



AGENDA

November 20, 2024
10:30 a.m.

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
Board of Supervisors Meeting
Agenda
November 20, 2024
10:30 a.m.

- 1. CALL TO ORDER**
- 2. OPENING INVOCATION**
- 3. PLEDGE OF ALLEGIANCE**
- 4. SAFETY MINUTE**
- 5. PUBLIC COMMENT PERIOD**
- 6. CONSENT AGENDA**
 - 6.1** October 23, 2024 Meeting Minutes
 - 6.2** Non-exclusive temporary easement and subsequent permanent easement along Hartzog Road with Summit Broadband, Inc.
- 7. REPORTS**
 - 7.1 Management Report**
- 8. GENERAL BUSINESS**
 - 8.1** Approve Contract #C006566 agreement with Halff Associates Inc. for professional engineering services for the District's master drainage model update in the amount of \$2,162,925
 - 8.2** Approve Contract #C006489 for one-year with Motorola Solutions Inc. to provide annual maintenance of the Astro P25 911 emergency dispatch radio system in the amount of \$537,139.17
 - 8.3** Approve Phase II of Contract #C006106 World Drive North Phase III for construction management and engineering inspection services with Consor Engineers, LLC. for \$2,238,318.27 plus 10% contingency, and \$142,261.02 for reimbursable expenses for a total of \$2,604,411.12

- 8.4** Approve Phase II of Contract #C006110 World Drive North Phase III project including add alternates with Southland Construction, Inc. in the amount of \$43,398,746.60, plus 10% contingency for a total of \$47,738,621
- 8.5** Approve Contract #C006619 for three years with Synagro South, LLC. to supply, operate, and maintain a skid-mounted centrifuge dewatering system to process waste sludge and produce dewatered solids in the amount of \$1,912,540

9. PUBLIC HEARING

10. OTHER BUSINESS

11. ADJOURN

APPEALS: All persons are advised that, should they decide to appeal any decision made at a Board of Supervisors hearing, they will need a verbatim transcript of the record of the proceedings. It is the responsibility of every party-in-interest to arrange for a transcript of the proceedings, which must include the verbatim testimony and evidence upon which the appeal is made.

AMERICANS WITH DISABILITIES ACT: The Central Florida Tourism Oversight District is committed to reasonably accommodating the needs of anyone with disabilities who wishes to attend or participate in public meetings. Anyone with a disability who requires a reasonable accommodation should contact the Clerk of the Board, by telephone at (407) 934-7480 or via email (DistrictClerk@oversightdistrict.org), no less than one business day (i.e. Monday through Friday, excluding legal holidays) in advance of the applicable meeting to ensure that the District has sufficient time to accommodate the request

In The Matter Of:
Central Florida Tourism Oversight District

Board of Supervisors Meeting
October 23, 2024

Legal Realtime Reporting
P.O Box 533082
Orlando, Florida 32853- 3082

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT

BOARD OF SUPERVISORS MEETING

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LOCATION: Central Florida Tourism Oversight
District
1900 Hotel Plaza Boulevard
Lake Buena Vista, Florida 32830

DATE TAKEN: October 23, 2024

TIME: 10:33 a.m. - 11:23 a.m.

REPORTED BY: SANDRA D. BROWN, FPR,
Court Reporter and Notary Public
State of Florida at Large

PRESENT:

BOARD MEMBERS: Charbel Barakat, Vice Chairman; Brian Aungst, Jr.; Bridget Ziegler

SPEAKERS: Pastor Finoy Johnson, IPC Orlando; Eddie Fernandez, CFTOD Operational Safety Consultant; Katherine Luetzow, Planning & Engineering Manager; Stephanie Kopelousos, District Administrator; Christine Ferraro, Director - RCES

CFTOD STAFF: Stephanie Kopelousos, District Administrator; Paula Hoisington, Deputy District Administrator of Administration; Roy Payne, Esquire, General Counsel; Eric Ferrari, Fire Chief; Alycia Mills, District Clerk, Executive Assistant; Tanya Naylor, Director of Security and Emergency Management; Ron Zupa, IT Service Delivery Manager; Samarth Thomas, Systems Administrator; Susan Higginbotham, Chief of Finance; Christine Ferraro, Director - RCES; Roger Smith, Deputy Fire Chief; Eddie Fernandez, CFTOD Operational Safety Consultant; Tiffany Kimball, Contracting Officer; Yenni Hernandez, Chief Information Officer; Katherine Luetzow, Planning & Engineering Manager; Matthew Oberly, External Affairs Director; Heidi Powell, Manager - Financial Reporting Analysis; Douglas Henley, Director of Facilities; Mary Balliet, Senior HR Generalist; Erin O'Donnell, Public Records Administrator; Ella Hickey, Building & Safety; Craig Sandt, Principal Construction Manager; Jason Herrick, Manager Gas Water & Wastewater; Holly Hagans, Security and Emergency Management Coordinator

P R O C E E D I N G S

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3 VICE CHAIR BARAKAT: Good morning, I call this
4 meeting of the Central Florida Tourism Oversight
5 District Board of Supervisors to order. Before we
6 begin, I would like to introduce for our invocation
7 Pastor Finoy Johnson, who will lead our invocation
8 today. Pastor Finoy -- hopefully, I pronounced
9 your name right -- was born in India, and has spent
10 most of his life in the United States. He's a son
11 of Pastor Johnson Zachariah and Sister Johnson who
12 served the Church of God for 50 years.

13 Pastor Finoy completed his undergraduate
14 studies and later earned a Masters in Theology and
15 Biblical Studies. While living in Dallas, he was
16 activity involved in the Dallas/Fort Worth Citywide
17 Fellowship and Youth Fellowship, in addition to
18 serving his local congregation.

19 In 2000, Pastor married Sister Suni, and they
20 are blessed with three children: Alexander, Alyssa,
21 and Andrew. The pastor and his wife -- they're
22 entire family is involved in ministry where they do
23 international missions and campus youth ministry.
24 They've traveled to multiple countries with their
25 international team leading biblical and medical

1 camps.

2 Pastor, would you please stand and lead us in
3 prayer?

4 PASTOR JOHNSON: Good morning, it is a
5 wonderful privilege for me to be here this morning.
6 I appreciate the opportunity on behalf of IPC
7 Orlando, where I serve as associate pastor, on
8 behalf of our senior pastor, who is actually
9 traveling on a mission opportunity, and the Board
10 and the members, I extend our prayers of blessing
11 to this body and to all the work that you do.

12 I just wanted to share a brief thought and
13 lead us into prayer. One of the characters in the
14 Bible that most people refer to is David. He's
15 known for his musical abilities, being a good
16 shepherd, but also as one who slayed the giant.
17 But in the New Testament, when they talk about
18 David, it says, David served the purpose of God in
19 his generation.

20 I pray as his body that they would have that
21 same mentality and mindset, that whatever God has
22 fulfilled or asked for this body, to fulfill the
23 purpose that we can serve the generation. And
24 David did so by setting up the next generation for
25 success, as well, and I pray that this body has the

1 wisdom to do that.

2 Let's pray. Almighty Holy Living God, through
3 your only begotten Son, Jesus Christ, we come
4 before your throne and call you Father. Thank you
5 for the bountiful blessings you showered upon us.
6 I pray that your wisdom, your guidance, your
7 discernment is entrusted to this body as many
8 decisions will be made in the coming days and
9 weeks.

10 I pray that your favor will be upon every
11 member and every decision that is made in the fear
12 of God and for the welfare of the people. I pray
13 that your presence would guide each member and
14 their families. I pray that each of us may be
15 faithful stewards of every responsibility and
16 opportunity that has been relegated to us.

17 May our words and actions honor our creator,
18 Lord Jesus Christ. Our Heavenly Father, we also,
19 at this time, bless our state, our neighbors,
20 especially those who have been impacted by the
21 calamities. Lord Jesus, we pray that your hand
22 will be upon our nation in these critical times.

23 The Lord bless you and keep you. May the Lord
24 make his face shine upon you and be gracious to
25 you. The Lord lift up his countenance upon you and

1 give you peace. In the name of our Lord and
2 Savior, Jesus Christ, we pray, amen.

3 VICE CHAIR BARAKAT: Amen. Thank you, Pastor.

4 PASTOR JOHNSON: Thank you.

5 VICE CHAIR BARAKAT: With that, please rise
6 and join me in the pledge of appliance.

7 ATTENDEES: I pledge allegiance to the flag of
8 the United States of America, and to the Republic,
9 for which it stands, one nation, under God,
10 indivisible, with liberty and justice for all.

11 VICE CHAIR BARAKAT: Thank you. And, you
12 know, with that -- I guess I didn't really greet
13 everybody properly, but it's good to be back.
14 Yeah, nothing -- not like anything too exciting
15 went on in the last month, so it's been a very
16 quiet period of time. Hopefully, now that we're
17 through the budget season, through hurricane
18 season, we'll -- looking forward to getting --
19 looking forward and being, you know, productive and
20 forward looking, and hopefully getting back to a
21 little bit of normalcy.

22 And along those lines, before we get to our
23 safety minute, I did want to pause and reflect for
24 a moment on the devastating impact of our region --
25 on our region of two powerful storms: Hurricane

1 Helene and Hurricane Milton. It was an
2 unprecedented one, two punch of flood and wind
3 damage that impacted the state from the Gulf to the
4 Atlantic and our District in between.

5 I wanted to take a moment to thank -- sorry,
6 thank our District team members who manned our
7 Emergency Operation Center, and those who responded
8 after the storms to ensure that the District
9 returned to normal operations swiftly and safely.
10 You are the best of the best in public service
11 today, and I'm proud to work with all of you.

12 I'd also like to thank all of those who live
13 and work in the District, who showed up under very
14 stressful circumstances, and helped so many
15 visitors navigate the storms' uncertainty and
16 safety and security. And I would add myself and my
17 family among them.

18 For some of our guests, a hurricane just
19 happened to land during the first and possibly only
20 time they'd ever visit Walt Disney World. And so
21 when you think about that, a swift return to normal
22 operations help make sure that those folks from --
23 who came from all around the world, I spoke to
24 folks from France, from Germany, and elsewhere,
25 experience a trip of a lifetime with minimal

1 disruption and full safety. So everyone here can
2 take great pride in that.

3 I'd like to give a few specific shout-outs.
4 So, yeah, as I said, my family and I, including a
5 newborn, were fortunate to ride out the storm
6 alongside many District employees at the Wyndham
7 Lake Buena Vista next door. And along those lines,
8 I'd like to thank Mr. Jay Leonard, the general
9 manager of the Wyndham, for hosting me and my
10 family and so many -- and dozens of District
11 personnel.

12 I think everyone here knows Jay. He's a
13 regular presence at our meetings. Someone
14 introduced him to me as the mayor of Walt Disney
15 World, and as best as I can tell, he's earned that
16 title better than just about anyone else. Jay
17 seemed to know -- I've never gotten to see him in
18 his element like that before. He seemed to know
19 all his guests personally and made sure their needs
20 were attended to.

21 He told me Milton was his 17th storm at the
22 hotel, and it showed. He and his team are a
23 well-oiled machine, and they managed to turn what
24 could have been a very stressful experience for a
25 lot of guests into a positive one. In particular,

1 I have a seven year old and a five year old already
2 asking when they -- when they can come back. So
3 big thanks to Jay and his team at the Wyndham
4 for -- for their support.

5 Secondly, as I was leaving the hotel to return
6 home the day after the storm, I happened to run
7 into Joey Rodriguez. I know Joey can't be here
8 today, but he's, of course, our District Manager of
9 Building and Safety. Joey gave me the good news
10 that there were no -- there was no significant
11 storm damage related to any structures within the
12 District. Not every city or county in Florida can
13 say the same.

14 I think that is a testament, at least in part,
15 to the foresight and resiliency of the Epcot
16 building code and the efforts of Eddie. His recent
17 predecessors, Mike Rickabaugh, Jerry Wooldridge,
18 and their entire department, as well as the quality
19 and -- of construction and maintenance performed by
20 the Walt Disney World team and other businesses
21 operating the District. So I think it's worth
22 recognizing that.

23 We are a best-in-class environment from top to
24 bottom, and it's from -- part from the District,
25 but it's also from all the folks, and, obviously,

1 Disney -- the Disney folks deserving a big part of
2 that credit, as well. So I just salute all of you,
3 and please keep up the good work, and thank
4 you-all.

5 Finally, Stephanie, I'll just briefly say that
6 I'm grateful for your calm and experienced presence
7 at the helm of this operation, and thank you for
8 steering the ship.

9 To all of those who the recent hurricanes have
10 impacted, I hope you will please consider seeking
11 out disaster assistance from the local, state, and
12 federal agencies to ensure you and the
13 communities -- and our communities can recover
14 quickly, and our thoughts and prayers here at the
15 District are with you.

16 So with that, we will hear from Eddie
17 Fernandez, who will present our safety minute.

18 MR. FERNANDEZ: Thank you, Mr. Vice Chair,
19 members of the Board, and to all of our guests and
20 visitors, we like to cover some safety elements
21 before every board meeting for your protection.

22 We want everyone to know that in the event of
23 an evacuation, there are two exits. You can use
24 the ones to the right, and those will lead you to
25 the front of the building where you came in this

1 morning. But if you exit through these on the
2 left, these double doors on the left, that will
3 take you to an exit at the rear of the building.

4 We ask everybody to make their way to the
5 front and to the ends of the parking lot where our
6 employees will be, and they will ask you to stay
7 there until emergency services responds and tells
8 us that we have the all clear to come back in the
9 building.

10 In the event we need first-aid or AED, both of
11 those are available at the security desk up front,
12 and we will grab those if necessary.

13 To add to your message, Mr. Vice Chair, just a
14 moment ago, in light of the recent hurricanes that
15 impacted Florida, this month's safety tip, we want
16 to underscore the importance of emergency
17 preparedness. And although it's not possible to
18 avoid the damage that hurricanes bring, we do have
19 advanced notice that they're on their way to give
20 us the opportunity to prepare as best that we can.

21 However, having this advanced notice
22 doesn't -- isn't always the case for other types of
23 emergencies: tornadoes, national emergencies, job
24 loss, sudden illness, fires, and a various -- a
25 variety of other unforeseen circumstances can

1 create significant challenges if we don't prepare
2 properly.

3 As you'll hear from District Administrator,
4 Stephanie Kopelousos, in a moment, the District's
5 ability to formidability respond to Hurricane
6 Milton is attributable to the planning and efforts
7 of our employees and our leadership, our leadership
8 team. We are especially grateful to District
9 emergency manager, Tanya Naylor, and her team for
10 their hard work. They expertly managed a multitude
11 of tasks in preparedness and response efforts, and
12 the results speak for themselves. Thank you,
13 Tanya, and to all of our employees for their hard
14 work.

15 Since no one ever knows when the next
16 emergency is going to take place, we strongly
17 encourage everyone to take the necessary time to
18 regularly build, test, and refresh your emergency
19 plans and supplies. The State of Florida
20 government website offers an excellent selection of
21 online resources to help anyone get started. We're
22 hopeful that everyone who was impacted by Hurricane
23 Milton is recovering as quickly as possible and is
24 back to some sense of normalcy right before we head
25 into the holiday season. Thank you very much for

1 your time, enjoy the meeting.

2 VICE CHAIR BARAKAT: Thank you, Eddie. Our
3 next -- our next item is the public comment period.
4 A general reminder this is a time for public
5 comments, not a question-and-answer period for the
6 Board. It's important for us to receive public
7 comments to enact the will of the people of
8 Florida. If you have -- if you wish to make a
9 public comment, please state your name and address
10 before addressing the Board. Now, I don't have any
11 cards in front of me. Should I take that --

12 MS. KOPELOUSOS: No public comment.

13 VICE CHAIR BARAKAT: No public comment. All
14 right. In that case, no one has signed up for
15 public comment, so we will move on to the consent
16 agenda items.

17 Today's consent agenda, that's item No. 6 on
18 the agenda. Today's consent agenda has six items.
19 Items 6.1, 6.2, and 6.3 cover the approval of the
20 meeting minutes from the August 28th,
21 September 11th, and September 25th meetings,
22 respectfully. Item No. 6.4 seeks the approval of a
23 non-exclusive temporary easement with a permanent
24 easement with Peoples Gas System, Inc, a/k/a TECO.
25 Thanks, TECO, for getting my lights on this week,

1 by the way.

2 Item No. 6.5 covers the approval of a
3 non-exclusive permanent easement with Summit
4 Broadband, Inc., and item No. 6.6 covers the
5 approval of the release of interest in the
6 greenways and easements of the Lake Marion Preserve
7 Property, Tract C, Poinciana Neighborhood 1 West,
8 Village 7 Plats.

9 Finally, 6.7 -- item 6.7 on the agenda
10 includes the 2023 District engineer's annual
11 report, and the companion 2024 water control --
12 control structure inspection report.

13 I did think it would be appropriate and
14 helpful for Katherine, the District's manager of
15 planning and engineering, to comment on agenda item
16 6.6, which include -- involves the District's
17 participation and effort by Polk County and the
18 nature conservancy.

19 MS. LUETZOW: Good morning.

20 VICE CHAIR BARAKAT: Good morning.

21 MS. LUETZOW: So as the Board may be aware,
22 the District owns a two acre parcel of land in Polk
23 County. This was previously purchased as part of
24 our permitting for a prior roadway capital
25 improvement project many years ago, and it's for

1 threatened and endangered species, primarily sand
2 skinks at the time.

3 When the District purchased this property,
4 because of the way the area was platted, we had
5 interest in an adjacent property and common areas.
6 This adjacent property is about 600 acres of land
7 that was recently purchased by Polk County, and so
8 Polk County reached out to District staff with a
9 request for the District to release our interest in
10 these common areas on this adjacent parcel.

11 And that is because Polk County and the nature
12 conservancy are working together to do conservation
13 over this area because, like our parcel, it has
14 scrub habit, which is vital for certain species,
15 including the Florida scrub-jay and sand skinks,
16 its vital habitat.

17 And so District staff reviewed this request,
18 and because it helps bolster our mitigation, which
19 is right next door by providing a larger area of
20 conservation, we are recommending to the Board that
21 the District release this so that that effort can
22 continue forward.

23 VICE CHAIR BARAKAT: Very good. Thank you,
24 Katherine. I appreciate it, and I thought this was
25 a great example of partnering with neighboring

1 counties for sort of the greater good, and,
2 obviously, conversation is a noble goal. Let
3 the -- I hope the record will reflect, and history
4 will reflect, that this District is a -- a true
5 friend of the sand skink.

6 So, with that, is there a motion to approve
7 today's consent agenda?

8 MR. AUNGST: So moved.

9 MS. ZIEGLER: Second.

10 VICE CHAIR BARAKAT: All those in favor, say
11 aye.

12 THE BOARD: Aye.

13 VICE CHAIR BARAKAT: Any opposed? Hearing
14 none, let the record reflect that the consent
15 agenda passes unanimously. Thank you.

16 Item -- agenda item 7.1, the management
17 report. Topic, hurricane response. With that, I'd
18 like to invite the District administrator,
19 Stephanie Kopelousos, to deliver her report.
20 Stephanie.

21 MS. KOPELOUSOS: Chairman, first of all, thank
22 you for acknowledging the team. When you look at a
23 hurricane coming our direction not knowing where
24 it's going, you realize very quickly how prepared
25 our district is, our team is, to respond. But not

1 just to respond, it's the preparation that goes
2 ahead. Yes, we had a few trees down, but part of
3 it is we maintained the structures, right? We
4 maintained the -- the landscaping to make sure that
5 those trees that are vulnerable, those have already
6 been taken out in preparation for this. Those that
7 we can save, they're saved.

8 And I think that helps with the recovery, but
9 all that is part of what this team does day in and
10 day out, in each and every day. And I know I've
11 only been here a few short months, but you can see
12 what a well-oiled machine this team is; not just in
13 response and preparation for the storms, but when
14 you look at everything else they do on a regular
15 basis. And I am just grateful and humbled to watch
16 this team operate.

17 And you look at the sacrifices they made, you
18 look at -- for example, Tanya, and her team, they
19 were in the EOC throughout the event leaning into
20 it. And, yes, Tanya has a family plan for her
21 family, but I think what's obvious in the team that
22 rides this out, and the EOC, and our garage, it
23 includes every aspect of our team.

24 I mean, we had IT in the EOC with us. But
25 it's to make sure that we can respond to anything

1 and everything that happens. And you look at
2 Tanya's leadership, but I look at the rest of the
3 team who is a part of this response.

4 You look at the Chief and Roger and their
5 whole team. I mean, not only are they responding
6 to incidents that are happening, but as soon as
7 that storm went through, we were out with the fire
8 trucks, with chain saws cutting and tossing. And
9 it wasn't just us, it was the Disney team. It
10 didn't matter for the Disney team that it was our
11 roadway. They got there before we did, they
12 started going, we moved forward. Took -- you know,
13 so it's the real team approach.

14 But you look at engineering and planning. You
15 look at Katherine's team, and they rode it out.
16 They were the first ones in. You look at the
17 amount of water that was coming, and then you see
18 Reams Road is under water right now, dealing with
19 the county and those relationships and controlling
20 that.

21 But you look at not just the roadways, but you
22 look at the canal structures and what they were
23 seeing, and you can't just get there immediately.
24 We were seeing downed trees in the canals, and we
25 were seeing blockages, and Katherine immediately

1 knew within hours something is between here and
2 here because the water level has changed. I mean,
3 she knows it like the back of her head. You know,
4 numbers just appear, and she goes, It's this level
5 here, this level here, something in the middle is
6 the problem, we'll get there. But it's not the
7 emergency right this second, here's what we're
8 focused on.

9 So when you look at that, and I look at
10 Ella -- and I know Joey is not here, but, Ella,
11 y'all were here leading up to it, you helped. You
12 did everything you needed to do with inspections
13 and making sure that our partners could get up and
14 running.

15 But part of -- like what you said, Chairman,
16 it's the work that's done beforehand. It's making
17 sure we do it right from the beginning and making
18 sure that we -- you know, I will tell you,
19 Tallahassee called me three times, did the power go
20 out? Did you lose any power? I'm like, No, we
21 didn't lose power. We're not going to lose power.
22 (indicating). Watch the electricity go out right
23 now. That serves me right, Chris.

24 But those are the things, and you look at the
25 teams who rode out the storm and -- and families

1 were not with them and making sure they have a
2 plan. It's just -- it is humbling and rewarding
3 all in the same that I have the opportunity to work
4 with a team like this.

5 But it goes beyond -- I mean, our utility. I
6 bet one county, one district cannot say we didn't
7 lose electricity. Everything kept moving. They
8 didn't -- and they rode it out in their EOC.
9 Chris, your team, everyone was in. We were all
10 talking, going back and forth, but nothing
11 happened. Chris calls me and goes, We still have
12 all electricity. I'm like, Thanks.

13 That just doesn't happen. That doesn't happen
14 without having the best of the best, and I am
15 grateful. Now, that doesn't mean that things
16 didn't happen and we're not in the process of
17 recovering. Katherine's team is out there each and
18 every day still dealing with the level of water
19 that we're dealing with. But it was our signals
20 were askew, right, we have signs that were down,
21 and those type of things that are easier than what
22 could have -- could have been if we didn't plan
23 appropriately.

24 And I just want y'all to hear me say this to
25 this team, I'm grateful. Grateful to the work you

1 put in, but's it not just in these times, it's
2 day-to-day. It's everything that happens. When
3 you look at Douglas, your facilities team, they
4 were right there with us. They made sure -- yeah,
5 we had a few leaks, we had a little bit of water,
6 but I don't know anyone with the amount of wind and
7 water we had that didn't have some water and
8 infrastructure that was affected. But -- but
9 Douglas's team was here. They were with us the
10 whole time. I mean, everyone was out as soon as
11 daylight came driving around to see what was going
12 on and what could be helpful.

13 I know I've left people out, but I can say
14 this: Every single part of our team chipped in to
15 make sure we got this right and -- and did things
16 right, and for that, I'm grateful.

17 Mr. Chairman, blessed to be here and excited
18 to see the things that are coming.

19 VICE CHAIR BARAKAT: Amen. Thank you,
20 Stephanie. Very well said. I can't -- can't echo
21 that -- all of those statements, echo and underline
22 them and co-sign them a thousand times over.

23 I mean, look, I'll just say: Tanya, Chief,
24 Katherine, Douglas, I should -- you know, I should
25 be thanking you-all at the start of every meeting,

1 and at the end of every meeting. Like I've said
2 before, the degree -- the everyday degree of
3 difficulty here and what you-all do is at the
4 highest level. I would put it up against any city,
5 county government, any fire department anywhere in
6 the country. Okay. That's on -- that's on an
7 average sunny day, not during hurricane season.

8 To add -- add this weather, add the tension,
9 add the crowds, and to remain safe, to remain
10 secure, to not have a significant disruption in
11 power, a significant issue with any building,
12 that's just -- it's a testament to the work that
13 you-all have been putting in, not just -- as
14 Stephanie said, not just during and leading
15 immediately up to the storm, but in the weeks and
16 months and years that you-all have put in here, so
17 I can't thank you enough.

18 And, Stephanie, like I said, thank you. It's
19 a -- you're -- you've mentioned a lot of names.
20 You didn't mention yourself. You deserve a lot of
21 credit, and I thank you. That's a testament to
22 your self-less leadership, and we're glad to have
23 you here, so thank you-all.

24 And now -- and, yeah, so I appreciate that.
25 Thank you for the report. And, Roy, I did want to

1 take a moment. I should have mentioned this
2 earlier. I wanted to -- I spoke to you about this
3 directly, but I wanted to mention it on the record,
4 obviously acknowledge the passing of your
5 mother-in-law and let you know, deliver the
6 condolences of myself, I'm sure on behalf of the
7 Board, on her passing, and we're glad to have you
8 here, so thank you.

9 MR. PAYNE: Thank you.

10 VICE CHAIR BARAKAT: And we'll now move on to
11 general business. We have five items to cover
12 under general business. Agenda item 8.1,
13 Approve -- Approval of the establishment of an
14 allowance for the procurement of owner-furnished
15 materials necessary to provide electric service for
16 Project L in the amount of \$4 million.

17 We will hear from Chris Ferraro, director of
18 Reedy Creek Energy Services, who will present on
19 all five items under the general business section
20 of our meeting. And, Chris, great to have you
21 back, and, again, thank -- yeah, thank you for
22 keeping the lights on for us.

23 MS. FERRARO: Thank you. And as Stephanie
24 said, credit to the team. We had a large ride-out
25 crew, and there were no disruptions in any of the

1 utility systems for the District, so happy to serve
2 to the District and the District's customers, and
3 great to work with Stephanie. We talked -- and
4 Tanya and the whole gang from the District. We
5 talked multiple times throughout the event.

6 But I do have five agenda items this morning.
7 Luckily, three of them are about electric, so this
8 is going to be super fun, so here we go. So our
9 first request is for a \$4 million equipment
10 allowance to supply electric service to a new
11 customer of the District. We received a utility
12 service request --

13 VICE CHAIR BARAKAT: Chris, I'm sorry. I
14 don't mean to interrupt. We -- our monitors are
15 not on up front. Sorry.

16 MS. FERRARO: No problem.

17 MS. ZIEGLER: We have swivel chairs. We can
18 swivel.

19 VICE CHAIR BARAKAT: I suppose we could.
20 Perfect. Thank you. Technical difficulties.
21 All right. We're back in business. Chris --
22 thank you, Ron. Carry on.

23 MS. FERRARO: No problem. So just a little
24 bit of the "why" for this item. It is unusual for
25 us to come this early in our design process for a

1 new customer to ask for an equipment allowance, but
2 there are long lead times associated with the
3 electrical equipment required for this system
4 expansion to serve the customer.

5 So during the pandemic we had a disruption in
6 a lot of areas, but in the supply chain that
7 supports electric utility systems, particularly
8 switch gear, high-voltage cable, medium-voltage
9 cable, and transformers. And today that long lead
10 time is still continuing.

11 There's an increased demand for this
12 equipment. We have increasing electrification
13 globally. We have large customers like data
14 centers that are also utilizing this equipment, and
15 then we just have replacing infrastructure, and, of
16 course, the hurricanes that damage equipment also
17 create the demand.

18 Lead times associated with the equipment we'll
19 be purchasing with this allowance. We have
20 electrical switch gear and 15,000-volt cable,
21 that's more than a year. Standard voltage
22 transformers are one to two years, and then if we
23 need a non-standard voltage or a large power
24 transformer, that we'll talk about in a future
25 agenda item, that can be two years or more.

1 So we are asking for a Board consideration of
2 a \$4 million allowance for owner-furnished
3 materials, including cable, transformers, switches,
4 and pertinent items so that we may issue purchase
5 orders for this equipment when the design is
6 finalized, and the design criteria for each of
7 those items is available.

8 We are close on that design criteria, but we
9 have not finalized that, but with the lead times
10 we're requesting Board approval now so that we can
11 get these items ordered and be able to extend the
12 system as required.

13 I wanted to assure the Board that there are
14 sufficient funds available in the utility division
15 to support this request in advance of coming in for
16 a full project budget. What you'll see in the
17 graph on the right hand of the slide is a look at
18 the utility's unrestricted reserve funds. We are
19 forecasting a year-end balance of \$53.5 million in
20 that reserve fund.

21 We have commitments, including our fiscal year
22 2026 60-day cash reserve subtracted from what is
23 available in that 53.5 million, and we are showing
24 a \$19 million available balance. We will go ahead
25 and reserve that fund for any of the deposits or

1 cancellation fees that may be required for this
2 equipment.

3 We do expect that this cash flow for this
4 item, we won't receive them until 2026 or 2027, and
5 you'll see the projects will come in front of the
6 Board as we have a full project scope and we move
7 through our engineering and design phase for these
8 projects. Those items will come before the Board,
9 likely financed through utility revenue bonds in
10 '26 and '27.

11 That concludes agenda item 8.1.

12 VICE CHAIR BARAKAT: Thank you, Chris. Any
13 questions from the Board on this? The 4 million,
14 Chris, I assume there's some comfort level.
15 That's -- I guess, there's some room in that number
16 in case, I guess -- on the uncertainty. There's
17 some uncertainty baked into that, I guess, but
18 you're comfortable with that figure?

19 MS. FERRARO: We have gotten some quotes from
20 vendors on equipment, and we've held about a
21 10 percent contingency in that \$4 million value.
22 We do have some items in inventory, but these would
23 be for what is newly required.

24 VICE CHAIR BARAKAT: Okay. All right. That
25 seems reasonable. Is there a motion to approve the

1 procurement of owner-furnished materials for
2 Project L for 4 million?

3 MS. ZIEGLER: Yes, move approval of agenda
4 item 8.1.

5 VICE CHAIR BARAKAT: Second?

6 MR. AUNGST: Second.

7 VICE CHAIR BARAKAT: All those in favor, say
8 aye.

9 THE BOARD: Aye.

10 VICE CHAIR BARAKAT: Any opposed? Hearing
11 none, let the record reflect that the motion passes
12 unanimously.

13 In agenda item 8.2, the District seeks to
14 approve contract No. C006553 with McKim & Creed,
15 Inc., for professional engineering services to make
16 improvements to the condenser water and cooling
17 tower systems at the Epcot Central Energy Plant in
18 the amount of \$295,859 plus a 10 percent
19 contingency for a total of \$325,444.90, plus an
20 RCES design/support services fee not to exceed
21 75,000.

22 Chris, I understand this contract would allow
23 for increased operational efficiency by not -- by
24 allowing you to isolate a cooling tower should
25 there be a need to create repairs. If you could

1 maybe elaborate on that and then present the item.

2 MS. FERRARO: Thank you, Vice Chair. You have
3 done a great job describing this item. I'll add
4 very little to it. But at the District's Epcot
5 Central Energy Plant, we do produce hot water and
6 chilled water. It is a pretty significant
7 production facility for chilled water. We have
8 eight, 2,000-ton chillers, and there are four
9 cooling towers. So each of the chillers, there's
10 two chillers per cooling towers.

11 Three of the cooling towers were installed
12 with the original plant construction in the early
13 1980s. The fourth cooling tower was installed in
14 1989. All of those cooling towers are collected in
15 a common basin.

16 So this project envisions the ability to do a
17 design and upgrade to be able to isolate each
18 cooling tower, and to be able to isolate the
19 condenser water basin so that we have operational
20 flexibility, and we don't have to impact a large
21 section of the production facility for that
22 required maintenance activities. And you can see
23 in the picture here we have one of the chillers
24 inside the Epcot Central Energy Plant.

25 On the next slide, we have a picture for

1 everyone who wonders what a cooling tower looks
2 like. So on the first picture, you can see a view
3 of the Epcot Central Energy Plant. There are four
4 large cooling towers that evaporate water, and that
5 water is collected in a common condenser basin. So
6 this project would install piping and other
7 pertinent devices to allow us more flexibility in
8 the maintenance of that basin.

9 We did go out with a Letter of Interest for
10 this project, and we had three vendors who brought
11 us proposals. McKim & Creed is the most qualified
12 and selected vendor, so we're recommending, at this
13 time, Board approval to McKim & Creed for
14 professional engineering service for improvements
15 to the Epcot Central Energy Plant condenser water
16 and cooling tower systems in the amount of
17 \$295,859, plus 10 percent contingency, and a total
18 amount of \$325,444.90, and then a request for RCES
19 design and support services fees for \$75,000 for
20 the design and bidding phase. This project will be
21 funded from cash on hand from the CFTOD Series
22 2021-2 utility revenue bond, which is one of our
23 taxable borrowings.

24 VICE CHAIR BARAKAT: Chris, we have a pretty
25 long-standing relationship with McKim & Creed,

1 don't we?

2 MS. FERRARO: Yes, we do.

3 VICE CHAIR BARAKAT: Great. Excellent.

4 Members, any questions for Chris?

5 Great. In that case, is there a motion to
6 approve item No. 8.2?

7 MR. AUNGST: Move to approve item 8.2.

8 MS. ZIEGLER: Second.

9 VICE CHAIR BARAKAT: Very good. All those in
10 favor, say aye.

11 THE BOARD: Aye.

12 VICE CHAIR BARAKAT: Any opposed? Hearing
13 none, let the record reflect that the motion passes
14 unanimously.

15 Item No. 8.3 on the agenda, The District seeks
16 the approval of contract No. C006528 with Chen
17 Moore and Associates for professional engineering
18 to replace the potential load-break switches and
19 unit substation transformers at Epcot in the amount
20 of \$570,335.10. Item 8.3 also includes a
21 10 percent contingency for a total of \$627,368.61,
22 plus an RCES design/support services fee not to
23 exceed \$200,000. Chris, why don't you go ahead and
24 cover item 8.3?

25 MS. FERRARO: Certainly. So, in this item, we

1 are seeking to focus on these switches that are
2 located around the Epcot electric distribution
3 system for the District. It's a 12,000-volt piece
4 of switch gear, and you can see it is vintage in
5 the picture. We have -- the switch is located on
6 the left-hand side, and the transformer is located
7 on the right-hand side. These were super fancy and
8 state of the art in the 1980s, but there is new and
9 different equipment available today.

10 These items look very good. We have a robust
11 painting program, but they do show from an interior
12 basis some heavy rust. We have degradation and
13 they are subject to water damage and intrusion.
14 Most of these switches are 30 to 40 years old, and
15 they are approaching the end of their useful life.
16 We do heavily maintain this equipment, but it is
17 time to replace them.

18 This item seeks for professional engineering
19 services to replace ten of the 40 units in the
20 Epcot electrical system with industry standard
21 dead-front switches and pad-mounted transformers.
22 And those are pictured on the next slide.

23 So a little bit of a from/to. In the larger
24 picture, you can see our vintage equipment. In the
25 rear of the picture are HPL switches, and our unit

1 substation transformers. And then in the forefront
2 of the picture, you can see a industry standard
3 pad-mounted switch, and in the lower picture on the
4 right-hand side, you can see a pad-mounted
5 transformer.

6 So we did go out in February of this year for
7 Letter of Interest for engineering services for the
8 design of these replacements, and we received three
9 bids. We are proposing approval to Chen Moore and
10 Associates, a local firm in Maitland.

11 So today we are seeking Board approval of
12 contract C006528 with Chen Moore and Associates for
13 professional engineering services for replacement
14 of high potential or HPL load-break switches on the
15 Epcot distribution system in the amount of
16 \$570,335.10, plus 10 percent contingency, for a
17 total of \$627,368.61, and an RCES design and
18 support services fee not to exceed \$200,000 for the
19 design and bidding phases.

20 The design of this project will be funded
21 through the fiscal year 2025 utility capital
22 planned work fund. These are funds collected
23 through the current year's rates. I do anticipate
24 when we bring this back to the Board for the
25 construction contract, the Board will be leveraging

1 existing bond funds for the construction part of
2 this project, but we have plans in the current
3 utility rates to fund the design in the fiscal '25
4 rate structure.

5 VICE CHAIR BARAKAT: Great. Well, Chris, I
6 will resist the urge to speak up in defense of
7 things from the '80s, but I appreciate --
8 appreciate that. It is my understanding that the
9 replacement -- sounds like the replacements will
10 have a pretty long lead time, so appreciate you
11 getting ahead of the ball with the load-break
12 switches and the transformer replacements.

13 So before we get to a vote, I would like to
14 ask the members if they have any -- any questions.

15 MS. ZIEGLER: No.

16 VICE CHAIR BARAKAT: Okay. Then hearing none,
17 is there a motion to approve item No. 8.3?

18 MS. ZIEGLER: Yes, move approval of item 8.3.

19 MR. AUNGST: Second.

20 VICE CHAIR BARAKAT: All those in favor, say
21 aye.

22 THE BOARD: Aye.

23 VICE CHAIR BARAKAT: Any opposed? Hearing
24 none, let the record reflect the motion passes
25 unanimously. Thank you.

1 Next, Chris will present to the Board item No.
2 8.4 on the agenda. The District seeks to approve
3 the purchase of two, 69,000-volt substation
4 transformers from Prolec GE Waukesha for
5 \$3,493,186. Chris, why don't you -- why don't you
6 go ahead?

7 MS. FERRARO: All right. I will try to be
8 brief, but this is my favorite subject, so we're
9 going to talk about the District's electric system.
10 So just a little bit of a background, so that
11 lovely picture is our point of interconnection with
12 Tampa Electric Company. It's actually owned by
13 Tampa Electric. Those are the famous Mickey ears
14 on the southern side of our property.

15 That is one of five connections that the
16 District has with the Florida electric grid.
17 Within the District's electric system, we have
18 28 miles of 69,000-volt transmission lines, half of
19 which is overhead, and half is underground.
20 Connected to that 69,000-volt line, we have nine
21 customer supplying substations with 15 power
22 transformers that stepped the voltage down from
23 69,000 volts to 12,470 volts.

24 The typical service life for one of those
25 transformers that stepped that voltage down from

1 69,000 to 12,000 volts is 30 years under standard
2 operating conditions. We do an awesome job
3 maintaining those units and monitoring their
4 condition, so we have seen longer lives from those
5 units.

6 And I will speak of some of my contemporaries
7 now, Vice Chair. So the last transformers that
8 were replaced in the District were at the Lake
9 Buena Vista substation, which were about 50 years
10 old. So I'll classify myself as vintage, as
11 well --

12 MR. AUNGST: So ten more years of useful life.

13 MS. FERRARO: We did replace those
14 transformers. We were very lucky at that time to
15 have an opportunity to do that. One of the
16 fortunate things that came to us during COVID, the
17 property was less occupied, and we were able to do
18 that work without impact.

19 So, at this time, we are keeping an eye on the
20 transformers at the District's Epcot substation.
21 They were installed in 1981. We do extensive
22 testing on those transformers, internal and
23 external inspections, but we do feel like they are
24 approaching the end of their useful life and would
25 like to get an order in now for their replacements.

1 The lead time for these units now is between
2 137 and 170 weeks. We would like to procure two.
3 There are two identical transformers at Epcot.
4 They each back each other up, so if we lose one
5 transformer at the substation, there is a fully
6 redundant in-service second transformer. We went
7 out for three quotes for these transformers. The
8 low responsive bidder that we have used before is
9 Prolec GE -- and it's Waukesha. I had a briefing
10 on that before the meeting.

11 VICE CHAIR BARAKAT: I did know it was
12 Wisconsin. I did know it was Wisconsin, but, you
13 know.

14 MS. FERRARO: Waukesha. The amount that we
15 have been quoted is \$3,493,186. Just to give the
16 Board a sense of price escalation, the units that
17 we replaced at Lake Buena Vista substation we
18 received in 2019, they were \$1.3 million. Just to
19 give you a sense of the supply and demand forces in
20 the market.

21 VICE CHAIR BARAKAT: Oh, yeah.

22 MS. FERRARO: So, again, we are proposing, at
23 this time, with the long lead time, looking to
24 ensure this purchase with the use of the
25 unrestricted reserve funds, and to secure some of

1 this toward the purchase, we do -- are required to
2 put down 10 percent of the purchase price per the
3 terms with the vendor of \$349,319.

4 We will also reserve an additional 10 percent.
5 There is a mandatory cancelation clause. We don't
6 expect to cancel, but we want the District to be
7 assured that the funds are held. We are expecting
8 delivery of these items in 2027. We will be coming
9 back to the Board with the project for replacement
10 of these. We'll be budgeting that full -- that
11 full project work and planning that looking forward
12 to '27 and '28, likely using available bond funds
13 at the time, but we'd like to go ahead and place
14 this order now.

15 VICE CHAIR BARAKAT: Great. Yeah, I mean,
16 look, I think there was an audible -- does that
17 conclude? Sorry.

18 MS. FERRARO: Yes.

19 VICE CHAIR BARAKAT: Okay. I mean, I think
20 there was a little bit of an audible response to
21 the lead time and the numbers, and I think -- I can
22 understand that response. Anybody familiar with,
23 you know, the procurement of transformers in this
24 current environment, and the last few years, you
25 know, the longer lead times, and sharply higher

1 costs are -- they're not surprising. That's
2 consistent with certainly my experience, and I
3 think that's just the new reality we live in.

4 So I appreciate your efforts to get out -- get
5 out in front of this. And, obviously, very
6 thorough -- very thorough presentation on that.

7 So any particular challenges or concerns
8 related to this project that you've otherwise
9 stated? I mean...

10 MS. FERRARO: We always have a continuity of
11 service concern, right, when we take our system out
12 of configuration to replace one. We'll do a lot of
13 studying to make sure that as we move load around
14 the system that we maintain. We usually have at
15 least two additional sources, sometimes three, in
16 the electric system. That's why we don't lose
17 power during hurricanes, but we'll be -- there will
18 be a lot of complexity with the replacement, but
19 we've done it before, and we'll do it again.

20 VICE CHAIR BARAKAT: Great, thanks. Thanks,
21 Chris. With that, any questions, or, if not, is
22 there a motion to approve the purchase of the two,
23 69,000-volt substation transformers from Prolec GE
24 Waukesha in the amount of \$3,493,186.

25 MR. AUNGST: Move to approve agenda item 8.4.

1 MS. ZIEGLER: Second.

2 VICE CHAIR BARAKAT: All those in favor, say
3 aye.

4 THE BOARD: Aye.

5 VICE CHAIR BARAKAT: Any opposed? Hearing
6 none, let the record reflect that that motion
7 passes unanimously.

8 And now on to agenda item 8.5, the last item
9 in our agenda. Chris to present, the District will
10 seek approval to award three-year continuing
11 service contracts to the top ranked and selected
12 firms for electrical, hydrology/wastewater, and
13 mechanical engineering services.

14 Chris, I understand several of the firms
15 qualified as Buy Local vendors, which I'm excited
16 to hear about. I appreciate the work of the
17 District procurement team and your team at RCES
18 that you put in procuring those services locally.
19 It's very meaningful to me, and I know the rest of
20 the Board, so please -- please continue.

21 MS. FERRARO: Wonderful. So just a little bit
22 of background, and I, too, echo really my gratitude
23 to Tiffany and her whole team. This was a
24 significant lift. It starts us into the process of
25 the CCNA process required by Florida statute.

1 We're really looking to get well-qualified vendors,
2 and then trying to establish a number of firms that
3 we can work with to provide outstanding services to
4 the District.

5 So we did issue three Letters of Interest in
6 July of this year for engineering services for
7 electric, hydrology and wastewater, and mechanical
8 engineering services. We had a great response, as
9 you mentioned, from a number of local firms. There
10 were 49 firms that responded, and 27 firms that
11 were selected. A really significant lift.

12 We were able to get six consultants that were
13 recommending continuing service contracts for
14 electrical, 12 for hydrology/wastewater and civil,
15 and nine consultants for mechanical engineering.

16 Our firms are listed here, and you can see
17 really how well we did with great local talent.
18 And I should tell you that these are the A
19 students. As a District, we developed a scoring
20 criteria partnering with procurement and
21 contracting, and these are the folks that are at 90
22 out of 100. These are really well-suited to do
23 work with the District, as we -- we know we're a
24 little bit unique, but looking forward to the
25 relationships with these teams.

1 VICE CHAIR BARAKAT: Excellent. Yeah.

2 MS. FERRARO: Moving forward, how we'll use
3 these continuing services contracts, we'll issue
4 authorized task work order for each of the work
5 scopes. We will document what help we're looking
6 for from the consultant, pick the folks that are
7 qualified, and then look toward what's their
8 specialty, workload and capability for that
9 project. We'll also look to take a fair and
10 balanced approach spreading this work among those
11 well-qualified firms based on their availability
12 and the expertise, and that will be at the
13 discretion of the District, but, again, following
14 the Florida statute for the CCNA process.

15 These are some great pictures of all the nifty
16 things we're going to do together from an
17 engineering services procurement. We have some
18 switch gear, some of our large chillers, piping
19 systems, potable water supplies and then piping and
20 waste way work, and that concludes my presentation.

21 VICE CHAIR BARAKAT: Chris, thank you very
22 much. I appreciate your time and effort in today's
23 presentations, Chris. You know, you make -- you
24 make cooling towers cool, so thank you for that.
25 Well done.

1 MS. KOPELOUSOS: Let's not go that far.

2 VICE CHAIR BARAKAT: I know.

3 MS. FERRARO: Come on, it's a gift.

4 VICE CHAIR BARAKAT: Fair enough, fair enough,
5 fair enough. I couldn't help myself. Any -- any
6 questions from my fellow Board members on agenda
7 item No. 8.5?

8 All right. In that case, is there a motion to
9 approve the award of three-year continuing services
10 contracts for electrical, hydrology/wastewater, and
11 mechanical engineering services under item No. 8.5?

12 MS. ZIEGLER: Yes, move to approve 8.5.

13 MR. AUNGST: Second.

14 VICE CHAIR BARAKAT: Thank you both. All
15 those in favor, say aye.

16 THE BOARD: Aye.

17 VICE CHAIR BARAKAT: Any opposed? Hearing
18 none, let the record reflect that the motion passes
19 unanimously. Thank you very much, Chris.

20 MS. FERRARO: Thank you.

21 VICE CHAIR BARAKAT: Moving on to other
22 business. Do we have any questions or comments or
23 other items of business from the Board? No?

24 MS. ZIEGLER: I just wanted to --

25 VICE CHAIR BARAKAT: Go ahead, go ahead.

1 MS. ZIEGLER: -- it's not a question. I just
2 wanted to comment. I know we talked about it, the
3 hurricane, but I wanted to, again, also echo my
4 thanks and appreciation to staff. I think so
5 often -- well, before the hurricane, I know that
6 Tanya and I have spoken before, and I have said
7 this before, but our emergency response plan is
8 exceptional, and it really, again, is a testament
9 to the caliber of work that makes up this District.

10 I know we talk about that a lot, but we've had
11 the privilege of working in other places in the
12 state, and it really is exceptional. And I think
13 it's evidenced as to how you guys were able to
14 sustain that, but the part that I think is
15 oftentimes missed is that while you're here
16 serving, your homes may or may not have been
17 impacted or your family, and so often that -- we
18 live and work in this hospitality space and don't
19 skip a beat, and I think that you guys take that to
20 heart. And I think it's unique you got to really
21 experience it, I didn't realize that.

22 So -- but, again, thank you to all of you for
23 the hard work. I know it's been a heck of a month,
24 but onward and upward, but I just wanted to, again,
25 appreciate that.

1 VICE CHAIR BARAKAT: Amen. Thank you. Very
2 well said. Supervisor Aungst?

3 I think that's a perfect note upon which to
4 end. I -- as we reach the end of our meeting time,
5 I guess I'll just state for -- between now and our
6 next meeting scheduled for -- gosh, when is our
7 next -- it's the end of November.

8 MS. KOPELOUSOS: November 20th.

9 VICE CHAIR BARAKAT: So between now and then,
10 you-all may be aware there's an election happening.
11 I hope that all those in the District who are
12 legally qualified and registered to vote take the
13 opportunity to do so. I think we can be very proud
14 in the State of Florida. We have -- you know, our
15 election integrity is beyond reproach. You can be
16 confident that your vote will count when it should
17 be counted, and that the results are going to be
18 reached in a timely manner on -- on election night,
19 as it should be, as George Washington would have
20 wanted.

21 So with that, good luck. I hope you-all will
22 vote on election day, and I look forward to having
23 that -- having that behind us, as well. So with
24 that, if there's no further business to discuss, I
25 adjourn -- I will -- well, I will make a motion to

1 adjourn the meeting. Is there a second?

2 MS. ZIEGLER: Second.

3 VICE CHAIR BARAKAT: All those in favor.

4 THE BOARD: Aye.

5 VICE CHAIR BARAKAT: Hearing none, let the
6 record reflect the -- that motion to adjourn the
7 meeting has passed unanimously; therefore, I
8 adjourn the October 23rd meeting of the Central
9 Florida Tourism Oversight District Board at 11:23
10 in the morning. Thank you-all.

11 (The meeting adjourned at 11:23 a.m.)

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C E R T I F I C A T E

STATE OF FLORIDA
COUNTY OF ORANGE

I, SANDRA D. BROWN, Florida Professional
Reporter, certify that I was authorized to and did
stenographically report the foregoing proceedings
and that the transcript is a true and complete
record of my stenographic notes.

Dated this 13th day of November, 2024.

Sandra D. Brown

SANDRA D. BROWN
FLORIDA PROFESSIONAL REPORTER

**CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
BOARD OF SUPERVISORS REPORT 6.2**

Board Meeting Date: 11/20/2024

Subject: Non-Exclusive Temporary Easement w/Permanent Easement – Summit Broadband, Inc.

Presented By: Katherine Luetzow, Manager, Planning & Engineering

Department: Public Works

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #6.2 non-exclusive temporary easement and subsequent permanent easement along Hartzog Road with Summit Broadband, Inc.

RELEVANT STRATEGIC GOALS: Quality of Place

PROOF OF PUBLICATION: N/A

BACKGROUND: Summit Broadband, Inc. is requesting permission to construct and install underground and overhead communication lines and appurtenant underground facilities within the portion of District property located within Exhibit A of the easement. This installation will be connecting to existing infrastructure of Summit Broadband, Inc. currently present in the District's property. The temporary easement outlines terms and conditions, and is also accompanied by the permanent easement which shall be effective upon construction completion.

FINDINGS AND CONCLUSIONS: The non-exclusive easement provides a mechanism to grant third party use of District property and establishing the terms and provisions of that use.

FISCAL IMPACT: N/A – Installation and any future relocation shall be at Summit Broadband's sole cost and expense.

PROCUREMENT REVIEW: N/A

LEGAL REVIEW: This agenda item has been reviewed by the District General Counsel.

ALTERNATIVE:

- Deny
- Amend
- Table

SUPPORT MATERIALS: See attached Temporary Construction Easement.

NON-EXCLUSIVE TEMPORARY EASEMENT AGREEMENT

THIS NON-EXCLUSIVE TEMPORARY EASEMENT AGREEMENT (“**Temporary Easement Agreement**”) is made as of the Effective Date (as hereinafter defined) by and between **CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, whose mailing address is Post Office Box 690519, Orlando, Florida 32869-0519 (“**Grantor**”), and **SUMMIT BROADBAND INC.**, a Florida corporation, whose mailing address is 4558 35th Street, Orlando, Florida 32811 (“**Grantee**”).

WITNESSETH:

WHEREAS, Grantor is the fee owner of certain real property located in Orange County, Florida (the “**Property**”); and

WHEREAS, Grantee desires to obtain a non-exclusive easement on, over, under and across the portion or portions of the Property more particularly described on Exhibit “A” attached hereto and made a part hereof (the “**Easement Area**”), for the purpose of: (i) constructing and installing underground communication lines, conduits, and appurtenant underground facilities or attach to existing power poles for installation of above ground communication lines, conduit and appurtenant facilities (the “**Communication Lines**”); and, in accordance with, and limited to, the Right of Way Permit, “Permit,” approved and issued by Grantor pursuant to the permit application, a copy of which is attached hereto as Exhibit “B”; in connection therewith (ii) access to and from the Easement Area, over and through adjacent public roads, alleys, sidewalks and other designated portions of the Property as Grantor may designate from time to time (as hereinafter provided) (items (i) and (ii) hereinabove are sometimes referred to as the “**permitted use**”); and

WHEREAS, all or part of the easement area, contains an active, natural, stormwater conveyance system, named the Whittenhorse Creek, that is part of the Central Florida Tourism Oversight District’s master drainage system serving both conveyance and flood control for all upstream property; and

WHEREAS, Grantor agrees to grant to Grantee this non-exclusive temporary easement and, upon termination of this Temporary Easement Agreement, to grant a permanent easement on, over, under and across the portions of the Easement Area where the Communication Lines are located, subject to the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual agreement of the parties hereto, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. Recitations. Each party represents to the other party hereto that the above recitations, as they relate to it, are true and correct.

2. Grant and Use of Easement. Grantor grants to Grantee a non-exclusive temporary easement (this “**Easement**”) on, over, under and across the Easement Area. This Easement is subject and subordinate to the terms, conditions, restrictions, and limitations set forth herein and in other recorded and unrecorded easements, reservations, rights-of-way, licenses, restrictions, conditions, and limitations affecting the Easement Area and the Property. This Easement is also subject and subordinate to the rights of Orange County, Florida and to the rights, if any, of any other governmental or quasi-governmental authorities to locate, construct, maintain, improve and replace roadways and roadway related improvements and utilities over, through, upon and/or across the Easement Area. This Easement shall be used by Grantee (and its employees, contractors and agents) for the permitted use of the Easement Area and for no other purpose whatsoever. Grantee’s rights in connection therewith shall include the right to maintain temporary construction facilities on the Easement Area. Grantor reserves the right to identify specific routes and other means of vehicular and pedestrian ingress and egress (in addition to existing public roads, alleys and sidewalks) to and from the Easement Area across the balance of the Property. Thereafter, only such routes and other means of vehicular and pedestrian access designated by Grantor shall be used by Grantee. This Easement shall terminate on the date (the

“**Termination Date**”) which is the earlier of (i) the date that Grantor and Grantee execute a permanent easement agreement for the Communication Lines in accordance with Section 3 hereof, or (ii) **June 30, 2025**. This Temporary Easement Agreement and this Easement granted hereby shall automatically terminate and shall be of no further force and effect on the Termination Date. This Temporary Easement Agreement shall not be recorded in the public records, and, notwithstanding the foregoing, this Temporary Easement Agreement shall automatically terminate if it is recorded in the public records. Grantee’s use of the Easement is strictly limited to the activities approved as part of the Permit and may not be expanded without the prior written consent of Grantor.

Notwithstanding any provision in this Temporary Easement Agreement to the contrary, Grantee acknowledges that Grantee’s access to the Easement Area and/or for ingress and egress across the Property is subject at all times to the strict compliance by Grantee, its employees, contractors, subcontractors, representatives, and agents, with all security provisions, rules and regulations of Grantor which may be in effect from time to time.

3. Permanent Easement. Promptly upon completion by Grantee of the Communication Lines, Grantor agrees to convey, by separate easement agreement, a perpetual, non-exclusive, easement agreement in the form attached hereto and incorporated herein as Exhibit “C” (the “**Permanent Easement**”); provided, however, that Grantee shall provide to Grantor, at Grantee’s sole cost and expense, an as-built survey (the “**Survey**”) detailing the centerline alignment of the Communication Lines which Survey shall be signed and sealed by a surveyor licensed by the State of Florida, shall comply with the minimum detail survey requirements established under Florida law, and shall verify that the Communication Lines placed by way of this Temporary Easement Agreement lie within the Easement Area (if applicable). The legal description for the Permanent Easement shall be based upon the Survey and shall not exceed ten (10) feet in width. The Permanent Easement shall be recorded in the public records of Orange County, Florida. Grantee’s use of the Permanent Easement is strictly limited to the activities approved as part of the Permit and may not be expanded without amendment to the Permanent Easement.

4. Limitation of Rights. This Temporary Easement Agreement creates a non-exclusive temporary Easement, subordinate to Grantor’s interest, and Grantee does not and shall not (at any time) claim any interest or estate of any kind or extent whatsoever in the Easement Area by virtue of this Easement or Grantee’s use of the Easement Area pursuant hereto. Grantee is prohibited from exercising its rights under this Agreement in any manner that would interfere with Grantor’s use of the Easement Area. Prior to any work occurring in the Easement Area, Grantee shall submit construction plans to the Grantor for review and approval to ensure that Grantee’s use of the Easement does not interfere with Grantor’s facilities. This Easement is granted subject to the conditions: (i) no facilities constructed by Grantee will diminish the volumetric capacity of Grantor’s drainage facilities within the Easement Area; (ii) any facilities constructed by Grantee must maintain a minimum vertical clearance of all overhead lines that is not be less than 25 feet above the top of the existing berm; and (iii) Grantee shall be responsible for the construction, maintenance and repair of any portion of Grantor’s facilities that Grantee relocates (after receiving Grantor’s approval) as part of Grantee’s exercise of its rights hereunder. Grantee will conduct such construction, maintenance and repair of Grantor’s facilities in a diligent manner and consistent with reasonable engineering standards. In addition, Grantor may direct Grantee, in writing, to conduct such maintenance or repair of its facilities. Grantee will do so within thirty (30) days, failing which Grantor may conduct such maintenance and repair and invoice Grantee for the cost. Grantee will pay the invoice within thirty (30) days after receipt. Furthermore, except as provided in and subject to Paragraph 5(d), hereinbelow, no new facilities shall be constructed on the Easement Area without the prior written consent of Grantor, which may be withheld in Grantor’s sole and absolute discretion.

5. Grantor’s Reservation of Rights. Subject to the rights created herein, Grantor expressly reserves (to itself, its successors and assigns) the right to use, or to grant to others the right to use by virtue of additional licenses, rights-of-way, reservations or easements, any and all portions of the area upon, above or under the Easement Area and the Property (in Grantor’s sole discretion) for any purpose whatsoever not inconsistent with the rights herein granted, including, but not limited to, the right of ingress and egress over and across the Easement Area onto any adjacent or contiguous property; provided, such right does not materially and adversely interfere with Grantee’s permitted use of the Easement Area pursuant to the terms hereof. Grantor also reserves the right, but not the obligation, to do all or any of the following without Grantee’s consent:

a) to construct (or allows others to construct) improvements; landscape; provide for drainage; construct paved roads, bridges, tunnels, driveways, parking areas, or any other improvements; and install utility lines,

equipment and cables upon, above or under the Easement Area, so long as such use does not materially and adversely interfere with the purpose for which this Easement is granted;

b) to enter upon the Easement Area from time to time, in order to repair, maintain, repave, construct on, or complete other activities on the Easement Area or the Property. Grantor shall cooperate with Grantee in minimizing any unreasonable interference with Grantee's use of the Easement Area;

c) to enter upon the Easement Area at any time to inspect the operation, sanitation, safety, maintenance, and use thereof, and to perform any repair or maintenance of the Easement Area, and to enter upon the Easement Area at any time to remedy any condition thereof in the event of an emergency. Grantor shall not assume any responsibility for the performance of any of Grantee's obligations hereunder, or any liability arising from the improper performance thereof;

d) relocate, alter or modify, or cause Grantee to relocate, alter or modify, the location of all or any portion of the Communication Lines to another location either within or outside of the Easement Area, from time to time, in Grantor's sole discretion, at Grantee's sole cost and expense. In the event of any such relocation, alteration or modification, Grantee shall, at Grantor's option, either: (i) execute a release of the rights granted hereunder with respect to the portion of the Easement Area to be vacated and enter into a new agreement in substantially the same form as this Temporary Easement Agreement to cover the new easement area(s), in which event, this Easement shall be considered canceled as to the portion vacated by such relocation and all rights and obligations of Grantee contained herein with respect to the Easement Area shall be described in such subsequent agreement; or (ii) execute an amendment to this Temporary Easement Agreement amending the description of the Easement Area to reflect the designated location where the Communication Lines are to be relocated. Grantee (at Grantee's cost) shall cooperate with Grantor in taking all steps necessary or appropriate to accomplish the release of designated portions of the Easement Area from the effect of this Temporary Easement Agreement and the relocation, alteration or modification of the Easement Area or the Communication Lines. If any or all of the Easement Area or the Communication Lines are to be relocated, altered, or modified, Grantee shall, upon Grantor's request (and at Grantee's sole cost and expense) promptly remove the Communication Lines, restore the Easement Area to the same condition existing at the time of the execution of this Temporary Easement Agreement, and commence use of the new location designated by Grantor; and

e) plat, replat or dedicate the Easement Area to the public.

6. Covenants of Grantee. Grantee, for itself, its grantees, and invitees, covenants and agrees it shall:

a. not interfere with or prevent the following: (i) the development, use and maintenance by Grantor of the Easement Area, the Property, or Grantor's adjacent properties, if any; (ii) the use of any portion of the Easement Area by the general public, if any portion of the Easement Area has been or is hereafter dedicated to the general public; and (iii) any development, construction, improvement, or other activity or use by Grantor now or in the future existing on or about the Easement Area and the Property, so long as such use does not materially and adversely interfere with Grantee's permitted use of the Easement Area;

b. not interfere with or disturb any threatened or endangered plant or animal life on or under the Easement Area or the Property;

c. not interfere with any existing license, easement, reservation, or right-of-way upon, above, over, through, under, or across the Easement Area;

d. not interfere with any hereafter granted license, easement, reservation or right-of-way upon, above, over, through, under, or across the Easement Area so long as such license, easement, reservation or right-of-way does not materially and adversely interfere with Grantee's permitted use of the Easement Area;

e. comply at all times and in all respects with all present and future local, municipal, county, state, and federal environmental and all other applicable laws, statutes, governmental constitutions, ordinances, codes, rules, regulations, resolutions, requirements, standards, applications, and directives, as well as all decisions,

judgments, writs, injunctions, orders, decrees or demands of courts, administrative bodies and other authorities construing any of the foregoing (collectively, the “**Laws**”), and Grantee shall obtain, maintain and comply with all applicable permits in connection with Grantee’s use of the Easement Area. Grantee shall not, by any act or omission, render the Grantor liable for any violation thereof. Grantee shall promptly deliver to Grantor true and accurate copies of all applicable permits upon issuance and shall pay all costs and expenses incurred with respect to compliance with this subparagraph;

f. operate, maintain, replace, and repair the Communication Lines, at its sole cost and expense, and in compliance with all applicable Laws and permits, in an expeditious and good and workmanlike manner, and maintain the appearance of all above-ground facilities, if any, if permitted hereunder by Grantor (and of the Easement Area, if requested by Grantor) in reasonably the same condition as existed upon completion of their initial installation;

g. not cause or give permission for any hazardous waste, toxic substances or related materials as defined by any Laws (collectively, “**Hazardous Materials**”) to be used, placed, misused, or disposed of upon, above or under, or transported to or from the Easement Area or the Property (“**Hazardous Materials Activities**”). Grantor shall not be liable to Grantee for any Hazardous Materials Activities caused by Grantee, its employees, agents, contractors, or invitees. Grantee shall be liable to Grantor for any and all Hazardous Materials Activities and any and all hazardous spills, fires, or other environmental hazard on the Easement Area or the Property caused by Grantee, its employees, agents or contractors, or in any way resulting from Grantee’s construction, repair, replacement, maintenance, or operation of the Communication Lines;

h. after completion of any repair or replacement work with respect to the permitted use of the Easement Area (or any construction or installation work for relocated facilities or new facilities, if any, consented to by Grantor, which consent Grantor may grant or withhold in its sole discretion), at its sole cost and expense and in a safe, good and workmanlike manner, remove any temporary improvements and equipment placed on the Easement Area, and restore both the ground surface of the Easement Area and any grass, irrigation lines and equipment, and landscaping in or on the Easement Area, to the original contour, grade and condition which existed immediately prior to the commencement of any work; and

i. not permit any lien to be filed against the Easement Area or the Property for any labor or materials in connection with work of any character performed or claimed to have been performed on the Easement Area or the Property at the direction or sufferance of Grantee. If any such lien is filed against the Easement Area or the Property, Grantee shall have the obligation to remove or otherwise cancel or discharge the same immediately. Grantor shall have the right (but not the obligation) to cause such lien to be released. Grantee shall pay on demand all of Grantor’s costs in connection therewith, together with interest thereon at the interest rate set forth in Paragraph 7, hereof, accruing from and after the date of such expenditure until Grantor’s receipt of full payment therefor.

7. **Breach by Grantee.** If Grantee breaches any provision in this Temporary Easement Agreement and fails to cure any such breach within fifteen (15) days after written notice thereof is given by Grantor, in addition to any other right or remedy available to Grantor at law or in equity, Grantor shall have the right, but not the obligation, to cure any such breach. Grantee agrees to reimburse Grantor for the cost thereof upon demand, together with interest accruing thereon at an annual rate of interest equal to the lesser of: (i) four percent (4%) above the prime rate of interest announced by SunTrust Bank, Central Florida, N.A.; or (ii) the highest rate of interest allowable by law, from and after the date of Grantor’s expenditure thereof, until Grantor’s receipt of full payment therefor.

8. **Condition of Easement Area; Indemnity.**

a. Grantee acknowledges that it (i) has physically inspected the Easement Area; and (ii) accepts the Easement Area “AS IS” and “WHERE IS” with full knowledge of the condition thereof and subject to all the terms, conditions, restrictions, and limitations applicable thereto. Grantee, for and on behalf of itself and its employees, contractors, agents, grantees, representatives, and invitees, assumes sole and entire responsibility for any and all loss of life, injury to persons or damage to property (wherever such property may be located) sustained from the activities, operations or use of the Easement Area (or use of the portions of the Property made available for ingress and egress) by Grantee, its employees, contractors, agents, grantees, representatives, and invitees. Grantee (for itself,

its employees, contractors, agents, grantees, representatives, and invitees and for those claiming by, through or under any of them) shall hereby release, indemnify, defend, and hold harmless the Central Florida Tourism Oversight District, its Board of Supervisors, agents, officers, directors, supervisors, servants, contractors, representatives, and employees (collectively, the “**Indemnitees**”) from and against all claims, liabilities, suits, judgments, liens, damages, penalties, fines, interest, costs, and expenses (including without limitation, those relating to injuries to persons (including, without limitation, loss of life) or for damage, destruction or theft of property), including, without limitation, reasonable attorneys’ fees and litigation costs incurred by or asserted against the Indemnitees in connection therewith, that arise from or relate, directly or indirectly, to: (i) operations on, or the use of, the Easement Area or the Property by Grantee (its employees, contractors, agents, grantees, representatives, and invitees, and all of their officers, directors, employees, representatives and agents); (ii) Hazardous Materials Activities, spills or fire caused by Grantee, its employees, contractors, agents, grantees, representatives, and invitees, on, over, under, through or across the Easement Area or the Property; (iii) any activity, work or act committed, omitted, permitted, or suffered by Grantee (its employees, contractors, agents, grantees and invitees and any of their officers, directors, employees, representatives, and agents) or caused, in whole or in part, on or about the Easement Area or the Property; (iv) the negligent or willful acts or omissions of Grantee (its employees, contractors, agents, grantees, representatives, and invitees); (v) Grantee’s failure to perform any obligations imposed hereunder, including, without limitation, the failure of any of Grantee’s employees, contractors, agents, grantees, representatives, and invitees to so perform; (vi) the use, operation, maintenance, or repair of the Easement Area by Grantee, its employees, contractors, agents, grantees, representatives, and invitees; (vii) liens by third parties arising out of Grantee’s acts or omissions, or out of the acts or omissions of Grantee’s employees, contractors, agents, grantees, representatives, and invitees; or (viii) the failure of Grantee, its employees, contractors, agents, grantees, representatives, and invitees, to abide by any applicable Laws existing or which may be enacted subsequent to the date of this Temporary Easement Agreement. Grantee shall cooperate with the Indemnitees in the defense of any such claims or action including, without limitation, the employment, at the sole expense of Grantee, of legal counsel satisfactory to the Indemnitees. Grantee’s liability and the indemnity provided herein shall survive the expiration or sooner termination of this Temporary Easement Agreement as to events which occurred prior to such expiration or termination.

b. If one or more of the Indemnitees become subject to any claim as to which Grantee is obligated to indemnify such Indemnitee or Indemnitees as aforesaid:

i) Such Indemnitee or Indemnitees and Grantor shall be entitled to approve selection of Grantee’s counsel, which approval shall not be unreasonably withheld;

ii) Grantee shall promptly deliver to Grantor and such Indemnitee or Indemnitees copies of all documents and pleadings prepared and filed on its behalf, and Grantee shall monitor and advise and inform Grantor and such Indemnitee or Indemnitees of the progress and status of all developments in any litigation or proceeding; and

iii) any settlement or other resolution of any litigation or proceeding shall result in the full release, discharge and acquittal of Grantor and such Indemnitee or Indemnitees, without any obligation on the part of Grantor or such Indemnitee or Indemnitees to take or refrain from any action whatsoever.

c. Grantee shall not raise as a defense to its obligation to indemnify any comparative or contributing negligence of any of these Indemnitees pursuant to any such provision, it being agreed that comparative or contributing negligence shall not relieve Grantee from its aforesaid obligation to indemnify, nor entitle Grantee to any contribution (either directly or indirectly) by those indemnified (except in instances of Grantor’s or such Indemnitee’s or Indemnitees’ willful misconduct).

9. Insurance. Unless otherwise agreed to by Grantor and Grantee, Grantee and Grantee’s contractors shall carry (at their own cost and expense), the following insurance:

a) Occurrence basis commercial general liability insurance (including broad form contractual coverage) and automobile liability insurance, each with minimum limits of Five Million Dollars (\$5,000,000.00) combined single limit per occurrence, protecting Grantee from claims for bodily injury (including death) and property damage which may arise from or in connection with the performance of Grantee hereunder or from or out of any act or omission of Grantee and Grantee’s agents or contractors and their related, affiliated and subsidiary companies and

the officers, directors, agents, and employees of each, which insurance shall name Grantor as additional insured (the “**Additional Insured**”); and

b) Worker’s compensation insurance as required by applicable law (and employer’s liability insurance) with minimum limits of One Million Dollars (\$1,000,000.00) per occurrence.

All such insurance required herein shall be with companies licensed to issue insurance in the State of Florida and which have a Best Guide rating of B+ VII or better, shall include a waiver of subrogation, be primary and non contributory and shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days prior written notice thereof is furnished to Grantor. Upon Grantor’s written request, certificates of insurance, together with copies of the binding endorsements identifying the Additional Insured, shall be furnished to Grantor. In the event of any cancellation or reduction of coverage, Grantee shall obtain substitute coverage as required hereunder, without any lapse of coverage to Grantor.

10. Assignment. Grantor may, at any time and in its sole discretion, assign, transfer or convey its rights hereunder. Upon any such assignment, transfer or conveyance, the liability of Grantor under this Temporary Easement Agreement shall automatically terminate, and Grantor’s assignee, transferee, or grantee (as the case may be) shall be deemed to have assumed and be bound by the obligations of Grantor hereunder. This Temporary Easement Agreement involves the granting of a personal right by Grantor to Grantee and, therefore, neither this Temporary Easement Agreement nor any interest herein or rights hereunder may be assigned, transferred or conveyed in whole or in part by Grantee without the prior written consent of Grantor, which consent may be withheld or approved in Grantor’s sole discretion.

11. No Warranty; Entire Agreement. Grantor makes no representations, statements, warranties, or agreements to Grantee in connection with this Temporary Easement Agreement or the Easement Area, other than as may be set forth herein. This Temporary Easement Agreement embodies the entire understanding of the parties hereto, and supersedes all prior discussions and agreements between the parties hereto, and there are no further or other agreements or understanding, written or oral, in effect between the parties relating to the subject matter hereof. This Temporary Easement Agreement shall not be modified or amended in any respect except by a written agreement executed by or on behalf of the parties hereto in the same manner as executed herein. Notwithstanding anything to the contrary set forth in this Temporary Easement Agreement, Grantee acknowledges and agrees that Grantee’s use of the Easement Area is at its own risk and neither Grantor nor the Indemnitees (as hereinabove defined) shall have any liability or obligation for or with respect to any loss or damage to any of Grantee’s property arising out of or related to Grantor’s or the Indemnitees’ use of or activities within the Easement Area.

12. Notices. Any notice or other communication required or permitted hereunder shall be in writing and shall be deemed given and received: (i) on the same day it is personally delivered to the intended recipient at the address set forth below; (ii) upon confirmation of successful transmission (if sent by facsimile transmission) to the intended recipient at the facsimile number set forth below provided that a copy of such notice is contemporaneously sent by one of the other methods of delivery set forth herein (it being understood and agreed, however, that such notice shall be deemed received upon receipt of electronic transmission); (iii) the next business day if sent by reputable overnight courier to the intended recipient at the address set forth below; or (iv) three business days after it is deposited in the United States registered or certified mail, postage prepaid, return receipt requested, to the address set forth below:

If to Grantor: Central Florida Tourism Oversight District
1900 Hotel Plaza Boulevard, P.O. Box 690519
Orlando, Florida 32869-0519
Attn: District Administrator

With a copy to: Central Florida Tourism Oversight District
1900 Hotel Plaza Boulevard, P.O. Box 690519
Orlando, Florida 32869-0519
Attn: Legal Counsel

If to Grantee:

Summit Broadband Inc.
4558 35th Street
Orlando, Florida 32811
Attn: Contract Administration
Facsimile: (407) 966-8901

13. **Counterparts.** This Temporary Easement Agreement may be executed in counterparts, each of which shall be deemed to be an original and all of which shall together constitute one and the same instrument.

14. **Governing Law.** This Temporary Easement Agreement shall be governed by, construed under and interpreted and enforced in accordance with the laws of the State of Florida.

15. **Jurisdiction.** Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Temporary Easement Agreement, or arising out of any matter pertaining to this Temporary Easement Agreement, shall be exclusively submitted for trial before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; or, if the Circuit Court does not have jurisdiction, then before the United States District Court for the Middle District of Florida (Orlando Division); or if neither of such courts shall have jurisdiction, then before any other court sitting in Orange County, Florida, having subject matter jurisdiction. The parties consent and submit to the exclusive jurisdiction of any such court and agree to accept service of process outside the State of Florida in any matter to be submitted to any such court pursuant hereto and expressly waive all rights to trial by jury for any matters arising under this Agreement.

16. **Binding Obligations.** This Temporary Easement Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective permitted legal representatives.

17. **Construction of Agreement.** This Temporary Easement Agreement has been fully reviewed and approved by the parties hereto and their respective counsel. Accordingly, in interpreting this Temporary Easement Agreement, no weight shall be placed upon which party hereto or its counsel drafted the provisions being interpreted. Paragraph headings are for convenience only and shall not be deemed a part of this Temporary Easement Agreement or considered in construing this Temporary Easement Agreement.

18. **No Implied Waiver.** No course of dealing between the parties and no delay in exercising any right, power or remedy conferred hereby or now hereafter existing at Law, in equity, by statute, or otherwise shall operate as a waiver of, or otherwise prejudice, any such right, power or remedy. All waivers, if any, of any or all of the foregoing rights, powers or remedies must be in writing.

19. **Attorneys' Fees and Costs.** If either party files suit or brings a judicial action or proceeding against the other to recover any sum due hereunder or for default or breach of any of the covenants, terms or conditions herein contained, the party which substantially prevails in any such suit, action or proceeding shall be entitled to receive from the other party such prevailing party's actual costs, fees and expenses reasonably incurred (including the fees and expenses of attorneys and paraprofessionals) in connection with such suit, action or proceeding (whether or not such costs, fees and expenses are taxable to the other party as such by any Law) through any and all final appeals arising out of such suit, action or proceeding.

20. **No Public Rights Created.** Nothing herein shall create or be construed to create any rights in and/or for the benefit of the general public in or to the Easement Area or the easement granted hereby.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK– SIGNATURES
APPEAR ON THE FOLLOWING PAGES]

IN WITNESS WHEREOF, the parties hereto have executed this Temporary Easement Agreement effective as of the date on which the last of Grantor or Grantee executed this Temporary Easement Agreement, as indicated below (the “**Effective Date**”).

WITNESSES TO GRANTOR:

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT, a public corporation and public body corporate and politic of the State of Florida

_____ (Signature)

By: _____ (Signature)

_____ (Print Name)

S. C. Kopelousos, District Administrator

_____ (Signature)

Dated: _____

_____ (Print Name)

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 2024, by **S. C. Kopelousos**, as District Administrator of the **CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, on behalf of the corporation. She is personally known to me or produced _____ as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

[SIGNATURES AND NOTARY CONTINUED ON FOLLOWING PAGE]

WITNESSES TO GRANTEE:

SUMMIT BROADBAND INC.,
a Florida corporation

_____ (Signature)

_____ (Print Name)

_____ (Signature)

_____ (Print Name)

By: _____ (Signature)

_____ (Print Name)

Its: _____ (Title)

Dated: _____

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 2024, by _____, as _____ of **SUMMIT BROADBAND INC.,** a Florida corporation, on behalf of the corporation. He/She is personally known to me or produced _____ as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

EXHIBIT "A"

Temporary Easement Area



EXHIBIT "B"

FORM OF RIGHT OF WAY PERMIT

DATE _____ PERMIT NUMBER _____

CORRIDOR: Road / Canal Name _____

County _____ Section(s) _____ Township _____ Range _____

PERMITTEE: _____

ADDRESS: _____

PHONE: _____

Permittee is requesting permission from the Central Florida Tourism Oversight District (hereinafter "CFTOD") to:

_____ and the conditions set forth and described in Exhibits "A" and "B" (hereinafter the "Work") (Attach additional sheets, if required. Coordinates referencing the precise location of the Work must be specified)

1. The work is within the corporate limits of a municipality. Yes () No () [Mark one]
If Yes, indicate the name of the municipality _____
2. Permittee declares that, prior to filing the application for this Permit, the location of all existing utilities, both above and below ground, has been ascertained and is accurately reflected on the plans which accompanied the application. Permittee mailed letters of notification on _____ to the following utilities/municipalities

3. The office of CFTOD's Manager of Planning & Engineering (hereinafter "**Engineer**"), at 1920 East Buena Vista Drive, Lake Buena Vista, Florida 32830, telephone (407) 828-2250, must be notified 48 hours prior to commencement and again immediately upon completion of the Work.
4. The Work may require authorization by the U.S. Environmental Protection Agency for Storm Water Discharges from Connection Sites pursuant to the Clean Water Act. Permittee is responsible for obtaining the National Pollutant Discharge Elimination System (NPDES) permit, if applicable. Copies of any such permits required shall be provided to CFTOD prior to commencement of the Work.
5. All Work, including materials and equipment, must meet CFTOD standards and shall be subject to inspection at any time and from time to time, by the Engineer.
6. Following completion of the Work, all CFOD property shall be restored to its original condition, to the extent practicable, in keeping with CFTOD specifications and in a manner satisfactory to CFTOD.
7. Installations shall conform to CFTOD's requirements, specifications and procedures in place, as amended from time to time.
8. Plans for the installation shall conform to CFTOD's requirements, specifications and procedures and shall be made an integral part of this Permit.
9. Permittee shall **commence the Work** on _____ and shall be **finished** with all of the **Work** by _____. If the commencement date is more than 60 days from the date of the issuance of the Permit, Permittee must review the Permit with the Engineer prior to commencement to ensure that no changes have occurred that would affect the permitted Work.

10. The Work and maintenance thereof shall not interfere with the property and rights of any prior permittee.
11. Permittee expressly understands and acknowledges that this Permit is a license for permissive use only and the placing of facilities upon public property pursuant to this Permit shall not operate to create or to vest any property rights in Permittee.
12. Whenever necessary for the construction, repair, improvement, maintenance, alteration, relocation, safety, and efficient operation of all or any portion of the corridor (as determined in the sole discretion of the District Administrator of CFTOD), any or all of the facilities and appurtenances authorized hereunder shall be immediately removed from the corridor or reset or relocated thereon, as required by the District Administrator of CFTOD. Such relocation, resetting or removal shall be at the sole expense of Permittee unless otherwise stated in the terms and conditions of that certain _____ document between CFTOD and _____, dated _____, and, if recorded, filed in the records of _____ County, Book _____, Page _____.
13. Permittee agrees, in the event removal, resetting or relocation of Permittee's facilities is scheduled simultaneously with CFTOD's construction work, to coordinate with CFTOD before proceeding with such removal, resetting or relocation, and to otherwise cooperate in all respects with CFTOD and with CFTOD's contractor(s) to arrange the sequence of work so as not to unnecessarily delay the work of CFTOD or CFTOD's contractor(s). Permittee further agrees to defend any legal claims of CFTOD or CFTOD's contractor(s) due to delays caused by Permittee's failure to comply with the approved schedule and to otherwise comply with applicable present and future local, municipal, county, state and federal environmental and all other applicable laws, statutes, governmental constitutions, ordinances, codes, regulations, resolutions, rules, requirements, standards, applications and directives as well as all decisions, judgments, writs, injunctions, orders, decrees or demands of courts, administrative bodies and other authorities construing any of the foregoing and to obtain, maintain and comply, at its sole expense, with all applicable permits in connection with Permittee's use of the corridor (hereinafter collectively referred to as the "**Law**" or the "**Laws**", as applicable). Notwithstanding the provisions herein contained to the contrary, Permittee shall not be responsible for delays beyond its normal control.
14. Special Conditions:

15. Special Instructions:

16. Permittee, for itself, its successors, assigns, grantees, invitees, and customers, and for those claiming by, through or under any of them, hereby releases, indemnifies, saves, defends and forever holds harmless CFTOD and their Board of Supervisors, officers, directors, employees, representatives, agents, guests and invitees (collectively, the "Indemnitees") from any and all claims or demands, liabilities, losses, suits, actions, judgments, liens, damages, penalties, fines, interest, costs and expenses (whether to person or property), including, without limitation, reasonable attorneys' fees and litigation costs incurred by or asserted against the Indemnitees in connection therewith through all appeals, arising out of or incurred in connection with: (i) any activity, work, act, accident, injury or damage committed, omitted, permitted or suffered in respect of the work to be performed by Permittee or its successors, assigns, grantees, invitees, customers or any of their respective officers, directors, employees, contractors, representatives or agents, or caused, in whole or in part, by the use the right-of way; (ii) any accident, injury or damage which shall happen or be claimed to have happened in any manner connected with Permittee's use of the right-of-way (iii) actual or alleged negligence or willful misconduct of Permittee, its successors, assigns, grantees, invitees, customers, agents, employees, representatives or contractors; or (iv) Permittee's breach of this Agreement or failure to perform any obligations imposed hereunder; (v) liens filed by third parties; or (vi) Permittee's failure to abide by any applicable Laws as they now exist and those which may be enacted subsequent to the date of this Agreement; and as to all of the foregoing clauses (i) through (v) whether or not such losses, injuries, damage, destruction or theft are sustained by Permittee or CFTOD. Permittee shall cooperate with CFTOD in the defense of any such claims, demands or action, including, without limitation, the employment, at the sole expense of Permittee, of legal counsel satisfactory to CFTOD. Permittee shall not raise as a defense to its obligation to indemnify any comparative or contributory negligence of any of the Indemnitees, it being understood and agreed that no such comparative or contributory negligence shall relieve Permittee from its liability to so indemnify, nor entitle Permittee to any contribution, either directly or indirectly.

17. During construction, Permittee shall observe all safety regulations imposed by CFTOD and shall take all appropriate measures that may be necessary to safely conduct the public through the area in which the Work is being conducted, including, but not limited to, placing and displaying safety devices, all in accordance with the Federal Manual on Uniform Traffic Control Devices (“MUTCD”), as amended, and the State of Florida Department of Transportation (“FDOT”) most current edition of FDOT’s Roadway and Traffic Design Standards and Standard Specifications for Road and Bridge Construction, as amended.
18. If Permittee, in the sole and absolute discretion of CFTOD, shall be found not to be in compliance with CFTOD’s requirements in effect as of the approval date of this Permit, this Permit shall be void, and all Work must either be immediately brought into compliance or removed from the corridor at the sole expense of Permittee.
- a) In conjunction therewith, Permittee shall, without violating any Laws:
- i) Deactivate, place out of service or remove the described facilities and the Work in accordance with Industry Standards and and/or within the specifications of and to the sole satisfaction of CFTOD in accordance with the terms of this Permit, as hereinabove set forth;
 - ii) Retain ownership and all legal obligations of ownership of the Work and all facilities associated therewith; and
 - iii) Be responsible (upon the request of CFTOD) for location (horizontally and vertically) of existing facilities within CFTOD’s corridor.
- b) Permittee further covenants and agrees that it shall indemnify, hold harmless and defend CFTOD, its Board of Supervisors, elected and appointed officials, and any of its directors, officers, employees or agents, from and against any loss, damage, claim, cost, charge or expense arising:
- i) From or as a result of the presence of the Work and the associated facilities, or the materials and/or products utilized therein, including removal of same;
 - ii) Out of any act, action, negligence, omission, or commission by Permittee, its officers, agents, employees, contractors or subcontractors; or
 - iii) If applicable, as a result of placing the facilities installed by Permittee out of service, including, but not limited to, causes arising out of any future removal of the facilities or the Work by Permittee or any entity other than Permittee, whether or not such entity is acting at the instruction of Permittee or CFTOD.
19. This Permit may not be assigned or transferred by Permittee (including assignments by operation of Law) without CFTOD’s prior written consent.
20. CFTOD agrees to allow Permittee to retain the facilities hereinabove described within the corridor for the time period set forth in paragraph 9 above, contingent upon, the continuing satisfactory performance of the conditions of this Permit.
21. Permittee’s employee responsible for Maintenance of Traffic is _____
PRINT NAME
 Contact number (____) _____

Submitted By: _____
Printed Name of Permittee Date

_____ Title (If doing business under a fictitious name, provide proof of compliance with Law)

_____ Signature of Permittee

Approved by: _____
CFTOD Engineer or Authorized Representative Date

ISSUED FOR:

The following is Required for Sign Installation Only

Please Provide All of the Following Information:

(Attach additional sheets if required)

Purpose of Sign: _____

Location of Sign: _____

Disney Grid Coordinates: _____

Type of Sign: _____

Face of Sign, including All Symbols or Text :

Once the approved sign has been installed a digital photograph along with the CFTOD sign identification number must be provided to CFTOD.

NOTE: The Central Florida Tourism Oversight District (CFTOD) follows the minimum standards established in the Florida Department of Transportation (FDOT) Manual of Uniform Traffic Control Devices (MUTCD). In addition to these standards, the CFTOD has also adopted the signage standards specific to CFTOD. All proposed signage must be reviewed and approved by the CFTOD Senior Planner, or authorized representative, prior to the completion of this application.

Planning Approval by _____
DATE _____

**CORRIDOR PERMIT
FINAL INSPECTION REPORT**

DATE: _____ PERMIT NUMBER: _____

COUNTY/SECTION/TOWNSHIP/RANGE: _____

DATE STARTED: _____ DATE COMPLETED: _____

Required for Sign Installation:

COPY OF DIGITAL PHOTO RECEIVED BY CFTOD ON _____

REMARKS:

I, the undersigned, do hereby attest that the Work approved by the Permit set forth above was installed in accordance with all Permit requirements.

SIGNED: _____
(Permittee)

TITLE: _____

DATE: _____

INSPECTED BY: _____

PERMIT CLOSURE APPROVED BY: _____

EXHIBIT "C"

FORM OF PERMANENT EASEMENT AGREEMENT

Record and Return to:

Central Florida Tourism Oversight District
Post Office Box 690519
Orlando, Florida 32869-0519
Attn: Planning & Engineering

NON-EXCLUSIVE PERMANENT EASEMENT AGREEMENT

THIS NON-EXCLUSIVE PERMANENT EASEMENT AGREEMENT ("Permanent Easement Agreement") is made as of the Effective Date (as hereinafter defined) by and between **CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, whose mailing address is Post Office Box 690519, Orlando, Florida 32869-0519 ("**Grantor**") and _____, a _____, whose mailing address is _____ ("**Grantee**").

WITNESSETH:

WHEREAS, Grantor is the fee owner of certain real property located in Osceola County, Florida (the "**Property**"); and

WHEREAS, Grantee desires to obtain a non-exclusive easement on, over, under and across the portion or portions of the Property more particularly described on Exhibit "**A**" attached hereto and made a part hereof (the "**Easement Area**"), solely for the purpose of: (i) maintaining underground communication lines, conduits, and appurtenant underground facilities or attach to existing power poles for installation of above ground communication lines, conduit and appurtenant facilities; (the "**Communication Lines**") under the terms of the corridor utilization permit approved and issued by Grantor; and, in connection therewith (ii) access to and from the Easement Area, over and across adjacent public roads, alleys, sidewalks and other designated portions of the Property as Grantor may designate from time to time (as hereinafter provided) (items (i) and (ii) hereinabove are sometimes referred to as the "**permitted use**"); and

WHEREAS, all or part of the easement area, contains an active, natural, stormwater conveyance system, referred to as the Whittenhorse Creek, that is part of the Central Florida Tourism Oversight District's master drainage system serving both conveyance and flood control for all upstream property; and

WHEREAS, Grantor agrees to grant to Grantee this non-exclusive permanent easement subject to the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual agreement of the parties hereto, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereby agree as follows:

1. **Recitations.** The above recitations are true and correct and are incorporated herein by reference.
2. **Grant and Use of Easement.** Grantor grants to Grantee, a non-exclusive easement in perpetuity, or such earlier date as the use thereof as set forth herein is abandoned (this "**Easement**") on, over, under and across the Easement Area. This Easement is subject to the terms, conditions, restrictions and limitations set forth herein and in other recorded and unrecorded easements, reservations, rights-of-way, licenses, restrictions, conditions, and limitations affecting the Easement Area and the Property. This Easement shall be used by Grantee (and its employees, contractors, and agents) for the permitted use of the Easement Area, together with the right of vehicular and pedestrian ingress and egress in connection therewith by Grantee and the aforesaid parties, to and from the Easement Area over and across public roads, alleys, sidewalks and such other portions of the Property as Grantor may designate from time to time (as hereinafter provided) and for no other purpose whatsoever. Grantee's rights in connection therewith shall

include the right, subject to the prior written approval of Grantor, to maintain temporary construction facilities on the Easement Area. Grantor reserves the right to specify which portions of the Easement Area shall be used by Grantee for all or any portion of the _____ (and future facilities, if any, consented to by Grantor, which consent Grantor may grant or withhold in its sole discretion) and any temporary construction facilities on the Easement Area, and to designate (from time to time) specific routes and other means of vehicular and pedestrian ingress and egress (in addition to existing public roads, alleys and sidewalks) to and from the Easement Area across the balance of the Property and Grantor's adjacent property. Thereafter, only such routes and other means of vehicular and pedestrian access designated by Grantor shall be used by Grantee. Grantor accepts the location of the _____ as set forth in the permit issued by Grantor for the construction of the improvements, subject to the provisions of Paragraph 4.d), below.

Notwithstanding any provision in this Permanent Easement Agreement to the contrary, Grantee shall be required to obtain a Right-of-Way Permit from Grantor prior to initiating any work within the Easement Area or accessing any Easement Area. In the case of an emergency, oral notification to the Grantor describing the nature of the emergency and the work to be performed shall be acceptable prior to initiation of work and shall be followed within 72 hours with a request for a Right-of-Way Permit. In addition, Grantee shall be required to comply with all governmental permitting requirements, as now or hereafter may be enacted or amended, and shall be required to obtain all required permits prior to initiation of work within the Easement Area. Grantee acknowledges that Grantee's access to the Easement Area and/or for ingress and egress across Grantor's Property is subject at all times to the strict compliance by Grantee, its employees, contractors, subcontractors, representatives, and agents, with all security provisions, rules and regulations of Grantor which may be in effect from time to time.

Limitation of Rights. This Permanent Easement Agreement creates a non-exclusive Easement, subordinate to Grantor's interest in the Easement Area, and Grantee does not and shall not (at any time) claim any interest or estate of any kind or extent whatsoever in the Easement Area by virtue of this Easement or Grantee's use of the Easement Area pursuant hereto. Grantee's rights under this Agreement and use of the Easement, including, without limitation, any facilities constructed upon the Easement Area, and any construction, operation, maintenance and repair activities conducted by Grantee upon the Easement Area, shall not interfere with the Grantor's present and future use, operation, maintenance or integrity of any drainage facilities. This Easement is granted subject to the condition that: (i) In constructing any Grantee facilities, Grantee shall submit copies of all plans for same to Grantor for Grantor's review and approval; (ii) no facilities constructed by Grantee shall diminish the volumetric capacity of Grantor's existing drainage facilities within the Easement Area; (iii) Grantee facilities shall maintain a minimum vertical clearance of all overhead lines that shall not be less than 25 feet above the top of the existing berm; and (iv) Grantee shall be responsible for the construction, maintenance and repair of any portion of Grantor's facilities that Grantee relocates (after receiving Grantor's approval) as part of Grantee's exercise of its rights hereunder. Grantee will conduct such construction, maintenance and repair of Grantor's facilities in a diligent manner and consistent with reasonable engineering standards. In addition, Grantor may direct Grantee, in writing, to conduct such maintenance or repair of its facilities. Grantee will do so within thirty (30) days, failing which Grantor may conduct such maintenance and repair and invoice Grantee for the cost. Grantee will pay the invoice within thirty (30) days after receipt. Furthermore, except as provided in and subject to Paragraph 4.d), hereinbelow, no new facilities shall be constructed on the Easement Area without the prior written consent of Grantor. Replacement of the _____ with facilities in the same location and of the same type, size, number and capacity shall not be deemed construction of new facilities.

3. Grantor's Reservation of Rights. Subject to the rights created herein, Grantor expressly reserves (to itself, its successors and assigns) the right to use, or to grant to others the right to use by virtue of additional licenses, rights-of-way, reservations or easements, any and all portions of the area upon, above, or under the Easement Area and the Property (in Grantor's sole discretion) for any purpose whatsoever not inconsistent with the rights herein granted, including, but not limited to, the right of ingress and egress over and across the Easement Area onto any adjacent or contiguous property; provided such right does not unreasonably interfere with Grantee's permitted use of the Easement Area pursuant to the terms hereof. Grantor also reserves the right, but not the obligation, to do all or any of the following without Grantee's consent:

a) to construct improvements; landscape; provide for drainage; construct paved roads, bridges, tunnels, driveways, parking areas, or any other improvements; and install utility lines, equipment and cables

upon, above or under the Easement Area, so long as such use does not materially and adversely interfere with the purpose for which this Easement is granted;

b) after reasonable notice (except in circumstances of emergency), to temporarily interrupt Grantee's use of the Easement Area or the _____ from time to time, in order to repair, maintain, repave, construct on, or complete other activities on the Easement Area or the Property;

c) to enter upon the Easement Area at any time to inspect the operation, sanitation, safety, maintenance, and use thereof, and to perform any repair or maintenance of the Easement Area, and to enter upon the Easement Area at any time to remedy any condition thereof in the event of an emergency. Grantor shall not assume any responsibility for the performance of any of Grantee's obligations hereunder, or any liability arising from the improper performance thereof;

d) to relocate, alter or modify, or cause Grantee to relocate, alter or modify, the location of all or any portion of the _____ to another location either within or outside of the Easement Area, from time to time, in Grantor's sole discretion, at Grantee's sole cost and expense. In the event of any such relocation, alteration or modification, Grantee shall, at Grantor's option, either: (i) execute a release (in recordable form) of the rights granted hereunder with respect to the portion of the Easement Area to be vacated and enter into a new agreement in substantially the same form as this Permanent Easement Agreement (in recordable form) to cover the new easement area(s), in which event this Easement shall be considered canceled as to the portion vacated by such relocation and all rights and obligations of Grantee contained herein with respect to the Easement Area shall be described in such subsequent agreement; or (ii) execute an amendment (in recordable form) to this Permanent Easement Agreement amending the description of the Easement Area to reflect the designated location where the _____ are to be relocated. Grantee (at Grantee's cost) shall cooperate with Grantor in taking all steps necessary or appropriate to accomplish the release of designated portions of the Easement Area from the effect of this Permanent Easement Agreement and the relocation, alteration or modification of the Easement Area or the _____, in whole or in part. If any or all of the Easement Area or the _____ are to be relocated, altered, or modified, Grantee shall, upon Grantor's request (and at Grantee's sole cost and expense) promptly remove the _____ and restore the Easement Area to the same condition existing at the time of the execution of this Permanent Easement Agreement, and commence use of the new location designated by Grantor; and

e) plat, replat or dedicate the Easement Area to the public.

4. Covenants of Grantee. Grantee, for itself, its grantees and invitees, covenants and agrees it shall:

a) not interfere with or prevent the following: (i) the normal development, use and maintenance by Grantor of the Easement Area, the Property, or Grantor's adjacent properties, if any; (ii) the normal use of any portion of the Easement Area by the general public, if any portion of the Easement Area has been or is hereafter dedicated to the general public; and (iii) any development, construction, improvement, or other activity or use by Grantor now or in the future existing on or about the Easement Area and the Property so long as such use does not materially and adversely interfere with Grantee's permitted use of the Easement Area;

b) not interfere with or disturb any threatened or endangered plant or animal life on or under the Easement Area or the Property;

c) not interfere with any existing license, easement, reservation, or right-of-way upon, above, over, through, under, or across the Easement Area;

d) not interfere with any hereafter granted license, easement, reservation, or right-of-way upon, above, over, through, under, or across the Easement Area so long as such license, easement, reservation, or right-of-way does not materially and adversely interfere with Grantee's permitted use of the Easement Area;

e) comply at all times and in all respects with all present and future local, municipal, county, state, and federal environmental and all other applicable laws, statutes, governmental constitutions, ordinances, codes, rules, regulations, resolutions, requirements, standards, applications, and directives, as well as all decisions,

judgments, writs, injunctions, orders, decrees, or demands of courts, administrative bodies and other authorities construing any of the foregoing (collectively, the “**Laws**”), and Grantee shall obtain, maintain and comply with all applicable permits in connection with Grantee’s use of the Easement Area. Grantee shall not, by any act or omission, render Grantor liable for any violation thereof. Grantee shall promptly deliver to Grantor true and accurate copies of all applicable permits upon issuance and shall pay all costs and expenses incurred with respect to compliance with this subparagraph;

f) operate, maintain, replace, and repair the _____, at its sole cost and expense, and in compliance with all applicable Laws and permits, in an expeditious and good and workmanlike manner, and maintain the appearance of all above-ground facilities, if any, if permitted hereunder by Grantor (and of the Easement Area, if requested by Grantor) in reasonably the same condition as existed upon completion of their initial installation;

g) not cause or give permission for any hazardous waste, toxic substances or related materials as defined by any Laws (collectively, “**Hazardous Materials**”) to be used, placed, misused, or disposed of upon, above or under, or transported to or from the Easement Area or the Property (“**Hazardous Materials Activities**”). Grantor shall not be liable to Grantee for any Hazardous Materials Activities caused by Grantee, its employees, agents, contractors, or invitees. Grantee shall be liable to Grantor for any and all Hazardous Materials Activities and any and all hazardous spills, fires, or other environmental hazard on the Easement Area or the Property caused by Grantee, its employees, agents or contractors, or in any way resulting from Grantee’s repair, replacement, maintenance, or operation of the _____;

h) after completion of any repair or replacement work with respect to the _____ (or any construction or installation work for relocated facilities or new facilities, if any, consented to by Grantor, which consent Grantor may grant or withhold in its sole discretion), at its sole cost and expense and in a safe, good and workmanlike manner, remove any temporary improvements and equipment placed on the Easement Area, and restore both the ground surface of the Easement Area and any grass, irrigation lines and equipment, and landscaping in or on the Easement Area, to the original contour, grade and condition which existed immediately prior to the commencement of any work; and

i) not permit any lien to be filed against the Easement Area or the Property for any labor or materials in connection with work of any character performed or claimed to have been performed on the Easement Area or the Property at the direction or sufferance of Grantee. If any such lien is filed against the Easement Area or the Property, Grantor shall have the right (but not the obligation) to cause such lien to be released. Grantee shall pay on demand all of Grantor’s costs in connection therewith, together with interest thereon at the interest rate set forth in Paragraph 6, hereof, accruing from and after the date of such expenditure until Grantor’s receipt of full payment therefor.

5. Breach by Grantee. If Grantee breaches any provision in this Permanent Easement Agreement and fails to cure any such breach within fifteen (15) days after written notice thereof is given by Grantor, in addition to any other right or remedy available to Grantor at law or in equity, Grantor shall have the right, but not the obligation, to cure any such breach. Grantee agrees to reimburse Grantor for the cost thereof upon demand, together with interest accruing thereon at an annual rate of interest equal to the lesser of: (i) four percent (4%) above the prime rate of interest announced by SunTrust Bank, Central Florida, N.A.; or (ii) the highest rate of interest allowable by law, from and after the date of Grantor’s expenditure thereof, until Grantor’s receipt of full payment therefor.

6. Condition of Easement Area; Indemnity.

a. Grantee acknowledges that it (i) has physically inspected the Easement Area; and (ii) accepts the Easement Area “as is” and “where is” with full knowledge of the condition thereof and subject to all the terms, conditions, restrictions and limitations applicable thereto. Grantee, for and on behalf of itself and its employees, contractors, agents, grantees, and invitees, assumes sole and entire responsibility for any and all loss of life, injury to persons or damage to property (wherever such property may be located) sustained from the activities, operations or use of the Easement Area (or use of the portions of the Property made available for ingress and egress) by Grantee, its grantees, invitees, employees, contractors, and agents. Grantee (for itself, its grantees, invitees, contractors, and agents and for those claiming by, through or under any of them) shall hereby release, indemnify,

defend and hold harmless the Grantor, its Board of Supervisors, the officers, directors, agents, employees and assigns (collectively, “**Indemnitees**”) from and against all claims, liabilities, suits, judgments, liens, damages, penalties, fines, interest, costs and expenses (including without limitation, those relating to injuries to persons (including, without limitation, loss of life) or for damage, destruction or theft of property), including, without limitation, reasonable attorneys’ fees and litigation costs incurred by or asserted against the Indemnitees in connection therewith, that arise from or relate, directly or indirectly, to: (i) operations on, or the use of, the Easement Area or the Property by Grantee (its grantees, invitees, employees, contractors, and agents, and all of their officers, directors, employees, representatives, and agents); (ii) Hazardous Materials Activities, spills or fire caused by Grantee, its employees, agents, contractors, or invitees, on, over, under, through or across the Easement Area or the Property; (iii) any activity, work or act committed, omitted, permitted or suffered by Grantee (its grantees, invitees, employees, contractors, and agents and any of their officers, directors, employees, representatives, and agents) or caused, in whole or in part, on or about the Easement Area or the Property; (iv) the negligent or willful acts or omissions of Grantee (its grantees, invitees, agents, employees, representatives, or contractors); (v) Grantee’s failure to perform any obligations imposed hereunder; (vi) Grantee’s use, operation, maintenance, or repair of the Easement Area; (vii) liens by third parties arising out of Grantee’s acts or omissions; or (viii) Grantee’s failure to abide by any applicable Laws existing or which may be enacted subsequent to the date of this Permanent Easement Agreement. Grantee shall cooperate with the Indemnitees in the defense of any such claims or action including, without limitation, the employment, at the sole expense of Grantee, of legal counsel satisfactory to the Indemnitees. Grantee’s liability and the indemnity provided herein shall survive the expiration or sooner termination of this Permanent Easement Agreement, as to events which occurred prior to such expiration or termination.

b. If one or more of the Indemnitees become subject to any claim as to which Grantee is obligated to indemnify such Indemnitee or Indemnitees as aforesaid:

i) Such Indemnitee or Indemnitees and Grantor shall be entitled to approve selection of Grantee’s counsel, which approval shall not be unreasonably withheld;

ii) Grantee shall promptly deliver to Grantor and such Indemnitee or Indemnitees copies of all documents and pleadings prepared and filed on its behalf, and Grantee shall monitor and advise and inform Grantor and such Indemnitee or Indemnitees of the progress and status of all developments in any litigation or proceeding; and

iii) any settlement or other resolution of any litigation or proceeding shall result in the full release, discharge and acquittal of Grantor and such Indemnitee or Indemnitees, without any obligation on the part of Grantor or such Indemnitee or Indemnitees to take or refrain from any action whatsoever.

c. Grantee shall not raise as a defense to its obligation to indemnify any comparative or contributing negligence of any of these Indemnitees pursuant to any such provision, it being agreed that comparative or contributing negligence shall not relieve Grantee from its aforesaid obligation to indemnify, nor entitle Grantee to any contribution (either directly or indirectly) by those indemnified (except in instances of Grantor’s or such Indemnitee’s or Indemnitees’ willful misconduct).

8. Insurance. Unless otherwise agreed to by Grantor and Grantee, Grantee and Grantee’s contractors shall carry (at their own cost and expense), the following insurance:

a) Occurrence basis commercial general liability insurance (including broad form contractual coverage) and automobile liability insurance, each with minimum limits of Five Million Dollars (\$5,000,000.00) combined single limit per occurrence, protecting Grantee from claims for bodily injury (including death) and property damage which may arise from or in connection with the performance of Grantee hereunder or from or out of any act or omission of Grantee and Grantee’s agents or contractors and their related, affiliated and subsidiary companies and the officers, directors, agents, and employees of each, which insurance shall name Grantor as additional insured (the “**Additional Insured**”); and

b) Worker’s compensation insurance as required by applicable law (and employer’s liability insurance) with minimum limits of One Million Dollars (\$1,000,000.00) per occurrence.

All such insurance required herein shall be with companies licensed to issue insurance in the State of Florida and which have a Best Guide rating of B+ VII or better, shall include a waiver of subrogation, be primary and non contributory and shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days prior written notice thereof is furnished to Grantor. Upon Grantor's written request, certificates of insurance, together with copies of the binding endorsements identifying the Additional Insured, shall be furnished to Grantor. In the event of any cancellation or reduction of coverage, Grantee shall obtain substitute coverage as required hereunder, without any lapse of coverage to Grantor.

9. Assignment. Grantor may, at any time, in its sole discretion, assign, transfer or convey its rights hereunder. Upon any such assignment, transfer or conveyance, the liability of Grantor under this Permanent Easement Agreement shall automatically terminate, and Grantor's assignee, transferee, or grantee (as the case may be) shall be deemed to have assumed and be bound by the obligations of Grantor hereunder. This Permanent Easement Agreement involves the granting of a personal right by Grantor to Grantee and, therefore, neither this Permanent Easement Agreement nor any interest herein or rights hereunder may be assigned, transferred or conveyed in whole or in part by Grantee without the prior written consent of Grantor, which consent may be withheld or approved in Grantor's sole discretion.

10. No Warranty: Entire Agreement. Grantor makes no representations, statements, warranties or agreements to Grantee in connection with this Permanent Easement Agreement or the Easement Area, other than as may be set forth herein. This Permanent Easement Agreement embodies the entire understanding of the parties hereto, and supersedes all prior discussions and agreements between the parties hereto, and there are no further or other agreements or understanding, written or oral, in effect between the parties relating to the subject matter hereof. This Permanent Easement Agreement shall not be modified or amended in any respect except by a written agreement executed by or on behalf of the parties hereto, in the same manner as executed herein. Notwithstanding anything to the contrary set forth in this Permanent Easement Agreement, Grantee acknowledges and agrees that Grantee's use of the Easement Area is at its own risk and neither Grantor nor the Indemnitees (as hereinabove defined) shall have any liability or obligation for or with respect to any loss or damage to any of Grantee's _____, arising out of or related to Grantor's or the Indemnitees' use of or activities within the Easement Area.

11. Notices. Any notice or other communication required or permitted hereunder shall be in writing and shall be deemed given and received: (i) on the same day it is personally delivered to the intended recipient at the address set forth below; (ii) upon confirmation of successful transmission (if sent by facsimile transmission) to the intended recipient at the facsimile number set forth below provided that a copy of such notice is contemporaneously sent by one of the other methods of delivery set forth herein (it being understood and agreed, however, that such notice shall be deemed received upon receipt of electronic transmission); (iii) the next business day if sent by reputable overnight courier to the intended recipient at the address set forth below; or (iv) three business days after it is deposited in the United States registered or certified mail, postage prepaid, return receipt requested, to the address set forth below:

If to Grantor: Central Florida Tourism Oversight District
1900 Hotel Plaza Boulevard, P.O. Box 690519
Orlando, Florida 32869-0519
Attn: District Administrator

With a copy to: Central Florida Tourism Oversight District
1900 Hotel Plaza Boulevard, P.O. Box 690519
Orlando, Florida 32869-0519
Attn: Legal Counsel

If to Grantee: _____

Attn: _____

Facsimile: () _____

12. **Counterparts.** This Permanent Easement Agreement may be executed in counterparts, each of which shall be deemed to be an original and all of which shall together constitute one and the same instrument.

13. **Governing Law.** This Permanent Easement Agreement shall be governed by, construed under and interpreted and enforced in accordance with the laws of the State of Florida.

14. **Jurisdiction.** Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Permanent Easement Agreement, or arising out of any matter pertaining to this Permanent Easement Agreement, shall be exclusively submitted for trial before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; or, if the Circuit Court does not have jurisdiction, then before the United States District Court for the Middle District of Florida (Orlando Division); or if neither of such courts shall have jurisdiction, then before any other court sitting in Orange County, Florida, having subject matter jurisdiction. The parties consent and submit to the exclusive jurisdiction of any such court and agree to accept service of process outside the State of Florida in any matter to be submitted to any such court pursuant hereto and expressly waive all rights to trial by jury for any matters arising under this Agreement.

15. **Binding Obligations.** This Permanent Easement Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective permitted legal representatives.

16. **Construction of Agreement.** This Permanent Easement Agreement has been fully reviewed and approved by the parties hereto and their respective counsel. Accordingly, in interpreting this Permanent Easement Agreement, no weight shall be placed upon which party hereto or its counsel drafted the provisions being interpreted. Paragraph headings are for convenience only and shall not be deemed a part of this Permanent Easement Agreement or considered in construing this Permanent Easement Agreement.

17. **No Implied Waiver.** No course of dealing between the parties and no delay in exercising any right, power or remedy conferred hereby or now hereafter existing at Law, in equity, by statute or otherwise shall operate as a waiver of, or otherwise prejudice, any such right, power or remedy. All waivers, if any, of any or all of the foregoing rights, powers or remedies must be in writing.

18. **Attorneys' Fees and Costs.** If either party files suit or brings a judicial action or proceeding against the other to recover any sum due hereunder or for default or breach of any of the covenants, terms or conditions herein contained, the party which substantially prevails in any such suit, action or proceeding shall be entitled to receive from the other party such prevailing party's actual costs, fees and expenses reasonably incurred (including the fees and expenses of attorneys and paraprofessionals) in connection with such suit, action or proceeding (whether or not such costs, fees and expenses are taxable to the other party as such by any Law) through any and all final appeals arising out of such suit, action or proceeding.

19. **No Public Rights Created.** Nothing herein shall create or be construed to create any rights in and/or for the benefit of the general public in or to the Easement Area or the easement granted hereby.

[REMAINDER OF PAGE LEFT INTENTIONALLY BLANK– SIGNATURES
APPEAR ON THE FOLLOWING PAGES]

IN WITNESS WHEREOF, the parties hereto have executed this Permanent Easement Agreement effective as of the date on which the last of Grantor or Grantee executed this Permanent Easement Agreement, as indicated below (the “**Effective Date**”).

WITNESSES TO GRANTOR:

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT,

a public corporation and public body corporate and politic of the State of Florida

_____ (Signature)

By: _____ (Signature)

S. C. Kopelousos, District Administrator

_____ (Print Name)

_____ (Address)

Dated: _____

_____ (Signature)

_____ (Print Name)

_____ (Address)

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 20____, by **S. C. Kopelousos**, as District Administrator of the **CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT**, a public corporation and public body corporate and politic of the State of Florida, on behalf of the corporation. He is personally known to me or produced _____ as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

[SIGNATURES AND NOTARY CONTINUED ON FOLLOWING PAGE]

WITNESSES TO GRANTEE:

(Signature)

(Print Name)

(Address)

(Signature)

(Print Name)

(Address)

By: _____ (Signature)

_____ (Print Name)

Its: _____ (Title)

Dated: _____

STATE OF FLORIDA
COUNTY OF ORANGE

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ day of _____, 20__, by _____, as _____ of _____, a _____ corporation and public body corporate and politic of the State of Florida, on behalf of the corporation. He/She is personally known to me or produced _____ as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

EXHIBIT "A"

Description of Permanent Easement Area

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT

BOARD OF SUPERVISORS REPORT 8.1

Board Meeting Date: 11/20/2024

Subject: Master Drainage Model Update

Presented By: Katherine Luetzow, Manager of Planning & Engineering

Department: Public Works

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #8.1 agreement with Half Associates Inc. for professional engineering services for the District's Master Drainage Model update in the amount of \$2,162,925

RELEVANT STRATEGIC GOALS: Operational Excellence

PROOF OF PUBLICATION: Bid released to the public: March 31, 2024

BACKGROUND: The District maintains flood control of the master drainage system which serves approximately 24,500 acres. The master drainage system is comprised of approximately 67 miles of canals, as well as, portions of natural creek and swamp topography which include Whittenhorse Creek, Davenport Creek and Reedy Creek which is controlled by water control structures, including weirs and aml gates. The District is responsible for maintaining and updating the master drainage model for its flood control system. The scope for this project is to migrate and update the District's existing master drainage model to current industry standard software.

At the end of this project, the District will have revised floodplain maps and a tool that can be used for emergency management, future resiliency efforts, understanding the impacts of offsite development, and overall planning initiatives. This will be a multi-year project with anticipated completion in FY 2026. The current request is for the full contract amount, with the contract having fiscal year limits and conditions based upon future funding availability.

FINDINGS AND CONCLUSIONS:

On March 31, 2024, Invitation to Bid #C006566 was released for professional engineering services to update the District's Master Drainage Model. Six (6) Letters of Interest were received as follows:

- Chen Moore and Associates, Inc.
- Drummond Carpenter, PLLC.**
- RES Florida Consulting, LLC
- Half Associates Inc.
- AECOM
- DRMP, Inc. *

*Buy Local Bidder, ** Veteran Small Business

The letters of interest were reviewed, three (3) firms where shortlisted, and technical presentations with question and answer sessions were conducted. Half Associates Inc. was selected as the most qualified bidder by the selection committee.

Master Drainage Model Update

(Letter of Interest # C006566) Buyer: Andrea Osinski

Criterion	Weight	AECOM				DRMP, Inc.				Halff			
		KL	MB	TS	AVG	KL	MB	TS	AVG	KL	MB	TS	AVG
Project understanding, approach, and management	50	43	43	44	43.33	43	38	42	41	45	47	44	45.33
Project team w/ experience on projects of similar nature	30	27	25	23	25	27	25	22	24.67	27	25	25	25.67
Knowledgeable answers during the Q&A session	20	18	18	16	17.33	16	17	15	16	18	18	16	17.33
Round 2 - Final Selection	100	88	86	83	85.67	86	80	79	81.67	90	90	85	88.33

Highest Scoring Firm = Halff

FISCAL IMPACT:

The current request is for the full contract amount, with the conditions addressing future funding availability, with a projected split;

- FY 2025 \$1,500,000 in current Planning and Engineering Operating Budget
- FY 2026 \$662,925 contingent on future budget approval

PROCUREMENT REVIEW:

This contract has been reviewed and approved for compliance with the District’s procurement policies.

LEGAL REVIEW:

This agenda item has been reviewed by the District’s General Counsel.

ALTERNATIVE:

- Deny
- Amend
- Table

SUPPORT MATERIALS:

Contract #C006566 – Halff Associates Inc.

MASTER DRAINAGE MODEL UPDATE PROFESSIONAL SERVICES AGREEMENT

THIS AGREEMENT (“Agreement”) shall be effective commencing November 20, 2024, between **Central Florida Tourism Oversight District** (herein referred to as the “Owner,” “CFTOD” or “District”), whose mailing address is 10450 Turkey Lake Road, Box #690519, Orlando, Florida 32869, and **Half Associates, Inc.** (herein referred to as the “Consultant”), whose mailing address is 1201 North Bowser Road, Richardson, Texas 75081.

WITNESSETH:

WHEREAS, Central Florida Tourism Oversight District issued a Letter of Interest (“LOI”) No. C006566 on March 31, 2024 for the master drainage model update;

WHEREAS, six (6) proposers responded, and Half Associates, Inc. was the highest ranked proposer. The Consultant was subsequently selected as the intended awardee for these services; and

WHEREAS Owner desires to commission the services of a consultant to perform the master drainage model update services hereinafter described, and Consultant desires to be so commissioned.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and obligations herein contained, the parties agree as follows:

1. **SCOPE OF SERVICES.**

a. **Basic Services:** A description of the nature and scope of services to be performed by Consultant under this Agreement (“Basic Services”) is set forth in **Exhibit A** attached hereto and incorporated herein as set forth in the below list of Exhibits.

b. **Additional Services:** Owner may, from time to time, authorize Consultant in writing to perform additional services (“Additional Services”), in which event Consultant shall perform same. Any such Additional Services shall be set forth in an Amendment to this Agreement which shall be executed by both parties and which shall be governed by the terms and conditions of this Agreement unless otherwise expressly set forth therein.

c. **Reduction of Scope of Services:** Basic Services plus Additional Services are hereinafter referred to collectively as “Services”. Owner retains the right, in its sole discretion, to reduce any portion of the scope of Services. In the event Owner reduces the scope of Services, Owner shall be entitled to a proportionate reduction to the Fixed Fee Expenses, as defined in Section 2 (Compensation).

d. **Time for Completion:** Consultant shall commence the Services upon execution of this Agreement, or as otherwise directed by Owner, and shall complete same in accordance with the schedule (“Schedule”) set forth in **Exhibit B** attached.

e. **Acceleration:** Consultant shall accelerate performance of its Services in the manner directed by Owner in the event that Owner, in its sole discretion, determines that such acceleration is necessary to maintain the Schedule. If acceleration is required as a result of delays caused solely by Consultant, then such acceleration shall be at no cost to Owner. If acceleration is required as a result of delays partially caused by Consultant, then such portion of any delay partially caused by Consultant shall not be compensated by Owner, and any other portion of any such delay shall be compensated as an Additional Service.

2. **COMPENSATION.**

a. Owner shall pay Consultant a fixed fee in the amount of **TWO MILLION, ONE HUNDRED SIXTY-TWO THOUSAND, NINE HUNDRED TWENTY-FOUR AND THREE ONE-HUNDREDTHS DOLLARS (\$2,162,924.03)** (“Fixed Fee Amount”) as total compensation for the complete and satisfactory performance of the Services in accordance with the Schedule and to cover Consultant’s profit, overhead, and all costs and expenses of any nature whatsoever (including, without limitation, taxes, labor and materials).

b. The basis of compensation for any Additional Services shall be set forth in the Amendment to this Agreement providing for such Additional Services and shall be one of the following: (1) time-and-materials or cost-reimbursement, in accordance with the billing rates set forth in **Exhibit C** attached hereto and incorporated herein by reference, (2) a Fixed Price or (3) such other basis as the parties shall mutually agree. Any Additional Services performed by Consultant prior to execution by both parties of an Amendment shall be at Consultant's sole risk and expense and shall not be compensated by Owner.

c. Progress payments shall be made monthly based upon the percentage of Services completed to date of invoice and approved by Owner. Consultant shall invoice Owner on the first day of each month and Owner shall pay each such approved invoice (or uncontested portion thereof) within thirty (30) days after receipt of invoice. Invoices shall (i) refer to this Agreement by the Agreement Number indicated at the top left-hand corner of the first page hereof, (ii) display the Fixed Fee Amount (iii) itemize each Amendment and amount being billed against such Amendments in the invoice, (iv) itemize all amounts previously invoiced and paid and (v) include complete documentation and substantiation for all amounts invoiced. All invoices shall be addressed to:

Central Florida Tourism Oversight District
Attention: Accounts Payable
P.O. Box 690519
Orlando, Florida 32869
All invoices shall be sent to ap@oversightdistrict.org

d. Return of Funds. Consultant will return any overpayments due to unearned funds or funds disallowed pursuant to the terms of the Agreement that were disbursed to the Consultant. The Consultant must return any overpayment within forty (40) calendar days after either discovery by the Consultant, its independent auditor, or notification by the Owner of the overpayment.

3. **BOOKS AND RECORDS.**

Consultant shall maintain, in accordance with generally accepted accounting principles, comprehensive books and records relating to all Services performed under this Agreement, which shall be retained by Consultant for a period of at least four (4) years from and after the completion of all Services. Owner, or its authorized representatives, shall have the right to audit such books and records at all reasonable times upon two days prior notice to Consultant.

4. **DELIVERABLES.**

"Deliverables" shall mean final drawings, specifications, data, sketches, models, reports, or other project related work product in whole or in part created by Consultant in connection with the Services. Consultant shall supply Deliverables to Owner in accordance with the requirements of **Exhibit A** and this Agreement. The Agreement Number, specification number, item number, and any other required identification must appear on all Deliverables submitted to Owner. Consultant is and shall be fully responsible for the preparation and accuracy of all Deliverables and strict compliance of the Deliverables with all requirements hereof. Owner's review, approval, action or inaction taken on the Deliverables is for Owner's convenience and/or to express Owner's opinion and shall not relieve or discharge Consultant either expressly or by implication from its responsibilities and obligations hereunder.

5. **OWNERSHIP OF DELIVERABLES.**

a. Deliverables shall become the property of Owner when created. In the event of early termination of the Services hereunder, Consultant shall deliver to Owner all Deliverables upon completion of final payment.

b. The provisions of this Section shall survive the expiration or earlier termination of this Agreement.

6. **CONFIDENTIALITY OF MATERIAL.**

Consultant may, during the course of providing its Services hereunder or in relation to this Agreement, have access to and acquire knowledge regarding plans, concepts, designs, materials, data, systems and other information of or with respect to the Owner or Owner's Representative, or any subsidiaries or affiliated companies thereof, which may not be accessible or known to the general public ("Confidential Information"). Confidential Information that is specific as to techniques, equipment, processes, products, concepts or designs, etc. shall not be deemed to be within the knowledge of the general public merely because it is embraced by general disclosures in the public domain. Any knowledge acquired by Consultant from such Confidential Information or otherwise through its engagement hereunder shall not be used, published or divulged by Consultant to any other person, firm or corporation, or used in any advertising or promotion regarding Consultant or its services, or in any other manner or connection whatsoever without first having obtained the written permission of Owner, which permission Owner may withhold in its sole discretion. Consultant specifically agrees that the foregoing confidentiality obligation applies to, but is not limited to, any information disclosed to Consultant in any document provided to Consultant pursuant to or in connection with this Agreement, including but not limited to, a Request for Proposal, Request for Estimate, Request for Quotation and Invitation to Bid. The provisions of this Section shall survive the expiration or earlier termination of this Agreement.

7. **INSURANCE AND INDEMNIFICATION.**

a. The Consultant shall at its expense procure and maintain during the life of this Contract and for two (2) years thereafter (and shall require the same from its Subconsultants, subcontractors, and Sub-subconsultants) the following types and minimum amounts of insurance:

- i. Commercial General Liability Insurance including liability assumed under written contract, bodily injury, property damage, personal and advertising injury, and products/completed operations liability written on an occurrence basis with minimum combined single limits for bodily injury and property damage of \$1,000,000 per occurrence;
- ii. Automobile Liability coverage for all owned, non-owned and hired vehicles written on an occurrence basis, with minimum combined single limits of \$1,000,000 per occurrence;
- iii. Workers' Compensation Insurance providing statutory benefits and Employer's Liability Insurance with minimum limits of \$1,000,000 per occurrence;
- iv. Umbrella Liability on a follow-form basis providing coverage excess of the underlying policies required by i, ii, and iii above in an amount of at least \$1,000,000 per occurrence;
- v. If Consultant is providing any kind of professional service or advice including design, architectural, surveying, legal, financial, accounting or similar then Consultant will also carry Professional Liability/Errors & Omissions insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least two (2) years following the conclusion of work.
- vi. If Consultant is using, transporting or disposing of any hazardous materials, potentially harmful materials, chemicals, waste or similar then Consultant will also carry Pollution Liability insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least two (2) years following the conclusion of work.

- vii. If work will include the use or operation of any crane, total limit of Umbrella liability insurance will be at least \$4,000,000.
- viii. If Consultant is using any kind of aircraft including unmanned aerial vehicles (drones) then use must be approved by Owner and liability insurance satisfactory to Owner must be obtained.
- ix. If Consultant is providing information technology software or services, then Consultant must also carry Cyber Liability Insurance with limits not less than \$2,000,000 per occurrence or claim. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Consultant in this agreement and shall include, but not be limited to, claims involving infringement of intellectual property, infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.
- x. Consultant is not required to commercially insure its owned, rented or borrowed machinery, tools, equipment, office trailers, vehicles, and other property but agrees that Owner is not responsible for and Consultant holds Owner harmless for loss, damage or theft of such items.

b. All insurance required under this Section shall be with companies and on forms authorized to issue insurance in Florida and with an insurer financial strength rating from AM Best of no less than A- or an equivalent rating from a similar, recognized ratings agency unless such requirements are waived, in writing, by the Owner's Risk Manager. Certificates of insurance (or copies of policies, if required by the Owner) shall be furnished to the Owner.

c. CANCELLATION. All such insurance required by this Section shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days unrestricted prior written notice thereof is furnished to Consultant, who agrees to promptly relay any such notice received to Owner.

d. ADDITIONAL INSUREDS. Each liability policy required herein (except Workers' Compensation or Professional Liability) shall schedule as Additional Insureds, on a primary and non-contributory basis, the Owner and its affiliated entities and their supervisors, officers, employees, agents and assigns.

e. WAIVERS. The Consultant hereby waives, and will require its Subconsultants and Sub-subconsultants to waive and to require its and their insurers to waive their rights of recovery or subrogation against the Owner and its affiliated entities, supervisors, officers, employees, agents and assigns.

f. CLAIMS. The Consultant and its Subconsultants and Sub-subconsultants shall assist and cooperate in every manner possible in connection with the adjustment of all claims arising out of the operations conducted under or in connection with the Work and shall cooperate with the insurance carrier or carriers of the Owner and of the Consultant, its Subconsultants and Sub-subconsultants in all litigated claims and demands which arise out of said operations and which the said insurance carrier or carriers are called upon to adjust or resist.

g. INDEMNIFICATION. The Consultant shall indemnify District and its appointed board supervisors, officers, employees, and volunteers against, and hold District and its appointed board supervisors, officers, employees and volunteers harmless from damages, claims, losses, costs, and expenses, including attorneys' fees, which District or its appointed board supervisors, officers, employees or volunteers may sustain, or which may be asserted against District or its appointed board supervisors, officers, employees or volunteers, arising out of negligent errors, acts, or omissions by Consultant and contemplated by this Agreement to the extent allowed by Florida Statute, §725.08, and to the extent that the services rendered pursuant to the Agreement were services of a "Design Professional" as defined in Florida Statute, §725.08(4) including, without limitation, harm or personal injury to third

persons. The provisions of this paragraph shall survive the expiration or sooner termination of this Agreement.

8. **NO WAIVER OF SOVEREIGN IMMUNITY.**

Nothing herein is intended to waive sovereign immunity by the District to which sovereign immunity may be applicable, or of any rights or limits of liability existing under Florida Statute § 768.28. This term shall survive the termination of all performance or obligations under this Agreement and shall be fully binding until any proceeding brought under this Agreement is barred by any applicable statute of limitations.

9. **PROFESSIONAL STANDARDS.**

a. Consultant hereby represents and warrants that it has the professional experience and skill to perform the Services required to be performed hereunder; that it shall comply with all applicable federal, state and local laws, including without limitation all professional registration (both corporate and individual) for all required basic disciplines; that it shall perform the Services in accordance with generally accepted professional standards and in an expeditious and economical manner; that it has sufficient capital assets and is adequately financed to meet all financial obligations it may be required to incur hereunder; that the Deliverables shall not call for the use of nor infringe any patent, trademark, service mark, copyright or other proprietary interest claimed or held by any person or interest absent prior express written consent from the Owner; and that it shall provide and employ in connection with the performance of Services personnel qualified and experienced in their profession, it being understood that Owner may at any time require Consultant to remove, and Consultant shall forthwith remove, any person employed in connection with the performance of the Services for any reason whatsoever.

b. If, at any time during the performance of its Services or during the maximum period permitted by applicable law after completion of same, it is discovered that Consultant or any of its officers, directors, agents, subcontractors, employees, or Subconsultants, as defined in Section 14 (Subconsultant), has committed any negligent act, error or omission, or has failed to meet the warranties and representations contained herein, which has caused or will cause additional expense to Owner, then Consultant shall, at Owner's request, promptly make all necessary corrections and/or bear any and all such additional expenses associated with the correction of same. The foregoing is without limitation of Owner's other rights under Contract or at law. Correction of errors and omissions shall include, but not be limited to, additional architectural and engineering services, design documentation, travel, demolition, removal, relocation, manufacture, fabrication, construction, testing and installation, irrespective of whether originally performed by Consultant, Owner, or a third party.

10. **DETERMINATION OF DISPUTES/CHOICE OF LAW.**

Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Agreement, or arising out of any matter pertaining to this Agreement or the Services to be performed hereunder (a "Proceeding"), shall be submitted for trial, without jury, solely and exclusively before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; provided, however, that if such Circuit Court does not have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before the United States District Court for the Middle District of Florida (Orlando Division); and provided further that if neither of such courts shall have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before any other court sitting in Orange County, Florida, having jurisdiction. The parties (i) expressly waive the right to a jury trial, (ii) consent and submit to the sole and exclusive jurisdiction of the requisite court as provided herein and (iii) agree to accept service of process outside the State of Florida in any matter related to a Proceeding in accordance with the applicable rules of civil procedure.

11. **SUSPENSION/TERMINATION FOR CONVENIENCE.**

a. Anything herein to the contrary notwithstanding, Owner may, for convenience, terminate this Agreement upon seven (7) days prior written notice to Consultant. In the event of such termination, Owner's sole obligation and liability to Consultant, if any, shall be to pay Consultant that portion of the Fixed Fee Amount earned by Consultant for the performance of the Services through the date of termination only. Under no circumstances shall

Owner be liable for any lost profits, lost revenue, unabsorbed overhead or any other losses of any kind whatsoever associated with any Services not performed.

b. Upon delivery to Consultant of a written Notice to Suspend Services, Consultant shall immediately suspend performance of its Services in the manner and for the duration directed by Owner in said Notice. Consultant shall take reasonable steps to preserve any Deliverables in progress at the time of suspension. Upon written notice that the suspension has been canceled, Consultant shall be entitled to an equitable adjustment to the Schedule only. In no event shall any suspension of Services exceed one (1) year in duration.

12. **ASSIGNMENT.**

This Agreement is for the personal services of Consultant and may not be assigned by Consultant, nor shall it be assignable by operation of law, without the prior written consent of Owner, which consent Owner may withhold in its sole discretion. Owner reserves the right to assign or novate all or any portion of this Agreement and Consultant agrees to execute all documents that are required (if any) to effectuate such assignment or novation.

13. **KEY EMPLOYEES.**

The Key Staff (herein “Key Employees”) of Consultant are listed in **Exhibit F – Consultant Proposal**. Consultant acknowledges that Owner has relied upon and hired Consultant because of the involvement of such individuals. Consultant agrees that such Key Employees shall be assigned to perform the Services. Consultant shall not remove any Key Employees from the performance of the Services absent prior written consent of Owner.

14. **SUBCONSULTANT.**

If Consultant, as part of the performance of its Services hereunder, is required to commission other consultants (“Subconsultant”), then the following provisions shall apply:

a. Consultant shall obtain Owner's written consent prior to engaging the services of any Subconsultant and shall not engage any Subconsultant to which Owner objects;

b. Consultant shall direct and coordinate the services of any Subconsultant commissioned by Consultant;

c. Consultant shall bear full responsibility under this Agreement for all services of its Subconsultant(s), including without limitation each Subconsultant's negligent errors and omissions;

d. The costs of all Subconsultants’ services for the performance of Additional Services compensated on a time-and-materials or cost-reimbursable basis shall be billed to Owner without markup;

e. Owner shall have no obligation to pay, or be responsible in any way, for the payment of any monies to any Subconsultant, except as may otherwise be required by law;

f. All agreements between Consultant and any Subconsultants shall reflect the terms of this Agreement and require the Subconsultant, to the extent of the Services to be performed by the Subconsultant, to assume toward the Consultant all the obligations which Consultant by this Agreement assumes towards the Owner, it being understood that nothing herein shall in any way relieve Consultant from any of its duties under this Agreement.

g. Owner shall be a third party beneficiary of all obligations under all agreements between Consultant and any Subconsultants; provided, however, that nothing contained herein or therein shall create any contractual relationship between Owner and any Subconsultant or any obligation of Owner to any Subconsultant.

15. **NOTICE.**

a. Notices required or permitted to be given hereunder shall be in writing, may be delivered personally to an officer or designated representative of the party to be served or sent by first class mail, facsimile to be confirmed by first class mail, or messenger services and shall be deemed given when received by the addressee. Notices shall be addressed as follows:

If to Owner: CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
Attention: Contracting Officer
10450 Turkey Lake Road, Box # 690519
Orlando, Florida 32869

If to Consultant: HALFF ASSOCIATES, INC.
Attention: Robert Ern, VP
1201 North Bowser Road
Richardson, Texas 75081

or to such other address as either party may direct by written notice given to the other as hereinabove provided.

b. Notwithstanding the foregoing, any notice sent to the last designated address of the party to whom a notice may be or is required to be delivered hereunder shall not be deemed ineffective if actual delivery cannot be made due to an unnoticed change of address of the party to whom the notice is directed or the failure or refusal of such party to accept delivery of the notice.

16. **PROMOTION.**

Consultant shall acquire no right under this Agreement to use, and shall not use, the name of Owner, or the name of the Owner's Representative or its parent, related, affiliated or subsidiary companies or any of their fanciful marks or copyrighted characters or designs:

a. in any of Consultant's advertising, publicity, or promotion, including but not limited to the Internet; nor

b. in any in-house publication; nor

c. to express or imply any endorsement by Owner of Consultant's Services or in any other manner whatsoever (whether or not similar to the uses herein above specifically prohibited). The provisions of this Section shall survive the expiration or earlier termination of this Agreement.

17. **CODES.**

Consultant's Services shall conform to all applicable building codes, and all applicable federal, state, and local laws, statutes, codes ordinances and agency regulations, including without limitation, the requirements of the Americans with Disabilities Act of 1990 ("ADA"), as same may be amended from time to time, which have jurisdiction and which are current at the time Consultant renders Services hereunder.

18. **NO AGENCY.**

It is the express intention of the parties that Consultant is an independent contractor and not an employee, agent, joint venturer or partner of Owner. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Owner and Consultant or any employee or agent of Consultant. Both parties acknowledge that Consultant is not an employee for state or federal tax purposes. Consultant shall retain the right to perform services for others during the term of this Agreement.

19. **GOVERNING LAW.**

This Agreement shall be governed by, and be construed in accordance with, the laws of the State of Florida, to the exclusion of its rules concerning conflicts of laws.

20. **ENTIRE AGREEMENT.**

a. This Agreement supersedes any and all discussions, understandings or other agreements, either oral or written, between the parties hereto with respect to the Services and contains all the covenants and agreements between the parties with respect to the Services. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that no other agreement, statement, course of dealing usage of trade, or promise not contained in this Agreement shall be valid or binding or used to interpret this Agreement. Any modification or amendment of this Agreement will be effective only if it is in writing and signed by both parties.

b. Any failure by Owner to require strict compliance with any provision of this Agreement shall not be construed as a waiver of such provision, and Owner may subsequently require strict compliance at any time, notwithstanding any prior failure to do so.

21. **PARTIAL INVALIDITY.**

If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

22. **CAPTIONS.**

The captions contained in this Agreement are inserted for convenience of reference only and shall not be construed in any manner for the purpose of interpreting the provisions thereof.

23. **EFFECTIVE DATE.**

Any Services performed or caused to be performed by Consultant prior to the effective date of this Agreement shall be deemed to have been performed under this Agreement when agreed to by the Owner.

24. **THE OWNER'S REPRESENTATIVE.**

a. **Mandee Brandt** shall act as the Owner's designated representative (herein referred to as the "Owner's Designated Representative"); provided, however, that the Owner may, without liability to the Consultant, unilaterally amend this Section from time to time by designating a different person or organization to act as its representative and so advising the Consultant in writing, at which time the person or organization so designated shall be the Owner's Designated Representative for purposes of this Agreement. Except as otherwise provided in this Agreement, and until the Consultant is notified in writing to the contrary, all actions to be taken by, all approvals, notices, consent, directions and instructions to be given by, all notices and other matters to be delivered to, all determinations and decisions to be made by and, in general, all other action to be taken by, or given to, the Owner shall be taken, given and made by, or delivered or given to, the Owner's Designated Representative in the name of and on behalf of the Owner; provided, however, that the Owner (and not the Owner's Designated Representative) shall be solely obligated to the Consultant for all sums required to be paid by the Owner to the Consultant hereunder.

b. Nothing contained in this Agreement shall create any contractual relationship between the Consultant and the Owner's Designated Representative.

25. **PUBLIC RECORDS.**

The Consultant shall comply with all applicable provisions of the Florida Public Records Act, Chapter 119, Florida Statutes. Specifically, the Consultant shall:

- a. Keep and maintain public records required by the public agency to perform the service.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Consultant does not transfer the records to the public agency.
- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the Consultant or keep and maintain public records required by the public agency to perform the service. If the Consultant transfers all public records to the public agency upon completion of the contract, the Consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Consultant keeps and maintains public records upon completion of the contract, the Consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

IF THE CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT TELEPHONE NUMBER 407-939-3240, EMAIL ADDRESS PUBLICRECORDS@OVERSIGHTDISTRICT.ORG, MAILING ADDRESS CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT, ATTN: PUBLIC RECORDS ADMINISTRATOR, P.O. BOX 690519, ORLANDO, FLORIDA 32869.

26. **NON-FUNDING.**

In the event that budgeted funds for this Agreement are reduced, terminated, or otherwise become unavailable, Owner may terminate this Agreement upon written notice to Consultant without penalty to Owner. Owner shall be the final authority as to the availability of the funding.

27. **E-VERIFY COMPLIANCE.**

The Consultant and its subconsultants warrant compliance with all federal immigration laws and regulations that relate to their employees. The Consultant agrees and acknowledges that the Owner is a public employer that is subject to the E-verify requirements as set forth in Section 448.095, Florida Statutes, and that the provisions of F.S. Sec. 448.095 apply to this Agreement. Notwithstanding the provisions of this Section hereof, if the Owner has a good faith belief that the Consultant has knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws of the Attorney General of the United States for employment under this Agreement, the Owner shall terminate the Agreement. If the Owner has a good faith belief that a subconsultant performing work under this Agreement knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws or the Attorney General of the United States for employment under this Agreement, the Owner shall promptly notify the Consultant and order the Consultant to immediately terminate the contract with the subconsultant. The Consultant

shall be liable for any additional costs incurred by the Owner as a result of termination of a contract based on Consultant's failure to comply with E-verify requirements referenced herein.

28. **SCRUTINIZED COMPANIES.**

a. By executing this Agreement, the Consultant certifies that it is eligible to bid on, submit a proposal for, enter into or renew a contract with the Owner for goods or services pursuant to Section 287.135, Florida Statutes.

b. Specifically, by executing this Agreement, the Consultant certifies that it is **not**: on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes, or is engaged in a boycott of Israel.

c. Additionally, if this Agreement is for an amount of \$1,000,000 or more, by executing this Agreement, the Consultant certifies that it is **not**:

- i. On the "Scrutinized Companies with Activities in Sudan List" or the "Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List," created pursuant to Section 215.473 Florida Statutes; and/or
- ii. Engaged in business operations in Cuba or Syria.

d. The Owner reserves the right to terminate the Agreement immediately should the Consultant be found to:

- i. Have falsified its certification herein pursuant to Section 287.1358, Florida Statutes; and/or
- ii. Have become ineligible to bid on, submit a proposal for, enter into or renew a contract with the Owner for goods or services pursuant to Section 287.135, Florida Statutes subsequent to entering into this Agreement with the Owner.

e. If this Agreement is terminated by the Owner as provided in paragraph d above, the Owner reserves the right to pursue any and all legal remedies against the Consultant, including, but not limited to the remedies described in Section 287.135, Florida Statutes.

f. If this Agreement is terminated by the Owner as provided in paragraph above, the Consultant shall be paid only for the work completed as of the date of the Owner's termination.

g. Unless explicitly stated in this Section, no other damages, fees or costs may be assessed against the Owner for its termination of the Agreement pursuant to this Section.

29. **CONTRACT DOCUMENTS.**

a. The Contract Documents which comprise the entire understanding between the Owner and Consultant shall only include this Agreement and those documents listed in this section as Exhibits to the Agreement. Each Exhibit is incorporated herein by reference for all purposes.

- Exhibit A: Scope of Services (A-1 through A-29)
- Exhibit B: Schedule (B-1)
- Exhibit C: Rate Schedule (C-1)
- Exhibit D: District Map with Water Control Structures (D-1)
- Exhibit E: Zone Map (E-1)
- Exhibit F: Consultant Proposal (F-1 through F-30)

b. If there is a conflict between the terms of this Agreement and the Exhibits, then the terms of this Agreement shall control, amend, and supersede any conflicting terms contained in the Exhibits. If there is any conflict between the exhibits, Exhibit A shall take precedence.



IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed on the day and year first above written.

OWNER
CENTRAL FLORIDA TOURISM
OVERSIGHT DISTRICT

CONSULTANT
HALFF ASSOCIATES, INC.

Signature: _____

Signature: _____

Print Name: Charbel Barakat

Print Name: _____

Title: Vice Chairman of the Board of Supervisors

Title: _____

Date: November 20, 2024

Date: _____



Scope of Services
Central Florida Tourist Oversight District
Master Drainage Model Update
Contract No. C006566
October 17, 2024
Singhofen Halff Project No. 57665

1.0 OBJECTIVE

The Central Florida Tourism Oversight District (CFTOD) (hereinafter “District”, “Owner” and “CFTOD”) is a Special Taxing District that serves as a local government entity. One of the primary responsibilities of the District is to maintain flood control of the master drainage system which serves approximately 24,500 acres within the District’s boundary, as well as the adjacent developments of Golden Oak and Celebration. In addition, approximately 123 square miles of offsite tributary area drain to the District’s master drainage system from adjacent Orange, Osceola, Lake and Polk Counties. The master drainage system is comprised of approximately 67 miles of canals, as well as, portions of natural creek and swamp topography, which include Whittenhorse Creek, Davenport Creek and Reedy Creek. The system is controlled by 25 primary water control structures, including weirs and amil gates.

Singhofen Halff (SH) is pleased to provide the CFTOD with this scope of work to complete the Master Drainage Model Update. The District has a long history of modeling the master drainage system and is responsible for maintaining and updating the master drainage model for its flood control system. This project serves as a major update to the model and consists of three primary objectives. The first objective is to migrate the District’s model to more current modeling software, moving away from an obsolete customized version of the UNET program and the HEC-1 program and to update more recent regional models that were developed utilizing the Interconnected Channel and Pond Routing program (ICPR Versions 3 and 4). Given the widespread agency and industry acceptance and prior District testing regarding capabilities and the ability to accurately model amil gates, the District is transitioning their model to Stormwise (fka ICPR4) and a GIS platform. The second objective is to update the model to adequately reflect the significant development that has occurred within the tributary areas and update onsite areas to future land use conditions to maintain consistency with the District’s Comprehensive Plan. The final objective is to convert the model from a local datum to State Plane/NAVD 88.

This Project will be split into seven (7) zones as shown in the table below. The zones are interconnected, therefore each zone will build upon the previous zone. However, each zone will have separate deliverables and deliverable milestones.

Zone No.	Zone Title
1	North District
2	Whittenhorse Creek
3	East District
4	RC NCA
5	Central District
6	South District
7	RC Swamp

The work for each zone will consist of two phases: Data Collection Phase and Modeling Phase. As part of the Data Collection Phase, ESRI ArcGIS will be used to delineate and georeference 700+ drainage basins, establish existing and future land uses, and determine soil properties. All areas within the District will be modeled to a high level of detail including incorporation of existing regional drainage studies for the BVD Corridor, L-403 Basin, and World Drive North. The project will also include analysis of Offsite Tributary Basins to establish updated flow conditions. Model data for the Offsite Tributary areas will not be as detailed as onsite. The Modeling Phase will consist of detailed, one-dimensional modeling of the entire master system for both existing and future conditions, including all canals and control structures. The end result will include a geo-referenced model with consistency between Stormwise and GIS that will be used to establish revised hydraulic stages and floodplains for the canals and modeled waterbodies. The results will be mapped to show final flood elevations and floodplain extents.

SH has partnered with Geosyntec Consultants, Inc. (Geosyntec) to support the project through the preliminary model simulations for Zones 3 & 7 and the eastern 50% of Zones 1 & 6. SH will be responsible for preparing model data for the other zones and, ultimately, calibration of the final combined model and floodplain mapping. Geosyntec's complete scope of services, which match the tasks under this scope, is included as **Attachment 1**.

SH believes that the most efficient approach to the project will be to complete work for each zone in parallel. Zone 1 will act as a pilot study to demonstrate our overall approach and provide deliverables for review and approval of the District. Once approved, remaining zones will be completed by working within two (2) zones concurrently. Each zone will have separate deliverables and intermediate reviews during the course of the project. Once a deliverable is reviewed and approved by CFTOD, the zone will be merged with previously approved zones.

2.0 SCOPE OF SERVICES

TASK 1. Data Collection

Subtask 1.1 – Existing Model Data Collection & Migration: Existing model data developed within the District as well as the offsite tributaries will be collected and reviewed. The model data collected within the District will be migrated into Stormwise and a model geodatabase. The migrated model network will be used as a baseline to identify data gaps within each zone. This will allow SH to focus data collection efforts to fill in the model gaps within the zones. The information from the offsite tributaries will be utilized to develop the limited offsite detailed modeling as well as boundary conditions. Coordination with the following entities will be required to collect this data:

- Onsite Model Data
 - CFTOD
 - WDI
 - FDOT
- Offsite Model Data
 - Orange County
 - Osceola County
 - Lake County
 - Polk County
 - FDOT
 - FEMA

Subtask 1.2 – GIS Data Collection: GIS data that will be used for model setup and hydrologic calculations will be collected, reviewed and cataloged under this task. Each item will be cataloged to include the source and the date certain, if applicable, of the collected information. Under this task and an in-depth review of each of the items is conducted to identify concerns within the source data. Generally, collected GIS data is used at a widescale using GIS processing tools throughout the model development. Doing this in-depth review now allows us to address issues with the sources early on to avoid duplicating work. Majority of the time spent on this task is that review process and below are GIS datasets that will be collected with a description of the review task:

- Aerial Imagery: Available aerial imagery will be collected from CFTOD and FDOT.
- Topographic Information: The 2018-2019 LiDAR-based digital elevation models (DEM) for Orange and Osceola Counties will be collected from the US Geological Survey (USGS) Florida Statewide LiDAR Project. In addition, LiDAR data within the district will be collected from CFTOD. The most recent LiDAR information within the district will be reviewed based on the aerial imagery. This review entails panning through the model zones, and tributaries, we are responsible for to identify potential topographic voids to be excluded from hydrologic calculations. These topographic voids include, but not limited to, errors within the LiDAR that show buildings being lower than the surrounding area or significant elevation differences within the same pond bottom. This scope of work does not include modifying the LiDAR information to rectify the topographic voids.
- USGS National Hydrography Dataset: The USGS National Hydrography Dataset (NHD) waterbodies and flowlines will be reviewed to help identify offsite watershed boundaries.
- Existing Land Use: Land use information will be collected from CFTOD and SFWMD. The collected information will be compared to aerial imagery to identify discrepancies and revised to better reflect current conditions. The original source files and the modified land use will be provided in the project deliverable. For all waterbodies, 100% direct impervious shall be applied to normal water level or limits of water on aerial.
- Future Land Use: The latest future land use file will be collected from CFTOD. The future land use will be reviewed and revised to be incorporated into Stormwise. In general, the future land use is categorized into three categories of water, conservation or developable land. The only area to be considered conservation is the Water/Wildlife Management Conservation Area (WMCA). The land use of water, open space, woods, etc., within the WMCA limits shall be assigned. For all waterbodies, 100% direct impervious shall be applied to normal water level or limits of water on aerial. All remaining areas are to be considered as developable areas and will either use 80% impervious for future buildout or if the existing land use exceeds 80%, 100% impervious shall be used for "buildout".
- Existing Soils: Soil information will be collected from Natural Resource Conservation Services (NRCS). The collected information will be compared to aerial imagery and existing land use to identify discrepancies and revised to better reflect current conditions. The original source files and the modified soils will be provided in the project deliverable.
- Other CFTOD GIS Basemap Data: Supplemental GIS information will also be collected for CFTOD that can be used for modeling purposes as well as report documentation. This information may include stormwater infrastructure data that identifies the location of the drainage structures within the district. This also includes the model zones, streets, jurisdictional boundaries, tributaries, existing Time of Concentration (TC) paths, etc.

Subtask 1.3 – Reference Documents Collection and Cataloging: Reference Documents (RefDocs) will be collected and cataloged per zone. RefDocs include permits, as-builts, construction plans, historical flooding photos, and old survey files. This will include collecting the permit documents from SFWMD and CFTOD. Data for each zone will be stored in its own folder where the RefDocs will be cataloged and stored in corresponding sub-folders. A spreadsheet will be developed per zone that includes project name, source and type of each RefDoc.

Subtask 1.3.1 – Zone 1: North District (western portion)

Subtask 1.3.2 – Zone 2: Whittenhorse Creek

Subtask 1.3.3 – Zone 3: East District (not included in SH Scope)

Subtask 1.3.4 – Zone 4: RC NCA

Subtask 1.3.5 – Zone 5: Central District

Subtask 1.3.6 – Zone 6: South District (western portion)

Subtask 1.3.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 1.4 – Model Network Development and Data Capture: This task involves the development the **ICPR_Nodes**, **ICPR_Links**, **Basins**, & **ICPR_Xsects** feature classes within the project geodatabase. SH will develop the Model Network and capture the relevant parameter data under this task. In areas that have existing model network, this task includes review of the placement and verify the model inputs based on the collected reference documents. This includes developing the detailed portion on the offsite tributaries identified by CFTOD in **Figure 1**.

- **ICPR_NODE:** Nodes will be used to represent ponds that are at a minimum of one half (0.5) acre or in key depressional areas (i.e., wetlands). Ponds that are less than one half (0.5) acre will be included within the network when the pond is part of a larger conveyance system. This also includes nodes along the creeks and canals.

This task only includes the spatial placement of nodes and limited data capture. Complete parameterization of the nodes (e.g., stage-area relationships) will be completed during a subsequent task. Information on sub-type, SHWE, NWL, DHWE, and source information will be documented in the ADDL_MODEL_DATA table. The folder containing the reference document will be hyperlinked to the appropriate model network element via the HYPERLINK table.

All nodes shall have a consistent naming convention, using the basin name first to identify the waterway to which the node drains. The nodes associated with a channel or the Creek shall be named according to the distance in miles upstream of the junction point (e.g. C4-00.21) or tailwater. The furthest downstream point for the canals or Creek is to equal 0.00. All nodes' names will be followed with "_N" (e.g. C4-00.21_N).

- **ICPR_LINK:** Links will be utilized to provide the conveyance between nodes and shall represent channels, outfall structures, bleeders, pipes, etc. This task includes hydraulic data capture as well as spatial development. All hydraulic feature data related to the Model Network will be collected and input into the project geodatabase in the applicable tables (e.g. PIPE_BARREL, WEIR, etc.). When applicable, bleeders will be included within the model network. The source of the information and subtypes will be documented in the ADDL_MODEL_DATA table. The folder containing the reference document will be hyperlinked to the appropriate model network element via the HYPERLINK table. All links shall have a consistent naming convention, using the basin name first to identify the waterway to which the link drains. The only exception shall be named structures like the amil gates that shall use their structure name. The assumptions and the methodology for the development of each link type are as follows:
 - **Channels:** Channel links will be used to represent the rivers, streams, channels, canals, ditches, and swales within the primary drainage systems of the watershed. Cross section locations will be established and source information (existing data, proposed survey. DEM, etc.) will be identified. All canals and Reedy Creek shall be modeled using irregular section channels and cross sections. Only the spatial representation of the channels and cross sections will be developed at this time as the parameterization will be conducted in a later task. The cross sections will be drawn looking downstream from left to right. All channel link names will correspond to the canal or creek name that it represents and will be followed with "_C".
 - **Pipes:** Pipe data for new or revised pipes will be captured from the collected record drawings, survey, construction plans, and infrastructure databases. This includes populating the pipe geometry, size, length and invert based on the RefDocs. Field verification and survey needs, if any, will be identified. All pipe link names will be followed with "_P".

- *Drop Structures*: Drop structure links are utilized to represent weir and pipe systems (i.e., control structures) and shall be developed in the same way as the pipes. This includes populating the pipe and weir information based on the RefDocs. The weir information will include the geometry, size, invert and control elevation. Field verification and survey needs, if any, will be identified. All drop structure link names will be followed with “_D”.
- *Weirs*: Weir links are separated into two categories, structural and overland flow. Structural weirs represent man-made structures and will be developed in the same way as pipes and drop structures. Overland weirs represent flow over pond banks, road crossings, or other natural locations. Information for overland weirs will come from either permitted/asbuilt information, survey, or LiDAR. In cases where the information is to be developed based on LiDAR, only the spatial representation of the overland flow weir will be developed at this time as the parameterization will be conducted in a later task. All weir link names will be followed with “_W”.
- *Bridges*: Bridge links will only be developed spatially at this time as all bridge information will be developed within HEC-RAS and imported into the Stormwise model as a rating curve. Bridge curve development is part of a later task. All rating curve links that represent a bridge will have “_B” following the name.
- *Rating Curves*: Rating curves will be used to represent pump stations and the amil gates within the watershed. Pump stations and amil gates are typically named structures and as such the link name will use the structure name. In the case what the rating curve represents is not a named structure, the naming convention will be based on the basin name with “_R” at the end. During the development of the Zone 1 model network, SH will use the amil gate S-101 and available USGS data to calibrate the amil gate rating curves. This calibration effort will be documented and submitted to CFTOD for approval. Once approved, the same process will be applied to the remaining amil gates. After approval from CFTOD, SH will provide the methodology to Geosyntec to develop the rating curves within their model zones.
- *ICPR_BASIN*: Arc-Hydro tools will be utilized to develop initial subbasins based on the collected DEM. Existing basins will be reviewed against the Arc-Hydro derived basins and will be revised as necessary. Basins within topographic void areas or areas of new development will be delineated based on terrain data, aerials, plan, and permit information. This task only includes the spatial development of the basins at this time. This task also includes reviewing and revising existing basins based on the new information collected in previous tasks. Parameterization of the basins will be completed during a subsequent task.

Subtask 1.4.1 – Zone 1: North District (western portion)

Subtask 1.4.2 – Zone 2: Whittenhorse Creek

Subtask 1.4.3 – Zone 3: East District (not included in SH Scope)

Subtask 1.4.4 – Zone 4: RC NCA

Subtask 1.4.5 – Zone 5: Central District

Subtask 1.4.6 – Zone 6: South District (western portion)

Subtask 1.4.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 1.5 – Field Data Acquisition Needs and Approach Development: Upon completion of the above tasks, field verification will be required for structures with missing and/or conflicting information. SH shall distinguish between field acquisition needs including field verification/measurement of structures, resolution of conflicting data, observations of drainage patterns, and professional survey by a PSM. This task includes the development of the field data acquisition plan and setting up the prioritization to fit within the agreed

upon survey budget and provide the data necessary for the existing conditions model development. SH will first coordinate with CFTOD before any survey or field visits are conducted. This will allow SH to avoid using up field data acquisition budget for locations that CFTOD can confirm or provide a proper data source. This task will also include the identification of key wetland locations for seasonal high-water elevations (SHWEs) to be collected. These locations will also be prioritized and coordinated within CFTOD prior to any field visits. Once the field data acquisition plan is finalized and approved by CFTOD, SH will develop plan to optimally conduct each field visit. This will include coordinating with CFTOD and other entities to plan visits at locations where SH staff will need to be granted access.

Subtask 1.5.1 – Zone 1: North District (western portion)

Subtask 1.5.2 – Zone 2: Whittenhorse Creek

Subtask 1.5.3 – Zone 3: East District (not included in SH Scope)

Subtask 1.5.4 – Zone 4: RC NCA

Subtask 1.5.5 – Zone 5: Central District

Subtask 1.5.6 – Zone 6: South District (western portion)

Subtask 1.5.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 1.6 – Field Measurement and Drainage Pattern Verification: Field visits will be conducted at locations where analyses of the existing datasets are inconclusive or do not provide information sufficient to determine drainage patterns. Two-person teams will visit these locations and look for drainage patterns, divides, and absence or presence of hydraulic or topographic features that may change boundaries. The findings will be documented for structures visited in the field and shall include documentation of location, alignment, condition, and digital photographs. Collection of elevation data and confined space entry is not included as part of this task. SH will conduct up to two (2) days of field reconnaissance with a two-person team for each zone they are solely responsible for (Zones 2, 4, & 5) and one (1) for each zone shared with Geosyntec (Zones 1 & 6) or a total of eight (8) days. This scope of work also includes one (1) day for each zone, or seven (7) days total, of field reconnaissance by a specialized two-person team to identify/flag the SHWEs within the identified wetlands. It is assumed that the two-person teams will be in the field for a max of ten (10) hours per day.

Subtask 1.6.1 – Zone 1: North District (western portion)

Subtask 1.6.2 – Zone 2: Whittenhorse Creek

Subtask 1.6.3 – Zone 3: East District (1 day for SHWE)

Subtask 1.6.4 – Zone 4: RC NCA

Subtask 1.6.5 – Zone 5: Central District

Subtask 1.6.6 – Zone 6: South District (western portion)

Subtask 1.6.7 – Zone 7: RC Swamp (1 day for SHWE)

Subtask 1.7 – Professional Survey Data Collection: Professional survey (by a PSM) will be required for structures whose vertical elevation information has been identified as unavailable or unknown or at locations where cross section information is needed. This scope includes collecting professional survey for the following items across the entire watershed:

- Up to 7.1 miles of cross section (\$16/ Linear Foot)
- Up to 30 Culvert Crossings (~\$1,700/ Culvert)
- Up to 5 Pond Drop Structures (~\$2,500/ Drop)
- Up to 5 Weir Structures (~\$1,400/ Weir)

- Up to 5 Storm Sewer Pipes (~\$1,700/ Pipe)
- Up to 10 Bridges (~\$10,500/Bridge)
- Up to 21 SHWEs (\$1,300/SHWE)

The preliminary locations of the cross sections, and how length of cross sections needed were estimated, is shown in **Figure 2**. During the model development efforts under **Task 1.4**, these cross section locations and limits will be redefined.

Subtask 1.8 – Field Data Post Processing: Following the completion of the field acquisition efforts above, the data will be reviewed and incorporated into a survey geodatabase. A feature will be drawn at each location visited and will have fields populated with the information that was collected during the field visits. The feature will also be hyperlinked to the original field notes and photos that were collected. This geodatabase will also act as a QC tool to identify items that may need a second visit before incorporating the data into the model. After the survey geodatabase is completed and QC'd, the information will then be migrated into the model geodatabase.

Subtask 1.9 – Boundary Conditions: This task involves coordinating with CFTOD to obtain the available information for the two boundary locations: the twin 48-in pipes (V-6-A) and from S-40 to Lake Russell. These boundary conditions will be confirmed and/or revised based on new available information. Geosyntec will take the lead on this task and will research available information for these areas including FEMA FIRMS, Lake Atlas/Index information for Lake Russell, USGS information, etc. to establish updated boundary conditions. This task is not included in SH's scope of work.

TASK 2. Modeling

Subtask 2.1 – Curve Number (CN) Lookup Table: SH will develop the CN and Impervious lookup tables to be used for both existing and future land use conditions. The data will be comprehensive and will be used across the CFTOD (i.e., for each zone).

Subtask 2.2 – Time of Concentration (TC): The TCs will be calculated using the TR-55 method for each developed basin. The TC flow paths will be drawn using GIS tools and divided into the different flow component segments: overland sheet flow, shallow concentrated flow, and channel flow. Sheet flow length will be limited to 100 feet, after which it will be assumed to become shallow concentrated flow. An assumed flow velocity of 2.5 fps will be used for flow in channels and pipes. A minimum TC of 10 minutes will be used for any basins whose calculated time is less than 10 minutes. The developed TC flow paths will be provided within the project geodatabase. This task only includes developing and calculating TCs for newly developed basins. TCs taken from existing data or from permit files will be taken as-is with limited back checking and revisions.

Subtask 2.2.1 – Zone 1: North District (western portion)

Subtask 2.2.2 – Zone 2: Whittenhorse Creek

Subtask 2.2.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.2.4 – Zone 4: RC NCA

Subtask 2.2.5 – Zone 5: Central District

Subtask 2.2.6 – Zone 6: South District (western portion)

Subtask 2.2.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.3 – Node Storage Development: The stage-area relationships for the associated nodes will be developed based on the project DEM using GIS tools. Typically, the storage information for permitted ponds stop at the top of the pond berm. This task includes calculating the additional storage within the basin for

when stages exceed the pond bank elevation. This task also includes developing storage exclusion polygons for channels links within the model. Stormwise calculates the storage within channels based on cross section data, so the exclusion polygons define the areas where storage will be attributed to the channel to ensure that this storage volume is not duplicated. The exclusion polygons will be defined by the horizontal limits of the channel cross sections used in the channel links.

Subtask 2.3.1 – Zone 1: North District (western portion)

Subtask 2.3.2 – Zone 2: Whittenhorse Creek

Subtask 2.3.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.3.4 – Zone 4: RC NCA

Subtask 2.3.5 – Zone 5: Central District

Subtask 2.3.6 – Zone 6: South District (western portion)

Subtask 2.3.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.4 – Initial Conditions: The initial conditions will be associated with the NWL for either the canals or Creek which will be provided by CFTOD when controlled by their water control structures. Ponds shall start at their NWL based on the permit documentation collected during previous tasks. This scope of work assumes that a drawdown analysis will not be conducted and the initial stages from NWL based on the permit documents will not be modified to address initial flows. In natural areas where data is not available to establish the initial conditions, either LiDAR and/or environmental indicators will be used establish the starting elevations.

Subtask 2.4.1 – Zone 1: North District (western portion)

Subtask 2.4.2 – Zone 2: Whittenhorse Creek

Subtask 2.4.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.4.4 – Zone 4: RC NCA

Subtask 2.4.5 – Zone 5: Central District

Subtask 2.4.6 – Zone 6: South District (western portion)

Subtask 2.4.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.5 – Channel Parameterization: This task includes cutting channel cross sections from the LiDAR, reviewing sections, combining sections with survey data, and assigning Manning's values. Canal cross sections will use bottom elevation information provided by CFTOD and tie to available LiDAR information. Cross sections will be developed to be sufficient to capture modeled storms. The channels will not assume vertical wall unless explicitly approved by CFTOD.

Subtask 2.5.1 – Zone 1: North District (western portion)

Subtask 2.5.2 – Zone 2: Whittenhorse Creek

Subtask 2.5.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.5.4 – Zone 4: RC NCA

Subtask 2.5.5 – Zone 5: Central District

Subtask 2.5.6 – Zone 6: South District (western portion)

Subtask 2.5.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.6 – Bridge Parameterization: Properly conditioned bridge curves will be developed for each bridge included in the model. The bridge curve development will be conducted using HEC-RAS and the resultant rating curves will be imported into Stormwise. The HEC-RAS model used to develop the rating curves will be provided to CFTOD as part of the deliverables.

Subtask 2.6.1 – Zone 1: North District (western portion)

Subtask 2.6.2 – Zone 2: Whittenhorse Creek (assumed 0 bridges in this zone)

Subtask 2.6.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.6.4 – Zone 4: RC NCA

Subtask 2.6.5 – Zone 5: Central District

Subtask 2.6.6 – Zone 6: South District (western portion)

Subtask 2.6.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.7 – Overland Flow Weir Parameterization: This task includes cutting overland flow weir cross sections from the LiDAR, reviewing sections, and assigning the appropriate discharge coefficient. In specific locations, some overland flow weirs will be better represented as short channels with a high Manning's value.

Subtask 2.7.1 – Zone 1: North District (western portion)

Subtask 2.7.2 – Zone 2: Whittenhorse Creek

Subtask 2.7.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.7.4 – Zone 4: RC NCA

Subtask 2.7.5 – Zone 5: Central District

Subtask 2.7.6 – Zone 6: South District (western portion)

Subtask 2.7.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.8 – Model Setup and Initial Simulations: This task includes the creation of the Stormwise model by exporting the data from the project geodatabase. This also includes importing the soils, existing land use and future land use into the model. Using the process polygons feature within Stormwise, the correlation of the soils and land use within each basin will be developed. Modifications to the model parameters will be completed to ensure that the model is executable. This also includes setting up simulations for the 1000 year/72-hour storm event and a no rainfall event.

Subtask 2.8.1 – Zone 1: North District (western portion)

Subtask 2.8.2 – Zone 2: Whittenhorse Creek

Subtask 2.8.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.8.4 – Zone 4: RC NCA

Subtask 2.8.5 – Zone 5: Central District

Subtask 2.8.6 – Zone 6: South District (western portion)

Subtask 2.8.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.9 – Model QC, Debug and Stabilization: This is an iterative process to develop a stable model that is representative of existing conditions. This task includes developing level-pool floodplains for the 1000 year/72-hour simulation. The following potential issues based on the initial simulations will be reviewed and addressed:



- Continuity Error (preferably less than 5%)
- Inadequate Simulation Time
- Flow Reversals or Sudden Change
- Instability
- Significant Initial Flows
- Node and Cross Section Extrapolations
- Missing Interconnections (glass walls)

Changes made to address these potential issues will be completed in the model and project geodatabase.

Subtask 2.9.1 – Zone 1: North District (western portion)

Subtask 2.9.2 – Zone 2: Whittenhorse Creek

Subtask 2.9.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.9.4 – Zone 4: RC NCA

Subtask 2.9.5 – Zone 5: Central District

Subtask 2.9.6 – Zone 6: South District (western portion)

Subtask 2.9.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.10 – Preliminary Model Simulations: After the model QC efforts are complete, the following storm events will be developed and simulated:

- 10 Year/72 Hour Storm
- 25 Year/72 Hour Storm
- 50 Year/72 Hour Storm
- 100 Year/72 Hour Storm
- 500 Year/72 Hour Storm
- 1000 Year/72 Hour Storm

All simulations will use the 72-hour SFWMD rainfall distribution. The rainfall amounts for the 10, 50 and 100-year storms will come from the CFTOD rainfalls identified in the LDR and the 25-year will be interpolated based on these values. The 500 and 1000-year storms will use the rainfall values from NOAA Atlas 14 Rainfall Data. A table on the different rainfall amounts and source will be provided to CFTOD for approval prior to the simulation setup. The initial setup of the simulations will be completed during the development of the Zone 1 model. The fees associated with other zones relate to reviewing the model results.

Subtask 2.10.1 – Zone 1: North District (western portion)

Subtask 2.10.2 – Zone 2: Whittenhorse Creek

Subtask 2.10.3 – Zone 3: East District (not included in SH Scope)

Subtask 2.10.4 – Zone 4: RC NCA

Subtask 2.10.5 – Zone 5: Central District

Subtask 2.10.6 – Zone 6: South District (western portion)

Subtask 2.10.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 2.11 – Model Calibration and Verification: After the completion of the initial modelling efforts for each zone and the updated model for the entire District is available, calibration efforts will begin. The model will be calibrated and verified using two (2) different rainfall events. SH will work with CFTOD to discuss which storms shall be used for this effort. After the storms are decided, the available NEXRAD rainfall data, stream gages and known high water locations will be identified and collected. The calibration rainfall event will be simulated first and, if necessary, the model parameters will be adjusted, and the model will be rerun to evaluate the results against the available measured data. The calibrated model will then be verified using the second rainfall event. The following efforts will be conducted under this task:

- Setup of Rainfall Events
- Simulate Calibration Storm
- Address Instability Concerns
- Plot Level Pool Floodplains
- Review Results and Compare to Measured/Observed Stages
- Evaluate and Revise Model Parameters
- Conduct Efforts for Verification Storm



Calibration Parameters: These may include the following:

- Amil Gates Rating Curves
- Peak Rate Factor
- Runoff Parameters (CN Assumptions)
- Channel Manning's Values
- Initial Abstraction / Initial conditions

Calibration Metrics: Success of calibration will include statistical evaluation of the model results including the following:

- | | |
|--|---|
| <ul style="list-style-type: none"> ▪ Correlation Coefficient (R) ▪ Coefficient of Determination (R²) ▪ Mean Error (ME) | <ul style="list-style-type: none"> ▪ Mean Absolute Error (MAE) ▪ Root Mean Square Error (RSME) ▪ Nash-Sutcliffe Model Efficiency Coefficient (N-S) |
|--|---|

Changes made to the model parameters will be completed in the model and project geodatabase.

Subtask 2.12 – Final Model Scenario Setup and Simulation: Using the final calibrated model, four (4) different scenarios will be developed within the Stormwise model:

1. Existing Land Use with Historical Offsite Tributary Flows
2. Existing Land Use with Current Offsite Tributary Flows
3. Future Land Use with Historical Offsite Tributary Flows
4. Future Land Use with Current Offsite Tributary Flows

The simulations setup during **Subtask 2.10** will be simulated and the model results will be tabulated.

TASK 3. Floodplain Mapping

Using the model results from the Future Land Use with Current Offsite Tributary Flows, floodplains will be developed for the 100, 500 and 1000-year storm events. The floodplain mapping will generally follow FEMA criteria which will include transition areas and be cleaned (GIS smoothing, processing, removal of spackling, etc.). A flood elevation will be established for each developed floodplain. These floodplain delineations will be limited to areas within CFTOD. Separate map documents will be developed for the three (3) floodplains.

TASK 4. Project Management

Subtask 4.1 – Schedule: Within ten (10) business days after the Notice-to-Proceed is received, a detailed project schedule identifying dates of the project deliverables will be provided to CFTOD. Throughout the course of the project impacts to the schedule will be coordinated with CFTOD and after approval an updated schedule will be developed.

Subtask 4.2 – Progress Meetings: Meeting minutes will be prepared and submitted to CFTOD for meetings held regarding this project. This task assumes attending one (1) project kickoff meeting and up to 36 bi-weekly progress meetings. These meetings are assumed to primarily be in person at CFTOD's office unless otherwise approved by CFTOD.

Subtask 4.3 – Stakeholder Coordination: SH will attend one (1) coordination meeting per zone with the major stakeholders during the data collection efforts. After the model results are finalized, one (1) additional meeting will be held to present the results to the major stakeholders. This task also includes up to six (6) additional meetings with the stakeholders for a total of fourteen (14) meetings. In addition, up to one (1) formal public meeting will be held at the completion of the project. This includes supporting CFTOD with the preparation of exhibits and meeting materials, note taking/documentation and limited follow up



service. SH will attend and support CFTOD on up to one (1) presentation to CFTOD's senior leadership and Board of Supervisors.

Subtask 4.4 – Monthly Progress Reports/Invoices: Project invoices will be submitted monthly for the work performed during each calendar month showing the current month's percent complete on each task. Invoicing will be accompanied by a brief description of the work effort completed during the billing period.

Subtask 4.5 – Intermediate Reviews and Submittal Logs: After completion of a major task, the native files will be provided to CFTOD for review. These files will include the project GIS geodatabase, Stormwise model file(s), project library, calculations and other files to facilitate CFTOD's review. Reviews will be done incrementally at various stages within each zone so CFTOD can review components of the project prior to the draft deliverables. Review/submittal logs will be developed for each zone so comments and responses can be tracked through the course of the project.

Subtask 4.6 – Quality Assurance/Control: A QA/QC plan will be developed and adopted early on in the project to develop a product that is complete and appropriate to the purposes of the scope. QC will be conducted and documented throughout the various stages.

Subtask 4.6.1 – Task 1: Data Collection

Subtask 4.6.2 – Task 2: Modeling

Subtask 4.6.3 – Task 3: Floodplain Mapping

Subtask 4.7 – Draft Deliverables: Deliverables will be submitted for each zone after the completion of **Subtask 2.10**. The draft deliverables will include the project geodatabase and model file, libraries of cataloged permits and other supporting data, all hydraulic calculations and a brief submittal memorandum. This memo will include discussions of the data collected and model development with the intention to be included in the Watershed Model Update Report.

Subtask 4.7.1 – Zone 1: North District (western portion)

Subtask 4.7.2 – Zone 2: Whittenhorse Creek

Subtask 4.7.3 – Zone 3: East District (not included in SH Scope)

Subtask 4.7.4 – Zone 4: RC NCA

Subtask 4.7.5 – Zone 5: Central District

Subtask 4.7.6 – Zone 6: South District (western portion)

Subtask 4.7.7 – Zone 7: RC Swamp (not included in SH Scope)

Subtask 4.8 – Revised Draft Deliverables: This task includes providing responses and addressing CFTOD's comments on the draft deliverables for each zone. SH will submit a revised deliverable to CFTOD for confirmation before moving on to a new zone.

Subtask 4.8.1 – Zone 1: North District (western portion)

Subtask 4.8.2 – Zone 2: Whittenhorse Creek (not included in SH Scope)

Subtask 4.8.3 – Zone 3: East District

Subtask 4.8.4 – Zone 4: RC NCA

Subtask 4.8.5 – Zone 5: Central District

Subtask 4.8.6 – Zone 6: South District (western portion)

Subtask 4.8.7 – Zone 7: RC Swamp (not included in SH Scope)



Subtask 4.9 – Draft Watershed Model Update Report: After the model calibration efforts and the completion of the floodplain mapping, the Draft Master Watershed Drainage Model Update Report deliverable will be submitted. This will include the final model results for the four (4) different scenarios, the results of the model calibration, and the delineated floodplains. This will also include the comparison of the model results to the latest FEMA Floodplain Maps, FEMA effective model and FIS. Discrepancies, greater than 0.5 feet, between the model results and FEMA will be identified and an explanation will be included. The draft deliverable will include updates to the project geodatabase, model file, permit libraries, hydraulic calculations and the Draft Master Watershed Model Update Report. The report will be a combination of the previous submittal memos as well as a detailed summary of the calibration process and stage deviations from the current model. The report will include summary tables of the model results for each scenario and a comparison of the model predicted discharge from S-40 and the permitted allowable amount for the 10-year storm event.

Subtask 4.10 – Final Watershed Model Update Report: Due to the intermediate reviews and addressing CFTOD's comments on previous draft deliverables, this task assumes addressing comments on the Draft Watershed Model Update Report, exhibits, and the electronic deliverables.

Subtask 4.11 – GWIS and Stormwise Demonstration: SH will provide an on-site demonstration of and training in using the GWIS geodatabase and the interface within Streamwise to CFTOD staff. SH will provide a one person for one full day at the CFTOD's office. The demonstration will provide an overview of the GWIS geodatabase, related tables, geodatabase schema, and the conversion to Stormwise. This does not include the development of a formal presentation but an agenda will be prepared and provided to CFTOD's staff prior to the on-site session. Printed material, with descriptions of key items/steps, will be provided to CFTOD's staff during the demonstration to keep for future reference. This task includes the time for prepping the agenda and printed material.



3.0 PROPRIETARY INFORMATION

SH shall turn over final modeling deliverables including GIS File Geodatabase, Stormwise model and all associated calculations used to develop the model as indicated. The final model shall be CFTOD's sole property and SH shall consider it proprietary to the CFTOD. The model, supporting documentation and calculations used in its creation shall not be copied, distributed or reproduced in whole or in part, nor passed to any third party without CFTOD's explicit permission to do so. Any request for information from third parties regarding this model, shall be directed to the CFTOD, where a public records request can be completed.

4.0 COMPENSATION

The compensation to be paid to SH for providing the services described in the above scope of work shall be on a "Lump-Sum" basis. The amount is based on our estimated budget for performing these services, which includes the labor and other direct costs necessary to complete the work scope described in the proposal, as detailed in **Table 1**. Lump sum project efforts will be billed to CFTOD on a task percent complete basis, based on the major tasks defined in **Table 1**. Invoices will be structured to list project tasks with accomplished percent complete, then corresponding budget invoiced, overall budget expended and overall budget remaining. A separate status report will be provided to the CFTOD project manager providing a narrative of work accomplished supporting the invoice.

5.0 CLOSURE

We sincerely appreciate the opportunity to work with the CFTOD. Should you have any questions or comments regarding this proposal, please do not hesitate to contact us directly at 407.679.3001.

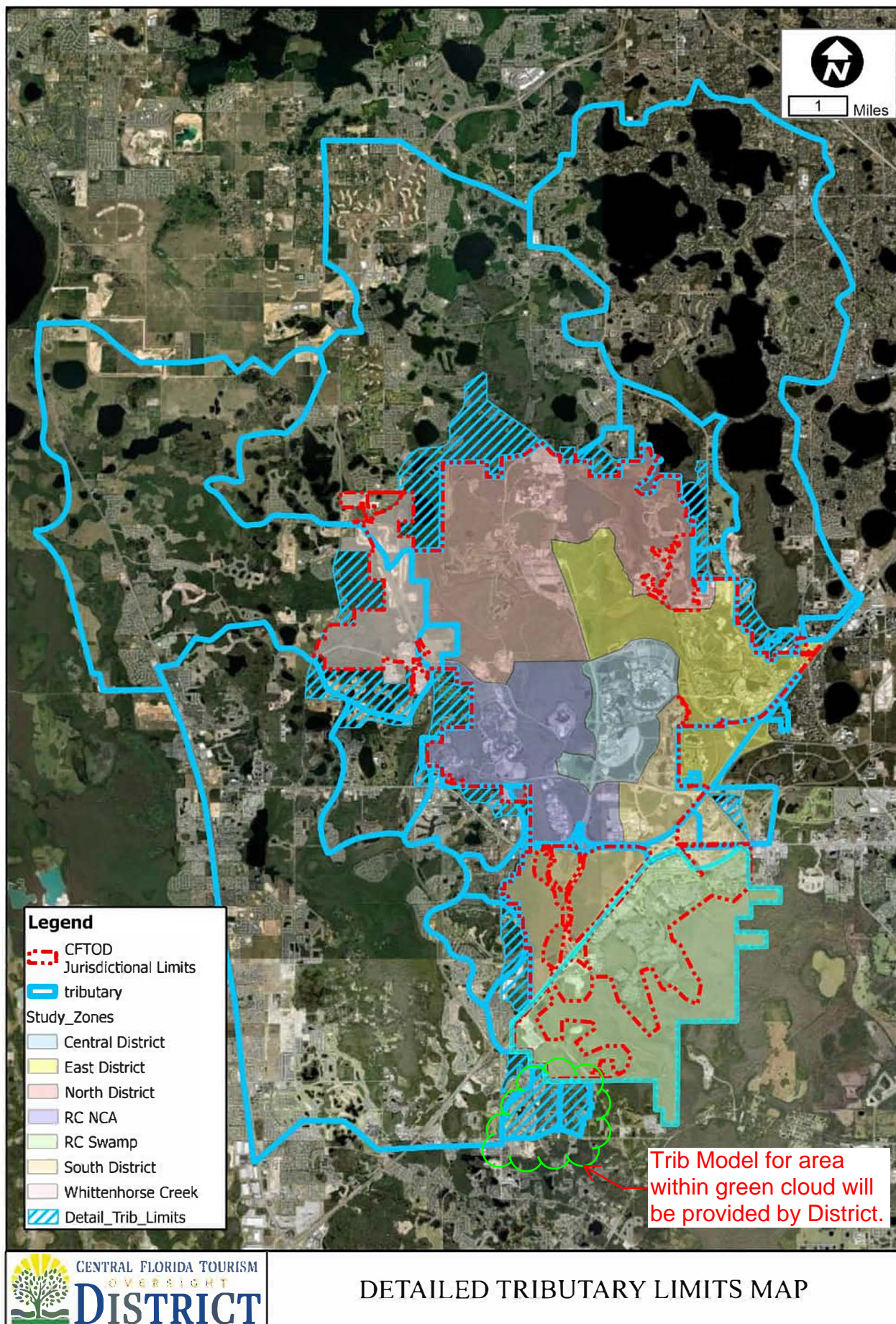
Sincerely,

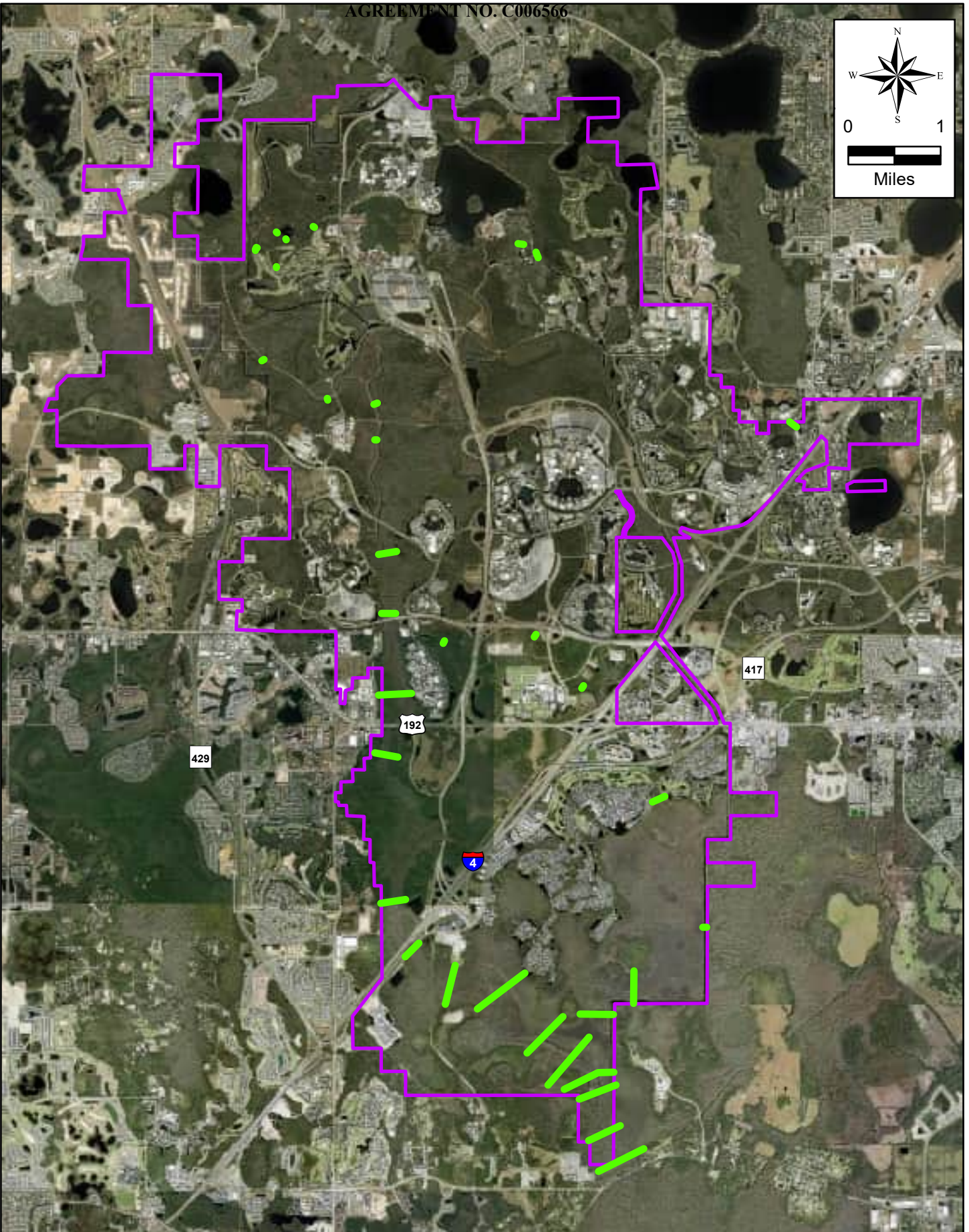
Singhofen Halff, Inc.

Brennen Crenshaw, P.E.
Team Leader
Project Manager

Mark Trolio, P.E., CFM
Vice President / Technical Leader
Principal in Charge

FIGURE 1





CFTOD MASTER
DRAINAGE MODEL
UPDATE

CROSS SECTION
LOCATIONS

FIGURE:
2

October 17, 2024

Brennen Crenshaw, PE - Team Leader
Singhofen Halff
11723 Orpington Street
Orlando, FL 32817

Subject: **Master Drainage Model Update (Contract No. C006566)**
Central Florida Tourist Oversight District

Dear Mr. Crenshaw:

Geosyntec Consultants, Inc. (**GEOSYNTEC**) is pleased to provide this proposal to Singhofen Halff (**SH**) for providing our services for the above referenced project.

PROJECT BACKGROUND AND OBJECTIVES

The Central Florida Tourism Oversight District (CFTOD) (hereinafter “District”, “Owner” and “CFTOD”) is a Special Taxing District that serves as a local government entity. One of the primary responsibilities of the District is to maintain flood control of the master drainage system which serves approximately 24,500 acres (~38 square miles) within the District’s boundary, as well as the adjacent developments of Golden Oak and Celebration. In addition, approximately 123 square miles of offsite tributary area drain to the District’s master drainage system from adjacent Orange, Osceola, Lake and Polk Counties. The master drainage system is comprised of approximately 67 miles of canals, as well as, portions of natural creek and swamp topography, which include Whittenhorse Creek, Davenport Creek and Reedy Creek. The system is controlled by 25 primary water control structures, including weirs and amil gates.

GEOSYNTEC is pleased to support **SH** to provide the CFTOD with this scope of work to complete the Master Drainage Model Update. The District has a long history of modeling the master drainage system and is responsible for maintaining and updating the master drainage model for its flood control system. This project serves as a major update to the model and consists of three primary objectives. The first objective is to migrate the District’s model to more current modeling software, moving away from an obsolete customized version of the UNET program and the HEC-1 program and to update more recent regional models that were developed utilizing the Interconnected Channel and Pond Routing program (ICPR Versions 3 and 4). Given the widespread agency and industry acceptance and prior District testing regarding capabilities and the ability to accurately model amil gates, the District is transitioning their model to Stormwise (fka ICPR4) and a GIS platform. The second objective is to update the model to adequately reflect the significant development that has occurred within the tributary areas and update onsite areas to future land use conditions to maintain consistency with the District’s Comprehensive Plan. The final objective is to convert the model from a local datum to State Plane/NAVD 88.

This Project will be split into seven (7) zones as shown in the table below. The zones are interconnected; therefore each zone will build upon the previous zone. However, each zone will have separate deliverables and check points.

Zone No.	Zone Title
1	North District
2	Whittenhorse Creek
3	East District
4	RC NCA
5	Central District
6	South District
7	RC Swamp

GEOSYNTEC will support SH to provide the enclosed scope of services for Zones 3 (East District) and 7 (RC Swamp) in their entirety, and the eastern approximately 50% of Zones 1 (North District) and 6 (South District).

The work for each zone will consist of two phases: Data Collection Phase and Modeling Phase. As part of the Data Collection Phase, ESRI ArcGIS will be used to delineate and georeference 700+ drainage basins, establish existing and future land uses, and determine soil properties. All areas within the District will be modeled to a high level of detail including incorporation of existing regional drainage studies for the BVD Corridor, L-403 Basin, and World Drive North. The project will also include analysis of Offsite Tributary Basins to establish updated flow conditions. Model data for the Offsite Tributary areas will not be as detailed as onsite. The Modeling Phase will consist of detailed, one-dimensional modeling of the entire master system for both existing and future conditions, including all canals and control structures. The end result will include a geo-referenced model with consistency between Stormwise and GIS that will be used to establish revised hydraulic stages and floodplains for the canals and modeled waterbodies. The results will be mapped to show final flood elevations and floodplain extents.

It is noted that GEOSYNTEC will support SH through preliminary model simulations for Zones 3 & 7 and the eastern 50% of Zones 1 & 6. SH will be responsible for preparing model data for the other zones and, ultimately, calibration of the final combined model and floodplain mapping.

GEOSYNTEC in support of SH believes that the most efficient approach to the project will be to complete each zone in parallel. Zone 1 will act as a pilot study to demonstrate our overall approach and provide deliverables for review and approval of the District. Once approved, remaining zones will be completed by working within two (2) zones concurrently. Each zone will still have separate deliverables and intermediate reviews during the course of the project. Once a deliverable is reviewed and approved by CFTOD, the zone will be migrated with the previously approved zones.

PROFESSIONAL ENGINEERING SCOPE OF SERVICES

GEOSYNTEC shall perform the scope of engineering services as detailed below. Note that the task sequencing and numbering follows the format designated by prime consultant SH.

TASK 1. DATA COLLECTION

Subtask 1.1 – Existing Model Data Collection & Migration: Existing model data developed within the District as well as the offsite tributaries will be collected and reviewed. The model data collected within the District will be migrated into Stormwise and a model geodatabase. The migrated model network will be used as a baseline to identify data gaps within each zone. This will allow GEOSYNTEC to focus data collection efforts to fill in the model gaps within the zones. The information from the offsite tributaries will be utilized to develop the limited offsite detailed modeling as well as boundary conditions. Coordination with the following entities will be required to collect this data:

- Onsite Model Data
 - CFTOD
 - WDI
 - FDOT
- Offsite Model Data
 - Orange County
 - Osceola County
 - Lake County
 - Polk County

- FDOT
- FEMA

Subtask 1.2 – GIS Data Collection: GIS data that will be used for model setup and hydrologic calculations will be collected, reviewed and cataloged under this task. Each item will be cataloged to include the source and the date certain, if applicable, of the collected information. Under this task and an in-depth review of each of the items is conducted to identify concerns within the source data. Generally, collected GIS data is used at a widescale using GIS processing tools throughout the model development. Doing this in-depth review now allows us to address issues with the sources early on to avoid duplicating work. Majority of the time spent on this task is that review process and below are GIS datasets that will be collected with a description of the review task:

- **Aerial Imagery:** Available aerial imagery will be collected from CFTOD and FDOT.
- **Topographic Information:** The 2018-2019 LiDAR-based digital elevation models (DEM) for Orange and Osceola Counties will be collected from the US Geological Survey (USGS) Florida Statewide LiDAR Project. In addition, LiDAR data within the district will be collected from CFTOD. The most recent LiDAR information within the district will be reviewed based on the aerial imagery. This review entails panning through the model zones, and tributaries, we are responsible for to identify potential topographic voids to be excluded from hydrologic calculations. These topographic voids include, but not limited to, errors within the LiDAR that show buildings being lower than the surrounding area or significant elevation differences within the same pond bottom. This scope of work does not include modifying the LiDAR information to rectify the topographic voids.
- **USGS National Hydrography Dataset:** The USGS National Hydrography Dataset (NHD) waterbodies and flowlines will be reviewed to help identify offsite watershed boundaries.
- **Existing Land Use:** Land use information will be collected from CFTOD and SFWMD. The collected information will be compared to aerial imagery to identify discrepancies and revised to better reflect current conditions. The original source files and the modified land use will be provided in the project deliverable. For all waterbodies, 100% direct impervious shall be applied to normal water level or limits of water on aerial.
- **Future Land Use:** The latest future land use file will be collected from CFTOD. The future land use will be reviewed and revised to be incorporated into Stormwise. In general, the future land use is categorized into three categories of water, conservation or developable land. The only area to be considered conservation is the Water/Wildlife Management Conservation Area (WMCA). The land use of water, open space, woods, etc., within the WMCA limits shall be assigned. For all waterbodies, 100% direct impervious shall be applied to normal water level or limits of water on aerial. All remaining areas are to be considered as developable areas and will either use 80% impervious for future buildout or if the existing land use exceeds 80%, 100% impervious shall be used for “buildout”.
- **Existing Soils:** Soil information will be collected from Natural Resource Conservation Services (NRCS). The collected information will be compared to aerial imagery and existing land use to identify discrepancies and revised to better reflect current conditions. The original source files and the modified soils will be provided in the project deliverable.
- **Other CFTOD GIS Basemap Data:** Supplemental GIS information will also be collected for CFTOD that can be used for modeling purposes as well as report documentation. This information may include stormwater infrastructure data that identifies the location of the drainage structures within the district. This also includes the model zones, streets, jurisdictional boundaries, tributaries, existing Time of Concentration (TC) paths, etc.

Subtask 1.3 – Reference Documents Collection and Cataloging: Reference Documents (RefDocs) will be collected and cataloged per zone. RefDocs include permits, as-builts, construction plans, historical flooding photos, and old survey files. This will include collecting the permit documents from SFWMD and CFTOD. Each zone will have its own folder where inside that folder RefDocs will be cataloged and provided in individual folders. A spreadsheet per zone will be developed that includes project name, source and type of each RefDoc.

Subtask 1.3.1 – Zone 1: North District (eastern portion)

Subtask 1.3.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 1.3.3 – Zone 3: East District

Subtask 1.3.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 1.3.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 1.3.6 – Zone 6: South District (eastern portion)

Subtask 1.3.7 – Zone 7: RC Swamp

Subtask 1.4 – Model Network Development and Data Capture: This task involves the development of the Stomwise model ICPR_Nodes, ICPR_Links, Basins, & ICPR_Xsects feature classes within the project geodatabase. **GEOSYNTEC** will develop the Model Network and capture the relevant parameter data under this task. In areas that have existing model network, this task includes review of the placement and verify the model inputs based on the collected reference documents. This includes developing the detailed portion on the offsite tributaries identified by CFTOD in Figure 1.

- ICPR_NODE: Nodes will be used to represent ponds that are at a minimum of one half (0.5) acre or in key depressional areas (i.e., wetlands). Ponds that are less than one half (0.5) acre will be included within the network when the pond is part of a larger conveyance system. This also includes nodes along the creeks and canals.

This task only includes the spatial placement of nodes and limited data capture. Complete parameterization of the nodes (e.g., stage-area relationships) will be completed during a subsequent task. Information on sub-type, SHWE, NWL, DHWE, and source information will be documented in the ADDL_MODEL_DATA table. The folder containing the reference document will be hyperlinked to the appropriate model network element via the HYPERLINK table.

All nodes shall have a consistent naming convention, using the basin name first to identify the waterway to which the node drains. The nodes associated with a channel or the Creek shall be named according to the distance in miles upstream of the junction point (eg. C4-00.21). The furthest downstream point for the canals or Creek is to equal 0.00. All nodes names will be followed with “_N” (eg. C4-00.21_N).

- ICPR_LINK: Links will be utilized to provide the conveyance between nodes and shall represent channels, outfall structures, bleeders, pipes, etc. This task includes conducting the hydraulic data capture as well as the spatial development. All hydraulic feature data related to the Model Network will be collected and input into the project geodatabase in the applicable tables (e.g. PIPE_BARREL, WEIR, etc.). When applicable, bleeders will be included within the model network. The source of the information and subtypes will be documented in the ADDL_MODEL_DATA table. The folder containing the reference document will be hyperlinked to the appropriate model network element via the HYPERLINK table. All links shall have a consistent naming convention, using the basin name first to identify the waterway to which the link serves. The only exception shall be named structures like the amil gates that

shall use their structure name. The assumptions and the methodology for the development of each link type are as follows:

- Channels: Channel links will be used to represent the rivers, streams, channels, canals, ditches, and swales within the primary drainage systems of the watershed. Cross section locations will be established and source information (existing data, proposed survey, DEM, etc.) will be identified. All canals and Reedy Creek shall be modeled using channels and cross sections. Only the spatial representation of the channels and cross sections will be developed at this time as the parameterization will be conducted in a later task. The cross sections will be drawn looking downstream from left to right. All channel link names will correspond to the canal or creek name that it represents and will be followed with “_C”.
- Pipes: Pipe data for new or revised pipes will be captured from the collected record drawings, survey, construction plans, and infrastructure databases. This includes populating the pipe geometry, size, length and invert based on the RefDocs. Field verification and survey needs, if any, will be identified. All pipe link names will be followed with “_P”.
- Drop Structures: Drop structure links are utilized to represent weir and pipe systems (i.e., control structures) and shall be developed in the same way as the pipes. This includes populating the pipe and weir information based on the RefDocs. The weir information will include the geometry, size, invert and control elevation. Field verification and survey needs, if any, will be identified. All drop structure link names will be followed with “_D”.
- Weirs: Weir links are separated into two categories, structural and overland flow. Structural weirs represent man-made structures and will be developed in the same way as pipes and drop structures. Overland weirs represent flow over pond banks, road crossings, or other natural locations. Information for overland weirs will come from either permitted/asbuilt information, survey, or LiDAR. In cases where the information is to be developed based on LiDAR, only the spatial representation of the overland flow weir will be developed at this time as the parameterization will be conducted in a later task. All weir link names will be followed with “_W”.
- Bridges: Bridge links will only be developed spatially at this time as all bridge information will be developed within HEC-RAS and imported into the Stormwise model as a rating curve. Bridge curve development is part of a later task. All rating curve links that represent a bridge will have “_B” following the name.
- Rating Curves: Rating curves will be used to represent pump stations and the amil gates within the watershed. Pump stations and amil gates are typically named structures and as such the link name will use the structure name. In the case what the rating curve represents is not a named structure, the naming convention will be based on the basin name with “_R” at the end. **SH** will provide **GEOSYNTEC** the methodology to develop the rating curves for the gates used in the model.
- ICPR_BASIN: Arc-Hydro tools will be utilized to develop initial subbasins based on the collected DEM. Existing basins will be reviewed against the Arc-Hydro derived basins and will be revised as necessary. Basins within topographic void areas or areas of new development will be delineated based on terrain data, aerials, plan, and permit information. This task only includes the spatial development of the basins at this time. This task also includes reviewing

and revising existing basins based on the new information collected in previous tasks. Parameterization of the basins will be completed during a subsequent task.

Subtask 1.4.1 – Zone 1: North District (eastern portion)

Subtask 1.4.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 1.4.3 – Zone 3: East District

Subtask 1.4.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 1.4.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 1.4.6 – Zone 6: South District (eastern portion)

Subtask 1.4.7 – Zone 7: RC Swamp

Subtask 1.5 – Field Data Acquisition Needs and Approach Development: Upon completion of the above tasks, field verification will be required for structures with missing and/or conflicting information. **GEOSYNTEC** shall distinguish between field acquisition needs including field verification/measurement of structures, resolution of conflicting data, observations of drainage patterns, and professional survey by a PSM. This task includes the development of the field data acquisition plan and setting up the prioritization to fit within the agreed upon survey budget and provide the data necessary for the existing conditions model development. **GEOSYNTEC** will first coordinate with CFTOD before any survey or field visits are conducted. This will allow **GEOSYNTEC** to avoid using up field data acquisition budget for locations that CFTOD can confirm/provide the proper data source. This task will also include the identification of key wetland locations for seasonal high-water elevations (SHWEs) to be collected by **SH** staff. These locations will also be prioritized and coordinated within CFTOD prior to any field visits. Once the field data acquisition plan is finalized and approved by CFTOD, **GEOSYNTEC** will develop a plan to optimally conduct each field visit. This will include coordinating with CFTOD and other entities to plan visits at locations where **GEOSYNTEC** staff will need to be granted access.

Subtask 1.5.1 – Zone 1: North District (eastern portion)

Subtask 1.5.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 1.5.3 – Zone 3: East District

Subtask 1.5.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 1.5.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 1.5.6 – Zone 6: South District (eastern portion)

Subtask 1.5.7 – Zone 7: RC Swamp

Subtask 1.6 – Field Measurement and Drainage Pattern Verification: Field visits will be conducted at locations where analyses of the existing datasets are inconclusive or do not provide information sufficient to determine drainage patterns. Two-person teams will visit these locations and look for drainage patterns, divides, and absence or presence of hydraulic or topographic features that may change boundaries. The findings will be documented for structures visited in the field and shall include documentation of location, alignment, condition, and digital photographs. Collection of elevation data nor confined space entry is not included as part of this task. **GEOSYNTEC** will conduct up to two (2) days of field reconnaissance with a two-person team for each zone they are solely responsible for (zones 3, 7) and one (1) day for each zone shared with **SH** (Zones 1 & 6), or a total of six (6) days plus prep time (assume 10 hours per person per day average). This scope of work assumes a day of coordination with a specialized team from **SH** that will identify/flag the SHWEs within identified wetlands.

Subtask 1.6.1 – Zone 1: North District (eastern portion)

Subtask 1.6.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 1.6.3 – Zone 3: East District

Subtask 1.6.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 1.6.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 1.6.6 – Zone 6: South District (eastern portion)

Subtask 1.6.7 – Zone 7: RC Swamp

Subtask 1.7 – Professional Survey Data Collection: NOT INCLUDED

Subtask 1.8 – Field Data Post Processing: Following the completion of the field acquisition efforts above, the data will be reviewed and incorporated into a survey only geodatabase. A feature will be drawn at each location visited and will have fields populated with the information that was collected during the field visits. The feature will also be hyperlinked to the original field notes and photos that were collected. This geodatabase will also act as a QC tool to identify items that may need a second visit before incorporating the data into the model. After the survey geodatabase is completed and QC'd the information will then be migrated into the model geodatabase.

Subtask 1.9 – Boundary Conditions: This task involves **GEOSYNTEC** coordinating through **SH** with CFTOD to obtain the available information for the two boundary locations: the twin 48-in pipes (V-6-A) and from S-40 to Lake Russell. These boundary conditions will be confirmed and/or revised based on new available information. **GEOSYNTEC** will take the lead on this task and will research available information for these areas including FEMA FIRMS, Lake Atlas/Index information for Lake Russell, USGS information, etc. to establish updated boundary conditions.

TASK 2. MODELING

Subtask 2.1 – Curve Number (CN) Lookup Table: NOT INCLUDED.

Subtask 2.2 – Time of Concentration (TC): The TCs will be calculated using the TR-55 method for each developed basin. The TC flow paths will be drawn using GIS tools and divided into the different flow component segments, overland sheet flow, shallow concentrated flow, and channel flow. Sheet flow length will be limited to 100 feet, after which it will be assumed to become shallow concentrated flow. An assumed flow velocity of 2.5 fps will be used for flow in channels and pipes. A minimum TC of 10 minutes will be used for basins that the calculated time was less than 10 minutes. The developed TC flow paths will be provided within the project geodatabase. This task only includes developing and calculating TCs for newly developed basins. TCs taken from existing data or from permit files will be taken as-is with limited back checking and revisions.

Subtask 2.2.1 – Zone 1: North District (eastern portion)

Subtask 2.2.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.2.3 – Zone 3: East District

Subtask 2.2.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.2.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.2.6 – Zone 6: South District (eastern portion)

Subtask 2.2.7 – Zone 7: RC Swamp

Subtask 2.3 – Node Storage Development: The stage-area relationships for the associated nodes will be developed based on the project DEM using GIS tools. Typically, the storage information for permitted

ponds stop at the top of the pond berm. This task includes calculating the additional storage within the basin for when stages exceed the pond bank elevation. This task also includes developing storage exclusion polygons for channel links within the model. Stormwise calculates the storage within channels based on cross section data, so the exclusion polygons define the areas where storage will be attributed to the channel to ensure that this storage volume is not duplicated. The exclusion polygons are defined by the horizontal limits of the channel cross sections used in the channel links.

Subtask 2.3.1 – Zone 1: North District (eastern portion)

Subtask 2.3.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.3.3 – Zone 3: East District

Subtask 2.3.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.3.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.3.6 – Zone 6: South District (eastern portion)

Subtask 2.3.7 – Zone 7: RC Swamp

Subtask 2.4 – Initial Conditions: The initial conditions will be associated with the NWL for either the canals or Creek which will be provided by CFTOD when controlled by their water control structures. Ponds shall start at their NWL based on the permit documentation collected during previous tasks. This scope of work assumes that a drawdown analysis will not be conducted and the initial stages from NWL based on the permit documents will not be modified to address initial flows. In natural areas where data is not available to establish the initial conditions, either LiDAR and/or environmental indicators will be used establish the starting elevations.

Subtask 2.4.1 – Zone 1: North District (eastern portion)

Subtask 2.4.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.4.3 – Zone 3: East District

Subtask 2.4.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.4.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.4.6 – Zone 6: South District (eastern portion)

Subtask 2.4.7 – Zone 7: RC Swamp

Subtask 2.5 – Channel Parameterization: This task includes cutting channel cross sections from the LiDAR, reviewing sections, combining sections with survey data, and assigning Manning’s values. Canal cross sections will use bottom elevation information provided by CFTOD and tie to available LiDAR information. Cross sections will be developed to be sufficient to capture modeled storms. The channels will not assume vertical wall unless explicitly approved by CFTOD.

Subtask 2.5.1 – Zone 1: North District (eastern portion)

Subtask 2.5.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.5.3 – Zone 3: East District

Subtask 2.5.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.5.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.5.6 – Zone 6: South District (eastern portion)

Subtask 2.5.7 – Zone 7: RC Swamp

Subtask 2.6 – Bridge Parameterization: Properly conditioned bridge curves will be developed for each bridge included in the model. The bridge curve development will be conducted using HEC-RAS and the resultant rating curves will be imported into Stormwise. The HEC-RAS model used to develop the rating curves will be provided to CFTOD as part of the deliverables.

Subtask 2.6.1 – Zone 1: North District (eastern portion)

Subtask 2.6.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.6.3 – Zone 3: East District

Subtask 2.6.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.6.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.6.6 – Zone 6: South District (eastern portion)

Subtask 2.6.7 – Zone 7: RC Swamp

Subtask 2.7 – Overland Flow Weir Parameterization: This task includes cutting overland flow weir cross sections from the LiDAR, reviewing sections, and assigning the appropriate discharge coefficient. In specific locations, some overland flow weirs will be better represented as short channels with a high Manning’s value.

Subtask 2.7.1 – Zone 1: North District (eastern portion)

Subtask 2.7.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.7.3 – Zone 3: East District

Subtask 2.7.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.7.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.7.6 – Zone 6: South District (eastern portion)

Subtask 2.7.7 – Zone 7: RC Swamp

Subtask 2.8 – Model Setup and Initial Simulations: This task includes the creation of the Stormwise model by exporting the data from the project geodatabase. This also includes importing the soils, existing land use and future land use into the model. Using the process polygons feature within Stormwise, the correlation of the soils and land use within each basin will be developed. Modifications to the model parameters will be completed to ensure that the model is executable. This also include setting up the simulations for the 1000 year/72 hour storm event and a no rainfall event.

Subtask 2.8.1 – Zone 1: North District (eastern portion)

Subtask 2.8.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.8.3 – Zone 3: East District

Subtask 2.8.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.8.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.8.6 – Zone 6: South District (eastern portion)

Subtask 2.8.7 – Zone 7: RC Swamp

Subtask 2.9 – Model QC, Debug and Stabilization: This is an iterative process to develop a stable model that is representative of existing conditions. This task includes developing level-pool floodplains for the

1000 year/72 hour simulation. The following potential issues based on the initial simulations will be reviewed and addressed:

- Continuity Error (preferably less than 5%)
- Inadequate Simulation Time
- Flow Reversals or Sudden Change
- Instability
- Significant Initial Flows
- Node and Cross Section Extrapolations
- Missing Interconnections (glass walls)

Changes made to address these potential issues will be completed in the model and project geodatabase.

Subtask 2.9.1 – Zone 1: North District (eastern portion)

Subtask 2.9.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.9.3 – Zone 3: East District

Subtask 2.9.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.9.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.9.6 – Zone 6: South District (eastern portion)

Subtask 2.9.7 – Zone 7: RC Swamp

Subtask 2.10 – Preliminary Model Simulations: After the model QC efforts are complete, the following storm events will be developed and simulated:

- 10 Year/72 Hour Storm
- 25 Year/72 Hour Storm
- 50 Year/72 Hour Storm
- 100 Year/72 Hour Storm
- 500 Year/72 Hour Storm
- 1000 Year/72 Hour Storm

All simulations will use the 72-hour SFWMD rainfall distribution. The rainfall amounts for the 10, 50 and 100-year storms will come from the CFTOD rainfalls identified in the LDR and the 25-year will be interpolated based on these values. The 500 and 1000-year storms will use the rainfall values from NOAA Atlas 14 Rainfall Data. A table on the different rainfall amounts and source will be provided to CFTOD for approval prior to the simulation setup. The initial setup of the simulations will be completed during the development of the Zone 1 model. The fees associated with other zones relate to reviewing the model results.

Subtask 2.10.1 – Zone 1: North District (eastern portion)

Subtask 2.10.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 2.10.3 – Zone 3: East District

Subtask 2.10.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 2.10.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 2.10.6 – Zone 6: South District (eastern portion)

Subtask 2.10.7 – Zone 7: RC Swamp

Subtask 2.11 – Model Calibration and Verification: NOT INCLUDED.

Subtask 2.12 – Final Model Scenario Setup and Simulation: NOT INCLUDED

TASK 3. FLOODPLAIN MAPPING – NOT INCLUDED

TASK 4. PROJECT MANAGEMENT

Subtask 4.1 – Schedule: Within ten (10) business days after the Notice-to-Proceed is received, a detailed project schedule identifying dates of the project deliverables will be provided to **SH**. Throughout the course of the project impacts to the schedule will be coordinated with **SH** and after approval an updated schedule will be developed.

Subtask 4.2 – Progress Meetings: Meeting minutes will be prepared and submitted to CFTOD for meetings held regarding this project. This task assumes attending one (1) project kickoff meeting and up to 30 bi-weekly progress meetings. These meetings are assumed to primarily be in person at CFTOD’s office unless otherwise approved by CFTOD.

Subtask 4.3 – Stakeholder Coordination: **GEOSYNTEC** will attend up to one (1) coordination meeting per zone (limited to Zones 1, 3, 6, 7) with the major stakeholders during data collection efforts. After the model results are finalized, one (1) additional meeting will be held to present the results to the major stakeholders. The task also includes up to three (3) additional meetings with stakeholders for a total of eight (8) meetings. This includes supporting **SH** with the preparation of exhibits and meeting materials, note taking/documentation and limited follow up service. **GEOSYNTEC** will attend and support **SH** on up to one (1) presentation to CFTOD’s senior leadership and Board of Supervisors.

Subtask 4.4 – Monthly Progress Reports/Invoices: Project invoices will be submitted monthly for the work performed during each calendar month showing the current month’s percent complete on each task. Invoicing will be accompanied by a brief description of the work effort completed during the billing period.

Subtask 4.5 – Intermediate Reviews and Submittal Logs: After completion of a major task the working files will be provided to **SH** for review. These files will include the project geodatabase, Stormwise model file, project library, calculations and other files to facilitate **SH** and CFTOD’s review. Reviews will be done incrementally at various stages within each zone so CFTOD can review components of the project prior to the draft deliverables. Review/submittal logs will be developed for each zone so comments and responses can be tracked through the course of the project.

Subtask 4.6 – Quality Assurance/Control: A QA/QC plan will be developed and adopted early in the project to develop a product that is complete and appropriate to the purposes of the scope. QC will be conducted and documented throughout the various stages for **GEOSYNTEC** assigned zone work.

Subtask 4.6.1 – Task 1: Data Collection

Subtask 4.6.2 – Task 2: Modeling

Subtask 4.6.3 – Task 3: Floodplain Mapping (NOT INCLUDED)

Subtask 4.7 – Draft Deliverables: Deliverables will be submitted to **SH** for each zone after the completion of Subtask 2.10. The draft deliverables will include the project geodatabase and model file, libraries of cataloged permits and other supporting data, all hydraulic calculations and a brief submittal memorandum. This memo will include discussions of the data collected and model development with the intention to be included in the Watershed Model Update Report.

Subtask 4.7.1 – Zone 1: North District (eastern portion)

Subtask 4.7.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 4.7.3 – Zone 3: East District

Subtask 4.7.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 4.7.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 4.7.6 – Zone 6: South District (eastern portion)

Subtask 4.7.7 – Zone 7: RC Swamp

Subtask 4.8 – Revised Draft Deliverables: This task includes providing responses and addressing CFTOD’s comments on the draft deliverables for each zone. **GEOSYNTEC** will submit to **SH** a revised deliverable to CFTOD for confirmation before moving on to a new zone.

Subtask 4.8.1 – Zone 1: North District (eastern portion)

Subtask 4.8.2 – Zone 2: Whittenhorse Creek (not included in GEOSYNTEC scope)

Subtask 4.8.3 – Zone 3: East District

Subtask 4.8.4 – Zone 4: RC NCA (not included in GEOSYNTEC scope)

Subtask 4.8.5 – Zone 5: Central District (not included in GEOSYNTEC scope)

Subtask 4.8.6 – Zone 6: South District (eastern portion)

Subtask 4.8.7 – Zone 7: RC Swamp

Subtask 4.9 – Draft Watershed Model Update Report: NOT INCLUDED.

Subtask 4.10 – Final Watershed Model Update Report: NOT INCLUDED.

Subtask 4.11 – GWIS and Stormwise Demonstration: NOT INCLUDED.

The consultant should note the following procedures to be adhered to during the contract.

1. Watershed Features will be stored and edited within the GIS geodatabase in accordance with the Southwest Florida Water Management District’s (SWFWMD) Geographic Watershed Information System (GWIS) geodatabase format, version 2.1.
2. The STORMWISE model (latest edition), will be the hydrologic/hydraulic model utilized to analyze the drainage systems for this study.
3. Engineering services related to project improvement alternative development, geotechnical investigations, environmental assessments, mitigation plans, or surveying of any jurisdictional wetlands are not included in this proposal.
4. All calculations, design parameters, and surveys shall be submitted in English Standard Units.
5. Copies of all back up data (i.e., time of concentrations, curve numbers, ICPR modeling, etc.) to develop and evaluate the existing, future, shall be provided to **SH** in digital format via online download with each submittal except for the final deliverables in which electronic deliverables will be provided on a formatted USB flash / hard drive.
6. Deliverables for the project will be provided electronically via online download or sharing of portable hard drive(s). No hardcopy deliverables are anticipated for the project.

*Master Drainage Model Update
Central Florida Tourist Oversight District
October 17, 2024
Page 13*

PROPRIETARY INFORMATION:

GEOSYNTEC shall turn over final modeling deliverables including GIS File Geodatabase, Stormwise model and all associated calculations used to develop the model as indicated. The final model shall be the CFTOD’s sole property and **GEOSYNTEC** shall consider it proprietary to the CFTOD. The model, supporting documentation and calculations used in its creation shall not be copied, distributed or reproduced in whole or in part, nor passed to any third party without CFTOD’s explicit permission to do so. Any request for information from third parties regarding this model, shall be directed to the CFTOD, where a public records request can be completed.

BUDGET ESTIMATE

GEOSYNTEC proposes to provide the services discussed herein for the following lump sum amount **\$529,304.03**.

Costs will be charged on a lump sum fee as noted in Attachment A in accordance with the terms and conditions specified herein and pursuant to our master services agreement with **SH**. The amount is based on our estimated budget for performing these services, which includes the labor and other direct costs necessary to complete the work scope described in the proposal, as detailed in Attachment A.

Lump sum project efforts will be billed to **SH** on a task percent complete basis, based on the major tasks defined in the cost build-up spreadsheet in Attachment A. Invoices will be structured to list project tasks with accomplished percent complete, then corresponding budget invoiced, overall budget expended and overall budget remaining. A separate status report will be provided to the **SH** project manager providing a narrative of work accomplished supporting the invoice.

SCHEDULE

GEOSYNTEC can begin work immediately upon Notice to Proceed. We will execute the project in accordance with the prime consultant’s master schedule.

CLOSURE

We appreciate the opportunity to work with the SH and CFTOD on this project. Should you have any questions regarding this proposal, please do not hesitate to contact us at (407) 321-7030.

Sincerely,
Geosyntec Consultants, Inc.



Thomas Amstadt, PE, CFM
Principal Engineer
tamstadt@geosyntec.com



Mark W. Ellard, PE, CFM, BC.WRE, ENV SP
Senior Principal
mellard@geosyntec.com

**EXHIBIT B
SCHEDULE
AGREEMENT NO. C006566**

The Consultant shall commence the Services on **November 21, 2024** and complete the Services on or before **May 21, 2026**.

- The anticipated project duration is 18 months.
- Within ten (10) days after the Notice to Proceed (“NTP”) and prior to Consultant beginning work, the Consultant will provide a detailed schedule identifying dates for each deliverable for each of the zones.
- The Consultant shall maintain the schedule throughout the project life and any impacts to the schedule due to unforeseen items shall be coordinated and approved by the District.

END OF EXHIBIT B

**EXHIBIT C
RATE SCHEDULE
AGREEMENT NO. C006566**

Itemization of the Fee: The following itemizes the Fee and corresponds to completion of the Scope of Services set forth in Exhibit A:

Prime Consultant - Half Associates, Inc.			
Labor Classification	Fully Loaded Hourly Rate	Total Hours (all tasks)	Total Fixed Fee
Engineer V	\$303.94	356	\$108,201.75
Engineer III	\$187.03	1,407	\$263,152.59
Engineer I	\$116.91	1,472	\$172,086.40
Specialist III	\$144.95	965	\$139,876.58
Specialist II	\$108.61	768	\$83,410.18
Specialist I	\$90.78	431	\$39,124.46
Scientist III	\$148.06	70	\$10,364.35
Scientist I	\$101.31	70	\$7,091.88
Surveyor V	\$227.56	108	\$24,576.05
Surveyor III	\$148.06	148	\$21,913.20
Field Tech III	\$103.74	2,702	\$280,316.29
Field Tech II	\$87.53	2,702	\$236,516.87
Field Tech I	\$71.32	2,702	\$192,717.45
Office Tech II	\$121.58	388	\$47,171.10
Admin. III	\$104.42	68	\$7,100.89
Total - Prime		14,357	\$1,633,620.00

Subconsultant - Geosyntec Consultants			
Labor Classification	Fully Loaded Hourly Rate	Total Hours (all tasks)	Total Fixed Fee
Principal	\$246.72	214	\$52,797.47
Senior Engineer	\$209.58	814	\$170,594.71
Professional Engineer	\$183.73	140	\$25,721.68
Senior Staff Engineer	\$147.00	901	\$132,448.68
Staff Engineer	\$120.28	924	\$111,142.16
Technician I	\$79.91	458	\$36,599.33
Total - Subconsultant		3,451	\$529,304.03

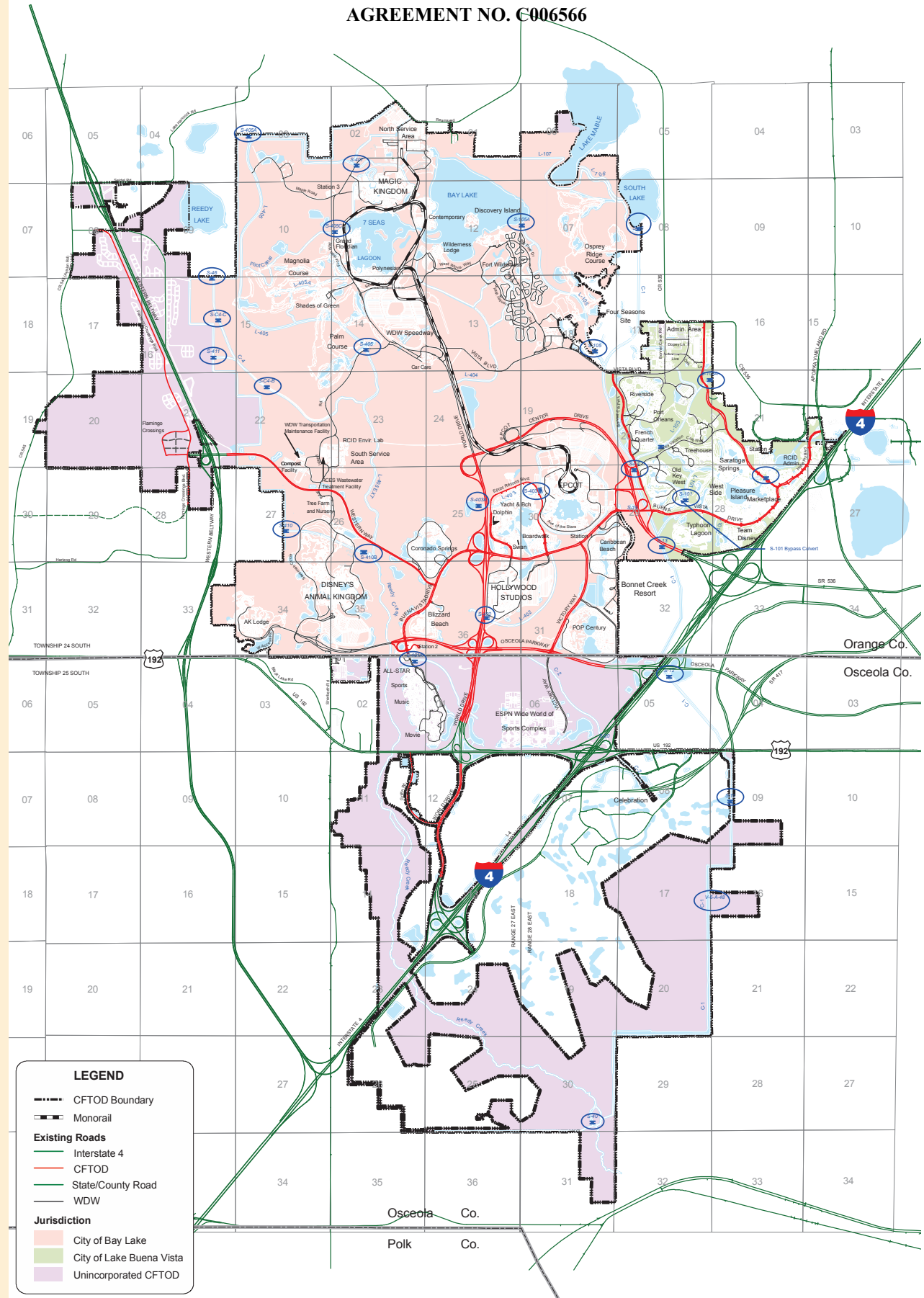
Task	Resource Allocation	Prime Hours	Sub Hours
1	Data Collection	10,268	1,081
2	Modeling	2,389	1,555
3	Floodplain Mapping	280	0
4	Project Management	1,420	815
Total Hours		14,357	3,451

Summary		
Description	Hours	Fixed Fee
Prime - Half Associates, Inc.	14,357	\$1,633,620.00
Subconsultant - Geosyntec Consultants	3,451	\$529,304.03
Grand Total	17,808	\$2,162,924.03










END OF EXHIBIT C

**EXHIBIT D
DISTRICT MAP WITH WATER CONTROL STRUCTURES
AGREEMENT NO. C006566**

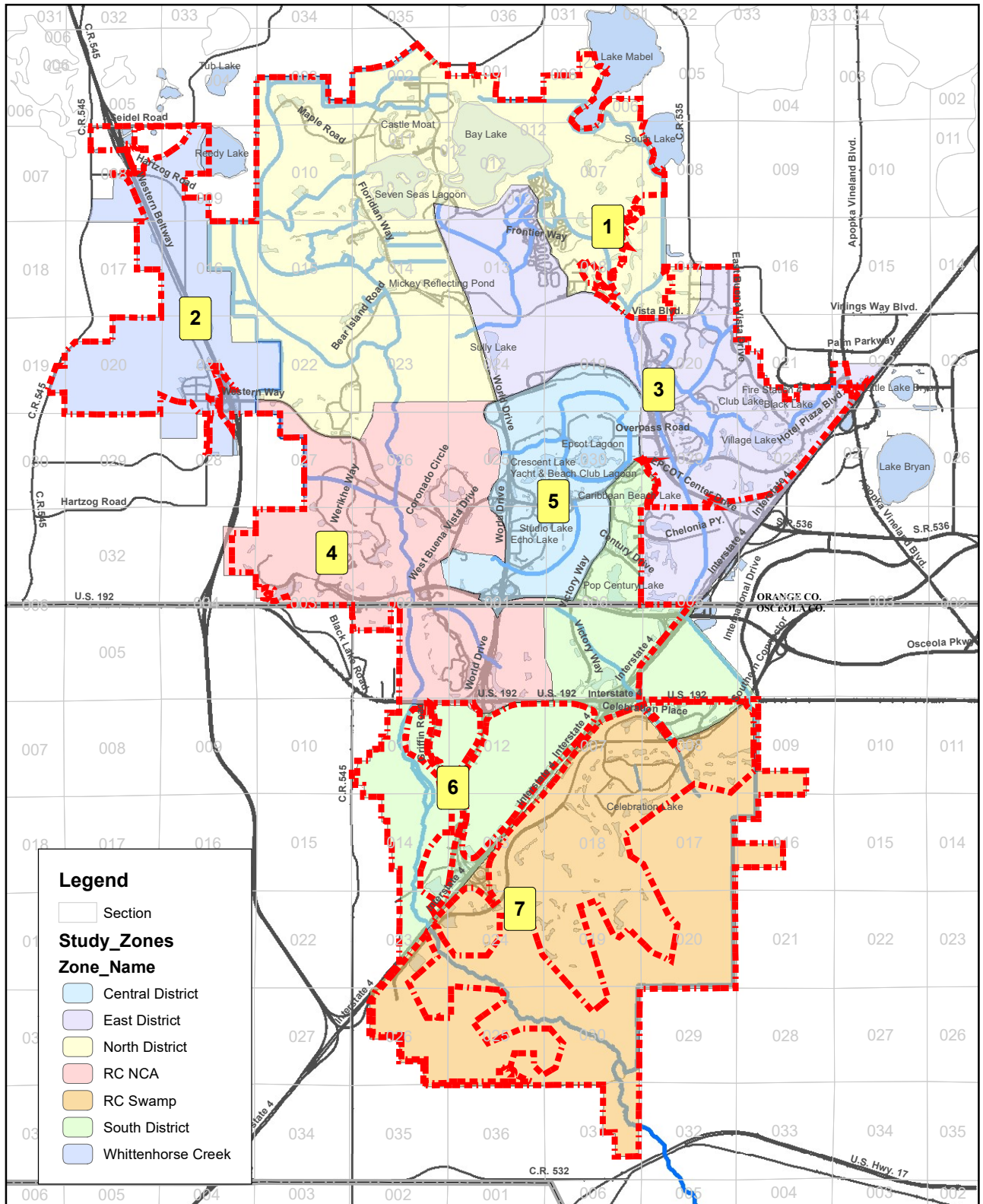
 Water control structure



LEGEND

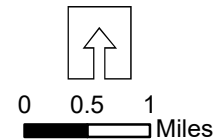
-  CFTOD Boundary
-  Monorail
- Existing Roads**
 -  Interstate 4
 -  CFTOD
 -  State/County Road
 -  WDW
- Jurisdiction**
 -  City of Bay Lake
 -  City of Lake Buena Vista
 -  Unincorporated CFTOD

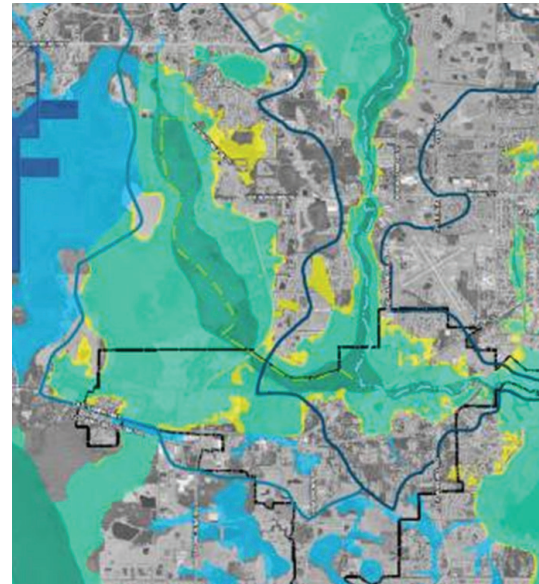
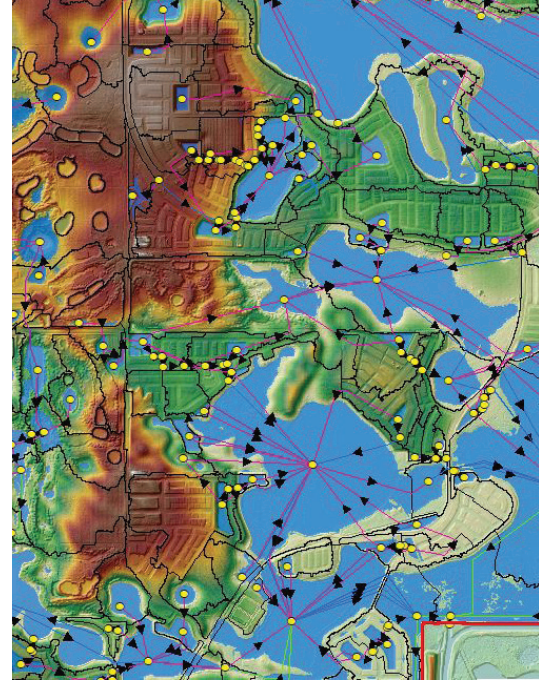
**EXHIBIT E
ZONE MAP
AGREEMENT NO. C006566**



MASTER DRAINAGE
MODEL STUDY
ZONES MAP
Exhibit E

**CENTRAL FLORIDA TOURISM
OVERSIGHT DISTRICT**





May 24, 2024

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT

Letter of Interest

LOI No. C006566

Master Drainage Model Update

D. PROJECT UNDERSTANDING, APPROACH, AND MANAGEMENT PLAN

Singhofen Halff has been modeling watersheds and addressing complex stormwater-related issues in Central Florida for over 40 years. Our team provides a high level of relevant expertise, and have experience working with the District's models and data. This includes work that began nearly 30 years ago with the District-wide UNET/HEC1 model data from the late 1990's to a recent ICPR4 model version provided by the District for evaluations of the Reams Road project in Orange County.

Singhofen Halff has assembled a team of professionals that are exceptionally qualified to assist the District in moving forward with the migration and update of model information within the District and surrounding areas. Singhofen Halff has teamed with Geosyntec to help complete this important project for the District, providing additional expertise and resources which gives our team redundancy and increased flexibility to meet the District's desired schedule. The team's continuous project successes are a result of strong project management and committed resources. Our Project Manager, Brennen Crenshaw, PE, will be the focal point for all project communication, coordination, and administration, providing the District with a singular, consistent representative of the consulting project team. Our Chief Modeler, Mark Troilo, MS, PE, CFM will serve as the Principal-in-Charge and Technical Advisor on the project, providing Mr. Crenshaw with company resources and guiding the technical direction of the project. Lead QA Manager Kent Boulicault, PE, CFM will implement Singhofen Halff's deliberate and organized Quality Assurance Program, providing the District with detailed records of Quality Control records, checklists, and reports at project milestones.

Brennen is very familiar with the project area, having served as Project Manager on both Reedy Creek and Cypress Creek watershed updates for Orange County. Furthermore, the model update methodology being recommended by the team mirrors that used during the Orange County's recent modeling updates. Our team will serve as an extension of District staff and operate solely as a representative of the District for its unique needs and goals. Finally, while the project scope is well-defined, we can offer some suggestions that may help improve the study and contribute to the success of the project. However, we will also bring a

flexible focus to the project and not rigidly try to do it "the way it's always been done" at the expense of project success.

APPROACH

It is understood that services under this solicitation are to be provided through four general tasks: **Data Collection, Modeling, Floodplain Mapping, and Project Management**. The Singhofen Halff team's detailed approach to these tasks follows below.



Data Collection

Kickoff Meeting: Initiation of the project will begin with a kickoff meeting with the District to establish contacts within

the project team and to collect information for the project including relevant reports, plans, surveys, and other relevant information. Task assignment goals and schedules can be established at this point. Our extensive experience conducting similar basin and watershed management projects allows us to identify constraints and potential problems at this early phase of the project. Opportunities to accelerate workflow will be discussed as well as potential cost savings measures.

Next, the team will formally request permits and review materials from the SFWMD, the District and other potential sources (e.g., FDOT, Counties) to build a comprehensive data library from which we can begin to more fully understand the area's drainage systems and challenges. We will use as much of what has been previously done (modeling data, drainage inventories, surveys, permits, etc.) to build a data "baseline." This baseline of reference documents (RefDocs) leads to the effort of identifying data gaps that must be addressed for the project to confirm our final model accurately reflects the drainage characteristics within the District and immediate surrounding areas.

Addressing data gaps will involve:

1. **Data Review and Integration:** Extracting detailed hydrologic and hydraulic (H&H) data from the collected data and incorporating this into the project file geodatabase (GDB). This allows us to begin reconciling collected information with observed or known field conditions and other information. Conflicts or missing information at key locations are to be verified in the field.

- Lidar and Aerial Imagery Analysis:** Updating the District's GIS basin information using high-resolution aerial photography and lidar data. We will supplement District-provided data with collected information and imagery from neighboring counties as needed. This information and the collected data mentioned above provides a means of identifying field reconnaissance needs.
- Field Verification:** Conducting field visits to verify and rectify basin delineations and data gaps or conflicts will lead to identification of potential survey needs. This includes development of a preliminary, refined model network with model node locations and the connectivity between them (model links) identified. This effort is intended to help make certain the District's model accurately reflects the current watershed divides and primary drainage infrastructure.

It is anticipated that the preliminary network will be reviewed with District staff to gain concurrence on the model level of detail prior to moving forward with any field surveys and model parameterization. The refined model node and link locations will be reviewed to determine where survey of drainage structures or cross-sections is required to address data gaps at key locations and support model parameterization.

To expedite survey services, per Chapter 5J-17 F.A.C., our in-house surveyors will be assigned tasks to accelerate the data collection effort. This can be based on geographical distribution of work or assignments based on specific data types (i.e., control runs, drainage structures, cross-sections, normal high water levels, etc.). Drainage structures and channel / weir cross-section locations identified as important to existing conditions model development will be located and surveyed. We will include locations proposed by the District in the LOI as well as other potential key locations. The District's scope requires use of "bottom elevation information" which is to be tied into available lidar information.

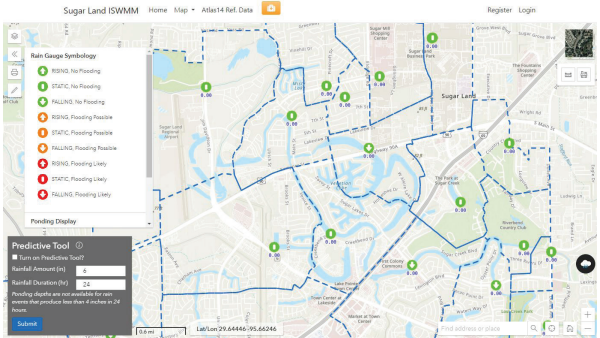
This is a commonly used approach and helps reduced survey budgets and schedules. The District might also consider profile surveys of the canal network to screen for locations that may have undergone significant changes since design and construction of the drainage system.

Finally, data collection efforts will round out with compilation of supplemental aerials and lidar from

other potential sources including neighboring Counties or SFWMD in addition to watershed data required for model parameterization such as soils, land use, water body data, and pertinent historical water level information.

GIS Data Management: GIS-based data management is a critical component of streamlining model development efforts and maintaining easily accessible supporting documentation (e.g., hyperlinking record drawings, reports, survey data, field forms, photos, videos, etc.). Indeed, this approach to data management and organization is required by the District's project scope.

The team has considerable experience with developing and updating model databases, ranging from simple spatial datasets to fully populated GDBs that include fully catalogued reference documentation. In fact, we often take the RefDoc organization effort a bit further by including more explicitly specified RefDoc classifications (i.e., surveyed or AsBuilts) so that supporting information is available to justify baseflood elevations determinations should the model be used for a map amendment request to FEMA.



Our team recently partnered with the City of Sugar Land to develop an Integrated Stormwater Management Model (ISWMM) web map. This informational tool provides citizens with real-time ponding levels during rainfall events. Halff's Water Resources/GIS personnel used 11 detailed hydraulic models and drainage reports from previously studied areas to create comprehensive flood response information. When paired with 28 rain/stream gauges, the City can obtain real-time ponding information and residents can receive notifications for their safety during rainfall events.

Singhofen Halff and Geosyntec have been using SWFWMD's advanced modeling GIS data structure known as GWIS since 2007. In fact, Singhofen Halff has used an ICPR4-centric version of GWIS since before the District developed GWISv2.1. For this project, we recommend use of the SWFWMD data model given the available data processing tool set available and supported by the SWFWMD and existing functionality. Managing H&H model data using a complex data structure provides capabilities important to facilitating model reviews, defensibility and the District's future model maintenance efforts. The District has taken a proactive position in requiring organization of the information that will be collected during this study in a GIS environment. To that end, the team includes unmatched expertise related to data organization and use of GWISv2.1. This expertise will be valuable in the migration effort for the District's available GIS data into GWIS2.1 and incorporating additional data that are important to the District and the modelers. Finally, this approach also allows the District and the team to take advantage of SWFWMD's ongoing maintenance of this data structure and their development of valuable GWIS and ArchHydro-related tools.



Modeling

H&H Modeling & Analysis: The project includes development of a surface water model using ICPR4 leveraging previously developed model data

(e.g. UNET/HEC1, ICPR3) and various sources of information collected at the beginning of the project. Singhofen Halff's and Geosyntec's experience and expertise using ICPR is unparalleled. Singhofen Halff has been using ICPR4 long before it was ever released to the public. Our experience with the nuances of the program and model development procedures will be a valuable resource to the District on this project. We have developed a series of in-house tools to facilitate our modeling efforts (e.g., data takeoff and migration routines, automated QC routines, etc.). These tools provide the benefit of streamlining modeling efforts and improving model defensibility. The Singhoffen Halff team has worked with local governments that have developed detailed watershed models within the tributary areas. We will leverage this experience and information to prepare detailed model information in areas adjacent to and outside the CFTOD boundary as required by the project scope.

The model is to be used to simulate four scenarios. These include various combinations of land use and historical Offsite Tributary flows. The team will develop Stormwise model scenarios for each combination to simulate the various required design storms. Stormwise has improved its standard reports and now includes easier methods of providing comparisons of multiple scenarios and design storms.

GIS Analysis of Lidar: Our team routinely uses lidar with tools such as ArchHydro to determine drainage paths, identify flow barriers, delineate watersheds, and geoprocess various model parameters including flood storage. We understand the importance of a quality foundational surface and its effect on the modeling effort. Singhofen Halff and Geosyntec each have extensive experience conducting QC reviews of and post-processing of lidar data. We frequently and effectively have reviewed, interpreted, and modified terrain data to integrate un-surveyed features over thousands of square miles of lidar. This includes adjustments to lidar that are sometimes required to revise water areas when flight data may have occurred during wet periods and failed to penetrate to depths of storage that might be required for modeling purposes (e.g., defining water body areas or flood storage at documented normal water levels below available lidar data). Relative to the contemplated scope, this could also be a factor in defining imperviousness of water surface areas in hydrologic calculations.

Hydrologic Parameter Development: This task will include definition of rainfall excess parameters for the model and updates to land use classifications, as needed to address District's needs. Existing District model information uses the NRCS curve number (CN) rainfall excess method and the Santa Barbara Urban Hydrograph method to distribute the runoff. Although not explicitly stated, the LOI appears to prefer the CN approach. Furthermore, it specifically states that CN values will be based on the hydrologic soil group (HSG) and, in the case of a mixed soil HSG, the more conservative, undrained condition will be used.

As part of the District's QC requirements, the model is to be calibrated and model results/floodplains are to be compared to the latest FEMA floodplain maps to determine if adjacent models are within FEMA's 0.5 ft tolerance. Preliminary model runs can be compared to available historic data to determine if model adjustments are required. This typically requires adjustments to the

CN values which are typically accomplished through adjustments of CN values based on the defined HSG for soils in pervious areas of the model domain.

The District might also want to consider the other methods of rainfall excess calculations available in ICPR4, namely the Green-Ampt or Vertical layers method. It is the team's experience that these methods can facilitate calibration of models, particularly in basins that have deep, sandy soils or volume sensitive drainage systems commonly found in some areas within the anticipated model domain, including Offsite Tributary areas. Hydrologic parameterization is to be based on collected soils data and both existing and future land use information. Detailed land use mapping is available in many areas of development that can serve as a basis for defining existing impervious and pervious spaces. Wetland jurisdictional limits are also defined in the District which will be used to help define both wetland and adjacent uplands in undeveloped parts of the District. The future land use condition will be based on mapping information as depicted in the CFTOD Comprehensive Plan. It will use the greater of the designated impervious or actual imperviousness, whichever is greater.

Finally, the effort to update basin information includes verification of offsite tributary basins.

This effort is to include a review of available information in counties adjacent to the District's boundary making certain that historical divides have not changed. If a conflict between available data and the historic information is identified, the team will notify District staff to resolve the issue. Otherwise, the historical limits of the offsite tributary areas will be used for the project. It is also noted that areas immediately adjacent to the District are to be modeled using a higher level of detail than is currently included in the offsite tributary basins. In some of these adjacent areas, information may be available from local counties and will be used to update these areas to the extent required to allow use of the remaining areas of the offsite basins to determine flows to the District boundary.

Hydraulic Parameter Development: This will include representation of 1D model conveyances such as culverts, channels, control structures, and bridges. The

District drainage system includes specialized flow control structures called aml gates at a number of key locations. The team is aware of these structures and how they are intended to function having included a number of them in models in the area. The structures are currently modeled using rating curve information obtained from the District ICPR model. They are thought to be developed from manufacturer's information. Some of these structures do not function as originally intended. The District is in the process of rehabilitating some of them to restore the original design capacities and function. It is important to identify which of these structures may not be performing as expected or as simulated using the current rating curve information. The team can coordinate with and assist the District in developing a monitoring approach to evaluate current function and prepare revised rating curves for the various locations. Available information (e.g., USGS stream gage locations) may be of use for this effort.

Model storage in natural areas is to be determined by lidar or, in the case of ponds, based on "permitted geometry" or As-Built information. It may be useful to compare permitted geometry to pond configurations depicted in the lidar and/or aerial photographs to confirm storage as constructed. This could include georeferencing of plan sets but should generally be limited to the largest of ponds in the model domain to avoid unnecessary increases in budget for this effort.

Canal link information will largely come from previous modeling efforts, surveys and lidar. The District's scope of work requires that cross sections "shall be sufficient to capture modeled storms." Additionally, at no time shall the Consultant have an assumed vertical wall unless explicitly approved by the District". Areas that provide offline storage and do not provide effective conveyance are typically "separated" from the adjacent cross sections per ICPR recommendations. This may result in "vertical walls" for the link and cross section, however, the storage is still accounted for in the channel node information. Another approach, which is somewhat less accurate but commonly used in older model applications (e.g., HEC-RAS, UNET), is to use the cross section to account for the offline storage but prevent conveyance within that portion of the cross section by setting ineffective flow stations or adjusting the Manning's roughness to a large value (similar to the current UNET approach). This can, at times, lead to stability issues that must be addressed. It is also less accurate in defining available storage in the offline

areas. Ultimately, modeling approaches for these areas of the model domain will be reviewed with and confirmed by the District in during model parameterization.

Initial and Boundary Conditions: Initial conditions at model nodes are typically set based on seasonal high water levels, particularly in large wetlands. These water levels can be determined from available information including previously established seasonal high water levels or other survey information. Oftentimes, this information can be obtained from permits or geotechnical evaluations that may be available and obtained during the data collection phase of the project. As mentioned earlier, jurisdictional wetland information is available within the District. This information may also be used to estimate seasonal high water levels in the absence of biologically or geotechnically based data. Once initial water levels are determined at model nodes, the team will develop initial condition, level-pool floodplains. This mapping effort is simple and quick but allows for checking of proper inundation of wetland and lake areas and confirmation that initial water levels are set correctly. Depending on the results of this effort, base flow rate information may need to be developed and entered into the model to help avoid drawdowns and maintain water levels at their desired initial stages during simulations. This may also be required at some of the Offsite Tributary inflow locations such as the Cypress Creek inflow from Tributary 1. Appropriate values may be determined from available data collected at USGS stream gage stations.

The seven project Zones are defined in the LOI, some of which appear to be dependent on boundary conditions/elevations in adjacent watersheds or basins. The team will develop interim boundary conditions for use in model development for each Zone as the project progresses, likely based on either historic or available model data. Final model parameterization and simulations will require simulation of all assembled zonal models so that potential overflows or interactions are determined and accounted for.

As mentioned previously, the team recommends development of Zone models in parallel. One of the reasons for this recommendation is the need to reconcile boundary conditions at shared basin limits between adjacent zones. It is noted the project scope requires simulation of the 1000-year storm event. This storm could potentially lead to floodwater exchanges between

Zones, including overland flow that may not be currently expected based on available 100-year floodplain information. Analysis of this issue on a Zone by Zone basis would typically require estimates of boundary condition stages at a “receiving” location or Zone. Depending on how “finalized” the Zone submittals are to be, this approach could require iteration of conditions between the two adjacent zones to resolve interim estimates and the results; Adjacent Zone models that are developed in parallel could be combined to resolve this issue without the need for initial estimates and iteration.

Finally, it is understood that boundary conditions at the V-6-A and S-40/Lake Russell locations will be coordinated with District staff. It is further understood that current data may require updates using available information (e.g., USGS, FEMA or other available water level data) and additional adjustments will be necessary for some simulations including interpolation of both boundary flow and boundary stage information for some storm events required by the project scope.

Singhofen Halff will conduct a detailed QC review of model input information prior to generating model simulations. The simulations will, ultimately, include a series of 72-hour storms with rainfall amounts as specified in the project scope for the required return periods. Model simulations will initially begin with the most extreme storm event. Results of that simulation will be reviewed to make certain the model is stable and mass balances, if any, are acceptable. This review will also verify storage recovery is as expected. Once model results are deemed to be stable and acceptable, level-pool floodplains will be prepared and used to evaluate results. This effort helps identify any missing overflow locations (i.e., glass walls) which require additional model links. The resulting model is then used to simulate the remaining storms and similar QC reviews of the simulation results are conducted.

The model development process, model debugging and calibration results as well as design storm simulation results will be discussed and summarized in the Master Drainage Model Update report that is to be provided for the project. This report must include updates to relevant

exhibits in the current Master Plan. It may also be useful to include a comparison of select model results to the permitted master plan data to evaluate the performance of the updated model.



Floodplain Mapping

Floodplain Assessment: Using the results of the approved model(s), an assessment of flood prone areas will be performed to estimate base flood

elevations. This will be focused on areas in the model domain. Floodplain areas will be delineated based on 100-year, 500-year and 1,000-year flood stages from simulations of the model scenarios that include existing and future land uses with current Offsite Tributary flows. Floodplain maps developed according to FEMA guidelines will be prepared for the future condition land use with current offsite tributary flows for the 100-year and 500-year results only. Floodplain maps will be incorporated into the project GDB and provided in PDF format with the deliverables. Singhofen Halff modelers regularly review LOMR and CLOMR applications for FEMA under our RiskMAP program. Our modeling expertise coupled with high-level GIS capabilities have formed the basis for numerous successful map revisions. If desired, we can provide Technical Documentation for the project including full TSDN development in FEMA's required format.



Project Management

The Singhofen Halff team understands that the District Master Drainage Model Update (the update) is a high priority of the District and that it is to

be conducted on a fairly aggressive schedule of 18 months. To this end, Singhofen Halff has partnered with Geosyntec to leverage the resources of both of our firms working in parallel. Singhofen Halff has successfully managed large teams working in parallel to expedite projects and will effectively employ this approach to complete the study within the desired timeframe. Singhofen Halff and Geosyntec have conducted work within and around the District and has had access to some of the available model data through those efforts. This has given us a good understanding of the drainage patterns and past and upcoming projects located within and in the vicinity of the District. As a result, the Singhofen Halff team will be able to hit the ground running on the model migration/update effort.

Singhofen Halff will lead the project and establish standards for modeling, quality control, and documentation at the beginning of the project as part of the Project Plan. While the LOI calls for the project to be conducted in sequential "zones" with separate complete deliverables and checkpoints, Singhofen Halff believes that the most efficient and timely approach to the project may be to divide the project geographically and develop consistent and seamless work products in parallel to expedite the work and meet the District's desired schedule. This would, of course, only be implemented with the District's approval. The effort could include a pilot study of one of the Zones to demonstrate our overall approach and provide deliverables for review and approval of the District. If approved, work on remaining Zones could be executed concurrently. Sequencing of the Zones would be determined primarily based on likely hydrologic interactions between Zones and would generally work from north to south, generally in the order the District has already defined. The work flow for a particular Zone would begin with the data takeoff and "desktop" parametrization effort. The data takeoff teams would "keep moving" through data capture for successive Zones while field surveys are underway for previous Zones. Once field surveys are completed for the "previous" Zones, modeling teams would begin the work of completing parameterization of the model and conducting preliminary model simulations. This approach can avoid possible delays while waiting for surveys for a particular Zone and helps consolidate District review times of deliverables into just a couple of instances as opposed to reviews for each Zone separately.

PROJECT MANAGEMENT BEST PRACTICES

We understand that the best engineering projects can get muddled if there is insufficient communication during the project process leading to delays in schedule or budget issues. Our project management approach focuses on effective coordination of the project team to expedite model development and coordination of services provided by subconsultants. This maintains quality control under an accelerated schedule. Key project management steps are described below.

Meetings: Communication is the key to successful project management. Regular communication will be accomplished through progress review meetings (the District requires biweekly meetings throughout the project). Communication will be maintained between Singhofen Halff and subconsultants through weekly

telephone calls and emails; progress meetings with subconsultants will be held as needed to accomplish the work. Coordination with the District and outside agencies will be documented in meeting minutes and phone logs.

The District's scope of work also requires two coordination meetings with major stakeholders for each project Zone, one public meeting at the end of the project and presentations to the CFTOD Board of Supervisors. Singhofen Halff will assist and support the District with preparations for these meetings including preparation of materials for and attendance at the meetings as well as documentation of the meetings and follow-up services. Should the District decide to run the project with parallel work on the various model Zones, stakeholder meetings could be consolidated. This approach offers another opportunity to streamline the project, shorten the schedule, and potentially reduce project costs.

Control of Budget: Singhofen Halff uses a sophisticated project management software (Deltek Vantagepoint) to manage its financial information. Project budgets and financial details are always at the fingertips of project managers and key project staff. Staff labor and expense costs can be tracked near real time. Challenges with budget can be identified quickly and corrective actions employed to void any issues requiring change orders.

Monthly invoices for the project will be accompanied by Progress Reports describing previous work and projected work efforts for the coming months.

Project Schedule: A project schedule will be prepared and maintained using Microsoft Project. Weekly email updates will be provided during peak work periods. The schedule will be updated monthly and reviewed at progress meetings with the District and all Singhofen Halff subconsultants. Appropriate corrective action will be taken if needed to keep the project on schedule. The project manager has the authority to allocate resources to make certain the schedule will be met.

Singhofen Halff has found that submittal deliverables are often facilitated with a pre-submittal presentation. This allows the Singhofen Halff team to "orient" staff on the structure and organization of the deliverable as well as any special considerations for the work effort that went into preparing the contents of that deliverable.

Cost Savings Measures: The project manager will be sensitive to ways and means to reduce project costs starting with the project scoping. Our experience with

similar projects in the past allows us to accurately estimate project budgets and work within funding constraints. Our attention to detail and focus on project objectives will allow us to spend effort only on scope items that bring a tangible benefit to the project with no unnecessary documentation. Opportunities for securing grant funding can also be evaluated during the planning stages and revisited during project execution if the District so desires.

INITIATION

Prior to scope development, the project manager, along with the appropriate technical leads will meet with District staff to discuss the project goals, scope, and schedule. Project-specific requirements will also be defined, such as water quality needs (i.e. TMDL, NPDES), permitting, level of service, design considerations, and potential grant funding deadlines.



SCOPE DEVELOPMENT

The project manager and key members of the project team will develop a scope of work with schedule and fees. The scope of work will outline the project-specific approach and methodology, and will clearly define milestones and deliverables. As part of this process, our team is always evaluating opportunities to streamline efforts for our clients.



PROJECT EXECUTION

Our team will initiate the project work upon approval of the task order from the District. Successful project execution requires ongoing communication between the project team and the District. A project kickoff meeting will be held, and Singhofen Halff will engage the District through regular in-person and virtual progress meetings, along with email and telephone communications throughout the course of the project. Status reports will also be provided on a minimum monthly basis.



PROJECT DELIVERY & CLOSEOUT

Interim deliverables will be submitted at key milestones defined in the project scope for District review. A submittal meeting will be held with the District at each submittal. Upon project completion, final deliverables will be submitted to the District for approval and the project will be closed.

D. PROJECT UNDERSTANDING, APPROACH, AND MANAGEMENT PLAN

LEGEND

- 1 Singhofen Halff
- 2 Geosyntec Consultants, Inc.

* Key Staff

**CENTRAL FLORIDA TOURISM
 OVERSIGHT DISTRICT**



E. STAFFING PLAN

STAFFING PLAN

Our staffing plan is designed to leverage the extensive experience and diverse skill sets of our key team members to achieve the successful delivery of the Master Drainage Model Update project within the District's schedule. The team is structured to provide comprehensive coverage of all project phases, from data collection to modeling and final deliverables. We are committed to providing excellent service to the Central Florida Tourism Oversight District and bringing the most well-rounded team available to manage the Master Plan Update.

WORKLOAD MANAGEMENT

Our current and anticipated workload is balanced to have all key team members fully committed to the Master Drainage Model Update project. Each team member's availability has been carefully planned to align with the project schedule, resulting in no delays or resource constraints. Each person's capabilities can be found on their resumes, as detailed below.

KEY STAFF MEMBER	CURRENT / ANTICIPATED WORKLOAD
Brennen Crenshaw, PE	Brennen is currently dedicating 50% of his time to ongoing projects, some of which will be completed in the next couple of months, and can allocate the remaining 50% to this project.
Mark Troilo, PE, CFM	Mark is currently involved in 4 projects as a key task member, dedicating 40% of his time to those projects, leaving 60% available for this project.
Kent Boulicault, PE	Kent will dedicate 30% of his time to this project, allowing a rigorous quality check at each phase.
Allyson Hunt, PE, CFM	Allyson can dedicate 50% of her time to this project, allowing for frequent and comprehensive QC reviews and support.
Mark Ellard, PE, CFM, BC.WRE, ENV SP	Mark is currently dedicating 50% of his time to ongoing projects and can allocate the remaining 50% to this project.
Tom Amstadt, PE, CFM	Tom is currently dedicating 50% of his time to ongoing projects and can allocate the remaining 50% to this project.
Michael Barretto, GISP	Michael is currently dedicating 50% of his time to ongoing projects and can allocate the remaining 50% to this project.
Rebecca Harris, PE, CFM	Rebecca is currently involved in 3 projects as a key task member, dedicating 40% of her time to those projects, leaving 60% available for this project.

AUTHORIZATION

All of Singhofen Halff's key staff members are available and can give and support information both in written and oral presentations.

KEY STAFF MEMBER	TITLE	EMAIL	PHYSICAL WORK ADDRESS	TELEPHONE NUMBER
Brennen Crenshaw, PE	Team Leader	bCrenshaw@halff.com	Orlando, FL	689.303.3311
Mark Troilo, PE, CFM	Technical Leader	mTroilo@halff.com	Orlando, FL	689.303.3301
Kent Boulicault, PE	Deputy Practice Leader	kBoulicault@halff.com	Orlando, FL	689.303.3303
Allyson Hunt, PE, CFM	Senior Project Manager	aHunt@halff.com	Orlando, FL	689.303.3309
Michael Barretto, GISP	GIS Technical Manager	mBarretto@halff.com	Orlando, FL	689.303.3308
Rebecca Harris, PE, CFM	Project Manager	rHarris@halff.com	Orlando, FL	689.303.3315

KEY STAFF RESUMES



Brennen Crenshaw, PE

Brennen has 10 years of experience in stormwater modeling and engineering design. He routinely uses GIS for model development and parameterization, data management and mapping. He is skilled in the use of a variety of GIS-based tools including those associated with ArcHydro as well as tools developed by Singhofen Halff. He is well versed in the use of complex GIS data structures including SWFWMD's GWIS and is skilled in FEMA's BCA methodology. Brennen has managed or assisted with multiple publicly-funded stormwater management projects.

ROLE

Project Manager

EXPERIENCE

10 Years

EDUCATION

BS, Industrial Engineering,
University of Central Florida,

BS, Civil Engineering,
University of Central Florida

REGISTRATION

Professional Engineer -
Florida No. 91884

CONTACT INFORMATION

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REPRESENTATIVE PROJECT EXPERIENCE

Reedy & Cypress Creek Drainage Basin Master Plans, Orange County, FL.

The purpose of this project was to update the stormwater management master plan from 1996 for both the Reedy Creek and Cypress drainage basins. This project was spread across multiple phases which included model migration, model refinement, calibration/verification, and model result evaluation. The migration effort included developing a model network in SWFWMD's GWIS geodatabase from legacy CADD and GIS files, reconciling the new GIS features to the model to make sure that they were consistent, regenerating the ICPR model from the GIS using XML export/import routines, and evaluating differences between the migrated and original models. The model update effort included identification of areas that have changed since the previous model date certain, desktop data collection and review, development of a field data acquisition plan, field reconnaissance, survey coordination and data QC review, data capture, and subbasin revisions. The model calibration/verification efforts included collecting NEXRAD rainfall data and incorporating it into the ICPR model to be simulated. The model calibration effort is an iterative process of comparing model results to measured/observed water levels and making revisions to the model parameters. The final model results were used to develop FEMA floodplains and conduct a Level-of Service analysis within the model result evaluation phase.

Brennen has been a part of every phase for both Reedy and Cypress Creek. Earlier on in Brennen's career, he assisted in the model migration efforts by developing the spatial representation of the model within the GWIS geodatabase. Brennen also had a role for model updates by reviewing reference documents including construction plans, survey, record drawings, and reports for the spatial development of new HydroNetwork features and revisions to the Model Network. He also captured and populated hydraulic data from reference documents (e.g., size, inverts, material, manning's roughness coefficients, etc.) and development and parameterization of the model subbasins. During the model updates phase, Brennen made a transition to being

the project lead for the Reedy and Cypress Creek basins. He was responsible for the final QC of the GWIS geodatabase and import into an ICPR4 model. Brennen also was responsible for developing the rating curves that represent the various amil gates that control the flow into CFTOD. He worked closely with staff during the model calibration efforts, conducting QC along the way with each model revision.

Reams Road Watershed Management Plan, Orange County, FL.

This was a fast-tracked watershed management project for an 11-square mile watershed in Orange County that included Reams Road. The project was conducted on an accelerated schedule to be completed in advance of an upcoming roadway improvement project. Brennen had a lead role in the model development which included laying out the model network, identifying data gaps, development of a field acquisition plan, coordination with the surveyors and QC of the survey deliverables. He also coordinated with staff to complete the hydraulic data capture efforts, within SWFWMD's GWIS schema, from permitted documents and survey files. He had the key role in the project to conduct the final QC of the populated GWIS geodatabase and import the information into an ICPR model file. After completion of this project, Brennen assisted the County in coordinating with CFTOD and modifying the ICPR model. The modifications to the model included setting up S-405A amil gate as a rating curve and updating the boundary stage information within CFTOD's canal downstream of S-405A.

County-Wide Stormwater Master Plans Miscellaneous Services, Orange County, FL.

During the stormwater master plan updates, various miscellaneous services arise that could include small area studies, development review, flood forecasting tools, post-flooding forensic analysis, and public outreach. Brennen has been able to extract portions of the stormwater master plans basin models for fast-tracked small area studies due concerns form various stakeholders (residents, commissioners, etc.). He also helped setup the historical highwater measurement program across the County. He has coordinated within other County consultants in identifying key locations within the drainage basin they are responsible for and coordinates with subconsultants on collecting the measured water levels at these locations after a significant rainfall event. At the request of the County, Brennen lead a team that took the existing stormwater master plans' ICPR models to develop floodplains for the County's 10 major drainage basins for 20 storm events based on rainfall depth and duration. After Hurricane Ian, Brennen really became the person that County Staff has turned to for development reviews and forensic analyses. He has incorporated proposed developments into the master plan ICPR models to identify any impacts that the development may have further downstream. Brennen has assisted County staff on identifying the cause of flooding and being able to present that to the public, including residents and commissioners. At the request of the County, he has attended, and presented, at community meetings to discuss the overall drainage patterns in the area and the County's responsibility on managing these drainage patterns.

East County Basin Studies (Soldiers Creek, Gee Creek, Little Lake Howell and Lake Jesup Basins) Seminole County, FL.

Singhofen Halff teamed with Geosyntec in efforts to work on the different watersheds simultaneously to meet the client's aggressive schedule. Each basin included conducting engineering assessments, developing H&H models (ICPRv4), and conceptualizing BMPs and other improvement measures to meet the County's flood management and water quality goals. Singhofen was responsible for these efforts for the Soldiers Creek and Gee Creek Basins. As the project manager for Singhofen, Brennen lead a team to update and modernize the existing basin models utilizing the SWFWMD Geographic Watershed Information System (GWIS) data structure. He also handled all coordination with Geosyntec and the client to have a consistency model/deliverable across the different basins. Brennen also coordinated and visited with residents and other municipalities on historical flooding to be used to calibrate the models.



Mark Troilo, PE, CFM

Mark has over 38 years of experience in the water resources field in stormwater management modeling and design. He has been involved in numerous major publicly funded watershed H&H model development and drainage design projects ranging in size from a few acres to over 1,800-mi². He brings extensive expertise in stormwater modeling using various tools such as ICPR (1D and 2D), suite of HEC models (HEC-RAS, HEC-HMS, HEC-GeoRAS, etc.), SWMM, and CHAN. His experience includes floodplain mapping, level of service evaluation, flood mitigation design, environmental restoration, water quality analyses and design, and presentation of study results to the public. For over 15 years, he provided technical support for the users of the hydrodynamic model, ICPR on behalf of Streamline Technologies, Inc. Mark is considered a subject matter expert in surface water modeling and is routinely requested for lectures on the subject, delivering over 50 workshops, roundtables, and presentations on the methodologies to surface water modeling and design, including sea level rise and groundwater implications.

ROLE

Principal-in-Charge/
Technical Lead

EXPERIENCE

38 Years

EDUCATION

MS, Environmental
Engineering Science,
University of Central Florida

BS, Biology, University of
Central Florida

BS, Limnology, University of
Central Florida

REGISTRATION

Professional Engineer -
Florida No. 55512

ASFPM Certified Floodplain
Manager - No. US-10-05511

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REPRESENTATIVE PROJECT EXPERIENCE

Reedy & Cypress Creek Drainage Basin Master Plans, Orange County, FL.

The purpose of this project was to update the stormwater management master plan from 1996 for both the Reedy Creek and Cypress drainage basins. This project was spread across multiple phases which included model migration, model refinement, calibration/verification, and model result evaluation. The migration effort included developing a model network in SWFWMD's GWIS geodatabase from legacy CADD and GIS files, reconciling the new GIS features to the model to make sure that they were consistent, regenerating the ICPR model from the GIS using XML export/import routines, and evaluating differences between the migrated and original models. The model update effort included identification of areas that have changed since the previous model date certain, desktop data collection and review, development of a field data acquisition plan, field reconnaissance, survey coordination and data QC review, data capture, and subbasin revisions. The model calibration/verification efforts included collecting NEXRAD rainfall data and incorporating it into the ICPR model to be simulated. The model calibration effort is an iterative process of comparing model results to measured/observed water levels and making revisions to the model parameters. The final model results were used to develop FEMA floodplains and conduct a Level-of Service analysis within the model result evaluation phase. Mark served as Chief Modeler, Technical Lead, and Quality Control for this project.

Reams Road Watershed Management Plan, Orange County, FL.

This was a fast-tracked WMP project for an 11-mi² watershed in Orange County (within the Reedy Creek watershed that straddles Orange/ Osceola Counties). The project was conducted on an accelerated schedule to be completed in advance of an upcoming roadway

improvement project. Mark was responsible for technical direction on all aspects of the ICPR4 model development (model network, basin delineation, parameterization, debugging/stabilization, verification, LOS analysis, floodplain mapping, and report development). He also conducted QC reviews throughout the project.

Mill Creek Watershed Management Plan Update, Manatee County FL.

This 16-mi² watershed management plan for SWFWMD involved both WE and WMP elements. Modeling was conducted using ICPR4 and areas that are primarily characterized by streamflow or overland flow are represented using 2D elements. Work involved data collection and review, rainfall analysis and model verification, field data acquisition, Hydro, HEP, and Model Network development in a GWIS geodatabase, the development of 2D features, and floodplain/floodway mapping for FEMA. Mark was responsible for providing technical direction on the H&H modeling and model QC throughout the WMP. Currently, he is providing technical support and QC on physical map revision (PMR) updates with FEMA under a separate contract with the County, including floodway revisions which were complicated by the use of 2D features.

Town of Malabar Stormwater Master Plan, Malabar, FL.

This project, located on the Indian River Lagoon, involved the development of a town-wide stormwater master plan model and CIP design recommendations for flood control purposes. It involved the development of a 24.5-mi² H&H model (ICPR4 with both 1D and 2D elements), field reconnaissance, delineation of floodplains, identification, and prioritization of areas of concern. Mark was responsible for directing the model development efforts and conducting QC reviews of model data and results.

Big and Little Econlockhatchee River Basin Study, Seminole County, FL.

Mark serves as lead engineer for this stormwater master plan modeling update for Seminole County. The project included a public meeting to kick off the project, data collection, survey coordination, model and GIS updates to incorporate all data, model calibration and verification for Hurricanes Irma and Matthew, report pre Econlockhatchee paration and preliminary floodplain mapping. The model is currently being used to evaluate drainage level of service and develop drainage improvements for identified areas of concern. Submittal to FEMA to update floodplain mapping is planned.

North Merritt Island Watershed Master Plan, Brevard County, FL.

The project, located between the Indian and Banana Rivers, involved the development of a stormwater master plan for the 34-mi² North Merritt Island watershed. The effort included the development of a detailed 1D/2D stormwater (H&H) model with groundwater interaction (ICPR4) and model calibration/verification to Hurricane Irma and subsequent significant storm events. The project also involved survey efforts and forecasting future rainfall and tailwater conditions for the watershed with a 20-year projection.

Shingle Creek Basin Stormwater Management Master Plan (2017), Osceola County, FL.

As part of a teaming effort with Geosyntec, this study involved the development of a stormwater management master plan to identify and prioritize stormwater flood reduction and water quality improvement needs in the Shingle Creek and West Branch basins. Mark lead Singhofen Halff's efforts on the project, which included developing a floodplain assessment approach, delineation of subbasins, development of a surface water model in ICPR for the existing condition, and conducting a floodplain level of service assessment. Boundary data for the model was obtained from the current effective FEMA models, which were in HEC-1 (hydrologic model), HEC-2 (Shingle Creek), and HEC-RAS (West Branch), and were migrated by Singhofen Halff into HEC-HMS and HEC-RAS, respectively. Singhofen Halff's efforts also included development of conceptual flood mitigation designs for the region.



Kent Boulicault, PE

Kent has over 33 years of experience addressing water resources and environmental issues at the local, state, and federal regulatory levels. His project experience includes civil works design (flooding, water quality, and streambank stabilization), watershed master plan development, level of service analyses, resilience/vulnerability evaluations, and FEMA floodplain/floodway mapping. In addition, Kent has been a persistent proponent of addressing the implications of sea level rise on our communities and developing model tools to assess our vulnerabilities and make our capital projects more resilient. He has authored and delivered multiple presentations on this subject and the implication of ignoring the groundwater flow component.

ROLE

Lead QA Manager

EXPERIENCE

33 Years

EDUCATION

BS, Civil Engineering,
University of Central Florida

MS, Environmental
Engineering Sciences,
University of Central Florida

REGISTRATION

Professional Engineer -
Florida No. 52584

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REPRESENTATIVE PROJECT EXPERIENCE

SWFWMD Continuing General Engineering and Professional Services, SWFWMD, FL.

Kent has served as the Program and Project Manager for the SWFWMD Continuing Engineering and Professional Services Contract continuously for over 20 years. During this time, he has managed a variety of large engineering projects, including comprehensive watershed management plans, extensive H&H analyses, conceptual design development and analyses (flood/erosion control, water quality improvements, etc.), feasibility studies, peer reviews of model data prepared by others, structure data inventories, managing quality and implementation of QC plans, and permitting assistance. He has coordinated and directed large multi-disciplinary project teams on projects up to \$5M.

North Merritt Island H&H Modeling Study, Brevard County, FL.

Kent served as the QC Officer and Senior Engineer on this stormwater master plan of the 34-mi² North Merritt Island watershed. The watershed is relatively flat with depressional areas that have little relief and is impacted by groundwater conditions throughout the watershed. This project included the development of a 2D surface water model with groundwater interaction (ICPR4) and associated GIS model geodatabase, calibration and verification efforts to Hurricane Irma, and delineation of floodplains. Services included forecasting future rainfall scenarios and tailwater conditions based with a 20-year projection. Kent was responsible for coordination between a number of team members and directing QC efforts throughout the model development.

Orange County Continuing Stormwater Services, Orange County, FL.

Singhofen Halff has been providing stormwater engineering services to the County continuously for over 30 years. Kent has served as the project engineer, project manager, and QC manager for numerous projects over the last 24 years and currently serves as the overall contract manager. Under this contract and his direction, Singhofen Halff has conducted a detailed assessment of the County's 10 (ten) major

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basin H&H models (~740 mi²), prepared a long-term approach to updating the models, developed the County standards for H&H modeling and GIS, conducted a pilot study to demonstrate the approach, and updated four of the major basin models. These have involved lidar acquisition, lidar deliverable QC reviews, desktop data review and capture, field survey, implementation of SWFWMD's GWIS data structure, and H&H analyses. Numerous small area studies and designs have also been conducted to address flooding, water quality and erosion problems across the County. Kent was also responsible for developing a detailed GIS-based survey deliverable specification that is centric to ICPR and GWIS which includes hyperlinked field notes, photos, and videos. He developed this intentionally to facilitate porting the data to the GWIS HEP tables, enforce consistency across the County, and improve the defensibility of the models.

Reedy & Cypress Creek Drainage Basin Master Plans, Orange County, FL.

The purpose of this project was to update the stormwater management master plan from 1996 for both the Reedy Creek and Cypress drainage basins. This project was spread across multiple phases which included model migration, model refinement, calibration/verification, and model result evaluation. The migration effort included developing a model network in SWFWMD's GWIS geodatabase from legacy CADD and GIS files, reconciling the new GIS features to the model to make sure that they were consistent, regenerating the ICPR model from the GIS using XML export/import routines, and evaluating differences between the migrated and original models. The model update effort included identification of areas that changed since the previous model date certain, desktop data collection and review, development of a field data acquisition plan, field reconnaissance, survey coordination and data QC review, data capture, and subbasin revisions. The model calibration/verification efforts included collecting NEXRAD rainfall data and incorporating it into the ICPR model to be simulated. The final model results were used to develop FEMA floodplains and conduct a Level-of Service analysis within the model result evaluation phase. Kent served as Client Manager and Quality Control for this project.

County-Wide Model and Flood Forecasting Tool Development (Pinellas County, FL)

This project involved 5 main tasks. 1. combining the County's existing H&H models into a single 1D ICPR4 model (161 mi²), 2. development of a 2D rapid flood hazard assessment model for the remaining areas of the county (78 mi²), 3. combining all into a single H&H model, 4. simulation of 20 different storm scenarios, mapping floodplains and flood depths at over 5,000 locations, and 5. correlation of flood conditions to gage elevations for proactive flood management efforts. The model was successfully developed in an extremely aggressive 2-month time frame. Kent managed all aspects of this project and provided technical direction.

Pithlachascotee WMP Model Update and BMP Analysis (SWFWMD, Pasco County)

This 200 mi² study area is a combination of the Pithlachascotee River Watershed, the Bear Creek Watershed, and a portion of Squirrel Prairie watershed. Singhofen Halff was responsible for combining the GIS datasets into one, migrating the legacy GIS to GWISv1.6, reconciling GIS and model discrepancies, regenerating the ICPR model using XML routines, confirming results, and addressing previous hydrograph concerns throughout the study area. Singhofen Halff also addressed previous peer review comments and conducted model updates within three priority areas (10 mi²) of the watershed and developed conceptual flood mitigation BMPs in each update area. Work included model verification, floodplain mapping, LOS evaluation, design development, and benefit-cost analyses. Kent served as Project Manager and QC Officer.



Allyson Hunt, PE, CFM

Allyson has 15 years of experience in stormwater modeling and civil infrastructure design. She has managed or assisted with numerous publicly funded stormwater management projects, including master plan development, floodplain mapping, level of service evaluation, design alternative evaluation, drainage retrofit design (including flood mitigation, water quality improvement, and erosion countermeasures) and model review. She is skilled in H&H modeling (1D/2D), cost estimation, drainage design calculations, report preparation, and construction document preparation. Her permitting experience includes Environmental Resource Permits (including emergency authorizations), FEMA map revisions, NPDES and USACE Permits, and FDOT drainage connection permits.

ROLE

QC Manager

EXPERIENCE

15 Years

EDUCATION

MS, Civil Engineering,
University of Central Florida

BS, Civil and Environmental
Engineering, University of
South Florida

REGISTRATION

Professional Engineer -
Florida No. 78531

Certified Floodplain Manager -
Florida No. US-10-05504

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REPRESENTATIVE PROJECT EXPERIENCE

North Merritt Island Watershed Master Plan, Brevard County, FL.

Project Manager responsible for the 38-mi² North Merritt Island watershed model, which includes both 1D and 2D components with groundwater integration. Allyson led the team conducting data collection, field reconnaissance, survey, analysis of tidal tailwater and rainfall data (current and future projection) supporting the model development, as well as managing the collaboration between team members. The ICPR4 model was calibrated to Hurricane Irma in 2017 and updated to include post-2017 improvements. Design storm simulations were conducted, and floodplains were delineated for the watershed. The model network's geodatabase was in SWFWMD's GWIS format.

Mill Creek Watershed Management Plan Update, SWFWMD and Manatee County, FL.

Singhofen Halff was responsible for the development of a hydrodynamic model of this 16-mi² watershed using ICPR4 and 2D features to represent areas characterized by meandering stream segments and/or overland flow. Floodplains and floodway were developed for the watershed, including the 2D areas. Allyson was responsible for conducting QC review of the model network with a focus on the channel features and proper placement of cross sections to accurately represent the conveyance features for each reach. Under a separate contract, Singhofen Halff prepared and submitted a LOMR application to FEMA, which is currently under review. Allyson was responsible for conducting QC during these efforts as well.

Town of Malabar Stormwater Master Plan, Malabar, FL.

Project Manager responsible for developing a town-wide stormwater master plan model and CIP design recommendations. The project included the development of a 24.5-mi² H&H model (ICPR4 with both 1D and 2D components), field reconnaissance, delineation of floodplains, identification, and prioritization of areas of concern, and the development of design alternatives for the various identified locations. She also presented the results of the study and conceptual designs to the Town's Council at a public meeting. Future work will involve supporting the Town with the SRF funding requirements.



Mark Ellard, PE, CFM, BC.WRE, ENV SP

Mark leads Geosyntec's water resources group in Florida. He has provided project management and senior engineering on over 300 water resources-related projects including watershed assessments, basin studies, stormwater retrofits, water quality assessments, BMP design, floodplain mapping, erosion control measures, and stormwater master planning. He provides technical direction and engineering associated with QA/QC of field data collection and inventory, hydrologic and hydraulic modeling, GIS data analysis, CADD production, permitting, public involvement, and construction inspection.

ROLE

QC Manager

EXPERIENCE

34 Years

EDUCATION

MS, Water Resources
Engineering, University of
Central Florida

BS, Civil Engineering,
Georgia Institute of
Technology

REGISTRATION

Professional Engineer -
Florida No. 48073

Certified Floodplain Manager -
Florida No. US-09-04415

Water Resources Engineer -
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REPRESENTATIVE PROJECT EXPERIENCE

Shingle Creek Basin Study Stormwater Management Plan (2024), Osceola County, FL.

Developing a comprehensive master plan to manage surface water in the Osceola County portion of Shingle Creek, covering an area of 29,000 acres using the GWIS 2.1 geodatabase and ICPR4. This involves conducting a thorough drainage inventory, creek bathymetry, bridge scans and structure survey to inform the model network and parametrization. This also includes floodplain mapping, water quality assessments, and a detailed final report that supports the development of stormwater capital improvements to relieve flooding.

Shingle Creek Basin Stormwater Management Master Plan (2017), Osceola County, FL.

Developed a stormwater management master plan to identify and prioritize stormwater flood reduction and water quality improvement needs in the region. Tasks included a stormwater inventory and problem definition of Shingle Creek and West Brach basins; engineering drainage assessment of the South Basin Focus Area using an ICPR H&H model; water quality assessment of the focus area; alternatives analysis; and capital improvement project recommendations.

Future 100-Year Flood Elevation Map, Broward County, FL.

Established a baseline for future resiliency of buildings and infrastructure related to projected sea level rise (SLR) and climate change induced hydrological changes. Updated the existing MIKE SHE/MIKE HYDRO RIVER countywide model that covers the urbanized areas of Broward County, including 30 municipalities and 21 water control districts, and facilities managed by South Florida Water Management District. A future conditions (SLR, groundwater levels, rainfall duration and intensity, and land use changes) 100-year flood model was created to prepare the 100-year flood elevation map.

Shingle Creek Hydronetwork Development, Orange County, FL.

To support efforts by the County to update and refine the watershed H&H modeling in the watershed, developed the Hydronetwork (Hydrojunctions and Hydroedges), to represent the drainage infrastructure in the watershed and identified survey needs to support future modeling. The first task

consisted of migration of existing GIS drainage infrastructure data from other sources to the Hydronetwork within a standard GIS geodatabase schema model. The migrated data consisted of drainage infrastructure survey data and data digitized from referenced plans and as-builts. The second task consisted of researching permit information from the South Florida Water Management District (SFWMD), County, and Florida Department of Transportation (FDOT) data sources for developments in the watershed and digitizing drainage infrastructure from the researched data. Hyperlinks to data sources were established for all digitized Hydronetwork features. Data gaps were identified and field reconnaissance was performed to address the gaps. Upon field investigation, the Hydronetwork was reviewed to identify survey needs to support future modeling. The first step was to identify primary drainage infrastructure anticipated to participate in the future hydraulic model network. After identifying the primary features, the data sources were reviewed to determine which features required collection of survey data. Needed drainage structure and cross-section surveys were identified. Finally, remaining data gaps were identified for future field investigation or additional research.

East County Basin Studies (Soldiers Creek, Gee Creek, Little Lake Howell and Lake Jesup Basins), Seminole County, FL.

Providing engineering and surveying services associated with four basins that drain to Lake Jesup. For each basin, we are conducting engineering assessments, developing H&H models (ICPR version 4), and conceptualizing BMPs and other improvement measures to meet the County's flood management and water quality goals. The primary objectives are to complete comprehensive basin studies to develop updated floodplains as well as evaluate conceptual flood improvement alternatives that will result in future capital improvement projects. Utilizing the previously completed work within the basins, we will update and modernize the existing Lake Jesup Basin model utilizing the SFWMD Geographic Watershed Information System (GWIS) data structure.

Wekiva Watershed Model Refinement and Water Quality BMP Evaluation, Seminole County, FL.

Developed a stormwater database to support future hydrologic, hydraulic, and water quality models as well as the conceptualization of BMPs to meet the goals of the Wekiva Total Maximum Daily Load (TMDL). This project was conducted in advance of the updated lidar based topographical data delivery that future efforts will rely upon. Developed a hydrogeological database to support BMP surface-groundwater interactions, conducted spatial identification of existing BMP's to support updates to the County's BMP inventory, and updated the drainage infrastructure network.

Lake Harney Basin Watershed Flood Resiliency Plan, Seminole County, FL.

Established 100-year floodplains, assessed flood LOS of drainage infrastructure, and evaluated improvement alternatives to address flooding. Tasks included developing an H&H flood model using ICPR version 4 and submitting a Letter of Map Revision for FEMA floodplain update.

Orlo Vista Flood Mitigation, Orange County, FL.

Developed watershed model and updated floodplains through LOMR process. Evaluated five alternatives to mitigate flooding. The alternatives evaluation included proposed conditions modeling and preliminary design and detailed cost estimates. The selected alternative was designed to provide a 100-year flood level of service. The design included pond vertical expansion, pump station and force main design and associated structural and electrical design elements. Final design included permitting, construction plans, specifications, and cost estimates. Currently providing post-design services including shop drawing review, responses to requests for additional information (RFI), and construction oversight.

Bowlees Creek Watershed Management Plan, Southwest Florida Water Management District (SFWMD), Manatee County, FL.

Established 100-year floodplains, assessed flood LOS of drainage infrastructure, and evaluated improvement alternatives to address flooding. Several flood improvement alternative concepts were developed to mitigate flooding at known flooding locations along the creek. The alternatives included lowering or removing existing weirs to improve conveyance, increasing storage along the creek, diverting flow, channeling widening, and widening road crossings. The estimated cost of each potential alternative was compared to estimated benefits to evaluate benefit-cost ratios.



Tom Amstadt, PE, CFM

Tom leads Geosyntec's watershed management group in Florida. He has served as project manager on water resources projects for state and local government clients since 2004. His areas of expertise include watershed management plans, stormwater retrofits, stormwater master plans, floodplain analyses, hydrologic and hydraulic modeling, pollutant load analyses, BMP concepts, construction plans, and environmental resource permitting. He has extensive experience using ArcGIS for geoprocessing of spatial data, mapping, and data representation. He has developed numerous stormwater models using ICPR (versions 3 and 4), EPA SWMM (version 5), and HEC-RAS (version 5).

ROLE

Team 1 - Watershed Analysis /
Team Leader

Watershed Analysis Lead

EXPERIENCE

20 Years

EDUCATION

ME, Environmental
Engineering Sciences,
University of Florida

BS, Civil Engineering,
University of Central Florida

REGISTRATION

Professional Engineer -
Florida No. 69032

Certified Floodplain Manager -
Florida No. US-09-04404

FDEP Certified Stormwater
Erosion & Sedimentation Control
Inspector -
No. 22296

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REPRESENTATIVE PROJECT EXPERIENCE

Shingle Creek Watershed Model Data Migration and Desktop Verification, Orange County, FL.

For this 84mi² watershed, migrated data from an existing ICPR model completed in 1996 to a standard GIS data model. The model consisted of 343 subbasins, 526 nodes, 649 links, and 292 cross-sections. Subsequently, the modeled drainage infrastructure was verified through desktop and field reconnaissance efforts. The migrated model was imported to ICPR to execute model simulations and verify the model data was accurately migrated. The migrated and verified model was used as a starting point for future model refinement by the County to identify flooding level of service deficiencies and floodplain risk.

Shingle Creek Hydronetwork Development, Orange County, FL.

To support efforts by the County to update and refine the watershed H&H modeling in the watershed, developed the Hydronetwork (Hydrojunctions and Hydroedges), to represent the drainage infrastructure in the watershed and identified survey needs to support future modeling. The first task consisted of migration of existing GIS drainage infrastructure data from other sources to the Hydronetwork within a standard GIS geodatabase schema model. The migrated data consisted of drainage infrastructure survey data and data digitized from referenced plans and as-builts. Hyperlinks to data sources were established for all migrated Hydronetwork features. The second task consisted of researching permit information from the South Florida Water Management District (SFWMD), County, and Florida Department of Transportation (FDOT) data sources for developments in the watershed and digitizing drainage infrastructure from the researched data. Hyperlinks to data sources were established for all digitized Hydronetwork features. Data gaps were identified and field reconnaissance was performed to address the gaps. Upon field investigation, the Hydronetwork was reviewed to identify survey needs to support future modeling.

Shingle Creek Basin Stormwater Management Master Plan (2017), Osceola County, FL.

Developed a stormwater management master plan to identify and prioritize stormwater flood reduction and water quality improvement needs in the region. Tasks included a stormwater inventory and problem

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definition of Shingle Creek and West Brach basins; engineering drainage assessment of the South Basin Focus Area using an ICPR H&H model; water quality assessment of the focus area; alternatives analysis; and CIP recommendations.

Big Sand Lake Watershed Management Plan, Orange County, FL.

The Big Sand Lake watershed is approximately 8.8 square miles within the Shingle Creek watershed. The focus of the study was the level of services provided by primary drainage systems in the Big Sand Lake watershed, as well as delineation of floodplains. Also included was an evaluation of the flood control performance of the drainwells on Big Sand Lake. The study utilized both single event design storms and rainfall representing the extreme precipitation events of 2003, which caused major flooding in the watershed, to evaluate peak stages. The H&H model, watershed data, hydraulic feature inventory data, and topographic data were developed using GIS software and stored in a SWFWMD GIS watershed and model geodatabase. The model included 215 basins, 582 nodes, and 785 links.

Lake Harney Basin Watershed Flood Resiliency Plan, Seminole County, FL.

Established 100-year floodplains, assessed flood LOS of drainage infrastructure, and evaluated improvement alternatives to address flooding. Tasks included developing an H&H flood model using ICPR version 4 and submitting a Letter of Map Revision for FEMA floodplain update.

Sebring Watershed Management Plan, Southwest Florida Water Management District, Highlands County, FL.

Developed a detailed H&H model to characterize runoff responses throughout the watershed, developed updated floodplain maps, determined FPLOS for basins in the watershed, and developed best management practice alternatives to address flooding problems in the watershed. Tasks included identifying the drainage structures in the watershed and developing data acquisition plan, initial GIS processing using ArcHydro tools, and examining hydrologic characteristics of the watershed and watershed boundary.

Community Redevelopment Area (CRA) Stormwater Master Plan, Winter Park, FL.

Developed cost-effective and feasible engineering alternatives to mitigate flooding associated with Lake Mendsen and Canton Avenue. Water quality retrofit improvements were investigated to reduce nutrient loads discharged from the 9th Grade Center Pond to Lake Virginia. A detailed existing conditions analysis was performed to evaluate other potential flooding and water quality deficiencies within the CRA area.

South Creek Watershed Management Plan, Pinellas County, FL.

Prepared a management plan for the South Creek watershed that comprises 4.5 square miles or approximately 2,918 acres located in north Pinellas County as well as the cities of Clearwater and Oldsmar. Collected drainage and water quality data; evaluated the 2.33-year, 5-year, 10-year, 25-year, 50-year, and 100-year existing conditions design storm event flood elevations using ICPR4 surface water modeling software; considered sea level rise and future rainfall conditions as part of the County's resiliency planning efforts. Developed a pollutant loading model and developed recommendations for non-structural and site-specific structural improvements.

Weeki Wachee Prairie Watershed Alternatives Analysis, SWFWMD, Hernando County, FL.

Project Director. Identified flooding and water quality deficiencies in the watershed and developed improvement concepts to address the deficiencies. An existing SWFWMD-approved H&H model was reviewed for necessary updates to develop 500-year floodplains and for use on this project. The model features were migrated to the GWIS geodatabase for inundation polygon generation. A LOS analysis was conducted to identify road and structure LOS deficiencies; the annual flood damages at each structure and road location were estimated. A surface water resource assessment (SWRA) was conducted to inventory water quality concerns and characterize direct runoff, infiltration, and percolation pollutant loads (total nitrogen, total phosphorus, and total suspended solids). Based on the results of the LOS and SWRA and input from SWFWMD and Hernando County staff, eight flood improvement and/or water quality BMP concepts were developed. Each concept was evaluated and ranked based on anticipated benefit-cost.



Michael Barretto, GISP

Michael brings over 18 years of experience in the use of GIS and CADD software as it applies to stormwater modeling and civil infrastructure design, supporting numerous publicly-funded projects of varying size and complexity. He has extensive experience in the use of GIS tools for the development of watershed H&H models, master plans, and designs to mitigate flooding and improve water quality. This includes digital terrain modeling, geodatabase development and implementation, geoprocessing techniques to calculate model and design parameters, ArcHydro processing to support model development, level-of-service (LOS) evaluations, and floodplain/inundation area mapping.

ROLE

Data Management / GIS /
Team Leader

EXPERIENCE

18 Years

EDUCATION

BS, Civil Engineering,
University of Central Florida

CERTIFICATIONS

Certified Geographic
Information Systems
Professional - No. 160910

CONTACT INFORMATION

11723 Orpington St.
Orlando, FL 32817
689.303.3307
mBarretto@halff.com

REPRESENTATIVE PROJECT EXPERIENCE

Riverside Village / Oaks Park MSBU Drainage Study Expansion and Conceptual BMP Design, Pasco County, FL.

As GIS Analyst, Michael was responsible for establishing existing conditions model features in GIS and ICPR to address significant roadway flooding. The project area experienced flooding during storm events and during times of high water in the Anclote River, resulting in backflow into the neighborhood. The project design included concrete box culverts, gabion-lined channels, a structural weir, multiple control structures, and maintenance improvements.

Holden Heights Community Improvements Phase IV, Orange County, FL.

As GIS Analyst, Michael created an existing conditions H&H model in GIS and ICPR for the project. As part of design development, Singhofen Halff developed an H&H model to analyze and refine the conceptual design prepared by others. Singhofen Halff was able to consolidate numerous stormwater ponds proposed in the conceptual design into a single pond providing compensating treatment, thereby reducing the amount of land acquisition required and providing significant cost savings to the County. Several alternative pond layouts were provided to the County during the collaborative design development process.

All Aboard Florida PE03 Railway Drainage Project, Orange and Brevard Counties, FL.

As GIS Analyst, Michael was responsible for laying out the drainage design in CADD for over 14 miles of new railway along a major Florida highway. The project was designed within the highway ROW, included two interchanges, two offsite stormwater ponds, a borrow pit, and modeling and design for the new railway, as well as the ultimate future build-out condition of the highway for both stormwater attenuation and treatment. Additional treatment was required for discharge to the adjacent State preserve. Floodplain compensation and mimicking existing flow patterns also was required.



Rebecca Harris, PE, CFM

Rebecca brings eight years of experience in H&H modeling and BMP development. She has had key roles in multiple publicly funded watershed management projects. Her focus has been on the use of ICPR, and she is skilled in the development of Hydro, HEP, and Model Network features in GWIS, the development of 2D features, model parameterization, model QC, model simulations including validation storms, level of service analysis, and floodplain mapping. She is also experienced in developing BMP alternatives to address flooding and managing and working on WMP projects, including using SWFWMD methods for data collection and GIS standards.

ROLE

Team 2 - Watershed Analysis /
Team Leader

EXPERIENCE

8 Years

EDUCATION

BS, Environmental
Engineering, University of
Central Florida

REGISTRATION

Professional Engineer -
Florida No. 98611

ASFPM Certified Floodplain
Manager No. US-18-10331

CONTACT INFORMATION

11723 Orpington St.
Orlando, FL 32817
689.303.3315
rharris@halff.com

REPRESENTATIVE PROJECT EXPERIENCE

Lake Mills/Lake Pickett Watershed Management Plan, Seminole County, FL.

Singhofen Halff was tasked with developing a fast-tracked, detailed WMP for the seven-square-mile area draining to Lake Mills and Lake Pickett within the 45-mi² Econ watershed. The model was developed using ICPR4 with a 2D mesh to represent overland flow and included model verification to an actual storm event, LOS analysis, identification of areas of concern, and floodplain mapping. As Staff Engineer, Rebecca assisted with the floodplain mapping and preparation of a report documenting the data collection, modeling, and results.

Reams Road Watershed Management Plan, Orange County, FL.

This was a fast-tracked WMP project for an 11-square-mile watershed in Orange County. The project was conducted on an accelerated schedule to be completed in advance of an upcoming roadway improvement project. As Staff Engineer, Rebecca assisted with the H&H model (ICPR) parameterization, addressing QC review comments, and floodplain and flood depth grid development.

Mill Creek Watershed Management Plan Update, Manatee County, FL.

This 16-mi² watershed management plan for SWFWMD involved both WE and WMP elements. The modeling was conducted using ICPR4 and areas that are primarily characterized by streamflow or overland flow are represented using 2D elements. Rebecca has been responsible for assisting in the model development for this project and served as the Deputy Project Manager. Her role has included data collection and review, rainfall analysis and verification storm selection, field data acquisition plan development, Hydro, HEP, and Model Network development in a GWIS geodatabase, the development of 2D features (e.g. breaklines, mesh, interface points, control volumes), population of data tables from reference documents and survey, parameterization including the use of geoprocessing tools, model input QC, model simulations, model debugging/stabilization, and floodplain mapping for FEMA. Currently, Rebecca is leading the efforts on physical map revision (PMR) updates of the watershed with FEMA under a separate contract with the County, including floodway revisions which were complicated by the use of 2D features.



Drew Sanders

Drew Sanders is highly experienced in environmental permitting that encompasses a wide range of public and private projects. His areas of specialization include project management, environmental permitting, ecological assessments, and habitat mapping of terrestrial and aquatic systems, plant and wildlife surveys, listed species surveys, photo interpretation, wetland delineation and hydroperiod assessment, habitat restoration and management, and wetland mitigation design.

REPRESENTATIVE PROJECT EXPERIENCE

Wekiva Trail Segment 1, Lake County, FL.

Environmental Scientist responsible for this project that involves the design of an asphalt trail from 350 LF west of Tremain Street to SR 46 (Sorrento Avenue) in Lake County. The proposed trail is approximately 5.5 miles. The 14-foot-wide trail requires an environmental assessment be completed to determine the presence of wetlands and protected species throughout the project limits. Permitting and utility coordination is required. The trail alignment is to utilize CSX rail corridor right of way.

Pasco County, Anclote River Park, Holiday, FL.

Environmental Scientist responsible for providing project management for the renovation and expansion of the Anclote River Park. As a part of the project, Drew is providing assistance with wetland delineations, habitat mapping, seagrass and mangrove surveys, and wildlife surveys in support of the park improvement project. Assistance with public meetings, regulatory agency coordination, and environmental permitting for wetland and wildlife is also being provided.

East Point Washington Road Realignment, Walton County, FL.

Drew provided environmental support for a new 1.0 mile two-lane roadway to improve access to Eden Gardens State Park and accommodate proposed residential development. He completed wetland delineations, listed species surveys, and provided environmental permitting assistance for the project.

Western Beltway/Western Way Interchange, Orange County, FL.

Completed wetland delineations, listed species surveys, and provided environmental permitting for a 457-acre mixed-use development. Listed species addressed as a part of this project included the sand skink, gopher tortoise, and the eastern indigo snake.

SR 429 (Western Beltway), Orange and Osceola Counties, FL.

Environmental Scientist who completed upland habitat assessments, listed species surveys, and environmental permitting for an 11-mile, 1,063-acre segment of the Western Beltway. Drew's primary area of responsibility focused on wildlife issues associated with the sand skink, gopher tortoise, eastern indigo snake, and listed plant species. Drew was also responsible for the development of a suitable listed species mitigation plan which included coordination with private and public stakeholders and the acquisition and enhancement of over 300-acres of xeric and mesic habitats.

ROLE

Environmental /
Permitting Support

EXPERIENCE

31 Years

EDUCATION

BS, Biology, University of
South Florida, 1991

CONTACT INFORMATION

1000 N. Ashley Dr., Ste. 900
Tampa, FL 33602
813.331.0957
drew.sanders@halff.com



Sean Lahav, MPA

Sean is the Resilience Market Leader and is responsible for growing resilience in both Florida and Texas. He brings highly specialized senior level experience to Marion County having navigated resilience and climate adaptation planning priorities across academia and the public and private sectors. He has advised municipalities, counties, and regional planning councils across the state on climate resilience priorities and has been invited to speak before elected commissions and civic organizations on more than 90 occasions in a policy advisory role. He is currently a doctoral candidate in FSU's Department of Urban and Regional Planning where his dissertation research is focused on evaluating the role of collaborative planning and governance in advancing Nature-based Solutions (NbS). He was recognized with an Environmental Achievement Award by the City of Jacksonville's Environmental Protection Board in 2021.

ROLE

Resilience and Sustainability
Planning Lead

EXPERIENCE

8 Years

EDUCATION

PhD, Urban and Regional
Planning, Florida State
University (Expected 2024)

MPA, Public Administration
& Policy, University of North
Florida

BA, Political Science,
University of North Florida

CONTACT INFORMATION

9995 Gate Parkway N.,
Ste. 200
Jacksonville, Florida 32246
904.720.2611
slahav@halff.com

REPRESENTATIVE PROJECT EXPERIENCE

Apalachee Nine-County Regional Vulnerability Assessment, Apalachee Region, FL.

Project Manager. Sean oversaw the ARPC's development of a regional vulnerability assessment that encompassed more than 10% of Florida's total land area. He was responsible for leading a multi-disciplinary team of civil and coastal engineers, GIS analysts, infrastructure experts, and planners in a regional effort focused on evaluating the vulnerabilities of critical and regionally significant assets to the climate hazards of storm surge, sea level rise, precipitation, and compound flooding. The project benefited nine counties and 28 municipalities.

Municipal and County Vulnerability Assessments, State of Florida.

Currently serving as Project Manager, Deputy Project Manager, and Senior Technical Advisor on vulnerability assessment projects for Flagler County, Pasco County, Panama City, Port Richey, and Fernandina Beach. Advising local government staff and elected officials on Section 380.093, F.S., requirements, climate adaptation planning priorities, and grant funding opportunities. Serving as Halff's leading subject matter expert for vulnerability assessments in Florida.

Tampa Bay Regional Inundation Coordination Project, Tampa Bay Region, FL.

Stakeholder Engagement Lead who oversaw all research, stakeholder engagement, and regional outreach components of the Tampa Bay Regional Planning Council's TBRIC initiative. He was responsible for leading qualitative interviews with more than a dozen subject matter experts on flooding modeling from the private, public, and nonprofit sectors. Led interviews with representatives from UF, FIU, USF, SFWMD, NOAA, USACE, and a broad range of industry leaders. Led and facilitated virtual stakeholder engagement workshops comprised of local government leadership in emergency management, planning, public works, and floodplain management. The project benefited seven counties and 21 municipalities.



Scot Carpenter, PSM

Scot has significant experience in performing and managing a wide variety of surveys including, but not limited to sectionalized land boundary surveys, topographic, tree and utility location surveys, extensive right of way surveys for water main and forcemain installations, hydrographic surveying, and wetland delineation surveying. Scot oversees all survey operations in Florida and will verify all available resources are used to provide timely services. Scot emphasizes client satisfaction and will keep our group of professionals focused on meeting schedules and providing quality deliverables.

ROLE

Survey Lead

EXPERIENCE

36 Years

EDUCATION

High School Diploma

REGISTRATION

Professional Survey Manager
- Florida No. LS6177

CONTACT INFORMATION

902 N. Sinclair Avenue
Tavares, FL 32778
352.557.9246
scarpenter@halff.com

REPRESENTATIVE PROJECT EXPERIENCE

FDOT District Five, SR 600 at A1A, Daytona Beach, FL.

The scope included advanced survey services for the design of a proposed roundabout at the intersection. Survey services included horizontal and vertical project control, mobile lidar targets for mobile scanning of the roadway out to the back of sidewalk, the retracement and staking of historical alignments along SR 600 and A1A and setting reference points on alignment control points. Additional survey tasks involved control survey efforts along the routes that included the retracement of PLSS sectionalized lands and platted subdivisions along the route that resulted in a right of way control survey.

FDOT District Seven, US 301/SR 43 Falkenburg Road to Sligh Avenue, Tampa, FL.

The project scope included transportation design surveying services which involved horizontal and vertical survey control, the recovery of historical centerline of survey alignment, mobile lidar, the setting and control of targets for the mobile lidar effort, and a conventional topographic survey of obscure areas to be merged with the lidar data to produce a digital terrain model of a six mile corridor for median modifications along US 301.

FDOT District Five, SR 35/US 301 from CR 470 to SR 44, Coleman, FL.

The scope included performing an existing right of way and maintained right of way survey with the results being a maintained right of way map along SR 35, this included the retracement of SR 35, CR 470, CR 468, the Florida Turnpike and SR 44 alignments. Horizontal project control was also established along and within the limits of each roadway corridor. Each alignment was staked, and reference points were set at alignment control points. He also provided retracement of thirteen public land survey system (PLSS) sections and all subdivisions along the route.



Matt Trimble, PE

Matt has 20 years of invaluable experience as a transportation engineer. He has a diverse array of experience ranging from roadway reconstruction, widening/capacity projects, milling and resurfacing projects, trail projects, and bridge replacements. Matt also offers design expertise in bridges and miscellaneous transportation structures including, concrete box culverts, retaining walls, noise walls, mast arms, strain poles, and sign support structures. He has a thorough understanding and background in the project delivery process from project pursuit through design office support serving as Engineer of Record/task leader/production team or Project Manager.

ROLE

Structural Lead

EXPERIENCE

20 Years

EDUCATION

BS, Civil Engineering, Case Western Reserve University

MS, Civil Engineering (Structural), Virginia Polytechnic Institute and State University

REGISTRATION

Professional Engineer - FL No. 65708

CONTACT INFORMATION

2255 Killearn Center Blvd., Ste. 200
Tallahassee, FL 32309
850.224.4400
mtrimble@halff.com

REPRESENTATIVE PROJECT EXPERIENCE

Indian River Bridge, Kennedy Space Center, FL.

Project Engineer/Assistant Project Manager for the TS&L Study for the replacement of the existing low level AASHTO girder bridge with twin leaf steel plate girder main span. Proposed bridge is a precast segmental concrete fixed high level bridge approximately 4,000' long with 260' long balanced cantilever approach spans and a 305' long main span. Led a small group of engineers to complete the conceptual design of multiple superstructure and substructure alternates for the TS&L Study. Managed CAD effort to develop conceptual drawing set for the TS&L Study.

East Point Washington Road Realignment, Walton County, FL.

This project is a new 0.75-mile, two-lane roadway to improve access to Eden Gardens State Park and accommodate proposed residential development. Design included removal of the existing dirt road, stabilization of the proposed roadbed with geosynthetic reinforced material (Geogrid), installation of new cross drain culverts, and add rip-rap revetment along front slopes in wetland areas. The design included roadway analysis, pavement design, geotechnical design, drainage analysis, environmental services, and permitting necessary to complete the project.

Airport Gateway Project, Leon County, FL.

Matt is currently serving as EOR for the final design of Segment C. This project involves a broad range of transportation improvements to various rural and urban corridors within COT and Leon County. Segment C is a new 1.2 mile alignment with two 11' lanes, a landscaped median, buffered sidewalk and multi-use path in a curb and gutter section. This segment contains five stormwater management facilities and features a roundabout near the northern terminus connecting the new road to the realignment of two existing roads.

CR 375 Smith Creek Road, Wakulla County, FL.

Design for this project was recently completed that includes engineering and permitting for the resurfacing, paving, and widening of 5.997 miles of County Road (CR) 375. Design included roadway analysis, pavement design, geotechnical design, drainage analysis, environmental services, and permitting necessary to complete the project.



Emilia Yanagi, PE, CFM

Emilia has focused on the design and analysis of riverine watersheds, specifically including hydrologic and hydraulic computer analysis, flood control planning, floodplain management, water supply and demand studies, erosion analysis and design, storm drainage systems, and channel design. She provides consistent reviews based on her extensive knowledge of iSWM policies and procedures and FEMA guidelines and policies, as well as the City of Fort Worth Stormwater Criteria Manual.

REPRESENTATIVE PROJECT EXPERIENCE

City of Frisco, Three Cities Hike and Bike Trail, Frisco, TX.

responsible for assisting with the City of Frisco, the City of Allen, and the City of Plano constructed an interconnected Active Transportation Trail System that would become a vital transportation link between the three cities. By linking these three cities, this project becomes regional in nature and also identifies the need for cities to work in collaboration to construct a regional network of interconnected trails.

City of Lewisville / Corporate Drive Extension, Lewisville, TX.

Task Leader responsible for assisting with the development of 1D and 2D HEC-RAS hydraulic models along Elm Fork Trinity River, Elm Fork Split Flow, and Midway Branch for the proposed Corporate Road improvements between Railroad Street and Carrollton Parkway in Lewisville. Prepared and coordinated Corridor Development Certificate and Conditional Letter of Map Revision (CLOMR). This was an extremely complex hydraulic situation with three distinct flow paths in low flows situations which combined during significant events. Discharges downstream from Lake Lewisville were in excess of 20,000 cfs for the 10 miles of detailed unsteady modeling.

City of Fort Worth / CentrePort Trail, Fort Worth, TX.

responsible for assisting with the federally funded project including the assessment, schematic design, and construction documentation development for 5 miles of trail that connects the American Airlines Campus to Mike Lewis Park in Grand Prairie. This project involved a CentrePort Trail Phase 1 and Phase 2 for the City of Fort Worth. Phase 1 involved the new American Airline Campus in east Fort Worth CentrePort area and headed south to connect with the City of Arlington's River Legacy Park trail and turned east to pass under SH 360 and connect to TRE CentrePort Station (1.6 miles). Phase 2 starts at TRE CentrePort Station and extends east along TRE railroad until meeting the Trinity Boulevard, and then heads south to connect with Mike Lewis Park in north Grand Prairie (3.5 miles) for 5.1 miles total.

Harris County Flood Control District (HCFCD), San Jacinto Regional Watershed Master Drainage Plan, Houston, TX.

responsible for assisting with the Watershed Master Drainage Plan by performing data collection, assessing existing conditions with model calibration with Atlas 14 Rainfall and 1% ACE, performing a flood mitigation alternative evaluation for 16 different alternatives based on flood risk reduction, social vulnerabilities, cost and benefits to the community.

ROLE

HEC Support

EXPERIENCE

23 Years

EDUCATION

BS, Civil Engineering, Texas Tech University, 1989

REGISTRATION

Professional Engineer - Texas No. 80282

CERTIFICATIONS

Certified Floodplain Manager - Texas No. 3227-16N

CONTACT INFORMATION

2601 Meacham Blvd., Ste. 600
Fort Worth, TX 76137-4204
817.764.7466
eyanagi@halff.com

F. QUALITY CONTROL AND ASSURANCE

Our project team has been carefully assembled to provide the most cost-effective model development approach for the District's drainage system. Our services will be provided in accordance with Singhofen Halff's proven work processes and quality control program.

DATA COLLECTION PHASE

The data collection phase is critical for establishing a solid foundation for the Master Drainage Model Update project. Our team will conduct a thorough kickoff meeting, comprehensive data review and integration, lidar and aerial imagery analysis, and field verification. These tasks involve collecting, verifying, and integrating all relevant data into our project geodatabase (GDB).

Data Review and Integration: Cross-check data against original sources and address discrepancies.

Lidar and Aerial Imagery Analysis: Verify updated data layers through visual inspections for accuracy.

Field Verification: Review field verification reports and integrate updates into the GDB.

GIS Data Management: Conduct regular audits of the GDB to maintain data integrity and accessibility.

Survey Coordination: Cross-reference survey data with existing datasets.

MODELING PHASE

The modeling phase involves the development and validation of hydraulic models, hydrologic parameter development, and setting initial and boundary conditions. This phase aims to simulate real-world conditions accurately, preparing for detailed analysis and floodplain mapping.

Preliminary Model Development: Assess accuracy and completeness before advancing to detailed modeling.

H&H Modeling & Analysis: Conduct rigorous internal reviews and validate models against field conditions and historical data.

Hydrologic Parameter Development: Cross-check parameters against existing data and verify through model calibration.

Hydraulic Parameter Development: Review and validate model outputs for accuracy and expected performance.

Initial and Boundary Conditions: Review and iterate conditions as necessary to maintain model accuracy.

FLOODPLAIN MAPPING PHASE

Using the results from the approved models, this phase focuses on assessing flood-prone areas and estimating base flood elevations. Floodplain maps will be developed according to FEMA guidelines and integrated into the project GDB.

Floodplain Assessment: Review floodplain maps for compliance with FEMA guidelines and project requirements.



H. REQUIRED STATEMENTS

The following statements must be included in your submittal:

1. *Consultant will not delete or substitute any sub-consultant without the prior written approval of the District.*
 - Singhofen Halff will not delete or substitute any sub-consultant without the prior written approval of the District.
2. *Consultant will not discriminate in admission or access to or treatment or employment in its programs and activities on the basis of race, color, religion, age, sex, national origin, marital status, handicap, or any other reason prohibited by law.*
 - Singhofen Halff will not discriminate in admission or access to or treatment or employment in its programs and activities on the basis of race, color, religion, age, sex, national origin, marital status, handicap, or any other reason prohibited by law.
3. *Consultant will comply with Equal Employment Opportunity requirements.*
 - Singhofen Halff will comply with Equal Employment Opportunity requirements.
4. *All federal and state laws and regulations will be adhered to during the course of this project. In case of a conflict between federal, state or local laws or regulations, the strictest will be adhered to.*
 - All federal and state laws and regulations will be adhered to during the course of this project by Singhofen Halff. In case of a conflict between federal, state or local laws or regulations, the strictest will be adhered to by Singhofen Halff.



[Singhofen & Associates, Inc.] “SAI has set a very high standard for other Engineering Firms to follow. They have extensive drainage and stormwater modeling design experience, and they possess a highly qualified and committed staff with local project area experience. They always look for opportunities to improve a given scope of service and they always provided project designs ahead of schedule.”

Juan E. Bostwick, PE, City of Palm Coast (former City Engineer)

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT

BOARD OF SUPERVISORS REPORT 8.2

Board Meeting Date: 11/20/2024

Subject: Annual Service Agreement for Motorola Astro P25 Radio System Public Safety Radio

System Presented By: Joel Edwards

Department: District Fire Department

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #8.2 one-year contract with Motorola Solutions Inc. to provide annual maintenance of the Astro P25 911 emergency dispatch radio system in the amount of \$537,139.17

RELEVANT STRATEGIC GOALS: Operational Excellence

PROOF OF PUBLICATION: N/A

BACKGROUND: The District owns, operates, and maintains a public safety radio system utilized by the District Fire Department and various other District departments. This system is also part of an interlocal agreement that allows local county law enforcement and fire department's to roam on each other's system, improving coverage for everyone in region. As part of this interlocal, each radio system owner must maintain operational upgrades and repairs on the system. This service contract provides essential repair and replacement of the radio system components, excluding portable and mobile radios (servers, routers, switches, etc.)

FINDINGS AND CONCLUSIONS: The Astro P25 radio system is a proprietary system which requires highly technical maintenance technicians to provide service and maintain system upgrades, including software. As a proprietary system, this is a single source vendor.

FISCAL IMPACT: This contract has been approved in the District's 2025 Annual Budget as item 121-001-5307805, Radio Service Contract Year 5 of 6.

PROCUREMENT REVIEW: This service contract has been reviewed and approved for compliance with the District's Procurement policies.

LEGAL REVIEW: The contract will be reviewed and approved for form and legality by the District Attorney.

ALTERNATIVE: Deny or Table

SUPPORT MATERIALS: Service contract attached.



SERVICE AGREEMENT

500 W Monroe Street
 Chicago, IL. 60661
 (888) 325-9336

Quote Number : QUOTE-2513541
 Contract Number: USC000030303
 Contract Modifier: R05-FEB-24
 15:06:39

Date:07/11/2024

Company Name: CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT Attn: Billing Address: PO BOX 690519 City, State, Zip: ORLANDO , FL, 32819 Customer Contact: Phone:

Required P.O. :
 PO # :
 Customer # :3010366824
 Bill to Tag # :
 Contract Start Date :01-Oct-2024
 Contract End Date :30-Sep-2025
 Payment Cycle :ANNUALLY

Qty	Service Name	Service Description	Extended Amt
		ASTRO P25 SYSTEM MAINTENANCE PACKAGE	\$537,139.17
		Remote Technical Support	
		Network Hardware Repair (with Advanced Replacement)	
		Security Update Service	
		Network Event and Security Monitoring	
		On-Site Infrastructure Response	
		Preventative Maintenance	
		Subtotal - Recurring Services	\$44,761.59
		Subtotal - One-Time Event Services	\$0.00
		Total	\$537,139.17
THIS SERVICE AMOUNT IS SUBJECT TO STATE AND LOCAL TAXING JURISDICTIONS WHERE APPLICABLE, TO BE VERIFIED BY MOTOROLA			

SPECIAL INSTRUCTIONS: Motorola P25 System Maintenance Package for Central Florida Tourism Oversight District P25 Radio System. 1 Master Site, 1 Prime Site, 3 Simulcast RF Sites (5 Total with Disney), 30 Channels/ Stations, 3 Dispatch Centers, 12 Dispatch Consoles (9 MCC7500, 3 RNI Laptop), and UPS Annual Preventative Maintenance at Hartzog, DC6, TOT.




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500 W Monroe Street
Chicago, IL. 60661
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AUTHORIZED CUSTOMER REPRESENTATIVE(JOEL EDWARDS, DEPUTY CHIEF PHONE 407-473-0998)

CUSTOMER (VICE-CHAIRMAN CHARBEL BARAKAT, Board of Supervisors)

MOTOROLA REPRESENTATIVE(PRINT NAME)	Regional Service Manager	7/11/2024
TITLE		DATE
	407-574-0091	
MOTOROLA REPRESENTATIVE(PRINT NAME)	PHONE	

Company Name : CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
Contract Number : USC000030303
Contract Modifier : R05-FEB-24 15:06:39
Contract Start Date : 01-Oct-2024
Contract End Date : 30-Sep-2025



SERVICE AGREEMENT

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Service Terms and Conditions

Motorola Solutions Inc. ("Motorola") and the customer named in this Agreement ("Customer") hereby agree as follows:

Section 1. APPLICABILITY

These Maintenance Service Terms and Conditions apply to service contracts whereby Motorola will provide to Customer either (1) maintenance, support, or other services under a Motorola Service Agreement, or (2) installation services under a Motorola Installation Agreement.

Section 2. DEFINITIONS AND INTERPRETATION

2.1 "Agreement" means these Maintenance Service Terms and Conditions; the cover page for the Service Agreement or the Installation Agreement, as applicable; and any other attachments, all of which are incorporated herein by this reference. In interpreting this Agreement and resolving any ambiguities, these Maintenance Service Terms and Conditions take precedence over any cover page, and the cover page takes precedence over any attachments, unless the cover page or attachment states otherwise.

2.2 "Equipment" means the equipment that is specified in the attachments or is subsequently added to this Agreement.

2.3 "Services" means those installation, maintenance, support, training, and other services described in this Agreement.

Section 3. ACCEPTANCE

Customer accepts these Maintenance Service Terms and Conditions and agrees to pay the prices set forth in the Agreement. This Agreement becomes binding only when accepted in writing by Motorola. The term of this Agreement begins on the "Start Date" indicated in this Agreement.

Section 4. SCOPE OF SERVICES

4.1 Motorola will provide the Services described in this Agreement or in a more detailed statement of work or other document attached to this Agreement. At Customer's request, Motorola may also provide additional services at Motorola's then-applicable rates for the services.

4.2 If Motorola is providing Services for Equipment, Motorola parts or parts of equal quality will be used; the Equipment will be serviced at levels set forth in the manufacturer's product manuals; and routine service procedures that are prescribed by Motorola will be followed.

4.3 If Customer purchases from Motorola additional equipment that becomes part of the same system as the initial Equipment, the additional equipment may be added to this Agreement and will be billed at the applicable rates after the warranty for that additional equipment expires.

4.4 All Equipment must be in good working order on the Start Date or when additional equipment is added to the Agreement. Upon reasonable request by Motorola, Customer will provide a complete serial and model number list of the Equipment. Customer must promptly notify Motorola in writing when any Equipment is lost, damaged, stolen or taken out of service. Customer's obligation to pay Service fees for this Equipment will terminate at the end of the month in which Motorola receives the written notice.

4.5 Customer must specifically identify any Equipment that is labeled intrinsically safe for use in hazardous environments.

4.6 If Equipment cannot, in Motorola's reasonable opinion, be properly or economically serviced for any reason, Motorola may modify the scope of Services related to that Equipment; remove that Equipment from the Agreement; or increase the price to Service that Equipment.

4.7 Customer must promptly notify Motorola of any Equipment failure. Motorola will respond to Customer's notification in a manner consistent with the level of Service purchased as indicated in this.

Section 5. EXCLUDED SERVICES

5.1 Service excludes the repair or replacement of Equipment that has become defective or damaged from use in other than the normal, customary, intended, and authorized manner; use not in compliance with applicable industry standards; excessive wear and tear; or accident, liquids, power surges, neglect, acts of God or other force majeure events.

5.2 Unless specifically included in this Agreement, Service excludes items that are consumed in the normal operation of the Equipment, such as batteries or magnetic tapes.; upgrading or reprogramming Equipment; accessories, belt clips, battery chargers, custom or special products, modified units, or software; and repair or maintenance of any transmission line, antenna, microwave equipment, tower or tower lighting, duplexer, combiner, or multicoupler. Motorola has no obligations for any transmission medium, such as telephone lines, computer networks, the internet or the worldwide web, or for Equipment malfunction caused by the transmission medium.



SERVICE AGREEMENT

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Chicago, IL. 60661
(888) 325-9336

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Section 6. TIME AND PLACE OF SERVICE

Service will be provided at the location specified in this Agreement. When Motorola performs service at Customer's location, Customer will provide Motorola, at no charge, a non-hazardous work environment with adequate shelter, heat, light, and power and with full and free access to the Equipment. Waivers of liability from Motorola or its subcontractors will not be imposed as a site access requirement. Customer will provide all information pertaining to the hardware and software elements of any system with which the Equipment is interfacing so that Motorola may perform its Services. Unless otherwise stated in this Agreement, the hours of Service will be 8:30 a.m. to 4:30 p.m., local time, excluding weekends and holidays. Unless otherwise stated in this Agreement, the price for the Services exclude any charges or expenses associated with helicopter or other unusual access requirements; if these charges or expenses are reasonably incurred by Motorola in rendering the Services, Customer agrees to reimburse Motorola for those charges and expenses.

Section 7. CUSTOMER CONTACT

Customer will provide Motorola with designated points of contact (list of names and phone numbers) that will be available twenty-four (24) hours per day, seven (7) days per week, and an escalation procedure to enable Customer's personnel to maintain contact, as needed, with Motorola.

Section 8. INVOICING AND PAYMENT

8.1 Customer affirms that a purchase order or notice to proceed is not required for the duration of this service contract and will appropriate funds each year through the contract end date. Unless alternative payment terms are stated in this Agreement, Motorola will invoice Customer in advance for each payment period. All other charges will be billed monthly, and Customer must pay each invoice in U.S. dollars within twenty (20) days of the invoice date

8.2 Customer will reimburse Motorola for all property taxes, sales and use taxes, excise taxes, and other taxes or assessments that are levied as a result of Services rendered under this Agreement (except income, profit, and franchise taxes of Motorola) by any governmental entity. The Customer will pay all invoices as received from Motorola. At the time of execution of this Agreement, the Customer will provide all necessary reference information to include on invoices for payment in accordance with this Agreement.

8.3 For multi-year service agreements, at the end of the first year of the Agreement and each year thereafter, a CPI percentage change calculation shall be performed using the U.S. Department of Labor, Consumer Price Index, all Items, Unadjusted Urban Areas (CPI-U). Should the annual inflation rate increase greater than 3% during the previous year, Motorola shall have the right to increase all future maintenance prices by the CPI increase amount exceeding 3%. All items, not seasonally adjusted shall be used as the measure of CPI for this price adjustment. Measurement will take place once the annual average for the new year has been posted by the Bureau of Labor Statistics. For purposes of illustration, if in year 5 the CPI reported an increase of 8%, Motorola may increase the Year 6 price by 5% (8%-3% base).

Section 9. WARRANTY

Motorola warrants that its Services under this Agreement will be free of defects in materials and workmanship for a period of ninety (90) days from the date the performance of the Services are completed. In the event of a breach of this warranty, Customer's sole remedy is to require Motorola to re-perform the non-conforming Service or to refund, on a pro-rata basis, the fees paid for the non-conforming Service. MOTOROLA DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Section 10. DEFAULT/TERMINATION

10.1 If either party defaults in the performance of this Agreement, the other party will give to the non-performing party a written and detailed notice of the default. The non-performing party will have thirty (30) days thereafter to provide a written plan to cure the default that is acceptable to the other party and begin implementing the cure plan immediately after plan approval. If the non-performing party fails to provide or implement the cure plan, then the injured party, in addition to any other rights available to it under law, may immediately terminate this Agreement effective upon giving a written notice of termination to the defaulting party.

10.2 Any termination of this Agreement will not relieve either party of obligations previously incurred pursuant to this Agreement, including payments which may be due and owing at the time of termination. All sums owed by Customer to Motorola will become due and payable immediately upon termination of this Agreement. Upon the effective date of termination, Motorola will have no further obligation to provide Services.

10.3 If the Customer terminates this Agreement before the end of the Term, for any reason other than Motorola default, then the Customer will pay to Motorola an early termination fee equal to the discount applied to the last three (3) years of Service payments for the original Term.

Section 11. LIMITATION OF LIABILITY

Except for personal injury or death, Motorola's total liability, whether for breach of contract, warranty, negligence, strict liability in tort, or otherwise, will be limited to the direct damages recoverable under law, but not to exceed the price of twelve (12) months of Service provided under this Agreement.



SERVICE AGREEMENT

500 W Monroe Street
Chicago, IL. 60661
(888) 325-9336

Quote Number : QUOTE-2513541
Contract Number: USC000030303
Contract Modifier: R05-FEB-24 15:06:39

ALTHOUGH THE PARTIES ACKNOWLEDGE THE POSSIBILITY OF SUCH LOSSES OR DAMAGES, THEY AGREE THAT MOTOROLA WILL NOT BE LIABLE FOR ANY COMMERCIAL LOSS; INCONVENIENCE; LOSS OF USE, TIME, DATA, GOOD WILL, REVENUES, PROFITS OR SAVINGS; OR OTHER SPECIAL, INCIDENTAL, INDIRECT, OR CONSEQUENTIAL DAMAGES IN ANY WAY RELATED TO OR ARISING FROM THIS AGREEMENT OR THE PERFORMANCE OF SERVICES BY MOTOROLA PURSUANT TO THIS AGREEMENT. No action for contract breach or otherwise relating to the transactions contemplated by this Agreement may be brought more than one (1) year after the accrual of the cause of action, except for money due upon an open account. This limitation of liability will survive the expiration or termination of this Agreement and applies notwithstanding any contrary provision.

Section 12. EXCLUSIVE TERMS AND CONDITIONS

12.1 This Agreement supersedes all prior and concurrent agreements and understandings between the parties, whether written or oral, related to the Services, and there are no agreements or representations concerning the subject matter of this Agreement except for those expressed herein. The Agreement may not be amended or modified except by a written agreement signed by authorized representatives of both parties.

12.2 Customer agrees to reference this Agreement on any purchase order issued in furtherance of this Agreement, however, an omission of the reference to this Agreement will not affect its applicability. In no event will either party be bound by any terms contained in a Customer purchase order, acknowledgement, or other writings unless: the purchase order, acknowledgement, or other writing specifically refers to this Agreement; clearly indicate the intention of both parties to override and modify this Agreement; and the purchase order, acknowledgement, or other writing is signed by authorized representatives of both parties.

Section 13. PROPRIETARY INFORMATION; CONFIDENTIALITY; INTELLECTUAL PROPERTY RIGHTS

13.1 Any information or data in the form of specifications, drawings, reprints, technical information or otherwise furnished to Customer under this Agreement will remain Motorola's property, will be deemed proprietary, will be kept confidential, and will be promptly returned at Motorola's request. Customer may not disclose, without Motorola's written permission or as required by law, any confidential information or data to any person, or use confidential information or data for any purpose other than performing its obligations under this Agreement. The obligations set forth in this Section survive the expiration or termination of this Agreement.

13.2 Unless otherwise agreed in writing, no commercial or technical information disclosed in any manner or at any time by Customer to Motorola will be deemed secret or confidential. Motorola will have no obligation to provide Customer with access to its confidential and proprietary information, including cost and pricing data.

13.3 This Agreement does not grant directly or by implication, estoppel, or otherwise, any ownership right or license under any Motorola patent, copyright, trade secret, or other intellectual property, including any intellectual property created as a result of or related to the Equipment sold or Services performed under this Agreement.

Section 14. FCC LICENSES AND OTHER AUTHORIZATIONS

Customer is solely responsible for obtaining licenses or other authorizations required by the Federal Communications Commission or any other federal, state, or local government agency and for complying with all rules and regulations required by governmental agencies. Neither Motorola nor any of its employees is an agent or representative of Customer in any governmental matters.

Section 15. COVENANT NOT TO EMPLOY

During the term of this Agreement and continuing for a period of two (2) years thereafter, Customer will not hire, engage on contract, solicit the employment of, or recommend employment to any third party of any employee of Motorola or its subcontractors without the prior written authorization of Motorola. This provision applies only to those employees of Motorola or its subcontractors who are responsible for rendering services under this Agreement. If this provision is found to be overly broad under applicable law, it will be modified as necessary to conform to applicable law.

Section 16. MATERIALS, TOOLS AND EQUIPMENT

All tools, equipment, dies, gauges, models, drawings or other materials paid for or furnished by Motorola for the purpose of this Agreement will be and remain the sole property of Motorola. Customer will safeguard all such property while it is in Customer's custody or control, be liable for any loss or damage to this property, and return it to Motorola upon request. This property will be held by Customer for Motorola's use without charge and may be removed from Customer's premises by Motorola at any time without restriction.

Section 17. GENERAL TERMS

17.1 If any court renders any portion of this Agreement unenforceable, the remaining terms will continue in full force and effect.

17.2 This Agreement and the rights and duties of the parties will be interpreted in accordance with the laws of the State in which the Services are performed.

17.3 Failure to exercise any right will not operate as a waiver of that right, power, or privilege.



SERVICE AGREEMENT

500 W Monroe Street
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17.4 Neither party is liable for delays or lack of performance resulting from any causes that are beyond that party's reasonable control, such as strikes, material shortages, or acts of God.

17.5 Motorola may subcontract any of the work, but subcontracting will not relieve Motorola of its duties under this Agreement.

17.6 Except as provided herein, neither Party may assign this Agreement or any of its rights or obligations hereunder without the prior written consent of the other Party, which consent will not be unreasonably withheld. Any attempted assignment, delegation, or transfer without the necessary consent will be void. Notwithstanding the foregoing, Motorola may assign this Agreement to any of its affiliates or its right to receive payment without the prior consent of Customer. In addition, in the event Motorola separates one or more of its businesses (each a "Separated Business"), whether by way of a sale, establishment of a joint venture, spin-off or otherwise (each a "Separation Event"), Motorola may, without the prior written consent of the other Party and at no additional cost to Motorola, assign this Agreement such that it will continue to benefit the Separated Business and its affiliates (and Motorola and its affiliates, to the extent applicable) following the Separation Event.

17.7 THIS AGREEMENT WILL RENEW, FOR AN ADDITIONAL ONE (1) YEAR TERM, ON EVERY ANNIVERSARY OF THE START DATE UNLESS EITHER THE COVER PAGE SPECIFICALLY STATES A TERMINATION DATE OR ONE PARTY NOTIFIES THE OTHER IN WRITING OF ITS INTENTION TO DISCONTINUE THE AGREEMENT NOT LESS THAN THIRTY (30) DAYS OF THAT ANNIVERSARY DATE. At the anniversary date, Motorola may adjust the price of the Services to reflect its current rates.

17.8 If Motorola provides Services after the termination or expiration of this Agreement, the terms and conditions in effect at the time of the termination or expiration will apply to those Services and Customer agrees to pay for those services on a time and materials basis at Motorola's then effective hourly rates.

17.9 This Agreement may be executed in one or more counterparts, all of which shall be considered part of the Agreement. The parties may execute this Agreement in writing, or by electronic signature, and any such electronic signature shall have the same legal effect as a handwritten signature for the purposes of validity, enforceability and admissibility. In addition, an electronic signature, a true and correct facsimile copy or computer image of this Agreement shall be treated as and shall have the same effect as an original signed copy of this document.

Revised Sept 03, 2022

Section 1

ASTRO 25 Essential Services Statement of Work

1.1 Overview

Motorola Solutions' ASTRO® 25 Essential Services (Essential Services) provide an integrated and comprehensive sustainment program for fixed end network infrastructure equipment located at the network core, RF sites, and dispatch sites. Essential Services do not include maintenance for mobile devices, portable devices, or network backhaul equipment.

Essential Services consist of the following elements:

- Remote Technical Support
- Network Hardware Repair (with Advanced Replacement)
- Security Update Service
- Network Event and Security Monitoring
- On-Site Infrastructure Response
- Preventative Maintenance

Each of these elements is summarized below and expanded upon in **Section 1.3: Essential Services Detailed Description**. In the event of a conflict between the descriptions below and an individual subsection of **Section 1.3: Essential Services Detailed Description**, the individual subsection prevails.

This Statement of Work (SOW), including all of its subsections and attachments is an integral part of the applicable agreement ("Agreement") between Motorola Solutions, Inc. ("Motorola Solutions") and the customer ("Customer").

In order to receive the services as defined within this SOW, the Customer is required to keep the system within a standard support period as described in Motorola Solutions' Software Support Policy (SwSP).

Remote Technical Support

Motorola Solutions will provide telephone consultation with specialists skilled at diagnosing and swiftly resolving infrastructure operational technical issues that require a high level of ASTRO 25 network experience and troubleshooting capabilities.

Network Hardware Repair (with Advanced Replacement)

Motorola Solutions will repair Motorola Solutions-manufactured infrastructure equipment and select third-party manufactured infrastructure equipment supplied by Motorola Solutions. Motorola Solutions coordinates the equipment repair logistics process.

Security Update Service

Motorola Solutions will pre-test third-party security updates to verify they are compatible with the ASTRO 25 network. Once tested, Motorola Solutions posts the updates to a secured extranet website, along with any recommended configuration changes, warnings, or workarounds.

Network Event and Security Monitoring

Real-time, continuous ASTRO 25 radio communications network monitoring and event management, and network security elements monitoring. Using sophisticated tools for remote monitoring and event characterization, Motorola will assess events, determine the appropriate response, and initiate that response. Possible responses include remotely addressing the issue, escalation to product technical support groups, and dispatch of designated field technical resources.

On-Site Infrastructure Response

When needed to resolve equipment malfunctions, Motorola will dispatch qualified local technicians to the Customer's location to diagnose and restore the communications network. Technicians will perform diagnostics on impacted hardware and replace defective components. The service technician's response time will be based on pre-defined incident priority levels.

Preventive Maintenance

Qualified field service technicians will perform regularly scheduled operational testing and alignment of infrastructure and network components to verify those components comply with the original manufacturer's specifications.

1.2 Motorola Solutions Service Delivery Ecosystem

Essential Services are delivered through a tailored combination of local field service personnel, centralized teams equipped with a sophisticated service delivery platform, product repair depots, and Customer Hub. These service entities will collaborate to swiftly analyze issues, accurately diagnose root causes, and promptly resolve issues to restore the Customer's network to normal operations.

1.2.1 Centralized Managed Support Operations

The cornerstone of Motorola Solutions' support process is the Centralized Managed Support Operations (CMSO) organization, which includes the Service Desk and technical support teams. The CMSO is staffed 24/7/365 by experienced personnel, including service desk specialists, security analysts, and operations managers.

The Service Desk provides a single point of contact for all service related items, including communications between the Customer, Motorola Solutions and third-party subcontractors. The Service Desk processes service requests, service incidents, change requests and dispatching, and communicates with stakeholders in accordance with pre-defined response times.

All incoming transactions through the Service Desk are recorded, tracked and updated through the Motorola Solutions Customer Relationship Management (CRM) system. The Service Desk also documents Customer inquiries, requests, concerns, and related tickets.

The CMSO coordinates with the field service organization that will serve the Customer locally.

1.2.2 Customer Support Manager

A Motorola Solutions Customer Support Manager (CSM) will be the Customer's key point of contact for defining and administering services. The CSM's initial responsibility is to create the Customer Support Plan (CSP) in collaboration with the Customer.

The CSP functions as an operating document that personalizes the services described in this document. The CSP contains Customer-specific information, such as site names, site access directions, key contact persons, incident handling instructions, and escalation paths for special issues. The CSP also defines the division of responsibilities between the Customer and Motorola Solutions so response protocols are pre-defined and well understood when the need arises.

The CSP governs how the services will be performed and will be automatically integrated into this Statement of Work by this reference. The CSM and Customer will review and amend the CSP on a mutually agreed cadence so the CSP remains current and effective in governing the Essential Services.

1.2.3 Repair Depot

The Motorola Solutions Repair Depot provides the Customer with a central repair location, eliminating the need to send network equipment to multiple vendor locations for repair. All products sent to the Depot are tracked throughout the repair process, from inbound shipment to return, through a case management system that enables Customer representatives to see repair status.

1.2.4 Customer Hub

Supplementing the CSM and the Service Desk as the Customer points of contact, Customer Hub is a web-based platform that provides network maintenance and operations information. The portal is accessed from a desktop, laptop, tablet or smartphone web browser. The information available includes:

- **Remote Technical Support:** Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- **Network Hardware Repair:** Track return material authorizations (RMA) shipped to Motorola Solutions' repair depot and eliminate the need to call for status updates. In certain countries, customers will also have the ability to create new RMA requests online.
- **Security Update Service:** View available security updates. Access available security update downloads.
- **Network Event and Security Monitoring:** Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- **On-Site Infrastructure Response:** Manage incidents and view self-service reports. Observe incident details by incident priority level, and track the progress of issue resolution.
- **Preventive Maintenance:** View incident status and details of each annual change request for preventive maintenance, including completed checklist information for the incident.
- **Orders and Contract Information:** View available information regarding orders, service contracts, and service coverage details.

The data presented in Customer Hub is provided to support the services described in the following sections, which define the terms of any service delivery commitments associated with this data.

1.3 Essential Services Detailed Description

Due to the interdependence between deliverables within the detailed sections, any changes to or any cancellation of any individual section may require a scope review and price revision.

1.3.1 Remote Technical Support

Motorola Solutions' Remote Technical Support service provides telephone consultation for technical issues that require a high level of ASTRO 25 network knowledge and troubleshooting capabilities. Remote Technical Support is delivered through the Motorola Solutions CMSO organization by a staff of technical support specialists skilled in diagnosis and swift resolution of infrastructure performance and operational issues.

Motorola Solutions applies leading industry standards in recording, monitoring, escalating, and reporting for technical support calls from its contracted customers to provide the support needed to maintain mission-critical systems.

1.3.1.1 Description of Service

The CMSO organization's primary goal is Customer Issue Resolution (CIR), providing incident restoration and service request fulfillment for Motorola Solutions' currently supported infrastructure. This team of highly skilled, knowledgeable, and experienced specialists is an integral part of the support and technical issue resolution process. The CMSO supports the Customer remotely using a variety of tools, including fault diagnostics tools, simulation networks, and fault database search engines.

Calls requiring incidents or service requests will be logged in Motorola Solutions' CRM system, and Motorola Solutions will track the progress of each incident from initial capture to resolution. This helps ensure that technical issues are prioritized, updated, tracked, and escalated as necessary, until resolution. Motorola Solutions will advise and inform Customer of incident resolution progress and tasks that require further investigation and assistance from the Customer's technical resources.

The CMSO Operations Center classifies and responds to each technical support request in accordance with 1.3.5.5 Priority Level Definitions and Response Times.

This service requires the Customer to provide a suitably trained technical resource that delivers maintenance and support to the Customer's system, and who is familiar with the operation of that system. Motorola Solutions provides technical consultants to support the local resource in the timely closure of infrastructure, performance, and operational issues.

1.3.1.2 Scope

The CMSO Service Desk is available via telephone 24/7/365 to receive and log requests for technical support. Remote Technical Support service is provided in accordance with 1.3.5.5 Priority Level Definitions and Response Times.

1.3.1.3 Inclusions

Remote Technical Support service will be delivered for Motorola Solutions-provided infrastructure, including integrated third-party products.

1.3.1.4 Motorola Solutions Responsibilities

- Maintain availability of the Motorola Solutions CMSO Service Desk via telephone (800-MSI-HELP) 24/7/365 to receive, log, and classify Customer requests for support.
- Respond to incidents and technical service requests in accordance with 1.3.5.5 Priority Level Definitions and Response Times.
- Provide caller a plan of action outlining additional requirements, activities, or information required to achieve restoral/fulfillment.
- Maintain communication with the Customer in the field as needed until resolution of the incident.
- Coordinate technical resolutions with agreed upon third-party vendors, as needed.
- Escalate support issues to additional Motorola Solutions technical resources, as applicable.
- Determine, in its sole discretion, when an incident requires more than the Remote Technical Support services described in this SOW and notify the Customer of an alternative course of action.

1.3.1.5 Limitations and Exclusions

The following activities are outside the scope of the Remote Technical Support service:

- Emergency on-site visits required to resolve technical issues that cannot be resolved by the CMSO working remotely with the Customer's technical resource.
- Customer training.
- Remote Technical Support for network transport equipment or third-party products not sold by Motorola Solutions.
- Any maintenance and/or remediation required as a result of a virus or unwanted cyber intrusion.

1.3.1.6 Customer Responsibilities

- Prior to contract start date, provide Motorola Solutions with pre-defined information necessary to complete CSP.
- Submit timely changes in any information supplied in the CSP to the CSM.
- Contact the CMSO Service Desk to engage the Remote Technical Support service when needed, providing the necessary information for proper entitlement services. This information includes, but is not limited to, the name of contact, name of Customer, system ID number, site(s) in question and a brief description of the problem that contains pertinent information for initial issue classification.
- Maintain suitably trained technical resources familiar with the operation of the Customer's system to provide field maintenance and technical maintenance services for the system.
- Supply suitably skilled and trained on-site presence when requested.
- Validate issue resolution in a timely manner prior to close of the incident.
- Acknowledge that incidents will be addressed in accordance with 1.3.5.5 Priority Level Definitions and Response Times.
- Cooperate with Motorola Solutions, and perform all acts that are reasonable or necessary to enable Motorola Solutions to provide Remote Technical Support.

- In the event that Motorola Solutions agrees in writing to provide supplemental Remote Technical Support to third-party elements provided by the Customer, the Customer agrees to obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

1.3.2 Network Hardware Repair with Advanced Replacement

Motorola Solutions will provide hardware repair for Motorola Solutions and select third-party infrastructure equipment supplied by Motorola Solutions. A Motorola Solutions authorized repair depot manages and performs the repair of Motorola Solutions supplied equipment, and coordinates equipment repair logistics.

1.3.2.1 Description of Service

Infrastructure components are repaired at Motorola Solutions-authorized Infrastructure Depot Operations (IDO). At Motorola Solutions' discretion, select third-party infrastructure may be sent to the original equipment manufacturer or third-party vendor for repair.

Network Hardware Repair is also known as Infrastructure Repair.

1.3.2.2 Scope

Repair authorizations are obtained by contacting the CMSO organization Service Desk, which is available 24/7/365. Repair authorizations can also be obtained by contacting the CSM.

1.3.2.3 Inclusions

This service is available on Motorola Solutions-provided infrastructure components, including integrated third-party products. Motorola Solutions will make a commercially reasonable effort to repair Motorola Solutions manufactured infrastructure products after product cancellation. The post-cancellation support period of the product will be noted in the product's end-of-life (EOL) notification.

1.3.2.4 Motorola Solutions Responsibilities

- Provide the Customer access to the CMSO Service Desk, operational 24/7, to request repair service.
- Provide repair return authorization numbers when requested by the Customer.
- Receive malfunctioning infrastructure components from the Customer and document its arrival, repair, and return.
- Conduct the following services for Motorola Solutions infrastructure:
 - Perform an operational check on infrastructure components to determine the nature of the problem.
 - Replace malfunctioning components.
 - Verify that Motorola Solutions infrastructure components are returned to applicable Motorola Solutions factory specifications.
 - Perform a box unit test on serviced infrastructure components.
 - Perform a system test on select infrastructure components.

- Conduct the following services for select third-party infrastructure:
When applicable, perform pre-diagnostic and repair services to confirm infrastructure component malfunctions and prevent sending infrastructure components with No Trouble Found (NTF) to third-party vendor for repair.
When applicable, ship malfunctioning infrastructure components to the original equipment manufacturer or third-party vendor for repair service.
Track infrastructure components sent to the original equipment manufacturer or third-party vendor for service.
When applicable, perform a post-test after repair by original equipment manufacturer or third-party vendor to confirm malfunctioning infrastructure components have been repaired and function properly in a Motorola Solutions system configuration.
- Reprogram repaired infrastructure components to original operating parameters based on software and firmware provided by the Customer, as required in **Section 1.3.1.6: Customer Responsibilities**. If the Customer's software version and configuration are not provided, shipping will be delayed. If the repair depot determines that infrastructure components are malfunctioning due to a software defect, the repair depot reserves the right to reload these components with a different but equivalent software version.
- Properly package repaired infrastructure components.
- Ship repaired infrastructure components to Customer-specified address during normal operating hours of Monday through Friday from 7:00 a.m. to 7:00 p.m. Central Standard Time (CST), excluding holidays. Infrastructure component will be sent using two-day air shipping unless the Customer requests otherwise. Motorola Solutions will pay for shipping unless the Customer requests shipments outside of the above mentioned standard business hours or carrier programs, such as next flight out (NFO). In such cases, the Customer will be responsible for paying shipping and handling charges.

1.3.2.5 Limitations and Exclusions

Motorola Solutions may return infrastructure equipment that is no longer supported by Motorola Solutions, the original equipment manufacturer, or a third-party vendor without repairing or replacing it. The following items are excluded from this service:

- All Motorola Solutions infrastructure components over the post-cancellation support period.
- All third-party infrastructure components over the post-cancellation support period.
- All broadband infrastructure components over the post-cancellation support period.
- Physically damaged infrastructure components.
- Third-party equipment not shipped by Motorola Solutions.
- Consumable items including, but not limited to, batteries, connectors, cables, toner or ink cartridges, tower lighting, laptop computers, monitors, keyboards, and mouse.
- Video retrieval from digital in-car video equipment.
- RF infrastructure and backhaul components, including but not limited to, antennas, transmission lines, antenna dehydrators, microwave, line boosters, amplifiers (such as tower top amplifiers and bi-directional amplifiers), logging recorders, data talker wireless transmitters, short haul modems, combiners, multicouplers, duplexers, shelters, shelter HVAC, generators, UPSs, dropship non-standard items and test equipment.
- Racks, furniture, and cabinets.

- Non-standard configurations, customer-modified infrastructure, and certain third party infrastructure.
- Firmware or software upgrades.

1.3.2.6 Customer Responsibilities

- Contact or instruct servicer to contact the Motorola Solutions CMSO organization, and request a return authorization number prior to shipping malfunctioning infrastructure components.
- Provide model description, model number, serial number, type of system, software and firmware version, symptom of problem, and address of site location for spare infrastructure components.
- Indicate if Motorola Solutions or third-party infrastructure components being sent in for service were subjected to physical damage or lightning damage.
- Follow Motorola Solutions instructions regarding including or removing firmware and software applications on infrastructure components being sent in for service.
- In the event that the Customer requires repair of equipment that is not contracted under this service at the time of request, the Customer acknowledges that charges may apply to cover shipping, labor, and parts. Motorola Solutions and the Customer will collaborate to agree on payment vehicle that most efficiently facilitates the work, commensurate with the level of urgency that is needed to complete the repair.
- Properly package and ship the malfunctioning component, at the Customer's expense. The Customer is responsible for properly packaging the malfunctioning infrastructure component to ensure it is not damaged in-transit and arrives in repairable condition.
Clearly print the return authorization number on the outside of the packaging.
- Maintain versions and configurations for software, applications, and firmware to be installed on repaired equipment.
- Provide Motorola Solutions with proper software and firmware information to reprogram equipment after repair, unless current software has caused this malfunction.
- Cooperate with Motorola Solutions and perform reasonable or necessary acts to enable Motorola Solutions to provide hardware repair services to the Customer.
- At the Customer's cost, obtain all third-party consents or licenses required to enable Motorola Solutions to provide the service.

1.3.2.7 Repair Process

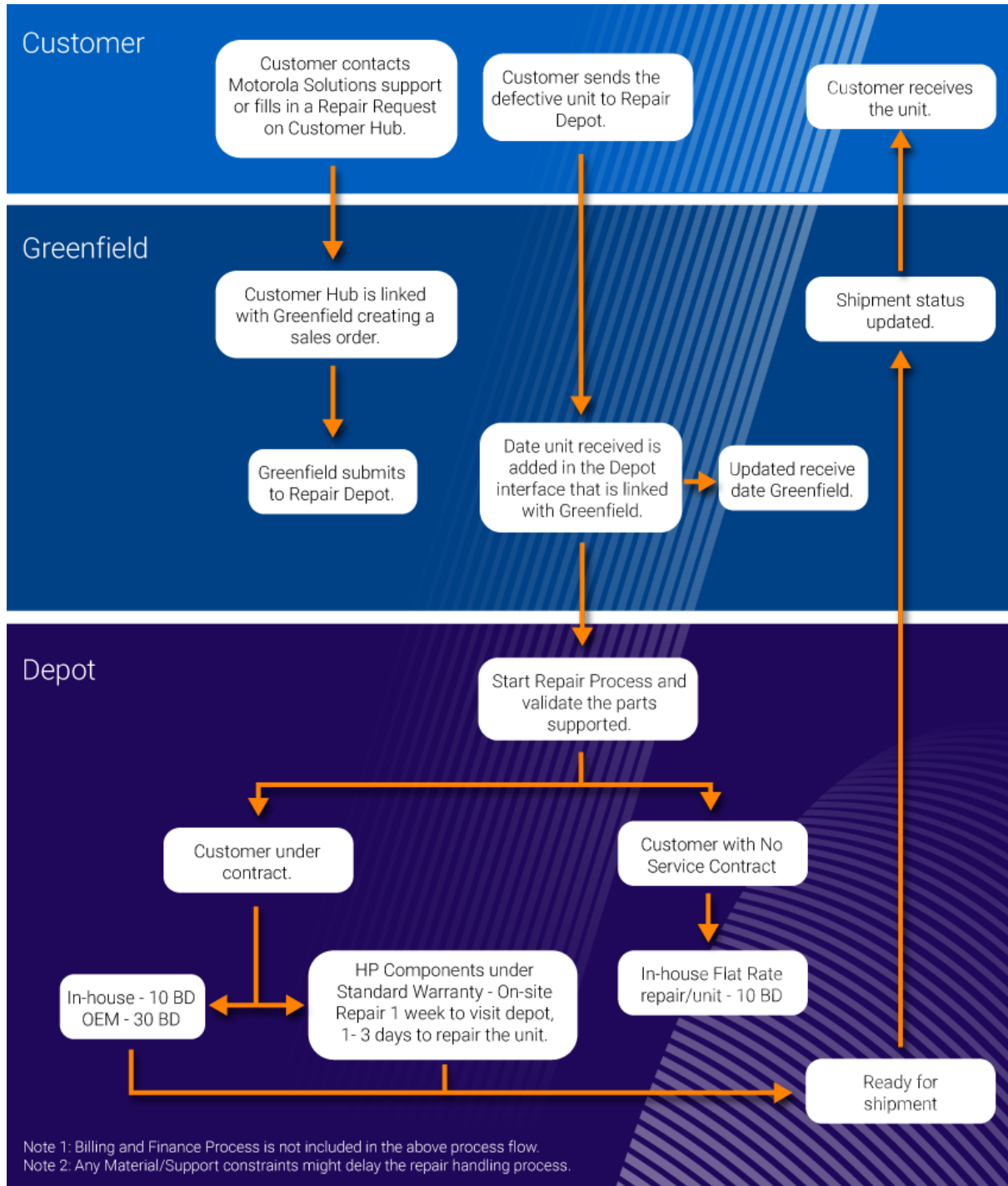


Figure 1-1: Repair Decision Process

1.3.2.8 Advanced Replacement

As an addition to Hardware Repair service, Advanced Replacement is a repair exchange service for Motorola Solutions and select third-party infrastructure components supplied by Motorola Solutions.

When available, Motorola Solutions will provide the Customer with advanced replacement units or Field Replacement Units (FRU) in exchange for the Customer's malfunctioning equipment. A Motorola Solutions-authorized repair depot will evaluate and repair malfunctioning equipment, and add that equipment to the depot's FRU inventory after completing repairs.

Customers who prefer to maintain their own FRU inventory may request a "Loaner" FRU while their unit is being repaired. Refer to **Figure 1-2: Advanced Replacement or Loaner Decision Process** for details on the unit loan process.

1.3.2.8.1 Added Motorola Solutions Responsibilities for Advanced Replacement

- Use commercially reasonable efforts to maintain FRU inventory on supported platforms.
- Provide new or reconditioned FRUs to the Customer upon request, subject to availability. The FRU will be an equipment type and version similar to the Customer's malfunctioning component, and will contain equivalent boards and chips.
- Load firmware and software for equipment that requires programming. The Customer's software version information must be provided for the replacement FRU to be programmed accordingly. If the Customer's software version and configuration are not provided, shipping will be delayed.
- Package and ship FRU from the FRU inventory to Customer-specified address.

Motorola Solutions will ship FRU as soon as possible, depending on stock availability and requested configuration. FRU will be shipped during normal operating hours of Monday through Friday from 7:00 a.m. to 7:00 p.m. CST, excluding holidays. Motorola Solutions will pay for the shipping to the Customer, unless the Customer requests shipments outside of standard business hours or carrier programs, such as weekend or NFO shipment. In such cases, the Customer will be responsible for paying shipping and handling charges.

When sending FRU to the Customer, provide a return air bill in order for the Customer to send the Customer's malfunctioning component. The Customer's malfunctioning component will become property of the Motorola Solutions repair depot or select third party replacing it, and the Customer will own the FRU.

For loaner equipment, Motorola Solutions will ship repaired infrastructure components to Customer-specified address during normal operating hours, Monday through Friday from 7:00 a.m. to 7:00 p.m. CST, excluding holidays. FRU will be sent using two-day air shipping unless the Customer requests otherwise. Motorola Solutions will pay for shipping unless the Customer requests shipments outside of the above-mentioned standard business hours or carrier programs, such as NFO. In such cases, the Customer will be responsible for paying shipping and handling charges.

When sending a loaner FRU to the Customer, Motorola Solutions will pay for outbound shipping charges. Inbound shipping to Motorola Solutions for repair will be the Customer's responsibility. Motorola Solutions will repair and return the Customer's component, and provide a return air bill for the Customer to return the loaner FRU. Refer to Figure 1-2: Advanced Replacement or Loaner Decision Process for the loaner process, and Table 1-1: Shipping Charges and Default Mail Service for shipping charge details.

- Provide repair return authorization (RA) number upon Customer request to replace infrastructure components that are not classified as an advanced replacement or loaner FRU.
- Provide a repair RA number so that returned components can be repaired and returned to FRU stock.
- Receive malfunctioning components from the Customer, carry out repairs and testing, and return it to the FRU stock.

1.3.2.8.2 Added Customer Responsibilities for Advanced Replacement

- Pay for Advanced Replacement or Loaner FRU shipping from Motorola Solutions repair depot if the Customer requested shipping outside of standard business hours or carrier programs set forth in **Section 1.3.3.1.1: Onsite Delivery**. See **Table 1-1: Shipping Charges and Default Mail Service** for shipping charge details.
- Properly package and ship the malfunctioning component using the pre-paid air-bill that arrived with the FRU. The Customer is responsible for properly packaging the malfunctioning infrastructure component to ensure that it is not damaged in transit and arrives in repairable condition. The Customer will be subject to a replacement fee for malfunctioning components returned improperly.
- Within five business days of receipt of the advanced replacement FRU from Motorola Solutions' FRU inventory, properly package the Customer's malfunctioning FRU and ship the malfunctioning Infrastructure to Motorola Solutions' repair depot for evaluation and repair. The Customer must send the return air bill back to the repair depot in order to facilitate proper tracking of the returned infrastructure. The Customer will be subject to a full replacement fee for FRUs not returned within five business days.
- At the Customer's expense and risk of loss, the Customer may send a malfunctioning Motorola Solutions or third-party infrastructure component for repairs before a replacement has been sent. In such cases, the malfunctioning component should be properly packaged and shipped to Motorola Solutions.
- Clearly print the return authorization number on the outside of the packaging.

1.3.2.8.3 Replacement Process for Advanced Replacement

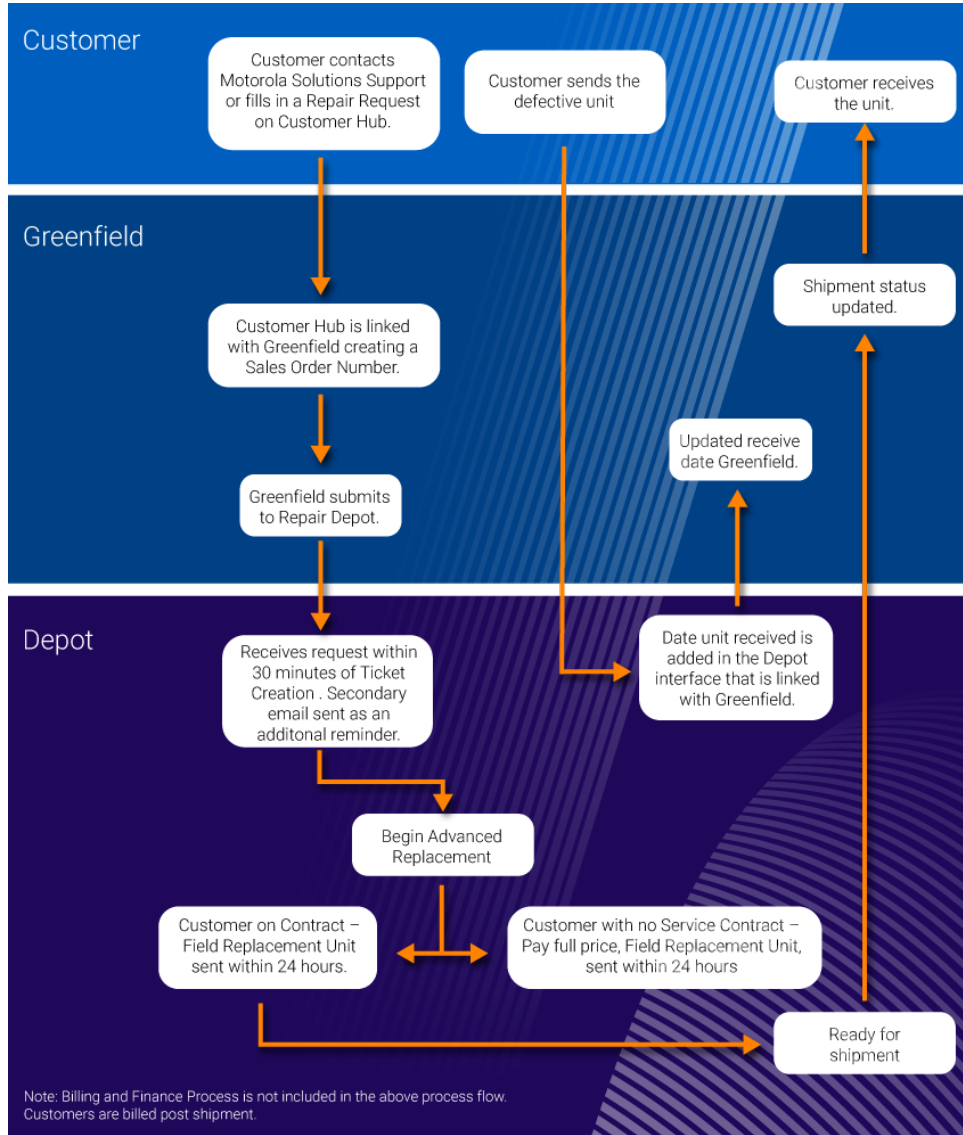


Figure 1-2: Advanced Replacement or Loaner Decision Process

Table 1-1: Shipping Charges and Default Mail Service

Services	Advanced Replacement Charges Responsibility
Advanced Replacements (Normal Business Hours) Shipped FedEx Overnight or equivalent	Motorola Solutions
Loaner Shipping Outbound to Customer	
Loaner Repair and Return Shipping Outbound to Customer	
Advanced Replacements (Next Flight Out or Other)	Customer
Exchanges or Loaners Shipped Outbound to Customer by Non-Motorola Carrier*	

Services	Advanced Replacement Charges Responsibility
Loaner Repair Shipping Inbound to Motorola Solutions	
Loaner Installation Labor	

Motorola Solutions shipping carrier: FedEx

1.3.3 Security Update Service

Motorola Solutions' ASTRO 25 Security Update Service (SUS) provides pretested security updates, minimizing cyber risk and software conflicts. These security updates contain operating system security patches and antivirus definitions that have been validated for compatibility with ASTRO 25 systems. Security update delivery is determined by the options included as part of this service. **Section 1.3.3.3: Inclusions** indicates if options are included as part of this service.

1.3.3.1 Description of Service

Motorola Solutions uses a dedicated information assurance lab to test and validate security updates. Motorola Solutions deploys and tests security updates in the lab to check for and prevent potential service degradation.

Motorola Solutions releases tested, compatible security updates for download and installation. Once security updates are verified by the SUS team, Motorola Solutions uploads them to a secure website and sends a release notification email to the Customer contact to inform them that the security update release is available. If there are any recommended configuration changes, warnings, or workarounds, the SUS team will provide documentation with the security updates on the secure website.

With the base service, the Customer will be responsible for downloading security updates, installing them on applicable components, and rebooting updated components. Additional options are available for Motorola Solutions to deploy security updates, reboot servers and workstations, or both.

1.3.3.1.1 Onsite Delivery

If Onsite Delivery is included with SUS, Motorola Solutions provides trained technician(s) to install security updates at the Customer's location. The technician downloads and installs available security updates and coordinates any subsequent server and workstation reboots.

1.3.3.1.2 Reboot Support

If Reboot Support is included with SUS, Motorola Solutions provides technician support to reboot impacted Microsoft Windows servers and workstations after operating system security patches have been installed.

1.3.3.2 Scope

SUS includes pretested security updates for the software listed in **Table 1-2: Update Cadence**. This table also describes the release cadence for security updates.

Table 1-2: Update Cadence

Software	Update Release Cadence
Antivirus Definition Files	Weekly
Microsoft Windows	Monthly
Microsoft Windows SQL Server	Quarterly
Microsoft Windows third party (i.e., Adobe Reader)	Monthly
Red Hat Linux (RHEL)	Quarterly
VMWare ESXi Hypervisor	Quarterly
PostgreSQL (From ASTRO 25 7.14 and newer major releases)	Quarterly
McAfee Patch(es)	Quarterly
Dot Hill DAS Firmware	Quarterly
HP SPP Firmware	Quarterly
QNAP Firmware	Quarterly

1.3.3.3 Inclusions

Supported ASTRO 25 core types and security update delivery methods are included in **Table 1-3: SUS Package**. This table indicates if Motorola Solutions will provide any SUS optional services to the Customer. SUS supports the current Motorola Solutions ASTRO 25 system release and aligns with the established [Software Support Policy \(SwSP\)](#).

Motorola Solutions reserves the right to determine, which releases are supported as business conditions dictate. Additional charges may apply in the event of supporting older releases. Contact Motorola Solutions' assigned CSM for the latest supported releases.

Table 1-3: SUS Package

Service	ASTRO 25 Core Type	Included
Security Update Service Customer Self-installed	L Core M Core Simplified Core	
Security Update Service with Reboot Support	L Core M Core Simplified Core	
Security Update Service with On-site Delivery	L Core M Core Simplified Core	X

Responsibilities for downloading and installing security updates and rebooting applicable hardware are detailed in **Section 1.3.3.7: Installation and Reboot Responsibilities**.

1.3.3.4 Motorola Solutions Responsibilities

- On the release schedule in Section 1.3.3.2: Scope, review relevant and appropriate security patches released by Original Equipment Manufacturer (OEM) vendors.
- Release tested and verified security patches to Motorola Solutions' secure website.
- Publish documentation for installation, recommended configuration changes, any identified issue(s), and remediation instructions for each security update release.
- Include printable labels the Customer may use if downloading security updates to a disk.
- Send notifications by email when security updates are available to download from the secure website.

1.3.3.5 Limitations and Exclusions

- Systems with non-standard configurations that have not been certified by Motorola Solutions' Systems Integration and Test (SIT) team are specifically excluded from this service, unless otherwise agreed in writing by Motorola Solutions.
- Interim or unplanned releases outside the supported release cadence.
- Service does not include pretested intrusion detection system (IDS) signature updates for IDS solutions. However, select vendor IDS signature updates are made available via the secure website. The available vendors may change pursuant to Motorola Solutions' business decisions. The Customer is responsible for complying with all IDS licensing requirements and fees, if any.
- This service does not include releases for Motorola Solutions products that are not ASTRO 25 L, M, and Simplified Core radio network infrastructure equipment. The following are examples of excluded products: WAVE PTX, Critical Connect, and VESTA solutions.
- K Core ASTRO 25 systems are excluded.
- Motorola Solutions product updates are not included in these services.
- Shared network infrastructure firmware, such as transport and firewall firmware, are not included in these services.
- Motorola Solutions does not represent that it will identify, fully recognize, discover, or resolve all security events or threats, system vulnerabilities, malicious codes or data, backdoors, or other system threats or incompatibilities as part of the service, or that the agreed upon cadence/time of delivery will be sufficient to identify, mitigate or prevent any cyber incident.

1.3.3.6 Customer Responsibilities

- Provide Motorola Solutions with predefined information necessary to complete a CSP prior to the Agreement start date.
- Provide timely updates on changes of information supplied in the CSP to Motorola Solutions' assigned CSM.
- Update Motorola Solutions with any changes in contact information, specifically for authorized users of Motorola Solutions' secure website.
- Provide means for accessing Motorola Solutions' secure website to collect the pretested files.
- Download and apply only to the Customer's system as applicable, based on the Customer Agreement and the scope of the purchased service. Distribution to any other system or user other than the system/user contemplated by the Customer Agreement is not permitted.
- Implement Motorola Technical Notices (MTN) to keep the system current and patchable.

- Adhere closely to the Motorola Solutions CMSO troubleshooting guidelines provided upon system acquisition. Failure to follow CMSO guidelines may cause the Customer and Motorola Solutions unnecessary or overly burdensome remediation efforts. In such cases, Motorola Solutions reserves the right to charge an additional fee for the remediation effort.
- Upgrade system to a supported system release when needed to continue service. Contact Motorola Solutions’ assigned CSM for the latest supported releases.
- Comply with the terms of applicable license agreements between the Customer and non-Motorola Solutions software copyright owners.

1.3.3.7 Installation and Reboot Responsibilities

Installation and Reboot responsibilities are determined by the specific SUS package being purchased. Table 1-4: Installation and Reboot Responsibilities Matrix contains the breakdown of responsibilities. Section 1.3.3.3: Inclusions indicates which services are included.

Microsoft Windows servers and workstations often need to be rebooted before security updates take full effect and mitigate vulnerabilities.

Table 1-4: Installation and Reboot Responsibilities Matrix

SUS Package	Motorola Solutions Responsibilities	Customer Responsibilities
Security Update Service Customer Self-installed		<ul style="list-style-type: none"> ▪ Deploy pretested files to the Customer’s system as instructed in the “Read Me” text provided on Motorola Solutions’ secure website. ▪ When a security update requires a reboot, reboot servers and workstations after security updates are installed.
Security Update Service with On-site Delivery	<ul style="list-style-type: none"> ▪ Dispatch a technician to deploy pretested files to the Customer’s system. ▪ When a security update requires a reboot, reboot servers and workstations after security updates are installed. 	<ul style="list-style-type: none"> ▪ Acknowledge Motorola Solutions will reboot servers and workstations, and agree to timing.
Security Update Service with Reboot Support	<ul style="list-style-type: none"> ▪ When a security update requires a reboot, dispatch a technician to reboot servers and workstations after security updates are installed. 	<ul style="list-style-type: none"> ▪ Deploy pretested files to the Customer’s system as instructed in the “Read Me” text provided on Motorola Solutions’ secure website.

1.3.3.8 Disclaimer

This service tests OEM security updates. Delivering security updates for specific software depends on OEM support for that software. If an OEM removes support (e.g. end-of-life) from deployed software, Motorola Solutions may work with the OEM to reduce the impact, but may remove support for the affected software from this service without notice.

OEMs determine security update schedules, supportability, or release availability without consultation from Motorola Solutions. Motorola Solutions will obtain and test security updates when they are made available, and incorporate those security updates into the next appropriate release.

All security updates are important. This service is intended to balance the security and compatibility of tested updates with agreed upon time/cadence of delivery. Customer assumes the risk of this inherent tradeoff.

Motorola Solutions disclaims any warranty with respect to pretested database security updates, hypervisor patches, operating system software patches, intrusion detection sensor signature files, or other third-party files, express or implied. Further, Motorola Solutions disclaims any warranty concerning non-Motorola Solutions software and does not guarantee Customers' systems will be error-free or immune to security breaches as a result of these services.

1.3.4 Network Event Monitoring

Network Event Monitoring provides continuous real-time fault monitoring for radio communications networks. Motorola uses a defined set of tools to remotely monitor the Customer's ASTRO 25 radio network and characterize network events. When an actionable event takes place, it becomes an incident. CMSO technologists acknowledge and assess these incidents, and initiate a defined response.

1.3.4.1 Description of Service

With Network Event Monitoring, Motorola uses a Managed Services Suite of Tools (MSST) to detect events 24/7 as they occur, analyze them, and escalate them to the Network Operation Center (NOC). Incidents will be generated automatically based on the criteria shown in Table 1-5: Alarm Threshold Rule Options for all Event Types.

Table 1-5: Alarm Threshold Rule Options for all Event Types

Standard Threshold	Optional Threshold
An incident will be triggered if an event fulfills one of the two following criteria: <ul style="list-style-type: none"> ▪ Event occurs 5 times in 30 minutes. ▪ Event causes 10 minutes of continuous downtime for a monitored component. 	An incident will be triggered if an event fulfills one of the two following criteria: <ul style="list-style-type: none"> ▪ Event occurs 7 times in 30 minutes. ▪ Event causes 15 minutes of continuous downtime for a monitored component.

The CMSO NOC agent assigns a priority level to an incident, then initiates a response in accordance with the Customer Handling Procedure (CHP). Depending on the incident, Motorola's response may include continued monitoring for further incident development, remote remediation by technical support, dispatching a field service technician, or other actions Motorola determines necessary.

To prevent duplicate incidents from being generated by the same root cause, Motorola employs an auto triage process that groups related incidents. The auto triage process therefore automatically assigns grouped incidents to a field service technician, enabling the resolution of these incidents together if the root alarm has been addressed.

Motorola uses a set of standard templates to record key information on service process, defined actions, and points of contact for the Customer's service. In the event of an incident, Motorola and the

Customer can reference these templates. When information is updated, it will be organized in four categories:

- **Open** – Motorola's points of contact for dispatch permissions, entitlement information, and knowledge management.
- **Vendor** – Escalation and contact information.
- **Resolution** – Incident closure information.
- **Site Arrival** – Site arrival and exit process information.

The Customer will be able to access information on Network Event Monitoring activities via Customer Hub, including incident management reports. Any specific remediation and action notes from Motorola's CMSO or field service technicians will be available for the Customer to review as well.

Service Configuration Portal-Lite (SCP-Lite), which can be accessed through Customer Hub, provides a read-only view of the Customer's current service configuration, including site parameters, notification preferences and dispatch information. If the Customer or Motorola makes changes to the network, the updated information will be incorporated into SCP-Lite allowing the Customer a view of the ASTRO 25 radio network's state.

1.3.4.2 Scope

Network Event Monitoring is available 24/7. Incidents generated by the monitoring service will be handled in accordance with 1.3.5.5 Priority Level Definitions and Response Times.

Network Event Monitoring is a globally provided service unless limited by data export control or other applicable local and regional regulations. Timeframes are based on the Customer's local time zone.

1.3.4.3 Inclusions

Network Event Monitoring is available for the devices listed in Section 1.3.4.6: Monitored Elements.

Motorola Responsibilities

- Provide a dedicated network connection necessary for monitoring the Customer's communication network.
- Provide continuous utility service to any Motorola equipment installed or used at the Customer's premises to support delivery of the service. The Customer agrees to take reasonable due care to secure the Motorola equipment from theft or damage while on the Customer's premises.
- Create an incident, as necessary. Gather information to perform the following:
 - Characterize the issue.
 - Determine a plan of action.
 - Assign and track the incident to resolution.
- Prior to contract start date, provide Motorola with pre-defined information necessary to complete a CSP, including:
 - Incident notification preferences and procedure.
 - Repair verification preference and procedure.
 - Database and escalation procedure forms.
- Submit timely changes in any information supplied to Motorola and included in the CSP to the CSM.

- Notify the CMSO when the Customer performs any activity that impacts the system. Activity that impacts the system may include, but is not limited to: installing software or hardware upgrades, performing upgrades to the network, renaming elements or devices within the network, and taking down part of the system to perform maintenance.
- Send system configuration change requests to Motorola's CSM.
- Allow Motorola's field service technician, if designated in the CSP, access to equipment, including any connectivity or monitoring equipment, if remote service is not possible.
- Allow Motorola's field service technician, if designated in the CSP, access to remove Motorola-owned monitoring equipment upon cancellation of service.
- Provide Motorola with all Customer-managed passwords required to access the Customer's system upon request, when opening a request for service support, or when needed to enable response to a technical issue.
- Pay additional support charges above the contracted service agreements that may apply if it is determined that system faults were caused by the Customer making changes to critical system parameters without written agreement from Motorola.
- In the event that Motorola agrees in writing to provide supplemental monitoring for third-party elements provided by the Customer, the Customer agrees to obtain third party consents or licenses required to enable Motorola to provide the monitoring service.
- Cooperate with Motorola and perform reasonable or necessary acts to enable Motorola to provide these services.
- Contact Motorola to coordinate transition of monitoring when the responsibility for monitoring needs to be transferred to or from Motorola, as specified in pre-defined information provided in the Customer's CSP. An example of a transfer scenario is transferring monitoring from Motorola for network monitoring after normal business hours.

Upon contact, the Customer must provide Motorola with customer name, site ID, status on any open incidents, priority level of any open incidents, brief descriptions of any ongoing incident, and action plan for resolving those incidents.

- Acknowledge that incidents will be handled in accordance with 1.3.5.5 Priority Level Definitions and Response Times.
- Connectivity Matrix describes available connectivity options.
- If determined necessary by Motorola, provide Motorola-owned equipment at the Customer's premises for monitoring network elements. The type of equipment and location of deployment is listed in Section 1.3.4.5: Motorola Owned and Supplied Equipment.
- Verify connectivity and event monitoring prior to system acceptance or start date.
- Monitor system continuously during hours designated in the CSP, and in accordance with 1.3.5.5 Priority Level Definitions and Response Times.
- Remotely access the Customer's system to perform remote diagnosis as permitted by the Customer.
- Provide the Customer with a link to access system configuration info, site info, system notifications, and system notes.
- Cooperate with the Customer to coordinate the transition of monitoring responsibilities between Motorola and the Customer.
- Maintain communication as needed with the Customer in the field until incident resolution.
- Provide available information on incident resolution to the Customer.

Limitations and Exclusions

The following activities are outside the scope of the Network Monitoring service:

- Motorola will not monitor any elements outside of the Customer's ASTRO 25 network, or monitor infrastructure provided by a third-party, unless specifically stated. Monitored elements must be within the ASTRO 25 radio network and capable of sending alerts to the Unified Event Manager (UEM).
- Additional support charges above contracted service agreement fees may apply if Motorola determines that system faults were caused by the Customer making changes to critical system parameters without written agreement from Motorola.
- Monitoring of network transport, such as WAN ports, WAN cloud, and redundant paths, unless provided by supplemental service outside this standard scope.
- Elements deployed outside of ASTRO RNI (E.g.: ASTRO CEN sites) are excluded from the service.
- Emergency on-site visits required to resolve technical issues that cannot be resolved by working remotely with the Customer's technical resource.
- System installations, upgrades, and expansions.
- Customer training.
- Hardware repair and/or replacement.
- Network security services.
- Information Assurance.

Customer Responsibilities

- Allow Motorola continuous remote access to enable the monitoring service.
- Provide continuous utility service to any Motorola equipment installed or used at the Customer's premises to support delivery of the service. The Customer agrees to take reasonable due care to secure the Motorola equipment from theft or damage while on the Customer's premises.
- Create an incident, as necessary. Gather information to perform the following:
 - Characterize the issue.
 - Determine a plan of action.
 - Assign and track the incident to resolution.
- Prior to contract start date, provide Motorola with pre-defined information necessary to complete a CSP, including:
 - Incident notification preferences and procedure.
 - Repair verification preference and procedure.
 - Database and escalation procedure forms.
- Submit timely changes in any information supplied to Motorola and included in the CSP to the CSM.
- Notify the CMSO when the Customer performs any activity that impacts the system. Activity that impacts the system may include, but is not limited to: installing software or hardware upgrades, performing upgrades to the network, renaming elements or devices within the network, and taking down part of the system to perform maintenance.
- Send system configuration change requests to Motorola's CSM.

- Allow Motorola’s field service technician, if designated in the CSP, access to equipment, including any connectivity or monitoring equipment, if remote service is not possible.
- Allow Motorola’s field service technician, if designated in the CSP, access to remove Motorola-owned monitoring equipment upon cancellation of service.
- Provide Motorola with all Customer-managed passwords required to access the Customer’s system upon request, when opening a request for service support, or when needed to enable response to a technical issue.
- Pay additional support charges above the contracted service agreements that may apply if it is determined that system faults were caused by the Customer making changes to critical system parameters without written agreement from Motorola.
- In the event that Motorola agrees in writing to provide supplemental monitoring for third-party elements provided by the Customer, the Customer agrees to obtain third-party consents or licenses required to enable Motorola to provide the monitoring service.
- Cooperate with Motorola and perform reasonable or necessary acts to enable Motorola to provide these services.
- Contact Motorola to coordinate transition of monitoring when the responsibility for monitoring needs to be transferred to or from Motorola, as specified in pre-defined information provided in the Customer’s CSP. An example of a transfer scenario is transferring monitoring from Motorola for network monitoring after normal business hours.

Upon contact, the Customer must provide Motorola with customer name, site ID, status on any open incidents, priority level of any open incidents, brief descriptions of any ongoing incident, and action plan for resolving those incidents.

- Acknowledge that incidents will be handled in accordance with 1.3.5.5 Priority Level Definitions and Response Times.

1.3.4.4 Connectivity

The connectivity between customer’s system and Motorola CMSO to enable Network Event Monitoring, MDR and RSUS should be established prior service start date.

Table 1-6: Available Connectivity

System Type	Available Connectivity	Set up and Maintenance
ASTRO 25	ASTRO Connectivity Service	Motorola

1.3.4.5 Motorola Owned and Supplied Equipment

This table identifies equipment that Motorola will supply to support the network monitoring service for the duration of the service.

Table 1-7: Motorola Owned and Supplied Equipment

Equipment Type	Location Installed
Firewall/Router	Primary Site
Service Delivery Management Server (DSR only)	Primary Site for each Zone

1.3.4.6 Monitored Elements

This table identifies the elements that can be monitored by the service. The specific quantities of each element to be monitored on the Customer's system will be inventoried in the CHP.

Table 1-8: Monitored Elements

Monitored Elements		
Active Directory	Enrichment Testing	Probe
Agent	Environmental	Core Switch
AIS	ESX	Radio Interface
AMB	Exit Router	RDM
Application Server	RNI Firewall	RFDS
APX Cloud Application	Core Server	RGU
ATR	Gateway	RNG
AUC	Gateway Router	Site Router
Backup Server	Gateway Unit	RTU
Base Radio	GIS Server	SCOM Server
Call Processor	HSS	Short Data Router
Camera	Install Server	Statistical Server
CBSD	Site Switch	Storage Networking
CCGW	Licensing Service	Consoles
Channel	Load Balancer	TRAK
Client Station	Logging Recorder (only NICE)	Terminal Server
CommandCentral AXS dispatch console	Logging Replay Station (only if NICE)	Time Keeper
Controller	UNC	Training App
Conventional	UEM	Training Database
Core Router	MOSCAD Server	Trap Forwarder
Data Processing	Network Address	UCS
Database Server	Network Device	Licensing Server
Data Warehouse Server	NTP	Virtual Machine
Device Configuration Server	AIS	VMS
DNS	Application Server	VPM
Domain Controller	Packet Data Gateway	WSGU
D series Site Controller	Physical Host Environmental	ZDS
eNodeB	Physical Host Power and Network	Zone Controller
Active directory	Power Distribution Unit	Syslog
Repeaters	Power Monitor	Proxy

1.3.5 On-Site Infrastructure Response

Motorola's On-Site Infrastructure Response service provides incident management and escalation for on-site technical service requests. The service is delivered by Motorola's CMSO organization in cooperation with a local service provider.

On-Site Infrastructure Response may also be referred to as On-Site Support.

1.3.5.1 Description of Service

The Motorola CMSO Service Desk will receive the Customer's request for on-site service.

The CMSO Dispatch Operations team is responsible for opening incidents, dispatching on-site resources, monitoring issue resolution, and escalating as needed to ensure strict compliance to committed response times.

The dispatched field service technician will travel to the Customer's location to restore the system in accordance with 1.3.5.5 Priority Level Definitions and Response Times.

Motorola will manage incidents as described in this SOW. The CMSO Service Desk will maintain contact with the field service technician until incident closure.

1.3.5.2 Scope

On-Site Infrastructure Response is available in accordance with 1.3.5.5 Priority Level Definitions and Response Times. Customer's Response Time Classification is designated in the Customer Support Plan.

1.3.5.3 Geographical Availability

On-Site Infrastructure Response is available worldwide where Motorola servicers are present. Response times are based on the Customer's local time zone and site location.

1.3.5.4 Inclusions

On-Site Infrastructure Response is provided for Motorola-provided infrastructure.

Motorola Responsibilities

- Receive service requests.
- Create an incident when service requests are received. Gather information to characterize the issue, determine a plan of action, and assign and track the incident to resolution.
- Dispatch a field service technician, as required by Motorola's standard procedures, and provide necessary incident information.
- Provide the required personnel access to relevant Customer information, as needed.
- Motorola field service technician will perform the following on-site:
 - Run diagnostics on the infrastructure component.
 - Replace defective infrastructure components, as supplied by the Customer.
 - Provide materials, tools, documentation, physical planning manuals, diagnostic and test equipment, and any other material required to perform the maintenance service.

If a third-party vendor is needed to restore the system, the vendor can be accompanied onto the Customer's premises.

If required by the Customer's repair verification in the CSP, verify with the Customer that restoration is complete or system is functional. If verification by the Customer cannot be completed within 20 minutes of restoration, the incident will be closed and the field service technician will be released.

Escalate the incident to the appropriate party upon expiration of a response time.

- Close the incident upon receiving notification from the Customer or Motorola field service technician, indicating the incident is resolved.
- Notify the Customer of incident status, as defined in the CSP and Service Configuration Portal (SCP):

Open and closed.

Open, assigned to the Motorola field service technician, arrival of the field service technician on-site, delayed, or closed.

- Provide incident activity reports to the Customer, if requested.

Limitations and Exclusions

The following items are excluded from this service:

- All Motorola infrastructure components beyond the post-cancellation support period.
- All third-party infrastructure components beyond the post-cancellation support period.
- All broadband infrastructure components beyond the post-cancellation support period.
- Physically damaged infrastructure components.
- Third-party equipment not shipped by Motorola.
- Consumable items including, but not limited to, batteries, connectors, cables, toner or ink cartridges, tower lighting, laptop computers, monitors, keyboards, and mouse.
- Video retrieval from digital in-car video equipment.
- RF infrastructure and backhaul components, including but not limited to, antennas, transmission lines, antenna dehydrators, microwave, line boosters, amplifiers (such as tower top amplifiers and bi-directional amplifiers), logging recorders, data talker wireless transmitters, short haul modems, combiners, multicouplers, duplexers, shelters, shelter HVAC, generators, UPS's, and test equipment.
- Racks, furniture, and cabinets.
- Tower and tower mounted equipment.
- Non-standard configurations, customer-modified infrastructure, and certain third-party infrastructure.
- Firmware or software upgrades.

Customer Responsibilities

- Contact Motorola, as necessary, to request service.
- Prior to start date, provide Motorola with the following pre-defined Customer information and preferences necessary to complete CSP:

Incident notification preferences and procedure.

Repair verification preference and procedure.

Database and escalation procedure forms.

- Submit timely changes in any information supplied in the CSP to the CSM.
- Provide the following information when initiating a service request:
 - Assigned system ID number.
 - Problem description and site location.
 - Other pertinent information requested by Motorola to open an incident.
- Provide field service technician with access to equipment.
- Supply infrastructure spare or FRU, as applicable, in order for Motorola to restore the system.
- Maintain and store software needed to restore the system in an easily accessible location.
- Maintain and store proper system backups in an easily accessible location.
- If required by repair verification preference provided by the Customer, verify with the CMSO Service Desk and dispatch that restoration is complete or system is functional.
- Cooperate with Motorola and perform reasonable or necessary acts to enable Motorola to provide these services.
- In the event that Motorola agrees in writing to provide supplemental On-Site Infrastructure Response to Customer-provided third-party elements, the Customer agrees to obtain and provide applicable third-party consents or licenses to enable Motorola to provide the service.

1.3.5.5 Priority Level Definitions and Response Times

This section describes the criteria Motorola used to prioritize incidents and service requests, and lists the response times for those priority levels.

Table 1-9: Standard Level Definitions and Response Times

Incident Priority	Incident Definition	On-Site Response Time
Critical P1	<p>Core: Core server or core link failure. No redundant server or link available.</p> <p>Sites/Subsites: Primary site down. Two RF sites or more than 10% of RF sites down, whichever is greater.</p> <p>Consoles: More than 40% of a site's console positions down.</p> <p>Conventional Channels: Conventional Channel Gateways (CCGW) down without redundant gateways available.</p> <p>Security Features: Security is non-functional or degraded.</p>	<p>Response provided 24/7 until service restoration.</p> <p>Field service technician arrival on-site within 4 hours of receiving dispatch notification.</p>

Incident Priority	Incident Definition	On-Site Response Time
High P2	<p>Core: Core server or link failures. Redundant server or link available.</p> <p>Consoles: Between 20% and 40% of a site's console positions down.</p> <p>Sites/Subsites: One RF site or up to 10% of RF sites down, whichever is greater.</p> <p>Conventional Channels: Up to 50% of CCGWs down. Redundant gateways available.</p> <p>Network Elements: Site router, site switch, or GPS server down. No redundant networking element available.</p>	<p>Response provided 24/7 until service restoration.</p> <p>Field service technician arrival on-site within 4 hours of receiving dispatch notification.</p>
Medium P3	<p>Consoles: Up to 20% of a site's console positions down.</p> <p>Conventional Channels: Single channel down. Redundant gateway available.</p> <p>Network Elements: Site router/switch or GPS server down. Redundant networking element available.</p>	<p>Response provided during normal business hours until service restoration.</p> <p>Field service technician arrival on-site within 8 hours of receiving dispatch notification.</p>
Low P4	<p>Service Requests: Minor events and warnings in the system. Preventative and planned maintenance activities (scheduled work).</p>	<p>Not applicable.</p>

1.3.6 Annual Preventative Maintenance

Motorola personnel will perform a series of maintenance tasks to keep network equipment functioning correctly.

1.3.6.1 Description of Service

Annual Preventative Maintenance provides annual operational tests on the Customer's infrastructure equipment to monitor its conformance to specifications.

1.3.6.2 Scope

Annual Preventive Maintenance will be performed during standard business hours, unless otherwise agreed to in writing. After the service starts, if the system or Customer requirements dictate that the service must occur outside of standard business hours, an additional quotation will be provided. The Customer is responsible for any charges associated with unusual access requirements or expenses.

1.3.6.3 Inclusions

Annual Preventive Maintenance service will be delivered for Motorola-provided infrastructure, including integrated third-party products, per the level of service marked in Table 1-12: Preventive Maintenance Level.

Table 1-12: Preventive Maintenance Level

Service Level	Included
Level 1 Preventive Maintenance	X
Level 2 Preventive Maintenance	

Motorola Responsibilities

- Notify the Customer of any planned system downtime needed to perform this service.
- Maintain communication with the Customer as needed until completion of the Annual Preventive Maintenance.
- Determine, in its sole discretion, when an incident requires more than the Annual Preventive Maintenance services described in this SOW, and notify the Customer of an alternative course of action.
- Provide the Customer with a report in Customer Hub, or as otherwise agreed in the CSP, comparing system performance with expected parameters, along with any recommended actions. Time allotment for report completion is to be mutually agreed.
- Provide trained and qualified personnel with proper security clearance required to complete Annual Preventive Maintenance services.
- Field service technician will perform the following on-site:
 - Perform the tasks defined in Section 1.3.6.4: Preventative Maintenance Tasks.
 - Perform the procedures defined in Section 1.3.6.5 : Site Performance Evaluation Procedures for each site type on the system.
 - Provide diagnostic and test equipment necessary to perform the Preventive Maintenance service.
 - As applicable, use the Method of Procedure (MOP) defined for each task.

Limitations and Exclusions

The following activities are outside the scope of the Annual Preventive Maintenance service.

- Preventive maintenance for third-party equipment not sold by Motorola as part of the original system.
- Network transport link performance verification.
- Verification or assessment of Information Assurance.
- Any maintenance and/or remediation required as a result of a virus or unwanted cyber intrusion.
- Tower climbs, tower mapping analysis, or tower structure analysis.

Customer Responsibilities

- Provide preferred schedule for Annual Preventative Maintenance to Motorola.
- Authorize and acknowledge any scheduled system downtime.
- Maintain periodic backup of databases, software applications, and firmware.
- Establish and maintain a suitable environment (heat, light, and power) for the equipment location as described in equipment specifications, and provide Motorola full, free, and safe access to the equipment so that Motorola may provide services. All sites shall be accessible by standard service vehicles.
- Submit timely changes in any information supplied in the CSP to the CSM.

- Provide site escorts, if required, in a timely manner.
- Provide Motorola with requirements necessary for access to secure facilities.
- In the event that Motorola agrees in writing to provide supplemental Annual Preventive Maintenance to third-party elements provided by Customer, the Customer agrees to obtain any third-party consents or licenses required to enable Motorola field service technician to access the sites to provide the service.

1.3.6.4 Preventative Maintenance Tasks

The Preventive Maintenance service includes the tasks listed in this section.

PRIMARY SITE CHECKLIST – LEVEL 1	
Servers	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Network Management (NM) Client Applications	Review Unified Event Manager (UEM) events and verify backhaul links are reported as operational. Review event log for persistent types. Verify all NM client applications are operating correctly.
Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to the Customer server.
Complete Backup	Verify backups have been completed or scheduled, and that data has been stored in accordance with the Customer's backup plan. Check that adequate storage space is available for backups.
Network Time Protocol (NTP)	Verify operation and syncing all devices.
Data Collection Devices (DCD) check (if present)	Verify data collection.
Anti-Virus	Verify anti-virus is enabled and that definition files on the core security management server were updated within two weeks of the current date.
Routers	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on router type. Capture available diagnostic logs.
Verify Redundant Routers	Test redundancy in cooperative WAN routers. Carry out core router switchover in coordination with Customer.
Switches	
Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on switch type. Capture available diagnostic logs.
Verify Redundant Switches	Test redundancy in backhaul switches. Carry out core router switchover in coordination with Customer.

PRIMARY SITE CHECKLIST – LEVEL 1

Domain Controllers (non-Common Server Architecture)

Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to the Customer server.

Firewalls

Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.

Software

Verify System software physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to the Customer server.
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Switches

Equipment Alarms	Check LED and/or other status indicators for fault conditions.
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Switches (continued)

Capture Diagnostics	Perform recommended diagnostic tests based on switch type. Capture available diagnostic logs.
Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.

Routers

Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on router type. Capture available diagnostic logs.
Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.

Miscellaneous Equipment

Equipment Alarms	Check LED and/or other status indicators for fault conditions.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Site Frequency Standard Check (Timing Reference Unit)	Check LEDs for proper operation.

Site Controllers

Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Equipment Alarms	Check LED and/or other status indicators for fault conditions.

PRIMARY SITE CHECKLIST – LEVEL 1

Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.
Site Controller Redundancy (Trunking)	Roll site controllers with no dropped audio.
Comparators	
Equipment Alarms	Verify no warning/alarm indicators.
Capture Diagnostics	Perform recommended diagnostic tests based on server type. Capture available diagnostic logs.
Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.

DISPATCH SITE CHECKLIST – LEVEL 1

General	
Inspect all Cables	Inspect all cables and connections to external interfaces are secure.
Mouse and Keyboard	Verify operation of mouse and keyboard.
Configuration File	Verify each operator position has access to required configuration files.
Console Operator Position Time	Verify console operator position time is consistent across all operator positions.
Screensaver	Verify screensaver set as Customer prefers.
Screen Performance	Verify screen operational and is not suffering from dead pixels or image burn-in that prevent user operation.
Touchscreen	Verify touchscreen operation, if present.
Cabling/Lights/Fans	Visual inspection of all equipment cabling, lights, and fans
Filters/Fans/Dust	Clean all equipment filters and fans and remove dust.
Monitor and Hard Drive	Confirm the monitor and hard drive do not "sleep".
DVD/CD	Verify and clean DVD or CD drive.
Time Synchronization	Verify console time is synchronized with NTP server
Anti-Virus	Verify anti-virus is enabled and that definition files have been updated within two weeks of the current date.
Headset Unplugged Testing	
Speakers	Test all speakers for audio quality, volume, static, drop-outs, and excess hiss when turned up.
Channel Audio in Speaker	Verify selected channel audio in select speaker only.
Footswitch Pedals	Verify both footswitch pedals operational.
Radio On-Air Light	Verify radio on-air light comes on with TX (if applicable).

DISPATCH SITE CHECKLIST – LEVEL 1

Headset Plugged In Testing

Radio TX and RX	Verify radio TX/RX from both headset jacks. Verify levels OK. Check volume controls for noise, static, or drop-outs.
Speaker Mute	Verify speaker mutes when muted.
Telephone Operation	Verify telephone operational through both headset jacks. Check volume controls for noise, static, or drop-outs.
Audio Switches	Verify audio switches to speaker when phone off-hook if interfaced to phones.
Radio Takeover in Headset	Verify radio-takeover in headset mic when phone is off-hook, with mic switching to radio and muting phone during push-to-talk.

DISPATCH SITE CHECKLIST – LEVEL 1

Other Tests

Phone Status Light	Verify phone status light comes on when phone is off-hook (if applicable).
Desk Microphone Operation	Confirm desk mic operation (if applicable).
Radio Instant Recall Recorder (IRR) Operation	Verify radio IRR operational on Motorola dispatch (if applicable).
Telephone IRR Operation	Verify telephone IRR operational on Motorola dispatch, if on radio computer.
Recording	Verify operator position being recorded on long term logging recorder (only if NICE), if included in service agreement

Computer Performance Testing

Computer Reboot	Reboot operator position computer.
Computer Operational	Confirm the client computer is fully operational (if applicable).

Audio Testing

Conventional Resources	Confirm all conventional resources are functional, with adequate audio levels and quality.
Secure Mode	Confirm any secure talkgroups are operational in secure mode.
Trunked Resources	Confirm all trunked resources on screen are functioning by placing a call in both directions, at the Customer's discretion, and at a single operator position
Backup Resources	Confirm backup resources are operational.

RF SITE CHECKLIST – LEVEL 1

RF PM Checklist

Equipment Alarms	Verify no warning or alarm indicators. Verify AC/DC converter, RMC have been wired correctly on D series site.
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RF SITE CHECKLIST – LEVEL 1

Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.
Site Frequency Standard Check	Check LEDs for proper operation, PCA screens indicating potential faults for proper operation
Basic Voice Call Check	Voice test each voice path, radio to radio.
Trunking Control Channel Redundancy	Roll control channel, test, and roll back if the site has GTR stations. This test is not applicable for D series stations.
Trunking Site Controller Redundancy, ASTRO 25 Site Repeater only	Roll site controllers with no dropped audio if the site has GTR stations. This test is not applicable for D series stations.
PM Optimization Workbook (See Section 4.1.9.5: Site Performance Evaluation Procedures for GTR tests)	Complete Base Station Evaluation tests - Frequency Error, Modulation Fidelity, Forward at Set Power, Reverse at Set Power, and Gen Level Desense no TX. Update station logs.

MOSCAD CHECKLIST – LEVEL 1

MOSCAD Server

Equipment Alarms	Verify no warning or alarms indicators.
Check Alarm/Event History	Review MOSCAD alarm and events to find if there are chronic issues.
Windows Event Logs	Review Windows event logs. Save and clear if full.
Password Verification	Log in to site devices to verify passwords. Document changes if any found.

MOSCAD Client

Equipment Alarms	Verify no warning or alarm indicators.
Check Alarm / Event History	Review MOSCAD alarms and events to find if there are chronic issues.
Windows Event Logs	Review Windows event logs. Save and clear if full.
Password Verification	Site devices to verify passwords. Document changes if any found.

MOSCAD Client (continued)

Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to the Customer server.
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MOSCAD CHECKLIST – LEVEL 1

MOSCAD RTUs

Equipment Alarms	Verify no warning or alarm indicators.
Verify Connectivity	Verify connectivity
Password Verification	Site devices to verify passwords. Document changes if any are found.
Check Alarm/Event History	Review MOSCAD alarms and events to find if there are chronic issues.
Verify System software Physical media	Perform audit of software media on site. Verify that versions, KC numbers, and types match what is deployed to the Customer server.

FACILITIES CHECKLIST – LEVEL 1

Visual Inspection Exterior

Antenna Site Registration Sign	Verify that the Antenna Site Registration sign is posted.
Warning Sign - Tower	Verify that a warning sign is posted on the tower.
Warning Sign - Gate	Verify that a warning sign is posted at the compound gate entrance.
10 Rule Sign	Verify that a 10 rules sign is posted on the inside of the shelter door.
Outdoor Lighting	Verify operation of outdoor lighting and photocell.
Exterior of Building	Check the exterior of the building for damage and disrepair.
Fences / Gates	Check fences and gates for damage and disrepair.
Landscape / Access Road	Check the landscape and access road for accessibility.

Visual Inspection Interior

Electrical Surge Protectors	Check electrical surge protectors for alarms.
Emergency Lighting	Verify emergency lighting operation.
Indoor Lighting	Verify indoor lighting.
Equipment Inspection	Visually inspect that all hardware, including equipment, cables, panels, batteries, and racks, is in acceptable physical condition for normal operation.

Visual Inspection Interior (continued)

Regulatory Compliance (License, ERP, Frequency, Deviation)	Check for site and station FCC licensing indicating regulatory compliance.
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FACILITIES CHECKLIST – LEVEL 1

Clean Fans and Equipment	Use an antistatic vacuum to clean cooling pathways.
UPS	
Visual inspection (condition, cabling)	Check for damage, corrosion, physical connections, dirt and dust, and error indications.
Generator	
Visual Inspection	Check panel housing for cracks, rust, and weathering. Check physical connections for corrosion, dirt and dust, or other abnormal conditions.

1.3.6.5 UPS Preventative Maintenance Service

- Perform temperature check on all breakers, connections, and associated controls. Repair and/or report all high temperature areas.
- Perform a complete visual inspection of the equipment including subassemblies, wiring harnesses, contacts, cables, and major components.
- Check rectifier and inverter snubber boards for discoloration.
- Check power capacitors for swelling or leaking oil. (if applicable)
- Check for DC capacitor vent caps that have extruded more than 1/8". (if applicable)
- Record all voltage and current meter readings on the module control cabinet or the system control cabinet.
- Measure and record harmonic trap filter currents. (if applicable)
- Check the inverter and rectifier snubbers for burned or broken wires.
- Check all nuts, bolts, screws, and connectors for tightness and heat discoloration.
- Check fuses on the DC capacitor deck for continuity (if applicable).
- With customer approval, perform operational test of the system including unit transfer and battery discharge.
- Calibrate and record all electronics to system specifications.
- Measure and record all low-voltage power supply levels.
- Record phase-to-phase input voltage and currents.
- Review system performance with customer to address any questions and to schedule any repairs.
- Check integrity of battery cabinet (if applicable).
- Visual inspection only of the battery cabinet and/or room to include:
 - Check for NO-OX grease or oil on all connections (if applicable).
 - Check battery jars for proper liquid level (if flooded cells).
 - Check for corrosion on all the terminals and cables.
 - Examine the physical cleanliness of the battery room and jars.

- Measure and record DC bus ripple voltage (if applicable).
- Measure and record total battery float voltage.
- Parts coverage excludes batteries, air filters, proactive full bank capacitor and proactive full fan replacement.
- Customer should check air filters monthly for cleanliness and replace as necessary.
- Maintenance does not include System Control Cabinet, Power Tie, Breaker Cabinets, Load Bus Sync or Maintenance Bypass Cabinets.

**CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
BOARD OF SUPERVISORS REPORT 8.3****Board Meeting Date: 11/20/2024**

Subject: World Drive North Phase III – Phase II Professional Services Agreement

Presented By: Craig Sandt, Principal Construction Manager

Department: Public Works

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #8.3 Phase II of Contract #C006106 World Drive North Phase III construction management and engineering inspection services with Consor Engineers, LLC. for \$2,238,318.27 plus 10% contingency, and \$142,261.02 for reimbursable expenses for a total of \$2,604,411.12

RELEVANT STRATEGIC GOALS: Quality of Place

PROOF OF PUBLICATION: N/A

BACKGROUND:

In February 2023, the District awarded a professional services contract to Consor Engineers, LLC, for Construction Management and Construction Engineering Inspection (CM/CEI) services for the World Drive North Phase III project. The proposal from Consor Engineers included cost estimates for both Phase I (base scope) and Phase II (add alternate scope), although only the Phase I scope was initially awarded.

Under Contract #C006106, the scope of work includes, but is not limited to, the following tasks:

- Establishment of project administrative procedures,
- Evaluation of bid results for construction services,
- Review and approval of the baseline project schedule and subsequent progress updates,
- Preparation of cost estimates as needed for scope changes,
- Provision of ongoing risk and financial analysis,
- Review and approval of all contractor and vendor payment applications, and
- Provision of comprehensive project oversight, including construction management, construction coordination, and CEI services necessary for contract administration, inspection, and materials sampling and testing.

This agenda item seeks Board approval for Phase II (add alternate phase) of the CM/CEI services related to the World Drive North Phase III project.

FINDINGS AND CONCLUSIONS:

On February 22, 2023, the Board of Supervisors authorized the commencement of Phase I (base phase) of Contract #C006106 with Consor Engineers, LLC, for the World Drive North Phase III project. Per Section 2, Compensation, of the Professional Services Agreement, the Owner (Central Florida Tourism Oversight District - CFTOD) retained the option to approve a Not-to-Exceed Fee of \$2,238,318.27 and a Reimbursable Expenses Amount of \$142,261.02 for Phase II (add alternate phase). We are requesting approval of these amounts along with a 10% contingency.

FISCAL IMPACT:

There will be no impact on the overall budget for the World Drive North Phase III project. Funding for this request is provided through the RCID 2016-2024 Transportation Projects Ad Valorem Bonds.

C006106 Consor Engineering LLC	NTE Fee	Material Testing	Reimbursable Expenses	Contingency Amount (10%)
Phase I/Base Scope	\$4,760,423.23	\$60,000.00	\$178,788.71	\$476,042.32
Phase II/Add Alternate	\$2,238,318.27	N/A	\$142,261.02	\$223,831.83

PROCUREMENT REVIEW: This contract has been reviewed and approved for compliance with the District's procurement policies.

LEGAL REVIEW: This agenda item has been reviewed by the District's General Counsel.

ALTERNATIVE:

- Deny
- Amend
- Table

SUPPORT MATERIALS:

Contract #C006106

**AGREEMENT FOR PROFESSIONAL SERVICES
NOT TO EXCEED**

THIS AGREEMENT (“Agreement”) shall be effective commencing on **March 14, 2023**, between **Reedy Creek Improvement District**, whose mailing address is P.O. Box 10170, Lake Buena Vista, FL 32830-0170 (“Owner”), and **Conzor Engineers, LLC**, whose mailing address is 15310 Park Row, Houston, TX 77084 (“Consultant”).

Project: **World Drive North Phase III CM/CEI Services**

General type of services to be performed: Construction Management/CEI Services to support the World Drive North Phase III Project

W I T N E S S E T H:

WHEREAS Owner desires to commission the services of a consultant to perform the hereinafter described services, and Consultant desires to be so commissioned.

NOW, THEREFORE, in consideration of the premises and the mutual covenants and obligations herein contained, the parties agree as follows:

1. SCOPE OF SERVICES.

a. Basic Services: A description of the nature and scope of services to be performed by Consultant under this Agreement (“Basic Services”) is set forth in Exhibit “A” attached hereto and incorporated herein by reference.

b. Additional Services: Owner may, from time to time, authorize Consultant in writing to perform additional services (“Additional Services”), in which event Consultant shall perform same. Any such Additional Services shall be set forth in an Amendment to this Agreement which shall be executed by both parties and which shall be governed by the terms and conditions of this Agreement unless otherwise expressly set forth therein.

c. Reduction of Scope of Services: Basic Services plus Additional Services are hereinafter referred to collectively as “Services”. Owner retains the right, in its sole discretion, to reduce any portion of the scope of Services. In the event Owner reduces the scope of Services, Owner shall be entitled to a proportionate reduction to the Not-to-Exceed Fee and Reimbursable Expenses, as defined in Article 2 (Compensation).

d. Time for Completion: Consultant shall commence the Services upon execution of this Agreement, or as otherwise directed by Owner, and shall complete same in accordance with the schedule (“Schedule”) set forth in Exhibit “B” attached hereto and incorporated herein by reference, it being understood and agreed that TIME IS OF THE ESSENCE of this Agreement.

e. Acceleration: Consultant shall accelerate performance of its Services in the manner directed by Owner in the event that Owner, in its sole discretion, determines that such acceleration is necessary to maintain the Schedule. If acceleration is required as a result of delays caused solely by Consultant, then such acceleration shall be at no cost to Owner. If acceleration is required as a result of delays partially caused by Consultant, then such portion of any delay partially caused by Consultant shall not be compensated by Owner, and any other portion of any such delay shall be compensated as an Additional Service.

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2. COMPENSATION.

a. Owner shall pay Consultant for the Initial Phase an amount Not-to-Exceed **FOUR MILLION, SEVEN HUNDRED SIXTY THOUSAND, FOUR HUNDRED TWENTY-THREE AND TWENTY-THREE ONE-HUNDREDTHS DOLLARS (\$4,760,423.23)** (“NTE Amount”) and;

b. if the Owner elects no later than 18 months after contract execution to proceed with the Add Alternate Phase, the Add Alternate Phase in the amount of **TWO MILLION, TWO HUNDRED THIRTY-EIGHT THOUSAND, THREE HUNDRED EIGHTEEN AND TWENTY-SEVEN ONE-HUNDREDTHS DOLLARS (\$2,238,318.27)**, will be as total compensation for the complete and satisfactory performance of the Services based upon the rates set forth in Exhibit “F”, attached hereto and incorporated herein by this reference. The NTE Amount shall cover Consultant’s profit, overhead, and all costs and expenses of any nature whatsoever (including, without limitation, taxes, labor and materials), with the exception only of reimbursable expenses, which shall be paid by Owner to Consultant subject to and in accordance with the terms and conditions of Exhibit “C” (“Reimbursable Expenses”).

c. Material Testing Expenses for the Initial Phase under this Agreement shall not exceed the amount of **SIXTY THOUSAND, SEVEN HUNDRED AND ZERO ONE-HUNDRETHS DOLLARS (\$60,700.00)**. The NTE Amount shall cover Consultant’s profit, overhead, and all costs and expenses of any nature whatsoever.

d. Reimbursable Expenses for the Initial Phase under this Agreement shall not exceed the amount of **ONE HUNDRED SEVENTY-EIGHT THOUSAND, SEVEN HUNDRED EIGHTY-WIGHT AND SEVENTY-ONE ONE-HUNDREDTHS DOLLARS (\$178,788.71)** (“Reimbursable Expenses Cap”) and;

e. If the Owner elects no later than 18 months after contract execution to proceed with the Add Alternate Phase, the Reimbursable Expenses for the Add Alternate Phase shall be **ONE HUNDRED, FORTY-TWO THOUSAND, TWO HUNDRED SIXTY-ONE AND TWO ONE-HUNDREDTHS DOLLARS (\$142,261.02)**. Consultant shall not be entitled to payment for Reimbursable Expenses in excess of such amount, unless Consultant has obtained Owner’s express written consent for an increase in the Reimbursable Expenses Cap prior to incurring additional expenses.

i.) Should Consultant’s actual cost of completing the Services equal the NTE Amount, Owner shall pay Consultant the entire NTE Amount as set forth above. However, should the actual cost of completing the Services be greater than the NTE Amount, Consultant shall bear the entire responsibility for that amount in excess of the NTE Amount that is necessary to complete the Services.

ii.) The NTE Amount shall be proportionally adjusted to reflect any changes in the scope of Services as set forth in an Amendment, and the Schedule shall be equitably adjusted by way of said Amendment to the extend impacted thereby.

iii.) Consultant shall not be entitled to compensation for Additional Services unless Consultant has obtained prior written authorization in the form of an Amendment to perform such Additional Services.

b. The basis of compensation for any Additional Services shall be set forth in the Amendment to this Agreement providing for such Additional Services and shall be in accordance with the billing rates set forth in Exhibit “F” attached hereto and incorporated herein by reference. Any Additional Services performed by Consultant prior to execution by both parties of an Amendment shall be at Consultant’s sole risk and expense and shall not be compensated by Owner.

c. Progress payments shall be made monthly based upon the percentage of Services completed to date of invoice and approved by Owner. Consultant shall invoice Owner on the first day of each month and Owner shall pay each such approved invoice (or uncontested portion thereof) within thirty (30) days after receipt of invoice. Invoices shall (i) refer to this Agreement by the Agreement Number indicated at the top left-hand corner

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of the first page hereof, (ii) display the NTE Amount (iii) itemize each Amendment and amount being billed against such Amendments in the invoice, (iv) itemize all amounts previously invoiced and paid and (v) include complete documentation and substantiation for all amounts invoiced. Reimbursable Expenses shall be invoiced at their actual cost without markup and original receipts and other appropriate documentation shall be provided to substantiate expenses. All invoices shall be addressed to:

Reedy Creek Improvement District
Attention: Accounts Payable
P.O. Box 10170
Lake Buena Vista, FL 32830-0170
All invoices shall be sent to ProjectAP@rcid.org

3. RESERVED.

4. BOOKS AND RECORDS.

Consultant shall maintain, in accordance with generally accepted accounting principles, comprehensive books and records relating to all Services performed under this Agreement, which shall be retained by Consultant for a period of at least four (4) years from and after the completion of all Services. Owner, or its authorized representatives, shall have the right to audit such books and records at all reasonable times upon two days prior notice to Consultant.

5. DELIVERABLES.

“Deliverables” shall mean all drawings, specifications, data, ideas, designs, concepts, sketches, artwork, molds, models, tooling, programs, software, reports, improvements, inventions, original works of authorship or other tangible or intangible work product in whole or in part conceived, produced, commissioned or acquired by Consultant in connection with the Services. Consultant shall supply all Deliverables to Owner in accordance with the requirements of this Agreement. The Agreement Number, specification number, item number, and any other required identification must appear on all Deliverables submitted to Owner. Consultant is and shall be fully responsible for the preparation and accuracy of all Deliverables and the strict compliance of the Deliverables with all requirements hereof. Owner’s review, approval, action or inaction taken on the Deliverables is for Owner’s convenience and/or to express Owner’s opinion and shall not relieve or discharge Consultant either expressly or by implication from its responsibilities and obligations hereunder.

6. OWNERSHIP OF DELIVERABLES.

a. Title to all Deliverables shall be and remain the sole and exclusive property of Owner when produced, whether or not fixed in a tangible medium of expression. In the event of early termination of the Services hereunder, Consultant shall deliver to Owner all Deliverables whether complete or not.

b. Without limiting the foregoing, Consultant agrees that any Deliverables shall be deemed to be "works made for hire" for Owner as the author, creator, or inventor upon creation; provided, however, that in the event and to the extent that such Deliverables are determined not to constitute "works made for hire" as a matter of law, Consultant hereby irrevocably assigns and transfers such property, and all right, title and interest therein, whether now known or hereafter existing, including but not limited to patents and copyrights, to Owner and its successors and assigns. Consultant grants to Owner all rights including, without limitation, reproduction, manufacturing and moral rights, throughout the universe in perpetuity and in all languages and in any and all media whether now or hereafter known, with respect to such Deliverables. Consultant acknowledges that Owner is the motivating force and factor, and for purposes of copyright or patent, has the right to such copyrightable or patentable Deliverables produced by Consultant under this Agreement. Consultant shall deliver all Works to Owner promptly upon their completion or the sooner termination of Consultant's services hereunder. Consultant agrees to execute any and all documents and do such other acts as requested by Owner to further evidence any of the transfers, assignments and exploitation rights provided for herein.

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c. The provisions of this Article shall survive the expiration or earlier termination of this Agreement.

7. CONFIDENTIALITY OF MATERIAL.

Consultant may, during the course of providing its Services hereunder or in relation to this Agreement, have access to and acquire knowledge regarding plans, concepts, designs, materials, data, systems and other information of or with respect to the Owner or Owner's Representative, or any subsidiaries or affiliated companies thereof, which may not be accessible or known to the general public ("Confidential Information"). Confidential Information that is specific as to techniques, equipment, processes, products, concepts or designs, etc. shall not be deemed to be within the knowledge of the general public merely because it is embraced by general disclosures in the public domain. Any knowledge acquired by Consultant from such Confidential Information or otherwise through its engagement hereunder shall not be used, published or divulged by Consultant to any other person, firm or corporation, or used in any advertising or promotion regarding Consultant or its services, or in any other manner or connection whatsoever without first having obtained the written permission of Owner, which permission Owner may withhold in its sole discretion. Consultant specifically agrees that the foregoing confidentiality obligation applies to, but is not limited to, any information disclosed to Consultant in any document provided to Consultant pursuant to or in connection with this Agreement, including but not limited to, a Request for Proposal, Request for Estimate, Request for Quotation and Invitation to Bid. The provisions of this Article shall survive the expiration or earlier termination of this Agreement.

8. INSURANCE AND INDEMNIFICATION.

a. Consultant and any of its Subconsultants, as defined in Article 14 (Subconsultant), of every tier shall, throughout the performance of their respective Services hereunder, maintain:

- (i) Commercial General Liability Insurance including unmodified contractual liability, personal and advertising injury, and products/completed operations liability written on an occurrence form basis with minimum limits for bodily injury and property damage of \$2,000,000.00 per occurrence, protecting Consultant, Owner, and Owner's Representative from claims for personal injury, bodily injury, and property damage which may arise from or in connection with Consultant's performance of the Services or from or out of any negligent act or omission of Consultant, its officers, directors, agents, subcontractors, employees, or Subconsultants;
- (ii) Automobile Liability coverage for all owned, non-owned and hired vehicles written on an occurrence form basis, with minimum limits of \$2,000,000.00 per occurrence, protecting Consultant, Owner, and Owner's Representative from claims for bodily injury and property damage which may arise from or in connection with Consultant's performance of the Services or from or out of any negligent act or omission of Consultant, its officers, directors, agents, subcontractors, employees, or Subconsultants;
- (iii) Workers' Compensation Insurance as required by applicable law and Employer's Liability Insurance with minimum limits of \$1,000,000.00 per occurrence; and
- (iv) Professional Liability Insurance, including unmodified cross liability coverage, with a minimum limit of \$2,000,000.00 per claim, protecting Consultant, Owner and Owner's Representative from claims arising from errors and omissions of Consultant in connection with Consultant's performance of the Services during and for a period of at least three years after the completion of Consultant's Services. If Consultant's Professional Liability Insurance is written on a claims made basis, such insurance shall continue through the term of this Agreement and

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Consultant shall purchase at its sole expense either 1) an Extended Reporting Endorsement; or 2) Prior Acts Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that Consultant has Maintained continuous coverage with the same or original insurer.

b. All such insurance required by this Article shall be with companies and on forms acceptable to Owner and shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days unrestricted prior written notice thereof is furnished to Owner. All insurance shall be primary and non-contributory with regard to any other insurance available to Owner and Owner's Representative. All insurance shall be written by companies admitted to the State of Florida with a BEST Guide rating of A VIII or better, unless such requirements are waived, in writing, by the Reedy Creek Improvement District's Risk Manager.

c. Certificates of insurance (or copies of policies, if required by Owner) shall be furnished to Owner and shall include as Additional Insureds Owner, its supervisors, officers and employees agents and assigns and, if applicable, Owner's Representative and its parent, affiliated and related companies, officers, directors, employees, agents and assigns, and shall contain a waiver of subrogation. The additional insured requirement applies to all coverages except Professional Liability, Workers' Compensation and Employers Liability. The waiver of subrogation requirement applies to all coverages.

d. The insurance requirements contained in this Agreement may be met with excess/umbrella coverage(s), or by a program of self-insurance acceptable to the Owner.

e. Consultant shall indemnify and hold harmless Owner and its supervisors, officers and employees from all liabilities, damages, losses and costs, including, but not limited to, reasonable attorneys' and paralegal fees, to the extent caused by Consultant's negligence, recklessness, or intentional wrongful conduct. The provisions of this paragraph shall survive the expiration or sooner termination of this Agreement.

f. Owner's Representative: Pursuant to Article 24 of this Agreement, if the Owner has designated as its Owner's Representative an organization or individual other than a supervisor, officer or employee of the Owner, then Consultant shall indemnify and hold harmless Owner's Representative and its parent, subsidiary, related and affiliated companies and the officers, directors, agents, employees and assigns of each from all liabilities, damages, losses and costs, including, but not limited to, reasonable attorneys' and paralegal fees, to the extent caused by Consultant's negligence, recklessness or intentional wrongful conduct. The provisions of this paragraph shall survive the expiration or sooner termination of this Agreement.

9. PROFESSIONAL STANDARDS.

a. Consultant hereby represents and warrants that it has the professional experience and skill to perform the Services required to be performed hereunder; that it shall comply with all applicable federal, state and local laws, including without limitation all professional registration (both corporate and individual) for all required basic disciplines; that it shall perform the Services in accordance with generally accepted professional standards and in an expeditious and economical manner; that it has sufficient capital assets and is adequately financed to meet all financial obligations it may be required to incur hereunder; that the Deliverables shall not call for the use of nor infringe any patent, trademark, service mark, copyright or other proprietary interest claimed or held by any person or interest absent prior express written consent from the Owner; and that it shall provide and employ in connection with the performance of Services personnel qualified and experienced in their profession, it being understood that Owner may at any time require Consultant to remove, and Consultant shall forthwith remove, any person employed in connection with the performance of the Services for any reason whatsoever.

b. If, at any time during the performance of its Services or during the maximum period permitted by applicable law after completion of same, it is discovered that Consultant or any of its officers, directors, agents, subcontractors, employees, or Subconsultants, as defined in Article 14 (Subconsultant), has committed any negligent act, error or omission, or has failed to meet the warranties and representations contained herein, which has

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caused or will cause additional expense to Owner, then Consultant shall, at Owner's request, promptly make all necessary corrections and/or bear any and all such additional expenses associated with the correction of same. The foregoing is without limitation of Owner's other rights under Contract or at law. Correction of errors and omissions shall include, but not be limited to, additional architectural and engineering services, design documentation, travel, demolition, removal, relocation, manufacture, fabrication, construction, testing and installation, irrespective of whether originally performed by Consultant, Owner, or a third party.

10. DETERMINATION OF DISPUTES/CHOICE OF LAW.

Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Agreement, or arising out of any matter pertaining to this Agreement or the Services to be performed hereunder (a "Proceeding"), shall be submitted for trial, without jury, solely and exclusively before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; provided, however, that if such Circuit Court does not have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before the United States District Court for the Middle District of Florida (Orlando Division); and provided further that if neither of such courts shall have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before any other court sitting in Orange County, Florida, having jurisdiction. The parties (i) expressly waive the right to a jury trial, (ii) consent and submit to the sole and exclusive jurisdiction of the requisite court as provided herein and (iii) agree to accept service of process outside the State of Florida in any matter related to a Proceeding in accordance with the applicable rules of civil procedure.

11. SUSPENSION/TERMINATION FOR CONVENIENCE.

a. Anything herein to the contrary notwithstanding, Owner may, for convenience, terminate this Agreement upon seven (7) days prior written notice to Consultant. In the event of such termination, Owner's sole obligation and liability to Consultant, if any, shall be to pay Consultant that portion of the Fixed Fee Amount earned by Consultant for the performance of the Services through the date of termination only, plus Reimbursable Expenses incurred through the date of termination. Under no circumstances shall Owner be liable for any lost profits, lost revenue, unabsorbed overhead or any other losses of any kind whatsoever associated with any Services not performed.

b. Upon delivery to Consultant of a written Notice to Suspend Services, Consultant shall immediately suspend performance of its Services in the manner and for the duration directed by Owner in said Notice. Consultant shall take reasonable steps to preserve any Deliverables in progress at the time of suspension. Upon written notice that the suspension has been canceled, Consultant shall be entitled to an equitable adjustment to the Schedule only. In no event shall any suspension of Services exceed one (1) year in duration.

12. ASSIGNMENT.

This Agreement is for the personal services of Consultant and may not be assigned by Consultant, nor shall it be assignable by operation of law, without the prior written consent of Owner, which consent Owner may withhold in its sole discretion. Owner reserves the right to assign or novate all or any portion of this Agreement and Consultant agrees to execute all documents that are required (if any) to effectuate such assignment or novation.

13. KEY EMPLOYEES.

In the event that any employees of Consultant are listed as Key Employees in Exhibit "E", Consultant acknowledges that Owner has relied upon and hired Consultant because of the involvement of such individuals. Consultant agrees that such Key Employees shall be assigned to perform the Services. Consultant shall not remove any Key Employees from the performance of the Services absent prior written consent of Owner.

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14. SUBCONSULTANT.

If Consultant, as part of the performance of its Services hereunder, is required to commission other consultants (“Subconsultant”), then the following provisions shall apply:

- a. Consultant shall obtain Owner's written consent prior to engaging the services of any Subconsultant and shall not engage any Subconsultant to which Owner objects;
- b. Consultant shall direct and coordinate the services of any Subconsultant commissioned by Consultant;
- c. Consultant shall bear full responsibility under this Agreement for all services of its Subconsultant(s), including without limitation each Subconsultant's negligent errors and omissions;
- d. The costs of all Subconsultants' services for the performance of Additional Services compensated on a time-and-materials or cost-reimbursable basis shall be billed to Owner without markup;
- e. Owner shall have no obligation to pay, or be responsible in any way, for the payment of any monies to any Subconsultant, except as may otherwise be required by law;
- f. All agreements between Consultant and any Subconsultants shall reflect the terms of this Agreement and require the Subconsultant, to the extent of the Services to be performed by the Subconsultant, to assume toward the Consultant all the obligations which Consultant by this Agreement assumes towards the Owner, it being understood that nothing herein shall in any way relieve Consultant from any of its duties under this Agreement;
- g. Owner shall be a third party beneficiary of all obligations under all agreements between Consultant and any Subconsultants; provided, however, that nothing contained herein or therein shall create any contractual relationship between Owner and any Subconsultant or any obligation of Owner to any Subconsultant.

15. NOTICE.

a. Notices required or permitted to be given hereunder shall be in writing, may be delivered personally to an officer or designated representative of the party to be served or sent by first class mail, facsimile to be confirmed by first class mail, or messenger services and shall be deemed given when received by the addressee. Notices shall be addressed as follows:

If to Owner: Reedy Creek Improvement District
 Attention: John H. Classe, Jr., District Administrator
 1900 Hotel Plaza Boulevard
 Lake Buena Vista, Florida 32830

With a copy to: Reedy Creek Improvement District
 Attention: Mr. Bruce Jones, Director, Procurement
 1900 Hotel Plaza Blvd.
 Lake Buena Vista, FL 32830

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If to Consultant: Consor Engineers, LLC
 Attention: David Bowden
 15310 Park Row
 Houston, TX 77084

or to such other address as either party may direct by written notice given to the other as hereinabove provided.

b. Notwithstanding the foregoing, any notice sent to the last designated address of the party to whom a notice may be or is required to be delivered hereunder shall not be deemed ineffective if actual delivery cannot be made due to an unnoticed change of address of the party to whom the notice is directed or the failure or refusal of such party to accept delivery of the notice.

16. PROMOTION.

Consultant shall acquire no right under this Agreement to use, and shall not use, the name of Owner, or the name of the Owner's Representative or its parent, related, affiliated or subsidiary companies or any of their fanciful marks or copyrighted characters or designs:

- a. in any of Consultant's advertising, publicity, or promotion, including but not limited to the Internet; nor
- b. in any in-house publication; nor
- c. to express or imply any endorsement by Owner of Consultant's Services or in any other manner whatsoever (whether or not similar to the uses herein above specifically prohibited). The provisions of this Article shall survive the expiration or earlier termination of this Agreement.

17. CODES.

Consultant's Services shall conform to all applicable building codes, and all applicable federal, state, and local laws, statutes, codes ordinances and agency regulations, including without limitation, the requirements of the Americans with Disabilities Act of 1990 ("ADA"), as same may be amended from time to time, which have jurisdiction and which are current at the time Consultant renders Services hereunder.

18. NO AGENCY.

a. It is the express intention of the parties that Consultant is an independent contractor and not an employee, agent, joint venturer or partner of Owner. Nothing in this Agreement shall be interpreted or construed as creating or establishing the relationship of employer and employee between Owner and Consultant or any employee or agent of Consultant. Both parties acknowledge that Consultant is not an employee for state or federal tax purposes. Consultant shall retain the right to perform services for others during the term of this Agreement.

b. Consultant is responsible for paying all required state and federal taxes, including without limitation, FICA, FUTA, SUI, DUI, worker's compensation, and other employee benefits as set forth in Exhibit "F".

19. GOVERNING LAW.

This Agreement shall be governed by, and be construed in accordance with, the laws of the State of Florida, to the exclusion of its rules concerning conflicts of laws.

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20. ENTIRE AGREEMENT.

a. This Agreement supersedes any and all discussions, understandings or other agreements, either oral or written, between the parties hereto with respect to the Services and contains all the covenants and agreements between the parties with respect to the Services. Each party to this Agreement acknowledges that no representations, inducements, promises, or agreements, orally or otherwise, have been made by any party, or anyone acting on behalf of any party, which are not embodied herein, and that no other agreement, statement, course of dealing usage of trade, or promise not contained in this Agreement shall be valid or binding or used to interpret this Agreement. Any modification or amendment of this Agreement will be effective only if it is in writing and signed by both parties.

b. Any failure by Owner to require strict compliance with any provision of this Agreement shall not be construed as a waiver of such provision, and Owner may subsequently require strict compliance at any time, notwithstanding any prior failure to do so.

21. PARTIAL INVALIDITY.

If any provision in this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

22. CAPTIONS.

The captions contained in this Agreement are inserted for convenience of reference only and shall not be construed in any manner for the purpose of interpreting the provisions thereof.

23. EFFECTIVE DATE.

Any Services performed or caused to be performed by Consultant prior to the effective date of this Agreement shall be deemed to have been performed under this Agreement.

24. THE OWNER'S DESIGNATED REPRESENTATIVE.

a. **Craig Sandt** shall act as the Owner's designated representative (herein referred to as the "Owner's Designated Representative"); provided, however, that the Owner may, without liability to the Consultant, unilaterally amend this Article from time to time by designating a different person or organization to act as its representative and so advising the Consultant in writing, at which time the person or organization so designated shall be the Owner's Designated Representative for purposes of this Agreement. Except as otherwise provided in this Agreement, and until the Consultant is notified in writing to the contrary, all actions to be taken by, all approvals, notices, consent, directions and instructions to be given by, all notices and other matters to be delivered to, all determinations and decisions to be made by and, in general, all other action to be taken by, or given to, the Owner shall be taken, given and made by, or delivered or given to, the Owner's Designated Representative in the name of and on behalf of the Owner; provided, however, that the Owner (and not the Owner's Designated Representative) shall be solely obligated to the Consultant for all sums required to be paid by the Owner to the Consultant hereunder.

b. Nothing contained in this Agreement shall create any contractual relationship between the Consultant and the Owner's Designated Representative.

25. PUBLIC RECORDS.

PUBLIC RECORDS COMPLIANCE (APPLICABLE FOR SERVICE CONTRACTS). IF THE CONTRACTOR/CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S/CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT TELEPHONE NUMBER 407-939-3240, EMAIL ADDRESS

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**PUBLICRECORDS@RCID.ORG, MAILING ADDRESS REEDY CREEK IMPROVEMENT DISTRICT,
ATTN: PUBLIC RECORDS ADMINISTRATOR, P.O. BOX 10170, LAKE BUENA VISTA, FL 32830.**

A. THE CONTRACTOR/CONSULTANT SHALL:

1. Keep and maintain public records required by the public agency to perform the service.
2. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor/consultant does not transfer the records to the public agency.
4. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor/consultant or keep and maintain public records required by the public agency to perform the service. If the contractor/consultant transfers all public records to the public agency upon completion of the contract, the contractor/consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor/consultant keeps and maintains public records upon completion of the contract, the contractor/consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

B. REQUEST FOR RECORDS; NONCOMPLIANCE:

1. A request to inspect or copy public records relating to a public agency's contract for services must be made directly to the public agency. If the public agency does not possess the requested records, the public agency shall immediately notify the contractor/consultant of the request, and the contractor/consultant must provide the records to the public agency or allow the records to be inspected or copied within a reasonable time.
2. If a contractor/consultant does not comply with the public agency's request for records, the public agency shall enforce the contract provisions in accordance with the contract.
3. A contractor/consultant who fails to provide the public records to the public agency within a reasonable time may be subject to penalties under s. 119.10.

26. E-VERIFY COMPLIANCE

The Consultant and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees. The Consultant agrees and acknowledges that the Owner is a public employer that is subject to the E-verify requirements as set forth in Section 448.095, Florida Statutes, and that the provisions of F.S. Sec. 448.095 apply to this Agreement. Notwithstanding the provisions of Section 11 hereof, if the Owner has a good faith belief that the Consultant has knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws of the Attorney General of the United States for employment under this Agreement, the Owner shall terminate this Agreement. If the Owner has a good faith belief that a subcontractor performing work under this Agreement knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws or the Attorney General of the United States for employment under this Agreement, the Owner shall promptly notify the Consultant and order the Consultant to immediately terminate the contract with the subcontractor. The Consultant

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shall be liable for any additional costs incurred by the Owner as a result of termination of a contract based on Consultant's failure to comply with E-verify requirements referenced herein.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed on the day and year first above written.

CONSULTANT: CONSOR ENGINEERS, LLC

Authorized Signature: David Bowden
Print Name: David Bowden
Title: EVP, East Region Executive Director
Date: 3/24/2023 | 11:21 AM PDT

OWNER: REEDY CREEK IMPROVEMENT DISTRICT

Authorized Signature: John H. Classe, Jr.
Print Name: John H. Classe, Jr.
Title: District Administrator
Date: 3/26/2023 | 3:16 PM EDT

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EXHIBIT "A"
SCOPE OF SERVICES
AGREEMENT NO. C006106

Consultant shall provide the following Services:

CM/CEI Services in support of the World Drive North Phase III Project as detailed in the Consultant Proposal dated September 22, 2022. The Scope of Service is further detailed in **Exhibit A- Pages A-3 through A-7**.

ELECTRICAL SAFETY POLICY

Implicit on all electrical work performed at any of the Owner's properties is the Consultant's (and its Subconsultant's and Sub-subconsultant's) strict compliance with the Owner's Electrical Safety Policy ("policy").

The policy is that all electrical work *shall* be performed de-energized as a standard work practice. This policy applies to the Consultant, its Subcontractors, Sub-subcontractors, Subconsultants, Sub-subconsultants and anyone who performs electrical work on or near electrical conductors or circuit parts which are or may be energized. Consultant is expected to exercise good judgment and take personal responsibility for reducing the hazard risk to its lowest level and to ensure strict compliance with all applicable federal, state and local laws, codes, regulations and rules.

The Consultant agrees that its employees and agents and the employees of any of its Subcontractors, Sub-subcontractors, Subconsultants, Sub-subconsultants or anyone who performs electrical work as described herein shall adhere to all posted warnings, wear appropriate personal protective equipment (PPE) and protective clothing and use appropriate tools until exposed energized electrical conductors or circuit parts are verified to be at a zero energy state.

In the narrowly limited circumstances when exposed energized parts are not de-energized, excluding diagnostic testing that cannot be performed de-energized, a documented job briefing shall be completed. The intent of the briefing is to provide notification for performing energized work to the Owner's Representative prior to performing the work. The job briefing shall include, but not be limited to, the following:

- Validation for energized work
- Hazards associated with scheduled work such as working in roadways or work performed within boundary, etc.
- Work procedures
- Energy source controls such as physical barriers or meter verification
- Personal protective equipment to be utilized
- Job work plan summary
- Record of the names of all workers involved in the work/briefing

The Consultant understands and agrees that the Owner, throughout the term of the Contract, may review the Consultant's, Subconsultant's, and Sub-subconsultant's safe work plan(s) to confirm for its operations and the safety and wellbeing of its cast, guests and invitees that adequate contingency plans have been considered in the event of an inadvertent interruption of electrical service.

Consultant shall establish or shall cause its Subconsultants or Sub-subconsultants to establish appropriate boundaries to restrict access around the work based on the type of hazard present. A **flash protection boundary** shall be established by the qualified person of the Consultant or its Subconsultants or Sub-subconsultants a minimum of four feet away (600V, 600A max) from the exposed energized electrical conductors or circuit parts where the potential exists for an arc flash to occur, unless specific information is available indicating a different flash boundary is appropriate. Persons must not cross the flash protection boundary unless they are wearing the appropriate PPE and are under direct supervision of a qualified person.

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A **limited approach boundary** shall be established by the qualified person of the Consultant or its Subconsultants or Sub-subconsultants a minimum of three feet six inches (3'-6") away from the exposed fixed energized electrical conductors or circuit parts, 600V max, where the potential exists for an electric shock to occur, unless specific information is available indicating a different limited approach boundary is appropriate. The purpose of the limited approach boundary is to advise unqualified persons that an electrical shock hazard exists and to reduce the risk of contact with an exposed energized conductor. Only qualified persons and immediately supervised unqualified persons are allowed to cross the limited approach boundary.

The Consultant understands and agrees that it is the responsibility of the Consultant to ensure compliance with all applicable safety laws, codes regulations and rules as well as adherence to the policy for all electrical work. The Owner reserves the right to observe and/or audit the Consultant's (or its Subconsultants' or Sub-subconsultants') work without notice. The Consultant expressly understands and unequivocally agrees that any failure to strictly comply with any applicable safety laws, codes, regulations, and the rules of this policy is a material breach of the Contract and may result in an immediate work stoppage or termination of the Contract at no additional cost to the Owner.

FORM C. PROJECT SCOPE, APPROACH, AND UNDERSTANDING

UNDERSTANDING THE PROJECT



For this unique and challenging project, CONSOR has thoroughly reviewed all available contract documents. Combined with extensive prior knowledge gained from previous successful projects for RCID, we have a comprehensive understanding of both the

intent of this project and the scope of services requested of the CM/CEI consultant. As the third of three projects designed to meet the increasing traffic demands in and around the Magic Kingdom, this project will pick up where our current CM/CEI project, WDN PH II, leaves off just south of Seven Seas Drive. Similar to Phases I and II, this project will widen and expand World Drive Northbound and Southbound, as well as reconfigure several secondary roadways and ingress/egress from three of Disney's resorts, with the introduction of three roundabouts. Significant proposed storm drainage installations are integral to construction, including the construction of a 296-ft. concrete box culvert, extending an existing box culvert, and filling in existing ponds/lakes to support subsequent construction activities.

One thing is abundantly clear with our in-depth understanding of this project: it is a utility project. The above-referenced activities are critical to the success of this project and require the care, coordination, attention to detail, and management dedication we show to all of our endeavors at RCID. However, they are almost exclusively dependent on the success of the utility scope of work.

The scope for utility improvements within this project is one of the largest to date in RCID history and monopolizes the schedule of work for the first two years of the project. This project will upgrade the existing electrical infrastructure and add redundancy to the three major circuits that travel through this corridor. In addition to relocating sections of medium and high-pressure gas lines, new gas main will be installed from Seven Seas Drive to Maple Road near RCID Fire Station Number 3. All of this will be accomplished while decommissioning the existing fiberglass gas mains, which extend from Seven Seas Drive to the World Drive Phase II connection to the south while maintaining existing services at all times. A full complement of wet utilities will be installed along the entire project length while maintaining the existing utility services. This requires activating and clearing the potable and reclaimed water mains in sections. The sanitary sewer is comprised of a force main and gravity sewer and will be installed via direct bury and direction drill, requiring a tie-in connection to an existing lift station.

Critical aspects of this project include installing a temporary chiller system that must be commissioned before any construction can occur adjacent to the existing chiller lines, which run the entire north end of the project. These temporary chiller systems will service the Polynesian and Grand Floridian resorts and the Pirates of the Caribbean attraction within Disney's Magic Kingdom and will be brought online simultaneously and decommissioned in phases. The six sites that make up the temporary chiller package are the precursor to this project's proposed permanent chiller improvements. These chiller improvements include 4,690 ft. of new chiller lines, primarily 30-in., which will require coordination with RCES' provided installation inspections.

All services must be completed while working within RCID's stringent environmental controls, around resorts, waterways and canals, and adjacent to the entrance and exit to Disney's Magic Kingdom.

PROJECT APPROACH



With a project scope similar to our current CM/CEI contract with RCID, we will modify our proven project approach to fit the specific needs of this project. Key points of the approach are highlighted below and

cover both the CM and CEI functions required in the scope of services.

UTILITY COORDINATION

We will hold separate utility coordination meetings for electric, mechanical, and wet utilities throughout the duration of the critical utility installation. These separate utility meetings provide time to dive into the level of detail required to successfully administer this project without consuming other stakeholders' valuable time and resources. CONSOR will lead inter-utility coordination and will ensure the most critical issues are discussed in the weekly progress meetings. We will also continue to coordinate directly with RCES and will utilize the relationships we have developed throughout our tenure with RCID. By working directly with Archie, Marty, and Jerry; Bill, Andy, and Matt; and Brad and Mark, we can ensure that important tasks discussed in the utility coordination meetings are coordinated with the general contractor and implemented per the plan.

EFFECTIVE AND EFFICIENT UTILITY COORDINATION IS CRUCIAL FOR THIS PROJECT. CONSOR WILL SEAMLESSLY TRANSITION OUR CURRENT UTILITY COORDINATION EFFORTS ON THE WDN PH II PROJECT TO PHASE III.

In addition to inter-utility coordination, CONSOR's administrative team will monitor and manage the installation of proposed utilities with adjacent roadways and civil operations. Throughout the project, proposed utilities are installed adjacent to, underneath, and/or above proposed stormwater and civil elements. The order in which these operations are accomplished is critical. Although we identified and resolved many of these locations during our constructability review, tight clearances remain throughout the project; **the location of the proposed utilities is critical.**

CONSOR will continue to coordinate planned outages for tie-ins. Once outages are granted, CONSOR will monitor them to ensure disruptions to service are minimized. These critical outages must be vetted early in the project, coordinated thoroughly with the contractor, utility owners, and resorts, and implemented efficiently. **CONSOR has proven during WDN PH II that we take coordination efforts seriously,** and as with the current project, Paul and Rod will take the lead for CONSOR in this role. Paul and Rod have a relentless drive for project success and understand the importance of following through after installation to ensure accurate utility as-builts are produced. Additional time and effort are spent producing and maintaining meticulous site source documents and reviewing the as-builts before submittal to RCES. When they reach RCES for review, the team knows the information provided is representative and accurate, allowing them to focus on higher-level items.

QUALITY CONTROL PROCEDURES

CONSOR is tasked with delivering an exemplary project to RCID that is in reasonably close conformity with the contract documents. To successfully implement a quality control plan acceptable to RCID, the FDOT-style verification system is not the solution. It is necessary to know RCID and its special nuances. We must know the specifications, but that's just the start. For example, one must know that stormwater inspections require an additional sign-off from planning and engineering; most significant activities require a pre-work meeting, not just paving;; not all irrigation belongs to Troy; and even light poles have an aesthetic requirement.

CONSOR KNOWS RCID, AND AS ILLUSTRATED FROM PREVIOUS CONTRACTS, WE HAVE DEVELOPED A CUSTOM QUALITY CONTROL (QC) PROGRAM, WHICH SATISFIES BOTH THE NEEDS OF RCID AND THIS PROJECT.

- ◆ Prior to starting work, **we will hold pre-activity meetings for all significant construction activities** in which the nuanced requirements of the contract documents are reviewed with the contractor and any subcontractors involved in the work.

- ◆ In addition to our field staff monitoring the work, **we will follow up on tasked activities in our weekly progress meetings to ensure appropriate implementation of discussed tasks.** As with our previous contracts, we will conduct regular reviews of our deliverables and ensure our documentation satisfies RCID's expectations. Additionally, weekly staff meetings will be used to make real-time adjustments to our field procedures and resource allocations.
- ◆ **As part of our standard internal QC, CONSOR will conduct an in-depth quarterly review of all relevant documentation.** These reviews will be conducted by on-site administrative staff or by other senior CONSOR staff, brought in specifically for this purpose with the expectation that a fresh perspective yields positive results for the project overall.
- ◆ **All inspection staff will be required to follow FDOT-level activity-specific checklists for monitoring major items of work.** These will be used in conjunction with the daily work records to accurately track and document the activities, participants, and requisite material testing. Peter and Michelle will review this documentation and correct it as needed before any submission to RCID.
- ◆ **Peter will also provide final review and approval of all project CM-CEI deliverables,** including density logbooks, material sampling and testing results, pile driving records, daily construction reports, material certifications, rebar mill certifications, etc. Upon project completion, all relevant paperwork will be filed in a neat and organized manner on Newforma's™ for archiving and permanent storage.

By utilizing our proven methods, with slight modifications to meet the custom needs of this project and implementing them with the checks and balances referenced above, we will deliver a quality product to RCID.

STAFF MANAGEMENT

It will be the job of the CONSOR administrative team to efficiently manage workforce and resource allocation. Our core group of experienced RCID inspectors will continue to serve RCID during Phase III and will provide the level of coverage and attention to detail required to produce a quality product. Our administrators will ensure the inspection staff is informed and prepared to inspect the requisite activities. In addition, we will ensure that our inspection staff is commensurate with the level of construction. By "ramping up" inspection activities proportional to the needs of the project as it progresses, we can deliver the quality product referenced above while being efficient with RCID's financial resources.

PROJECT START-UP AND FINANCIAL ADMINISTRATION

On a project of this scale, simply implementing the documented financial processes required by RCID is only the beginning; relying solely on Sections 01018 and 01019 to administer this project successfully will be insufficient. One must know and understand RCID's processes and be prepared on day one; there is no time for a learning curve. With the current material pricing volatility and long lead times, CONSOR will begin setting up the financial infrastructure well before day one of the project.

The construction team executes their subcontracts and begins the preliminary submittal process during the time between LNTP and NTP. The same time frame will be used to begin financial coordination, including the assembly of the Owner Direct Purchase (ODP) cost estimate. By working with the contractor on this document, we can be ready to complete the ODP change order in a timely fashion. **We have implemented an ODP administrative system on WDN PH II that has proven effective**, and Michelle will continue to manage that process for this project. She will continue to track quantities billed on invoices and compare them to the purchase orders, track items of interest or rejected work on her "watchlist" to ensure they are not paid, and polish the risk log and review with management before each month's submission. Most importantly, she will continue to evolve with the project. As project demands change, so do some of the financial procedures. Michelle will continue to work with Sandy, Joel, and Lexi to keep our team's files on par with RCID's strict financial standards.

QUANTITY MANAGEMENT, SITE SOURCE DOCUMENTS, AND DIRECTIVES

We understand that in a lump sum contract, unless there is a change in scope, the contractor is entitled to the full contract amount. However, this entitlement does not mean it has to be paid at the contractor's discretion. Additionally, our team will continue generating site source documents for unforeseen work. When it comes time to negotiate a directive, detailed information is paramount. A well-informed CM team, with time-stamped photos, site source documents, and detailed daily reports, will nearly always decrease the initially proposed pricing.

THROUGH OUR QUANTITY MANAGEMENT SYSTEM DEVELOPED FOR WDN PH II, CONSOR PAID EXACTLY WHAT WAS OWED TO THE CONTRACTOR IN EACH PAY PERIOD. WITH FINANCIAL OVERSIGHT, WE CAN BETTER CONTROL THE CONTRACT AND HOLD THE CONTRACTOR FISCALLY RESPONSIBLE.

PROJECT COORDINATION AND DOCUMENT CONTROL

CONSOR strives for excellence when implementing document control. As with our other projects with RCID, we will continue to use Newforma's® project management software. We know firsthand setting up this system properly and assigning responsibilities to each point of contact is critical to creating a smooth project environment. We will continue to use our proven internal systems from Phase II, including advising and sometimes directing the contractor on how to implement a user-friendly system for submittals and requests for information (RFIs). The overall goal is to ensure project data is organized and easy to find for all parties. We will apply this same logic to RCID's BIM 360, which is used to exchange permits and larger files with the District. With many moving parts, including separate utility coordination and job meetings, submittals, RFIs, and directives, ensuring all parties are using the most recent documents will be critical for project success.

ENVIRONMENTAL COMPLIANCE

CONSOR understands the strict environmental controls required to work adjacent to RCID's waterways and on RCID property. Continuing to assist with implementing these controls will be essential for this project. We know to coordinate pump activation with Melissa and her group with enough notice to schedule the necessary inspections. We know the most critical points to take our turbidity readings after a rain event. We understand how crucial it is to maintain the canal's elevation according to Kathryn's parameters. Poor or inefficient environmental compliance can significantly slow or completely halt a construction project. As a CM/CEI team, we will continue to work with planning and engineering personnel on compliance issues.

PROJECT CLOSEOUT

A thorough project closeout procedure is critical. RCID relies on the project documentation included in the project's closeout package for years after the project is complete. CONSOR takes pride in issuing an organized and detailed project deliverable to RCID and will continue to prioritize and ensure full and accurate documentation for this project.

CRITICAL ISSUES

Ingress/Egress Management – CONSOR understands that the utility protection structure in the project's north end is an immediate priority. Procurement of the required ODP items and successful installation of this structure allows access to the northwest quadrant of this project for subsoil excavation, utility installation, and bridge construction. However, it is crucial to understand that this mitigates only one of the project's ingress/egress issues.

Numerous access points will be required throughout the project. Each location will require scrutiny to ensure any existing utilities are protected, and as new utilities are installed, the same level of diligence will be required to protect them. Of particular concern are the existing gas lines south of Seven Seas Drive, which will need to be crossed for construction to proceed. This access point must be submitted and reviewed by RCES, and soil improvements will likely be required. With high truck traffic volume anticipated during construction, a well-thought-out plan is paramount to mitigate impacts to both the vehicular traveling public and pedestrians during clearing and grubbing, subsoil excavation, embankment, utility, and drainage material deliveries. This plan, at a minimum, should include truck routes, the above-referenced access points complete with soil tracking prevention devices, delivery times, and temporary traffic control plan requirements.

Temporary Chiller Implementation – Critical to the success of this project and emphasized heavily in the construction milestones is the installation, use, and decommissioning of the temporary chiller system.

Coordination and installation of temporary chiller facilities at sites two, five, and six is a priority. Each site has individual nuances, but due to the duration of service at site six, the surface piping will be considered permanent and will require additional precautions such as hurricane strapping and permanent electrical service. Once all three sites are accepted, and the line stops at site one have been installed, the temporary chillers can be brought online and the clock starts.



Polynesian Resort Chiller

RCID has a significant financial interest in decommissioning each site as soon as possible. First, the system can be drained in accordance with the notes on Sheet M-201. Valve installation at work area three will be complete first. With the newly installed valves, work area three can be isolated, and temporary chiller number two can be decommissioned. The piping and valve installation at work area four will follow, and once complete, the temporary chiller at work area five can be decommissioned. Additional care needs to be exercised with the installation of the valves in work areas

three and four due to connecting the new steel section with the valves to the existing asbestos cement pipe. Temporary chiller six will be in service the longest and will require installing the proposed chiller line and bringing it online prior to being decommissioned.

Establish Electrical Redundancy – Continuing from WDN PHII, this project will continue to relocate and extend the three primary circuits that run through this corridor: A1, B1, and B3. **CONSOR understands that one of these circuits is currently offline, and we are sensitive to the necessity of electrical redundancy in this corridor.** With only two circuits online, any outages would put RCES at risk and would not be allowed. CONSOR discussed this with Jerry Murphy and the EOR, yielding the recommendation for an additional directional drill to be added to this project for additional redundancy. This additional drill is only one of three activities required to establish electric redundancy before any outages. The existing directional drill, which extends all three circuits from the WDN PHII tie-in to the switch gear at Seven Seas Drive, and the open cut duct bank across Floridian Way at Magnolia Drive are the other two activities required. CONSOR fully understands how critical these activities are and the necessary aspects of coordination and will begin this coordination as a priority.

Decommission Fiberglass Gas Lines – The team learned in WDN PHII that fiberglass gas mains are prevalent in this area and run from the WDN PH II tie-in to Magnolia Drive. These gas lines are brittle and must be protected. However, protecting them would make construction difficult and, in some areas, impossible. These gas line issues were discussed with Brad, and as a result, the EOR is investigating and will likely change gas line installation from open cut to direction drill in the southern phase of the project. **By completing these three directional drills – all starting in the Seven Seas area – the known fiberglass gas lines can be decommissioned early and facilitate an earlier construction start in this area.**

Connecting the Proposed Utilities – It is critical to connect any utility to the existing system with minimal impacts. Considering the stakeholders in this area, planning and executing this connection will require extensive coordination and management. Line stops will be required for all wet utilities, and pipe sections may need to be constructed, accepted, and pressure tested above grade prior to installation. **This process has been effectively used on WDN PH II, and CONSOR understands what is required to achieve this efficiently.** The connection of proposed gas lines to existing systems will be equally important. We understand that outages may not be allowed, or they may be limited to a two to four-hour window, which is why the stopple bypass detail has been added

to the plan sheets. We understand this process and the coordination required and will work directly with Mark to ensure his expectations are met before, during, and after these connections.

Chiller and Gas Line Coordination – CONSOR understands that RCES will inspect the proposed chiller and gas lines independently. Having completed work with similar QC requirements – primarily fuel lines – we know how thorough inspection requirements can be. **By partnering with RCES' third-party welding inspection firm, we can help streamline this process, help coordinate the timing of inspections, and use the CONSOR inspection force to help supplement this operation.** By partnering with RCES, we can provide real-time updates to the team to minimize downtime during required intersection testing for gas line installations.

Magnolia Intersection – This intersection presents a considerable challenge with numerous utility conflicts. We understand the contractor must complete soft digs early in the project to locate and mitigate conflicts for the open-cut electrical duct bank, which, once installed, provides the required redundancy for the system. We also understand that open cutting the water line across Magnolia Drive is very challenging. We recommend changing this operation to a bore, with the waterline connection shifted further west. This will place it closer to the Shades of Green guard shack and outside the limits of the temporary access road required in subsequent phases. Realigning the gravity sewer to east of Floridian Way to avoid the proposed pedestrian bridge will also be problematic with the existing utility network to contend with. **With the knowledge CONSOR has gained during our in-depth review of the contract documents, we know what to prioritize in this area and the most efficient sequence for installation.** Additionally, our current knowledge of the area will allow efficient, successful management of these issues, which is one of the more challenging aspects of this project.

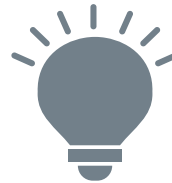


Magnolia Intersection Waterline

Box Culvert Construction/Canal Management – CONSOR has managed box culvert construction on RCID property during previous projects, and we understand

typical construction standards may be inadequate when considering how critical this infrastructure is to RCID's stormwater management system. By using what we have learned on previous projects, we understand what is required to accept this culvert, including an additional confined space inspection of the culvert before it is activated. Additionally, we will continue to support planning and engineering by managing the existing canals within the project limits. Stormwater can bypass these construction areas by maintaining flow through the existing CD-1 during CD-1A construction and utilizing CD-1A and the center ditch during CD-1 construction. However, additional care and coordination is required when considering the sensitivity of the WMCA and adjacent wetlands.

INNOVATION



CONSOR values the importance of having real-time and reliable data available in the office and the field for all our projects. During our in-depth constructability review for this pursuit, **we tested new software, PlanGrid, that has demonstrated significantly improved benefits for the transfer of and referencing to information.** The plan sheets can be linked to relevant plan sheet details and other contract documents for effortless cross reference with real-time updates. CONSOR will continue using PlanGrid throughout this project, which can quickly create real-time progress updates on existing plan sheets, share data between field and office staff, assemble/monitor an action item, and ultimately create a punch list. **As an added feature, RCID will be provided access to PlanGrid to see accurate progress updates and construction photos overlaid on the contract documents.** This benefit is in addition to official project management documentation within Newforma®.

WHY CHOOSE CONSOR



CONSOR is eager to administer this project as a part of the RCID construction team. We will combine the information extracted from our in-depth review of the contract documents with tried and true methods acquired from many prior successful projects for RCID with our CM/CEI experience to carry out the tasks of this project confidently, expertly, and efficiently. We trust our performance throughout the last eight years has demonstrated that once selected, we are relentless in our pursuit of project success. We achieve that success by always representing RCID's best interests and never compromising on quality. **CONSOR is committed to continuing our relationship with RCID and will help deliver this project successfully.**

Agreement for Professional Services

Agreement No. C006106

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EXHIBIT "B"
SCHEDULE
AGREEMENT NO. C006106

The Consultant shall commence the Services on **March 1, 2023** and shall complete all Services on or before **September 30, 2026** and in substantial accordance with the schedule for performance set forth in the Agreement.

END OF EXHIBIT "B"

EXHIBIT "C"
REIMBURSABLE EXPENSE GUIDELINES
AGREEMENT NO. C006106

Consultant is hereby authorized during the Initial Phase an allowance Not-To-Exceed **\$178,788.71** for reimbursable expenses, in accordance with the itemized allowances set forth in Exhibit "F" and subject to the following guidelines, and if Owner elects the Add Alternate Phase, an allowance Not-To-Exceed **\$142,261.02**.

All reasonably and actually incurred direct, non-salary reimbursable expenses, including materials, shall be billed to Owner at actual cost without markup. Consultant shall not be reimbursed for any such expenses incurred without prior Owner approval. Reimbursable expenses shall include, but not be limited to, the following:

a. Meals and Incidental Expenses

1. Daily Allowance: For business travel for which the original itinerary is equal to or less than twenty-one (21) consecutive days in duration, Consultant shall be provided a Not-to-Exceed allowance for meals and incidental expenses. Said allowance shall be established by using the *per diem* amount set forth by the U.S. Department of State Standardized Regulations for Meals and Incidental Expenses for the period and destination of travel. Owner shall reimburse Consultant the actual cost without markup for meals and incidental expenses upon presentation by Consultant to Owner of the original receipts for same.
2. Per Diem: For business travel for which the original itinerary exceeds twenty-one (21) consecutive days in duration, Consultant shall be paid a *per diem* for meals and incidental expenses (for international travel only, incidentals shall include, but not be limited to, laundry service) at the rate set forth by the U.S. Department of State Standardized Regulations for Meals and Incidental Expenses for the period and destination of travel. Original receipts shall not be required. Consultant's invoices shall identify the *per diem* rate for the month(s) during which said travel occurs, multiplied by the number of travel days in each month.
3. Current *per diem* rates may be obtained from the U.S. Department of State at the following website: <http://www.gsa.gov>.

b. Hotel Accommodations

1. Lodging on business trips will be reimbursed by Owner at reasonable rates according to availability, upon presentation by Consultant to Owner of the original receipts for such. Owner reserves the right to direct Consultant to stay in a Disney or other preferred hotel based upon rate, location, and availability. Lodging expenses shall include the cost of the room and applicable taxes only, and shall not include room service, recreation, or other direct charges to the room. In the event the Owner directs Consultant to stay in a Disney hotel, Owner shall make hotel reservations for Consultant and shall pay all hotel charges. For approved lodging expenses incurred at a hotel other than a Disney hotel, Consultant shall seek reimbursement from Owner hereunder.

c. Airfare

1. All air travel, regardless of domestic or international destination, shall be at unrestricted coach class fare or other class, whichever is lowest. Owner reserves the right to direct Consultant to use an airline of Owner's choice. Owner shall, at its option, and upon notifying Consultant, make air travel reservations for Consultant and directly pay for all air travel. For approved air travel expenses incurred in connection with reservations made by the Consultant on its own behalf, the Consultant shall seek reimbursement from Owner hereunder.

d. Ground Transportation, Rental Cars and Mileage

1. Mileage shall be reimbursed at a rate not to exceed the current rate set forth by the Internal Revenue Service, as may be amended from time to time, for travel by Consultant in its own vehicles. This provision shall not

Agreement for Professional Services
Agreement No. C006106
Page A-2

apply to daily commuting, for which Consultant shall not be reimbursed.

2. Rental cars of midsize class or lower shall be reimbursed by Owner upon presentation by Consultant to Owner of the original receipts for such. The Collision Damage Waiver shall be included in the car rental rate. Owner reserves the right to direct Consultant to use a car rental company of Owner's choice. Owner shall make rental car reservations for Consultant; however, Consultant shall pay all rental car charges and seek reimbursement from Owner hereunder.
3. Ground transportation such as, but not limited to, taxis and airport shuttles shall be reimbursed by Owner upon presentation by Consultant to Owner of the original receipts for same. Owner reserves the right to direct Consultant to use ground transportation companies of Owner's choice. Consultant shall make all ground transportation reservations, pay all ground transportation charges and seek reimbursement from Owner hereunder.
4. Travel time shall not be reimbursed.

END OF EXHIBIT "C"

Agreement for Professional Services
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EXHIBIT "D"
PROJECT CONSTRUCTION BUDGET
AGREEMENT NO. C006106

RESERVED.

END OF EXHIBIT "D"

Agreement for Professional Services

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EXHIBIT "E" KEY EMPLOYEES AGREEMENT NO. C006106
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Consort Staff

Peter McGovern, P.E.	Construction Manager
Jeff Hutchinson, P.E.	Senior Project Engineer
Paul Fabrizio	Project Administrator
Rod Bowden	Assistant Construction Manager
Michelle Brant	Contract Support Specialist
Ana Yanez	Contract Support Specialist

Subconsultants

Adaptive Consulting Engineers LLC.
Bechtol Engineering and Testing Inc.
Echo Utility Engineering & Survey Inc.
GRL Engineering Inc.
Terracon Consultants Inc.
Universal Engineering Sciences LLC.

See **Exhibit Pages E-2 through E-5** for additional information and organizational chart.

FORM B. SKILLS AND EXPERIENCE OF THE PROJECT TEAM

CONSOR will transition our proven team of seasoned professionals from the WDN PH II project to this contract. Our team is armed with a wealth of RCID experience, and all personnel are committed to continuing a proud alliance with RCID.

PETER MCGOVERN, PE **CONSTRUCTION MANAGER**

Peter will head the team with his unique ability to both lead and collaborate with all parties involved in the project. He will draw from his RCID experience on the WDN PH II, Osceola Parkway/Victory Way, A3 Garage Civil Works, Buena Vista Drive Modifications, A3 Pedestrian Bridge and Epcot Resorts Boulevard Bridge Replacement projects. Additionally, Peter has prior experience serving as senior project engineer/quality control manager for another private client, Brightline Trains, on the Orlando Vehicle Maintenance Facility, as well as an administrator for Florida Department of Transportation (FDOT) District Five's I-95/I-4/US-92 Systems Interchange design-build project. His experience as a structural designer, combined with an in-depth understanding and familiarity with the RCID systems, makes Peter the ideal candidate to serve as construction manager for this contract.

JEFF HUTCHINSON, PE **SENIOR PROJECT ENGINEER**

Jeff was instrumental in schedule development for our WDN PH II pursuit, continues to review the contractor's schedules, and has developed a detailed schedule for WDN PH III. He served as project administrator, then senior project engineer for the \$110M FDOT Wekiva Parkway Section 7A project, which included four roundabouts and significant franchise utility relocations. Additionally, Jeff managed the FDOT I-95/I-4/US-92 Systems Interchange design-build project. His extensive contractor background through design, estimating, and construction makes him ideally suited to anticipate potential construction issues and proactively work to mitigate them before they become contractor issues.

PAUL FABRIZIO **PROJECT ADMINISTRATOR**

Paul has more than eight years of experience working with RCID, including Buena Vista Drive Widening, I-4 Slip Ramp and Flyover Bridge, Eastbound Epcot Center Drive and Pedestrian Bridges, Osceola Parkway and World Drive Interchange, Epcot Interchange Improvements, Osceola Parkway and Victory Way Interchange Early Works, Osceola Parkway/Victory Way Interchange, EPCOT Resorts Boulevard Bridge Replacement – Phase 1, EPCOT Center Drive M&R, World Drive Southbound Asphalt

Repairs, and currently WDN PH II. This vast knowledge of RCID construction and understanding of what to expect, both above and below grade, makes Paul a leading expert in project administration for RCID. His eight years as principal project manager/project administrator on numerous projects with Osceola County gave him the depth to manage the challenges of any project. Paul's comprehensive knowledge of all facets of construction, along with his unique ability to solve problems in a timely fashion, makes him invaluable to the team and the success of the project.

ROD BOWDEN **ASSISTANT CONSTRUCTION MANAGER**

Rod's current role as assistant project administrator on WDN PH II grew from his RCID start eight years ago as a senior inspector on Buena Vista Drive Widening, I-4 Slip Ramp and Flyover Bridge, Eastbound Epcot Center Drive, and Pedestrian Bridges projects, followed by Osceola Parkway and World Drive Interchange, Epcot Interchange Improvements, Osceola Parkway and Victory Way Interchange Early Works, Osceola Parkway/Victory Way Interchange, EPCOT Resorts Boulevard Bridge Replacement – Phase 1, EPCOT Center Drive M&R, and World Drive Southbound Asphalt Repairs. Through his years at RCID, Rod is aware of the special challenges presented with the existing utilities, the fragility of some of the services, and the importance of uninterrupted service to the park and resorts. His ability to anticipate the critical details and forward planning will continue to benefit the team and project immensely.

MICHELLE BRANT **CONTRACT SUPPORT SPECIALIST**

Although relatively new to RCID with CONSOR, including involvement with WDN PH II, Epcot Resorts Boulevard Bridge Replacement Phase 1, EPCOT Center Drive Milling and Resurfacing, World Drive South Repair, and Osceola Parkway/Victory Way Interchange, Michelle brings 11 years of office administrative and management skills gained at Intertek PSI, who have a long-standing relationship with RCID. Her organizational skills and attention to detail will ensure the ODP process and financial administration system run smoothly and efficiently.

ANA YANEZ **CONTRACT SUPPORT SPECIALIST**

As a recent engineering graduate of UCF, Ana brings youthful enthusiasm to the project. Ana started as an intern, transitioned to full-time employment upon graduation, and has already shown maturity, drive, and aptitude. She assisted with closing out the FDOT Wekiva Parkway Section 7B project and is actively involved in the FDOT

Wekiva Parkway Section 7A project as it rapidly approaches completion and closeout.

CONSOR's administrative staff is supported by experienced senior inspectors and inspectors, including senior bridge/concrete inspectors **George Gall** and **David Jackson**; senior paving inspectors **Pat Coderre** and **Jessy Heflin**; senior roadway inspector **Chris Thomas**; and roadway inspectors **Brandon Dewitt**, **David Hernandez**, and **Nick Butler**. Additional resources are available from our St. Cloud and Orlando locations on an as needed basis.

SUBCONSULTANTS



Adaptive Consulting Engineers, LLC (Adaptive CE) will provide inspection staff and important DBE participation. They have provided CEI services to various agencies throughout Florida, including RCID (their first client), FDOT, Florida's Turnpike Enterprise, and the Central Florida Expressway Authority. Currently, Adaptive CE is providing oversight on the Poinciana Parkway Widening design-build project, which includes a 6,300-ft. bridge, box culverts, ITS, tolling, lighting, signalization, utility work for Toho Water, MSE walls, concrete pavement, and asphalt paving with LiDAR specification.



Bechtol Engineering and Testing, Inc. (BET) will provide asphalt quality control, which is their current role for WDN PH II. BET is a Florida-based consulting engineering firm specializing in geotechnical engineering, environmental engineering services, and construction materials testing. Since its founding in 1989, BET has provided professional engineering and testing services for a wide array of clients in both the private and governmental sectors throughout Florida, including RCID. BET continues to be a valuable component of CONSOR's asphalt construction efforts for many RCID paving-related projects.



ECHO UES, Inc. (ECHO) will provide comprehensive survey services for this contract. ECHO was founded in 2017 to provide subsurface utility engineering and survey and mapping professional services throughout Florida for a variety of projects, assisting owners, engineers, and contractors throughout the entire project cycle. Field work is performed with the use of highly specialized technology and equipment, including surface geophysical equipment, pipe and cable locators, ground penetrating radar, vacuum excavation units, total stations, GPS, and laser scanners.



GRL Engineers, Inc. (GRL) will transition their geotechnical services from WDN PH II to this contract. GRL, along with their related company **Pile Dynamics, Inc.**,

are the original inventors, developers, and manufacturers of modern deep foundations dynamic testing methods and equipment (Pile Driving Analyzer®, Pile Integrity Tester, GRLWEAP wave equation analysis, CAPWAP computer program, CHAMP CSL shafts testing, Saximeter, etc.) that are commonly used on projects worldwide, including FDOT bridges in Florida. GRL also wrote *Design and Construction of Driven Pile Foundations Manual* under sponsorship of the US Department of Transportation, which is routinely used by government agencies and private consultants nationwide.

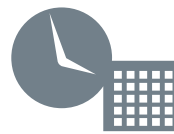


For off-site plant inspections of critical components such as prestressed, precast concrete beams, CONSOR will continue to utilize **Terracon Consultants, Inc. (Terracon)**, who is currently providing these services on the WDN PH II project. Their highly-certified and experienced inspection staff will continue to assist us with off-site observation of prestressing operations, reinforcement installation, concrete testing, and QC plan verification for items such as FIBs, prestressed piles, and precast box culvert sections. Terracon will also perform plant inspections and coatings inspection of light poles ensuring compliance with plans and specifications, as well as serve as our back-up materials testing laboratory.



Universal Engineering Sciences, LLC (Universal) will serve as our primary materials testing laboratory for WDN Phase III, continuing our strong partnership from WDN PH II. Universal has an extensive history of partnering and teamwork with key CONSOR staff members. Their Orlando and Gainesville offices are fully-equipped to offer a comprehensive array of engineering and construction-related services to meet the needs of RCID.

PROJECT MANAGEMENT



Our management plan has been developed over the years with flexibility in mind, to meet the living world of construction. While it has the necessary structure as illustrated in the attached organizational chart, our administrative staff are cross-trained in most tasks and have the ability to "pick up" a task in the absence of the usual task master. This approach keeps the project moving forward while keeping everyone informed. **Prompt, accurate dissemination of information is at the forefront of success.**

The CONSOR approach also relies on efficiencies of staff, depending on the construction load. For the first 18 months with initial systems setup, ODP, and utility heavy construction, it will be all hands-on deck. This approach will continue as long as the construction effort demands it, which is somewhat dependent on the selected contractor's effort. We will make informed decisions on ramping down

or ramping up of staff as required to administer the project efficiently and effectively. Listed below is a brief summary of some of the anticipated structured roles of key individuals.

- ◆ **Peter McGovern, PE:** administrative lead; main contact with RCID; construction-related financial management, including reviewing/approving pay estimates and producing the monthly highlight report; coordination of change management, including reviewing and making recommendations on directives; document control, including reviewing and facilitating submittals through various EOR(s); facilitate RFI responses by working directly with the EOR(s); risk mitigation; permitting; submittal approval support; and execution of project related meetings.
- ◆ **Jeff Hutchinson, PE:** in-depth contract document review; technical support; schedule analysis/review; maintain master schedule; cash flow analysis and directive analysis/review; quality assurance/quality control management.
- ◆ **Paul Fabrizio:** construction lead; main contact with contractor; schedule staffing; main utility coordinator, including point of contact with RCES, permitting agencies, and RCID; facilitate utility meetings; onsite utility conflict/issue resolution.
- ◆ **Rod Bowden:** direct oversight of field activities; review MOT setup; review daily reports; review contractor pay estimates; quantity tracking oversight; as-built verification and conformance; assist with utility coordination; and schedule progress reporting.
- ◆ **Michelle Brant:** document control: owner direct purchases, pay estimates, directives.
- ◆ **Ana Yanez:** document control: submittals, RFIs, material sampling/certifications, daily construction reports, quantity tracking, and pay requests.
- ◆ **Haylie Bowden:** will be used as needed for additional CSS efforts. Her eight years of RCID experience provides invaluable institutional knowledge of RCID communication and processes.
- ◆ **Senior inspectors:** monitor, inspect and document construction work; conduct field tests; coordinate and manage lower-level inspectors.

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)



To ensure QA/QC for our role on this project, CONSOR will establish a hierarchy of quality review and control for internal CM-CEI activity and off-site inspection reporting.

We will conduct cursory reviews of our deliverables and dedicate needed time with our field staff. The complexity

of this project will require regular monitoring of our field efforts and needed adjustments in response to the evolution of construction activity. Our administrative staff will conduct regular field meetings with active inspection staff, coinciding with the project progress meeting schedule. These meetings will include pre-operation meetings for critical items such as drilled shafts, asphalt operations, pile driving, and major concrete pours. These meetings will occur weekly, bi-weekly, or whenever necessary, per project demands. These meetings will also serve as a means to convey manpower allocation needs to our field staff and facilitate enhancements to critical documentation, including operation-specific checklists, daily work reports, subsoil tracking, and density records as generated by field personnel.

As part of our typical internal QA, Jeff Hutchinson, PE will conduct thorough quarterly internal quality reviews. When deemed necessary, CONSOR's project principal, David Bowden will also supplement these efforts to bring fresh eyes to overall quality management activities. Results of any findings, as well as a detailed implementation of corrective efforts, will be documented and submitted to the RCID for review and filing. CONSOR's FDOT-approved QA plan accounts for all areas of CEI services along with core administrative processes, which can be altered to accommodate changing needs of the project parameters and the CM-CEI scope.

Inspection staff will be required to follow FDOT-level inspection guide lists as required by our state clients to provide activity-specific checklists for major items. QA reviews of subconsultant documentation, such as material laboratory testing, will be completed periodically by Rod Bowden and Michelle Brant. Findings will be communicated to the originator and corrected for resubmittal.

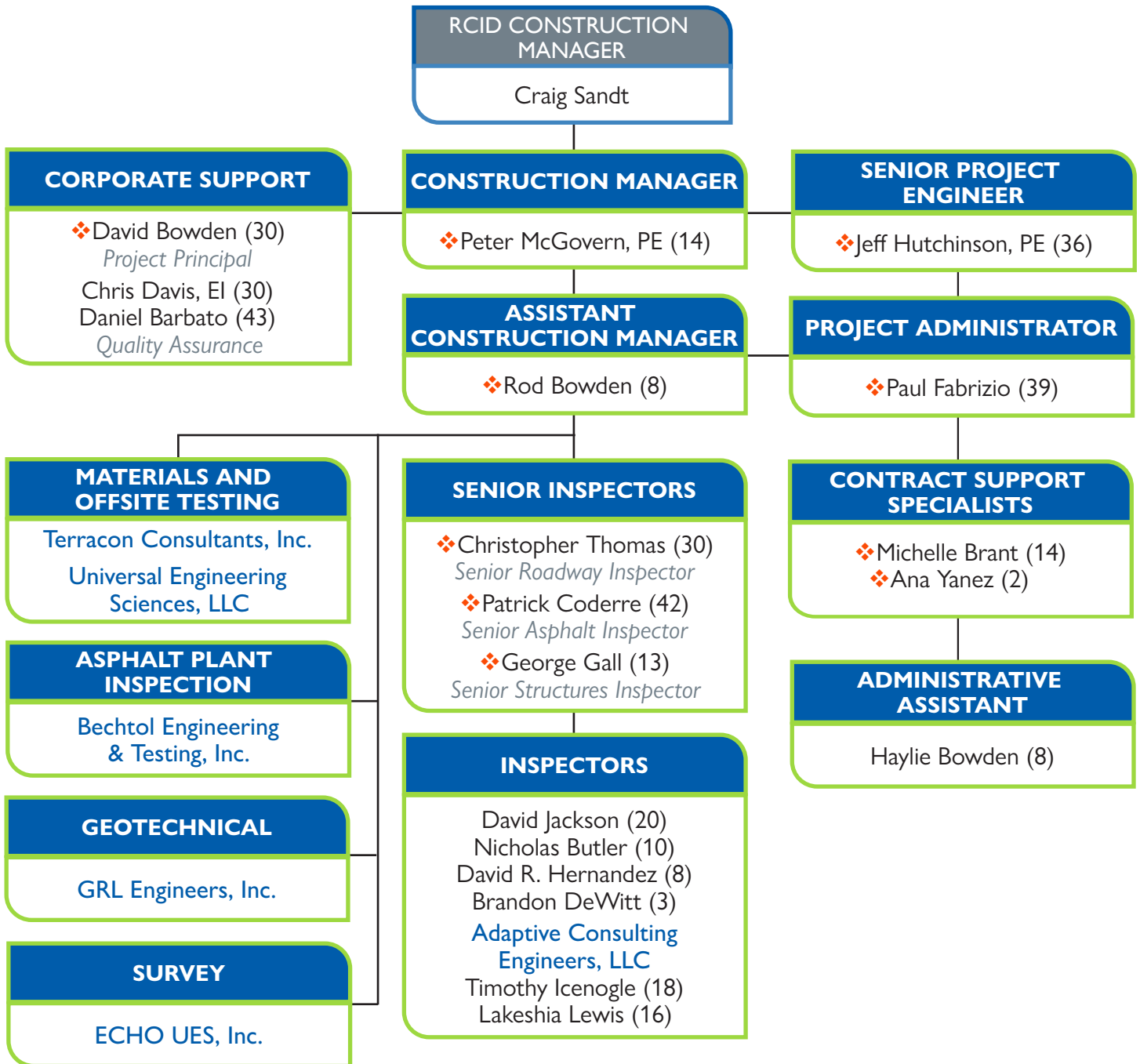
Jeff will provide final review and approval of all project CM-CEI deliverable documentation, including but not limited to density logbooks, material sampling and testing records, drilled shaft records, pile driving records, daily construction reports, material supplier certifications, and mill analysis submittals. Upon completion of his review with administrative staff, he will provide written certification of construction compliance to RCID and include it within the final version of deliverables.

QA records such as periodic review checklists and corrective action documentation will be filed by CONSOR and made available to RCID upon request.



ORGANIZATION CHART

Key:
(XX): Years of Experience
❖: Resume included



THE **CONSOR TEAM**



EXHIBIT "F"
SCHEDULE OF RATES, ITEMIZATION OF NTE AMOUNT & ITEMIZATION OF REIMBURSABLE
EXPENSES
AGREEMENT NO. C006106

I. Schedule of Billing Rates:

1. The following establishes the hourly billing rates in effect throughout the term of the Agreement.

Item No.	INITIAL PHASE- Labor Category	Billable Hourly Rate	Total Hours (All Tasks)	Budget
H-1	Senior Project Engineer (Part Time)	\$205.38	496	\$101,868.48
H-2	Construction Manager (Full Time)	\$210.93	3680	\$776,222.40
H-3	Assistant Construction Manager (Full Time)	\$157.50	3830	\$603,225.00
H-4	Project Administrator (Full Time)	\$180.40	3760	\$678,304.00
H-5	Assistant Project Administrator/ Utility Coordinator	\$138.77	3520	\$488,470.40
H-6	Contracts Support Specialist (2 Full Time)	\$88.81	7040	\$625,222.40
H-7	Sr. CTQP Roadway (Full Time)	\$101.99	3600	\$367,164.00
H-8	Sr. CTQP Roadway (Overtime)	\$152.99	360	\$55,076.40
H-9	CTQP Inspector Roadway	\$72.16	7252	\$523,304.32
H-10	CTQP Inspector Roadway (Overtime)	\$108.24	725.2	\$78,495.65
H-9A	CTQP Inspector Roadway (DBE)	\$72.16	3040	\$219,366.40
H-10A	CTQP Inspector Roadway (Overtime)(DBE)	\$108.24	304	\$32,904.96
H-11	CTQP Sr. Bridge Inspector	\$104.08	490	\$50,999.20
H-12	CTQP Sr. Bridge Inspector (Overtime)	\$156.11	49	\$7,649.39
H-13	CTQP Concrete Inspector	\$80.49	0	\$0.00
H-14	CTQP Concrete Inspector (Overtime)	\$120.73	0	\$0.00
H-15	Precast Concrete Plant Inspect- Box Culverts/Precast Beams (Off-site)	\$97.14	60	\$5,828.40
H-16	Geotechnical Engineer - Field Pile Driving Technician	\$72.16	0	\$0.00
H-17	Geotechnical Engineer - Senior Pile Drving Engineer	\$135.00	210	\$28,350.00
H-18	Geotechnical Engineer - Chief Pile Driving Engineer	\$135.00	55	\$7,425.00
H-19	Geotechnical Engineer - Drilled Shaft Field Technician	\$72.16	0	\$0.00
H-20	Geotechnical Engineer - Drilled Shaft Foundations Subconsultant	\$72.16	0	\$0.00
H-21	CTQP - Asphalt Senior Inspector	\$97.14	0	\$0.00
H-22	CTQP - Asphalt Senior Inspector (Overtime)	\$145.71	0	\$0.00
H-23	CTQP - Asphalt Roadway Inspector	\$72.16	0	\$0.00
H-24	CTQP - Asphalt Roadway Inspector (Overtime)	\$108.24	0	\$0.00
H-25	CTQP - Asphalt Plant Inspector	\$91.59	0	\$0.00
H-26	CTQP - Asphalt Plant Inspector (Overtime)	\$137.38	0	\$0.00
H-27	Administrative Assistant	\$69.38	768	\$53,287.02
H-28	Coatings Inspector Subconsultant	\$135.00	80	\$10,800.00

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H-29	Light Pole Inspection (Off-site) Subconsultant	\$135.00	64	\$8,640.00
H-30	Survey Crew (DBE)	\$197.93	150	\$29,689.50
H-31	FL Licensed PSM (DBE)	\$223.21	30	\$6,696.30
H-32	Survey Admin (DBE)	\$95.60	15	\$1,434.00
H-33	Senior Project Engineer / CBI Supervisor (DBE)	\$205.38	0	\$0.00
H-34	Certified Bridge Inspector (Structure Inspect) Underwater or Topside	\$156.40	0	\$0.00
H-35	Bridge Inspector - Helper (Structure Inspection) Underwater or Topside	\$146.70	0	\$0.00
H-36	Administrative Assist. (Structure Inspection) BrM Underwater or Topside	\$83.35	0	\$0.00
H-37	Structural Design/PE (Senior Engineer) Structure Underwater or Topside	\$219.50	0	\$0.00
INITIAL PHASE BID - TOTAL			39578.2	\$4,760,423.23
Estimated NTE Material Testing Costs				\$60,700.00
Estimated Expense Allowance				\$178,788.71
TOTAL INITIAL PHASE				\$4,999,911.94

Item No.	ADD ALTERNATE PHASE- Labor Category	Billable Hourly Rate	Total Hours (All Tasks)	Budget
H-1	Senior Project Engineer (Part Time)	\$205.38	144	\$29,574.72
H-2	Construction Manager (Full Time)	\$210.93	2730	\$575,838.90
H-3	Assistant Construction Manager (Full Time)	\$157.50	480	\$75,600.00
H-4	Project Administrator (Full Time)	\$180.40	1840	\$331,936.00
H-5	Assistant Project Administrator/ Utility Coordinator	\$138.77	1440	\$199,828.80
H-6	Contracts Support Specialist (2 Full Time)	\$88.81	2860	\$253,996.60
H-7	Sr. CTQP Roadway (Full Time)	\$101.99	2340	\$238,656.60
H-8	Sr. CTQP Roadway (Overtime)	\$152.99	224	\$34,269.76
H-9	CTQP Inspector Roadway	\$72.16	4960	\$357,913.60
H-10	CTQP Inspector Roadway (Overtime)	\$108.24	304	\$32,904.96
H-9A	CTQP Inspector Roadway (DBE)	\$72.16	0	\$0.00
H10A	CTQP Inspector Roadway (Overtime)(DBE)	\$108.24	0	\$0.00
H-11	CTQP Sr. Bridge Inspector	\$104.08	0	\$0.00
H-12	CTQP Sr. Bridge Inspector (Overtime)	\$156.11	0	\$0.00
H-13	CTQP Concrete Inspector	\$80.49	0	\$0.00
H-14	CTQP Concrete Inspector (Overtime)	\$120.73	0	\$0.00
H-15	Precast Concrete Plant Inspect- Box Culverts/Precast Beams (Off-site)	\$97.14	0	\$0.00
H-16	Geotechnical Engineer - Field Pile Driving Technician	\$72.16	0	\$0.00
H-17	Geotechnical Engineer - Senior Pile Drving Engineer	\$135.00	0	\$0.00
H-18	Geotechnical Engineer - Chief Pile Driving Engineer	\$135.00	0	\$0.00
H-19	Geotechnical Engineer - Drilled Shaft Field Technician	\$72.16	0	\$0.00
H-20	Geotechnical Engineer - Drilled Shaft Foundations Subconsultant	\$72.16	0	\$0.00
H-21	CTQP - Asphalt Senior Inspector	\$97.14	304	\$29,529.89

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H-22	CTQP - Asphalt Senior Inspector (Overtime)	\$145.71	76	\$11,073.71
H-23	CTQP - Asphalt Roadway Inspector	\$72.16	0	\$0.00
H-24	CTQP - Asphalt Roadway Inspector (Overtime)	\$108.24	0	\$0.00
H-25	CTQP - Asphalt Plant Inspector	\$91.59	304	\$27,842.47
H-26	CTQP - Asphalt Plant Inspector (Overtime)	\$137.38	76	\$10,440.93
H-27	Administrative Assistant	\$69.38	351	\$24,353.84
H-28	Coatings Inspector Subconsultant	\$135.00	0	\$0.00
H-29	Light Pole Inspection (Off-site) Subconsultant	\$135.00	0	\$0.00
H-30	Survey Crew (DBE)	\$197.93	0	\$0.00
H-31	FL Licensed PSM (DBE)	\$223.21	0	\$0.00
H-32	Survey Admin (DBE)	\$95.60	0	\$0.00
H-33	Senior Project Engineer / CBI Supervisor (DBE)	\$205.38	5	\$1,026.90
H-34	Certified Bridge Inspector (Structure Inspect) Underwater or Topside	\$156.40	8	\$1,251.20
H-35	Bridge Inspector - Helper (Structure Inspection) Underwater or Topside	\$146.70	8	\$1,173.60
H-36	Administrative Assist. (Structure Inspection) BrM Underwater or Topside	\$83.35	8	\$666.80
H-37	Structural Design/PE (Senior Engineer) Structure Underwater or Topside	\$219.50	2	\$439.00
TOTAL ADD ALTERNATE			18464	\$2,238,318.27

2. The foregoing billing rates include, without limitation:

a. The employee's **hourly rate**, defined as the actual hourly compensation paid by the Consultant to its employee; and

b. **Employee burden**, defined as, but not limited to, all applicable state and federal payroll taxes such as social security, unemployment and disability insurance, and worker's compensation insurance; medical and group life insurance benefits; vacation; holidays; sick time; pension and ESOP plans; and other company benefits; and

c. **Overhead**, defined as but not limited to rental/mortgage expenses for office space, utilities, liability insurance, office supplies (including but not limited to faxes, telephone calls, computer usage, postage and copies) and all other company overhead business expenses; and

d. **Profit**.

The aforementioned items shall not be separately reimbursed as Reimbursable Expenses.

II: Itemization of the Not To Exceed (NTE) Fee:

1. The following itemizes the Not to Exceed Fee and corresponds to completion of the Scope of Services set forth in Exhibit "A":

Phases	Total Hours (all tasks)	Total NTE Fee
Initial Phase- Base Scope	39,578.2	\$4,760,423.23
Initial Phase- Material Testing		\$60,700.00
Add Alternate Phase- Base Scope	18,464.0	\$2,238,318.27

Agreement for Professional Services

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III. Itemization of Reimbursable Expenses:

1. The following itemizes the Reimbursable Expenses and corresponds to completion of the Scope of Services set forth in Exhibit "A".

Task Number	Reimbursable Expense Cap
INITIAL PHASE	\$178,788.71
ADD ALTERNATE PHASE	\$142,261.02
TOTAL EXPENSE CAP- ALL PHASES	\$321,049.73

END OF EXHIBIT "F"

**CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
BOARD OF SUPERVISORS REPORT 8.4**

Board Meeting Date: 11/20/2024

Subject: World Drive North Phase III – Phase II Construction Contract

Presented By: Craig Sandt, Principal Construction Manager

Department: Public Works

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #8.4 Phase II of Contract #C006110 World Drive North Phase III construction with Southland Construction, Inc. including add alternates in the amount of \$43,398,746.60, plus 10% contingency for a total of \$47,738,621

RELEVANT STRATEGIC GOALS: Quality of Place

PROOF OF PUBLICATION: N/A

BACKGROUND: The scope of work for Phase II of the World Drive North Phase III project includes replacing the existing two-way Floridian Way roadway with the extension of the four-lane divided World Drive from approximately 3,800 LF south of Seven Seas Drive to approximately 700 LF north of Maple Road. Phase II work includes notable travel-way items such as three (3) roundabouts, a single span (84'-0" overall bridge length) Florida I-36 beam superstructure bridge, and relocation of a portion of Seven Seas Drive. Associated work items include, but are not limited to: regular excavation, subsoil excavation, embankment, lime rock, and asphalt base, concrete curb elements, signage, roadway lighting, underground storm drainage, potable water main, reclaimed water main, communications (Smart City, ITS) infrastructure, electrical infrastructure, and replacement of existing gas main infrastructure.

FINDINGS AND CONCLUSIONS: On February 22, 2023, the Board of Supervisors authorized Phase I of the World Drive North Phase III Contract #C006110 with Southland Construction Inc. Exhibit "C" is established within the contract outlining Phase I and Phase II. Within Article 5, Section 5.4 of the Agreement, the Owner (CFTOD) has the right to elect to accept the Lump Sum Fixed Price of \$43,398,746.60, inclusive of all add alternates) to complete the project. In a letter from Southland Construction Inc. date July 30, 2024, they agreed to extend the election date of Phase II work to January 7, 2025. A 10% contingency has been added to the contract sum.

Southland Construction, Inc.	Construction Contract C006110	Contract Days to Final Completion	Contingency Amount (10%)
Phase I	\$74,253,965.00	760	\$7,425,396.50
Phase II	\$43,398,746.60	689	\$4,339,874.66

FISCAL IMPACT: There will be no change in the overall budget for the World Drive North Phase III project. Funding for this request is derived from the RCID 2016-2024 Transportation Projects Ad Valorem Bonds.

PROCUREMENT REVIEW: This contract has been reviewed and approved for compliance with the District's procurement policies.

LEGAL REVIEW: This agenda item has been reviewed by the District's General Counsel.

ALTERNATIVE:

- Deny
- Amend
- Table

SUPPORT MATERIALS:

Contract #C006110



**REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH PHASE III**

Agreement: C006110

PROJECT MANUAL

ISSUED FOR CONSTRUCTION

Date of Issuance: March 14, 2023

Owner: Reedy Creek Improvement District
1900 Hotel Plaza Boulevard
Lake Buena Vista, Florida 32830

Owner's Representative: Reedy Creek Improvement District
1900 Hotel Plaza Boulevard
Lake Buena Vista, Florida 32830

Engineer/Architect of Record: TLP Engineering Consultants Inc.
450 S. Orange Avenue, Suite 450
Orlando, Florida 32801

Contractor: Southland Construction, Inc.
172 West Fourth Street
Apopka, FL, 32703

PROJECT MANUAL

Definition: The compilation of Documents listed herein is hereinafter referred to as the Project Manual.

The following listed documents comprise the Project Manual entitled:

WORLD DRIVE NORTH PHASE III ISSUED FOR CONSTRUCTION

Contract Number: C006110

CONTRACT DOCUMENTS

Agreement (Lump Sum)

- Exhibit 'A' – List of Contract Documents and Description of Work
- Exhibit 'B' – Project Milestone Schedule
- Exhibit 'C' – Recap of Lump Sum Fixed Price
- Exhibit 'D' – Pending Alternates
- Exhibit 'E' – Unit Price Schedule, including Attachment 'A' to Exhibit 'E' – Schedule of Wage and Equipment Rates

- Special Contract Conditions
- General Conditions of the Contract for Construction
- Payment Bond
- Performance Bond
- Contractor's Interim Affidavit (sample form)
- Contractor's Request for Information (RFI) (sample form)
- Directive (sample form)
- Change Order (sample form), including Exhibit 'A'
- Close-Out Change Order (sample form)
- Certificate of Substantial Completion (sample form)
- Punch List (sample form)

Drawings – Drawings are separately bound. For the List of Drawings, refer to Specification Section 00850, entitled List of Drawings and Specifications, contained in the Project Manual, entitled WORLD DRIVE NORTH PHASE III, dated March 14, 2022. All Drawings listed therein, and any applicable Addenda subsequently issued thereto, are specifically incorporated into the Project Manual by this reference.

Specifications - For the List of Specifications, refer to Specification Section 00850, entitled List of Drawings and Specifications, contained in the Project Manual, entitled WORLD DRIVE NORTH PHASE III, dated March 14, 2022. All specifications listed therein, and any applicable Addenda subsequently issued thereto, are specifically incorporated into the Project Manual by this reference.

END OF TABLE OF CONTENTS - PROJECT MANUAL
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PROJECT: WORLD DRIVE NORTH PHASE III

CONTRACT NUMBER: C006110

**REEDY CREEK IMPROVEMENT DISTRICT
LUMP SUM AGREEMENT**

THIS AGREEMENT, made effective as of **March 14, 2023**, by and between **Reedy Creek Improvement District** (herein referred to as the "Owner"), whose mailing address is P.O. Box 10170, Lake Buena Vista, Florida 32830-0170, and **Southland Construction, Inc.** (herein referred to as the "Contractor"), whose mailing address is 172 West Fourth Street, Apopka, FL, 32703.

WITNESSETH

In consideration of the mutual covenants hereinafter set forth, the parties hereto agree as follows:

Article 1

DEFINITIONS: THE CONTRACT DOCUMENTS

1.1. The capitalized terms used herein shall have the meanings set forth in the General Conditions of the Contract for Construction (herein referred to as the "General Conditions") unless a specific definition therefor is provided herein. Unless otherwise specified, references herein to numbered articles and paragraphs are to those in this Agreement. This Agreement shall be referred to throughout the Contract Documents as the "Agreement".

1.2. The Contract Documents consist of this Agreement, the Conditions of the Contract (General and Special), the Drawings, the Specifications, all Addenda (except portions thereof relating purely to any of the bidding forms or bidding procedures), all Modifications and all other documents identified in the "List of Contract Documents" included in Exhibit "A", which is attached hereto. Such documents form the Contract and all are as fully a part thereof as if attached to this agreement or repeated herein.

Article 2

STATEMENT OF THE WORK

2.1. The totality of the obligations imposed upon the Contractor by this Article and by all other provisions of the Contract Documents, as well as the structures to be built and the labor to be performed, is herein referred to as the "Work".

2.2. Exhibit "A", "Description of Project and List of Contract Documents", contains a brief description of the Project.

2.3. The Contractor shall provide and pay for all materials, tools, equipment, labor and professional and nonprofessional services, and shall perform all other acts and supply all other things necessary to fully and properly perform and complete the Work. The Contractor shall further provide and pay for all related facilities described in any of the Contract Documents, including all work expressly specified therein and such additional work as may be reasonably inferred therefrom, saving and excepting only such items of work as are specifically stated in the Contract Documents not to be the obligation of the Contractor.

Article 3
OWNER'S REPRESENTATIVE

Conсор Engineers Inc., Peter McGovern, P.E., pmcgovern@consoreng.com, whose mailing address **2121 Old Hickory Tree Road, St. Cloud, FL 34772**; shall act as the Owner's designated representative (herein referred to as the "Owner's Designated Representative"); provided, however, that the Owner may, without liability to the Contractor, unilaterally amend this Article from time to time by designating a different person or organization to act as its representative and so advising the Contractor in writing, at which time the person or organization so designated shall be the Owner's Representative for purposes of this Contract.

Article 4
THE ARCHITECT/ENGINEER

4.1. The Architect/Engineer for the Project (herein referred to as the "A/E") is **TLP Engineering Consultants Inc.**, whose mailing address is 450 S. Orange Avenue, Suite 450, Orlando, FL 32801.

Article 5
TIME OF COMMENCEMENT AND COMPLETION OF PHASES

5.1. **Phase I**. The Contractor shall commence the Work promptly upon receipt of written Notice-to-Proceed from the Owner and **shall complete all Work within 730 Days** after issuance of said Notice (such period of time is herein referred to as the "Contract Time") and in accordance with such interim milestone dates (herein referred to as the "Milestones") as may be specified in the Contract Documents. The Contract Time and any such Milestones are of the essence of the Contract.

5.2. If any Work is performed by the Contractor prior to the execution of this Agreement based on receipt of written notice to proceed, all such Work performed shall be in accordance with and governed by the Contract Documents.

5.3. The Contractor acknowledges that the Owner has made no warranties to the Contractor, expressed or implied, that the Contractor will be able to follow a normal, orderly sequence in the performance of the Work or that there will be no delays in, or interference with, the Work.

Phase I: SUBSTANTIAL COMPLETION

Substantial Completion of the Work shall be achieved not later than **730 days from Notice-to-Proceed**. Notice-to-Proceed is defined as the date the Owner provides the Notice to Contractor to begin the project.

Phase I: FINAL COMPLETION

Final Completion of the Work shall be achieved not later than **760 days from Notice-to-Proceed**.

5.4. **Phase II**. If Owner elects to begin PHASE II within 18 months of contract execution, the Contractor shall commence the Work promptly upon receipt of written Notice-to-Proceed from the Owner and **shall complete all Work within 644 Days** after issuance of said Notice (such period of time is herein referred to as the "Contract Time") and in accordance with such interim milestone dates (herein referred to as the "Milestones") as may be specified in the Contract Documents. The Contract Time and any such Milestones are of the essence of the Contract.

5.5. If any Work is performed by the Contractor prior to the execution of this Agreement based on receipt of written notice to proceed, all such Work performed shall be in accordance with and governed by the Contract Documents.

5.6 The Contractor acknowledges that the Owner has made no warranties to the Contractor, expressed or implied, that the Contractor will be able to follow a normal, orderly sequence in the performance of the Work or that there will be no delays in, or interference with, the Work.

Phase II: SUBSTANTIAL COMPLETION

Substantial Completion of the Work shall be achieved not later than 644 days from Notice-to-Proceed. Notice-to-Proceed is defined as the date the Owner provides the Notice to Contractor to begin the project.

Phase II: FINAL COMPLETION

Final Completion of the Work shall be achieved not later than 689 days from Notice-to-Proceed.

**Article 6
CONTRACT SUM**

6.1. **PHASE I.** Provided that the Contractor shall strictly and completely perform all of its obligations under the Contract Documents, and subject only to additions and deductions by Change Order or as otherwise provided in the General Conditions, the Owner shall pay to the Contractor for the Phase I, Plan C Utility Project, in current funds and at the times and in the installments hereinafter specified, the sum of SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00) (herein referred to as the "PHASE I Contract Sum") to cover the Contractor's profit and general overhead and all costs and expenses of any nature whatsoever (including, without limitation, taxes, labor and materials), foreseen or unforeseen, and any increases in said costs and expenses, incurred by the Contractor in connection with the performance of the Work, all of which costs and expenses shall be borne solely by the Contractor.

6.2. **PHASE II.** Provided that the Owner elects within 18 months of contract execution to commence Phase II, Contractor shall strictly and completely perform all of its obligations under the Contract Documents, and subject only to additions and deductions by Change Order or as otherwise provided in the General Conditions, the Owner shall pay to the Contractor for Phase II, Plan X Utility Project, in current funds and at the times and in the installments hereinafter specified, the sum of FORTY-THREE MILLION, THREE HUNDRED NINETY-EIGHT THOUSAND, SEVEN HUNDRED FORTY-SIX AND SIXTY ONE-HUNDREDTHS DOLLARS (\$43,398,746.60) (herein referred to as the "PHASE II Contract Sum") to cover the Contractor's profit and general overhead and all costs and expenses of any nature whatsoever (including, without limitation, taxes, labor and materials), foreseen or unforeseen, and any increases in said costs and expenses, incurred by the Contractor in connection with the performance of the Work, all of which costs and expenses shall be borne solely by the Contractor.

**Article 7
APPLICATIONS FOR PAYMENT**

7.1. The Contractor shall, on the twenty-fifth (25th) day of each calendar month (herein referred to as the "Payment Application Date"), deliver to the Owner an Application for Payment in accordance with the provisions of Article 9 of the General Conditions. Before submitting the first Application for Payment, Contractor shall submit (and resubmit until approval is obtained) to the Owner's Representative for approval the "Schedule of Values", generally following the Uniform Construction Index (CSI) cost analysis format but further broken down by facility, labor and material, all as required by the Owner's Representative. Each item in the "Schedule of Values" shall only include its proper share of overhead and profit. The Schedule of Values, when approved by the Owner's Representative, shall be used as a basis for the Contractor's Application for Payment.

Article 8
PROGRESS PAYMENTS, FINAL PAYMENT OF THE CONTRACT SUM, AND LIQUIDATED DAMAGES

8.1. Based on the Contractor's Application for Payment, the Schedule of Values submitted by the Contractor and approved by the Owner, and the Owner's approval of the Application for Payment pursuant to Article 9 of the General Conditions, the Owner shall make monthly payments to the Contractor on account of the Contract Sum. Such monthly payments shall be made on or before the twenty-fifth (25th) day of each calendar month or the thirtieth (30th) day after receipt by the Owner of such documentation as the Owner may require pursuant to Article 9 of the General Conditions to substantiate the amount owed, whichever is later; provided, however, that the Owner shall have no obligation to make payment as aforesaid if it has withheld approval thereof as permitted under Subparagraph 9.3.1. of the General Conditions or if the Contractor has not submitted to the Owner all documentation required to substantiate the Application for Payment. Each such monthly payment shall be in an amount equal to ninety-five percent (95%) of the net amount allowed the Contractor for labor, materials and equipment incorporated or used in the Work (or suitably stored at the job site if the Owner has agreed in advance to pay for such stored materials and equipment) through the Payment Application Date, as indicated in the Owner's approval of the Application for Payment, after deducting any sums withheld by the Owner pursuant to the Contract Documents and the aggregate of all previous payments to the Contractor on account of the Contract Sum. Upon Substantial Completion of the Work, as determined by the Owner, the Owner shall pay to the Contractor a sum sufficient to increase the aggregate payments theretofore made to the Contractor on account of the Contract Sum to ninety-five percent (95%) of the Contract Sum, less such retainage as the Owner shall determine is necessary for all incomplete Work, unsettled claims or other matters for which the Owner is permitted to withhold under the General Conditions.

8.2. Final payment, constituting the entire unpaid balance of the Contract Sum, shall be paid by the Owner to the Contractor within fourteen (14) days after completion of those items set forth in the Punch List, including, without limitation, approval by Owner of the final Application for Payment, and execution by the Contractor of the Close-out Change Order, in accordance with the General Conditions; provided, however, that final payment shall in no event be due unless and until the Contractor shall have complied with all provisions of the Contract Documents, including those contained in Subparagraph 9.4.2 of the General Conditions.

8.3. Should the Contractor fail to substantially complete all Work under this Contract as directed, and make the project available for beneficial use on or before the date stipulated for each Phases' stipulated Substantial Completion (or such later date as may result from extension of time granted by the District), the Contractor shall pay and/or the District may retain from the compensation otherwise to be paid to the Contractor, as liquidated damages, the following amounts for each Phase, as outlined in Article 5, the sum of \$1,000.00 for each consecutive calendar day that terms of the Contract remain unfulfilled beyond the date allowed by the Contract for that Phase, which sum is agreed upon as a reasonable and proper measure of damages which District will sustain per diem by failure of the Contractor to complete work within the time as stipulated; it being recognized by the District and the Contractor that the injury to the District which could result from a failure of the Contractor to complete on schedule is uncertain and cannot be computed exactly. In no way shall costs for liquidated damages be construed as a penalty on the Contractor. Liquidated damages do not apply to Final Completion dates.

Article 9
CONTRACTOR'S REPRESENTATIONS, WARRANTIES AND COVENANTS

9.1. The Contractor hereby represents and warrants to the Owner that:

(a) it is duly licensed to observe and perform the terms, covenants, conditions and other provisions on its part to be observed or performed hereunder;

(b) it is experienced and skilled in the construction and work of the type described in, or required by, the Contract Documents;

(c) all equipment and materials used in connection with the Work shall be new (except if otherwise required by the Specifications) and the equipment, the materials and the Work shall be of the best quality, free from faults and defects and shall strictly conform to the Contract Documents; and

(d) it has, by careful examination satisfied itself as to: (i) the nature, location and character of the job site including, without limitation, the surface and subsurface conditions of the land and all structures and obstructions thereon, both natural and manmade, surface water conditions of the Job Site and the surrounding area and, to the extent pertinent to the Work, all other conditions; (ii) the nature, location and character of the general area in which the Job Site is located including, without limitation, its climatic conditions, the availability and cost of labor and the availability and cost of materials, tools and equipment; (iii) the quality and quantity of all materials, supplies, tools, equipment, labor and professional services necessary to complete the Work in the manner required by the Contract Documents; and (iv) all other matters or things which could in any manner affect the performance of the Work. Without limitation on the foregoing, the Contractor recognizes the physical and operational restrictions on carrying on of the Work in or about the Project or the Job Site.

9.2. The Contractor accepts the relationship of trust and confidence established by this Agreement between it and the Owner. It covenants with the Owner that it shall: furnish its best skill and judgment and cooperate with the Owner

in furthering the interests of the Owner; furnish efficient business administration and superintendence and an adequate supply of workmen, equipment, tools and materials at all times; and perform the work in the best and soundest way and in the most expeditious and economical manner consistent with the best interests of the Owner.

Article 10 TERMINATION

10.1. Termination of the Contract by the Owner, with or without cause, and by the Contractor are provided for in Article 15 of the General Conditions. If the Owner terminates the Contract pursuant to Paragraph 15.2. of the General Conditions, and the unpaid balance of the Contract Sum exceeds the costs and expenses incurred by or on behalf of

the Owner in finishing the Work, including compensation for any additional architectural, engineering, management and administrative services, such excess shall, upon the completion of the Work, be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Owner upon demand.

Article 11 LEGAL PROCEEDINGS

11.1. The Contract Documents shall be construed and interpreted in accordance with the laws of the State of Florida, to the exclusion of its rules concerning conflicts of laws, and shall constitute the entire and sole understanding of the parties hereto notwithstanding any prior oral or written statements, instructions, agreements, representations, or other communications.

11.2. Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Contract, or arising out of any matter pertaining to this Contract or the Work to be performed hereunder (a "Proceeding"), shall be submitted for trial, without jury, solely and exclusively before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; provided, however, that if such Circuit Court does not have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before the United States District Court for the Middle District of Florida (Orlando Division); and provided further that if neither of such courts shall have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before any other court sitting in Orange County, Florida, having jurisdiction. The parties (i) expressly waive the right to a jury trial, (ii) consent and submit to the sole and exclusive jurisdiction of the requisite court as provided herein and (iii) agree to accept service of process outside the State of Florida in any matter related to a Proceeding in accordance with the applicable rules of civil procedure.

11.3. In the event that any provision of any of the Contract Documents is judicially construed to be invalid by a court of competent jurisdiction, such provision shall then be construed in a manner allowing its validity or, if this leads

to an impracticable result, shall be stricken but, in either event, all other provisions of the Contract Documents shall remain in full force and effect.

Article 12
PUBLIC RECORDS

PUBLIC RECORDS COMPLIANCE (APPLICABLE FOR SERVICE CONTRACTS). IF THE CONTRACTOR/CONSULTANT HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S/CONSULTANT'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT TELEPHONE NUMBER 407-939-3240, EMAIL ADDRESS PUBLICRECORDS@RCID.ORG, MAILING ADDRESS REEDY CREEK IMPROVEMENT DISTRICT, ATTN: PUBLIC RECORDS ADMINISTRATOR, P.O. BOX 10170, LAKE BUENA VISTA, FLORIDA 32830.

A. THE CONTRACTOR/CONSULTANT SHALL:

1. Keep and maintain public records required by the public agency to perform the service.
2. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
3. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the contractor/consultant does not transfer the records to the public agency.
4. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the contractor/consultant or keep and maintain public records required by the public agency to perform the service. If the contractor/consultant transfers all public records to the public agency upon completion of the contract, the contractor/consultant shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the contractor/consultant keeps and maintains public records upon completion of the contract, the contractor/consultant shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

B. REQUEST FOR RECORDS; NONCOMPLIANCE:

1. A request to inspect or copy public records relating to a public agency's contract for services must be made directly to the public agency. If the public agency does not possess the requested records, the public agency shall immediately notify the contractor/consultant of the request, and the contractor/consultant must provide the

records to the public agency or allow the records to be inspected or copied within a reasonable time.

2. If a contractor/consultant does not comply with the public agency's request for records, the public agency shall enforce the contract provisions in accordance with the contract.
3. A contractor/consultant who fails to provide the public records to the public agency within a reasonable time may be subject to penalties under s. 119.10.

C. CIVIL ACTION:

1. If a civil action is filed against a contractor/consultant to compel production of public records relating to a public agency's contract for services, the court shall assess and award against the contractor/consultant the reasonable costs of enforcement, including reasonable attorney fees, if:
 - i. The court determines that the contractor/consultant unlawfully refused to comply with the public records request within a reasonable time; and
 - ii. At least 8 business days before filing the action, the plaintiff provided written notice of the public records request, including a statement that the contractor/consultant has not complied with the request, to the public agency and to the contractor/consultant.
2. A notice complies with subparagraph (c) ii. if it is sent to the public agency's custodian of public records and to the contractor/consultant at the contractor's/consultant's address listed on its contract with the public agency or to the contractor's/consultant's registered agent. Such notices must be sent by common carrier delivery service or by registered, Global Express Guaranteed, or certified mail, with postage or shipping paid by the sender and with evidence of delivery, which may be in an electronic format.
3. A contractor/consultant who complies with a public records request within 8 business days after the notice is sent is not liable for the reasonable costs of enforcement.

Article 13
E-VERIFY COMPLIANCE

The Contractor and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees. The Contractor agrees and acknowledges that the Owner is a public employer that is subject to the E-verify requirements as set forth in Section 448.095, Florida Statutes, and that the provisions of F.S. Sec. 448.095 apply to this Agreement. Notwithstanding the provisions of Article 10 hereof and Article 15 of the General Conditions of the Contract for Construction, which forms a part of this Agreement, if the Owner has a good faith belief that the Contractor has knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws of the Attorney General of the United States for employment under this Agreement, the Owner shall terminate the Agreement. If the Owner has a good faith belief that a subcontractor performing work under this Agreement knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws or the Attorney General of the United States for employment under this Agreement, the Owner shall promptly notify the Contractor and order the Contractor to immediately terminate the contract with the subcontractor. The Contractor shall be liable for any additional costs incurred by the Owner as a result of termination of a contract based on Contractor's failure to comply with E-verify requirements referenced herein.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed effective as of the day and year first above written.

OWNER:
REEDY CREEK IMPROVEMENT DISTRICT

CONTRACTOR:
SOUTHLAND CONSTRUCTION, INC.

Authorized
Signature: John H. Classe, Jr.

Authorized
Signature: Daniel T. Carr

Print Name: John H. Classe, Jr.

Print Name: Daniel T. Carr

Title: District Administrator

Title: President

Date: 4/6/2023 | 11:57 PM EDT

Date: 4/7/2023 | 10:07 AM EDT

EXHIBIT "A"
PROJECT DESCRIPTION AND LIST OF CONTRACT DOCUMENTS
Contract No.: C006110

I. Project Description

The Overall Project is briefly described as follows:

The scope of work for the World Drive North Phase III project includes replacing the existing two-way Floridian Way roadway with the extension of the four-lane divided World Drive from approximately 3800 LF south (Station 162+66.29) of Seven Seas Drive to approximately 700 LF North (Station 275+11.79) of Maple Road.

New construction includes notable travel-way items such as three (3) roundabouts and a single span (84'-0" overall bridge length) Florida I-36 beam superstructure bridge. Associated work items include, but are not limited to: regular excavation, subsoil excavation, embankment, lime rock, and asphalt base, concrete curb elements, an extension the of existing culvert(s), new box culvert(s), underground storm drainage, potable water main, reclaimed water main, sanitary sewer (gravity), sanitary force main, chilled water (base bid and alternate), communications (Smart City, ITS) infrastructure, electrical infrastructure, and replacement of existing gas main infrastructure.

PHASE II Scope of Work:

Phase II includes replacing the existing two-way Floridian Way roadway with the extension of the four-lane divided World Drive from approximately 3800 LF south (Station 162+66.29) of Seven Seas Drive to approximately 700 LF North (Station 275+11.79) of Maple Road. New construction includes notable travel-way items such as three (3) roundabouts and a single span (84'-0" overall bridge length) Florida I-36 beam superstructure bridge. Associated work items include, but are not limited to: regular excavation, subsoil excavation, embankment, lime rock, and asphalt base, concrete curb elements, signage, roadway lighting, underground storm drainage, potable water main (Station 225+68 to Station 275+12), reclaimed water main (Station 225+68 to Station 275+12), communications (Smart City, ITS) infrastructure (Station 225+68 to Station 275+12), electrical infrastructure (Station 225+68 to Station 275+12), and replacement of existing gas main infrastructure (Station 225+68 to Station 275+12).

II. List of Contract Documents

A. Drawings:

Drawings are separately bound. For the List of Drawings, refer to Specification Section 00850, entitled List of Drawings and Specifications, contained in the Project Manual, entitled WORLD DRIVE NORTH PHASE III, and dated March 14, 2023. All Drawings listed therein, and any applicable Addenda subsequently issued thereto, are specifically incorporated into the Project Manual by this reference.

B. Specifications:

For the List of Specifications, refer to Specification Section 00850, entitled List of Drawings and Specifications, contained in the Project Manual, entitled WORLD DRIVE NORTH PHASE III, and dated March 14, 2023. All Drawings listed therein, and any applicable Addenda subsequently issued thereto, are specifically incorporated into the Project Manual by this reference.

C. This Exhibit "A", Project Description and List of Contract Documents, 2 pages

D. Exhibit "B" Project Milestone Schedule, 1 page

E. Exhibit "C" Recap of Contract Sum, 2 pages

F. Exhibit "D" Pending Alternates, 1 page

G. Exhibit "E" Unit Price Schedule, 15 pages, including Attachment '1', Schedules of Wage & Equipment Rates, 6 pages

H. Special Contract Conditions, 15 pages, March 6, 2023 Ed.

EXHIBIT “A”
PROJECT DESCRIPTION AND LIST OF CONTRACT DOCUMENTS
Contract No.: C006110

- I. General Conditions of the Contract for Construction, 26 pages, March 2023 Ed.
- J. Payment Bond, 2 pages, and Exhibit A-Legal Descriptions, 18 pages
- K. Performance Bond, 2 pages, and Exhibit A- Legal Descriptions, 18 pages
- L. Dual Obligee (form), 1 page
- M. Contractor’s Interim Affidavit (form), 1 page
- N. Contractor’s Request for Information (form), 1 page
- O. Directive (form), 1 page
- P. Change Order (form), including Exhibit “A”, 2 pages
- Q. Close-Out Change Order (form), including Attachments “A” through “G”, 10 pages
- R. Certificate of Substantial Completion (form), 1 page
- S. Punch List (form), 1 page
- T. Addenda, listed as follows, excluding those portions pertaining to the Bidding Documents and Bidding procedures:
 - Addendum 1, dated September 26, 2022
 - Addendum 2, dated October 07, 2022
 - Addendum 3, dated October 17, 2022
 - Addendum 4, dated October 31, 2022
 - Addendum 5, dated November 07, 2022
 - Addendum 6, dated November 14, 2022
 - Addendum 7, dated December 19, 2022
 - Addendum 8, dated December 28, 2022

End of Exhibit “A”

EXHIBIT "B"
PROJECT MILESTONE SCHEDULE
Contract No.: C006110

The Contractor agrees to commence and complete the Work in strict accordance with the Project Milestone Schedule for performance of the work, as provided below:

Milestone	Start Date	Completion Date
PHASE I		
Notice-To-Proceed	Day 1	Day 1
Temporary Chilled Water Plan Implementation	Day 1	Day 120
Decommission Temporary Chiller Site 2	Day 120	Day 180
Decommission Temporary Chiller Site 5	Day 120	Day 240
Decommission Temporary Chiller Site 6	Day 120	Day 540
PHASE I: Substantial Completion	Day 1	Day 730
PHASE I: Final Completion	Day 730	Day 760
PHASE II (If Owner proceeds with PHASE II)		
Notice-To-Proceed (No later than Day 730 of the project)	Day 1 (730)	Day 1 (730)
PHASE II: Substantial Completion	Day 1 (730)	Day 644 (1374)
PHASE II: Final Completion	Day 644 (1374)	Day 689 (1419)
OVERALL PROJECT FINAL COMPLETION		Day 1419

For a listing of the phases and their scope, refer to Division No. 01010 Summary of Work, section 1.2.2.

End of Exhibit "B"

EXHIBIT "C"
RECAP OF CONTRACT SUM
Contract No.: C006110

The Contract Sum is based solely on the Contractor's proposed price:

PHASE I- Lump Sum Fixed Price of \$74,253,965.00

And, if Owner elects within 18 months of contract execution,

PHASE II- Lump Sum Fixed Price of \$43,398,746.60

WORLD DRIVE NORTH PH III- PROJECT PRICING		PHASE I	PHASE II
Item #	Description	Cost	Cost
General Conditions			
GC-1	Payment and Performance Bonds	\$718,910.00	\$354,090.00
GC-2	Mobilization and Demobilization	\$6,039,250.00	\$1,065,750.00
GC-3	Survey and Layout	\$1,350,000.00	\$450,000.00
GC-4	Erosion and Sediment Control	\$368,900.00	\$158,100.00
GC-5	Maintenance of Traffic	\$2,787,750.00	\$929,250.00
GC-6	Supervision	\$3,774,750.00	\$1,258,250.00
GC-7	Aerial Photography	\$8,800.00	\$7,200.00
GC-8	Dewatering	\$969,200.00	\$242,300.00
GC-9	Clearing and Grubbing	\$582,500.00	\$582,500.00
Roadway		\$2,953,950.00	\$14,724,550.00
RW-1	Regular Excavation	\$260,000.00	\$260,000.00
RW-2	Subsoil Excavation	\$391,950.00	\$2,221,050.00
RW-3	Embankment	\$2,302,000.00	\$2,302,000.00
RW-4	12" Type B Stabilized Subgrade, LBR 40	\$---	\$670,000.00
RW-5	8" Limerock Base (OBG06)	\$---	\$44,600.00
RW-6	12" Limerock Base (OBG11)	\$---	\$1,830,000.00
RW-7	7" Type B 12.5 Asphalt Base (OBG11, B12.5 Only)	\$---	\$93,000.00
RW-8	Type SP Structural Course (Traffic D) (PG82-10)	\$---	\$3,451,000.00
RW-9	Friction Course FC-5 (0.75") (Traffic D) (PG82-10)	\$---	\$46,000.00
RW-10	Friction Course FC-12.5 (1.5") (Traffic D) (PG82-10)	\$---	\$1,962,000.00
RW-11	Mill Existing Asphalt Pavement Average Depth 0.75"	\$---	\$13,200.00
RW-12	Mill Existing Asphalt Pavement Average Depth 1.5"	\$---	\$152,000.00
RW-13	Concrete Paving	\$---	\$171,200.00
RW-14	Traffic Separator	\$---	\$1,405,500.00
RW-15	Guardrail	\$---	\$103,000.00
Stormwater Drainage		\$4,516,085.00	\$4,129,515.00
SW-1	Box Culverts (CD-1)	\$1,002,000.00	\$---
SW-2	Box Culverts (CD-1A)	\$1,290,500.00	\$---
SW-3	SW Pipe Materials, Inlets, Boxes, Manholes, Structures	\$2,223,585.00	\$4,129,515.00
Bridge Construction		\$733,600.00	\$2,388,050.00
BR-1	Bridge 756071	\$---	\$1,820,300.00
BR-2	Prestressed Concrete Piling, 24" square	\$---	\$474,300.00
BR-3	Test Piles- Prestressed Concrete 24" square	\$---	\$98,450.00
BR-4	Utility Protection Structure	\$733,600.00	\$---
Utilities		\$47,863,770.00	\$7,330,530.00
UT-1	Potable Water	\$3,224,000.00	\$1,736,000.00
UT-2	Reclaimed Water	\$3,198,000.00	\$1,722,000.00
UT-3	Sanitary (Force Main)	\$1,041,000.00	\$---
UT-4	Sanitary (Gravity)	\$486,000.00	\$---
UT-5	Electrical	\$5,296,340.00	\$2,269,860.00

EXHIBIT "C"
RECAP OF CONTRACT SUM
Contract No.: C006110

UT-6	Gas	\$2,550,660.00	\$1,093,140.00
UT-7	Chilled Water System (Base Bid) CHS/CHR	\$18,020,000.00	\$---
UT-8	Electrical Service, Rental (w/maintenance) remove/secure	\$13,101,500.00	\$---
UT-9	Communications (Smart City)	\$946,270.00	\$509,530.00
Signage		\$---	\$2,464,700.00
SI-1	Overhead Sign Structures (Trusses/Cantilevers)	\$---	\$1,218,000.00
SI-2	Permanent Signage (single post, overhead panels, replacements, removals)	\$---	\$294,400.00
SI-3	Permanent Pavement Markings (Thermoplastic, Tape, RPMs)	\$---	\$140,600.00
SI-4	DMS/ITS Systems	\$---	\$811,700.00
Lighting			\$3,136,000.00
LI- 1	Street/Highway Lighting	\$---	\$3,136,000.00
Landscape		\$311,500.00	\$311,500.00
LS-1	Sodding/Site Stabilization	\$311,500.00	\$311,500.00
Allowances		\$1,275,000.00	
AW-1	Secondary Utility Locating Services	\$75,000.00	\$---
AW-2	Re-establish Landscaping and Irrigation	\$100,000.00	\$---
AW-3	Box Culvert Spall Repairs	\$250,000.00	\$---
AW-4	Temporary Chiller Security Fencing	\$250,000.00	\$---
AW-5	Temporary Chiller Secondary Fencing	\$300,000.00	\$---
AW-6	Temporary Chiller Site Preparation and Restoration	\$300,000.00	\$---
Totals Without Alternates		\$74,253,965.00	\$39,532,285.00
Alternates		\$---	\$3,866,461.60
BA-2	PVR Modifications Project B2	\$---	\$3,272,461.60
BA-2A	Alternate 2A	\$---	\$151,100.00
BA-2B	Additional Limerock	\$---	\$14,000.00
BA-3	Signalization	\$---	\$428,900.00
TOTALS PER PHASE		\$74,253,965.00	\$43,398,746.60

End of Exhibit "C"

EXHIBIT "D"
ALTERNATES
Contract No.: C006110

		PHASE II ONLY	
Alternates		\$---	\$3,866,461.60
BA-2	PVR Modifications Project B2	\$---	\$3,272,461.60
BA-2A	Alternate 2A	\$---	\$151,100.00
BA-2B	Additional Limerock	\$---	\$14,000.00
BA-3	Signalization	\$---	\$428,900.00

Bid Alternate 2: PVR Modifications Project B2 (a/k/a Seven Seas Drive Realignment) depicted within the Plans and generally noted: *"Information Shown Reflects Add Alternate 2 Items"*.

Bid Alternate 2A: Replacement of existing dual 38" x 60" ERCPs as shown on **Drawings XC-102**, and replacement of existing dual 30" CMPs as shown on **Drawing XC-103**.

Bid Alternate 2B: Provide Heavy Duty Pavement Section as depicted on **Sheet C-190** and generally noted as "Bid Alternate."

Bid Alternate 3: Signalization depicted within the Plans, and generally noted: *"Information Shown Reflects Add Alternate 3 Items."*

End of Exhibit "D"

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

In accordance with Article 12 of the General Conditions of the Contract for Construction, the following Unit Price Schedule may be used for additions and/or deletions to the Contract Work as the Construction Manager may direct.

1. Unit Price items shall be inclusive of all items of expense, including but not limited to applicable materials (delivered to the Job Site and unloaded), labor (including receiving, handling, scaffolding, distributing, storing, hoisting, installation, clean-up and protection), equipment, professional consulting services, drafting services, trucking, permits, appliances, supervision, engineering, taxes, insurance, overhead, profit and bonds.
2. Except where specific exceptions are indicated, it is understood that all equipment and material to be furnished is to be identical with that which is called for in the Specifications.
3. The Unit Price indicated for each item hereinafter described shall remain in effect for the duration of the Contract and shall apply to both additions and deletions. Any changes in the Work shall be computed on a net quantity basis multiplied by the Unit Price.
4. For all Directive changes (Unit Price, Lump Sum or Time & Material), rentals for equipment not listed under Attachment "A" hereto shall be based on a prorata portion as to the portion of the month used of the current monthly Blue Book rates; or by actual invoice from the Rental Agency, whichever is less.
5. The Owner reserves the right to choose Unit Price; Lump Sum; or Time & Material pricing in accordance with Article 12 of the GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION.

Item	Description	Unit Price	Unit of Measure
EROSION AND SEDIMENT CONTROL			
1	Sediment Barrier (Silt Fence)	\$1.00	LF
2	Mowing	\$110.00	AC
3	Staked Turbidity Barrier	N/A	LF
4	Floating Turbidity Barrier	\$12.00	LF
5	Inlet Protection System (Gutter Buddy or Approved Equivalent)	\$150.00	EA
6	Soil Tracking Device & Maintenance	\$4,500.00	EA
7	SWPPP Maintenance	\$1,690.00	ED
8	Water Quality/Flocking	N/A	LS
9	Site Stabilization- Sodding (Bahia)	\$3.00	SY
10	Site Stabilization- Sodding (St. Augustine)	\$8.00	SY
11	Site Stabilization- Seeding and Mulching	\$1.00	SY
12	Power Broom	\$730.00	ED
13	Street Sweeper (with Vacuum Pick-Up)	\$1,400.00	ED
MAINTENANCE OF TRAFFIC			
14	Traffic Control Off-Duty Law Enforcement Officer	\$90.00	HR
15	MOT Crew and Equipment	\$1,690.00	ED
16	Temporary Storm Drain Pipe <30" Diameter	\$95.50	LF
17	Temporary Storm Drain Pipe >30" Diameter	N/A	LF
18	Temporary Drainage Structures	\$3,800.00	EA
19	Commercial Material for Temp Driveway Maint.	\$60.00	CY
20	Work Zone Sign	\$0.25	ED
21	Business Sign	\$0.31	EA
22	Barrier Mounted Work Zone Sign	\$0.45	ED
23	Portable Changeable Message Sign (PCMS)	\$13.00	ED

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

24	Temporary Barrier, F&I, Low Profile, Concrete	\$32.00	LF
25	Temporary Barrier, F&I, Low Profile, Relocate	\$11.00	LF
26	Temporary Barrier, F&I, Anchored, Type K	\$46.00	LF
27	Temporary Barrier, F&I, Free Standing, Type K	\$35.00	LF
28	Channelizing Device: Types I, II, DI, VP, Drum, LCD	\$0.08	ED
29	Channelizing Device: Pedestrian LCD	\$0.06	ED
30	Temporary Crash Cushion, Redirect	N/A	LO
31	Arrow Board/ Advanced Warning Panel	\$6.00	ED
32	Type III Barricade	\$0.32	ED
33	Temporary Pavement (6" limerock base or equivalent w/ 2" asphalt)	\$83.00	SY
34	Temp. Fixed Tubular Markers (50' spacing) Wht 36"	\$66.00	EA
35	Temp Object Marker, Type 1	\$0.16	EA
36	Temporary Raised Pavement Marker (All Asphalt Layers except Final RPM Application)	\$5.00	EA
37	Pavement Markings, Standard, White Solid 6"	\$2,580.00	GM
38	Painted Pavement Markings, Standard, White, Solid for interchange and urban island, 8"	\$3,360.00	GM
39	Painted Pavement Markings, Standard, White, Solid for crosswalk and roundabout, 12"	\$1.70	LF
40	Painted Pavement Markings, Standard, White, Solid for diagonal or chevron, 18"	\$2.50	LF
41	Painted Pavement Markings, Standard, White, Solid for stop line or crosswalk, 24"	\$3.40	LF
42	Painted Pavement Markings, Standard, White, Skip, 10-30 or 3-9 skip, 6" wide	\$960.00	GM
43	Painted Pavement Markings, Standard, White, 2-4 dotted guideline/ 6-10 dotted extension, 6"	2.280.00	GM
44	Painted Pavement, White, 2-2 dotted guideline, 12" for roundabout	\$3,600.00	GM
45	Paint, Standard, Message or Symbol (Merge)	\$84.00	EA
46	Paint, Standard, Arrows (Merge, Turn)	\$42.00	EA
47	Pavement Markings, Standard, Yellow, Solid, 6"	\$2,580.00	GM
48	Painted Pavement Markings, Standard, Yellow Island Nose	\$4.80	SF
49	Clearing and Grubbing	\$28,700.00	AC
50	Regular Excavation	\$28.00	CY
51	Subsoil Excavation	\$33.00	CY
52	Embankment (Off-Site Source)	\$14.50	CY
53	Embankment (Stockpile Source)	\$11.40	CY
54	Embankment (Subsoil Replacement)	\$33.00	CY
ROADWAY			
55	12" Type B Stabilized Subgrade, LBR 40	\$11.00	SY
56	12" Type B Stabilized Subgrade, LBR 100	\$32.00	SY
57	8" Limerock Base (OBG06)	\$27.70	SY
58	12" Limerock Base (OBG11)	\$37.20	SY
59	7" Type B- 12.5 Asphalt Base (OBG11, B12.5 Only)	\$98.50	SY
60	Type SP Structural Course (Traffic D) (PG76-22)	\$234.00	TN

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

61	Friction Course Fe-5 (0.75") (Traffic D) (Pg82-10) (82 Tn)	N/A	TN
61A	Friction Course Fc-5 (0.75") (Traffic D) (Pg82-22) (82 Tn)	Not Priced	TN
62	Friction Course Fe-12.5 (1.5") (Traffic D) (Pg82-10) (6,839 Tn)	N/A	TN
62A	Friction Course Fc-12.5 (1.5") (Traffic D) (Pg82-22) (6,839 Tn)	Not Priced	TN
63	Mill Existing Asphalt Pavement Avg Depth 0.75"	\$12.50	SY
64	Mill Existing Asphalt Pavement Avg Depth 1.5"	\$9.25	SY
65	Miscellaneous Asphalt Pavement	\$720.00	TN
66	Concrete Pavement for Roundabout Apron, 12"	\$170.00	SY
67	Guardrail TL-3	\$41.00	LF
68	Special Guardrail Post	\$690.00	EA
69	Guardrail End Anchorage Assembly- Parallel Approach	\$3,840.00	EA
70	Guardrail Anchorage Assembly- Bridge Barrier	\$5,102.00	EA
71	Concrete Curb and Gutter, Type E	\$40.00	LF
72	Concrete Curb and Gutter, Type F	\$40.00	LF
73	Concrete Curb, Type D	\$40.00	LF
74	Concrete Curb, Ribbon (12" x 6")	N/A	LF
75	Concrete Curb and Gutter, Type RA	\$41.30	LF
76	Concrete Traffic Separator, Special-Variable Width	\$83.00	SY
77	Concrete Sidewalk/Driveway Apron, (6" thickness) fiber reinforced)	\$78.00	SY
78	Detectable Warnings	\$60.00	SF
79	Concrete Ditch Pavement, NR, 4"	\$71.00	SY
80	Type B Fence (7.1' to 8.0') w/ vinyl coating, w/scrim	\$104.00	LF
STORMWATER			
81	Pipe Culvert, OPT Material, Round, 18" S/CD	\$111.00	LF
82	Pipe Culvert, OPT Material, Round, 24" S/CD	\$166.00	LF
83	Pipe Culvert, OPT Material, Round, 30" S/CD	\$214.00	LF
84	Pipe Culvert, OPT Material, Round, 36" S/CD	\$276.00	LF
85	Pipe Culvert, OPT Material, Other, 36" S/CD (29" x 45")	\$439.00	LF
86	Pipe Culvert, OPT Material, Round, 48" S/CD	\$464.00	LF
87	Pipe Culvert, OPT Material, Round, 54" S/CD	\$575.00	LF
88	Inlets, Curb, Type P-1, <10'	\$8,631.00	EA
89	Inlets, Curb, Type P-1, >10'	\$11,124.00	EA
90	Inlets, Curb, Type P-2, <10'	\$9,147.00	EA
91	Inlets, Curb, Type P-2, >10'	\$11,100.00	EA
92	Inlets, Curb, Type P-5, <10'	\$7,234.00	EA
93	Inlets, Curb, Type J-1, <10'	\$12,893.00	EA
94	Inlets, DTBOT, Type B, <10', with slots w/pavement	\$6,982.00	EA
95	Inlets, DTBOT, Type D, <10'	\$5,143.00	EA
96	Inlets, DTBOT, Type D, <10', with slots w/pavement	\$7,017.00	EA
97	INLETS, DT BOT, TYPE D, <10', 5' X 15' J Bot	N/A	EA
98	Junction Box, Drainage, 4' X 19' - Manhole Top	N/A	EA

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

99	Junction Box, Drainage, 6' X 25.5' - Manhole Top	N/A	EA
100	Manholes, P-8, >10'	\$7,817.00	EA
101	Manholes, J-7, >10'	\$12,006.00	EA
102	Manholes, J-8, >10', 6'x6'	\$8,565.00	EA
103	Mitered End Section, Optional Round, 18" Cd, Single	\$3080.00	EA
104	Mitered End Section, Optional Round, 24" Cd, Single	\$3,124.00	EA
105	Mitered End Section, Optional Round, 30" Cd (3x30")	\$15,482.00	EA
106	Mitered End Section, Optional Round, 30" Cd, Single	\$5,125.00	EA
107	Mitered End Section, Optional Round, 36" Cd (2x36")	\$13,067.00	EA
108	Mitered End Section, Optional Round, 36" Cd (3x36")	\$20,379.00	EA
109	Mitered End Section, Optional Round, 36" Cd, Single	\$6,751.00	EA
110	Mitered End Section, Optional Round, 48" Cd (3x48")	\$28,749.00	EA
111	Straight Concrete Endwalls, 24", Tripple	\$16,833.00	EA
112	Straight Concrete Endwalls, 36", Double	\$9,020.00	EA
113	Straight Concrete Endwalls, 36", Tripple	\$13,259.00	EA
114	Straight Concrete Endwalls, 48", Double	N/A	EA
115	Straight Concrete Endwalls, 48", Single	N/A	EA
116	U-Endwall w/o Baffles, Index 261/430-011, 18"Pipe	\$4,233.00	EA
117	Desilt Existing Pipe (12" – 24")	NA	LF
118	Desilt Existing Pipe (30" – 36")	\$11.00	LF
119	Desilt Existing Pipe (42" – 54")	\$12.00	LF
120	Desilt Existing Box Culvert (Per Barrel)	\$25.00	LF
121	Riprap, Rubble, F&I, Ditch Lining, (Granite)	\$215.00	TN
122	Bedding Stone, F&I (Granite)	\$156.00	TN
123	Remove And Dispose Storm Structure (Includes Replacement Backfill)	\$1,210.00	EA
124	Remove And Dispose Storm Pipe (12"- 24") (Includes Replacement Backfill)	\$28.60	LF
125	Remove And Dispose Storm Pipe (30"- 36") (Includes Replacement Backfill)	\$31.00	LF
126	Remove And Dispose Storm Pipe (42"- 54") (Includes Replacement Backfill)	\$45.00	LF
STRUCTURES			
127	Concrete Class IV, Culverts	\$1,966.00	CY
128	Concrete Class II, Bridge Superstructure	\$875.00	CY
129	Concrete Class II, Approach Slabs	\$594.00	CY
130	Concrete Class IV, Substructure	\$1,469.00	CY
131	Bridge Deck Grooving	\$40.00	SY
132	Bridge Deck Planing	N/A	SY
133	Clean & Coat Concrete Surface, Class 5	N/A	SF
134	Composite Neoprene Pads	\$168.00	CF
135	Reinforced Steel - Roadway (Culverts)	\$1.50	LB
136	Reinforced Steel- Superstructure	\$1.55	LB
137	Reinforced Steel- Substructure	\$1.75	LB
138	Reinforced Steel- Approach Slabs	\$1.50	LB

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

139	Prestressed Beams: Florida-I Beam 36"	\$450.00	LF
140	Prestressed Concrete Piling, 24" SQ	\$214.00	LF
141	Prestressed Concrete Piling, 24" SQ - Chw Bridge Only	N/A	LF
142	Sheet Piling Steel, Temporary-Critical	\$82.00	SF
143	Test Piles-Prestressed Concrete, 24" SQ	\$512.00	LF
144	Concrete Traffic Rail- Bridge, 36" Single Slope	\$283.00	LF
145	Riprap- Rubble, Bank And Shore (Granite), F&I	\$180.00	TN
146	Bedding Stone (Granite), F&I	\$199.00	TN
POTABLE WATER MAIN			
147	8" Water Main, RMJ, DIP, F&I	\$112.00	LF
147A	10" Water Main, RMJ, DIP, F&I	\$123.00	LF
148	12" Water Main, RMJ, DIP, F&I	\$182.00	LF
149	16" Water Main, RMJ, DIP, F&I	\$148.00	LF
150	20" Water Main, RMJ, HDPE, F&I, Incl. All Components For Transition To MJ Utility Pipe	\$225.00	LF
151	18" Steel Casing, F&I, Jack & Bore	\$1,135.00	LF
152	30" Steel Casing, F&I, Jack & Bore	\$1,333.00	LF
153	18" Steel Casing, F&I, Open Cut	N/A	LF
154	30" Steel Casing, F&I, Open Cut	N/A	LF
155	2" ARV Assembly, F&I	\$5,471.00	EA
156	2" Blowoff, F&I	\$1,293.00	AS
157	Meter And Backflow Preventer Assembly	\$38,664.00	AS
158	8" DI 11.25° Bend, RMJ, F&I	\$802.00	EA
159	8" DI 22.5° Bend, RMJ, F&I	\$815.00	EA
160	8" DI 45° Bend, RMJ, F&I	\$818.00	EA
161	8" DI 90° Bend, RMJ, F&I	\$853.00	EA
162	8" DI Cap, RMJ, F&I	\$670.00	EA
163	8" DI GV, RMJ, F&I	\$2,702.00	EA
164	8" X 6" DI Tee, RMJ, F&I	\$956.00	EA
165	8" DI Tee, RMJ, F&I	\$1,050.00	EA
166	8" Wet Tap Sleeve & Valve, F&I	\$8,320.00	EA
166A	10" DI 11.25° Bend, RMJ, F&I	\$1,008.00	EA
166B	10" DI 22.5° Bend, RMJ, F&I	\$1,008.00	EA
166C	10" DI 45° Bend, RMJ, F&I	\$1,010.00	EA
166D	10" DI 90° Bend, RMJ, F&I	\$1,085.00	EA
166E	10" DI CAP, RMJ, F&I	\$585.00	EA
166F	10" DI GV, RMJ, F&I	\$3,724.00	EA
166G	10" Wet Tap Sleeve & Valve, F&I	N/A	EA
167	12" DI 90° Bend, RMJ, F&I	N/A	EA
168	12" DI 45° Bend, RMJ, F&I	\$1,283.00	EA
169	12" DI Cap, RMJ, F&I	\$965.00	EA
169A	12" DI GV, RMJ, F&I	\$4,485.00	EA
170	12" Wet Tap Sleeve & Valve, F&I	\$13,810.00	EA
171	16" DI 11.25° Bend, RMJ, F&I	\$1,999.00	EA
172	16" DI 22.5° Bend, RMJ, F&I	\$1,964.00	EA
173	16" DI 45° Bend, RMJ, F&I	\$1,991.00	EA
174	16" DI 90° Bend, RMJ, F&I	\$2,243.00	EA

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

175	16" DI CAP, RMJ, F&I	\$1,446.00	EA
176	16" DI GV, RMJ, F&I	\$8,242.00	EA
177	16" DI Tee, RMJ, F&I	\$2,874.00	EA
178	16" Wet Tap Sleeve & Valve, F&I	\$22,811.00	EA
178A	16" x 8" Tap Sleeve And Valve, F&I	\$11,008.00	EA
178B	16" x 10" DI Tee, RMJ, F&I	\$2,562.00	EA
179	16"X6" DI Tee, RMJ, F&I	\$2,175.00	EA
180	16"X8" DI Tee, RMJ, F&I	\$2,261.00	EA
180A	16"X8" DI Reducer, F&I	\$1,615.00	EA
181	16"X12" DI Tee, RMJ, F&I	\$2,493.00	EA
182	20" DI 11.25° Bend, RMJ, F&I	\$2,892.00	EA
183	20" DI 22.5° Bend, RMJ, F&I	\$2,916.00	EA
184	20" DI 45° Bend, RMJ, F&I	\$2,909.00	EA
185	20" DI Spool Piece (Straight Sleeve), RMJ, F&I	N/A	EA
186	20"X16" DI Red, RMJ, F&I	\$2,396.00	EA
187	Fire Hydrant Assembly (Excl. Mainline Fitting), F&I	\$16,129.00	AS
RECLAIMED WATER			
188	1" RCW, PVC SCH 40, F&I	\$41.00	LF
189	6" RCW, RMJ, DIP, F&I	\$103.00	LF
190	8" RCW, RMJ, DIP, F&I	\$132.00	LF
190A	12" RCW, RMJ, DIP, F&I	\$236.00	LF
191	16" RCW, RMJ, DIP, F&I	\$149.00	LF
192	20" RCW, RMJ, DIP, F&I	\$203.00	LF
192A	24" RCW, RMJ, DIP, F&I	\$452.00	LF
193	20" HDPE, Incl. All Components For Transition To Mj Utility Pipe, F&I	\$231.00	LF
194	24" RCW, HDPE, Incl. All Components For Transition To MJ Utility Pipe, F&I	\$348.00	LF
195	16" Steel Casing, F&I, Jack & Bore	\$1,108.00	LF
196	18" Steel Casing, F&I, Jack & Bore	\$1,118.00	LF
197	30" Steel Casing, F&I, Jack & Bore	\$1,362.00	LF
198	36" Steel Casing, F&I, Jack & Bore	\$1,854.00	LF
199	16" Steel Casing, F&I, Open Cut	N/A	LF
200	18" Steel Casing, F&I, Open Cut	N/A	LF
201	30" Steel Casing, F&I, Open Cut	N/A	LF
202	36" Steel Casing, F&I, Open Cut	N/A	LF
203	1" Tapping Saddle (6" X 1") for a 1" SCH 40 Tap, F&I	\$523.00	EA
204	2" ARV Assembly, F&I	\$5,486.00	EA
205	2" Blowoff, F&I	\$1,296.00	EA
206	6" DI 11.25° Bend, RMJ, F&I	\$649.00	EA
207	6" DI 22.5° Bend, RMJ, F&I	\$643.00	EA
208	6" DI 45° Bend, RMJ, F&I	\$655.00	EA
209	6" DI 90° Bend RMJ, F&I	\$676.00	EA
210	6" DI CAP, RMJ, F&I	\$542.00	EA
211	6" DI GV, RMJ, F&I	\$2,132.00	EA
212	6" Wet Tap Sleeve & Valve, F&I	\$6,369.00	EA
213	6" DIP Spool Piece (Straight MJ Sleeve), F&I	\$1,205.00	EA

EXHIBIT "E"
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213A	6"X3" Tee, RMJ, F&I	\$770.00	EA
214	8" DI 11.25° Bend, RMJ, F&I	\$802.00	EA
215	8" DI 22.5° Bend, RMJ, F&I	\$815.00	EA
216	8" DI 45° Bend, RMJ, F&I	\$818.00	EA
217	8" DI 90° Bend, RMJ, F&I	\$853.00	EA
218	8" DI Cap, RMJ, F&I	\$670.00	EA
219	8" DI GV, RMJ, F&I	\$2,702.00	EA
220	8" DI Tee, RMJ, F&I	\$501.00	EA
221	8" Wet Tap Sleeve & Valve, F&I	\$8,320.00	EA
222	8" DIP Spool Piece (Straight MJ Sleeve), F&I	\$1,380.00	EA
223	12" DI 45° Bend, RMJ, F&I	\$1,283.00	EA
224	12" DI 90° Bend, RMJ, F&I	\$1,360.00	EA
225	12" DI CAP, RMJ, F&I	.\$965.00	EA
226	12" DI GV, RMJ, F&I	\$4,485.00	EA
227	12" Wet Tap Sleeve & Valve, F&I	\$13,810.00	EA
228	12" DIP Spool Piece (Straight Mj Sleeve), F&I	N/A	EA
229	16" DI 11.25° Bend, RMJ, F&I	\$1,999.00	EA
230	16" DI 22.5° Bend, RMJ, F&I	\$1,964.00	EA
231	16" DI 45° Bend, RMJ, F&I	\$1,991.00	EA
232	16" DI 90° Bend, RMJ, F&I	\$2,243.00	EA
233	16" DI Cap, RMJ, F&I	\$1,446.00	EA
234	16" DI GV, RMJ, F&I	\$8,242.00	EA
235	16" DI Tee, RMJ, F&I	\$2,874.00	EA
236	16" Wet Tap Sleeve & Valve, F&I	N/A	EA
237	16" Tapping Sleeve & Valve, F&I	\$22,811.00	EA
238	16"X8" DI Tee, RMJ, F&I	\$2,870.00	EA
239	16"X8" Wet Tap Sleeve & Valve, F&I	11,008.00	EA
240	16"X12" DI Tee, RMJ, F&I	2,493.00	EA
241	16" Dip Spool Piece (Straight Mj Sleeve), F&I	N/A	EA
242	20" DI 11.25° Bend, RMJ, F&I	2,892.00	EA
243	20" DI 22.5° Bend, RMJ, F&I	2,916.00	EA
244	20" DI 45° Bend, RMJ, F&I	2,909.00	EA
245	20" DI 90° Bend, RMJ, F&I	3,442.00	EA
246	20" Dip Spool Piece (Straight Mj Sleeve), F&I	N/A	EA
247	20" DI GV, RMJ, F&I	18,147.00	EA
248	20" Wet Tap Sleeve & Valve, F&I	40,220.00	EA
249	20"X6" DI Tee, RMJ, F&I	3,212.00	EA
250	20"X8" DI Tee, RMJ, F&I	3,263.00	EA
251	20"X12" DI Tee, RMJ, F&I	3360.00	EA
252	20"X16" DI Tee, RMJ, F&I	3,465.00	EA
253	20"X16" DI Red, RMJ, F&I	2,395.00	EA
254	24" DI 11.25° Bend, RMJ, F&I	3,899.00	EA
255	24" DI 45° Bend, RMJ, F&I	3920.00	EA
256	24"X20" DI Red, RMJ, F&I	3,779.00	EA
SANITARY (FM AND GRAVITY)			
257	8" C900 PVC, RMJ FM, F&I	\$107.00	LF
257A	12" PVC DR18, RMJ FM, F&I	\$262.00	LF

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

257B	12" Camlock Connection, F&I	\$22,114.00	EA
257C	12" GV, RMJ FM, F&I	\$4,355.00	EA
258	20" PVC DR18, RMJ FM, F&I	\$262.00	LF
259	24" PVC SDR 35, Gravity, F&I	\$246.00	LF
260	36" Steel Casing, F&I	N/A	LF
261	60" Dia San Dog House MH (5'-9'-11" Depth), F&I	\$13,064.00	EA
262	60" Dia San Dog House MH (10' - 15' Depth), F&I	N/A	EA
263	60" Dia San MH (5'-10' Depth), F&I	\$12,977.00	EA
264	60" Dia San MH (10' - 15' Depth), F&I	\$13,064.00	EA
265	Tie-In Existing 6"-12" Sanitary Gravity (@DH), F&I	\$5,183.00	EA
266	Tie-In Existing 12"-18" Sanitary Gravity (@DH), F&I	N/A	EA
267	8" DI 45° Bend, RMJ, F&I	\$1,185.00	EA
268	20" DI 11.25° Bend, RMJ, F&I	\$4,310.00	EA
269	20" DI 22.5° Bend, RMJ, F&I	\$4,405.00	EA
270	20" DI 45° Bend, RMJ, F&I	\$35,081.00	EA
270A	20"X12" Tee, RMJ FM, F&I	\$5,423.00	EA
271	2" ARV Assembly, F&I	\$7,271.00	EA
WET UTILITIES - MISC.			
272	Utility Fixture- Line Stop Assy, F&I, 6", Includes Restraint Of Existing Pipe Per Table	\$6,562.00	EA
273	Utility Fixture- Line Stop Assy, F&I, 8", Includes Restraint Of Existing Pipe Per Table	\$9,375.00	EA
274	Utility Fixture- Line Stop Assy, F&I, 12", Includes Restraint Of Existing Pipe Per Table	\$17,470.00	EA
275	Utility Fixture- Line Stop Assy, F&I, 16", Includes Restraint Of Existing Pipe Per Table	\$23,838.00	EA
276	Utility Fixture- Line Stop Assy, F&I, 18", Includes Restraint Of Existing Pipe Per Table	N/A	EA
277	Utility Fixture- Line Stop Assy, F&I, 20", Includes Restraint Of Existing Pipe Per Table	\$34,777.00	EA
278	Utility Pipe, Plug & Place Out Of Serv,2-4.9" (Grouting Included)	\$16.00	LF
279	Utility Pipe, Plug & Place Out Of Serv,5-7.9" (Grouting Included)	\$20.00	LF
280	Utility Pipe, Plug & Place Out Of Serv,8-19.9" (Grouting Included)	\$23.00	LF
281	Utility Pipe, Plug & Place Out Of Serv,20-49.9" (Grouting Included)	\$215.00	LF
282	Utility Pipe, Remove- Dispose,2-4.9" (Includes All Replacement Backfill)	\$20.00	LF
283	Utility Pipe, Remove & Dispose,5-7.9" (Includes All Replacement Backfill)	\$23.00	LF
284	Utility Pipe, Remove & Dispose,8-19.9" (Includes All Replacement Backfill)	\$24.00	LF
285	Utility Pipe, Remove & Dispose, 20-49.9" (Includes All Replacement Backfill)	\$29.00	LF
286	6" Mechanical Restraint (For Existing Pipe) F&I	\$2,677.00	EA
287	8" Mechanical Restraint (For Existing Pipe) F&I	\$4,145.00	EA
288	12" Mechanical Restraint (For Existing Pipe), F&I	\$6,983.00	EA

EXHIBIT "E"
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289	16" Mechanical Restraint (For Existing Pipe), F&I	\$11,622.00	EA
290	18" Mechanical Restraint (For Existing Pipe), F&I	N/A	EA
291	20" Mechanical Restraint (For Existing Pipe), F&I	\$19,792.00	EA
ELECTRICAL			
292	Electrical Concrete Encased Duct Bank: 4-6in, 2-2in, F&I	\$419.00	LF
293	Electrical Concrete Encased Duct Bank: 8-6in, 2-2in, F&I	\$539.00	LF
294	Electrical Concrete Encased Duct Bank: 2-6in, 2-2in, F&I	\$329.00	LF
295	Electrical Concrete Encased Duct Bank: 4-6in, F&I	\$395.00	LF
295a	Electrical Concrete Encased Duct Bank: 4-6in, 1-2in, F&I	\$389.00	LF
296	Electrical Concrete Encased Duct Bank: 2-6in, F&I	\$309.00	LF
296a	Electrical Concrete Encased Duct Bank: 1-6in, 1-2in, F&I	\$319.00	LF
297	Electrical Direct Buried: 2-6in, 1-2in, F&I	\$114.00	LF
298	Electrical Direct Buried: 3-6in, F&I	\$98.00	LF
299	Electrical Direct Buried: 2-2in, F&I	\$39.90	LF
300	Electrical Direct Buried: 1-6in, 1-2in, F&I	\$65.00	LF
301	Electrical Direct Buried: 1-6in, F&I	\$52.00	LF
301A	Electrical Direct Buried: 2-6in, F&I	\$118.00	LF
301B	Electrical Direct Buried: 4-6in, 1-2in, F&I	\$189.00	LF
301C	Electrical Direct Buried: 4-6in, F&I	\$154.00	LF
301D	Electrical Direct Buried: 3-6in, 1-2in, F&I	\$166.00	LF
301E	Electrical Direct Buried: 1-4in, F&I	\$49.00	LF
302	Electrical Directional Drill: 4-6in, 2-2in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$187.00	LF
303	Electrical Directional Drill: 1-6in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$109.00	LF
304	Electrical Directional Drill: 2-6in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$129.90	LF
304A	Electrical Directional Drill: 2-6in, 2-2in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$169.85	LF
304B	Electrical Directional Drill: 2-6in, 1-2in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$164.20	LF
304C	Electrical Directional Drill: 1-4in, 1-2in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$159.00	LF
304D	Electrical Directional Drill: 1-4in (Includes Concrete End Encasements And Concrete Caps At Mh's), F&I	\$155.00	LF
305	Electrical Manhole, F&I 5'x7'x6.5' Rectangular, F&I	\$19,950.00	EA
306	Electrical Manhole, F&I 8'x8'x6' Octagonal, F&I	\$22,900.00	EA
307	Electrical Splicing & Terminating	\$5,190.00	EA
308	Electrical Tie-Ins (Manhole)	\$3,920.00	EA
309	Cable/Conductor Install - 6in	\$2,960.00	LF
310	Electrical Fiber Pullbox, F&I	\$7,450.00	EA

EXHIBIT "E"
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311	Electrical Fiber Optic (72 Strand), F&I	\$6.99	LF
312	Electrical Fiber Optic (24 Strand), F&I	\$6.09	LF
313	Fiber Splices / Terminations (72 Strand)	\$51.89	EA
314	Fiber Splices / Terminations (24 Strand)	\$51.89	EA
GAS			
315	8" Pipe Open Trench, F&I	\$174.00	LF
316	4" Pipe Open Trench, F&I	\$83.00	LF
317	2" Pipe Open Trench, F&I	\$64.00	LF
318	8" Hdd, F&I, Includes All Transition Components	\$242.00	LF
319	4" Hdd, F&I, Includes All Transition Components	\$121.00	LF
320	8" 90° Elbow, F&I	\$742.00	EA
321	8" 45° Elbow, F&I	\$654.00	EA
322	8" 22.5° Elbow, F&I	\$654.00	EA
323	8" 11.25° Elbow, F&I	\$654.00	EA
324	4" 90° Elbow, F&I	\$404.00	EA
325	4" 45° Elbow, F&I	\$396.00	EA
326	2" 90° Elbow, F&I	\$258.00	EA
327	2" Valve, V-800, F&I, Per Isolation Valve Details	\$2,000.00	AS
328	2" Valve, V-815, F&I, Per Isolation Valve Details	\$2,300.00	AS
329	1.25" Valve, V-850, F&I, Per Isolation Valve Details	\$2,640.00	AS
330	2" Valve, V-852, F&I, Per Isolation Valve Details	\$2,360.00	AS
331	4" Valve, V-852, F&I, Per Isolation Valve Details	\$2,530.00	AS
332	4" Valve, V-860, F&I, Per Isolation Valve Details	\$2,670.00	AS
333	2" Valve, V-882, F&I, Per Isolation Valve Details	\$2,420.00	AS
334	4" Valve, V-882, F&I, Per Isolation Valve Details	\$2,712.00	AS
335	8" Valve, V-890, F&I, Per Isolation Valve Details	\$11,445.00	AS
336	4" Valve, V-892, F&I, Per Isolation Valve Details	\$3,883.00	AS
337	8" Tee, F&I	\$1,016.00	EA
338	8" X 4" Tee, F&I	\$1,100.00	EA
339	4" Tee, F&I	\$549.00	EA
340	2" Tee, F&I	\$328.00	EA
341	8" X 4" Reducer, F&I	\$660.00	EA
342	4" X 2" Reducer, F&I	\$406.00	EA
343	4" X 1.25" Reducer, F&I	\$468.00	EA
344	2" X 1.5" Reducer, F&I	265.00	EA
345	8" Miter Joint, F&I	440.00	EA
346	4" Miter Joint, F&I	330.00	EA
347	Temporary Vent Valve Detail (Detail 7), F&I, (Includes Valve(S) And All Equipment Shown)	4337.00	AS
348	2" Vent Valve Assembly (Detail 10), F&I, (Includes Valve(S) And All Equipment Shown)	38250.00	AS
349	2" Vent Valve Assembly (Detail 11), F&I, (Includes Valve(S) And All Equipment Shown)	25182.00	AS
350	2" Vent Valve Assembly (Detail 12), F&I, (Includes Valve(S) And All Equipment Shown)	36480.00	AS
351	Line Marker (Detail 14), F&I	769.00	EA
352	Anode Installation And Test Station (Details 15 And 18) (2-Anode), F&I	2552.00	AS

EXHIBIT "E"
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353	Anode Installation And Test Station (Details 15 And 18) (5-Anode), F&I	9240.00	AS
354	Pipeline Insulator (Detail 16), F&I	11740.00	AS
355	Gas Main Transition (Detail 17) 2", F&I	1353.00	AS
CHILLED WATER			
356	Temp Chiller (Initial Connection) - Per Individual Temp Chiller Unit	NA	EA
357	Temp Chiller (Monthly Rental) - Per Individual Temp Chiller Unit	NA	MO
358	Temp Chiller Connections, Plus - Cut Cap	1980.00	EA
359	2" Pipe (Chs/Chr), F&I	NA	LF
360	12" Pipe (Chs/Chr), F&I	1604.00	LF
361	20" Pipe (Chs/Chr), F&I	1709.00	LF
362	30" Pipe (Chs/Chr), F&I	2121.00	LF
363	20" HDD (Chs/Chr), F&I, Includes All Needed Transition Components	NA	LF
364	30" HDD (Chs/Chr), F&I, Includes All Needed Transition Components	NA	LF
365	30" Steel Casing, F&I, J&B	2856.00	LF
366	36" Steel Casing, F&I, J&B	4245.00	LF
367	48" Steel Casing, F&I, J&B	2645.00	LF
368	30" Steel Casing, F&I, Direct Bury	NA	LF
369	36" Steel Casing, F&I, Direct Bury	NA	LF
370	48" Steel Casing, F&I, Direct Bury	NA	LF
371	30" Steel Casing End Closure Per Details	NA	EA
372	36" Steel Casing End Closure Per Details	49063.00	EA
373	48" Steel Casing End Closure Per Details	NA	EA
374	30" Steel Casing Closure Plate, F&I (Temporary/Future)	24643.00	EA
375	36" Steel Casing Closure Plate, F&I (Temporary/Future)	NA	EA
376	48" Steel Casing Closure Plate, F&I (Temporary/Future)	203656.00	EA
377	8" Pipe Grouting	66.00	LF
378	10" Pipe Grouting	70.00	LF
379	12" Pipe Grouting	75.00	LF
380	18" Pipe Grouting	82.00	LF
381	20" Pipe Grouting	85.00	LF
382	12" 45° Elbow, F&I	13433.00	EA
383	20" 90° Elbow, F&I	17934.00	EA
384	20" 45° Elbow, F&I	NA	EA
385	20" 22.5° Elbow, F&I	NA	EA
386	20" 11.25° Elbow, F&I	NA	EA
387	30" 90° Elbow, F&I	22305.00	EA
388	30" 45° Elbow, F&I	21491.00	EA
389	30" 22.5° Elbow, F&I	18581.00	EA
390	30" 11.25° Elbow, F&I	19406.00	EA
391	2" Valve, V-405, F&I	1639.00	EA
392	12" Valve, V-103, F&I	52975.00	EA

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
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393	20" Valve, V-103, F&I	75120.00	EA
394	30" Valve, V-103, F&I	125322.00	EA
395	8" Cap, F&I (Chs/Chr)	NA	EA
396	10" Cap, F&I (Chs/Chr)	NA	EA
397	12" Cap, F&I (Chs/Chr)	6738.00	EA
398	18" Cap, F&I (Chs/Chr)	NA	EA
399	20" Cap, F&I (Chs/Chr)	13437.00	AS
400	30" Cap, F&I (Chs/Chr)	15567.00	AS
401	20" Tee, F&I (Chs/Chr)	19756.00	EA
402	30" X 12" Tee, F&I	20243.00	EA
403	30" X 20" Tee, F&I	19238.00	EA
404	30" Tee, F&I	25014.00	EA
405	30" X 20" Reducer, F&I	18143.00	EA
406	20" X 10" Reducer, F&I	15876.00	EA
407	20" Miter Joint, F&I	NA	EA
408	30" Miter Joint, F&I	15257.00	EA
409	2" Terminus Piping W/ Bypass Assembly (Detail 7), F&I, All Pipe, Fittings And Equipment Per Detail	55092.00	AS
410	Auto Air Vent Assembly (Detail 6)	NA	AS
411	Thrust Block (Per Details)	55092.00	AS
412	Injection/Vent/Drain (Steel Pipe) (Detail 22)	7751.00	AS
413	Injection/Vent (Ac Pipe) (Detail 22a)	8298.00	AS
414	Grout Stop Plate (Detail 23) 8"	3473.00	EA
415	Grout Stop Plate (Detail 23) 10"	3633.00	EA
416	Grout Stop Plate (Detail 23) 12"	4535.00	EA
417	Grout Stop Plate (Detail 23) 18"	5213.00	EA
418	Grout Stop Plate (Detail 23) 20"	6766.00	EA
419	Grout Stop Plate (Detail 23) 30"	NA	EA
420	Concrete Filled Bollard (Detail 14)	7988.00	EA
421	Remove And Dispose Of Pipe 8" (Incl. Asbestos)	564.00	LF
422	Remove And Dispose Of Pipe 10" (Incl. Asbestos)	658.00	LF
423	Remove And Dispose Of Pipe 12" (Incl. Asbestos)	735.00	LF
424	Remove And Dispose Of Pipe 18" (Incl. Asbestos)	905.00	LF
425	Remove And Dispose Of Pipe 20" (Incl. Asbestos)	1128.00	LF
426	Remove And Dispose Of Pipe 30" (Incl. Asbestos)	NA	LF
424	Remove And Dispose Of Pipe 18" (Incl. Asbestos)	905.00	LF
COMMUNICATIONS (SMART CITY)			
427	Conduit, F&I, Open Trench (1 Run - 5 Runs) 4in Dia Conduit	\$99.50	LF
428	4in Conduit (1 Run - 5 Runs) Directional Bore, F&I	\$179.00	LF
429	Pull Box Type 1 (5'x7.5'x4'), F&I	\$18,900.00	EA
430	Pull Box Type 2 (2'x3'x3'), F&I	\$6,900.00	EA
431	Pull Box Type 3 (4'x4'x4'), F&I	\$11,080.00	EA
432	Pull Box Type 4 (30"X60"X30"), F&I	\$16,800.00	EA
433	CIP Box (8'x8'x7')	\$26,700.00	EA
SIGNALIZATION			
434	Conduit, F&I, Open Trench	\$24.90	LF
435	Conduit, F&I, Directional Bore	\$98.00	LF

EXHIBIT "E"
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436	Signal Cable - New Or Reconstructed Intersection, F&I	\$18.99	PI
437	Pull & Splice Box, F&I, 13" X 24" Cover Size	\$1,190.00	EA
438	Electrical Power Service, F&I, Ug, Purchased By Contractor From The Power Company	\$15,980.00	AS
439	Electrical Service Wire, F&I,	\$26.00	LF
440	Prestressed Concrete Pole, (Index 17725), F&I, Type P-Ii Service Pole	\$2,990.00	EA
441	Aluminum Signal Pole, F&I, Pedestal	\$2,080.00	EA
442	Aluminum Signal Pole, F&I; Pedestrian Detector Post	\$2,080.00	EA
443	Steel Mast Arm Assembly, F&I, Single Arm, 40'	\$59,800.00	EA
444	Steel Mast Arm Assembly, F&I, Double Arm, 50, 40'	\$84,900.00	EA
445	Vehicular Traffic Signal, F&I Aluminum, 3 Section, 1 Way	\$1,390.00	AS
446	Pedestrian Signal, F&I, Led Countdown, 1 Way	\$830.00	AS
447	Vehicle Detection System - Video, F&I, Cabinet Equipment	\$17,900.00	EA
448	Vehicle Detection System - Video, F&I, Above Ground Equipment	\$3,950.00	EA
449	Signal Priority And Preemption System, F&I, GPS. Cabinet Electronics	\$7,600.00	EA
450	Signal Priority And Preemption System, F&I, GPS, Detector	\$9,450.00	EA
451	Pedestrian Detector, F&I, Standard	\$660.00	EA
452	Traffic Controller Assembly, F&I, Nema, One Preemption Plan	\$34,800.00	AS
453	Managed Field Ethernet Switch, Layer 2	\$4,620.00	EA
454	Uninterruptible Power Supply, F&I, Online/Double Conversion, Installed Within Cabinet	\$9,900.00	EA
455	Internally Illuminated Sign, F&I, Overhead Mount, 12-18 Sf	\$5,650.00	EA
SIGNING AND PAVEMENT MARKINGS			
456	Overhead Static Sign Structure, Furnish & Install, Cantilever, 41-50 Ft	\$176,900.00	EA
457	Oh Static Sign Str, F&I, Truss, 101-150 Ft	\$239,860.00	AS
458	Single Post Sign, F&I Ground Mount, Up To 12 Sf (WDW Current Spec)	5055.00	AS
459	Single Post Sign, F&I Ground Mount, 12-20 Sf (WDW Current Spec)	5760.00	AS
460	Single Post Sign, Relocate	2460.00	AS
461	Single Post Sign, Remove	212.00	AS
462	Multi- Post Sign, Remove	3030.00	AS
463	Multi-Post Sign, F&I Ground Mount, 51-100 Sf (WDW Current Spec)	52200.00	AS
464	Multi-Post Sign, F&I Ground Mount, 201-300 Sf (WDW Current Spec)	66702.00	EA
465	Sign Panel, Furnish & Install Overhead Mount, 201-300 Sf (WDW Current Spec)	66702.00	EA
466	Raised Pavement Marker, Type B Final Surface Markings	5.10	LS
467	Painted Pavement Markings - Final Surface	35760.00	GM

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
Contract No.: C006110

468	Thermoplastic, Standard, White, Solid, 6"	6960.00	GM
469	Thermoplastic, Standard, White, Solid, 8"	11400.00	LF
470	Thermoplastic, Standard, White, Solid, 12" For Crosswalk And Roundabout	4.30	LF
471	Thermoplastic, Standard, White, Solid, 18" For Diagonals And Chevrons	6.50	LF
472	Thermoplastic, Standard, White, Solid, 24" For Stop Line And Crosswalk	8.70	EA
473	Thermoplastic, Standard, White, Message Or Symbol	624.00	EA
474	Thermoplastic, Standard, White, Arrow	336.00	GM
475	Thermoplastic, Standard, Yellow, Solid, 6"	6960.00	GM
476	Thermoplastic, Standard, White, Skip, 6",10-30 Skip Or 3-9 Lane Drop	1920.00	GM
477	Thermoplastic, Standard, White, 2-4 Dotted Guideline/ 6-10 Gap Extension, 6"	3000.00	GM
478	Thermoplastic, Standard, White, 2-2 Dotted Guideline, 12" For Roundabout	12672.00	GM
479	Permanent Tape, White, Solid, 6" (6" White W/ 1.5" Black Contrast Borders) For Concrete Bridges	69600.00	GM
480	Permanent Tape, White, 10-30 Skip, 9" (6" White W/ 1.5" Black Contrast Borders) For Concrete Bridges	25200.00	GM
481	Permanent Tape, Yellow, Solid, 9" (6" Yellow W/ 1.5" Black Contrast Borders) For Concrete Bridges	69600.00	EA
ITS			
482	Conduit, F&I, Open Trench	\$24.90	LF
483	Conduit, F&I, Directional Bore	\$89.00	EA
484	Fiber Optic Cable, F&I, Underground, 1-12 Fibers	\$4.39	EA
485	Fiber Optic Cable, F&I, Underground, 49-96 Fibers	\$4.99	EA
486	Fiber Optic Connection, Install, Splice	\$51.89	EA
487	Fiber Optic Connection Hardware, F&I, Splice Enclosure	\$119.00	EA
488	Fiber Optic Connection Hardware, F&I, Splice Tray	\$68.50	EA
489	Fiber Optic Connection Hardware, F&I, Preterminated Connection Assembly	\$164.00	EA
490	Fiber Optic Connection Hardware, F&I, Patch Panel - Field Terminated	\$1,596.00	EA
491	Fiber Optic Connection Hardware, F&I, Connector Panel	\$136.20	EA
492	Pull & Splice Box, F&I, 13" X 24" Cover Size	\$2,160.00	EA
493	Pull & Splice Box, F&I, 24" X 36" Cover Size	\$3,240.00	LF
494	Pull & Splice Box, F&I, 30" X 60" Rectangular Or 36" Round Cover Sizecover Size	\$5,140.00	EA
495	Managed Field Ethernet Switch, F&I	\$4,620.00	EA
LIGHTING			
496	Conduit, Furnish & Install, Open Trench (2")	\$19.95	LF
497	Conduit, Furnish & Install, Directional Bore (2")	\$56.20	EA
498	Conduit, Furnish & Install, Embedded Concrete Barriers And Traffic Railings (2")	\$88.90	EA
499	Pull & Splice Box, F&I, 13" X 24" Cover Size	\$2,190.00	EA

EXHIBIT "E"
SCHEDULE OF UNIT PRICES
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500	Electrical Power Service, F&I, Underground, Meter Purchased By Contractor	\$15,980.00	EA
501	Electrical Service Wire, Furnish & Install	\$26.00	EA
502	Prestressed Concrete Pole, F&I, Type P-Ii Pedestal	\$2,990.00	EA
503	Lighting Conductors, F&I, Insulated, No. 8 - 6	\$4.99	EA
504	Lighting Conductors, F&I, Insulated, No. 4 - 2	\$7.15	EA
505	Light Pole Complete, F&I, Steel Tapered, Standard Foundation, 45' Mounting Height, Includes Bracket/Arm (Per RCID Spec)	\$17,325.00	EA
506	Luminare (Specified In Pole Data Table) 186 Watt	N/A	EA
507	Luminare (Specified In Pole Data Table) 140 Watt	N/A	
508	Light Pole Complete, Remove Pole And Foundation	\$3,190.00	LF
509	Load Center, F&I, Includes Connection Fees	\$15,980.00	LF
510	Pole Cable Distribution System, Conventional	\$799.00	LF

End of Exhibit "E"

REEDY CREEK IMPROVEMENT DISTRICT
ATTACHMENT “1” of EXHIBIT “E”
Schedules of Hourly Wage rates and Contractor-Owned Equipment Rates
 Contract No.: C006110

The following is an integral attachment to the aforementioned Exhibit “E”, Schedule of Unit Prices, and together with the Unit Prices, may be utilized as the basis for adjustments to the Contract Sum for additions to and deletions from the Contract Work, as the Owner’s Representative may direct, in accordance with Article 12 of the General Conditions of the Contract for Construction. The rates contained in this schedule shall be subject to all restrictions and provisions set forth in Exhibit “B” Schedule of Unit Prices. All Hourly Wage Rates are inclusive of Contractor’s overhead, profit and cost of all employee burdens, benefits, insurance and Worker’s Compensation coverage. Upon request by the Owner’s Representative, the Contractor shall provide, as supporting data, evidence of the direct cost of labor, Contractor’s overhead, profit and each category of employee burden, benefit and related cost. Overtime rates are applicable to a five-day workweek for hours worked in excess of 40 hours per week, excluding weekends and holidays.

A. Hourly Wage Rates:

Wage rates shall remain in effect through Contract Completion

Labor Category	Total Straight Time Hourly Wage Rate	Total Overtime Hourly Wage Rate
Carpenter	\$58.65	\$87.98
Carpenter Foreman	\$64.27	\$96.41
Carpenter Laborer	\$48.83	\$73.25
Concrete Finisher	\$48.83	\$73.25
Concrete Laborer (Skilled)	\$43.46	\$65.19
Concrete Laborer (Unskilled)	\$36.42	\$54.63
Laborer- Foreman	\$53.86	\$80.79
Flagman	\$40.17	\$60.26
Laborer/Rough Roller Operator	\$35.88	\$53.82
Laborer- Skilled	\$43.46	\$65.19
Laborer- Unskilled	\$36.42	\$54.63
Mechanic	\$68.56	\$102.84
MOT Flagman	\$40.17	\$60.26
MOT Foreman/Supervisor	\$55.96	\$83.94
MOT Laborer	\$40.17	\$60.26
MOT Operator	\$47.13	\$70.70
MOT/Safety Site Superintendent	\$103.01	\$154.52
Operator- Backhoe	\$62.69	\$94.04
Operator- Crane	\$83.84	\$125.76
Operator- Dozer	\$47.13	\$70.70
Operator- Equipment (Misc.)	\$53.88	\$80.82
Operator- Foreman	\$50.86	\$76.29
Operator- Loader (Rough)	\$43.13	\$64.70
Operator- Loader (Finish)	\$52.15	\$78.23
Operator- Grader (Rough)	\$73.29	\$109.94
Operator- Grader (Finish)	\$90.63	\$135.95
Operator- Off Road Trucks	\$39.79	\$59.69
Operator- Water Truck	\$52.67	\$79.01
Pile Driver	\$49.18	\$73.77
Pile Driver- Foreman	\$61.48	\$92.22
Pile Driver- Journeyman	\$47.95	\$71.93
Pile Driver- Laborer	\$37.45	\$56.18
Pile Driver- Welder	\$65.58	\$98.37

REEDY CREEK IMPROVEMENT DISTRICT
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Backhoe Operator (Pipe Crew)	\$62.69	\$94.04
Pipe Foreman	\$83.56	\$125.34
Pipe Laborer (Skilled)	\$41.79	\$62.69
Pipe Laborer (Unskilled)	\$36.42	\$54.63
Pipelayer	\$51.42	\$77.13
Loader Operator (Pipe Crew)	\$43.13	\$64.70
Equipment Operator (Pipe Misc.)	\$43.13	\$64.70
Pipe/Utility Superintendent	\$128.77	\$193.16
Pipe Tailman	\$41.79	\$62.69
QC Clerk	\$93.37	\$140.06
QC Manager	\$126.18	\$189.27
QC Field Technician	\$100.94	\$151.41
Bridge/Structural Superintendent	\$129.87	\$194.81
Field Office Clerk	\$53.56	\$80.34
Bridge Foreman	\$72.84	\$109.26
Field Security/ Nights-Weekends	\$35.83	\$53.75
Project/ Road Foreman	\$74.99	\$112.49
Project Engineer	\$86.82	\$130.23
Project Manager	\$152.30	\$228.45
Project Safety Manager	\$108.15	\$162.23
Project Superintendent	\$138.83	\$208.25
Survey- Instrument Man	\$73.94	\$110.91
Surveyor- Crew Chief	\$123.61	\$185.42
Survey- Rodman	\$48.72	\$73.08
Fuel/Lube Truck Driver	\$51.42	\$77.13
Truck/Transport Driver	\$49.28	\$73.92
Truck Driver	\$49.28	\$73.92

B. Contractor-owned Equipment Rates:

The table below lists each type of Contractor-owned equipment to be utilized in the performance of the Work and the hourly, daily, weekly and monthly rate corresponding to each. Each and every listed rate is an all-inclusive rate, which includes but is not necessarily limited to, the cost of purchasing, leasing, maintaining, licensing, transporting and fueling the equipment, the Contractor’s overhead and any profit to be derived by the Contractor from the use of the equipment pursuant to the Agreement, and is not subject to additional markup by the Contractor. Each and every equipment rate shall remain in effect for the duration of the Contract and shall apply for the purpose of calculating changes to the amount of the Contract Sum attributable to both additions to and deletions from the Work (collectively, changes to the Work). Any costs for such equipment that are attributable to changes to the Work shall be computed on a net hourly, daily, weekly or monthly basis, as applicable, multiplied by the corresponding rate. The rates applied in such computations shall be strictly applied in the following manner: the hourly rate shall be applied when the equipment is utilized for less than one (1) eight-hour day; the daily rate shall be applied when the equipment is utilized for more than one (1) but less than five (5) consecutive days; the weekly rate shall be applied when the equipment is utilized for more than five (5) consecutive days but less than four (4) consecutive weeks; and, the monthly rate shall be applied when the equipment is utilized for four (4) or more consecutive weeks, including any net portions thereof, which shall be applied on a prorated basis. The equipment rates set forth below are exclusive of the cost of Labor, if any, that is necessary to operate the equipment. The equipment rates included in the list below do not apply to rented equipment, the costs for which are subject to the corresponding provisions set forth in Article 12 of the General Conditions of the Contract for Construction.

REEDY CREEK IMPROVEMENT DISTRICT
ATTACHMENT "1" of EXHIBIT "E"
Schedules of Hourly Wage rates and Contractor-Owned Equipment Rates
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EQUIPMENT TYPE	HOURLY RATE	DAILY RATE	WEEKLY RATE	MONTHLY RATE
Air Compressor W/ Tools	\$27.54	\$220.32	\$1,101.60	\$4,773.51
Bridge Deck Paver - Auto	\$66.70	\$533.60	\$2,668.00	\$11,561.11
Work Bridge	\$26.75	\$214.00	\$1,070.00	\$4,636.58
Bridge Deck Paver - Manual	\$20.70	\$165.60	\$828.00	\$3,587.93
Wet Cure System	\$28.75	\$230.00	\$1,150.00	\$4,983.24
Air Compressor W/Tools	\$27.54	\$220.32	\$1,101.60	\$4,773.51
3" Diaphragm Pump Mud Hog	\$9.11	\$72.88	\$364.40	\$1,579.04
Plate Compactor	\$18.22	\$145.76	\$728.80	\$3,158.07
Welding Mach	\$15.59	\$124.72	\$623.60	\$2,702.21
Walk Behind Saw	\$8.37	\$66.96	\$334.80	\$1,450.77
Generator Gas	\$8.28	\$66.24	\$331.20	\$1,435.17
2 CY Concrete Bucket	\$10.01	\$80.08	\$400.40	\$1,735.03
Flexible Shaft Vibrator	\$6.90	\$55.20	\$276.00	\$1,195.98
Utility Vehicle/ATV (Gator)	\$25.67	\$205.36	\$1,026.80	\$4,449.38
Forklift	\$36.80	\$294.40	\$1,472.00	\$6,378.54
Articulating Boom Lift	\$103.49	\$827.92	\$4,139.60	\$17,937.92
Trackhoe (Mini)	\$49.27	\$394.16	\$1,970.80	\$8,539.97
Rubber Tire Excavator (Medium)	\$142.60	\$1,140.80	\$5,704.00	\$24,716.86
Trackhoe (Small- 1-1/2 Cy)	\$128.30	\$1,026.40	\$5,132.00	\$22,238.24
Trackhoe (Medium)	\$163.78	\$1,310.24	\$6,551.20	\$28,387.99
Trackhoe (Med.)(GPS)	\$177.58	\$1,420.64	\$7,103.20	\$30,779.94
Trackhoe (Large)	\$190.92	\$1,527.36	\$7,636.80	\$33,092.16
Comb Backhoe (Small)	\$58.32	\$466.56	\$2,332.80	\$10,108.61
Comb Backhoe (Large)	\$80.14	\$641.12	\$3,205.60	\$13,890.67
Trackhoe (Large)(GPS)	\$208.93	\$1,671.44	\$8,357.20	\$36,213.84
Trackhoe (LG)(50'+ Longstick	\$101.20	\$809.60	\$4,048.00	\$17,541.00
Trackhoe (Ex Large)	\$281.06	\$2,248.48	\$11,242.40	\$48,716.13
Trackhoe (Heavy)	\$345.00	\$2,760.00	\$13,800.00	\$59,798.85
Bidwell Deck Finisher	\$62.10	\$496.80	\$2,484.00	\$10,763.79
Broom Tractor	\$62.69	\$501.52	\$2,507.60	\$10,866.06
Concrete/Cement Mixer	\$10.57	\$84.56	\$422.80	\$1,832.10
Concrete Pump (Small)	\$15.20	\$121.60	\$608.00	\$2,634.62
All Terrain Crane	\$51.75	\$414.00	\$2,070.00	\$8,969.83
Hydraulic Crane (80 Ton)	\$109.25	\$874.00	\$4,370.00	\$18,936.30
25 Ton Off Road Truck	\$214.51	\$1,716.08	\$8,580.40	\$37,181.02
40 Ton Off Road Truck	\$250.42	\$2,003.36	\$10,016.80	\$43,405.30
Hydrema 912 Off Road Truck	\$63.19	\$505.52	\$2,527.60	\$10,952.72

REEDY CREEK IMPROVEMENT DISTRICT
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Tractor Disc	\$6.90	\$55.20	\$276.00	\$1,195.98
Dump Truck (Rented)	\$63.25	\$506.00	\$2,530.00	\$10,963.12
1-3 Cy Finish Dozer	\$118.94	\$951.52	\$4,757.60	\$20,615.87
1-3 Cy Finish Dozer (W/GPS)	\$152.84	\$1,222.72	\$6,113.60	\$26,491.76
D5m LGP Dozer	\$145.58	\$1,164.64	\$5,823.20	\$25,233.38
3-4 CY Dozer Articulated	\$128.92	\$1,031.36	\$5,156.80	\$22,345.70
3-4 CY Dozer Articulated (W/GPS)	\$143.03	\$1,144.24	\$5,721.20	\$24,791.39
4-5 CY Dozer Articulated	\$155.38	\$1,243.04	\$6,215.20	\$26,932.02
4-5 CY Dozer Articulated (W/GPS)	\$169.18	\$1,353.44	\$6,767.20	\$29,323.97
5-6 CY Dozer - Fixed Blade	\$193.48	\$1,547.84	\$7,739.20	\$33,535.89
D6r LGP Dozer	\$147.55	\$1,180.40	\$5,902.00	\$25,574.84
Generator (Gas)	\$9.20	\$73.60	\$368.00	\$1,594.64
GPS/TS Survey Equip.	\$10.35	\$82.80	\$414.00	\$1,793.97
Highboy Deck Trailer	\$13.80	\$110.40	\$552.00	\$2,391.95
4" Hydraulic Pump	\$26.45	\$211.60	\$1,058.00	\$4,584.58
6" Hydraulic Pump	\$35.42	\$283.36	\$1,416.80	\$6,139.35
8" Hydraulic Pump	\$38.35	\$306.80	\$1,534.00	\$6,647.21
Loader (1-2 CY)	\$66.06	\$528.48	\$2,642.40	\$11,450.18
Loader (2-3 CY)	\$69.33	\$554.64	\$2,773.20	\$12,016.97
Loader (3-4 CY)	\$87.65	\$701.20	\$3,506.00	\$15,192.37
Loader (4-5 CY)	\$82.09	\$656.72	\$3,283.60	\$14,228.66
Loader (5-6 CY)	\$101.20	\$809.60	\$4,048.00	\$17,541.00
Lite Plant	\$20.18	\$161.44	\$807.20	\$3,497.80
Lowboy Transport/Tractor	\$81.16	\$649.28	\$3,246.40	\$14,067.46
12' Moldboard Motor Grader	\$95.50	\$764.00	\$3,820.00	\$16,553.02
14' Moldboard Motor Grader	\$139.34	\$1,114.72	\$5,573.60	\$24,151.80
14' Moldboard Motor Grader (W/GPS)	\$159.53	\$1,276.24	\$6,381.20	\$27,651.33
Small Mower (60")	\$20.70	\$165.60	\$828.00	\$3,587.93
Off Road Manlift (Rental)	\$41.40	\$331.20	\$1,656.00	\$7,175.86
12" Vac Trash Pump (Hi Volume)	\$32.37	\$258.96	\$1,294.80	\$5,610.69
6" Vacuum Trash Pump	\$53.68	\$429.44	\$2,147.20	\$9,304.35
3" Diaphragm Pump (Mud Hog)	\$8.31	\$66.48	\$332.40	\$1,440.37
Double Diaphragm Mud Hog Pump	\$18.70	\$149.60	\$748.00	\$3,241.27
Pickup Truck	\$23.58	\$188.64	\$943.20	\$4,087.12
Pickup- Mot Crew	\$69.91	\$559.28	\$2,796.40	\$12,117.50
Pickup- Pipe Crew (W/Tools)	\$49.83	\$398.64	\$1,993.20	\$8,637.03
Project Mgr Pickup (Leased)	\$14.49	\$115.92	\$579.60	\$2,511.55
Pickup- Qc Manager	\$16.51	\$132.08	\$660.40	\$2,861.68

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ATTACHMENT "1" of EXHIBIT "E"
Schedules of Hourly Wage rates and Contractor-Owned Equipment Rates
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Pickup- Superintendent	\$25.04	\$200.32	\$1,001.60	\$4,340.18
Pickup-Surveyor (Truck Only)	\$25.88	\$207.04	\$1,035.20	\$4,485.78
Rake Attachment For Loader	\$12.14	\$97.12	\$485.60	\$2,104.23
Steel Wheel Roller (Non-Vibratory)	\$73.85	\$590.80	\$2,954.00	\$12,800.42
Pneumatic Wheel Roller	\$153.74	\$1,229.92	\$6,149.60	\$26,647.75
Load Scanner	\$20.70	\$165.60	\$828.00	\$3,587.93
Skid Steer Loader (Small)	\$76.36	\$610.88	\$3,054.40	\$13,235.48
Skid Steer (Track) Loader Large	\$92.78	\$742.24	\$3,711.20	\$16,081.56
Stab Mixer (Wirtgen Wr200 Xli)	\$456.72	\$3,653.76	\$18,268.80	\$79,163.28
Striping Remover/Eraser	\$32.43	\$259.44	\$1,297.20	\$5,621.09
Jumping Jack Compactor	\$10.48	\$83.84	\$419.20	\$1,816.50
Vibratory Plate Compactor	\$3.11	\$24.88	\$124.40	\$539.06
Flat Bed 1 Ton	\$29.90	\$239.20	\$1,196.00	\$5,182.57
Flat Bed 2-5 Ton	\$44.45	\$355.60	\$1,778.00	\$7,704.52
Tractor W/Mower	\$34.50	\$276.00	\$1,380.00	\$5,979.89
Tractor (No Attachments)	\$41.40	\$331.20	\$1,656.00	\$7,175.86
Trench Box (Small)	\$7.39	\$59.12	\$295.60	\$1,280.91
Trench Box (Large)	\$9.41	\$75.28	\$376.40	\$1,631.04
Wheel Trencher (Large)	\$40.25	\$322.00	\$1,610.00	\$6,976.53
Vacuum Locator (Vactron)	\$116.04	\$928.32	\$4,641.60	\$20,113.21
Vibratory Roller (Small)	\$93.25	\$746.00	\$3,730.00	\$16,163.02
Vibratory Roller (Medium)	\$119.55	\$956.40	\$4,782.00	\$20,721.60
Vibratory Roller (Large)	\$135.10	\$1,080.80	\$5,404.00	\$23,416.88
Vibratory Roller (Pipe Crew)	\$94.71	\$757.68	\$3,788.40	\$16,416.08
Walk Behind Saw	\$9.20	\$73.60	\$368.00	\$1,594.64
Barrier Wall Lift Hook	\$5.83	\$46.64	\$233.20	\$1,010.51
Welder (Gas Powered)	\$17.64	\$141.12	\$705.60	\$3,057.54
Road Widener	\$119.60	\$956.80	\$4,784.00	\$20,730.27
10" Well Point Pump	\$57.62	\$460.96	\$2,304.80	\$9,987.27
12" Well Point Pump	\$50.60	\$404.80	\$2,024.00	\$8,770.50
6" Well Point Pump	\$34.50	\$276.00	\$1,380.00	\$5,979.89
8" Well Point Pump	\$43.01	\$344.08	\$1,720.40	\$7,454.92
Water Truck (On Road)	\$80.34	\$642.72	\$3,213.60	\$13,925.33
Water Truck (Off Road)	\$84.74	\$677.92	\$3,389.60	\$14,687.98
Fuel Truck	\$73.40	\$587.20	\$2,936.00	\$12,722.42

End of Attachment "1" Exhibit "E"

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(i) Definitions:

The following is a list of defined terms and their corresponding meaning as they appear within this document:

Contractor: The word, Contractor, as it appears within this document, means the Contractor or the Consultant as named and as defined within the Agreement. The Contractor’s, rights, privileges, duties and obligations, as set forth herein also apply to each of its Sub-contractors and Sub-subcontractors and the suppliers of each and to the Consultant and each of its Sub-consultants and Sub-subconsultants and the suppliers of each.

Owner: The word, Owner, as it appears within this document, means the Owner, acting on its own behalf, or the Owner’s Representative, acting on the Owner’s behalf, each as named and defined within the Agreement, together with their designated representative(s).

I. GENERAL SAFETY REQUIREMENTS, CONTRACTOR PARKING AND ACCESS, BREAK AREAS

The Owner is dedicated to establishing and maintaining a safe work environment on all of its sites. Accordingly, the Contractor is obligated to strictly abide by the safety regulations and requirements set forth within these Special Contract Conditions. Flagrant disregard for safety regulations and requirements by the Contractor may result in disciplinary action up to and including immediate suspension of all relevant work activities and permanent removal of the responsible party, individual (or both) from the Owner’s property.

All workers must maintain appropriate and respectful behavior at all times. The following behaviors are not allowed and may result in disciplinary action up to and including immediate removal from the property:

- a) Fighting
- b) Horseplay
- c) Possession of firearms
- d) Possession/use of alcohol/drugs

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Work performed must be planned and communicated prior to starting and must incorporate safety into the planning. This shall take the form of a Project Site-Specific Safety Plan (“PSSP”), a hazard analysis, pre-task planning, etc. The type of planning used should be based on the complexity of the project and the associated safety hazards. Do not begin work before safety measures are in place and training is complete. Any changes to the PSSP must be communicated to the Owner.

All workers, including managers and supervisors, shall have the proper training and instruction on general safety requirements for the project as well as any task or equipment specific training required to complete the project. This also includes temporary workers. Awareness-type training is not sufficient where task or equipment specific training is required.

No one shall knowingly be permitted to work while their ability or alertness is so impaired by fatigue, illness, or other cause that they may expose themselves or others to injury.

All jobsite emergencies shall be reported immediately. For fire or medical emergencies, call 911 and ask for REEDY CREEK IMPROVEMENT DISTRICT. Report all emergencies to an immediate supervisor, the project manager and the Owner.

All work-related materials must be stored in an orderly fashion, keeping exits, access ways, walkways and sidewalks unobstructed. Work areas must be kept as clean and free of debris as practicable. Trash cans must be provided for refuse.

Smoking, “vaping”, and smokeless tobacco use will be permitted in designated areas only. The Owner reserves the right to designate these areas on a project.

Workers shall not engage in any activity, including cell phone usage, which diverts their attention while actually engaged in performing work. This includes operating vehicles and equipment. If cell phone usage is the primary means of communication, then it must be used in hands-free mode. The use of ear buds is prohibited.

No one shall ride in a vehicle or mobile equipment unless they are on a seat, with the exceptions of aerial work platforms (“AWPs”) and other equipment designed to be ridden while standing. Riding in the back of pick-ups shall not be allowed.

Seatbelts must be used when provided in any type of vehicle, including but not limited to, personal vehicles, industrial trucks, haulage, earth moving, and material handling vehicles. Seatbelts must also be used in a personal transport vehicle (“PTV”) if so equipped.

Posted speed limits and other traffic signs shall be observed at all times. Stop for personnel in and/or entering a crosswalk as they have the right of way.

Do not pass or drive around busses when they are loading, unloading, or stopped in a driving lane.

Park in authorized areas only. Do not block or obstruct intersections, fire lanes or fire hydrants, traffic lanes, pedestrian walkways, driveways or parking lot entrances. Vehicles parked in unauthorized places may be towed without notice at the vehicle owner’s expense.

Fresh drinking water must be provided at construction job sites. If a cooler is used instead of bottled water, then it must be maintained in a sanitary condition, be capable of being tightly closed, equipped with a tap, and clearly marked as to its content. Disposable cups must be provided. Trash cans must be provided for the disposable cups and/or bottles.

Portable restrooms and hand washing facilities must be provided, if needed, and must be maintained in a clean and sanitary condition. Portable restrooms must meet Florida Administrative Code 64E-6.0101. The Owner reserves the right to determine the location of these facilities.

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II. CONSTRUCTION SITE MINIMUM PERSONAL PROTECTIVE EQUIPMENT (“PPE”) AND CLOTHING REQUIREMENTS

The Contractor shall require that all workers within the construction limits always wear/utilize personal protective equipment (“PPE”), including but not limited to the following: hard hats, safety glasses, high visibility vests or shirts, construction/work-grade footwear and long pants. Additional PPE shall be utilized when other specific hazards are present as defined by the Project Specific Safety Plan (“PSSP”). All PPE must meet current Occupational Safety and Health Administration (“OSHA”) and American National Standards Institute (“ANSI”) requirements. The Owner reserves the right of final decision, in its sole and absolute discretion, as to whether the PPE utilized meets project requirements. “Cowboy” and similar novelty hard hats are not permitted. Sleeveless shirts are not permitted. All high-visibility clothing is to be monitored closely to ensure that all items retain the protective qualities provided by the manufacturer. Vests and shirts that have become faded are to be replaced and shall not be worn while performing work on the Owner’s job site. Shirts designed to be worn by the general public, such as those endorsing sports teams or other products or services, even if they are yellow, green, or orange, are not considered high-visibility shirts and do not meet the requirements set forth herein. In the event that any of the requirements set forth within this Section conflict with the requirements set forth elsewhere within this document or within any of the Contract Documents, the more stringent requirements shall apply.

III. DIVERSE SMALL BUSINESS ENTERPRISE (DSBE) PROGRAM REQUIREMENTS

The District requires all Consultants to implement this section in the course of their daily business practices while performing District work, and to report the percentage of DSBE inclusion efforts when submitting their quotations/proposals.

- A. REEDY CREEK IMPROVEMENT DISTRICT (RCID) provides equal opportunity for Diverse Small Business Enterprise (DSBE) businesses to receive and participate on District contracts. It is also our standard to:
- a. Ensure nondiscrimination in the award and administration of RCID contracts;
 - b. Create a level playing field on which diverse small businesses can compete fairly for RCID contracts;
 - c. Accept into the Program any of the following classifications of diverse entities who hold a majority stake in the ownership and control of a company:
Black Americans, Asian-Pacific Americans, Native Americans, Hispanic Americans, Subcontinent Asian-Pacific Americans, Women (including Caucasian Women) and Veterans who served on active duty with any of the U.S. Armed Forces.
 - d. Help remove barriers to the participation of disadvantaged, Diverse Business Enterprises in RCID contracting opportunities; and
 - e. Assist the development of firms that can compete successfully in the marketplace outside the Diverse Small Business Enterprise program.
- B. INTERPRETATION:
Any conflict, error, omission or ambiguity, which may arise between these instructions and the above-mentioned DSBE Program obligation shall be resolved by the Director of Procurement & Contracting, whose decision will be final.
- C. RCID OVERALL DSBE GOAL:
The Consultant agrees to employ good faith efforts to contract part of the work to diverse business enterprises as defined by RCID. Contractor’s participation for this contract is **15 %** of the contract value using Good Faith Efforts (GFE).

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Listing of DSBE subcontractors for this project:

1. Unlimited Turf
2. Sabcon Underground
3. Shelby Erectors
4. JVD Construction Inc.
5. C. Slagter Construction
6. Straight Horizon
7. Diversified Supply
8. Paul Walsh Trucking
9. Diamond C Trucking

NOTE: The above listed DSBE subcontractors may not be changed or removed unless approved in writing by the assigned RCID project manager.

D. DSBE MEASURES:

Race Conscious DSBE Measures for RCID contracts includes setting DSBE contract goals for the participation of DSBE groups found to have significant statistical disparity in RCID contracting. The DSBE groups are Black Americans, Asian-Pacific Americans, Native Americans, Hispanic Americans, Subcontinent Asian-Pacific Americans, Women (including Caucasian Women) and Veterans of the U.S. Armed Forces.

1. Consultant should contact their assigned RCID buyer for assistance with sourcing DSBE companies, for questions concerning their DSBE goal obligations, and for information concerning completing their good faith documentation.

E. CONTRACTOR ASSURANCE:

Failure in the future by the Awarded Contractor to comply with these DSBE goal assurances in a good faith manner is a material breach of this contract, which may result in the termination of this contract or such other remedy as RCID deems appropriate, which may include, but is not limited to:

- Withholding monthly Progress Payments;
- Assessing sanctions;
- Liquidated Damages; and/or
- Disqualifying the Contractor from future bidding/proposing as non-responsible.

F. CONTRACTOR’S REPORTING REQUIREMENTS:

To be included with every monthly pay application, the Contractor is required to complete **RCID Form 5- Monthly Work Accomplished by DSBE Subcontractors**, which lists the work for that month completed by the DSBE subcontractors, and the value of the work.

G. DIVERSE SMALL BUSINESS ENTERPRISE (DSBE) PROGRAM Supporting Documents are incorporated by reference:

1. Instructions to Bidders/Proposers (13) pages
2. DSBE Bid Package Forms (4) pages
3. Form 4 DBE – MBE Good Faith Efforts Documentation (4) pages

IV. ASBESTOS/CADMIUM OR LEAD/CFCs

A. ASBESTOS

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Contractor acknowledges that it has been made aware that Asbestos-Containing Materials (ACM) and/or Presumed Asbestos-Containing Materials (PACM), including without limitation, thermal system insulation, and sprayed on or troweled on surfacing material that is presumed to contain asbestos, exists or may exist at the Job Site and that Contractor may be performing Work or services in or near areas that contain ACM and/or PACM as specified in the Contract Documents. Contractor takes full and complete responsibility for communicating existing conditions to all Subcontractors, Sub-subcontractors and employees thereof in accordance with the Occupational Safety and Health Administration Hazard Communication Standard 29 CFR Part 1926.59. The Owner and Contractor agree that the quantities of ACM and/or PACM referred to in the Contract Documents are approximate and are enumerated for the sole purpose of providing notification pursuant to the Occupational Safety and Health Administration Asbestos Standards, 29 CFR Parts 1910, 1915, and 1926.

B. CADMIUM and/or LEAD

Contractor acknowledges that it has been made aware that cadmium and/or lead exists, or may exist, at the Job Site and that Contractor may be performing Work or services in or near areas that contain cadmium and/or lead as specified in the Contract Documents. Contractor takes full and complete responsibility for communicating existing conditions to all subcontractors and employees thereof in accordance with the Occupational Safety and Health Administration Hazard Communication Standard 29 CFR Part 1926.59. The Owner and Contractor agree that the cadmium and/or lead referred to in the Contract Documents are described for the sole purpose of providing notification pursuant to the Occupational Safety and Health Administration Cadmium Standard 29 CFR 1926.63 and/or Lead Standard 29 CFR 1926.62.

C. CHLOROFLUOROCARBONS (CFCs)

Contractor acknowledges that it has been made aware that chlorofluorocarbons (CFCs) exist, or may exist at the Job Site and that Contractor may be performing Work or services in or near areas that contain CFCs as specified in the Contract Documents. Should the Contractor's work result in (i) any loss or release of CFCs from any source, including any equipment or containers, or (ii) any addition by Contractor of CFCs to any equipment or container, then Contractor shall provide all necessary documentation concerning such loss, release or addition, including the quantities of CFCs affected, to the Owner. The Owner and Contractor agree that the quantities of CFCs referred to in the Contract Documents are approximate and are enumerated for the sole purpose of providing notification to the Contractor.

D. USE OF ASBESTOS/LEAD/CADMIUM CONTAINING MATERIALS

Contractor shall not utilize or install any asbestos, lead, or cadmium-containing products on the Owner's property or within the scope of Work or services contemplated by this Agreement. It is the responsibility of the Contractor to obtain appropriate Material Safety Data Sheets for all materials to be used, and verify that the products do not contain asbestos, lead or cadmium. This requirement extends to any materials that may be specified in the Contract Documents. Specification of a particular material by the Owner in the Contract Documents does not relieve the Contractor from its responsibility to verify that the specified material does not contain asbestos, lead or cadmium. If a specified material does contain asbestos, lead or cadmium, then Contractor shall notify Owner immediately, and submit a proposed alternate material to be used in lieu of the specified material. Contractor shall submit Material Safety Data Sheets for all installed products, as part of the As-Built package. If Contractor installs any product containing asbestos, lead or

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cadmium, without previously obtaining the written consent of the Owner, Contractor shall be responsible for all costs associated with removal of the asbestos, lead, or cadmium containing material.

V. CONFINED SPACES

Contractor acknowledges that it has been made aware that permit-required confined spaces exist or may exist at the Job Site and that the Contractor may be performing Work or Services in or near permit-required confined spaces as specified in the Contract Documents. The Contractor shall fully comply with the requirements of 29 CFR Part 1910.146 in connection with all Work in any permit-required confined space (“PRCS”), as defined by OSHA. The Contractor must have a written confined space program when performing Permit Required Confined Space (“PRCS”) entry. Accordingly, site specific conditions related to confined space entry must be addressed in the Contractor’s Project Specific Safety Plan (“PSSP”). In support of the Contractor’s preparation the PSSP, the Contractor shall obtain from the Owner the following information: (i) the elements that make the space in question a permit-required confined space, including the hazards identified and the Owner’s experience with the space, and (ii) any precautions or procedures that the Owner has implemented for the protection of employees in or near any PRCS where the Contractor’s personnel will be working.

The Contractor shall provide its own confined space permits when working on the Owner’s job site. All workers entering a confined space must have training commensurate with the role or task they will be performing. This includes: entrant, attendant entry supervisor, air monitoring, rescue, site-specific training for those workers exposed to hazards posed by PRCS, but who may not be performing work inside of confined space or supporting confined space entry.

Confined spaces that have been evaluated and designated by the Owner as a PRCS will be treated as such, despite whether or not the Contractor agrees or disagrees with that designation. Trenches may also be treated as a PRCS under certain conditions. The Owner reserves the right to designate any trench as a PRCS in its sole and absolute discretion.

Alternate entry procedures or reclassification may be used if all requirements of 29CFR1926.1200 are met. When certain conditions described in the OSHA standard are met, the Contractor may use alternate entry procedures for worker entry into a PRCS, however, the Contractor must first consult with the Owner prior to using any alternate entry procedures.

The Owner shall provide information to the Contractor respecting any known hazards associated with a given PRCS. However, it is ultimately the Contractor’s responsibility to determine, with reasonable certainty, the existence of any and all hazards prior to any worker’s entry into the confined space. The Owner is NOT responsible for providing additional services prior to or during entry into a given confined space, including but not limited to: atmospheric monitoring, emergency response services, including rescue, attendants or entry supervisors.

The Owner reserves the right to order the immediate discontinuation of the performance of work and the immediate removal of the Contractor’s personnel from a confined space if an unsafe condition or behavior is observed. In such instances, the space will be immediately evacuated until concerns are resolved to the satisfaction of the Owner.

When both the Owner’s personnel and the Contractor’s personnel will be working in or near any PRCS, prior to entering such PRCS, the Contractor shall coordinate entry operations with the Owner. The Contractor shall inform the Owner at the conclusion of the entry operations regarding the PRCS program followed and regarding any hazards encountered or created within any PRCS during entry operations. The Contractor takes full and complete responsibility for communicating existing conditions to all Subcontractors, Sub-subcontractors and to the employees thereof.

VI. HAZARDOUS AND CHEMICAL WASTE DISPOSAL.

All hazardous, regulated, universal and chemical wastes generated by the Contractor during the performance of the Work shall be managed in accordance with applicable federal, state and local law and regulations, including but not limited to Title 40 CFR Subchapter I, Parts 260 through 265, 273, 279, 302; Title 49 CFR Chapter I, Subchapter A and Rule 62-730 of the Florida Administrative Code as applicable to "Large Quantity Generators of Hazardous Wastes". Packaging, labeling, storage and disposal of such wastes shall also comply with Owner's policies, which are available from Owner. Such wastes must be properly placed in U.S. Department of Transportation approved packaging, with appropriate markings at the time of generation. Packages containing such wastes must be labeled to identify the contents, date of accumulation and the Contractor's name and telephone number. Such packages must be stored at a secure location and not exposed to weather. Upon completion of the Project or before 60 days has elapsed from the date of the first accumulation of wastes in each specific container, whichever is earlier, Contractor shall contact Owner to arrange for disposal. Owner will arrange for the disposal of such wastes by Owner's approved hazardous waste disposal vendor. Upon Owner's receipt of the invoice for disposal costs, a copy of the invoice will be forwarded to the Contractor and Contractor shall reimburse Owner therefor. The Contractor shall be responsible for all packaging, storage, and labeling costs.

VII. ELECTRICAL SAFETY POLICY

Implicit on all electrical work performed at any of the Owner's properties is the Contractor's (and its Subcontractor's and Sub-subcontractor's) strict compliance with the Owner's Electrical Safety Policy ("Policy").

The Policy is that all electrical work *shall* be performed de-energized as a standard work practice. This Policy applies to the Contractor, Subcontractors, Sub-subcontractors, Subconsultants, Sub-subconsultants and anyone who performs electrical work on or near electrical conductors or circuit parts which are or may be energized. Contractor is expected to exercise good judgment and take personal responsibility for reducing the hazard risk to its lowest level and to ensure strict compliance with all applicable federal, state and local laws, codes, regulations and rules.

The Contractor agrees that its employees and agents and the employees of any Subcontractor, Sub-subcontractor, Subconsultant, Sub-subconsultant or anyone who performs electrical work as described herein shall adhere to all posted warnings, wear appropriate personal protective equipment ("PPE") and protective clothing and use appropriate tools until exposed energized electrical conductors or circuit parts are verified to be at a zero energy state. For systems up to 1000V, the zero-energy state shall be verified by the Contractor and those greater than 1000V shall be verified by the Owner. Any work performed within six feet (6') of systems greater than 1000V at a zero energy state and where there are exposed cables, all personnel shall wear a minimum of 8cal daily wear Flash Resistant Clothing (FRC).

In the narrowly limited circumstances when exposed energized parts are not de-energized, excluding diagnostic testing that cannot be performed de-energized, a documented job briefing must first be completed by the Contractor and submitted to the Owner for approval. The intent of the briefing is to provide notification for performing energized work to the Owner prior to performing the work. The job briefing shall include, but not be limited to, the following:

- Validation for energized work
- Hazards associated with scheduled work such as working in roadways or work performed within boundary, etc.
- Work procedures
- Energy source controls such as physical barriers or meter verification
- PPE to be utilized

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- Job work plan summary
- A complete list of the names of all individuals involved in the work/briefing

The Contractor understands and agrees that the Owner, throughout the term of the Contract, may review the Contractor's, Subcontractor's, and Sub-subcontractor's safe work plan to confirm for its operations and the safety and wellbeing of its employees, guests and invitees that adequate contingency plans have been considered in the event of an inadvertent interruption of electrical service.

Contractor shall establish or shall cause its Subcontractor or Sub-subcontractor to establish appropriate boundaries to restrict access around the Work based on the type of hazard present as called for in NFPA 70. The boundaries shall be either:

A **flash protection boundary**, which shall be established by the qualified person of the Contractor or its Subcontractor or Sub-subcontractor a minimum of four feet away (600V, 600A max) from the exposed energized electrical conductors or circuit parts where the potential exists for an arc flash to occur, unless specific information is available indicating a different flash boundary is appropriate. Persons must not cross the flash protection boundary unless they are wearing the appropriate PPE and are under direct supervision of a qualified person.

A **limited approach boundary**, which shall be established by the qualified person of the Contractor or its Subcontractor or Sub-subcontractor a minimum of three feet six inches (3'6") away from the exposed fixed energized electrical conductors or circuit parts, 600V max, where the potential exists for an electric shock to occur, unless specific information is available indicating a different limited approach boundary is appropriate. The purpose of the limited approach boundary is to advise unqualified persons that an electrical shock hazard exists and to reduce the risk of contact with an exposed energized conductor. Only qualified persons and immediately supervised unqualified persons are allowed to cross the limited approach boundary.

The Contractor understands and agrees that it is the responsibility of the Contractor to ensure compliance with all applicable safety laws, codes regulations and rules as well as adherence to the Policy for all electrical work. The Owner reserves the right to observe and/or audit the Contractor's (or its Subcontractor's or Sub-subcontractor's) work without notice. The Contractor expressly understands and unequivocally agrees that any failure to strictly comply with any applicable safety laws, codes, regulations, and the rules of this Policy constitutes a material breach of the Contract and may result in an immediate work stoppage or termination of the Contract at no additional cost to the Owner.

VIII. LOCK OUT / TAG OUT

The Contractor shall have and maintain a program consisting of energy control procedures, employee training and periodic inspections prior to performing Lock Out / Tag Out ("LOTO"). The program shall have steps for notification, shutting down, isolating, blocking and securing machines, applying LOTO devices, dissipating stored energy equipment or facilities to control hazardous energy. It shall also have steps for the removal and transfer of LOTO devices and tags.

The Contractor must verify by testing that the machine or equipment has been isolated and secured from all energy sources before work begins. All affected personnel must be notified prior to starting.

Proper PPE must be worn in accordance with NFPA70E as referenced in RCES Electrical Safety, latest revision.

LOTO devices shall indicate the identity of the employee applying the device(s) as well as their department/company, contact number and date if the work will extend beyond one shift. A lock and tag must be used for all energy isolation. LOTO devices shall be standardized by color, shape or size and shall not be used for any other purpose. LOTO devices shall only be used for performing service or maintenance

on equipment, not to be used for any other use. LOTO shall be performed only by the person(s) who are performing the servicing or maintenance. Each person performing LOTO must have individual locks and tags.

Before LOTO devices are removed by the worker who applied the device(s), the work area shall be inspected to ensure that nonessential items have been removed, all workers have been safely positioned or removed, and affected workers have been notified of re-energization of the equipment.

Hot tap operations for pressurized pipelines carrying natural gas, steam or water do not require LOTO if it is demonstrated that:

- a) Continuity of service is essential, and
- b) Shutdown of the system is impractical, and
- c) Procedures are documented and followed, and
- d) Special equipment is used to provide effective protection for workers

Systems shall be de-energized and taken to a zero-energy state using applicable LOTO procedures and verified before work begins. Work on an energized system (e.g. diagnostic testing that cannot be performed de-energized) shall require validation accepted by the Owner and project manager.

If an equipment/machine is not capable of accepting a lock, a tag may be used without a lock as long as additional means can be used to prevent accidental activation of the device (e.g., removal of a lever, handle, switch, or valve).

Group LOTO is permitted when all of the following are met:

- a) A single authorized employee must assume the overall responsibility for the control of hazardous energy for all workers in the group. Authorized employees must have knowledge and training in the following:
 - b) Skills necessary for the safe application, use and removal of energy-isolating devices
 - c) Hazardous energy source recognition
 - d) Type and magnitude of the hazardous energy sources in the workplace
 - e) Energy-control procedures, including methods and means to isolate and control energy sources

The authorized employee must communicate and implement LOTO procedures, coordinate the operation to all affected workers, and verify that all LOTO procedural steps have been taken.

Each worker must affix their own personal LOTO device and tag to the group LOTO device or group lockbox before work begins.

The authorized employee must not remove the group LOTO device until each worker in the group has removed their personal LOTO device. The authorized employee will be the first lock on and the last lock off unless their responsibilities have been handed over to another authorized employee.

The authorized employee must make sure that there is a continuity of LOTO protection during a shift change. It is the responsibility of the oncoming worker to verify the machine, equipment or facilities is still in a zero-energy state. If there will be a lapse in time between the outgoing worker removing their LOTO device and the oncoming worker placing their LOTO device, the oncoming authorized employee must repeat the LOTO process and place their personal LOTO device on the machine, equipment or system.

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In the event that a worker leaves the jobsite without removing their LOTO device and cannot be located, and it is necessary to restore the equipment to its normal operating state, the LOTO device may be removed after all of the following have been completed:

- a) Contractor has had no success in contacting the worker to determine if they are available to remove the LOTO device.
- b) Contractor's supervisory personnel, the authorized person, and the Owner have determined that it is safe to re-energize the machine, equipment or facility.
- c) The authorized person has notified all affected individuals that the machine, equipment or facility is being reenergized.
- d) After removal of the LOTO device, the Contractor must notify the worker whose lock was removed, prior to their return to work, that their LOTO device was removed and the machine, equipment or facility has been reenergized.

When the Contractor is performing work on existing machines, equipment or facilities owned and operated by the Owner, the Owner's responsible Project / Engineering Management and responsible Contractor supervisory personnel shall inform each other of their respective LOTO programs. The Owner reserves the right to determine if the Contractor's LOTO program meets the Owner's requirements.

IX. FALL PROTECTION

The Contractor shall provide training to all affected workers regarding the proper use of fall protection systems. Workers using fall protection improperly (e.g. harness slightly loose, D-ring in the wrong position on the back, etc.) can correct the condition and then continue working. Repeated misuse or misuse which results in an extremely hazardous condition (e.g. using an improper anchor point, using the wrong type or length of lanyard, etc.) will be considered cause for the Owner to demand an immediate stop to the performance of all related work (hereinafter deemed a "STOP WORK" condition), and the Contractor shall then immediately discontinue the performance of such work. When workers are observed being exposed to an unmitigated fall hazard, it will also be considered a STOP WORK condition. Work will not resume until the Contractor has reevaluated the situation and developed corrective measures to ensure the hazard(s) will not occur again.

Fall restraint systems shall be used instead of fall arrest systems whenever feasible. These systems allow a person to reach an area to perform their duties but prevent them from reaching a point where a fall could occur.

Self-retracting lifelines or lanyards ("SRLs") must be anchored at the height of the harness D-ring or above. It should be positioned directly overhead in order to prevent swing falls. When it isn't feasible to anchor overhead, and anchorage is only possible below the D-Ring, then fall protection equipment specifically designed for that application must be used. All SRLs must be used in accordance with the SRL manufacturer's instructions.

The Contractor shall use anchorage connection points designated by the Owner when available. If no such designated anchorages are available, then the Contractor's qualified person must select structures suitable as fall protection anchorage points for their workers.

Fall protection is not required when using portable ladders unless the ladder cannot be placed to prevent slipping, tilting or falling. If ladders must be used under these circumstances (e.g. lifts are not feasible), a

Personal Fall Arrest System (“PFAS”), independent of the ladder, must be used. Working height on portable ladders is limited to twenty-five feet (25’).

The use of a ladder, or similar, in close proximity (i.e., ladder length plus 4 feet) to a guardrail or parapet may create an exposure to the fall hazard. Fall protection must be provided by raising the height of the guardrail/parapet or a PFAS, independent of the ladder, must be used. Ladders or work platforms with a built-in guarded work platform do not require additional fall protection.

Workers shall be protected from falling into excavations five feet (5’) or more in depth.

Slopes with an angle of measure from horizontal grade that exceed 40⁰ require the use of fall protection.

Fall protection is required for work conducted six feet (6’) or more above water. Where fall protection completely prevents falling into the water, personal flotation devices (PFDs) are not required.

X. AERIAL WORK PLATFORMS (“AWP”)

All operators must be trained in safe and proper AWP operation. Training documents must be provided to the Owner immediately upon the Owner’s request.

Written permission from the manufacturer is required before modifications, additions or alterations can be made to an AWP.

Operators shall be responsible for following the requirements of the AWP operating manual and ensuring that the vehicle is in proper operating condition. Operators shall immediately report any item of non-compliance to a supervisor for corrective action. AWP’s that are not in proper operating condition shall be immediately removed from service until repaired. The key shall be removed from the vehicle and a tag shall be attached to the control panel to identify the machine as “out of service” the vehicle shall not to be operated until it has been repaired.

The primary purpose of AWP equipment is to raise personnel and necessary tools to a temporary height for work; the AWP shall not be used as a crane. AWP equipment is not designed to lift materials except on the platform and within the manufacturer’s capacity limits. Lifting items on the guardrails or by attaching them to the AWP equipment in any manner not approved by the manufacturer is strictly prohibited.

AWP occupants shall wear a fall restraint system, which includes a safety harness along with a fixed lanyard or self-retracting lifeline (“SRL”) of appropriate length (e.g. 3 feet). If the AWP is being used at heights of 18 ft. or less, then a SRL shall be utilized. The fall restraint system shall be connected to an anchorage point provided by the manufacturer at all times when the AWP is in use.

Transfer at Height (in or out of the basket/platform) is permitted however one hundred percent (100%) tie-off is required during the maneuver.

Some AWP’s are equipped with an external fall protection system. These systems are either a halo system or rigid rail engineered to safely allow personnel to exit the basket with 270-degree (270°) mobility around the basket. These systems are designed to provide an anchorage for fall arrest and can be used as such. Fall restraint is also an option depending upon the situation. When an individual is attached outside of the AWP basket, the AWP shall be emergency stopped and the basket shall not be moved. If an individual must reach an area that is not within the current radius of the attached fall protection system (harness/lanyard) they shall re-enter the AWP basket, move the unit to a closer location, emergency stop the AWP and then exit the basket to perform the given task from the new location.

XI. LADDERS

Consideration must be given to the method of transporting tools and materials to the work location. Workers are not permitted to hand-carry items up the ladder. Hands must be free to climb the ladder.

Ladders placed in areas such as passageways, walkways, doorways or driveways, or where they can be displaced by workplace activities or traffic should be barricaded to prevent accidental movement.

Never place a ladder in front of doors unless the door is locked and access is controlled.

Never climb the back-bracing of a step/A-frame ladder unless it is a twin (double-sided) ladder.

Only one person is permitted on a ladder at a time, unless it is designed for two-person use.

Do not use ladders as scaffold.

All manufacturer stickers/labels must be affixed and in readable condition.

Prior to each use, the Contractor must visually check the ladder for the following:

- a) Free of cracks, splits, and corrosion.
- b) Steps/rungs free of oil/grease.
- c) Steps/rungs firmly attached to side rails.
- d) Steps/rungs not bent.
- e) Safety feet/base and other moveable hardware in good working condition.
- f) Ropes/pulleys in good condition (extension ladders).

Temporary fixes shall not be used to make repairs to a damaged ladder. Any repair to a ladder must be with manufacturer approved parts or kits. Any accessories used with a ladder must be approved by the manufacturer.

Work shall not be performed from a permanent fixed ladder unless a fall protection system, such as a ladder climbing device, is installed and used.

Extension, straight, and portable ladders cannot be made of wood (except job-made ladders on construction sites); fiberglass is preferred. Ladders made of aluminum cannot be used for electrical work or near energized equipment.

The working height for an extension shall be limited to under 25 feet.

Workers shall not sit, kneel, step, or stand on the pail shelf, top cap, or the first step below the top cap of an A-frame/step ladder.

If ladders are used within 1.5 times their height to a leading edge or drop in elevation (measured horizontally), fall protection devices must be used.

Do not use an A-frame/step ladder to transition to another elevated work surface unless it has been specifically designed for this.

Use ladders correctly. Do not over-reach. Prevent belt buckles from extending outside the side rails of the ladder. A-frame/step ladders should be used only for front-facing work. Do not perform "side-load" work.

XII. TRENCHING AND EXCAVATION

Utility locate tickets must be obtained prior to breaking ground by each and every contractor performing trenching/excavation and the operator performing the trenching/excavation must have reviewed the ticket. Third party locates may also be required for trenching/excavations located beyond the utility provider's service point.

All soil shall be considered as Class C soil. Class A and B soils do not exist on property. All sloping of trenches must be at a 1.5:1.0 ratio. Benching is not allowed in Class C soil.

Any shoring, bracing, shielding or trench boxes used must be in good condition. Tabulated data must be made available upon request.

Trenches or excavations that have a hazardous atmosphere or the potential to contain a hazardous atmosphere must be monitored by the competent person and may have to be treated as a confined space if appropriate.

The Contractor must provide appropriate barricades to protect people from falling or driving into the trench or excavation. Lighted and/or reflective barricades are preferable at night. Caution tape is not a sufficient barricade. Barricades must be placed at least six feet (6') from the edge of the trench or excavation. Trenches and excavation that are left open and unattended shall be barricaded until work resumes. These barricades shall be checked at least daily to assure no changes have occurred.

XIII. UTILITY LOCATES*Routine Locate Tickets:*

The Contractor must request the locate ticket a minimum of three (3) full business days before digging.

If the dig site is in an area that is under water, the Contractor must call for the locate ten (10) full business days before digging.

Locate ticket requests can be submitted anytime on-line at Sunshine One but must be submitted to Reedy Creek Energy Services (RCES) between 7:00 AM and 4:00 PM, Monday through Friday, excluding weekends and holidays.

Obtain a completed locate ticket through Sunshine State One Call of Florida ("SSOCOF") by calling 811.

Call the Reedy Creek Energy Services (RCES) Utility Locate Office at (407) 560-6539.

Provide the Sunshine One Call locate ticket number.

Mark up the RCES supplied map to show limits of excavation.

The Contractor is expressly forbidden from performing any excavation work until it has received and reviewed the RCES Utility Locate Office response and notes for utility presence, conflicts or special conditions.

Emergency Locate Tickets:

An emergency is defined as any condition constituting a clear and present danger to life or property; a situation caused by the escape of any substance transported by means of an underground facility; any interruption of vital public service or communication caused by any break or defect in an underground facility; or any impairment of public roads or utilities that requires immediate repair (collectively, incident(s)), as determined by the authority having jurisdiction within the area where the incident has

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occurred. Difficulties experienced by the Contractor in properly scheduling the performance of planned work activities will not constitute justification for obtaining an emergency locate ticket.

During the hours of 7:00 AM to 4:00 PM, Monday through Friday, call the Reedy Creek Energy Services (RCES) Utility Locate Office at (407) 560-6539. Call the SSOCOF at 811 or 1-800-432-4770. Provide the SSOCOF locate ticket number to the RCES Utility Locate Office

The Contractor shall not begin emergency excavation until it has received verbal clearance from the RCES Utility Locate Office

On weekdays between 4:00 PM and 7:00 AM, or Weekends and Holidays: Call the RCES Control Room Emergency Number at 407-824-4185. Provide the nature of the emergency and exact location. Contact SSOCOF at 811. Provide the SSOCOF locate ticket number to the RCES Control Room. The Contractor shall not begin emergency excavation until it has received verbal clearance from the RCES Control Room.

No excavation will be permitted until the excavator has submitted a Locate Ticket request and received clearance as described above.

Each company that performs digging must obtain and follow their own locate ticket. The excavator shall have a copy of the locate ticket at the excavation site.

Requirements must be communicated directly to the person(s) performing the digging.

Exposed underground utilities must be protected.

Each company must locate utilities when cutting or drilling into concrete.

Secondary utilities must be considered when performing digging activities.

The Contractor shall IMMEDIATELY STOP EXCAVATION if an underground facility is contacted (even if there is no noticeable damage) and immediately notify the Owner of such. Warning signs that indicate the potential of contacting a buried, underground utility include buried red concrete, unpainted buried concrete, wooden boards, warning tape, etc.

It is important to understand tolerance zones. Locate marks show the approximate location of underground facilities. The lines can actually be located anywhere within the tolerance zone. Proceed cautiously when digging within 24 inches on either side of the locate marks.

When any mechanized equipment is used within the tolerance zone, supervisory personnel shall be present to supervise the operation.

XIV. MOBILE CRANES

Operators must be certified on the specific type of crane they are operating. Certification must come from an accredited crane operator testing organization, such as The National Commission for the Certification of Crane Operators (NCCCO).

A Lift Plan shall be submitted on all critical lifts and should be completed and submitted for review and acceptance, with the exception of emergency lifts, 72 hours, prior to lift.

A critical lift plan is required for the following lifts:

- a) Lift is $\geq 75\%$ of the cranes rated capacity as determined by the load chart
- b) Two or more cranes involved in the lift or adjacent to each other

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- c) Hoisting personnel
- d) Lift from floating platform, barge, or vessel
- e) Any lift where boom intersects within 20 feet of monorail
- f) Any lift deemed critical by the Owner
- g) Any lift where boom intersects within 25 feet of a populated area

A critical lift plan should include a Pre-Lift Crane Data Worksheet, step-by-step work instructions, a list of all personnel involved and their assignments, and a diagram of the lift and swing area. A 3-D plan or comparable CAD rendering is preferable. A rigging plan is required to be submitted for critical lifts. If the crane will be set up on top of, or within 10-feet of a tunnel, manhole, or utility vault; or within 10-feet of a seawall, bridge, or water's edge, Ground Bearing Pressures (GBP) for each outrigger (below the crane mats) must be submitted with the lift plan.

The use of a crane to hoist personnel is prohibited except where it can be demonstrated that conventional means of reaching the work area (scaffold, ladders, aerial lifts, etc.) would be more hazardous or is not possible due to worksite conditions. Hoisting personnel shall comply with all parts of 29 CFR 1926.1431.

The crane hook or other part of the load line may be used as an anchor for a personal fall arrest system where all of the following requirements are met:

- a) Approved by a qualified person
- b) Equipment operator must be at the worksite
- c) No load is suspended from the load line when the personal fall arrest system is anchored to it or the hook.

Tag lines must be used for all lifts to control the load unless the use of a tag line is deemed unsafe or unfeasible. The decision to not use a tag line must be included in the lift plan and accepted by the Owner.

All crane operations near, adjacent to, or within 10 feet of the monorail or skyway transportation system, require a special precautions are taken. All work must be coordinated with the Owner prior to commencing. Any contact with anything associated with these systems must be reported immediately to the Owner. At no time will any materials be lifted over the systems. A spotter is required when a crane travels under the systems

Barricades and notices should be used to prevent people from entering the fall zone (the area where the load will land if dropped). No one is allowed to be under a suspended load, with the exception of steel workers working in accordance with 29 CFR 1926.753(d).

In congested areas where barriers are not feasible, an audible signal (horn, whistles, etc.) must precede each lift to alert nearby personnel working in the proximity of the crane that the lift is in progress. Evening lifts may use alternative signaling methods in lieu of audible signals, if requested.

The qualified signal person shall be the only person signaling the crane operator; however, anyone can signal a stop if there is a perceived emergency situation.

XV. HEAVY EQUIPMENT OPERATIONS

The operator must not wear earbuds or headphones while operating heavy equipment. These devices may create a distraction and may prevent the operator from hearing important sounds in the work area (e.g. backup alarms, evacuation horns, etc.). They do not serve as hearing protection or attenuation which may be needed when operating heavy equipment.

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Unless the cab is totally enclosed, the operator must wear appropriate personal protective equipment (PPE) which may include safety glasses, hearing or respiratory protection. When exiting the cab in a construction zone, the operator must wear the required site PPE. Seat belts are required at all times.

Chase (escort) vehicles / Spotters are required when:

- a) Heavy equipment travels to and from work zones
- b) Anticipated pedestrian or vehicle traffic intrudes within the safe work zone, in the judgment of the operator
- c) Space is restricted, and a safe work zone cannot be maintained
- d) The back-up alarm is muted
- e) Safe movement is in question
- f) Overhead hazards are present

The equipment shall be operated at a safe speed. Equipment inspections shall be documented and available upon request.

Check the area for overhead utility lines to ensure the equipment will remain at least 10 feet away from the lines at all times.

Avoid backing up the equipment unless it is absolutely necessary. Attempt to always travel forward if possible. Backing up the equipment usually does not present a clear field of view.

Never allow an individual to ride on running boards or any other part of the equipment. Only the operator should be on the equipment.

Maintain three points of contact when exiting or entering the vehicle.

Never exit a running vehicle. The vehicle must be turned off if the operator is leaving the cab.

Remove keys from unattended vehicles.

Always park the vehicle on level ground. Lower buckets, shovels, dippers, etc. and set the parking brake.

XVI. DIVING OPERATIONS

Before conducting dive operations, a job hazard assessment shall be developed by the Contractor and submitted to the Owner in the form of a dive plan ("Dive Plan"). A complete Dive Plan shall be developed and documented for each diving operation. The primary purpose of the Dive Plan is to provide a written document capturing the details of the dive operations. The Owner must approve all Dive Plans prior to beginning the dive operations. Dive Plans shall be reviewed on a periodic basis to ensure they remain relevant for the actual diving activity and have been updated as warranted (i.e., staff safety concerns are conveyed, new equipment or procedures are to be implemented, or an injury/incident has occurred).

The Dive Plan shall include the following:

- a) Site & project information
- b) Immediate contact name(s) and telephone number(s)
- c) Information regarding personnel involved, including the Designated Person in Charge ("DPIC"), dive team roles and qualifications, assignment of responsibilities and verification of training records, and the verification of the physical fitness of dive team members
- d) Minimum equipment requirements
- e) Sequence of basic job steps and the recommended safe operational procedures and protection.

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- f) Known and/or potential hazards, including environmental, surface, overhead and underwater conditions and hazards, including any anticipated hazardous conditions or confined spaces
- g) Activities, equipment or processes in the area of operations that may interfere with the dive or that pose a safety hazard to dive team members (i.e., watercraft, ride vehicles, chemicals, potentially dangerous aquatic wildlife and other types of hazards)
- h) Limited access or penetration situations. A diver entering a pipe, tunnel, wreck, or similarly enclosed or confining structure, (other than a habitat).

Activities, equipment or processes in the area of operation that may interfere with the dive or that pose a safety hazard to dive team members shall require that proper controls be developed, documented and implemented to ensure the dive area is secured from such hazards impeding and/or entering the area.

A diver-carried reserve breathing supply that meets the emergency air volume requirements for the dive profile with a separate first and second stage regulator shall be provided to each diver for all diving operations.

XVII. RESERVED.

END OF SPECIAL CONTRACT CONDITIONS

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REEDY CREEK IMPROVEMENT DISTRICT
GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

ARTICLE 1
DEFINITIONS

1.1. **THE CONTRACT.** The Contract for Construction (referred to herein as the "Contract") is the sum of all Contract Documents. It represents the entire and integrated agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a Modification, as defined below.

1.1.1. The Contract Documents consist of those documents specified in Paragraph 1.2. of the Agreement or otherwise referred to in these General Conditions of the Contract for Construction. The Contract Documents do not include bidding documents, such as the Advertisement or Invitation to Bid, the Instructions to Bidders, sample forms, the Contractor's Bid or portions of Addenda as and to the extent that they may relate to any of the bidding documents or bidding procedure.

1.1.2. An Addendum is a written or graphic instrument issued by the Owner prior to the execution of the Agreement which sets forth additions, deletions or other revisions to the Contract Documents or clarifications thereof.

1.1.3. A Modification may be accomplished by: (a) a Change Order; (b) a Directive; or (c) any other written amendment to the Contract signed by both parties. A Modification may be made only after execution of the Agreement. No Directive shall be construed as a Change Order or other Modification unless it expressly so states.

1.1.4. A Change Order is a written Modification executed by both parties (except in the event of a unilateral Change Order as herein provided) and consisting of additions, deletions or other changes to the Contract. A Change Order may be accompanied by and/or may identify additional or revised Drawings, sketches or other written instructions, which become and form a part of the Contract Documents by virtue of the executed Change Order. Except as otherwise provided in Subparagraph 1.1.5., a Change in the Work, or a change in the Contract Time or the Contract Sum shall become the subject of a Change Order.

1.1.5. A Directive is a written document issued by the Owner and consisting of additions, deletions, clarifications or other written instructions issued by the Owner with respect to the performance of the Work or the activities of the Contractor on the Job Site or the property of the Owner. A Directive may include, but shall not be limited to, a bulletin, an engineering change, or other orders or instructions. Directives may become the subject of a Change Order, either singularly or collectively. Directives shall become the subject of a Change Order if they involve a Change in the Work, or a change in the Contract Time or the Contract Sum.

1.2. **THE OWNER.** The Owner is the person or organization identified as such in the Agreement. The term "Owner," whenever it appears in the Contract Documents, means the Owner and/or the Owner's Representative acting on behalf or for the benefit of the Owner (except as otherwise specified in the Contract Documents or as the context otherwise requires); provided, however, that with respect to any provisions of the Contract which require the Contractor to provide insurance for the protection of the Owner or to release the Owner from, or waive, any claims the Contractor may have against it, the term "Owner" shall mean the Owner and its supervisors, officers, employees, agents and assigns and the Owner's Representatives and its parent, related, affiliated and subsidiary companies, and the officers, directors, agents, employees and assigns of each.

1.3. **THE OWNER'S REPRESENTATIVE.** The Owner's Representative is the person or organization designated from time to time by the Owner to act as its representative as identified in Article 3 of the Agreement or the most current Modification thereto.

1.4. **THE CONTRACTOR.** The Contractor is the person or organization identified as such in the Agreement. The Contractor shall so designate a sufficient number of Project representatives that there shall be at least one authorized representative on the Job Site at all times in which the Work is being performed including, without limitation, a project manager (herein referred to as the "Project Manager") who shall at all times have authority to act (in all capacities necessary for the Work) for and bind the Contractor.

1.5. SUBCONTRACTOR; SUB-SUBCONTRACTOR.

1.5.1. A Subcontractor is a person or organization having a direct contract with the Contractor to perform any of the Work at the Job Site or to supply any materials or equipment to be incorporated in, or utilized in connection with, the Work.

1.5.2. A Sub-subcontractor is a person or organization having a direct or indirect contract (on any tier) with a Subcontractor to perform any of the Work at the Job Site or to supply any materials or equipment to be incorporated in, or utilized in connection with, the Work.

1.6. THE JOB SITE. The Job Site shall mean the area in which the Work is to be performed and such other areas as may be designated by the Owner for the storage of the Contractor's materials and equipment.

1.7. THE PROJECT. The Project is the total construction of which the Work may be the whole or a part.

1.8. WORK; CONTRACT TIME; CONTRACT SUM. The Work, the Contract Time and the Contract Sum are as defined in Articles 2, 5 and 6, respectively, of the Agreement.

1.9. PROVIDE. Except as the context otherwise requires, the term "provide" means to furnish, fabricate, complete, deliver, install and erect including all labor, materials, equipment, apparatus, appurtenances and expenses, necessary to complete in place, ready for operation or use under the terms of the Specifications.

1.10. PLANS. Wherever the words "Plan" or "Plans" are used in the Contract Documents, they shall be construed as having the same meaning as Drawing or Drawings (as referred to in the Agreement).

1.11. SPECIFICATIONS. The Specifications shall include those referred to in the Agreement.

1.12. THE ARCHITECT/ENGINEER. The person or entity having a direct contract with the Owner to design the Project or a portion thereof and to produce the Project Plans and Specifications or portion thereof, as identified in Article 4 of the Agreement or the most current Modification thereto, together with its subconsultants.

Article 2 THE CONTRACT DOCUMENTS

2.1. EXECUTION, INTENT AND INTERPRETATIONS.

2.1.1. The Contractor warrants and represents that, in executing the Agreement and undertaking the Work, it has not relied upon any oral inducement or representation by the Owner, the Owner's Representative, the Architect/Engineer or any of their officers or agents as to the nature of the Work, the Job Site, the Project conditions or otherwise.

2.1.2. The Contract Documents are complementary, and what is required by any one shall be as binding as if required by all. If the Contract Documents do not specifically allow the Contractor a choice as to quality or cost of items to be furnished, but could be interpreted to permit such choice, subject to confirmation or approval by the Owner, they shall be construed to require the Contractor to furnish the best quality. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

2.1.3. Where conflict exists within or between parts of the Contract Documents, or between the Contract Documents and either applicable industry standards or applicable codes, ordinances or other legal requirements, the more stringent requirements shall apply; otherwise, the following order of precedence shall be used: the Agreement; the Special Conditions; the General Conditions; the Specifications; the Drawings. If the Contractor is required to perform any extra or corrective Work to comply with the preceding sentence, it shall not be entitled to an increase in the Contract Sum or Contract Time, and no claim shall result from such compliance. Subject to confirmation or approval by the Owner, large scale Drawings take precedence over smaller scaled Drawings, figured dimensions on the Drawings take precedence over scaled dimensions, and noted items on the Drawings take precedence over graphic representations.

2.1.4. The organization of the Specifications into divisions, sections and articles, and the arrangement of Drawings, are not intended to influence the Contractor in its division of the Work among Subcontractors or its establishment of the extent of the Work to be performed by any trade.

2.1.5. The Contractor shall submit a written request to the Owner for any interpretations necessary for the proper execution or progress of the Work. Such interpretations shall be issued in writing.

2.1.6. The Contract Documents reflect conditions as they are believed to exist, but it is not intended or to be inferred that the conditions as shown thereon constitute a representation by or on behalf of the Owner that such conditions actually exist. The Contractor shall inspect the Job Site and conduct any tests or surveys it deems necessary or desirable prior to the commencement of the Work and shall accept full responsibility for any loss sustained by it as a result of any variances between the conditions as shown on the Contract Documents and the actual conditions revealed during the progress of the Work or otherwise. The Contract Sum shall in no event be increased by reason of any such variance unless otherwise specifically provided herein.

2.1.7. The Contractor shall develop and maintain current "as-built" Plans to be provided to the Owner in accordance with Subparagraph 9.4.2. The Owner may inspect and copy such Plans at any time during the course of the Work.

2.2. COPIES FURNISHED; OWNERSHIP. All Contract Documents and copies thereof furnished by the Owner, the Owner's Representative or the Architect/Engineer are and shall remain the Owner's property. They are not to be published or used by the Contractor on any other project and, with the exception of one complete set for the Contractor, are to be returned to the Owner upon completion of the Work.

2.3. NO ORAL WAIVER. The provisions of this Contract cannot be amended, modified, varied or waived in any respect except by a Modification signed by the Owner. The Contractor is hereby given notice that no person has authority to orally waive, or to release the Contractor from, any of the Contractor's duties or obligations under or arising out of this Contract. Any waiver, approval or consent granted to the Contractor shall be limited to those matters specifically and expressly stated thereby to be waived, approved or consented to and shall not relieve the Contractor of the obligation to obtain any future waiver, approval or consent. Despite any prior waiver, approval or consent as to any particular matter, the Owner may at any time require strict compliance with the Contract Documents as to any other matter.

Article 3 OWNER

3.1. EASEMENTS. The Owner shall obtain and pay for any easements required for permanent structures.

3.2. ACCESS. The Owner shall at all times have access to the Work at each and every stage of preparation and progress. The Contractor shall provide facilities (including, without limitation, roadways) for such access.

Article 4 THE OWNER'S REPRESENTATIVE

4.1. CONTRACTUAL RELATIONSHIPS. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner's Representative and the Contractor; provided, however, that the Owner's Representative shall be deemed to be a third party beneficiary of those obligations of the Contractor to the Owner as imposed by the Contract Documents (including, but not limited to, the Owner's rights pursuant to Paragraph 7.2. and Articles 10 and 11 of these General Conditions).

4.2. ROLE. Except as otherwise provided in the Contract Documents, and until the Contractor is notified in writing to the contrary, all actions to be taken by, all approvals, notices, consent, directions and instructions to be given by, all notices and other matters to be delivered to, all determinations and decisions to be made by and, in general, all other action to be taken by, or given to, the Owner shall be taken, given and made by, or delivered or given to, the Owner's Representative in the name of and on behalf of the Owner; provided, however, that the Owner (and not the Owner's Representative) shall be solely obligated to the Contractor for all sums required to be paid by the Owner to the Contractor hereunder. If the Owner's Representative is an organization, then it shall, in turn, act through such person or persons as it may designate in writing from time to time. Only those so designated are authorized to grant on behalf of the Owner any approval, consent or waiver with respect to the Contract Documents or the Work, or to otherwise act for the Owner in any capacity whatsoever.

Article 5 CONTRACTOR

5.1. REVIEW OF CONTRACT DOCUMENTS. In addition to the representations and warranties contained in Article 9 of the Agreement, the Contractor acknowledges that prior to execution of the Agreement it has thoroughly reviewed and inspected the Contract Documents. The Contractor further acknowledges that it has satisfied itself regarding any error, inconsistency, discrepancy, ambiguity, omission, insufficiency of detail or

explanation and has assured itself of the adequacy and accuracy of each of the Contract Documents, as well as the compatibility of any combination thereof, as they relate to one another and to the scope of Work and the Schedule. The Contractor hereby warrants and represents to the Owner that the Contract Documents are suitable and adapted for the Work and guarantees their sufficiency for their intended purpose. The Owner shall not be responsible or liable to the Contractor for, and the Contractor hereby waives, any claims for changes, delays, accelerations, inefficiencies, impacts, and any other costs, damages, losses, or expenses of any nature whatsoever, resulting from any error, inadequacy, inaccuracy, inconsistency, insufficiency, unsuitability, discrepancy, ambiguity, omission, or insufficiency of detail or explanation in the Contract Documents. The Contractor shall perform no portion of the Work at any time without approved Contract Documents or, where required, shop drawings, product data, or samples, for such portions bearing the A/E's appropriate action stamp. Work performed in violation of this provision shall be at the Contractor's risk. Nothing in this Paragraph 5.1 shall in any way limit the effects of Article 9 of the Agreement.

5.2. SUPERVISION AND CONSTRUCTION PROCEDURES.

5.2.1. The Contractor shall supervise and direct the Work, using its best skill and attention. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, coordination, scheduling (subject to Article 8) and procedures, for all cleanup and for all safety and weather precautions and programs, in connection with the Work.

5.2.2. The Contractor shall employ a competent Project Manager and necessary assistants who shall be in attendance at the Job Site during the progress of the Work and who shall be satisfactory to the Owner. The Contractor shall remove any of its employees or agents (including, without limitation, the Project Manager) from the Project upon instruction from the Owner. The Project Manager shall not be changed except with the consent of the Owner unless the Project Manager ceases to be in the Contractor's employ.

5.2.3. The Contractor shall be responsible to the Owner for the acts and omissions of its employees. It shall also be responsible to the Owner for the acts and omissions of its Subcontractors and Sub-subcontractors, their agents and employees, and other persons performing any of the Work, in the same manner as if they were the acts and omissions of persons directly employed by the Contractor.

5.2.4. The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner in its administration of the Contract, including, without limitation, by any inspections or tests required or performed under Paragraph 5.7., or by approvals or other similar action with regard to shop drawings or submittals (of any type), or by the activities of persons other than the Contractor with respect to the Project. Further, notwithstanding the fact that a dispute, controversy or other question may have arisen between the parties hereto relating to the execution or progress of the Work, the interpretation of the Contract Documents, the payment of any monies, the delivery of any materials or any other matter whatsoever, the Contractor shall not be relieved of its obligations to pursue the Work diligently under the Contract Documents pending the determination of such dispute, controversy or other question.

5.2.5. The Contractor shall establish, implement and supervise the submission of shop drawings and other submittals (of any type) in accordance with the Schedule and any Milestones. The Contractor shall note any variances between any such shop drawings or other submittals and the Contract Documents for the benefit of the Owner at the time of submission.

5.3. MATERIALS AND EQUIPMENT.

5.3.1. The Contractor shall, if so directed by the Owner, cause any or all materials and equipment to be manufactured in advance, and be warehoused either at the factory or elsewhere at the Contractor's cost. The Contractor shall cause all materials and equipment to be delivered to the Job Site in accordance with any schedule or schedules therefor established from time to time and approved by the Owner and, in any event, in a manner which will assure the timely progress and completion of the Work but will not encumber the Job Site unreasonably. Materials delivered to the Job Site for incorporation in the Work shall not be removed from the Job Site without the consent of or unless directed by the Owner.

5.3.2. The Owner may, from time to time during the performance of the Work and without any liability or obligation whatsoever to the Contractor or any of its Subcontractors or Sub-subcontractors, direct the Contractor to relocate, or cause to be relocated, to any other location on or off the Job Site, as designated by the Owner, any materials, equipment, office or storage trailers, storage sheds or the like brought onto the Owner's property by the Contractor or any of its Subcontractors or Sub-subcontractors, with which directions the Contractor shall promptly comply. Should such relocation not be completed within the time therefor established by the Owner, the Owner may accomplish such relocation and offset the costs incurred by it in accomplishing the same against any amounts then or thereafter due to the Contractor.

5.3.3. The Contractor shall give, or shall require its Subcontractors and their Sub-subcontractors to give, full and accurate quality, performance and delivery status reports, in a form satisfactory to the Owner, regarding any materials and equipment, or such other data with respect thereto as may be requested by the Owner, and shall obtain for the Owner the written assurances of any manufacturer that its material or equipment is designed, and appropriate, for the use intended.

5.4. **WARRANTY.** The Contractor warrants to the Owner that all materials and equipment furnished under this Contract shall be new unless otherwise specified, and that all Work shall be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards may be considered defective. This warranty is not limited by the provisions of Paragraph 14.2. of these General Conditions or Article 9 of the Agreement. All warranties and guarantees from Subcontractors or Sub-subcontractors (including, without limitation, manufacturers) shall be assignable to the Owner regardless of whether it is so stated therein, and the Contractor agrees to assign all such warranties and guarantees to the Owner and deliver them pursuant to Subparagraph 9.4.2. The Contractor's obligations under this Paragraph shall survive the expiration or sooner termination of the Contract.

5.5. TAXES; FEES AND LICENSES; ROYALTIES AND PATENTS.

5.5.1. The Contractor shall pay, or cause to be paid, all import duties and sales, consumer, use, excise, value added and ad valorem taxes required to be paid in connection with the Work or upon materials, tools or equipment brought to the Job Site or used in the Work. If any of the foregoing taxes are not paid in a timely manner, the Owner may withhold the amount of any such taxes from any amounts owing to the Contractor under the Contract Documents, submit the amount so withheld to the appropriate taxing authority on behalf of the Contractor or its Subcontractors or Sub-subcontractors and offset said amount against the Contract Sum.

5.5.2. The Contractor shall secure and pay for all governmental fees, permits and licenses which the Owner is not specifically required to provide and pay for under the Contract Documents.

5.5.3. The Contractor shall pay all royalties and license fees incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others, all of which shall be deemed included in the Contract Sum. The Contractor shall not unlawfully use or install any patented or copyrighted article, and any such unlawful use or installation shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions for infringement of, or otherwise related to, any patent rights or copyrights, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner. In the event of any injunction or legal action arising out of any such infringement which has the effect of delaying the Work, the Owner may require the Contractor to substitute such other articles of like kind as will make it possible to proceed with and complete the Work, and all costs and expenses occasioned thereby shall be borne by the Contractor.

5.6. **COMPLIANCE WITH LAWS.** The Contractor shall, at its cost and expense, comply with each and every Federal, state and local law, ordinance, code, rule and regulation, as well as the lawful order or decree of any public or quasi-public authority, bearing on the performance of the Work specifically including, but not limited to, those specified in Subparagraph 10.1.2., and all applicable building codes. It shall be the responsibility of the Contractor to familiarize itself with all of the same, and any performance of the Work by or on behalf of the Contractor which is not in compliance therewith shall be at the Contractor's sole risk and expense. The Contractor shall notify the Owner prior to execution of the Contract (and, without limiting the duty of such prior notice, continuously thereafter) of any instances where the Contract Documents are, or where the Contractor believes the Contract Documents are, not in compliance with the same.

5.7. TESTS.

5.7.1. If the Contract Documents, or any laws, ordinances, rules, regulations, or any orders or decrees of any public or quasi-public authority having jurisdiction, or common practice in the industry, require or dictate that the Contractor have any portion of the Work inspected, tested or approved, the Contractor shall advise the

Owner in a timely manner (in writing, if practicable) of its readiness and of the date arranged so that the Owner may observe such inspection, testing or approval. The Contractor shall bear all costs of such inspections, tests and approvals except as otherwise specified.

5.7.2. The Owner may require any special inspection, testing or approval of the Work not included under Subparagraph 5.7.1., or any more stringent inspection, testing or approval thereof, in which event it shall instruct the Contractor to order such inspection, testing or approval, and the Contractor shall advise the Owner in a timely manner (in writing, if practicable) as in Subparagraph 5.7.1. If such inspection or testing reveals any failure of the Work or the performance thereof to comply with the more stringent of: (a) the requirements of the Contract Documents; (b) applicable industry standards; or (c) applicable laws, ordinances, codes, rules, regulations or orders or decrees of any public or quasi-public authority having jurisdiction, or reveals any defect in the Work, the Contractor shall bear the costs of such inspection or testing and all costs to correct the Work to the satisfaction of the Owner, which, if incurred by the Owner, may be offset by the Owner against any amounts then or thereafter due to the Contractor. If such inspection or testing proves that the Work was performed properly, the Owner shall bear the costs of such inspection or testing.

5.7.3. Required certificates of inspection, testing or approval shall be secured by the Contractor and promptly delivered by it to the Owner.

5.8. GENERAL. The duties and responsibilities of the Contractor as set forth in this Article 5 are in addition to, and not in lieu of, other duties and responsibilities of the Contractor enumerated elsewhere in these Contract Documents.

Article 6 SUBCONTRACTORS

6.1. GENERAL. Nothing contained in the Contract Documents shall create any contractual relationship between the Owner or the Owner's Representative and any Subcontractor or Sub-subcontractor. However, it is acknowledged that the Owner and Owner's Representative are intended third party beneficiaries of the obligations of the Subcontractors and Sub-subcontractors related to the Work and the Project.

6.2. AWARD OF SUBCONTRACTS.

6.2.1. The Contractor shall, prior to awarding any subcontract, notify the Owner in writing of the names of all Subcontractors proposed for the several parts of the Work and shall include with any such notice the completed insurance information form and any insurance certificates required by this Contract for any proposed Subcontractor. The Owner may also require such lists and information regarding any proposed Sub-subcontractors. The Contractor shall also advise the Owner in writing of any Subcontractor or Sub-subcontractor with which it shares any business relationship or financial interest, and of the nature and extent of any such relationship or interest. No Subcontractor or Sub-subcontractor shall be engaged if objected to by the Owner; provided, however, that if the Owner does not take exception to a Subcontractor or Sub-subcontractor in writing within fifteen (15) days of its receipt of such notification, such Subcontractor or Sub-subcontractor shall be deemed acceptable to the Owner. The Owner shall not be liable to the Contractor in any manner arising out of the Owner's objection to a proposed Subcontractor or Sub-subcontractor. The Contractor shall not terminate the employment of a Subcontractor or Sub-subcontractor engaged in the Work prior to the expiration of that subcontract without good cause shown and the Owner's prior approval after reasonable notice of the Contractor's intent to so terminate.

6.2.2. The Owner may, without any responsibility or liability whatsoever, require the Contractor to utilize any person or organization for any portion of the Work as a Subcontractor or a Sub-subcontractor (herein referred to as a "Nominated Subcontractor" or "Nominated Sub-subcontractor") provided the Owner gave notice of its intention to so nominate any such Subcontractor or Sub-subcontractor prior to execution of the Agreement. The Contractor shall assume full responsibility for any such Nominated Subcontractor or Nominated Sub-subcontractor.

6.2.3. In the event the Owner and Contractor agree that the Owner may participate in any Subcontractor or Sub-subcontractor procurement activities, provided the Owner has informed the Contractor and allowed the Contractor the opportunity to participate and concur with such activities, the Contractor shall assume full responsibility for the results of any such activities including, without limitation, full responsibility for the Subcontractors' or Sub-subcontractors' awarded portions of the Work as a result thereof.

6.2.4. The Owner may assign to the Contractor any contracts or purchase orders entered into between the Owner and any other person or organization in any way related to the Project or the Work, at any time, in which event the Contractor shall assume full responsibility for such person or organization and its portion of the Work

as if such person or organization was originally a Subcontractor. Such assignment may occur by Change Order or other Modification to the Contract, and any increase in the Contract Sum shall be governed by Article 12.

6.3. SUBCONTRACTUAL RELATIONS.

6.3.1. All subcontracts and sub-subcontracts shall be in writing. Each subcontract and sub-subcontract shall contain a reference to this Contract and shall incorporate the terms and conditions hereof to the full extent applicable to the portion of the Work covered thereby. Each Subcontractor must agree, for the benefit of the Owner, to be bound by, and to require each of its Sub-subcontractors to be bound by, such terms and conditions to the full extent applicable to its portion of the Work.

6.3.2. Each subcontract shall provide for its termination by the Contractor if, in the Owner's opinion, the Subcontractor fails to comply with the requirements of the Contract Documents insofar as the same may be applicable to its portion of the Work; and each Subcontractor shall be required to insert a similar provision in each of its sub-subcontracts. In the event of any such failure by a Subcontractor or Sub-subcontractor to comply with the requirements of the Contract Documents, such Subcontractor or Sub-subcontractor, as the case may be, shall, upon the Owner's request, be removed immediately from the Work and shall not again be employed on the Work. Any such failure (specifically including, without limitation, a failure to pay for labor (including applicable fringe benefits) or materials) by a Subcontractor or Sub-subcontractor shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such failure, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner.

6.4. PAYMENTS TO SUBCONTRACTORS.

6.4.1. Unless the Owner otherwise agrees or the Contract Documents otherwise provide, the Contractor shall pay each Subcontractor, upon receipt of payments from the Owner, an amount equal to the percentage of completion allowed to the Contractor on account of such Subcontractor's portion of the Work, less a percentage thereof equal to the percentage retained from payments to the Contractor. The Contractor shall also require each Subcontractor to make similar payments due to any Sub-subcontractor.

6.4.2. If the Owner fails to approve a Contractor's Application for Payment, as hereinafter provided, for any cause which is the fault of the Contractor and not the fault of a particular Subcontractor, the Contractor shall nevertheless pay that Subcontractor for its portion of the Work to the extent completed, less the retained percentage, such payment to be made no later than the date payment to the Contractor would otherwise have been made by the Owner.

6.4.3. The Contractor shall pay each Subcontractor its proper share of any insurance monies received by the Contractor under Article 11, and it shall require each Subcontractor to make similar payments due to a Sub-subcontractor.

Article 7 SEPARATE CONTRACTS

7.1. OWNER'S RIGHT TO AWARD SEPARATE CONTRACTS. The Owner reserves the right to award other contracts in connection with the Project or other work on the Job Site on any terms and conditions which the Owner may from time to time determine in its sole discretion (hereinafter referred to as "Separate Contracts"; and such other contractors are hereinafter referred to as "Separate Contractors").

7.2. MUTUAL RESPONSIBILITY OF CONTRACTORS.

7.2.1. The Contractor shall afford all Separate Contractors and the Owner reasonable opportunity for the introduction and storage of their materials and equipment and for the execution of their work and shall properly cooperate, connect and coordinate the Work with such other work as shall be in the best interest of the Project as determined by the Owner.

7.2.2. If the execution or result of any part of the Work depends upon any work of the Owner or of any Separate Contractor, the Contractor shall, prior to proceeding with the Work, inspect and promptly report to the Owner in writing any apparent discrepancies or defects in such work of the Owner or of any Separate Contractor that render it unsuitable for the proper execution or result of any part of the Work. Failure of the Contractor to so inspect and report shall constitute an acceptance of the Owner's or Separate Contractor's work as fit and proper to receive the Work, except as to defects which may develop in the Owner's or Separate Contractor's work after completion of the Work and which the Contractor could not have discovered by its inspection prior to completion of the Work.

7.2.3. Should the Contractor cause damage to the work or property of the Owner or of any Separate Contractor on the Project, or to other work on the Job Site, or delay or interfere with the Owner's or any Separate Contractor's work, the Contractor shall be liable for the same; and, in the case of a Separate Contractor, the Contractor shall attempt to settle said claim with such Separate Contractor prior to such Separate Contractor's institution of litigation or other proceedings against the Contractor. If so requested by the parties to the dispute, the Owner may, but shall not be obligated to, arbitrate the dispute, in which event the decision of the Owner shall be final and binding on the parties to the dispute. Any such damage to the work or property of the Owner or of any Separate Contractor on the Project, or to other work on the Job Site, or delay or interfere with the Owner's or any Separate Contractor's work shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such damage, delay or interference, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner.

7.2.4. Should any Separate Contractor cause damage to the Work or to the property of the Contractor or cause delay or interference with the Contractor's performance of the Work, the Contractor shall present to such Separate Contractor any claims it may have as a result of such damage, delay or interference (with an information copy to the Owner) and shall attempt to settle its claim against such Separate Contractor prior to the institution of litigation or other proceedings against such Separate Contractor. If so requested by the parties to the dispute, the Owner may, but shall not be obligated to, arbitrate the dispute, in which event the decision of the Owner shall be final and binding on the parties to the dispute. In no event shall the Contractor seek to recover from the Owner, the Owner's Representative or the Architect/Engineer, and the Contractor hereby represents that it will not seek to recover from them, any costs, expenses or losses incurred by the Contractor as a result of any damage to the Work or property of the Contractor or any delay or interference caused or allegedly caused by any Separate Contractor.

7.2.5. If a dispute arises between the Contractor and any Separate Contractor as to the responsibility for cleaning as required by the Contract Documents, the Owner may clean and charge the cost thereof to the responsible contractor, or apportion it among the several responsible contractors, as the Owner shall determine to be just.

Article 8 TIME

8.1. DEFINITIONS.

8.1.1. Whenever the word "day" is used in the Contract Documents, it shall mean a calendar day unless otherwise specifically provided.

8.1.2. The Date of Commencement of the Work is the date established in a written notice to proceed. If there is no notice to proceed, it shall be the date of the Agreement or such other date as may be established by the Owner in writing.

8.1.3. The Date of Substantial Completion of the Work (or "Substantial Completion") is the date, certified by the Owner, when all construction is sufficiently complete in accordance with the Contract Documents that the Owner may, if it so elects, occupy and use the Work or designated portion thereof for the purpose for which it was intended.

8.2. PROGRESS AND COMPLETION; SCHEDULING.

8.2.1. All times and dates stated in the Contract Documents including, without limitation, those for the Commencement, prosecution, Milestones, Substantial Completion and final completion of the Work and for the delivery and installation of materials and equipment, are of the essence of the Contract.

8.2.2. The Contractor shall begin the Work on the Date of Commencement and shall perform the Work diligently, expeditiously and with adequate resources so as to meet all Milestones and complete all the Work within the Contract Time. The scheduling of the Work shall be performed and monitored by the Contractor utilizing a method to be chosen by the Owner. The Contractor (and its Subcontractors, if the Owner requires) shall furnish all scheduling information requested by the Owner (in such form and detail as requested for the particular portion of the Work; herein referred to as the "Schedule" or "Schedules") within two (2) weeks of the Owner's request, shall revise the same from time to time thereafter when so requested by the Owner, and shall attend such meetings concerning scheduling as the Owner may call from time to time. The Contractor shall comply with any Schedule or Schedules established by it and approved by the Owner, or established by the Owner with respect to the Commencement, performance, Milestones or completion of the whole or various portions of the Work. With respect to any portion of the Work for which a Schedule has not been established, the Contractor shall commence such portion of the Work within three (3) days of the date on which the Owner directs such commencement and shall thereafter prosecute and complete the same with all due diligence or as otherwise directed by the Owner. Neither the scheduling information submitted by the Contractor or its Subcontractors, the acceptance or approval thereof by the Owner nor the establishment or implementation of, or failure to establish or implement, Schedules by the Owner shall relieve the Contractor of its obligation to perform and complete the Work in a timely manner or to otherwise perform in accordance with the Contract Documents.

8.2.3. Float or slack time associated with any one chain of activities is defined as the amount of time between earliest start date and latest start date or between earliest finish date and latest finish date for such activities, as set forth in an approved Schedule for the Work (assuming the critical path method is used), including any revisions or updates thereto. Float or slack time is not for the exclusive use or benefit of either the Owner or the Contractor. However, if float time associated with any chain of activities is expended but not exceeded by any actions attributable to the Owner, the Contractor shall not be entitled to an extension in the Contract Time.

8.3. DELAYS, EXTENSIONS OF TIME AND OVERTIME.

8.3.1. The time during which the Contractor is delayed in the performance of the Work by the acts or omissions of the Owner, the Owner's Representative, acts of God, unusually severe and abnormal climatic conditions or other conditions beyond the Contractor's control and which the Contractor could not reasonably have foreseen and provided against, shall be added to the Contract Time stated in the Agreement; provided, however, that no claim by the Contractor for an extension of time for such delays shall be considered unless made in accordance with Paragraph 13.1.

8.3.2. The Owner and the Owner's Representative shall not be obligated or liable to the Contractor for, and the Contractor hereby expressly waives any claims against them, on account of, any damages, costs or expenses of any nature whatsoever which the Contractor, its Subcontractors or Sub-subcontractors may incur as a result of any delays, interferences, suspensions, rescheduling, changes in sequence, congestion, disruptions or the like, arising from or out of any act or omission of the Owner, or any of the events referred to in Subparagraph 8.3.1. above, it being understood and agreed that the Contractor's sole and exclusive remedy in such event shall be an extension of the Contract Time, but only if claim is properly made in accordance with the provisions of Paragraph 13.1.

8.3.3. Whenever, in the opinion of the Owner, the Work falls behind Schedule due to the fault of the Contractor, the Contractor shall, to the extent necessary to meet said Schedule, increase its labor force and/or provide overtime, extra shifts, Saturday, and Sunday and/or holiday work, and shall have each Subcontractor do likewise, all at no additional cost to or compensation from the Owner. Further, the Owner shall have the right to offset against any amounts then or thereafter due to the Contractor, or to be reimbursed by the Contractor for, any additional costs the Owner may incur as a direct result of said increase in labor force or overtime, extra shifts, Saturday, Sunday and/or holiday work.

8.3.4. The Owner may, in its sole discretion and for any reason, direct the Contractor to accelerate the Schedule of performance by providing overtime, extra shifts, Saturday, Sunday and/or holiday work and/or by having all or any Subcontractors or Sub-subcontractors designated by the Owner provide overtime, extra shifts, Saturday, Sunday and/or holiday work.

8.3.4.1. In the event of overtime, extra shifts, Saturday, Sunday or holiday work by the Contractor's own forces pursuant to this Subparagraph 8.3.4., the Owner's sole and exclusive obligation to the Contractor

(except as hereinafter provided) on account thereof shall be to reimburse the Contractor for the direct cost to the Contractor of the premium time (or shift differential for any extra shifts) for all labor utilized by the Contractor in such overtime, extra shifts, Saturday, Sunday or holiday work (but not for the straight time costs of such labor, together with any Social Security and state or federal unemployment insurance taxes in connection with such premium time (or shift differential for any extra shifts).

8.3.4.2. In the event of overtime, extra shifts, Saturday, Sunday or holiday work by a Subcontractor pursuant to this Subparagraph 8.3.4., the Owner's sole and exclusive obligation to the Contractor (except as hereinafter provided) on account thereof shall be to reimburse the Contractor for the direct cost to the Subcontractor for the premium time (or shift differential for any extra shifts) of all labor utilized in such overtime, extra shifts, Saturday, Sunday or holiday work (but not for the straight time cost of such labor), together with any Social Security and state or federal unemployment insurance taxes in connection with such premium time.

8.3.4.3. Anything in the foregoing to the contrary notwithstanding, should the Owner's direction to the Contractor to accelerate the Schedule of performance pursuant to this Subparagraph 8.3.4. require the Contractor's or a Subcontractor's forces to work in excess of fifty (50) hours per week for a period in excess of four (4) consecutive weeks, the Owner shall pay to the Contractor, for each consecutive week after the fourth consecutive week in which the same forces are required to work in excess of fifty (50) hours, an additional amount equivalent to ten percent (10%) of the gross wages of Job Site labor, less payroll costs as defined in Subparagraph 12.2.1., paid to such forces on account of such overtime, Saturday, Sunday or holiday work pursuant to this Subparagraph 8.3.4. Such acceleration shall be referred to as "Extended Acceleration", and the payment described herein shall be the sole and exclusive remedy for such Extended Acceleration including, without limitation, all inefficiencies, impacts, added supervision and overhead, ripple effect or any other costs or expenses of any kind. Anything in this Subparagraph 8.3.4.3. to the contrary notwithstanding, the Owner shall have no obligation to make payments on account of overtime, Saturday, Sunday or holiday work ordered pursuant hereto unless: (a) the Contractor shall submit to the Owner, for the Owner's review and approval, duly authenticated time tickets evidencing the hours of overtime, Saturday, Sunday or holiday work performed pursuant to this Subparagraph 8.3.4.3. by the end of the day on which performed and recapped in summary form; and (b) the Contractor shall include with its request for reimbursement a duplicate of each of the foregoing time tickets and such other substantiation of costs reimbursable hereunder as the Owner may require. If overtime, extra shifts, Saturday, Sunday or holiday work is performed in part pursuant to Subparagraph 8.3.3. and in part pursuant to this Subparagraph 8.3.4.3., the provisions of this Subparagraph 8.3.4.3. calling for payments by the Owner on account thereof shall only apply to such work performed pursuant to this Subparagraph 8.3.4.3.

8.4. TEMPORARY SUSPENSION OF WORK. The Owner shall have the authority to suspend the Work, in whole or in part, for such periods and such reasons as it may deem necessary or desirable, in its sole discretion including, without limitation: (a) unsuitable weather; (b) other conditions considered unfavorable for the suitable prosecution of the Work; (c) special events; and/or (d) other conditions considered adverse to the best interests of the Owner. Any such suspension shall be in writing to the Contractor. The Contractor shall immediately obey such orders of the Owner and shall not resume the Work until so ordered in writing by the Owner. No such temporary suspension of the Work, for periods of time up to thirty (30) consecutive days, shall be the basis of a claim by the Contractor for any increase in the Contract Sum or for any other damages, losses, costs or expenses whatsoever, all of which claims the Contractor hereby expressly waives. The Contractor shall be entitled to an extension of the Contract Time not to exceed the length of time that the Work was suspended provided the claim is submitted in accordance with Paragraph 13.1. and the suspension is not due to an act or omission of the Contractor, any Subcontractor or Sub-subcontractor.

Article 9 PAYMENTS AND COMPLETION

9.1. APPLICATION FOR PAYMENT; PASSAGE OF TITLE.

9.1.1. The "Payment Application Date" shall be that day of each calendar month designated in the Agreement when the Contractor shall deliver the "Application for Payment," as hereinafter defined, to the Owner.

9.1.2. The "Application for Payment" shall be an invoice prepared by the Contractor and submitted to the Owner in accordance with the Contract Documents. It shall show in detail all monies properly payable to the Contractor in accordance with the previously approved Schedule of Values, including those items of labor, materials and equipment used or incorporated in the Work (and, if the Owner has agreed in advance in writing, suitably stored at the Job Site) through and including the Payment Application Date. The Application for Payment shall have, as attachments, waivers of mechanics' and materialmen's liens by the Contractor and its Subcontractors and Sub-subcontractors as of the date of submission of the Application for Payment, which waivers shall conform in all material respects with the then current provisions of Part I, Chapter 713, Florida Statutes (or any successor

thereto), and such other evidence of performance of the Work, the costs thereof and payment therefor as the Owner may deem necessary or desirable.

9.1.3. The Contractor warrants that title to all Work, materials and equipment covered by an Application for Payment shall pass to the Owner, free and clear of all liens, claims, security interests or encumbrances, upon the sooner occurrence of: (a) the delivery of any such materials or equipment to the Job Site; or (b) the tender of payment of the applicable Application for Payment by the Owner to the Contractor; and that no Work, materials or equipment covered by an Application for Payment shall have been acquired, whether by the Contractor or by any Subcontractor or Sub-subcontractor, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person. The passage of title to the Owner as provided herein shall not alter or limit the obligations and duties of the Contractor with respect to the Work and the materials or equipment incorporated therein or used in connection therewith as set forth in the Contract Documents.

9.2. APPROVALS OF APPLICATIONS FOR PAYMENT.

9.2.1. If the Contractor has submitted an Application for Payment in the manner prescribed in the Contract Documents, the Owner shall, with reasonable promptness, approve the same (or such portions thereof covering amounts it determines to be properly due) or shall state in writing its reasons for withholding its approval (whether of all or a part).

9.2.2. The Owner's approval of an Application for Payment shall not constitute a representation by the Owner that the conditions precedent to the Contractor's entitlement to payment have been fulfilled, nor shall approval of an Application for Payment by the Owner be deemed a representation by the Owner: (a) that it has made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (b) that it has reviewed the construction means, methods, techniques, sequences, coordination or procedures, or the cleanliness of the Job Site, or the safety precautions and programs, in connection with the Work; (c) that it has made any examination to ascertain how or for what purposes the Contractor has used the monies previously paid on account of the Contract Sum.

9.2.3. No approval of an Application for Payment, progress payment or any beneficial, partial or entire use or occupancy of the Project by the Owner shall constitute an acceptance of any Work which is not in accordance with the Contract Documents; and regardless of approval of an Application for Payment by the Owner, the Contractor shall remain totally obligated and liable for the performance of the Work in strict compliance with the Contract Documents.

9.2.4. Subject to the Owner's rights to offset or withhold as set forth in these General Conditions, after the Owner has approved an Application for Payment, in whole or in part, it shall make payment of the amount approved to the Contractor as provided in the Contract Documents.

9.3. PAYMENTS WITHHELD; OWNER'S RIGHT TO MAKE DIRECT PAYMENTS FOR WORK.

9.3.1. The Owner may withhold its approval of an Application for Payment, in whole or in part, or nullify the whole or any part of an approval previously given, if it determines that the Application for Payment covers portions of the Work which have not, in fact, been completed, or that it includes amounts for claims allegedly made but not actually made (or subsequently withdrawn), and/or for which payment is not then due or if, and to the extent that, it deems it necessary or desirable to protect itself against loss or damage due to: (a) defective Work not remedied; (b) Contractor, Subcontractor, Sub-subcontractor or third party claims, disputes or liens or reasonable evidence indicating such claims, disputes or liens; (c) failure or alleged failure of the Contractor to make payments to Subcontractors (or of Subcontractors to make payments to Sub-subcontractors) as required by the Contract Documents, or failure to provide lien waivers for previous payments; (d) inability, or reasonable doubt as to the ability, of the Contractor to complete the Work within the Contract Time, for the unpaid balance of the Contract Sum or within the estimates prepared by the Contractor and submitted to and approved by the Owner; (e) damage to the Owner or a Separate Contractor; (f) unsatisfactory prosecution of the Work by the Contractor, its Subcontractors or Sub-subcontractors; (g) failure of the Contractor to maintain the Job Site in a clean and safe condition; (h) failure of the Contractor to meet any other monetary obligation imposed upon it pursuant to the Contract Documents; or (i) failure of the Contractor to comply with any other provision of the Contract Documents.

9.3.2. The Owner after giving the Contractor appropriate notice, may make payments on account of labor, materials and/or equipment for the Work directly to the Subcontractors, Sub-subcontractors or persons entitled to the same in lieu of paying the Contractor therefor or make joint payment to any such person and the Contractor. Any amounts so paid shall be credited against the Contract Sum. No such payment shall create any relationship between the recipient thereof and the Owner, nor any duty on the part of the Owner. The Contractor shall

cooperate with the Owner to facilitate any such direct payments and shall provide such evidence as the Owner may request for purposes of determining any amount to be so paid. If the Owner elects to make such payments as a result of a failure on the part of the Contractor to perform in accordance with the Contract, or as a result of a request from the Contractor that the Owner make such payments, then the Owner may offset or credit the amount of its administrative costs incurred in making said such payments against the Contract Sum or render an invoice to the Contractor for such administrative costs, which invoice the Contractor shall pay promptly.

9.4. SUBSTANTIAL COMPLETION AND FINAL PAYMENT.

9.4.1. At such time as the Contractor deems the Work to be Substantially Complete, the Contractor shall so notify the Owner and prepare and submit to the Owner a list of items to be completed and/or corrected and its final bill, including itemized projected amounts for any portions of the Work not yet completed. The failure to include any items on such list shall not alter the responsibility of the Contractor to complete and/or correct the Work in accordance with the Contract Documents. When the Owner, on the basis of an inspection, confirms the notification from the Contractor that the Work is Substantially Completed or, without being notified by the Contractor, determines that the Work is Substantially Completed, it shall prepare and deliver to the Contractor a Certificate of Substantial Completion which may state the responsibilities of the Owner and the Contractor for maintenance, heat, utilities and insurance and it shall, within twenty (20) days from the date of the Certificate of Substantial Completion, prepare and deliver to the Contractor a Punch List, in the form provided by the Owner, which sets forth those items determined by the Owner to require completion or correction, as applicable, and fix the time within which the Contractor shall complete or correct the items listed and complete all obligations required by the Contract Documents and submit to the Owner all documents and other matters required by the Contract Documents to be submitted by the Contractor upon completion of the Work. Failure of the Owner to prepare and deliver to the Contractor a Punch List shall not constitute a waiver of the Owner's rights or remedies under the Contract Documents nor release the Contractor of its obligations to complete the Work in accordance with the Contract Documents. The Certificate of Substantial Completion shall constitute a demand for an Application for Payment (including all costs, claims or fees for any outstanding Change Orders, or any other matter which the Contractor has not previously waived pursuant to the General Conditions, and itemized projections for any incomplete Work), and the Contractor shall be deemed conclusively to have waived the right to payment of any such item, fee or cost of any kind not billed to the Owner within thirty (30) days of delivery to the Contractor of the Certificate of Substantial Completion. The issuance of the Certificate of Substantial Completion shall not constitute a waiver of any rights of the Owner, including without limitation the right to those retainages permitted by the Contract Documents. If the Contractor does not complete and/or correct the items listed in the Punch List within the time fixed therein, the Owner shall have the right to accomplish the same and offset all costs thereof against any amounts then or thereafter due to the Contractor. If the amounts then or thereafter due to the Contractor are not sufficient to cover such costs, the Contractor shall pay the difference to the Owner. The Owner's decision as to the Date of Substantial Completion shall be final and binding.

9.4.2. Within a reasonable time following the Owner's receipt of written notification from the Contractor that the Work is ready for final inspection and acceptance and that the Contractor has completed all items set forth on the Punch List, including, delivery of the final Application for Payment, the Owner shall make such inspection and, when the Work is found to be acceptable under the Contract Documents and the Contract fully performed, shall certify completion of the Punch List, including approval of the final Application for Payment; provided, however, Owner shall not be required to certify completion of the Punch List and, therefore, neither final payment nor any retainage shall become due, until the Contractor submits to the Owner: (a) an affidavit, in a form approved by the Owner, that all payrolls, bills for materials and equipment and other indebtednesses connected with the Work for which the Owner or its property might in any way be responsible have been paid in full or otherwise satisfied; (b) consent of sureties, if any, to final payment; (c) all Contract Documents (except one set thereof to be retained by the Contractor), including, without limitation, a completed set of as-builts and record documents (as defined in and to the extent required by the Specifications); (d) such other data as the Owner may require establishing payment or satisfaction of all obligations of the Contractor in connection with the Work including, without limitation, receipt of final satisfaction and releases and waivers of lien and releases of any and all claims by the Contractor, Subcontractors and Sub-subcontractors, conforming in all material respects with the then current provisions of Part I, Chapter 713, Florida Statutes (or any successor thereto) and evidencing performance of the Work in accordance with the Contract Documents; (e) a release of the Owner and its insurers from and against any claims under the insurance required to be provided by the Owner hereunder (except to the extent of any claims theretofore timely filed which are owing but unpaid) and a release of the Owner from and against any claims between the Contractor and a separate contractor; (f) any governmental certificates required by the Contract Documents or otherwise to evidence compliance of the Contractor and the Work with applicable laws, ordinances, rules, codes, regulations and the Contract Documents; and (g) warranties, guarantees, assignments thereof, and maintenance or other manuals, required by the Specifications in the forms approved by the Owner, in favor of the Owner and such other persons as the Owner may direct (notwithstanding the foregoing, by execution of the Agreement, the Contractor shall be deemed to have guaranteed to the Owner the matters contained in the attached form of guarantee incorporated by reference into the Agreement); and (h) a fully and

properly executed Close-out Change Order, with all of its fully and properly executed Exhibits, in the form attached to the Agreement.

9.4.3. The making of final payment shall not constitute a waiver of any claims or rights by the Owner.

9.4.4. The acceptance of final payment shall constitute a waiver of all claims by the Contractor and shall constitute a general release of the Owner, the Owner's Representative and the Architect/Engineer by the Contractor.

9.4.5. If any Subcontractor or Sub-subcontractor refuses to furnish any release, satisfaction or waiver of lien required at any time by the Owner under Paragraphs 9.1., 9.3. or 9.4., or files a claim of lien against the Owner's property, the Contractor shall, if requested by the Owner and at the Contractor's expense, furnish a bond (separate and apart from any other bond provided by the Contractor hereunder) satisfactory to the Owner to exempt the Owner and its property from and against any such lien. The Contractor authorizes the Owner, and shall cause its Subcontractors and Sub-subcontractors to authorize the Owner, to check directly with any suppliers of labor and material with respect to any item chargeable to the Owner's property, to confirm balances due and to obtain sworn statements and waivers of lien, all if the Owner so elects. If any lien remains unsatisfied after all payments are made to the Contractor, the Contractor shall reimburse the Owner on account of all monies that the latter may be compelled to pay in discharging such lien, including all costs and attorneys' fees.

9.5. BENEFICIAL USE AND OCCUPANCY; PARTIAL SUBSTANTIAL COMPLETION.

9.5.1. The Owner reserves the right, at its option and convenience, to occupy or otherwise make use of all or any part of the Project or equipment at any time prior to completion of the Work upon two (2) days written notice to the Contractor (referred to herein as "Beneficial Occupancy"). The Owner shall use its best efforts to prevent such occupancy from interfering with the performance of the remaining Work; provided, however, that the Owner shall not be liable for any delays or additional costs of any nature caused by such occupancy.

9.5.2. Beneficial Occupancy shall not constitute acceptance by the Owner or the Owner's Representative of the completed Work or any portion thereof, shall not relieve the Contractor of its full responsibility for correcting defective Work and repairing the Work, shall not be deemed to be the equivalent of completion of the Work, shall not relieve the Contractor from its obligation to complete the Punch List, and shall not entitle the Contractor to any increase in the Contract Sum.

9.5.3. Anything in this Paragraph 9.5. to the contrary notwithstanding, the Owner may certify any portion of the Work to be occupied or used hereunder to be Substantially Completed and shall prepare and deliver to the Contractor a Certificate of Partial Substantial Completion for such portion of the Work. The Owner shall, within twenty (20) days from the date of the Certificate of Partial Substantial Completion, prepare and deliver to the Contractor a Punch List, in the form provided by the Owner, and, upon the Contractor's timely completion or correction of the items on the Punch List and the Owner's approval thereof, accept that portion of the Work. Failure of the Owner to prepare and deliver to the Contractor a Punch List, shall not constitute a waiver of the Owner's rights or remedies under the Contract Documents nor release the Contractor of its obligations to complete the Work in accordance with the Contract Documents. The provisions of Paragraph 9.4., except as they relate to the Contractor's obligations to complete or correct the Work in accordance with the Contract Documents, shall not apply to such Partial Substantial Completion, but the provisions of Subparagraph 14.2.2. shall apply to the portion of the Work which the Owner certifies to be Substantially Completed.

Article 10 PROTECTION OF PERSONS AND PROPERTY

10.1. RESPONSIBILITY FOR SAFETY AND HEALTH.

10.1.1. The Contractor shall be responsible for initiating, maintaining and supervising safety and anti-substance abuse precautions and programs in connection with the Work, and shall provide all protection to prevent injury to all persons involved in any way in the Work and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Owner who may visit or be affected thereby. These precautions shall include, but in no event be limited to: the posting of danger signs and personal notification to all affected persons of the existence of a hazard of whatever nature; the furnishing and maintaining of necessary traffic control barricades and flagman services; the use, or storage, removal and disposal of required explosives or other hazardous materials only under the supervision of qualified personnel and after first obtaining permission of all applicable governmental authorities; and the maintenance of adequate quantities of both hose and operable fire extinguishers at the Job Site. The Contractor shall set forth in writing its safety and anti-substance abuse precautions and programs in connection with the Work and, if requested by the Owner, submit the same to the

Owner for review. The Owner may, but shall not be obligated to, make suggestions and recommendations to the Contractor with respect thereto.

10.1.2. All Work, whether performed by the Contractor, its Subcontractors or Sub-subcontractors, or anyone directly or indirectly employed by any of them, and all equipment, appliances, machinery, materials, tools and like items incorporated or used in the Work, shall be in compliance with, and conform to: (a) all applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental authority relating to the safety of persons and their protection against injury, specifically including, but in no event limited to, the Federal Occupational Safety and Health Act of 1970, as amended, and all rules and regulations now or hereafter in effect pursuant to said Act; and (b) all codes, rules, regulations and requirements of the Owner and its insurance carriers relating thereto. In the event of conflicting requirements, the more stringent shall govern.

10.1.3. The Contractor shall designate a responsible member of its organization at the Job Site as the Project Safety Officer, whose duties it shall be to enforce the Contractor's safety and anti-substance abuse programs, to assure compliance with Subparagraph 10.1.2 and to prevent accidents. This person shall be the Contractor's Project Manager unless otherwise designated in writing by the Contractor and approved by the Owner. The Contractor shall further cause each of its Subcontractors and Sub-subcontractors to designate a responsible supervisory representative to assist the Contractor's Project Safety Officer Representative in the performance of his or her duties as aforesaid.

10.1.4. Should the Contractor fail to provide a safe area for the performance of the Work or any portion thereof, the Owner shall have the right, but not the obligation, to suspend Work in the unsafe area. All costs of any nature (including, without limitation, overtime pay) resulting from the suspension, by whomsoever incurred, shall be borne by the Contractor.

10.1.5. The Contractor shall provide to each worker on the Job Site the proper safety equipment for the duties being performed by that worker and will not permit any worker on the Job Site who fails or refuses to use the same. The Owner shall have the right, but not the obligation, to order the Contractor to send a worker home for the day or to discharge a worker for his or her failure to comply with safe practices or anti-substance abuse policies, with which order the Contractor shall promptly comply.

10.1.6. Any failure of the Contractor, its Subcontractors or Sub-subcontractors or anyone directly or indirectly employed by any of them or for whose acts any of them may be responsible, to comply with the provisions of Paragraph 10.1. shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such failure, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner. The Contractor shall not be relieved of its responsibilities under this Paragraph 10.1. should the Owner act or fail to act pursuant to its rights hereunder, nor shall the Owner thereby assume, nor be deemed to have assumed, any responsibilities otherwise imposed upon the Contractor by this Contract, or in any other manner whatsoever.

10.1.7 The Contractor shall not be relieved of its responsibilities under this Paragraph 10.1. should the Owner act or fail to act pursuant to its rights hereunder, nor shall the Owner thereby assume, nor be deemed to have assumed, any responsibilities otherwise imposed upon the Contractor by this Contract, or in any other manner whatsoever.

10.2. PROTECTION OF WORK AND PROPERTY; RESPONSIBILITY FOR LOSS.

10.2.1. The Contractor shall, throughout the performance of the Work, maintain adequate and continuous protection of all Work and temporary facilities against loss or damage from whatever cause, shall protect the property of the Owner and third parties from loss or damage from whatever cause arising out of the performance of the Work and shall comply with the requirements of the Owner and its insurance carriers and with all applicable laws, codes, rules and regulations with respect to the prevention of loss or damage to property as a result of fire or other hazards. The Owner may, but shall not be required to, make periodic patrols of the Job Site as a part of its normal security program. In such event, however, the Contractor shall not be relieved of its aforesaid responsibilities.

10.2.2. Until final acceptance of the Work by the Owner pursuant to Paragraph 9.4. (unless and to the extent otherwise set forth in a Certificate of Substantial Completion), the Contractor shall have full and complete charge and care of and, except as otherwise provided in this Subparagraph 10.2.2., shall bear all risk of loss of, and injury or damage to, the Work or any portion thereof (specifically including Owner-furnished supplies, equipment or other items to be utilized in connection with, or incorporated in, the Work) from any cause whatsoever. The Contractor shall rebuild, repair, restore and make good all losses of, and injuries or damages to, the Work or any portion thereof (specifically including Owner-furnished supplies, equipment or other items to be utilized in connection with, or incorporated in, the Work) before final acceptance of the Work. Such rebuilding, repair or restoration shall be at the Contractor's sole cost and expense unless the loss, injury or damage requiring such rebuilding, repair or restoration: (a) is directly due to errors in the Contract Documents which were not discovered by the Contractor and which the Contractor could not have discovered through the exercise of due diligence; (b) is caused by the Owner (unless (i) the Contractor has waived its rights of subrogation against the Owner on account thereof as provided in the Contract Documents, or (ii) such loss or damage would be covered by any policy or policies of insurance which the Contractor is required to maintain hereunder, whether the Contractor actually maintains such insurance or not, or (iii) is otherwise covered by a policy or policies of insurance maintained by the Contractor, whether or not required hereunder); or (c) is caused by a hazard against which the Owner is required to insure under the provisions of Article 11 hereof; provided, however, that if the loss, injury or damage would not have occurred but for the negligent act or omission of the Contractor, any of its Subcontractors or Sub-subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, the rebuilding, repair or restoration shall be at the Contractor's cost and expense to the extent of the deductible on said insurance.

10.3. SURFACE OR SUBSURFACE WATER. Surface or subsurface water or other fluid shall not be permitted to accumulate in excavations or under structures. Should such conditions develop or be encountered, the water or other fluid shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines and ditches, dams or other methods approved by the Owner in writing. The proposed location and coordination of temporary channels and conduits conducting accumulated water from the Job Site shall be submitted to the Owner for its prior written approval. All such work shall be done at the sole expense of the Contractor.

10.4. EMERGENCIES. In any emergency affecting the safety of persons or property, or in the event of a claimed violation of any federal or state safety or health law or regulation, arising out of or in any way connected with the Work or its performance, the Contractor shall act immediately to prevent threatened damage, injury or loss or to remedy said violation, whichever is applicable, failing which the Owner may immediately take whatever action it deems necessary, including, but not limited to, suspending the Work as provided in Paragraph 8.4. Any failure by the Contractor to so act or so remedy a violation shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such failure to act or remedy a violation, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner. If the Contractor shall be entitled to any additional compensation or extension of time claimed on account of emergency work not due to the fault or neglect of the Contractor or its Subcontractors or Sub-subcontractors, it shall be handled as a claim as provided in Article 13.

10.5. CLEANUP. The Contractor shall at all times keep the Job Site clean and free from accumulation of waste materials or rubbish (including, without limitation, hazardous waste), caused by his performance of the Work, and shall continuously throughout performance of the Work remove and dispose of all such materials from the Job Site and the Project. The Owner may require the Contractor to comply with such standards, means and methods of cleanup, removal or disposal as the Owner may make known to the Contractor. In the event the Contractor fails to keep the Job Site clean and free from such waste or rubbish, or to comply with such standards, means and methods, the Owner may take such action and offset any and all costs or expenses of whatever nature paid or incurred by the Owner in undertaking such action against any sums then or thereafter due to the Contractor. The Contractor shall notify the Owner in advance of the generation, importation, storage, transportation or disposal, of any hazardous waste, toxic materials or contaminants of any type in connection with the Project.

10.6. OWNER'S STANDARDS. The Owner reserves the right, but assumes no duty, to establish and enforce standards, and to change the same from time to time, for the protection of persons and property, with which the Contractor shall comply, and to review the efficiency of all protective measures taken by the Contractor. The exercise of or failure to exercise any or all of these acts by the Owner shall not relieve the Contractor of its duties and responsibilities under this Contract, and the Owner shall not thereby assume, nor be deemed to have assumed, any such duties or responsibilities of the Contractor.

Article 11 INSURANCE

11.1. CONTRACTOR'S INSURANCE; CERTIFICATES.

- A. The Contractor shall at its expense procure and maintain during the life of this Contract and for two (2) years thereafter (and shall require the same from its Subcontractors and Sub-subcontractors) the following types and minimum amounts of insurance:
- i. Commercial General Liability Insurance including liability assumed under written contract, bodily injury, property damage, personal and advertising injury, and products/completed operations liability written on an occurrence basis with minimum combined single limits for bodily injury and property damage of \$1,000,000 per occurrence;
 - ii. Automobile Liability coverage for all owned, non-owned and hired vehicles written on an occurrence basis, with minimum combined single limits of \$1,000,000 per occurrence;
 - iii. Workers' Compensation Insurance providing statutory benefits and Employer's Liability Insurance with minimum limits of \$1,000,000 per occurrence;
 - iv. Umbrella Liability on a follow-form basis providing coverage excess of the underlying policies required by i., ii, and iii. above in an amount of at least \$5,000,000 per occurrence;
 - v. If Contractor is providing any kind of professional service or advice including design, architectural, surveying, legal, financial, accounting or similar then Contractor will also carry Professional Liability/Errors & Omissions insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least 2 years following the conclusion of work.
 - vi. If Contractor is using, transporting or disposing of any hazardous materials, potentially harmful materials, chemicals, waste or similar then Contractor will also carry Pollution Liability insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least 2 years following the conclusion of work.
 - vii. If work will include the use or operation of any crane, total limit of Umbrella liability insurance will be at least \$4 million.
 - viii. If Contractor is using any kind of aircraft including unmanned aerial vehicles (drones) then use must be approved by Owner and liability insurance satisfactory to Owner must be obtained.

Contractor is not required to commercially insure its owned, rented or borrowed machinery, tools, equipment, office trailers, vehicles, and other property but

agrees that Owner is not responsible for and Contractor holds Owner harmless for loss, damage or theft of such items.

- B. All insurance required under this Article shall be with companies and on forms authorized to issue insurance in Florida and with an insurer financial strength rating from AM Best of no less than A- or an equivalent rating from a similar, recognized ratings agency unless such requirements are waived, in writing, by the Owner's Risk Manager. Certificates of insurance (or copies of policies, if required by the Owner) shall be furnished to the Owner.
- C. CANCELLATION. All such insurance required by this Article shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days unrestricted prior written notice thereof is furnished to Contractor, who agrees to promptly relay any such notice received to Owner.
- D. ADDITIONAL INSUREDS. Each liability policy required herein (except Workers' Compensation or Professional Liability) shall schedule as Additional Insureds, on a primary and non-contributory basis, the Owner and its affiliated entities and their supervisors, officers, employees, agents and assigns.
- E. WAIVERS. The Contractor hereby waives, and will require its Subcontractors and Sub-subcontractors to waive and to require its and their insurers to waive their rights of recovery or subrogation against the Owner and its affiliated entities, supervisors, officers, employees, agents and assigns.
- F. CLAIMS. The Contractor and its Subcontractors and Sub-subcontractors shall assist and cooperate in every manner possible in connection with the adjustment of all claims arising out of the operations conducted under or in connection with the Work and shall cooperate with the insurance carrier or carriers of the Owner and of the Contractor, its Subcontractors and Sub-subcontractors in all litigated claims and demands which arise out of said operations and which the said insurance carrier or carriers are called upon to adjust or resist.
- G. INDEMNIFICATION. The Contractor shall indemnify the Owner from and against any and all claims, suits, judgments, damages, losses and expenses (including attorneys' fees) of any nature whatsoever to the extent caused by the negligence, recklessness or intentional wrongful misconduct (which includes, without limitation, any failure of the Contractor or any of its Subcontractors or Sub-subcontractors to perform and complete the Work in strict compliance with the Contract Documents, unless such failure has been specifically waived by the Owner in writing upon final acceptance of the Work) of the Contractor or any persons employed or utilized by the Contractor in the performance of the Contract, including without limitation, any Subcontractor or Sub-subcontractor (or their employees), utilized by the Contractor in the performance of the Work. The provisions of this paragraph shall survive the expiration or sooner termination of this Agreement.

Article 12 CHANGES IN THE WORK

12.1. CHANGE ORDERS AND DIRECTIVES. The Owner may, without affecting the validity of the Contract Documents or any term or condition thereof, issue Change Orders, or Directives, or give other orders and instructions regarding the Work which may have the effect of ordering extra work or other changes in the Work by altering, adding to or deducting from the Work, modifying the method or manner of its performance or otherwise (herein sometimes referred to as "Changes in the Work"). The Contractor shall comply with all such orders and instructions issued by the Owner. In any such event, the Contract Sum shall, where applicable, be increased or decreased in the manner hereinafter set forth; provided, however, that if the Contractor should proceed with a Change in the Work upon an oral order, by whomsoever given, it shall constitute a waiver by the Contractor of any claim for an increase in the Contract Sum or extension of the Contract Time on account thereof. Upon receipt of any such Change Order, or Directive or other order or instructions, the Contractor shall promptly proceed with the Change in the Work, even though the amount of any resultant increase or decrease in the Contract

Sum has not yet been determined. All Changes in the Work shall be performed in accordance with the Contract Documents.

12.2. CHANGES REQUIRING AN INCREASE IN CONTRACT SUM. If any Change in the Work will result in an increase in the Contract Sum, the Owner shall have the right to require the performance thereof on a lump sum basis, a unit price basis or a time and material basis, all as hereinafter more particularly described.

12.2.1. If the Owner elects to have any Change in the Work performed on a lump sum basis, its election shall be based on a lump sum proposal which shall be submitted by the Contractor to the Owner within the time established by the Owner in the Owner's request therefor (but the Owner's request for a lump sum proposal shall not be deemed an election by the Owner to have the Change in the Work performed on a lump sum basis). The Contractor's proposal shall be itemized and segregated by labor and materials for the various components of the Change in the Work (no aggregate labor total will be acceptable) and shall be accompanied by signed proposals of any Subcontractors or Sub-subcontractors who will perform any portion of the Change in the Work and of any persons who will furnish materials or equipment for incorporation therein. The portion of the proposal relating to labor, whether by the Contractor's forces or those of its Subcontractors or Sub-subcontractors, may only include reasonably anticipated gross wages of Job Site labor, including foremen, who will be directly involved in the Change in the Work (for such time as they will be so involved), plus payroll costs (including Social Security, federal or state unemployment insurance taxes and fringe benefits in connection with such labor required by union and/or trade agreements if applicable) and up to fifteen percent (15%) of such anticipated gross wages, but not payroll costs, as overhead and profit for any such entity actually performing the Change in the Work or a portion thereof. The portion of the proposal relating to materials may only include the reasonably anticipated direct costs to the Contractor, its Subcontractors or Sub-subcontractors (as applicable) of materials to be purchased for incorporation in the Change in the Work, plus transportation and applicable sales or use taxes, and up to fifteen percent (15%) of said direct material costs as overhead and profit for the entity actually supplying the materials. The proposal may further include the Contractor's or its Subcontractor's or Sub-subcontractor's reasonably anticipated direct rental costs in connection with the Change in the Work (either actual rates or discounted local published rates), plus up to six percent (6%) thereof as overhead and profit for the entity actually incurring such costs. If any of the items included in the lump sum proposal are covered by unit prices contained in the Contract Documents, the Owner may elect to use these unit prices in lieu of the similar items included in the lump sum proposal, in which event an appropriate deduction will be made in the lump sum amount prior to the application of any allowed overhead and profit percentages. No overhead and profit shall be applied to any unit prices. The lump sum proposal may only include up to six percent (6%) of the amount which the Contractor will pay to any Subcontractor, and up to six percent (6%) of the amount which a Subcontractor will pay to any Sub-subcontractor, for the Change in the Work as overhead and profit to the Contractor or Subcontractor (only a maximum of two contractual tiers of such markup may be included).

12.2.2. If the Owner elects to have the Change in the Work performed on a unit price basis, its election shall be based on a unit price proposal which shall be submitted by the Contractor to the Owner within the time established by the Owner in the Owner's request therefor (but the Owner's request for a unit price proposal shall not be deemed an election by the Owner to have the Change in the Work performed on a unit price basis). The Contractor's proposal shall itemize the quantities of each item of the Change in the Work for which there is an applicable unit price contained in the Contract Documents. The quantities shall be itemized in relation to each specific Drawing. Unit prices shall be applied to net differences of quantities of the same item. Nothing herein contained shall preclude the Owner from requesting a lump sum proposal and a unit price proposal with respect to the same Change in the Work, in which event the Contractor shall submit both.

12.2.3. If the Owner elects to have the Change in the Work performed on a time and material basis, the same shall be performed, whether by the Contractor's forces or the forces of any of its Subcontractors or Sub-subcontractors, at actual cost to the entity performing the Change in the Work (without any charge for administration, clerical expense, supervision or superintendents of any nature whatsoever, except foremen directly involved in the Change in the Work, or the cost, use or rental of small tools, defined as tools with a cost or value of less than \$1,000, or equipment owned by the Contractor or any of its related or affiliated companies), plus fifteen percent (15%) of gross wages (excluding payroll costs) of Job Site labor and direct material costs and six percent (6%) of rental costs (other than small tools or equipment owned by the Contractor or any of its related or affiliated companies) as the total overhead and profit. Only the entity actually performing the Change in the Work or a portion thereof shall be entitled to a mark-up as aforesaid for overhead and profit, but the Contractor may include up to six percent (6%) of the amount it will pay to any Subcontractor, and a Subcontractor may include up to six percent (6%) of the amount it will pay to any Sub-subcontractor (only a maximum of two contractual tiers of such markup may be included), for the Change in the Work as overhead and profit to the Contractor or Subcontractor. The Contractor shall submit to the Owner daily time and material tickets, to include the identification number assigned to the Change in the Work, the location and description of the Change in the Work, the classification, names and social security numbers of the labor employed, the materials used, the equipment rented (not tools) and such other evidence of costs as the Owner may require. The Owner may require

authentication of all time and material tickets and invoices by persons designated by the Owner for such purpose. The failure of the Contractor to secure any required authentication shall, if the Owner elects to treat it as such, constitute a waiver by the Contractor of any claim for the cost of that portion of the Change in the Work covered by a non-authenticated ticket or invoice; provided, however, that the authentication of any such ticket or invoice by the Owner shall not constitute an acknowledgment by the Owner that the items thereon were reasonably required for the Change in the Work.

12.2.4. The Owner shall have no obligation or liability on account of a Change in the Work except as specifically provided in this Paragraph 12.2. If the Contractor fails to render any proposal within ten (10) days after the date of the Owner's request pursuant to this Paragraph 12.2. or such longer period of time established by the Owner in its request, the Owner may issue a unilateral Change Order for any such Change in the Work giving the Owner's reasonable estimate of the cost of the Change, which shall become automatically binding upon the Contractor. Overhead and profit, as allowed under this Paragraph 12.2., shall be deemed to cover all costs and expenses of any nature whatsoever, including, without limitation, those for clean-up, protection, supervision, estimating, field operations, insurance, impacts, inefficiency, extended (Job Site and home office) overhead, unabsorbed (Job Site and home office) overhead, delays, acceleration (actual or constructive), ripple effect, small tools and security, which the Contractor or any of its Subcontractors or Sub-subcontractors may incur in the performance of or in connection with a Change in the Work and which are not otherwise specifically recoverable by them pursuant to this Paragraph 12.2.

12.2.5. The Work pursuant to this Contract shall be performed by the Contractor at no extra cost to the Owner despite any order from the Owner which designates or contemplates a portion of the Work as a Change in the Work.

12.3. CHANGES REQUIRING A DECREASE IN CONTRACT SUM. If any Change in the Work will result in a decrease in the Contract Sum, the Owner may request a quotation by the Contractor of the amount of such decrease for use in preparing a Change Order. The Contractor's quotation shall be forwarded to the Owner within ten (10) days after the date of the Owner's request or such longer period of time established by the Owner therein and, if acceptable to the Owner, shall be incorporated in the Change Order. If not acceptable, the parties shall make every reasonable effort to agree as to the amount of such decrease, which may be based on a lump sum properly itemized, on unit prices stated in the Contract Documents and/or on such other basis as the parties may mutually determine. If the parties are unable to so agree, the amount of such decrease shall be the total of the estimated reduction in actual cost of the Work, as determined by the Owner's Representative in its reasonable judgment. If the Contractor fails to render any proposal within the time required herein, the Owner may issue a unilateral deductive Change Order giving the Owner's reasonable estimate of the deductive Change, which shall become automatically binding upon the Contractor.

12.4. DISPUTES REGARDING CHANGES. If any dispute should arise between the parties with respect to an increase or decrease in the Contract Sum as a result of a Change in the Work, the Contractor shall not suspend performance of any such Change in the Work or the Work itself unless otherwise so ordered by the Owner in writing. The Owner may, however, notify the Contractor of its determination regarding any such Change and, in the case of an increase, may thereafter pay to the Contractor up to 50% of the Owner's reasonable estimate of the value of the Change in the Work as its sole obligation with respect to any such Change pending resolution of the dispute. The Contractor shall thereafter be subject to the terms of Paragraph 13.2. regarding its claim for any difference.

12.5. AUDIT RIGHTS. The Contractor shall afford, and shall cause its Subcontractors and Sub-subcontractors to afford, access to the Owner at all reasonable times to any accounting books and records, correspondence, instructions, invoices, receipts, vouchers, memoranda and other records of any kind relating to the Work, all of which each of them shall maintain for a period of at least four (4) years from and after the Date of Substantial Completion. The Contractor and its Subcontractors and Sub-subcontractors shall make the same available for inspection, copying and audit, in accordance with generally accepted accounting standards, within three (3) days following notification to the Contractor of the Owner's intent to audit, failing which any claims for an increase in the Contract Sum and/or extension of the Contract Time, as applicable, shall be waived.

Article 13 CLAIMS

13.1. CLAIMS FOR EXTENSIONS OF CONTRACT TIME. No claim by the Contractor for an extension of the Contract Time or any Milestones shall be considered unless made in accordance with this Paragraph 13.1. The Contractor shall not be entitled to any extension of the Contract Time or any Milestones as a result of any condition or cause, unless it shall have given written notice to the Owner pursuant to Paragraph 16.3. promptly, but in any event within fourteen (14) days following the commencement of each such condition or cause and

stating the probable duration of the condition or cause and the Contractor's request for an extension of time. The Contractor shall deliver to the Owner, within thirty (30) days after the commencement of each condition or cause for which the Contractor has submitted a request for extension of time, supporting data to substantiate and justify the Contractor's request, including, without limitation, an analysis showing the actual impact of the condition or cause on the Schedule and the critical path of construction activities, plus any other documentation or information as may be requested by the Owner or as may be necessary to substantiate the Contractor's request. The Contractor hereby waives any claims for any such extensions not timely made or timely substantiated in accordance herewith. If the Contractor timely makes any such claim and the parties are unable to agree as to whether or not the Contractor is entitled to an extension of time or the length of such extension regarding such claim, the Owner's Representative may, but shall not be required to, ascertain the facts and the extent of the delay and determine and fix an extension of the time for completing the Work.

13.2. CLAIMS FOR INCREASES IN CONTRACT SUM.

13.2.1. Except as otherwise provided in Paragraph 12.2., no claim by the Contractor for an increase in the Contract Sum shall be considered unless made in accordance with this Paragraph 13.2. The Contractor shall give the Owner written notice pursuant to Paragraph 16.3. of any such claim promptly, but in any event not later than fourteen (14) days after the occurrence of the event giving rise to the claim (including, without limitation, any Owner determination pursuant to Article 12.4.), but (except in the event of emergencies pursuant to Paragraph 10.4.) prior to the incurring of any expenses by the Contractor. Failure to give such notice, or to provide substantiation thereof as required below, shall constitute a waiver of the claim including, but not limited to, any and all damages, cost, impacts, inefficiency, extended overhead, unabsorbed overhead, ripple effect, or expenses of any nature whatsoever which the Contractor, or its Subcontractors or Sub-subcontractors, may suffer or incur. Claims shall be made in writing and shall identify the instructions or other circumstances that are the basis of the claim and shall set forth the Contractor's best estimate of the dollar amount claimed. Within thirty (30) days after the occurrence of the event giving rise to the claim, the Contractor shall fix the amount of its claim with specificity and shall provide to the Owner supporting data to substantiate and justify the Contractor's claim, including, without limitation, substantiation of all costs plus any other documentation or information as may be requested by the Owner or as may be necessary to substantiate the Contractor's claim. No claim shall be considered by the Owner if the Contractor has otherwise waived its rights to file a claim pursuant to the Contract Documents.

13.3. NO OTHER CLAIMS. The parties acknowledge that the provisions of Paragraphs 13.1. and 13.2. are included herein for the purpose of fixing and limiting the time within which, and the manner in which claims must be made; and that Paragraphs 13.1. and 13.2. do not grant to the Contractor any right to increases in the Contract Sum, or extensions in the Contract Time or any Milestones, not otherwise permitted or provided by the other terms and provisions of the Contract Documents.

Article 14 UNCOVERING AND CORRECTION OF WORK; OWNER'S RIGHT TO CARRY OUT WORK

14.1. UNCOVERING OF WORK.

14.1.1. If any portion of the Work should be covered contrary to the instructions or request of the Owner or the requirements of the Contract Documents, the Contractor shall, if required by the Owner, uncover such portion of the Work for the Owner's observation and shall replace such Work all at the Contractor's expense.

14.1.2. If any portion of the Work should be covered prior to a specific request for observation or instruction by the Owner, the Owner may request to see such Work, and it shall be uncovered by the Contractor. If such Work is found to be in accordance with the Contract Documents and without defect, the cost of uncovering and replacement shall, by appropriate Change Order, be charged to the Owner. If such Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall bear such costs; provided, however, that if it is found that the condition was caused by a Separate Contractor employed as provided in Article 7, the Contractor shall have the right to seek reimbursement of the costs it incurs as aforesaid from said Separate Contractor.

14.2. CORRECTION OF WORK.

14.2.1. The Owner shall have the authority to reject any portion of the Work which is defective or does not conform to the Contract Documents, and the Contractor shall promptly correct all Work so rejected by the Owner, whether observed before or after the Date of Substantial Completion and whether or not fabricated, installed or completed. In order that such corrective Work shall not interrupt or delay the Owner's schedule for completion of the Project or, if applicable, disturb the occupants of the completed Project, the Contractor shall perform such

Work according to a schedule therefor established by the Owner (which may provide that the same be performed on overtime, shiftwork, Saturdays, Sundays and/or holidays), utilizing in the performance thereof such manpower as is necessary to complete the corrective Work in accordance with said schedule. The Contractor shall bear all costs of correcting such rejected Work including, without limitation, compensation for any additional architectural and engineering services made necessary thereby.

14.2.2. If, within one (1) year after the Date of Substantial Completion of the Work (as determined by the Owner) or within such longer period of time as may be prescribed by law or by the terms of any applicable warranty or guarantee required by the Contract Documents, any of the Work is found to be defective or not in accordance with the Contract Documents, the Contractor shall correct it promptly after receipt of written instructions to that effect from the Owner unless the Owner has previously given the Contractor a written acceptance of such condition.

14.2.3. The Contractor shall remove from the Job Site all Work which is defective or non-conforming and not corrected under Paragraph 5.4. or Subparagraphs 14.2.1. or 14.2.2. unless removal is waived by the Owner.

14.2.4. The Contractor shall bear the cost of making good all work of Separate Contractors (and any of the Owner's other structures or facilities) destroyed or damaged by such removal or correction.

14.2.5. If the Contractor does not remove such uncorrected defective or non-conforming Work within a reasonable time fixed by written instructions to that effect from the Owner, the Owner may remove it and store the materials and equipment at the expense of the Contractor. If the Contractor does not pay the cost of such removal and storage within ten (10) days thereafter, the Owner may, upon ten (10) additional days written notification to the Contractor, sell such materials and equipment at public or private sale and account to the Contractor for the net proceeds thereof, after deducting all the costs that should have been borne by the Contractor, including compensation for any additional architectural and engineering services and attorneys' fees made necessary thereby. If such proceeds of sale do not cover all costs which the Contractor should have borne, the difference shall be offset against any amounts then or thereafter due to the Contractor. If the amounts then or thereafter due to the Contractor are not sufficient to cover such difference, the Contractor shall, upon demand, pay the same to the Owner. The obligations of the Contractor under this Subparagraph 14.2.5. shall be in addition to, and not in limitation of, any obligations imposed on it by law, by any other provision of this Contract or by any warranty or guarantee under this Contract.

14.2.6. If the Contractor fails to correct any defective or non-conforming Work, the Owner may correct it in accordance with Paragraph 14.3. In the event of a defect found after final acceptance of the Work by the Owner which the Contractor is obligated to correct pursuant to Subparagraph 14.2.2., the Owner may, at its option, after giving the Contractor an opportunity to correct such defect, cause such corrective Work to be performed by others and charge the Contractor with the cost thereof. Such charge shall be due and payable by the Contractor upon demand.

14.3. OWNER'S RIGHT TO CARRY OUT WORK. If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provision of this Contract, and such default, neglect or non-performance shall continue for a period of 48 hours after written notification thereof from the Owner (or if such default, neglect or non-performance cannot be reasonably remedied within such 48-hour period, and Contractor does not (in the sole determination of Owner) undertake in good faith the remedy of the same within said period and thereafter proceed diligently to completion), then the Owner may, without prejudice to any other remedy the Owner may have, make good such deficiencies; provided, however, that in the event of an emergency, as determined by the Owner, no notification shall be required. The Owner shall have the right to take possession of such portion of the Job Site as will enable it to make good such deficiencies and, in connection therewith, to utilize the materials, equipment, tools, construction equipment and machinery of the Contractor located on the Job Site. If the Owner makes good any such deficiencies, the costs of correcting the same including, without limitation, compensation for additional architectural and engineering services made necessary by such default, neglect or non-performance, shall be offset against any amounts then or thereafter due to the Contractor. If the amounts then or thereafter due to the Contractor are not sufficient to cover such costs, then the Contractor shall, upon demand, pay the difference to the Owner.

14.4. ACCEPTANCE OF DEFECTIVE OR NON-CONFORMING WORK. If the Owner prefers to accept defective or non-conforming Work, it may do so instead of requiring its removal and correction, in which case an appropriate amount shall be offset against any amounts then or thereafter due to the Contractor; or, if the said appropriate amount of offset is determined after final payment (or if there is not then or thereafter due to the Contractor an amount sufficient to cover the offset available to the Owner), the Contractor shall, upon demand, pay the appropriate amount (or the difference after offset, as applicable) to the Owner.

Article 15 TERMINATION OF CONTRACT

15.1. **TERMINATION BY CONTRACTOR.** If the Owner should, without notifying the Contractor of its cause for doing so, fail or refuse to approve an Application for Payment or make payment thereon for a period of thirty (30) days after the same is required to be approved or paid pursuant to the Contract Documents, then the Contractor shall have the right, as its sole and exclusive remedy and upon fourteen (14) days prior written notice to the Owner, to terminate this Contract and recover from the Owner payment for all unpaid Work executed up to the date of termination, including any proven loss of reasonable profits sustained, based upon the percentage of Work completed through the date of termination. If the Owner shall cure its said default within such fourteen (14) day period, then the Contractor's notice of termination shall thereby be rendered ineffective, and this Contract shall continue in full force and effect. Prior to termination as aforesaid, the Contractor shall not delay or suspend the Work in whole or in part. The Contractor may not terminate this Contract on the grounds that the cause given by the Owner for failing or refusing to pay is not in accordance with fact or law, it being understood and agreed that the Contractor's sole remedy in such event shall be to seek money damages. The Contractor acknowledges that it can be adequately compensated by such money damages for any breach of this Contract which may be committed by the Owner. Accordingly, and except as hereinabove provided, the Contractor expressly agrees that no default, act or omission of the Owner shall entitle the Contractor to cancel or rescind this Contract or suspend or abandon its performance of the Work.

15.2. TERMINATION BY OWNER FOR CAUSE.

15.2.1. If the Contractor should become insolvent, file any bankruptcy proceedings, make a general assignment for the benefit of creditors, suffer or allow appointment of a receiver, refuse, fail or be unable to make prompt payment to Subcontractors, disregard applicable laws, ordinances, governmental orders or regulations or the instructions of the Owner, or if the Contractor should otherwise be guilty of a violation of, or in default under, any provision of the Contract, then the Owner may, without prejudice to any other right or remedy available to the Owner and after giving the Contractor and its surety, if any, three (3) days written notice, terminate the Contract and the employment of the Contractor on the Project, take possession of the Job Site and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor and finish the Work by whatever method the Owner may deem expedient. In addition, without terminating this Contract as a whole, the Owner may, under any of the circumstances set forth above, terminate any portion of this Contract (by reducing, in such manner the Owner deems appropriate, the scope of the Work to be performed by the Contractor) and complete the portion of this Contract so terminated in such manner as the Owner may deem expedient, taking possession of such part of the Job Site and utilizing such materials, equipment, tools, construction equipment and machinery owned by the Contractor as may be necessary to accomplish the same. The Contractor hereby grants to the Owner the further right: (a) to enter upon any premises or property other than the Job Site in order to take possession of any materials, tools, equipment, machinery or other items intended for incorporation in the Work (or any portion thereof) or for use in the performance thereof; and (b) to receive an assignment of such subcontracts as the Owner deems necessary or desirable at the time of termination of this Contract or a portion thereof.

15.2.2. If this Contract is terminated pursuant to Subparagraph 15.2.1., the Contractor shall not be entitled to receive any further payment until the Work is completed, and the Owner shall have the same right to retain monies owing to the Contractor as it would have to retain such monies from and against final payments. Upon the completion of the Work, the Owner shall make payment to the Contractor, or the Contractor shall reimburse the Owner, as the case may be, as provided in Article 10 of the Agreement. If a portion of this Contract is terminated pursuant to Subparagraph 15.2.1., such termination shall not be treated as a reduction in the scope of the Work pursuant to Article 12. Rather, in such event, the Owner shall offset against any monies then or thereafter due to the Contractor an amount determined by the Owner to be adequate to cover all costs and expenses it will incur in performing, or causing to be performed, the portion of this Contract so terminated. If the Owner's cost and expenses prove to be less than the amount offset, the Contractor shall be entitled to the difference unless otherwise provided herein. If the amount then or thereafter due to the Contractor is less than the amount to be offset and/or if the Owner's costs and expenses prove to exceed the amount offset, the Contractor shall pay the difference to the Owner upon demand.

15.2.3. The remedies provided to the Owner in this Paragraph 15.2. are in addition to, and not in lieu of, any other rights or remedies available to the Owner under the Contract Documents, at law or in equity. In the event of any breach of this Contract by the Contractor, and whether or not this Contract is terminated by the Owner, the Contractor shall be liable for all damages, losses, costs and expenses incurred by the Owner as a result thereof.

15.3. **TERMINATION BY OWNER WITHOUT CAUSE.** Without limitation to the provisions of Paragraph 15.2., the Owner shall have the right at any time, upon not less than three (3) days notice to the Contractor to

terminate this Contract without cause and/or for the Owner's convenience. Upon receipt of such notice of termination, the Contractor shall forthwith discontinue the Work and remove its equipment and employees from the Job Site. In the event of termination under this Paragraph 15.3., the Contractor shall have the right, as its sole and exclusive remedy, to recover from the Owner payment for all unpaid Work executed up to the date of termination, including any proven loss of reasonable profits sustained based upon the percentage of Work completed through the date of termination. In addition, without terminating this Contract as a whole, the Owner may, for its convenience, terminate a portion of this Contract (by reducing, in such manner as the Owner deems appropriate, the scope of the Work to be performed by the Contractor), in which event such termination of a portion of this Contract shall be treated as a reduction in the scope of the Work pursuant to Article 12.

Article 16 MISCELLANEOUS PROVISIONS

16.1. GOVERNING LAW. This Contract shall be governed by, and construed in accordance with, the laws of the State of Florida, to the exclusion of Florida rules of conflicts of laws.

16.2. ASSIGNABILITY; SUCCESSORS AND ASSIGNS.

16.2.1. This Contract may be assigned by Owner at any time without Contractor's consent; without limiting the generality of the foregoing, all warranties and guarantees in favor of Owner under the Contract Documents may be assigned without Contractor's consent by Owner to any party designated by Owner and such assignee may directly enforce any such warranty or guarantee. The Contractor shall not assign this Contract in whole or in part without the written consent of the Owner, which consent the Owner may withhold in its sole discretion; nor shall this Contract be assignable by the Contractor by operation of law. The Contractor shall not assign any monies due or to become due to it hereunder without the prior written consent of the Owner.

16.2.2. The Owner and the Contractor each binds itself and, to the extent permitted herein, its successors and assigns, to the other party and, to the extent permitted herein, the other party's successors and assigns, in respect to all covenants, agreements and obligations contained in the Contract Documents.

16.3. NOTICE. All notices (whether or not designated as such herein) which are required under this Contract to be given between the parties pursuant to this paragraph shall be in writing and deemed given and, unless otherwise provided herein, effective when delivered personally to an officer of the party to be served (including the Contractor's Project Manager, in the case of the Contractor), when deposited in the United States mail, or in a sealed envelope, with postage thereon prepaid, sent by registered or certified mail, return receipt requested, and addressed to the appropriate party at the address set forth in the Agreement or such other address as may be designated by either party hereto by notice to the other, or when transmitted by wire or facsimile to the appropriate party at the aforesaid address (a complimentary confirming letter shall also be mailed to the appropriate party on the same date).

16.4. PERFORMANCE AND PAYMENT BONDS. Unless waived or otherwise agreed by the Owner, the Contractor shall furnish (and if directed by the Owner shall require all or certain of its Subcontractors to furnish) a bond covering the faithful performance of this Contract (or any such subcontract), as revised or modified from time to time, and a bond covering the payment of all obligations arising thereunder in full compliance with the then current provisions of Section 713.23, Florida Statutes (or any successor thereto; or, if applicable, Section 255.05, Florida Statutes, or any successor thereto), each in the full Contract Sum, as revised or Modified from time to time, and with such sureties as may be approved by the Owner. Each bond shall contain the following language: "The provisions and limitations of Section 255.05 or of Section 713.23, Florida Statutes, whichever is applicable to the Contract, are incorporated herein by reference, provided, however, that in the event of any conflict between the provisions of said Section 255.05 or Section 713.23 and those contained in this bond, the provisions of said Section 255.05 or Section 713.23 shall govern." If such bonds, or either of them, are stipulated in the bidding documents or in the Contract Documents, the premium therefor shall be paid by the Contractor (or appropriate Subcontractors); but if required or increased in amount pursuant hereto subsequent to award of the Contract or due to Changes in the Work, the premium therefor shall be reimbursed by the Owner. The Contractor shall deliver promptly, and in any event no later than ten (10) days after notice of award, to the Owner any required bonds or amendments thereto. The Contractor's failure to timely obtain and deliver the required bonds or amendments thereto shall constitute cause for the Owner to terminate this Contract (or for the Contractor to terminate any subcontract). The Owner shall not be obligated to respond to, and the Contractor shall assure that the Owner is not sent, any job status inquiries from the Contractor, any surety, or any of their accountants or independent auditors.

16.5. MAINTENANCE OF HARMONIOUS RELATIONS. The Contractor is hereby advised that any portion of the Project, or other projects in proximity to the Project may be subject to, and governed by, certain union or trade agreements. It is the policy of the Owner to promote and maintain harmonious relationships in connection

with the Project. The Contractor and its Subcontractors and Sub-subcontractors shall follow this policy; and shall utilize only qualified persons or organizations in the performance of the Work. A qualified person or organization is one: which is not likely to promote labor unrest on the Project; which shall abide by all local, state and federal labor and employment relation rules, regulations and laws; whose financial stability is reasonably assured throughout the duration of the Contract; and whose commitments to other projects are not likely to interfere with its ability to perform its portion of the Work efficiently and cost effectively. The Owner reserves the right to disapprove, or to require the removal of, any person or organization who is being considered for, or has received, an award to perform all or a portion of the Work but has failed to demonstrate the willingness or ability to follow this policy.

16.6. UNION AGREEMENTS. Regardless of the expiration of any collective bargaining agreement during the term of this Contract which may affect the Contractor in any of its activities including, without limitation, with respect to the Work or the Project, the Contractor is obligated to man the job and properly and timely perform the Work in a diligent manner. Upon notification of expected or actual labor disputes or job disruption arising out of any such collective bargaining negotiations, the expiration of any union or trade agreement or any other cause, the Contractor and its Subcontractors and Sub-subcontractors shall cooperate with the Owner concerning any legal, practical or contractual actions to be taken by the Owner in response thereto and shall perform any actions requested by the Owner to eliminate, neutralize or mitigate the effects of such actions on the progress of the Work and the impact of such actions on the public access to the Reedy Creek Improvement District or any of the properties or facilities located therein, irrespective of whether such properties are owned by the Owner or by a third party. It is the Contractor's obligation, at the Contractor's own cost and expense, to take all steps available to prevent any persons performing the work from engaging in any disruptive activities such as strikes, picketing, slowdowns, job actions or work stoppages of any nature or ceasing to work due to picketing or other such activities, which steps shall include, without limitation, execution of an appropriate project agreement with appropriate unions prohibiting all such activities on or about the Project. Notwithstanding any such occurrences, the Contractor shall not be relieved of its obligation to man the job and properly and timely perform the Work in a diligent manner.

16.7. USE OF OWNER'S NAME/CONFIDENTIALITY. Neither the Contractor nor its Subcontractors or Sub-subcontractors, by virtue of this Contract, shall acquire any right to use, and they shall not use, the name of the Owner, the Owner's Representative (either alone or in conjunction with or as a part of any other word, mark or name) or any marks, fanciful characters or designs of either of them or any of its related, affiliated or subsidiary companies: in any of their advertising, publicity or promotion; to express or imply any endorsement of their respective Work or services; or in any other manner whatsoever (whether or not similar to the foregoing uses hereinabove specifically prohibited). The Contractor may, during the course of its engagement hereunder, have access to, and acquire knowledge of or from, material, data, strategies, systems or other information relating to the Work, the Project, the Owner, the Owner's Representative, its parent, affiliated, or related companies, which may not be accessible or known to the general public. Any such knowledge acquired by the Contractor shall be kept confidential and shall not be used, published or divulged by the Contractor to any other person, firm or corporation, or in any advertising or promotion regarding the Contractor or its Work or services, or in any other manner or connection whatsoever without first having obtained the written permission of the Owner, which permission the Owner may withhold in its sole discretion. The Contractor shall not be allowed to undertake or allow any photography on or about the Job Site or the Project absent written permission of the Owner, which permission the Owner may withhold in its sole discretion. In the event of a breach by Contractor of its obligations under this Paragraph 16.7., Owner shall be entitled to an injunction restraining Contractor from disclosing or divulging in whole or in part any confidential information. Further, any failure by Contractor to comply with this Paragraph 16.7. shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such failure, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. The Provisions of this Paragraph shall survive the expiration or sooner termination of the Contract.

16.8. GENERAL.

16.8.1. The captions of divisions, sections, articles, paragraphs, subparagraphs, clauses and the like in the Contract Documents are for convenience only and shall in no way define the content or limit the meaning or construction of the wording of the divisions, sections, articles, paragraphs, subparagraphs, clauses and the like. The parties agree that the Contract Documents shall not be construed more strictly against any party regardless of the identity of their drafter.

16.8.2. Unless otherwise specified, article, paragraph and subparagraph references appearing in these General Conditions are to articles, paragraphs and subparagraphs herein.

16.8.3. Wherever this Contract obligates the Contractor hereunder to reimburse the Owner or others for attorneys' fees, such obligation shall not only include attorneys' fees incurred prior to and including litigation in the trial court, but also all attorneys' fees incurred in connection with any and all appellate proceedings, no matter to which court any appeal is taken and by whomever so taken.

16.8.4. Wherever this Contract obligates the Contractor to "indemnify" the Owner, such obligations shall include, but shall not be limited by, the following: (i) the Contractor shall indemnify the Owner and its supervisors, administrators, officers, directors, agents, employees, agents, successors and assigns and Owner's Representative, and its parent, related, affiliated and subsidiary companies and the officers, directors, agents, employees and assigns of each; (ii) the Contractor shall defend (if requested by the Owner) and hold each indemnitee harmless; (iii) in the event of any such requested defense, the Owner may choose its legal counsel, control the litigation including, without limitation, determining legal strategy, settlement strategy and whether or not to file any appeals; (iv) the Contractor shall not raise as a defense to its obligation to indemnify any comparative or contributing negligence, recklessness or intentional wrongful misconduct of any of those indemnified pursuant to any such provision, it being understood and agreed that no such comparative or contributing negligence, recklessness or intentional wrongful misconduct shall relieve the Contractor from its liability to so indemnify nor entitle the Contractor to any contribution, either directly or indirectly, by those indemnified; (v) no indemnification obligation hereunder shall be limited in any way to any limit on the amount or type of damage, compensation or benefits payable by or for the Contractor or any Subcontractor or Sub-subcontractor under any Worker's Compensation Act, disability benefit acts or other employee benefit acts; and (vi) all such indemnity provisions shall survive the expiration or sooner termination of this Contract.

16.8.5. Unless otherwise specifically provided herein, the Owner may withhold any consents, approvals or waivers required of it pursuant to the Contract in its sole discretion.

16.9. IMMIGRATION REFORM CONTROL ACT. All Contractors, Subcontractors, and Sub-subcontractors must adhere to the Immigration Reform Control Act of 1986 and shall maintain I-9 forms regarding all employees. It is not the Owner's obligation to insure compliance with this law, however, the Owner reserves the right to inspect and copy the Contractor's records in this regard upon request.

16.10. ADJACENT LAND AND LANDOWNERS. To the extent the Work requires the Contractor to enter upon land owned by others than the Owner, or the Contractor is permitted to enter upon such land, then the Contractor shall, prior to entry, satisfy itself as to all conditions present upon such land and shall take all necessary precautions to protect all persons and property from injury or damage as a result of the Contractor's entry upon such land and shall promptly repair any damage to the land and any property located thereon. The Contractor shall defend, indemnify and hold harmless the owner(s) of such land from and against any and all claims, suits, judgments, damages, losses and expenses (including attorneys' fees) of any nature whatsoever to the extent caused by or arising out of the Contractor's entry upon such land. Nothing contained herein shall create any contractual relationship between the Contractor and the owner(s) of such land; however, it is acknowledged that the owner(s) of such land are intended third party beneficiaries of the obligations of the Contractor hereunder.

Article 17 EQUAL OPPORTUNITY

17.1. POLICIES OF EMPLOYMENT. The Contractor shall maintain policies of employment as follows:

17.1.1. Neither the Contractor nor any of its Subcontractors or Sub-subcontractors shall discriminate against any employee or applicant for employment on the basis of race, religion, color, sex or national origin. The Contractor shall ensure that qualified applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, or national origin. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth these policies of non-discrimination.

17.1.2. The Contractor and its Subcontractors and Sub-subcontractors shall, in all solicitations or advertisements for employees placed by them or on their behalf, state that all qualified applicants will receive consideration for employment without regard to race, religion, color, sex or national origin.

17.2. MINORITY BUSINESS ENTERPRISE PARTICIPATION. The Contractor shall provide, and shall require its Subcontractors to provide, full and fair utilization of minority business enterprises in the performance of the Work.

17.3. PROCEDURES AND GUIDELINES. The provisions of this Article are in addition to any and all other policies, procedures or guidelines established by the Owner with respect to equal employment opportunities and minority business participation which are set forth elsewhere in the Contract Documents. The Owner may, at any time during the term of the Contract, issue Directives in furtherance of this Article and the obligations of the Contractor and its Subcontractors and Sub-subcontractors hereunder, and the Contractor and its Subcontractors and Sub-subcontractors shall comply with all of the foregoing as they relate to any Work performed under this Contract. No policies, procedures or guidelines established by the Owner pursuant hereto shall give rise to a claim by the Contractor for an increase in the Contract Sum or an extension of the Contract Time, nor shall they relieve the Contractor of its primary responsibilities to provide equal employment opportunities and to insure that its Subcontractors and Sub-subcontractors do the same. Any failure of the Contractor or any of its Subcontractors or Sub-subcontractors to provide equal employment opportunities as required by these Contract Documents or by law shall be considered or deemed to be caused by the negligence, recklessness or intentional wrongful misconduct of the Contractor or of persons employed or utilized by the Contractor in the performance of the Work. The Contractor is responsible for and shall pay all damages, judgments, losses, costs or expenses, including, without limitation, attorneys' fees, arising out of any claims, lawsuits or actions pertaining or otherwise related to any such failure, including, without limitation, any and all damages, judgments, losses, expenses, costs and attorneys' fees, incurred by the Owner. If the Contractor fails to reimburse the Owner for, or to otherwise pay, any such damages, judgments, losses, expenses, costs or attorneys' fees, the Owner shall have the right to offset or back-charge all of said items or amounts against sums then or thereafter due to the Contractor under the Contract. If the sums due under the Contract have already been paid or if the sums then or thereafter due to the Contractor are not sufficient to cover the items or amounts required hereunder, the Contractor shall reimburse the Owner or otherwise pay the difference to the Owner.

END OF GENERAL CONDITIONS OF THE
CONTRACT FOR CONSTRUCTION

**REEDY CREEK IMPROVEMENT DISTRICT
PAYMENT BOND**

OWNER:

REEDY CREEK IMPROVEMENT DISTRICT
P.O. Box 10170
Lake Buena Vista, Florida 32830-0170 (hereinafter "Owner")

CONTRACTOR:

SOUTHLAND CONSTRUCTION, INC.
172 West Fourth Street
Apopka, FL, 32703 (hereinafter "Contractor")

SURETY:

Name: _____
Address: _____

_____ (hereinafter "Surety")

CONTRACT:

Date: March 14, 2023
Contract No. C006110
Project: WORLD DRIVE NORTH PHASE III

Legal Description or Street Address of Project: (Refer to Attachment "A" for Legal Descriptions of property, attached hereto and made a part hereof).

Contract Sum: **SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00)** (hereinafter "Contract")

BOND:

Date: March 14, 2023
Amount: **SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00)** (hereinafter "Bond")

1. The Contractor, as Principal, and the Surety hereby, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner, as Obligee, to pay for labor, material, services, utilities, equipment and all other items for which a lien could be claimed if Ch. 713, Florida Statutes applied to this Project, supplied for or used in the performance of the Contract, including, but not limited to, all modifications, changes, additions, alterations, and warranties thereof, all of which are incorporated herein by reference.
2. If the Contractor promptly makes full payment to all Claimants, as hereinafter defined, for all labor, material, services, utilities and equipment and all other items for which a lien could be claimed if Ch. 713, Florida Statutes applied to this Project, supplied for or used in the performance of the Contract, including, but not limited to, all modifications, changes, additions, alterations, and warranties thereof, and also fully indemnifies and holds harmless the Owner from all costs, damages, losses and expenses which the Owner may suffer by reason of the Contractor's failure to do so and fully reimburses and pays the Owner for all costs, damages and expenses which the Owner may incur in remedying any such failure, then this obligation shall be void; otherwise it shall remain in full force and effect.
3. The Surety and Contractor further agree that any modifications, changes, additions or alterations which may be made in the terms of the Contract or in the work to be done thereunder, or any extensions of the Contract time, or

other forbearance on the part of either the Owner or Contractor to the other, shall not in any way release the Contractor and the Surety, or either of them, their heirs, executors, administrators, successors and assigns, from their liability hereunder, notice to Surety of any such modifications, changes, additions, alterations, extensions or forbearances being hereby expressly waived.

4. The Surety and the Contractor further agree that this bond shall inure to the benefit of, and may be sued directly upon by, any Claimant furnishing labor, materials, services, utilities or equipment or any other item for which a construction lien could be claimed if Ch. 713, Florida Statutes applied to this Project.
5. "Claimant" shall mean for purposes hereof all persons, firms, partnerships, corporations or other entities that would be entitled to claim a construction lien if Ch. 713, Florida Statutes applied to this Project.
6. The provisions of Section 255.05, Florida Statutes, including without limitation its notice and limitations provisions, are incorporated in this bond by reference; provided, however, that in the event any provision of this Bond conflicts with Section 255.05, Florida Statutes, then such conflicting provision shall be deemed deleted herefrom and the applicable provisions of Section 255.05, Florida Statutes shall be deemed incorporated herein.
7. The sum of this Payment Bond is in addition to the sum of the Performance Bond being executed concurrently herewith.

IN WITNESS WHEREOF, the parties have executed this instrument under their several seals effective on the Date of this Bond as set forth on page 1 hereof.

CONTRACTOR:
SOUTHLAND CONSTRUCTION, INC.

SURETY:

[SEAL]

[SEAL]

By: _____
Print Name: _____
Title: _____

By: _____
Print Name: _____
Title: _____

REEDY CREEK IMPROVEMENT DISTRICT PROPERTY
DESCRIPTION

Parcel 1

A parcel of land lying in Section 11, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Northwest corner of said Section 11, run along the North line of the Northwest 1/4 of said Section 11, N 89°33'37" E, 337.23 feet; thence S 00°26'23" E, 90.04 feet to the Point of Beginning; thence S 88°26'56" E, 45.37 feet; thence S 01°33'04" W, 122.40 feet; thence S 03°43'31" W, 92.53 feet; thence S 86°16'29" E, 44.95 feet; thence S 03°43'31" W, 44.95 feet; thence S 09°05'04" W, 93.24 feet; thence S 09°05'04" W, 115.04 feet; thence N 88°19'52" E, 52.60 feet to a point on a non-tangent curve concave Westerly having a radius of 2183.00 feet, and a central angle of 08°43'00"; thence from a tangent bearing of S 12°08'20" W run Southerly along the arc of said curve, 332.11 feet; to a point of reverse curvature of a curve concave Easterly having a radius of 1983.00 feet, and a central angle of 20°51'21"; thence run Southerly along the arc of said curve, 721.81 feet; thence S 00°00'00" E, 277.99 feet; thence N 90°00'00" W, 200.00 feet; thence N 00°00'00" E, 277.99 feet to a point of curvature of a curve concave Easterly having a radius of 2183.00 feet, and a central angle of 20°51'21"; thence run Northerly along the arc of said curve, 794.61 feet; to a point of reverse curvature of a curve concave Westerly having a radius of 1983.00 feet, and a central angle of 02°31'42"; thence run Northerly along the arc of said curve, 87.50 feet; to a point on a non-tangent curve concave Southerly having a radius of 1158.02 feet, and a central angle of 07°37'33"; thence from a tangent bearing of S 74°50'00" W run Westerly along the arc of said curve, 154.13 feet; thence S 67°12'27" W, 23.16 feet; thence S 88°18'41" W, 84.22 feet; thence N 08°29'26" W, 51.97 feet; thence N 77°30'23" E, 266.27 feet; thence N 21°29'20" E, 140.95 feet; thence S 87°40'12" E, 51.55 feet; thence N 10°16'21" E, 160.69 feet; thence N 06°01'42" E, 168.52 feet; thence N 01°32'40" E, 130.15 feet to the Point of Beginning.

PARCEL 2

A parcel of land lying in Section 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

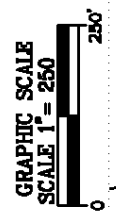
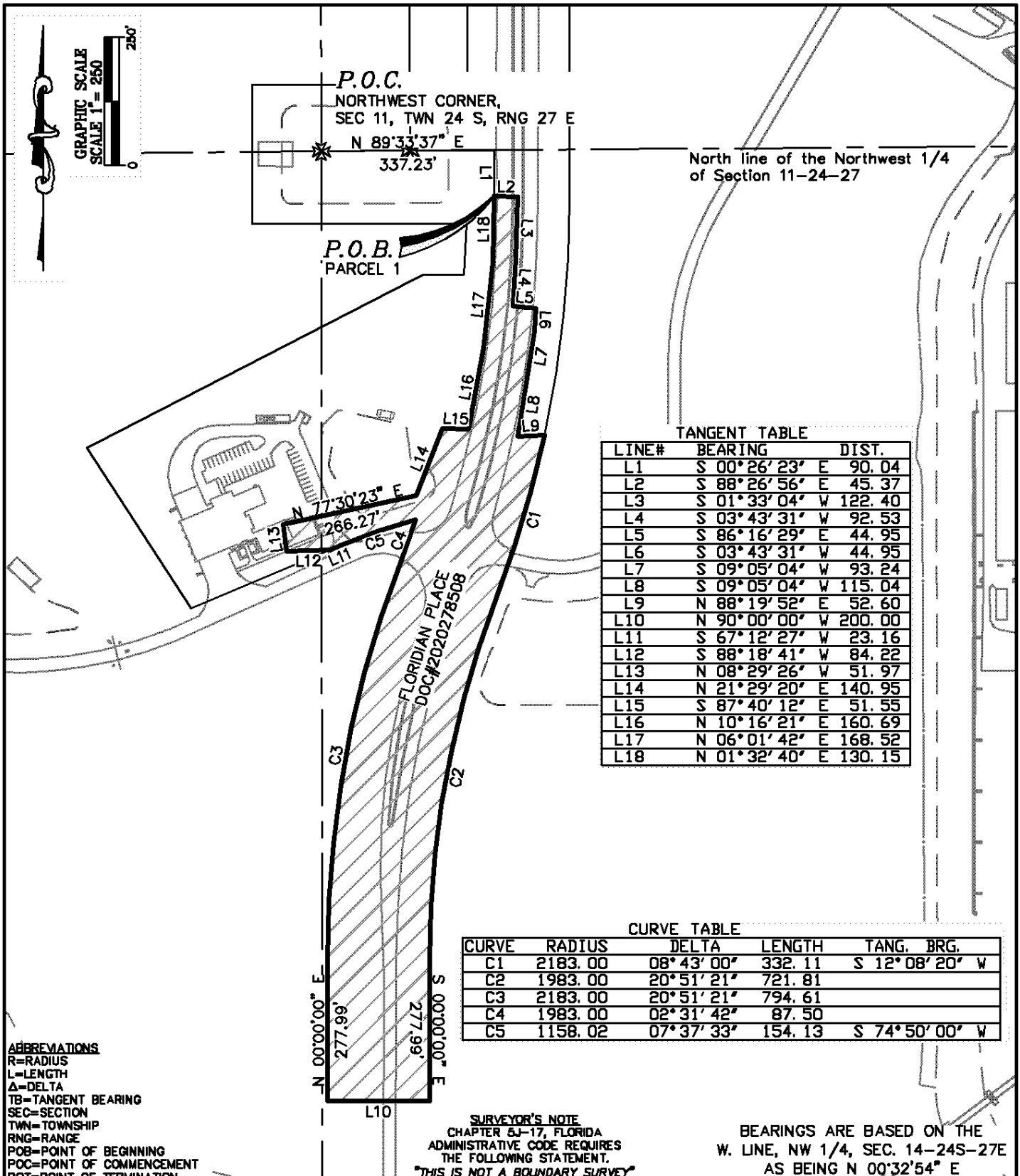
Commence at the West Quarter corner of said Section 14, run along the West line of the Northwest 1/4 of said Section 14, N 00°32'54" E, 3370.79 feet; thence N 89°58'50" E, 1846.46 feet to the Point of Beginning; thence N 72°09'00" E, 200.59 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1869.00 feet, and a central angle of 18°23'02"; thence from a tangent bearing of S 17°51'00" E run Southeasterly along the arc of said curve, 599.69 feet; thence S 36°14'02" E, 132.91 feet; thence S 49°22'52" W, 62.28 feet; thence S 43°02'40" E, 275.23 feet; thence S 49°27'09" E, 245.76 feet; thence S 52°51'51" E, 180.05 feet; thence S 33°42'45" E, 245.30 feet; thence S 55°26'54" E, 338.63 feet to a point on a non-tangent curve concave Northeasterly having a radius of 3136.88 feet, and a central angle of

09°50'29"; thence from a tangent bearing of S 58°26'21" E run Southeasterly along the arc of said curve, 538.81 feet; thence S 78°19'16" E, 342.63 feet; thence S 70°41'41" E, 159.16 feet; thence N 85°11'24" W, 368.10 feet; thence N 69°53'19" W, 115.78 feet to a point on a non-tangent curve concave Northeasterly having a radius of 4119.16 feet, and a central angle of 06°43'41"; thence from a tangent bearing of N 68°08'27" W run Northwesterly along the arc of said curve, 483.70 feet; thence N 55°58'45" W, 400.62 feet; thence N 60°12'55" W, 301.72 feet; thence N 55°30'37" W, 163.94 feet; thence N 38°39'46" W, 537.36 feet; thence S 50°28'28" W, 24.52 feet; thence N 38°28'21" W, 192.59 feet; thence N 33°32'42" W, 186.56 feet to a point on a non-tangent curve concave Northeasterly having a radius of 2069.00 feet, and a central angle of 10°33'47"; thence from a tangent bearing of N 29°46'57" W run Northwesterly along the arc of said curve, 381.44 feet; thence N 19°13'09" W, 49.46 feet to the Point of Beginning.

PARCEL 3

A parcel of land lying in Section 2, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Southwest corner of said Section 2, run along the West line of the Southwest 1/4 of said Section 2, N 00°07'50" W, 1233.65 feet; thence N 89°52'10" E, 1566.82 feet to the Point of Beginning; thence N 12°21'32" W, 20.04 feet to a point on a non-tangent curve concave Southerly having a radius of 660.00 feet, and a central angle of 36°21'37"; thence from a tangent bearing of N 53°41'45" E run Easterly along the arc of said curve, 418.84 feet; thence S 89°56'38" E, 1007.83 feet; thence N 00°06'11" W, 475.38 feet; thence S 89°56'38" E, 175.00 feet; thence S 00°06'11" E, 120.00 feet; thence N 89°56'38" W, 100.00 feet; thence S 00°06'11" E, 368.43 feet; thence N 90°00'00" W, 1082.07 feet to a point of curvature of a curve concave Southerly having a radius of 630.04 feet, and a central angle of 38°00'09"; thence run Westerly along the arc of said curve, 417.88 feet to the Point of Beginning.



P.O.C.
NORTHWEST CORNER,
SEC 11, TWN 24 S, RNG 27 E
N 89°33'37" E
337.23'

P.O.B.
PARCEL 1

North line of the Northwest 1/4
of Section 11-24-27

N 77°30'23" E
266.27'

TANGENT TABLE

LINE#	BEARING	DIST.
L1	S 00°26'23" E	90.04
L2	S 88°26'56" E	45.37
L3	S 01°33'04" W	122.40
L4	S 03°43'31" W	92.53
L5	S 86°16'29" E	44.95
L6	S 03°43'31" W	44.95
L7	S 09°05'04" W	93.24
L8	S 09°05'04" W	115.04
L9	N 88°19'52" E	52.60
L10	N 90°00'00" W	200.00
L11	S 67°12'27" W	23.16
L12	S 88°18'41" W	84.22
L13	N 08°29'26" W	51.97
L14	N 21°29'20" E	140.95
L15	S 87°40'12" E	51.55
L16	N 10°16'21" E	160.69
L17	N 06°01'42" E	168.52
L18	N 01°32'40" E	130.15

CURVE TABLE

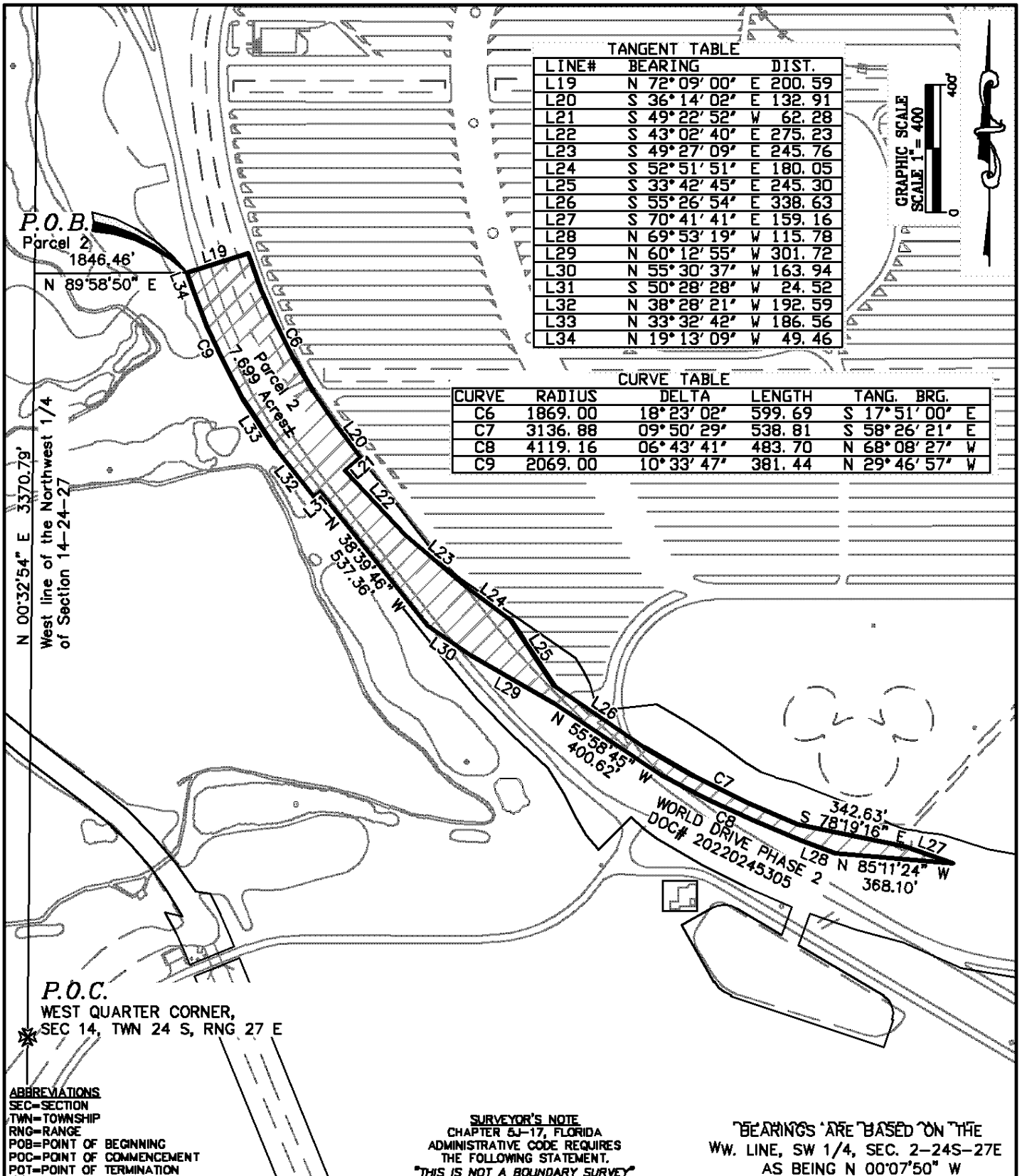
CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	2183.00	08°43'00"	332.11	S 12°08'20" W
C2	1983.00	20°51'21"	721.81	
C3	2183.00	20°51'21"	794.61	
C4	1983.00	02°31'42"	87.50	
C5	1158.02	07°37'33"	154.13	S 74°50'00" W

ABBREVIATIONS
 R=RADIUS
 L=LENGTH
 Δ=DELTA
 TB=TANGENT BEARING
 SEC=SECTION
 TWN=TOWNSHIP
 RNG=RANGE
 POB=POINT OF BEGINNING
 POC=POINT OF COMMENCEMENT
 POT=POINT OF TERMINATION

SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"

BEARINGS ARE BASED ON THE
 W. LINE, NW 1/4, SEC. 14-24S-27E
 AS BEING N 00°32'54" E

	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 11/2/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 250'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 1 OF 3	DRAWN BY: JLG
		COMMENTS RCID LAND	FILENAME: 10JG21082



P.O.B.
Parcel 2
1846.46'
N 89° 58' 50" E

Parcel 2
1.689 Acre(s)

N 00° 32' 54" E 3370.79'
West line of the Northwest 1/4
of Section 14-24-27

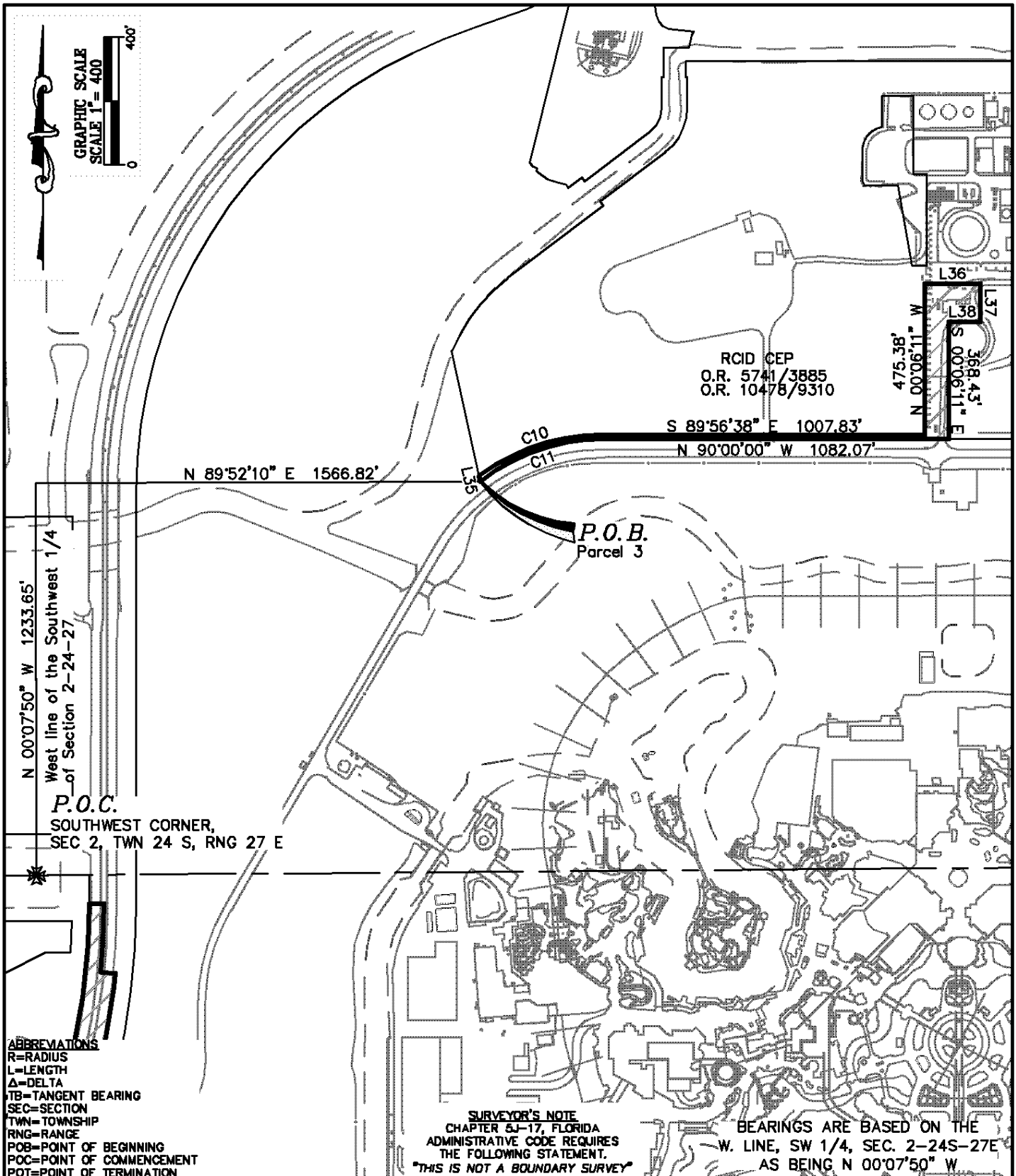
P.O.C.
WEST QUARTER CORNER,
SEC 14, TWN 24 S, RNG 27 E


ABBREVIATIONS
SEC=SECTION
TWN=TOWNSHIP
RNG=RANGE
POB=POINT OF BEGINNING
POC=POINT OF COMMENCEMENT
POT=POINT OF TERMINATION

SURVEYOR'S NOTE
CHAPTER 5J-17, FLORIDA
ADMINISTRATIVE CODE REQUIRES
THE FOLLOWING STATEMENT.
"THIS IS NOT A BOUNDARY SURVEY"

BEARINGS ARE BASED ON THE
W.W. LINE, SW 1/4, SEC. 2-24S-27E
AS BEING N 00° 07' 50" W

<p>ACES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 11/2/22
	PROJECT NAME WORLD DRIVE PHASE 3	SURVEY TYPE SKETCH OF DESCRIPTION SHEET 2 OF 3	SCALE 1" = 400'
	COMMENTS RCID LAND	DRAWN BY: JLG	FILENAME: 10JG21082



 <p>RCES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 11/2/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 400'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 3 OF 3	DRAWN BY: JLG
		COMMENTS RCID LAND	FILENAME: 10JG21082

WALT DISNEY PARK AND RESORTS PROPERTY
DESCRIPTION

PARCEL 1

A parcel of land lying in Sections 10, 11 and 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the East Quarter corner of said Section 10, run along the East line of the Northeast 1/4 of said Section 10, N 00°02'49" W, 795.13 feet; thence N 89°58'57" E, 26.68 feet to the Point of Beginning; thence N 90°00'00" E, 91.95 feet; thence S 00°00'00" E, 1019.98 feet; thence N 90°00'00" E, 105.89 feet; thence N 39°56'49" E, 63.67 feet; thence S 54°31'59" E, 56.99 feet; thence S 06°55'30" E, 172.22 feet; thence S 53°47'35" E, 89.63 feet; thence S 06°01'41" E, 148.41 feet; thence S 82°17'46" W, 216.50 feet; thence N 67°33'58" W, 94.46 feet; thence N 90°00'00" W, 121.99 feet; thence N 00°00'00" E, 378.97 feet; thence N 90°00'00" W, 294.27 feet; thence N 67°29'48" W, 79.68 feet; thence N 89°59'58" W, 165.55 feet; thence S 01°16'54" W, 165.39 feet; thence S 84°32'32" W, 115.25 feet; thence S 10°05'59" E, 91.95 feet; thence S 06°36'17" E, 73.49 feet; thence N 75°41'39" E, 71.38 feet; thence S 76°39'47" E, 49.67 feet; thence S 24°41'39" E, 57.25 feet; thence S 01°09'56" W, 190.94 feet; thence S 19°31'01" W, 34.03 feet; thence S 46°11'15" W, 144.96 feet; thence S 04°44'56" E, 75.23 feet to a point of curvature of a curve concave Northeasterly having a radius of 500.00 feet, and a central angle of 58°40'50"; thence run Southeasterly along the arc of said curve, 512.08 feet; thence S 27°08'37" W, 15.00 feet to a point on a non-tangent curve concave Northerly having a radius of 515.00 feet, and a central angle of 11°30'03"; thence from a tangent bearing of S 63°24'46" E run Easterly along the arc of said curve, 103.37 feet; thence N 15°05'11" E, 10.00 feet; thence S 74°54'49" E, 118.53 feet; thence N 16°13'54" E, 134.93 feet; thence N 81°47'34" E, 281.33 feet; thence S 50°37'51" E, 93.93 feet to a point on a non-tangent curve concave Northeasterly having a radius of 507.93 feet, and a central angle of 09°45'45"; thence from a tangent bearing of S 50°30'17" E run Southeasterly along the arc of said curve, 86.55 feet; to a point of reverse curvature of a curve concave Southwesterly having a radius of 305.00 feet, and a central angle of 12°56'00"; thence run Southeasterly along the arc of said curve, 68.85 feet; thence N 38°29'18" E, 76.38 feet; thence S 51°30'42" E, 48.44 feet; thence S 38°29'18" W, 71.64 feet; thence S 58°35'20" E, 160.46 feet; thence S 67°54'55" E, 212.84 feet; thence N 88°57'10" E, 44.05 feet; thence S 06°55'27" W, 76.63 feet; thence N 65°54'07" W, 36.44 feet; thence S 31°09'46" W, 273.94 feet; thence S 36°19'39" E, 50.10 feet; thence N 54°44'50" E, 22.83 feet; thence S 34°38'54" E, 27.14 feet; thence S 55°21'06" W, 22.69 feet; thence S 33°21'07" E, 62.50 feet; thence S 59°10'50" W, 4.93 feet; thence S 32°45'43" E, 239.07 feet; thence N 61°03'28" E, 20.33 feet; thence S 35°31'08" E, 27.22 feet; thence S 42°14'06" E, 24.20 feet; thence S 55°04'04" E, 51.00 feet; thence S 15°46'05" E, 42.41 feet; thence S 39°17'24" E, 21.86 feet; thence S 57°14'17" W, 25.03 feet; thence S 32°45'43" E, 171.68 feet; thence N 57°14'17" E, 62.91 feet; thence S 32°50'46" E, 33.35 feet; thence S 57°14'17" W, 62.96 feet; thence S 32°45'43" E, 55.96 feet; thence S 57°14'18" W, 5.00 feet; thence S 32°45'43" E, 173.79 feet; thence N 57°14'17" E, 37.97 feet to a point on a non-tangent curve concave Northeasterly having a radius of 511.38 feet, and a

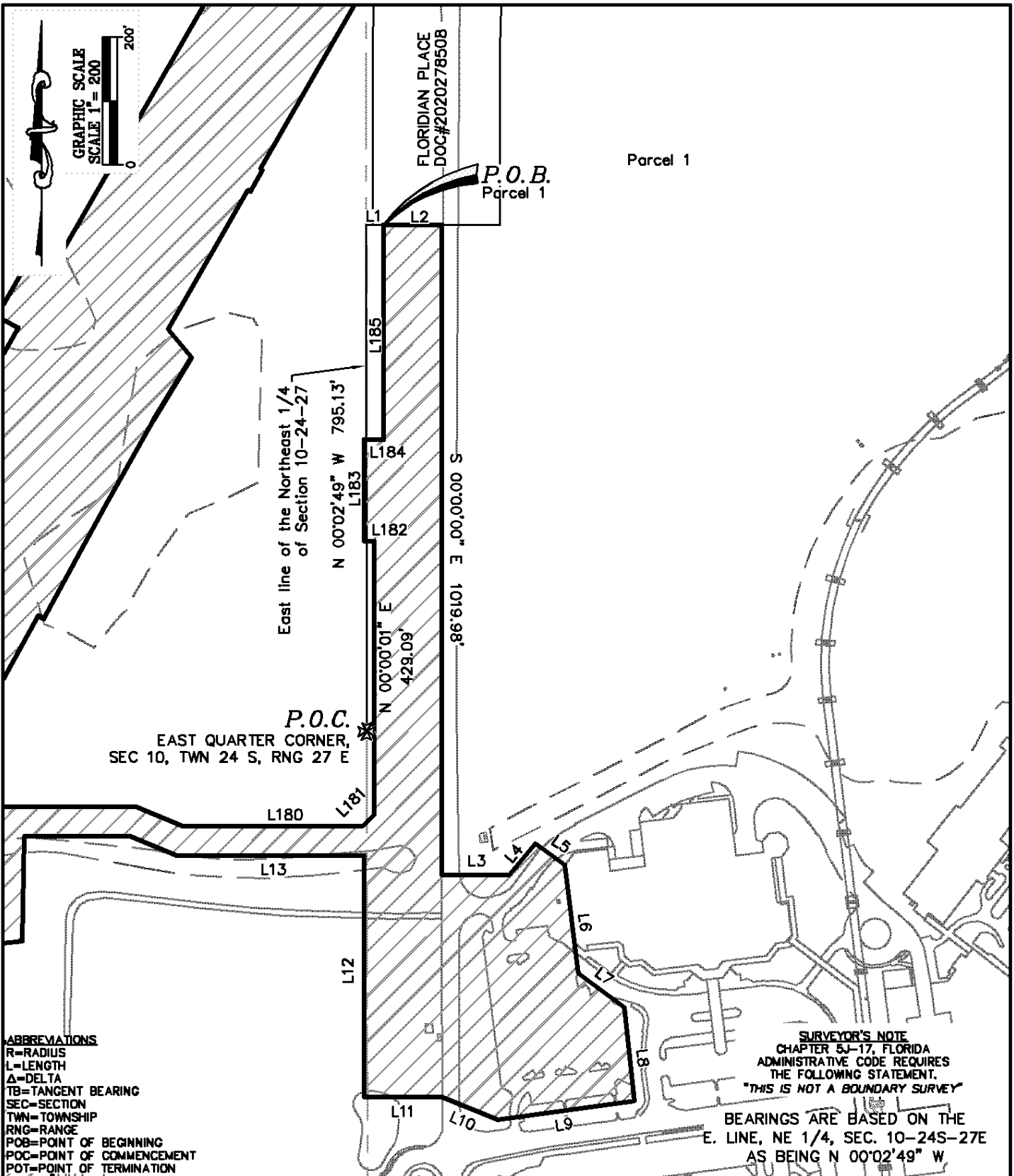
central angle of 22°24'26"; thence from a tangent bearing of S 52°15'58" E run Southeasterly along the arc of said curve, 199.99 feet; thence S 74°40'25" E, 73.61 feet; thence N 14°57'40" E, 93.55 feet; thence S 74°40'25" E, 122.12 feet; thence S 14°57'39" W, 133.98 feet; thence N 75°02'21" W, 32.29 feet; thence S 14°57'40" W, 214.35 feet; thence S 56°38'53" W, 41.90 feet; thence S 30°39'06" E, 320.42 feet; thence S 73°33'11" E, 274.67 feet; thence N 65°05'55" E, 192.62 feet to a point of curvature of a curve concave Southerly having a radius of 1000.00 feet, and a central angle of 24°57'38"; thence run Easterly along the arc of said curve, 435.64 feet; thence S 89°56'27" E, 948.68 feet; thence S 00°03'33" W, 173.92 feet; thence N 89°56'27" W, 263.40 feet to a point of curvature of a curve concave Southeasterly having a radius of 427.56 feet, and a central angle of 56°52'00"; thence run Southwesterly along the arc of said curve, 424.36 feet; to a point of compound curvature of a curve concave Easterly having a radius of 496.75 feet, and a central angle of 34°46'45"; thence run Southerly along the arc of said curve, 301.53 feet; thence S 01°35'12" E, 130.43 feet; thence S 89°54'40" W, 703.74 feet; thence S 00°22'43" W, 18.87 feet; thence S 88°10'59" W, 40.34 feet; thence S 08°53'36" E, 287.47 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1864.00 feet, and a central angle of 23°42'58"; thence from a tangent bearing of S 12°31'04" E run Southeasterly along the arc of said curve, 771.55 feet; thence S 36°14'02" E, 132.89 feet; thence S 49°41'18" W, 5.00 feet; thence N 36°14'16" W, 133.24 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1869.00 feet, and a central angle of 18°23'02"; thence from a tangent bearing of N 36°14'02" W run Northwesterly along the arc of said curve, 599.69 feet; thence S 72°09'00" W, 200.59 feet to a point on a non-tangent curve concave Northeasterly having a radius of 2106.33 feet, and a central angle of 11°43'19"; thence from a tangent bearing of S 18°02'01" E run Southeasterly along the arc of said curve, 430.92 feet; thence S 33°32'42" E, 186.56 feet; thence S 38°28'21" E, 192.59 feet; thence S 49°18'53" W, 21.35 feet; thence N 38°03'03" W, 355.90 feet; thence N 28°57'26" W, 117.22 feet; thence N 36°00'49" W, 27.30 feet; thence N 44°57'22" W, 26.71 feet; thence N 89°34'24" W, 90.06 feet; thence N 63°46'07" W, 51.14 feet; thence N 39°00'17" W, 132.74 feet; thence N 51°19'38" W, 94.21 feet; thence N 43°07'34" E, 83.71 feet; thence N 38°08'54" W, 32.63 feet; thence N 57°13'15" W, 67.59 feet; thence N 44°56'52" W, 45.86 feet; thence N 36°07'47" W, 60.62 feet; thence N 43°44'25" W, 81.68 feet; thence N 25°24'19" W, 195.36 feet; thence N 13°49'45" W, 36.97 feet; thence N 05°16'32" W, 35.47 feet; thence N 15°04'10" W, 117.48 feet; thence N 00°05'09" E, 38.33 feet; thence N 14°39'07" E, 61.80 feet; thence N 04°14'24" W, 73.87 feet; thence N 13°26'06" W, 106.32 feet; thence N 01°18'30" E, 55.76 feet; thence N 12°07'16" E, 128.23 feet; thence N 03°37'49" E, 84.64 feet; thence N 56°19'00" E, 37.60 feet to a point on a non-tangent curve concave Southwesterly having a radius of 1944.00 feet, and a central angle of 02°11'00"; thence from a tangent bearing of N 31°19'44" W run Northwesterly along the arc of said curve, 74.08 feet; thence N 33°30'45" W, 373.69 feet; thence S 56°16'51" W, 21.13 feet; thence N 33°22'37" W, 40.52 feet; thence N 62°12'22" E, 20.56 feet; thence S 73°29'52" E, 134.04 feet; thence N 74°16'09" E, 35.75 feet; thence N 32°02'04" W, 315.59 feet to a point on a non-tangent curve concave Northwesterly having a radius of 2915.08 feet, and a central angle of 02°51'40"; thence from a tangent bearing of S 53°13'03" W run Southwesterly along the arc of said curve, 145.56 feet; thence N 32°45'43" W, 20.45 feet; thence N 12°31'38" E, 28.14 feet; thence N 32°45'43" W, 453.97 feet; thence N 73°22'54" W, 166.18 feet; thence N 53°55'16" W, 282.40 feet; thence N 23°53'14" W, 205.71

feet; thence N 77°46'14" W, 234.94 feet; thence N 18°16'04" E, 57.33 feet; thence N 04°58'12" E, 145.67 feet; thence S 86°44'17" W, 185.69 feet; thence N 62°17'54" W, 121.92 feet; thence N 18°41'57" W, 74.46 feet; thence N 14°27'40" E, 119.38 feet; thence N 74°54'49" W, 104.60 feet to a point of curvature of a curve concave Northeasterly having a radius of 725.00 feet, and a central angle of 39°13'07"; thence run Northwesterly along the arc of said curve, 496.26 feet; thence N 80°23'44" W, 0.42 feet; thence N 80°23'46" W, 14.96 feet; thence N 09°48'51" W, 26.72 feet to a point on a non-tangent curve concave Northeasterly having a radius of 725.00 feet, and a central angle of 13°00'49"; thence from a tangent bearing of N 32°55'48" W run Northwesterly along the arc of said curve, 164.67 feet; thence N 48°56'48" W, 3.61 feet; thence N 57°38'56" W, 14.22 feet; thence N 66°21'04" W, 14.22 feet; thence N 75°03'12" W, 14.22 feet; thence N 23°40'12" E, 25.28 feet; thence N 23°40'12" E, 26.67 feet; thence N 09°33'48" W, 121.70 feet; thence N 04°44'56" W, 5.60 feet; thence N 16°14'50" W, 69.06 feet; thence N 32°37'32" W, 137.24 feet; thence N 00°45'35" W, 126.25 feet; thence N 04°46'58" E, 97.47 feet; thence N 75°21'31" W, 16.44 feet; thence N 54°52'19" E, 21.12 feet; thence N 04°47'47" E, 64.19 feet; thence N 38°54'40" W, 37.10 feet; thence N 48°08'44" E, 37.35 feet; thence N 04°47'47" E, 80.72 feet; thence N 85°12'13" W, 10.00 feet; thence N 04°47'47" E, 70.28 feet; thence S 85°12'13" E, 10.00 feet; thence N 04°47'47" E, 122.99 feet to a point of curvature of a curve concave Easterly having a radius of 1064.00 feet, and a central angle of 25°04'35"; thence run Northerly along the arc of said curve, 465.68 feet; thence N 29°52'22" E, 393.39 feet; thence N 60°07'38" W, 38.92 feet; thence N 29°52'22" E, 141.39 feet; thence S 60°07'38" E, 38.92 feet; thence N 29°52'22" E, 951.55 feet to a point of curvature of a curve concave Northwesterly having a radius of 1958.00 feet, and a central angle of 03°16'50"; thence run Northeasterly along the arc of said curve, 112.11 feet; thence N 06°47'01" E, 196.98 feet; thence S 88°18'41" W, 58.74 feet; thence N 67°12'27" E, 23.16 feet to a point of curvature of a curve concave Southerly having a radius of 1158.02 feet, and a central angle of 07°37'33"; thence run Easterly along the arc of said curve, 154.13 feet; thence S 19°35'30" W, 87.49 feet to a point on a non-tangent curve concave Easterly having a radius of 2183.00 feet, and a central angle of 17°36'28"; thence from a tangent bearing of S 20°51'21" W run Southerly along the arc of said curve, 670.86 feet; thence S 29°52'22" W, 361.30 feet; thence S 60°11'50" E, 4.13 feet; thence S 29°48'10" W, 39.00 feet; thence N 60°11'50" W, 4.67 feet; thence S 29°45'54" W, 251.65 feet; thence S 39°35'48" E, 57.07 feet; thence S 31°06'43" W, 115.34 feet; thence S 29°10'09" W, 155.88 feet; thence S 28°40'22" W, 199.95 feet; thence N 60°26'11" W, 10.00 feet; thence S 28°40'22" W, 140.77 feet; thence S 17°55'52" W, 185.78 feet; thence S 89°59'58" E, 277.81 feet; thence S 67°29'48" E, 79.68 feet; thence N 90°00'00" E, 282.77 feet; thence N 44°59'55" E, 24.98 feet; thence N 00°00'01" E, 429.09 feet; thence N 90°00'00" W, 15.32 feet; thence N 00°00'00" E, 160.00 feet; thence N 90°00'00" E, 30.04 feet; thence N 00°00'00" E, 336.98 feet to the Point of Beginning.

PARCEL 2


A parcel of land lying in Sections 10 and 11, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

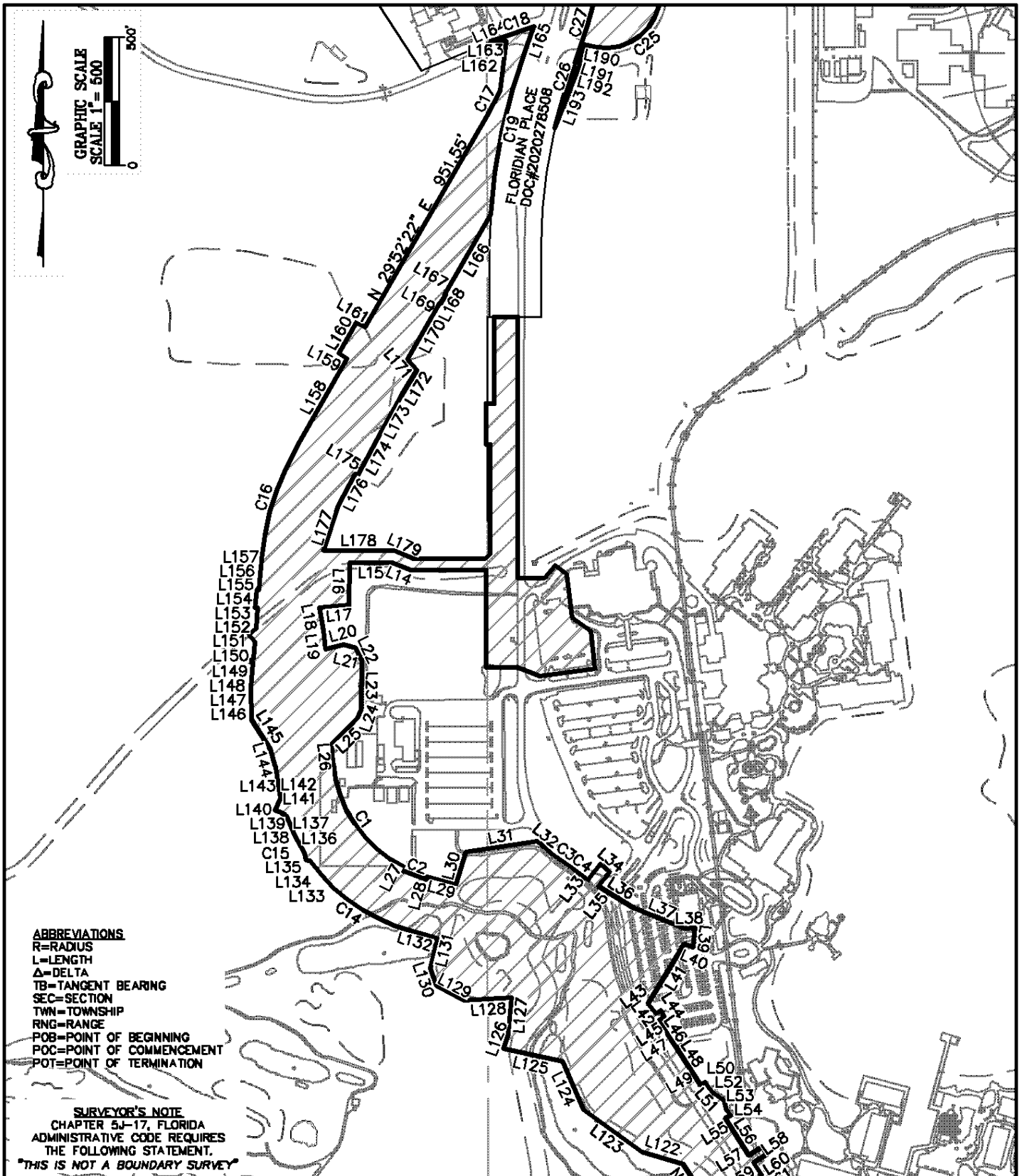
Commence at the Northwest corner of said Section 11, run along the North line of the Northwest 1/4 of said Section 11, N 89°33'37" E, 484.39 feet; thence S 00°00'00" E, 99.94 feet to a point of curvature of a curve concave Westerly having a radius of 2183.00 feet, and a central angle of 12°08'20"; thence run Southerly along the arc of said curve, 462.50 feet; to the Point of Beginning; thence N 30°21'50" E, 1869.65 feet to a point on a non-tangent curve concave Southeasterly having a radius of 660.00 feet, and a central angle of 23°23'34"; thence from a tangent bearing of N 30°18'10" E run Northeasterly along the arc of said curve, 269.47 feet; thence S 12°21'32" E, 20.04 feet to a point on a non-tangent curve concave Southerly having a radius of 630.04 feet, and a central angle of 38°00'09"; thence from a tangent bearing of N 51°59'51" E run Easterly along the arc of said curve, 417.88 feet; thence N 90°00'00" E, 1082.07 feet; thence S 00°06'11" E, 36.95 feet; thence N 89°56'38" W, 1082.97 feet to a point of curvature of a curve concave Southeasterly having a radius of 610.00 feet, and a central angle of 59°45'12"; thence run Southwesterly along the arc of said curve, 636.16 feet; thence S 30°18'10" W, 1313.25 feet to a point of curvature of a curve concave Easterly having a radius of 620.00 feet, and a central angle of 30°03'22"; thence run Southerly along the arc of said curve, 325.24 feet; thence S 00°14'49" W, 183.80 feet to a point of curvature of a curve concave Northwesterly having a radius of 210.00 feet, and a central angle of 100°31'07"; thence run Southwesterly along the arc of said curve, 368.42 feet; thence N 79°14'04" W, 49.94 feet; thence S 15°34'49" W, 37.05 feet; thence S 06°25'09" W, 46.23 feet; thence S 21°25'10" W, 265.20 feet to a point on a non-tangent curve concave Easterly having a radius of 1983.00 feet, and a central angle of 07°27'02"; thence from a tangent bearing of N 13°24'18" E run Northerly along the arc of said curve, 257.87 feet; to a point of reverse curvature of a curve concave Westerly having a radius of 2183.00 feet, and a central angle of 08°43'00"; thence run Northerly along the arc of said curve, 332.11 feet to the Point of Beginning.



ABBREVIATIONS
 R=RADIUS
 L=LENGTH
 Δ=DELTA
 TB=TANGENT BEARING
 SEC=SECTION
 TWN=TOWNSHIP
 RNG=RANGE
 POB=POINT OF BEGINNING
 POC=POINT OF COMMENCEMENT
 POT=POINT OF TERMINATION


SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"
 BEARINGS ARE BASED ON THE
 E. LINE, NE 1/4, SEC. 10-24S-27E
 AS BEING N 00°02'49" W

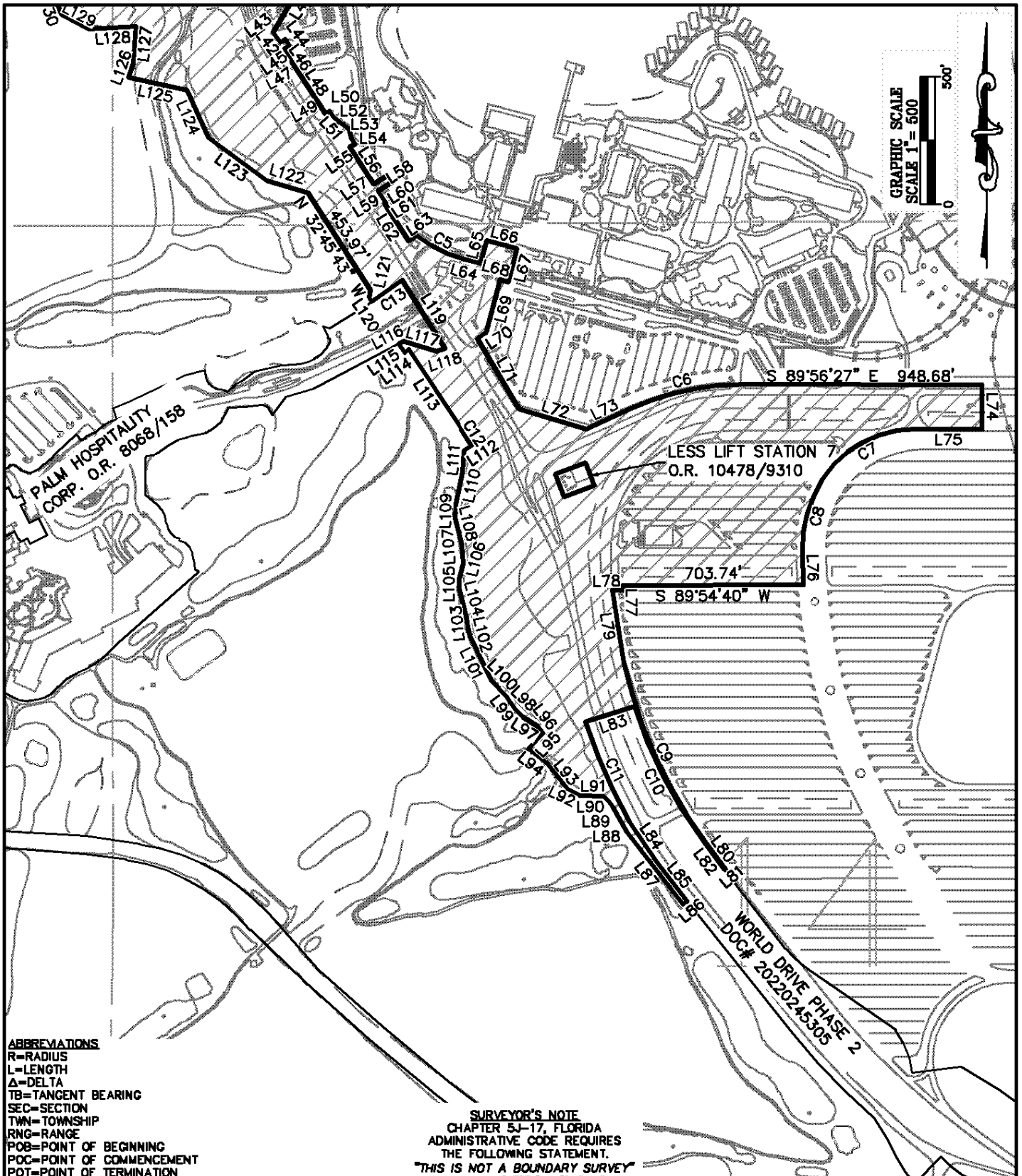
 <p>ACES BEERY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 1102/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 200'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 1 OF 6	DRAWN BY: JLG
		COMMENTS WDPR LAND	FILENAME: 10JG21084



ABBREVIATIONS
 R=RADIUS
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SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
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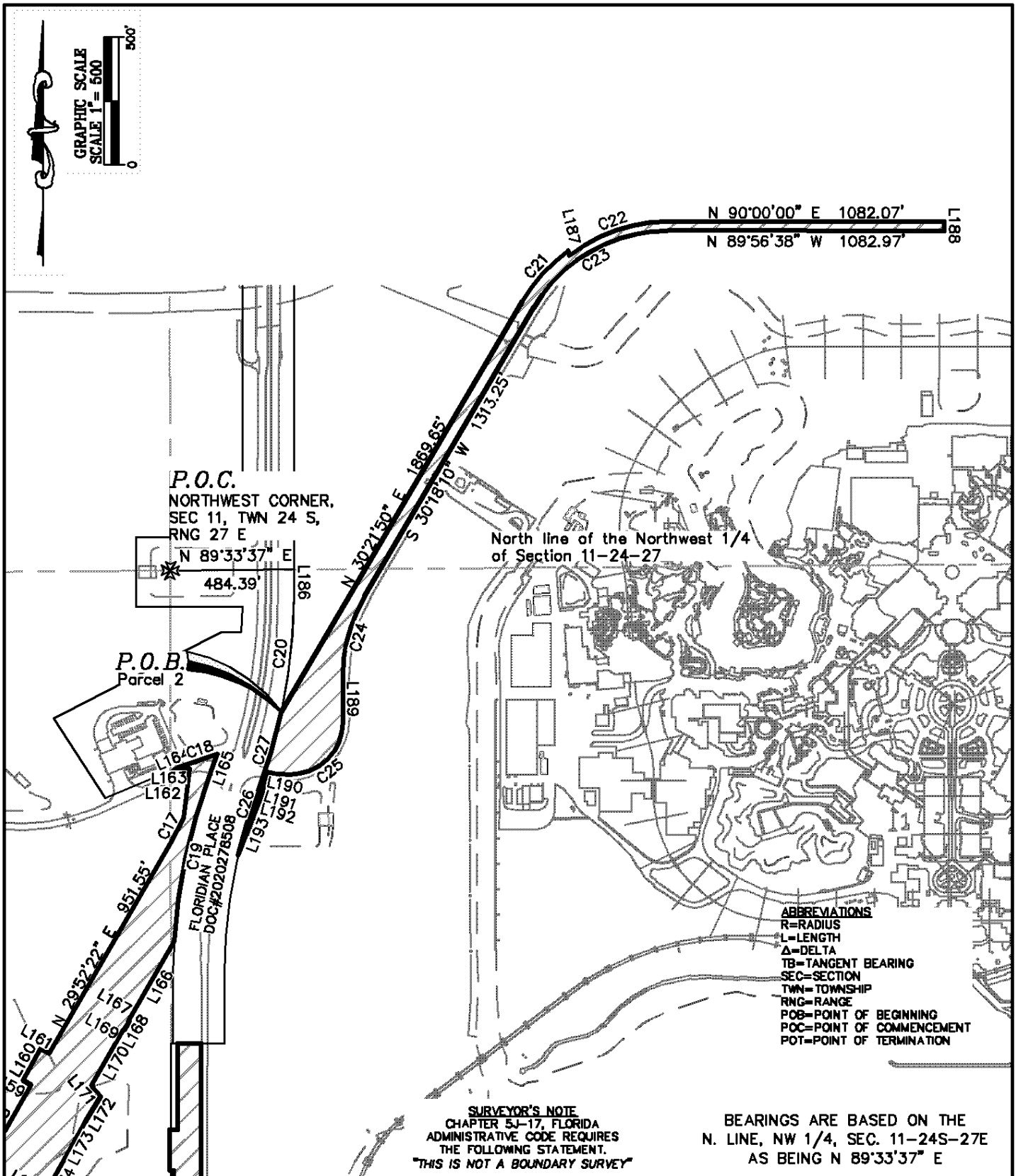
 <p>ACES BEERY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 8/23/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 2 OF 6	DRAWN BY: JLG
		COMMENTS W DPR LAND	FILENAME: 10JG21084




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SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"


 <p>ACES BEERY CREEK ENERGY SERVICES</p> <p>P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855</p>	FILING AREA OVERALL	DATE: 8/23/22
	PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
	SURVEY TYPE SKETCH OF DESCRIPTION SHEET 3 OF 6	DRAWN BY: JLG
	COMMENTS WDPR LAND	FILENAME: 10JG21084



 <p>ACES BERRY CREEK ENERGY SERVICES</p>	<p>P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855</p>	<p>FILING AREA OVERALL</p>	<p>DATE: 8/23/22</p>
		<p>PROJECT NAME WORLD DRIVE PHASE 3</p>	<p>SCALE 1" = 200'</p>
		<p>SURVEY TYPE SKETCH OF DESCRIPTION SHEET 4 OF 6</p>	<p>DRAWN BY: JLG</p>
		<p>COMMENTS WDPR LAND</p>	<p>FILENAME: 10JG21084</p>


TANGENT TABLE

LINE#	BEARING	DIST.	L66	S 74° 40' 25" E 122. 12	L132	N 74° 54' 49" W 104. 60
L1	N 89° 58' 57" E	26. 68	L67	S 14° 57' 39" W 133. 98	L133	N 80° 23' 44" W 0. 42
L2	N 90° 00' 00" E	91. 95	L68	N 75° 02' 21" W 32. 29	L134	N 80° 23' 46" W 14. 96
L3	N 90° 00' 00" E	105. 89	L69	S 14° 57' 40" W 214. 35	L135	N 09° 48' 51" W 26. 72
L4	N 39° 56' 49" E	63. 67	L70	S 56° 38' 53" W 41. 90	L136	N 48° 56' 48" W 3. 61
L5	S 54° 31' 59" E	56. 99	L71	S 30° 39' 06" E 320. 42	L137	N 57° 38' 56" W 14. 22
L6	S 06° 55' 30" E	172. 22	L72	S 73° 33' 11" E 274. 67	L138	N 66° 21' 04" W 14. 22
L7	S 53° 47' 35" E	89. 63	L73	N 65° 05' 55" E 192. 62	L139	N 75° 03' 12" W 14. 22
L8	S 06° 01' 41" E	148. 41	L74	S 00° 03' 33" W 173. 92	L140	N 23° 40' 12" E 25. 28
L9	S 82° 17' 46" W	216. 50	L75	N 89° 56' 27" W 263. 40	L141	N 23° 40' 12" E 26. 67
L10	N 67° 33' 58" W	94. 46	L76	S 01° 35' 12" E 130. 43	L142	N 09° 33' 48" W 121. 70
L11	N 90° 00' 00" W	121. 99	L77	S 00° 22' 43" W 18. 87	L143	N 04° 44' 56" W 5. 60
L12	N 00° 00' 00" E	378. 97	L78	S 88° 10' 59" W 40. 34	L144	N 16° 14' 50" W 69. 06
L13	N 90° 00' 00" W	294. 27	L79	S 08° 53' 06" E 287. 47	L145	N 32° 37' 32" W 137. 24
L14	N 67° 29' 48" W	79. 68	L80	S 36° 14' 02" E 132. 89	L146	N 00° 45' 35" W 126. 25
L15	N 89° 59' 58" W	165. 55	L81	S 49° 41' 18" W 5. 00	L147	N 04° 46' 58" E 97. 47
L16	S 01° 16' 54" W	165. 39	L82	N 36° 14' 16" W 133. 24	L148	N 75° 21' 31" W 16. 44
L17	S 84° 32' 32" W	115. 25	L83	S 72° 09' 00" W 200. 59	L149	N 54° 52' 19" E 21. 12
L18	S 10° 05' 59" E	91. 95	L84	S 33° 32' 42" E 186. 56	L150	N 04° 47' 47" E 64. 19
L19	S 06° 36' 17" E	73. 49	L85	S 38° 28' 21" E 192. 59	L151	N 38° 54' 40" W 37. 10
L20	N 75° 41' 39" E	71. 38	L86	S 49° 18' 53" W 21. 35	L152	N 48° 08' 44" E 37. 35
L21	S 76° 39' 47" E	49. 67	L87	N 38° 03' 03" W 355. 90	L153	N 04° 47' 47" E 80. 72
L22	S 24° 41' 39" E	57. 25	L88	N 28° 57' 26" W 117. 22	L154	N 85° 12' 13" W 10. 00
L23	S 01° 09' 56" W	190. 94	L89	N 36° 00' 49" W 27. 30	L155	N 04° 47' 47" E 70. 28
L24	S 19° 31' 01" W	34. 03	L90	N 44° 57' 22" W 26. 71	L156	S 85° 12' 13" E 10. 00
L25	S 46° 11' 15" W	144. 96	L91	N 89° 34' 24" W 90. 06	L157	N 04° 47' 47" E 122. 99
L26	S 04° 44' 56" E	75. 23	L92	N 63° 46' 07" W 51. 14	L158	N 29° 52' 22" E 393. 39
L27	S 27° 08' 37" W	15. 00	L93	N 39° 00' 17" W 132. 74	L159	N 60° 07' 38" W 38. 92
L28	N 15° 05' 11" E	10. 00	L94	N 51° 19' 38" W 94. 21	L160	N 29° 52' 22" E 141. 39
L29	S 74° 54' 49" E	118. 53	L95	N 43° 07' 34" E 83. 71	L161	S 60° 07' 38" E 38. 92
L30	N 16° 13' 54" E	134. 93	L96	N 38° 08' 54" W 32. 63	L162	N 06° 47' 01" E 196. 98
L31	N 81° 47' 34" E	281. 33	L97	N 57° 13' 15" W 67. 59	L163	S 88° 18' 41" W 58. 74
L32	S 50° 37' 51" E	93. 93	L98	N 44° 56' 52" W 45. 86	L164	N 67° 12' 27" E 23. 16
L33	N 38° 29' 18" E	76. 38	L99	N 36° 07' 47" W 60. 62	L165	S 19° 35' 30" W 87. 49
L34	S 51° 30' 42" E	48. 44	L100	N 43° 44' 25" W 81. 68	L166	S 29° 52' 22" W 361. 30
L35	S 38° 29' 18" W	71. 64	L101	N 25° 24' 19" W 195. 36	L167	S 60° 11' 50" E 4. 13
L36	S 58° 35' 20" E	160. 46	L102	N 13° 49' 45" W 36. 97	L168	S 29° 48' 10" W 39. 00
L37	S 67° 54' 55" E	212. 84	L103	N 05° 16' 32" W 35. 47	L169	N 60° 11' 50" W 4. 67
L38	N 88° 57' 10" E	44. 05	L104	N 15° 04' 10" W 117. 48	L170	S 29° 45' 54" W 251. 65
L39	S 06° 55' 27" W	76. 63	L105	N 00° 05' 09" E 38. 33	L171	S 39° 35' 48" E 57. 07
L40	N 65° 54' 07" W	36. 44	L106	N 14° 39' 07" E 61. 80	L172	S 31° 06' 43" W 115. 34
L41	S 31° 09' 46" W	273. 94	L107	N 04° 14' 24" W 73. 87	L173	S 29° 10' 09" W 155. 88
L42	S 36° 19' 39" E	50. 10	L108	N 13° 26' 06" W 106. 32	L174	S 28° 40' 22" W 199. 95
L43	N 54° 44' 50" E	22. 83	L109	N 01° 18' 30" E 55. 76	L175	N 60° 26' 11" W 10. 00
L44	S 34° 38' 54" E	27. 14	L110	N 12° 07' 16" E 128. 23	L176	S 28° 40' 22" W 140. 77
L45	S 55° 21' 06" W	22. 69	L111	N 03° 37' 49" E 84. 64	L177	S 17° 55' 52" W 185. 78
L46	S 33° 21' 07" E	62. 50	L112	N 56° 19' 00" E 37. 60	L178	S 89° 59' 58" E 277. 81
L47	S 59° 10' 50" W	4. 93	L113	N 33° 30' 45" W 373. 69	L179	S 67° 29' 48" E 79. 68
L48	S 32° 45' 43" E	239. 07	L114	S 56° 16' 51" W 21. 13	L180	N 90° 00' 00" E 282. 77
L49	N 61° 03' 28" E	20. 33	L115	N 33° 22' 37" W 40. 52	L181	N 44° 59' 55" E 24. 98
L50	S 35° 31' 08" E	27. 22	L116	N 62° 12' 22" E 20. 56	L182	N 90° 00' 00" W 15. 32
L51	S 42° 14' 06" E	24. 20	L117	S 73° 29' 52" E 134. 04	L183	N 00° 00' 00" E 160. 00
L52	S 55° 04' 04" E	51. 00	L118	N 74° 16' 09" E 35. 75	L184	N 90° 00' 00" E 30. 04
L53	S 15° 46' 05" E	42. 41	L119	N 32° 02' 04" W 315. 59	L185	N 00° 00' 00" E 336. 98
L54	S 39° 17' 24" E	21. 86	L120	N 32° 45' 43" W 20. 45	L186	S 00° 00' 00" E 99. 94
L55	S 57° 14' 17" W	25. 03	L121	N 12° 31' 38" E 28. 14	L187	S 12° 21' 32" E 20. 04
L56	S 32° 45' 43" E	171. 68	L122	N 73° 22' 54" W 166. 18	L188	S 00° 06' 11" E 36. 95
L57	N 57° 14' 17" E	62. 91	L123	N 53° 55' 16" W 282. 40	L189	S 00° 14' 49" W 183. 80
L58	S 32° 50' 46" E	33. 35	L124	N 23° 53' 14" W 205. 71	L190	N 79° 14' 04" W 49. 94
L59	S 57° 14' 17" W	62. 96	L125	N 77° 46' 14" W 234. 94	L191	S 15° 34' 49" W 37. 05
L60	S 32° 45' 43" E	55. 96	L126	N 18° 16' 04" E 57. 33	L192	S 06° 25' 09" W 46. 23
L61	S 57° 14' 18" W	5. 00	L127	N 04° 58' 12" E 145. 67	L193	S 21° 25' 10" W 265. 20
L62	S 32° 45' 43" E	173. 79	L128	S 86° 44' 17" W 185. 69		
L63	N 57° 14' 17" E	37. 97	L129	N 62° 17' 54" W 121. 92		
L64	S 74° 40' 25" E	73. 61	L130	N 18° 41' 57" W 74. 46		
L65	N 14° 57' 40" E	93. 55	L131	N 14° 27' 40" E 119. 38		

 <p>ACES BERRY CREEK ENERGY SERVICES</p> <p>P.O.B. 10000 LAKE BUENA VISTA FL 32830-1000 PHONE 407-824-5855</p>	FILING AREA OVERALL	DATE: 8/23/22
	PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
	SURVEY TYPE SKETCH OF DESCRIPTION SHEET 5 OF 6	DRAWN BY: JLG
	COMMENTS WDPR LAND	FILENAME: 10JG21084

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	500.00	58° 40' 50"	512.08	
C2	515.00	11° 30' 03"	103.37	S 63° 24' 46" E
C3	507.93	09° 45' 45"	86.55	S 50° 30' 17" E
C4	305.00	12° 56' 00"	68.85	
C5	511.38	22° 24' 26"	199.99	S 52° 15' 58" E
C6	1000.00	24° 57' 38"	435.64	
C7	427.56	56° 52' 00"	424.36	
C8	496.75	34° 46' 45"	301.53	
C9	1864.00	23° 42' 58"	771.55	S 12° 31' 04" E
C10	1869.00	18° 23' 02"	599.69	N 36° 14' 02" W
C11	2106.33	11° 43' 19"	430.92	S 18° 02' 01" E
C12	1944.00	02° 11' 00"	74.08	N 31° 19' 44" W
C13	2915.08	02° 51' 40"	145.56	S 53° 13' 03" W
C14	725.00	39° 13' 07"	496.26	
C15	725.00	13° 00' 49"	164.67	N 32° 55' 48" W
C16	1064.00	25° 04' 35"	465.68	
C17	1958.00	03° 16' 50"	112.11	
C18	1158.02	07° 37' 33"	154.13	
C19	2183.00	17° 36' 28"	670.86	S 20° 51' 21" W
C20	2183.00	12° 08' 20"	462.50	
C21	660.00	23° 23' 34"	269.47	N 30° 18' 10" E
C22	630.04	38° 00' 09"	417.88	N 51° 59' 51" E
C23	610.00	59° 45' 12"	636.16	
C24	620.00	30° 03' 22"	325.24	
C25	210.00	100° 31' 07"	368.42	
C26	1983.00	07° 27' 02"	257.87	N 13° 24' 18" E
C27	2183.00	08° 43' 00"	332.11	

 <p>RCES REEDY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 8/23/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 6 OF 6	DRAWN BY: JLG
		COMMENTS WDPR LAND	FILENAME: 10JG21084

PALM HOSPITALITY PROPERTY

DESCRIPTION

A parcel of land lying in Section 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Northwest corner of said Section 14, run along the West line of the Northwest 1/4 of said Section 14, S 00°01'10" E, 287.36 feet; thence N 89°58'50" E, 1029.13 feet to the Northeasterly most corner of a Ground Lease described in instrument number 20220406900 of the Public Records of Orange County Florida, and the Point of Beginning; said point being a point on a non-tangent curve concave Northwesterly having a radius of 2915.08 feet, and a central angle of 02°28'04"; thence from a tangent bearing of N 55°41'07" E run Northeasterly along the arc of said curve and a Boundary line Agreement as described in instrument number 20050463415 of the Public Records of Orange County Florida, 125.56 feet; thence continue along said Boundary line Agreement the following three courses: S 32°02'04" E, 315.59 feet; S 74°16'09" W, 35.75 feet; N 73°29'52" W, 94.25 feet to a point on the aforementioned Ground Lease; thence run along said Ground Lease the following courses; N 33°30'45" W, 128.39 feet; N 77°28'22" W, 34.14 feet; N 32°45'43" W, 74.93 feet to the Point of Beginning. Containing 29893 square feet, more or less.

P.O.C.

NORTHWEST CORNER,
SEC 14, TWN 24 S, RNG 27 E

S 00°01'10" E 287.36'

N 89°58'50" E 1029.13'

BOUNDARY LINE AGREEMENT
DOC. 20050463415

P.O.B.
29893 sq.ft±

GRAPHIC SCALE
SCALE 1" = 200'

LEASE BOUNDARY
DOC. 20220406900

West line of the Northwest 1/4
of Section 14-24-27

TANGENT TABLE

LINE#	BEARING	DIST.
L1	S 74°16'09" W	35.75
L2	N 73°29'52" W	94.25
L3	N 33°30'45" W	128.39
L4	N 77°28'22" W	34.14
L5	N 32°45'43" W	74.93

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	2915.08	02°28'04"	125.56	N 55°41'07" E

ABBREVIATIONS

- R=RADIUS
- L=LENGTH
- Δ=DELTA
- TB=TANGENT BEARING
- SEC=SECTION
- TWN=TOWNSHIP
- RNG=RANGE
- POB=POINT OF BEGINNING
- POC=POINT OF COMMENCEMENT
- POT=POINT OF TERMINATION

SURVEYOR'S NOTE
CHAPTER 5J-17, FLORIDA
ADMINISTRATIVE CODE REQUIRES
THE FOLLOWING STATEMENT.
THIS IS NOT A BOUNDARY SURVEY

BEARINGS ARE BASED ON THE
W. LINE, NW 1/4, SEC. 14-24S-27E
AS BEING S 00°01'10" E



P.O.B. 10000
LAKE BUENA VISTA
FL 32830-1000
PHONE 407-824-5855

FLING AREA
OVERALL

PROJECT NAME
WORLD DRIVE PHASE 3

SURVEY TYPE
SKETCH OF DESCRIPTION

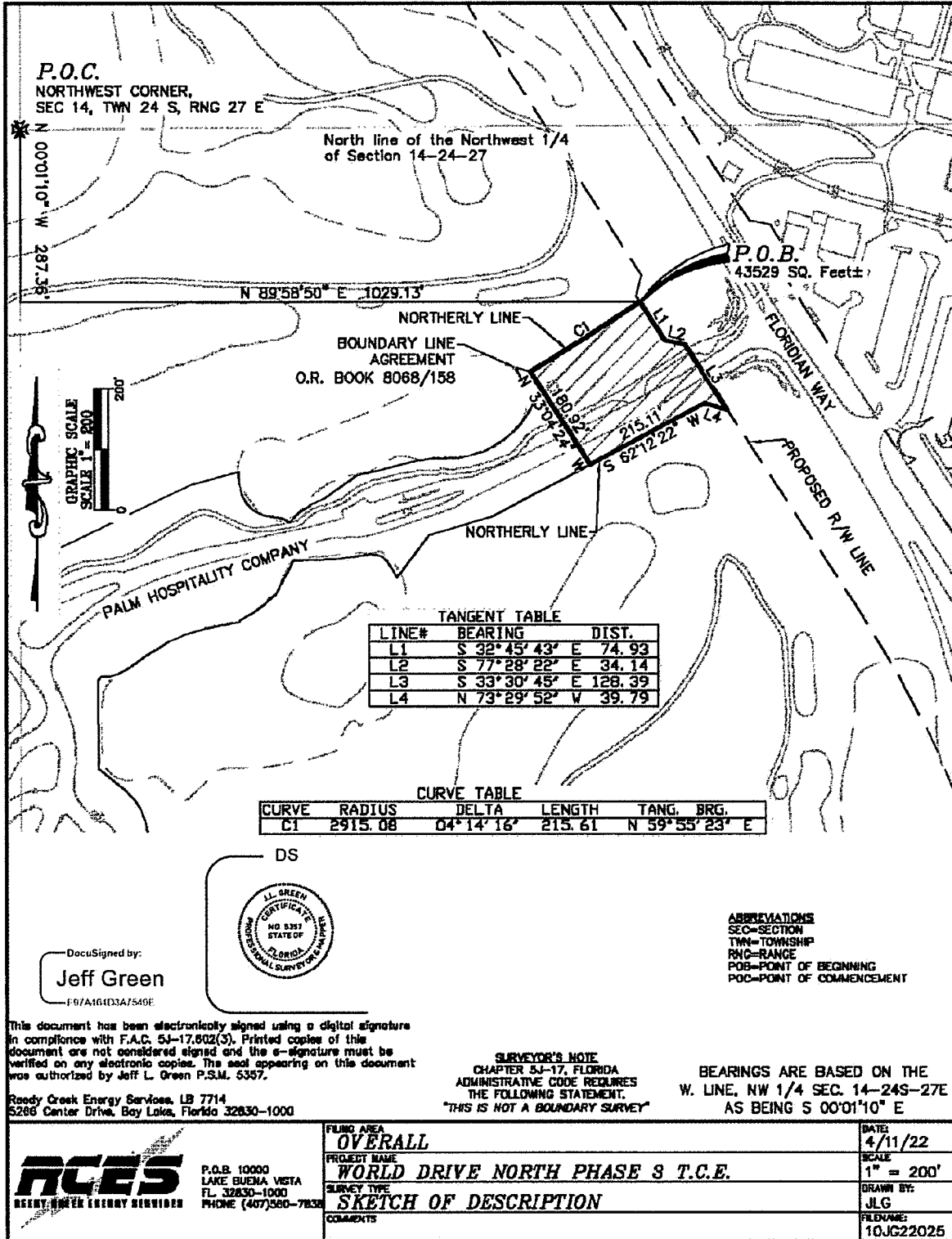
COMMENTS
PALM HOSPITALITY LAND

DATE:
11/16/22

SCALE
1" = 200'

DRAWN BY:
JLG

FILENAME:
10JG22042



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**REEDY CREEK IMPROVEMENT DISTRICT
PERFORMANCE BOND**

OWNER:

REEDY CREEK IMPROVEMENT DISTRICT
P.O. Box 10170
Lake Buena Vista, Florida 32830-0170 (hereinafter "Owner")

CONTRACTOR:

SOUTHLAND CONSTRUCTION, INC.
172 West Fourth Street
Apopka, FL, 32703 (hereinafter "Contractor")

SURETY:

Name: _____

Address: _____

_____ (hereinafter "Surety")

CONTRACT:

Date: March 14, 2023
Contract No. C006110
Project: WORLD DRIVE NORTH PHASE III

Legal Description or Street Address of Project: (Refer to Attachment "A" for Legal Descriptions of property, attached and made a part hereof).

Contract Sum: **SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00)** (hereinafter "Contract")

BOND:

Date: March 14, 2023
Amount: **SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00)** (hereinafter "Bond")

1. The Contractor, as Principal, and the Surety hereby, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner, as Obligee, for the performance of the Contract, including, but not limited to, all undertakings, covenants, terms, conditions, agreements, extensions, modifications, changes, additions, alterations, and warranties thereof, all of which are incorporated herein by reference.
2. If the Contractor fully performs the Contract, including, but not limited to, all undertakings, covenants, terms, conditions, agreements, extensions, modifications, changes, additions, alterations, and warranties thereof, and also fully indemnifies and holds harmless the Owner from all costs, damages, losses and expenses which the Owner may suffer by reason of the Contractor's failure to do so and fully reimburses and pays the Owner for all costs, damages and expenses which the Owner may incur in remedying any such failure, then this obligation shall be void; otherwise it shall remain in full force and effect.
3. The Surety further agrees that whenever the Contractor shall be, and is declared by Owner to be, in default under or in breach of the Contract (which shall include without limitation any breach by the Contractor of any of the provisions of the Contract) the Surety shall promptly remedy the default or breach and undertake to perform and

complete the Contract in accordance with its terms and conditions. The Surety's obligations include, but are not limited to, (i) the responsibilities of the Contractor for correction of defective work, completion of the Contract and fulfillment of warranty obligations, (ii) additional legal, design professional and delay costs resulting from the Contractor's default or breach or from the Surety's failure to act as required under this paragraph, and (iii) liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the Contractor or the Surety. The Surety shall fully indemnify and hold harmless the Owner from all costs, damages, and expenses (including attorneys' fees), which the Owner may incur as a result of the Surety's failure to act as required under this paragraph.

- 4. The Surety and Contractor further agree that any modifications, changes, additions or alterations which may be made in the terms of the Contract or in the work to be done thereunder, or any extensions of the Contract time, or other forbearance on the part of either the Owner or Contractor to the other, shall not in any way release the Contractor and the Surety, or either of them, their heirs, executors, administrators, successors and assigns, from their liability hereunder, notice to Surety of any such modifications, changes, additions, alterations, extensions or forbearances being hereby expressly waived.
- 5. The provisions of Section 255.05, Florida Statutes, including without limitation its notice and limitations provisions, are incorporated in this bond by reference; provided, however, that in the event any provision of this Bond conflicts with Section 255.05, Florida Statutes, then such conflicting provision shall be deemed deleted herefrom and the applicable provisions of Section 255.05, Florida Statutes shall be deemed incorporated herein.
- 6. The sum of this Performance Bond is in addition to the sum of the Payment Bond being executed concurrently herewith.

IN WITNESS WHEREOF, the parties have executed this instrument under their several seals effective on the Date of this Bond as set forth on page 1 hereof.

CONTRACTOR:
SOUTHLAND CONSTRUCTION, INC.

SURETY:

[SEAL]

[SEAL]

By: _____
Print Name: _____
Title: _____

By: _____
Print Name: _____
Title: _____

REEDY CREEK IMPROVEMENT DISTRICT PROPERTY
DESCRIPTION

Parcel 1

A parcel of land lying in Section 11, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Northwest corner of said Section 11, run along the North line of the Northwest 1/4 of said Section 11, N 89°33'37" E, 337.23 feet; thence S 00°26'23" E, 90.04 feet to the Point of Beginning; thence S 88°26'56" E, 45.37 feet; thence S 01°33'04" W, 122.40 feet; thence S 03°43'31" W, 92.53 feet; thence S 86°16'29" E, 44.95 feet; thence S 03°43'31" W, 44.95 feet; thence S 09°05'04" W, 93.24 feet; thence S 09°05'04" W, 115.04 feet; thence N 88°19'52" E, 52.60 feet to a point on a non-tangent curve concave Westerly having a radius of 2183.00 feet, and a central angle of 08°43'00"; thence from a tangent bearing of S 12°08'20" W run Southerly along the arc of said curve, 332.11 feet; to a point of reverse curvature of a curve concave Easterly having a radius of 1983.00 feet, and a central angle of 20°51'21"; thence run Southerly along the arc of said curve, 721.81 feet; thence S 00°00'00" E, 277.99 feet; thence N 90°00'00" W, 200.00 feet; thence N 00°00'00" E, 277.99 feet to a point of curvature of a curve concave Easterly having a radius of 2183.00 feet, and a central angle of 20°51'21"; thence run Northerly along the arc of said curve, 794.61 feet; to a point of reverse curvature of a curve concave Westerly having a radius of 1983.00 feet, and a central angle of 02°31'42"; thence run Northerly along the arc of said curve, 87.50 feet; to a point on a non-tangent curve concave Southerly having a radius of 1158.02 feet, and a central angle of 07°37'33"; thence from a tangent bearing of S 74°50'00" W run Westerly along the arc of said curve, 154.13 feet; thence S 67°12'27" W, 23.16 feet; thence S 88°18'41" W, 84.22 feet; thence N 08°29'26" W, 51.97 feet; thence N 77°30'23" E, 266.27 feet; thence N 21°29'20" E, 140.95 feet; thence S 87°40'12" E, 51.55 feet; thence N 10°16'21" E, 160.69 feet; thence N 06°01'42" E, 168.52 feet; thence N 01°32'40" E, 130.15 feet to the Point of Beginning.

PARCEL 2

A parcel of land lying in Section 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

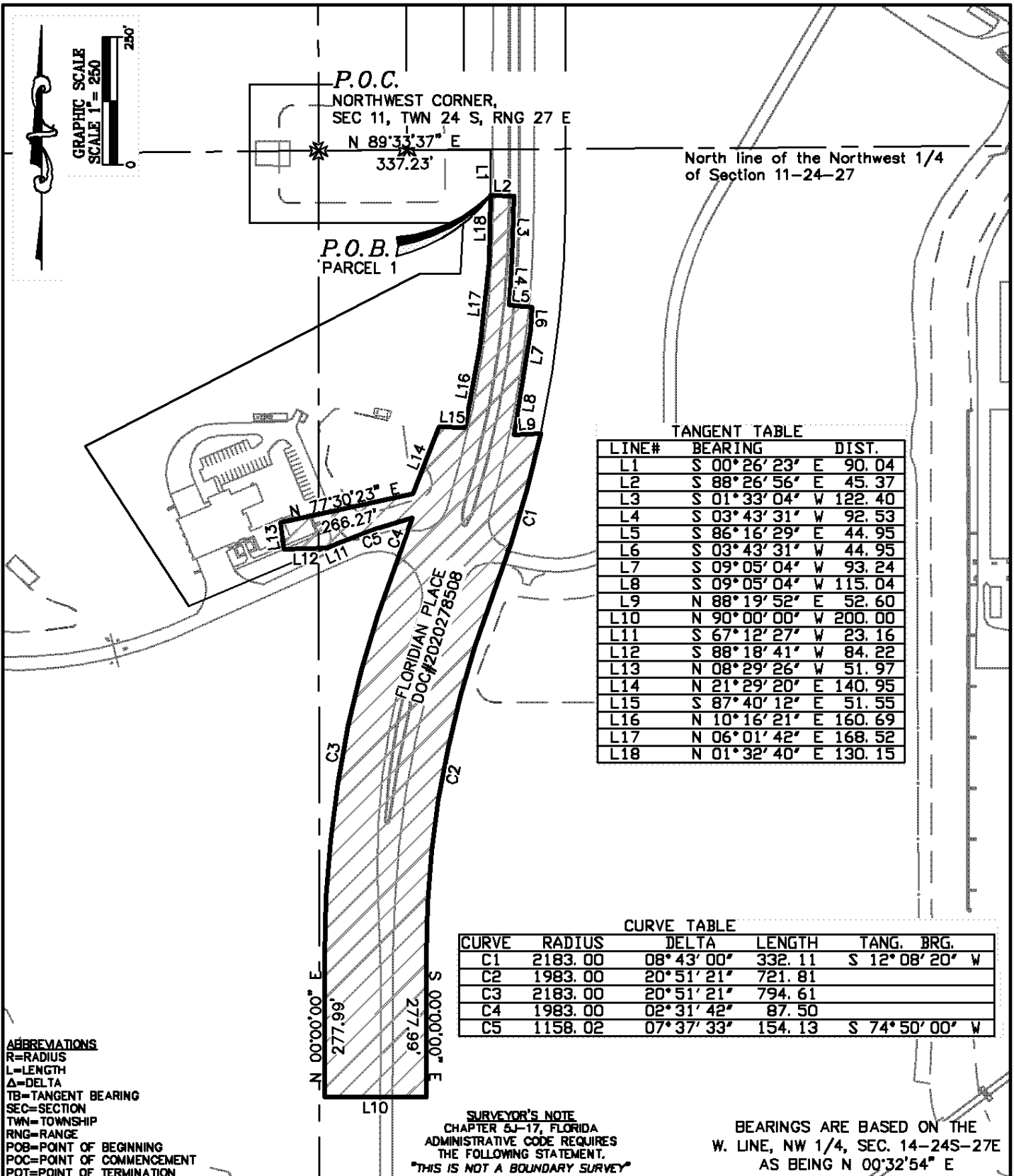
Commence at the West Quarter corner of said Section 14, run along the West line of the Northwest 1/4 of said Section 14, N 00°32'54" E, 3370.79 feet; thence N 89°58'50" E, 1846.46 feet to the Point of Beginning; thence N 72°09'00" E, 200.59 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1869.00 feet, and a central angle of 18°23'02"; thence from a tangent bearing of S 17°51'00" E run Southeasterly along the arc of said curve, 599.69 feet; thence S 36°14'02" E, 132.91 feet; thence S 49°22'52" W, 62.28 feet; thence S 43°02'40" E, 275.23 feet; thence S 49°27'09" E, 245.76 feet; thence S 52°51'51" E, 180.05 feet; thence S 33°42'45" E, 245.30 feet; thence S 55°26'54" E, 338.63 feet to a point on a non-tangent curve concave Northeasterly having a radius of 3136.88 feet, and a central angle of

09°50'29"; thence from a tangent bearing of S 58°26'21" E run Southeasterly along the arc of said curve, 538.81 feet; thence S 78°19'16" E, 342.63 feet; thence S 70°41'41" E, 159.16 feet; thence N 85°11'24" W, 368.10 feet; thence N 69°53'19" W, 115.78 feet to a point on a non-tangent curve concave Northeasterly having a radius of 4119.16 feet, and a central angle of 06°43'41"; thence from a tangent bearing of N 68°08'27" W run Northwesterly along the arc of said curve, 483.70 feet; thence N 55°58'45" W, 400.62 feet; thence N 60°12'55" W, 301.72 feet; thence N 55°30'37" W, 163.94 feet; thence N 38°39'46" W, 537.36 feet; thence S 50°28'28" W, 24.52 feet; thence N 38°28'21" W, 192.59 feet; thence N 33°32'42" W, 186.56 feet to a point on a non-tangent curve concave Northeasterly having a radius of 2069.00 feet, and a central angle of 10°33'47"; thence from a tangent bearing of N 29°46'57" W run Northwesterly along the arc of said curve, 381.44 feet; thence N 19°13'09" W, 49.46 feet to the Point of Beginning.

PARCEL 3

A parcel of land lying in Section 2, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Southwest corner of said Section 2, run along the West line of the Southwest 1/4 of said Section 2, N 00°07'50" W, 1233.65 feet; thence N 89°52'10" E, 1566.82 feet to the Point of Beginning; thence N 12°21'32" W, 20.04 feet to a point on a non-tangent curve concave Southerly having a radius of 660.00 feet, and a central angle of 36°21'37"; thence from a tangent bearing of N 53°41'45" E run Easterly along the arc of said curve, 418.84 feet; thence S 89°56'38" E, 1007.83 feet; thence N 00°06'11" W, 475.38 feet; thence S 89°56'38" E, 175.00 feet; thence S 00°06'11" E, 120.00 feet; thence N 89°56'38" W, 100.00 feet; thence S 00°06'11" E, 368.43 feet; thence N 90°00'00" W, 1082.07 feet to a point of curvature of a curve concave Southerly having a radius of 630.04 feet, and a central angle of 38°00'09"; thence run Westerly along the arc of said curve, 417.88 feet to the Point of Beginning.



TANGENT TABLE

LINE#	BEARING	DIST.
L1	S 00°26'23" E	90.04
L2	S 88°26'56" E	45.37
L3	S 01°33'04" W	122.40
L4	S 03°43'31" W	92.53
L5	S 86°16'29" E	44.95
L6	S 03°43'31" W	44.95
L7	S 09°05'04" W	93.24
L8	S 09°05'04" W	115.04
L9	N 88°19'52" E	52.60
L10	N 90°00'00" W	200.00
L11	S 67°12'27" W	23.16
L12	S 88°18'41" W	84.22
L13	N 08°29'26" W	51.97
L14	N 21°29'20" E	140.95
L15	S 87°40'12" E	51.55
L16	N 10°16'21" E	160.69
L17	N 06°01'42" E	168.52
L18	N 01°32'40" E	130.15


CURVE TABLE

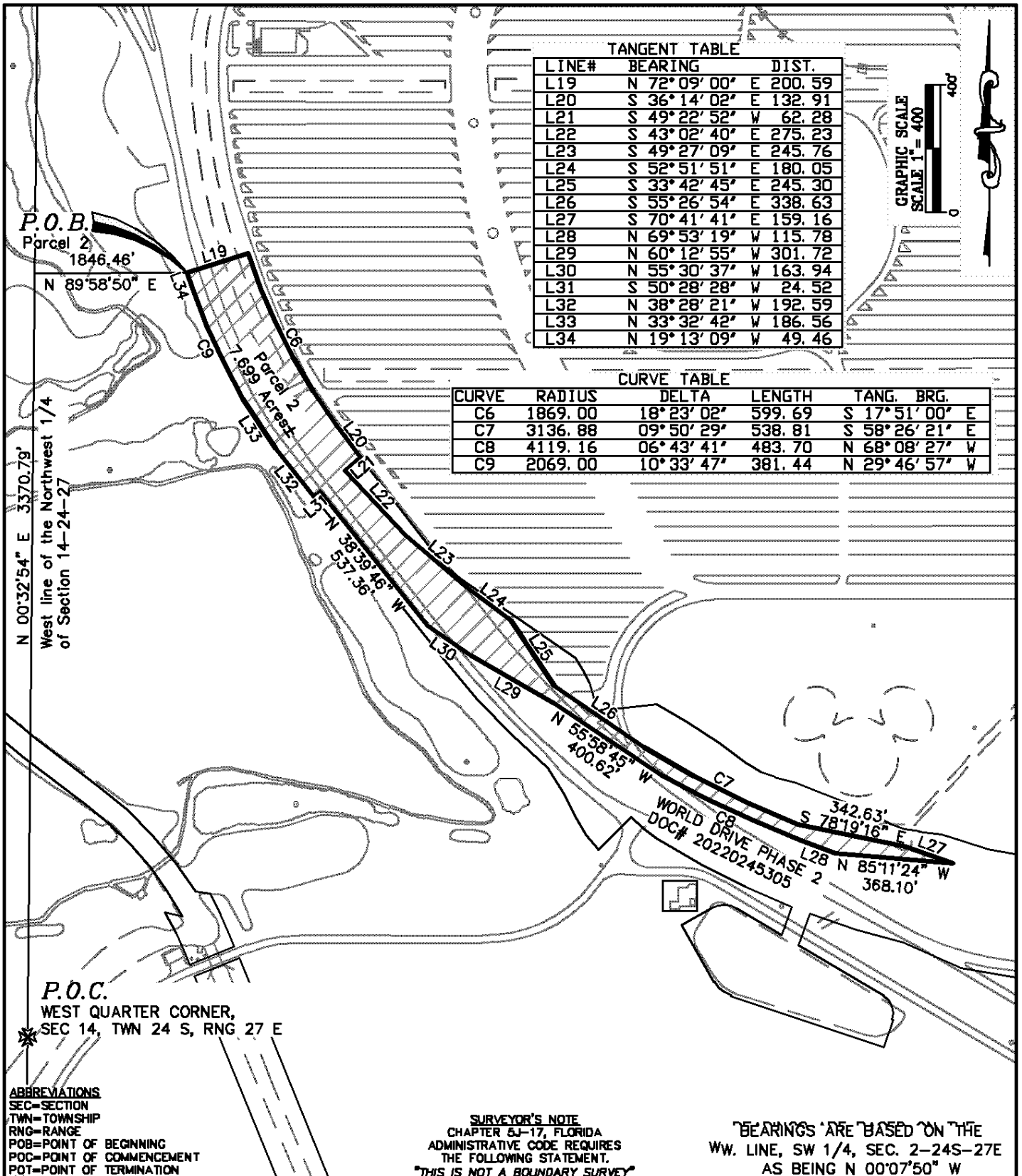
CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	2183.00	08°43'00"	332.11	S 12°08'20" W
C2	1983.00	20°51'21"	721.81	
C3	2183.00	20°51'21"	794.61	
C4	1983.00	02°31'42"	87.50	
C5	1158.02	07°37'33"	154.13	S 74°50'00" W

ABBREVIATIONS
 R=RADIUS
 L=LENGTH
 Δ=DELTA
 TB=TANGENT BEARING
 SEC=SECTION
 TWN=TOWNSHIP
 RNG=RANGE
 POB=POINT OF BEGINNING
 POC=POINT OF COMMENCEMENT
 POT=POINT OF TERMINATION

SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"

BEARINGS ARE BASED ON THE
 W. LINE, NW 1/4, SEC. 14-24S-27E
 AS BEING N 00°32'54" E

 RCES BERRY CREEK ENERGY SERVICES	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL PROJECT NAME WORLD DRIVE PHASE 3 SURVEY TYPE SKETCH OF DESCRIPTION SHEET 1 OF 3 COMMENTS RCID LAND	DATE: 11/2/22 SCALE: 1" = 250' DRAWN BY: JLG FILENAME: 10JG21082
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P.O.B.
Parcel 2
1846.46'
N 89° 58' 50" E

Parcel 2
1.689 Acre(s)

N 00° 32' 54" E 3370.79'
West line of the Northwest 1/4
of Section 14-24-27

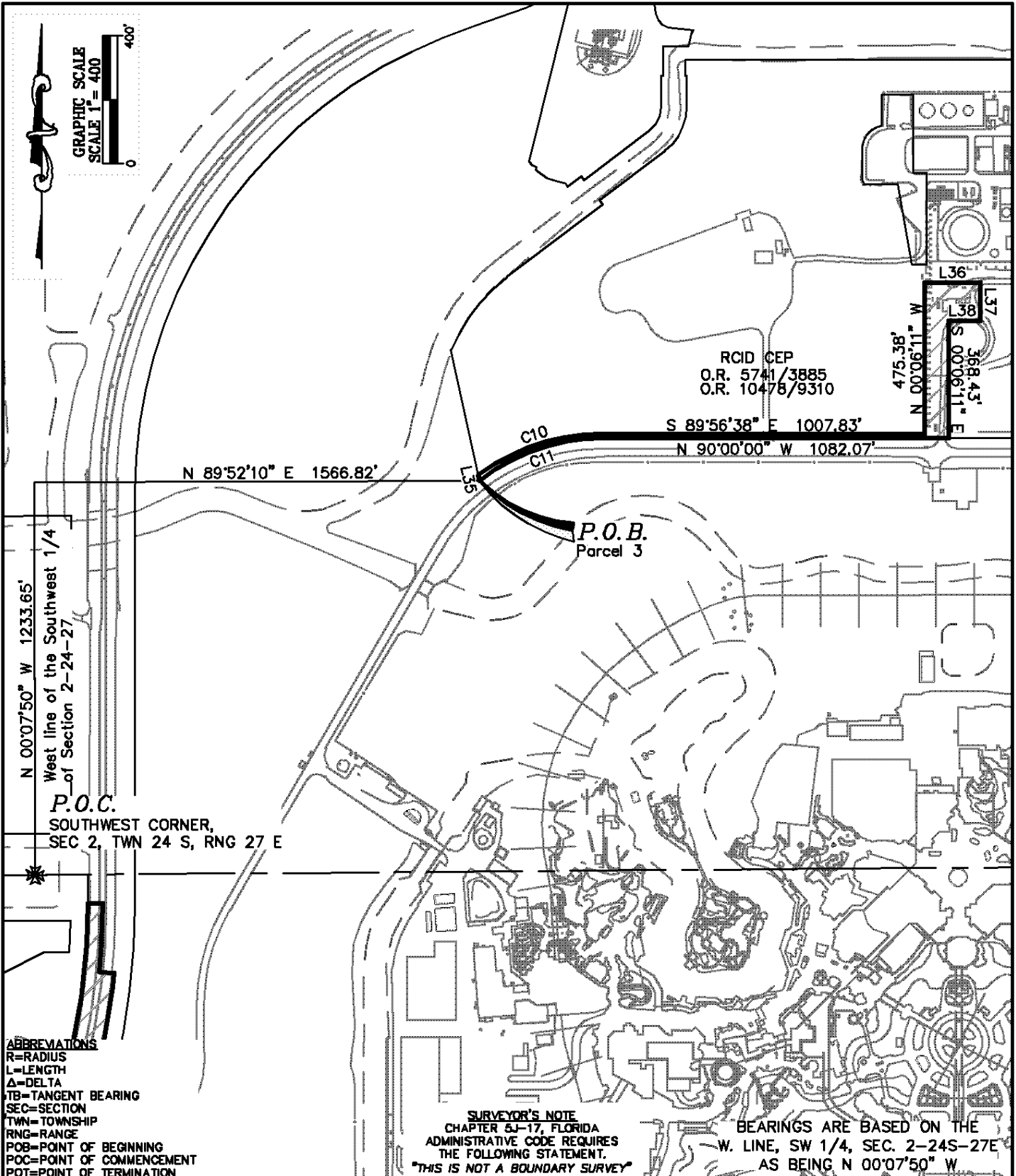
P.O.C.
WEST QUARTER CORNER,
SEC 14, TWN 24 S, RNG 27 E


ABBREVIATIONS
SEC=SECTION
TWN=TOWNSHIP
RNG=RANGE
POB=POINT OF BEGINNING
POC=POINT OF COMMENCEMENT
POT=POINT OF TERMINATION

SURVEYOR'S NOTE
CHAPTER 5J-17, FLORIDA
ADMINISTRATIVE CODE REQUIRES
THE FOLLOWING STATEMENT.
"THIS IS NOT A BOUNDARY SURVEY"

BEARINGS ARE BASED ON THE
W.W. LINE, SW 1/4, SEC. 2-24S-27E
AS BEING N 00° 07' 50" W

<p>ACES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 11/2/22
	PROJECT NAME WORLD DRIVE PHASE 3	SURVEY TYPE SKETCH OF DESCRIPTION SHEET 2 OF 3	SCALE 1" = 400'
	COMMENTS RCID LAND	DRAWN BY: JLG	FILENAME: 10JG21082



 <p>RCES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 11/2/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 400'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 3 OF 3	DRAWN BY: JLG
		COMMENTS RCID LAND	FILENAME: 10JG21082

WALT DISNEY PARK AND RESORTS PROPERTY
DESCRIPTION

PARCEL 1

A parcel of land lying in Sections 10, 11 and 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the East Quarter corner of said Section 10, run along the East line of the Northeast 1/4 of said Section 10, N 00°02'49" W, 795.13 feet; thence N 89°58'57" E, 26.68 feet to the Point of Beginning; thence N 90°00'00" E, 91.95 feet; thence S 00°00'00" E, 1019.98 feet; thence N 90°00'00" E, 105.89 feet; thence N 39°56'49" E, 63.67 feet; thence S 54°31'59" E, 56.99 feet; thence S 06°55'30" E, 172.22 feet; thence S 53°47'35" E, 89.63 feet; thence S 06°01'41" E, 148.41 feet; thence S 82°17'46" W, 216.50 feet; thence N 67°33'58" W, 94.46 feet; thence N 90°00'00" W, 121.99 feet; thence N 00°00'00" E, 378.97 feet; thence N 90°00'00" W, 294.27 feet; thence N 67°29'48" W, 79.68 feet; thence N 89°59'58" W, 165.55 feet; thence S 01°16'54" W, 165.39 feet; thence S 84°32'32" W, 115.25 feet; thence S 10°05'59" E, 91.95 feet; thence S 06°36'17" E, 73.49 feet; thence N 75°41'39" E, 71.38 feet; thence S 76°39'47" E, 49.67 feet; thence S 24°41'39" E, 57.25 feet; thence S 01°09'56" W, 190.94 feet; thence S 19°31'01" W, 34.03 feet; thence S 46°11'15" W, 144.96 feet; thence S 04°44'56" E, 75.23 feet to a point of curvature of a curve concave Northeasterly having a radius of 500.00 feet, and a central angle of 58°40'50"; thence run Southeasterly along the arc of said curve, 512.08 feet; thence S 27°08'37" W, 15.00 feet to a point on a non-tangent curve concave Northerly having a radius of 515.00 feet, and a central angle of 11°30'03"; thence from a tangent bearing of S 63°24'46" E run Easterly along the arc of said curve, 103.37 feet; thence N 15°05'11" E, 10.00 feet; thence S 74°54'49" E, 118.53 feet; thence N 16°13'54" E, 134.93 feet; thence N 81°47'34" E, 281.33 feet; thence S 50°37'51" E, 93.93 feet to a point on a non-tangent curve concave Northeasterly having a radius of 507.93 feet, and a central angle of 09°45'45"; thence from a tangent bearing of S 50°30'17" E run Southeasterly along the arc of said curve, 86.55 feet; to a point of reverse curvature of a curve concave Southwesterly having a radius of 305.00 feet, and a central angle of 12°56'00"; thence run Southeasterly along the arc of said curve, 68.85 feet; thence N 38°29'18" E, 76.38 feet; thence S 51°30'42" E, 48.44 feet; thence S 38°29'18" W, 71.64 feet; thence S 58°35'20" E, 160.46 feet; thence S 67°54'55" E, 212.84 feet; thence N 88°57'10" E, 44.05 feet; thence S 06°55'27" W, 76.63 feet; thence N 65°54'07" W, 36.44 feet; thence S 31°09'46" W, 273.94 feet; thence S 36°19'39" E, 50.10 feet; thence N 54°44'50" E, 22.83 feet; thence S 34°38'54" E, 27.14 feet; thence S 55°21'06" W, 22.69 feet; thence S 33°21'07" E, 62.50 feet; thence S 59°10'50" W, 4.93 feet; thence S 32°45'43" E, 239.07 feet; thence N 61°03'28" E, 20.33 feet; thence S 35°31'08" E, 27.22 feet; thence S 42°14'06" E, 24.20 feet; thence S 55°04'04" E, 51.00 feet; thence S 15°46'05" E, 42.41 feet; thence S 39°17'24" E, 21.86 feet; thence S 57°14'17" W, 25.03 feet; thence S 32°45'43" E, 171.68 feet; thence N 57°14'17" E, 62.91 feet; thence S 32°50'46" E, 33.35 feet; thence S 57°14'17" W, 62.96 feet; thence S 32°45'43" E, 55.96 feet; thence S 57°14'18" W, 5.00 feet; thence S 32°45'43" E, 173.79 feet; thence N 57°14'17" E, 37.97 feet to a point on a non-tangent curve concave Northeasterly having a radius of 511.38 feet, and a

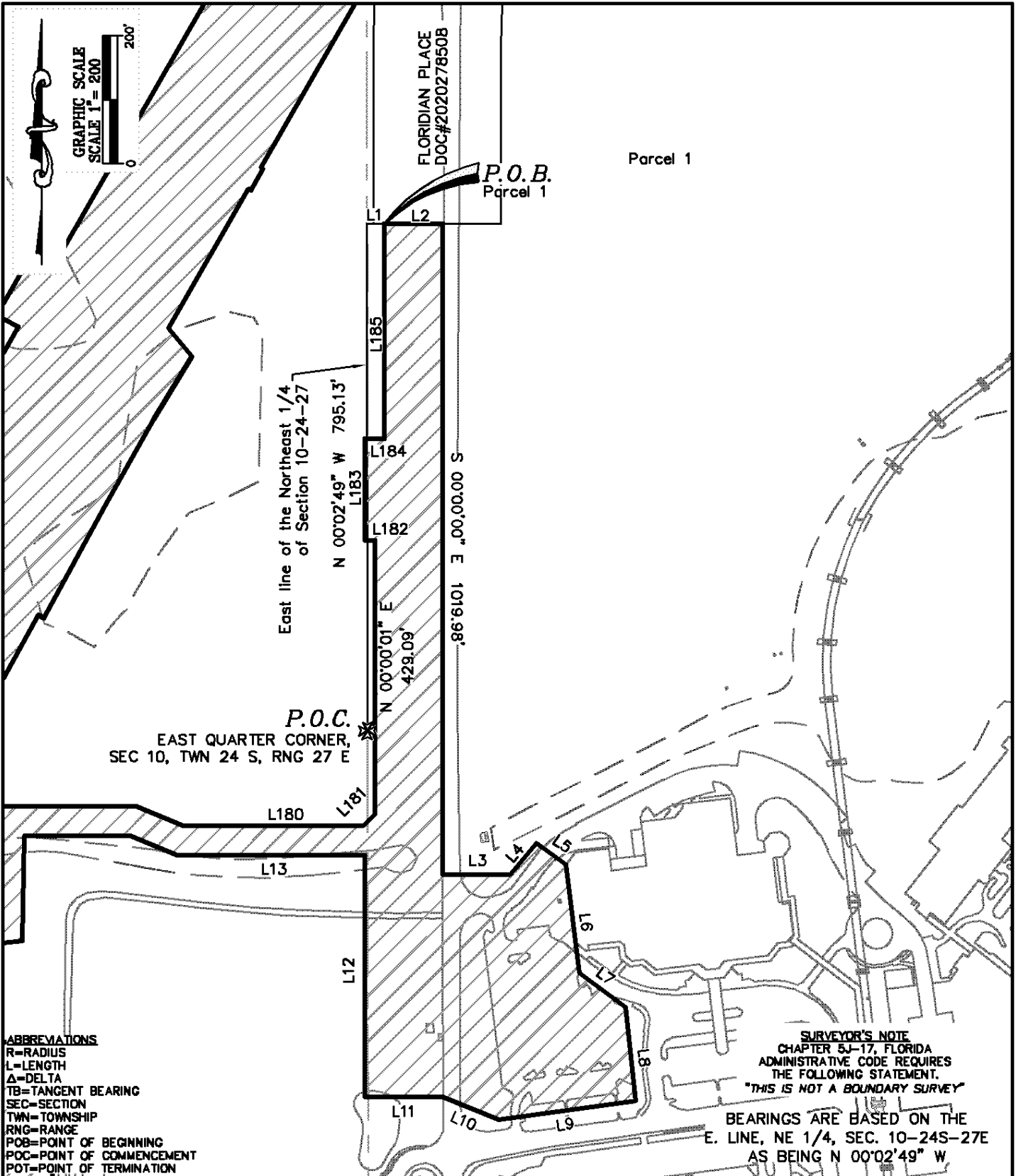
central angle of 22°24'26"; thence from a tangent bearing of S 52°15'58" E run Southeasterly along the arc of said curve, 199.99 feet; thence S 74°40'25" E, 73.61 feet; thence N 14°57'40" E, 93.55 feet; thence S 74°40'25" E, 122.12 feet; thence S 14°57'39" W, 133.98 feet; thence N 75°02'21" W, 32.29 feet; thence S 14°57'40" W, 214.35 feet; thence S 56°38'53" W, 41.90 feet; thence S 30°39'06" E, 320.42 feet; thence S 73°33'11" E, 274.67 feet; thence N 65°05'55" E, 192.62 feet to a point of curvature of a curve concave Southerly having a radius of 1000.00 feet, and a central angle of 24°57'38"; thence run Easterly along the arc of said curve, 435.64 feet; thence S 89°56'27" E, 948.68 feet; thence S 00°03'33" W, 173.92 feet; thence N 89°56'27" W, 263.40 feet to a point of curvature of a curve concave Southeasterly having a radius of 427.56 feet, and a central angle of 56°52'00"; thence run Southwesterly along the arc of said curve, 424.36 feet; to a point of compound curvature of a curve concave Easterly having a radius of 496.75 feet, and a central angle of 34°46'45"; thence run Southerly along the arc of said curve, 301.53 feet; thence S 01°35'12" E, 130.43 feet; thence S 89°54'40" W, 703.74 feet; thence S 00°22'43" W, 18.87 feet; thence S 88°10'59" W, 40.34 feet; thence S 08°53'36" E, 287.47 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1864.00 feet, and a central angle of 23°42'58"; thence from a tangent bearing of S 12°31'04" E run Southeasterly along the arc of said curve, 771.55 feet; thence S 36°14'02" E, 132.89 feet; thence S 49°41'18" W, 5.00 feet; thence N 36°14'16" W, 133.24 feet to a point on a non-tangent curve concave Northeasterly having a radius of 1869.00 feet, and a central angle of 18°23'02"; thence from a tangent bearing of N 36°14'02" W run Northwesterly along the arc of said curve, 599.69 feet; thence S 72°09'00" W, 200.59 feet to a point on a non-tangent curve concave Northeasterly having a radius of 2106.33 feet, and a central angle of 11°43'19"; thence from a tangent bearing of S 18°02'01" E run Southeasterly along the arc of said curve, 430.92 feet; thence S 33°32'42" E, 186.56 feet; thence S 38°28'21" E, 192.59 feet; thence S 49°18'53" W, 21.35 feet; thence N 38°03'03" W, 355.90 feet; thence N 28°57'26" W, 117.22 feet; thence N 36°00'49" W, 27.30 feet; thence N 44°57'22" W, 26.71 feet; thence N 89°34'24" W, 90.06 feet; thence N 63°46'07" W, 51.14 feet; thence N 39°00'17" W, 132.74 feet; thence N 51°19'38" W, 94.21 feet; thence N 43°07'34" E, 83.71 feet; thence N 38°08'54" W, 32.63 feet; thence N 57°13'15" W, 67.59 feet; thence N 44°56'52" W, 45.86 feet; thence N 36°07'47" W, 60.62 feet; thence N 43°44'25" W, 81.68 feet; thence N 25°24'19" W, 195.36 feet; thence N 13°49'45" W, 36.97 feet; thence N 05°16'32" W, 35.47 feet; thence N 15°04'10" W, 117.48 feet; thence N 00°05'09" E, 38.33 feet; thence N 14°39'07" E, 61.80 feet; thence N 04°14'24" W, 73.87 feet; thence N 13°26'06" W, 106.32 feet; thence N 01°18'30" E, 55.76 feet; thence N 12°07'16" E, 128.23 feet; thence N 03°37'49" E, 84.64 feet; thence N 56°19'00" E, 37.60 feet to a point on a non-tangent curve concave Southwesterly having a radius of 1944.00 feet, and a central angle of 02°11'00"; thence from a tangent bearing of N 31°19'44" W run Northwesterly along the arc of said curve, 74.08 feet; thence N 33°30'45" W, 373.69 feet; thence S 56°16'51" W, 21.13 feet; thence N 33°22'37" W, 40.52 feet; thence N 62°12'22" E, 20.56 feet; thence S 73°29'52" E, 134.04 feet; thence N 74°16'09" E, 35.75 feet; thence N 32°02'04" W, 315.59 feet to a point on a non-tangent curve concave Northwesterly having a radius of 2915.08 feet, and a central angle of 02°51'40"; thence from a tangent bearing of S 53°13'03" W run Southwesterly along the arc of said curve, 145.56 feet; thence N 32°45'43" W, 20.45 feet; thence N 12°31'38" E, 28.14 feet; thence N 32°45'43" W, 453.97 feet; thence N 73°22'54" W, 166.18 feet; thence N 53°55'16" W, 282.40 feet; thence N 23°53'14" W, 205.71

feet; thence N 77°46'14" W, 234.94 feet; thence N 18°16'04" E, 57.33 feet; thence N 04°58'12" E, 145.67 feet; thence S 86°44'17" W, 185.69 feet; thence N 62°17'54" W, 121.92 feet; thence N 18°41'57" W, 74.46 feet; thence N 14°27'40" E, 119.38 feet; thence N 74°54'49" W, 104.60 feet to a point of curvature of a curve concave Northeasterly having a radius of 725.00 feet, and a central angle of 39°13'07"; thence run Northwesterly along the arc of said curve, 496.26 feet; thence N 80°23'44" W, 0.42 feet; thence N 80°23'46" W, 14.96 feet; thence N 09°48'51" W, 26.72 feet to a point on a non-tangent curve concave Northeasterly having a radius of 725.00 feet, and a central angle of 13°00'49"; thence from a tangent bearing of N 32°55'48" W run Northwesterly along the arc of said curve, 164.67 feet; thence N 48°56'48" W, 3.61 feet; thence N 57°38'56" W, 14.22 feet; thence N 66°21'04" W, 14.22 feet; thence N 75°03'12" W, 14.22 feet; thence N 23°40'12" E, 25.28 feet; thence N 23°40'12" E, 26.67 feet; thence N 09°33'48" W, 121.70 feet; thence N 04°44'56" W, 5.60 feet; thence N 16°14'50" W, 69.06 feet; thence N 32°37'32" W, 137.24 feet; thence N 00°45'35" W, 126.25 feet; thence N 04°46'58" E, 97.47 feet; thence N 75°21'31" W, 16.44 feet; thence N 54°52'19" E, 21.12 feet; thence N 04°47'47" E, 64.19 feet; thence N 38°54'40" W, 37.10 feet; thence N 48°08'44" E, 37.35 feet; thence N 04°47'47" E, 80.72 feet; thence N 85°12'13" W, 10.00 feet; thence N 04°47'47" E, 70.28 feet; thence S 85°12'13" E, 10.00 feet; thence N 04°47'47" E, 122.99 feet to a point of curvature of a curve concave Easterly having a radius of 1064.00 feet, and a central angle of 25°04'35"; thence run Northerly along the arc of said curve, 465.68 feet; thence N 29°52'22" E, 393.39 feet; thence N 60°07'38" W, 38.92 feet; thence N 29°52'22" E, 141.39 feet; thence S 60°07'38" E, 38.92 feet; thence N 29°52'22" E, 951.55 feet to a point of curvature of a curve concave Northwesterly having a radius of 1958.00 feet, and a central angle of 03°16'50"; thence run Northeasterly along the arc of said curve, 112.11 feet; thence N 06°47'01" E, 196.98 feet; thence S 88°18'41" W, 58.74 feet; thence N 67°12'27" E, 23.16 feet to a point of curvature of a curve concave Southerly having a radius of 1158.02 feet, and a central angle of 07°37'33"; thence run Easterly along the arc of said curve, 154.13 feet; thence S 19°35'30" W, 87.49 feet to a point on a non-tangent curve concave Easterly having a radius of 2183.00 feet, and a central angle of 17°36'28"; thence from a tangent bearing of S 20°51'21" W run Southerly along the arc of said curve, 670.86 feet; thence S 29°52'22" W, 361.30 feet; thence S 60°11'50" E, 4.13 feet; thence S 29°48'10" W, 39.00 feet; thence N 60°11'50" W, 4.67 feet; thence S 29°45'54" W, 251.65 feet; thence S 39°35'48" E, 57.07 feet; thence S 31°06'43" W, 115.34 feet; thence S 29°10'09" W, 155.88 feet; thence S 28°40'22" W, 199.95 feet; thence N 60°26'11" W, 10.00 feet; thence S 28°40'22" W, 140.77 feet; thence S 17°55'52" W, 185.78 feet; thence S 89°59'58" E, 277.81 feet; thence S 67°29'48" E, 79.68 feet; thence N 90°00'00" E, 282.77 feet; thence N 44°59'55" E, 24.98 feet; thence N 00°00'01" E, 429.09 feet; thence N 90°00'00" W, 15.32 feet; thence N 00°00'00" E, 160.00 feet; thence N 90°00'00" E, 30.04 feet; thence N 00°00'00" E, 336.98 feet to the Point of Beginning.

PARCEL 2


A parcel of land lying in Sections 10 and 11, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

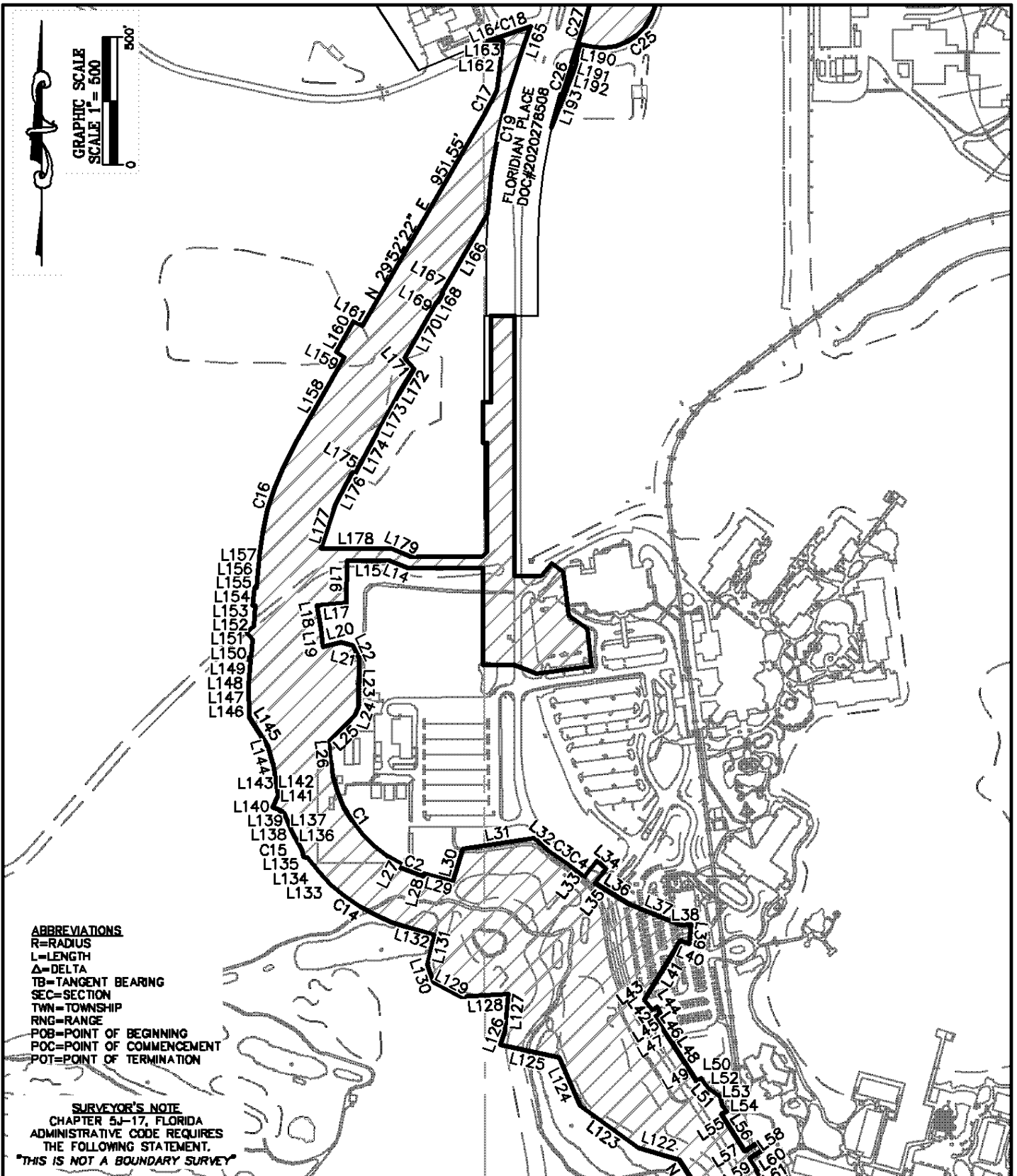
Commence at the Northwest corner of said Section 11, run along the North line of the Northwest 1/4 of said Section 11, N 89°33'37" E, 484.39 feet; thence S 00°00'00" E, 99.94 feet to a point of curvature of a curve concave Westerly having a radius of 2183.00 feet, and a central angle of 12°08'20"; thence run Southerly along the arc of said curve, 462.50 feet; to the Point of Beginning; thence N 30°21'50" E, 1869.65 feet to a point on a non-tangent curve concave Southeasterly having a radius of 660.00 feet, and a central angle of 23°23'34"; thence from a tangent bearing of N 30°18'10" E run Northeasterly along the arc of said curve, 269.47 feet; thence S 12°21'32" E, 20.04 feet to a point on a non-tangent curve concave Southerly having a radius of 630.04 feet, and a central angle of 38°00'09"; thence from a tangent bearing of N 51°59'51" E run Easterly along the arc of said curve, 417.88 feet; thence N 90°00'00" E, 1082.07 feet; thence S 00°06'11" E, 36.95 feet; thence N 89°56'38" W, 1082.97 feet to a point of curvature of a curve concave Southeasterly having a radius of 610.00 feet, and a central angle of 59°45'12"; thence run Southwesterly along the arc of said curve, 636.16 feet; thence S 30°18'10" W, 1313.25 feet to a point of curvature of a curve concave Easterly having a radius of 620.00 feet, and a central angle of 30°03'22"; thence run Southerly along the arc of said curve, 325.24 feet; thence S 00°14'49" W, 183.80 feet to a point of curvature of a curve concave Northwesterly having a radius of 210.00 feet, and a central angle of 100°31'07"; thence run Southwesterly along the arc of said curve, 368.42 feet; thence N 79°14'04" W, 49.94 feet; thence S 15°34'49" W, 37.05 feet; thence S 06°25'09" W, 46.23 feet; thence S 21°25'10" W, 265.20 feet to a point on a non-tangent curve concave Easterly having a radius of 1983.00 feet, and a central angle of 07°27'02"; thence from a tangent bearing of N 13°24'18" E run Northerly along the arc of said curve, 257.87 feet; to a point of reverse curvature of a curve concave Westerly having a radius of 2183.00 feet, and a central angle of 08°43'00"; thence run Northerly along the arc of said curve, 332.11 feet to the Point of Beginning.




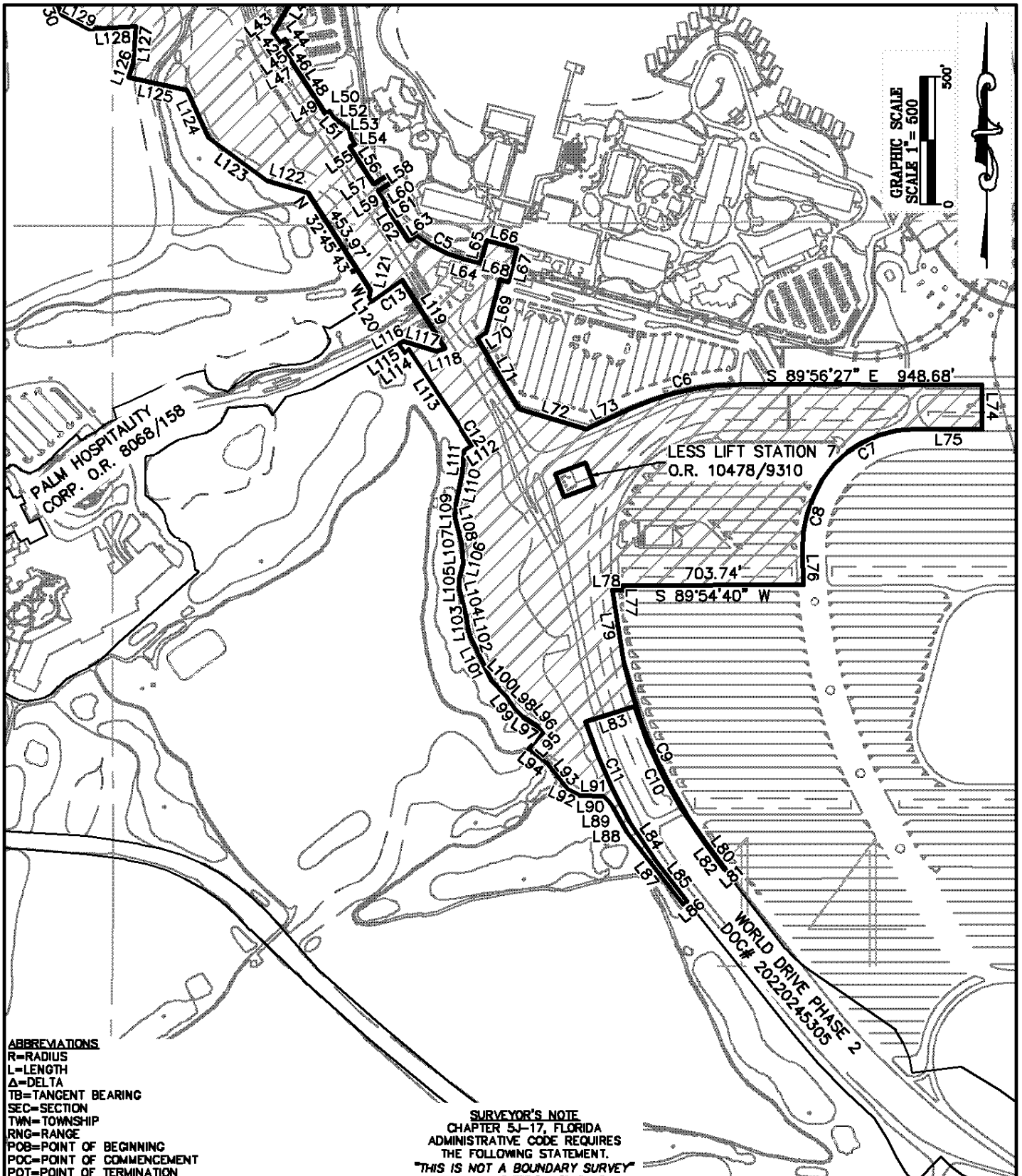
ABBREVIATIONS
 R=RADIUS
 L=LENGTH
 Δ=DELTA
 TB=TANGENT BEARING
 SEC=SECTION
 TWN=TOWNSHIP
 RNG=RANGE
 POB=POINT OF BEGINNING
 POC=POINT OF COMMENCEMENT
 POT=POINT OF TERMINATION

SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"
 BEARINGS ARE BASED ON THE
 E. LINE, NE 1/4, SEC. 10-24S-27E
 AS BEING N 00°02'49" W

 <p>ACES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 1102/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 200'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 1 OF 6	DRAWN BY: JLG
		COMMENTS WDPR LAND	FILENAME: 10JG21084




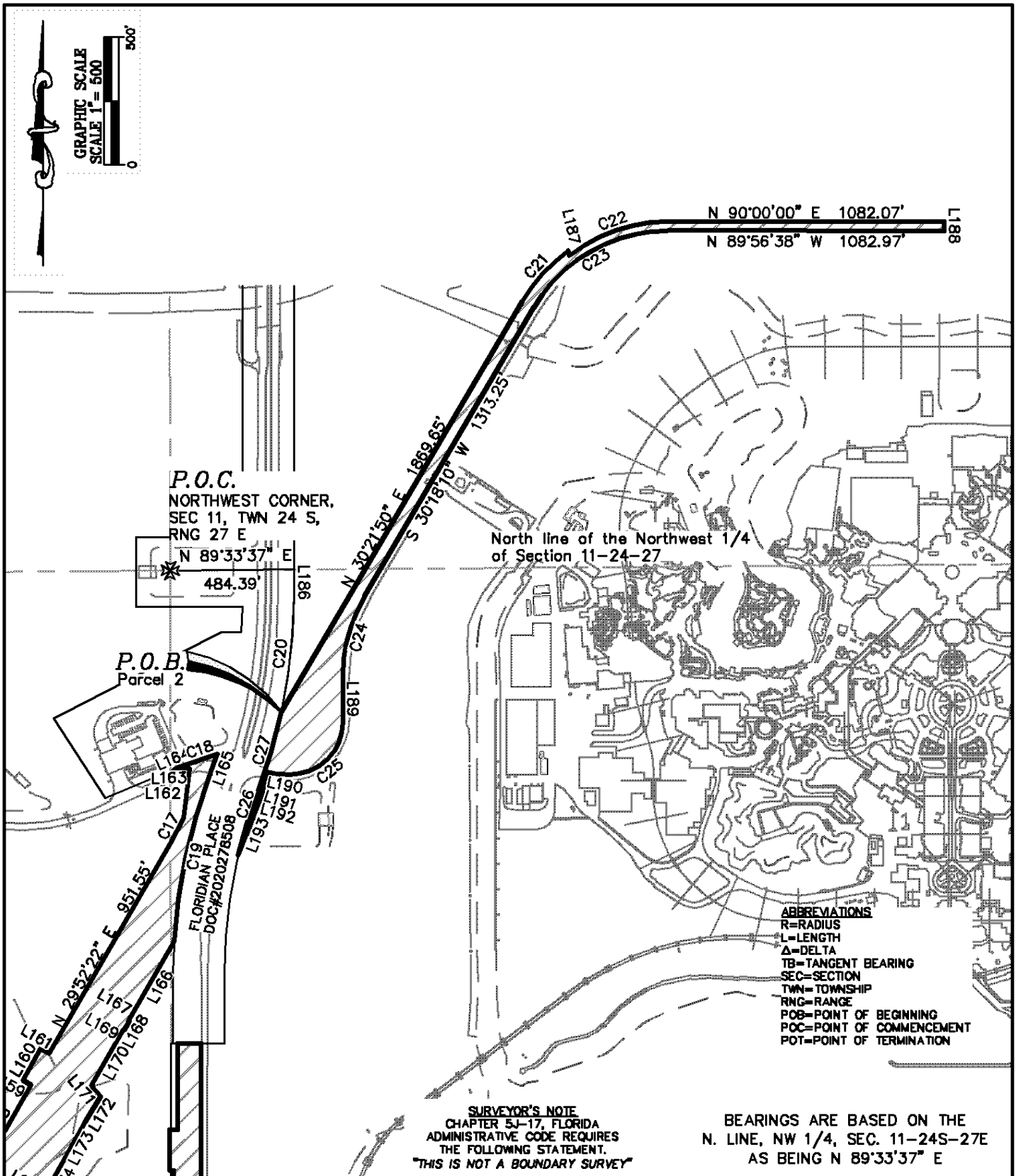
 <p>ACES BERRY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 8/23/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 2 OF 6	DRAWN BY: JLG
		COMMENTS W DPR LAND	FILENAME: 10JG21084




ABBREVIATIONS
 R=RADIUS
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SURVEYOR'S NOTE
 CHAPTER 5J-17, FLORIDA
 ADMINISTRATIVE CODE REQUIRES
 THE FOLLOWING STATEMENT.
 "THIS IS NOT A BOUNDARY SURVEY"


 <p>ACES BEERY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 8/23/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 3 OF 6	DRAWN BY: JLG
		COMMENTS WDPR LAND	FILENAME: 10JG21084



 <p>ACES BERRY CREEK ENERGY SERVICES</p>	<p>P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855</p>	<p>FILED AREA OVERALL</p>	<p>DATE: 8/23/22</p>
		<p>PROJECT NAME WORLD DRIVE PHASE 3</p>	<p>SCALE 1" = 200'</p>
		<p>SURVEY TYPE SKETCH OF DESCRIPTION SHEET 4 OF 6</p>	<p>DRAWN BY: JLG</p>
		<p>COMMENTS WDPR LAND</p>	<p>FILENAME: 10JG21084</p>


TANGENT TABLE

LINE#	BEARING	DIST.	L66	S 74° 40' 25" E 122.12	L132	N 74° 54' 49" W 104.60
L1	N 89° 58' 57" E	26.68	L67	S 14° 57' 39" W 133.98	L133	N 80° 23' 44" W 0.42
L2	N 90° 00' 00" E	91.95	L68	N 75° 02' 21" W 32.29	L134	N 80° 23' 46" W 14.96
L3	N 90° 00' 00" E	105.89	L69	S 14° 57' 40" W 214.35	L135	N 09° 48' 51" W 26.72
L4	N 39° 56' 49" E	63.67	L70	S 56° 38' 53" W 41.90	L136	N 48° 56' 48" W 3.61
L5	S 54° 31' 59" E	56.99	L71	S 30° 39' 06" E 320.42	L137	N 57° 38' 56" W 14.22
L6	S 06° 55' 30" E	172.22	L72	S 73° 33' 11" E 274.67	L138	N 66° 21' 04" W 14.22
L7	S 53° 47' 35" E	89.63	L73	N 65° 05' 55" E 192.62	L139	N 75° 03' 12" W 14.22
L8	S 06° 01' 41" E	148.41	L74	S 00° 03' 33" W 173.92	L140	N 23° 40' 12" E 25.28
L9	S 82° 17' 46" W	216.50	L75	N 89° 56' 27" W 263.40	L141	N 23° 40' 12" E 26.67
L10	N 67° 33' 58" W	94.46	L76	S 01° 35' 12" E 130.43	L142	N 09° 33' 48" W 121.70
L11	N 90° 00' 00" W	121.99	L77	S 00° 22' 43" W 18.87	L143	N 04° 44' 56" W 5.60
L12	N 00° 00' 00" E	378.97	L78	S 88° 10' 59" W 40.34	L144	N 16° 14' 50" W 69.06
L13	N 90° 00' 00" W	294.27	L79	S 08° 53' 06" E 287.47	L145	N 32° 37' 32" W 137.24
L14	N 67° 29' 48" W	79.68	L80	S 36° 14' 02" E 132.89	L146	N 00° 45' 35" W 126.25
L15	N 89° 59' 58" W	165.55	L81	S 49° 41' 18" W 5.00	L147	N 04° 46' 58" E 97.47
L16	S 01° 16' 54" W	165.39	L82	N 36° 14' 16" W 133.24	L148	N 75° 21' 31" W 16.44
L17	S 84° 32' 32" W	115.25	L83	S 72° 09' 00" W 200.59	L149	N 54° 52' 19" E 21.12
L18	S 10° 05' 59" E	91.95	L84	S 33° 32' 42" E 186.56	L150	N 04° 47' 47" E 64.19
L19	S 06° 36' 17" E	73.49	L85	S 38° 28' 21" E 192.59	L151	N 38° 54' 40" W 37.10
L20	N 75° 41' 39" E	71.38	L86	S 49° 18' 53" W 21.35	L152	N 48° 08' 44" E 37.35
L21	S 76° 39' 47" E	49.67	L87	N 38° 03' 03" W 355.90	L153	N 04° 47' 47" E 80.72
L22	S 24° 41' 39" E	57.25	L88	N 28° 57' 26" W 117.22	L154	N 85° 12' 13" W 10.00
L23	S 01° 09' 56" W	190.94	L89	N 36° 00' 49" W 27.30	L155	N 04° 47' 47" E 70.28
L24	S 19° 31' 01" W	34.03	L90	N 44° 57' 22" W 26.71	L156	S 85° 12' 13" E 10.00
L25	S 46° 11' 15" W	144.96	L91	N 89° 34' 24" W 90.06	L157	N 04° 47' 47" E 122.99
L26	S 04° 44' 56" E	75.23	L92	N 63° 46' 07" W 51.14	L158	N 29° 52' 22" E 393.39
L27	S 27° 08' 37" W	15.00	L93	N 39° 00' 17" W 132.74	L159	N 60° 07' 38" W 38.92
L28	N 15° 05' 11" E	10.00	L94	N 51° 19' 38" W 94.21	L160	N 29° 52' 22" E 141.39
L29	S 74° 54' 49" E	118.53	L95	N 43° 07' 34" E 83.71	L161	S 60° 07' 38" E 38.92
L30	N 16° 13' 54" E	134.93	L96	N 38° 08' 54" W 32.63	L162	N 06° 47' 01" E 196.98
L31	N 81° 47' 34" E	281.33	L97	N 57° 13' 15" W 67.59	L163	S 88° 18' 41" W 58.74
L32	S 50° 37' 51" E	93.93	L98	N 44° 56' 52" W 45.86	L164	N 67° 12' 27" E 23.16
L33	N 38° 29' 18" E	76.38	L99	N 36° 07' 47" W 60.62	L165	S 19° 35' 30" W 87.49
L34	S 51° 30' 42" E	48.44	L100	N 43° 44' 25" W 81.68	L166	S 29° 52' 22" W 361.30
L35	S 38° 29' 18" W	71.64	L101	N 25° 24' 19" W 195.36	L167	S 60° 11' 50" E 4.13
L36	S 58° 35' 20" E	160.46	L102	N 13° 49' 45" W 36.97	L168	S 29° 48' 10" W 39.00
L37	S 67° 54' 55" E	212.84	L103	N 05° 16' 32" W 35.47	L169	N 60° 11' 50" W 4.67
L38	N 88° 57' 10" E	44.05	L104	N 15° 04' 10" W 117.48	L170	S 29° 45' 54" W 251.65
L39	S 06° 55' 27" W	76.63	L105	N 00° 05' 09" E 38.33	L171	S 39° 35' 48" E 57.07
L40	N 65° 54' 07" W	36.44	L106	N 14° 39' 07" E 61.80	L172	S 31° 06' 43" W 115.34
L41	S 31° 09' 46" W	273.94	L107	N 04° 14' 24" W 73.87	L173	S 29° 10' 09" W 155.88
L42	S 36° 19' 39" E	50.10	L108	N 13° 26' 06" W 106.32	L174	S 28° 40' 22" W 199.95
L43	N 54° 44' 50" E	22.83	L109	N 01° 18' 30" E 55.76	L175	N 60° 26' 11" W 10.00
L44	S 34° 38' 54" E	27.14	L110	N 12° 07' 16" E 128.23	L176	S 28° 40' 22" W 140.77
L45	S 55° 21' 06" W	22.69	L111	N 03° 37' 49" E 84.64	L177	S 17° 55' 52" W 185.78
L46	S 33° 21' 07" E	62.50	L112	N 56° 19' 00" E 37.60	L178	S 89° 59' 58" E 277.81
L47	S 59° 10' 50" W	4.93	L113	N 33° 30' 45" W 373.69	L179	S 67° 29' 48" E 79.68
L48	S 32° 45' 43" E	239.07	L114	S 56° 16' 51" W 21.13	L180	N 90° 00' 00" E 282.77
L49	N 61° 03' 28" E	20.33	L115	N 33° 22' 37" W 40.52	L181	N 44° 59' 55" E 24.98
L50	S 35° 31' 08" E	27.22	L116	N 62° 12' 22" E 20.56	L182	N 90° 00' 00" W 15.32
L51	S 42° 14' 06" E	24.20	L117	S 73° 29' 52" E 134.04	L183	N 00° 00' 00" E 160.00
L52	S 55° 04' 04" E	51.00	L118	N 74° 16' 09" E 35.75	L184	N 90° 00' 00" E 30.04
L53	S 15° 46' 05" E	42.41	L119	N 32° 02' 04" W 315.59	L185	N 00° 00' 00" E 336.98
L54	S 39° 17' 24" E	21.86	L120	N 32° 45' 43" W 20.45	L186	S 00° 00' 00" E 99.94
L55	S 57° 14' 17" W	25.03	L121	N 12° 31' 38" E 28.14	L187	S 12° 21' 32" E 20.04
L56	S 32° 45' 43" E	171.68	L122	N 73° 22' 54" W 166.18	L188	S 00° 06' 11" E 36.95
L57	N 57° 14' 17" E	62.91	L123	N 53° 55' 16" W 282.40	L189	S 00° 14' 49" W 183.80
L58	S 32° 50' 46" E	33.35	L124	N 23° 53' 14" W 205.71	L190	N 79° 14' 04" W 49.94
L59	S 57° 14' 17" W	62.96	L125	N 77° 46' 14" W 234.94	L191	S 15° 34' 49" W 37.05
L60	S 32° 45' 43" E	55.96	L126	N 18° 16' 04" E 57.33	L192	S 06° 25' 09" W 46.23
L61	S 57° 14' 18" W	5.00	L127	N 04° 58' 12" E 145.67	L193	S 21° 25' 10" W 265.20
L62	S 32° 45' 43" E	173.79	L128	S 86° 44' 17" W 185.69		
L63	N 57° 14' 17" E	37.97	L129	N 62° 17' 54" W 121.92		
L64	S 74° 40' 25" E	73.61	L130	N 18° 41' 57" W 74.46		
L65	N 14° 57' 40" E	93.55	L131	N 14° 27' 40" E 119.38		

 <p>P.O.B. 10000 LAKE BUENA VISTA FL 32830-1000 PHONE 407-824-5855</p>	FILING AREA OVERALL	DATE: 8/23/22
	PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
	SURVEY TYPE SKETCH OF DESCRIPTION SHEET 5 OF 6	DRAWN BY: JLG
	COMMENTS WDPR LAND	FILENAME: 10JG21084

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	500.00	58° 40' 50"	512.08	
C2	515.00	11° 30' 03"	103.37	S 63° 24' 46" E
C3	507.93	09° 45' 45"	86.55	S 50° 30' 17" E
C4	305.00	12° 56' 00"	68.85	
C5	511.38	22° 24' 26"	199.99	S 52° 15' 58" E
C6	1000.00	24° 57' 38"	435.64	
C7	427.56	56° 52' 00"	424.36	
C8	496.75	34° 46' 45"	301.53	
C9	1864.00	23° 42' 58"	771.55	S 12° 31' 04" E
C10	1869.00	18° 23' 02"	599.69	N 36° 14' 02" W
C11	2106.33	11° 43' 19"	430.92	S 18° 02' 01" E
C12	1944.00	02° 11' 00"	74.08	N 31° 19' 44" W
C13	2915.08	02° 51' 40"	145.56	S 53° 13' 03" W
C14	725.00	39° 13' 07"	496.26	
C15	725.00	13° 00' 49"	164.67	N 32° 55' 48" W
C16	1064.00	25° 04' 35"	465.68	
C17	1958.00	03° 16' 50"	112.11	
C18	1158.02	07° 37' 33"	154.13	
C19	2183.00	17° 36' 28"	670.86	S 20° 51' 21" W
C20	2183.00	12° 08' 20"	462.50	
C21	660.00	23° 23' 34"	269.47	N 30° 18' 10" E
C22	630.04	38° 00' 09"	417.88	N 51° 59' 51" E
C23	610.00	59° 45' 12"	636.16	
C24	620.00	30° 03' 22"	325.24	
C25	210.00	100° 31' 07"	368.42	
C26	1983.00	07° 27' 02"	257.87	N 13° 24' 18" E
C27	2183.00	08° 43' 00"	332.11	

 <p>RCES REEDY CREEK ENERGY SERVICES</p>	P.O.B. 10000 LAKE BUENA VISTA FL. 32830-1000 PHONE 407-824-5855	FILING AREA OVERALL	DATE: 8/23/22
		PROJECT NAME WORLD DRIVE PHASE 3	SCALE 1" = 500'
		SURVEY TYPE SKETCH OF DESCRIPTION SHEET 6 OF 6	DRAWN BY: JLG
		COMMENTS WDPR LAND	FILENAME: 10JG21084

PALM HOSPITALITY PROPERTY

DESCRIPTION

A parcel of land lying in Section 14, Township 24 South, Range 27 East, Orange County, Florida, and being more particularly described as follows:

Commence at the Northwest corner of said Section 14, run along the West line of the Northwest 1/4 of said Section 14, S 00°01'10" E, 287.36 feet; thence N 89°58'50" E, 1029.13 feet to the Northeasterly most corner of a Ground Lease described in instrument number 20220406900 of the Public Records of Orange County Florida, and the Point of Beginning; said point being a point on a non-tangent curve concave Northwesterly having a radius of 2915.08 feet, and a central angle of 02°28'04"; thence from a tangent bearing of N 55°41'07" E run Northeasterly along the arc of said curve and a Boundary line Agreement as described in instrument number 20050463415 of the Public Records of Orange County Florida, 125.56 feet; thence continue along said Boundary line Agreement the following three courses: S 32°02'04" E, 315.59 feet; S 74°16'09" W, 35.75 feet; N 73°29'52" W, 94.25 feet to a point on the aforementioned Ground Lease; thence run along said Ground Lease the following courses; N 33°30'45" W, 128.39 feet; N 77°28'22" W, 34.14 feet; N 32°45'43" W, 74.93 feet to the Point of Beginning. Containing 29893 square feet, more or less.

P.O.C.

NORTHWEST CORNER,
SEC 14, TWN 24 S, RNG 27 E

S 00°01'10" E 287.36'

N 89°58'50" E 1029.13'

BOUNDARY LINE AGREEMENT
DOC. 20050463415

P.O.B.
29893 sq.ft±

GRAPHIC SCALE
SCALE 1" = 200'

LEASE BOUNDARY
DOC. 20220406900

West line of the Northwest 1/4
of Section 14-24-27

TANGENT TABLE

LINE#	BEARING	DIST.
L1	S 74°16'09" W	35.75
L2	N 73°29'52" W	94.25
L3	N 33°30'45" W	128.39
L4	N 77°28'22" W	34.14
L5	N 32°45'43" W	74.93

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	TANG. BRG.
C1	2915.08	02°28'04"	125.56	N 55°41'07" E

ABBREVIATIONS

- R=RADIUS
- L=LENGTH
- Δ=DELTA
- TB=TANGENT BEARING
- SEC=SECTION
- TWN=TOWNSHIP
- RNG=RANGE
- POB=POINT OF BEGINNING
- POC=POINT OF COMMENCEMENT
- POT=POINT OF TERMINATION

SURVEYOR'S NOTE
CHAPTER 5J-17, FLORIDA
ADMINISTRATIVE CODE REQUIRES
THE FOLLOWING STATEMENT.
THIS IS NOT A BOUNDARY SURVEY

BEARINGS ARE BASED ON THE
W. LINE, NW 1/4, SEC. 14-24S-27E
AS BEING S 00°01'10" E



P.O.B. 10000
LAKE BUENA VISTA
FL 32830-1000
PHONE 407-824-5855

FLING AREA
OVERALL

PROJECT NAME
WORLD DRIVE PHASE 3

SURVEY TYPE
SKETCH OF DESCRIPTION

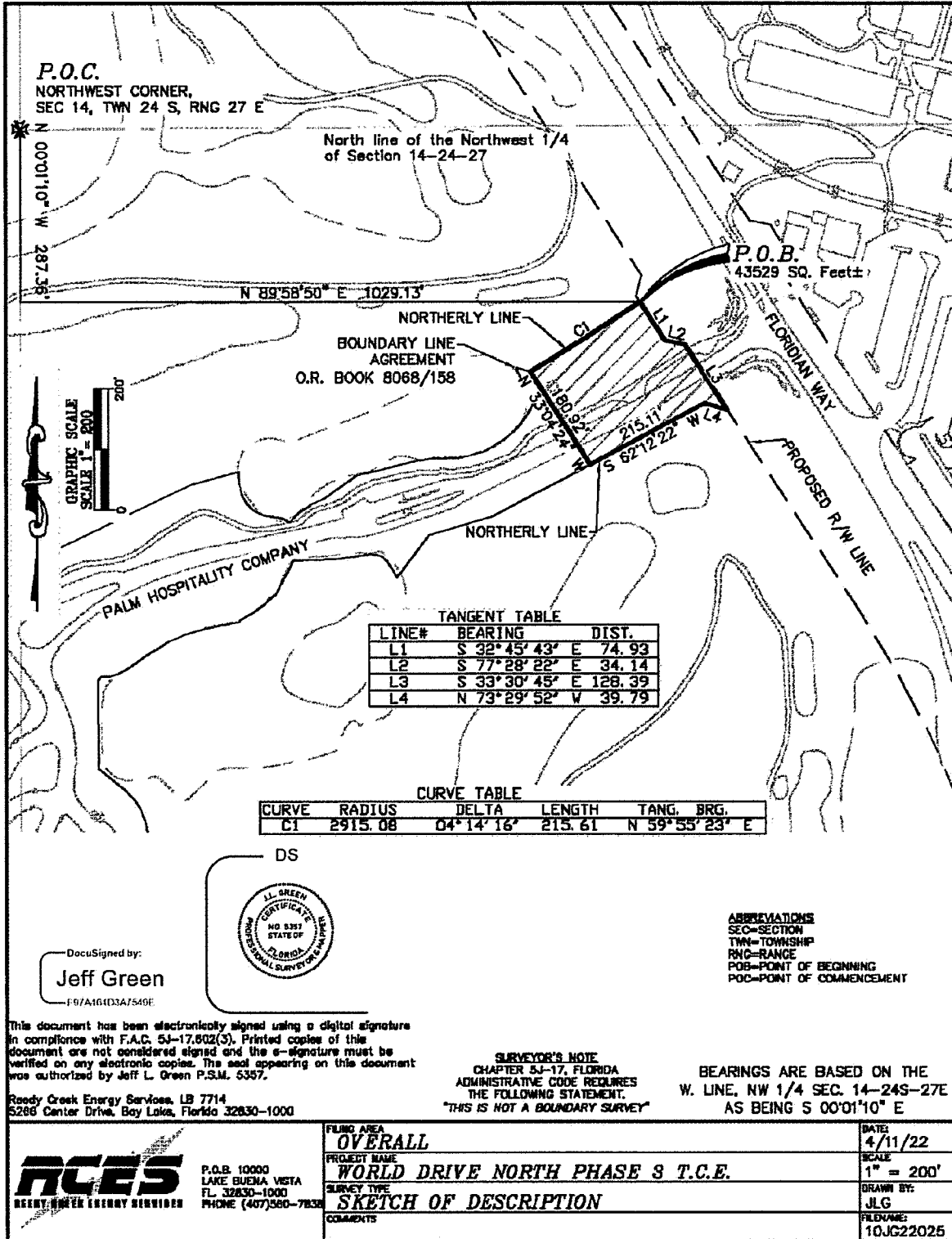
COMMENTS
PALM HOSPITALITY LAND

DATE:
11/16/22

SCALE
1" = 200'

DRAWN BY:
JLG

FILENAME:
10JG22042



**REEDY CREEK IMPROVEMENT DISTRICT
CONSENT OF SURETY FOR PARTIAL PAYMENT APPLICATION**

(Date) _____

REEDY CREEK IMPROVEMENT DISTRICT
P.O. Box 10170
Lake Buena Vista, Florida 32830

Re: Consent of Surety
Bond # _____
Contract # C006110
Payment Req. No.: _____

Dear Sir or Madam:

_____ (Surety) hereby consents to the payment of the amount of moneys due to **SOUTHLAND CONSTRUCTION INC.** (Prime Contractor), by REEDY CREEK IMPROVEMENT DISTRICT for which the necessary duly executed affidavits/releases of liens have not been provided.

This Consent of Surety is executed in lieu of the appropriated Affidavit and Release of Lien from _____ (Subcontractor/s - Supplier/s list if necessary) which the District's Prime Contractor has not submitted with its Partial Payment Application. The Surety executes this Consent for the amount of _____, encompassing Work and/or labor performed, the provision of materials, equipment, and supplies through the _____ day of _____, 20____, except for any applicable retainage.

_____ (Surety) further acknowledges that payment by REEDY CREEK IMPROVEMENT DISTRICT shall not be construed as a waiver of any of the District's rights or those of any other named Obligee under the Payment and Performance Bonds; nor a determination by the District or those of any other named Obligee as to the merits of any controversy or dispute between the Prime Contractor and a Subcontractor/Supplier.

Sincerely,

Name

Title

Signature of Attorney-in-Fact

Note: Documentation must be provided that reflects the Attorney-in-Fact's authority to sign for the Surety.

DUAL OBLIGEE RIDER

To be attached to and form a part of contract payment bond number _____ issued by

Surety
On behalf of **SOUTHLAND CONSTRUCTION INC.**

In the amount of **SEVENTY-FOUR MILLION, TWO HUNDRED FIFTY-THREE THOUSAND, NINE HUNDRED SIXTY-FIVE AND ZERO ONE-HUNDREDTHS DOLLARS (\$74,253,965.00)** and dated March 14, 2023 in favor of **REEDY CREEK IMPROVEMENT DISTRICT.** In consideration of the sum of One Dollar (\$1.00), and other good and valuable consideration receipt of which is hereby acknowledged, the Undersigned hereby agree as follows:

1. Walt Disney Parks and Resorts U.S. Inc.
is hereby added to said bond as additional Obligee.
2. The Surety shall not be liable under this bond to the Obligee, or either of them unless the said Obligee, or either of them, shall make payments to the Principal strictly in accordance with the terms of the said contract as to payments, and shall perform all other obligations to be performed under said contract at the time and in the manner therein set forth.
3. No suit, action or proceeding by reason of any default whatever shall be brought on this bond after two (2) years from the day on which the final payment under said construction contract falls due.
4. Aggregate liability of Surety hereunder to Obligee is limited to the penal sum above stated Surety, upon making payment hereunder, shall be subrogated to, and shall be entitled to an assignment of all rights of the payee with respect to the particular obligation discharged by the payment, either against principal or against and other party liable to the payee on the discharged obligation.

Signed, sealed and Dated this _____ day of _____, 2023.

REEDY CREEK IMPROVEMENT DISTRICT

Contractor: SOUTHLAND CONSTRUCTION, INC.

By _____

By _____

John H. Classe, Jr., District Administrator

Walt Disney Parks and Resorts U.S., Inc.

Surety

By _____

By _____

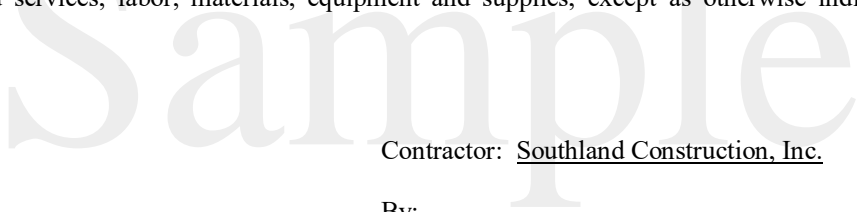
CONTRACTOR'S INTERIM AFFIDAVIT

From: Southland Construction, Inc.

To: REEDY CREEK IMPROVEMENT DISTRICT

The undersigned, being duly sworn, upon his/her oath deposes and says:

- 1. That he/she is over the age of eighteen (18) years, has personal knowledge of the following facts, is authorized to make this Affidavit on behalf of the Contractor named above, and that this Affidavit is, in fact, made on behalf of said Contractor.
2. That this Affidavit is made with respect to Contract No.: C006110, dated March 14, 2023, for WORLD DRIVE NORTH PHASE III
3. That all Work performed under the above Contract through the date of this Affidavit has been performed in accordance with the terms of said Contract.
4. That the Contractor covenants and warrants that all labor, materials, equipment, services and other items including, without limitation, all amounts due and owing to, or claimed by, all persons, firms, corporations, union welfare or benefit funds (if any), furnished pursuant to the above Contract and any additions or changes thereto, have been paid in full as of the date of this Affidavit, and that waivers of liens and waivers of claims through the date of this Affidavit have been obtained from all persons, firms, and corporations who have furnished services, labor, materials, equipment and supplies, except as otherwise indicated in Schedule A attached.



Contractor: Southland Construction, Inc.

By: _____

Print Name/Title

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of [] physical presence or [] online notarization, this _____ (date) by _____ (name of officer or agent, title of officer or agent) of _____ (name of corporation acknowledging), a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ (type of identification) as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

CONTRACTOR'S INTERIM AFFIDAVIT - SCHEDULE A

Date:

From: Southland Construction, Inc.

To: REEDY CREEK IMPROVEMENT DISTRICT

Re: Contract No.: C006110, dated January 27, 2022, between REEDY CREEK IMPROVEMENT DISTRICT and Southland Construction, Inc.

The following are ALL the amounts due and owing to, or claimed by, all persons, firms, corporations and union welfare and benefit funds (if any) who have furnished services, labor, materials, equipment or supplies, with respect to the above-referenced Contract. All amounts represent the total amount due and owing, or claimed, as of the date hereof and any contested, claimed, or unissued credits are specifically noted next to the amounts due and owing.

<u>Name</u>	<u>Amount Due and Owing</u>	<u>Notes</u>
-------------	---------------------------------	--------------

Sample

Please initial:

_____ Owner

_____ Contractor

CONTRACTOR'S REQUEST FOR INFORMATION

RFI NO: _____

DATE: _____

DATE INFORMATION REQUIRED: _____

SUBMITTED BY: _____

SCHEDULE EFFECT IF THE RESPONSE IS NOT RECEIVED BY THE ABOVE REFERENCED DATE: _____

CATEGORY _____ Information not shown on the Contract Documents
 _____ Interpretation of Contract Requirements
 _____ Conflict in Contract Requirements
 _____ Coordination Problems

Contract Drawing Ref. _____
 Shop Drawing Ref _____
 Specification Ref. _____
 Other: _____

SUBJECT: _____

DESCRIPTION: _____

By: _____

ENGINEER/ARCHITECT ASSIGNMENT

To: _____

Date: _____

From: _____

ENGINEER/ARCHITECT RESPONSE

REPLY: _____

By: _____

Date: _____

RESPONSE TO CONTRACTOR

To: _____

Date: _____

Copy To: _____

From: _____

DIRECTIVE NO.

CONTRACT NO: C006110
PROJECT: **WORLD DRIVE NORTH PHASE III**

DATE: _____

SUB-PROJECT: _____

CONTRACTOR: Southland Construction, Inc.

ATTACHMENTS:

DESCRIPTION: _____

Pursuant to the General Conditions of the Contract for Construction, you are hereby directed to proceed to perform the Work described above as indicated below. All work is to be accomplished in accordance with the Contract Documents. Any time extension associated with this Directive should be identified and a separate price stated to incorporate this change within the Contract completion date. Accurate records of any additional work, which may result in a change to the Contract Sum or Contract Time must be maintained. The implementation of all work now in process must be coordinated with the proposed revised conditions associated with this Directive.

The following is applicable to this Directive as marked:

- _____ A. The work described above and in the accompanying attachments will not change the Contract Sum or Contract Time.
- _____ B. The Contract Sum shall be increased/decreased by the sum of \$ _____ as a result of this Directive and the Contract Time shall be increased/decreased by _____ calendar days and shall be reflected in a Change Order to be signed by the parties.
- _____ C. The amount of change, if any, to the Contract Sum or Contract Time is undetermined as of the date of the Directive. Any such change amount shall be determined in accordance with the provisions of Article 12 of the General Conditions of the Contract for Construction.
- _____ D. Proceed immediately with the changes on a time-and-materials basis. Time tickets shall be submitted daily to the Owner’s Representative for verification. A formal Change Order will be issued for the actual costs based upon the signed time tickets and material invoices plus the Contractor’s allowable mark-up as specified in the Contract Documents.
- _____ E. The parties are unable to agree at this time as to whether the work described above constitutes a change in the scope of the work of the Contractor. Such dispute shall be resolved in accordance with the applicable provisions in the Contract Documents.

Approved:

Recommended for Approval:

REEDY CREEK IMPROVEMENT DISTRICT

Date
Engineer/Architect – (insert company name) Date

Accepted:

Contractor: Southland Construction, Inc. Date

Copy: Contract File
Engineer/Architect’s Project Manager: _____
Owner’s Project Manager: Craig Sandt

PROJECT: WORLD DRIVE NORTH PHASE III

CONTRACTOR: Southland Construction, Inc.
172 West Fourth Street,
Apopka, FL, 32703

CONTRACT NO. C006110

CHANGE ORDER NO.
DATE: «Change Order Date»

REEDY CREEK IMPROVEMENT DISTRICT
CHANGE ORDER

The Owner and the Contractor hereby agree to this Change Order for all labor, services, materials, equipment and other items or things to be furnished, provided or performed, and all other obligations, terms and conditions, as described in Exhibit A hereto, all of which shall become part of the Work.

- | | |
|---|------------------------------|
| 1. Original Contract Sum | \$74,253,965.00 |
| 2. Total net change by previous Change Orders | «Prior Revisions Fee Amount» |
| 3. Contract Sum prior to this Change Order | «Prior Contract Sum Amount» |
| 4. Contract Sum will be adjusted with this Change Order | «Fee Amount» |
| 5. Adjusted Contract Sum including this Change Order | «Total Contract Fee Amount» |
| 6. Original Contract Time | «Original Completion Date» |
| 7. Contract Time prior to this Change Order | «Prior Completion Date» |
| 8. Adjustment in Contract Time by this Change Order | «Extended Days» days |
| 9. Adjusted Contract Time including this Change Order | «Current Completion Date» |

Any funds payable to the Contractor hereunder are hereby declared to constitute trust funds in the hands of the Contractor to be first applied to the payment of Subcontractors, laborers and materialmen, and other costs of construction, pursuant to law.

The total amount of this Change Order is fair, reasonable and mutually agreeable, and includes all applicable taxes, insurance, bond or corporate guarantee, delivery, supervision, overhead, profit, labor, labor impact, materials, changes, cardinal change, delays, acceleration, inefficiency and cumulative impact, or any claims, lawsuits, actions or causes of action therefor, and the Contractor hereby waives, releases and forever discharges any and all claims, lawsuits, actions or causes of action for such items associated with or related to the Work covered by this Change Order. Without limitation on the foregoing, the parties hereto specifically acknowledge that it is their intent to hereby waive, release and forever discharge any and all cardinal change or cumulative impact claims, whether known or unknown, whether in law or in equity, whether contingent or non-contingent, and whether past, present or future, arising out of or in connection with this Change Order and all previous Change Orders.

This Change Order represents the entire and integrated agreement between the parties, and supersedes all prior negotiations and qualifications, for this change in scope; but this Change Order and the Work contemplated herein is, except as otherwise specifically provided herein, subject to all the terms and conditions of the Contract including, without limitation, those concerning payment.

OWNER
REEDY CREEK IMPROVEMENT DISTRICT

CONTRACTOR
SOUTHLAND CONSTRUCTION, INC.

Authorized
Signature: _____

Authorized
Signature: _____

Print Name: John H. Classe, Jr.

Print Name: _____

Title: District Administrator

Title: _____

Date: _____

Date: _____

CONTRACT NUMBER: C006110
CHANGE ORDER NO. « Change Order_Number»
DATE: «Change Order Date»
Page 1

EXHIBIT A

<u>Item</u>	<u>Description</u>	<u>Value</u>
-------------	--------------------	--------------

Sample

Please initial:

Owner

Contractor

PROJECT: WORLD DRIVE NORTH PHASE III

CONTRACT NUMBER: C006110

CHANGE ORDER NUMBER: (C.O. No.)

CLOSE-OUT CHANGE ORDER

THIS CLOSE-OUT CHANGE ORDER, is made effective as of (Insert Change Order Date), by and between the Owner and the Contractor.

WHEREAS, the parties desire to close-out the above referenced Contract based upon the Contract Documents as, and to the extent, modified below.

NOW THEREFORE, in consideration of the covenants hereinafter set forth, the parties agree as follows:

1. The current status of the Contract is as follows:

Original Contract Sum	\$74,253,965.00
Total net change by previous Change Orders	\$(Insert Amount)
Contract Sum prior to this Change Order	\$(Insert Amount)
Contract Sum will be increased/decreased with this Change Order	\$(Insert Amount)
Final Contract Sum including this Change Order	\$(Insert Amount)

2. The Contractor certifies that all Work covered by the Contract and Change Order No. _ through _ has been completed in accordance with the terms of the Contract, including all punch list items.

3. The attached Contract Close-out Documents, all of which are incorporated herein by reference, relate to all Work performed under the Contract and all Change Orders thereto (which are inclusive of all the Work in Contract No. C006110 and, along with the other terms of this Close-out Change Order, constitute material consideration and representations to the Owner to induce the Owner into execution of this Close-out Change Order.

CONTRACT CLOSE-OUT DOCUMENTS

Attachment "A"	General Release
Attachment "B"	Contractor's Affidavit
Attachment "C"	Contractor's Release and Waiver - Insurance
Attachment "D"	Waiver of Claim/Waiver of Lien/Litigation List
Attachment "E"	Contractor's Guarantee to Owner
Attachment "F"	Consent of Surety
Attachment "G"	Certificate of Substantial Completion

4. RETAINAGE: Within (15) working days after approval by Owner of the Contract Close-out Documents submitted by Contractor hereunder and satisfaction by Owner that Contractor shall have complied with all provisions of the Contract Documents, final payment, constituting the entire unpaid balance of the Contract Sum shall be paid by the Owner to the Contractor.

5. The Contractor represents to the Owner that:

a. There are no outstanding claims, which the Contractor has against the Owner or Separate Contractors, their Subcontractors or Sub-subcontractors, on the Project, and to the best of

Please initial:

Contractor

Owner

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)
Page 2

its knowledge, there are no outstanding claims against Contractor, its Subcontractors or Sub-subcontractors, by Separate Contractors or their Subcontractors or Sub-subcontractors on the Project.

- b. Without limitation upon the indemnity provisions contained in the Contract and in addition thereto, the Contractor shall indemnify, defend and hold harmless the Owner, the Owner's Representative, the parent, related, affiliated and subsidiary companies of each, and the officers, directors, agents, employees, successors and assigns of each from and against any and all claims, causes of action, liens, rights to claim a lien, suits, expenses, losses and damages (including, without limitation, any and all expenses, losses and damages, for or arising out of direct costs, indirect costs, expenses, overhead, profit, labor, labor impacts, materials, supplies, equipment, changes, cardinal changes, cumulative impacts, disruptions, hindrances, interferences, delays, acceleration, inefficiencies, lost productivity, taxes, insurance, bonds, deliveries, supervision, or any other costs, expenses, losses or damages of any nature whatsoever), judgments, and rights whatsoever, in law or in equity, known or unknown or which may hereafter accrue (hereinafter referred to collectively as "Claims") directly or indirectly (i) made or asserted by any Subcontractors or Sub-subcontractors arising out of, related to or in connection with the Contract or the Project, or (ii) arising out of or relating to any and all Claims asserted or made by any of such Subcontractors or Sub-subcontractors including, without limitation, any Claims made or asserted against any of the "Releasees" ("Releasees" being as defined in the General Release attached hereto as Attachment A), provided such Claim arises out of or relates to the Contract or the Project.
 - c. If requested by the Owner, the Contractor shall cooperate with the Owner in gathering and providing information to the Owner regarding any claims by or against Separate Contractors.
6. The Contractor hereby certifies and warrants that all charges for labor, materials, supplies, equipment, lands, licenses, and other expenses under the Contract incurred up to and including the date hereof, for which the Owner might be sued or for which a lien might be filed, have been fully satisfied, paid in full and released, except for those names listed on the attached Contractor's Affidavit and that those listed on the Contractor's Affidavit shall be fully satisfied, paid in full and released prior to final payment as provided herein.
7. All other obligations of the Contractor under the Contract Documents remain unchanged and shall survive the disbursement of final payment and the closing hereon.

OWNER:

REEDY CREEK IMPROVEMENT DISTRICT

Authorized
Signature: _____
Print Name: John H. Classe, Jr.
Title: District Administrator
Date: _____

CONTRACTOR:

SOUTHLAND CONSTRUCTION, INC.

Authorized
Signature: _____
Print Name: _____
Title: _____
Date: _____

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number
DATE: (Insert Date)

GENERAL RELEASE

Attachment "A"

CONTRACT NO. C006110

FOR AND IN CONSIDERATION OF THE SUM OF \$ _____ (Insert Amount of Final Payment, including all retainage withheld), as FINAL PAYMENT, the receipt and adequacy of which is hereby acknowledged, Southland Construction, Inc., the undersigned, hereby fully and forever releases, acquits and discharges REEDY CREEK IMPROVEMENT DISTRICT, the Owner's Representative, the Architect/Engineer and their parent, related and affiliated companies, their agents, employees, consultants, architects, engineers, officers, directors, successors and assigns, all of whom are hereinafter referred to collectively as "Releasees", from all manner of action and causes of action, suits, claims, judgments, damages, liens, claims of lien and rights whatsoever, in law or in equity, now existing or which may hereafter accrue in favor of the undersigned including, without limitation, any and all liability arising out of or in connection with that certain construction Contract dated January 27, 2022, Contract No. C006110, between REEDY CREEK IMPROVEMENT DISTRICT and Southland Construction, Inc. and all Work, labor and materials furnished, performed or provided pursuant thereto or otherwise for the project.

The undersigned covenants that except for actions and suits based upon breaches of the terms of this Release, it shall not commence or prosecute any action or suit in law or in equity, against the Releasees, either collectively or individually, on account of any action or cause of action which now exists or which may hereafter accrue in its favor.

In addition to any other liability which shall accrue upon the breach of the covenants contained herein, undersigned shall be liable to pay all reasonable attorneys' fees and costs incurred by the Releasees in the defense of any such action or suit.

Attested this _____ of _____, 20____.

Southland Construction, Inc.
(Contractor)

Signature

Print Name/Title

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ (date) by _____ (name of officer or agent, title of officer or agent) of _____ (name of corporation acknowledging), a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ (type of identification) as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

CONTRACTOR'S AFFIDAVIT

Attachment "B"
Page 1

From: Southland Construction, Inc.

To: REEDY CREEK IMPROVEMENT DISTRICT

The undersigned, being duly sworn, upon his/her oath deposes and says:

1. That he/she is over the age of eighteen (18) years, has personal knowledge of the following facts, is authorized to make this Affidavit on behalf of the Contractor named above, and that this Affidavit is, in fact, made on behalf of said Contractor.
2. That this Affidavit is made with respect to Contract No. C006110, dated March 14, 2023, for the WORLD DRIVE NORTH PHASE III project.
3. That all Work performed under the above Contract through the date of this Affidavit has been performed in accordance with the terms of said Contract.
4. That the Contractor covenants and warrants that all labor, materials, equipment, services and other items including, without limitation, all amounts due and owing to all persons, firms, corporations, union welfare or benefit funds (if any), furnished pursuant to the above Contract and any additions or changes thereto, have been paid in full as of the date of this Affidavit, and that waivers of lien through the date of this Affidavit have been obtained from all persons, firms, and corporations who have furnished services, labor, materials, equipment and supplies, except as otherwise indicated in Schedule A attached.

_____ Southland Construction, Inc. _____
(Contractor)

By: _____

Print Name/Title

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ (date) by _____ (name of officer or agent, title of officer or agent) of _____ (name of corporation acknowledging), a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ (type of identification) as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

CONTRACTOR'S AFFIDAVIT - SCHEDULE A

Attachment "B"
Page 2

Date: (Insert Date)

From: Southland Construction, Inc.

To: REEDY CREEK IMPROVEMENT DISTRICT

Re: Contract No.: C006110, dated March 14, 2023, between REEDY CREEK IMPROVEMENT DISTRICT and Southland Construction, Inc.

The following are ALL the amounts due and owing to all persons, firms, corporations and union welfare and benefit funds (if any) who have furnished services, labor, materials, equipment or supplies, with respect to the above referenced Contract. All amounts represent the total amount due and owing as of the date hereof AND any contested, claimed, or unissued credits are specifically noted next to the amounts due and owing.

NAME	AMOUNT DUE AND OWING	OTHER
------	----------------------	-------

Sample

Please initial: _____
Contractor

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

CONTRACTOR'S RELEASE AND WAIVER - INSURANCE

Attachment "C"

Project: WORLD DRIVE NORTH PHASE III

Contract No.: C006110

Contractor: Southland Construction, Inc.

Date of Contract: March 14, 2023

In consideration of the final payment under the Contract shown above between REEDY CREEK IMPROVEMENT DISTRICT, as Owner, and the undersigned, as Contractor, for Work on the above-captioned Project, the undersigned hereby represents that all claims which the undersigned may have against the Owner-furnished insurance (as and to the extent provided pursuant to the Contract Documents) for the Project have been reported in writing to the Owner and the Owner's insurance representative. The undersigned hereby waives and releases REEDY CREEK IMPROVEMENT DISTRICT, its insurance carriers pursuant to any such Owner-furnished insurance, the Owner's Representative, their respective parent, subsidiary, related and affiliated companies and the officers, directors, agents and employees of each from any and all claims for property damage which have not been timely reported in writing to the Owner's insurance representative. REEDY CREEK IMPROVEMENT DISTRICT and its insurance carriers reserve the right to deny any claim which has not been timely filed.

If Corporation, sign below:

(Southland Construction, Inc.)

Signature: _____
(Signature of Corporate Officer)

Title: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of physical presence or online notarization, this _____ (date) by _____ (name of officer or agent, title of officer or agent) of _____ (name of corporation acknowledging), a _____ (state or place of incorporation) corporation, on behalf of the corporation. He/she is personally known to me or has produced _____ (type of identification) as identification.

[Notary Seal]

Notary Public

Name typed, printed or stamped

My Commission Expires: _____

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

Attachment "D"

WAIVER OF CLAIM/WAIVER OF LIEN/LITIGATION LIST

CONTRACTOR: Southland Construction, Inc.

CONTRACT NO. C006110

All of the following have filed one or more of the following Notices:

(NTC) NOTICE TO CONTRACTOR
(NTO) NOTICE TO OWNER
(NONP) NOTICE OF NON-PAYMENT
(NOC) NOTICE OF CLAIM
(COL) CLAIM OF LIEN

Pursuant to the General Conditions, provide such releases, waivers, or satisfactions of Claims and Liens (or other documentation) in such form as the Owner may require for the following:

TYPE COMPANY FILING NOTICE UNDER AN ORDER GIVEN BY:

Sample

Please initial: _____
Contractor

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

CONTRACTOR'S GUARANTEE TO OWNER

Attachment "E"

Date: (Insert Date)

To: REEDY CREEK IMPROVEMENT DISTRICT

Contract No: C006110

Project: WORLD DRIVE NORTH PHASE III

In further consideration of the above-referenced Contract and pursuant to the provisions thereof, the undersigned hereby guarantees to the Owner, its successors and assigns, that all Work, as defined in the Contract Documents, whether performed or caused to be performed by the undersigned, shall be free from any defects in workmanship, materials and/or equipment and shall be in strict compliance with the Contract Documents. If, within a period of one (1) year from the date of acceptance of the Work by the Owner (or such longer period of time as may be prescribed by law or otherwise specified in the Contract Documents), the Work or any portion thereof shall prove to be defective in workmanship, material and/or equipment, or in any way not in strict compliance with the Contract Documents, then the undersigned shall repair and/or, at the option of the Owner, replace at its own cost and expense all such defective or non-complying Work, together with any adjacent structures or facilities which have been displaced or damaged by so doing or which have been damaged as a result of any defect in workmanship, material and/or equipment or the failure of the Work to comply with the Contract Documents. Such repairs and/or replacements shall be performed in accordance with all terms, conditions, covenants and provisions of the Contract Documents pursuant to which the Work was performed in the first instance, except that such repairs and/or replacements shall be without cost to the Owner, its successors or assigns.

Should the undersigned fail to perform its said repair and/or replacement obligations promptly after being given notice of its breach of this Guarantee, then the Owner may perform such corrective Work or cause it to be performed by others and charge the undersigned with the cost thereof, at Owner's option; provided, however, that if, in the sole judgment of the Owner, an emergency exists as a result of any such defective or non-complying Work which, in the Owner's opinion, requires more immediate corrective action than the undersigned is able to provide, then the Owner may, without notice to the undersigned, perform such corrective Work or cause it to be performed by others and charge the undersigned with the cost thereof.

_____ Southland Construction, Inc. _____
(Contractor)

By: _____

(Title)

Local Representative to be contacted for service: Contractor: (Southland Construction, Inc.)
Name: _____
Address: 172 West Fourth Street
Apopka, FL, 32703
Telephone No.: _____

CONSENT OF SURETY

Attachment "F"

Date: _____

REEDY CREEK IMPROVEMENT DISTRICT
1900 Hotel Plaza Boulevard
Lake Buena Vista, Florida 32830

Attention: Bruce D. Jones

Dear Mr. Jones:

We are the surety for the "Contractor" under Performance and Payment Bonds issued in connection with Contract No. C006110, dated March 14, 2023, between the Contractor and the Owner pursuant to which Contract the Contractor is performing certain Work in connection with the construction of the WORLD DRIVE NORTH PHASE III project. We understand that the Contractor desires to be paid, subject to our consent, the retainage held by the Owner under the aforesaid Contract and any Change Orders. Accordingly, please be advised as follows:

1. We hereby consent to the payment of the retainage as aforesaid.
2. Said payment shall in no way affect the aforesaid Payment and Performance Bonds or our obligations thereunder, all of which shall remain in full force and effect.

Very truly yours,

Name

Title

THIS SPECIFIC FORMAT MUST BE SUBMITTED ON THE LETTERHEAD OF THE SURETY

CONTRACTOR: Southland Construction, Inc.
CONTRACT NUMBER: C006110
CHANGE ORDER NO. (Insert C.O. Number)
DATE: (Insert Date)

Attachment "G"

CERTIFICATE OF SUBSTANTIAL COMPLETION

CONTRACT NO. C006110
PROJECT: WORLD DRIVE NORTH PHASE III
CONTRACTOR: Southland Construction, Inc.

Pursuant to the provisions of Section 9.4 of the General Conditions of the Contract for Construction, this is to certify that the Work under the above referenced Contract has been substantially completed on _____ (Insert date of substantial completion) (the "date of substantial completion") and a Punch List shall be issued within twenty (20) days.

Commencing on the day following the date of substantial completion, the Owner shall have responsibility for maintenance of the Project, utilities serving the Project and casualty insurance covering the Project; provided, however, that nothing herein contained shall relieve Contractor of its responsibilities under Article 11 of the General Conditions of the Contract for Construction during the period following the date of substantial completion of the Work and final completion (or thereafter with respect to Section 11.8 of said General Conditions).

As provided in Section 9.4.1 of the General Conditions of the Contract for Construction, this Certificate of Substantial Completion shall constitute a demand for an Application for Payment (including all costs and/or fees for any outstanding Revision Orders and itemized projections for any incomplete Work), and the Contractor shall conclusively be deemed to have waived the right to payment of any item or fee or cost not billed within thirty (30) days of Contractor's receipt hereof. The issuance of this Certificate of Substantial Completion shall not constitute a waiver of any right of the Owner hereunder including, without limitation, the right to those retainages permitted by the Contract Documents.

By: _____
Print Name: _____
Title: _____

PUNCH LIST FOR THE
PROJECT AREA KNOWN AS
{Project Name}

CONTRACT NO.: C006110

PROJECT: WORLD DRIVE NORTH PHASE III

CONTRACTOR: Southland Construction, Inc.

DATE: _____, 20__

1. Pursuant to the provisions of Section 9.4 of the General Conditions of the Contract for Construction, the Owner has determined that the following items related to the Work require completion and/or correction:

SEE ATTACHED LIST (__pages), dated _____, 20__

2. Pursuant to the provisions of Section 9.4 of the General Conditions of the Contract for Construction, the Contractor shall submit to the Owner all items required by Section 9.4.2 of the General Conditions of the Contract for Construction, including, without limitation, the following items. All such items shall be delivered to the Owner and the Owner must approve all such items before the Contractor is entitled to receive payment from the Owner.
 - (i) Application for Payment;
 - (ii) As-Built Drawings; and
 - (iii) Retainage Reduction Change Order including all Exhibits attached thereto and all Waivers of Claim. **NOTE: THIS PROVISION WILL BE INCLUDED ONLY WHEN THE OWNER WILL RELEASE RETAINAGE.**

The items referenced in paragraph 1, above, shall be accomplished on or before _____ (insert completion date). In the event Contractor does not complete and/or correct such items set forth above within the time set forth above, then, in accordance with the provisions of Section 14.3 of the General Conditions of the Contract for Construction, the Owner shall have the right to complete and/or correct such items or to cause the same to be completed and/or corrected by others, and Owner shall have the right to offset such costs against any amounts then or thereafter due the Contractor. If the amounts then or thereafter are not sufficient to cover such costs, the Contractor shall pay the difference to the Owner.

Owner's Representative

REEDY CREEK IMPROVEMENT DISTRICT
World Drive North Phase III
Contract: C006110

Section 00850
List of Drawings & Specifications
March 14, 2023

SECTION 00850
LIST OF DRAWINGS & SPECIFICATIONS

The following list of drawings and specifications, all prepared as noted, shall form a part of the Project Manual:

Project Manual

Entitled: WORLD DRIVE NORTH- PHASE III

Dated: March 14, 2023

DRAWINGS:

The following list of drawings/materials is applicable to the foregoing.

LIST OF DRAWINGS / MATERIALS:

Plan Sheet No.	Title	Date	EOR
	ROADWAY		
1	TITLE AND INDEX OF DRAWINGS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
2	SIGNATURE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
3	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
4	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
5	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
6	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
7	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
8	DRAINAGE MAPS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
9	TYPICAL SECTION	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
10	TYPICAL SECTION	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
11	TYPICAL SECTION	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
12	TYPICAL SECTION	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
13	TYPICAL SECTION	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
14	GENERAL NOTES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
15	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
16	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
17	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
18	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
19	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
20	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
21	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
22	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
23	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
24	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

REEDY CREEK IMPROVEMENT DISTRICT
World Drive North Phase III
Contract: C006110

Section 00850
List of Drawings & Specifications
March 14, 2023

25	COORDINATE AND CURVE DATA SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
26	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
27	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
28	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
29	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
30	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
31	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
32	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
33	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
34	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
35	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
36	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
37	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
38	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
39	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
40	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
41	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
42	ROADWAY PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
43	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
44	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
45	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
46	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
47	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
48	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
49	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
50	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
51	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
52	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
53	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
54	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
55	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
56	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
57	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
58	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
59	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
60	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
61	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
62	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
63	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
64	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

REEDY CREEK IMPROVEMENT DISTRICT
World Drive North Phase III
Contract: C006110

Section 00850
List of Drawings & Specifications
March 14, 2023

65	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
66	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
67	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
68	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
69	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
70	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
71	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
72	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
73	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
74	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
75	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
76	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
77	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
78	ROADWAY PROFILE SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
79	INTERSECTION DETAIL SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
80	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
81	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
82	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
83	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
84	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
85	ROUNDAABOUT LAYOUT SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
86	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
87	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
88	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
89	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
90	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
91	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
92	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
93	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
94	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
95	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
96	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
97	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
98	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
99	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
100	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
101	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
102	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
103	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
104	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

REEDY CREEK IMPROVEMENT DISTRICT
World Drive North Phase III
Contract: C006110

Section 00850
List of Drawings & Specifications
March 14, 2023

105	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
106	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
107	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
108	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
109	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
110	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
111	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
112	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
113	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
114	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
115	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
116	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
117	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
118	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
119	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
120	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
121	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
122	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
123	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
124	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
125	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
126	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
127	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
128	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
129	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
130	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
131	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
132	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
133	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
134	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
135	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
136	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
137	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
138	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
139	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
140	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
141	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
142	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
143	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
144	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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145	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
146	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
147	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
148	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
149	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
150	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
151	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
152	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
153	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
154	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
155	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
156	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
157	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
158	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
159	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
160	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
161	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
162	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
163	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
164	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
165	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
166	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
167	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
168	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
169	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
170	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
171	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
172	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
173	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
174	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
175	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
176	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
177	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
178	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
179	DRAINAGE STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
180	CROSS SECTION PATTERN	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
181	CROSS SECTION PATTERN	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
182	ROADWAY SOIL SURVEY	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
183	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
184	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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185	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
186	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
187	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
188	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
189	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
190	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
191	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
192	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
193	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
194	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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201	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
202	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
203	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
204	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
205	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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207	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
208	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
209	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
210	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
211	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
212	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
213	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
214	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
215	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
216	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
217	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
218	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
219	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
220	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
221	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
222	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
223	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
224	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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225	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
226	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
227	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
228	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
229	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
230	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
231	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
232	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
233	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
234	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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236	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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238	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
239	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
240	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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244	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
245	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
246	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
247	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
248	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
249	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
250	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
251	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
252	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
253	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
254	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
255	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
256	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
257	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
258	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
259	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
260	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
261	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
262	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
263	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
264	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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265	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
266	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
267	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
268	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
269	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
270	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
271	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
272	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
273	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
274	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
275	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
276	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
277	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
278	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
279	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
280	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
281	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
282	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
283	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
284	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
285	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
286	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
287	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
288	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
289	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
290	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
291	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
292	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
293	CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
294	POND DETAILS SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
295	POND DETAILS SHEETS	09/27/2022	TLP ENGINEERING CONSULTANTS, INC.
296	POND DETAILS SHEETS	09/27/2022	TLP ENGINEERING CONSULTANTS, INC.
297	DRAINAGE DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
298	STORMWATER POLLUTION PREVENTION PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
299	STORMWATER POLLUTION PREVENTION PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
300	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
301	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
302	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
303	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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304	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
305	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
306	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
307	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
308	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
309	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
310	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
311	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
312	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
313	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
314	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
315	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
316	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
317	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
318	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
319	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
320	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
321	EROSION CONTROL SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
322	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
323	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
324	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
325	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
326	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
327	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
328	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
329	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
330	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
331	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
332	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
333	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
334	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
335	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
336	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
337	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
338	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
339	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
340	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
341	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
342	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
343	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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344	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
345	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
346	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
347	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
348	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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351	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
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357	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
358	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
359	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
360	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
361	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
362	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
363	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
364	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
365	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
366	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
367	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
368	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
369	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
370	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
371	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
372	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
373	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
374	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
375	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
376	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
377	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
378	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
379	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
380	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
381	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
382	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
383	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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384	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
385	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
386	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
387	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
388	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
389	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
390	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
391	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
392	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
393	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
394	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
395	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
396	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
397	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
398	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
399	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
400	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
401	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
402	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
403	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
404	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
405	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
406	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
407	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
408	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
409	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
410	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
411	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
412	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
413	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
414	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
415	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
416	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
417	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
418	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
419	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
420	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
421	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
422	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
423	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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424	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
425	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
426	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
427	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
428	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
429	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
430	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
431	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
432	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
433	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
434	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
435	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
436	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
437	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
438	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
439	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
440	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
441	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
442	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
443	TEMPORARY TRAFFIC CONTROL PLANS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
444	CD-1 AND CD-1A BOX CULVERT DATA	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
445	CD-1 AND CD-1A REINFORCING BAR LISTS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
446	CD-1 AND CD-1A REINFORCING BAR LISTS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
447	CD-1 AND CD-1A REINFORCING BAR LISTS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
448	OS-1 GEOMETRY AND CD-1 RT INTERFACE DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
449	CD-1 BOX CULVERT REPAIRS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
	SIGNING AND PAVEMENT MARKING		
S-1	TITLE AND INDEX OF DRAWINGS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-2	SIGNATURE SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-3	GENERAL NOTES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-4	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-5	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-6	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-7	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-8	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-9	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-10	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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S-11	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-12	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-13	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-14	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-15	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-16	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-17	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-18	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-19	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-20	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-21	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-22	SIGNING AND PAVEMENT MARKING PLAN SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-23	SIGN STRUCTURE CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-24	SIGN STRUCTURE CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-25	SIGN STRUCTURE CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-26	SIGN STRUCTURE CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-27	SIGN STRUCTURE CROSS SECTIONS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-28	SIGN STRUCTURES DATA TABLES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-29	SIGN STRUCTURES DATA TABLES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
S-30	REPORT OF SPT BORINGS FOR SIGN STRUCTURES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
ITS SYSTEMS			
IT-1	TITLE AND INDEX OF DRAWINGS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-2	SIGNATURE SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-3	GENERAL NOTES	<u>10/20/2022</u>	TLP ENGINEERING CONSULTANTS, INC.
IT-4	SUMMARY OF PAY ITEMS	<u>10/20/2022</u>	TLP ENGINEERING CONSULTANTS, INC.
IT-5	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-6	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-7	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-8	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-9	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-10	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-11	ITS PLAN SHEETS	<u>10/20/2022</u>	TLP ENGINEERING CONSULTANTS, INC.
IT-12	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-13	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-14	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.

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IT-15	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-16	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-17	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-18	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-19	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-20	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-21	ITS PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-22	PULL BOX DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-23	SPLICING DIAGRAMS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
IT-24	SPLICING DIAGRAMS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
	LIGHTING		
L-1	TITLE AND INDEX OF DRAWINGS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-2	SIGNATURE SHEET	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-3	GENERAL NOTES	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-4	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-5	PROJECT LAYOUT	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-6	POLE DATA AND LEGEND	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-7	POLE DATA AND LEGEND	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-8	POLE DATA AND LEGEND	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-9	POLE DATA AND LEGEND	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-10	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-11	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-12	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-13	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-14	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-15	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-16	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-17	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-18	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-19	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-20	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-21	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-22	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-23	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-24	PLAN SHEETS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-25	SERVICE POINT DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-26	SERVICE POINT DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
L-27	SERVICE POINT DETAILS	08/30/2022	TLP ENGINEERING CONSULTANTS, INC.
	SECTION 2, TOWNSHIP 24 SOUTH, RANGE 27 EAST - WET UTILITIES		
1	COVER	08/30/2022	REISS ENGINEERING, INC.

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2	GENERAL NOTES	08/30/2022	REISS ENGINEERING, INC.
3	STANDARD LEGENDS AND ABBREVIATIONS	08/30/2022	REISS ENGINEERING, INC.
<u>D01</u>	DEMOLITION KEYMAP	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D02</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D03</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D04</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D05</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D06</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
<u>D07</u>	DEMOLITION PLAN	<u>10/20/2022</u>	<u>CHA CONSULTING, INC.</u>
11	POTABLE WATER KEYMAP	08/30/2022	REISS ENGINEERING, INC.
12	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
13	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
14	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
15	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
16	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
17	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
18	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
19	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
20	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
21	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
22	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
23	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
24	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
25	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
26	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
27	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
28	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
29	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
30	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
31	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
32	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
33	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
34	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
35	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
36	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
37	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
38	POTABLE WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
39	RECLAIMED WATER KEYMAP	08/30/2022	REISS ENGINEERING, INC.
40	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
41	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.

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42	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
43	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
44	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
45	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
46	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
47	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
48	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
49	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
50	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
51	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
52	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
53	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
54	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
55	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
56	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
57	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
58	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
59	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
60	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
61	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
62	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
63	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
64	RECLAIMED WATER PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
65	SANITARY KEYMAP	08/30/2022	REISS ENGINEERING, INC.
66	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
67	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
68	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
69	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
70	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
71	SANITARY PLAN & PROFILE	08/30/2022	REISS ENGINEERING, INC.
72	RCID STANDARD DETAILS	08/30/2022	REISS ENGINEERING, INC.
73	RCID STANDARD DETAILS	08/30/2022	REISS ENGINEERING, INC.
74	RCID STANDARD DETAILS	08/30/2022	REISS ENGINEERING, INC.
75	DETAILS	08/30/2022	REISS ENGINEERING, INC.
76	FDOT STANDARD DETAILS	08/30/2022	REISS ENGINEERING, INC.
77	FDOT STANDARD DETAILS	08/30/2022	REISS ENGINEERING, INC.
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ID-101	LIST OF DRAWINGS AND REVISION STATUS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-102	SCOPE OF WORK AND GENERAL REQUIREMENTS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-103	GENERAL REQUIREMENTS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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ID-105	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-106	EXISTING P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-107	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-108	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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ID-111	PROPOSED ABANDONMENT P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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ID-121	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-122	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-123	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-124	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-125	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-126	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-127	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-128	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-129	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-130	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-131	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-132	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-133	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-134	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-135	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-136	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-137	WELD MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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M-203	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-204	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-205	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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M-208	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-209	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-210	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-211	RELOCATION PLANS (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-212	RELOCATION PLANS (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-213	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-214	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-215	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-216	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-217	RELOCATION PLANS (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-218	RELOCATION PLANS (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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M-301	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-302	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-303	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-304	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-305	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-306	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-307	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-308	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-309	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-310	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-311	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-312	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-313	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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M-316	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-317	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-318	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-319	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-320	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-321	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-322	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-323	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-324	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-325	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-326	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-327	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-328	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-329	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-330	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-331	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-332	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-333	RELOCATION PROFILES (HDD)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-334	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-335	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-336	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-337	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-338	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-339	RELOCATION PROFILES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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M-401	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-402	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-403	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-404	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-405	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-406	MISCELLANEOUS DETAILS	8/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-407	MISCELLANEOUS DETAILS	8/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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ID-101	LIST OF DRAWINGS AND REVISION STATUS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-102	SCOPE OF WORK AND GENERAL REQUIREMENTS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-103	GENERAL REQUIREMENTS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-104	SPECIFICATIONS AND SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-105	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-106	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-107	SPECIFICATIONS AND DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-108	SYMBOLS AND ABBREVIATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
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ID-110	EXISTING P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-111	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-112	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-113	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-114	PROPOSED P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-115	PROPOSED ABANDONMENT P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-116	PROPOSED ABANDONMENT P&ID	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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	MECHANICAL		
M-200	OVERALL SITE PLAN - KEY SHEET	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-201	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-202	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-203	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-204	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-205	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-206	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-207	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-208	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-209	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-210	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-211	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-212	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-213	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-214	RELOCATION PLANS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-300	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-301	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-302	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-303	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-304	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-305	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-306	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-307	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-308	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-309	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-310	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-311	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-312	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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M-313	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-314	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-315	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-316	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-317	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-318	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-319	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-320	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-321	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-322	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-323	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-324	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-325	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-326	RELOCATION PROFILES (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-327	RELOCATION PROFILES (CHS/CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-350	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-351	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-352	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-353	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-354	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-355	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-356	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-357	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-358	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-359	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-360	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-361	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-362	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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M-363	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-364	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-365	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-366	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-367	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-368	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-369	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-370	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-371	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-372	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-373	RELOCATION PROFILES (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-380	HDD - PLAN AND PROFILE (CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-381	HDD - PLAN AND PROFILE (CHS)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-382	PULLBACK	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-383	CONSTRUCTION NOTES (CHS/CHR)	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-384	PULLHEAD AND PIPE SLEEVE DETAIL	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-400	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-401	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-402	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-403	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-404	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-405	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-406	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-407	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-408	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
	CIVIL		
C-101	EROSION CONTROL	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
C-102	RIPRAP DETAIL	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
C-103	SECTION VIEW	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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	STRUCTURAL		
S-101	STRUCTURAL GENERAL NOTES	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-102	STRUCTURAL GEN. NOTES AND ABBREVIATIONS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-201	FOUNDATION PLAN AND SECTIONS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-301	FRAMING PLANS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-302	FRAMING ELEVATIONS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-303	STRUCTURAL ELEVATION AND DETAILS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-304	STRUCTURAL DETAILS	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-305	STRUCTURAL BEAM SECTION	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
S-306	PRECAST PILE DETAIL	09/15/2021	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
	COMMUNICATIONS DUCTBANK		
COMM-100	COMMUNICATIONS DUCTBANK COVER PAGE	08/30/2022	SMART CITY TELECOM
COMM-101	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-102	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-103	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-104	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-105	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-106	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-107	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-108	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-109	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-110	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-111	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-112	COMMUNICATIONS DUCTBANK SITE PLAN	08/30/2022	SMART CITY TELECOM
COMM-401	COMMUNICATIONS DUCTBANK DETAILS	08/30/2022	SMART CITY TELECOM
COMM-402	COMMUNICATIONS DUCTBANK DETAILS	08/30/2022	SMART CITY TELECOM
COMM-403	COMMUNICATIONS DUCTBANK DETAILS	08/30/2022	SMART CITY TELECOM
	WORLD DRIVE ELECTRICAL RELOCATION PHASE 3		
CV100	GENERAL NOTES AND PROJECT LOCATION	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.

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CV101	DRAWING INDEX	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CV102	LEGEND, SYMBOLS, AND ABBREVIATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE100	KEY MAP	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE101	AREA 1 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE102	AREA 2 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE103	AREA 3 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE104	AREA 4 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE105	AREA 5 & AREA 6 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE106	AREA 7 PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE107	PLAN AND PROFILE - SHEET 1	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE108	PLAN AND PROFILE - SHEET 2	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE109	PLAN AND PROFILE - SHEET 3	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE110	PLAN AND PROFILE - SHEET 4	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE111	PLAN AND PROFILE - SHEET 5	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE112	PLAN AND PROFILE - SHEET 6	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE113	PLAN AND PROFILE - SHEET 7	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE114	PLAN AND PROFILE - SHEET 8	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE115	PLAN AND PROFILE - SHEET 9	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE116	PLAN AND PROFILE - SHEET 10	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE117	PLAN AND PROFILE - SHEET 11	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE118	PLAN AND PROFILE - SHEET 12	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE119	PLAN AND PROFILE - SHEET 13	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE120	PLAN AND PROFILE - SHEET 14	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE121	PLAN AND PROFILE - SHEET 15	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE122	PLAN AND PROFILE - SHEET 16	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE123	PLAN AND PROFILE - SHEET 17	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE124	PLAN AND PROFILE - SHEET 18	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE125	PLAN AND PROFILE - SHEET 19	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.

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CE126	PLAN AND PROFILE - SHEET 20	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE127	PLAN AND PROFILE - SHEET 21	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE128	PLAN AND PROFILE - SHEET 22	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE129	PLAN AND PROFILE - SHEET 23	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE130	PLAN AND PROFILE - SHEET 24	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE131	PLAN AND PROFILE - SHEET 25 - NOT INCLUDED IN THIS SET	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE132	INTERSECTION OF FLORIDIAN WAY & MAGNOLIA PALM DR. ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE133	WEDDING PAVILION ENTRANCE ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE134	P705 ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE135	P706 & P756 ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE136	CAR CARE SUBSTATION ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE137	NORTHWEST SUBSTATION ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE138	MAGIC KINGDOM SUBSTATION ENLARGED PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE200	CABLE SCHEDULE AND OWNER FURNISHED EQUIPMENT	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE201	HORIZONTAL DISTANCES BETWEEN EQUIPMENT	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE202	MANHOLE & PULL BOX DETAILS - SHEET 1	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE203	MANHOLE & PULL BOX DETAILS - SHEET 2	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE204	MANHOLE & PULL BOX DETAILS - SHEET 3	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE205	MANHOLE & PULL BOX DETAILS - SHEET 4	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE206	MANHOLE & PULL BOX DETAILS - SHEET 5	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE207	MANHOLE & PULL BOX DETAILS - SHEET 6	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE208	MANHOLE & PULL BOX DETAILS - SHEET 7	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE209	MANHOLE & PULL BOX DETAILS - SHEET 8	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE210	MANHOLE & PULL BOX DETAILS - SHEET 9	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE211	MANHOLE & PULL BOX DETAILS - SHEET 10	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE212	MISCELLANEOUS DETAILS - SHEET 1	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE213	MISCELLANEOUS DETAILS - SHEET 2	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE214	MISCELLANEOUS DETAILS - SHEET 3	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.

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CE215	MISCELLANEOUS DETAILS - SHEET 4	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE216	MISCELLANEOUS DETAILS - SHEET 5	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE500	12kV ONE LINE DIAGRAM - EXISTING	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE501	12kV ONE LINE DIAGRAM - MODIFIED	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE502	12kV GEOSPATIAL DIAGRAM SHEET 1 - EXISTING	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE503	12kV GEOSPATIAL DIAGRAM SHEET 1 - EXISTING	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE504	12kV GEOSPATIAL DIAGRAM SHEET 1 - MODIFIED	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE505	12kV GEOSPATIAL DIAGRAM SHEET 2 - MODIFIED	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE506	FIBER OPTIC GEOSPATIAL DIAGRAM SHEET 1 - EXISTING	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE507	FIBER OPTIC GEOSPATIAL DIAGRAM SHEET 2 - EXISTING	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE508	FIBER OPTIC GEOSPATIAL DIAGRAM SHEET 1 - MODIFIED	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CE509	FIBER OPTIC GEOSPATIAL DIAGRAM SHEET 2 - MODIFIED	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CI700	CAR CARE FIBER RACK	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CI701	CAR CARE FIBER DESIGNATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CI702	MAGIC KINGDOM FIBER PACK	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
CI703	MAGIC KINGDOM FIBER DESIGNATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES ELECTRICAL ENGINEERING DEPT.
	POLY AND GRAND TEMP CHILLER SERVICE		
CV100	DRAWING INDEX AND GENERAL NOTES	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CV101	LEGEND, SYMBOLS AND ABBREVIATIONS	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE100	POLYNESIAN SITE PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE101	GRAND FLORIDIAN SITE PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE102	PLAN AND PROFILE - SHEET 1	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE103	PLAN AND PROFILE - SHEET 2	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE104	PLAN AND PROFILE - SHEET 3	08/30/2022	FRED WILSON & ASSOCIATES, INC.

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CE105	POLYNESIAN SWITCHYARD - ENLARGED PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE106	POLYNESIAN SERVICE YARD - ENLARGED PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE107	SOUTHWEST MONORAIL RECTIFIER - ENLARGED PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE108	P705 - ENLARGED PLAN	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE109	GRAND FLORIDIAN CONVENTION CENTER - ENLARGED PLAN - SHEET 1	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE110	GRAND FLORIDIAN CONVENTION CENTER - ENLARGED PLAN - SHEET 2	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE111	HORTICULTURE EXHIBIT	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE200	CABLE SCHEDULE AND OWNER FURNISHED EQUIPMENT	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE201	MISCELLANEOUS DETAILS - SHEET 1	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE202	MISCELLANEOUS DETAILS - SHEET 2	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE203	GENERATOR PERMIT DETAIL	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE500	12kV ONE LINE DIAGRAM - EXISTING	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE501	12kV ONE LINE DIAGRAM - MODIFIED	08/30/2022	FRED WILSON & ASSOCIATES, INC.
CE502	FIBER OPTION ONE LINE DIAGRAM - EXISTING AND MODIFIED	08/30/2022	FRED WILSON & ASSOCIATES, INC.
	NORTH SERVICE AREA CHILLED WATER SYSTEM VALVE REPLACEMENT PROGRAM		
ID-100	COVER SHEET AND LOCATION MAPS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-101	INDEX OF DRAWINGS AND REVISIONS STATUS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-102	SCOPE OF WORK AND GENERAL REQUIREMENTS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-103	GENERAL NOTES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-104	SCOPE OF WORK AND SEQUENCE OF WORK	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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ID-105	SYMBOLS AND ABBREVIATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-106	SYMBOLS AND ABBREVIATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-107	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-108	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-109	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-110	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-111	OVERALL P&ID SCHEMATIC	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-112	WORK AREA #6 OVERALL P&ID POLYNESIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-113	FLOW SCHEMATIC WORK AREA #1	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-114	FLOW SCHEMATIC WORK AREA #2	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-115	FLOW SCHEMATIC WORK AREA #3	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-116	FLOW SCHEMATIC WORK AREA #4	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
ID-117	CHILLED WATER P&ID WORK AREA #5	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-100	OVERALL SITE PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-101	ENLARGED PLAN - WORK AREA #1	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-102	POTABLE WATER ENLARGED SITE PLAN GRAND FLORIDIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-103	ENLARGED PLAN - WORK AREA #2	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-104	ENLARGED PLAN - WORK AREA #3	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-105	CHILLED WATER OVERALL SITE PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-106	CHILLED WATER ENLARGED SITE PLAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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M-107	ENLARGED PLAN - WORK AREA #4	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-108	CHILLED WATER WORK AREA #5	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-109	WORK AREA #6 OVERALL SITE PLAN POLYNESIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-200	OVERALL SITE PLAN DRAINAGE	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-201	DRAINAGE PLAN NORTH	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-202	DRAINAGE PLAN NORTH AREA	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-203	DRAINAGE PLAN NORTH	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-204	DRAINAGE PLAN SOUTH	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-205	DRAINAGE PLAN SOUTH	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-300	CHILLED WATER PROFILE	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-400	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-401	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-402	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-403	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-404	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-405	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-406	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-407	ENLARGED PLAN - WORK AREA #3	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
M-408	ENLARGED PLAN - WORK AREA #3	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-102	SCOPES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.

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P-103	GENERAL NOTES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-104	SYMBOLS AND ABBREVIATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-105	SPECIFICATIONS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-106	SCHEDULES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-107	SCHEDULES AND DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-108	POTABLE WATER P&ID - GRAND FLORIDIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-109	FLOW SCHEMATIC WORK AREA #1	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-200	POTABLE WATER OVERALL SITE PLAN GRAND FLORIDIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-201	POTABLE WATER ENLARGED SITE PLAN GRAND FLORIDIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-202	POTABLE WATER OVERALL SITE PLAN POLYNESIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-203	POTABLE WATER ENLARGED SITE PLAN POLYNESIAN	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-400	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-401	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
P-402	MISCELLANEOUS DETAILS	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
C-101	WORK AREA #2	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
C-102	GRAND FLORIDIAN CIVIL NOTES	08/30/2022	REEDY CREEK ENERGY SERVICES MECHANICAL ENGINEERING DEPT.
	POLYNESIAN VILLAGE RESORT 1600 – PVR MODIFICATIONS – PROJECT B2 ROADWAY		
ID-100	COVER	<u>12/22/2022</u>	STUDIO 407, LLC.
C-001	GENERAL NOTES	<u>12/22/2022</u>	LANDDESIGN, INC. LANDDESIGN, INC.
C-002	SURVEY CONTROL POINT AND BENCHMARK DATUM PLAN	<u>12/22/2022</u>	

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XC-100	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-101	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-102	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-103	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-104	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-105	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-106	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-107	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-108	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-109	EXISTING CONDITIONS & DEMOLITION AND EROSION CONTROL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
XC-190	EROSION CONTROL DETAILS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-100	OVERALL SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-101	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-102	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-103	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-104	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-105	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-106	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-107	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-108	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.

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C-109	SITE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-120	INTERSECTION DETAIL PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-190	SITE DETAILS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-191	SITE DETAILS	<u>08/19/2022</u>	LANDDESIGN, INC.
C-195	TYPICAL ROAD SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-202	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-203	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-205	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-206	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-207	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-208	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-209	GRADING AND DRAINAGE PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-220	INTERSECTION GRADING PLAN	<u>12/22/2022</u>	LANDDESIGN, INC.
C-230	DRAINAGE STRUCTURE TABLES	<u>12/22/2022</u>	LANDDESIGN, INC.
C-250	OVERALL PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-251	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-252	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-253	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-254	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-255	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.

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C-256	PLAN AND PROFILE	<u>12/22/2022</u>	LANDDESIGN, INC.
C-257	PIPE AND CANAL PROFILES	<u>12/22/2022</u>	LANDDESIGN, INC.
C-290	ROAD CROSS SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-291	ROAD CROSS SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-292	ROAD CROSS SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-293	ROAD CROSS SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
C-294	ROAD CROSS SECTIONS	<u>12/22/2022</u>	LANDDESIGN, INC.
E-100	LEGEND, SYMBOLS, AND ABBREVIATIONS	05/06/2022	TLC ENGINEERING SOLUTIONS
XE-101	DEMOLITION SITE PLAN	05/06/2022	TLC ENGINEERING SOLUTIONS
E-101	SITE ELECTRICAL PLAN	05/06/2022	TLC ENGINEERING SOLUTIONS
E-401	EXISTING PANEL SCHEDULES	05/06/2022	TLC ENGINEERING SOLUTIONS
	SKETCHES AND CRITICAL INFRASTRUCTURE EXHIBITS		
SK-1.1	General Project Ingress/Egress Haul Route		
SK-1.2	Magic Kingdom Stockpile Haul Route		
SK-1.3	Stolport Laydown Area Haul Route		
EX-E-1.1	Electrical Critical Infrastructure Exhibit (1 of 2)		
EX-E-1.2	Electrical Critical Infrastructure Exhibit (2 of 2)		
EX-CH-1.1	Chilled Water Critical Infrastructure Exhibit (1 of 8)		
EX-CH-1.2	Chilled Water Critical Infrastructure Exhibit (2 of 8)		
EX-CH-1.3	Chilled Water Critical Infrastructure Exhibit (3 of 8)		

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EX-CH-1.4	Chilled Water Critical Infrastructure Exhibit (4 of 8)		
EX-CH-1.5	Chilled Water Critical Infrastructure Exhibit (5 of 8)		
EX-CH-1.6	Chilled Water Critical Infrastructure Exhibit (6 of 8)		
EX-CH-1.7	Chilled Water Critical Infrastructure Exhibit (7 of 8)		
EX-CH-1.8	Chilled Water Critical Infrastructure Exhibit (8 of 8)		
EX-D-1.1	Drainage Critical Infrastructure Exhibit (1 of 3)		
EX-D-1.2	Drainage Critical Infrastructure Exhibit (2 of 3)		
EX-D-1.3	Drainage Critical Infrastructure Exhibit (3 of 3)		
	<u>WDW Sign Manual FY18 (Combined)</u>		
	<u>World Drive North Phase III FINAL S+S Roadway Soil Survey</u>	09/15/2021	Geotechnical and Environmental Consultants, Inc.
	<u>World Drive North Phase III FINAL S+S Structures Geotech Survey</u>	09/15/2021	Geotechnical and Environmental Consultants, Inc.

SPECIFICATIONS:

The following list of specifications is applicable to the foregoing.

DIVISION 0 – CONTRACT & BIDDING DOCUMENTS:

<u>SPEC. NO.</u>	<u>SPECIFICATION TITLE</u>	<u>DATE</u>
00350	DIVERSE SMALL BUSINESS ENTERPRISE (DSBE)	03/14/2023
00850	LIST OF DRAWINGS & SPECIFICATIONS	03/14/2023

DIVISION 1 – GENERAL REQUIREMENTS:

01009	RCID PROJECT-SPECIFIC SAFETY PLAN REQUIREMENTS	03/14/2023
01010	SUMMARY OF WORK	03/14/2023
01018	OWNER-FURNISHED PRODUCTS	03/14/2023
01019	OWNER-PURCHASED PRODUCTS	03/14/2023
01019A	EXHIBIT 'A' ODP PURCHASE ORDER PROCEDURES	03/14/2023
01019B	EXHIBIT 'B' ATTACHMENT "1" CONTRACTOR'S VENDOR INVOICE AFFIRMATION LETTER	03/14/2023
01019C	EXHIBIT 'C' ATTACHMENT '2' OWNER'S REPRESENTATIVE'S INVOICE AFFIRMATION LETTER	03/14/2023
01020	ELECTRONIC DOCUMENT PROCESSING SERVICE	03/14/2023

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01021	ALLOWANCES	03/14/2023
01041	PROJECT COORDINATION	03/14/2023
01045	CUTTING AND PATCHING	03/14/2023
01050	FIELD ENGINEERING	03/14/2023
01100	ALTERNATES	03/14/2023
01202	PROGRESS MEETINGS	03/14/2023
01310	CONSTRUCTION SCHEDULE	03/14/2023
01315	CONTRACT TIME, SEQUENCING AND TIMING OF WORK	03/14/2023
01325	SCHEDULE OF WORK	03/14/2023
10330	SUBMITTAL PROCEDURES	03/14/2023
01340	SHOP DRAWINGS, PRODUCT DATA AND SAMPLES	03/14/2023
01370	SCHEDULE OF VALUES	03/14/2023
01410	REGULATORY REQUIREMENTS	03/14/2023
01420	REFERENCES	03/14/2023
01430	SOILS INVESTIGATIONS	03/14/2023
01440	QA & QC	03/14/2023
01455	TESTING AND INSPECTING SERVICES	03/14/2023
01500	TEMPORARY CONSTRUCTION FACILITIES	03/14/2023
01560	EROSION CONTROL	03/14/2023
01560A	P&E SFWMD DEWATERING PERMIT NOTIFICATION	03/14/2023
01630	SUBSTITUTIONS AND PRODUCT OPTIONS	03/14/2023
01640	PRODUCT HANDLING AND PROTECTIONS	03/14/2023
01700	PROJECT CLOSEOUT	03/14/2023
01710	CLEANING	03/14/2023
01720	PROJECT RECORD DOCUMENTS	03/14/2023
01730	EXECUTION	03/14/2023
01750	STARTING AND ADJUSTING	03/14/2023
09870	PROTECTIVE COATINGS	03/14/2023

DIVISION 2 AND 3 – SPECIFICATIONS:

Section 1. Roadway Specifications	
1)	100% Specification Package – August 2022 (TLP Engineering Consultants, Inc.)
2)	FDOT Specification Reference and Modifications
3)	Specification for Asphalt Pavement - RCID 334
4)	Specification for Portland Cement Concrete Sidewalk - RCID 528
5)	Dewatering - Section 02240
6)	Soils Stabilization / Dust Control

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Section 2. Utility Specifications	
7)	Section 01050 - Field Engineering
8)	Section 01440 - Quality Assurance & Quality Control
9)	Section 01721 - Surveying - Third Party
10)	Section 01788 - Project Documents
11)	Section 02260 - Excavation Support
12)	Section 02320 - Excavating & Backfilling for Utilities
13)	Section 02321 - Excavating & Backfilling for Structures
14)	Section 02445 - Boring and Jacking Conduits
15)	Section 02448 - Horizontal Directional Drilling
16)	Section 02505 - Underground Utilities Marking
17)	Section 02513 - Potable Water Distribution System
18)	Section 02515 - Reclaimed Water Distribution System
19)	Section 02580 - Electrical and Communication Structures
20)	Section 02730 - Utility Relocation Specials
21)	Section 16150 - Wiring Connections
22)	Section 16120 - Conductors and Cable
23)	RCES ECS Specification Reference and Modifications

END OF SECTION 00850

Diverse Small Business Enterprise Program

Division 000350

DIVERSE SMALL BUSINESS ENTERPRISE PROGRAM GUIDELINES

SECTION 100 - DSBE PROGRAM

Reedy Creek Improvement District provides equal opportunity for Diverse Small Business Enterprise (DSBE) businesses to receive and participate on District contracts. It is also our standard to:

- Ensure nondiscrimination in the award and administration of RCID contracts;
- Create a level playing field on which diverse small businesses can compete fairly for RCID contracts;
- Accept into the Program any of the following classifications of diverse entities who hold a majority stake in the ownership and control of a company:

Black Americans, Asian-Pacific Americans, Native Americans, Hispanic Americans, Subcontinent Asian-Pacific Americans, Women (including Caucasian Women) and Veterans who served on active duty with any of the U.S. Armed Forces.

- Help remove barriers to the participation of disadvantaged, Diverse Business Enterprises in RCID contracting opportunities; and
- Assist the development of firms that can compete successfully in the marketplace outside the Diverse Small Business Enterprise program.

INTERPRETATION:

Any conflict, error, omission or ambiguity, which may arise between these instructions and the above-mentioned DSBE Program obligation shall be resolved by the Director of Procurement & Contracting, whose decision will be final.

RCID OVERALL DSBE GOAL:

RCID has established an overall DSBE goal for bidder participation. RCID will use both Race-Conscious (RC) and Race-Neutral (RN) measures to achieve its overall goal. To ascertain whether the overall DSBE goal is being achieved, RCID will monitor Contractor's DSBE commitments and will track the payments to all firms (DSBE and Non-DSBE).

DSBE MEASURES:

Race Conscious DSBE Measures for RCID contracts includes setting DSBE contract goals for the participation of DSBE groups found to have significant statistical disparity in RCID contracting. The DSBE groups are Black Americans, Asian-Pacific Americans, Native Americans, Hispanic Americans, Subcontinent Asian-Pacific Americans, Women (including Caucasian Women) and Veterans of the U.S. Armed Forces.

SECTION 200 - DSBE PARTICIPATION

DSBE CONTRACT GOAL:

DSBE goals are established based on the analysis of the scope of work, and the availability of DSBE firms that are ready, willing, and able to perform. If established, the contract goal is listed in the published solicitation document.

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If a contract goal is not established, Bidders/Contractors are encouraged to utilize DSBE firms when opportunities are available during the performance of the contract. The successful Bidder/Contractor will be required to report DSBE participation throughout the period of performance.

RESPONSIVENESS TO CONTRACT GOAL:

NOTE: If a DSBE contract goal is established for this contract, obtaining the contract goal is a matter of bid responsiveness. Bidders/Contractors are required to document sufficient DSBE participation to meet the goals or, alternatively, document adequate good faith efforts (GFE). Bidders/Contractors shall provide the following:

- Names and addresses of DSBE firms that will participate in this Contract;
- Description of the work each DSBE will perform;
- Dollar commitments of each DSBE firm participating;
- Written documentation of the Bidder/Contractor's commitment to use a DSBE subcontractor whose participation it submits to meet the contract goal;

NOTE: If the contract goal is not met, evidence of good faith efforts must be submitted by the bid/proposal due date. Documentation of good faith efforts shall include copies of all DSBE and non-DSBE subcontractor quotes submitted to the Bidder/Contractor, when a non-DSBE subcontractor was selected over a DSBE for scopes of work identified. (Refer to Section 400- GFE Requirements). In addition, the Bidders/Contractors shall submit the Bidder/Bidder/Contractor Notarized Certification of Good Faith Efforts Form with their GFE documentation.

CONTRACTOR ASSURANCE:

Failure in the future by the Awarded Contractor to comply with these DSBE goal assurances in a good faith manner is a material breach of this contract, which may result in the termination of this contract or such other remedy as RCID deems appropriate, which may include, but is not limited to:

- Withholding monthly Progress Payments;
- Assessing sanctions;
- Liquidated Damages; and/or
- Disqualifying the Contractor from future bidding/proposing as non-responsible.

DSBE INFORMATION:

Bidders/Contractors are informed of the following:

DSBE firms listed to meet the contract goal must be in the designated RCID DSBE groups. Bidders/Contractors will receive credit toward the contract goal for DSBE groups designated.

A DSBE may participate as a prime contractor, subcontractor, joint venture partner with a prime or Subcontractor, vendor of material or supplies, or as a trucking company. Bidders/Contractors are encouraged to consider achieving the DSBE goal by purchasing materials and commodities from DSBE firms.

A DSBE joint venture partner must be responsible for performing a clearly defined scope of work. DSBE joint venture partners must actually perform, manage and supervise the work with its own forces; and share in the

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capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest.

DSBE firms must perform a commercially useful function, by being responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising at least thirty percent (30%) of the project work with its own workforce.

REPLACEMENT OF A DSBE FIRM:

Prior to contract award, if a Bidder/Contractor lists a DSBE firm denied qualification or is ineligible, or the DSBE firm is subsequently unable to subcontract with the Bidder/Contractor, the Bidder/Contractor shall replace the DSBE firm with another DSBE subcontractor. The Bidder/Contractor shall notify the RCID Procurement Department's assigned buyer of this occurrence and shall obtain prior written approval for replacement of the DSBE firm.

To the extent that RCID permits a pre-award deletion or substitution of DSBE firm(s) put forward by Bidders/Contractors as part of discussions or any best and final offer, the Bidder/Contractor shall give notice in writing to the applicable DSBE Subcontractor, with a copy to RCID, of its intent to request to delete or substitute. The Bidder/Contractor must give the DSBE five days to respond to its notice advising RCID and the Bidder/Contractor of the reasons, if any, why it objects to the proposed deletion or substitution and why RCID should not approve the Bidder/Contractor's action. Bidder/Contractor shall seek to replace the DSBE with another DSBE firm.

Bidder/Contractor shall document good faith efforts to replace the DSBE firm by following the good faith effort steps outlined in Section 400 Good Faith Efforts Requirements.

A Bidder/Contractor's inability to find a replacement DSBE at the original price is not alone sufficient to support a finding that good faith efforts have been made to replace the original DSBE. The fact that the Bidder/Contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the Contractor of the obligation to make good faith efforts to find a replacement DSBE, and it is not a sound basis for rejecting a prospective replacement DSBE's reasonable quote.

SECTION 300 - COMMERCIAL USEFUL FUNCTION AND COUNTING DSBE PARTICIPATION**COMMERCIAL USEFUL FUNCTION:**

To receive DSBE participation credit towards the DSBE commitments, DSBE firm(s) must perform a commercially useful function. A DSBE must perform at least thirty percent (30%) of its listed work with its own workforce or must not subcontract a greater portion of the work than would be expected on the basis of normal industry practices for that type of work. A DSBE performs a CUF when it is responsible for a clearly defined and distinct scope of work. DSBE firms must be responsible for the execution of the work and carrying out its responsibilities by actually performing, managing, and supervising the work involved and normal industry practices.

RCID will count DSBE participation for firms performing a CUF. When a DSBE participates in a contract, RCID will count only the value of the work actually performed by the DSBE toward the DSBE commitment.

DSBE as the Prime Contractor: One-hundred percent (100%) DSBE credit for that portion of the work performed by the DSBE's own forces, including the cost of materials and supplies for a construction contract.

DSBE as a Joint Venture Contractor: One-hundred percent (100%) credit for that portion of the total dollar value of this Contract equal to the distinct, clearly defined portion of the work performed by the DSBE's own forces.

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DSBE as a Subcontractor: One-hundred percent (100%) credit for the work of the subcontract performed by the DSBE's own forces, including the cost of materials and supplies, excluding the purchase of materials and supplies or the lease of equipment by the DSBE Subcontractor from the prime Contractor or its affiliates. Work that a DSBE Subcontractor in turn subcontracts to a non-DSBE firm does not count toward the DSBE commitment.

DSBE as a Regular Dealer (Material Supplier): Sixty percent (60%) DSBE credit for the cost of the materials or supplies purchased from a DSBE regular dealer. A regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business.

DSBE as a Manufacturer: One-hundred percent (100%) DSBE credit for the cost of materials or supplies obtained from a DSBE manufacturer.

A manufacturer is a firm that operates or maintains a factory or establishment that produces, on the premises, the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications.

DSBE as a Trucker: One-hundred percent (100%) credit for the work of the subcontract performed as a trucker. RCID will use the following factors when counting DSBE participation for a DSBE trucking company:

The DSBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for meeting the DSBE commitment. The DSBE must itself own and operate at least one fully licensed, insured, and operational truck used on the contract.

SECTION 400 - GOOD FAITH EFFORTS**REQUIREMENTS:**

Bidders/Contractors are reasonably expected to take active and aggressive measures sufficient to meet the DSBE goal(s), even if not fully successful. RCID will consider whether the quality, quantity, volume and intensity of the efforts were sufficient to meet the DSBE goal. Mere pro forma efforts are not good faith efforts and are not sufficient to meet the DSBE contract requirements. Only those efforts made prior to bid/proposal due date shall be considered for GFE evaluation. The "Bidder/Contractor Certification of Good Faith Efforts" (DSBE FORM 4) must be submitted at the bid/proposal due date if the Bidder/Contractor did not meet the goal.

GFE measures undertaken by a third party shall be at the Bidder/Contractor's own risk and shall not relieve Bidder/Contractor of the responsibility for meeting the GFE requirements. Bidder/Contractor shall also identify all Third Parties utilized to prepare GFE responses for each GFE indicator.

RESPONSIVENESS:

To determine if a Bidder/Contractor who failed to meet the DSBE contract goal is responsive, RCID will determine if the effort taken to obtain DSBE participation satisfies GFE requirements. Further, RCID will ensure that all good faith effort information supplied by each Bidder/Contractor is complete, accurate and adequately documented prior to award of any contract.

Any of the following conditions constitute failure to meet the contract goal and will require submittal of good faith effort documentation:

- The DSBE commitment reflected in the DSBE Forms is less than the DSBE contract goal established.

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- If the Bidder/Contractor has not met the stated contract goal, documentation of its GFE must be submitted at the time of bid/proposal due date.

RCID will evaluate each GFE step under Section 403 (Good Faith Efforts steps) on a pass/fail basis. The Director of Procurement & Contracting will evaluate the GFE of each Bidder/Contractor and determine if GFE was achieved.

Bidders/Contractors:

RCID shall notify Bidders/Contractors in writing whether GFE requirements were met or not met. The notification will explain the basis and include the reasons for the determination. If a Bidder/Contractor fails GFE, the Bidder/Contractor will be provided the opportunity for administrative reconsideration of RCID's GFE determination.

RECONSIDERATION:

Bidders/Contractors shall receive written notification from RCID detailing the results of their GFE evaluation. If the Bidder/Contractor failed to achieve adequate good faith efforts to meet the established DSBE goal(s), they shall have the right to request a Reconsideration Hearing. Hearing procedures include:

Right to Reconsideration Hearing: If a Bidder/Contractor receives notice that they failed GFE requirements, they may request a reconsideration hearing. Hearing requests shall be made in writing, via U.S. Mail or delivery service to RCID, Attn: Bruce Jones, RCID Reconsideration Officer, 1900 Hotel Plaza Blvd, Lake Buena Vista, FL . Requests may also be submitted by email to the Reconsideration Officer's ("RO") email at bjones@rcid.org, provided, however, that requests must be received by the RO within two (2) business days after the date the Bidder/Contractor receives the GFE determination notice. The Bidder/Contractor shall be presumed to have received the notification five (5) days after the date of the notice letter. The RO shall provide the RCID District Administrator with a copy of the hearing request.

Scheduling of Reconsideration Hearing: Upon receipt of a request for a reconsideration hearing, the RO or his/her designee will contact the Bidder/Contractor to schedule the hearing. Reconsideration hearings will be held no later than five (5) business days after receipt of the Bidder/Contractor's request, unless the RO agrees to extend this time period based on good cause. Extensions are disfavored.

Decision: The RO will provide a written decision to the Bidder/Contractor and the District Administrator within five (5) business days of the hearing, or as soon as possible thereafter. The decision will explain the basis for finding that the Bidder/Contractor did or did not meet the goal, or make adequate good faith efforts to do so. The decision is final and not administratively appealable to any other person within RCID, or any other authority.

SECTION 403: GOOD FAITH EFFORT STEPS

The achievement of Good Faith Efforts (GFE) will be based on evaluation of the following criteria:

STEPS:

- #1. Advertisement of bid opportunity to DSBE businesses
- #2. Notification of bid to small business/minority organizations/community groups
- #3. Selecting portion of the Work to be subcontracted to DSBE firms
- #4. Bid/Proposal and specification information provided to DSBE firms
- #5. Solicitation follow-up with DSBE businesses

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#6. Assistance in obtaining bonds & insurance, if needed

#7. Documented list of subcontractors submitting bids/proposals

STEP 1- ADVERTISEMENT OF BID OPPORTUNITY TO DSBE BUSINESSES

Effort:

Advertisements soliciting sub-bids/proposals from DSBE firms shall appear no fewer than 14 days prior to the initial bid/proposal due date. If the bid/proposal schedule established by RCID is of a short duration, advertisements for a shorter reasonable period of time are acceptable. When amendments extend bid/proposal due dates, GFE consideration shall only be given to Bidders/Contractors who extend, or revise advertised dates for the benefit of increased DSBE opportunities.

Advertisements will only refer to bids/proposals for RCID projects and will specify the categories of work for DSBE subcontracting opportunities. The advertisements shall be placed in a minimum of three different media: email outreach, job boards, newspapers, network groups, minority group website boards, and community newsletters are examples of advertising opportunities.

Advertisements shall consist of the following:

- 1) Bidder/Contractor shall advertise in general media, diverse job boards, or newspaper publications that are reasonably expected to reach DSBE firms likely to bid/propose on this contract.
- 2) Bidder/Contractor shall advertise in two (2) varied minority, veteran, and/or women trade association newspapers or other focus publications or media that will reach all DSBE firms.
- 3) The advertisement shall include, at a minimum, the name of the media, company contact person, type of publication, circulation dates of advertisement, project name and number, date of DSBE Subcontractor bid/proposal or quote due date to the Bidder/Contractor, Bidder/Contractor bid/proposal due date to RCID, detailed description of subcontracting work solicited, and time and location where bid/proposal plans, specifications and other documents may be reviewed.
- 4) The advertisement must further identify Reedy Creek Improvement District as owner and indicate that the solicitation is in response to RCID's DSBE requirements and the Bidder/Contractor will extend opportunities to DSBEs and conduct itself in good faith with DSBE firms seeking subcontract opportunities for the contract.

If bid/proposal due date was amended, explain positive and/or negative impact(s) to DSBE solicitations with your submitted GFE Form 4.

Evidence:

Include a list of advertisements placed, including a copy of the advertisements and/or tear sheets, advertisement commitment form and/or transaction receipt, and copy of advertisement specs submitted to the selected media source.

Bidders/Contractors are reasonably expected to take active and aggressive measures sufficient to meet the DSBE goal and advertise to DSBEs reasonably expected to perform the identified subcontractable work items.

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STEP 2- NOTIFICATION TO SMALL BUSINESS ORGANIZATIONS AND COMMUNITY GROUPS

Effort:

Outreach notification must be made to a minimum of ten (10) diverse business and community organizations. For assistance, utilize the listing of member organizations included in RCID's **Reference List A- Directory of Diverse Business & Community Organizations**.

Evidence:

Copies of letters, e-mails, faxes, fax confirmation sheets, telephone logs, etc. used to contact local diverse community organizations. The documentation must include names of organizations/groups, dates, names of contacts, and/or email addresses and telephone numbers.

Bidder/Contractor must include documented evidence of correspondence made to the community organizations. Documented evidence of a minimum of five (5) organizations/groups must be included in GFE Form 4 submittal.

Follow-up activity must be documented in telephone logs or other written documentation which provide, at a minimum, the following information:

- Type of contact (e.g., telephone call, visit, email, letter)
- Name and position of person who made contact on behalf of the Bidder/Contractor
- Name and address and/or email of community group contacted
- Name and position of person contacted, telephone number, and date of contact
- Indicate response from the group contacted with regard to its interest for notifying their members of the bid, or posting the bid internally to their members.
- Email return receipts to document successful delivery to the community groups, and in the case of returned email correspondence, documentation from the mail server that the email was undeliverable.

STEP 3- SELECT PORTION OF THE WORK FOR SUBCONTRACTING TO DSBE BUSINESSES

Effort:

The Bidder/Contractor shall identify work categories it intends to self-perform with its own workforce and all work/services that it intends to subcontract. This includes breaking out scopes of work into economically feasible units to facilitate DSBE participation, even when the Prime Contractor might otherwise prefer to perform these work items with its own workforce.

Evidence:

Documents showing all the work that the Bidder/Contractor intends to perform with its own work force and all the work that the Bidder has identified for subcontracting/supply should be evidenced. Bidders/Contractors shall provide documentation of efforts to utilize DSBE firms that can reasonably be expected to perform the identified subcontractable work items. Include additional comments when selected work categories are not sufficient to meet the goal and provide supporting documentation of why Bidder/Contractor decided to self-perform certain types of work with its own workforce.

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STEP 4- BID SOLICITATION, SPECIFICATION INFORMATION SENT TO DSBE BUSINESSES

Effort:

Bidder/Proposer's solicitation requests for subcontracted work are to be sent to DSBE firms included in the DSBE sourcing list provided with the RCID solicitation, and supplemented by sourcing DSBE firms found at any certifying agency website. Each RCID solicitation will publish the minimum number of DSBE firms required to be sourced by the Bidders/Contractors, but in no event will that number be less than ten (10).

Sourcing lists of certified diverse businesses can be found at the below two major certifying state organizations, however, any governmental sourcing list is acceptable to use.

- 1) State of Florida Office of Supplier Diversity | Website: [OSD \(myflorida.com\)](http://OSD(myflorida.com))
- 2) Florida Department of Transportation Diverse Small Business Directory (provides access to **all** unified certification program members' sourcing lists) | Website: [DBE Directory \(state.fl.us\)](http://DBEDirectory(state.fl.us))

Attach copies of solicitation letters/emails to the sourced DSBE firms. Solicitation notifications shall be mailed or emailed and sent no fewer than fourteen (14) calendar days prior to the bid/proposal due date. If, due to the schedule established by RCID, fourteen (14) calendar days is not feasible, a notification providing a shorter reasonable period of notice is acceptable, but never less than seven (7) calendar days unless for an emergency procurement.

Evidence:

Bidder/Contractor shall provide interested DSBEs with adequate information about the plans, specifications, and requirements in a timely manner to assist them in responding to the solicitation. Bidder/Contractor shall include names, contact persons, addresses, phone numbers, and dates of all DSBE firms solicited at least fourteen (14) calendar days prior to bid/proposal due date and by what means (letters, fax, phone, emails, etc.). Copies of the solicitation letters must be included. Bidders/Contractors notifications shall:

- Clearly identify portions of the work to be subcontracted and offer to break down any portion of the work into economically feasible units in order to facilitate DSBE participation.
- Identify if there is a bond requirement for Subcontractors for this contract and specify requirements.
- Offer assistance with regard to bonding requirements and insurance requirements, where applicable, and/or financing (e.g., lines of credit), specifying the type of assistance that the Bidder/Contractor is offering. Assistance may include, but is not limited to the following:
- Contact bonding and/or insurance companies on behalf of DSBEs.
- Arrange with sureties incremental or phased bonding for the DSBEs and/or paying for the cost of the bond or insurance
- Waive bond or other requirements.
- Refer DSBEs to Business Development Centers or other resource agencies, which may assist DSBEs in obtaining bonding, insurance, or lines of credit.

When complying with the guidelines for contacting an adequate number of DSBE firms, Bidders/Contractors shall utilize, at a minimum, RCID's DSBE sourcing lists included in the solicitation. When soliciting DSBEs, Bidders/Contractors are required to use at a minimum the list of DSBEs provided by RCID with the referenced

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solicitation; however, Bidders/Contractors are still responsible to source as many DSBE firms as possible through various channels in order to demonstrate Good Faith Effort (GFE).

Bidders/Contractors are encouraged to identify additional DSBE firms and request assistance from RCID to increase its efforts for achieving the DSBE goal. Bidders/Contractors shall outreach to utilize DSBE firms that can reasonably be expected to perform the identified subcontract work items.

STEP 5- SOLICITATION FOLLOW-UP TO DSBE BUSINESSES

(Complete FORM 4 – Good Faith Effort Documentation)

Effort:

Bidder/Contractor shall conduct follow up with the number of DSBE firms listed on the Bidders’/Contractors’ GFE form. Bidders/Contractors shall conduct solicitation follow-up 5 days after the making the initial solicitation letters. Follow-up must be with same firms solicited from the RCID DSBE certified list and/or any DSBEs initially sourced by the Bidder/Contractor.

Bidder/Contractor shall designate someone familiar with the project and capable of answering questions from potential DSBE Subcontractors and shall be responsible for solicitation follow-up. Follow up communication may be conducted orally, by email, or in writing. Oral communication must include documentation of follow-up (email, letter or fax).

Evidence:

Follow-up must be done with a minimum of sixty percent (60%) of the required number of DSBEs referenced in GFE Step #4 under Section 403 (Good Faith Efforts steps). Follow-up activity must be documented in telephone logs or other written documentation which provide, at a minimum, the following information:

- Type of contact, e.g., telephone call, visit, email, letter.
- Name and position of person who made contact on behalf of the Bidder/Contractor.
- Name and address and/or email of firm contacted.
- Name and position of person contacted, telephone number, and date of contact.
- Indicate response from the firm contacted with regard to its interest in submitting a sub-bid/ proposal.

Email return receipts to document successful delivery to DSBE Subcontractors, and in the case of returned email correspondence, documentation from the mail server that the email was undeliverable.

Bidder/Contractor shall provide written justification for decisions to self-perform work using its own workforce.

STEP 6- ASSISTANCE IN OBTAINING BONDS AND INSURANCE

Effort:

Assist DSBE firms in obtaining bonding and insurance, as needed.

Evidence:

Includes a description of assistance provided by Bidder/Contractor to DSBEs in obtaining bonding and insurance.

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STEP 7- LIST OF SUBCONTRACTORS SUBMITTING BIDS/PROPOSALS

Effort:

When negotiating with subcontractors, Bidders/Contractors shall include DSBE subcontractors, take price and capabilities as well as the contract goals into consideration. The Bidder/Contractor shall negotiate in good faith with DSBEs and not unjustifiably reject bids/proposals prepared by any DSBE.

Bidder/Contractor shall not reject DSBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities and must demonstrate justification based on a thorough investigation of their capabilities. Another practice considered an insufficient good faith effort is the rejection of the DSBE because its quotation for the work was not the lowest received. Please note that nothing in this paragraph shall be constructed to require the Bidder/Contractor or prime Contractor to accept unreasonable quotes to satisfy contract goals. If the reason cited relates to bonding, financing or insurance, or requested further breakdown of the work the Bidder/Contractor must provide documentation describing in detail the assistance offered by the Bidder/Contractor to the DSBE.

Evidence:

Names, addresses, dates, contact person, phone numbers, and emails of all Subcontractors DSBE and non-DSBE firms who submitted bids/proposals and copies of all bids/proposals including telephone bids/proposals for all work categories identified in GFE Step #3 under Section 403 (Good Faith Efforts steps). Identify number of total bids, proposal or quotes received for each work category and corresponding number from DSBE firms. Indicate reason for your choice of Subcontractor(s). Submit written (e.g. emails, letters or faxes) documentation evidencing good faith negotiations between DSBE subcontractors and Bidder/Contractor. Only significant price differences (ten percent (10%) or more) between the selected subcontractor/supplier versus rejected DSBE contractors are valid cause for rejecting bids/proposals.

GOOD FAITH EFFORTS DOCUMENTATION FORMS:

The following GFE attachments must be included in the Bidder/Contractor's bid submittal package:

- FORM 1-** Proposed Subcontractors and Suppliers
- FORM 2-** Affidavit DSBE Goal Achievement
- FORM 3-** Self-Classification DSBE Subcontractor Forms, if any
- FORM 4-** Good Faith Effort Documentation

SUSPENSION OR DEBARMENT:

Suspension or debarment proceedings may be initiated by RCID against any firm that:

- Attempts to participate in a RCID contract as a DSBE and does not meet the eligibility criteria stated in the certification standards for DSBE programs; or on the basis of false, fraudulent or deceitful statements; or under circumstances indicating a serious lack of business integrity or honesty.
- Attempts to use false, fraudulent or deceitful statements, or representations in order to meet its DSBE administrative requirements or uses another firm that does not meet the DSBE eligibility criteria stated in the certification standards.

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SECTION 500 - DSBE CERTIFICATION AND SELF-CERTIFICATION

CERTIFICATION/SELF-CERTIFICATION REQUIREMENTS:

DSBE firms may be certified through other governmental entities' programs, or may self-classify by completing and returning the **RCID Diverse Small Business Enterprise Self-Classification Form 3**. Bidder/Contractors are responsible for submitting completed DSBE self-classification forms for each DSBE firm not certified by another governmental agency.

DSBE CLASSIFICATION ELIGIBILITY:

A firm's ownership by at least fifty-one percent (51%) majority owned by socially and economically disadvantaged individuals and must be real, substantial and continuing, going beyond pro forma ownership of the firm as reflected in merely the ownership documents but possess the power to control the firm's management and policies.

The firm must be independent and not depend on its relationship with another firm or firms to be viable.

SECTION 600 – SMALL BUSINESS ENGAGEMENT OUTREACH PLAN (EOP)(if required)

Bidder/Contractor shall submit a Small Business Engagement Outreach Plan (EOP) as part of its bid only when noted and required for the solicitation. The purpose of the EOP is to ensure engagement and outreach to the small and disadvantaged business community on contracting opportunities for all phases of the contract work.

The EOP shall include without limitation:

- Identify strategies for awareness of the project to the small and disadvantaged business community.
- Identify strategies for advertising of contracting opportunities.
- Identify assistance provided to small and disadvantaged business community during the bidding process.
- Identify strategies to engage potential protégés to support a mentoring program.
- Identify methods used to engage with minority and women-owned firms and professional organizations.
- Identify methods used to provide project updates to the small and disadvantaged business community; and
- Development of a project website used to disseminate information to small and disadvantaged businesses.

Contractor shall provide updates to their EOP as part of its monthly reporting requirement.

SECTION 700 - CONTRACT COMPLIANCE

RCID will monitor the Contractor's compliance with the DSBE Program and administrative requirements for this contract.

End of INSTRUCTIONS

SECTION 01009**RCID PROJECT SPECIFIC SAFETY PLAN REQUIREMENTS****PART 1 – GENERAL****1.1 INTRODUCTION**

A Project Specific Safety Plan (PSSP) is a communication tool between contractors and the Owner's Representative. Used correctly, the PSSP ensures that relevant project/site-specific safety information is identified, monitored and communicated to all involved with the project.

1.2 PURPOSE

The PSSP will allow all those involved with the project to easily identify the existing and potential hazards associated with the scope of work and what methods the contractor shall utilize to mitigate the hazards to an acceptable level.

This should not be an overly complex document. It should be easily referenced by all those working on the project. The document should be able to be used as part of the daily pre task planning and for onsite safety meetings (toolbox talks).

The PSSP should not be a version of the company safety plan. It is Project / Site / Task specific. The PSSP shall include the applicable information commensurate with the size, complexity and risk level of the project.

The PSSP shall make it clear that everyone on the project has the right to report hazards and unsafe practices without fear of reprisal.

Contractor shall submit a PSSP to the Owner's Representative for review prior to project commencement with appropriate time for review. The Owner's Representative reserves the right to ask the Contractor to resubmit the PSSP if safety critical items related to the project are missing or incomplete.

The submittal of the PSSP does not relieve the Contractor from any other submittals required by the Contract Documents, including but not limited to:

- Construction & Demolition Safety Plan
- Crane Critical Lift Plan
- Hazardous Materials Disposal Plan
- Maintenance of Traffic Plan
- Hurricane / Weather Contingency Plan

1.3 FORMAT

The Owner's Representative will not dictate the exact format of the PSSP. However, there are four critical components of the PSSP:

- Responsibilities / Contacts
- Scope of work
- Job Safety Analysis (JSA)
- Pre-Task / Daily Safety Planning

1.3.1 RESPONSIBILITIES / CONTACTS

This section shall simply and clearly define the duties and responsibilities of the Contractor's personnel regarding the work to be completed and safety and health program implementation. It should also include means to contact those listed (i.e. phone, email, etc.)

- Contractor's President/Owner (of company)
- Contractor's Project Manager
- Contractor's Safety Manager (if applicable)
- Contractor's Field Supervision/ Superintendent
- All of Contractor's Subcontractors and Sub-Subcontractors (if any)

1.3.2 SCOPE OF WORK

The Scope of Work shall include translating the contract scope of work into a specific detailed work plan. It shall identify location(s), means and methods of accomplishing the plan, anticipated sequence of events, equipment to be used, etc. Please note that this includes all work to be performed by the Contractor and Subcontractors of every tier.

The scope shall also identify the following:

- Maximum height and depth of work activities
- Industrial hygiene issues
- Exposure to high hazard areas including but not limited to:
 - water ways
 - diving
 - crane lifts
 - energized electrical systems
 - confined spaces
 - maintenance of traffic ("MOT")
 - guest areas

1.3.3 JOB SAFETY ANALYSIS (JSA)

The JSA is a task/operation-driven document to ensure that the job task or operation receives proper safety planning prior to beginning work. In actuality, the JSA is a written work plan that incorporates safety procedures into the work practices. The JSA should be prepared far enough in advance of the task or activity to ensure that changes or revisions will not affect the scheduled execution of the task or activity. A JSA is to be developed by the Contractor or Subcontractors for any high-hazard or high-risk activity as identified by the Owner's Representative in its sole and absolute discretion, the Contractor or all Subcontractors of every tier.

The specific format of the JSA is to be determined by the Contractor, however, it must include the following information:

- A breakdown of the job into successive steps involved with the work activity.
- Identification of the hazards and the potential incidents associated with each work activity.
- Identification of methods to reduce or eliminate the hazards and potential incidents.

1.3.4 PRE-TASK PLANNING

Pre-task Planning is an activity that occurs at the start of each day, prior to beginning any work shift during which work is to be performed by the Contractor or any Sub-contractor of any tier, as well as any time the

daily cope of the work changes. It helps everyone involved in performing, supervising and overseeing the work to align the objectives to be accomplished before the day of work begins. A Pre-task Planning form is required to be completed and a meeting is required to be held with the crew by the supervisor prior to the start of each work shift. At a minimum, the supervisor will include the following in the Pre-task Planning:

- Identify the specific actions and work methods required to perform the work.
- Identify the specific hazards associated with the performance of the work and the measures necessary to eliminate or minimize the workers' exposure to the hazard.
- Provide the necessary training needed to safely perform the work.
- Identify and provide the necessary tools, equipment, and PPE required to protect the workers from the hazards.
- Review any items that may be applicable to their work activity previously identified on the JSA.

The Pre-Task Plan will be documented and kept in the work location for the duration of the shift or activity. As acknowledgment of its contents, the Pre-Task Plan must be signed by all members of the work crew and its supervisor, and others identified by, and in the sole and absolute discretion of, the Owner's Representative. .

Pre-Task Planning is not something that is to be submitted with the PSSP however it must be maintained on the jobsite throughout the project duration for review by the Owner's Representative and, at the request of the Owner's Representative, must be provided to the Owner's Representative as part of the Contract Close-out documentation.

END OF SECTION 01009

**SECTION 01010
 SUMMARY OF WORK**

PART 1 – WORK COVERED BY CONTRACT DOCUMENTS

1.1 General

- 1.1.1 The Scope of Work for the WORLD DRIVE NORTH PHASE III CONSTRUCTION project is described in the Project Manual entitled WORLD DRIVE NORTH PHASE III CONSTRUCTION. Specific elements of the Scope of Work are generally summarized below, but this Summary of the Work is not intended to be a complete description of the Work. Any quantities or measurements, if included in the summaries, are approximate and are not to be used in estimating the Work.
- 1.1.2 It is the intent of the Owner that the Contractor will perform all of the Work of any kind and nature shown on the drawings and/or described in the specifications, which is within the Contractor's Scope of Work unless specifically excluded or indicated as Owner-furnished and/or installed. Any Work not specifically indicated on the drawings and/or described in the specifications but required to fulfill the intent of a "complete job" for the Contractor's Scope of Work will be considered to be included in the Contract.

1.2 General Summary

- 1.2.1 The WORLD DRIVE NORTH PHASE III CONSTRUCTION scope of work includes:
- Replacement of the existing two-way Floridian Way roadway with the extension of the four-lane divided World Drive from south of Seven Seas Drive to north of Maple Road. New construction includes notable travel-way items such as three (3) roundabouts and a single span (84'-0" overall bridge length) Florida I-36 beam superstructure bridge.
- The Project also includes but is not limited to; (i) erosion control, clearing and grubbing Maintenance of Traffic (MOT); (ii) pile driving with 100% dynamic testing; (iii) utility protection structure construction; (iv) subsoil excavation, excavation, embankment, imported fill, and sod and/or grass; (v) directional drill/ jack and bore operations for various types of crossings; (vi) utility construction (water, sanitary sewer, reclaim water, gas, electric systems) and utility adjustments; (vii) permanent storm water management systems including ponds, box culvert, closed drainage systems and open drainage systems; (viii) temporary and permanent pavement, pavement markings and messages, signs (overhead sign structures, single and multi-post); (ix) roadway lighting, and electric load centers and controls; (x) installation of multiple temporary chillers to serve resorts during construction phase(s), chilled water construction (base bid and alternate); (xi) communications (Smart City, ITS) infrastructure.

1.3 Detailed Scope of Work

- 1.3.1 Mobilization and General Conditions:
- 1.3.1.1 The Contractor shall provide a minimum dedicated full-time staff for the duration of the Contract Time including but not limited to the following staff positions:
- 1.3.1.1.1 Full time dedicated project manager.
- 1.3.1.1.2 Full time dedicated general superintendent.
- 1.3.1.1.3 Full time dedicated utilities superintendent

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- 1.3.1.1.4 Full time bridge superintendent during bridge (vehicular bridge and utility protection structure) activities
 - 1.3.1.1.5 Full time dedicated field project engineer.
 - 1.3.1.1.6 Full time dedicated administrative support.
 - 1.3.1.1.7 Full time foreman and crew dedicated to Maintenance of Traffic (MOT) and SWPPP only.
 - 1.3.1.1.8 Power broom on site at all times.
 - 1.3.1.1.9 Water truck on site at all times.

1.3.2 Permitting:

- 1.3.2.1 The Contractor shall apply for de-watering permit(s) during the pre-construction phase. The Contractor shall prepare and submit the NOI to the Reedy Creek Improvement District prior to submitting to the FDEP during the pre-construction phase. In addition, the Contractor shall apply for any and all permits that are required by RCID Building and Safety during the pre-construction period.
- 1.3.2.2 Work must meet all requirements of the 2018 EPCOT Building Code with the 2018 or other most current supplement thereof in effect at the time of the effective Contract date.
- 1.3.2.3 The Contractor shall provide all building permits. Because the project is owned by the same entity as that which will issue the building permits, the permitting fees normally applicable are waived. It is necessary, however, for any contractor applying for building permits through RCID to request exemption from payment of the permitting fees for the reason stipulated herein.

1.3.3 Maintenance of Traffic:

- 1.3.3.1 The Contractor shall follow the Traffic Control Plans (TCPs) provided for the Project. Contractor is required to adhere to FDOT Standard Plans (Standard Design Index) 102-600 series and associated indexes for items not detailed in the TCPs. Contractor is required to submit for approval proposed MOT details when certain activities (i.e., structure component deliveries, excavations adjacent to traffic, overhead installations, etc.) require detailed operations to control traffic flow. Contractor shall include all such activities within their bid and expect to attend regular MOT Coordination meetings to discuss proposed operations. Should the Contractor request to deviate from the TCPs or request an alternate/additional detour or subphase, the Contractor shall hire a professional engineer licensed to do business in the State of Florida to provide a certified Maintenance of Traffic (MOT) individual plan prior to applying for the required permits from RCID Planning & Engineering. The MOT plans shall be in compliance with the Manual for Uniform Traffic Control Devices and applicable FDOT Standards. The Contractor shall maintain his traffic control devices for the entire duration of the project until the Owner certifies that the Punch List is complete.
 - 1.3.3.2 The Contractor shall provide a qualified traffic control crew to provide **continuous** maintenance of all traffic control systems at its expense, whenever traffic conditions warrant such control and
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whenever directed to provide such maintenance or adjustments by the Construction Manager. This requirement shall also apply to all events requiring a vehicle to back up on a lane maintained for traffic or any other situation considered by the Construction Manager to be dangerous.

1.3.3.3 The Contractor shall provide a qualified traffic control crew at its expense to inspect all traffic control systems in the presence of the Construction Manager at the beginning and end of each work shift for a minimum of one hour after the start of the shift and a minimum of one hour before the end of the shift. The Contractor's crew shall make immediate corrections or adjustments to the MOT systems as required to conform them to the approved MOT plans or as directed by the Construction Manager.

1.3.3.4 All MOT devices shall be like new. They shall be freshly painted and free of scratches, dents, dirt, and debris, and stains. The Contractor shall replace any MOT device that becomes damaged with a new device.

1.3.3.5 The Contractor shall construct and remove all temporary pavement as indicated within the drawings or otherwise deemed as necessary by the Owner's Representative.

1.3.4 Lay Down Yard/Employee Parking Construction:

1.3.4.1 Staging and construction laydown is very limited within project limits. A designated lay down yard and employee privately operated vehicle (POV) parking area is anticipated to be located at the nearby STOLport construction yard. The Contractor shall contain all trade parking, inclusive of the Contractor itself, to designated contractor parking areas. Contractor is responsible to maintain cleanliness of their assigned/approved area(s). No POV shall be parked within project limits.

1.3.4.2 Contractor Employees shall be transported from assigned parking areas to work areas by means provided by Contractor.

1.3.4.3 Contractor employees shall not gain access to the project site using the Magic Kingdom Toll Plaza. Deliveries using the Magic Kingdom Toll Plaza are allowed **ONLY** if approved and coordinated with the Owner(s) and Owner Representative/Construction Manager 72 hours prior to the requested activity.

1.3.5 Erosion and Sedimentation Control:

1.3.5.1 The Contractor shall design, furnish, install and maintain, at its expense, all necessary erosion control and wetland protection systems, such as silt fences, temporary retention basins, silt screens, synthetic hay bales, floating turbidity barriers, inlet protection systems, filter fabric, sandbags, sheet piling or other approved devices required to prevent erosion and to protect the storm water systems and receiving waters. The Contractor shall be responsible for repairing and/or replacing any and all damage to the erosion

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protection devices. The Contractor shall maintain all erosion control systems until the Owner certifies that the punch list is complete.

- 1.3.5.2 The Contractor shall prepare the Storm Water Pollution Prevention Plan utilizing the forms included in the Specification Section 01560. The Contractor shall submit a completed SWPPP to RCID Planning and Engineering for review and the Contractor shall make all modifications and refinements to the plan requested by RCID Planning and Engineering. Once all of the modifications have been made to the satisfaction of RCID Planning and Engineering, then the Contractor shall sign and certify the SWPPP as the operator and implement the structural erosion control devices.
- 1.3.5.3 The Contractor shall prepare and submit the NOI to the FDEP and pay all filing fees and secure a permit authorization letter from the EPA and fully comply with all record keeping requirements.
- 1.3.5.4 The Contractor shall provide a qualified and dedicated erosion and sedimentation control team to inspect and maintain the erosion control and wetland protection systems on a daily basis. The Contractor acknowledges that daily inspection and maintenance requirement is more stringent than the periodic inspections required by the FDEP. The Owner requires more stringent daily inspection and maintenance by a dedicated crew. The Contractor shall remove all erosion and sediment control systems at the conclusion of its Work when authorized to do so by the Owner.
- 1.3.5.5 The Contractor will be required to maintain at all times, a clear, orderly construction site and ensure the implementation of good housekeeping practices as described in these Contract Documents within the Storm Water Pollution Prevention Plans (SWPPP).
- 1.3.5.6 The Contractor shall maintain a power broom on site at all times throughout the Contract Time and sweep the roadways on a daily basis whenever its construction traffic causes dirt or debris to be deposited on the roads or whenever directed to sweep the roads by the Construction Manager.
- 1.3.5.7 The Contractor shall provide and maintain a water truck at all times during the Contract Time to provide dust control when conditions warrant or as directed by the Construction Manager.
- 1.3.5.8 The Contractor shall utilize lined trucks to haul muck or saturated soils off-site.
- 1.3.5.9 The water quality within the various bodies of water located on the Owner's property is regularly monitored and compliance with environmental standards is rigidly enforced. The Contractor is advised that should any of the Owner's ponds, lakes or canals, (or those of adjacent landowner's) become contaminated due to the Contractor's actions or inaction, the cost to flocculate, or clean by any means as may be required, shall be paid for by the Contractor.

1.3.6 Survey and Lay-Out:

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- 1.3.6.1 The Contractor shall perform all survey and lay out as required to complete the work within the specified tolerances.
- 1.3.6.2 After award of the contract and within fourteen (14) days of receiving a Limited Notice to Proceed, the Contractor shall complete all survey work required to verify and accept the accuracy of the grades noted as existing on the bid drawings. At the end of the fourteen-day discovery period, the Contractor shall provide written acceptance of the existing grades or provide written documentation of any material deviation it has discovered between the existing conditions and the conditions noted as existing on the bid drawings. All claims shall be made in strict accord with Article 13 of the General Conditions of the Contract for Construction. Failure to give such notice or to provide substantiation thereof shall constitute a waiver of the claim and acceptance of the existing grades.
- 1.3.6.3 Refer to the Drawings for information regarding benchmark, datum and coordinate system.
- 1.3.6.4 The Contractor shall preserve and protect all existing survey monuments within the limits of construction.
- 1.3.6.5 The Contractor shall provide the following specific survey tasks:
- 1.3.6.5.1 All surveying, engineering and layout required for the Work including but not limited to: (i) the limits of standard clearing and grubbing; (ii) drainage structure, utilities, roadway layout, and traffic signalization; (iii) provide and maintain baseline/centerline station boards
- 1.3.6.5.2 All “rough” and “finish” grade stakes as required to perform the Work. Any re-staking required due to his or any other contractor damaging, or removing original stakes shall be performed by the Contractor and will not be the responsibility of the Owner.
- 1.3.6.5.3 Coordination with the Owner’s survey consultant for verification of the Contractor’s survey including, but not limited to, Contractor’s field notes and temporary horizontal and vertical control points.
- 1.3.6.6 It is the responsibility of the Contractor to generate survey control, layout, and as-built information as required in the contract documents. **At no time will the project CAD design files be given to the Contractor.**
- 1.3.7 De-Watering:
- 1.3.7.1 Dewatering, defined as the act of temporarily removing groundwater for the purpose of achieving a dry condition during construction, renovation and the installation or removal of underground utilities or systems, shall require regulatory permits from both the South Florida Water Management District (SFWMD) and the Florida Department of Environmental Protection (FDEP). Dewatering may include the use of well points, pit pumps, deep wells, sock drains or any other
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means for lowering the water table or removing water seeping from the ground into a pit, excavation, trench, etc. SFWMD regulates removing the water from the ground and the FDEP regulates the discharge of the water to waters of the State or the US. The contractor is required to obtain SFWMD permit coverage through RCID by completing the permit application listed below. The contractor receives permit coverage for the discharge of produced groundwater through the FDEP Construction Generic Permit for Storm water Discharge from Large and Small Construction Activities as long as the ground water is not within 500 feet of a known contamination area. If the dewatering activities are within 500 feet of a known contamination area please contact RCID Compliance: Melissa Pulver, 407.828.2250 to obtain additional permit requirements.

1.3.7.2 De-watering pump activation (any size/capacity) is to be coordinated via request with RCID Planning and Engineering. Pre-activation inspection is required by RCID personnel for every activation. Advance requests are to be scheduled with RCID's Environmental Compliance division in writing 72-hours prior to the activity.

1.3.7.3 The Contractor shall apply for de-watering permit(s) through RCID Planning and Engineering at least twenty-one (21) days prior to commencement of any de-watering activities. The Contractor shall not begin any dewatering activities until RCID Planning and Engineering has approved the proposed activity. The following information is required by RCID Planning and Engineering to apply for the permit:

- 1.3.7.3.1 Name of Contractor.
- 1.3.7.3.2 Site location plan showing task specific dewatering locations.
- 1.3.7.3.3 Records that indicate the presence or absence of known areas of contamination within the project, and in adjacent areas that could be impacted if dewatering operations are performed.
- 1.3.7.3.4 Proposed methods of construction.
- 1.3.7.3.5 Estimating pumping rates and duration of pumping.
- 1.3.7.3.6 Known volume to be discharged from vessels installed in the wet.
- 1.3.7.3.7 Estimated depth of drawdown.
- 1.3.7.3.8 Anticipated radius of the cone influence.
- 1.3.7.3.9 Proposed points of discharge.
- 1.3.7.3.10 Site water routing from excavation to storm water retention area.
- 1.3.7.3.11 Proposed groundwater and surface water monitoring plans.
- 1.3.7.3.12 Any other sites and tasks specific characteristics worthy of consideration.
- 1.3.7.3.13 Hydraulic information (i.e. normal pool and seasonal high-water elevations) of any wetlands and surface waters within of adjacent to the proposed dewatering activities.
- 1.3.7.3.14 Monthly withdrawals will need to be submitted to RCID the first of each month once the dewatering starts.
- 1.3.7.3.15 Information shall be submitted through BIM 360 for electronic review under the specific Project Folder, under Dewatering. Contractor shall notify Melissa Pulver and

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Sam Duhs via the Review Status form on BIM 360. For BIM 360 information, please contact RCID at 407.828.2250.

- 1.3.7.3.16 If the Contractor utilizes a sock drain to accomplish its de-watering, then the Contractor shall remove the sock drain when the de-watering work is completed.

1.3.8 Clearing:

1.3.8.1 The Contractor shall provide all clearing and grubbing as needed in performance of the work. Tree pruning, as required, is to be performed/supervised by an approved arborist as deemed necessary by the Owner's Representative.

1.3.8.2 No burning will be allowed on site. The Contractor shall remove all cleared vegetation (grasses, plants, bushes, shrubs, trees, etc) from the site and dispose of it legally off site. Existing grasses/sod removed (strippings), as required for construction, shall be disposed of off-site at the contractor's expense and not utilized for embankment, backfill, or prepared soil layer of any kind unless approved by the Owner's Representative.

1.3.8.3 The Contractor shall remove all irrigation systems within the limits of the Work as required for the construction of the improvements. The Contractor shall contact RCID/WDW irrigation supervisor before removing irrigation systems within the limits of the Work. Temporary connections may need to be made to maintain some of the existing irrigation during construction. Any cost for temporary irrigation shall be included in the contract price. The Contractor will be required to retain the services of a RCID approved irrigation company to make any repairs/adjustments due to the Contractor's construction activities as directed by the Owner's Representative.

1.3.8.4 The following contractors have worked within the boundaries of Reedy Creek Improvement District (RCID) property in the past. By providing this list, RCID does not make or imply any qualifications or statements as to the performance or standing of these firms and the bidder is at their own risk while contracting or working with them:

- A. Brightview Development
- B. Ron Claassen 321-231-0161
Commercial Landscapes
- C. Philip Johnson 352-267-2457
Cepra Landscapes
Robert Maier 407-717-0635
- D. Down To Earth
Keith O'Neil 407-885-5113
- E. Newberg Irrigation
Joel Newberg 407-493-7300

1.3.9 Utilities:

1.3.9.1 The Contractor is to coordinate all utility construction efforts with the utility owner(s). Reedy Creek Energy Services (RCES) requires

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- coordination for inspections of their new and existing utilities. RCES will also require 72-hour notice and planning when working around their existing utilities. Other utility owners may include, but are not limited to, Smart City Telecom (data and communications fiber optic and wire), RCID (traffic fiber optic), and WDW Telecom (Disney fiber optic), Spectrum, Duke, Summit Broadband, TECO, & AT&T.
- 1.3.9.2 The Contractor shall identify, facilitate continued operation, and protect all existing utilities within the limits of the work.
- 1.3.9.3 Except as otherwise explicitly indicated on Drawings or called for in the Specifications, do not cut, alter, remove or otherwise disturb any existing improvement or construction or disturb any existing utilities without the approval of the Construction Manager.
- 1.3.9.4 The Contractor shall immediately restore to service and repair any damage caused by it to any existing utilities which are not scheduled for removal, discontinuance or abandonment, or which have not been released by the Owner and jurisdictional agencies for removal, discontinuance or abandonment, even if so scheduled.
- 1.3.9.5 Temporary Supports for existing Utilities: The Contractor shall provide all necessary temporary supports required to protect any and all existing utilities prior to commencing Work. Any damage to existing in-service utilities during construction will be repaired at the Contractor's expense. Temporary supports shall be reviewed by representatives of RCES or the appropriate utility companie(s) prior to installation by the Contractor.
- 1.3.9.6 The Contractor shall strictly adhere to utility notice and excavation permit provisions specified in Section 2.9 of Section 01010 of the project manual. The RCES Utility Locate Office will locate primary utility services. It will not locate secondary services. Secondary services include roadway lighting systems, irrigation systems, and electrical power systems for the existing lift station. All such services shall be maintained and/or relocated without interruption to existing services. The Contractor shall hire a private utility locate service to identify and locate all secondary utilities within the limits of the Work. (Refer to Allowance No. 1).
- 1.3.9.7 Locating services provided by the RCES Locating Services, Sunshine 811 and by any private secondary locating technician are confined to surface markings and flagging only. The Contractor shall hand dig and soft dig as required to determine the depths of all utilities. All such hand digging and soft digging shall be included in the Lump Sum Contract amount.
- 1.3.9.8 In the case of a conflict between the RCES specifications and the RCID specifications, generally the RCID specifications shall supersede the RCES specifications. The final determination shall be made by the Construction Manager. This is not withstanding provisions contained elsewhere in the general conditions
- 1.3.9.9 Any temporary or permanent utility (potable water, reclaimed water, sanitary water, gas, chilled water, etc.) connection to existing
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- facilities will require advance coordination between Contractor, Owner, Owner's Representative, and RCES in all cases.
- 1.3.9.10 Contractor is strictly prohibited from adjusting, closing, or opening any mechanical valves on RCES, RCID or Resort utility systems. Utilization/adjustment of valves for any reason requires advance coordination between Contractor, Owner, Resort Owner, Owner's Representative and RCES in all cases. The utility Owner(s) must be present to supervise/perform any and all valve operations.
- 1.3.9.11 The Owner has issued critical infrastructure exhibits to aid in utility scheduling. These exhibits, referenced in part 4 of this specification and in Section 00850, clarify the precedence and order of required utility phasing and activation. Any deviation from these exhibit(s) is subject to owner review and approval and is at the risk of the Contractor.
- 1.3.9.12 **Gas Utilities:** Gas mains within the project limits (proposed or existing) will require various approvals and adherence to the following specific guidelines when performing proximate explorations and work on or near gas mains (steel, fiberglass, other):
- 1.3.9.12.1 Nominated sub-contractors, previously approved to complete work for the Reedy Creek Improvement District, are listed in article 3.2.3 of the Section. However, Contractors are not limited to the Subcontractor(s) noted in the above-referenced section. If a proposed Subcontractor is not listed in the above-referenced section, the Contractor shall submit a qualifications package within 7 days of Limited Notice to Proceed for Owner review and approval.
- 1.3.9.12.2 Gas line Locates – (i) Line locates must be current and maintained. If they are disturbed, work must be stopped until they are re-established; (ii) No method of excavation or probing that induces a point loading may be utilized on a fiberglass gas line due to the delicate/brittle nature of the pipe.; (iii) Steel probe rods are not to be used; (vi) There are no “approach distances” to avoid when working next to gas lines, however, extreme caution must always be exercised. (No exclusion zones are required).
- 1.3.9.12.3 Soft Digs/Excavation (including locates for positive ID) - (i) When excavating near a fiberglass gas line, hand excavation must be used within three (3) feet of the gas line. Excavation via mechanical means may be used for depths greater than three (3) feet; however, once the depth of three (3) feet has been achieved, the excavation effort needs to be reduced to hand excavation only. If using vacuum excavation of any type, the probe tip cannot reside within three (3) feet of a buried fiberglass gas line; (ii) When excavating adjacent to gas lines, hand excavation is the preferred method.
- 1.3.9.12.4 Backfilling - (i) When backfilling a fiberglass gas item, use a sand wash compaction for the first two (2) feet of backfill and gently hand tamp thereafter. Mechanical compaction increases the risk of breakage; (ii) Mechanical compaction within twenty (20) feet of active fiberglass gas lines should be kept to an absolute minimum and avoided where/when possible; (iii) Do
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- not backfill a gas line until the Gas Department performs an inspection. This should be performed immediately prior to backfill; (iv) If backfilling of a gas line is not to be performed by an RCES preferred Gas Contractor, the RCES Gas Department must be on site to witness the backfilling and compaction of the first lift of backfill.
- 1.3.9.12.5 General Requirements and Precautions - (i) If a gas line is exposed, the Owner's Representative and Gas Department must be notified to coordinate/perform inspection and testing of the protective coating; (ii) If there is reason to suspect a gas leak of any severity, immediately notify the RCES control room (407-824-4185) and the Gas Department, cease work, and evacuate the area. DO NOT try to repair, patch, or any in way address the situation. Keep a safe distance and keep others from entering the area until the Gas Department arrives; (iii) Do not backfill a gas line until the Gas Department or their designated representative performs an inspection. This should be performed immediately prior to backfill; (iv) Only RCES certified contractors are permitted to work on RCID- owned gas lines; (v) Look for any wires coming out of a gas valve box. Report this condition to the RCES Gas Department.
- 1.3.9.12.6 All work on Gas facilities is to be performed in a craftsman-like manner.
- 1.3.9.13 **Chilled Water Utilities:** CHW mains within the project limits (proposed or existing) will require various approvals and adherence to the following specific guidelines when performing proximate explorations and work on or near CHW mains:
- 1.3.9.13.1 Nominated sub-contractors, previously approved to complete work for the Reedy Creek Improvement District, are listed in article 3.2.3 of the Section. However, Contractors are not limited to the Subcontractor(s) noted in the above-referenced section. . If a proposed Subcontractor is not listed in the above-referenced section, the Contractor shall submit a qualifications package within 7 days of Limited Notice to Proceed for Owner review and approval.
- 1.3.9.13.2 CHW line Locates – (i) Line locates must be current and maintained. If they are disturbed, work must be stopped until they are re-established; (ii) An “approach distance” of 10 feet is mandated to avoid potential impacts to active mains when working within proximity of CHW lines. Extreme caution must always be exercised.
- 1.3.9.13.3 Soft Digs/Excavation (including locates for positive ID) - (i) When excavating near a CHW line, hand excavation must be used within three (3) feet of the CHW line. Excavation via mechanical means may be used for depths greater than three (3) feet; however, once the depth of three (3) feet has been achieved, the excavation needs to be reduced to hand excavation; (ii) When excavating adjacent to chilled water lines, hand excavation is the preferred method.
- 1.3.9.13.4 Existing Chiller Line Delineation and Protection: The existing CHW line(s) shall be delineated in a manner sufficient to prevent Construction traffic from crossing the utility. These delineation(s) shall be maintained by the Contractor until the
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- Contractor is directed to remove them by the Construction management team.
- 1.3.9.13.5 Backfilling - (i) Mechanical compaction within twenty (20) feet of active CHW lines should be kept to an absolute minimum and avoided wherever possible; (ii) Do not backfill a CHW line until the Mechanical Department performs an inspection. This should be performed immediately prior to backfill; (iii) If backfilling of a CHW line is not to be performed by an RCES preferred CHW Contractor, the RCES Mechanical Department must be on site to witness the backfilling and compaction of the first foot.
- 1.3.9.13.6 General Requirements and Precautions - (ii) If a CHW line is exposed, the Mechanical Department must be notified to inspect the line and the insulation's condition; (ii) If there is reason to suspect a CHW leak of any severity, immediately notify the RCES Control Room (407-824-4185) and Mechanical Department and cease work. DO NOT try to repair, patch, or in any way address the situation; (iii) Do not backfill a CHW line until the Mechanical Department or their designated representative performs an inspection. This should be performed immediately prior to backfill; (iv) Only RCES certified contractors are permitted to work on RCID- owned CHW lines.
- 1.3.9.13.7 If and when Asbestos Cement (AC) items are exposed or encountered, notify the Owner's representative and RCES Mechanical Department immediately. If AC material or coverings are damaged, repairs may be required and the associated work needs to be performed by qualified personnel. DO NOT backfill any damaged AC items prior to inspection by RCES Mechanical personnel.
- 1.3.9.13.8 Any removal and disposal of Asbestos Cement (AC) materials is to be performed by Qualified personnel and with approved safety procedures. Removed asbestos materials must be disposed of at a qualified facility. All disposal documentation shall be presented to the Owner within a timely manner.
- 1.3.9.13.9 All work on Chilled Water facilities is to be performed in a craftsman-like manner.
- 1.3.9.13.10 Temporary Chillers are required to complete the work for this project and to maintain the continued function of the associated system(s). Key served facilities include the Pirate's Lateral, WDW's Polynesian Resort and WDW's Grand Floridian Resort as further defined in Alternate 1a. Please reference Specification 01100 "Alternates". These locations are to each receive temporary equipment with tonnage/capacity as required within the chilled water plans and contract documents. Temporary facilities (potable water supply, electrical service connection, generators, equipment shoring and protection to serve Temporary Chiller Equipment is the Contractor's responsibility. The Pirate's Lateral temporary chillers will include temporary generators. Refer to the contract drawings for specific requirements.
- 1.3.9.13.11 Temporary Chiller initial set-up, connection, start-up, and disconnect are to be coordinated with Owner, Owner's Representative, RCES and WDW Resort Management in advance of planned time of connection.
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- 1.3.10 Vehicular Bridge, Utility Protection Structure, and Pilot Canal Utility Bridge Construction:
- 1.3.10.1 The Contractor shall construct the Vehicular Bridge 756071, the Utility Protection Structure, and the Pilot Canal Utility Bridge as shown on the drawings.
- 1.3.10.2 The Contractor shall be required to provide a certified lift plan with the proposed MOT (if applicable) for the installation of the vehicular bridge, utility protection structure, and utility bridge components to be approved by the Owner.
- 1.3.10.3 Vehicular Bridge and Pilot Canal Utility Bridge pile driving is to be 100% Dynamically Tested, as stated in contract documents. Dynamic Testing will be completed by the CM/CEI team. Measurement, payment, and procedures will adhere to the latest FDOT Specifications and FDOT CPAM.
- 1.3.10.4 The Utility Protection Structure and its components are to be submitted (shop drawings), approved, procured, and installed at the earliest possible stage in the project's construction sequence. This structure is to be in place and functional prior to any clearing and grubbing north of the proposed bridge, for it provides the primary construction access to the area.
- 1.3.11 Subsoil Excavation and Removal:
- 1.3.11.1 The project includes Subsoil excavation and removal. Subsoil removal shall be defined to include any excavated material unsuitable for construction ("muck", peat, buried construction debris, rubbish, buried vegetation, buried trees, etc.).
- 1.3.11.2 Limits of removal will be governed using stationing and lines/grades as depicted within the contract documents, FDOT specifications, FDOT Standard Plans, and approved modifications thereto by the Construction Manager (CM).
- 1.3.11.3 Measurement and payment will be governed by FDOT Specifications and the latest CPAM standards.
- 1.3.11.4 Subsoil removal limits are anticipated to be extended in width, further than shown in the roadway cross sections in some areas to accommodate adjacent underground installations. The contractor is to anticipate subsoil removal beyond associated limits depicted within the plans.
- 1.3.11.5 If unsuitable materials (as defined above) are encountered in other areas of the project, Unit Cost Rates for "Subsoil Excavation" and "Embankment" as submitted/approved within "**Exhibit B**" **Schedule of Unit Prices** will govern additional costs.
- 1.3.12 Sod/Grasses:
- 1.3.12.1 Contractor shall replace all sod, in-kind, damaged by any construction operations.
- 1.3.13 Stockpile (Owner Provided Material Source):
- 1.3.13.1 This Project will provide a source of embankment material located near the project limits, within the Magic Kingdom Parking Lot area. This material source is anticipated to provide **approximately 225,000 CY** of needed fill material for the project. Contractor shall utilize this material prior to approval of additional import.
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- 1.3.13.1.1 The Contractor shall provide and maintain a Loadscan, or approved equal, payload management system. The system shall be located in a location that requires all trucks leaving the stockpile area to be scanned. Quantity reports shall be provided to the Construction Manager on a weekly basis, or at any point if requested by the Owner.
- 1.3.13.1.2 The Contractor shall remove vegetation and debris from the stockpile, as required, to meet the applicable embankment specifications
- 1.3.13.2 The Contractor is to utilize this material for any and all locations where it is deemed suitable and as acceptable per FDOT Specifications and FDOT Standard Plans for Road and Bridge Construction; and as modified thereto by the Owner's Representative.
- 1.3.13.3 Hauling operations must be coordinated/scheduled in advance with the Owner's Representative and Magic Kingdom Parking Operations.
- 1.3.13.4 The Owner's Representative may test the material for classification, and physical properties at random intervals.
- 1.3.13.5 The Contractor is to maintain the condition of the stockpile to prevent overland flows, sedimentation of parking areas, sedimentation of nearby waterways, and overall erosion-based degradation. The surrounding fence is to be maintained for functionality and pleasing aesthetics throughout the duration of the project.
- 1.3.13.6 The stockpile slopes and grades are to be kept uniform and maintained throughout the project duration. Entrances and affected, adjacent pavement are to be swept during and after hauling operations; and kept clean at all times.
- 1.3.13.7 Final accepted condition of the stockpile will be fine-graded flat and grassed via approved seeding. Contractor is responsible until final grasses are established.
- 1.3.13.8 The perimeter fence and all related components are to be removed and disposed of at the end of project.
- 1.3.13.9 Maintenance includes regular mowing and erosion control measures, such as regular replacement of silt fence, commercial driveway material, soil tracking devices, and inlet protection. Contractor is responsible for any mitigation of erosion control failures.
- 1.3.14 Directional Boring/Jack and Bore:
- 1.3.14.1 Before any Boring operation can commence, all known utilities and underground infrastructure within the proposed path must be located with positive identification.
- 1.3.14.2 A proposed bore path profile showing all identified infrastructure and their locations is to be submitted for approval prior to proceeding with installation.
- 1.3.15 Sheet Piling:
- 1.3.15.1 The project includes installation of sheet coffer within the Pilot Canal to facilitate bridge construction and canal modifications. The Contractor is to anticipate removal of the sheet pile coffer when major weather events are forecast and when seasonal heavy rains typically induce impactive flows to WDW and RCID waterways. RCID considers wet season to extend from May 15 thru November 15. Top elevation of sheet piling will be provided by RCID Planning & Engineering.
- 1.3.15.2 Non-critical sheet pile coffer may be utilized in specific areas as shown in the plans to facilitate in-the-dry construction. Use of sheet piles in such
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- 1.3.15.3 areas are to be designed by the Contractor's specialty engineer, signed and sealed by an Engineer licensed to do work in the State of Florida, and submitted to RCID Planning and Engineering for approval as part of a de-watering plan(s).
- 1.3.15.3 The Owner has issued critical infrastructure exhibits to aid in scheduling. These exhibits are referenced in part 4 of this specification and in Section 00850. Proposed non-critical sheet pile coffer locations are shown in the "critical drainage exhibit" referenced above. The final location(s) of these sheet pile wall applications is at the discretion of the Contractor, however, the Contractor shall acknowledge the expectations of the Owner outlined in the exhibit.
- 1.3.15.4 A sheet piling plan(s) with design calculations signed/sealed by a State of Florida Professional Engineer is required for any intended sheet piling installation as part of de-watering permit submittal/request.

PART 2 – GENERAL INSTRUCTIONS & STANDARDS FOR THE CONSTRUCTION WORK

2.1 General Requirements

- 2.1.1 The Contractor shall provide all services and necessary items of expense, including but not limited to, labor, material, trucking, transportation, equipment, hoisting, scaffolding, power, supervision, appliances, layout and all other services and items of expense required for the complete performance of all Work in accordance with the Contract Documents.
- 2.1.2 Cost Loaded Schedule
- 2.1.2.1 The Contractor shall cost load their monthly progress CPM schedule submittals, in order to provide projected monthly cash flows to the Owner.
- 2.1.3 Proposed Staffing Plan
- 2.1.3.1 Contractor shall submit with its Bid Proposal a staffing plan which clearly illustrates the key elements of the organizational structure proposed to accomplish the management, field work, and administrative services required. The Contractor shall identify the key person to be placed in responsible charge of the work. The Project Manager and key personnel within each discipline shall be identified and past experience of each, as it relates to this Project, shall be discussed. Other items to be included in the discussion of the staffing plan are:
- Work force capabilities of the firm.
 - Work force commitment for the Project.
 - Key staff resumes.

Note: The Contractor is required to have a certified inspector onsite for SWPPP and MOT at all times.

2.2 Job Site Access / Use of Job Site

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- 2.2.1 Access to the project site shall come from South World Drive and from North Floridian Way. At no time will construction traffic be permitted under the World Drive “water bridge”. Contractor shall utilize lined trucks to haul muck or saturated soils off site (if required) and shall utilize only those hauling routes prescribed or approved by the Construction Manager for hauling to and from the site. For each and every occurrence that the Contractor or its Subcontractor(s) utilize a haul route that is not prescribed by, or otherwise expressly approved by, the Construction Manager, the Owner shall deduct from the Contract Sum, the sum of \$1000.00 per incident. Please refer to the *Supplemental Sketch Package* for the proposed Haul Route map.
- 2.2.2 Vehicular traffic to the Job Site is limited to vehicles required to deliver labor and materials. On-site parking for vehicles shall be limited to those areas designated by the Construction Manager and shall be limited to company work vehicles actively working on site. Vehicles not actively supporting Job Site operations are not permitted to remain on site. The designated lay down yard and employee parking area is anticipated to be in the vicinity of the Project Site. When it is designated, the Contractor shall create an engineered plan for review by the Owner that demonstrates how it will safely access the work zone and storage areas and how it will egress from the work zone and storage area.
- 2.2.3 The Contractor is responsible for the routing of all construction personnel and traffic required in the performance of the Work and shall ensure compliance with any special instructions pertaining to such routing as established by the Construction Manager.
- 2.2.4 Lunch and break areas are confined to the immediate job site area, within the limits of construction. Tradesmen shall be prohibited from patronizing the restaurants in the adjacent development.
- 2.2.5 The Contractor shall confine its use of the job site to those activities directly relating to the performance of the Work. No other use of the job site will be permitted without the express written approval of the Construction Manager.
- 2.2.6 The Contractor shall provide all necessary flagmen, barricades, and MOT devices necessary for safe and proper traffic control. The Contractor is advised that it is responsible for all construction personnel and traffic routing logistics required in the performance of its work.
- 2.2.7 The Contractor shall provide all necessary temporary water retention basins, turbidity control, and silt fence, etc., for construction site water run-off control. The Contractor is advised that should any of the adjoining Reedy Creek Improvement District and Walt Disney World ponds, lakes, wetlands, or canals become contaminated due to the Contractor’s actions or inactions, the cost to flocculate, clean, or restore by any other means, these ponds, lakes, wetlands, or canals shall be paid for by the Contractor. Any fines and / or penalties assessed for contamination of these water bodies, due to the Contractor’s actions or inactions, shall be paid for by the Contractor.

2.3 Coordination

- 2.3.1 The Contractor shall coordinate with the Construction Manager to allow for all soils and materials testing. The Owner shall pay for costs associated with the initial testing but the Contractor shall be liable for costs associated with retesting as a result of initial test failure due to deficiencies in the Contractor's work efforts.
- 2.3.2 The Contractor shall coordinate its work with the Construction Manager and with the Owner’s Separate Contractors. The Contractor shall sequence its Work, as required by

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the Construction Manager, with the work of the Owner's Separate Contractors at no additional cost to the Owner.

- 2.3.3 Contractor is required to coordinate its efforts through the Owner's Representative/ Construction Manager for the World Drive North Phase III project. Entities/organizations requiring detailed project coordination at no additional cost to the Owner include but are not limited to: RCID, RCES, Walt Disney Imagineering (WDI), Facilities Asset Management (FAM), Arnold Palmer Golf Management (APGM), Walt Disney World Parking Operations, Disney's Car Care, and Walt Disney World Resort, Walt Disney Transportation Services (buses), or others.
- 2.3.4 The Contractor is required to coordinate delivery of any and all Owner Furnished items and Owner or Contractor installed items.leave
- 2.3.5 The Contractor shall coordinate with the Construction Manager for site access/control for the Reedy Creek Fire Department.
- 2.3.6 The Owner, or appointed delegate, reserve the right of access to any part of the job site, at any time, for the purpose of observation, or to install other work, either with its own forces of with other contractors.

2.4 Worker Conduct and Clothing

- 2.4.1 The Contractor is responsible at all times for the proper conduct of its personnel and that of its subcontractors and suppliers. The Contractor shall restrict its personnel to the job site and immediate vicinity thereof and shall endeavor to prevent discordant relationships between its personnel and that of any adjacent property owner or resident.
- 2.4.2 The Contractor shall enforce strict discipline and good order among employees and other workers related to the performance of the Work. Under no circumstances will behavior offensive to local residents or the general public be tolerated, and Contractor shall immediately remove and further ban from the job site any persons failing to comply with this standard.
- 2.4.3 The Contractor shall ensure its personnel are properly dressed with O.S.H.A. approved clothing and safety gear, including but not limited to, hard hats, work shoes, shirts and long pants, as appropriate for the performance of the Work. Shorts, sleeveless shirts (tank tops) or clothing bearing offensive marks or wording are not permitted to be worn on the job site. The Owner's Representative shall solely determine whether any such clothing is or is not permissible.

2.5 Surveying

- 2.5.1 Refer to Specification Section 01050 – Field Engineering, contained in the Project Manual, for specifications governing field engineering and surveying.
- 2.5.2 The Contractor shall inspect the site, observe the existing conditions and grades, and make reasonable measurements to verify existing conditions prior to its bid.
- 2.5.3 After award of the contract and within fourteen (14) days of receiving a Limited Notice to Proceed, the Contractor shall complete all survey work required to verify and accept the accuracy of the grades noted as existing on the bid drawings and the accuracy the as-built drawings provided by the Owner's Separate Contractor. At the end of the fourteen-day discovery period, the Contractor shall provide written acceptance of the existing

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grades or provide written documentation of any material deviation it has discovered between the existing conditions and the conditions noted as existing on the bid drawings and as-built drawings. All claims shall be made in strict accord with Article 13 of the General Conditions of the Contract for Construction. Failure to give such notice or to provide substantiation thereof shall constitute a waiver of the claim and acceptance of the existing grades.

2.5.4 It is the responsibility of the Contractor to generate survey control, layout, and as-built information as required in the contract documents. **At no time will the project CAD design files be given to the Contractor. Final as-built submissions shall be digitally signed and sealed.**

2.5.5 The Contractor shall verify the location of all existing utilities or obscured existing improvements or construction indicated on Drawings to be proximate to or affected by the Work prior to commencement of excavation, directional bores, jack and bores, or demolition in any given area.

2.5.6 The Contractor shall verify placement of formwork prior to pouring concrete, or installation of critical components of structures.

2.6 Testing and Inspection

2.6.1 Refer to Specification Section 01410 – Testing Laboratory Services, contained in the Project Manual, for specifications governing soils and materials testing and inspection. The Owner reserves the right to re-test and approve or disapprove the results of the Testing and Inspection.

2.6.2 The project specifications utilize Florida Department of Transportation specifications governing acceptance of materials used in the performance of the Work. Because the Owner has no affiliation with the Florida Department of Transportation's materials testing laboratories where such materials are deemed acceptable, the Owner has developed an alternative Materials Acceptance Criteria Matrix governing the manner in which materials will be accepted on the project. Contractor shall refer to attached Division 2 through Division 3 Specifications prepared by TLP Engineering Consultants.

2.7 Surface Water Management and Environmental Controls

2.7.1 The Contractor shall provide and maintain all necessary erosion control in accordance with paragraph 1.3.5 above, the plans, and Specification Section 01560, entitled Erosion and Sedimentation Control, contained in the Project Manual.

2.7.2 The Contractor shall submit for approval any and all Erosion and Sedimentation control measures necessary/required to remedy waterway conditions negatively impacted by or resulting from contractor operations. Contractor will implement such approved measures at no additional cost to the owner.

2.8 Temporary Fencing

2.8.1 Geogrid Fencing and Silt Barriers:

2.8.1.1 When required by the Contract Documents, geogrid fencing and silt barriers shall be provided and maintained along the boundaries of all designated tree

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preservation and protected wetland areas. The Contractor shall not disturb the trees or vegetation within such areas unless directed otherwise by the Owner's Representative.

2.8.1.2 Geogrid fencing shall be provided and maintained along jurisdictional wetland buffers excluding those wetlands (if any) to be removed under this Contract. Silt barrier shall be provided and maintained along areas designated on Drawings.

2.8.1.3 The Contractor shall inspect all geogrid fences and silt barriers daily and shall immediately make necessary repairs to any damaged or improperly functioning geogrid fences and/or silt barriers.

2.9 Permits and Permit Fees

2.9.1 All Permits required for any part of the Contractor's Work (except those permits obtained directly by the Owner, as further enumerated below) shall be procured and paid for by the Contractor. This shall apply also to those permits required to be obtained by the Contractor in the name of the Owner or its Owner's Representative for the Owner's or Owner's Representative's own temporary construction office facilities, if any. The costs for the required permits (except those permits obtained directly by the Owner or the Owner's Representative) are included in the Contract Sum. Before applying for any permit, the Contractor shall present a draft application to the Owner's Representative for review.

2.9.2 The Contractor shall apply for a de-watering permit(s) during the pre-construction phase. The Contractor shall prepare and submit the NOI to the Owner prior to submitting to the FDEP during the pre-construction phase. In addition, the Contractor shall apply for any and all permits that are required by RCID Building and Safety during the pre-construction period.

2.9.3 The Contractor shall obtain, secure and pay for the following permits:

- NOI NPDES – EPA Environmental Permit
- SWPPP and Dewatering Permit (see Specification Section 01560)
- RCID PM Building Permit and any applicable sub permits
- RCID Haul Permit
- RCES Dig permit

2.9.4 The Owner shall provide to the Contractor the following:

- FDEP Water & Wastewater permits
- SFWMD Permit
- WDW Environmental Permit – Reclaim Water

2.9.5 The Contractor shall submit to the Owner's Representative a copy of ALL permits required to be obtained by this Contractor, which are required for the performance of this Work.

2.10 Job Site Cleanliness, Construction Operations Upon and Affecting the Use of the Project Site

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- 2.10.1 Refer to Specification Section 01710 – Cleaning, contained in the Project Manual, for specifications governing cleaning and job site cleanliness.
 - 2.10.2 The Contractor shall cause no dirt or debris to be deposited on any public or private roadways and must clean up same in an expeditious manner if such dirt or debris occurs due to this Contractor's operation. If the Contractor fails to perform, clean-up will be performed by others and all costs for same will be deducted from monies due or owing the Contractor.
 - 2.10.3 The Contractor shall clean the tires of all vehicles as they exit the job site and enter onto the public roadway or private driveways. The Contractor shall provide rotary power broom equipment on site for daily sweeping as needed and as requested by the Owner's Representative.
 - 2.10.4 The Contractor shall use "whisperized" construction equipment. Noise levels shall be within those levels acceptable by the authorities having jurisdiction.
 - 2.10.5 Material deliveries shall generally be made during normal working hours. Where special deliveries must be made at other times Contractor shall request approval of same. If such request is approved Contractor shall arrange for the proper labor force to receive and unload materials promptly.
 - 2.10.6 The Contractor shall be responsible to consolidate and secure all equipment and materials at the job site. The Owner will not provide any security for material and equipment stored on site for contractors working at the Project site.
 - 2.10.7 On site storage of fuel will not be permitted without prior written approval of the Owner and approval from all appropriate local, state, and federal agencies having jurisdiction.
 - 2.10.8 Any and all damage to property resulting directly or indirectly by the Contractor's operations, or those of its subcontractors, shall be repaired or replaced by the Contractor at no additional cost to the Owner and to the satisfaction of Owner's Representative.
 - 2.10.9 Daily clean-up of the construction areas will be strictly enforced. Excess materials or accumulation of debris shall not encumber the site.
 - 2.10.10 If, in the judgment of the Owner's Representative, the construction area is deemed to be unclean and/or encumbered by the accumulation of excess materials; and, in the event the Contractor fails to correct the situation, the Owner reserves the right to take any action it deems necessary to correct the situation and shall back charge the Contractor for the full cost of the corrective action.
 - 2.10.11 The Contractor shall provide a final clean prior to turnover.
 - 2.10.12 All construction activities that may have any effect on any adjacent landowner's operating systems or facilities must first have the final approval of the Owner's Representative before they are initiated. The activity description, schedule time and duration, and areas affected must be submitted to the Owner at least 72 hours in advance to obtain this approval.
 - 2.10.13 Work activities that affect the environment of guest operations (noise, visual intrusion, safety, odor, dust and dirt, etc.) may be restricted to other than normal operating hours.
 - 2.10.14 Cranes and draglines shall be boomed down at the end of each workday and during periods of inactivity during the workday.
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- 2.10.15 Any maintenance to construction equipment on-site, which may be considered by the Owner's Representative to have the potential to contaminate the existing earth, will not be permitted.
- 2.10.16 Maintenance and dust abatement of all areas of Work provided by the Contractor shall be performed in a manner acceptable to the Owner.
- 2.10.17 The Contractor will be responsible for safely barricading open excavations that may present hazards.
- 2.10.18 The Contractor shall hire Mid Florida Materials to provide rubbish removal, reuse container rental/removal or other services related to the disposal of waste material from the job site. Contact Noah (Tel: 407.607.9359) or Lisa (Tel: 407.607.9345), a minimum of 24 hr. in advance of waste pick-up. No other firm, entity or agency is authorized to provide solid waste service within the District unless permitted in writing by the District (RCID). Such service includes Class I, Class III and Construction and Demolition Debris service. Any firm, entity or agency found to be providing such service within the District without written permission from the District shall be required to remove any solid waste containers associated with this service within 48 hours of notification. Failure to do so will result in the impoundment of said containers by the District. Release of said impounded containers to the owner will require payment of a storage fee of \$100/container each day.
- 2.10.19 The Contractor shall legally dispose of all excess soils generated by the Work.
- 2.10.20 On-site security is the responsibility of Contractor. Observe security requirements established by Reedy Creek Improvement District and adjacent landowners. Coordination and all questions with regard to security shall be directed to the Construction Manager.

2.11 Existing and Adjacent Roadways and Utilities

- 2.11.1 The Contractor will maintain through-access to roadways at all times. Continuous access shall be maintained at all times for resorts, adjacent properties, and facilities within/along the project limits. The Contractor shall create no open cuts or other obstacles on roadways or walkways without explicit approval of the Owner's Representative. Authorized cuts must be bridged to permit vehicular and pedestrian traffic to continue without delay or hindrances. Any work that must be performed which may result in delays to public traffic or re-routing of traffic must be coordinated with the Owner's Representative.
 - 2.11.2 Wherever possible, the Contractor shall arrange work so there will be no service interruptions of any existing systems. Whenever service interruptions are necessary, the Contractor shall secure the advance approval of the Construction Manager and jurisdictional agencies as to the time and date such interruptions will be permitted. The Contractor shall return all services back into operation as soon as possible, including working on an overtime basis, if deemed necessary by the Construction Manager, at no additional cost to the Owner.
 - 2.11.3 All existing conditions off the immediate Project site that are disturbed due to Contractor's activities must be restored by the Contractor to pre-construction conditions.
 - 2.11.4 The Contractor shall restore all existing grade, existing sod, and existing irrigation it disturbs. Restore all affected areas to existing conditions or better.
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2.11.5 RCES, RCID, WDW and other Utility Owners all have existing infrastructure within the project limits. The Contractor shall preserve and protect all such infrastructure during the performance of its Work. The Contractor shall sequence its Work in cooperation with the utility companies and as required to work around the existing infrastructure without damaging it until it is relocated. Once relocated, the Contractor shall preserve and protect the relocated infrastructure throughout the remaining duration of the work. Contact information is provided on the drawings.

2.12 Temporary Facilities

2.12.1 The Contractor shall provide generators for temporary construction power.

2.12.2 The Contractor shall provide temporary portable toilets for use by its tradesmen, and shall be located out of view from the traveling public at locations approved by the Construction Manager.

2.12.3 The Contractor may secure a hydrant meter from RCES to provide water for its water truck and for water for construction purposes.

2.13 Notification to Utility Companies and Excavation Permit

2.13.1 Utility Locate Tickets:

2.13.1.1 In accordance with Florida "Underground Damage Prevention and Safety Act" (Chapter 556, Florida Statutes) as administered by Sunshine 811 of Florida. Any entity or individual responsible for any project involving excavating, grading, penetration, or disturbance of the earth's surface, inclusive of jack and boring, pile-driving, directional drilling, trenching and pipe bursting, within the District shall not commence such work within the District until that entity/individual has submitted a Locate Ticket request to Sunshine 811 and received clearance from the affected utilities. Refer to <http://www.sunshine811.com/>.

2.13.1.2 There are two types of utility locate requests:

2.13.1.2.1 Standard Locate requests:

- Used when no portion of the excavation will be underwater
- Request must be submitted a minimum of three (3) full business days before excavation. If the excavation site is in an area that is underwater, the request must be submitted ten (10) full business days before excavation. Three (3) full business days represents a time period of 72 hours, not including the day the locate ticket is requested, weekends or holidays. Day one begins at 12:00 a.m. the day AFTER the locate ticket is requested.

2.13.1.2.2 Submit request to Sunshine 811. Notification system.

2.13.1.2.2.1 Call 811 or enter the request via the internet at:

2.13.1.2.2.1.1 <http://www.online811.com>

2.13.1.2.2.2 Write down the Sunshine 811 locate ticket number

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- 2.13.1.2.3 Contact the Reedy Creek Energy Services (RCES) Utility Locate Office via email at utilitylocates@disney.com to locate the existing utilities in the area.
 - 2.13.1.2.3.1 Provide the Sunshine 811 locate ticket number.
 - 2.13.1.2.3.2 Mark up the RCES supplied map to show the limits of the excavation that will occur within the following thirty (30) days.
 - 2.13.1.2.4 Emergency Locate requests:
 - 2.13.1.2.4.1 An emergency is defined by Chapter 556.109, Florida Statutes as any condition constituting a clear and present danger to life or property; a situation caused by the escape of any substance transported by means of an underground facility; any interruption of vital public service or communication caused by any break or defect in a member's underground facility; or any impairment of public roads or utilities that requires immediate repair, as determined by FDOT or another affected political subdivision.
 - 2.13.1.2.4.2 Work-scheduling problems are not considered an emergency.
 - 2.13.1.2.5 If prior to 7:00 AM or after 4:00 PM on weekdays, or anytime on weekends or holidays, call the RCES Control Room Emergency Number at 407.824.4185. Provide the nature of the emergency and exact location.
 - 2.13.1.2.6 Call Sunshine 811.
 - 2.13.1.2.7 Provide the Sunshine 811 locate ticket number to the RCES Control Room.
 - 2.13.1.2.8 Approved excavators can request emergency tickets using Internet Ticket Entry. Excavators not approved for ITE emergency ticket entry must request emergency tickets by calling 811.
- 2.13.2 Have the area subject to the request marked on the ground using the "white line" method recommended by Sunshine 811. If the area is a sensitive "on-stage" area where marking is not desired, meet the locators at the site and define the actual extent of the area to be located. Follow the Low Impact Marking Guidelines defined in Chapter 556.114, Florida Statutes.
- 2.13.3 DO NOT BEGIN EXCAVATION until you have:
- 2.13.3.1 Received and reviewed the RCES Utility Locate Office ticket and notes for utility presence, conflicts, or special conditions AND
 - 2.13.3.2 Been notified by Sunshine 811 that all public utility locators (RCES/RCID, Smart City, TECO/Peoples Gas, Duke Energy, etc.) have responded to the locate request. This is automatically sent to you if you provide an e-mail address during
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the locate ticket request process. Or you can access them manually by calling 800.850.8257 or using the internet at the web address noted above.

- 2.13.3.3 The “Locate” process, as described within Section 2.13, is to be adhered to not only for general project limits or large, aggregate work area(s), but also for smaller, localized operations within. All project contractors, subcontractors, sub-subcontractors, etc. performing localized excavations, drills, bores, or jacking within larger, global Locate areas are responsible to procure their own new or *refresh/enhance* Locates and field markings, as required by Section 2.13. This includes operation-specific locations if the active Locate is aged with unidentifiable field markings, or as deemed necessary by the owner. Contractor shall call to “refresh” any disturbed or damages locates within 24-hours of the damage or disturbance.
- 2.13.4 NOTE: RCES is ONLY RESPONSIBLE for locating the utilities owned by Reedy Creek Improvement District and for notifying specific WDW organizations that have underground facilities within RCID (WDW Irrigation, WDW Telecom, and WDW Video Technology). RCES is not responsible for location of “secondary” facilities – those lines (electric, water, sewer, etc.) that are on the customer side of the meter or any other similar lines on the customer’s property. The Locate Ticket you will get from RCES will specifically indicate that the excavator must also contact the property owner / customer to obtain information on those secondary lines. The customer may require that the excavator locate such lines.
- 2.13.5 During Excavation:
- 2.13.5.1 Protect exposed underground facilities.
 - 2.13.5.2 Keep the locator marks visible throughout the excavation period or request a reissue of the locate.
 - 2.13.5.3 STOP EXCAVATION if an underground facility is contacted (even if there is no noticeable damage) or if you expose any warning tape or red concrete and contact the facility owner directly.
 - 2.13.5.4 Understand tolerance zones. Locate marks show the approximate location of underground facilities. The lines can actually be located anywhere within the tolerance zone. Proceed cautiously when digging within 24 inches on either side of the locate marks when using any mechanized equipment within the tolerance zone, supervision is necessary.
 - 2.13.5.5 Keep a copy of the RCES Locate Ticket and the Sunshine 811 Positive Response at the specific area of work.
 - 2.13.5.6 Issuance of a utility locate ticket does not relieve the excavator of the responsibility of exercising due caution for unknown or miss-allocated underground utilities.
 - 2.13.5.6.1 The Utility Locate Ticket shall not be construed as a building permit.
 - 2.13.5.6.2 When a utility requests an area to be “HAND-DUG” it means HAND DIG ONLY.

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- 2.13.5.7 The Owner reserves the right to stop excavation at any time for the following reasons:
- 2.13.5.7.1 The Utility Locate Ticket is not present at the work site.
 - 2.13.5.7.2 The excavation is not in compliance with WDW, RCES, or RCID rules and regulations.
 - 2.13.5.7.3 The excavation is endangering personnel, equipment, or existing utilities.
 - 2.13.5.7.4 No restitution will be made for work stoppage for violations of the above-mentioned causes.

2.14 Safety Requirements

- 2.14.1 The Contractor shall submit a certificate to show proof of inspection of all hoisting machinery, including serial number, date of certification, and expiration date, prior to its use. The certificate shall be displayed on the subject equipment signed by a competent person or by a government or private agency recognized by the Department of Labor. The Contractor shall maintain records and dates of the results of inspections for each hoisting machine and piece of equipment.
- 2.14.2 Contractor shall provide a Site-Specific Safety Plan and obtain approval by the Owner prior to commencing work.
- 2.14.3 Contractor shall provide a Severe Weather Preparedness plan and obtain approval prior to commencing work. The Severe Weather Preparedness plan will follow the guidelines of RCID's "Required Storm Preparation Procedures", dated June 2017. The costs incurred as a result of the implementation of this plan on this contract will be the responsibility of the Contractor.
- 2.14.4 Contractor is required to start all meetings or briefings with a "Safety minute or thought of the day".

PART 3 – SPECIAL INSTRUCTIONS

3.1 Work Hours

- 3.1.1 Normal hours of work shall be between 7:00 AM and 4:00 PM Monday through Friday. All work requiring a temporary lane closure may need to be performed no sooner than 2-hours after park closure and 06:00 A.M, Sunday through Thursday. All lane closures shall require owner approval prior to implementation.
- 3.1.2 Contractor shall obtain approval from the Owner's Representative at least 72 hours prior to scheduling any work to be performed during hours other than the normal (7:00 am to 4:00 pm) work hours or on Saturdays, Sundays, or legal holidays.
- 3.1.3 The Contractor shall pay for the cost of all standby trades or premiums for work on Saturdays, Sundays, and Holidays when the schedule or job site conditions require such work

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3.1.4 All road closures, MOT Phase transitions, and implementation of new traffic patterns shall be coordinated with RCID and the Construction Manager a minimum of **four weeks** prior to the scheduled closures.

3.2 Critical Sequencing of Work

3.2.1 The Contractor shall designate areas of crossing Fiberglass Gas and Existing Chiller lines. These areas shall be submitted to the Owner for review. The Owner reserves the right to require the Contractor to modify the site in order to safely cross these utilities. These modifications include but are not limited to additional embankment, limerock, steel plates, crane mats, etc.

3.2.2 At its earliest opportunity, the Contractor shall soft dig in the area of the proposed Electric Duct Bank, which crossed World Drive, South of Magnolia Drive. These soft digs shall be completed at night, or during daytime business hours utilizing temporary pavement and maintaining traffic flow in both operations, shall be coordinated with the Construction Manager and RCES, and shall document the utility type, location, depth to top of utility, depth to the bottom of utility, and other information requested by the Owner. The findings of these soft digs shall be transmitted to the Owner for review. The Owner reserves the right to modify the location and or depth of the propose electrical duct bank in this area to account for the in-situ utilities.

3.2.3 As stated in section 1.3.9, the Owner has provided a critical infrastructure exhibit for the Electric utilities. This exhibit clarifies the Owners intent for the sequence of electric utility activation. The Contractor shall acknowledge that any deviation from the sequence for work outline in this exhibit is at the sole risk of the Contractor.

3.2.4 As stated in exhibit 1.3.15, the Owner has provided a critical infrastructure exhibit for drainage activities. This exhibit also references the filling of existing ponds/lakes. The Contractor shall acknowledge the Owner's intent to protect critical structures and waterways and damage and disturbance by using temporary sheet pile walls. The location and design of these sheet pile walls are the sole responsibility of the Contractor.

3.2.4.1 The Contractor shall acknowledge that work associated with CD-1 and CD-1a shall be completed in the dry.

3.2.4.2 The Contractor shall acknowledge that the filling of existing ponds and lakes may be completed in the wet, pending the material used is verified as A-3 Select by the Construction Management Team, a work plan is submitted and approved, the conditions of the Critical Drainage Infrastructure Exhibit are satisfied, and there are sufficient means to prevent adjacent waterways from becoming turbid.

3.3 Restrictions Governing Certain Construction or Demolition Activities

3.3.1 Work Restrictions

3.3.1.1 Reedy Creek Energy Services (RCES) places moratoriums restricting work near critical utilities during the following Holiday periods:

Christmas through New Years
 July 4th
 Easter/Spring Break
 Thanksgiving

Work activities during these time periods shall be vetted through RCES. Time periods and durations of such may differ depending on what day the Holidays actually fall on.

3.3.2 Direction drill, drilled shaft, jack and bore spoils

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- 3.3.2.1 Spoils from auger operations, drilling, and jacking operations are to be disposed of properly offsite at no additional cost to the Owner.
- 3.3.2.2 All fluids (slurry) generated by directional drill/auger operations must be legally disposed of outside of the Reedy Creek Improvement District and outside of the Walt Disney World Resort. The RCES Composting Facility no longer accepts drilling fluids.
- 3.3.3 **Owner Approved Contractors** - For construction of **the following scope of work items** and associated coordination with RCID Construction Management and Reedy Creek Energy Services (RCES), the following contractors are approved for specific trades:

The following contractors have worked within the boundaries of Reedy Creek Improvement District (RCID) property in the past. By providing this list, RCID does not make or imply any qualifications or statements as to the performance or standing of these firms and the bidder is at their own risk while contracting or working with them:

- 3.3.3.1 Natural Gas Construction - For construction and coordination of project gas infrastructure including pipe, fittings, commissioning, testing, etc.
- Sabcon Underground, LLC
 - Mears Group, Inc.
- 3.3.3.2 Natural Gas Construction – For construction and coordination of line stop and/or Stoppel Bypass Installation.
- Barnard Construction Company
- 3.3.3.3 Chilled Water Systems Construction - For construction and coordination of project chilled water infrastructure including temporary and permanent chilled water equipment, pipe, fittings, commissioning, testing, etc.
- W.W. Gay Mechanical Contractor, Inc.
 - Garney Construction
- 3.3.3.4 High Voltage Electrical Construction (Defined as 12KV and above) - For construction and coordination of project high voltage electrical infrastructure utilities.
- Carter Electric
 - Maddox Electric
 - Team Fischel
- 3.3.3.5 Secondary Electrical Construction - For construction and coordination of project electrical utility.
- Carter Electric
 - Maddox Electric
 - Team Fischel
- 3.3.3.6 Irrigation and Landscaping - For construction and coordination of project irrigation and landscape scope of work.
- Brightview Development
 - Commerical Landscapes
 - Cepra Landscapes
 - Down To Earth
 - Newberg Irrigation
-

3.4 Material and Equipment Storage Limitations

- 3.4.1 Limited storage space will be available at the job site and on-site storage will be subject to approval of the Owner's Representative. All stored material must be neatly organized and stacked, subject to advance approval by the Owner's Representative. The Contractor shall create an engineered plan for review by the Owner that demonstrates how it will safely access the work zone and storage areas and how it will egress from the work zone and storage areas.
- 3.4.2 **Due to limited and constrained work limits, Contractor shall supply materials to the Job Site on a just in time delivery strategy in order to minimize storage of materials on site.**
- 3.4.3 The Contractor shall relocate stored materials or equipment at its expense when directed by the Owner's Representative.
- 3.4.4 The Contractor shall cooperate and coordinate with the Owner's Representative and all other Separate Contractors regarding the placement and storage of materials and equipment in order not to encumber the areas prior to and during the performance of the Work.
- 3.4.5 The Contractor shall be solely responsible for the securing and safekeeping of all of its on-site materials, tools and equipment.
- 3.4.6 The Contractor shall use "whispered" construction equipment. The Contractor shall be prepared to schedule work of extreme noise levels at times established by the Owner's Representative.
- 3.4.7 Material deliveries shall be made during normal working hours unless otherwise arranged with the Owner's Representative. Where special deliveries must be made at other times, the Contractor shall arrange for labor forces to receive and unload as promptly as possible.
- 3.4.8 The Contractor shall not store fuel on site.

PART 4 – ATTACHMENTS

4.1 Supplemental Sketch Package

- 4.1.1 SK-1.1 – General Project Ingress/Egress Haul Route
 4.1.2 SK-1.2 – Magic Kingdom Stockpile Haul Route
 4.1.3 SK-1.3 – Stolport Laydown Area Map
 4.1.4 EX-1-1.1 – Electrical Critical Infrastructure Exhibit
 4.1.5 EX-1-1.2 – Electrical Critical Infrastructure Exhibit
 4.1.6 EX-CH-1.1 – Chilled Water Critical Infrastructure Exhibit
 4.1.7 EX-CH-1.2 – Chilled Water Critical Infrastructure Exhibit
 4.1.8 EX-CH-1.3 – Chilled Water Critical Infrastructure Exhibit
 4.1.9 EX-CH-1.4 – Chilled Water Critical Infrastructure Exhibit
 4.1.10 EX-CH-1.5 – Chilled Water Critical Infrastructure Exhibit
 4.1.11 EX-CH-1.6 – Chilled Water Critical Infrastructure Exhibit
 4.1.12 EX-CH-1.7 – Chilled Water Critical Infrastructure Exhibit
 4.1.13 EX-CH-1.8 – Chilled Water Critical Infrastructure Exhibit
 4.1.14 EX-D-1.1 – Drainage Critical Infrastructure Exhibit
 4.1.15 EX-D-1.2 – Drainage Critical Infrastructure Exhibit
 4.1.16 EX-D-1.3 – Drainage Critical Infrastructure Exhibit

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PART 5 – CLARIFICATIONS

- 5.1 The work hereunder is not subject to, nor governed by, union and/or trade agreements.
- 5.2 The Contractor shall be responsible to furnish, install and remove a doublewide construction trailer at the RCID Typhoon Lagoon trailer compound. The Contractor shall be responsible for assuming all costs associated with the lease, fire alarm monitoring, water/sewer, and internet/phone lines of said trailer.

END OF SECTION 01010

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**SECTION 01018
OWNER FURNISHED PRODUCTS**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Certain products throughout the Work may be furnished by the Owner. In addition to the items of equipment listed in this Section, refer also to other individual Specification Sections for additional items, locations, and the extent of Work involved.

1.2 DUTIES OF PARTIES

A. Owners duties:

1. Obtain installation drawings and instructions.
2. Submit claims for transportation damages.
3. Arrange and detail warranties.

B. Contractor's duties:

1. Schedule delivery dates with Supplier in accordance with construction schedule.
2. Provide the Purchase Order number and Sales Number to the Vendor.
3. Designate delivery locations.
4. Provide insured storage for all new material.
5. Promptly inventory and inspect delivered items, and report damaged or defective items to the Construction Manager and material supplier. Coordinate with the supplier the prompt replacement of damaged or defective items.
6. Provide means of handling material upon delivery.
7. Repair or replace materials damaged as result of Contractor's operations.
8. Replace materials that have been lost, stolen, or otherwise misplaced and are not available for installation.
9. Properly install, connect, and provide any and all work necessary for completion of Owner furnished/Contractor installed materials.

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PART 2 – PRODUCTS

2.1 SCHEDULE OF MATERIALS

- A. The Owner currently does not anticipate furnishing any products at this time and reserves the right to furnish products in the future:
- B. The Contractor assumes responsibility for the condition of all Owner furnished material beginning at the time of initial loading onto transports at origin of shipment until the Certificate of Substantial Completion is issued by the Owner. Any mechanical damage, or decline in the condition of Owner furnished products will be assumed to have occurred while in the care of the Contractor. THE CONTRACTOR IS RESPONSIBLE FOR THE OWNER FURNISHED PRODUCTS FROM THE POINT OF ORIGIN UNTIL TIME OF FINAL COMPLETION OF THE WORK.
- C. The Contractor shall be responsible for contacting each supplier of Owner furnished products and scheduling delivery of the materials. The Contractor shall confirm all quantities and the condition of Owner furnished products in advance of signing delivery tickets or Bills of Lading corresponding thereto. The Contractor shall annotate any discrepancies in quantities of material actually delivered or damaged or defective materials on the delivery ticket or Bill of Lading. The person making such deliveries on behalf of the material supplier shall initial all such annotations prior to countersigning the delivery ticket or Bill of Lading. Contractor shall submit signed delivery tickets or Bills of Lading to the Construction Manager for all materials delivered from each supplier.
- D. All Purchase Orders issued by the Owner for Owner furnished products shall include the cost of the material, including the cost of delivery. Given the Owner's status as a public entity and its legal exemption from the payment of sales tax, no sales tax is included in any Purchase Order issued by the Owner or by the Construction Manager on its behalf for Owner furnished products.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Install all Owner furnished products in strict accordance with the manufacturer's installation instructions and technical bulletins.
- B. Refer also to pertinent Contract Documents for other specific installation requirements.

END OF SECTION 01018

SECTION 01019
OWNER PURCHASED PRODUCTS**PART 1 - GENERAL****1.1 DESCRIPTION**

- A. This specification sets forth the procedural guidelines and the obligations of the parties to the Contract as such pertain to Owner Direct Purchases (“ODP”) and to which the parties shall adhere in order for the Owner to realize the benefits of its sales and use tax exemption status for the procurement of materials that are to be incorporated into a public works project. Accordingly, certain selected construction materials, supplies, equipment or systems (hereinafter “Goods”) having a singular value or, for several items that make up a final system, final array or final assembly, an aggregate value of not less than \$25,000.00 and which are to be incorporated into the Work, may be purchased directly by the Owner at the Owner’s option and in its sole and absolute discretion, at any time throughout the term of the Agreement.

Wherever the term “Owner’s Representative” appears throughout this document or the various Exhibits their accompanying Attachments, it refers to one of the following distinct entities; either (i) that certain entity that is named in the Agreement, or if no such entity is named within the Agreement, then (ii) the Owner’s internal Construction Manager.

1.2 SALES TAX EXEMPTION FOR OWNER PURCHASED MATERIAL

- A. Authority: Pursuant to Florida Statutes, Chapter 212.08(6), and Florida Administrative Code Number 12A-1.094, the Owner, Reedy Creek Improvement District, which operates and is organized as a political subdivision within the State of Florida, is exempt from the payment of Florida sales and use tax on real property rented, transient rental property rented, tangible personal property purchased or rented, or services purchased. For purposes hereof, both Florida State Sales Tax and Florida State Use Tax will be understood to be included when the terms “Tax” or “Florida State Sales Tax” are utilized. Accordingly, the Owner reserves the right to directly purchase from the Contractor’s vendors, at prices and terms quoted to the Contractor, which include applicable Florida State Sales Tax and which were included in the Contractor’s bid, any and all selected Goods that are to be incorporated into the Work under the Contract.
- B. Application: The Florida Sales Tax rate of 6% shall apply to purchases of \$5,000.01 and above. For purchases of \$5,000.00 or less the tax rate of 6.5% shall apply. By way of example, for a \$100,000.00 purchase, sales tax in the amount of 6.0% would apply to the total purchase amount of \$100,000.00 and sales tax in the amount of 0.5% would apply only to (the first) \$5,000.00. Thus, the total Florida State Sales Tax saved on a purchase in the amount of \$100,000 would be \$6,025.00. Only those materials purchased from vendors whose sales are subject to the application of Florida State Sales Tax are affected by this option. The Contractor shall immediately notify the Owner’s Representative if any materials optioned for direct purchase by the Owner are not being provided by vendors who meet this criterion.

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PART 2 - EXECUTION

2.1 IDENTIFICATION OF ALL ODP GOODS AND QUANTIFICATION OF TOTAL ESTIMATED DOLLAR VALUE

- A. The Contractor shall assist the Owner in its efforts to procure selected Goods (hereinafter “ODP Goods”) pursuant to this specification by first establishing and submitting to the Owner for review and approval an itemized, preliminary list of each category of such ODP Goods, the total dollar value corresponding to each category thereof and the combined total dollar value of all such categories of ODP Goods to be directly purchased by the Owner and shall do so within twenty-one (21) calendar days of receipt of a written Limited Notice to Proceed from the Owner. The Contractor shall be prohibited from proceeding with mobilizing equipment and labor resources upon the site until the aforesaid information is received by the Owner. This limitation is in addition to any other conditions that the Contractor must satisfy prior to mobilization upon the site. The categories of items to be included in the total estimated amount of such ODP Goods shall include, but are not necessarily limited to, each of the categories listed under Section 4.2 hereof. Subsequent to the execution of the Agreement by both parties and the Owner’s receipt of the aforesaid information, the Owner shall promptly amend the Agreement via a written deductive Change Order utilizing the form of Change Order included in the Project Manual, which will serve the exclusive purpose of reducing the Contract Sum set forth in the Agreement by the amount corresponding to the combined total estimated dollar value of all ODP Goods that will be subject to direct purchase by the Owner, including amounts for Tax. The subject Change Order shall serve strictly to amend the Contract for the stated purpose and for no other purpose whatsoever. The dollar value, inclusive of Tax, established for each category of ODP Goods shall be identified as a separate deductive line item on the Schedule of Values that accompanies each of the Contractor’s Applications for Payment, which shall serve to memorialize such dollar values for the purpose of reconciling actual dollar values of purchases made to the corresponding estimated value of each. Notwithstanding the foregoing, the Owner may, at any time throughout the term of the Agreement, purchase additional ODP Goods that were not included on the preliminary list of ODP Goods at the time of its submission, in which event the value of any such additional Purchase Order and Tax shall be deducted from the Contract Sum via a written Change Order, which will serve the exclusive purpose of reducing the Contract Sum accordingly. The Contractor shall itemize each and every such additional Purchase Order amount on the Schedule of Values accompanying its Applications for Payment. Such additional Purchase Orders shall be subject to reconciliation prior to close out of the Contract in accordance with the provisions set forth in Section 2.3 C hereof.
- B. Following the Owner’s review and approval of the list of ODP Goods, the Contractor shall prepare and submit to the Owner’s Representative for review and approval a procurement schedule relating strictly to the procurement of ODP Goods and which shall serve to identify the date(s) such materials are required on site and the date(s) such materials must be ordered in order to facilitate timely delivery of such, taking into account the estimated lead time required for obtaining such ODP Goods.

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2.2 PREPARATION AND SUBMITTAL OF ODP PURCHASE REQUISITIONS

- A. The Contractor shall assist the Owner in the preparation of orders for ODP Goods by preparing Purchase Requisitions utilizing an owner-provided, **ODP Purchase Requisition Form**. The preparation of ODP Purchase Requisition Forms by the Contractor shall be prioritized in accordance with the ODP Goods procurement schedule as outlined within **Exhibit A - Owner's ODP Purchase Order Procedures**. In preparing the ODP Purchase Requisition Form, the Contractor shall work in close cooperation with the Owner's Representative for the purpose of properly applying the Owner's established accounting cost codes to each corresponding category of ODP Goods listed on each ODP Purchase Requisition Form. The Contractor shall submit the completed ODP Purchase Requisition Form in an editable electronic form to the Owner's Representative, who shall in turn review the form and any relevant attachments for general conformity and acceptance. Upon reviewing the Purchase Requisition Form the Owner's Representative will either, (i) return the form to the Contractor for incorporation of any necessary modifications together with resubmittal instructions or, (ii) forward the conformed document to the Owner's internal Construction Manager or to his/her delegate for processing.
- B. The Contractor may attach to the Purchase Requisition Form, the Contractor's and/or the Vendor's terms and conditions that supplement the Owner's standard Purchase Order Terms and Conditions, which form a part of the Owner's Purchase Order. Any such supplemental terms should be utilized by the Contractor in order to incorporate specifics, such as product or material specifications, or to provide other clarifications regarding submittal drawing requirements, special expediting, delivery and/or handling instructions, specialized terms and conditions, special warranty provisions, et cetera. Any such supplemental Attachment shall be titled in a manner that distinguishes it as a separate Attachment to the Purchase Order and given a unique Attachment letter (e.g. "E", "F", et cetera) together with a unique title to distinguish it from the other standard Attachments that form a part of the Purchase Order.
- C. Following the Owner's receipt of the completed ODP Purchase Requisition Form, the purchase of ODP Goods shall be accomplished by the issuance of Owner-prepared, Owner-issued Purchase Orders. For Purchase Orders that serve as an instrument to purchase ten (10) or more different items, the Owner may refer to the ODP Purchase Requisition Form within the Purchase Order and incorporate it into the Purchase Order as an Attachment thereto by said reference. Similarly, the Owner may elect to incorporate the vendor's corresponding quotation into any Purchase Order utilized for purchasing ODP Goods.
- D. The Owner will provide a State of Florida Certificate of Exemption and a Certificate of Entitlement to the Vendor with the completed purchase order and will copy the Contractor.
- E. **Amendments to Purchase Orders:** With the exception of amendments made to Purchase Orders for the purpose of reconciling variances in actual quantities of ODP Goods purchased and received thereunder, amendments to Purchase Orders utilized for purchasing ODP Goods shall be restricted to additive amounts equal to or in excess of \$25,000.00. For such Amendments, the Contractor shall complete the Purchase Requisition Form and follow the procedures for submission that are set forth in Section 2.2 C, hereof. Other Goods required for completing the Work having a total value of less than \$25,000.00 shall be purchased directly by the Contractor or its Subcontractors utilizing their own forms of Purchase Order. The Owner shall not be entitled to exemption of payment for Tax on Goods purchased directly by the Contractor or its Subcontractors.

2.3 DUTIES OF THE CONTRACTOR UNAFFECTED

- A. The Contractor acknowledges that any direct purchase of ODP Goods by the Owner from the Contractor's vendor does not in any way or manner diminish or modify the contractual duties of the Contractor to the Owner, including the coordination, inspection, delivery, handling, storage, protection, securing of guarantees and warranties for such ODP Goods and installation/incorporation of such ODP Goods into the Work. Such duties pertinent thereto set forth in the Contract between the Contractor and the Owner shall remain unchanged. The Contractor shall immediately notify the Owner's Representative of instances involving damage to ODP Goods, regardless of the apparent cause, or of any apparent defects in materials or workmanship, and of any other matter that may serve as cause for refusal of the subject ODP Goods.
- B. The Owner shall directly pay the Contractor's vendors all proper, uncontested invoice amounts for ODP Goods that are free of any damage or apparent material or workmanship defects and that are satisfactorily delivered to the delivery destination set forth under the corresponding Purchase Order and provided that such ODP Goods strictly comply with the applicable specifications that form a part of the Project Manual. The Contractor shall, on its own behalf and on that of its Subcontractors, be responsible for confirming to the Owner's Representative the adequacy of receipt of all ODP Goods as a pre-condition of the Owner's payment therefore. Prior to payment of the invoice the Owner will promptly forward the invoice to the Owner's Representative who shall, within three (3) consecutive calendar days of receipt, forward the invoice to the Contractor who shall, within five (5) consecutive calendar days:
1. Certify to the Owner's Representative, on its own behalf and on that of its Subcontractors, that the invoiced ODP Goods have been received in accordance with the Purchase Order and attach to the invoice the original signed delivery ticket(s); and
 2. Certify to the Owner's Representative, on its own behalf and on that of its Subcontractors, that proper invoices have been submitted by the vendor. Additionally, identify any apparent discrepancies or disputed amounts and provide supporting explanation(s) for such; and
 3. Submit to the Owner's Representative, on its own behalf and on that of its Subcontractors, **Exhibit B, Attachment "1" – Contractor's Vendor Invoice Affirmation Letter** that includes a final, properly reconciled accounting for the Purchase Order including, but not limited to, the total Purchase Order amount as well as sales tax savings.
 4. Upon its receipt of the Contractor's Invoice Affirmation Letter, the Owner's Representative shall verify the submitted reconciled Purchase Order documentation. Following verification, the Owner's Representative shall submit to the Owner the owner-provided **ODP Pay Request Form, and Exhibit C, Attachment "2" – Owner's Representative Invoice Affirmation Letter**, Contractor's Invoice Affirmation Letter, and reconciled Purchase Order documentation.

Upon its receipt of the above listed items, the Owner shall directly pay to Vendors all undisputed Purchase Order invoice amounts.

- C. Following the final payment of all amounts owed to Vendors under all ODP Purchase Orders and prior to the issuance of the Close Out Change Order, the Owner shall prepare and issue a Change Order to the Contract, which shall serve the exclusive purpose of reconciling the Contract Sum, and to produce a final accounting of the actual amount of each Purchase Order, including Tax, compared with the originally estimated amount for each Purchase Order, including Tax. Each final Purchase Order will be itemized within the Change Order and shall reflect the corresponding originally estimated amount and the final, actual amount for each and the variance between such amounts, if

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any, including sales tax. In instances when the actual Purchase Order amount exceeds the originally estimated Purchase Order amount, the Change Order shall serve to further reduce the Contract Sum by the amount of the variance, including the amount for Tax. In instances when the actual Purchase Order amount is less than the originally estimated Purchase Order amount, the Change Order shall serve to increase the Contract Sum by the amount of the variance, including the amount for Tax.

PART 3 – INDEMNITIES, EFFECT ON PAYMENT BOND, ASSIGNABILITY OF PURCHASE ORDERS

3.1 OWNER’S INDEMNIFICATION OF CONTRACTOR

- A. The Owner agrees to defend, hold harmless, and indemnify the Contractor from any and all liability for unpaid sales taxes which the Contractor may suffer as a result of claims, demands, costs, interest, penalties or judgments against the Contractor made by or in favor of the State of Florida on account of failure to pay Florida State Sales Taxes on ODP Goods purchased by the Owner pursuant to the procedures set forth herein. The Owner agrees to defend against any such claims or actions brought against the Contractor whether rightfully or wrongfully brought or filed. The Contractor agrees that it will promptly notify the Owner of any such claim, demand, or action. Upon request of the Owner, Contractor agrees to execute any and all documents including, but not necessarily limited to, contract amendments, affidavits, and Department of Revenue forms, reasonably necessary to effectuate the tax saving intent of the ODP purchase option.

3.2 NO EFFECT ON PAYMENT BOND

- A. The obligation of the Contractor’s surety under the payment bond will remain unmodified and in full force and effect, notwithstanding that the Owner has entered into a separate purchasing arrangement with the Contractor’s vendor for the direct purchase of the ODP Goods and has reduced the amount payable directly to the Contractor by the purchase amount(s), and applicable Florida State Sales Tax.

3.3 OWNER’S RIGHT TO ASSIGN PURCHASE ORDERS

- A. The Purchase Order between the Owner and the Vendor(s) will be unilaterally assignable by the Owner to the Contractor or its Subcontractor(s). Upon assignment by the Owner, the Owner will not make further related deductions from monthly pay applications for sales tax savings and shall reconcile previous amounts deducted for same and for previous amounts paid to the Vendor.
- B. The Contractor and its Subcontractors understand and acknowledge their obligation to provide this specification and the Exhibits and Attachments related hereto to each Vendor that proposes to sell ODP Goods to the Contractor or its Subcontractors as a prerequisite to the solicitation and submission of such proposals. Vendors proposing to the Contractor and its Subcontractors pursuant to this Agreement agree to accept the following assignability provision in Purchase Orders from the Owner for ODP Goods:

“Vendor is prohibited from assigning this Purchase Order or any right hereunder without the prior written consent of Buyer, which consent Buyer may withhold in its sole and absolute discretion. Vendor acknowledges that this Purchase Order between Vendor and Buyer is assignable to the Prime Contractor, Design/Builder, or Subcontractor for which the original proposal was received. The Vendor acknowledges the right of the Buyer to

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unilaterally assign this Purchase Order at any time and for any reason. Upon assignment, any reference to the Buyer within the Purchase Order will be understood to be that of the assignee.”

PART 4 – PRELIMINARY LISTING OF ODP GOODS; LIST OF ATTACHMENTS

4.1 PRELIMINARY LIST OF ODP GOODS CONTEMPLATED FOR DIRECT PURCHASE BY THE OWNER

- A. The following is a preliminary listing of ODP Goods, which the Owner MAY elect to purchase directly from the Contractor’s or its Subcontractors’ vendors pursuant to the provisions set forth herein:
1. Any and all materials used on the project which are deemed appropriate by Owner for direct purchase.

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EXHIBIT A:
ODP PURCHASE ORDER PROCEDURES
(Routing procedures for processing Reedy Creek Improvement District's Owner Direct Purchase Orders)

This document sets forth the procedures for establishing a tax-exempt Purchase Order between a given Vendor and Reedy Creek Improvement District ("RCID") to facilitate the purchase of goods (materials) that will be incorporated into permanent improvements constructed over, upon or under property owned by RCID. This document outlines the process, sequentially, and specifies the separate and collective duties of the Contractor, the Owner's Representative, RCID's internal Construction Manager, RCID's Contract Support Specialist and RCID's Sr. Project Accountant. Any use of the aforementioned titles in this document refers to the named titleholder or his/her duly appointed delegate.

Step 1: Preparation and Submittal of Purchase Requisition

1. Owner's Representative provides Contractor with a written list describing which materials RCID intends to purchase directly.
2. Contractor provides Owner's Representative with a completed **ODP Purchase Order Requisition Form**, together with Vendor's signed price quotation and any supplemental Contractor's or Vendor's terms and conditions. Any discounts for early payment of subsequent invoices must be identified on the face of the corresponding price quotation(s).
3. Owner's Representative reviews Contractor's ODP Purchase Order Requisition Form and confirms that Vendor's price quotation and any supplemental Vendor terms and conditions, are acceptable. Any terms and conditions that appear to conflict with RCID's standard Purchase Order terms and conditions shall be submitted to RCID's Contract Support Specialist for review and disposition.
4. Owner's Representative completes RCID Purchase Order Request form which will include an Owner authorized contingency allowance in an amount determined solely by RCID's internal Construction Manager and shall include such allowance in the total Purchase Order amount.
5. Owner's Representative transmits the completed RCID Purchase Order Request form and Contractor's Purchase Order request package to RCID's internal Construction Manager or to his/her appointed delegate.

Step 2: Routing Purchase Order Approval: Preparation and Distribution

1. RCID's internal Construction Manager or his/her appointed delegate routes the Contractors Purchase Order Request Package through RCID's electronic purchase requisition system for RCID's internal approvals.
2. Subsequent to receipt of RCID approvals, RCID's Contract Support Specialist prepares the Purchase Order, sends an electronic copy of the Purchase Order to the Vendor and concurrently transmits an electronic copy of the Purchase Order to RCID's Sr. Project Accountant, RCID's internal Construction Manager and RCID's Owner's Representative. All attachments to the Purchase Order shall accompany each electronic copy of the Purchase Order sent to the Vendor, the RCID Construction Manager and the Owner's Representative.

Step 3: Receiving of Goods, Review, Validation and Processing of Purchase Order Invoices.

1. Upon receipt of the original Vendor invoice, RCID's Sr. Project Accountant shall promptly forward same to the Owner's Representative or to RCID's internal Construction Manager. Upon receipt, the recipient shall enter the Vendor's original invoice into the Invoice Summary Section of the **ODP Pay Request Form**,

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and shall be responsible for facilitating any and all coordination required with and between the Contractor and the Vendor in order to ascertain that the goods (materials) purchased via the subject Purchase Order have been received, that such goods correspond to those described in the Purchase Order, that they appear to be free from defects in material or workmanship, that all quantities of such received goods are accurate and that all amounts sought by the Vendor for remittance are valid and conform in all material respects with the Purchase Order amount(s) and the Purchase Order terms and conditions. The Owner's Representative or RCID's internal Construction Manager shall then forward the Purchase Order invoice and all supporting documentation to the Contractor for review and validation. Provided that the invoice is determined to be correct, the Contractor completes and submits to the Owner's Representative or to RCID's internal Construction Manager, the **Contractor's Vendor Invoice Affirmation Letter (Exhibit A-Attachment 1)**. In instances when the subject Purchase Order Invoice is found to be erroneous or discrepant, the Contractor shall be responsible for promptly notifying the Vendor of any required actions necessary to process the Vendor's invoice for payment, including but not limited to, revision of any erroneous or discrepant invoice quantities and/or corresponding prices or for acquiring credit memoranda from the Vendor. Once all necessary corrections are made by the Vendor to the subject Purchase Order Invoice, the Contractor shall complete and submit same to the Owner's Representative or to RCID's internal Construction Manager, together with the Contractor's Purchase Order Invoice Affirmation Letter.

2. Upon receipt of the Contractor's Purchase Order Invoice Affirmation Letter and the subject Purchase Order Invoice, the Owner's Representative or RCID's internal Construction Manager shall prepare the ODP Pay Request Package, which consists of the completed, owner-provided **ODP Pay Request Form**, the approved Vendor invoice, the completed **Owner's Representative Invoice Affirmation Letter (Exhibit B- Attachment 2)**, and the completed Contractor's Purchase Order Invoice Affirmation Letter, and transmits it to RCID's Construction Manager, who in turn transmits all aforesaid documentation to RCID's Sr. Project Accountant for processing of payment.

Reconciliation of Quantity Overruns of Owner Direct Material Purchases (Owner's Representative)

1. As the project progresses, the total executed RCID Purchase Order amount may be exceeded due to quantity overruns. If the amount of authorized Contingency Allowance is less than the amount of the total cost of overruns, then a Change Order to the Purchase Order will be required. In such instances, and after confirming the additional quantity supplied by the Vendor, the Owner's Representative shall complete the RCID Purchase Order Request form with the Change Order 'box' check marked and the words "Change Order No. (XX)" written below the Purchase Order Number. Owner's Representative transmits the completed RCID Purchase Order Request form to RCID's internal Construction Manager or to his/her appointed delegate, who shall in turn process the request through the Owner's electronic purchase requisition system.

Purchase Order Closeout

1. When all materials associated with the Purchase Order have been satisfactorily delivered to the Project by the Vendor and there are no known unresolved time or money issues, the Contractor shall promptly notify the Owner's Representative that the Purchase Order can be closed out.
2. The Owner's Representative shall promptly verify the project record of total amount of materials purchased from and paid to Vendor(s) under the Purchase Order and request closeout of the Purchase Order by submitting a final reconciliation of the Purchase Order to RCID's Sr. Project Accountant.
3. RCID's Sr. Project Accountant will validate the final reconciliation of the Purchase Order against RCID's financial system to confirm there are no unresolved financial concerns that will impede or prevent timely closeout of the Purchase Order. In instances when the final reconciliation of the Purchase Order is materially incorrect, RCID's Sr. Project Accountant will return

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the closeout request to the Owner's Representative for additional review and resolution of the identified issues. Once all necessary corrections have been made, the Owner's Representative will resubmit the closeout request and corrected final reconciliation of the Purchase Order to RCID's Sr. Project Accountant.

4. RCID's Sr. Project Accountant will prepare the closeout letter for the Purchase Order and send it electronically to the Vendor for confirmation that all undisputed invoice amounts were paid by RCID and there are no unresolved time or money issues with the Contractor. RCID's Contract Support Specialist and the Owner's Representative will be included on the electronic communication to the Vendor.
5. Purchase Order Closeout documentation is complete upon RCID's Sr. Project Accountant's receipt of the signed closeout letter from the Vendor. Absent a response from the Vendor, the Purchase Order will be closed out at the expiration of the response window outlined in the closeout letter. RCID's Sr. Project Accountant will forward an electronic copy of the signed closeout letter or notification of non-response and response window expiration to RCID's Contract Support Specialist and the Owner's Representative to formally conclude the closeout process.

END

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EXHIBIT B- ATTACHMENT “1”

CONTRACTOR’S VENDOR INVOICE AFFIRMATION LETTER
(Remove this Line and Print on Company Letterhead)

Date: _____

(Owner’s Representative Co. Name)
Attn: (Owner’s Representative Contact)
Address (Owner’s Representative Address)
Address (Owner’s Representative Address)

RE: Project Name:
Project No.:
Contract No.:

Subject: Vendor’s Name – ODP
Purchase Order No.:

Dear _____:

Please find attached **Invoice No.** _____ from **Vendor’s Name, dated. Contractor’s Company Name** confirms that; (1) we’ve received the materials on the attached invoice and found them to be properly manufactured and in a serviceable condition, (2) the materials have been manufactured and are properly stored at **Vendor’s Name** manufacturing plant or (3) a combination of (1) and (2) to satisfy the disposition of the material.

Contractor’s Name recommends that Reedy Creek Improvement District “RCID” make payment to **Vendor’s Name** for **Invoice No.** _____ in the amount of \$_____.

If you require any further information, please let us know.

Respectfully,

Contractor’s Company Name

Name
Title

Attachment(s)

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EXHIBIT C- ATTACHMENT “2”

OWNER’S REPRESENTATIVE INVOICE AFFIRMATION LETTER

(Remove this Line and Print on Company Letterhead)

Date: _____

Reedy Creek Improvement District “RCID”
Attn: Project Accounts Payable
PO Box 10170
Lake Buena Vista, FL 32830-0170

RE: **Project Name:**
 Project No.:
 Contract No.:

Subject: **Vendor’s Name – ODP**
 Purchase Order No.:

Dear _____:

Please find attached **Invoice No.** _____ from **Vendor’s Name**, **dated** along with a summary of the ODP invoice for the subject project. We have reviewed the invoice and based on plant and on-site observation; the materials have been properly manufactured.

We recommend Reedy Creek Improvement District “RCID” make payment to **Vendor’s Name** for **Invoice No.** _____ in the amount of \$_____.

If you require any further information, please let us know.

Respectfully,

(Owner’s Representative Co. Name)

Name
Title

Attachment(s)Cc: File

SECTION 01020
ELECTRONIC DOCUMENT PROCESSING SERVICE

PART 1 - GENERAL

1.01 DESCRIPTION

- A. In order to expedite the electronic review process and to minimize the expense associated with creating and transmitting paper documents, the Owner subscribes to multiple web-based, centralized file sharing and document control services, known separately as NewForma® and BIM360® or others as the Owner may identify from time to time. Accordingly, the Consultant shall process all documents supporting the project to which the Contractor's contract pertains, either via Bim360® or NewForma® as directed by the Owner.
- B. Sending documents via email, FTP or paper will not be accepted absent the express permission of the Owner's designated document control administrator (hereafter "Administrator"), which permission shall not be unreasonably withheld.
- C. The fee for the web-based software shall be paid by the Owner. The number of users directly employed by the Contractor will not be limited.
- D. The Contractor shall use the web-based software to provide and update status logs, reports, searching and automated notifications.
- E. The web-based software includes the following modules:
1. Submittals
 2. Submittal Register
 3. RFIs (Request for Information)
 4. Field Reports
 5. Pay Applications
 6. Storage for Construction Documents and Specifications
 7. Revision Documents (ASI, CCD, PR, PCO, COR, CO, etc)
 8. Meeting Minutes
 9. Gantt charts and milestones.
- F. The web-based software provides integrated web-based markup tools. All users shall be able to modify ("markup") a centralized file to eliminate redundancy of file modification efforts.
- G. The Contractor shall utilize NewForma® or Bim360® as directed by the Owner to automatically route documents to the Owner, its separate consultants, and its separate contractors, project, program and construction managers to ensure that documents will automatically be sent to design team and construction team users based on trade or discipline. The Owner will designate a single person as Administrator of each system and that person shall, among other things, grant specific user interface

permissions and restrictions based upon each individual user's need, and for which the Administrator shall have sole and absolute discretion.

- H. NewForma® will provide one (1) training session to the Contractor by way of web conference at no cost to the Contractor, which shall be attended simultaneously by all of Contractor's users engaged to perform Services under the Agreement. Additional training sessions, if needed, can be arranged through the Administrator with NewForma® but the cost for such additional training sessions, if any, shall be at Contractor's sole expense.
- I. NewForma® will include a downloadable, offline archive of all project data.
- J. The NewForma® web-based software will provide tools for the Owner's various consultants to respond to submissions made by the Contractor. Those consultants are obligated to respond to such submissions via NewForma®. The Contractor shall utilize NewForma® to review and correspond with respect to such responses.
- K. Color samples and other submittals requiring physical review shall be logged into the system and delivered to its appropriate recipient by mail or courier.
- L. NewForma® may be contacted at: Newforma Project Cloud, www.newformaprojectcloud.com or at telephone 800-303-4650.
- M. The Contractor acknowledges that it has reviewed the terms of use required by NewForma® (<http://www.newformaprojectcloud.com/terms-of-use>) and BIM360® and further stipulates that it will accept the standard terms of use and shall utilize NewForma® and/or BIM360® for the purposes stated herein.

END OF SECTION 01020

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Section 01021
Allowances
Dated: March 14, 2023

**SECTION 01021
ALLOWANCES**

1.01 SPECIFIC CASH ALLOWANCES

- A. Allowances include only the costs for items described in paragraphs B and C, below. All overhead, profit, general conditions, tools, miscellaneous expenses, and all other things necessary to complete the Work shall be included by the Contractor in the Contract Sum.
- B. The cost of each “furnish and install” allowance, unless specifically described otherwise, shall include:
 - 1. The cost of the product to the Contractor, less any applicable trade discounts.
 - 2. Delivery to the site.
 - 3. Applicable taxes.
 - 4. Installation labor, including worker’s compensation, social security, paid benefits, and other applicable labor taxes.
- C. In addition to the amount of each “material only” allowance, Contractor shall include the following costs:
 - 1. The cost of the product to the Contractor, less any applicable trade discounts.
 - 2. Delivery to the site.
 - 3. Applicable taxes.
- D. List of Allowances:
 - 1. Allowance No. 1 – Secondary Utility Locating Service

The RCES Utility Locate Services Office will only locate primary utilities. It will not locate secondary utilities. Allowance No. 1 provides funds for the Contractor to hire a private utility locate service to locate all secondary utilities with the limits of the work. The Allowance shall cover the costs of electromagnetic induction detection, ground penetrating radar detection, and vacuum excavation by an independent certified locate technician. The locate service selected by the Contractor shall be a member of Sunshine State One Call of Florida, Underground Utility Leak & Locators Association (UULLA), and the National Utility Locating Contractors Association.

This Allowance will not cover the costs of hand digging or soft digging by the Contractor’s personnel. Locating services provided by the RCES Locating Services Office and by any private secondary locating technician provided for under this Allowance No. 1 shall be confined to surface markings and flagging only. The Contractor shall hand dig as required to determine the depths of all utilities, storm infrastructure, and other known, buried infrastructure to be traversed by installations per design documents. All such hand digging is included in the Lump Sum Contract Amount. Where vacuum excavation is required, the Contractor shall secure approval from the Owner’s Representative in advance.

Allowance No. 1 – Amount shall be Seventy-Five Thousand Dollars (\$75,000.00)

End of Allowance No. 1

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2. Allowance No. 2 – Re-establish Landscaping and Irrigation

The work encompassed in this Allowance includes addressing existing landscape conflicts and irrigation repairs that are needed outside of what is already called out in the plans. Replacement and repair procedures shall be approved by the Owner prior to implementation.

Allowance No. 2 – Amount shall be One Hundred Thousand Dollars (\$100,000.00)

End of Allowance No. 2

3. Allowance No. 3 – Box Culvert Spall Repairs

This allowance shall cover all costs associated with cleaning, surface prep, build-up and coating of the interior of box culvert CD-1.

Allowance No. 3 – Amount shall be Two Hundred, Fifty Thousand Dollars (\$250,000.00)

End of Allowance No. 3

4. Allowance No. 4 – Temporary Chiller Security Fencing

This allowance shall cover all costs associated with temporarily fencing, securing the temporary chiller plants. Temporary fencing shall include scrim and any costs associated with permitting, signed and sealed plans and any maintenance and repairs needed throughout the life of the temporary chiller work.

Allowance No. 4 – Amount shall be Two Hundred, Fifty Thousand Dollars (\$250,000.00)

End of Allowance No. 4

5. Allowance No. 5 – Temporary Chiller Secondary Electrical

This allowance shall cover all costs associated with providing temporary secondary electric from the temporary transformers to the temporary chillers. This allowance shall also cover any conduit and cable ramps required through the life of this scope of work.

Allowance No. 5 – Amount shall be Three Hundred Thousand Dollars (\$300,000.00)

End of Allowance No. 5

6. Allowance No. 6 – Temporary Chiller Site Preparation and Restoration

This allowance shall cover all costs associated with site preparation and restoration scope, not already included within the sub-consultant's scope of work (Trane), at temporary chiller locations #2, #5 and #6.

Allowance No. 6 – Amount shall be Three Hundred Thousand Dollars (\$300,000.00)

1.02 SUBMITTALS

- A. Comply with pertinent provisions of Section 01340.

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1.03 ADJUSTMENT OF COSTS

- A. If the aggregate costs of the allowance items exceed the allowance aggregate total, the Contractor shall receive an additive change order for the difference plus a percentage mark-up per the terms of the Contract. If the aggregate costs of the allowance items are less than the allowance aggregate total, the Contractor shall receive a deductive change order for the difference less any other allowable deductions pursuant to the terms set forth in the Contract.
- B. Submit all requests for anticipated additional costs at the site, or other expenses caused by selection under the Allowance, prior to purchase and execution of the Work of the selected item.

1.04 CONTRACTOR'S RESPONSIBILITIES

- A. Identify the selection dates required to meet the Construction Schedule.
- B. Assist Owner's Representative and Engineer/Architect in determining qualified suppliers or subcontractors.
- C. Obtain competitive Bids from at least 3 separate suppliers or subcontractors. Notify Owner's Representative of any reasonable objections Contractor may have against any party under consideration prior to solicitation of Bids.
- D. Make appropriate recommendations for the consideration of the Owner's Representative and Engineer/Architect.
- E. Upon notification by the Owner's Representative, execute purchase agreement or subcontract with selected party.
- F. Administer the Work in accordance with the provisions of the Contract Documents.

END OF SECTION 01021

**SECTION 01041
PROJECT COORDINATION**

PART 1 – GENERAL

1.01 DESCRIPTION

- A. The Contractor is responsible for all project coordination.

1.02 DUTIES OF CONTRACTOR

- A. The following requirements are not to be construed as setting limits on the Contractor's responsibilities, but intend to guide the Contractor in the administration of its responsibilities.
- B. Coordinate work of all subcontractors.
- C. Establish on-site lines of authority and communication. Schedule and conduct progress meetings among Owner's designated representatives and subcontractors.
- D. Construction schedules:
1. Prepare detailed schedule of contractor's operations and for all subcontractor's on project.
 2. Monitor schedules as Work progresses.
 - a. Identify potential variances between scheduled and probable completion date.
 - b. Recommend in writing to the Owners Representative any adjustments in schedule to meet required completion date.
 - c. Provide written summary reports of each monitoring.
 - d. Document all changes in the schedule to the Owners Representative in writing.
 3. Observe Work to monitor compliance with schedule.
 - a. Verify that labor and equipment are adequate to meet and maintain the schedule for the Work.
 - b. Verify that product deliveries are adequate to meet and maintain the schedule for the Work.
 - c. Report any noncompliance to the Owners Representative, with recommendations for remedy.
 - d. Verify that adequate services are provided to comply with requirements for Work and climatic conditions.
 - e. Verify proper maintenance and operation of temporary facilities.

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- f. Administer traffic and parking controls for construction workers.
 - 4. Changes:
 - a. Recommend necessary or desirable changes to the Owners Representative.
 - b. Review subcontractors' requests for changes and substitutions. Submit recommendations to the Owners Representative.
 - c. Provide appropriate justification and documentation of the actual costs of any Change Order in a manner acceptable to Owner.
 - 5. Permits and fees: Verify that all subcontractors have obtained all required permits.
 - 6. Inspections and testing:
 - a. Inspect Work to assure that it is performed in accord with requirements of the Contract Documents.
 - b. Arrange with the Owners Representative for special inspections or testing when required.
 - c. Reject work which does not conform to the requirements of the Contract Documents.
 - 7. Coordinate testing laboratory services:
 - a. Notify the Owners Representative of test schedule.
 - b. Verify that required personnel are present during test.
 - c. Verify that specified tests are made as scheduled.
 - d. Verify compliance of test results with specified criteria.
 - e. Operation of heavy construction equipment and/or compaction equipment shall be no closer than 200 feet from density test while test is in progress.
 - E. Interpretations of Contract Documents:
 - 1. Consult with the Owners Representative to obtain interpretation or clarifications for any portions of Contract Documents, which may be unclear or ambiguous.
 - 2. Assist in answering of questions which may arise.
 - 3. Transmit written interpretations to interested parties.
 - F. Administer processing of shop drawings, product data and samples.
 - G. Owner-Furnished products: Accept delivery, arrange storage, protection, and security.
 - H. Maintain reports and records at job site:
 - 1. Daily log of progress of work and other pertinent data.
-

2. Records:
 - a. Contracts.
 - b. Purchase Orders.
 - c. Materials and equipment records, including record of Owner-furnished products.
 - d. Applicable handbooks, codes and standards.
 - e. Labor man-hours expended for each trade on Work site.
3. Obtain information from subcontractors and maintain record documents.
4. At completion of project, deliver all records, as-builts, operating and maintenance manuals and warranty documentation to the Owner's Representative for turnover to Owner.
5. Assemble documentation for handling of any claims or disputes that may arise.
- I. Ensure that specified daily cleaning is done during progress of Work and at completion of Contract.
- J. Partial Owner Occupancy: Schedule early completion of any areas which may be designated by the Owners Representative for Owner's use prior to Substantial Completion of entire Project.
- K. Substantial Completion:
 1. Upon determination of Substantial Completion of Work or portion thereof, prepare for the Owners Representative a list of incomplete or unsatisfactory items.
 2. Upon Owner's certification of date of Substantial Completion, supervise correction and completion of the Work.
- L. Final Completion:
 1. Upon determination that Work is finally complete:
 - a. Submit written notice to the Owners Representative that Work is ready for final inspection.
 - b. Secure and transmit to the Owners Representative required closeout submittals.

1.03 WORK OF OTHER CONTRACTORS

- A. Access:
 1. During the course of the Work, the Contractor will make available to other contractors certain parts of the landscaped areas, for the installation of utilities and other items.
 2. Other contractors will be working on adjacent sites and may require continued access through the project site.
-

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1.04 STORAGE AND DISPOSAL OF MATERIALS

- A. The materials from excavations and those used in the construction of the Work shall be deposited in such a manner that they will not endanger the work and that free access may be had at any time to all hydrants, valves and gates in the vicinity of the Work. The suitable material shall be stockpiled where and as approved to provide a minimum of obstruction and the stockpiles shall be kept trimmed up in such a manner as to be of as little inconvenience as possible to travel of the adjoining contractors. Any unsuitable material including trash, debris, or excavated material shall be removed and disposed of by the Contractor off property within 24 hours. Removal and disposal shall be in accordance with the current disposal requirements outlined within Section 01010- Summary of Work.

END OF SECTION 01041

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Section 01045
Cutting and Patching
Issue Date: March 14, 2023

**SECTION 01045
CUTTING AND PATCHING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Execute cutting (including excavating of earth) and fitting or patching of work required to:
 - 1. Make several parts fit properly.
 - 2. Uncover work to provide for installation of ill-timed work.
 - 3. Remove and replace work not conforming to requirements of Contract Documents.
 - 4. Remove and replace defective work.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Install specified work in existing construction.
- B. In addition to Contract requirements, upon written instruction of Owner or Owner's Representative.
 - 1. Uncover work to provide for Owner's and Owner's Representative observation of covered work.
 - 2. Remove samples of installed materials for testing.
 - 3. Remove work to provide for alteration of existing work.
- C. Do not cut or alter work of another contractor without consent of Owner or Owner's Representative.

1.02 SUBMITTALS

- A. Prior to doing any cutting, which would affect structural safety of structure, submit written notice to the Owner's Representative requesting consent to proceed with cutting.
- B. Should conditions of Work or schedule require change of materials or methods, submit written recommendations to the Owner's Representative including:
 - 1. Conditions indicating change.
 - 2. Recommendations for alternative materials or methods.
 - 3. Submittals as required to obtain approval for substitutions.
- C. Submit written notice to Owner's Representative designating time work will be uncovered to allow observation.

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1.03 PAYMENT FOR COSTS

- A. Costs caused by ill-timed or defective Work, or Work not conforming to Contract Documents, including the compensation for the additional engineering services made necessary thereby: party responsible for ill-timed rejected, or non-conforming Work.
- B. Work done on instructions of the Owner or its Representative other than defective or non-conforming Work: the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Materials for replacement of work removed: comply with Specifications for type of work to be performed.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Inspect existing conditions of work, including elements subject to movement or damage during cutting and patching, excavating, and backfilling.
- B. After uncovering Work, inspect conditions affecting installation of new products.

3.02 PREPARATION

- A. Prior to cutting, shore, brace, and otherwise support involved portions as required to maintain structural integrity.
- B. Provide protection for other portions.
- C. Provide protection from elements.

3.03 PERFORMANCE

- A. Fit and adjust products to provide finished installation to comply with specified tolerances and finishes.
- B. Perform excavating and backfilling as specified in Sections requiring same.
- C. Execute cutting and removal only to the extent necessary.
- D. Restore Work, which has been cut or removed: install new products to provide completed Work in accord with requirements of Contract Documents.
- E. Refinish entire surfaces as necessary to provide an even finish.
 - 1. Continuous surfaces: to nearest intersections.
 - 2. Assembly: entire refinishing.

END OF SECTION 01045

**SECTION 01050
FIELD ENGINEERING****PART 1 – GENERAL****1.01 LINE AND GRADE**

- A. Contractor shall be responsible for the accuracy of the construction line and grade.
 - 1. Employ a Florida licensed land surveyor to establish and maintain all lines and levels necessary for the locations and construction of the Work.
 - a. Submit qualifications of individual responsible for survey to Owner's Representative for approval.
- B. Contractor shall verify grade on the drawings with existing grade, and notify the Owner's Representative of any discrepancies before proceeding with the Work.
- C. Contractor shall maintain the survey provided by others on behalf of the Owner. All additional survey work required shall be the responsibility of the Contractor.
- D. All offsets on the survey provided by others on behalf of the Owner will be as agreed upon between the Owner's Representative and Contractor and verified by the Owner's Representative or Engineer/Architect.
- E. Compliance of work shall be in accord with Minimum Technical Standards of Chapter 61G17-6, Florida Administrative Code, and in particular "61G17-6.005" Construction Layout, Record or As-built, Quantity and Rights of Way Surveys."

1.02 OWNER'S RESPONSIBILITIES

- A. Owner will provide vertical and horizontal control points. Control points will be provided within the proximity of the limits of construction at a location determined by the Owner's Representative.

1.03 CONTRACTOR'S RESPONSIBILITIES

- A. All surveying, engineering and layout required for the work other than that which is supplied by others on behalf of the Owner as listed above.
- B. All layout, offsets, engineering, grades, etc., required to perform all work related to his installation.
- C. Verify that all underground utilities are in their proper location prior to backfilling.
- D. Verification and/or recording of existing utilities encountered.
- E. The Contractor shall coordinate and confirm all the survey benchmarks with the Owner's Representative. The Contractor shall provide survey control support services to the Owner's Representative at no additional cost within the project limits.

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- F. The Contractor shall survey, locate and flag the limits of construction, property boundaries, restricted management areas, etc. when requested by the Owner's Representative.
 - G. Provide surveying required for the preparation of the Record Documents and As-Built Drawings.

END OF SECTION 01050

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Section 01100
Alternates
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**SECTION 01100
ALTERNATES**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Contractor shall furnish all labor, materials, tools, equipment, and perform all work and services necessary for all Alternates as shown on drawings and as specified, in accordance with the provisions of the Contract Documents, and completely coordinated with Work of all other trades. RCID reserves the right to acknowledge the alternate bid within 90 days after **CONTRACT EXECUTION**.
- B. Although such Work is not specifically indicated, furnish and install all supplementary or miscellaneous items, appurtenances and devices incidental to or necessary for a sound, secure, and complete installation.
- C. Use of Alternates:
 - 1. The Owner wishes to learn the construction costs involved for various alternative methods or materials other than specified or detailed for the Base Bid. These items are defined as Alternates and are specifically described in the Schedule of Alternates that follows.
 - 2. The amounts for Alternates shall be listed in the Proposal Form in such a manner that the Owner will be able to clearly determine what sums are to be added to or deducted from the Base Bid for the alternate involved.
 - a. The amount stated by the Bidder shall include all changes in its work made necessary by the acceptance of the alternates, including profit, insurance, overhead, cost of Bonds, contingencies and any other cost incidental to the performance of the Alternate.
 - b. Warranties and bonds to be furnished in connection with alternates shall conform in every way to those required for the Base Bid.

1.02 REQUIREMENTS

- A. This Section identifies each Alternate by number, and describes the basic changes to be incorporated into the Work, only when that Alternate is made a part of the Work by specific provisions in the Owner-Contractor Agreement.
- B. Bidder, in submitting his bid, shall include in addition to his base bid, the following alternate(s). The numerical order of listing these alternates does not necessarily imply their priority. The Owner may decide to use any one or more of all the items.

1.03 RELATED REQUIREMENTS

- A. Coordinate pertinent related work and modify surrounding work as required to properly integrate the work under each Alternate, and to provide the complete construction required by the Contract Documents.

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World Drive North Phase III
Invitation to Bid: C006110

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Alternates
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PART 2 - ALTERNATES

- A. State in proposal the amount to be added to or deducted from the Base Bid for each of the Alternates described below. Upon execution of the Agreement, implement work and modify work as established under various Alternates as accepted or rejected by the Owner.

(Note: Except as noted, compute each Alternate in turn as a separate change from the Base Bid condition. If any alternate is taken in combination with other Alternates, any costing overlaps will be adjusted in the contract sum.)

PART 3 - DESCRIPTION OF ALTERNATES

3.1 MANDATORY BID ALTERNATE:

Bid Alternate 2: PVR Modifications Project B2 (a/k/a Seven Seas Drive Realignment) depicted within the Plans and generally noted: “*Information Shown Reflects Add Alternate 2 Items*”.

Bid Alternate 2A: Replacement of existing dual 38” x 60” ERCPs as shown on **Drawings XC-102**, and replacement of existing dual 30” CMPs as shown on **Drawing XC-103**.

The Owner reserves the right to accept the Alternates within 18 months (548 Calendar Days) from the effective date of the Contract. The Alternate is anticipated to be constructed within 42 months (1278 Calendar Days) from Contract Notice to Proceed.

3.2 BID ALTERNATES:

Bid Alternate 2B: Provide Heavy Duty Pavement Section as depicted on **Sheet C-190** and generally noted as “Bid Alternate.”

Bid Alternate 3: Signalization depicted within the Plans, and generally noted: “*Information Shown Reflects Add Alternate 3 Items*.”

The Owner reserves the right to accept the Alternate within 18 months (548 Calendar Days) from the effective date of the Contract. The Alternate is anticipated to be constructed within 42 months (1278 Calendar Days) from Contract Notice to Proceed.

END OF SECTION 01100

**SECTION 01202
PROGRESS MEETINGS**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. *The Owner's Representative will schedule and administer Project meetings during the progress of the Work.*
- B. Meetings required will include:
1. Pre-Construction meeting
 2. Weekly Progress meetings
 3. Weekly Safety meetings.
- C. Owner Representative's duties:
1. Notify participants at least 48 hours in advance of meeting date.
 2. Facilitate meeting, record minutes and distribute copies to participants and all others affected by the decisions.
- D. Attendance is required by:
1. Owner and/or Owner Representative(s).
 2. Contractor's job superintendent and Project Manager.
 3. Major subcontractors and suppliers.
 4. Contractor's designated safety representative at the safety meetings.
 5. Others affected by the Work and decisions involved.
- E. Agenda items shall include:
1. Review of work progress.
 2. Status of progress schedule and required adjustments.
 3. Schedules for deliveries.
 4. Status of submittals.
 5. Adherence to quality standards.
 6. Pending changes and substitutions.
 7. All other items affecting Work progress.
 8. Review of Contractor's Record Drawings.
 9. Safety concerns.
 10. Contractor-furnished Four Week Look Ahead Schedule

END OF SECTION 01202

**SECTION 01310
CONSTRUCTION SCHEDULE****1. PART 1 - GENERAL**

- A. Prepare and provide projected construction schedules for entire work in a logic bar graph, Critical Path Method (CPM) or combination thereof in a format which will be acceptable to the Owner. Revise monthly, or otherwise directed by the Owner.
- B. Coordination:
 - 1. It will be the responsibility of the Contractor to coordinate schedules of its own and its subcontractor's schedules as well as construction efforts by others as directed by the Owner or Owner's Representative.
 - 2. Final schedules are subject to concurrence by the Owner and Owner's Representative as regards to activity description, logic, sequence, duration and resources required.

1.02 FORM OF SCHEDULES

- A. Contractor prepares and provides the following construction schedule in a format and system acceptable to the Owner and Owner's Representative.
 - 1. Summary Milestone Schedule: Submit a computer generated bar chart schedule broken down by the major project areas. Format shall be consistent with the format as provided by the Owner's Representative. Required milestones will be subject to Owner's and Owner's Representative's acceptance.
 - 2. Detailed Network Schedule - Either overall basis and/or by sub-networks as may be requested by the Owner's Representative. Manpower resources by activity should be indicated if requested by the Owner or Owner's Representative.
 - 3. Horizontal Bar Chart:
 - a. Provide separate Horizontal Bar Column for each trade or operation indicating manpower resources if requested by the Owner or Owner's Representative.
 - b. Order: Chronological order of beginning of each item of work.
 - c. Identify each bar column by distinct graphic delineation.
 - d. Horizontal Time Scale: Identify first work day of each week, length of work week, and shifts involved.
 - e. Scale and Spacing: To allow space for updating.

1.03 CONTENT OF SCHEDULES

- A. Provide complete sequence of construction by activity.
1. Shop Drawings, product data and samples, submittal dates and dates approved copies will be required, etc., should be indicated if requested by the Owner or Owner's Representative.
 2. Permitting application and processing.
 3. Product procurement, fabrication duration, shipping dates and on-site availability should be indicated if requested by the Owner or Owner's Representative. Contractor will prepare format which shall include names of subcontractors; description of material; manufacturers and vendors with address, phone number and person to contact, order number, shop drawings and samples status, manufacturing lead time, shipping dates, proposed delivery date, format of shipping, date material is required and commitments from manufacturers or vendors on their letterhead.
 4. Dates for beginning and completion of each element of construction.
 5. Decision dates for selection of finishes and products may be required by the Owner or Owner's Representative.
 6. Restraints reflecting impact of related work.
 7. Activities as directed by the Owner or Owner's Representative when required to interface activities performed by the Owner or other Contractors.
 8. Detailed sub-schedule and special area schedules as directed by the Owner or Owner's Representative to define critical areas of work.
 9. The Owner's Representative shall receive and review updates from the Contractor on the 25th of each month indicating the ACTUAL work status through the 20th day of the month, or more/less often when directed to do so by the Owner's Representative.
 - a. Schedule submission shall be made as part of the monthly Application for Payment.
 10. All schedules shall reflect cost loading.

1.04 CONTRACTOR'S RESPONSIBILITIES

- A. Coordinate the scheduled work of all its subcontractors.
- B. Incorporate the work of all subcontractors into the construction schedules.
- C. Provide schedule update information of all subcontractors.
- D. Maintain a management organization to fulfill the requirements of this Section.
- E. Attend and participate in scheduling meetings as may be requested by the Owner or Owner's Representative.

1.05 OWNER'S RESPONSIBILITIES

- A. Owner may provide technical assistance to Contractor in preparation of its construction schedule.

1.06 SCHEDULE MAINTENANCE PROCEDURES

- A. Milestone Schedule: Within 10 calendar days of Award of this Contract, the Contractor shall provide the following:
1. A Summarized Milestone Schedule, prepared as a computer generated time-scaled CPM diagram in precedence diagramming format, identifying the major areas of the Project. Milestone Schedule shall identify all established milestones specified in the Contract Documents, to constitute one complete program for the entire work.
 2. The Summarized Milestone Schedule shall be used for the life of the Contract to delineate the interdependence and order of construction of the project Work areas. Also, it shall be employed as a framework for developing the Detailed Network Schedule described below.
 3. The Owner reserves the right to reject any submitted schedule by the Contractor, if, in the view of the Owner, said schedule reflects unreasonable assumptions on the part of the Contractor, its subcontractors or Owner's other Contractors. The Contractor shall be responsible for resubmitting within five (5) working days the actual reflection of current and projected status.
- B. Network Schedule: Within 10 calendar days of Owner's Representative's approval of the Summary Milestone Schedule, the Contractor shall provide the following:
1. A Detailed Network Schedule shall be prepared as a CPM logic diagram in precedence diagramming format. The detailed network schedule shall identify the work to be performed in order to support the Master Milestone Schedule.
 2. The Detailed Network Schedule shall be utilized to monitor progress and shall, therefore, be maintained throughout the duration of the Project.
 3. Activities represented on the Detailed Network Schedule shall dovetail the summary milestone schedule so as to constitute one complete program for the whole of the project.
 4. The Contractor shall provide a detailed successor/predecessor report, in a format acceptable to the Owner's Representative, sorted by major project area. This report shall also include the duration of each activity and logic relationship.
 - a. The Contractor shall submit both a printed copy and an electronic copy to the Owner's Representative containing this information.

Updating:

1. Show all changes, which have occurred since the previous update and submittal. Provide the following update information:
 - a. Progress of each activity.
 - b. Completion dates.
 - c. Activities modified.
 - d. Revision of schedule restraints.
 - e. Revision in duration to any activities.
 - f. Revision of resources.
 - g. With each schedule update, provide a NARRATIVE REPORT, including: current and anticipated delay factors and their impact on the schedule.
 - h. Corrective action taken or proposed and its effect or intended effect on schedule.
 - i. Detailed description of revisions to schedule.

1.07 SUBMITTALS

- A. Submit to the Owner's Representative, one electronic copy and one hard copy of the Summary Milestone Schedules within 10 days after Award of Contract.
- B. Submit to the Owner's Representative, one electronic copy and one hard copy Detailed Network Schedule within 14 calendar days of approval of Summary Milestone Schedule.
- C. On the 25th of each month (along with the monthly Application for Payment), submit one hard copy of the previous Detailed Network Schedule with annotations showing status and changes as required by paragraph 1.06.C.1. and an electronic copy of the updated Detailed Network Schedule reference progress to the update data.
 1. Along with updated schedules, submit NARRATIVE REPORT.
 2. Submit additional detailed network logic necessary to fulfill the requirements described in paragraph 1.06.B. above.
 3. Submit updated Summarized Milestones Schedule to reflect current project status. Identify any changes invoked or contemplated to the original program plan.
 4. Submit an electronic copy containing the detailed network schedule.

END OF SECTION 01310

SECTION 01315
CONTRACT TIME, SEQUENCING AND TIMING OF WORK**PART 1 - GENERAL****1.01 GENERAL REQUIREMENTS**

- 1.1. Refer to **GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION** and **SPECIAL CONTRACT CONDITIONS** for general requirements; relating to contract time, commencement or work, progress, and completion.

1.02 PROGRESS

- 1.1. The work shall be prosecuted at such rate of progress as will insure meeting the specified milestone dates, as well as Substantial and Final Completion within the Contract Time. By execution of the Contract, the Contractor represents he has analyzed the Work, the materials and methods involved, the systems involved, availability of qualified mechanics and unskilled labor, restrictions of the site, constraints imposed, his own work load and capacity to perform the Work and agrees that the specified times are reasonable considering the existing conditions at the site, usual working conditions, climatic conditions prevailing in the locality of the Work, and other factors, with reasonable allowance for variations from average, typical or ideal conditions.

1.03 RESERVED**1.04 DEPARTURES**

- 1.1. From time to time as Work progresses, departure from the schedule may occur to changes in the Work or delays or acceleration of one or more activities. The Contractor shall receive no compensation for those departures, other than a time extension, if applicable.

1.05 COMMENCEMENT OF WORK

- 1.1. Work at Site: The Contractor shall commence the work promptly following its receipt of a Notice to Proceed unless otherwise directed by the Owner's Representative.
- 1.2. Insurance: No work shall commence at the site until proper insurance certificates have been submitted by the Contractor and approved by the Owner's Representative.

1.06 MILESTONE COMPLETION DATES

- 1.1. Assumption: Milestone completion dates are predicated on issuing the Notice to Proceed on or before N/A.
- 1.2. Milestone Dates: Milestone Completion Dates are as described within this specification, Section 1.07 Project Construction Constraints.
- 1.3. General Comment:
- 1.3.1. Coordination of the drainage, mechanical and electrical work, particularly in areas of congestion, shall be accomplished by all Contractors involved in each particular area.

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WORLD DRIVE NORTH- PHASE III
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- 1.3.2. The schedule provides that the entire project be turned over to the Owner as per the Project Milestone Schedule entitled Exhibit "B" of the Agreement.

1.07 PROJECT CONSTRUCTION CONSTRAINTS

1.1. SPECIFIC CONSTRAINTS: Other than those constraints noted elsewhere within the Contract Documents, the specific construction schedule constraints are part of this Work and have been incorporated into the Project Milestone Schedule noted as Exhibit B of the Agreement.

1.2. GENERAL CONSTRAINTS: Other than those noted elsewhere within the Contract Documents, the following general construction schedule constraints are part of this Work:

- 1.2.1. From time to time special events may be scheduled adjacent to the Project Site. During such events, the Contractor may be requested to restrict its operation and construction to avoid impacts to guests and visitors.

END OF SECTION 01315

**SECTION 01325
SCHEDULING OF WORK**

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. The Contractor shall perform the Scheduling of the Work requirements as further defined herein and summarized as follows:
 - 1. Overall Requirements.
 - 2. Incorporation of Contract Milestones and associated Definitions into planning and scheduling of the Work.
 - 3. Provide and update a Contract Schedule.
 - 4. Provide and update a Submittal Schedule.
 - 5. Provide and update a Material Procurement Schedule.
 - 6. Provide and update Completion Lists & Punch Lists.
 - 7. Attend regular Schedule Reviews and provide updates and reports as required.
- B. Other references:
 - 1. Specification 01370 – Schedule of Values.
 - 2. Specification 01330 – Submittal Procedures.

1.02 OVERALL REQUIREMENTS

- A. All costs associated with compliance with this Section shall be included in the Contract Sum. All Schedules to be provided by Contractor shall fully integrate the work of all Subcontractors, Sub-subcontractors, adjacent separate contractors, and major suppliers and must comply fully with the Contract Milestones identified herein.
- B. Failure to comply with requirements:
 - 1. If Contractor fails to comply with the requirements specified herein, Owner reserves the right, but will not be required, to engage an independent scheduling consultant or provide its own expertise to fulfill those requirements, and back-charge Contractor an amount equal to the payment Contractor would have been due had it self-performed the delinquent or non-complying work.
 - 2. In such event, Owner will require the participation of Contractor to ensure that the information produced accurately reflects Contractor's plan to execute the Work and the progress of the Work, in compliance with the Contract.
 - 3. If Contractor fails to promptly cooperate by participating with Owner or its Consultant in developing or in implementing the jointly-developed Schedule, Owner will complete the effort to the best of its ability with the information provided by Contractor and issue that Schedule for the mandatory and immediate utilization by Contractor in a unilateral Change Order to the Contract.

1.03 CONTRACT MILESTONES

- A. Contract Milestones are date specific “events” which may or may not be on the critical path of the Work at which certain portions of the Work must be complete in order for Contractor to be in compliance with the Contract. Contract Milestone Definitions more specifically describe what is expected of the Contractor at these dates. Contractor shall comply with these definitions and Owner will monitor Contractor’s performance against these milestone dates and definitions.
1. Where “complete” is used in the description of a Contract Milestone, it shall be construed to mean that all portions of the Work which occur in the indicated area or zone are complete, are accepted by Owner and are suitable for recognition by Owner of Substantial (or Partial Substantial) Completion as defined in Article 9 of the General Conditions (notwithstanding that such recognition by Owner may be reserved until all Work of the Contract is Substantially Complete, at Owner’s sole discretion), and that no further duties or obligations of Contractor remain unfulfilled in that area or zone.
- B. Contractor shall identify all Contract Milestones in its schedule submittals, whether or not Owner has identified those dates in the Bidding or Contract Documents. Contract Milestones, whether specified by Owner or Contractor's schedule submissions, shall be conspicuous in all Contractor-submitted schedules, and shall serve as an essential instrument of measurement by Owner of Contractor's compliance with the terms of the Contract.
- C. Failure by Contractor to achieve Contract Milestone(s) may result in Owner availing itself of contractual remedies, as required, in order to regain the Contract Schedule.

1.04 CONTRACT SCHEDULE

- A. The initial Contract Schedule shall be submitted for Owner's review within 14 days after Notice to Proceed as specified in Section 01330.
- B. Contractor shall as defined herein, provide a Contract Schedule and updating of same.
1. Contract Schedule shall incorporate the Schedule of Submittals and updating of same.
2. Contract Schedule shall incorporate the Material Procurement Schedule and updating of same.
- C. The accepted Contract Schedule will supersede all “interim” Contract Schedules.
- D. Contractor shall utilize Primavera Project Planner™ for Windows® (“P6”), Sure Track software (latest version) by Primavera Systems. Inc., Microsoft Project, or other scheduling system approved by the Owner, and employ the Critical Path Method (“CPM”) in development and maintenance of the Contract Schedule network in Precedence Diagram Mode (“PDM”).
1. The schedule shall incorporate activity descriptions, sequence, logic relationships, duration estimates, resource-loading and other information as defined herein.
2. The schedule shall include all Contract Milestones defined herein and/or by Contractor's Proposal Schedule, as well as all engineering, fabrication and delivery dates required to support Contract Milestones.

3. Activities to be integrated and shown in the schedule shall include, in addition to all construction activities: milestones representing Contractor's submittal dates of all critical submittals, and activities representing Owner's review period of each submittal (which review period shall in no case be scheduled for less than 21 calendar days); Contractor's procurement of materials and equipment; manufacture and/or fabrication, testing and delivery to the Job Site of special material and major equipment; equipment installation and preliminary, final and performance testing of equipment or systems installed under the Contract.
 4. The Contract Schedule shall also show start and finish dates for all temporary works; all construction of mock-ups, prototypes and/or samples, punch-listing; Owner interfaces and Owner-furnished-item requirement dates; interfaces with Separate Contractors; regulatory agency approvals; and permits required for the performance of the Work.
 5. The Contract Schedule shall take into account all foreseeable factors or risks affecting, or which may affect, the performance of the Work, including historical and predicted weather conditions, applicable laws, regulations or collective bargaining agreements pertaining to labor, transportation, traffic, air quality, noise and any other applicable regulatory requirements.
 6. Contractor shall not use any "float suppression" techniques such as preferential sequencing or logic, special lead/lag constraints, or unjustifiably over-estimated activity durations in preparing its Contract Schedule (constraints for Contract Milestones only will be permissible), unless approved by Owner. All activities/milestones that are constrained, or contain start-to-start, finish-to-finish, or start-to-finish, or negative lag relationships, shall have an explanation in the activity log and the log shall be printed below the activity bar on all reports.
- E. When submitting initial Contract Schedule, Contractor shall attach a narrative report which explains Contractor's chosen method of determination and/or assumptions used for activity durations, its assumptions regarding crew sizes, equipment requirements and production rates, any potential areas of concern or specific areas requiring coordination it may have identified and any long-lead time materials or equipment in the Work. The submittal shall also include an electronic copy of the file.
- F. Time units for all Schedules shall be in work days, and no construction activity scheduled to commence within 60 days of the "Data Date" (date of Schedule calculation) shall have a duration greater than 5 work days. Construction activities scheduled to start more than 60 days of the Data Date shall have durations no greater than 20 work days.
1. Each activity shall be assigned an appropriate calendar, which signifies a 5, 6, or 7 day work week and acknowledges multiple daily work shifts where applicable.
- G. When completed, the Contract Schedule shall represent Contractor's plan for the Work, compliant with the Contract Milestones and other Contract Documents.
- H. Owner will notify Contractor of acceptance or of any changes necessary to the Contract Schedule within 10 days from the formal presentation by Contractor. Contractor shall effect any required changes to the Contract Schedule and resubmit it for acceptance within 3 days, certifying in writing that all information contained therein complies with the Contract requirements.
- I. Upon notification by Owner of acceptance of the Contract Schedule, Contractor shall prepare computer plots and printouts, and complete its submission of the Contract Schedule, which shall include the following:
1. Bar Charts for:
 - a. Contract Milestones only;
 - b. Summary Level (sorted by craft/trade and area);

- c. Detail (sorted by Dates);
 - d. Detail (sorted by Responsibility), and;
 2. Reports for:
 - a. Float (sorted low to high), and;
 - b. Resource Histogram.
 3. Provide all data files electronically via Newforma.
- J. Upon acceptance by Owner, the Contract Schedule shall become the baseline schedule against which all subsequent Schedule Updates shall be made, and against which Contractor shall report progress and variances and by which Owner shall measure Contractor's performance.
 1. All schedule updates shall be made to a separate electronic file that starts as a copy of the current Contract Schedule.
 2. The Contract Schedule shall only be modified to include settled change adjustments to schedule.
 3. Progress shall be tracked on the schedule update file.
- K. Contractor shall provide a time impact analysis, based on the Contract Schedule, for any applicable Contract Directives. This time impact analysis shall be provided within 10 days of receipt of the Contract Directive, and shall be accompanied by Contractor's proposal to effect recovery of any purported schedule impact.

1.05 SUBMITTAL SCHEDULE

- A. Contractor shall submit its Schedule of Critical Submittal Notification, as defined in Section 01330, to Owner within 48 hr. after Notice to Proceed for Owner's approval.
- B. Within 10 days after Notice to Proceed as specified in Section 01330, Contractor shall develop and submit its initial Schedule of Submittals for Owner's review. The Schedule of Submittals shall derive from and incorporate a complete listing of all submittals required by the Contract Documents for the duration of the Contract Time. Each submittal activity shall separately depict the duration Contractor has allocated for Owner's review. The allocated review durations are subject to adjustment by Owner.
 1. Contractor shall prepare its Submittal Schedule in coordination with development of the Contract Schedule logic, and shall ensure that Submittal Schedule activities are logically tied to the successor Material Procurement Schedule and Contract Schedule (work) activities.
- C. Owner's review of Contractor's Schedule of Submittals shall not confirm it as a complete listing of all submittals required by the Contract.
- D. The final Schedule of Submittals shall be submitted within 7 days of Owner's return of reviewed preliminary Schedule of Submittals to Contractor.
- E. Contractor shall identify in writing any submittals that it has determined must be initiated prior to the approval of the Schedule of Submittals to avoid any unrecoverable schedule impact or unwarranted relinquishing of float.
- F. After review by Owner, the Schedule of Submittals shall be updated on a weekly basis and a variance report generated including all activities in excess of 5 days behind schedule and proposed mitigation measures for each item on the variance report.
- G. The Schedule of Submittals shall also be updated and submitted with the monthly Contract Schedule Update submission. Changes from the last report shall be indicated with an asterisk.

1.06 MATERIAL PROCUREMENT SCHEDULE

- A. Within 14 days after Notice to Proceed as specified in Section 01330, Contractor shall develop and submit its Material Procurement Schedule for Owner's review. The Material Procurement Schedule shall incorporate all material or equipment required by the Contract having a lead time of 4 weeks or greater.
- B. Contractor shall prepare its Material Procurement Schedule in coordination with development of the Contract Schedule logic, and shall ensure that Material Procurement Schedule activities are logically tied to the precedent Submittal Schedule and successor Contract Schedule (work) activities.
- C. The Material Procurement Schedule shall be in tabular format, including the following at a minimum: Line No., Part Name/Description, Manufacturer's Part No., Drawing/Specification Reference, Quantity, Responsible Subcontractor, Purchase Order No., Purchase Order Date, Supplier Name, Supplier Contact, Supplier Phone No., Purchase Order Delivery Date, Field Need Date, Date of Last Contact, and Delivery Location.
- D. After review by Owner, the Material Procurement Schedule shall be updated on a weekly basis and a variance report generated including all activities in excess of 5 days behind schedule and proposed mitigation measures for each item on the variance report.
- E. The Material Procurement Schedule shall also be updated and submitted with the monthly Contract Schedule Update submission.
- F. Owner's review of Contractor's Material Procurement Schedule shall not confirm it as a complete listing of all materials required by the Contract.

1.08 COMPLETION LISTS AND PUNCHLISTS

- A. Completion lists:
 1. 30 days prior to Substantial Completion of an area, project component, construction package, and/or as defined by Owner, the Contractor shall walk the jobsite with Owner and develop a detailed Completion List.
 2. The Contractor shall submit the Completion List to the Owner for approval within 48 hr. after the job walk.
 3. The Completion List shall include a line item for each incomplete activity of each component to be ready for punch-listing.
 - a. Each line item shall include the line item number, project element, activity description, responsible company, responsible person and their cell phone number, start date, finish date, and comments.
 4. The responsible company/person listed shall be the actual party performing the work and not the Contractor's personnel, unless the Contractor is self-performing the Work.
 5. Once approved by Owner, the Contractor shall status the list at the beginning of each day and report to the Owner by noon each day, the total number of items, number complete, number remaining, and number of items that the approved list indicates should be done by the end of the shift.
- B. Punchlists:
 1. An area, zone, or component of the Scope of Work shall be deemed "Ready for Owner Punch-listing" once all Completion List activities are complete. The Contractor shall give Owner one week's advance notice of its forecast of completion so that a Punchlist walk can be coordinated.

2. Owner will conduct a Punchlist walk and provide a formal list to Contractor within 3 days after completion of walk. The Contractor shall start Punchlist work immediately based upon results and notes from the walk.
3. Using the same format as the Completion List, Contractor shall fill in all information and submit the Punchlist Schedule to Owner within 2 days of receipt. The comments column will be used for Owner sign-off of acceptance of the Punchlist items.
4. The Contractor shall status the list at the beginning of each day and report to the Owner by noon, the total number of items, number complete, number ready for Owner buy-off, and number to go.

1.09 SCHEDULE REVIEWS, UPDATES, AND REPORTING

A. Weekly reviews:

1. Owner and Contractor agree to conduct weekly reviews of the progress of all work activities using a four-week rolling schedule and compare that progress to the Contract Schedule, the Schedule of Submittals, and Material Procurement Schedule. The weekly schedule review shall include, at a minimum:
 - a. Four-Week Rolling Schedule:
 - (1) Contractor shall prepare its Four-Week Rolling Schedule immediately following database update/status and ensure that it accurately reflects progress of the Work. The Four-Week Rolling Schedule looks at the preceding week and the three weeks ahead.
 - (2) Contractor shall update/status electronic Contract Schedule database weekly prior to review. Contractor shall include Submittal Schedule and Material Procurement Schedule information linked to the Contract Schedule activity information in each update/status.
 - (3) When expanding activities to reduce maximum durations from 20 days to 5 days pursuant to Subparagraph 1.04.F, identify expanded activities so that the Contract Schedule activity they originate from is readily apparent. Do not allow the aggregate duration of the expanded activities to exceed the duration assigned to their parent activity in the Contract Schedule unless specifically allowed to do so by Owner during review.
 - (4) Review of all submissions, submittal reviews, fabrication/delivery status, work completed in the preceding week, all work in progress, and work schedule for the next 3 weeks.
 - (5) Review of all revisions, added or deleted work, and how those are being integrated into Contractor's work plan.
 - (6) Review of Contractor's interface and coordination with other work on the Project.
 - (7) Variance reports including all activities in excess of 5 days behind schedule and proposed mitigation measures for each item on the variance report. Variance reports shall be attached to Contractor's superintendent's Daily Report, with brief descriptions of remedial action taken against the variances noted thereon.
 - (8) Contractor shall attend review meetings prepared to discuss actual activity start and/or completion dates and any applicable variances, forecast activity start and/or completion dates and any applicable variances and progress of all activities underway at the time of the review.

- (9) During reviews, Contractor shall alert Owner to activities that are behind schedule, and identify all activities and Contract Milestones that are impacted by such variances. Contractor shall present to Owner, for review, proposed recovery plans to regain time lost due to variances from the Contract Schedule. All proposed recovery plans, whether verbal or written, will be included in the minutes of the review.
 2. Following review of the above and all other information relevant to the progress of the Work, Contractor shall adjust its work plan as required to assure compliance with the Contract Schedule. If the latest calculated Completion Date for any critical activity (total float less than or equal to 2 work days) does not fall within the time allowed by the Contract Schedule (irrespective of the cause of such variance), the sequence of work and/or performance of that work shall be revised by Contractor by means of utilizing concurrent operations, additional work force allocations, additional shifts, overtime, etc., until the schedule information produced indicates compliance with all Contract Milestones. The requirement for such additional work force allocations, additional shifts, overtime, etc., will not entitle Contractor to additional compensation except to the extent expressly provided for by the Contract or Change Order.
 3. At the subsequent Project Meeting called by Owner following the weekly schedule review, Contractor shall submit an updated Four-Week Rolling Schedule indicating any remedial measures necessary to maintain compliance with the Contract Schedule.
- B. Monthly reviews:
1. Prior to submission of the Contractor's monthly payment application, Owner and Contractor agree to conduct monthly schedule reviews to determine: "planned" versus "actual" progress to date; compliance with Contract submittal requirements, Contract Milestones and accepted Contract Schedule; and determination of any changes to the work plan or implementation which must be made by Contractor to comply with the Contract Schedule. The monthly schedule review shall include, at a minimum:
 - a. All requirements listed above of Weekly Reviews. Monthly update/status of electronic database shall include recording of all Actual Start Dates and Actual Finish Dates and status of activities in progress.
 - b. Review of "planned" versus "actual" work force allocations and progress for the preceding month.
 - c. Review of revisions, added or deleted Work, and how those elements are being integrated into the Contractor's work plan.
 - d. Review of all impacts to the work during the preceding month and to date, Contractor's evaluation of those impacts and any recovery plans or remedial actions required to comply with the Contract Schedule.
 - e. Verify that schedule progress ties to progress stated on the Schedule of Values for Contractor payment.
 - f. Review of Contractor's interface and coordination with work by Others on the Project.
 2. Following review of the above and all other information relevant to the progress of the Work, Contractor shall adjust its work plan as required to assure compliance with the Contract Schedule.
 - a. Incorporate respective changes into the update schedule, Submittal Schedule, Material Procurement Schedule, and Schedule of Values. Submit them with the Contract Schedule and monthly payment application.

-
- b. The requirement for additional work force allocations, additional shifts, overtime, etc., will not entitle Contractor to additional compensation except to the extent expressly provided for by the Contract or Change Order.
 - c. Owner reserves the right to withhold the monthly payment due Contractor until an acceptable, corresponding monthly schedule submittal is received.
3. Upon completion of the monthly schedule review, the Contractor shall incorporate comments to the Contract Schedule, Update Schedule, and Schedule of Values and submit them with its monthly payment application. The update shall incorporate actual status to date and include the following:
 - a. Computer plotted time-scaled Contract Schedule
 - b. Bar Charts for:
 - (1) Contract Milestones only (Baseline vs. forecast);
 - (2) Summary Level (sorted by craft/trade and area);
 - (3) Detail (sorted by Dates);
 - (4) Detail (sorted by Responsibility), and;
 - c. Reports for:
 - (1) Variance (Baseline vs. forecast);
 - (2) Float (sorted low to high), and;
 - (3) Resource Histogram.
 - d. Provide all data files electronically via NewForma.
- C. Schedule revisions:
1. Implementation of revised schedule logic and/or activity duration estimates for updating the Contract Schedule or other interim schedule whether furnished by Contractor or Owner do not constitute an extension of the Contract Time, relaxation of Contract Milestones or basis for a change to the Contract Sum. Such revisions are for the purpose of maintaining the accuracy of the Contract Schedule's representation of the work to be accomplished and to present best duration estimates for work yet to be performed.
 2. If it becomes necessary for Owner to furnish the suggested logic and/or duration revisions as a result of Contractor's failure to furnish acceptable data, and if Contractor has objections to those revisions furnished, it shall so advise Owner in writing within 3 days, providing also an acceptable alternate plan. If Contractor fails to so note any objections and provide an acceptable alternate plan, or if Contractor implements the revisions provided by Owner without so noting any objections, Contractor will be deemed to have waived all objections and concurred with the suggested logic/duration revisions provided by Owner.
 3. In updating the Contract Schedule, Contractor shall make no modifications to Activity ID numbers in the accepted Contract Schedule, schedule calculation rules/criteria or the Activity Coding Structure provided by Owner without the explicit written permission of Owner, which permission Owner may withhold at its sole discretion.
-

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01325
Scheduling of Work
Date: March 14, 2023

PART 2 – PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION 01325

SECTION 01330
SUBMITTAL PROCEDURES**PART 1 – GENERAL****1.01 SECTION INCLUDES**

- A. Prepare, submit and maintain schedule of submittals that designates anticipated or actual date(s) for submittal, and date(s) reviewed and returned.
- B. Prepare and submit shop drawings, product data, and office and field samples required by Specifications.
- E. Compile and submit operating and maintenance data.
- F. Prepare, submit and maintain all submittals pertaining to scheduling of the Work.
- G. Prepare, submit and maintain such other plans, programs or other submittals as are required by Contract Documents.
- H. All submittals except for physical sample shall be submitted electronically in .pdf format.

1.02 MANUFACTURER'S CERTIFICATIONS

- A. Where required by the Specifications, submit manufacturer's certifications, in duplicate, certifying that products meet or exceed specified requirements, executed by a responsible officer of the actual manufacturer (not a distributor or other sales representative).
- A. Written reports of all testing and check-outs are required to be submitted to the Owner's Representative.
- C. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Owner's Representative.
- D. Certificates shall state that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

1.03 SCHEDULE OF SUBMITTALS

- A. See Section 01325 for description of and requirements for preparation and maintenance of the Schedule of Submittals.
- B. All references herein to "days" shall be construed to mean calendar days.

1.04 SHOP DRAWINGS

- A. Description: Original drawings prepared by Contractor, subcontractor, supplier, or distributor, which illustrates some portion of the work, including, but not necessarily limited to, fabrication, layout, setting, or erection details.
- B. Cross-reference shop drawings to Drawings and Specifications and detail all work included. Indicate dimensions, materials, fastenings, anchorages, joining's, sealing, backing, utility requirements, rough-in, and adjacent related conditions.
- C. Coordinated drawings:

1. Contractor shall prepare separate (from Contract Drawings) composite, detailed coordination drawings consisting of plans, elevations, and sections as required to clearly delineate and show the relationship between all utilities, mechanical and electrical work. These drawings shall include and show due consideration for utilities, architectural elements and structural elements (including excavations and shoring, utility vaults, manholes, and foundations for permanent and temporary construction) and identify potential interface trouble spots.
2. Individual drawings for any single element will not be accepted or reviewed unless and until the coordinated drawings have been previously reviewed and accepted.
3. The purpose for the coordinated drawings is to determine, for the mutual benefit of all concerned, the precedence of trades' work and the allocation of available physical space for installation of trades' work.
4. Generation and submission of coordination drawings shall be made in a timely manner and in support of the Contract Schedule.

1.05 PRODUCT OR CATALOG DATA

- A. Manufacturer's standard drawings modified to delete non-applicable data or include applicable data.
- B. Manufacturer's catalog sheets, brochures, diagrams, schedules, charts, illustrations, and other standard descriptive data.
 1. Mark up each copy to identify pertinent materials, products, or models applicable to the project using a distinct, bold "cloud" outline. Clearly indicate which items shown are not for review.
 2. Clearly mark up each copy of the submittal data to identify the Section, page number, and Article of the Specifications to which it is referenced.
 3. Show dimensions and clearances required, performance characteristics and capacities, wiring diagrams, and controls.
 4. Submittals for each manufactured item shall be current manufacturer's descriptive literature of cataloged products, equipment drawings, diagrams, performance and characteristic curves and catalog cuts.
 5. Handwritten and typed modifications and other notations not part of the manufacturer's preprinted data will result in the rejection of the submittal.
 6. Should the manufacturer's data require supplemental information for clarification, the supplemental information shall be submitted as specified for certificates of compliance.
 7. Photographs of existing installations are unacceptable and will be returned without approval.
- C. Manufacturer and catalog data shall include the manufacturer's name, trade name, place of manufacture, catalog model or number, nameplate data, size, layout dimensions, capacity, project specification and technical paragraph reference.
 3. Submittals shall also include applicable federal, military, industry, and technical society publication references, years of satisfactory service and other information necessary to establish contract compliance of each item to be provided.
- D. Manufacturer's instructions
 1. Where installation procedures or part of the installation procedures are required to be in accordance with manufacturer's instructions, submit printed copies of those instructions prior to installation.
 2. Installation of the item shall not proceed until manufacturer's instructions are received.
 3. Failure to submit manufacturer's instructions shall be cause for rejection of the equipment or material.
- E. Manufacturer's certificates

1. Submit manufacturer's certifications as required for products, materials, finishes and equipment as specified in each technical section of these Specifications.
 2. Certificates from material suppliers are not acceptable.
 3. Preprinted certifications and copies of previously submitted documents will not be acceptable.
 4. The manufacturer's certifications shall name the appropriate products, equipment or materials and the publication specified as controlling the quality of that item.
1. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as," "achieve the same end use and results as materials formulated in accordance with the referenced publications," or "equal or exceed the service and performance of the specified material."
 2. Certifications shall simply state that the item conforms to the requirements specified.
 3. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance.

F. Reference Standard Compliance

1. Where equipment or materials are specified to conform to industry and technical society reference standards, submit proof of such compliance.
2. The label or listing by the specified organization shall be acceptable evidence of compliance.

1.06 SAMPLES

- A. Physical samples to illustrate materials, equipment or workmanship, and to establish standards by which completed work will be judged.
1. Office samples of sufficient size and quantity to clearly illustrate:
 - a. Functional characteristics of product or material, with integrally-related parts and attachment devices.
 - b. Full range of color samples.
 2. The samples will be kept by the Owner's Representative's Representative, at the Owner's Representative's option.

1.07 OPERATING AND MAINTENANCE DATA

- A. Prior to close-out of the Contract, the Contractor shall furnish to the Owner's Representative not less than three (3) bound copies of Operation and Maintenance (O&M) Manuals and 1 CD containing an electronic image of each and every page of the O&M manual in .pdf format, describing the proper operation and maintenance of all equipment and systems provided or installed by the Contractor as part of the Work. Information contained in the manuals shall include, but shall not be limited to, the following information as it pertains to each piece of equipment or system furnished:

1. Manufacturer's specification
 2. Manufacturer's installation instructions
 3. Manufacturer's operating instructions
 4. Manufacturer's maintenance instructions
 5. Equipment programming manuals and software
 6. Any serial numbers unique to individual machines, equipment or devices.
 7. Complete listing of equipment/system replacement parts, including part numbers.
 8. Name and telephone number of source for equipment/system replacement parts.
 9. Complete wiring and/or piping diagrams (as applicable).
 10. Manufacturer's written warranty
 11. Manufacturer's recommended spare parts list including lead tie information
 12. Certification of final inspection from Reedy Creek Improvement District
 13. Certificate of occupancy.
 14. Name and telephone number(s) of local qualified service representative.
- B. General:
1. O&M Manuals shall include three (3) up-to-date copies of all shop drawings, product data, and other information described in this Section.
 - a. Make required submittals prior to scheduled completion of project.
 - b. Submittals made by permanent reproduction copy equipment from typewritten or typeset originals.
 - c. Pre-punch 8-1/2 in. x 11 in. sheets for standard three ring binders, and provide high-quality, black plastic, hardback, loose-leaf binders with clear pocket for inserts on the covers and spines.
 - d. Submit larger sheets in rolled and protected packages.
 - e. Submittals on sepias will not be accepted.
- C. Compilation:
1. Receive shop drawings, brochures, materials lists, technical data of all types, warranties, guarantees, and other pertinent information from subcontractors and vendors, and assemble, catalog, and file information in loose-leaf, hardback, three-ring binders.
 2. Copy pertinent sheets of Drawings such as electrical and control diagrams, panelboard schedules, mechanical and electrical floor plans, and fold and insert them into the loose-leaf binders along with the other information.
- D. Submittal format: (Provide each of the following items, as applicable, for each required item or system. Requirements will vary, depending on the equipment. Refer to specific Specification Section requirements.)
1. Item: (Use appropriate Section title and submittal number)

2. System description: (Provide a detailed narrative description of each system, describing function, components, capacities, controls and other data specified, and including the following):
 - a. Number of.
 - b. Sizes.
 - c. Type of operation.
 - d. Detailed operating instructions, including start-up and shut-down of each system, with indications for position of all controls, as applicable.
3. Wiring diagrams: (Complete wiring diagrams for internally wired components including controls).
4. Operating sequence: (Describe in detail).
5. Manufacturer's data: (Provide catalog data sheets, specifications, nameplate data, and parts list).
6. Preventative maintenance: (Provide manufacturer's detailed maintenance recommendations).
7. Troubleshooting: (Provide manufacturer's sequence for troubleshooting procedures for operational problems).
8. Extra parts: (Provide a listing of extra stock parts furnished as part of the Contract).
9. Warranties: (Provide specific manufacturer's warranty). List each component and control covered, with day and date warranty begins, date of expiration, and name, address and telephone number of person to contact regarding problems during warranty period.
10. Directory: (Provide names, addresses, and telephone numbers of General Contractor, its subcontractors, suppliers, installers, and authorized service and parts suppliers). Format shall be as provided in Attachment C to the Project Manual:

1.08 SUBMITTALS RELATED TO SCHEDULING OF THE WORK

- A. Refer to Section 01325 for description of and requirements for preparation and submittal of submittals pertaining to scheduling of the Work.
- B. Milestone Schedule: Submit within 10 days after Notice to Proceed (hereinafter referred to as NTP, which shall have the same meaning as Date of Commencement as used in Article 8 of the General Conditions of the Contract for Construction).
- C. Initial Schedule of Submittals: Submit within 14 days after NTP.
- D. Initial Material Procurement Schedule: Submit within 21 days after NTP.
- E. Initial Contract Schedule: Submit within 28 days after NTP.

1.09 SUBMITTALS OF PLANS, PROGRAMS AND RELATED SUBMITTALS

- A. Payment and Performance Bonds: Submit immediately upon Contract execution.
- B. Initial (major) Subcontractor List: Submit within 5 days after NTP.
- C. Subcontractor List: Submit within 28 days after NTP, and update as required.

NOTE: In no case will a subcontractor be permitted to begin on-site operations if that subJCB Construction Inc. has not been submitted on the current Subcontractor List at least 5 days prior.

- D. Contractor's Storm Water Management Plan: Submit within 14 days of NTP.

- E. Construction safety program: Submit a copy of Contractor's "site specific program" in conformance with Article 10 of the General Conditions of the Contract for Construction within 21 days after NTP.
- F. Fire safety program: Submit within 21 days after NTP.
- G. Weather preparedness program: Submit within 28 days after NTP.
- H. Traffic control and logistics plan: Submit within 28 days of NTP.
- I. Hazardous waste management plan: Submit within 21 days of NTP.
- J. Quality control plan: Submit within 28 days of NTP.
- K. Sequence of operations plan. Submit within 28 days of NTP.

1.10 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data, and samples for compliance prior to submittal to Owner's Representative.
 - 1. Verify field measurements, field construction criteria, catalog numbers, and similar data.
 - 2. Coordinate each submittal with the requirements of the Work and Contract Documents.
 - 3. Contractor must have reviewed and stamped submittals that are furnished to them by their subcontractors or materials suppliers **PRIOR TO** submitting them to the Owner's Representative.
- B. Make all submittals at least 21 days prior to the date when the returned, reviewed and approved submittal will be needed to maintain the Contract Schedule.
 - 1. Within 5 days after the Notice to Proceed, Contractor shall identify to Owner's Representative those specific submittals which are critical to the anticipated sequence/flow of work and require an expedited Owner's Representative review/approval as part of its Initial Material Procurement Schedule submittal. Contractor shall identify any other critical submittals within 7 days of making its Initial Material Procurement Schedule submittal. Owner's Representative will coordinate with Contractor to expedite those submittals reviews so identified (subject to verification by Owner's Representative) in less than 10 days. However, if Contractor requests an expedited submittal turnaround after this aggregate 12-day period of "Critical Submittal Notification" Owner's Representative reserves the right to reject such request if its resource commitments do not allow (since it will be allocating such resources based on the extent of submittals so identified by contractor in that 12-day period).
- C. Contractor's responsibility for errors and omissions in submittals or deviations from Contract Documents shall not be relieved by Owner's Representative's review of submittals.
- D. Contractor's responsibility for any unauthorized deviations from requirements of Contract Documents made in submittals is not relieved by Owner's Representative's review of submittals.
- E. Do not begin work that requires submittals until submittals have been returned with Owner's Representative's (or consultant's) stamp and initials or signature indicating review and disposition.
- F. After Owner's Representative's review and return, promptly distribute copies to all affected parties.
- G. Notify Owner's Representative in writing of proposed deviations from requirements of Contract Documents at time submittals are made.
 - 1. A "deviation" shall be construed to mean a minor change to the sequence indicated on Drawings or specified.
 - a. Deviation shall not be construed to mean substitutions or product options.

2. In addition to notifying Owner's Representative in writing of deviations, circle deviations on shop drawings.
 3. The failure of the Contractor to clearly denote deviations within a submittal in writing on company stationery (not a transmittal), and subsequently not addressed in the Engineer/Architect's review of the submittal, and thereby installed by the Contractor, may constitute the removal of the applicable work item(s) and replacement in accordance with the Contract Documents at no additional cost to the Owner.
- H. The Owner's Representative may require submittals for other shop drawings or procedures.

1.11 SUBMITTAL REQUIREMENTS

- A. Accompany submittals with transmittal letter in duplicate, containing:
1. Date.
 2. Project title and number.
 3. Contractor's name and address.
 4. Description of data contained in submittals.
 5. Listing of all letters containing description of deviations from Contract Documents.
 6. Other pertinent data.
 7. Appropriate identification ("flagging") for the following occurrences:
 - a. Deviations, with separate, accompanying detailed description of proposed deviation including corresponding changes in Contract Sum, Contract Time, or Construction Schedule Milestones.
 - b. Submittals requiring expedited or urgent review and return, or not in conformance with specified submittal requirements.
 - c. Substitutions, where same have been approved in accordance with Section 01630.
- B. Each submittal shall be packaged separately and covered by a separately, single-subject transmittal letter. Do not combine multiple submittals in a single package or transmittal letter.
- C. Submittals shall include:
1. Date and revision dates.
 2. Project title and number.
 3. Number identification (i.e., submittal number) on every sheet, page or item, as applicable.
 4. The names of: Owner's Representative, Owner's consultants, Contractor, subcontractor, supplier, manufacturer, and separate detailer when appropriate or pertinent.
 5. Identification of product or materials on every sheet, page or item, as applicable.
 6. Relationship of product to adjacent structure, utilities, services or materials.
 7. Clearly identified field dimensions, when known.
 8. Specification Section number and paragraph(s), and/or drawing references to which it pertains.
 9. Applicable standards, such as ASTM and others.
 10. A blank space, 4 in. x 3 in., for Owner's Representative's stamp.
 11. Identification and description of deviations from Contract Documents.

12. Request for selection of colors, patterns, and textures for materials contained in submittals.

NOTE: Provide each and every item of finish, including color, pattern and texture as selected or approved by Owner's Representative.

13. Contractor's stamp, initialed or signed, certifying review of submittal, compliance with Contract Documents, and verification of field measurements when applicable. Additionally, material certifications, as required by Specifications, shall be notarized. Contractor's stamp shall read "This submittal has been reviewed for conformance to Drawings and Specifications."

- D. Contractor shall make submittals as indicated in the flow chart provided at the end of this section.

1.12 RESUBMITTAL REQUIREMENTS

- A. Shop drawings and coordination drawings:

1. Review drawings and indicate revision date as required, and resubmit as specified for initial submittal. Indicate clearly on transmittal letter that item is a re-submittal.
2. Indicate on drawings all changes that have been made since the initial submittal using a "cloud" and a "delta" revision symbol. Make notation of revision in title block.
3. Further indicate on drawings, distinct from the changes requested by Owner's Representative, all changes which have been made which are different than those requested by Owner's Representative.

- B. Product data, samples and other submittals: Submit new data and samples in accord with same criteria required for initial submittals.

1. Review submittals and indicate revision date as required, and resubmit as specified for initial submittal. Indicate clearly on transmittal letter that item is a re-submittal.
2. Indicate on submittals all changes, which have been made since the initial submittal using a "cloud" and a "delta" revision symbol.
3. Further indicate on submittals, distinct from the changes requested by Owner's Representative, all changes which have been made which are different than those requested by Owner's Representative.

1.13 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

- A. Distribute copies of shop drawings and product data, which carry Owner's Representative's stamp to:

1. Contractor's file, job site file, and product record documents file.
2. Subcontractor's, suppliers, and fabricators as appropriate.

- B. Distribute samples as directed.

1.14 OWNER'S REPRESENTATIVE'S RESPONSIBILITIES

- A. Review submittals with reasonable promptness on basis of design concept of project and information contained in Contract Documents.

1. Attention is directed to the fact that Owner's Representative's and Architect/Engineer's review is only to check for general conformance with the design concept of the project and general compliance with Contract Documents. No responsibility is assumed by Owner's Representative for correctness of dimensions, details, quantities, procedures shown on shop drawings, or submittals.

2. Omission in shop drawings of materials indicated in Contract Drawings, mentioned in Specifications, or required for proper execution and completion of Work, does not relieve Contractor from responsibility for providing such materials. Contractor is responsible for accuracy, dimensions, quantities, strength of connections, coordination with various trades, and conformance to project requirements.
 3. Review of a separate or specified item does not necessarily constitute acceptance of an assembly in which item functions.
- B. Furnish materials selections, and selection or approval of each and every item of color, pattern, and texture of materials contained in the project.
- C. Affix stamp and initials or signature acknowledging review of submittal as follows:
1. NO EXCEPTIONS TAKEN. If the review indicates that the material, equipment or work method complies with the project manual, submittal copies will be marked "NO EXCEPTIONS TAKEN." In this event, the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
 2. MAKE CORRECTIONS NOTED. DO NOT RESUBMIT. If the review indicates limited corrections are required, copies will be marked "MAKE CORRECTIONS NOTED. DO NOT RESUBMIT." The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. Where submittal information will be incorporated in O&M data, a corrected copy shall be provided.
 3. MAKE CORRECTIONS NOTED AND RESUBMIT. If the review reveals that the submittal is insufficient or contains incorrect data, copies will be marked "MAKE CORRECTIONS NOTED AND RESUBMIT." Except at his own risk, the Contractor shall not undertake work covered by this submittal until it has been revised, resubmitted and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED. DO NOT RESUBMIT. "
 4. REJECTED - RESUBMIT IN ACCORDANCE WITH CONTRACT DOCUMENTS. (Re-submittal of submittals shall be made within 14 days.) If the review indicates that the material, equipment, or work method does not comply with the project manual, copies of the submittal will be marked "REJECTED - RESUBMIT IN ACCORDANCE WITH CONTRACT DOCUMENTS." Submittals with deviations that have not been identified clearly may be rejected. Except at his own risk, the Contractor shall not undertake the work covered by such submittals until a new submittal is made and returned marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED. DO NOT RESUBMIT."
 5. Void.
 6. Not reviewed (record only).
- D. Return submittals to Contractor for distribution.

PART 2 – PRODUCTS
NOT USED

PART 3 – EXECUTION
NOT USED

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01330
Submittal Procedures
Date: March 14, 2023

SECTION 01340
SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. *Submit shop drawings, product data, samples and other items as required by respective Specification Sections.*
- B. Compile and submit maintenance manual data.

1.02 SCHEDULE OF VALUES

- A. Submit a trade payment breakdown for all Work. List each category of work separated as to labor and materials for the total value of each trade, main element and cost center (as defined by Owner); sum total of which shall be equal to the Contract Price.
- B. Refer to Section 01370 for additional requirements.

1.03 SHOP DRAWINGS

- A. Submit original drawings prepared by Contractor, subcontractor, supplier or distributor, which illustrates portions of the work, including but not limited to fabrication, layout, setting or erection details to Owner's Representative for review and approval.
- B. Cross reference shop drawings to Contract Drawings and Specifications and detail all work included. Indicated dimensions, materials, fastening, anchorages, joining, sealing, backing, utility requirements, rough-in, and adjacent related conditions. Coordinate submittals of related items.
- C. Identify the "Project Name" on each shop drawing.

1.04 PRODUCT OR CATALOG DATA

- A. Submit manufacturer's standard drawings modified to delete non-applicable data or include applicable data.
- B. Submit manufacturer's catalog sheets, brochures, diagrams, schedules, charts, illustrations and other standard descriptive data.
 - 1. Mark each copy to identify pertinent materials, products or models.
 - 2. Show dimensions and clearances required, performance characteristics and capacities, wiring diagrams and controls.
 - 3. For each item to be furnished, indicate on each catalog sheet, brochure, diagram chart, or other descriptive data the applicable referenced Specification Section number and Paragraph.

1.05 SAMPLES AND MOCK-UP

- A. Submit physical samples to illustrate materials, equipment or workmanship, and to establish standards by which completed work will be judged.

1. Office samples of sufficient size and quantity to clearly illustrate:
 - a) Functional characteristics of product or material, with integral related parts and attachment devices.
 - b) Full range of color samples.
2. Field samples and mock-ups:
 - a) Erect at job site at location acceptable to Owner.
 - b) Construct each sample or mock-up complete, including work of all trades required in finished work.

1.06 MANUFACTURER'S CERTIFICATES

- A. Submit three (3) copies of certificates in accordance with requirements of individual Specification Sections.

1.07 SUBMITTAL REQUIREMENTS/PROCEDURES

- A. Within five (5) calendar days after award of Contract, submit a list of shop drawings by Specification Section, and include a list of dates submittals are expected to be made.

Within ten (10) calendar days the Contractor shall submit ALL submittals to the Owner's Representative for approval.
- B. Deliver submittals at established times before the dates that approved submittals will be needed.
 1. Verify with the Owner's Representative required timing and dates.
- C. Procedure for submittals, including number and types of copies for shop drawings, catalog cuts, certifications and samples shall be as indicated on flow charts provided by Owner's Representative.
- D. Contractor must have reviewed and stamped submittals that are furnished to them by their subcontractors or materials suppliers **PRIOR TO** submitting them to the Owner's Representative.
- E. In addition to the usual, or normal, shop drawings, submit the following for approval when requested:
 1. Sequence of operations
 2. Safety and Hazard Communications program
 3. Fire protection program
 4. Weather protection program
 5. Site drainage and erosion control plan
 6. Maintenance of traffic plan
- F. Owner may require submittals for other shop drawings or procedures.
- G. Accompany submittals with a cover letter in duplicate, containing:
 1. Date.
 2. Project title and number.
 3. Contractor's name and address.

4. Description of data contained in submittals.
5. Listing of any letters containing description of deviations from Contract Documents.
6. Other pertinent data.

H. Submittals shall include:

1. Date and revision dates.
2. Project title and number.
3. The names of: Owner, Owner's consultants, Contractor, subcontractor, supplier, manufacturer, and separate detailer, when appropriate or pertinent.
4. Identification of product or materials.
5. Relationship of product to adjacent structure or materials.
6. Clearly identified field dimension, when known.
7. Specification Section number or numbers.
8. Applicable standard, such as ASTM or other.
9. A blank space, 4 inches x 2 inches, for the Owner's Representative's (or consultant's) stamp.
10. Identification and description of deviations from Contract Documents.
11. Request for selection of colors, patterns, textures for materials contained in submittals.

NOTE: Provide each and every item of finish, including color, pattern and texture as selected or approved by Owner.

12. Contractor's stamp, initialed or signed, certifying to review of submittal, compliance with Contract Documents, and verification of field measurements when applicable.

I. Number of copies of submittals

1. Contractor will submit an electronic copy to the Owner's Representative for review. Electronic approval will be sent back to the Contractor for his use.

J. Number of samples

1. Three (3) samples of each sample will be submitted to the Owner for review. The actual samples will not be returned to the Contractor, but the results of the review will be transmitted.

1.08 RESUBMITTAL REQUIREMENTS

A. Shop drawings:

1. Review drawings, indicate revision date as required, and resubmit as specified for initial submittal.
2. Indicate changes on drawings which have been made other than those requested by Owner.

B. Product data and samples: Submit new data and samples as required for first submittals.

1.09 DISTRIBUTION OF SUBMITTALS AFTER REVIEW

A. Distribute copies of shop drawings and product data which carry Owner's stamp to:

1. Contractor's file, job site file, and product record documents file.
2. Contractor's subcontractors, suppliers, and fabricators as appropriate.

REEDY CREEK IMPROVEMENT DISTRICT
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Section 01340
Shop Drawings, Product Data and Samples
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3. Other prime contractors.
- B. Distribute samples as directed.

1.10 CONTRACTOR'S RESPONSIBILITIES

- A. Review shop drawings, product data and samples prior to submission to Owner's Representative.
- B. Verify field measurements, field construction criteria, catalog numbers, and similar data.
- C. Coordinate each submittal with work of the project and Contract Documents.
- D. Contractor's responsibility for errors and omissions in submittals or deviations from Contract Documents is not relieved by Owner's review of submittals.
- E. Contractor's responsibility for deviations in submittals from Contract Document requirements is not relieved by Owner's review of submittals, unless Owner gives written approval of specific deviations.
- F. Notify Owner's Representative, **in writing**, of deviations from requirements of Contract Documents at time submittals are made.
 1. A 'deviation' shall be construed to mean a minor change to the items or sequence indicated on the Drawings or in the Specifications.
 - a) A 'deviation' is not intended to allow substitutions or product options.
 2. In addition to notifying Owner's Representative in writing of deviations, circle deviations on shop drawings.
 3. The failure of the Contractor to clearly denote deviations within a submittal **IN WRITING ON COMPANY STATIONARY (NOT A TRANSMITTAL)**, and subsequently is not addressed in the Engineer-of-Record's review of the submittal, and thereby installed by the Contractor, may constitute the removal of the applicable work item(s) and replacement in accordance with the Contract Documents at **NO ADDITIONAL COST TO THE OWNER**.
- G. Do not begin any work which requires submittals until submittals have been returned with the Owner's Representative's (or consultant's) stamp and initials or signature indicating review and approval.
- H. After Owner's Representative's review, distribute copies.

1.11 OWNER'S RESPONSIBILITIES

- A. Review submittals with reasonable promptness on basis of design concept of project and information contained in Contract Documents.
 1. Attention is directed to the fact that Owner's Representative's review is only to check for general conformance with the design concept of the project and general compliance with Contract Documents. No responsibility is assumed by Owner for correctness of dimensions, details, quantities, procedures shown on shop drawings or submittals.
 2. Omission in shop drawings of any materials indicated in Contract Drawings, mentioned in

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Specifications, or required for proper execution and completion of Work, does not relieve the Contractor from responsibility for providing such materials as indicated in Contract Documents.

3. Approval of a separate or specified item does not necessarily constitute approval of an assembly in which item functions.
- B. Furnish materials selections, and selection or approval of each and every item of color, pattern and texture of materials contained in the project.
- C. Affix stamp and initials or signature acknowledging review of submittal as follows:
1. Approved as drawn.
 2. Approved as noted.
 3. Approved as corrected. Resubmit.
 4. Not approved or Rejected. Resubmit.
- D. Return submittals to Contractor for distribution.

END OF SECTION 01340

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SECTION 01370
SCHEDULE OF VALUES

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

- A. Submit to the Owner's Representative two (2) Schedule of Values for each major and/or minor element of work, main element, or cost center, wherein all schedule of value components will total the Contract Sum.
 - 1. The Owner's Representative will provide format for submittal of Schedule of Values.
- B. Payment requests will not be approved until the Schedule of Values is found acceptable to the Owner and the Owner's Representative.
- C. Upon request by the Owner's Representative, support values in Schedule of Values with data that will substantiate their correctness.
- D. Schedule of Values is intended to be used only as a basis for Contractor's application for payment.
- E. Include with Schedule of Values a listing of quantities of designated materials.
- F. The Contractor's monthly schedule is to be submitted with the application for payment. The Application for Payment **will not** be processed until the schedule update is received.

1.02 FORM OF SUBMITTAL

- A. Except as directed otherwise by the Owner's Representative, use Table of Contents of Specifications as basis for format for listing cost for work under Division Nos. 1 through 16.
- B. Identify each line with number and title as listed in Table of Contents of Specifications.
- C. The Schedule of Values shall incorporate the cost center codes and funding sources provided by the Owner. Pay applications must reflect these cost codes and funding source splits.

1.03 PREPARING SCHEDULE

- A. Itemize separate line item cost for each of following general cost items:
 - 1. Permits and fees.
 - 2. Performance and payment bonds.
 - 3. Field coordination: Supervision and layout, including engineering.
 - 4. Temporary construction facilities.
 - 5. Mobilization and demobilization.
 - 6. Project Management

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7. Record Drawings.
 - a. The Contractor will be required to divide up the Schedule of Values item on a monthly basis for payment of this work after monthly submittal and review. (See Section 01720 - Project Record Documents.)
 8. Monthly schedule updates.
 9. Submittals and Shop Drawings.
 10. Daily Reporting.
- B. Itemize separate line cost for work required by each Section of Specification broken down as required by the Owner's Representative for segments of the Project by ramps, bridges, etc.
- C. Breakdown costs to indicate:
1. Delivered cost of product, with taxes paid.
 2. Total installed cost, with overhead and profit.
 3. Make sum of total costs of all items listed in schedule equal to total Contract Sum.
 4. Submit separate Schedule of Values for costs involved with Owner-furnished products.

1.04 STORED MATERIALS

- A. To assure that certain critical materials will be available for incorporation into the Work when needed, Contractor may request approval for payment of those certain materials suitably stored at job site before they are installed. Proof of Ownership and certificates of insurance will also be required for stored material prior to payment being considered.
- B. Unless otherwise approved by the Owner, no off-site stored materials will be considered for payment prior to installation.

1.05 REVIEW AND RESUBMITTAL

- A. After review by Owner's Representative, revise and resubmit schedule (and stored materials) as required.

END OF SECTION 01370

**SECTION 01410
REGULATORY REQUIREMENTS**

PART 1 – GENERAL

1.01 APPLICABLE REGULATIONS

- A. Comply with the latest edition of the Epcot Codes, (www.state.fl.us/rcid).
 - a. Epcot Building Code
 - b. Epcot Mechanical Code
 - c. Epcot Gas Code
 - d. Epcot Plumbing Code
 - e. Epcot Electrical Code
 - f. Epcot Fire Prevention Code
 - g. Epcot Energy Efficiency Code
 - h. Epcot Accessibility Code

- B. Comply with the provisions of the following statutes, codes, rules & regulations:
 - 1. Florida Thermal Efficiency Code (Florida Statute 553.900).
 - 2. Florida Lighting Efficiency Code (Florida Statute 553.89).
 - 3. Florida Americans With Disabilities Accessibility Implementation Act (Florida Statute Sections 553.501-553.513), as enacted Oct. 1, 1997.
 - 4. Orange County Health Department: Chapter 10 - Florida Rules and Regulations.
 - 5. Florida Administrative Code Chapter 10
 - 6. South Florida Water Management District Regulations.
 - 7. Florida Department of Environmental Protection, Florida Administrative Code, Chapter 62-1 through 62-814.
 - 8. Environmental Protection Agency's National Pollutant Discharge Elimination System (NPDES) water quality parameters.
 - 9. RCID Policies and Procedures for Metering, Cross Connections, Backflow Prevention, and Reclaimed Water
 - 10. RCID Utility Specifications and Construction Standards
 - 11. RCES Electrical Construction Specifications
 - 12. RCID HPG/MPGNatural Gas New Construction Standards

END OF SECTION 01410

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SECTION 01420 REFERENCES

PART 1 – GENERAL

1.01 ABBREVIATIONS AND SYMBOLS

- A. The abbreviations and symbols used on Drawings will be identified and defined in the abbreviations and symbols lists found in the 100 Series Drawings.
- B. The abbreviations and symbols used in the Specifications will be the standard abbreviations and symbols used in commerce, or the standard abbreviations and symbols of the engineering discipline in which found.

1.02 REFERENCE STANDARDS AND SPECIFICATIONS

- A. All work shall be performed in accordance with all Articles of the Reedy Creek Improvement District General Conditions of the Contract for Construction.
- B. For compliance with laws, see the Reedy Creek Improvement District General Conditions of the Contract for Construction, Section 5.6.
- C. Perform work in accordance with latest installation and manufacturing practices. Conform to the "Manual of Accident Prevention in Construction" by The Associated General Contractors of America, Inc.
- D. Unless specifically noted to the contrary, conform with and test in accordance the Reedy Creek Improvement District General Conditions of the Contract for Construction, Section 5.7.
- E. For standards conflicts, see the Reedy Creek Improvement District General Conditions of the Contract for Construction, Section 2.1.3.
- F. In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should," "could" or "may," wherever they appear. Interpret references in these publications to the "authority having jurisdiction," the "Building Official," the "Structural Engineer," the "Architect/Engineer" or words of similar meaning, to mean the Owner.
- G. Comply with the applicable portions of standards and specifications published by the technical societies, institutions, associations, and governmental agencies referred to in Specifications.
- H. Unless directed otherwise, comply with referenced standards and specifications' latest revision in effect at the time Contract is executed, unless otherwise identified by date.
 - 1. Exception: Comply with issues in effect as listed in governing legal requirements.
- J. Refer to Construction Specifications Institute, "Sources of Construction Information", TD-2-5, for the various organizations or references which may appear in the Specifications, along with their respective acronyms.
- K. Specifications may contain references in addition to those listed therein. Please notify Owner's Representative if references are encountered which are not listed.

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1.03 USE OF REFERENCE STANDARDS AND SPECIFICATIONS

- A. Any work specified by reference to the published standard or specification of a government agency, technical association, trade association, professional society or institute, testing agency, or other organization shall conform to or surpass the minimum standards of quality for the materials and workmanship established by the designated standard or specification.
- B. Where such reference standards are so specified, all products and workmanship shall also conform to the additional prescriptive or performance requirements included within the contract documents to establish a higher or more stringent standard of quality than that required by the reference standard.
- C. Where the specific date of issue of the reference standard is not included in the specifications with the reference to the standard, the latest edition, including all amendments published and available at the time of publication of the invitation to bid, shall apply.
- D. Where two or more standards are specified to establish product, material or workmanship quality, the product, material and workmanship shall conform to or surpass the most stringent of the standards.
- E. Where there is conflict between referenced standards, the more stringent of the standards shall apply.
- F. Where the contract documents specifies both a standard and a brand name for a product, the proprietary product named shall conform to or surpass the requirements of the specified reference standard. the listing of a brand or trade name in the specifications shall not be construed as a warranty, guaranteeing that the named product, material or workmanship is in conformance with the reference standard.
- G. COPIES OF REFERENCE STANDARDS:
 - 1. Copies of applicable referenced standards are not included in this contract document.
 - 2. Where copies of the referenced standards are required by the contractor for superintending and quality control of the work, it shall be the responsibility of the contractor to obtain a copy or copies of the standard directly from the publication source and to maintain the standards in an orderly manner at the job site. The standards shall be available to the contractor's personnel, subcontractors, owner, engineer and representatives of the serving utility at all times.

1.04 APPLICABLE CODES & STANDARDS

- A. The codes and standards listed in this section shall apply for all labor and material furnished under this specification.
- B. The list includes, but shall not be limited to, the following:
 - 1. American Concrete Institute (ACI)
 - 2. American Institute of Steel Construction (AISC)
 - 3. American Iron and Steel Institute (AISI)
 - 4. American National Standards Institute (ANSI)
 - 5. American Society of Testing and Materials (ASTM)
 - 6. American Water Works Association (AWWA)
 - 7. American Welding Society (AWS)
 - 8. Architectural Barriers

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9. Association of Edison Illuminating Companies (AEIC)
 10. Certified Ballast Manufacturers (CBM)
 11. Chain Link Fence Manufacturers' Institute
 12. Edison Electrical Institute (EEI)
 13. Electrical Testing Laboratory (ETL)
 14. Federal Department of Transportation (Federal DOT)
 15. Federal Specifications (FS)
 16. Florida Department of Transportation (Florida DOT)
 17. Florida Lighting Efficiency Code
 18. Florida Thermal Efficiency Code
 19. Florida Trenching and Safety Act
 20. Institute of Electrical and Electronics Engineers (IEEE)
 21. Instrument Society of America (ISA)
 22. Insulated Cable Engineers Association (ICEA)
 23. National Bureau of Testing Standards
 24. National Fire Protection Association (NFPA)
 25. National Electrical Code (NEC)
 26. National Electrical Manufacturers' Association (NEMA)
 27. National Electrical Safety Code (NESC)
 28. National Electrical Testing Association (NETA)
 29. Occupational Safety and Health Act (OSHA)
 30. Steel Door Institute (SDI)
 31. Steel Structures Painting Council (SSPC)
 32. Underwriter's Laboratories (UL)
 33. Uniform Building Code (UBC)

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01420

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Section 01430
Soils Investigation
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SECTION 01430
SOILS INVESTIGATION

PART 1 - GENERAL

1.01 SOILS INFORMATION

- A. The Geotechnical investigation report has been generated by Professional Service Industries, Inc. (PSI) for the site development. The Geotechnical investigation report included as an attachment.
- B. All soils investigation information was obtained only for Owner's use in design, and is not included as part of the Contract Documents.
- C. Additional Investigation
 - 1. Contractor shall visit the site and acquaint itself with the site conditions.
 - 2. Prior to bidding, Contractor may make its own subsurface investigations and make its own determination regarding subsurface conditions.
 - 3. Contractors are invited to conduct check surveys prior to bidding. No claim for additional compensation will be allowed due to difference in elevations encountered after Contract Award.

END OF SECTION 01430

SECTION 01440
QUALITY ASSURANCE & QUALITY CONTROL

PART 1 – GENERAL

1.01 CONTRACTOR'S QUALITY CONTROL PROGRAM

- A. Establish and maintain a quality control program for all items of work, including the work of Subcontractors, to ensure the Work conforms to all requirements of the Contract Documents.
- B. Owner may require Contractor to submit a quality control plan ("QC Plan") to Owner/Owner's Representative for review and acceptance, which shall address work of Contractor and its Subcontractors and include, at a minimum: Quality Assurance & Quality Control
 - 1. Contractor's quality control staff organization chart, including:
 - a. Identification of proposed quality control staff members (who shall be subject to Owner/Owner's Representative's approval);
 - b. Identification of the responsibilities of each member of the quality control staff; and
 - c. Listing of all independent organizations or entities proposed for use by Contractor, including, without limitation, testing laboratories and consultants; the qualifications and services to be performed by these outside organizations.
 - 2. Description of documentation and reporting procedures.
 - a. Submit weekly reports to Owner/Owner's Representative indicating, at a minimum, inspections performed, testing methods used and results thereof and any nonconforming items of work (with an explanation for the cause of nonconformance, proposed remedial action and corrective action taken for each nonconformance).
 - b. Describe the method that will be used to document quality control operation, inspection and testing (where performed by Contractor).
 - c. Provide examples of all forms, reports and submittal status log.
 - 3. Description of quality control implementation procedures.
 - a. Material selection procedures.
 - b. Procedures for the review of shop drawings, samples and other submittals, including the name(s) of the person(s) authorized to sign submittals for Contractor before submittal to Owner/Owner's Representative.
 - c. Control procedures for construction materials delivered to Job Site.
 - d. Supervision and control procedures for work carried out on-site.
 - e. Inspection and test procedures (for all specified tests, start-up operations, or special inspections required by regulatory agencies), identifying the procedures by trade, indicating what tests will be done, when such testing will take place, and by whom (including those tests performed by Owner's testing agency in accord with Section 01455).
 - f. Monitoring of any prefabricated elements whether on-site or off-site.

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- g. Sign-off procedures as the Work or each portion thereof is completed.
 - 4. Description of procedures for addressing and remedying completed or installed work that does not conform to the requirements of the Contract Documents.
 - a. Define actions that will be required by Contractor.
 - b. Define actions that will be required by Owner.
 - 5. Definition of Contractor's quality control objectives and enumeration of any "project-specific" or special quality control concerns.
 - C. Contractor's on-site supervisory staff shall function as the quality control staff, and such staff shall review all items of work to ensure compliance with the requirements of the Contract Documents.
 - D. Owner or its representative (which may be the Architect/Engineer or other such qualified entity as Owner may elect to employ for such purpose) will periodically review the Work in progress for compliance with the Contract Documents, and will present reports of such reviews to Contractor for corrective action as required.
 - 1. Neither the performance nor absence of performance of such reviews by Owner or its representative(s) shall relieve Contractor of its complete responsibility for quality control and ensuring conformance to the requirements of the Contract Documents.
 - 2. Contractor shall prepare and provide any additional information reasonably requested by Owner/Owner's Representative pertaining to the quality and performance of materials, methods and construction practices used by Contractor in performance of the Work.
 - E. Ensure that appropriate facilities, instruments and devices required for implementation of Contractor's approved QC Plan are available on site as required.

1.02 CONTRACTOR'S REQUIRED QUALITY ASSURANCE MEASURES

- A. Implement the accepted QC Plan, integrating same into all supervision, Subcontractors' and suppliers' work, manufacturing, services and work to ensure performance of the Work in accord with the requirements of the Contract Documents.
- B. Workmanship: Provide suitably qualified personnel to produce work of specified quality at all times, and enforce exclusion of personnel from performing operations for which they are unqualified by lack of certification, registration, or demonstrated inability.
- C. The Work shall be considered "custom construction" and completed in accord with the highest applicable standard of workmanship by all trades, and shall not be considered "standard commercial construction" unless explicitly shown or specified as such elsewhere in the Contract Documents.
- D. Covering of work: Complete and submit a "pre-cover sign-off sheet" to Owner/Owner's Representative before the concealing of any work.
 - 1. The sign-off sheet shall include certification, signed and dated by Contractor and the subcontractor(s), that the work has been installed in compliance with the Contract Documents and that the work has been reviewed and approved as required by applicable testing and jurisdictional authorities.
 - 2. Such sign-off sheet shall be submitted to allow adequate time for Owner/Owner's Representative to inspect the work before concealment.
 - a. Provide notice to Owner/Owner's Representative's testing agency as specified in Section 01455 for testing or inspections specified to be performed by it.

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- b. Provide minimum of 24 hours (1 working day) notice for any other procedures or installations.
 3. Afford Owner or its representative's full access to work to be observed or inspected, including any required accommodations such as hoisting, planking, or lighting.
 4. If after Contractor's having made proper and timely notice Owner/Owner's Representative should elect not to avail itself of the opportunity to inspect or observe an item of work, Contractor may proceed with covering of that work without further notice to Owner/Owner's Representative. Complete responsibility for performing all work in accord with requirements of the Contract Documents shall remain with Contractor in such event, and any such "unobserved" work later found to be nonconforming shall be remedied to Owner/Owner's Representative's satisfaction at no additional cost to Owner.
 5. Covering of work without providing Owner/Owner's Representative sufficient prior opportunity to review same shall be grounds for Owner/Owner's Representative to direct Contractor to uncover, correct (as required) and reinstall such work at no additional cost to Owner.
- E. Aesthetic inspections or observations by Owner/Owner's Representative: Complete and submit an "acceptance sign-off sheet" to Owner/Owner's Representative with a minimum of 48 hours (2 working days) notice for any procedures or installations which require inspection of an aesthetic or artistic nature.
1. Contractor shall not proceed with procedures and installations for which an inspection of an aesthetic nature is required absent Owner/Owner's Representative's receipt and approval of the acceptance sign-off sheet.
- F. Cable Splicer/Terminator Qualifications
1. Each cable splicer/terminator shall be approved and qualified by RCES in the splicing and terminating of Kerite high and medium voltage cables.
 2. Each cable splicer/terminator shall have five or more years recent, verifiable experience splicing and terminating Kerite high and medium voltage cables.
 3. In addition, the cable splicer/terminator may be required to make an approved dummy or practice splice/termination in the presence of the Owner/Owner's Representative in accordance with the cable manufacturer's instructions before being approved as a qualified cable splicer.
 4. The Owner/Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate cable splicer/terminator.
- G. Exothermic Welder Qualifications
1. Welders shall be previously qualified (within the past twelve months) by passing the tests prescribed in the AWS Standard Qualification Procedure or by passing such other tests as the Owner/Owner's Representative may accept.
 2. Welders, welding operators and tackers shall be qualified in accordance with the requirements of AWS D1.1.
 3. Submit two certified copies of the qualification records to the Owner/Owner's Representative as evidence of qualification to the above-mentioned code.
 4. Each welder shall have two or more year's recent, verifiable experience in performing exothermic welding.
 5. In addition, the welder may be required to make an approved dummy or practice weld in the presence of the Owner/Owner's Representative in accordance with the weld manufacturer's instructions before being approved as a qualified welder.
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6. The Owner/Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate welder.

H. Lightning Protection System Installer Qualifications

1. The Contractor must provide documentation that each installer has been certified with at least five years of recent experience in installing lightning protection systems.
2. The Owner/Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate lightning protection system installer.

1.03 MANUFACTURER'S INSTRUCTIONS

- A. Where required by Specifications, submit manufacturer's printed instructions in the quantity required for product dates, delivery, handling, storage, assembly, installation, start-up, adjusting, balancing, and finishing as applicable.
- B. Contractor shall comply with manufacturer's instructions in fullest detail, including performance of each step of assembly or installation in exact sequence. Should manufacturer's instructions conflict with Contract Documents in any manner, request immediate clarification from Owner/Owner's Representative before proceeding with the operation in question.

1.05 MINIMUM CONSTRUCTION TOLERANCES AND REQUIREMENTS

- A. Where stricter standards or tolerances are specified elsewhere in the Specifications or in references specified in the Specifications, such stricter standards or tolerances shall take precedence over the standards and tolerances enumerated herein.
- B. Construct and install all parts of the Work level, plumb, square and in correct position unless explicitly shown or specified otherwise.
 1. No part shall be out of plumb, level, square or correct position so as to impair the proper functioning of the part or the Work, in the sole determination of Owner/Owner's Representative.
 2. The following tolerances shall apply to plane surfaces:
 - a. No point in the plane surface shall be out of correct position by more than 1/8 in.
 - b. No straight-line tangent to the plane surface shall vary from the plane surface by more than 1/8 in. in 10 ft. (non-cumulative).
- C. Make all joints tightly and neatly.
 1. Only apply moldings, sealant, or other joint treatment with explicit permission of Owner/Owner's Representative unless it is explicitly so specified or shown.
- D. Provide galvanic insulation between dissimilar metals that are not adjacent on the standard galvanic scale.
- E. Fasteners and fastening:
 1. All fasteners used by all trades in exterior applications and elsewhere where dampness or corrosion can reasonably be anticipated shall be corrosion-resistant.
 - a. Fasteners for carpentry in exterior applications or in potentially damp locations shall be stainless steel, aluminum, or double hot-dip galvanized steel.

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- b. Fasteners for other materials in exterior applications, in cellars and crawl spaces, embedded in exterior walls, at or above the roof, and other places where dampness and corrosion can reasonably be anticipated shall be one of the types specified below (as applicable).
 2. Fasteners for copper, brass and bronze in all locations and under all conditions shall be copper, brass, or bronze, respectively.
 3. Fasteners for stainless steel in all locations and under all conditions shall be stainless steel.
 4. Fasteners for aluminum shall be stainless steel or aluminum where exposed to view, and stainless steel, aluminum or double hot-dip galvanized steel where not exposed to view.
 5. Fasteners for ferrous metals in all locations and under all conditions shall be galvanized or stainless steel.
 6. If corrosion-resistant fasteners are not available for a given application, notify Owner/Owner's Representative for direction regarding alternative corrosion protection methods.
- F. Apply protective finish to parts of the Work before concealing parts (i.e., paint door tops and bottoms before hanging doors, paint degradable mounting plates before installing other parts over them, etc.).
1. Unless specified otherwise, paint concealed materials and products with same primer and finish specified for exposed surfaces. If concealed materials are fully covered, primer alone is sufficient unless specified otherwise.
 2. Concealed products that are already corrosion-protected need not be protected further unless specified otherwise.
 3. Refer to individual Specification Sections for additional protective finishes or coatings requirements.
- G. Manufacturers, subcontractors, and workers shall be experienced and skillful in performing the work assigned to them.
- H. Verify critical dimensions in the field before fabricating items, which must fit adjoining construction.
- I. Where accessories are required in order to install parts of the Work in usable form, provide such accessories even where not explicitly specified or shown.
- J. Whenever possible, accessories shall be manufactured by the same manufacturer as the larger part or device for which they are to be used.
- K. Adjust and test operation of all items of equipment, leaving them fully ready for use (refer to Section 01660 for mechanical and electronic equipment start-up restrictions).

1.06 GENERAL WORK REQUIREMENTS

- A. Seal all cracks and openings to make exterior skin of buildings tight to water and air entry, as specified.
 - B. Provide adequate blocking, bracing, nailers, fastenings, and other supports to install parts of the Work securely.
 1. Blocking, bracing, nailers, fastenings, and other supports shall be of a type not subject to deterioration or weakening as the result of environmental conditions or aging.
 2. Secure any objects suspended directly overhead in accessible areas (or suspended over adjacent areas where a falling object can rebound into an accessible area) such that each suspended object has complete redundancy of adequate support connected to the structure of the building.
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- C. Provide bases, pads, inserts, blockouts, and other miscellaneous supporting structures as required for all portions of the Work, even where it may not be explicitly indicated but is nonetheless required for a complete or proper installation.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

Not Used

END OF SECTION 01440

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Section 01455
Testing and Inspection Services
Issue Date: March 14, 2023

SECTION 01455
TESTING AND INSPECTION SERVICES

PART 1 - GENERAL

1.01 TESTING AND INSPECTING SERVICES

A. General:

1. In reference to Subparagraph 5.7.2. of the General Conditions of the Contract for Construction, Owner will employ, and pay for services of an independent testing laboratory to perform specified services.
2. Employment of testing laboratory by Owner shall not, in any way, relieve Contractor of its obligation to perform work in accord with Contract requirements.
3. Contractor shall pay all costs for tests failed and retesting required because of failures due to defective work or materials, as well as charges related to standby and/or remobilization.
4. Costs for testing of materials or procedures that are deviations or substitutions from Contract provisions shall be borne by Contractor if the tests are conducted to determine the acceptability of the proposed deviations or substitutions.
5. Review or inspection (or failure to do so) by Owner's Representative or Owner's authorized testing agency of Contractor's materials and/or Work constitutes neither acceptance on Owner's part nor waiver of Owner's right to future review or inspection.

B. Purpose: Independent testing laboratory services are required to provide unbiased quality control information necessary to protect the interests of Owner and to furnish such technical abilities as may be of benefit to the project.

C. Extent of laboratory services:

1. Cooperate with Owner's Representative and Contractor. Provide qualified personnel promptly on notice.
2. Perform specified tests, and additional tests which may be necessary. Refer to individual Specifications Sections for required tests and inspections.
 - a. Comply with specified standards insofar as they apply to the Work.
 - b. Ascertain compliance with requirements of Contract Documents.
3. Promptly notify Owner's Representative and Contractor of noncompliance, irregularities, or deficiencies in the Work which are observed during performance of services.
4. Conduct inspections and tests and provide reports as soon as possible so as not to delay the Work.
 - a. Make an accurate written report of all tests and inspections, and deliver same to Owner's Representative. As a minimum, unless directed otherwise, a written report shall be prepared for all tests and inspections, or in some instances, series of tests and inspections.
 - b. In addition to submitting copies to Owner's Representative, submit copies to Contractor, Structural Engineer, to local building authorities as required by Codes and Ordinances, and to other parties as directed by Owner's Representative in the instructions to the laboratory.

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- c. Reports shall include: Date issued and date of test, project title and number, testing laboratory's name and address, name and signature of laboratory supervising engineer, inspector, date of inspection or test, record of temperature and weather, identification of product and project Specifications Section number, location in project, type of inspection or test, and comments regarding compliance with Contract Documents.
 - d. Perform additional services as may be required or ordered by Owner's Representative.
- D. Testing laboratory is not authorized to:
 - 1. Release, revoke, alter, or enlarge upon requirements of Contract Documents.
 - 2. Approve or accept any portion of the work.
 - 3. Perform any duties of Contractor.
- E. Tests and inspections: Sampling, inspection, and testing shall include, but not necessarily be limited to, the following:
 - 1. Soils for use in fills and backfills: Determine suitability.
 - 2. Foundation bearings: Inspect and test.
 - 3. In-place fills and backfills: Inspect and test.
 - 4. Reinforcing steel: Inspect and test.
 - 5. Concrete ingredients: Inspect and test.
 - 6. Concrete quality control: Inspect and test.
 - 7. Structural steel: Inspect and test.
 - 8. Welding and structural bolting: Inspect and test.
 - 9. Concrete unit masonry including veneer ties.
 - 10. Fireproofing: Inspect and test.
 - 11. Asphalt concrete; asphalt concrete base: Inspect and test.
 - 12. Refer to individual Specifications Sections for additional specific testing requirements.

1.02 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory personnel. Provide access to Work site, and to manufacturer's shops as may be required by laboratory personnel to perform inspecting, sampling, and testing services.
- B. Notify laboratory sufficiently in advance of project need to allow for scheduling, assignment of personnel, inspecting, and testing (at least 48 hours).
- C. Provide for laboratory sampling in required quantities, all representative samples of materials to be tested.
- D. Furnish copies of all test reports and certifications which may be required by testing laboratory.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01455
Testing and Inspection Services
Date: March 14, 2023

- E. Furnish casual labor and facilities:
 - 1. To provide access to work to be inspected and tested, facilitate inspections and tests, and to obtain and handle samples at the Job Site.
 - 2. For laboratory's exclusive use for storage and curing of test samples.
- F. Arrange with laboratory and pay for:
 - 1. Additional inspections, samples, and tests required for Contractor's convenience.
 - 2. Additional tests when initial tests indicate work does not comply with Contract requirements.
- G. Provide storage and protection of materials. Remove materials as necessary for inspections and tests, and replace same after inspections and tests have been performed by the laboratory.

END OF SECTION 01455

**SECTION 01500
TEMPORARY CONSTRUCTION FACILITIES****PART 1 - GENERAL****1.01 DESCRIPTION OF REQUIREMENTS**

- A. Provide all construction facilities and temporary controls required for the Work of the project and maintain supervision of same.
- B. Verify with the Owner's Representative and provide as required, the following items without additional cost to the Owner:
1. Temporary lighting required that would be in addition to that existing.
 2. Power extension cords for tools and equipment.
 3. Temporary field offices and storage sheds.
 4. Temporary barriers and fences.
 5. Temporary controls for noise, dust, water and erosion.
 6. Temporary construction aids.
 7. Temporary tree and plant protection.
 8. Security, protection and safety signage.
 9. Temporary sanitary facilities.
 10. Temporary telephone service.
 11. All additional construction facilities and temporary controls required by, and in accord with, legal requirements.
- C. Provide all work and facilities in full accord with all authorities having jurisdiction, including but not limited to OSHA.
1. The location of any temporary facilities and the extent of the facilities and services to be provided shall be subject to the requirements of the Contractor and the approval of, and to such conditions as, the Owner may prescribe.
- D. With regard to required construction facilities and temporary controls, provide for the following:
1. Responsibility for initiating all safety measures including, but not limited to, all barriers, fences and gates, concrete encasement, signs, and all other personnel warning and safety devices of every kind required by Code, local utility company, or Owner.
 2. Disconnecting and removal of all construction controls that are not part of permanent construction when and as directed by Owner, or at completion of Work.
 3. Filing of all permits for construction with local authorities.
 4. Payment of all fees as well as all inspection and supervision costs as may be levied by the utilities.
 5. Payment of all usage, service and energy charges for temporary utilities for construction purposes.
 6. Maintenance of all of this Contractor's temporary work and facilities.
 7. Required grubbing, excavation and backfill for this Contractor's construction facilities.
 8. All barriers, fences and gates, concrete encasement, signs, and all other personnel warning and safety measures and devices of every kind required by Code, local utility company, or Owner.
 9. Disconnecting and removing of all of this Contractor's temporary work not part of permanent construction when and as directed by the Owner's Representative.

1.02 TEMPORARY SANITARY FACILITIES FOR CONSTRUCTION PERSONNEL

- A. Since no services will be available for temporary toilets, provide, maintain and remove when directed, portable chemical toilets for this Contractor's construction and office personnel.

REEDY CREEK IMPROVEMENT DISTRICT
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Section 01500
Temporary Construction Facilities
Date: March 14, 2023

- B. Provide quantity and location of temporary toilets as required by authorities having jurisdiction, including, but not limited to OSHA, and subject to approval of the Owner's Representative.
- C. Maintain temporary toilets in a sanitary condition at all times, subject to approval of the Owner's Representative.

1.03 GENERAL ITEMS

- A. Noise Control: "Whisperize" and muffle all equipment.
- B. In general, make materials deliveries during normal working hours. Where special deliveries must be made at other times, request Owner approval. After approval, arrange for proper labor force to receive and unload. If this procedure is not complied with, delivery will not be permitted.
- C. Staging areas for delivery of materials and equipment will be at locations designated by Owner.
- D. Contractor understands that other contractors will be working on the site for the duration of this Contract. Sequence operations to accommodate and coincide with the operations of the other contractors, and as approved by the Owner. Areas will be made available in accord with Owner's requirements.
- E. Utility mains and utility services to buildings or other facilities of the Owner or another contractor shall not be cut off or otherwise interrupted without permission from the Owner or the Owner's Representative.
 - 1. After authorization, prior to interrupting any utility service, the Contractor shall ascertain that he has the proper materials, together with adequate workmen and equipment, to complete the work in a minimum amount of time.
 - 2. Where possible, interruption in service shall be scheduled during the hours when the facilities are not in use.
 - 3. Cost of delays and inconvenience to the Owner, when normal services are not resumed as scheduled, shall be chargeable to the Contractor.

1.04 CONTRACTOR ACCESS AND EGRESS

- A. Truck hauling of materials for the Work will be in accordance with the Contract Documents, the GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION and the SPECIAL CONTRACT CONDITIONS.

END OF SECTION 01500

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01560
Erosion Control and Dewatering
Date: March 14, 2023

**SECTION 01560
EROSION CONTROL AND DEWATERING**

PART 1 – GENERAL

1.01 Erosion Control

- A. Refer to Contract Drawings and Bid Manual.
- B. Refer to following list of documents attached with this section.
 - 1. SWPPP: The Contractor shall prepare the Storm Water Pollution Prevention Plan utilizing the template forms published by Reedy Creek Improvement District Planning & Engineering Department. The Contractor shall submit a completed SWPPP to RCID Planning and Engineering for review and the Contractor shall make all modifications and refinements to the plan requested by RCID Planning and Engineering. The Contractor shall provide the erosion control devices required by the plan and shall maintain them in accordance with Section 01010 until the punchlist is certified to be complete. *Rev. October 3, 2019*
 - 2. Turbidity Curtains: The Contractor shall provide turbidity curtains wherever required by its approved SWPPP
 - 3. De-watering: The Contractor shall submit all information required by RCID Planning & Engineering at least 21 days prior to the commencement of any dewatering activities; and the Contractor shall not begin dewatering activities until RCID Planning and Engineering has approved the proposed activities. The list of Submittal Information required by RCID P&E for SFWMD follows this Section of the specifications.
 - a. If any de-watering activity occurs adjacent to a wetland and extends longer than two weeks, then the Contractor shall provide an analysis engineered by a professional geotechnical engineer licensed to do business in the State of Florida that provides for wetland rehydration processes and monitoring. Further, the analysis shall consider the normal pool and seasonal high water elevations of any wetlands and surface waters adjacent to the proposed dewatering activities.
- C. The Contractor shall apply for the NOI and pay the filing fee.

END OF SECTION 01560

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH PHASE III
Contract: C006110

Section 01560A
SFWMD Dewatering Permit Notification
Date: March 14, 2023

**SECTION 01560A
RCID PLANNING & ENGINEERING
SUBMITTAL INFORMATION REQUIRED FOR
SFWMD DEWATERING PERMIT NOTIFICATION**

The contractor shall submit the following information on company letterhead as part of their dewatering permit notification at least **21 days** prior to anticipated commencement of any dewatering activities. The contractor shall not begin dewatering until the Reedy Creek Improvement District has approved the proposed activity and an inspection of the system has been conducted.

1. Name of contractor;
2. Site location plan showing task specific dewatering locations (does not need to be on company letterhead);
3. Records that indicate the presence or absence of known areas of contamination within the project, and in adjacent areas that could be impacted if dewatering operations are performed. Also, if applicable, reasonable assurance that dewatering activities will not alter the contamination plumes movement or directions,
4. Proposed methods of construction;
5. Estimated pumping rates and duration of pumping;
6. Known volume to be discharged from vessels installed in the wet;
7. Estimated depth of drawdown;
8. Anticipated radius of the cone influence;
9. Proposed points of discharge;
10. Site water routing from excavation to stormwater retention area;
11. Proposed groundwater and surface water monitoring plans and turbidity monitoring plan;
12. Any other sites and tasks specific characteristics worthy of consideration;
13. Hydraulic information (i.e., normal pool and seasonal high water elevations) of any wetlands and surface waters within or adjacent to the proposed dewatering activities.

Along with the information above, weekly withdrawals will be submitted to Reedy Creek Improvement District every Monday for the previous week's dewatering.

Information shall be submitted through BIM360 for electronic review under the specific Project Folder, under Dewatering. Contractor shall notify Melissa Pulver and Katherine Luetzow via the Review Status form on BIM360. For BIM360 information, please contact RCID at 407-828-2250.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01560A
SFWMD Dewatering Permit Notification
Date: March 14, 2023

**Reedy Creek Improvement District Projects
Master Dewatering Permit
Turbidity Monitoring Plan Requirements**

Description: Monitoring requirements for dewatering discharge. Turbidity is expressed in nephelometric turbidity units (NTU).

Location:

- (1) Background-
- Canals – 5 NTU
 - Bay Lake/7 Seas Lagoon – 1 NTU
 - Reedy Creek – 1 NTU
 - Wetland – 1 NTU

(2) Compliance--Samples shall be taken at the discharge point from the construction activity, i.e. at the location where that construction activity discharges into the receiving canal, lake, creek or wetland, AND at a location a minimum of 200 feet downstream of the location when that construction activity discharges into a canal, lake, or creek AND at any additional sampling locations as specified in this Dewatering Plan drawing.

Frequency: Turbidity monitoring sampling shall be conducted twice daily, with at least a four-hour interval between sampling events, during all work authorized by this permit.

Duration: Monitoring shall begin on the first day of construction for all activities related to the proposed activities. Monitoring shall cease when all construction activities related to the proposed activities are completed. The monitoring data must demonstrate that turbidity 200 feet downstream of all proposed activities or in the downstream canal or wetland is less than or equal to 29 NTU's above natural background turbidity for a period of seven consecutive days after completion of construction.

Reporting: All monitoring data shall be submitted to the Reedy Creek Improvement District as shown on the attached "RCID Weekly Dewatering Report".

If monitoring reveals violations of the state water quality standard for turbidity, discharge from the construction activities shall cease immediately and not resume until corrective measures have been taken and turbidity has returned to acceptable levels.

REEDY CREEK IMPROVEMENT DISTRICT
 WORLD DRIVE NORTH- PHASE III
 Contract: C006110

Section 01560A
 SFWMD Dewatering Permit Notification
 Date: March 14, 2023

RCID Weekly Dewatering Report
Planning & Engineering Department
 P.O. Box 10170, Lake Buena Vista, FL 33830
 (407) 828-2250 Fax: (407) 828-2560

Project Name: _____
Pump# _____
Location: _____
Discharging to: _____

Day/Date	Daily Meter Reading	Pump Shut off Reading*	Daily Volume	Turbidity Readings (Twice daily minimum of 4 hours apart)	
				Morning	Afternoon
Previous Saturday Reading (if applicable)		*Only complete this column when turning pump off			
Sunday					
Monday					
Tuesday					
Wednesday					
Thursday					
Friday					
Saturday					
Weekly Daily Volume Total					

Report each meter reading daily. If you are pumping continuously, please carry over the previous week's last meter reading to report accurate volumes. Please call RCID Compliance for questions 407-468-0366.

Note: Report/s for each pump used in dewatering must be submitted to RCID Planning & Engineering Department on the following Monday after pumping occurred and continue each Monday until pumping for the location has ended.

END OF SECTION 01560A

**SECTION 01630
SUBSTITUTIONS AND PRODUCT OPTIONS**

PART 1 - GENERAL

1.01 INTENT OF CONTRACT DOCUMENTS

- A. Throughout the Contract Documents, products are referred to or identified by trade name or number, manufacturer's name or number, or in some like manner. When so identified, it is intended that the named product be provided. Any other product will be classified as a substitution.
- B. The term "product" includes materials, systems and equipment.
- C. It is the further intent of the Contract Documents that products be:
 - 1. New and best of their respective kinds.
 - 2. Furnished in ample quantities to facilitate proper and timely execution of the Work.
 - 3. Of one manufacturer for each specific purpose, insofar as is practical.

1.02 CONTRACTOR'S PRODUCT OPTIONS

- A. For products specified only by reference standards or performance characteristics, select any product meeting requirements, by any manufacturer. The Owner reserves the right, however, to exercise its prerogative in determining what is acceptable and what is not acceptable.
- B. For products specified by naming several manufacturers, select product from list of manufacturers named.
- C. For products specified by naming several manufacturers, but indicating the option of selecting equivalent products by stating "equivalent to" before specified product, submit request, as required for substitution, for any product not specifically named.
- D. For products specified by naming only one product and manufacturer, there is no option, and no substitution will be allowed.

1.03 SUBSTITUTIONS

- A. Requests received for substitution will not be considered, except for the following conditions:
 - 1. Product discontinued and no longer being manufactured.
 - 2. Insufficient quantity, except the following shall not establish cause for substitutions.
 - a. Failure to award a subcontract in sufficient time, or failure to place orders for products so as to insure delivery without delaying work.
- B. Delays beyond control, such as strikes, lockouts, fires, storms, or other acts of God, which may delay the procurement and delivery of products may constitute sufficient grounds for other Contract changes, but will not necessarily be sufficient cause for allowing substitutions.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01630
Substitutions and Product Options
Issue Date: March 14, 2023

-
- C. The Owner reserves the right to consider substitutions at any time during the progress of the Work when it would be in its best interests to do so.
- D. Submit written request for substitution and include:
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. For products, submit:
 - a. Product identification: include manufacturer's name and address.
 - b. Manufacturer's literature: Product description, performance and test data and reference standards.
 - c. Samples, when appropriate.
 - d. Name and address of similar projects on which product was used, and date of installation.
- E. In making request for substitution, Contractor represents:
1. It has personally investigated proposed product or method, and determined that product is equal or superior in all respects to that specified.
 2. It will provide the same Warranty for substitution as for product or method specified.
 3. It will coordinate installation of accepted substitution into Work, making such changes as may be required for Work to be complete in all respects.
 4. It waives all claims for additional costs related to substitution, which consequently becomes apparent.
 - a. It will assume all additional cost of construction performed by other separate contractors to accommodate the accepted substitution.
 5. Cost data is complete and includes all related costs under its Contract, including redesign by a State of Florida Registered Engineer.
- F. Substitutions will not be considered if:
1. They are indicated or implied on shop drawings or product data submittals without formal request submitted in accord with Article 1.03 - Substitutions.
 2. Acceptance will require substantial revision of Contract Documents.

END OF SECTION 01630

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01640
Product Handling and Protection
Issue Date: March 14, 2023

**SECTION 01640
PRODUCT HANDLING AND PROTECTION**

PART 1 - GENERAL

1. DESCRIPTION OF REQUIREMENTS

- A. Transport, deliver, handle, and store materials and equipment at the job site in such manner as to prevent damage, including damage which might result from the intrusions of foreign matter or moisture from any source.
 - 1. In all cases, comply with:
 - a. Material and equipment manufacturer's instructions regarding temperature limitations.
 - b. Other environmental conditions which are required to maintain the original quality of the materials and equipment.
- B. Maintain packaged materials in manufacturer's original containers with seals unbroken and labels intact until they are incorporated into the work.
 - 1. Packaged material shall bear the name of the manufacturer, the product, including brand name, color, stock number and all other complete identifying information.
 - 2. Packages showing indications of damage that may affect conditions of contents are not acceptable.
- C. Remove all damaged or otherwise unsuitable materials and equipment promptly from the job site.
- D. Locate storage piles, stacks or bins so as to avoid being disturbed. Provide barricades as required to protect storage from damage.
- E. Protect all finished surfaces, through or over which materials and equipment are handled.
 - 1. Maintain all finished surfaces clean, unmarred and suitably protected until occupied by Owner.

END OF SECTION 01640

**SECTION 01700
PROJECT CLOSEOUT**

PART 1 – GENERAL

1.01 SUBSTANTIAL COMPLETION

- A. Contractor:
1. Submit written certification to Owner/Owner's Representative that project, or designated portion of project, is substantially complete.
 2. Submit list of major items to be completed or corrected.
- B. The Engineer/Architect and Owner/Owner's Representative will make a review of the work within 7 days after receipt of certification.
- C. Should the Engineer/Architect or Owner/Owner's Representative consider that Work is substantially complete:
1. Prepare, and submit to Owner, a list of items to be completed or corrected, as determined by the review.
 2. The Owner/Owner's Representative will prepare and issue a certificate of substantial completion, complete with signatures of Owner/Owner's Representative, Engineer/Architect, and Contractor, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the Owner/Owner's Representative.
 3. Owner occupancy of project or designated portion of project:
 - a. Contractor shall:
 - (1) Obtain certificate of occupancy, if applicable
 - (2) Perform final cleaning in accord with Section 01710.
 - b. Owner shall occupy project or designated portion of project, under provisions stated in certificate of substantial completion.
 4. Contractor: Complete work listed for completion or correction, within designated time.
- D. Should the Owner/Owner's Representative or Engineer/Architect consider that Work is not substantially complete:
1. The Owner/Owner's Representative will notify Contractor, in writing, stating reasons.
 2. Contractor: Complete Work and send second written notice to Owner/Owner's Representative, certifying that project, or designated portion of project, is substantially complete.
 3. The Engineer/Architect and Owner/Owner's Representative will make a review of the Work within 7 days after receipt of certification.
-

1.02 FINAL REVIEW

- A. Contractor shall submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Project has been inspected for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. Equipment and systems have been tested in Owner's presence and are operational.
 - 5. Project is completed, and ready for final review.
- B. The Engineer/Architect and/or Owner/Owner's Representative will make final review of the Work within 7 days after receipt of certification.
- C. Should the Owner/Owner's Representative or Engineer/Architect determine that Work is finally complete in accord with requirements of the Contract Documents, it will request Contractor to make project closeout submittals.
- D. Should the Owner/Owner's Representative or Engineer/Architect determine that Work is not finally complete:
 - 1. The Owner/Owner's Representative will notify Contractor, in writing, stating reasons.
 - 2. Contractor shall take immediate steps to remedy the stated deficiencies and subsequently submit written notice to the Owner/Owner's Representative certifying that the Work is complete.
 - 3. The Owner/Owner's Representative will make a review of the Work within 7 days after receipt of certification.

1.03 CLOSEOUT SUBMITTALS

- A. In addition to the requirements noted within the General Conditions of the Contract for Construction, Paragraph 9.4 - Substantial Completion and Final Payment, the following listed requirements supplement the requirements thereof. The Contractor shall:
 - 1. Deliver the project Record Documents in accordance with the requirements of Section 01720.
 - 2. Deliver the operating and maintenance data:
 - a. In accordance with the requirements of Section 01340.
 - b. In accordance with the requirements of applicable Specification Sections.
 - 3. Deliver warranties in accordance with the requirements of Contract Documents.
 - 4. Deliver all spare parts and maintenance materials in accordance with the requirements of Specifications Sections.
-

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01700
Project Closeout
Date: March 14, 2023

5. Deliver evidence of compliance with requirements of governing authorities, including but not limited to:
 - a. Certificates of Inspection: Mechanical and electrical.
6. Deliver certificates of insurance for:
 - a. Products
 - b. Completed operations.
7. Deliver evidence of payments, waivers of claims and releases of liens, including:
 - a. Contractor's Affidavit of Payment of Debts and Claims and Release of Liens.
 - b. Duly execute all submittals before delivery to the Owner/Owner's Representative.

1.04 INSTRUCTION

- A. Prior to close-out of the Contract, the Contractor shall instruct, or cause to be instructed, the Owner's designated personnel in the proper operation and care of any specialized equipment or systems provided or installed by the Contractor as part of the Work. Only appropriately qualified personnel shall provide such instruction and all arrangements for such instruction shall be coordinated with the Owner/Owner's Representative. The cost for any such instruction shall be borne by the Contractor and is included in the Contract Sum.

1.05 OPERATION AND MAINTENANCE MANUALS FOR EQUIPMENT AND SYSTEMS

- A. Prior to close-out of the Contract, the Contractor shall furnish to the Owner/Owner's Representative not less than ONE (1) bound copy, and TWO (2) USB/flash drive copies of Operation and Maintenance (O&M) Manuals describing the proper operation and maintenance of all equipment and systems provided or installed by the Contractor as part of the Work. Information contained in the manual shall include, but shall not be limited to, the following information as it pertains to each piece of equipment or system furnished:
 1. Manufacturer's specification
 2. Manufacturer's operating instructions
 3. Manufacturer's maintenance instructions
 4. Any serial numbers unique to individual machines, equipment or devices.
 5. Complete listing of equipment/system replacement parts, including part numbers.
 6. Name and telephone number of source for equipment/system replacement parts.
 7. Complete wiring and/or piping diagrams (as applicable).
 8. Manufacturer's written warranty
 9. Name and telephone number(s) of local, qualified service representative.

END OF SECTION 01700

**SECTION 01710
CLEANING**

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Maintain job site, surrounding areas, and public properties free from improperly stored materials, accumulations of waste, debris, and rubbish caused by operations.
- B. At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, surplus materials, and clean all sight-exposed surfaces. Leave job site clean and ready for occupancy.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of materials of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.01 CLEANING - GENERAL

- A. Cleaning and disposal:
 - 1. Conduct cleaning and disposal operations in accord with legal requirements.
 - 2. Do not burn or bury rubbish and waste materials on job site. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- B. Burning:
 - 1. Burning of the trees, shrubs, bushes, etc., cleared on the project site will not be allowed within the project site.
- C. Hazards control:
 - 1. Store volatile wastes in covered metal containers, and remove from premises daily.
 - 2. Prevent accumulation of wastes which create hazardous conditions.
 - 3. Provide adequate ventilation during use of volatile or noxious substances.

3.02 CLEAN-UP DURING CONSTRUCTION

- A. Execute cleaning to ensure job site, premises, adjacent and public properties are maintained free from accumulations of waste materials and rubbish.
- B. Wet down dry materials and rubbish to lay dust.
- C. At reasonable intervals during progress of Work, clean job site and public properties, and dispose

of waste materials, debris and rubbish.

- D. Provide dump containers on job site for collection of waste materials, debris and rubbish.
 - 1. Permit Owner's other contractors to place waste materials, debris and rubbish in containers provided by this Contractor.
- E. Remove waste materials, debris and rubbish from job site, premises, adjacent and public properties and legally dispose of at public or private dumping areas off Walt Disney World property.
- F. Handle materials in a controlled manner with as few handlings as possible. Do not drop or throw materials from height.
- G. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.03 FINAL CLEANING

- A. In preparation for substantial completion or occupancy, conduct final inspection of sight-exposed interior and exterior surfaces, and of concealed spaces.
- B. Remove grease, dust, dirt, stains, labels, furniture, fingerprints, and other foreign materials, from sight-exposed interior and exterior finished surfaces.
 - 1. Clean and polish all factory finished surfaces such as plastic laminate, plated metals, stainless steel, and factory baked-on enamel surfaces.
- C. Repair, patch and touch-up marred surfaces to specified finish, and to match adjacent surfaces as appropriate.
- D. Broom clean paved surfaces; rake clean other surfaces of grounds.
- E. Owner will assume responsibility for cleaning as of time designated on Certificate of Substantial Completion for Owner's acceptance of project or portion thereof.

3.04 GENERAL REQUIREMENTS

- A. If the Contractor fails to comply with the requirements of this Article, in the opinion of the Owner or the Owner's Representative, the Owner's Representative shall perform the necessary clean-up and deduct the cost of work from the monies due or to become due to said Contractor.

END OF SECTION 01710

SECTION 01720
PROJECT RECORD DOCUMENTS

PART 1 – GENERAL

1.01 MAINTENANCE OF DOCUMENTS

- A. Maintain at Job Site, one copy of each of the following as record documents:
 - 1. Contract Drawings (Hard copy prints or electronic copy, provided by Owner).
 - 2. Project Manual (Specifications) including Addenda/Bulletins issued prior to contract award.
 - 3. Approved shop drawings, product data and samples.
 - 4. Modifications: Revision Orders, Directives, Bulletins and other written amendments to the Contract.
 - 5. Field test records.
 - 6. As-built Drawings applicable to the project (if previously supplied).
- B. Adhere to following guidelines for maintenance of record documents:
 - 1. Store record documents in temporary field office, apart from documents used for construction purposes.
 - 2. Maintain record documents in clean, dry, and legible condition.
 - 3. Do not use record documents for construction purposes.
 - 4. Make record documents available at all times for inspection by Owner's Representative and other authorized users.

1.02 RECORDING

- A. Label each record document "PROJECT RECORD" in 2 in. high printed letters.
 - B. Keep record documents current.
 - C. Do not permanently conceal any work until required information has been recorded.
 - D. Record Contract Drawings: Legibly mark Drawings (or an electronic copy) to record actual construction.
 - 1. Depths of various elements of foundation in relation to survey datum.
 - 2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - 3. Structural steel framing tolerances which deviate from referenced standards.
 - 4. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - 5. Field changes of dimension and detail.
 - 6. Changes made by Revision Order, Directive, and other modification. Mark all areas on sheets affected by Contract Directives with a "cloud" and note with the Contract Directive number. Maintain binders with complete Contract Directives adjacent to Contract Drawings for convenient reference.
 - 7. Details not on original Contract Drawings.
 - E. Record Specifications and Addenda: Legibly mark up each Section to record:
-

-
1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed. Strike-through manufacturers and products that were not used on the project.
 2. Changes made by Revision Order, Directive, and other modifications.
 3. Other matters not originally specified.
- F. Shop drawings and samples: Maintain as record documents. Legibly annotate shop drawings and samples to record changes made after approval.
- G. In addition to requirements of this Article, comply with supplemental requirements of indicated mechanical, electrical, and equipment work.

1.03 AUDIT

- A. Project record documents will be reviewed monthly by Owner's Representative, who will use the current completeness of the record documents in evaluating the monthly progress payment request.

1.04 APPLICABLE CODES, STANDARDS AND SPECIFICATIONS: The Record Drawings information shall be in strict accordance with the following codes and standards:

- A. Reedy Creek Energy Services (RCES)
- B. Florida Department of Environmental Protection (FDEP)
- C. South Florida Water Management District (SFWMD)
- D. RCID Land Development Regulations

As-Built drawings must be received and accepted by the agencies, SFWMD, RCID, RCES and FDEP before the corresponding system(s) will be allowed to be put into service.

1.05 RECORD OR "AS-BUILT" SURVEYS

- A. The Contractor shall retain the services of a registered Professional Surveyor, who is licensed in the State of Florida and approved by the Owner, to provide professional surveying and mapping services to maintain survey control, layout and stake the Work and perform the As-Built Survey during construction. Prior to any services being performed, the Contractor shall submit the name and address of any proposed registered professional and a written acknowledgement from the Professional Surveyor stating that he/she has the hardware, software and adequate scope of services in his/her contractual agreement with the Contractor to fully comply with the requirements of this specification. It is recommended that the Surveyor and Mapper attend the Preconstruction meeting. The Florida Licensed Professional Engineer shall be qualified in the discipline required for the specific services required for the Project. The Contractor shall require the Professional Surveyor to locate all improvements for the Project As-Built Survey using the grid coordinate system and the vertical datum referenced on the Drawings. The As-Built Survey shall clearly show the designed and constructed locations and elevations information for ease of comparison
1. The surveyor shall provide on-site survey while construction is in progress and at such other times as required to fulfill his professional obligations and as listed below.
 - a. All existing structures, utilities, and features revealed during the course of construction shall be accurately located and dimensioned. Movement of such utilities or structures required by project

installation shall be recorded as "As-Built". This requirement shall apply whether the existing structure, utility or feature was shown on the original contract drawings or not.

- B. Compliance of work shall be in accord with Minimum Technical Standards of Florida Administrative Code Chapter 61G17-6, and in particular "61G17-6.005" Construction Layout, Record or As-built, Quantity and Right of Way Surveys."
- C. Survey documents shall comply with the Minimum Technical Standards of Chapter 5J-17 of the Florida Administrative Code (FAC) and Table 01050-1 Minimum Survey Accuracies, whichever are more stringent. All coordinates shall be geographically registered in the Florida State Plane Coordinate System using the contract Drawings control points for horizontal and vertical controls.
- D. For RCES as-built requirements, please refer to Section 01721.
- E. More specifically, the "As-Built" survey shall include but not be limited to the following:
1. DELIVERABLES:
 - a. TWO (2) USB/flash drive electronic copies digitally signed and sealed.
**The documentation shall be labeled to include the following:
Engineering and/or Survey Company Name with "prepared by" statement, Project Name, Reedy Creek Improvement District (RCID) Project Number (if any), Date of the data, Designate "Record Drawing", "Preliminary Record Drawing" or "Other" (with description of "Other").
 - b. ONE (1) each - 11" x 17" printed copy, signed and sealed.
 - c. Everything in the ground shall be "as-built" and submitted to RCID in a signed and sealed, scanned PDF format.
 - d. Auto-CAD Files (version 14 or higher) must be submitted in DWG format, minimally.
 - e. Each file should be for one layer included below. Multiple sections will not be accepted in one file.
 - f. Provide outline of layers on the Auto-CAD file.
 - g. Auto-CAD files shall be saved by using the E-TRANSMIT command.
 - h. Tie into section corners in the Florida State Plane Coordinate System East to insure proper orientation at each end of baseline. Section corner tie sheets can be obtained from the Orange County Surveyor's web page.
 2. DATUM:
 - a. As used in the design and shown on the Record Drawing; Horizontal datum shall be referenced to the Disney Grid System or North American Datum of 1983, on the 1990 adjustment for Florida Transverse Mercator - East Zone. **The same datum used in the design and shall be shown as the datum used in the Record Drawing;** Vertical datum shall be referenced to the National Geodetic Vertical Datum of 1929, NGVD29 Disney Datum or to the North American Vertical Datum of 1988. **THIS SHALL BE CLEARLY NOTED ON THE PLANS.**
 - b. Where there is no baseline, the baseline for water main should be the sanitary sewer, if there is no sanitary sewer then the storm sewer, if no storm sewer the property/ROW line, baseline for sanitary sewer should be the sanitary sewer, baseline for storm sewer should be the storm sewer.
 - c. All record data shall be digitally positioned on the design drawings prepared by the engineer of record. Said design drawings shall be complete and include both plan and profile views of the infrastructure.
 - d. In all cases, State Plane Coordinates shall be used in the electronic datum, station, off-set and elevations shall be shown on the plan.
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3. GENERAL: (FOR ALL LAYERS)
 - a. All references to "proposed" and "plan" are to be removed from the Record Drawing.
 - b. All lines, structures, and other items that are relocated will be removed and shown in the proper location (hand written notes and "x"ing out will not be allowed).
 - c. All record drawings will be signed and sealed by a Registered Land Surveyor or a Professional Engineer licensed to practice in the State of Florida. If certified by a Surveyor, a Professional Engineer will sign off stating that the record drawings were checked by the Engineer of Record, verifying that they inspected the work.
 - d. Clearly mark existing infrastructure which is to remain.
 - e. Clearly mark existing infrastructure which has been abandoned, and how it was abandoned (capped, filled with flowable fill, etc.).
 - f. All Detail sheets shall be included with each record drawing set.
 - g. Supply all surveys of the project and or property.
 - h. As-built drawings shall be drawn at a scale of no smaller than 1" = 100'. Areas requiring additional detail may be enlarged as necessary. Right-of-way, easements and lot lines shall be accurately shown. Lot and block numbers and street names shall be included.
 4. STORMWATER PIPE CROSSINGS AND SEPARATIONS FROM ALL OTHER UTILITIES: (PART OF EACH APPLICABLE LAYER)
 - a. Pipe types, sizes and material.
 - b. Crossings; Top and bottom elevations of pipes crossing each other and the distance between the outside of the two lines.
 - c. Separation; Distance between the outside of the two lines.
 5. STORMWATER CONFLICT STRUCTURES: (PART OF EACH APPLICABLE LAYER)
 - a. Top and bottom of casing.
 - b. Length, material and size of the casing.
 - c. All info asked for in storm or sanitary manhole descriptions with the addition of top of all pipes.
 6. CASINGS AND CONDUITS: (PART OF EACH APPLICABLE LAYER)
 - a. Size, material, depth and thickness.
 - b. Length and station and offset of ends.
 - c. Top elevation of casing.
 - d. If used, station and offset for vent, including tap location, and fittings.
 7. STORM SEWERS AND UNDERDRAIN: (TO BE LOCATED ON A SEPARATE LAYER)
 - a. Manhole and catch basin rim elevation, outfalls and top of headwall invert elevations and direction, weir and skimmer elevations, bottom of manholes and catch basins (sumps).
 - b. Length of run between storm structures, type of and size of pipe material with calculated percentage of slope for the run of pipe.
 - c. Location of service connections (without manholes) together with the invert elevation, pipe diameter and material.
 - d. Dry retention, wet retention, dry detention, and wet detention area as-builts to comply with the SFWMD permit requirements.
 - e. Exfiltration trenches, Station at beginning and end of system, width, depth.
 - f. Top of and toe of slope on berm elevation designed to stop flooding.
 - g. Underdrain, Station at beginning and end of the system, type of and size of pipe with clean-out locations.
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8. ROADWAY AND BRIDGES: (TO BE LOCATED ON A SEPARATE LAYER)
- a. Center line, edge of pavement, and curb flow line elevations shall be taken at a minimum of 100' intervals and at all grade breaks or as directed by the Engineer of Record or to match the proposed elevations on the construction plans.
 - b. Sidewalks, driveways locations and elevations as directed by the Engineer of Record (EOR) or to match the proposed elevations on the construction plans.
 - c. Bridge slabs and surface elevations shall be taken at a minimum of 100 foot intervals and at the beginning, center, end of the bridge, including every grade break point and gutter line or as directed by the Engineer of Record or to match the proposed elevations on the construction plans.
 - d. Bottom of bridge girders.
 - e. The contractor shall provide all data requested by the EOR, in enough time in advance of the anticipated in-service date, to allow the EOR to assess whether the As-Bid load rating has changed.
 - f. At a minimum the Contractor shall provide materials testing results, bridge member dimensions, differences from predicted prestressed beam cambers and build-up dimensions, concrete test results, and any other strength related data.
 - g. The Contractor shall provide pile driving records, drilled shaft records, geotechnical reports and any other related documents.
9. STREET LIGHTS AND TRAFFIC SIGNALIZATION: (TO BE LOCATED ON A SEPARATE LAYER)
- a. Manufacturer, model, and height of poles shall be shown on the record drawings.
 - b. Manufacturer, model, and wattage and voltage of lights shall be shown on the record drawings.
 - c. Pull boxes, control boxes, cabinets, pedestrian signals and meters require station and offset.
 - d. Length of conduit runs between boxes and poles, type of, and size of pipe material. Shown as, laid in the ground not as a wiring schematic, with amount, by color, type of, and size of wiring material.
 - e. Service connection, type (RCID or Duke Energy owned) station and offset.
10. IRRIGATION: (TO BE LOCATED ON A SEPARATE LAYER)
- a. Backflow preventer, control stand location, control valve, zone, station and offset.
 - b. Main line piping size, material, lengths, depth.
 - c. Heads, Type (1/4, half, 3/4, full circle).
11. LANDSCAPING: (TO BE LOCATED ON A SEPARATE LAYER)
- a. Tree type, caliper, and height.
 - b. Tree grate, size, and model.
 - c. Station, elevation, length, width, and depth of Structural Soil used.
 - d. Top of and toe of slope on berm elevation for landscaping.
12. PRIVATE CONSTRUCTION IMPACTS TO RIGHT-OF-WAY: (TO BE LOCATED ON A SEPARATE LAYER)
- a. Private utility or revocable easements in the RCID ROW's or on RCID property must be shown on the plan. Any improvements within the easement need to be shown and called out as private. The recording information should be on the as-built.
 - b. Privately owned lighting, irrigation and landscaping in the RCID right-of-way needs to be called out as private and identified.
 - c. All aerial and underground footer easements (in ROW).
 - d. Communication lines and duct banks encountered.
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13. FLOWABLE FILL: (PART OF EACH APPLICABLE LAYER) Limits of flowable fill shall be noted on the as-built. (Location, Length, Width, & Depth)

1.06 DIRECTIONAL DRILL “AS-BUILT” SURVEYS

- A. The directional drill as-built shall be data sufficient to accurately integrate the information into the project as-built, determine the actual utility construction location in relation to the utility design location, and permit an accurate field location and site marking, as required by Sunshine One Call of Florida, of the mapped directional drill. **Bore log shall be incorporated into the final record drawing set.**
- B. Horizontal Directional Drill Contractor Responsibilities:
1. The directional drill contractor will be responsible for providing the electronic tracement of the installed facility.
 2. The electronic tracement for submittal purposes will be performed on the final reaming or pulling of the drill.
 3. The linear distance between collected tracement data points will not be greater than 15 feet or individual lengths of bore casing; whichever is the lesser distance.
 4. Field location of data collection points used by the contractor will either be coordinated with the surveyor for simultaneous field location or marked in the field in a manner that the surveyor can collect the corresponding horizontal location and finished ground elevation for mapping purposes.
 5. The submitted data will include depths/distance from finished ground to the final installed facility/utility.
- C. Florida Surveyor Responsibilities:
1. All submitted directional drill as-built surveys will be performed by a Florida licensed surveyor.
 2. The submitted As-Built Map will be in accordance to Florida Statutes, Chapter 61G17-6 (Minimum Technical Standards.)
 3. Every directional drill will be identified by a unique name or number and that referenced identifier will be on the corresponding map, profile and report.
 4. All horizontal and vertical survey control will be referenced to a recognized datum.
 5. The beginning and ending as-built stations will have referenced measurements and ties to the survey control.
- D. The As-Built Report and/or Map will contain:
1. A measurement and integrated data statement; providing clear information of the data sources, assignment of responsibility and collection procedures on mapped features.
 2. A horizontal position accuracy statement; stating “The well identified features have been measured to an estimated horizontal positional accuracy of _____.”
 3. A vertical position accuracy statement; stating the vertical control loop closure and stating “The well identified features have been measured to an estimated vertical positional accuracy of _____.”
 4. The directional drill map or report if a report is required, will be signed and sealed by the Registered Florida Surveyor.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01720
Project Record Documents
Date: March 14, 2023

1.07 SUBMITTAL

- A. At the end of each week's work, make available As-Built information for Owner and/or Representative's review, and provide an electronic file containing up-to-date As-Built information for all concealed work indicated on the Drawings.
- B. The Contractor shall submit a copy of the current monthly updated As-Built Survey ("Progressive As-Built Survey") signed and sealed and also submit identically matching electronic files in PDF format and the same CAD file format as the original design. The Progressive As-Built Survey shall be submitted to the Owner with each Application for Payment and indicate the horizontal and vertical locations of all constructed improvements to date with sufficient information and notes to easily determine if the improvements were constructed in conformance with the Contract Documents. The Progressive As-Built Survey submittals shall include a cover sheet and include the surveyor's statement regarding the constructed improvements being within the specified tolerances or if not indicating the variances.

The Contractor's submission of a Progressive As-Built Survey or Final As-Built Survey, as applicable, acceptable to the Owner, with its Application for Payment, is a condition precedent for payment. If unidentified utilities (not shown on the Drawings) are encountered during the installation of the Work, their horizontal and vertical location shall be included in the As-Built Survey. Provide the name and type of utility, the size and material type of pipe, conduit or structure and if known, the status (active or inactive) of the utility.

The Contractor shall submit documentation to verify the accuracy of field surveying work at the request of the Owner. Cost of said survey for each project shall be included in the Contract Sum.

- C. Contractor's failure to maintain Record Contract Drawings, As-Built Drawings, Record Specifications, As-Built Survey documentation or other record documentation, and make same available for Owner's Representative's review (minimum of weekly) shall be deemed cause to withhold payment of amounts otherwise due until such failure is remedied.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

SECTION 01730
Execution
Date: March 14, 2023

**SECTION 01730
EXECUTION**

PART 1 – GENERAL

1.01 PRODUCT PREPARATION

- A. Install equipment and materials complete as specified, as required for operation and continuous service and as recommended by the manufacturer at the locations shown on the Contract Drawings.
- B. All equipment and hardware shall be inspected for visual defects and missing parts prior to installation.
- C. Missing pieces shall be replaced and all damage corrected prior to the installation by the Contractor.
- D. Install materials at times as required to meet the specified construction schedule and as necessary for movement of equipment into place without delaying the erection of structures and other equipment.
- E. Equipment shall be thoroughly cleaned of all shipping material, dust and dirt prior to installation.

1.02 EXISTING WORK

- A. Operations affecting existing work shall be conducted with care not to damage work in place.
- B. For the damage of existing work, refer to the Reedy Creek Improvement District General Conditions of the Contract for Construction.
- C. The disassembling, disconnecting, cutting, removal or altering in any way of existing work shall be carried on in such a manner as to prevent injury or damage to all portions of existing work, whether they are to remain in place, be reused in the new work or be salvaged and stored.
- D. Where existing work is changed or removed, or where new work adjoins, connects to or abuts existing work, the existing work shall be altered as necessary and connected in a substantial and workmanlike manner.
- E. Existing work that is permitted to be abandoned by the Owner shall be abandoned in place or shall be removed as necessary so as not to interfere with the new work.
- F. All new work shall match, as nearly as practicable the existing adjoining and/or adjacent similar work.

END OF SECTION 01730

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH- PHASE III
Contract: C006110

Section 01750
Starting and Adjusting
Date: March 14, 2023

**SECTION 01750
STARTING AND ADJUSTING**

PART 1 – GENERAL

1.01 CONTRACTOR’S DUTIES

- A. The Contractor shall provide all labor to prepare for the startup and initial operation of all electrical equipment as required to meet the Owner’s/Owner’s Representative’s startup schedule.
- B. The contractor shall comply with the Owner’s/Owner’s Representative’s switching and tagging procedures for all equipment prior to and during operation.
- C. Submit all test reports to the Owner’s/Owner’s Representative prior to the re-energization of all electrical systems.

1.01 OWNER’S REPRESENTATIVE’S DUTIES

- A. The Owner’s Representative will provide all operating personnel.

END OF SECTION 01750

REEDY CREEK IMPROVEMENT DISTRICT
*CONTRACT NAME
Invitation to Bid: *C00

Section 09870
Protective Coatings for Carbon Steel Light Poles and Mast Arms
*ISSUE DATE

**SECTION 09870
PROTECTIVE COATINGS FOR CARBON STEEL LIGHT POLES
AND MAST ARMS**

PART 1 – GENERAL

1.01 DESCRIPTION

- A. The intent of this section is to provide a durable, long-lasting coating system to withstand severe climatic conditions without the use of galvanizing.
- B. This section covers coatings of carbon steel traffic signal poles, traffic signal pole mast arms, and roadway light poles.
- C. Both exterior and interior coatings are included, as is their application following surface preparation.
- D. Contractor quality assurance and third-party inspection is also included.

PART 2 – PRODUCTS

2.01 INTERNAL COATING

- A. The internal coating shall be the rust inhibiting Carboline Carbomastic 15 or 90 Surface Tolerant Epoxy or equivalent.

2.02 EXTERNAL COATING

- A. The external coating shall be a three coat system as described below.
 - 1. The primer coat shall be the solvent based inorganic zinc primer Carboline Carbozinc 11 or equivalent.
 - 2. The intermediate coat shall be the cycloaliphatic amine epoxy Carboline Carboguard 893 or equivalent.
 - 3. The finish coat shall be the aliphatic acrylic polyurethane Carboline Carbothane 134 HG or equivalent.

PART 3 – APPLICATION

3.01 INTERNAL COATING

- A. Apply the internal coating per the manufacturer's product data information. Do not deviate from the manufacturer's product data information unless specifically stated in this section.
- B. Dry film thickness of the internal coating shall be 4 to 6 mils.

3.02 EXTERNAL PRIMER COAT

-
- A. Apply the external primer coat per the manufacturer's product data information. Do not deviate from the manufacturer's product data information unless specifically stated in this section.
 - B. Prior to application, prepare the exterior surface in accordance with SSPC-SP10 / NACE No 2 near white metal.
 - C. Dry film thickness of the external primer coat shall be 2 to 3 mils.

3.03 EXTERNAL INTERMEDIATE COAT

- A. Apply the external intermediate coat per the manufacturer's product data information. Do not deviate from the manufacturer's product data information unless specifically stated in this section.
- B. During application, the relative humidity shall not exceed 90%.
- C. Dry film thickness of the external intermediate coat shall be 3 to 4 mils.

3.04 EXTERNAL FINISH COAT

- A. Apply the external finish coat per the manufacturer's product data information. Do not deviate from the manufacturer's product data information unless specifically stated in this section.
- B. Prior to application, lightly sand or abrade the previous application to roughen and degloss the intermediate coat.
- C. During application, the relative humidity shall not exceed 80%.
- D. Dry film thickness of the external primer coat shall be 2 to 2.5 mils.

PART 4 – QUALITY ASSURANCE

4.01 APPLICATOR QUALITY CONTROL

- A. Quality Control Plan is required for all coatings. The Contractor is required at all times to coordinate the inspection efforts of the coatings with the Owner's Representative.
- B. The coating applicator shall keep records of its quality control throughout the application process. Records shall include, but not be limited to:
 - 1. Environmental conditions during coating application.
 - 2. Surface preparation prior to coating application.
 - 3. Coating dry film thickness.
- C. The Owner shall retain a Third-party Inspector to perform shop and field inspections of the coatings. The coating applicator shall provide Owner's Inspector:
 - 1. Copies of the manufacturer's product data information.

REEDY CREEK IMPROVEMENT DISTRICT
WORLD DRIVE NORTH PHASE III
Contract: C006110

Section 09870
Protective Coatings for Carbon Steel Light Poles and Mast Arms
Date: March 14, 2023

2. Access to the work before, during, and after application of each coat. Access to shipping and receiving, production, and quality control records.
3. If any issues should arise in the quality control inspection, testing shall be required that may affect the pole's finish.
4. The pole manufacturer must submit an engineer's analysis report.

4.02 OWNER'S THIRD-PARTY INSPECTOR

- A. The Owner shall retain a Third-party Inspector to perform shop and field inspections of the coatings. At a minimum the Inspector shall be NACE Level 3 certified or equivalent.
- B. The Inspector shall visit each coating applicator's shop a minimum of two times during production. Shop inspections shall include, but not be limited to:
 1. Verification of materials.
 2. Verification of quality records.
 3. Witnessing of surface preparation and coating applications, including verification the coating applicator complies with the manufacturer's product data information.
 4. Measurement of coating dry film thickness.
- C. The Inspector shall also inspect the coatings of signal poles, signal pole mast arms, and light poles as installed/erected in the field. Any damage caused by shipping, handling, and/or erection shall be fixed by reapplication of the coating system in the field, including any required surface treatment. The reapplication of the coating system in the field shall be re-inspected by the Inspector. Re-inspection costs shall be borne by the Contractor.

END OF SECTION 09870

Reedy Creek Improvement District (RCID)

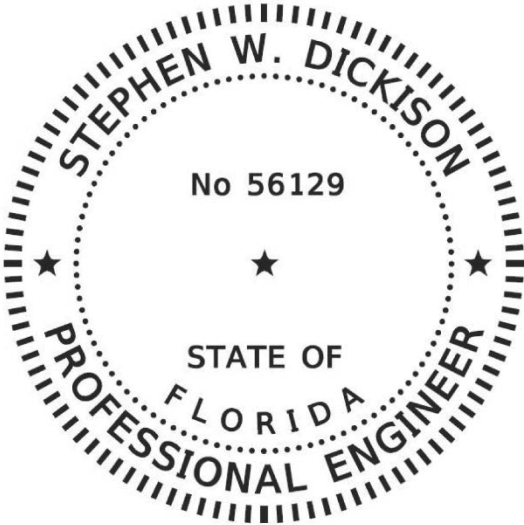
World Drive North Phase 3

Division 2 & 3 Specifications

Owner:	Reedy Creek Improvement District 1920 East Buena Vista Dr, Suite A Lake Buena Vista, FL 32830
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APPROVED BY:

*THIS DOCUMENT HAS BEEN DIGITALLY SIGNED
AND SEALED BY*



*PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED. THE
SIGNATURE MUST BE VERIFIED ON ANY
ELECTRONIC COPIES.*

*TLP ENGINEERING CONSULTANTS, INC.
450 SOUTH ORANGE AVE., SUITE 450
ORLANDO, FL. 32801
PH: 407-901-5060
CERT. OF AUTH. #27205
STEPHEN W. DICKISON, P.E. NO. 56129*

*THE ABOVE NAMED PROFESSIONAL ENGINEER SHALL BE RESPONSIBLE FOR
THE FOLLOWING SHEETS IN ACCORDANCE WITH RULE 61G15-23.004, F.A.C.*

**100% Specification Package
August 2022**

REEDY CREEK IMPROVEMENT DISTRICT (RCID)
WORLD DRIVE NORTH PHASE 3
100% DIVISION 2 & 3 SPECIFICATIONS
August 2022

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World Drive North Phase 3

Division 2 & 3 Specifications

100% Specifications
August 2022

SECTION 1
ROADWAY SPECIFICATIONS

REEDY CREEK IMPROVEMENT DISTRICT (RCID) World Drive North Phase 3 FDOT Specification Reference and Modifications

The FDOT Standard Specifications for Road and Bridge Construction, July 2019 Division II Construction Details and Division III Materials are hereby incorporated into the Division 2 and 3 Specifications with the following additions, deletions and clarifications listed below. All work required by these specifications shall be included in the price and format required by the Owner's Representative. The following definitions shall be used in association with this project:

- 1) Department - Reedy Creek Improvement District Planning and Engineering
- 2) Engineer - Owner's Representative as defined in the General Conditions.
- 3) Engineer of Record – Stephen W. Dickison, TLP Engineering Consultants, Inc.

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SECTION 101: MOBILIZATION**101-1 Description: Modified**

Perform preparatory work and operations in mobilizing for beginning work on the project, including, but not limited to, those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. Include the costs of bonds and any required insurance and any other preconstruction expense necessary for the start of the work, excluding the cost of construction materials. The cost of all subsurface investigation, pre-bid site investigations, or other research associated with subsurface conditions shall be included in the price to the Owner's Representative. Within 14 calendar days after notice to proceed, the contractor shall stake the roadway alignments at 100' intervals and at project limit breaks with stationing shown on the stakes. The stakes are to be maintained throughout the life of the project.

101-1.1 Job Site Photos and Videos: Added: Contractor shall submit aerial photographic prints monthly with progress payment requests. The first set of aerial photographic prints must be taken prior to any clearing and grubbing. The aerial photographs shall be color and at least 11" by 14" in size. Exposures shall be made at 10 per mile minimum plus one exposure for each off site pond construction. Owner's Representative will approve all views. Contractor shall submit a quality video documenting before and after construction field conditions for the entire project. Project Manager will approve all views. The contractor shall also submit 1 set of 11" by 14" showing after construction status. The rest of the monthly job site progress photos shall be presented on disk. Payment for these items shall be included under this pay item.

SECTION 102: MAINTENANCE OF TRAFFIC**102-1 Description: Modified**

Maintain traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work. Construct and maintain detours. Provide facilities for access to residences, businesses, etc., along the project. Furnish, install and maintain traffic control and safety devices during construction. Furnish and install work zone pavement markings for maintenance of traffic (MOT) in construction areas. Provide any other special requirements for safe and expeditious movement of traffic specified in the Plans. MOT includes all facilities, devices and operations as required for safety and convenience of the public within the work zone.

Do not maintain traffic over those portions of the project where no work is to be accomplished or where construction operations will not affect existing roads. Do not obstruct or create a hazard to any traffic during the performance of the work, and repair any damage to existing pavement open to traffic.

Existing traffic signs shall remain in place or be relocated as needed by the Contractor until the new signs are installed. The existing signs shall be removed by the Contractor and disposed of in a proper manner. The Contractor shall advise RCID and provide his own Maintenance of Traffic Plan for approval as specified in 102-4 (Alternative Traffic Control Plan) or follow the plan designed as part of the construction plans. The Maintenance of Traffic plan shall be approved prior to beginning construction.

The Contractor shall be aware that there may be construction operations and maintenance of traffic for other projects affecting this project. The contractor shall coordinate all construction with those contractors and shall adjust the schedules of construction for the work in the area of these projects as may be necessary. Cost for this coordination and scheduling of work shall be included in the unit prices for all work.

102-2.4 Temporary Pavement: Added: All temporary pavements, if not specified in the plans, will be a minimum of 6" RAP material base and 1.5" of HMA FC 9.5.

102-3.2 Worksite Traffic Supervisor: Modified: Provide a Worksite Traffic Supervisor who is responsible for initiating, installing, and maintaining all temporary traffic control devices as described in this Section and the Contract Documents. Provide all equipment and materials needed to set up, take down, maintain traffic control, and handle traffic-related situations. Use approved alternate Worksite Traffic Supervisors when necessary. Contractor shall maintain FDOT certified personnel in charge of the maintenance of traffic for the duration of the agreement.

The Worksite Traffic Supervisor must meet the personnel qualifications specified in Section 105.

The Worksite Traffic Supervisor is to perform the following duties:

1. On site direction of all temporary traffic control on the project.
2. Is on site during all set up and take down, and performs a drive through inspection immediately after set up.
3. Is on site during all nighttime operations ensuring proper temporary traffic control.
4. Immediately corrects all safety deficiencies and corrects minor deficiencies that are not immediate safety hazards within 24 hours.
5. Is available on a 24 hour per day basis and present at the site within 45 minutes after notification of an emergency situation and is prepared to respond to maintain temporary traffic control or to provide alternate traffic arrangements.

6. Conducts daily daytime and weekly nighttime inspections of projects with predominately daytime work activities, and daily nighttime and weekly daytime inspections of projects with predominantly nighttime work activities of all traffic control devices, traffic flow, pedestrian, bicyclist, and business accommodations.

Advise the project personnel of the schedule of these inspections and give them the opportunity to join in the inspection as deemed necessary. Pedestrians are to be accommodated with a safe, accessible travel path around work sites separated from mainline traffic in compliance with the Americans with Disabilities Act (ADA) Standards for Transportation Facilities. Maintain existing or detour bicycle facilities satisfactorily throughout the project limits. Existing businesses in work areas are to be provided with adequate entrances for vehicular and pedestrian traffic during business hours.

The Department may disqualify and remove from the project a Worksite Traffic Supervisor who fails to comply with the provisions of this Section. The Department may temporarily suspend all activities, except traffic, erosion control and such other activities that are necessary for project maintenance and safety, for failure to comply with these provisions.

102-5.5 Access for Residences and Businesses: Modified: Provide continuous access to all residences and all places of business. The Contractor shall maintain access for all traffic at all times. If during construction access for traffic is changed, then the Contractor shall notify the owner(s), in writing for review and approval, a minimum of ten working days in advance.

102-13.11 Temporary Crash Cushion (Redirective or Gating): Modified: Price and payment will be full compensation for furnishing, installing, maintaining (including restoring or replacing damaged) and subsequently removing such crash cushions. Additional MOT required for the repair of the crash cushion will be paid for under the appropriate MOT pay item. On lump sum projects, additional MOT required for the repair of the crash cushion will be paid for based on the weighted average unit price in the Six Month Moving Statewide Averages report for the temporary traffic control devices deployed. The report for the six months prior to the letting of this Contract will be used.

SECTION 104: PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION.**104-5 Preconstruction Requirements: Modified:**

The Contractor shall perform all work in accordance with all requirements and conditions of the permits included in the bid specifications, including those of the South Florida Water Management District (Environmental Resource Permit). Prior to the Preconstruction Conference, submit to the Department an Erosion Control Plan meeting the requirements or special conditions of all permits authorizing project construction. If no permits are required or the approved permits do not contain special conditions or specifically address erosion and water pollution, the project Erosion Control Plan will be governed by 7-1.1, 7-2.2, 7-8.1, 7-8.2, and Section 104.

When a DEP generic permit is issued, the Contractor's Erosion Control Plan shall be prepared to accompany the Department's Stormwater Pollution Prevention Plan (SWPPP). Ensure the Erosion Control Plan includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-storm water discharges, such as contaminated groundwater or accidental spills. Do not begin any soil disturbing activities until Department approval of the Contractor's Erosion Control Plan, including required signed certification statements have been submitted to the Department.

Failure to sign and submit any required documents or certification statements will be considered a default of the Contract. Any soil disturbing activities performed without the required signed documents or certification statements may be considered a violation of the DEP Generic Permit.

When the SWPPP is required, prepare the Erosion Control Plan in accordance with the planned sequence of operations and present in a format acceptable to the Department. The Erosion Control Plan shall describe, but not be limited to, the following items or activities:

1. For each phase of construction operations or activities, supply the following information:
 - a. Locations of all erosion control devices
 - b. Types of all erosion control devices
 - c. Estimated time erosion control devices will be in operation
 - d. Monitoring schedules for maintenance of erosion control devices
 - e. Methods of maintaining erosion control devices
 - f. Containment or removal methods for pollutants or hazardous wastes
2. The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.
3. Submit for approval the Erosion Control Plans meeting paragraphs 3a, 3b, or 3c below:
 - a. Projects permitted by the Southwest Florida Water Management District (SWFWMD), require the following: Submit the Erosion Control Plan to the Engineer for review and to the appropriate SWFWMD Office for review and approval. Include the SWFWMD permit number on all submitted data or correspondence. The Contractor may schedule a meeting with the appropriate SWFWMD Office to discuss his Erosion Control Plan in detail, to expedite the review and approval process. Advise the Engineer of the time and place of any meetings scheduled with

SWFWMD. Do not begin construction activities until the Erosion Control Plan receives written approval from both SWFWMD and the Engineer.

- b. Projects permitted by the South Florida Water Management District or the St. Johns River Water Management District, require the following: Obtain the Engineer's approval of the Erosion Control Plan. Do not begin construction activities until the Erosion Control Plan receives written approval from the Engineer.
- c. Projects authorized by permitting agencies other than the Water Management Districts or projects for which no permits are required require the following: The Engineer will review and approve the Contractor's Erosion Control Plan. Do not begin construction activities until the Erosion Control Plan receives written approval from the Engineer. Comply with the approved Erosion Control Plan.

SECTION 105 CONTRACTOR QUALITY CONTROL GENERAL REQUIREMENTS:

Has been deleted and replaced with the following:

105-1 General

105-1.1 Quality Control Documentation:

105-1.1.1 Submission of Materials Certification and Reporting Test Results: Provide certifications prior to placement of materials. Report test results at completion of the test and meet the requirements of the applicable Specifications.

105-1.1.2 Database: N/A

105-1.1.3 Worksheets: N/A

105-1.2 Inspections to Assure Compliance with Acceptance Criteria

105-1.2.1 General: RCID is not obligated to make an inspection of materials at the source of supply, manufacture, or fabrication. Provide the Engineer with unrestricted entry at all times to such parts of the facilities that concern the manufacture, fabrication, or production of the ordered materials. Bear all costs incurred in determining whether the material meets the requirements of these Specifications.

105-1.2.2 Quality Control Inspection: Refer to Specification 01455 for testing requirements.

105-1.2.3 Notification of Placing Order: Order materials sufficiently in advance of their incorporation in the work to allow time for sampling, testing and inspection. Notify the Engineer, prior to placing orders for materials. Submit to the Engineer a fabrication schedule for all items requiring commercial inspection, before or at the preconstruction meeting. These items include, but are not limited to steel bridge components, overhead cantilevered sign supports with cantilevered arms exceeding 41 feet, moveable bridge components or any other item identified as an item requiring commercial inspection in the Contract Documents. Notify the Engineer at least 30 days before beginning any production and include a production schedule.

105-2 Additional Requirements for Lump Sum Projects:

Prepare and submit to the Engineer a project-specific list of material items and quantities specified as unit price

items in the Bid Form as a Bid Item Schedule 21 calendar days prior to commencement of construction. Provide up-to-date quantities for the items on the Bid Item Schedule to the Engineer with each monthly progress estimate. RCID may not authorize payment of any progress estimate not accompanied by updated Bid Item Schedule quantities. Maintain the Bid Item Schedule throughout the project including the quantity placed since the previous submittal, and total to date quantity and any additional materials placed. Do not commence work activities that require testing until the Bid Item Schedule has been reviewed and accepted by the Engineer. At final acceptance, submit a Final Bid Item Schedule that includes all materials used on the project in the same format as the monthly reports.

105-3 Quality Control Program

105-3.1 General: Certain operations require personnel with specific qualifications. Certain materials require production under an approved Quality Control (QC) Plan to ensure that these materials meet the requirements of the Contract Documents. Applicable materials include hot mix asphalt, Portland cement concrete (Structural), cementitious materials, timber, steel and miscellaneous metals, galvanized metal products, prestressed and/or precast concrete products and drainage products. For all applicable materials included in the Contract, submit QC Plan prepared in accordance with the requirements of this Section to the Engineer for review and approval. Do not incorporate any of these materials into the project prior to the Engineer's approval of the QC Plan. Steel and Miscellaneous Metal products, including aluminum, are defined as the metal components of bridges, including pedestrian and moveable bridges, overhead and cantilevered sign supports, ladders and platforms, bearings, end wall grates, roadway gratings, drainage items, expansion joints, roadway decking, shear connectors, handrails, galvanized products, fencing, guardrail, light poles, high mast light poles, standard mast arm assemblies and Monotube assemblies, stay in-place forms, casing pipe, strain poles, fasteners, connectors and other hardware.

When accreditation or certification is required, make supporting documents from the two previous inspections performed by the accrediting or certifying agency available to RCID upon request.

Obtain approval prior to beginning production. Meet and maintain the approved Quality Control Program requirements at all times. Production and construction of these products without RCID's prior approval of a Quality Control Program may result in rejection of the products. Continued approval will be subject to satisfactory results from RCID evaluations, including the Independent Assurance program. In cases of noncompliance with the approved Quality Control Program, identify all affected material and do not incorporate or supply to the project. The following conditions may result in suspension of a Quality Control Program:

- A. Failure to timely supply information required.
- B. Repeated failure of material to meet Standard Specification requirements.
- C. Failure to take immediate corrective action relative to deficiencies in the performance of the Quality Control Program.
- D. Certifying materials that are not produced under an approved Quality Control Program for use on RCID projects.
- E. Failure to correct any deficiencies related to any requirement of the Quality Control Program, having received notice from RCID, within the amount of time defined in the notice.

105-3.2 Compliance with the Materials Manual:

Producers of Flexible Pipe shall meet the requirements of Section 6.1, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section61V2.shtm>

Producers of Pre-cast Concrete Pipe shall meet the requirements of Section 6.2, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section62V2.shtm>

Producers of Pre-cast Concrete Drainage Structures shall meet the requirements of Section 6.3, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section63V2.shtm>

Producers of Pre cast/Pre stressed Concrete Products shall meet the requirements of Sections 8.1 and 8.3 of the FDOT's Materials Manual, which may be viewed at the following URLs:

8.1: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/materials/administration/resources/library/publications/materialsmanual/documents/v1-section81-clean-pdf?sfvrsn=2c108131_2

8.3: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/materials/administration/resources/library/publications/materialsmanual/documents/v1-section83-clean.pdf?sfvrsn=692af8fc_4

Producers of Pre cast Pre stressed Concrete Products using Self Consolidating Concrete shall meet the requirements of Section 8.4, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section84V2.shtm>

Producers of Incidental Pre cast/Pre stressed Concrete Products shall meet the requirements of Section 8.2, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section82V2.shtm>

Producers of Portland Cement Concrete shall meet the requirements of Section 9.2, Volume II of the FDOT's Materials Manual, which may be viewed at the following URL:

<https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section92V2.shtm>

Producers of Structural Steel and Miscellaneous Metal Components shall meet the requirements of Sections 11.1 and 11.2 of the FDOT's Materials Manual, which may be viewed at the following URLs:

11.1: https://fdotwww.blob.core.windows.net/sitefinity/docs/default-source/materials/administration/resources/library/publications/materialsmanual/documents/v1-section111-clean.pdf?sfvrsn=909e4f0e_2

11.2: <https://www.fdot.gov/programmanagement/Implemented/URLinSpecs/Section112V2.shtm>

105-3.3 Hot Mix Asphalt, Portland Cement Concrete (Structural), Earthwork, Cementitious Materials, Timber, Steel and Miscellaneous Metals, Galvanized Metal Products, Prestressed and/or Precast Concrete Products and Drainage Products Quality Control Program: Have an accepted Quality Control Program, developed in accordance with this Section and all applicable technical specifications, during the production of materials.

105-3.4 Prestressed Concrete Quality Control Program: Ensure that pre stressed concrete plants participating in this project are qualified. Obtaining qualification will require a current Pre cast/Pre stressed Concrete Institute (PCI) certification and an approved Quality Control Plan, developed in accordance with this Section.

105-3.5 Steel and Miscellaneous Metals Quality Control Program: Ensure that the fabricators of Steel and

miscellaneous metal products participating in the RCID's Quality Control Acceptance Program are qualified. Obtaining qualification requires an accepted Quality Control Plan, developed in accordance with this Section. A current American Institute for Steel Construction (AISC) certification is a requirement for the Quality Control Acceptance Program of the steel and miscellaneous metal fabricators, provided that AISC certification program is available for the category of the fabrication products.

105-3.6 Producers Quality Control Plan Submittal: The producers shall submit their proposed Quality Control Plans to the Engineer for review and acceptance. For producers of Portland cement concrete (Structural), which do not have an FDOT approved Quality Control Plan, submit a proposed Quality Control Plan, following the guidelines set forth in this section, to RCID for review and acceptance.

105-3.7 Quality Control Plan Review and Acceptance: RCID will respond to the producer within 21 calendar days of receipt of the proposed Quality Control Program. RCID may perform evaluation activities to verify compliance with submitted documents prior to acceptance.

If the Quality Control Program must be revised for any reason, including non-compliance, submit the revision to RCID. RCID will respond to the producer within 7 calendar days of receipt of the revised Quality Control Program.

105-3.8 Contractor's Quality Control Plan: Have an approved Quality Control Plan meeting the requirements of this Section for the transportation, storage, placement, and other related construction operations required by the Contract Documents.

105-4 Contractor Certification of Compliance:

Provide the Engineer with a notarized monthly certification of compliance with the requirements of this Section, to accompany each progress estimate, on a form provided by the Engineer. RCID may not authorize payment of any progress estimate not accompanied by an executed certification document.

Final payment will not be made until a final notarized certification summarizing all QC exceptions has been submitted.

105-5 Guidelines for Development of the Quality Control Plan:

105-5.1 General: Use the following guidelines for developing the QC Plan. Provide detailed policies, methods and procedures to ensure the specified quality of all applicable materials and related production and field operations. Include other items in addition to these guidelines as necessary.

105-5.2 Personnel:

105-5.2.1 Qualifications: Submit the Training Identification Numbers (TIN) for all technicians performing sampling, testing and inspection for both field and laboratory tests. Include employed and subcontracted technicians.

105-5.2.2 Level of Responsibility: Identify the primary contact for RCID. Identify roles and responsibilities of various personnel involved in the QC process.

105-5.3 Raw Materials:

105-5.3.1 Source: Identify the sources of raw materials. Provide locations and plant or mine numbers when applicable.

105-5.3.2 Certification: Describe methods of verifying compliance of certification with the specifications.

105-5.3.3 Disposition of Failing Materials: Describe the system for controlling non-conforming materials, including procedures for identification, isolation and disposition.

105-5.4 Storage Facilities for Raw Materials: Describe measures and methods, including bedding details, for preventing segregation, contamination and degradation. Describe methods of identifying individual materials. Where applicable, submit a site plan showing the locations of various materials.

105-5.5 Production Equipment: Describe calibration frequencies, maintenance schedule and procedures for production equipment.

105-5.6 Plant Requirements

105-5.6.1 Plant Identification: For those facilities producing materials listed in Article 105-3, provide the mailing address, physical address including county, telephone and fax numbers, E-mail address, primary contact at the plant, responsible person in charge, Owner information and Vendor Number and other information as required.

105-5.6.2 Process Control System: Describe the methods and measures established to ensure Contract compliance for the produced materials that are supplemental to the QC sampling and testing program described in the Contract Documents. These methods and measures will include, but are not limited to, inspection schedule, additional sampling and testing, maintenance schedule, etc.

105-5.6.3 Loading and Shipping Control: Describe the methods and measures for preventing segregation, contamination and degradation during loading and shipping operations. Describe the methods established for materials to be in compliance with the specifications at the point of use.

105-5.6.4 Types of Products Generated: Describe the products the plant is approved to produce under RCID guidelines.

105-5.7 Other Requirements

105-5.7.1 Copy of Certification: Attach examples of certifications issued by the plant/Contractor for the products approved by the FDOT.

105-5.7.2 Statement of Compliance: Include a statement of compliance with all quality requirements set forth by RCID in the Contract Documents and FDOT manuals.

105-5.7.3 Information on Producers with Accepted Quality Control Programs: Identify the Producers of materials listed in 105-3.1 for the project.

105-5.7.4 Describing Documentation Procedure: Identify location of document storage to enable RCID review. Include QC charts, qualification/accreditation records, inspection reports, and other pertinent/supporting documents for an approved QC Plan.

105-5.8 Final Manufactured Product - Plant Operations: Describe inspection schedule and methods for identifying defects and non-compliance with the specifications. Describe corrective actions and methods to resolve them.

105-5.8.1 Storage: When storage of the produced materials is required and it is not defined in the Contract Documents, describe the methods and duration for storage. Include measures and methods for preventing segregation, contamination and degradation during storage.

105-5.8.2 Disposition of Failing Materials: When not described in the specifications, describe the methods and measures for identifying and controlling the failing materials. Include preventive and corrective measures. Describe disposition of failing materials.

105-5.9: Final Manufactured Product - Field Operations:

105-5.9.1 Transportation: Describe the method of delivery from the point of production/storage to the point of placement.

105-5.9.2 Storage: When storage of the produced materials is required and it is not defined in the Contract Documents, describe the methods and duration for storage. Include measures and methods for preventing segregation, contamination and degradation during storage.

105-5.9.3 Placement: Describe the methods and identify the type of equipment used in incorporation of the materials into the project.

105-5.9.4 Disposition of Failing Materials: When not described in the specifications, describe the methods and measures for identifying and controlling the failing materials. Include preventive and corrective measures. Describe disposition of failing materials.

105-6 Quality Control Plan Submittal:

Submit the QC Plan to the Engineer for approval within 14 calendar days after the Contract Award. The Engineer will review the QC Plan and respond to the Contractor within 14 calendar days of receipt.

If at any time the Contractor is not in compliance with the approved QC Plan, or a part thereof, affected portions of the plan will be disapproved. Cease work in the affected operation(s) and submit a revision to the Engineer.

If the QC Plan, or a part thereof, must be revised, submit the revision to the Engineer. The Engineer will review the revision and respond within seven calendar days of receipt.

Continue to work on operations that are still in compliance with the approved sections of the QC Plan.

105-7 Personnel Qualifications:

105-7.1 General: Provide qualified personnel for sampling, testing and inspection of materials and construction activities. Ensure that qualifications are maintained during the course of sampling, testing and inspection.

Construction operations that require a qualified technician must not begin until RCID verifies that the technician is on the CTQP list of qualified technicians. The use of CTQP personnel are subject to satisfactory results from periodic Independent Assurance evaluations. Unsatisfactory results from periodic Independent Assurance evaluations may result in immediate removal of CTQP personnel from the project.

105-7.2 QC Manager: Designate a QC Manager who has full authority to act as the Contractor's agent to institute any and all actions necessary for the successful implementation of the QC Plan. The QC Manager must speak and understand English. The QC Manager must be on-site at the project on a daily basis or always

available upon four hours notice to administer the QC Plan. This includes administering, implementing, monitoring, and as necessary, adjusting the processes to ensure compliance with the Contract Documents. Ensure that the QC Manager is qualified as such through the Construction Training/Qualification Program. Under the direction of the QC Manager, and using RCID's standard forms provided by the Engineer, summarize the daily QC activities including testing and material sampling. Since erasures are strictly prohibited on all reports and forms, use blue or colored ink. Do not use black ink. If manual corrections to original data are necessary, strike through, correct, and date the entry, including the initials of the person making the correction. Make copies of the completed forms available for RCID to review daily unless otherwise required in the specifications. Ensure that the QC test data is reported to RCID on a daily basis. Maintain all QC related reports and documentation for a period of three years from final acceptance of the project. Make copies available for review by RCID upon request.

105-7.3 Worksite Traffic Supervisor: Provide a Worksite Traffic Supervisor who is responsible for initiating, installing, and maintaining all traffic control devices as described in Section 102 and in the Contract Documents and has a minimum of six months experience in traffic control. Ensure that the Worksite Traffic Supervisor is certified in the advanced training category by a FDOT approved training Provider. Approved Providers will be posted on the FDOT's website at the following URL address: <http://www.motadmin.com/find-a-training-provider.aspx>. Use approved alternate Worksite Traffic Supervisors when necessary.

105-7.4 Flagger: Provide trained flaggers to direct traffic where one-way operation in a single lane is in effect and in other situations as required. The Worksite Traffic Supervisor or others as approved by the FDOT will provide training for flaggers.

105-7.9 Prestressed Concrete Plant Facility Quality Control Personnel: Ensure each plant has an onsite production manager, an onsite Facility Manager for QC, a plant engineer, and adequate on site QC inspectors/technicians to provide complete QC inspections and testing. Ensure the Facility Manager for QC has at least five years of related experience and a current PCI QC personnel Level III certification and a certificate of completion of Section 450 Specification examination. Ensure that the QC inspector/technician has current PCI QC Technician/Inspector Level II certification and a certificate of completion of Section 450 Specification examination.

105-7.11 Drainage Product Manufacturing Facilities Quality Control Personnel:

105-7.11.1 Precast Concrete Drainage, Precast Box Culvert, Precast Concrete Pipe Fiber Reinforced Concrete Pipe, and Flexible Pipe Manufacturing Facilities Quality Control Personnel:

105-7.11.1.1 Level I Quality Control Inspectors: Ensure that the Level I Inspectors have completed a minimum of a 12-hour, FDOT approved, Level I QC Inspector training course in the respective work area. As an exception to this, ensure Flexible Pipe Level I QC Inspectors have completed a minimum of an 8-hour, FDOT approved, Level I QC Flexible Pipe Inspector training course.

105-7.11.1.2 Level II Quality Control Inspectors: Ensure that Level II Inspectors have completed FDOT approved Level I QC Inspector training and a minimum of a 5-hour, FDOT approved, Level II QC Inspector training course in the respective work areas.

105-7.11.1.3 Additional Requirements for Quality Control Personnel of Precast Concrete Drainage and Precast Concrete Box Culvert Manufacturing Facilities

105-7.11.1.3.1 Testing Personnel: Ensure the personnel performing plastic property tests have ACI Concrete Field Testing Technician- Grade I certification. Ensure the personnel performing laboratory compressive strength testing have ACI Concrete Laboratory Testing Technician-Grade 1 certification or ACI Concrete Strength Testing Technician certification.

105-7.11.1.3.2 Batch Plant Operator: Ensure the concrete batch plant operator is qualified as a CTQP Concrete Batch Plant Operator. As an alternative to CTQP qualification, the Department will accept the completion of a minimum of a six-hour, Department approved, Batch Plant Operator training course. For dry cast concrete pipe and dry cast drainage structures, as an alternative to CTQP qualification, the Department will accept the American Concrete Pipe Association (ACPA) Quality School Level II Certification.

105-7.12 Structural Steel and Miscellaneous Metals Fabrication Facility Quality Control Personnel: Ensure each fabrication facility has an on-site production manager, an on-site facility manager for QC, a plant engineer, and on-site QC inspectors/technicians to provide complete QC inspections and testing. Ensure that the Facility Manager for QC and QC inspectors/technicians meet the certification requirements set forth in the latest version of AASHTO/NSBA Steel Bridge Collaboration S 4.1, Steel Bridge Fabrication QC/QA Guide Specification, including the years of experience required in Table 105-5 below. The Facility Manager for QC must meet the requirements of Table 105-5 for every Structural Steel Member Type produced by a plant with QC being managed by the Facility Manager for QC. The Facility Manager for QC will report directly to the plant manager or plant engineer and must not be the plant production manager nor report to or be the subordinate of the plant production manager. QC inspectors/technicians must be the employees of and must report directly to the Facility Manager for QC.

Structural Steel Member Type	Minimum Years of Experience Required	
	QC Inspector/Technician	Facility Manager for QC
Rolled beam bridges	1 year	3 years
Welded plate girders	2 years	4 years
Complex structures, such as trusses, arches, cable stayed bridges, and moveable bridges	3 years	5 years
Fracture critical (FC) members	3 years	5 years

SECTION 110: CLEARING AND GRUBBING

110-2.1 Work Included: Modified: All references to "right-of-way" shall be "project construction limits". Completely remove and dispose of all buildings, timber, brush, trees, stumps, roots, rubbish, debris, existing flexible pavement and base, drainage structures, culverts, and pipes. Remove all other obstructions resting on or protruding through the surface of the existing ground and the surface of excavated areas.

Perform standard clearing and grubbing within the following areas:

1. All areas where excavation is to be done, including borrow pits, lateral ditches, right-of-way ditches, etc.
2. All areas where roadway embankments will be constructed.
3. All areas where structures will be constructed, including pipe culverts and other pipe lines.

110-3.2 Trees to Remain: Modified: The Contractor shall be responsible for maintaining and keeping in good condition all cultivated grass plots, trees and shrubs within to the project limits that do not materially impact the proposed construction. After completion of the work, the Contractor shall replace or restore to original condition all destroyed or damaged trees, shrubbery and grassed areas that may have been inadvertently impacted by the contractor. Tree limbs, which interfere with equipment operation and approved for pruning by the Engineer, shall be neatly trimmed.

Protect trees as shown in the Plans or directed by the Engineer.

At the driplines of areas designated as trees to remain, construct a tree protection barrier in accordance with Standard Plans, Index 110-100.

When pruning cuts or root pruning to existing trees is shown in the Plans, work is to be supervised on site by an International Society of Arboriculture (ISA) Certified Arborist performed in accordance with ANSI A300.

110-6.1 General: Modified:

Remove and dispose of the materials from existing structures. Remove the following in their entirety:

1. Those structures, or portions of structures, shown in the Plans to be removed;
2. Those structures, or portions of structures, found within the limits of the area to be cleared and grubbed, and directed by the Engineer to be removed;
3. Those structures, or portion of structures, which are necessary to be removed in order to construct new structures; and
4. Other appurtenances or obstructions which may be designated in the Contract Documents as to be included in an item of payment for the work under this Article.

Provide detailed schedule information to the Engineer 15 working days prior to the commencement of any demolition or renovation of any structures, even if asbestos is not found on the project, for the Engineer's use in notifying the Department of Environmental Protection (DEP) on DEP Form 62-257.900(1) "Notice of Asbestos Renovation or Demolition".

110-9.2 Burning Debris: Modified:

No burning in RCID.

SECTION 120: EXCAVATION AND EMBANKMENT

120-5.4 Disposal Areas: Modified: Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation. Legally dispose of removed paving materials outside of RCID. If the materials are buried, disregard the 300 foot limitation.

120-8.1 General Modified: Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment. Do not construct another LOT over an untested LOT without the Engineer's approval in writing.

For construction of mainline pavement lanes, turn lanes, ramps, parking lots, concrete box culverts and retaining wall systems, a LOT is defined as a single lift of finished embankment not to exceed 500 feet.

~~For construction of shoulder-only areas, shared use paths, and sidewalks areas, a LOT is defined as a single lift of finished embankment not to exceed 2000 feet.~~

Isolated compaction operations will be considered as separate LOTs. For multiple phase construction, a LOT shall not extend beyond the limits of the phase.

120-8.2.1.2 Thick Lift Requirements: Modified: For A-1, Plastic materials (As designated in Standard Plans Index 120-001) and A-2-4 Materials with greater than 15% fines: Construct the embankment in

successive layers with lifts up to a maximum compacted thickness of 6 inches. Alternately, for A-1, Plastic material and A-2-4 Materials with greater than 15% fines, construct embankments using thick lift construction in successive layers of not more than 12 inches compacted thickness, after having demonstrated with a successful test section, the possession and control of compacting equipment sufficient to achieve density required by 120-9.2 for the full depth of a thicker lift, and if the Engineer approves the compaction effort. Notify the Engineer prior to beginning construction of a test section. Construct a test section of the length of one full LOT. Perform five Quality Assurance tests at random locations within the test section. All five Quality Assurance tests must meet the density required by 120-9.2. Identify the test section with the compaction effort and soil classification in the Density Log Book. In case of a change in compaction effort or soil classification, failing Quality Assurance test, constructs a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time. Construct all layers approximately parallel to the centerline profile of the road. The Engineer reserves the right to terminate the Contractor's use of thick lift Construction. Whenever the Engineer determines that the Contractor is not achieving satisfactory results, revert to the 6 inch compacted lifts. As far as practicable, distribute traffic over the work during the construction of embankments so as to cover the maximum area of the surface of each layer. Construct embankment in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

120-8.2.5 Proof Rolling: Added: Unless otherwise directed by Engineer and prior to the placement of fill, the area to be filled shall be proof rolled under the supervision of the engineer.

120-9.2.1 General: Modified: Except for embankment constructed by the hydraulic method as specified in 120-8.3 and for the material placed outside the standard minimum slope as defined in 120-8.2.4, and for the areas specifically excluded herein, compact each layer of material used in the formation of embankments to a density of at least 100% of the maximum density as determined by AASHTO T 99, Method C. The Engineer will obtain a representative Maximum density (Standard Proctor) sample and have it delivered to the laboratory designated by RCID for testing. Uniformly compact each layer, using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

120-9.2.2 Compaction Over Unstable Foundations: Modified: Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided in 120-8.2.2), compact the top 6 inches (compacted thickness) of such layer to the density as specified in 120-9.2.1.

120-9.4 Compaction of Subgrade: Modified: If the Plans do not provide for stabilizing, compact the subgrade as defined in 1-3 in both cuts and fills, to the density specified in 120-9.2.1. For cut areas, determine Standard Proctor Maximum Density in accordance with FM 1-T099 at a frequency of one per mile or when there is a change in soil type, whichever occurs first. For undisturbed soils, do not apply density requirements where constructing paved shoulders 5 feet or less in width.

Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

Maintain the required density until the base or pavement is placed on the subgrade.

120-10.1.1 Initial Equipment Comparison: Delete Section:

120-10.1.2 Initial Production LOT: Delete Section:

120-10.1.3 Density over 105%: Modified: When a QA computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, the Engineer will investigate the compaction methods;

examine the applicable Standard Proctor Maximum Density and material description. The Engineer may collect and test a new Standard Proctor Maximum Density sample for acceptance in accordance with the criteria of 120-9.2.1.

120-10.1.4.1 Standard Proctor maximum Density Determination: Delete Section:

120-10.1.4.2 Density Testing Requirements: Modified: Ensure compliance to the requirements of 120- 9.2.1 by Nuclear Density testing in accordance with FM 1-T 238. Determine the in-place moisture content for each density test. Use Florida Method FM 1-T 238, FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D 4643 (Laboratory Determination of Moisture Content of Granular Soils by Use of a Microwave Oven) for moisture determination per lot of embankment. A LOT is defined as one lift of backfill material placement, not to exceed 500 feet in length. For multiple phase backfill, a LOT shall not extend beyond the limits of the phase.

120-10.1.4.3 Soil Classification: Delete Section:

120-10.1.5 Department Verification: Delete Section:

120-10.1.6 Reduced Testing Frequency: Delete Section:

120-10.2 Acceptance Criteria: Delete Section:

120-10.3.1 Frequency: Modified: Quality Assurance sampling and testing will be conducted by the owner at its discretion.

120-10.3.2 Test Selection and Reporting: Modified: The Engineer will Determine test locations including Stations and offsets, at its discretion.

120-10.4.1 Standard Proctor Maximum Density Determination: Delete Section:

120-10.4.2 Density Testing: Delete Section:

120-10.4.3 Soil Classification: Delete Section:

120-10.4.4 Organic Content: Delete Section:

SECTION 125: EXCAVATION FOR STRUCTURES AND PIPE

125-1.1 Trench Excavation Safety System and Shoring, Special (Trench Excavation): Modified: When performing trench excavation in excess of 5 feet in depth, comply with the Occupational Safety and Health Administration's (OSHA) trench safety standards, 29 CFR 1926, Subpart P, and all subsequent revisions or updates adopted by the Department of Labor and Employment Security. Ensure that trench boxes are wide enough to accommodate compaction and density testing. The Contractor further agrees to obtain identical certification from his proposed subcontractors that will perform trench excavation prior to award of subcontracts and that he will retain such certifications on file for a period of not less than three years following final acceptance of this project.

Submission of bid and subsequent execution of the Contract will serve as certification that all trench excavation in excess of 5 feet in depth will be in compliance with Section 553.62, Florida Statutes.

Consider all available geotechnical information when designing the trench excavation safety system. Consider these and any more stringent trench safety standards as minimum Contract requirements.

125-8.1.6 Placement and Compaction: Modified:

Place the material in horizontal layers not exceeding 6 inches compacted thickness, in depth above water level, behind abutments, wing walls and end bents or end rest piers, under the haunches of the pipes and around box culverts and all structures including pipe culverts. When the backfill material is deposited in water, compact as specified in 125-8.2.5 and 125-8.3.4. The Contractor may elect to place material in thicker lifts of no more than 12 inches compacted thickness outside the soil envelope if he can demonstrate with a successful test section that density can be achieved. Notify the Engineer prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five Quality Assurance tests at random locations within the test section. All five tests must meet the density required by 125-9.2. Identify the test section with the compaction effort and soil classification in the Logbook. In case of a change in compaction effort or soil classification, construct a new test section. When a Quality Assurance test fails the requirements of 125-9.2, construct a new test section. The Contractor may elect to place material in 6 inches compacted thickness at any time. Fill material needed to reach final grades shall be considered incidental to the cost of the structure's installation. Costs to obtain, compact and grade additional fill shall be included in the unit price of the pipe.

125-8.3.3.3 Cover Zone: Modified: Before placing the Cover Zone material, lay pipe according to Section 430. Excavate for pipe bells before laying pipe. Place the material in 6 inches layers (compacted thickness), evenly deposited on both sides of the pipe, and compact with mechanical tampers suitable for this purpose. For soils classified as A-1, A-2, A-3 or A-2-4 with 10% or less material passing the 200 sieve, 12" compacted lifts, from the spring line up, will be accepted if the contractor can demonstrate, with a successful test section, that density can be achieved. Notify the Engineer prior to beginning construction of a test section. Construct a test section of the length of one LOT. Perform five Quality Assurance tests at random locations and within the test section. All five tests must meet the density required by 125-9.2 and be verified by the Engineer. Identify the test section with the compaction effort and soil classification in the Logbook. In case of a change in compaction effort or soil classification, construct a new test section. When Quality Assurance tests cannot be determined to have satisfactory results, revert back to 6" lifts until a new passing test strip can be achieved and meet the density Acceptance Criteria. This thick lift procedure can be terminated at any time at the Engineer's discretion. Hand tamp material below the pipe haunch that cannot be reached by mechanical tampers.

125-9.2.1 Density: Modified: Obtain a minimum Quality Assurance (QA) density in any LOT, as defined in 125-8.1.1, of 100% of the Standard Proctor maximum density as determined by AASHTO T 99, Method C, or the requirements of 125-8.3.3.1 when applicable. For metal and plastic pipe, compact the backfill in the cover zone to a density of at least 95% of the Standard Proctor maximum density as determined by AASHTO T 99, Method C. The Engineer will obtain a representative Maximum density (Standard Proctor) sample and have it delivered to the laboratory designated by RCID for testing.

125-9.3.1 Frequency: Modified: Quality Assurance Standard Proctor maximum density sampling and testing ~~will be conducted by the owner, at its discretion.~~ at a minimum frequency of one test per soil type.

125-9.3.2 Soil Classification: Added: Soil Classification: The owner will perform soil classification tests on samples collected at its discretion, in accordance with AASHTO-T-88. The soils will be classified in accordance with AASHTO-M-145 in order to determine compliance with embankment utilization requirements.

SECTION 160: STABILIZING**160-4.1.4 Quality Assurance Testing: Modified:**

160-4.1.4.1 Modified Proctor Maximum Density Determination: Modified: The Engineer will obtain a representative Maximum density (Modified Proctor) sample and have it delivered to the laboratory designated by RCID for testing (As per FM 1-T 180, Method 0)

160-4.1.4.3 Bearing Value Requirements: Modified: Test the stabilized subgrade sample collected in 160-4.1.4.1 to determine the LBR in accordance with FM 5-515. Within the entire limits of the width and depth of the areas to be stabilized, obtain the required minimum bearing value at the frequency in 160-4.4.1. For any area where the bearing value obtained is deficient from the value indicated in the Plans, in excess of the tolerances established herein, spread and mix additional stabilizing material in accordance with 160-3.3. Perform this reprocessing for the full width of the roadway being stabilized and longitudinally for a distance of 50 feet beyond the limits of the area in which the bearing value is deficient.

Determine the quantity of additional stabilizing material to be used in reprocessing.

The Engineer will have the LBR sample delivered to the laboratory designated by RCID for testing. (As per FM 5-515 and 160-7.2.4)

160-4.1.4.3.1: Under-tolerances in Bearing Value Requirements: Deleted:

160-4.2 Mixing Depth Requirements: Modified: Meet required plan mixing-depths by measuring from the proposed Final Grade Line. Do not exceed individual plan depth tolerance of 2 inches. The tolerance of the three tests at a single 100' location shall not exceed a 1" tolerance of the plan depth. As an exception to the above mixing requirements, where the sub grade is of rock, the Engineer may waive the mixing operations (and the work of stabilizing), and RCID will not pay for stabilization for such sections of the roadway.

160-4.3.1 General: Modified: Within the entire limits of the width and depth of the areas to be stabilized, other than as provided in 160-4.3.2, obtain a minimum density at any location of 98% of the Modified Proctor maximum density as determined by FM 1-T 180. Engineer will obtain a representative Maximum density (Modified Proctor) sample and have it delivered to the laboratory designated by RCID for testing.

160-4.4.1 Frequency: Modified: Quality Assurance sampling and testing will be conducted by the owner at its discretion.

160-5 Method of Measurement: Modified: The quantity to be paid for will be the plan quantity, in square yards, completed and accepted. The quantity to be paid for will be the plan quantity, in square yards, completed and accepted.

160-6 Basis of Payment: Modified:

Price and payment will constitute full compensation for all work and materials specified in this Section, including furnishing, spreading and mixing of all stabilizing material required and any reprocessing of stabilization areas necessary to attain the specified bearing value. The Department will make full payment for any areas where the existing subgrade materials meet the design bearing value requirements without the addition of stabilizing additives, as well as areas where the Contractor may elect to place select high-bearing materials from other sources within the limits of the stabilizing. The increased thickness of the Type B stabilization under curb and gutter sections shall be considered incidental and included in the contract price. If the item of borrow excavation is included in the Contract, any stabilizing materials obtained from designated borrow areas will be included in the pay quantity for borrow excavation. Payment will be made under: Item No. 160- 4- Stabilization - per square yard.

SECTION 200 ROCK BASE

200-5.2 Number of Courses: Modified: When the specified compacted thickness of the base is greater than 6 inches, construct the base in multiple courses of equal thickness. Individual courses shall not be less than 3 inches. The thickness of the first course may be increased to bear the weight of the construction equipment without disturbing the subgrade.

If, through field tests, the Contractor can demonstrate that the compaction equipment can achieve density for the full depth of a thicker lift, and if approved by the Engineer, the base may be constructed in successive courses of not more than 8 inches compacted thickness.

The Engineer will base the approval on results of a test section constructed using the Contractor's specified compaction effort. Notify the Engineer prior to beginning construction of a test section. Construct a test section of the length of one LOT. The Engineer will perform Quality Assurance density tests at random locations within the test section. All density tests must meet the density requirements of 200-7.2.1. Identify the test section with the compaction effort and thickness in the Logbook. If unable to achieve the required density, remove and replace or repair the test section to comply with the specifications at no additional expense to RCID. The Contractor may elect to place material in 6" compacted thickness at any time.

Once approved, a change in the source of base material will require the construction of a new test section. Do not change the compaction effort once the test section is approved. The Engineer will periodically verify the density of the bottom 6 inches during thick lift operations.

The Engineer may terminate the use of thick lift construction and instruct the Contractor to revert to the 6 inches maximum lift thickness if the Contractor fails to achieve satisfactory results or meet applicable specifications.

200-7.2 Acceptance Criteria: Modified:

200-7.2.1 Density: Modified: Within the entire limits of the width and depth of the base, obtain a minimum density in any LOT of 98% of modified Proctor maximum density as determined by FM 1-T180, Method D or the Pit Proctor when using the Pit Proctor option. For shoulder only areas and shared use paths, obtain a minimum density of 95% of the modified Proctor maximum density as determined by FM 1-T180, Method D or the Pit Proctor when using the Pit Proctor option. The Engineer will perform at least three density determinations on each day's final compaction operations on each course and at more frequent intervals, if deemed necessary. During final compacting operations, blade any areas necessary to obtain the true grade and cross-section, before the density tests on the finished base are taken.

200-7.2.2 Frequency: Modified: Quality Assurance sampling and testing will be conducted by the owner at its discretion.

200-7.3.1 Quality Assurance Testing: Modified:**200-7.3.1.1 Modified Proctor Maximum Density Requirement: Deleted:**

200-7.3.1.2 Depth and Surface Testing Requirements: Modified: RCID, at its discretion, shall perform thickness check on the finished base or granular sub base component of a composite base. When RCID is ready to check the finished base the contractor is to provide traffic control, coring/boring equipment, and an operator for the coring/boring equipment, if required. Traffic control is to be provided in accordance with the standard maintenance of traffic requirements of the Contract.

The thickness is considered deficient, if the measured depth is over 1/2 inch less than the specified thickness. Correct all deficient areas of the completed base by scarifying and adding additional base material. As an exception, if authorized by the Department, such areas may be left in place without correction and with no payment.

Check the finished surface of the base course with a template cut to the required crown and with a 15 foot straightedge laid parallel to the centerline of the road. Correct all irregularities greater than 1/4 inch to the satisfaction of the Engineer by scarifying and removing or adding rock as required, and recompact the entire area as specified hereinbefore.

200-7.3.1.3 Surface & Thickness Reduced Testing Frequency: Deleted:

200-7.3.2 Department Verification Tests: Deleted:

200-7.3.2.1 Maximum Density: Deleted:

200-7.3.2.2 Thickness and Surface Testing Requirements: Deleted:

200-7.4 Verification Comparison Criteria and Resolution Procedures: Deleted:

200-7.4.1 Modified Proctor Maximum Density: Deleted:

200-7.4.2 Pit Proctor: Deleted:

200-7.4.3 Density: Deleted:

200-7.4.4 Thickness and Surface Testing Requirements: Deleted:

200-9 Calculations for Average Thickness of Base: Deleted:

SECTION 327 MILLING OF EXISTING ASPHALT PAVEMENT

327-3.1 General: Modified: Remove the existing raised pavement markers (RPMs) before milling. Include the cost of removing existing RPMs in the price for milling.

When milling to improve rideability or cross slope, remove the existing pavement to the average depth specified in the Plans, in a manner that will restore the pavement surface to a uniform cross-section and longitudinal profile. The Engineer may require the use of a stringline to ensure maintaining the proper alignment.

Establish the longitudinal profile of the milled surface in accordance with the milling plans. Ensure the final cross slope of the milled surface parallels the surface cross slope shown in the Plans or as directed by the Engineer. Establish the cross slope of the milled surface by a second sensing device near the outside edge of the cut or by an automatic cross slope control mechanism. The Plans may waive the requirement of automatic grade or cross slope controls where the situation warrants such action.

Operate the milling machine to minimize the amount of dust being emitted. The Engineer may require prewetting of the pavement.

Provide positive drainage of the milled surface and the adjacent pavement. Perform this operation on the same day as milling. Repave all milled surfaces no later than the day after the surface was milled.

Traffic will not be allowed on a milled surface. Sweep in a manner to minimize the potential for creation of a traffic hazard and to minimize air pollution. Do not sweep or allow milled asphalt into inlets.

Sweep the milled surface with a power broom before placing asphalt concrete. The sweeping operation shall be performed immediately after the milling to keep milled material out of the storm sewer system, especially when the milling operation is near a municipal curb and gutter or a closed drainage system. This sweeping operation shall include thoroughly removing all milled material from the gutter to prevent it from being swept into inlet opening or grates. Curbs shall not be damaged during the removal operation. The Engineer may require the

equipment and/or methods be changed to achieve satisfactory results.

In urban and other sensitive areas, use a street sweeper or other equipment capable of removing excess milled materials and controlling dust. Obtain the Engineer's approval of such equipment, contingent upon its demonstrated ability to do the work.

Perform the sweeping operation immediately after the milling operations or as directed by the Engineer.

327-4 Milled Surface: Modified:

Provide a milled surface with a reasonably uniform texture, within 1/4 inch of a true profile grade, and with no deviation in excess of 1/4 inch from a straightedge applied to the pavement perpendicular to the centerline. Ensure the variation of the longitudinal joint between multiple cut areas does not exceed 1/4 inch. The Engineer may accept areas varying from a true surface in excess of the above stated tolerance without correction if the Engineer determines they were caused by a pre-existing condition which could not have reasonably been corrected by the milling operations. Correct any unsuitable texture or profile, as determined by the Engineer, at no cost to the Department.

The Engineer may require remilling of any area where a surface lamination causes a nonuniform texture to occur.

A prime coat shall be applied, as directed by the Engineer, on any base material exposed during the milling operation. The prime coat materials and applications shall comply with the requirements of Section 300 of the FDOT Standard Specifications for Road and Bridge Construction July 2019 edition. Prime coat shall be applied at a rate of 0.15 gal/per square yard or as directed by the Engineer. Cost of prime coat shall be included in the unit cost for milling.

SECTION 330 HOT MIX ASPHALT-GENERAL CONSTRUCTION REQUIREMENTS.

Shall be amended as defined in SPECIFICATION FOR ASPHALT PAVEMENT -RCID 334 enclosed in the specifications if included in the package.

SECTION 334 SUPERPAVE ASPHALT CONCRETE

Shall be amended as defined in SPECIFICATION FOR ASPHALT PAVEMENT -RCID 334 enclosed in the specifications if included in the package.

SECTION 336: ASPHALT RUBBER BINDER

Refer TO SPECIFICATION FOR ASPHALT PAVEMENT -RCID 334 enclosed in the specifications.

SECTION 337: ASPHALT CONCRETE FRICTION COURSE

Shall be amended as defined in SPECIFICATION FOR ASPHALT PAVEMENT -RCID 334 enclosed in the specifications if included in the package.

SECTION 346 PORTLAND CEMENT CONCRETE

346-1 Description: Modified:

Use concrete composed of a mixture of portland cement, aggregate, water, and, where specified, admixtures, and other cementitious materials. Deliver the portland cement concrete to the site of placement in a freshly mixed, unhardened state.

Obtain concrete from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105. If the concrete production facility's Quality Control (QC) Plan is suspended, the Contractor is solely responsible to obtain the services of another concrete production facility with an accepted QC Plan or await the reacceptance of the affected concrete production facility's QC Plan prior to the placement of any further concrete on the project. There will be no changes in the contract time, contract schedule, and completion date. Bear all delay costs and other costs associated with the concrete production facility's QC Plan acceptance or reacceptance.

346-5 Sampling and Testing Methods: Modified:

Concrete sampling and testing will be completed by the Owner in accordance with the following methods.

Description	Method
Slump of Hydraulic Cement Concrete	ASTM C 143
Air Content of Freshly Mixed Concrete by the Pressure Method *	ASTM C 231
Air Content of Freshly Mixed Concrete by the Volumetric Method	ASTM C 173
Making and Curing Test Specimens in the Field	ASTM C 31
Compressive Strength of Cylindrical Concrete Specimens**	ASTM C 39
Obtaining and Testing Drilled Core and Sawed Beams of Concrete	ASTM C 42
Early Sampling of Fresh Concrete During the Initial Placement	FM 5-501
Low Levels of Chloride in Concrete and Raw Materials	FM5-516-
Description	Method
Density (Unit Weight), Yield and Air Content (Gravimetric) of Concrete	ASTM C 138
Temperature of Freshly Mixed Portland Cement Concrete	ASTM C 1064
Sampling Freshly Mixed Concrete	ASTM C 172
Static Segregation of Self Consolidating Concrete using Column Techniques	ASTM C 1610
Slump Flow of Self Consolidating Concrete	ASTM C 1611
Passing Ability of Self Consolidating Concrete by J -Ring	ASTM C 1621
Concrete Resistivity as an Electrical Indicator of its Permeability	FM 5-578
* When using pressure type meters, use an aggregate correction factor determined by the concrete producer for each mix design to be tested. Record and certify test results or correction factors for each type of aggregate at the concrete production facility.	
** For compressive strength testing, the use of 4 inch x 8 inch test cylinders is allowed provided they meet the requirements of 450-4.1.	

346-6.1 General: Modified: : Perform QC activities to ensure materials, methods, techniques, personnel, procedures and processes utilized during production meet the specified requirements. For precast/prestressed operations, ensure that the QC testing is performed by the producer. Accept the responsibility for QC

inspections on all phases of work. Ensure all materials and workmanship incorporated into the project meet the requirements of the Contract Documents. If RCID withdraws plant approval during production for a construction project, the Contractor is solely responsible to (a) obtain another approved concrete plant to produce the concrete, or (b) await re-approval of the concrete plant, prior to any further production and placement of concrete on the construction project. The Engineer will not allow changes in Contract Time or completion dates.

The contractor shall bear all delay costs or other costs associated with plant approval or disapproval.

346-7.2 Transit Truck Mixing: Modified: When water is added at the jobsite, mix the concrete 30 additional drum mixing revolutions. Do not add water after the total number of drum mixing revolutions exceeds 130, do not make additional mix adjustments. Discharge all concrete from truck mixers before total drum revolutions exceed 300, unless the approved mix design allows for an extended transit time. Seek approval from the Engineer prior to using a central mixer and depositing the batch into a truck mixer. Do not haul concrete in mixer trucks loaded with more than the rated capacity shown on their attached plates.

346-7.4 Concreting in Cold Weather: Modified: Do not mix concrete when the air temperature is below 45°F. Protect the fresh concrete from freezing until the concrete reaches a minimum compressive strength of 1,500 psi, unless the concrete is to be heat cured. This does not apply to precast concrete placement operations occurring in a temperature controlled environment.

346-8 Plastic Concrete Sampling and Testing: Modified:

The Engineer will make initial verification tests (Quality Assurance) on a sample from the initial delivery of each class of concrete to the job site each day to ensure compliance with the requirements of this section for air content, temperature, and slump. Furnish sufficient concrete of each design mix as required by the Engineer for Quality Assurance testing. Do not proceed with the placement operations until the delivered concrete complies with the specified tolerances in this section for the plastic concrete. The Engineer will reject non-complying loads which cannot be adjusted at the job site in accordance with 346-6.4 and the standard operating procedures. Ensure that corrections are made by the concrete producer on subsequent load. After the Contractor begins concrete placement, RCID will make intermediate verification tests, as determined necessary by the Engineer, to ensure compliance with specification requirements for concrete plastic properties. The Engineer will reject non-complying loads which cannot be adjusted at the job site in accordance with 346-6.4 and the standard operating procedures. If the Engineer obtains an intermediate verification test failure of a load of concrete before any concrete from the load is placed, the Engineer will reject the load. Continue placement operations with the next load that is in compliance with requirements for air content, temperature and slump. The Engineer will not terminate the lot. If the Engineer obtains an intermediate verification test failure of a load of concrete that has been partially placed, the Engineer will reject the remainder of the load and terminate the lot. The Engineer will make acceptance cylinders representing that lot from the same sample of concrete unless acceptance cylinders have been made representing that lot. Following termination of a LOT, re-initiate plastic properties tests until such time as the water to cementitious materials ratio, air content, temperature and slump comply with the Specification requirements. Initiate a new LOT once the testing indicates compliance with Specification requirements. When three consecutive Lots, or when five Lots in two days of production of the same design mix are outside the specified tolerances, suspend production. Make the necessary revisions to concrete operations or the quality control plan to bring the concrete within allowable tolerances. Obtain the Engineer's approval of the revisions before resuming production. After production resumes, obtain the Engineer's approval before returning to the normal frequency of Quality Assurance testing.

If concrete placement stops for more than 90 minutes, perform initial plastic properties testing on the next batch and continue the LOT. Cylinders cast for that LOT will represent the entire LOT. RCID may perform Independent Assurance testing at any time to evaluate the QC of the concrete. When a test does not compare with the QC and/or the Quality Assurance it may be deemed necessary by RCID to revise the QCP. RCID

reserves the right to notify the IA to review the testing procedures and equipment. The Quality Assurance inspector shall ensure that each truck has a valid inspection card issued by RCID, the revolution counter on the mixer is working properly, and calibration of the water dispenser has been performed within the last twelve months and verify batch weights within required limits of the mix design.

346-9.1 General: Modified: The Engineer will perform plastic properties tests in accordance with 346-8 and cast a set of three Quality Assurance cylinders 1 @ 7 days and 2 @28 days using either 4 inch by 8 inch as permitted by 450-4.1 or 6 inch by 12 inch cylinders, for all structural concrete incorporated into the project. Take these acceptance samples randomly as determined by a random number generator (acceptable to RCID). The Contractor shall provide curing facilities at the job site that have the capacity to hold all Quality Control, Quality Assurance, and Independent Assurance cylinders simultaneously for the initial curing. All cylinders will be clearly identified. The Contractor will deliver the Quality Assurance cylinders to the final curing laboratory as designated by RCID in accordance with ASTM C 31. At this same time, the Engineer will deliver the Independent Assurance samples to their final curing facility. The RCID laboratory cured samples for compressive strength shall be tested at the age of 1 @ 7 days and 2 @ 28 days, or any other specified age, in a laboratory meeting and maintaining at all times the qualification requirements listed in 105-6. Meet the requirements of 450-16 .3 for the testing of shipment cylinders for pre: cast or pre-stressed products. The RCID testing laboratory will average the 2 cylinders @ 28 days for compressive strength test data. The RCID testing laboratory will submit the compressive strength test results to the Engineer within 24 hours

346-9.2 Sampling Frequency: Modified: As a minimum, sample and test concrete of each design mix for water to cementitious materials ratio, air content, temperature, slump and compressive strength in accordance with these specifications. The Engineer may perform additional Independent Verification tests. All Quality Assurance activities, calculations, and inspections will be randomly confirmed by the RCID Planning and Engineering.

TABLE 9	
Class Concrete	Maximum Lot Size
I (Pavement)	250 lane ft, or one day's production, whichever is less
I (Special)	one day's production
II (Bridge Deck), III, IV, IV (Drilled Shaft), V (Special), V, VI	50 yd ³ , or one day's production, whichever is less
III (Seal)	Each Seal placement

346-9.3 Strength Test Definition: Modified: The strength test of a LOT is defined as the average of the compressive strengths tests of two cylinders cast from the same sample of concrete from the LOT, except that if one test cylinder show evidence of improper sampling, molding, handling, curing or testing, the Engineer will disregard that cylinder and use the remaining two cylinders at the 28 day break and delete the 7 day break.

346-9.4 Acceptance of Concrete: Modified: Hardened concrete will be accepted or rejected on the basis of strength test results as defined in 346-9.3. Do not discard a cylinder strength test result based on low strength (strength below the specified minimum strength as per the provisions of 346-3 and 346-9). The Engineer will accept at full pay only LOTs of concrete represented by strength test results which equal or exceed the respective specified minimum strength. When one of the three cylinders from a LOT is lost, damaged or destroyed at the jobsite, determination of compressive strength will be made by averaging the remaining two

cylinders. If more than one Quality Assurance cylinder from a LOT is lost, damaged or destroyed at the jobsite, the Contractor will core the structure at no additional expense to RCID to determine the compressive strength. Acceptance of LOT may be based on verification data at the discretion of the Engineer. Obtain the approval of the Engineer to core, and of the core location prior to drilling.

346-9.5 Independent Assurance Procedure: Modified: RCID may initiate an Independent Assurance (IA) review of sampling and testing methods at any time during concrete placements. The IA procedure may consist of, but not limited to, a review of sampling and testing of fresh concrete, calculation of water cementitious materials ratio, handling of cylinders, curing procedures and compressive strength testing. Cores of the hardened concrete may be required. The results of the IA review will be forwarded to the Engineer. If RCID finds deficiencies based on the Contractor's QCP, the Engineer may suspend that part of the QCP. When the QC plan is suspended, submit corrective actions for approval of the Engineer. The Engineer may take up to five working days to review corrective actions to the QCP. The Engineer will not allow changes to Contract Time or completion dates. The Contractor shall incur all delay costs and other costs associated with QC plan suspension and re-approval.

SECTION 347 PORTLAND CEMENT CONCRETE-CLASS NS

347-1 Description: Modified:

The requirements of this Section are applicable to concrete designated as Class NS hereinafter referred to as concrete. Use concrete composed of a mixture of portland cement, aggregates, and water, with or without chemical admixtures, slag, or pozzolan materials. Deliver concrete to placement site in a freshly mixed, unhardened state. Ensure the concrete is placed and cured in a manner to ensure that the strength and durability of the concrete is maintained. Red tinting pigment shall be used for all concrete to encase electrical ducts or cap electrical cables.

347-2.2 Integral mineral coloring pigments: Added: Provide pure synthetic or natural mineral oxide colors as selected by the owner. Consolidate color admixture in accord with the manufacturer's instructions, using pigment portions as required to match Owner-approved samples. Acceptable manufacturers are:

- Chromix by L.M. Scofield Co., Tel: (800) 800-9900; Los Angeles, CA.
- Davis Colors, Tel: (800) 356-4848; Los Angeles, CA.
- Lambco Colors by Lambert Corp., Tel: (407) 841-2940; Orlando, FL.
- Landers-Segal Color Co., Inc., Tel: (888) 4-LANCO; Montvale, NJ.
- Solomon Colors, Tel: (800) 624-0261; Springfield, IL.

347-3.1 Concrete Production Requirements: Modified: Deliver concrete from a production facility that is certified by the National Ready-Mixed Concrete Association (NRMCA) or approved by the Engineer. RCID may inspect the concrete production facility's to verify compliance with the Specifications. Produce concrete utilizing equipment that is in good operating condition and operated in a manner to ensure a consistent product. Within two hours prior to each day's batching, ensure that the concrete production facility determines the free moisture for the coarse and fine aggregates. On concrete placements expected to exceed three hours, perform an additional moisture test approximately half way through the batching operations and adjust batch proportions accordingly. Ensure that the calibration of the measuring devices of the concrete production facilities meets the requirements of Chapter 531 of the Florida Statutes. At least quarterly, ensure that all scales, meters and other weighing or measuring devices are checked for accuracy by a qualified representative of a scale company registered with the Bureau of Weights and Measures of the Florida Department of Agriculture. Have the accuracy of admixture measuring dispensers certified annually by the admixture supplier. When Volumetric Mixers are used, deliver concrete in accordance with the requirements of Volumetric Mixer Manufactures

Bureau (VMMB) and ensure that the vehicle has a VMMB registered rating plate.

347-3.3 Small Quantities of Concrete: Modified: With approval of the Engineer, small quantities of concrete, less than 3 yd³ placed in one day and less than 0.5 yd³ placed in a single placement may be accepted using a pre-bagged mixture. The Engineer will verify that the pre-bagged mixture is prepared in accordance with the manufactures recommendations and will meet the requirements of this Specification.

347-3.4 Concreting in Cold Weather: Added: Do not mix concrete when the air temperature is below 45° F.

347-3.5 Concrete Mix Design: Added: Before producing any concrete, submit the proposed mix design to the Engineer. Use only concrete mix designs meeting the following requirements and having prior approval of the Engineer.

347-3.6 Sampling and testing: Added:

Maximum water to cementitious materials ratio	0.55 lbs/lbs
Minimum 28-Day Compressive Strength	2,500 psi
Minimum Cementitious Materials Content	470 lbs/yd ³
Slump	0 to 6 inch

Materials may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required original approved design mix data and batch adjustments and substituted material on the concrete delivery ticket. The Engineer may disqualify any concrete production facility for non-compliance with Specification requirements.

347-5.1 General: Modified: Furnish a Delivery Batch Ticket with each batch of concrete before unloading at the placement site. RCID will verify the delivery ticket contains the required information to support the approved mix design. Record material quantities incorporated into the mix on the Delivery Batch Ticket. Ensure that the Batcher responsible for producing the concrete certifies that the batch was produced in accordance with Specification requirements, signs the Delivery Ticket. Sign the Delivery Ticket certifying that the concrete was batched, delivered and placed in accordance with these Specifications. Acceptance by RCID will be by Certification on the Delivery Ticket, as described herein, by the Batcher and the Contractor. The Engineer will hold the Contractor responsible for rejecting loads of concrete that do not meet the minimum compressive strength requirements. Delineate and replace, at no cost to RCID, all concrete that does not meet the 28-day compressive strength requirements nor has any cracking greater than 1/4 inch in width or 1/4 inch in vertical displacement. Any spalling or flaking off of the surface layer that exposes the rough, pitted aggregate surface in excess of 10 square inches is to be removed and replaced in accordance with 347-5 .2. Sidewalk, Ditch Pavement, Slope Pavement, Traffic Separator, or Curb and Gutter having any intersecting cracks visible in the dry concrete (regardless of size) will be removed and replaced in accordance with 347-4.2. At the sole option of RCID, the Engineer may accept concrete at a reduced pay when it is determined that the concrete will serve its intended function. If any uncontrolled cracks appear during the life of the Contract unacceptable to the Engineer, remove and replace the concrete in accordance with 347-4.2 at no expense to RCID.

347-5.2 Remedial Action: Modified: Remedial action will be the removal and replacement of all concrete to the full depth and width. Sidewalk, Curb and Gutter, Ditch Pavement, and Traffic Separator: complete sections between contraction joints shall be removed and replaced. New joints between initially installed contraction joints are not acceptable.

SECTION 400 CONCRETE STRUCTURES

400-1 Description: Modified:

Construct concrete structures and other concrete members, with the exception of pavement and incidental concrete construction (which are specified in other Sections).

Refer to Section 450 for prestressed construction requirements additional to the requirements of this Section. For precast concrete structures meet the requirements of Section 450 for inserts and lifting devices, handling, storage, shipping, and erection.

Obtain incidental precast products from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105.

All Quality Assurance Inspectors are to be Construction Training Qualification Program certified in FDOT Concrete Field Inspector, ACI Level 1, Concrete Transportation Construction Inspector, or approved by the RCID Planning and Engineering .

SECTION 425 INLETS, MANHOLES AND JUNCTION BOXES

425-3.3 Manhole Covers: Modified: All manhole covers shall comply with the RCID custom cover or as directed by RCID.

425-3.4 Load Rating Requirement: Modified: Approved Castings (Grates and manhole coverings) as required in the FDOT Standard Plans for Curb inlets, Ditch Bottom Inlets, and Manholes shall be manufactured to withstand highway traffic loads, exceeding AASHTO H-20/HS-20 specifications (wheel loads of 16,000 pounds with a tire contact area of 8" x 20") 25,000 pounds proof load in accordance with CID A-A 60005 or 40,000 pounds proof load per AASHTO M-306.

SECTION 430 PIPE CULVERTS

430-1 Description: Modified:

Furnish and install drainage pipe and end sections at the locations called for in the Plans. Furnish and construct joints and connections to existing pipes, catch basins, inlets, manholes, walls, etc., as may be required to complete the work.

Obtain pipe culverts and drainage products from a plant that is currently on the Department's Production Facility Listing. Producers seeking inclusion on the list shall meet the requirements of Section 105.

At the beginning of each project, submit a notarized certification statement to the Engineer in accordance with Section 6. The Quality Control Manager's stamp or label on each product indicates certification that the product was fabricated in conformance with the Producer QC Plan, the Contract, and this Section. Ensure that each shipment of drainage products to the project site is accompanied with a QC signed or stamped delivery ticket providing the description and the list of the products.

When the Producer Quality Control Program is suspended by the Department, accept responsibility of either obtaining products from a plant with an approved Quality Control Program, or await re-approval of the plant. The Engineer will not allow changes in Contract Time or completion dates as a result of the plant's loss of qualification. Accept responsibility for all delay costs or other costs associated with the loss of the plant's qualification.

Construct structural plate pipe culverts or underdrains in accordance with Sections 435 and 440.

For pipe culverts installed by jack & bore, install in accordance with Section 556.

All reinforced concrete pipes shall be steel reinforced concrete pipe. Lifting holes in reinforced concrete pipe

are prohibited. If an existing structure is to be connected to a proposed storm sewer pipe, the opening cut into the existing structure shall be done in such a manner that the existing structure is not permanently damaged. All structure openings shall be grouted watertight with non-shrink grout after pipe installation, and the structure shall be restored as accepted by the Engineer. The cost of connections to existing and new structures shall be included in the price bid for the pipe. All culverts and storm sewer pipes shall be inspected and accepted by the Engineer prior to final paving. The cost of all Trench Safety shall be included in the contract price.

430-4.1 General: Modified: Lay all pipe, true to the lines and grades given, with hubs up and tongue end fully entered into the hub. When pipe with quadrant reinforcement or circular pipe with elliptical reinforcement is used, install the pipe in a position such that the manufacturer's marks designating "top" and "bottom" of the pipe are not more than five degrees from the vertical plane through the longitudinal axis of the pipe. Do not allow departure from and return to plan alignment and grade to exceed 1/16 inch per foot of nominal pipe length, with a total of not more than 1 inch departure from theoretical line and grade. Take up and relay any pipe that is not in true alignment or which shows any settlement after laying at no additional expense to the Department.

Do not use concrete pipe with lift holes except round pipe which has an inside diameter in excess of 54 inches or any elliptical pipe.

Repair lift holes, if present, with hand-placed, stiff, non-shrink, 1-to-1 mortar of cement and fine sand, after first washing out the hole with water. Completely fill the void created by the lift hole with mortar. Cover the repaired area with a 24 inch by 24 inch piece of filter fabric secured to the pipe. Use a Type D-3 filter fabric meeting the requirements specified in Section 985.

Secure the filter fabric to the pipe using a method that holds the fabric in place until the backfill is placed and compacted. Use grout mixtures, mastics, or strapping devices to secure the fabric to the pipe. Do not cut or drill into or through the corrugations or ribs of plastic pipe except when necessary to meet the dimensional requirements shown in the Plans.

When installing pipes in structures, construct inlet and outlet pipes of the same size and kind as the connecting pipe shown in the Plans. Use the same pipe material within each continuous run of pipe. Extend the pipes through the walls for a distance beyond the outside surface sufficient for the intended connections, and construct the concrete around them neatly to prevent leakage along their outer surface as shown on Standard Plans, Index 425-001. Keep the inlet and outlet pipes flush with the inside of the wall. Resilient connectors as specified in 942-3 may be used in lieu of a masonry seal.

All pipe tie-in to structures shall be filled with non-shrink grout, covered with an asphaltic mastic coating and wrapped with filter fabric materials which meet the FDOT specs. Furnish and install a filter fabric jacket around all pipe joints and the joint between the pipe and the structure in accordance with Standard Plans, Index Nos. 425-001 and 430-001. Use fabric meeting the physical requirements of Type D-3 specified in Section 985. Each joint in the concrete pipe culverts and storm sewers shall be wrapped on the exterior of the pipe with a band of filter fabric. The band shall be 3' wide centered on the joint and shall be lapped a minimum of 2'. The plastic filter fabric shall meet the requirements of Section 985 of the "Standards Specifications." These costs shall be included in the price for the pipe.

Meet the following minimum joint standards:

Pipe Application	Minimum Standard
Storm and Cross Drains	Water-tight
Gutter Drain	Water-tight
Side Drains	Soil-tight

When rubber gaskets are to be installed in the pipe joint, the gasket must be the sole element relied on to maintain a tight joint. Soil tight joints must be watertight to 2 psi. Water-tight joints must be water-tight to 5 psi unless a higher pressure rating is required in the Plans.

When laying pipes that pass through mechanically stabilized earth (MSE) reinforced fill, connect the portion of the pipe within the wall to the external portion of the pipe run only after the full height of the wall supported embankment is in place.

When Wall Zone Pipes are shown in the Plans, meet the following requirements:

1. Use resilient connectors on pipes entering and leaving drainage structures.
2. Provide a 2 to 4 inch pipe overhang beyond the drainage structure internal walls.
3. For pipes without welded joints, meet the following additional requirements:
 - a. Pipe joints must be watertight to 10.8 psi when pulled out 2 inches from the fully home joint alignment.
 - b. Do not allow the gap between sections of pipe to exceed 5/8 inch for all pipe diameters.

430-4.8 Pipe Inspection: Modified: Based on contract pavement type, upon completion of placement of concrete pavement or the placement of structural asphalt, but prior to placement of asphalt friction course, dewater installed pipe and provide the Engineer with a video taping schedule. Provide the Engineer with a video tape of pipe 48 inches, or less in diameter, for examination. The Engineer may waive this requirement for side drains and cross drains which are short enough to inspect from each end of the pipe. The Engineer will inspect pipe for line and grade, joint gaps, joint misalignment, leaks, damage, and for debris. For metal and plastic pipe the Engineer will also inspect for deflection. The Engineer may require further testing of the pipe as a result of the inspection. If so directed by the Engineer, test pipe 36 inches [900 mm] and less in diameter using a mandrel. The mandrel shall be pulled by hand and be approved by the Engineer prior to use. For pipe larger than 36 inches [900 mm] in diameter, deflection shall be determined by a method approved by the Engineer. If use of a mandrel is selected as the means of further testing, the mandrels diameter, length, and other requirements shall conform to 430-4.8.2. Replace pipe failing to meet the specific deflection requirements for the type of pipe installed, at no cost to RCID. Should the deflection test prove that the pipe met specifications; RCID will bear the cost of the deflection testing.

430-4.8.1 Video Report: Modified: Provide a high quality DVD format with 460 lines of resolution. Use a camera with lighting suitable to allow a clear picture of the entire periphery of the pipe. Center the camera in the pipe both vertically and horizontally and be able to pan and tilt to a 90 degree angle with the axis of the pipe and rotating 360 degrees having the ability to measure joint spacing to a tolerance of 1/8". Use equipment to move the camera through the pipe that will not obstruct the camera's view or interfere with proper documentation of the pipe's condition. The videotape image shall be clear, focused, and relatively free from roll, static, or other image distortion qualities that would prevent the reviewer from evaluating the condition of the pipe. The tape speed shall be standard play. The video tape will include identification before each section of pipe filmed. The identification will include the project number, the structure number corresponding to the structure number on the set of plans for the project, size of pipe, the date and time, and indicate which pipe is being filmed if multiple pipes are connected to the structure. Notes should be taken during the video taping. Provide the Engineer with copies of these notes along with the video. Move the camera through the pipe at a speed not greater than 30 feet per minute [10 meters per minute]. Mark the video tape with the distance down the pipe. The distance shall have an accuracy of one foot per 100 feet [300 mm in 328 meters]. Stop the camera and pan when necessary to document defects. Film the entire circumference at each joint.

430-99 Cleaning and Video Recording Existing Pipes: Added: Work specified in this Section consists of cleaning and video recording the interior of existing storm drain pipes that are to remain in place and or extended. The contractor shall perform this work and submit the video recordings to the Engineer prior to the beginning of any new roadway construction. Pipes that the engineer determines are not acceptable shall be removed and replaced. Payment for removal and replacement of pipes found to be unacceptable shall be made in accordance with Article 12 of the General Conditions of the Contract for Construction. Size of the replacement pipe shall be determined by the Engineer. This item may be increased, decreased or deleted by the Engineer. This work is strictly for the evaluation of the condition of existing pipe; it does not pertain to the

installation and acceptance of new pipe. Video recording and cleaning of new pipe for acceptance is included in the contract price.

430-99.1 Method of Measurement: Added: Quantities measured for payment under this Section shall be the linear foot of pipe cleaned and recorded of the various sizes of pipe. Size is based on cross-sectional area of the inside diameter of the pipe.

SECTION 450 PRECAST PRESTRESSED CONCRETE CONSTRUCTION

450-4.1: Concrete: Modified: Perform the QC sampling and testing of concrete in accordance with the requirements of Section 346, except as modified herein. When the maximum nominal size of the aggregate in the concrete mix does not exceed 1 inch, 4 x 8 inch test cylinders may be used for compressive strength tests of concrete. The use of 4 x 8 inch test cylinders requires that the approved mix design contain compressive strength test data for both 6 x 12 inch and 4 x 8 inch test cylinders. For the QC tests the Engineer will use the same size test cylinders that are used for the QC sampling and testing.

SECTION 520 CONCRETE GUTTER, CURB ELEMENTS AND TRAFFIC SEPARATOR

520-4: Excavation: Modified:

Excavate to the required depth, and compact the foundation material upon which these items are to be placed as specified in 120-9. Foundation material upon which the concrete is placed by slip forming shall be compacted as specified and shall be moist at the time of placement. For poured in place concrete, the foundation material shall meet the specified densities and shall be thoroughly wetted but free of standing water just prior to placing concrete.

520-6.1: Contraction Joints: Modified: Except for machine placed items, the Contractor may form joints by using dummy joints (either formed or sawed) or by using sheet metal templates. If using sheet metal templates, ensure that they are of the dimensions, and are set to the lines, shown in the Plans. Hold templates firmly while placing the concrete. Leave templates in place until the concrete has set sufficiently to hold its shape, but remove them while the forms are still in place.

Saw contraction joints, for machine placed items, unless the Engineer approves an alternate method. Saw the joints as soon as the concrete has hardened to the degree that excessive raveling will not occur and before uncontrolled shrinkage cracking begins.

Space contraction joints at intervals of 10 feet except where closure requires a lesser interval, but do not allow any section to be less than 4 feet in length.

For machine placed items, contraction joints shall be sawed to a minimum depth of 1 1/2 inches. Sawing shall begin as soon as the concrete has hardened to the degree that excessive raveling will not occur. Sawing shall progress in the same direction and sequence as the concrete placement. Every third joint shall be sawed first, then saw intermediate joints. For concrete placed before noon, all joints shall be sawed the same day of placement. For concrete placed after noon, all third joints shall be sawed the day of placement; all other joints shall be sawed prior to noon the following day.

520-7.1: Repair of Minor Defects: Modified: Remove the forms within 24 hours after placing the concrete, and then fill minor defects with mortar composed of one-part portland cement and two parts fine aggregate. The Engineer will not allow plastering on the face of the curb. Remove and replace any rejected curb, curb and gutter, or valley gutter without additional compensation.

Where replacement is necessary, complete sections between contraction joints shall be removed and replaced.

New joints between initially installed contraction joints are not acceptable.

520-8.1: General: Modified: Continuously cure the concrete for a period of at least 72 hours. Commence curing after completely finishing and as soon as the concrete has hardened sufficiently to permit application of the curing material without marring the surface. Immediately replace any curing material removed or damaged during the 72 hour period. After removing the forms, cure the surfaces exposed by placing a berm of moist earth against them or by any of the methods described below, for the remainder of the 72 hour curing period. Curing material shall be applied to the concrete surfaces after finishing as soon as the concrete has hardened sufficiently to prevent marring the surface or within one hour after finishing is completed, whichever occurs first. The application of curing materials shall not be held up due to other activities on the project. Contractor shall schedule and provide manpower necessary to conform to these requirements. If the Contractor chooses to use membrane curing compound, it shall be Type 2, white- pigmented, meeting AASHTO M 180 requirements. Curing compound shall be thoroughly agitated before pouring from original container and periodically agitated during application to prevent settlement of pigment. Spraying equipment, including spray tip and nozzle, shall be recommended by manufacturers' printed literature, or equal. Suggested equivalent spraying equipment are: Pump Sprayer: Model No. 1949, Chapin Mfg., (800) 444-3140 Drum Pump Sprayer: 12 Volt DC #6061, Chapin Mfg. Equipment shall be maintained and nozzles replaced to provide consistent uniform spray pattern. A uniform coating meeting the manufacturer's recommended minimum application rate shall be applied. Areas appearing to have insufficient curing compound, as determined solely by the Engineer, shall be re-coated immediately to provide required uniform coverage. Storage containers greater than 5 gal. capacity may be utilized only with prior approval of the Engineer. Contractor shall submit the manufacturer's descriptive literature describing the placement, storage and mixing requirements for storage containers exceeding 5 gal. Contractor shall provide and utilize mechanical mixers for all containers larger than 5 gal. The mixers shall meet or exceed the manufacturer's requirements. Contractor shall conform to all storage, mixing and application requirements.

SECTION 522 CONCRETE SIDEWALK AND DRIVEWAYS – DELETED:

Section 522 is Deleted and replaced with RCID 528 Specification

SECTION 527 DETECTABLE WARNINGS

527-2.1.1: Preformed Materials for New Construction: Modified: Use Detectable Warnings consisting of mats that are cast in place while concrete is still plastic as specified in the plans.

527-2.1.2: Field-Formed Materials: Deleted and replaced with Section 527-3.2:

SECTION 530 REVTMENT SYSTEMS

530-1.1 Riprap: Modified: Construct riprap composed of sand-cement or rubble (consisting of broken stone or broken concrete) as shown in the Standard Plans and in the Plans.

Shall be amended to preclude the use of broken concrete.

530-1.2 Articulating Concrete Block (ACB) Revetment Systems: Furnish and install an ACB revetment system in accordance with this Section and in conformance with the lines, grades, design, and dimensions shown in the Plans. Submit vendor drawings for review and approval by the Engineer. Submit signed and sealed calculations of the block and cable sizing design for approval. Comply with the National Concrete Masonry Association's Design Manual for Articulating Concrete Block Revetment Systems, Second Edition, or the

National Highway Institute, Hydraulic Engineering Circular (HEC) No. 23, Publication No. FHWA NHI 09-110. Use a minimum Factor of Safety of 1.5 and 0.5 inch for the block projection.

Blocks must be open cell and non-tapered unless otherwise stated in the Plans. Revetment cabling must be bi-directional or, for mono-directional cabling, the block installation must include a permanent mechanism within the block matrix to prevent lateral displacement of the installed blocks. Cabling must be polyester and free to move within the block.

Use only ACB revetment systems currently listed on the Department's Approved Product List (APL).

Manufacturers seeking evaluation of their product shall submit an application in accordance with Section 6, and include certified test reports from an independent test laboratory certifying the ACB revetment system meets the requirements of this Section.

If the ACB revetment system is intended for use as bridge abutment protection, include the following drawings with the APL submittal:

1. At the corner transition between the front and side slopes.
2. For anchorages, geotextile fabric, treatment of voids between adjacent blocks, limits on void size between adjacent blocks and other special details required to successfully install the ACB.
3. For areas adjacent to bridge abutments, detail mat placement around curves, connections, protection of mat ends, and splicing of mat.

530-2.1.3.2 Rubble (Ditch Lining): Modified: Use sound, hard, durable rubble, free of open or incipient cracks, soft seams, or other structural defects, consisting of broken stone or broken concrete with a bulk specific gravity of at least 1.90. Ensure that stones or broken concrete are rough and angular. Use broken stone or broken concrete meeting the following gradation and thickness requirements:

Shall be amended to preclude the use of broken concrete:

Weight Maximum Pounds	Weight 50% Pounds	Weight Minimum Pounds	Minimum Blanket Thickness in Feet
75	30	4	1.5
Ensure that at least 97% of the material by weight is smaller than Weight Maximum pounds. Ensure that at least 50% of the material by weight is greater than Weight 50% pounds]. Ensure that at least 90% of the material by weight is greater than Weight Minimum pounds].			

530-2.1.3.3 Physical Requirements of Broken Stone and Broken Concrete: Modified: Use broken stone and broken concrete meeting the following physical requirements:

Shall be amended to preclude the use of broken concrete.

Stone shall be composed of granite, gneiss, or quartzite.

Absorption (FM 1-T85)	Maximum 5%
Los Angeles Abrasion (FM 1-T096)	Maximum loss 45%*
Soundness (Sodium Sulphate) (AASHTO T104)	Maximum loss 12%** (after five cycles)

Flat and elongated pieces	Materials with least dimension less than one third of greatest dimension not exceeding 10% by weight.
Dirt and Fines	Materials less than 1/2 inch in maximum dimension accumulated from interledge layers, blasting or handling operations not exceeding 5% by weight.
Drop Test*** (EM 1110-2-2302)	No new cracks developed, or no existing crack widened additional 0.1 inch, or final largest dimension greater than or equal to 90% original largest dimension of dropped piece.
<p>* Ensure that granite does not have a loss greater than 55% and that broken concrete does not have a loss greater than 45%.</p> <p>** The Engineer may accept rubble exceeding the soundness loss limitation if performance history shows that the material will be acceptable for the intended use. The Engineer will waive the soundness specification for rubble riprap (broken stone and broken concrete) when project documents indicate it will be placed in or adjacent to water or soil with a sulfate content less than 150 parts per million and a pH greater than 5.0.</p> <p>*** The Engineer will waive the Drop Test unless required to ensure structural integrity. Provide all equipment, labor and testing at no expense to the Department. EM refers to the US Army Corps of Engineer's Specification Engineering Method.</p>	

530-2.1.4 Bedding Stone: Modified: Use Bedding Stone of either a durable quality limestone or other quarry run stone, with a bulk specific gravity of not less than 1.90 and that is reasonably free from thin, flat and elongated pieces. Ensure that the bedding stone is also reasonably free from organic matter and soft, friable particles. Meet the following gradation limits:

Standard Sieve Sizes - Inches	Individual Percentage by Weight Passing
12 inches	100
10 inches	70 to 100
6 inches	60 to 80
3 inches	30 to 50
1 inch	0 to 15

The Engineer will conduct source approval and project control of bedding stone as specified in 530-2.1.3.4. In lieu of limestone or other quarry run stone, the Contractor may substitute non-reinforced concrete from existing pavement that is to be removed and which meets the above requirements for commercial bedding stone.

Shall be amended to preclude the use of limestone or broken concrete.

Stone shall be composed of granite, gneiss, or quartzite.

SECTION 570 PERFORMANCE TURF

570-2 Materials: Modified:

Meet the following requirements:

Turf MaterialsSection 981

Water.....Section 983

570-3.2 Seeding: Modified: The Contractor's not use wildflower seed in the turf seeding operation. Use of compost meeting the requirements of Section 987 as mulch is acceptable unless otherwise specified.

570-3.3 Sod: Modified: Place the sod on the prepared surface, with edges in close contact. Do not use sod

which has been cut for more than 48 hours.

Place the sod to the edge of all landscape areas as shown in the Plans and the Standard Plans.

Place rolled sod parallel with the roadway and cut any exposed netting even with the sod edge.

Monitor placed sod for growth of pest plants and noxious weeds. If pest plants and/or noxious weeds manifest themselves within 30 days of placement of the sod during the months April through October, within 60 days of placement of the sod during the months of November through March treat affected areas by means acceptable to the Department at no expense to the Department. If pest plants and/or noxious weeds manifest themselves after the time frames described above from date of placement of sod, the Engineer, at his sole option, will determine if treatment is required and whether or not the Contractor will be compensated for such treatment. If compensation is provided, payment will be made as Unforeseeable Work as described in 4-4.

Remove and replace any sod as directed by the Engineer.

No additional compensation will be provided for pegging of sod as directed by the Engineer. The Engineer will not require pegging on any slope shallower than 5:1.

570-3.6 Watering: Modified: Water all turf areas as necessary to produce a healthy and vigorous stand of turf. Ensure that the water used for turf irrigation meets the requirements of Section 983.

Contractor shall use potable water only for watering. Should the Contractor want to purchase water from RCES, contact RCES for temporary hydrant meter and all water obtained from RCES shall be purchased in accordance with RCES rates and requirements. Provide RCES with deposit for meter if required and include all costs associated with obtaining water in the contract price.

570-3.7 Fertilizing: Modified: No fertilizer of any kind shall be utilized on this project.

570-4 Turf Establishment: Modified:

Perform all work necessary, including watering and fertilizing, to sustain an established turf until final acceptance, at no additional expense to the Department. Provide the filling, leveling, and repairing of any washed or eroded areas, as may be necessary.

Established turf is defined as follows:

1. An established root system (leaf blades break before seedlings or sod can be pulled from the soil by hand).
2. No continuous streaks running perpendicular to the face of the slope.
3. No bare spots or areas as determined by the engineer.
4. No deformation of the turf areas caused by mowing or other Contractor equipment.
5. No exposed sod netting.
6. No pests or noxious weeds.

Monitor turf areas and remove all competing vegetation, pest plants, and noxious weeds (as listed by the Florida Exotic Pest Plant Council, Category I "List of Invasive Species", Current Edition, <http://www.fleppc.org>).

Remove such vegetation regularly by manual, mechanical, or chemical control means, as necessary. When selecting herbicides, pay particular attention to ensure use of chemicals that will not harm desired turf or wildflower species. Use herbicides in accordance with 7-1.7.

If at the time that all other work on the project is completed, but all turf areas have not met the requirements for established turf set forth in 570-4, continuously maintain all turf areas until the requirements for established turf set forth in 570-4 have been met.

During the entire establishment period and until turf is established in accordance with this specification, continue inspection and maintenance of erosion and sedimentation control items in accordance with Section 104. Take responsibility for the proper removal and disposal of all erosion and sedimentation control items after turf has been established.

Notify the Engineer, with a minimum of seven calendar days advance notice, to conduct inspections of the turf at approximate 90-day intervals during the establishment period to determine establishment. Results of such inspections will be made available to the Contractor within seven calendar days of the date of inspection.

Determination of an established turf will be based on the entire project and not in sections.

Upon the determination by the Engineer that the requirements of 570-4 have been met and an established turf has been achieved and all erosion and sedimentation control items have been removed, the Engineer will release the Contractor from any further responsibility provided for in this Specification.

The Contractor's establishment obligations of this specification will not apply to deficiencies due to the following factors, if found by the Engineer to be beyond the control of the Contractor, his subcontractors, vendors or suppliers:

1. Determination that the deficiency was due to the failure of other features of the Contract.
2. Determination that the deficiency was the responsibility of a third party performing work not included in the Contract or its actions.

The Department will only pay for replanting as necessary due to factors determined by the Department to be beyond the control of the Contractor.

570-6 Dispute Resolution: Deleted:

570-7 Failure to Perform: Deleted:

SECTION 685 TRAFFIC CONTROL SYSTEM AUXILIARIES

685-1 Description: Modified:

Furnish and install all fiber optic communications interface panels, wiring harnesses, telephone box and fiber optic ethernet switch (modulator/demodulators) required to provide a fully functional closed-loop system.

685-2.3 Interface Panel: Added:

The Contractor shall furnish and install a termination cabinet with fiber optic connector panels in each controller cabinet. The termination cabinet shall be lockable with a minimum 24- fiber capacity and shall have the capacity to terminate all fibers, multimode and single-mode, passing through the controller cabinet. The termination cabinet shall be mounted on the inside wall of the traffic signal controller cabinet. The connector panels shall be capable of terminating all fiber cables passing through the cabinet.

685-2.4 Fiber Optic Ethernet Switch (Modulator/Demodulator): Added:

Fiber-optic Ethernet switch (modulator/demodulators) describes the data transceivers for use with single-mode fiber optic communications between the traffic controllers.

Fiber-optic Ethernet switch (modulator/demodulators) shall be capable of communications with NEMA traffic signal controllers operating in a centralized traffic control system and shall interface with the controller via the Ethernet port provided with the controller. The Ethernet switch shall include all necessary software, support full-duplex communications, shall meet all applicable NEMA environmental specifications and shall be fully compatible with the existing Ethernet switches in the system.

The Ethernet switch shall meet the requirements set forth by the signal system equipment manufacturer such that, combined with the specified fiber-optic cable, the required distances between controllers can be successfully spanned.

The Ethernet switches shall have a minimum of six 10/100BaseTX Ports CAT5 and a minimum of two 100BaseFX Ports capable of full duplex communication over single-mode fiber. All copper ports shall be Type RJ-45 and shall autonegotiate for speed (i.e., 10/100 Base) and duplex (i.e., full or half). Each optical port shall consist of a pair of fibers; one fiber will transmit (TX) data and one fiber will receive (RX) data.

685-6 Method of Measurement: Modified:

The Contract unit price shall include furnishing and installing system auxiliaries and all equipment specified in this Technical Special Provision, the Contract Documents, and all labor, equipment, and miscellaneous materials (including interface hardware and telemetry software, any needed lightning and surge protection equipment, and all ancillary hardware, connectors, cables, testing, and items incidental to the transmission of video and data) necessary for a complete and accepted installation.

The Contract unit price for the telephone box shall also include all initial start-up costs and connection fees charged by the service provider and any costs incurred by the Contractor in coordinating with the service provider.

685-7 Basis of Payment: Modified:

Prices and payments will be full compensation for all work specified in this Technical Special Provision.

Payment will be made under:

Item No. 685-128 System Auxiliaries, Furnish & Install, Interface Panel – each.

Item No. 685-140 System Auxiliaries, Furnish & Install Fiber Optic Modulator/Demodulator – each.

Item No. 685-1- Uninterruptible Power Supply - each

Reedy Creek Improvement District (RCID)**Supplemental Specifications****RCID 334 SPECIFICATION FOR ASPHALT PAVEMENT- (Revision 10/20/2016)****RCID 334-1 DESCRIPTION:**

RCID 334-1.1 General: Reedy Creek Improvement District (RCID) will administer this work under the direction of the RCID or their designated agent (Engineer). The work under this section shall consist of furnishing asphalt pavement composed of mineral aggregate and performance graded asphalt binder, mineral filler, recycled pavement, anti-strip additives, and if applicable, manufactured warm mix asphalt (WMA) additive and/or WMA plant process modifications that are mixed in a central mixing plant and placed on a prepared course in accordance with these specifications, and the RCID Contract Documents, conformance to the lines, grades, thickness and typical cross sections shown on the contract drawings or as directed by the Engineer. Meet the applicable requirements for plants, equipment and construction requirements as defined in FDOT Section 320 of the Standard Specifications, latest edition unless otherwise modified herein. Meet the applicable requirements for asphalt mixtures as defined in FDOT 330, 334, 336, and 337 unless otherwise modified herein. Meet the requirements for Quality Control Plans, FDOT 105, 330, and 334 unless otherwise modified herein, and Quality Acceptance as defined within this specification.

Each course shall be constructed to the depth, typical section, or elevation required by the contract and/or plans and shall be rolled, finished, and approved before the placement of the next course.

RCID 334-1.2 Work Categories: Construction of Asphalt Pavement will fall into one or more of the following Work Categories based upon Lots produced, placed, evaluated and accepted:

RCID 334-1.2.1 Work Category 1: Includes the construction of small parking lots and small pavement facilities generally less than a total of 300 tons.

RCID 334-1.2.2 Work Category 2: Includes the construction of larger parking lots and roadways generally between 300 ton and 2000 ton total for the project.

RCID 334-1.2.3 Work Category 3: Includes the construction of mainline roadways, turn lanes, cross overs, ramps, and shoulders generally greater than 2000 tons for the project.

RCID 334-1.3 Lot Sizes

Quality Characteristic	Lot Size & Unit of Measure
PG Asphalt Binder Grading	Total Tons of asphalt mixture per Work Category from all JMFs using the same PGAB Grade (from same PGAB Supplier), produced by a single plant and placed within same RCID fiscal year
PG Asphalt Binder Content, % pass #8, % pass #200	Total Tons of Asphalt mixture with same JMF, produced by a single plant, <i>per Work Category, per day</i> (24-hrs)
Volumetrics - Air Voids	
In-Place Density – Mat; and, Thickness; and, Smoothness and Cross-Slope	Total lineal feet of paver pass with same JMF for same individual pavement course, produced by a single plant, <i>per Work Category, per day</i> (24-hrs), <i>per facility</i> ⁽¹⁾
In-Place Density- Longitudinal Joint	Total lineal feet of Longitudinal Joint with same JMF for same individual pavement course, produced by a single plant, <i>per Work Category, per day</i> (24-hrs), <i>per facility</i> ⁽¹⁾⁽²⁾

Note (1): Facility is defined as a roadway, street, bridge deck, ramp, access road, parking lot, driveway or other pavement that has essentially similar cross-section for the purposes of obtaining uniform placement, compaction, texture and smoothness.

Note (2): Separate LOTs for Longitudinal Joint quality measurement will not be considered for single paver pass in-lay work but will be considered for multiple paver passes within the same day.

RCID 334-1.4 Mix Types: Use the appropriate asphalt mix as determined by RCID. Mixtures will be classed as fine graded , Type SP 9.5, 12.5 or Friction Course, FC-5. Traffic Level and PGAB binders will be as specified by the Engineer and shown within the project scope. No substitutions of mixture types shall be used unless otherwise approved by the Engineer.

RCID 334-1.5 Thickness: The total pavement thickness of the asphalt pavement will be based on the plan thickness or as shown within the Contract Documents and shall not be more deficient than that shown in the table below entitled “Thickness Acceptance Tolerances”. The thickness acceptance tolerance requirements contained herein shall apply only when each pavement layer is specified to be a uniform compacted thickness of 1 inch or greater. Thickness shall be evaluated for acceptance by the Engineer. Measurements of thickness may be checked periodically by the Contractor in following their QC system for field operations. Measurements of thickness for acceptance shall be made by the Engineer using yield calculations using the actual bulk specific gravity of the asphalt pavement. In the event of a dispute on thickness or density, cores will be taken, split sampled, tested by both parties and a determination will be rendered based upon the core results.

The compacted thickness of *each layer* of the asphalt mixture will be measured to determine compliance with the acceptance tolerances as given below. The average measured thickness of each lift will be determined by measurements taken by the Engineer. The finished pavement course shall not vary from that specified or shown on the contract drawings by more or less than the following tolerances. In the event the total thickness of any course of material varies from those specified beyond the tolerances given, the longitudinal and transverse limits of such variation will be determined by the Engineer. Where the thickness of any course is less than that specified beyond the tolerances given, the Contractor, with the approval of the Engineer, shall take corrective action in accordance with RCID 334-4.10.5.

The Contractor shall correct pavement areas varying in excess of these amounts by removing and replacing the defective work or as ordered by the Engineer in accordance with RCID 334-4.10.5.

Skin patching will not be permitted.

THICKNESS ACCEPTANCE TOLERANCES

Specified Thickness	Allowable Tolerances
1" to 2"	+/- 1/4"
>2"+ to 5"	+/- 3/8"
Over 5"	+/- 1/2"

RCID 334-2 MATERIALS:

RCID 334-2.1 Performance Graded Asphalt Binders: PGAB binders will be as designated within the Contract Documents. Unless otherwise specified within the contract documents, use a PGAB 67-22 for non-truck route Work Category 1 and 2 projects. Unless otherwise specified within the contract documents, use a PGAB 76-22 for truck route projects as determined by RCID or their Engineer. Binders must be from the FDOT Qualified Products List (QPL). For binders not on the QPL, submit samples and certified test reports and materials certificates to the Engineer for approval. For Friction Course mixtures, meet the requirements of FDOT Section 336 and 337. PG binders shall conform to FDOT 334-2.1.

For WMA technologies having production temperatures 100°F or more lower than HMA production temperatures, it may be necessary to increase the high-temperature performance grade of the binder one grade to meet the rutting resistance requirements of AASHTO R35.

RCID 334-2.2 Aggregate: Use aggregate capable of producing a quality pavement. For all Work Categories, the Contractor and aggregate supplier shall certify that the materials meet the FDOT requirements. For Friction Course mixtures, meet the requirements of FDOT Section 337-2.5 for Hydrated Lime; no RAP material will be permitted. No recycled crushed glass aggregate will be permitted in the surface course mixtures.

RCID 334-2.3 Reclaimed Asphalt Pavement (RAP) Material:

RCID 334-2.3.1 General Requirements: RAP may be used as a component of the asphalt mixture if approved by the Engineer. Usage of RAP is subject to the following requirements:

1. Limit the amount of RAP material used in the asphalt mixture to a maximum of 50 percent by weight of total aggregate. When using a PG 76-22 or higher PG grade, limit the amount of RAP material used in the mix to a maximum of 15% by weight of total aggregate. As an exception, amounts greater than 15% and less than or equal to 20% by weight of total aggregate may be used if no more than 20% by weight of the total asphalt binder comes from the RAP material.

For RAP percentages less than 20% (for non-trucks facilities), use PGAB 67-22.

For RAP percentages between 20% and 30% (for non-truck facilities), use PGAB 64-22.

For RAP percentages greater than or equal to 30%, full PG Binder testing results shall be supplied.

2. Do not use RAP material in any Friction course mixes.
3. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines, that contains minor amounts of crack sealer, and that is free of injurious amounts of materials that will jeopardize the quality of the asphalt mixture.

4. Provide RAP material having a minimum average asphalt content of 4.0 percent by weight of total mix. As an exception, when using fractionated RAP, the minimum average binder content for the coarse portion of the RAP shall be 2.5 percent by weight of the coarse portion of the RAP. The coarse portion of RAP shall be the portion of the RAP retained on the No. 4 sieve. The Engineer may sample the job mix formula (JMF) selected RAP stockpile as designated on the JMF to verify that this and the other requirements are met.
5. If oversized RAP material appears in the completed recycle mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.
6. RAP Asphalt mixtures shall not be loaded into surge or storage silos unless Engineer is present at plant.
7. WMA mixtures containing RAP shall have a planned field compaction temperature greater than the as-recovered high-temperature grade of the RAP binder.

RCID 334-2.3.2 Material Characterization: Assume responsibility for establishing the asphalt binder content, gradation, viscosity and bulk specific (G_{sb}) of the RAP material based on a representative sampling of the material.

RCID 334-2.3.3 Asphalt Binder for Mixes with RAP: Select the appropriate asphalt binder grade such that the final recycled mixture meets the requirements of the appropriate binder grade for the project. The JMF shall include such binder viscosity tests with the selected RAP percentage and designated RAP stockpile to confirm specification compliance. In general, for RAP percentages less than 20%, no asphalt binder grade adjustments are necessary in the mixture. See RCID 334-6.2.3(a).

RCID 334-3 COMPOSITION OF MIXTURE:

RCID 334-3.1 General: Compose the asphalt mixture using a combination of approved aggregates, RAP, mineral filler and anti-strip agent, if required, additives, asphalt binder material, and, if desired, manufactured WMA additive and/or WMA plant process modifications. WMA technologies (additives, foaming technologies, etc.) listed on the FDOT website may be used in the production of the mix. Evidence of current state approval shall be provided. The URL for obtaining this information, if available is:

<https://www.fdot.gov/materials/mac/production/warmmixasphalt/>

Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined. For Friction Course mixtures, meet the requirements of FDOT 337-3.3.

RCID 334-3.2 Mix Design

RCID 334-3.2.1: General: Design the asphalt mixture in accordance with AASHTO R35 and FDOT 334-3, except as noted herein. For those mix designs that are FDOT approved, submit the proposed JMF mix design with supporting test data indicating compliance with all mix design criteria to the Engineer a minimum of one week prior to production. Prior to the production of any asphalt mixture, obtain the Engineer's conditional approval of the mix design. The Engineer will require a Control Strip under the requirements of RCID 334-4.2.1 for all Work Category 3 projects, unless directed otherwise by the Engineer.

For those mix designs that do not have current FDOT 334-3 approvals, the Engineer will require a mix design verification and a Control Strip under the requirements of RCID 334-4.2.1 for Work Category 3 projects, unless directed otherwise by the Engineer. If required by the Engineer, send representative samples of all component materials, including the PGAB binder to the Engineer's AASHTO Accredited laboratory for verification. Allow the Engineer a maximum of four weeks to either conditionally verify or reject the mix as designed. Contractor

may elect to place the Control Strip prior to the Engineer's verification, but will do so solely at the Contractor's risk.

WMA – Include a description of the WMA technology and the target dosage rate together with the submission of an MSDS for the additive, if applicable, and submission of either enough of the additive for the laboratory mix design verification, or the additive pre-blended in the PGAB at the correct dosage. If the additive is not pre-blended into the PGAB, include directions for properly incorporating the additive into the laboratory made mixture. Include manufacturer's temperature range for mixing and compaction. The WMA mix design shall include the high temperature grade of the recovered binder in the RAP for mixtures incorporating RAP. The percent coating shall be evaluated and reported in accordance with AASHTO T195. The mix design shall include the gyrations needed to reach 92 percent relative density at the design binder content at the planned field compaction temperature and 30 C below the planned field compaction temperature. The resulting gyration ratio shall be calculated and reported. The mix design shall also include the dry tensile strength, tensile strength ratio, and observed stripping at the design binder content. The wma mix design shall include the flow number test temperature and the flow number at the design binder content. At this time, mechanical foaming WMA is not approved for use in RCID.

The Control Strip will be designated as the Initial Production Lot per mix design. During this period, Contractor shall demonstrate the capability to produce and place the mixture as specified unless waived by the Engineer.

RCID 334-3.2.2: Mixture Gradation Requirements: Combine the aggregates in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements of the design as defined in AASHTO M323-07, Table 3.

RCID 334-3.2.2 (a): Mixture Gradation Classification: Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M323-07, Table 3, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M323-07, Table 4. Fine mixes are defined as having a gradation that passes above or through the primary control sieve control point. Use only fine mixes unless otherwise directed by the Engineer, with the exception of open-graded friction courses.

RCID 334-3.2.3 Aggregate Consensus Properties: Meet the requirements as stated in FDOT 334-3.2.3 for Coarse Aggregate Angularity, Fine Aggregate Angularity, Flat and Elongated Particles and Sand Equivalent.

RCID 334-3.2.4 Gyrotory Compaction: Compact the design mixture in accordance with AASHTO T312-12. Use the number of gyrations as defined in AASHTO R35-12, Table 1 with the following exceptions: for Traffic Level A mixes, compact the mixture to N_{design} at 50 revolutions; for Traffic Level B mixes, compact the mixture to N_{design} at 65 revolutions; for Traffic Level C mixes, compact the mixture as specified by FDOT for the Traffic Level of 0.3×10^6 to $< 3 \times 10^6$ ESAL's.

RCID 334-3.2.5 Design Criteria: Meet the requirements for nominal maximum aggregate size as defined in AASHTO M323-07, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M323-07, Table 6. Use a dust-to-binder ratio of 0.8 to 1.6 for coarse mixes.

RCID 334-3.2.6 Moisture Susceptibility: Prior to JMF approval, the Contractor shall determine the moisture susceptibility of each mixture in accordance with FM 1-T283. Test 4 inch specimens in accordance with FM 1-T 283. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi. If necessary, add a liquid anti-stripping agent from the FDOT Qualified Products List, or hydrated lime in order to meet these criteria. A single stripping agent from the FDOT Qualified Products List shall be specified on the job mix formula.

WMA mixtures may be evaluated with 6" diameter specimens provided the material contains a minimum of 0.5% antistrip additive.

RCID 334-3.2.7 Warm Mix Asphalt: Evaluated in accordance with AASHTO T195 needs to contain a minimum of 95% coating. The WMA shall obtain a compactability ratio of less than or equal to 1.25. The rutting resistance of the WMA shall be evaluated in accordance with AASHTO T79. The WMA shall achieve minimum flow numbers in accordance with the following table:

Traffic Level, Million ESALs	Minimum Flow Number
<3	N/A
3 to <10	30
10 to <30	105
≥ 30	415

RCID 334-3.2.8 Additional Information: In addition to the requirements listed above, provide the following information on each mix design:

1. The design traffic level and the design number of gyrations (N_{design}).
2. The source and description of the materials to be used.
3. The FDOT source number and the FDOT product code of the aggregate components furnished from an FDOT approved source.
4. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.
5. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.
6. The bulk specific gravity (G_{sb}) value for each individual aggregate and RAP component.
7. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1 percent.
8. A target temperature at which the mixture is to be discharged from the plant and a target roadway compaction temperature. Use FDOT specified maximum target temperature of 330°F for modified asphalts and 315°F for unmodified asphalts unless otherwise specified by the manufacturers PGAB binder temperature/viscosity charts for mixing/compaction temperatures for special PGABs.
9. Provide the asphalt mixture physical properties achieved at four different asphalt binder contents. One shall be at the optimum asphalt content, and must conform to all FDOT specified physical requirements.
10. The name of the Mix Designer
11. The ignition oven calibration factor.
12. WMA technology, if used. Comply with the manufacturer's recommendations for incorporating the WMA technology. Test specimens may be made from plant produced or laboratory prepared WMA. Test specimens must be made from plant produced WMA if adding the WMA technology in the laboratory does not simulate the production process.
13. The project name shall be identified on the job mix formula(s) and Quality Control Plans.

RCID 334-3.3 Mix Design Revisions: During production, the Contractor may request a target value revision to a mix design, subject to meeting the following requirements: (1) the target change falls within the limits defined in Table 334-4 of the FDOT Standard Specifications, latest edition, (2) data exists demonstrating that the mix complies with production air voids specification criteria, and (3) the mixture gradation meets the basic gradation requirements defined in RCID 334.3.2.2 (a) of this specification.

Submit all requests for revisions to mix designs, along with supporting documentation, to the Engineer. In order to expedite the revision process, the request for revision or discussions on the possibility of a revision may be made verbally, but must be followed up by a written request. The verified mix design will remain in effect until the Engineer authorizes a change. In no case will the effective date of the revision be established earlier than the date of the first communication between the Contractor and the Engineer regarding the revision.

A new mix design will be required if aggregate sources change, or for any substitution of an aggregate product with a different aggregate code, unless approved by the Engineer.

RCID 334-4 GENERAL CONSTRUCTION REQUIREMENTS:

RCID 334-4.1 Weather Limitations: Do not transport asphalt mix from the plant to the roadway unless all weather conditions are suitable for the asphalt mixture placement operations. Asphalt mixtures shall not be placed on any wet surface or when weather conditions otherwise prevent the proper handling, finishing, or compaction of the mixture. If precipitation is imminent and the Contractor has not suspended operations, the Engineer may suspend the loading of trucks and not allow trucks to leave the plant. The Contractor may resume operations when the precipitation has stopped and the surface is free of water. The Engineer shall not be responsible for delays, material produced, cessation of supply, or penalties.

RCID 334-4.2 Limitations of Placement Operations:

RCID 334-4.2.1 Control Strip: If Contractor has not produced and placed the JMF as designed for this RCID project or for RCID previously, then a Control Strip will be required for Work Category 3 projects, unless directed otherwise by Engineer. The Control Strip will be designated as the Initial Production Lot per mix design. During this period, the Contractor shall demonstrate the capability to produce and place the mixture as specified unless waived by the Engineer. If necessary, during this time, make adjustments to the mix design under the requirements of RCID 334-3.3. Any target value adjustments to the mix design will result in the Lot being terminated and evaluated for payment purposes per RCID 334-6.7. Do not begin another Lot until a Control Strip has been successfully completed, or is waived by the Engineer. The amount of mixture for the Control Strip should be sufficient, at a minimum, to construct a test section 300 long and 20 to 30 feet wide placed in multiple paver passes, and shall be of the same depth specified for the construction of the course which it represents. If multiple paver passes are not required for the project, then the width shall be that which represents the travelway pull. The underlying grade or pavement structure upon which the Control Strip is to be constructed shall be the same as the remainder of that project course represented by the Control Strip. The equipment used in construction of the Control Strip shall be the same type and weight to be used on the remainder of the course represented by the Control Strip.

One random sample shall be taken at the plant by the Engineer and tested for gradation, PGAB binder content and air voids; these shall be tested for conformance to the requirements below.

Five randomly selected cores shall be taken by the Contractor, as directed by the Engineer, from the finished pavement mat in the Control Strip, and five from the longitudinal joint, and tested for conformance to the requirements below. Longitudinal density testing is not required for single pass work. Nuclear and non-nuclear density equipment shall be calibrated from the control strip cores for use on the project. Random sampling shall

be in accordance with procedures contained in ASTM D3665 and these specifications.
The Control Strip shall be considered acceptable: IF

1. Mat density and longitudinal joint density is achieved at 100% payment;
2. A minimum Pay Factor of 0.90 (RCID 334-8.3) for each quality characteristic of percent passing the #8 sieve, Air Voids, percent passing the #200 sieve and asphalt binder content is achieved and,
3. Asphalt pavement mat is uniform in texture and smoothness;

OR, if the Control Strip is uniform in texture and smoothness, and it conforms to the requirements for mat and longitudinal joint density and plant air voids as detailed above, the Contractor may elect to revise the target JMF within the tolerances allowed in RCID 334.3.3.

If the initial Control Strip should prove to be unacceptable, the necessary adjustments to the JMF, plant operation, placing procedures, and/or rolling procedures shall be made, and a second Control Strip shall then be placed.

When the initial Control Strip is unacceptable, but above a Pay Factor of 0.80 (RCID 334-8.3) for all Asphalt pavement quality characteristics and a minimum of 90% Pay Adjustment for mat and longitudinal joint density, and the asphalt pavement mat is uniform in texture and smoothness, it shall be allowed to remain in place and measured for payment under the requirements of RCID 334-8.

Additional Control Strips, as required, shall be constructed and evaluated for conformance to the specifications, until an acceptable Control Strip is constructed. Any Control Strips not meeting the criteria for PAYMENT as noted above shall be removed at the Contractor's expense and will not be measured for PAYMENT. The Engineer reserves the right to bill the Contractor or adjust payment for any testing fees associated with evaluating additional Control Strips that are found to be unacceptable. Full production shall not begin until an acceptable Control Strip has been constructed and approved by the Engineer. All Control Strips allowed to remain in place which are constructed per the project plans on an RCID project shall be paid for in accordance with the Section for Payment under the requirements of RCID 334-8.

Job mix formula quality control testing is to be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the JMF. It should be recognized that the aggregates produced by the plant may not satisfy the gradation requirements or produce a mix that exactly meets the JMF. In those instances, it will be necessary to re-evaluate and re-design the mix using plant-produced aggregates. Specimens should be prepared and the optimum asphalt binder content determined in the same manner as for the original design tests. A revised JMF will need to be submitted and a Control Strip constructed prior to approval and full production. The Control Strip and JMF submittal shall conform to all the specification requirements contained herein.

RCID 334-4.2.2 Surface Preparation: Spread the mixture only when the surface upon which it is to be placed has been previously prepared, is intact, firm, and properly cured, and dry. Do not place open graded friction course until the adjacent shoulder area has been dressed and grassed.

RCID 334-4.2.3 Air Temperature: Spread the mixture only when the air temperature in the shade and away from artificial heat is at least 40⁰F for layers greater than 1 inch in thickness and at least 45⁰F for layers 1 inch or less in thickness including leveling courses. The minimum temperature requirement for leveling courses placed at one-half inch or less is 50⁰F.

The minimum ambient air temperature requirement may be reduced by 5⁰F when using warm mix technology, if mutually agreed to by both the Engineer and the Contractor.

RCID 334-4.2.4 Wind: Do not spread the mixture when the wind is blowing to such an extent that proper and

adequate compaction cannot be maintained or when sand, dust, etc. are being deposited on the surface being paved to the extent that the bond between layers will be diminished.

RCID 334-4.2.5 Night Paving: Provide sufficient traffic control and lighting for night operations.

RCID 334-4.3 Asphalt Mix Temperature: Heat and combine the ingredients of the Asphalt mix in such a manner as to produce a mixture with a temperature at the plant and at the roadway, within a range of 25⁰F (single test) from the target JMF temperature.

For warm mix asphalt, the Contractor may produce the first five loads of the production day at a hot mix asphalt temperature not to exceed 330⁰F for the purposes of heating the asphalt paver. For this situation, the 25⁰F tolerance range does not apply to warm mix asphalt.

RCID 334-4.4 Contractor's Responsibility for Mixture Requirements: Produce a homogeneous mixture, free from moisture and temperature and gradation segregation that meets all applicable FDOT specifications and these specification requirements. Apply these requirements to all mixes produced by a drum or batch process and all mixes processed through a hot storage or surge bin, both before and after storage. The Contractor shall use the JMF target values as the indicator of central tendency for the following test parameters with associated Action and Suspension Limit tolerances:

RCID 334-4.4.1 Asphalt Mixture Production Tolerance Limits for Individual Measurements

<u>Sieve Size</u>	<u>Action</u>	<u>Suspension</u>
#4 (4.75 mm) thru 1-1/2" (37.5mm)	±6%	±9%
#8 (2.36 mm)	±5%	±7.5%
#16 (1.18 mm)	±5%	±7.5%
#30 (0.600 mm)	±4%	±5.5
#50 (0.300 mm)	±3%	±4.5
#100 (0.150 mm)	±3%	±4.5
#200 (0.075 mm)	±2%	±3%
Asphalt Binder Content	±0.4%	±0.70%
Design Air Voids	±1%	±1.7%

When evaluating the production limits, the sieve sizes above the maximum size aggregate should be deleted from the Individual Measurements Chart and the maximum size aggregate sieve size Action and Suspension Limits should be changed to 0%.

RCID 334-4.4.2 Production Tolerance Limits for Multiple Measurements Range, or the difference between multiple tests, may be established to indicate production variability for the test parameters and Suspension Limits listed below. The range may be computed as the difference between the high and low test results per Lot for each control parameter. The Suspension Limits specified below are based on a sample size of n = 2. Should the Contractor elect to perform more than two tests per Lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for n = 3 and by 1.27 for n = 4.

Asphalt Mixture Production Limits Based On Range	
(Based on n = 2)	
Sieve	Suspension Limit

#4 (4.75 mm) and Larger Size	11 percent
#8 (2.36 mm)	10 percent
#16 (1.18 mm)	9 percent
#50 (0.30 mm)	6 percent
#200 (0.075 mm)	3.5 percent
Asphalt Binder Content	0.8 percent
Design Air Void Content	2.0 percent

RCID 334-4.4.3 Corrective Action: The Contractor's Quality Control system shall include an appropriate action to be taken when the process is believed to be out of tolerance. The Contractor should review production on a continuous basis making adjustments to the process when necessary to keep the product consistent. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:
Design Air Voids falls outside the Suspension Limit line for its individual measurement or range; or
Design Air Voids and two or more points fall outside the Action Limit line for individual measurements or range; or

Design Air Voids fall outside the Action Limit and one point falls outside the Suspension Limit for individual measurements or range; or

Three points in a row fall outside the Action Limit line for individual measurements.

Three nonconsecutive samples out of five fall outside the Action Limit line for individual measurements.

WMA – All metering devices will meet the current state agency requirement for liquid or mineral additives.

Document the integration of plant controls and interlocks when using WMA additive metering devices.

RCID 334-4.5 Transportation of the Mixture: Transport the mixture in vehicles previously cleaned of all foreign material. After cleaning, thinly coat the inside surface of the truck body with soapy water or an approved asphalt release agent as needed to prevent the mixture from adhering to the beds. Do not allow excess liquid to pond in the truck body; therefore dump off on approved areas. Do not use diesel fuel or any other hazardous or environmentally detrimental material as a coating for the inside surface of the truck body. Cover each load at all times. Clean out trucks after each paver unloading at approved locations and not on the prepared underlying surface.

334-4.6 Preparation of Surfaces Prior to Paving:

RCID 334-4.6.1 Cleaning: Clean the surface of all loose and deleterious material to the satisfaction of the Engineer, by the use of power brooms or blowers, supplemented by hand brooming where necessary. Additional scraping or milling may be required when power brooms, blowers, or hand brooming is ineffective.

RCID 334-4.6.2. Patching and Leveling Courses: Where the asphalt mixture is to be placed on an existing pavement which is irregular, wherever the plans or contract documents indicate, or if directed by the Engineer, bring the existing surface to proper grade and cross-section by the application of patching or leveling courses.

RCID 334-4.6.3 Tack Coat: Contact surfaces of manholes, structures, natural pavement edges, etc. shall be painted with a thin, uniform tack coat just before the material is placed against them.

Tack coat is required on all surfaces to be paved. This includes freshly placed layers of asphalt pavement. Tack coat shall be applied at a residual binder amount on the pavement between 0.02 to 0.05 gallons per square yard which equates to approximately 0.035 to 0.08 gallons per square yard of applied emulsion. This amounts to

a very thin application that needs to be carefully applied by a distributor truck having calibrated nozzles set to provide a triple overlap of spray on the pavement surface. Dribbling emulsion on the surface is not acceptable. Use a non-tracking tack coat (NTSS-1hm) or RS-1h, RS-2, CRS-1h as directed by RCID. This product shall meet the FDOT specifications.

Allow tack coat to break (water escapes from the product) prior to paving.

The Contractor shall apply tack coat in a manner which will prevent traffic from driving on the applied tack coat material.

RCID 334-4.7 Paving

RCID 334-4.7.1 Alignment of Edges: With the exception of pavements placed adjacent to curb and gutter or other true edges, place all pavements by the stringline, or approved equal, method to obtain an accurate, uniform alignment of the pavement edge.

RCID 334-4.7.2 Rain and Surface Conditions: Immediately cease transportation of asphalt mixtures from the plant when rain begins at the project. Do not place asphalt mixtures while rain is falling, or when there is water on the surface to be covered. Once the rain has stopped and water has been removed from the tacked surface to the satisfaction of the Engineer and the temperature of the mixture caught in transit still meets the requirements as specified in RCID 334-4.3, the Contractor may then place the asphalt mixture caught in transit. One and one-half inch lift thicknesses or less must be placed on completely dry surfaces. Contractor is responsible to insure that bond has been created between the newly placed mat and the previous surface if suspect.

RCID 334-4.7.3 Speed of Paver: For Work Category 3 projects, the Contractor is required to balance the paving operation from plant to trucks to paver to rollers such that a smooth and uniform surface is achieved. The Contractor's CTQP Paving Level II technician in charge of the paving operations must be physically accessible to the Engineer at all times when placing mix.

RCID 334-4.7.4 Checking Depth of Layer: Check the depth of each layer at frequent intervals, and make adjustments when the thickness exceeds the allowable tolerance. Nominal compacted depth will be determined by using yield calculations with known bulk specific gravity values from the plant.

RCID 334-4.7.5 Placement: Upon arrival, the mixture shall be placed to the full width by an asphalt paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the asphalt mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of 10 feet except where edge lanes require less width to complete the area. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot, however, the joint in the top layer shall be at the centerline of the pavement. Transverse joints in one layer shall be offset by at least two (2) feet from transverse joints in the previous layer. The elevation of the screed above the surface of the first mat should be equal to the amount of roll-down expected during compaction of the new mat. The overlapped material shall be bumped by the lutes, if necessary and if applicable, to optimize the density along the longitudinal joint. Under no circumstances should the overlapped material be broadcast across the mat. Transverse joints in adjacent lanes shall be offset a minimum of 10 feet. The end gate of the unsupported edge should be lowered, when applicable, to provide confinement at the longitudinal joint. The Contractor is required to use joint making attachments, when applicable, to provide for better longitudinal joint construction and density.

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools. For pavement widths of 10 feet to 4

feet, the Contractor shall use paving machines including sidewalk width machines, if applicable, for narrow width paving. When hand spreading is permitted, the mixture shall be distributed into place by means of hot shovels and spread with lutes in a loose layer of uniform density and correct depth. The use of rakes to spread the asphalt mixture shall not be permitted. Loads shall not be dumped any faster than they can be properly handled by the shovelers and the shovelers shall not distribute the dumped load any faster than it can properly be handled by the luters. The luting shall be carefully and skillfully done to avoid segregation and so that, after the first passage of the roller over the luted mixture, no back patching will be necessary. Compaction must immediately follow hand spreading such that specification density is achieved while the mixture temperature is above the manufacturers recommended compaction temperature for the performance graded binder.

The mixtures shall be placed and compacted only at such times as to permit the proper inspection and checking by the Engineer.

The mixtures shall only be placed in the work when they can be efficiently and satisfactorily placed, compacted, smoothed and made uniform in accordance with these specifications. Unless otherwise permitted by the Engineer for special particular conditions, only machine methods of placing shall be used.

Immediately after any course is screeded and before roller compaction is started, the surface shall be checked, any irregularities adjusted, any accumulation from the screed removed by lute, and all fat spots in any course removed and replaced with satisfactory materials. Irregularities in alignment and grade along outside edges shall be corrected by the addition or removal of mixture before the edges are rolled. Indiscriminate casting of mix on the new screeded surface, where irregularities are not evident, shall not be permitted.

RCID 334-4.7.6 Thickness of Layers: Construct each course of asphalt pavement in layers of the compacted thickness as given within the Contract Documents.

RCID 334-4.7.7 Leveling Courses: Before spreading any leveling course, fill all depressions in the existing surface more than 1 inch deep by either shim patch, partial patch or full depth patch as determined by the Engineer. Place all courses of leveling with an asphalt paver or device approved by the Engineer. On bridge decks or concrete pavement, remove excess crack and joint material by trimming the excess material flush with the pavement surface prior to placing the first layer of the leveling course. No excess joint or crack material shall be on top of any pavement surface in excess of 1/16 inch in depth.

RCID 334-4.7.8 Material Transfer Vehicle (MTV): Place asphalt pavement for Work Category 3 projects and if directed by RCID in the contract documents, using a Material Transfer Vehicle. Furnish and use an MTV with the following:

1. A loading system with the ability to receive mixtures from the hauling equipment;
2. A minimum storage capacity of 13 tons with a remixing system in the MTV storage bin;
3. A discharge conveyor to deliver the mixture to the paver hopper; and
4. A weight not exceeding the maximum legal loadings on structures.

Pick-up machines, hopper inserts, and material transfer devices are not considered MTV's.

RCID 334-4.8 Compaction:

RCID 334-4.8.1 Rollers: Rollers of the vibratory, steel wheel, oscillatory, and pneumatic-tired type may be used. They shall be in good condition, capable of reversing direction without backlash, and operating at slow speeds to avoid displacement of the hot mix asphalt. Static rollers shall be operated at speeds not to exceed 3 mph and vibratory rollers shall be operated at a minimum of 10 to 12 impacts/ft in vibratory mode. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition.

The use of equipment which causes excessive crushing of the aggregate, or that which does not produce a smooth,

dense and uniform mat will not be permitted.

The Contractor shall exercise great caution when using vibratory rollers so as not to cause damage to buried infrastructure or adjacent infrastructure. Damage to buried or adjacent infrastructure will be the responsibility of the Contractor. The Oscillation type rollers and vibratory pneumatic rollers are acceptable for use for compaction rolling.

RCID 334-4.8.2 Compaction after Placement: The mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be compacted as soon as possible when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. Rolling shall be initiated with the drive roll or wheel towards the paving machine. When rolling on steep grades, the previous procedure may need to be altered. The speed of the roller shall, at all times, be sufficiently slow and of uniform speed to avoid displacement of the asphalt mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained. The number of rollers and passes required shall be governed by the compaction results; however, at least two, minimum ten (10) ton rollers, shall be provided for each paver employed on the paving operation. Each roller shall be operated by a competent, experienced roller operator and shall be kept in as nearly continuous operation as practicable while work is underway. A plate shall be attached to each roller showing the ballasted and unballasted weight per lineal-width of drum.

To prevent adhesion of the mixture to the roller, the drums or wheels shall be kept properly moistened, cocoa mats kept clean and scrapers used, but excessive water will not be permitted. Pneumatic rollers are to be used in the intermediate zone.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with hand tampers and vibratory plate compactors.

Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

Along any adjoining edge such as curb, gutter or an adjoining pavement, and after the asphalt mixture is placed by the paver, just enough of the asphalt mixture shall be placed by hand method to fill any space left open. These joints shall be properly 'set up' with the back of a lute at the proper height and level to receive the maximum compaction. Any areas where the rollers cannot access shall be hand tamped or plate compacted.

RCID 334-4.9 Joints: The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade. When abutting a previously placed lane, the longitudinal joint should be rolled first followed by the regular rolling pattern.

RCID 334-4.9.1 Transverse Joints: The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse paving joint. When necessary to form a temporary transverse paving joint, it shall be made by means of placing a bulkhead or by temporarily tapering the course, in which case the edge shall be cut back to its full depth and width on a straight line to expose a vertical face. In both methods, all contact surfaces shall be given a tack coat of asphaltic material before placing any fresh mixture against the joint. Tack coat shall be applied to the full vertical surface of the joint at a minimum application rate of 0.035gals/sy. The mixture within one foot of the constructed transverse joint shall be compacted to an in-place density of between 90.0% and 98.0% of the average maximum theoretical specific gravity.

All sawcut paving joints and construction joints formed in the surface courses at intersecting streets, walks and drives, shall be cleaned and tack coated. Tack coat shall be applied to the full vertical surface of the joint at a

minimum application rate of 0.035gals/sy.

RCID 334-4.9.2 Longitudinal Joints: For all layers of pavement except leveling course, place each layer so that longitudinal construction joints are offset 12 inches laterally between successive layers or as directed by the Engineer. Do not construct longitudinal joints in the wheelpaths. Longitudinal joints which are not straight, or are damaged or otherwise defective shall be cut back to expose a clean, sound surface for the full depth of the course and all contact surfaces shall be given a tack coat of approved asphaltic material prior to placing any fresh mixture against the joint. A minimum application rate of 0.035gals/sy of tack coat must be applied to all longitudinal joints prior to placing the abutting mixture when the joint temperature is less than 175°F.

- (a) Longitudinal Joints – Notch Wedge: For placement depths greater than or equal to 1-1/2”, use a notched wedge plate attachment on the screed such as the Trans Tech notch wedge assembly, or approved equal. The attachment must provide, for the first paver pass, a 1/2” notch at the top of the wedge, followed by a diagonal slope down to the underlying surface where a step is formed equal to the nominal maximum aggregate size. The width of the joint shall be a minimum of 6 inches. The attachment will include a mechanism to provide compaction of the sloped surface of the notched wedge. If no mechanism exists in the attachment, the diagonal shall be compacted by other means satisfactory to RCID. The subsequent paver pass will place mix at a depth equal to the lane being matched, plus the appropriate roll-down, to result in a fully compacted joint meeting the smoothness and compaction requirements of these specifications.
- (b) Longitudinal Joints – Straight Wedge: For non-leveling placement depths less than 1-1/2 inches, use a straight wedge plate attachment on the screed such that the asphalt mixture is placed at the specification depth at the top of the diagonal wedge followed by a diagonal slope down to the underlying surface. The width of the joint shall be a minimum of 6 inches.
- (c) Longitudinal Joints – Confined Edge – For leveling courses, use a conventional confined-edge longitudinal joint. This is the most typically constructed longitudinal joint in the past which attempts to confine the outside edge of the first paver pass of the mat as much as possible to create a near vertical edge.

RCID 334-4.10 Surface Requirements: Construct a smooth pavement with good surface texture, friction and the proper cross-slope.

RCID 334-4.10.1 Texture of the Finished Surface of Paving Layers: Produce a finished surface of uniform texture and compaction with no pulled, torn, raveled, crushed or loosened portions and free of segregation, bleeding, checking, sand streaks, sand spots, waves or ripples. Waves and ripples are best evaluated at night looking toward headlights. The mat shall be smooth, dense and uniform. Uniformity is generally affected by segregation. Gradation segregation can be identified by the separation of the coarse and fine aggregate fractions. Segregated areas will have surface textures either coarser or finer than the texture in a non-segregated area. If segregation, whether gradation or thermal, is evident and discernable by either the Contractor or the Engineer, the Contractor shall immediately take steps to correct and eliminate the cause(s) of the segregation to the satisfaction of the Engineer.

The Contractor shall review all potential causes of segregation as it relates to its operation, including but not limited to plant production and storage, loading and transportation, paver/equipment, placement and/or handwork. The Contractor shall employ additional investigation methods and make the necessary changes in their operation such that segregation is eliminated and mat uniformity is acceptable.

At the Engineer’s discretion, the Engineer may obtain two (2) six inch diameter cores from the identified (segregated) area and two (2) six inch diameter cores from the non-segregated area. The cores may be evaluated

for resilient modulus, dry tensile strength, change in air voids, maximum in place air voids, aggregate gradation and binder content. The results of the data obtained on the cores from the segregated area will be compared to the results of tests performed on the cores from the non-segregated area.

If any mix property is beyond the tolerance limits stated in the table below, that area shall be considered segregated and shall be removed and replaced by the Contractor.

SEGREGATION LIMITS

<u>Change in Mix Properties Expressed as a Percentage of the Properties in the Non-Segregated Areas</u>	
Property	Limits
Resilient Modulus, psi @ 77°F	<80%
Dry Tensile Strength, psi @ 77°F	<90%
Aggregate Gradation and Binder Content	Refer to RCID 334-4.10.2
Change in Air Voids	>2.5%

RCID 334-4.10.2 Limits For Asphalt Mixture Gradation Uniformity Properties

<u>Sieve Size</u>	<u>Percent Passing</u>
#4 (4.75 mm) and Larger	±6%
#8 (2.36 mm)	±5%
#16 (1.18 mm)	±5%
#30 (0.600 mm)	±4%
#50 (0.300 mm)	±3%
#100 (0.150 mm)	±3%
#200 (0.075 mm)	±2%
Asphalt Binder Content	±0.4%
Design Air Voids	±1%

The samples for the segregation analysis will be considered separately from the mat and joint cores tested for acceptance.

Segregated areas not meeting the requirements stated above or pavement mat areas having more than 10% in-place air voids shall be removed and replaced for the entire pavement thickness and lane width, and be paver-machine placed, or as directed by the Engineer. All corrective methods shall be performed at the Contractor's expense. The removal areas shall begin and end with a transverse butt joint located a minimum of 50 feet on either side of the defective area for the full width of the paving lane, which shall be constructed with a transverse saw cut perpendicular to the centerline. The corrective area shall conform to all grades, smoothness, material, and density specification requirements. The Engineer may retest any areas where corrections were made to verify that the material meets specification requirements.

Correct any area of the surface that does not meet the foregoing requirements in accordance with RCID 334-4.10.5.

RCID 334-4.10.3 Cross Slope: For all Work Category projects, construct a pavement surface with cross slopes in compliance with the requirements of the Contract Documents. For Work Category 3 projects, furnish a level with a minimum length of 4 feet or a digital measuring device approved by FDOT for the control of cross slope. Make this level or measuring device available at the jobsite at all times during paving operations. Utilize electronic transverse screed controls on the paving machine (unless otherwise directed by the Engineer) to obtain an accurate transverse slope of the pavement surface.

RCID 334-4.10.3 (a): Contractor Quality Control Requirement- Cross Slope: For Work Category 3 projects, measure the cross slope of the pavement surface by placing the measuring device perpendicular to the roadway centerline. Report the cross slope to the nearest 0.1%. Record all the measurements on an approved form and submit to the Engineer for documentation. Measure the cross slope at a minimum frequency of one measurement every 100 feet during paving operations to ensure that the cross slope is uniform and meeting existing grades. Engineer shall verify Contractor cross slope measurements by random checks during Contractor tests. When the cross slope is consistently within an acceptable range, upon the approval of the Engineer, the frequency of the measurements can be reduced to one every 250 feet during paving.

RCID 334-4.10.4 Pavement Smoothness: Construct a smooth pavement meeting the requirements of this Specification. Furnish a 15 foot manual and a 15 foot rolling straightedge meeting the requirements of FM 5-509. Make them available at the job site at all times during paving.

RCID 334-4.10.4 (a) Work Categories 1: If required by the Engineer, straightedge the final structural layer with a manual straightedge, either behind the final roller or as a separate operation. Correct all deficiencies in excess of 3/8 inch in accordance with RCID 334-4.10.5. Retest all corrected areas. If the Engineer determines that the deficiencies are due to field geometrical conditions, the Engineer may waive corrections.

RCID 334-4.10.4 (b) Work Categories 2: Straightedge the final structural layer with a manual straightedge for parking lots, drives, trails, and with a rolling straightedge for other facilities, or as directed otherwise by the Engineer, either behind the final roller or as a separate operation. Correct all deficiencies in excess of 3/8 inch in accordance with RCID 334-4.10.5. Retest all corrected areas. If the Engineer determines that the deficiencies are due to field geometrical conditions, the Engineer may waive corrections.

RCID 334-4.10.4 (c): Work Category 3: Straightedge the final structural layer and friction course layer with a rolling straightedge. Test all pavement lanes and document all deficiencies on a form approved by the Engineer. Notify the Engineer of the location and time of all straightedge testing a minimum of 48 hours before beginning testing. Correct all deficiencies in excess of 3/16 inch for structural layers and friction course layers in accordance with RCID 334-4.10.5.

Testing with the rolling straightedge will not be required in the following areas: intersections, tapers, crossovers, parking lots and similar areas. In addition, testing with the rolling straightedge will not be performed on the following areas when they are less than 50 feet in length: turn lanes, acceleration/deceleration lanes and side roads. However, correct any individual surface irregularity in these areas that deviates from the plan grade in excess of 3/8 inch as determined by a 15 foot manual straightedge, and that the Engineer deems to be objectionable, in accordance with RCID 334-4.10.5. The Engineer may waive or modify straightedging requirements if no milling, leveling, overbuild or underlying structural layer was placed on the project and the underlying layer was determined to be exceptionally irregular.

RCID 334-4.10.4(d): Contractor Quality Control Requirement-Smoothness For Work Category 3 Only: Straightedge all intermediate layers, final structural layers and friction course layers as necessary to construct a smooth pavement. On roadways with a design speed 50 miles per hour or greater, when an intermediate layer will be opened to traffic, straightedge the pavement with a rolling straightedge and correct all deficiencies in excess of 3/8 inch within 72 hours of placement, unless directed otherwise by the Engineer. Correct all deficiencies in accordance with RCID 334-4.10.5.

Straightedge the final structural layer with a rolling straightedge, either behind the final roller or as a separate operation. The Engineer will verify the straightedge testing by observing the Quality Control straightedging operations. Correct all deficiencies in excess of 3/16 inch in accordance with RCID 334-4.10.5, and retest the

corrected areas.

Straightedge the friction course layer with a rolling straightedge, either behind the final roller or as a separate operation. The Engineer will verify the straightedge testing by observing the Quality Control straightedging operations. Correct all deficiencies in excess of 3/16 inch in accordance with RCID 334-4.10.5, and retest the corrected areas.

RCID 334-4.10.5 Correcting Unacceptable Pavement

RCID 334-4.10.5 (a): General: Correct all areas of unacceptable pavement at no additional cost.

RCID 334-4.10.5 (b): Structural Layers: Correct deficiencies in the structural layer by one of the following methods:

1. Saw cut, remove and replace the full depth of the layer, extending a minimum of 50 feet on either side of the defective area for the full width of the paving lane.
2. Mill the pavement surface to a depth and width that is adequate to remove the deficiency. (This option only applies if the structural layer is not the final surface layer).

RCID 334-4.10.5 (c): Friction Course: Correct deficiencies in the friction course layer by saw cutting, removing and replacing the full depth of the layer, extending a minimum of 50 feet on either side of the defective area for the full width of the paving lane. Corrections may be waived if approved by the Engineer.

RCID 334-4.11 Protection of Finished Surface: Keep sections of newly compacted pavement, which are to be covered by additional courses, clean until the successive course is laid. Do not dump embankment or base material directly on the pavement. Dress shoulders before placing the friction course on adjacent pavement.

Equip blade graders operating adjacent to the pavement during shoulder construction with a 2 x 8 inch or larger board, or other attachment providing essentially the same results, attached to their blades in such manner that it extends below the blade edge in order to protect the pavement surface from damage by the grader blade.

To prevent rutting or other distortion, protect sections of newly finished asphalt pavement from traffic until the asphalt mixture temperature has cooled below 160⁰F.

The Contractor may use artificial methods to cool the pavement to expedite paving operations.

RCID 334-5 CONTRACTOR QUALITY CONTROL:

RCID 334-5.1 General: The Contractor assumes the responsibility of the quality for all materials and construction incorporated into the work and will control all the processes leading to the final result through this function. Quality Control activities include:

Maintain a Contractor Quality Control System;

Proficiency testing prior to production with Engineer;

Inspection and Testing of Asphalt Production;

Inspection and Testing of Asphalt Placement

The Contractor shall establish and maintain a Quality Control System (QCS) that will detail the methods and procedures that will be taken to assure that all materials and completed construction conform to project specifications, plans, technical specifications and other requirements, whether manufactured or processed by the Contractor or procured from subcontractors or vendors.

RCID 334-5.1.1 Lots & Quality Control Requirements

Quality Assurance Requirements	Work Category 1	Work Category 2	Work Category 3
	< 300 tons	≥ 300 tons, but < 2000 tons	≥ 2000 tons
QC Plan Required:	See Note 1	See Note 1	Yes
Contractor QC Inspection Required:	NO See Note 2	YES	YES
Contractor QC Testing Required:	NO See Note 2	YES See Note 2	YES See Note 2
Control Strip Required:	NO	NO	See Note 3
Production Trial Required:	NO	NO	See Note 3
Control Charts Required:	NO	NO	YES
Cross-Slope Measurements ⁽⁵⁾	NO	YES	YES
Smoothness Measurements ⁽⁶⁾	NO	YES	YES
Quality Level Analysis Required:	NO	NO	NO
RCID Acceptance Inspection & Testing Performed:	YES	YES	YES
QC Test Results included in Acceptance Determination:	NO	NO See Note 4	NO See Note 4
RCID Pay Adjustment Applied:	YES	YES	YES

Note 1: If all Lots fall under Category 1 and 2, then a QC Plan is not required. However, if any Lots on the project fall under Category 3, then any Category 1 or 2 Lots must be addressed in the QC Plan.

Note 2: On all Work Categories, Contractor to submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project was in substantial compliance with the Specifications, along with supporting test data documenting all QC available.

Note 3: If Contractor has not produced and placed JMF as designed for this RCID project or for RCID previously, then a production trial and control strip will be required, unless directed otherwise by Engineer.

Note 4: Visual Acceptance will be determined using Contractor QC cross slope and smoothness testing.

Note 5: Cross Slope measurements – see RCID 334-4.10.3

Note 6: Smoothness measurements – see RCID 334-4.10.4

RCID 334-5.2 Control Charts: If applicable, the Contractor shall develop production control charts and post them in the testing laboratory. The control charts shall identify the project number, the contract item number, the test number, each test parameter, the Target and Specification Limits applicable to each test parameter, and the test results. Upper and lower Control Chart limits for statistical Control Charts are encouraged but not required. If the project data during production indicates a problem and the Contractor is not taking satisfactory corrective action as is their responsibility under quality control, then the Engineer may suspend production or acceptance of the material, in accordance with these specifications.

RCID 334-5.2.1 Corrective Action: The Contractor's Quality Control system shall include an appropriate action to be taken when the process is believed to be out of tolerance. The Contractor should review the control charts on a continuous basis making adjustments to the process when necessary to keep the product consistent as per RCID 334-4.4.

RCID 334-5.3 Field Quality Control: For Work Category 2 and 3 projects, maintain a qualified CTQP Asphalt Paving Level II technician on the project at all times when placing asphalt mixtures for RCID, and perform all QC field testing with a CTQP Asphalt Plant Level I technician. As an exception, measurements of cross-slope, temperature and yield can be performed by someone under the supervision of a CTQP Paving Level II technician.

RCID 334-6 QUALITY ACCEPTANCE:

RCID 334-6.1 General: RCID, or Engineer, will perform the Quality Acceptance function for this work. All material will be considered for acceptance through a sampling, testing and inspection program performed by RCID or their authorized agent. Quality Acceptance activities include unless directed otherwise by the Engineer:

- Proficiency testing prior to production with Contractor;
- Inspection of Asphalt Production Plant and Testing Laboratory;
- Production Trials of Asphalt Pavement Products Intended For Use in RCID;
- Inspection/Testing for Acceptance of Asphalt Production;
- Inspection/Testing for Acceptance of Asphalt Placement;
- Quality Acceptance Daily Inspection Report of Activities

All acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the Engineer at no cost to the Contractor, unless otherwise stated herein. Testing organizations performing these tests shall meet the requirements of ASTM D 3666. All equipment in Contractor furnished laboratories shall be calibrated and verified by a testing organization prior to the start of operations. Such verification/certification shall be furnished to the Engineer prior to production. Engineer's testing and inspection personnel shall be certified by a state or regional Qualification/Certification Program meeting the requirements of the Code of Federal Regulations, 23 CFR, Part 637, Quality Assurance (QA) Procedures for Construction. This function does not relieve the Contractor from performing their daily quality control tasks as part of their normal operating business. For any test result dispute, the Contractor shall notify the Engineer in writing within 48 hours after receiving the test results. The notification shall describe the issue and include the data under dispute.

The Engineer or their agent shall have access at any time to all parts of the producing plant for:

- Inspection of the condition and operations of the yard, plant and laboratory.
- Verification of the character and proportions of the mixture.
- Verification of the stockpile location and RAP proportions
- Determination of temperatures being maintained in the preparation of the mixtures.
- Inspection of incidental related procedures.

Samples of all material including compacted specimens and certified copies of all reports and printouts shall be made available to the Engineer or its agent as often as requested including: asphalt binder; recycling agents; virgin aggregates; reclaimed pavement materials; anti-strip agents, modifiers, loose and compacted mixture specimens; and combined aggregate samples.

RCID 334-6.1.1: Acceptance Sampling and Testing of Lots

Quality Characteristic	Test Method⁽⁶⁾	Sublot Size⁽⁸⁾	Minimum Test Frequency	Point of Sampling	Sampling Method
PG Asphalt Binder Grading	AASHTO M320	N/A	1 per project per binder grading	From Tank Valve at Plant and/or CTR ⁽¹⁾	Selective
PG Asphalt Binder Content	FM 5-563 AASHTO T164	300 tons ⁽²⁾	1 per Sublot sampled ⁽²⁾	From Haul Vehicle at Plant	Random
Volumetrics: Air Voids	FM 1-T245 FM 1-T209 ⁽¹⁰⁾	300 tons ⁽²⁾	1 per Sublot sampled ⁽²⁾	From Haul Vehicle at Plant	Random
Combined Agg. Gradation for– Pass #8 & #200	FM 1-T030	300 tons ⁽²⁾	1 per Sublot sampled ⁽²⁾	From Haul Vehicle at Plant	Random
In-place Mat Density (by gauge) ⁽⁹⁾	AASHTO T269 FM 1 T209 ⁽¹⁰⁾ FM 1-T166, or T275 or T331 T343, FM 1-T 238	2000 lineal feet ⁽⁴⁾ of paver pass. See RCID 334-6.3.1	5 per Sublot sampled ⁽⁴⁾	From Compacted Course	Random
In-place Long. Joint Density (same Lot) (by gauge) ⁽⁹⁾	AASHTO T269 FM 1-T209 ⁽¹⁰⁾ FM 1-T166, or T275 or T331,T343, FM 1-T 238	2000 lineal feet ⁽⁴⁾ of Long. Joint	5 per Sublot sampled ⁽⁴⁾	see Note (11)	Random
Thickness ⁽⁵⁾	Yield Calculation	2000 lineal feet ⁽⁴⁾ of paver pass	5 per Sublot sampled ⁽⁴⁾	From Compacted Course ⁽⁵⁾	Inclusive
Smoothness	Per FDOT and RCID specifications	2000 lineal feet ⁽⁷⁾ of paver pass	Total project length	Each Pavement Course	Inclusive
Cross Slope	Per FDOT and RCID specifications	2000 lineal feet ⁽⁷⁾ of paver pass	Total project length	Each Pavement Course	Inclusive

Note (1): CTR – Certified Test Report

Note (2): In the event that the total daily production is less than one Sublot for all Work Category projects, a minimum of one random Acceptance sample shall be obtained for the day's production. Volumetrics are not required for open-graded friction courses. For Lot sizes greater than 900 tons, maximum number of Sublots shall be limited to three (3) per day therefore requiring Sublot sizes to be increased accordingly.

Note (3): Density on bridge decks will be by nuclear or non-nuclear density gauges correlated with cores from

control strip or mixture placed on non-bridge deck facilities. TMD will be from asphalt material as produced for the facility.

Note (4): In the event that the total day's placement is less than one Sublot for all Work Category projects, obtain a minimum of 5 density tests (or 5 tests for bridge course) per pavement facility. For Lot sizes greater than 6000 lineal feet of one paver pass, maximum number of Sublots shall be limited to three (3) per day therefore requiring Sublot sizes to be increased accordingly. Sublot sizes may be adjusted when placement thickness results in inconsistent numbers of sublots at the production facility compared to placement sublots. The maximum number of sublots shall be limited to three (3) per day.

Note (5): Thickness determination for pavement and bridge decks will be based upon nominal compacted thickness from yield computations using the Bulk Specific Gravity from asphalt mixture material as produced for the facility.

Note (6): Test Methods will be under the requirements of FDOT FM methods unless otherwise stated within these specifications.

Note (7): Visual Acceptance will be determined using Contractor QC Cross-slope and Smoothness testing for Work Category 2 and 3 projects. Engineer to determine Acceptance for Work Category 1 projects.

Note (8): If the asphalt mixture quantity at the end of a Lot is equal to or greater than one half of a full Sublot, then such quantity shall be identified and evaluated as a separate Sublot. If the asphalt mixture quantity at the end of a Lot is less than one half of a full Sublot, then such quantity shall be combined with the previous full Sublot quantity and shall be identified and evaluated as the final Sublot.

Note (9): Leveling courses less than 1.5" thickness – no density requirement.

Note (10): The initial lot (three G_{mm}) for each material shall be utilized to determine a correction factor for each material (each JMF). Verification of the correction factor may be determined by the Engineer if necessary after every 10 lots by using three G_{mm} tests.

Note (11): Straight wedge or notch wedge longitudinal joints: - Density shall be taken on the wedge portion of the joint with the sample/test centered on the joint.

RCID 334-6.2 Plant-Produced Material: Plant-produced material shall be sampled and tested for VMA, percent passing the #8 and #200 sieves, asphalt binder content, and air voids at N_{design} on a Lot basis. Sampling shall be from material deposited into trucks at the plant or from trucks at the job site. A Lot will consist of: one day's production (24-hours)

Where more than one plant is simultaneously producing material for, the job, the Lot sizes shall apply separately for each plant.

RCID 334-6.2.1: Sampling: Each Lot will be divided into 300 ton Sublots. The minimum Sublots in a Lot shall be 1, the number of Sublots in a Lot will not exceed 3. In the event that production is expected to exceed 900 tons total for the Lot, the Lot shall be divided into 3 equal Sublots. Sufficient material for analysis and preparation of test specimens will be sampled by the Engineer on a random basis, in accordance with the procedures contained in ASTM D 3665. One set of laboratory compacted specimens will be prepared for each Sublot in accordance with AASHTO T312, at the required number of gyrations. Each set of laboratory compacted specimens will consist of two test portions prepared from the same field sample, with the volumetric analysis based on the average of the two gyratory specimens and a minimum of one theoretical maximum specific gravity sample.

The sample of hot mix asphalt may be put in a covered metal tin and placed in an oven for one hour \pm five (5) minutes at the target roadway compaction temperature. The compaction temperature of the specimens should be as specified in the JMF.

In addition to the asphalt mixture samples, the Contractor shall take one, one-quart sample of the PG binder, per grade, used to produce the asphalt mixture at the start of the work. The PG sample shall be turned over to the Engineer on the first day of project production.

RCID 334-6.2.2 Testing: Bulk Specific Gravity - Sample specimens shall be tested for bulk specific gravity in accordance with AASHTO T166 or T275, whichever is applicable, for use in computing air voids and density. Air voids will be determined in accordance with AASHTO T269.

Gradation and Asphalt Binder Content - The gradation and asphalt binder content of the mixture shall be measured for each Sublot in accordance with the following:

Asphalt Binder Content (FM 5-563 Ignition Oven) - Extraction tests shall be performed once per Sublot in accordance with AASHTO T164 or FM 5-563 for determination of asphalt content. The weight of ash portion of the extraction test, as described in AASHTO T164, shall be determined as part of the first extraction test performed at the beginning of plant production. If utilizing FM 5-563 for asphalt content determination, the calibration process and calibration factor, as described in FM 5-563, shall be determined as stated, prior to acceptance testing.

Gradation (FM 1-T030) - Aggregate gradations shall be determined once for each Sublot from mechanical analysis of extracted aggregate in accordance with FM 1-T030. Asphalt mixtures will be evaluated for gradation acceptance based upon the percent passing the #8 and the #200 sieves.

The Dust-to-Effective Asphalt ratio shall be determined once for each Sublot from the mechanical analysis of extracted aggregate and the asphalt binder content. The Dust-to-Effective Asphalt ratio shall be determined by the Engineer in accordance with AASHTO R35.

The Theoretical Maximum Specific Gravity (FM 1-T209) - Samples shall be taken for each Sublot on a random basis in accordance with ASTM D 3665. The initial lot (three G_{mm}) for each material shall be utilized to determine a correction factor for each material (each JMF). Verification of the correction factor may be determined by the Engineer if necessary after every 10 lots by using three G_{mm} tests. Use 62.245 \#/ft^3 at water temperature of 77°F for conversion from specific gravity to density.

Temperatures. Temperatures shall be checked, at least three times per Lot, at necessary locations to determine the temperatures of the dryer, the asphalt binder in the storage tank, the mixture at the plant, and the mixture at the job site.

Voids in Mineral Aggregate (VMA), for each plant sample, will be determined by the Engineer in accordance with AASHTO T 312-12 and R35. The VMA, and air voids for each Sublot shall be computed by averaging the results of the two test specimens representing that Sublot.

RCID 334-6.2.3: Acceptance of Plant Produced asphalt mixtures: Acceptance of plant produced material will be based upon plant air voids, VMA, percent passing the #8 and #200 sieves, asphalt binder content, and temperature, and shall be determined by the Engineer in accordance with these specifications. Pay Factors will be used for asphalt binder content, percent passing the #8 and #200 sieve, and plant air voids. Incentive and disincentive Pay Factors are available for product quality based upon the results from either one, two or three Sublots. The target for the asphalt binder content and the % passing the #8 and #200 sieve, will be the approved JMF design. The target for the plant mixture air voids will be 4.0%.

RCID 334-6.2.3(a) PG Binder Verification: RCID may randomly test asphalt mixtures from the production plant, storage silos, or project paving site to determine the quality of the PG binder. For non-modified binder mixtures, the Abson extracted (AASHTO T170) binder high temperature DSR will be compared to the original binder RTFO high temperature DSR. If the mixture Dynamic Shear (DSR), $G^*\text{Sin Delta}$, is less than a minimum value of 2.20 kPa, production will be suspended and the extent of the problem will be further evaluated; full PG binder test verification will be run for conformance to the PG grade specified. For modified asphalt binder mixtures, a full PG binder test verification will be run for conformance to the PG grade specified. Failure of the PGAB to conform to specification requirements may be cause for rejection of the Lot. Further PGAB tests may be conducted on previous Lots; all costs for the PGAB tests will be the responsibility of the Producer if the results do not meet project specifications for PGAB recently placed.

RCID 334-6.3 Field-Placed Material: Asphalt Pavement material placed in the field shall be accepted based upon tests for mat and same Lot longitudinal joint density, computed thickness, smoothness, cross-slope and

uniformity on a completed roadway or pavement facility on a per Lot basis. A Lot will consist of:

- one day's production (24-hours)

The Engineer may conduct related testing to monitor the specified thickness, density, uniformity and smoothness. Either a properly correlated nuclear gauge shall be used to monitor the pavement density in accordance with ASTM D2950 or a properly correlated non-nuclear density gauge shall be used to monitor the pavement density in accordance with AASHTO TP343, unless otherwise directed by the Engineer. Monitoring density by either gauge type by the Engineer does not imply acceptance or rejection; the Contractor is ultimately responsible to meet the requirements of the specification.

RCID 334-6.3.1: Sampling: Mat and longitudinal joint density tests will be located by stratified random sampling methods for each roadway or pavement facility paved within 24 hours of construction. Each Lot shall be divided into Sublots of 2000 lineal feet. The minimum number of Sublots in a lot shall consist of 1, the number of Sublots in a Lot shall not exceed 3. In the event that production is expected to exceed 6000 lineal feet total for the Lot, the Lot shall be divided into 3 equal Sublots. Core samples, if applicable, shall be removed by the Contractor under the observation of the Engineer. For facilities constructed without a longitudinal joint, the length of the paver pass will be divided into Sublots for sampling and testing purposes. For facilities constructed with longitudinal joints, the length of the longitudinal paving joint will be divided into Sublots for sampling and testing purposes. If more than one longitudinal joint is formed on a roadway or pavement facility, then the random sample length will be the total lineal feet of longitudinal joint placed. A mat and longitudinal joint test will be located by the Engineer randomly from each of these Sublot intervals. Sublots for each density quality characteristic will be determined on the basis of 2000 lineal feet of paver pass for the mat, or longitudinal joint for joint density, with five density tests for mat and five density tests for joint, if applicable.

For *roadway pavements*, using stratified random sampling procedures, the transverse offset will be determined by the total width of the newly paved *roadway* surface, edge to edge, at the longitudinal Sublot location. A transverse offset distance from the centerline of the roadway will be established for mat density sampling and testing. The location for the transverse offset within each Sublot for roadways, either right or left of centerline, will be based on whether a random number is "odd or even" (odd=left; even=right). For pavements without a longitudinal joint, the transverse offset will be based off of the right paver edge.

For *non-roadway pavement facilities or facilities having more than one longitudinal paving joint construction*, the paver screeded width per paver pass will be used to determine the transverse offset within each Sublot using one constant direction from the longitudinal joint. When the offset location is within 1 foot of the pavement edge, curb, longitudinal joint, catch basin, structure, or within 10 feet of a transverse joint, the test shall be relocated by moving the offset by 2 feet (10 feet if within 10 feet of a transverse joint).

Core samples, when required, shall be neatly cut by the Contractor with a wet, core drill. The Engineer shall locate the cores, observe the sampling and take possession of the cores after removal. The cutting edge of the core drill bit shall be of hardened steel or other suitable material with diamond chips embedded in the metal cutting edge. The minimum diameter of the sample shall be 6 inches. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples and patching the cored pavement under the observation and direction of the Engineer. Cored holes shall be filled by the Contractor within one day after sampling using compacted lifts of asphalt mixture or proprietary cold patch such as UPM from Unique Pavement Materials, or equal. The top area of the patched core shall receive a coat of emulsion.

RCID 334-6.3.2: Testing: Mat and same Lot longitudinal joint density will be tested for each roadway or pavement facility within 24 hours of placement. If applicable, the bulk specific gravity of each cored sample will be measured by the Engineer in accordance with AASHTO T166 or T275, whichever is applicable. The

theoretical maximum specific gravity shall be measured once for each Sublot in accordance with these specifications. The theoretical value used for the percent density determinations shall be the average of the daily Sublot measurements for maximum specific gravity as determined by section 334-6.2.2. When daily Sublot measurements are not available, the average of the previous five (5) laboratory measurements for that mix, or if unavailable, the JMF target theoretical. If applicable, the percent density of each sample will be determined in accordance with AASHTO T269, using the bulk specific gravity and the average theoretical maximum specific gravity.

RCID 334-6.3.3: Acceptance of Field Placed Asphalt Pavement: Acceptance of field placed asphalt mixtures will be based upon tests for mat and same Lot longitudinal joint density, computed thickness, smoothness, cross-slope and uniformity on a completed roadway or pavement facility and shall be determined by the Engineer in accordance with these specifications. Pay Factors will be used for mat and same Lot longitudinal joint density. Incentive and disincentive Pay Factors are available for product quality based **RCID 334-8.3**.

RCID 334-6.4: Individual Test Tolerances: In the event that an individual test result of a Sublot for plant mixture air voids or for the average Sublot mat density or for the average Sublot longitudinal joint density (same Lot) does not meet the requirements of the table below, terminate the Lot and stop production of the mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. For suspended production, the Contractor shall go on Trials unless otherwise directed by the Engineer; see RCID 334-6.5. For suspended placement, the Contractor shall construct a Suspension Control Strip unless otherwise directed by the Engineer; see RCID 334-6.6. Address any material represented by the failing test result in accordance with RCID 334-6.7.

In the event that an individual test result of a Sublot for gradation or PGAB binder content does not meet the requirements below, take steps to correct the situation and report actions to the Engineer.

In the event that three consecutive individual test results (for the same material quality characteristic) for gradation or PGAB binder content, do not meet the requirements below, terminate the Lot and stop production of the mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Address any material represented by the failing test result in accordance with RCID 334-6.7.

In the event that there is a dispute regarding the nuclear or non-nuclear density results, the parties will agree to re-correlation for all of the original cores taken on the original control strip. Take 4 density readings around quarter points of each control strip core using two test increments for each of the 4 quarter point density tests. Establish a correlation for the QC and the Engineers gauge. Repeat the testing by both parties on the subject project Sublot(s) and average all readings to arrive at a density reading.

Any Lot terminated under this subarticle will be limited to a maximum Pay Factor of 1.00 (as defined in RCID 334-8.3) for each quality characteristic.

Master Production and Placement Range

CHARACTERISTIC	TOLERANCE⁽¹⁾
% PGAB Binder Content	JMF Target +/- 0.55
% Passing #8 Sieve	JMF Target +/- 5.50
% Passing #200 Sieve	JMF Target +/- 1.50
% Plant Air Voids	2.30 – 6.00
In-Place Mat Density, %G _{mm} ⁽²⁾ , (minimum)	91.00
In-Place Longitudinal Joint Density ⁽³⁾ , %G _{mm} ⁽²⁾ (minimum)	90.00

Note (1): Tolerances for sample size of n=1 from the JMF

Note (2): Based on an average of 5 randomly located tests

Note (3): Same Lot

RCID 334-6.5: Trials: If production is suspended due to asphalt plant quality problems, the Contractor shall be required to produce material on a Trial basis for testing purposes without shipment to the project. No payment will be made for material and labor employed for nonconforming plant Trials or Trail mixes not used in the project. The Contractor shall pay for any acceptance sampling and testing for the Trials necessary to determine conformance with the specification requirements during production suspension. When Trials have been approved, the plant will return to its normal operation.

Failure to stop production and make adjustments under the requirements of RCID 334-6.4, and not meeting the specified requirements, shall subject all mix from the stop point to the point when the next individual test is back on or within the Master Production and Placement Range, or to the point when production is actually stopped, whichever occurs first, to be considered unacceptable. This material shall be removed and replaced with materials that comply with the specifications at the Contractor's expense. Any sampling, testing, or evaluation services required during the Contractor's failure to stop production shall be paid for by the Contractor.

RCID 334-6.6: Suspension Control Strip: If suspension is due to asphalt mixture field quality problems during the performance of the contract such that the pavement does not conform to the specifications, the Engineer may order the Contractor to cease all operations and construct a new Control Strip consisting of a sufficient quantity of asphalt mixture. The Contractor shall construct a Control Strip as directed by the Engineer either: a minimum of 130 feet long by 12 feet wide, or a minimum of 65 feet long by a minimum of 24 feet wide depending upon the problem. A Control Strip may be required each time a change is made in the Job Mix Formula, sources of supply or paving and rolling equipment.

The mixture shall be prepared, placed, and compacted in accordance with this specification. When the Control Strip pavement has cooled sufficiently, five randomly selected cores shall be taken from the finished pavement mat in the Control Strip, and five from the longitudinal joint, and tested for conformance to the requirements below. Longitudinal density testing is not required for single pass work. Nuclear and PQI density equipment shall be re-calibrated from the control strip cores for use on the project. Random sampling shall be in accordance with procedures contained in ASTM D3665 and these specifications.

If the new Control Strip tests conducted by the Engineer, and paid for by the Contractor, indicate that pavement does not conform to specification requirements, necessary adjustment to plant operation and placement/rolling procedures shall be made.

Where the average mat density of 5 core samples or the average joint density of the 5 density samples does not conform to specification requirements, the pavement shall be removed and replaced at no cost to the Engineer. No payment will be made for material and labor employed, either in placement or removal of the nonconforming control section.

The Contractor shall not be permitted to place asphalt courses until a Control Strip is approved by the Engineer.

RCID 334-6.7: Defective Material: The Engineer may at any time, notwithstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of asphalt mixture which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix temperature. Such rejection may be based on only visual inspection or temperature measurements. Similarly, the Engineer may at any time, notwithstanding field acceptance for mat or longitudinal joint density, reject and require the Contractor to correct any pavement that was placed with unacceptable mat uniformity or paving joints, due to low density, lack of bond, segregation, improper elevation, or tearing. In the event of such rejection, the Contractor and Engineer may take random split samples of the area(s) in question in the presence of the Engineer, and if it can be demonstrated in the laboratory, in the presence of the Engineer, that such material/pavement was erroneously rejected, payment will be made for the material at the contract unit price.

The Contractor assumes the responsibility for removing and replacing all defective material placed on the project, at no cost to RCID.

As an exception to the above and upon approval of the Engineer, the Contractor may obtain an engineering analysis by an AASHTO Accredited laboratory in asphalt mixtures (as approved by the Engineer) to determine

the disposition of the material. The engineering analysis must be signed and sealed by a Professional Engineer licensed in the State of Florida.

The Engineer will then combine the test results of both engineering analyses from the two AASHTO Accredited laboratories to determine the disposition of the material.

Any material that remains in place will be paid for based on a Composite Pay Factor as determined by RCID 334-8, or as determined by the Engineer.

If defective material is due to gradation, PGAB binder content or density failure, upon approval of the Engineer, the Contractor may perform delineation tests in lieu of an engineering analysis to determine the limits of defective material that requires removal and replacement. Prior to any delineation testing, all sampling locations shall be approved by the Engineer. All delineation sampling and testing shall be monitored and verified by the Engineer. The minimum limit of removal of defective material is fifty-feet either side of the failed sample.

RCID 334-6.8 Minimum Acceptable Quality Levels:

RCID 334-6.8.1: Pay Factors Below 0.90: In the event that an individual Pay Factor for an applicable quality characteristic of a Lot falls below 0.90, take steps to correct the situation and report the action to the Engineer. In the event that the Pay Factor for the same quality characteristic for two consecutive Lots is below 0.90, cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Actions taken must be approved by the Engineer before production resumes.

RCID 334-6.8.2: Composite Pay Factors Less Than 0.90 and Greater Than or Equal to 0.80: If the composite Pay Factor for the Lot is less than 0.90 and greater than or equal to 0.80, cease production of the asphalt mixture until the problem is adequately resolved (to the satisfaction of the Engineer), unless it can be demonstrated to the satisfaction of the Engineer that the problem can immediately be (or already has been) resolved. Actions taken must be approved by the Engineer before production resumes.

RCID 334-6.8.3: Composite Pay Factor Less Than 0.80 and Greater Than or Equal to 0.75: If the composite Pay Factor for the Lot is less than 0.80 and greater than or equal to 0.75, address the defective material in accordance with RCID 334-6.7.

RCID 334-6.8.4: Composite Pay Factor Less Than 0.75: If the composite Pay Factor for the Lot is less than 0.75, remove and replace the defective Lot at no cost to RCID, or as approved by the Engineer.

RCID 334-7 MEASUREMENT:

RCID 334-7.1: Method of Measurement: The quantity of Asphalt Pavement to be paid for shall be measured by the number of tons of asphalt mixture used in the accepted work. The quantity of each truckload shall be obtained from printed tickets indicating the recorded batch weights or certified truck scale weights obtained at the time of delivery. Asphalt mixture quantities shall be verified by the Engineer using asphalt mixture yield calculations which will include the in-place bulk specific gravity and actual area and nominal depth for the mixture placed. The bid price for the asphalt mixture will include the cost of the PGAB (including any binder modifiers), anti-strip additive (if required by the job mix formula), warm mix additives and technologies, if used; pre-construction meetings, production/construction of control strip(s), development and implementation of the QC Plan, including revisions or modifications as may be required, joint treatments, removal of cores and filling voids left by cores, tack coat material and application, all sampling, testing, and inspection required by contract, and all materials labor and equipment required to construct the Asphalt Pavement. If an MTV is required as per contract, then the bid price shall also include the cost of that equipment.

RCID 334-8 PAYMENT:

RCID 334-8.1 Basis of Payment: Payment shall be made at the contract unit prices per ton complete in place for Asphalt Pavement with any applicable Pay Adjustments. This payment shall be full compensation for furnishing and placing all quality asphalt pavement materials, including tack coat where specified, warm mix asphalt additives or technologies, cutting of keyways or milling/stripping of pavement to produce neat joints, mechanical sweeping of pavements, costs for Engineer testing due to inferior production or placement, traffic control, and for all labor, tools, equipment, materials, and all incidentals necessary to complete the work.

RCID 334-8.2 Asphalt Pavement Pay Adjustments: A Payment Adjustment for asphalt mixture plant and field quality shall be made when the asphalt pavement material varies from the specification target limits, but is within the tolerances stated below in RCID 334-8.3. The Pay Adjustment will be applied to the bid price of the material as determined on a Lot by Lot basis under RCID 334-8.5.

RCID 334-8.3 Pay Factors (PF): For non-density material quality characteristics, payment is based on a single test result or average of two and three test results deviation from the target value. For density tests, use the ranges as shown below. For non-density material quality characteristics, use the 1 Sublot column when there is only one Sublot result and use the 2 and 3 Sublot column when there are either two or three Sublots.

PGAB Binder Pay Factor	1 Sublot Test Deviation	2 & 3 Sublot Test Average Deviation
1.05	0.00 – 0.23	0.00 – 0.16
1.00	0.24 – 0.45	0.17 – 0.32
0.90	0.46 – 0.55	0.33 – 0.39
0.80	>0.55	>0.39

No. 8 Sieve Pay Factor	1 Sublot Test Deviation	2 & 3 Sublot Test Average Deviation
1.05	0.00 – 2.25	0.00 – 1.59
1.00	2.26 – 4.50	1.60 – 3.18
0.90	4.51 – 5.50	3.19 – 3.89
0.80	>5.50	>3.89

No. 200 Sieve Pay Factor	1 Sublot Test Deviation	2 & 3 Sublot Test Average Deviation
1.05	0.00 – 0.55	0.00 – 0.39
1.00	0.56 – 1.10	0.40 – 0.78
0.90	1.11 – 1.50	0.79 – 1.06
0.80	>1.50	>1.06

Air Voids (Fine Mix) Pay Factor	1 Sublot Test Deviation	2 & 3 Sublot Test Average Deviation
1.05	0.00 – 0.50	0.00 – 0.35
1.00	0.51 – 1.00	0.36 – 0.71
0.90	1.01 – 1.70	0.72 – 1.20
0.80	1.71 – 2.00	1.21 – 1.41
0.70	2.01 – 2.50	1.42 – 1.77
0.55	>2.50	>1.77

ADJUSTMENT SCHEDULE**Mat Density**

<u>Average Percent of Maximum Density⁽¹⁾</u> <u>(minimum 5 samples)</u>	<u>Percent Mat Adjustment</u>
100 - 98.1	98
98.0 – 95.1	102
95.0 – 92.0	100
91.9 – 90.0	90
89.9 – 89.0	80
88.9 – 87.0	70
86.9 or less	Rejection

Longitudinal Joint (LJ) Density (same lot)

<u>Average Percent of Maximum Density⁽¹⁾</u> <u>(minimum 5 samples)</u>	<u>Percent LJ Adjustment</u>
100 - 98.1	98
98.0 – 93.1	102
93.0 – 91.0	100
90.9 – 89.0	90
88.9 – 87.0	75
86.9 or less	Rejection

Note (1): Each density test result is the average of five nuclear or non-nuclear tests for 1 Sublot.. When compaction is limited to non-vibratory rolling, the Contractor is encouraged to use oscillation compaction.

RCID 334-8.4 Composite Pay Factor (CPF): A Composite Pay Factor for the Lot will be calculated based on the individual Pay Factors (PF) with the weighting factor as given below:

Material Property	Weight (%)
Mat Density	25
Longitudinal Joint Density(same lot)	10
Percent Air Voids	25
PGAB Binder Content	25
Percent Passing No. 8 Sieve	5
Percent Passing No. 200 Sieve	10

Calculate the Composite Pay Factor (CPF) by using the following formula:

$$CPF = [(0.250 \times PF \text{ Mat Density}) + (0.100 \times PF \text{ Long. Joint Density}) + (0.250 \times PF \text{ Air Voids}) + (0.250 \times PF \text{ PGAB Binder Content}) + (0.050 \times PF \text{ Percent Pass \#8 Sieve}) + (0.100 \times PF \text{ Percent Pass \#200 Sieve})]$$

The number after each multiplication will be rounded to the nearest 0.01.

RCID 334-8.5 Asphalt Pavement Pay Adjustment Assessment: The Pay Adjustment will be assessed by calculating a Pay Factor from the Pay Factor table, RCID 334-8.3, for the following individual quality characteristics: pavement mat density, longitudinal joint density, air voids, PGAB binder content and the percentage passing the No. 200 and No. 8 sieves. The Pay Adjustment will be computed by multiplying a Composite Pay Factor for the Lot by the bid price per ton.

$$\text{Pay Adjustment} = \text{CPF} \times \text{Bid Price/Ton}$$

Incentives will first be applied to offset any penalties. A payment will be made for an increase in costs for incentives. A deduction from monies due the Contractor will be made for a decrease in costs for penalties. An addition of monies due the Contractor will be made for a net increase in costs resulting from incentives applied after subtraction of any deductions.

RCID 334-8.6 Asphalt Pavement Pay Items:

<u>ITEM No.</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
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Reedy Creek Improvement District (RCID)

Supplemental Specifications

RCID 528 SPECIFICATION FOR PORTLAND CEMENT CONCRETE SIDEWALK AND DRIVEWAY

RCID 528-1 Description:

Construct Portland cement concrete (PCC) sidewalk in accordance with the construction plans. The sidewalk section shall consist of one layer composed of 3,000 psi, at 28 days, PCC reinforced with fiber reinforcement. Thickness of the sidewalk section shall be 4 inches.

Construct PCC sidewalk curb ramp (curb ramp) in accordance with the construction plans. The sidewalk section shall consist of one layer composed of 3,000 psi, at 28 days, PCC reinforced with fiber reinforcement. Thickness of the curb ramp section shall be 6 inches.

Construct PCC driveway in accordance with the construction plans. The sidewalk section shall consist of one layer composed of 3,000 psi, at 28 days, PCC reinforced with fiber reinforcement. Thickness of the driveway section shall be 6 inches.

RCID 528-2 Materials:

RCID 528-2.1 Portland Cement Concrete: Use Class I or Class II in accord with ASTM C150. Store in suitable silos that protect the material from dampness and contamination.

Fly ash in accord with ASTM C168, Class F, with low carbon content and low loss on ignition of 3% or less. Fine aggregate shall be per ASTM C33 consisting of washed natural sand of hard, strong, and durable particles that do not contain more than 1% by weight of deleterious substances such as clay, shale, schist, mica or any soft flaky particles.

Coarse aggregate shall be in accord with ASTM C33 consisting of washed natural hard fine grained stone not to exceed 35% of crushed rock over $\frac{1}{2}$ inch in size and which does not contain in excess of 5% by weight of flat, chip-like, thin, elongated, friable pieces or more than 1% by weight of shale or cherty material.

Water shall be clean, potable water conforming to ASTM C94 free from all deleterious amounts of acids, alkalis, salts, and organic materials.

Provide approved water reducers, super-plasticizers, retarders or bonding agent admixtures as conditions require. Any selected admixtures shall not reduce the specified PCC strength and wearability or negatively affect the PCC color or finish. Do not use admixtures which cause shrinkage of 10% or greater or cause corrosion of embedded steel. Do not use admixtures which contain calcium chloride, triethanolamine or thiocyanates with chloride ions in excess of 0.05%.

Approved admixture manufactures:

- Applied Concrete Technology
- Euclid Chemical Co,
- Master Builders, Inc.
- Sika Chemical Co.
- W.R. Grace & Co.

RCID 528-2.2 Forms: Construct forms for the repairs of either wood or metal. Provide forms that are straight, free from warp or bends, and of sufficient strength, when staked, to resist the pressure of the PCC without deviation from line and grade. For all repairs constructed on a radius, use flexible forms. Ensure that forms have a depth equal to the thickness of the existing sidewalk or 4 inches, whichever is greater. For curb ramps ensure that forms have a depth equal to the thickness of the existing curb ramp or 6 inches, whichever is greater.

No earth forming is allowed.

RCID 528-2.3 Synthetic Fibers: Use synthetic fibers conforming to ASTM C1116, Type III. Filamentized 100% virgin nylon fibers shall be Nylon 6 as manufactured by Nycon, Inc. Fibrillated virgin polypropylene fibers, 3/4 inches long shall be:

Fiberstand 100 by Euclid Chemical Co.,
Grace Fiber by W.R. Grace & Co., or
Fibermesh by Propex Concrete Systems Corp.

RCID 528-2.4 Curing Compounds: Provide approved liquid, membrane-forming, curing and evaporation reducer (resin-based dissipating type) as required to facilitate proper curing and hardening of finished PCC surfaces. Curing compound shall not discolor or stain the color of the PCC and shall be compatible for use with the specified PCC sealer, if any.

RCID 528-2.5 Curing Covers and Protection Paper: Provide curing blankets and protection paper over finished PCC as required. If not specified otherwise, select from the following approved products:

Hydracure Covers by PNA Technologies
Seekure 892, non-staining, reinforced and laminated protection paper by Fortifiber Corporation
Orange Label Sisalkraft reinforced and laminated protection paper by Fortifiber Corporation

RCID 528-2.6 Construction Joint Fillers: Pre-molded asphalt impregnated type joint fillers conforming to ASTM D1751 shall be used at all construction joints needed in the repair and shall be 3/8 inches thick and extend to the full depth of the repair.

Approved joint filler manufactures:

Tamms Industries
W.R. Meadows Co.

RCID 528-3 Portland Cement Concrete Batching:

Proportioning, mixing, and transportation of PCC shall conform to ASTM C94. PCC shall be delivered and discharged from the truck within 1.5 hours after the introduction of water to the cement and aggregate mix or within 300 revolutions of the drum. Any PCC that is delivered after this time shall be rejected. Use only mix designs approved by RCID.

Batch PCC with 1.5 gallons of design water withheld for addition at the site to maximize slump control. Mix for at least five minutes at rated mixing speed after the last water is added to the drum. Make slump tests before and after any water additions for each load and when mix, during discharge, exhibits change in consistency.

Water to cement ration shall not exceed 0.5.

RCID 528-4 Surface Preparation:

RCID 528-4.1 Inspection: Examine the area and conditions for the installation of the PCC sidewalk. If there are any conditions detrimental to the proper and timely completion of the sidewalk, notify the Engineer in writing immediately. Do not proceed with work until unsatisfactory conditions are corrected. The sub-grade shall be firm and unyielding. If any soft spots, spongy materials, or tree roots are found notify the Engineer in writing immediately as this repair specification is no longer valid and a sidewalk reconstruction is necessary.

RCID 528-4.2 Subgrade: No additional subgrade material shall be added as part of a sidewalk construction. Should sub-grade replacement be necessary notify the Engineer in writing immediately as this repair specification is no longer valid and a sidewalk reconstruction is necessary.

All loose sub-grade material that cannot be compacted shall be removed prior to the placement of the PCC sidewalk section. Tree roots present within the area of sidewalk shall be removed by either cleanly cutting or

sawing off to 1 foot from the edge of the sidewalk section. Tearing or breaking off is not acceptable at any time. PCC shall not be placed if sub-grade is overly saturated. If sub-grade is dry it should be lightly moistened with an even spray, just prior to placing the PCC, to control any initial rapid loss of moisture from the sidewalk section.

RCID 528-5 Form Construction:

Set forms to meet alignment, shape, dimensions, and grades as required to complete the required sidewalk construction. Forms shall be rigidly braced and secured. Install sufficient quantity of forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after PCC placement. Forms shall be smooth, clean, and free of defects and any latent cement. Depth of all forms shall be equal to the depth of the sidewalk section.

Forms shall be of sufficient thickness to ensure they will not deform when loaded. Bender board or thin back-cut boards may be used for curves and radii with sufficient bracing. All forms shall be held rigidly in place with sufficient amounts of stakes, clamps, spreaders, and braces to ensure formwork will not move when loaded.

Check completed formwork for grade and alignment to the following tolerances:

- Top of forms shall not have more than a 1/8 inch in 10 foot deviation in alignment.
- Vertical face on the longitudinal axis shall not have more than a 1/4 inch in 10 foot deviation in alignment.
- Curb ramps must be accessible.

The forms shall be cleaned after each use and coated with a form release agent as often as required to ensure separation from PCC without damage.

RCID 528-6 Portland Cement Concrete Placement:

Do not place PCC until the sub-grade and forms are checked and the Engineer approves for line and grade. Moisten sub-grade, if required, to provide a uniform dampened condition at the time the PCC is placed. PCC should not be placed faster than it can be properly finished with due regard to weather, PCC temperature, and the size and ability of the finishing crew.

Place PCC using methods which prevent segregation of mix. Consolidate concrete along the face of the forms and adjacent to transverse joints with an internal vibrator. Keep the vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocation of reinforcing and joint assemblies.

PCC is to be placed in forms no later than 1.5 hours after water was first added to the batch. During hot weather, 90° F or greater, placement time shall be reduced to a maximum of 1 hour. Deposit and spread PCC in a continuous operation and in one direction within the formwork between transverse joints, as far as possible. If interrupted for more than *One* hour, place a construction joint.

Screed or strike-off the surface of the PCC to provide sidewalk at the required grades. Prior to the accumulation of any bleed water, bull float or darby to level and smooth the surface. After all bleed water has been evaporated cut all joints, tool all edges, hand float, and finish as needed. The sidewalk repair section surface shall be finished to achieve the following tolerance when measured in accord with ASTM E1 155:

Float and broom finished surfaces FF20/FL17

Broom finish shall be Light Broom or whatever matches the existing sidewalk being constructed. The finished surface shall be uniformly profiled to match the adjoining surfaces without lips or obstructions and shall drain completely.

RCID 528-7 Joints:

Joints in the PCC sidewalk section shall be spaced in accordance with FDOT Standard Plans Indexes. Accurately lay out areas and make joints straight and true, with clearly defined angles. Control joints shall be saw cut in PCC repair section no later than 8 hours after finishing or as soon as PCC is strong enough not to be damaged by the blade or weight of the machine. Carefully check the condition of the PCC before commencing saw cutting operation to ensure that the saw will not fret, ravel, sprawl edges of the cuts or dislodge aggregate. Use saw cutting equipment appropriate for the hardness condition of the PCC. Control joints shall be $\frac{3}{16}$ of an inch wide with a depth equal to the repair slab thickness divided by 4 ($d/4 = \text{depth of joint}$).

RCID 528-8 Curing and Sealing:

All PCC sidewalk sections shall be properly cured with approved methods and materials as specified. Commence curing of PCC immediately after finishing is completed. Do not permit any traffic, debris, or material storage on the surface during curing. Alternating wet and dry surface conditions during curing is not permitted.

RCID 528-9 Grinding:

No grinding will be allowed to achieve uniform sidewalk construction or matching existing sidewalk. If the newly constructed sidewalk does not match the grade of the existing sidewalk by more than $\frac{1}{8}$ ", the newly constructed sidewalk shall be removed to the next control joint and replaced.

RCID 528-10 Clean-up:

Remove all equipment, tools, and debris from the work site at the end of each day of work. Ensure that all areas are properly barricaded to prevent entry while curing and a safe condition for pedestrian and vehicular traffic. Remove and thoroughly clean all PCC spills onto existing sidewalk sections, adjacent areas, roadways, etc. Concrete trucks shall not be cleaned on RCID property.

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. The work to be performed under this section shall include the design, installation and operation of temporary dewatering system until completion of construction to remove subsurface waters from retention pond, borrow area, structure or utility trench excavations as required.
- B. The permitting of dewatering and dewatering discharge operations with the regulatory agencies shall be the ultimate responsibility of the Contractor. Dewatering and discharge of said water shall conform to the requirements of RCID and its General Permit.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Excavating and Backfilling for Utilities: Section 02320
- B. Excavating and Backfilling for Structures: Section 02321
- C. Grading: FDOT Specifications

1.03 QUALITY ASSURANCE

- A. The temporary dewatering system used for this project shall be designed by a firm who regularly engages in the design of dewatering systems and who is fully experienced, reputable and qualified in the design of such dewatering systems.
- B. The dewatering of any excavation areas and the disposal of water during construction shall be in strict accordance with all local and state government rules, regulations and permit conditions. In addition, the Contractor shall take any and all actions necessary to prevent subsidence or other damage to adjacent areas which might result from the dewatering operation.
- C. Generally, dewatering will require monitoring of both the quantity and quality of the discharge, and discharge to surface waters cannot exceed a turbidity level of 29 NTU over background.

1.04 SUBMITTALS

- A. The Contractor shall apply for a de-watering permit from RCID Planning and Engineering Department at least twenty-one (21) days prior to commencement of any de-watering activities. The Contractor shall not begin any dewatering activities until RCID Planning and Engineering has approved the proposed activity. Dewatering methods selected by Contractor shall be subject to approval by Owner and Reedy Creek Improvement District Planning & Engineering Department. The Contractor shall remain responsible for the adequacy and safety of the methods.
 1. Permit submittal shall include the following:
 - a. Name of Contractor.
 - b. Site location plan showing task specific dewatering locations.
 - c. Number of proposed locations and specifications of all pumps.
 - d. Show arrangement, locations, and details of wells and well points; locations of headers and discharge lines; and means of discharge and disposal of water.
 - e. Include layouts of piezometers and flow-measuring devices for monitoring performance of dewatering system.
 - f. Records that indicate the presence or absence of known areas of contamination within the project, and in adjacent areas that could be impacted if dewatering operations are performed.
 - g. Proposed methods of construction.
 - h. Estimating pumping rates and duration of pumping.
 - i. Known volume to be discharged from vessels installed in the wet.

- j. Estimated depth of drawdown.
 - k. Anticipated radius of the cone influence.
 - l. Proposed points of discharge.
 - m. Site water routing from excavation to storm water retention area.
 - n. Proposed groundwater and surface water monitoring plans.
 - o. Any other sites and tasks specific characteristics worthy of consideration.
 - p. Hydraulic information (i.e. normal pool and seasonal high water elevations) of any wetlands and surface waters within of adjacent to the proposed dewatering activities.
 - q. Control procedures to be adopted if dewatering problems arise.
2. During dewatering activity, submit the following information:
 - a.. Pumping reports documenting time, duration, accumulated volume, location and type of pump used must be sent to the Reedy Creek Improvement District Planning & Engineering office weekly. Reports are due on the Monday prior to the week the work is to be accomplished.
 - b. Monthly withdrawals will need to be submitted to RCID the first of each month once the dewatering starts.
 - c. Failure to properly maintain reports will result in shut down of all pumping activities for that project.
 3. Submit all information (permit application, and dewatering reports) via the RCID Planning and Engineering Permitting System (Buzzsaw ®) and notify RCID that the submittal has been made. For questions, please contact the Planning and Engineering Department at 407-828-2250.

1.05 DEWATERING SYSTEM CRITERIA

- A. Dewatering, defined as the act of temporarily removing groundwater for the purpose of achieving a dry condition during construction, renovation and the installation or removal of underground utilities or systems, shall require regulatory permits from both the South Florida Water Management District (SFWMD) and the Florida Department of Environmental Protection (FDEP). SFWMD regulates removing the water from the ground and the FDEP regulates the discharge of the water to waters of the state or the US. Dewatering may include the use of well points, pit pumps, deep wells, sock drains or any other means for lowering the water table or removing water seeping from the ground into a pit, excavation, trench, etc.
- B. The discharge of ground water from a dewatering operation requires a permit to authorize the discharge if the water flows or is pumped to a surface water body, pond, canal, wetland or any other body of water that is regulated by the SFWMD, FDEP or the United States Army Corps of Engineers. This permit process is obtained through the National Pollutant Discharge Elimination System (NPDES) program administered through the FDEP. For projects that are greater than 1 acre in size, coverage may be obtained under the NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities (Rule 62-621.300(4), F.A.C.). The specific regulations are found in Chapter 62-621 of the Florida Administrative Code and include the discharge of produced ground water from any non-contaminated site activity.
- C. The maximum pumpage per day shall not exceed 10 million gallons per day (MGD). The total pumpage from the operation shall not exceed 900 million gallons. The duration of the dewatering operation shall not exceed 120 days. Note: the 10 MGD, 900 MG and 120 days duration are requirements of RCID's General Permit and apply to the sum of all dewatering operations throughout the RCID and represent maximum rates, duration and volumes. Each project will be evaluated for dewatering limits with respect to other on-going and projected dewatering works in the District, and consequently may be subject to restrictions more stringent than these maximum values.

- D. The dewatering system shall be developed to the point that it is capable of dewatering the site surrounding all retention ponds, borrow areas, or structures as shown on the Drawings. Each well point systems shall be capable of dewatering and maintaining groundwater levels low enough for the proper performance of necessary operations or the respective retention ponds, borrow areas, or structures.
- E. Consult with and obtain Owner's approval of dewatering means and methods prior to commencement of the work.

PART 2 - PRODUCTS

2.01 GENERAL

- A. The equipment utilized shall be standard dewatering equipment of proven ability as designed, manufactured and installed by firms having experience in the design and production of such equipment. The equipment furnished shall be designed, constructed and installed in accordance with the best practices and methods.

PART 3 - EXECUTION

3.01 PUMPING AND DRAINAGE

- A. At the pre-construction conference, the Contractor shall have present and identify an individual as the "Environmental Compliance Officer." This individual shall be responsible for Contractor coordination with RCID Planning & Engineering Department Compliance before, during, and after construction.
- B. The Contractor shall at all times during construction provide and maintain proper equipment and facilities to remove all water entering the proposed excavations, and shall keep such excavations dry so as to obtain a satisfactorily undisturbed subgrade foundation condition until the walls, structures or pipes to be built thereon have been completed to such extent that they will not be floated or otherwise damaged by allowing water levels to return to natural levels. The dewatering system installed shall be in conformity with the overall construction plan and certification of this shall be provided by the Contractor. The Contractor shall be required to monitor the performance of the dewatering systems during the progress of the work and require such modifications as may be required to assure that the systems are performing satisfactorily.
- C. Dewatering shall at all times be conducted in such a manner as to preserve the undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation and to the integrity of adjacent structures. At a minimum, the water level shall be 2 feet below the trench or excavation bottom. Well or sump installations shall be constructed with proper sand filters to prevent drawing of finer grained soils from the surrounding ground.
- D. Water entering the excavation from surface runoff shall be collected in shallow ditches around the perimeter of the excavation, drained to sumps, and pumped from the excavation to maintain a bottom free from standing water.
- E. The Contractor shall take all additional precautions required to prevent uplift of any structure during construction.
- F. The conveying of water in open ditches or trenches will not be allowed except for the spreader or groundwater swale shown in the plans. This swale is shown as a minimum requirement and does not relieve the Contractor from the responsibility to take whatever actions are necessary to prevent damage to adjacent areas.
- G. Flotation shall be prevented by the Contractor by maintaining a positive and continuous operation of the dewatering system. The Contractor shall be fully responsible and liable for all damages which may result from failure of this system.
- H. Removal of dewatering equipment shall be accomplished after the Contractor and the Owner's Representative agree that the system is no longer required; all material and equipment constituting the system shall be removed by the Contractor. No parts of the said system shall remain behind (socks, well points, etc.)

- I. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, hydrocarbons, drilling fluids and other contaminants in order to prevent adverse effects on groundwater quality.
 - 1. Fuel containment must be provided for each pump in the event of a leak or spill. This may be provided via an earthen berm covered with plastic or a double walled factory containment system. Volume must be at least 110 percent of fuel capacity.
- J. Drain excavations and other prepared work areas occurring below groundwater level and maintain in a dewatered condition while performing work at those elevations.
- K. Prevent surface water drainage from entering excavations, and ponding on subgrades and other prepared work areas.
- L. Maintain dry excavations and subgrades by whatever means necessary while working in each area.
 - 1. Reduce groundwater level to a sufficient depth to ensure that bottom soils are not saturated or develop a "quick" condition.
 - 2. Reroute surface water drainage away from excavations, prepared subgrades, and other work areas.
 - 3. Prevent excessive rainwater, to the extent that detrimental softening, undermining, washout, and similar damage would occur, from accumulating in excavations, upon subgrades, and at other prepared work areas.
 - 4. Do not use excavations as temporary drainage.
- M. In the event that erosion prevention and control devices shown in these plans prove to be ineffective, alternate methods for maintaining state water quality standards for discharge from the construction site shall be required.
- N. Prior to and once per day, from each pump discharging from any temporary dewatering system required for the performance of the Work, the Contractor shall obtain samples of discharge and have them tested, at the Contractor's expense, in accordance with the Contract Documents. The Contractor must take samples to ensure that the water quality meets criteria of the Reedy Creek Improvement District, EPA, and all other jurisdictional agencies and provide RCID Planning & Engineering Department Compliance with a copy of water quality test results.
- O. The quality of all water discharged shall comply with the requirements of the United States Environmental Protection Agency, Florida Department of Environmental Regulation, South Florida Water Management District, Reedy Creek Improvement District and any other regulatory agency having proper jurisdiction. No pumped groundwater shall discharge to surface waters. In critical areas, dewatering discharge shall require additional turbidity monitoring by the Contractor.

3.02 PROTECTION AND SITE CLEAN-UP

- A. At all times during the progress of the Work the Contractor shall use all reasonable precautions to prevent weather tampering with the wellpoints (if used) or the entrance of foreign material into the existing storm drain system.
- B. Immediately upon completion of the dewatering operations, the Contractor shall remove all of his equipment, materials, and supplies from the site of the work, removal of all surplus materials and debris, fill in all holes or excavations, and grade the site to elevations of the surface levels which existed before the work started. The site shall be thoroughly cleaned and graded as directed by the Owner's Representative.

END OF SECTION

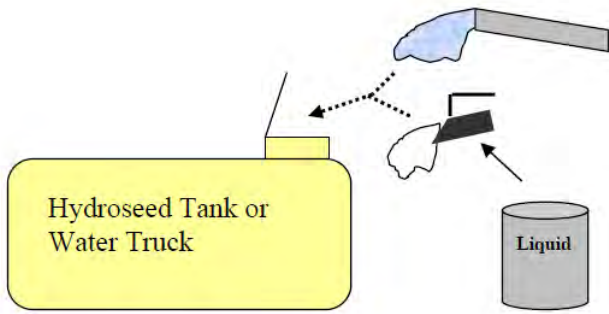
Dust Control

The APS Silt Stop emulsion material is designed to agglomerate and bind very fine particulate. This mechanism has been shown to reduce airborne dust from haul roads, waste dumps, tailings piles, and open areas on construction sites. Duration between watering will vary with weather and road conditions.

The use of APS Silt Stop material is intended to reduce the amount of airborne dust by increasing the soil particle size, and decrease the amount of water applications required to control fugitive dust.

- i. This application is not intended to completely replace a dust control watering regime.
- ii. The application rate should be $\frac{1}{4}$ - $\frac{1}{2}$ gallons of emulsion or 7-10 pounds of powder / 1000 gallons water per $\frac{1}{3}$ acre coverage. Polymeric additions to water are limited by high viscosity; do not exceed 1 gallon emulsion / 1000 gallons water.
- iii. Spraying device with a mechanical agitator, mixing apparatus or hydraulic recirculation is best. However, the Silt Stop emulsion can be added in any water truck but care should be taken to assure mixing of the emulsion into the water.
- iv. Application will need to contact 85% or greater of the target material within the spray area for the Silt Stop to be effective.
- v. The Silt Stop material is designed for temporary stabilization only. Reapply the Silt Stop emulsion as needed. Heavy traffic areas may require more frequent applications.

Step-by-step Dust Control Application

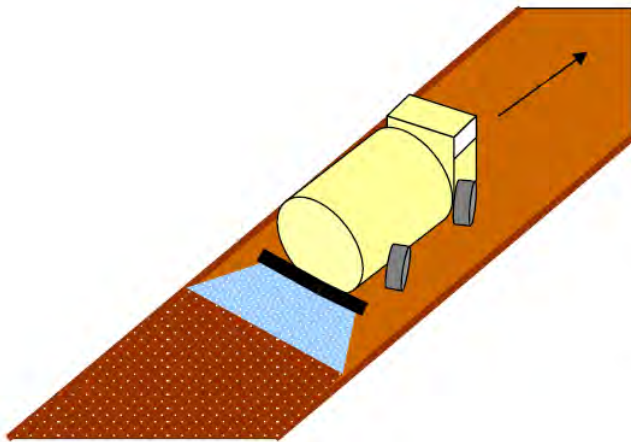


Step 1: Add Emulsion/Powder to Water

Add the Silt Stop slowly to the water to prevent clumping and poor performance.

It is suggested that the polymer material be added while the tank is filling and/or the agitator is running.

Allow 2-3 minutes of mixing time before application.



Step 2: Spray Target Area

Spray the target area just like a normal water application.

Spray needs to contact at least 85% of the target surface area to be effective.

Before Application



After Application



World Drive North Phase 3

Division 2 & 3 Specifications

100% Specifications
August 2022

**SECTION 2
UTILITY SPECIFICATIONS**

1. GENERAL

A. DESCRIPTION

1. Professional Surveyor: Provide professional surveying and mapping work required for the execution of the Contract including, but not limited to, verification of existing survey data, construction layout, and production of the As-Built Drawings. All work shall be performed by a Surveyor that is licensed by the State of Florida as a Professional Surveyor and Mapper pursuant to Chapter 472, F.S.
2. Professional Engineer: All work shall be performed by an Engineer that is licensed by the State of Florida as a Professional Engineer pursuant to Chapter 471, F.S.

B. REQUIREMENTS

1. Field Engineering Services
 - a. The Engineer shall be of the discipline required for the work.
 - b. The Engineer shall be responsible for duties during Construction to include, but not limited to:
 1. Inspections, testing, witnessing requiring a licensed Professional Engineer.
 2. Design of temporary shoring, bridging, scaffolding or other temporary construction, formwork and protection of existing structures.
 3. Other requirements as specified herein.
 - c. Engineering related designs and inspections shall be signed and sealed by the licensed Professional Engineer as required by the Owner and/or by Reedy Creek Improvement District Building and Safety
 - d. Lines and Levels
1. The Engineer shall be responsible for the accuracy of the construction lines and levels.
 - a. Employ a licensed Professional Civil Engineer or a licensed Professional Surveyor and Mapper to establish and maintain all lines and levels necessary for the locations and construction of the Work.
- Submit qualifications of individual responsible for survey to Owner for approval.
2. The Engineer shall verify levels shown on the drawings with existing levels and notify the Owner of any discrepancies before proceeding with the Work.

END OF SECTION

1. CONTRACTOR'S QUALITY CONTROL PROGRAM

- A. Establish and maintain a quality control program for all items of work, including the work of Subcontractors, to ensure the Work conforms to all requirements of the Contract Documents.
- B. Owner may require Contractor to submit a quality control plan ("QC Plan") to Owner's Representative for review and acceptance, which shall address work of Contractor and its Subcontractors and include, at a minimum:
 1. Contractor's quality control staff organization chart, including:
 - a. Identification of proposed quality control staff members (who shall be subject to Owner's Representative's approval);
 - b. Identification of the responsibilities of each member of the quality control staff; and
 - c. Listing of all independent organizations or entities proposed for use by Contractor, including, without limitation, testing laboratories and consultants; the qualifications and services to be performed by these outside organizations.
 2. Description of documentation and reporting procedures.
 - a. Submit weekly reports to Owner's Representative indicating, at a minimum, inspections performed, testing methods used and results thereof and any nonconforming items of work (with an explanation for the cause of nonconformance, proposed remedial action and corrective action taken for each nonconformance).
 - b. Describe the method that will be used to document quality control operation, inspection and testing (where performed by Contractor).
 - c. Provide examples of all forms, reports and submittal status log.
 3. Description of quality control implementation procedures.
 - a. Material selection procedures.
 - b. Procedures for the review of shop drawings, samples and other submittals, including the name(s) of the person(s) authorized to sign submittals for Contractor before submittal to Owner's Representative.
 - c. Control procedures for construction materials delivered to Job Site.
 - d. Supervision and control procedures for work carried out on-site.
 - e. Inspection and test procedures (for all specified tests, start-up operations, or special inspections required by regulatory agencies), identifying the procedures by trade, indicating what tests will be done, when such testing will take place, and by whom (including those tests performed by Owner's testing agency in accord with Section 01455).
 - f. Monitoring of any prefabricated elements whether on-site or off-site.
 - g. Sign-off procedures as the Work or each portion thereof is completed.
 4. Description of procedures for addressing and remedying completed or installed work that does not conform to the requirements of the Contract Documents.
 - a. Define actions that will be required by Contractor.
 - b. Define actions that will be required by Owner.
 5. Definition of Contractor's quality control objectives and enumeration of any "project-specific" or special quality control concerns.

- C. Contractor's on-site supervisory staff shall function as the quality control staff, and such staff shall review all items of work to ensure compliance with the requirements of the Contract Documents.
 - D. Owner or its representative (which may be the Architect/Engineer or other such qualified entity as Owner may elect to employ for such purpose) will periodically review the Work in progress for compliance with the Contract Documents, and will present reports of such reviews to Contractor for corrective action as required.
 - 1. Neither the performance nor absence of performance of such reviews by Owner or its representative(s) shall relieve Contractor of its complete responsibility for quality control and ensuring conformance to the requirements of the Contract Documents.
 - 2. Contractor shall prepare and provide any additional information reasonably requested by Owner's Representative pertaining to the quality and performance of materials, methods and construction practices used by Contractor in performance of the Work.
 - E. Ensure that appropriate facilities, instruments and devices required for implementation of Contractor's approved QC Plan are available on site as required.
2. CONTRACTOR'S REQUIRED QUALITY ASSURANCE MEASURES
- A. Implement the accepted QC Plan, integrating same into all supervision, Subcontractors' and suppliers' work, manufacturing, services and work to ensure performance of the Work in accord with the requirements of the Contract Documents.
 - B. Workmanship: Provide suitably qualified personnel to produce work of specified quality at all times, and enforce exclusion of personnel from performing operations for which they are unqualified by lack of certification, registration, or demonstrated inability.
 - C. The Work shall be considered "custom construction" and completed in accord with the highest applicable standard of workmanship by all trades, and shall not be considered "standard commercial construction" unless explicitly shown or specified as such elsewhere in the Contract Documents.
 - D. Covering of work: Complete and submit a "pre-cover sign-off sheet" to Owner's Representative before the concealing of any work.
 - 1. The sign-off sheet shall include certification, signed and dated by Contractor and the subcontractor(s), that the work has been installed in compliance with the Contract Documents and that the work has been reviewed and approved as required by applicable testing and jurisdictional authorities.
 - 2. Such sign-off sheet shall be submitted to allow adequate time for Owner's Representative to inspect the work before concealment.
 - a. Provide notice to Owner's Representative's testing agency as specified in Section 01455 for testing or inspections specified to be performed by it.
 - b. Provide minimum of 24 hours (1 working day) notice for any other procedures or installations.
 - 3. Afford Owner or its representatives full access to work to be observed or inspected, including any required accommodations such as hoisting, planking, or lighting.
 - 4. If after Contractor's having made proper and timely notice Owner's Representative should elect not to avail itself of the opportunity to inspect or observe an item of work, Contractor may proceed with covering of that work without further notice to Owner's Representative. Complete responsibility for performing all work in accord with requirements of the Contract Documents shall remain with Contractor in such event, and any such "unobserved" work later found to be nonconforming shall be remedied to Owner's Representative's satisfaction at no additional cost to Owner.

5. Covering of work without providing Owner's Representative sufficient prior opportunity to review same shall be grounds for Owner's Representative to direct Contractor to uncover, correct (as required) and reinstall such work at no additional cost to Owner.
- E. Aesthetic inspections or observations by Owner's Representative: Complete and submit an "acceptance sign-off sheet" to Owner's Representative with a minimum of 48 hours (2 working days) notice for any procedures or installations which require inspection of an aesthetic or artistic nature.
1. Contractor shall not proceed with procedures and installations for which an inspection of an aesthetic nature is required absent Owner's Representative's receipt and approval of the acceptance sign-off sheet.
- F. Cable Splicer/Terminator Qualifications
1. Each cable splicer/terminator shall have experience and training in the splicing and terminating of EPR insulated high or medium voltage cables.
 2. Each cable splicer/terminator shall have three (3) or more years recent, verifiable experience splicing and terminating high or medium voltage cables using the tape splice method on the RCID system or certification for Hand-applied Taping, from the National Cable Splicers Certification Board (NCSCB). For Manufactured Splice Kits, the cable splicer/terminator shall have a current splicer certification for the Manufactured Kits (splices and terminations) to be used on the project.
 3. The cable splicer/terminator shall be required to make practice splice/termination, at contractor's expense, in the presence of the Owner's Representative. The splice shall be in accordance with the cable manufacturer's recommendation's, splice/termination kit manufactures instructions or Tape splice/termination recommendations from a tape manufacturer regularly engaged in the sale of recognized tapes for high and medium Voltage splices/terminations before being approved as a qualified cable splicer.
 4. If the Contractor's individual cable splicer/terminator does not have a current certification from the NCSCB or RCID experience as outlined in F.2 above, a Temporary approval may be provided by the Owner for the current project only. The cable splicer/terminator Shall be required to make a practice splices/terminations, at the contractor's expense, in the presence of the Owner's Representative. The splice shall be in accordance with the cable manufacturer's recommendation's, splice/termination kit manufactures instructions or tape splice/termination recommendations from a tape manufacturer regularly engaged in the sale of recognized tapes for high and medium Voltage splices/terminations before being approved as a cable splicer for the project. The Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate cable splicer/terminator.
- G. Exothermic Welder Qualifications
1. Welders shall be previously qualified (within the past twelve months) by passing the tests prescribed in the AWS (American Welding Society) Standard Qualification Procedure or by passing such other tests as the Owner's Representative may accept.
 2. Welders, welding machine operators and anyone tacking with welding equipment shall be qualified in accordance with the requirements of AWS D1.1.
 3. Submit two certified copies of the qualification records to the Owner's Representative as evidence of qualification to the above-mentioned code.
 4. Each welder shall have two or more years recent, verifiable experience in performing exothermic welding.
 5. In addition, the welder may be required to make an approved dummy or practice weld in the presence of the Owner's Representative in accordance with the weld manufacturer's instructions before being approved as a qualified welder.

6. The Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate welder.

H. Lightning Protection System Installer Qualifications

1. The Contractor must provide documentation that each installer has been certified with at least five years of recent experience in installing lightning protection systems.
2. The Owner's Representative reserves the right to require additional proof of competency or to reject the individual and call for certification of an alternate lightning protection system installer.

3. MANUFACTURER'S INSTRUCTIONS

- A. Where required by Specifications, submit manufacturer's printed instructions in the quantity required for product dates, delivery, handling, storage, assembly, installation, start-up, adjusting, balancing, and finishing as applicable.
- B. Contractor shall comply with manufacturer's instructions in fullest detail, including performance of each step of assembly or installation in exact sequence. Should manufacturer's instructions conflict with Contract Documents in any manner, request immediate clarification from Owner's Representative before proceeding with the operation in question.

4. MINIMUM CONSTRUCTION TOLERANCES AND REQUIREMENTS

- A. Where stricter standards or tolerances are specified elsewhere in the Specifications or in references specified in the Specifications, such stricter standards or tolerances shall take precedence over the standards and tolerances enumerated herein.
- B. Construct and install all parts of the Work level, plumb, square and in correct position unless explicitly shown or specified otherwise.
 1. No part shall be out of plumb, level, square or correct position so as to impair the proper functioning of the part or the Work, in the sole determination of Owner's Representative.
 2. The following tolerances shall apply to plane surfaces:
 - a. No point in the plane surface shall be out of correct position by more than 1/8 inch.
 - b. No straight-line tangent to the plane surface shall vary from the plane surface by more than 1/8 inch in 10 feet (non-cumulative).
- C. Make all joints tightly and neatly.
 1. Only apply moldings, sealant, or other joint treatment with explicit permission of Owner's Representative unless it is explicitly so specified or shown.
- D. Provide galvanic insulation between dissimilar metals that are not adjacent on the standard galvanic scale.
- E. Fasteners and fastening:
 1. All fasteners used by all trades in exterior applications and elsewhere where dampness or corrosion can reasonably be anticipated shall be corrosion-resistant.
 - a. Fasteners for carpentry in exterior applications or in potentially damp locations shall be stainless steel, aluminum, or double hot-dip galvanized steel.
 - b. Fasteners for other materials in exterior applications, in cellars and crawl spaces, embedded in exterior walls, at or above the roof, and other places where dampness and corrosion can reasonably be anticipated shall be one of the types specified below (as applicable).
 2. Fasteners for copper, brass and bronze in all locations and under all conditions shall be copper, brass, or bronze, respectively.
 3. Fasteners for stainless steel in all locations and under all conditions shall be stainless steel.

4. Fasteners for aluminum shall be stainless steel or aluminum where exposed to view, and stainless steel, aluminum or double hot-dip galvanized steel where not exposed to view.
 5. Fasteners for ferrous metals in all locations and under all conditions shall be galvanized or stainless steel.
 6. If corrosion-resistant fasteners are not available for a given application, notify Owner's Representative for direction regarding alternative corrosion protection methods.
- F. Apply protective finish to parts of the Work before concealing parts (i.e., paint door tops and bottoms before hanging doors, paint degradable mounting plates before installing other parts over them, etc.).
1. Unless specified otherwise, paint concealed materials and products with same primer and finish specified for exposed surfaces. If concealed materials are fully covered, primer alone is sufficient unless specified otherwise.
 2. Concealed products that are already corrosion-protected need not be protected further unless specified otherwise.
 3. Refer to individual Specification Sections for additional protective finishes or coatings requirements.
- G. Manufacturers, subcontractors, and workers shall be experienced and skillful in performing the work assigned to them.
- H. Verify critical dimensions in the field before fabricating items, which must fit adjoining construction.
- I. Where accessories are required in order to install parts of the Work in usable form, provide such accessories even where not explicitly specified or shown.
- J. Whenever possible, accessories shall be manufactured by the same manufacturer as the larger part or device for which they are to be used.
- K. Adjust and test operation of all items of equipment, leaving them fully ready for use (refer to Section 01660 for mechanical and electronic equipment start-up restrictions).

5. GENERAL WORK REQUIREMENTS

- A. Seal all cracks and openings to make exterior skin of buildings tight to water and air entry, as specified.
- B. Provide adequate blocking, bracing, nailers, fastenings, and other supports to install parts of the Work securely.
1. Blocking, bracing, nailers, fastenings, and other supports shall be of a type not subject to deterioration or weakening as the result of environmental conditions or aging.
 2. Secure any objects suspended directly overhead in accessible areas (or suspended over adjacent areas where a falling object can rebound into an accessible area) such that each suspended object has complete redundancy of adequate support connected to the structure of the building.
- C. Provide bases, pads, inserts, blockouts, and other miscellaneous supporting structures as required for all portions of the Work, even where it may not be explicitly indicated but is nonetheless required for a complete or proper installation.

END OF SECTION

1. GENERAL

A. DESCRIPTION

1. Professional Surveyor: Provide professional surveying and mapping work required for the execution of the Contract including, but not limited to, verification of existing survey data, construction layout, and production of the As-Built Drawings. All work shall be performed by a Surveyor that is licensed by the State of Florida as a Professional Surveyor and Mapper pursuant to Chapter 472, F.S.

B. REQUIREMENTS

1. The Contractor shall retain the services of a Professional Surveyor and Mapper licensed in the State of Florida, approved by RCES, to provide professional surveying and mapping services necessary for investigation and/or construction including, but not limited to, a control survey. An As-Built survey shall be created and maintained during construction. The Surveyor will identify control points (monuments and benchmarks noted on the Drawings OR as provided and/or as designated by RCES Survey). The construction layout survey shall be established from the control points shown on the Construction Drawings. The control points shall be verified by the Contractor prior to start of construction.

C. SUBMITTALS

1. Provide qualifications of the Surveyor and Mapper:
 - a. Registered Surveyor and Mapper who is proposed by the Contractor to provide services for this scope of work shall be acceptable to the RCES Survey Department prior to field services being performed.
 - b. Submit name, address, and telephone number of the Surveyor and/or Mapper, as appropriate, to RCES Planning and Engineering and RCES Surveying for acceptance before starting survey or mapping work.
 - c. Submit written acknowledgement from the Surveyor and Mapper stating that they have the hardware, software, training, knowledge, and ability to provide the scope of services in their agreement with the Contractor to fully comply with the requirements of this specification and the project requirements.
 - d. Submit copies of current licenses and registrations.
2. Submit documentation verifying accuracy of survey work.

2. SURVEY DOCUMENTS

- A. The Surveyor and Mapper shall not copyright any of their work related to this project.
- B. All work, in all forms, shall become the property of the Owner.
- C. The Surveyor and Mapper shall record all new and existing utilities, known and exposed, including, but not limited to, water, wastewater, reclaimed water, storm water, hot water, chilled water, compressed air, communication, fiber optic cable, electric, gas, and any other structures located within the limits of construction.
 1. Piping/conduit shall be measured to the centerline and to the top of the pipe (T.O.P) or conduit and at every change in direction or elevation.
 2. Slopes, where applicable, shall be recorded.
 3. Valve elevations shall be measured to the nut operator (not the extension).
 4. The top and bottom elevations of electrical duct bank shall be recorded.
 5. Provide existing grade shots along the utility route.

D. The Surveyor and Mapper shall record, to 2 decimal places, the elevation and location of all:

Baseline Control Locational Accuracy	Bench Marks	Changes in Direction/Elevation
Tract and Easement Corners	Existing Utilities and Appurtenant Structures	Surface Body Water Levels
Transitions From One Pipe Material to Another	Clean Outs	Manhole Rims
Manhole Inverts	Hydrants	Pump Stations (Public & Private)
Monitoring Wells	Production Wells	Horizontal Directional Drills (HDDs)
Bore & Jack Casings, Supports, Carrier Pipe	Thrust and Anchors Blocks	Centerline of Pipelines – Location Top of Pipelines - Elevations
Pipe, Restraints	Piping, at 100-foot Maximum Intervals	Pipes, Abandoned in Place or Removed
Conduit/Pipeline Termini	Duct Bank Termini	Buried Conduit or Duct Bank by no less than one Elevation Shot per 100 Linear Feet
Changes in Conduit Arrangement	Direct Buried Cable Splice Locations	Direct Buried Cable by no less than one Elevation Shot per 100 Linear Feet
Valve Box Rims	Air Release, Blow Off, and Backflow Valves	Valves (Operating Nut)
Blows Offs / Drip Legs	Cathodic Protection Test Stations	Anodes
Fittings, Sleeves, Tapping Saddle, Service Saddles, Cap or Plugs	Flex Connectors	Hot Tap Fittings
Oil/Water Separators	Grease Interceptors	Grease Traps
Meters, All Kinds	Meter Boxes	Pull/Splice Boxes
Equipment Pads	Slabs on Grade	Bridge Slabs
Bottom of Bridge Girders	Other Project Construction Features	Waterline and Apparent Bottom of all Bodies of Water

- E. The Surveyor and Mapper shall submit a certified survey in both hard and soft copy version. Soft copy versions shall be submitted in AutoCAD 2020 format. CAD files are to be prepared using RCES templates and layering standards. Hard copy versions are to be submitted in PDF format.
- F. QUALITY ASSURANCE
1. Disney Grid Coordinates shall be used as the horizontal and vertical datum.
 2. The Surveyor and Mapper shall coordinate with RCES Surveying to obtain information or data required for the Surveyor and Mapper to establish the survey control points at the onset of any field work.
 3. RCES Surveying will provide electronic files and drawing information, if drawing are available, to be used as base files by the Surveyor and Mapper.
 4. RCES Surveying, RCES Engineering, and/or RCES Project Management intends on making random spot checks via desktop analysis methods to verify accuracy of all third party survey work. If more than 10% of the spot checks are found to be inaccurate, then Surveyor and Mapper must uncover all work performed to date and verify each point taken at their own expense. The Surveyor and Mapper is also responsible for the restoration of surfaces as part of this requirement.
 5. Any item that was installed, but not recorded, during construction and is listed in table 2D above must be surveyed post-construction at the Contractor's expense. This includes the restoration of any and all finishes.

3. SURVEY FIELD WORK

- A. Locate, reference, and preserve existing horizontal and vertical control points and property corners shown on the Drawings prior to starting any construction. If the Surveyor and Mapper performing the work discovers any discrepancies that will affect the Project, the Contractor must immediately report these findings to RCES Engineering. All survey work shall meet the requirements as defined in Florida Administrative Code 5J-17.
- B. Reference and preserve all survey pins/monuments during Construction. If survey pins/monuments are disturbed, it is the responsibility of the Surveyor and Mapper to reset the pins/monuments at the Contractor's expense.
- C. All sanitary lines shall be located using invert elevations in the existing manhole structures on both sides of the desired sanitary line location. Invert elevations surveyed in the manhole structures shall be documented with 3 digits. The desired location that is estimated by interpolating the surveyed manhole invert elevations shall be documented with one digit and labeled "approx.". Mechanical means such as air lances, vacuum excavation, probing, etc. shall not be used to locate this utility.
- D. Any time insulation is disturbed during excavation or the use of any mechanical means such as ~~air lances~~, vacuum excavation, etc. to locate or expose any mechanical utility, the insulation system shall be promptly repaired according to a prescribed method issued by the RCES Mechanical Engineering Department. Air lances are strictly prohibited and shall not be used for line locating.
- E. If the monuments are disturbed, any Work that is governed by these monuments shall be held in abeyance until the monuments are reestablished by the Surveyor and Mapper and approved by RCES Survey and RCES Engineering. The accuracy of all the Contractor's stakes, alignments, grades, layout, and all other work are the responsibility of the Contractor.
- F. RCES Survey or their designee has the discretionary right to check the Contractor's stakes, alignments, grades, or any other work product at any time. Copies of all the Surveyor and Mapper's field notes and/or electronic files for point replacement shall be provided to RCES Survey for record.
- G. The construction layout shall be established from the reference points shown listed on, or derived from, the Drawings. The accuracy of any method of layout shall be the responsibility of the Contractor or the

- Surveyor and Mapper or jointly. All construction layout staking shall be done such as to provide for easy verification of the Work.
- H. The Surveyor and Mapper shall coordinate with existing project control points if they exist.
- I. The Surveyor and Mapper shall locate and record all elements listed in table 2D as applicable.
- J. Horizontal Directional Drill and Jack & Bore (Trenchless) Support:
1. Roles and Responsibilities shall be as follows:
 - a. The Surveyor and Mapper shall provide support to the Contractor's Trenchless Sub-Contractor.
 - b. The Trenchless Contractor will be responsible for providing the electronic tracement of the installed facility.
 - c. The electronic tracement for submittal purposes will be performed on the final reaming or pulling of the drill.
 - d. The Surveyor and Mapper in conjunction with the Trenchless Contractor shall stake each directional drill a minimum of every 15 feet (where practical) or individual lengths of bore casing; whichever is the lesser distance. Each stake shall signify the depth of the drill at that location and shall be consecutively numbered and shown as As-Built. Provide existing grade elevations at the same intervals and locations.
 - e. Field location of data collection points used by the Contractor shall be coordinated with the Surveyor and Mapper for simultaneous field location so the Surveyor and Mapper can collect the corresponding horizontal location and finished ground elevation for mapping purposes.
 - f. The submitted data must include depths/distance from Disney datum to the final installed facility/utility.
 - g. Every ~~directional drill~~ Trenchless installation must be identified by a unique name or number and that referenced identifier will be on the corresponding map, profile and report.
 - h. The Contractor shall provide As-Built Bore Logs and Profiles with corresponding grade elevations at each end (minimum) to be collected by a licensed Surveyor and Mapper immediately at the completion of Trenchless work. Surveyors' data points shall directly correspond to points on Bore Logs and Profiles (end of rod, etc.). All Bore Logs and Profiles shall be in Disney datum and Disney grid and shall not be provide in any other format.
- K. The Contractor shall not permanently conceal any work until required information has been recorded. All re-excavation shall be at the expense of the Contractor.

END OF SECTION

1. GENERAL

A. DESCRIPTION

1. The purpose of the Project Documents is to provide RCES with factual information regarding all aspects of the Work, both concealed and visible; to verify that the Work was constructed in conformance with the Contract Documents, and to completely describe any and all modifications, deviations, or substitutions from the Contract Documents.

B. DEFINITIONS

1. All in-house surveying shall be provided in accordance with specification section 01720 RCES Surveying.
2. All third-party surveying shall be provided in accordance with specification section 01721 Third Party Surveying.
3. All field engineering shall be provided in accordance with specification section 01050 Field Engineering.
4. Mark Up Drawings: Revised set of drawings maintained by the Contractor documenting all changes from the Contract Drawings during the construction process. Exact dimensions, geometry, and locations of all completed work elements shall be recorded.
5. As-Builts
 1. For building exterior installations, AutoCAD drawings produced by a licensed Surveyor and Mapper will be provided.
 2. For building interior installations, architectural dimensions for all elements will be provided.
6. Record Drawings: Drawings prepared by the Engineer of Record using field Mark Ups, Project Documents, and other sources of information provided by RCES Survey, RCES Project Management, RCES Operations, the Contractor, WDI, WDW, the Developer, and/or other entities.
7. Project Documents: Any and all documents pertaining to the bidding, contractual agreement, scope of work, conditions, specifications, testing, collected data, materials, costs, certifications, modifications, substitutions, submittals, RFIs, directives, Mark Ups, As-Builts, and all other information required to complete the Work.

C. QUALITY ASSURANCE

1. Contractor shall delegate the responsibility for the maintenance of the Project Documents to one person on the Contractor's staff to provide consistency in the quality of the Mark Ups.
2. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of specifications and each sheet of Drawings and other documents where such entry is required to show progress and changes properly.
3. Make entries within 24 hours after receipt of information has occurred.

2. MAINTENANCE OF DOCUMENTS

A. OWNER FURNISHED DOCUMENTS

1. One (1) set of drawings in electronic PDF format revised to reflect bid amendments will

be provided by RCES Project Management prior to start of construction. These drawings shall be used for the maintenance of As-Built drawings.

- B. Maintain at Job Site, and available for RCES Project Management Review, one copy of each of the following as Record Documents:
1. Project Site Specific Plan, Construction Contract, Drawings, Specifications, General Conditions, Supplemental Conditions, Bid Proposal, Instruction to Bidders, Addenda, and all other Contract Documents.
 2. Change Orders, Documented Verbal Orders, Directives, Bulletins and other written modifications to Contract.
 3. Written instructions by RCES as well as correspondence related to Requests for Information (RFIs).
 4. Approved Shop Drawings, Samples, product data, substitution and "or-equal" requests.
 5. Field test records, inspection certificates, manufacturer certificates and construction photographs.
 6. Permits of all kinds and types.
 7. Paper copy of the Contract Drawings (one blue-line set of prints) maintained as the Progressive As-Built Drawings.
 8. Paper copy of the Contract Drawings (one blue-line set of prints) of current Survey As-Built Drawings.
 9. Surveyor and Mapper's documentation requirements which include any and all items as required by specification sections 01720 and 01721 as applicable.
 1. All As-Built and Project Documentation required by specification section 01050 as applicable.
- C. Adhere to following guidelines for maintenance of Project Documents:
1. Store Project Documents in an organized, clean, dry location, (such as a construction field office), apart from documents used for construction purposes.
 2. Provide files and racks for storage of Project Documents.
 3. Record information concurrently with construction progress. Do not conceal any Work until required information is recorded.
 4. Make Record Documents available at all times for inspection by Owner's Representative and other authorized users.

3. MARKING DEVICES

- A. Provide fine ball-point red, green and blue pens, and yellow highlighter for marking. Markings shall comply with good drafting standards as follows:
1. Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes. Notes shall be written in clear legible block lettering.
 2. Deletions (Green) - Over-strike deleted graphic items (lines), lettering in notes and leaders. Mark out items if not installed as shown.
 3. Additions (Red) – Show additions or modifications to graphic items (lines), lettering

in notes and leaders. Lettering for the changes shall be printed block lettering. Neatly Cloud the changes.

4. No Changes (Yellow Highlighter) – Trace all work installed without changes or deviations in yellow highlighter.
5. Lines drawn to indicate changes shall be done using a straight edge and curves to provide clear and clean lines.
6. Use the same symbols and follow as much as possible the same drafting standards used on the Contract Drawings.
7. Use frequent written explanations (in Blue) on Mark Up drawings to describe changes. Do not totally rely on graphic means to convey the revision.
8. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.
9. For deletions, cross out all features, data and captions that relate to that revision.

4. RECORD KEEPING

- A. Label each Project Document “MARK UP” in 2-inch-high printed letters.
- B. Keep Mark Ups current.
- C. Do not permanently conceal any work until required information has been recorded.
- D. Mark Up Drawings: Legibly mark Drawings as described above. The Contractor, for weekly submittals, shall electronically mark a set of drawings with the same marking colors as described above. The Contractor shall record items in accordance with specification section 01720.2.B or 01721.2.D as applicable.
- E. Project Specifications and Addenda: Legibly mark up each Section to record:
 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed. Strike-through manufacturers and products that were not used on the project.
 2. Changes made by Revision Order, Directive, and other modifications.
 3. Other matters not originally specified.
- F. Provide clearly marked Operations and Maintenance manuals in PDF format for each furnished item.
- G. Shop drawings and samples: Maintain as Project Documents. Legibly annotate shop drawings and samples to reflect the work.
- H. Provide an encompassing digital AutoCAD .dwg file type saved in AutoCAD 16 format. The file must include all the information of the As-Built Survey and other graphical information in the As-Built Drawings. It shall include the overall Work, utility system layout and associated parcel boundaries and easements. Feature point, line and polygon information for new or altered Work and all accompanying geodetic control and survey data shall be included. The Surveyor’s certified As-Built Asset Attribute Data shall be added to the As-Built Drawings.
- I. Provide Scanned “As-Built” Drawing sets complete and include the title sheet, plan/profile sheets, cross-sections, and details. Each individual sheet contained in the printed set of the As-Built

Drawings shall be included in the electronic drawings, with each sheet being converted into an individual TIF (tagged image file). The plan sheets shall be scanned in TIF format Group 4 at a minimum of 400 dpi resolution to maintain legibility of each drawing, then the TIF images shall be embedded into a single PDF (Adobe Acrobat) file representing the complete plan set.

- J. Provide Scanned Record Documents reflecting changes from the Contract Documents.
- K. All Projects Drawings and Record Documents shall become property of the Owner.

5. AUDIT

- A. Project Documents will be reviewed monthly by Owner's Representative, who will use the current completeness of the Mark Up documents in evaluating the monthly progress payment request.

1. Payment processing does not constitute acceptance of quality of survey work.

- B. The Project Manager reserves the right to conduct surprise audits.

6. SUBMITTAL

- A. At the end of each week's work, make available Project Documents for Owner's Representative's review. Documents shall contain up-to-date Mark Up and/or As-Built information for all concealed work indicated on the Drawings.
- B. At completion of the Work, deliver one (1) full size hardcopy (blue-line) of As-Built Drawings and electronic files of the As-Built Record Drawings, Record Specifications, and other Record Documents, and one hardcopy Record Specifications to Owner's Representative. Accompany submittal with transmittal letter, in duplicate, containing date, project title and number, Contractor's name and address, title and number of each record document, certification that each document as submitted is complete and accurate, and signature of Contractor, or its authorized representative.
- C. Contractor's failure to maintain Project Record Drawings, As-Built Drawings, Record Specifications, or other record documentation, and make same available for Owner's Representative's review (minimum of weekly) shall be deemed cause to withhold payment of amounts otherwise due until such failure is remedied.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Drilled soldier piles, tie-backs, and wood lagging.
- B. Design and engineering of temporary shoring.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Excavating for structures: Section 02321.
- B. Concrete: FDOT Specifications.

1.03 DESCRIPTION OF SYSTEM

- A. Temporary (or permanent if site access limitations prohibit temporary shoring), anchored excavation support system capable of resisting soil and hydrostatic pressure and supporting sidewalls of excavations.
 - 1. Prevent surface water from entering excavations by grading, dikes, or other means.
 - 2. Install excavation support systems without altering or damaging surrounding work or improvements (in-process or completed).

1.04 QUALITY ASSURANCE

- A. Installer qualifications: Minimum of 5 years continuous experience in the installation of work of similar material, design, extent, complexity; as determined by the Owner, experience in installation of extremely dissimilar types of work or similar work of less complexity are not acceptable.
- B. Welder's qualifications: Currently qualified by tests as prescribed in AWS D1.1, and certified by ICBO.
- C. Installation qualifications: Ensure that the sequence of Work of this Section does not disturb or otherwise affect adjacent drilled shafts or other in-place work.
- D. Shoring designer/engineer qualifications:
 - 1. Minimum of 5 years continuous experience in the design and structural engineering of temporary (or permanent) shoring, sheeting, and cribbing for support of building excavations of similar size and depth, (30-50 feet depth), as indicated on Drawings.
- E. Preservative-treated material qualifications: Identified with American Lumber Standards Committee-recognized agency's quality mark and AWWA applicable standard.
- F. Design criteria: Drawings indicate design intent only and do not include shoring design and engineering calculations required nor all considerations for varying site conditions or for trade industry practices. Provide complete structural design and engineering of temporary (or permanent shoring if required by site access limitations) shoring, sheeting, or cribbing, as necessary to resist soil, hydrostatic pressure, surcharges, dynamic live loads and to support sidewalls of excavations. Design and calculations must be performed by a Florida-licensed professional engineer.
- G. Tests and inspections:
 - 1. Procedure: In accord with Section 01455.
 - 2. Required tests:
 - a. Test structural steel shapes not otherwise identified by mill or independent testing agency's analyses, certifications, or test reports.
 - b. Test concrete mixes: In accord with FDOT Specifications.
 - c. Test steel strands for:
 - (1) Breaking strength.
 - (2) Yield strength under load.
 - (3) Elongation under load.

- d. Test load capacity of tie-back installations.
3. Required inspections:
 - a. Inspect welds: In accord with AWS D1.1.
 - b. Inspect drilling and pressure injection equipment.
 - c. Inspect drilled shafts for soldier piles.
 - d. Inspect placement of structural steel soldier piles in drilled shafts.
 - e. Inspect concrete placement for soldier piles.
 - f. Inspect lagging placement.
 - g. Inspect drilled shafts for tie-backs.
 - h. Inspect tie-back placement, including placement of concrete.
3. Other testing agency services:
 - a. Verify material certifications, and test reports.
 - b. Verify concrete volumes for soldier piles.
 - c. Verify concrete volumes for tie-backs.
 - d. Verify welder's qualifications.
- H. Reference specifications and standards:
 1. ASTM: A36 Structural Steel.
 2. ASTM A416 Uncoated Seven-Wire Steel Strand for Prestressed Concrete.
 3. AWS: D1.1 Structural Welding Code - Steel.
 4. AWS: A2.4 Symbols for Welding and Non-Destructive Testing.
- I. Allowable tolerances:
 1. Deviation of soldier piles and lagging from vertical or indicated batter: Maximum 1/4 inch per foot.
 2. Deviation of record location of excavation support and protection systems from location indicated on Drawings: 2 inches maximum center-to-center.
- J. Pre-installation conference:
 1. At least two weeks prior to scheduled commencement of the work of this Section, arrange a meeting at project site with installers of the work of this Section, and all related work, including substrates to receive work of this Section, other work in and around the work of this Section which must precede or follow the work of this Section, Owner, and other representatives directly concerned with performance of the work. Record discussions of conference and decisions and agreements (or disagreements) reached, and furnish copy of record to each party attending.
 2. Review methods and procedures related to the work of this Section, including but not necessarily limited to the following:
 - a. Inspect representative areas to receive work of this Section and discuss condition of substrate, and related work performed by other trades.
 - b. Review system requirements (Drawings, Specifications and other Contract Documents) for possible conflicts and resolve.
 - c. Review required submittals, both completed and yet to be completed.
 - d. Review and finalize construction schedule related to the work of this Section and verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.

- e. Review required inspection, testing, and certifying procedures.
- f. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions, including possibility of temporary enclosures (if not a mandatory requirement).

1.05 SUBMITTALS

- A. Procedures: In accord with Section 01330.
- B. Temporary shoring drawings and engineering design calculations: Provide signed and sealed engineering drawings and calculations for required temporary (or permanent shoring if required by site access limitations), shoring, sheeting, or cribbing for approval prior to start of installation of shoring, sheeting, or cribbing.
 1. Obtain approvals from Reedy Creek Improvement District office of Building and Safety of temporary shoring plans and engineering design calculations.
 2. Plans, elevations, sections, and details, including layout of components and accessories. Structural design and calculations must be signed and sealed by a Florida-licensed professional engineer.
 - a. Indicate dimensions of each or typical drilled shaft for soldier piles and tie-backs, typical clearance between shaft and structural steel soldier pile, typical clearance between shaft and steel strand tie-back, materials, and anchorage to surrounding construction.
 - b. Indicate sequence of drilling of shafts; include sequence of placement of soldier piles, concrete, and slurry, in relation to drilling of adjacent shafts.
 - c. Design details for typical and unique site conditions.
 - d. Include calculated volume of concrete for each or typical soldier pile foundation.
 - e. Include calculated volume of grout for each or typical tie-back anchor.
 3. Indicate welds in accord with AWS A2.4.
 4. Engineering calculations: Complete set of calculations, including structural engineering assumptions, to support structural design. Surcharge around perimeter of excavation shall include an allowance for static and dynamic loads imposed by heavy excavation and construction equipment.
- C. Certificates, certifications, and test reports:
 1. Structural steel and steel strands: Mill or independent testing agency's analyses, certifications, or test reports.
 2. Concrete, and slurry mixes: Certified mix designs for initial and any subsequent changes in mix designs.
 3. Welder's certifications.
 4. Wood treatment: Certification from treatment processor that pressure-treated materials conform to specified requirements.

1.06 PROJECT CONDITIONS

- A. Existing conditions:
 1. Do not conceal or cover any work until required tests or inspections have been performed and accepted.
 2. Do not fabricate items which require fitting to other elements until dimensions have been verified at the site.
- B. Protection: Protect completed installation from damage of subsequent construction activities.
- C. Sequencing and scheduling:
 1. Coordinate and sequence the application, erection, or installation of work of this Section with adjacent or integral materials, products, and work specified in other Sections. Such work includes but is not limited to the following:

- a. Earth fill surcharge or loading.
 - b. Excavation.
 - c. Utility services.
2. Order specified materials, and similar items sufficiently in advance of scheduled installation, or erection dates to permit any required shop or field alteration, fabrication, or modification and to not delay the scheduled progress of the Work. Such items include but are not limited to the following:
 - a. Structural steel shapes.
 - b. Items of rare ("short") supply, or non-standard or custom fabrication.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Structural steel for soldier piles: ASTM A36 rolled shapes and plates.
- B. Concrete and slurry: Conform to FDOT Specifications, except testing is not required for slurry mix materials.
 1. Slurry aggregate: At Contractor's option, either 1) material selected from excavation, imported material, or a combination thereof, which is free of organic material and other deleterious substances, or 2) commercial quality concrete sand. Material selected from excavation, imported material, or a combination thereof shall meet the following grading:

Sieve Size	% Passing Sieve by Weight
1-1/2 in.	100
1 in.	80 - 100
3/4 in.	60 - 100
3/8 in.	50 - 100
No. 4	40 - 80
No. 100	10 - 40

- C. Tie-backs:
 1. Steel strands: ASTM A416, Grade 270.
 2. Anchoring devices: As manufactured by Dywidag Systems International, Long Beach, CA.
- D. Welding materials: Conform to AWS D1.1.
- E. Lagging: Well seasoned S4S Coast Region Douglas Fir, or equivalent, conforming to WCLIB Grading Rules for West Coast Lumber or WWPA Western Lumber Grading Rules, Structural Joists and Planks; nominal thickness of 3 inches, No. 2 grade or better, unless otherwise indicated on Drawings. Permanent lagging shall be preservative-treated, pressure-type, in accord with AWPA C1, C2, and C15.
- F. Miscellaneous and accessory materials: As necessary for complete excavation support system.

2.03 MIXES

- A. Concrete: Conform to FDOT Specifications.
- B. Slurry:
 1. Lean concrete mixture consisting of a fluid, workable mixture of aggregate, cement, and water.

2. Proportion either by weight or by volume. Use not less than 1-1/2 sacks of cement for each cubic yard of slurry mix produced. Use sufficient water content to produce a fluid, workable mix that will flow and can be pumped without segregation of aggregate while being placed.
3. Thoroughly machine mix materials in a pugmill, rotary drum, or other approved mixer. Continue mixing until cement and water are thoroughly dispersed throughout the material.
4. Discard slurry mix not placed within 1 hour after mixing.

2.04 FABRICATION

A. Soldier piles:

1. General: In accord with AISC Design, Fabrication and Erection of Structural Steel for Buildings, and AISC Code of Standard Practice, as applicable.
2. Fabricate structural steel for soldier piles in shop to greatest extent possible.
3. Fabricate in single, continuous lengths.
4. Drill and ream holes; burning of holes is not acceptable.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces for conditions that will adversely affect execution, permanence, and quality of work of this Section.
- B. Do not proceed with work until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards that may occur during excavation support system operations.
 1. Shore, support, and protect utilities encountered.
- B. Install excavation support systems to ensure minimum interference with other adjacent work and processes.
 1. Do not obstruct or hinder the work of adjacent areas. Provide alternate routes around obstructed traffic ways.
- C. Constantly monitor excavation support systems during entire sequence of Work of this Section and until acceptance of entire Project. Promptly correct bulges, breakage, evidence of movement, or other deficiencies to ensure excavation support systems remain functional and stable.
- D. Promptly repair damages to adjacent facilities caused by installing excavation support systems.

3.03 INSTALLATION/PERFORMANCE

A. Drilling shafts:

1. Drill shafts for soldier piles at intervals or locations and to full depths as indicated on approved shoring drawings.
2. Where necessary, provide casings to prevent sloughing or caving-in of shaft walls.

B. Soldier piles:

1. General: In accord with AISC Design, Fabrication and Erection of Structural Steel for Buildings, and AISC Code of Standard Practice, as applicable.

2. Install structural steel soldier piles in drilled shafts. Align flanges to vary not more than 2 inches from the intended plane and not more than 1:120 out of intended alignment.
 3. Maintain alignment until concrete and slurry is poured and cured.
 4. Avoid cutting off excess portions of soldier pile tops in the field. Where necessary and as approved by the Owner, any cutting off of tops shall be performed neatly, square with axis length of pile, and at elevations approved by Owner.
- C. Concrete:
1. In accordance with FDOT Specifications.
 2. Use tremie or similar method to place concrete at bottom of drilled shaft.
 3. As concreting progresses, withdraw any casings, sleeves or similar items previously installed to protect drilled shafts.
 4. Unless otherwise indicated on Drawings or directed by Owner, place concrete in shafts up to "slip plane" indicated on Drawings, in a single, continuous, uninterrupted operation.
- D. Slurry:
1. Immediately remove foreign material which falls into drilled shafts prior to or during placing of slurry mix.
 2. After testing agency has verified volume of concrete previously placed and concrete has set, place slurry mix in a uniform manner that will prevent voids in, or segregation of slurry mix, and will not shift or disturb soldier piles and drilled shafts.
 3. Unless otherwise indicated on approved shoring drawings or directed by Owner, place slurry mix in shafts, above "slip plane" indicated on Drawings, in a single, continuous, uninterrupted operation, flush to grade elevations.
 4. Unless otherwise indicated on approved shoring drawings, allow slurry mix to completely cure prior to commencing excavation procedures.
- E. Excavation: In accord with Section 02321.
- F. Lagging:
1. Chip out hardened slurry mix from between flanges of soldier piles to the extent necessary to install and properly align wood lagging.
 2. Install wood lagging within flanges of soldier piles as excavation proceeds. Trim excavation as required to install lagging. Fill voids behind lagging with earth fill, and compact.
 3. Do not install wales or similar bracing or support on excavated side of excavation support systems.
- G. Tie-backs:
1. Drill shafts at angles, elevations, locations, and lengths as indicated on approved shoring drawings. Where necessary, provide casings, sleeves, or implement equivalent methods to prevent sloughing, caving-in, or collapse of shafts.
 2. Install steel strands and PVC sleeves in single, continuous lengths into drilled shafts.
 3. Using a tremie or similar method to place concrete in drilled shafts.
 4. Unless otherwise indicated on approved shoring drawings or directed by Owner, pressure inject concrete in shafts up to "slip plane" indicated on approved shoring drawings, in a single, continuous, uninterrupted operation. As pressure injection progresses, withdraw any casings, sleeves or similar items previously installed to protect drilled shafts.
 5. After testing agency has verified volume of concrete previously placed and concrete has set, place slurry mix in a uniform manner that will prevent voids in, or segregation of slurry mix, and will not shift or disturb steel strands and drilled shafts.

6. Unless otherwise indicated on approved shoring drawings or directed by Owner, pressure inject slurry mix in shafts, above "slip plane" indicated on approved shoring drawings, in a single, continuous, uninterrupted operation, flush to face of excavations. As pressure injection progresses, withdraw any casings, sleeves or similar items previously installed to protect drilled shafts.
 7. Allow concrete and slurry to fully cure.
 8. After load-capacity testing of steel strands has been performed and test results accepted by Owner, tension steel strands and secure in place with anchoring devices at face of soldier piles as indicated on approved shoring drawings.
- H. Continue excavating, install wood lagging, and install tie-backs to required excavation elevations indicated on approved shoring drawings.

3.04 FIELD QUALITY CONTROL

- A. After initial and any subsequent load-capacity testing of tie-back assemblies, remove and replace, install additional tie-backs at adjacent locations, or otherwise remedy, as directed by Owner, those tie-back assemblies that fail load-capacity tests.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Dewatering, excavating, shoring, sheeting, bracing, trenching, backfilling, and all other earthwork operations required for utility and other underground lines and appurtenances.
- B. Providing access to open trenches after utility lines have been installed and bedded, but prior to backfilling being commenced, to permit recording of record or "as-built" survey information.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Dewatering: Section 02240
- B. Excavation Support: Section 02260
- C. Excavating and backfilling for structures: Section 02321.
- D. Underground utilities marking: Section 02505.

1.03 QUALITY ASSURANCE

- A. Tests and inspections:
 - 1. Procedure: In accord with Section 01455.
 - 2. Test methods:
 - a. Maximum dry density of backfill materials shall be determined by ASTM D1557, Procedure A.
 - b. Field density tests shall be determined by ASTM D1556, ASTM D2922, or ASTM D2937.
 - 3. Required tests:
 - a. Backfill material: Determine suitability of backfill and bedding material not previously evaluated.
 - b. Maximum density tests: Determine optimum moisture content and maximum dry density of backfill and bedding materials placed and compacted.
 - c. Field density tests: Determine in-place density of backfill materials placed and compacted. One test for every 100 linear feet of trench and one test for each 1 foot vertical lift.
 - d. Other tests as may be required by Owner.
 - 4. Required inspections:
 - a. Excavation inspection: Detailed inspection of exposed excavations prior to placing bedding and backfill material.
 - b. Bedding conditions: Determine and evaluate condition of bedding to receive utility lines.
- B. Requirements of regulatory agencies: In addition to complying with other legal requirements, comply with the following.
 - 1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
 - 2. Occupational Safety and Health Administration Document 2226.
 - 3. Florida Statutes, Chapter 553 Building Construction Standards, Part VI, Trench Safety Act.
- C. Reference specifications and standards:
 - 1. ASTM: D422 Particle-Size Analysis of Soils.
 - 2. ASTM: D1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 - 3. ASTM: D1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³).

4. ASTM: D2419 Sand Equivalent Value of Soils and Fine Aggregate.
5. ASTM: D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
6. ASTM: D2937 Density of Soil In-Place by the Drive-Cylinder Method.
7. CFR: Title 29 CFR Part 1926 Safety and Health Regulations for Construction.
8. Florida Statutes: Chapter 553 Building Construction Standards.
9. OSHA: Document 2226 Excavations.

1.04 SUBMITTALS

- A. Procedures: In accord with Section 01330.
- B. Drawings and engineering design calculations: Signed and sealed engineering drawings and calculations for required shoring, sheeting, or cribbing for approval prior to starting installation of shoring, sheeting, or cribbing.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Source of materials: Materials may be obtained by selective stockpiling of excavated soils and/or from an on-site or off-site borrow pit approved by the Owner.
 1. Select bedding material shall be clean, natural, excavated sand, free from roots, organic material, trash or other debris, maximum size 1 inch containing less than 15 percent by weight passing the No. 200 sieve.
 2. Backfill material for pipe zone shall be free from stones, roots, foreign material and organic material. Maximum size of particles shall be 1-inch with less than 15 percent by weight passing the No. 200 sieve. This material may be clean natural sand or gravel, imported quarry waste or select excavated material, provided that such material consists of loam, sand, sandy clay loam, gravel or other materials of the GM/GC classification, as classified in accordance with ASTM D2487.
 3. Backfill above the pipe zone shall be excavated material obtained from the Contractor's excavations. Such materials shall be free of roots, trash, debris, deleterious materials, broken concrete or paving materials, organic materials, boulders, rocks or stones larger than three (3) inches and expansive soils.
 4. Gravel shall be 1-inch minus crushed rock, meeting the requirements of No. 57 aggregate as specified in Section 901 of the FDOT Standard Specifications.
 5. Deficiency of Backfill: Where excavated material is indicated as backfill on the drawings or specified herein and there is a deficiency due to the rejection of part of the material, the required quantity of sand, gravel or other approved backfill material shall be obtained from a source secured by the Contractor.

PART 3 - EXECUTION

3.01 PROTECTION

- A. Public and adjacent properties: Protect in accord with applicable laws and ordinances.
- B. Existing on-site features, plant life, including trees, scheduled to remain:
 1. Protect from damage at all times.
 2. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees.
 3. Do not cut tree roots over 2 inches in diameter without prior approval from Owner.
 4. Support trees during excavation in an approved manner.

5. When excavation adjacent to existing trees is necessary, use all possible care to avoid injury to trees and tree roots. Excavate by hand all areas where 2 inches and larger roots occur. Tunnel under and heavily wrap with burlap roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, to prevent scarring or excessive drying. When a trenching machine runs close to trees having roots smaller than 2 inches in diameter, hand trim wall of trench adjacent to tree, making clean cuts through roots. Paint roots 1 inches and larger in diameter with two coats of Tree Seal or Owner-approved equivalent. Close trenches adjacent to trees within 24 hours; when this is not possible, shade side of trench adjacent to tree with burlap or canvas.
 6. All work around and adjacent to existing trees, including inspection prior to backfill, shall be approved by Owner. Obtain Owner's approval in writing for all procedures prior to commencement of work. Trees that die due to damage or unacceptable work shall be back-charged to Contractor.
- C. Where utility line excavation occurs in lawn, grassed, or landscaped areas, carefully remove and stockpile sod and plants to preserve for transplanting.
1. Place excavated material from trenches on lawn or grass, provided a drop cloth or other approved method is employed to protect lawn or grass from permanent damage. Do not keep stockpiled materials on lawn or grass for more than 72 hours
 2. Immediately after completion of backfilling and testing of utility lines, replace sod and replant plants in a manner to restore lawn, grass, and landscaping to its original condition within practical limits. Replace damaged landscaping at no cost to Owner as part of the work of this Section.
- D. Where utility line excavation occurs in paved areas, saw-cut existing pavement along straight, uniform lines such that the amount of pavement cut and removed shall be the minimum consistent with safe excavation practices.
1. Do not use removed pavement as backfill material.
 2. Replace removed pavement with new pavement to match existing in accord with Project Specifications.
 3. Roadway cuts shall be made between the hours of 2:00 a.m. and 6:00 a.m. to minimize disruption of traffic unless otherwise directed and approved by the Owner's Representative. Roadways shall be in safe operating condition by not later than 7:00 a.m. The Contractor shall provide safe, temporary detours for traffic during open cut construction.
- E. Open trenches: Barricade all open trenches during work hours and cover at the close of each day's work. Maximum length of open trenches shall be 350 feet.
- F. Utilities:
1. Where utility line excavation occurs near existing utilities, whether or not indicated on Drawings, maintain existing utility services fully operational. Protect and support utility lines in a manner to prevent damage. Method of protection is subject to Owner's approval.
 2. Excavation in close proximity to existing utilities shall be performed in such a manner so as to prevent damage to the existing utilities. Hand digging may be required by the Owner to prevent damage. Contractor shall follow RCES Underground Construction Rules In the Vicinity of RCID Electric Utilities.
 3. Exeditiously repair utilities damaged at no cost to Owner.
 - a. Damage to high voltage electric system shall be repaired by RCES, charged to Contractor, and deducted from Contract Price by Change Order.
 - b. Natural gas utility lines discovered or damaged by Contractor shall not be further disturbed by Contractor. All work related to this utility shall be performed by RCES. Specific instructions appropriate to the issues shall be given to Contractor by responsible agencies and Owner. Damage to natural gas utility lines caused by Contractor shall be repaired only by qualified agencies as selected by Owner and all costs shall be reimbursed to Owner by Contractor in accord with provisions of Contract Documents.

4. Remove abandoned lines encountered during excavating and dispose of off-site. Report unidentified lines to Owner prior to removal.

G. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved roads, and involved portions of site.
2. Palliation: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted.
3. Use of reclaimed water is accepted and preferred and shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner. Consult with Owner's Representative for nearest source of reclaimed water.

H. Water control:

1. Maintain trenches and other excavations free of water while lines are being placed and until backfill has been completed and approved.
2. Maintain adequate pumping equipment at all times to provide for emergencies.
3. Dispose of water in such a manner as not to create a nuisance, cause damage to property, or interfere with activities of other contractors. Prevent water from migrating outside of construction areas. Use Owner-approved methods and materials to confine water to construction areas. Failure to contain water is not permitted.
4. Dewater as required to maintain site in a relatively dry condition, including well point dewatering.
5. Methods of dewatering and disposal of water are subject to Owner's approval.

I. Bracing and shoring:

1. The Contractor shall furnish, install and maintain sheeting, bracing, shoring and sloping required to support the sides of the excavation, and to prevent any movement which may damage adjacent utilities, pavements or structures, damage or delay the work or endanger life and health. All voids outside the supports shall be immediately filled and compacted.
2. Support excavations in accord with all legal requirements.
3. Set and maintain sheet piling and shoring timbers in a manner that will prevent caving of walls of excavations or trenches and not impose other loads or surcharges on lines.
4. When it is impractical to remove shoring and bracing, obtain approval from Owner to leave in place. Record locations of such "in-place" shoring and bracing on Project Record Documents and indicate type of material and thickness.

J. Stockpiled excavated materials: Confine excavated materials to immediate area of stockpiled location.

K. Where utility line excavations occur near Monorail pier pile caps and piles, limits of excavation shall not extend below a 1-1/2:1 (horizontal: vertical) plane extending down from the top of adjacent Monorail pier pile cap. Excavations that extend closer to the previously described zone require shoring.

M. Boring and jacking, where required, shall be conducted with no interference with traffic, even if this should require that the work be done between the hours of 2 a.m. and 6 a.m., unless directed otherwise by the Owner's Representative.

N. When obstructions that are not shown on the plans are encountered during the progress of the work and an alteration or revision to the plans is required, the Owner will have the plans revised or may order the removal, relocation or reconstruction of the obstruction.

3.02 EXCAVATION

A. General: Include removal of materials and obstructions that interfere with the execution of the Work.

1. Unless indicated otherwise, excavation for utilities lines shall be by open trench.

2. Sides of trenches shall be as nearly vertical as practicable.
 3. Obtain prior approval from Owner for use of tunneling.
 4. It shall be the Contractor's responsibility to coordinate the locating and flagging of all existing underground utilities at the work site not less than five (5) working days prior to the commencement of trenching and excavation.
 5. The excavation and preparation of trenches shall not proceed in advance of pipe installation more than 100 feet, except as approved by the Owner. Trenching shall not, under any conditions, exceed the quantity of pipe that can be bedded, inspected, tested, backfilled and compacted in one working day.
- B. Trench widths:
1. Lines less than 6 inches outside diameter: 18 inches, minimum.
 2. Larger lines: Clear distance on each side of line of not less than 12 inches.
- C. Trench depth: Excavate trenches to lines and grades as necessary for construction of utility lines indicated.
- D. Over-excavation: Backfill over-depth excavations to required grade with specified bedding and backfill material at no additional cost to the Owner. Compact bedding and backfill material to specified density.
- E. Perform any dewatering and pumping required to keep excavations free of standing water.
- F. Refer to geotechnical reports for seasonal high groundwater table elevation estimates. It is the sole responsibility of contractor to make its own judgments as to the actual conditions, and to draw its own conclusions as to means and methods required for performance of the work. Provide dewatering, if required, at whatever elevation groundwater is actually encountered.
- G. A plan for any proposed dewatering shall be submitted for approval prior to commencement of any such work. Any permitting for dewatering which may be required shall be the responsibility of Contractor.
- H. Sequence, schedule, coordinate, and perform the work so as to maintain safe, unobstructed passage as required for emergency egress and general site access. Provide any and all bridging of trenches of work, barricades, etc., that may be required to comply with this requirement.
- I. When the trench bottom is found to contain unsuitable material which is unstable to such a degree that in the judgment of the Owner it cannot be removed, a foundation for the pipe, structure and/or appurtenance shall be constructed using piling, treated timber, concrete or other material approved by the Owner.
1. Unsuitable materials are soils, exposed at the trench bottom that are compressible, expansive, contain extraneous rubble, offer uneven foundation support, or have a natural moisture content three (3) percent in excess of the soil's optimum moisture content. Unsuitable materials/soils shall include, but not be limited to, muck, peat, expansive clays, boulders, soils in a quick condition, rubble, any portion of trees, roots or similar vegetation, wood or other unyielding material.
 2. The Contractor shall notify the Owner immediately when unstable material is encountered. The Owner will investigate the questionable material to determine its stability. Should the Owner require soils testing to aid in his determination, then all tests revealing suitable materials shall be paid for by the Contractor.
 3. Where the Owner determines that unstable material is present below the pipe envelope which will not provide adequate support for the pipe, the Contractor shall remove the unstable material and replace with a minimum of six (6) inches of Gravel up to the bottom of the pipe envelope.
- 3.03 BACKFILL
- A. General:
1. Backfill consists of bedding, backfill, and restoration of surface.
 2. Do not cover lines until they have been inspected and approved for alignment and grade and recording of record or "as-built" survey information has been performed.

3. The minimum distance between test sampling points along the trench shall be in accordance with the following table:

TRENCH ZONE	STANDARD PROCTOR ASTM D1557	FIELD DENSITY ASTM D1556 * PER LIFT	RELATIVE DENSITY	
			GREEN AREA	PAVED AREA
PIPE BEDDING	ONE TEST FOR EACH SOIL TYPE FOUND	ONE TEST FOR EVERY 100 LINEAR FEET *	98%	98%
HAUNCHING			98%	98%
PIPE ZONE			95%	95%
BACKFILL ABOVE PIPE ZONE			95%	98%
MANHOLE FOUNDATION		ONE PER MANHOLE *	95%	98%

4. The Contractor shall not achieve compaction by the use of heavy rolling equipment or by running heavy construction equipment on or in the trench. Backfilling and compaction shall have been completed, tested and the degree of compaction verified before heavy equipment is operated over the trench.
5. Puddling or flooding with water to achieve compaction shall not be permitted.
6. When unsatisfactory compaction is revealed, the Contractor shall immediately re-excavate the trench, replace and re-compact the backfill to the required relative densities over the entire depth of the trench.
7. Partial Backfill During Testing: When conditions require that pipe testing should be accomplished before completion of backfilling or with pipe joints accessible for examination, sufficient backfill material shall be placed over the pipe barrel, between the joints, to prevent pipe movement.
- B. Bedding: Bedding is defined as material supporting and extending to the invert of utility line. Provide 6 inches minimum layer of Select Granular Bedding and compact bedding to 98% of the maximum dry density in accord with ASTM D1557 using mechanical equipment. Bedding shall not be required under or around structures, except at utility lines.
- C. Backfill: Backfill includes material from 12 inches above the lines to, and including, surface restoration.
1. Commence backfilling immediately after approval and survey information recording, to preclude damage to utility lines.
 2. Carefully place backfilling around utility lines so as not to displace or damage line, and fill symmetrically on each side of line to 12 inches above top of line.
 3. Do not backfill against structures until concrete has attained sufficient strength to withstand loads, and structures have been approved.
 4. Place backfill in loose uniform lifts not exceeding 8 inches, unless otherwise specified.
 5. Use mechanical compactors for compaction of backfill.
 6. Pipe Zone Backfill
 - a. Backfill the pipe zone to 12 inches above the top of the pipe for the full width of the trench with Backfill Material For Pipe Zone as specified in paragraph 2.01.A.2.

- b. Haunching (Up to Springline of Pipe): Place in the trench in horizontal lifts not exceeding 6 inches in uncompacted thickness on both sides of the pipe. Thoroughly tamp and compact the material to obtain a relative density of not less than 98 percent of the maximum density. Use particular attention in placing material on the underside or haunches of the pipe to provide a solid backing to eliminate any voids.
- c. Remainder of Pipe Zone: Place on both sides of the pipe. Tamp and compact the material to obtain a relative density of not less than 95 percent of maximum density.

7. Trench Backfill above Pipe Zone

- a. Place Backfill Material For Pipe Zone as specified in paragraph 2.01.A.3 in all areas beneath structures, piping, utilities, roads, pavements, or other facilities. Compact each lift to not less than 98% maximum density.
- b. In other areas, backfill the trench above the pipe zone with material conforming to Backfill above the Pipe Zone. Place in 12-inch layers and compact each layer by means of mechanical tampers or vibratory compactors to 95% maximum density in field areas and to 98% maximum density under all roadways, walks, paved surfaces and structures. Backfill to the required surface grade and compact so that no surface settlement occurs.

8. Coordinate and ensure installation of underground utilities marking in accord with Section 02505.

D. Minor structures

1. Support catch basins, vaults, manholes and other minor structures on bottom and all sides by soils compacted to 95% of the maximum dry density in grass or filed areas and to 98% maximum dry density under all roadways, walks, paved surfaces and structures in accord with ASTM D1557 for full depth of fill.
 - a. The pre-cast vaults shall be carefully placed on the prepared foundation so as to be fully and uniformly supported in true alignment, making certain that the pipe can pass through on the designed line and grade.
 - b. Pre-cast vaults shall be handled by lifting rings only.
 - c. Pre-cast vaults and manholes shall be placed and aligned to provide vertical alignment with not more than one eighth (1/8) inch maximum tolerance for five (5) feet of depth. The completed unit shall be rigid, true to dimensions and alignment.

E. Maintain the surface of the backfilled trench level with the existing grade until the entire project is accepted by the Owner. Any subsequent settlement of the finished surface during the warranty period shall be considered to be as a result of improper or insufficient compaction and shall be promptly repaired by the Contractor at no cost to the Owner.

1. The maintenance shall include, but not be limited to, the addition of roadway material to keep the surface of backfilled trenches reasonably smooth, free from ruts and potholes, and suitable for normal traffic flow.

3.04 ADJUST AND CLEAN

A. Surface restoration:

1. Restore surface areas over trenches equivalent to conditions which existed prior to start of work.
2. Reconstruct surfaces in accord with applicable Sections of the Specifications.

B. Disposal:

1. Debris:
 - a. Remove and dispose of all rubbish, debris, and vegetation as it accumulates.
 - b. Dispose of debris off-site or at an on-site disposal area designated by Owner.
2. Excess soil: Stockpile at an on-site area designated by Owner.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Excavating, backfilling, and compacting for structures.
- B. Restore grades to required elevations.
- C. Remove excess materials from site.
- D. Pumping and dewatering.
- E. Support of excavations.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Dewatering: Section 02240
- B. Excavation Support: Section 02260.
- C. Excavating and Backfilling for Utilities: Section 02320.

1.03 QUALITY ASSURANCE

- A. Tests and inspections:
 1. Procedure: In accord with Section 01455.
 2. Test methods:
 - a. Maximum dry density of backfill materials shall be determined by ASTM D1557, Procedure A.
 - b. Field density tests shall be determined by ASTM D1556, ASTM D2922, or ASTM D2937.
 3. Required tests:
 - a. Backfill material: Determine suitability of backfill material not previously evaluated.
 - b. Maximum density tests: Determine optimum moisture content and maximum dry density of backfill materials placed and compacted.
 - c. Field density tests: Determine in-place density of backfill materials placed and compacted. one test for every 100 cubic yard of material placed and one test for each 1-foot vertical lift
 - d. Other tests as may be required by Owner.
 4. Required inspections:
 - a. Excavation inspection: Detailed inspection of exposed excavations prior to placing backfill material.
 - b. Placement and compaction inspection: Continuous inspection and monitoring.
- B. Requirements of regulatory agencies: In addition to complying with other legal requirements, comply with the following.
 1. Code of Federal Regulations Title 29 CFR Part 1926, Subpart P, Excavations.
 2. Occupational Safety and Health Administration Document 2226.
 3. Florida Statutes, Chapter 553 Building Construction Standards, Part III, Trench Safety Act.
- C. Reference specifications and standards:
 1. ASTM: D1556 Density and Unit Weight of Soil in Place by the Sand-Cone Method.
 2. ASTM: D1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft.-lbf/ft³).
 3. ASTM: D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

4. ASTM: D2937 Density of Soil In-Place by the Drive-Cylinder Method.
5. CFR: Title 29 CFR Part 1926 Safety and Health Regulations for Construction.
6. Florida Statutes: Chapter 553 Building Construction Standards.

1.04 SUBMITTALS

- A. Procedures: In accord with Section 01330.
- B. Drawings and engineering design calculations: Signed and sealed engineering drawings and calculations for required shoring, sheeting, or cribbing for approval prior to start of installation of shoring, sheeting, or cribbing.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. On-site materials and borrow fill:
 1. Nonexpansive, predominantly granular material:
 - a. Particles less than 2 inches in any dimension.
 - b. Free of organic and other deleterious materials.
 - c. Not more than 12% by weight passing the No. 200 sieve behind retaining walls and 25% elsewhere.
 2. Acceptable to a geotechnical engineer retained by Owner.
 3. Top soil: All soil above the lower root line of fine vegetation (grasses and sod).
 4. Borrow site: At location approved by Owner.

PART 3 - EXECUTION

3.01 PROTECTION

- A. Public and adjacent properties: Protect in accord with applicable laws and ordinances.
- B. Existing on-site features, plant life, including trees, scheduled to remain:
 1. Protect from damage at all times.
 2. Do not allow earth-moving equipment within the branch spread perimeter (drip line) of existing trees.
 3. Do not cut tree roots over 2 inches in diameter without prior approval from Owner.
 4. Support trees during excavation in an approved manner.
 5. When excavating adjacent to existing trees is necessary, use all possible care to avoid injury to trees and tree roots. Excavate by hand areas where 2 inches and larger roots occur. Tunnel under and heavily wrap with burlap roots 2 inches and larger in diameter, except directly in the path of pipe or conduit, to prevent scarring or excessive drying. When a trenching machine runs close to trees having roots smaller than 2 inches in diameter, hand trim wall of trench adjacent to tree, making clean cuts through roots. Paint roots 1 inch and larger in diameter with two coats of Tree Seal, or Owner-approved equivalent. Close trenches adjacent to trees within 24 hours; when this is not possible, shade side of trench adjacent to tree with burlap or canvas.
 6. All work around and adjacent to existing trees, including inspection prior to backfill, shall be approved by Owner. Obtain Owner's approval in writing for all procedures prior to commencement of work. Trees that die due to damage or unacceptable work shall be back-charged to Contractor.

C. Utilities:

1. When utility line excavation occurs near existing utilities, whether or not indicated on Drawings, maintain existing utility services fully operational. Protect and support utility lines in a manner to prevent damage. Method of protection is subject to Owner's approval. Contractor shall follow RCES Underground Construction Rules in the Vicinity of RCID Electric Utilities.
2. Expeditiously repair damaged utilities at no cost to Owner.
 - a. Damage to high voltage electric system shall be repaired by Reedy Creek Energy Services, charged to Contractor, and deducted from Contract Price by Change Order.
 - b. Natural gas utility lines discovered or damaged by Contractor shall not be further disturbed by Contractor. All work related to this utility shall be performed by Reedy Creek Energy Services. Specific instructions appropriate to the issues shall be given to Contractor by responsible agencies and Owner. Damage to natural gas utility lines caused by Contractor shall be repaired only by qualified agencies as selected by Owner and all costs shall be reimbursed to Owner by Contractor in accord with the provisions of the Contract Documents.
3. Remove abandoned lines encountered during excavating and dispose of off-site. Report unidentified lines to Owner prior to removal.
4. Capping and rerouting of indicated active utility lines encountered during Work of this Section will be performed as part of the work of Divisions 15 and 16.

D. Dust control:

1. Throughout entire construction period, effectively dust-palliate working area, unpaved road, and involved portions of site.
2. Abatement: Intermittently water and sprinkle with such frequency as will satisfactorily allay dust at all times. Chemical treatment of any type is not permitted.
3. Use of reclaimed water shall conform to requirements and guidelines of governing health authorities and be specifically approved by Owner.

E. Water control:

1. Maintain excavation free of water while foundations are being placed and until backfill has been completed and approved.
2. Maintain adequate pumping equipment at all times to provide for emergencies.
3. Dispose of water in such a manner as not to create a nuisance, cause damage to property, or interfere with activities of other contractors. Prevent water from migrating outside of construction areas. Use Owner-approved methods and materials to confine water to construction areas. Failure to contain water is not permitted.
4. Dewater as required to maintain site in a relatively dry condition, including well point dewatering.
5. Methods of dewatering and disposal of water is subject to Owner's approval.

F. Cribbing and shoring:

1. Provide temporary or permanent cribbing, sheeting, and shoring as necessary to safely retain earth banks and protect excavations from caving or other damage.
2. Design, install, and maintain cribbing, sheeting, and shoring and remove after use.

G. Stockpiled excavated materials: Confine excavated materials to immediate area of stockpiled location.**3.02 STRIPPING**

- A. Stockpile materials from excavations suitable for use in fill and backfill.
- B. Remove from site materials not approved for use as topsoil, fill or backfill, and excess excavated materials.

3.03 EXCAVATING

- A. Excavate materials of every nature to dimensions and elevations indicated on Drawings. Use equipment of suitable type for materials and conditions involved.
- B. Extend excavation a sufficient distance from walls to allow for forming and shoring, application of waterproofing, installation of services, and approvals. Do not excavate below indicated depths.
- C. Correct unauthorized excavation made below depths indicated on Drawings, as recommended by geotechnical engineer retained by Owner, at no additional cost to Owner.
- D. Where additional excavation is required to remove unsatisfactory materials encountered, such additional work shall be paid for by means consistent with terms of Contract.

3.04 FILL, BACKFILL, AND COMPACTION

A. Fill and backfill:

1. Place earth fill and backfill in layers that will uniformly compact to required densities, but in loose layers not more than 8 inches thick.
 - a. Place backfill only after walls have been supported by completion of interior floor systems or have been sufficiently braced to resist imposed loading.
 - b. Place backfill against walls below grade after waterproofing systems have been completed and approved.
 - c. Protect waterproofing systems during backfill operations.
 - d. If waterproofing is damaged, do not continue backfilling until membrane damage is repaired as approved by Owner.
 - e. Restore grades to indicated elevations.
2. Slurry cement (lean concrete or flowable fill) backfill:
 - a. Where specifically indicated on Drawings, slurry cement backfill consisting of a fluid, workable mixture of aggregate, cement, and water shall be used as foundation structure backfill.
 - b. Cement shall be Portland cement conforming to the FDOT Specifications, except that testing will not be required.
 - c. Water used for slurry cement backfill shall be free from oil, salts, and other impurities which would have an adverse effect on quality of backfill material.
 - d. At Contractor's option, aggregate shall be either 1) material selected from excavation, imported material, or a combination thereof, which is free of organic material and other deleterious substances, or 2) commercial quality concrete sand. Material selected from excavation, imported material, or a combination thereof shall meet the following grading:

Sieve Sizes	Percentage Passing
1-1/2 inches	100
1 inches	80-100
3/4 inches	60-100
3/8 inches	50-100
No. 4	40-80
No. 100	10-40

- e. Aggregate, cement, and water shall be proportioned either by weight or by volume. Not less than 188 pound of cement shall be used for each cubic yard of material produced. Water content shall be sufficient to produce a fluid, workable mix that will flow and can be pumped without segregation of aggregate while being placed.
- f. Materials for slurry cement backfill shall be thoroughly machine-mixed in a pugmill, rotary drum, or other approved mixer. Mixing shall continue until cement and water are thoroughly dispersed throughout material. Slurry cement backfill shall be placed in the Work within 1 hour after mixing.
- g. Slurry cement backfill shall be placed in a uniform manner that will prevent voids in, or segregation of, backfill and will not float or shift foundation structures. Foreign materials which fall into trench prior to or during placing of slurry cement backfill shall be immediately removed.
- h. Placing material over slurry cement backfill shall not commence until 4 hours after slurry cement backfill has been placed.

B. Compaction:

1. Bring each layer to within $\pm 4\%$ of optimum moisture content before compaction. Add water by uniform sprinkling. Jetting and flooding are prohibited. Add and blend additional fill materials or dry out existing materials as required.
2. When moisture content and condition of each layer is satisfactory, compact to not less than 95% of maximum dry density in accord with ASTM D1557.
3. Compact areas not accessible to motor-driven equipment with mechanical or heavy hand tampers.
4. Rework compacted areas failing to meet specified maximum dry density, as determined by tests. Recompact and retest as required to achieve 95% of the maximum dry density in accord with ASTM D1557.

C. Grading:

1. Build compacted backfills to indicated or required finish grades, less allowances for thickness of slabs, paving, and required base courses.
2. Rough grade backfilled surfaces smooth, level to within 0.10 foot of intended surface. Compact loose material and maintain in a moist condition until covered.

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. The work under this section includes the installation of steel casing pipe and all related items of work necessary for a complete installation as shown on the Drawings and specified therein.

1.02 GENERAL

- A. Jack & Bore (J&B) is a method for installing a casing that will serve as a duct for a carrier (pipe, cable, or wire line products). It is a multi-stage process consisting of constructing a temporary horizontal jacking platform and a starting alignment track in an entrance pit at a desired elevation. The product is then jacked by manual control along the starting alignment track with simultaneous excavation of the soil being accomplished by a rotating cutting head in the leading edge of the product's annular space. The ground up soil (spoil) is transported back to the entrance pit by helical wound auger flights rotating inside the product. J&B typically provides limited tracking and steering as well as limited support to the excavation face.
 1. Removal and disposition of excess material varies, is the responsibility of the contractor and is not covered under this Specification. However, the cost of removal or final disposition is included in the cost of the J&B operation.
 2. No J&B conduit may be left open ended without approval of the Owner's Representative to prevent the conduit from acting as a drainage structure.

1.03 QUALITY ASSURANCE

- A. The Reference Standards within Sections 02512, 02513, 02515, 02532, and 02533 apply as appropriate.

1.04 SUBMITTALS

A. PROCEDURES:

1. Submit product data, shop drawings, samples, testing laboratory reports, etc. in a timely manner and in accordance with the requirements of Section 01300, Submittals.

B. PRODUCT DATA:

1. The data to be submitted shall include, but not be limited to:
 - a. Casing pipe.
 - b. Casing insulators and end seals.
 - c. Proposed construction method(s) and equipment for the installation.
 - d. Certificates of inspection from pipe manufacturer certifying that pipe supplied meets specified requirements.
 - e. After the casing has been installed, if so requested by the Owner's Representative for reasons of casing misalignment, resubmit for Owner's Representative's approval, drawings of the installation, showing measures that should be taken to maintain the carrier pipe on line and grade.

PART 2 - PRODUCTS

2.01 STEEL CASING PIPE

- A. **Size:** The minimum nominal internal diameter for casing pipe shall be equal to the carrier pipe bell outside diameter or largest outer diameter of the carrier pipe and its joint restraint plus 8 inches.
- B. **Type:** Smooth steel pipe fabricated in sections for welded field joints. Casing pipe shall meet the requirements of ASTM A139, Grade B / API 2B, with a minimum yield of 35,000 psi.
 1. The casing pipe shall be new, straight seam pipe or seamless pipe with smooth interior and exterior.

2. All steel pipe may be bare inside and out, with the manufacturer's recommended minimum nominal wall thicknesses to meet the greater of either installation, loading or carrier requirements.
 3. All steel casing pipe must be square cut and have dead-even lengths which are compatible with the J&B equipment.
- C. Use steel pipe casings and welds meeting or exceeding the thickness requirements to achieve the service life requirements noted in the FDOT Drainage Manual Chapter 6. For purposes of determining service life, ensure that casings installed under roadways meet or exceed cross drain requirements and casings under driveways meet or exceed side drain pipe requirements. For purposes of material classification, consider steel pipe casing as structural plate steel pipe. Ensure that steel pipe casing of insufficient length achieves the required length through fully welded joints. Ensure that joints are airtight and continuous over the entire circumference of the pipe with a bead equal to or exceeding the minimum of either that required
- D. Welding: Continuous butt weld at joints for rigid, watertight encasement.
- E. Field and shop welds of the casing shall conform to the American Welding Society Standard Specifications. Field welds shall be complete penetration, single-bevel groove type joints. Welds shall be airtight and continuous over the entire circumference of the casing and shell not increase the outside casing diameter by more than 3/4 inch.
- F. Minimum Wall Thickness:

Nominal Casing Diameter (Inches)	Smooth Steel Pipe Minimum Thickness
12 or smaller	3/16"
> 12 - ≤ 24	1/4"
> 24 - ≤ 30	5/16"
> 30 - ≤ 36	3/8"
> 36 up to 60	1/2"

2.02 AUGERING FLUIDS

- A. Use a mixture of bentonite clay or other approved stabilizing agent mixed with potable water with a minimum pH of 6.0 to create the drilling fluid for lubrication and soil stabilization. Vary the fluid viscosity to best fit the soil conditions encountered. Do not use other chemicals or polymer surfactant in the drilling fluid without written consent of the Owner's Representative. Certify in writing to the Owner's Representative that any chemicals to be added are environmentally safe and not harmful or corrosive to the facility. Identify the source of water for mixing the drilling fluid. Approvals and permits are required for obtaining water from such sources as streams, rivers, ponds or fire hydrants. Any water source used other than potable water may require a pH Test.

2.03 CASING INSULATORS/SPACERS

- A. Casing insulators spacers shall be bolt-on style with a shell made in two sections of Type 304 stainless steel or fusion epoxy coated steel. The shell shall be lined with a PVC liner 0.090-inch thick with 85-90 durometer. All nuts and bolts are to be stainless steel. Runners shall be made of ultra high molecular weight (UHMW) polymer with high abrasion resistance and a low coefficient of friction. Runners shall be supported by risers made of Type 304 stainless steel or fusion epoxy coated steel. The supports shall be welded to the shell. The height of the supports and runners combined shall be sufficient to keep the carrier pipe bell at least 0.75 inch from the casing pipe wall at all times. Casing insulators shall be made by Cascade Waterworks Mfg. Co., BWM Co. of Forest City, NC, or equal.
- B. Unless indicated otherwise on the drawings, casing spacers shall be placed at a minimum on 10 foot centers and one at least 2 feet or less from each end of the casing pipe. Adjust spacers as required to avoid bell joints or restrained joints. Spacers shall be a minimum of 8 inches wide for carrier pipe sizes under 24-inch diameter and 10 inches wide for larger size carrier pipe.

PART 3 - EXECUTION

3.01 GENERAL

- A. Contractor shall take control of the operation at all times. Contractor shall have a representative who is thoroughly knowledgeable of the equipment, boring, and Owner procedures present at the job site during the entire installation and available to address immediate concerns and emergency operations. Notify the Owner's Representative 48 hours in advance of starting work. Do not begin the installation until the Owner's Representative is present at the job site and agrees that proper preparations have been made.

3.02 CONSTRUCTION PROCESS

- A. For all installations, submit sufficient information to establish the proposed strategy for providing the following:
1. An indication of where the leading edge of the casing is located with respect to line and grade and the intervals for checking line and grade. Indication may be provided by using a water gauge (Dutch level) or electronic transmitting and receiving devices. Other methods must have prior approval. Maintain a record of the progress at the job site.
 2. Equipment of adequate size and capability to install the product and including the equipment manufacturer's information for all power equipment used in the installation.
 3. A means for controlling line and grade.
 4. A means for centering the cutting head inside the borehole.
 5. Provide a means for preventing voids by assuring:
 - a. The rear of the cutting head from advancing in front of the leading edge of the casing by more than 1/3 times the casing diameter and in stable cohesive conditions not to exceed 8 inches [200 mm].
 - b. In unstable conditions, such as granular soil, loose or flowable materials, the cutting head is retracted into the casing a distance that permits a balance between pushing pressure, pipe advancement and soil conditions.
 - c. Development of and maintaining a log of the volume of spoil material removal relative to the advancement of the casing.
 6. Adequate casing lubrication with a bentonite slurry or other approved technique.
 7. An adequate band around the leading edge of the casing to provide extra strength in loose unstable materials when the cutting head has been retracted into the casing to reduce skin friction as well as provides a method for the slurry lubricant to coat the outside of the casing.
 8. At least 20 feet [6.1 m] of full diameter auger at the leading end of the casing. Subsequent auger size may be reduced, but the reduced auger diameter must be at least 75% of the full auger diameter.
 9. Water to be injected inside the casing to facilitate spoil removal. The point of injection shall be no closer than 2 feet [610 mm] from the leading edge of the casing.

3.03 CASING PIPE INSTALLATION

- A. Install the casing pipe so that the carrier pipe can be installed true to line and grade.
1. Casing pipe sizes shown on the Drawings are minimum sizes.
 2. Contractor has the option of providing larger pipe, to facilitate the installation, at no increase in contract price.
 3. Provide casing pipe of the minimum length shown on the Drawings.
 4. Provide pipe ends with temporary seals.
- B. Install in strict accordance with the Drawings and Specifications.
- C. Boring operations shall be conducted in such manner as not to be detrimental to the facility being crossed.

- D. Provide extreme care to prevent voids from occurring outside the casing. If voids do occur, completely fill them by pressure grouting.
- E. Leave casing bores not completed and abandoned, because of unforeseen subsurface conditions beyond the control of the Contractor, in a safe condition.
 - 1. Fill casing or bore to restore the structural integrity of the area to a condition equal to that prior to construction.
 - 2. Fill casing or bore completely with cement grout.
- F. Provide access pits of sufficient size to permit safe access to the work area.
- G. Place concrete traffic barricades as indicated on Drawings and/or in accordance with FDOT Standards and Specifications to prevent vehicular traffic from inadvertently dropping into the work areas.
- H. After casings have been installed and the ends covered, place a 4 inch x 4 inch pressure-treated wooden post at each end of the casing to mark the locations.
 - 1. Provide pressure treated posts (AWPB LP-22) and extend at least 3 feet above finish grade.
- I. Place suitable backfill in the access pits to restore the area to original grade.
 - 1. Compaction: 95% of ASTM D1557 for maximum dry density and not less than ASTM C2049 for relative density.
- J. Provide dewatering equipment and shoring when required to keep the work areas accessible. Dewatering shall be in accord with the requirements of RCID and related sections of these specifications.

3.04 JACK AND BORE OPERATIONS

- A. Installation Process: Provide continuous pressure to the face of the excavation to balance groundwater and earth pressures. Ensure that shafts are of sufficient size to accommodate equipment, the pipe selected and to allow for safe working practices. Provide entry and exit seals at shaft walls to prevent inflows of groundwater, soil, slurry and lubricants. Use thrust blocks designed to distribute loads in a uniform manner so that any deflection of the thrust block is uniform and does not impart excessive loads on the shaft itself or cause the jacking frame to become misaligned.
 - 1. The jacking system must have the capability of pushing the pipe in J&B operations through the ground in a controlled manner and be compatible with the anticipated jacking loads and pipe capacity. Monitor the jacking force applied to the pipe and do not exceed the pipe manufacturer's recommendations.
 - 2. Ensure that the pipe lubrication system is functional at all times and sufficient to reduce jacking loads. Use pipe lubrication systems that include a mixing tank, holding tank and pumps to convey lubricant from the holding tank to application points. Maintain sufficient fluids on site to avoid loss of lubrication.
 - 3. Power Distribution System must be identified in the plans package or permit provisions as well as any noise constraints. Identify spoil removal capability and method to avoid creating hindrance to other activities which may be necessary in the area.
- B. Excess Material and Fluids: Monitor the pumping rate, pressures, viscosity and density of the boring fluids to ensure adequate removal of soil cuttings and the stability of the borehole. Contain excess drilling fluids, slurry and soil cuttings at entry and exit points in pits until they are recycled or removed from the site.
 - 1. Ensure that all boring fluids are disposed of or recycled in a manner acceptable to the appropriate local, state or federal regulatory agencies. When jacking and boring in suspected contaminated ground, test the boring fluid for contamination and dispose of appropriately. Remove any excess material upon completion of the bore. If it becomes evident that the soil is contaminated, contact the Owner's Representative immediately. Do not continue boring without the Owner's Representative's approval.

- C. Boring Failure: If an obstruction is encountered which prevents completion of the installation in accordance with the design location and specifications; the pipe may be taken out of service and left in place at the discretion of the Owner's Representative. Immediately fill the product left in place with excavatable flowable fill. Submit a new installation procedure and revised plans to the Owner's Representative for approval before resuming work at another location. If damage is observed to any property, cease all work until a plan of action to minimize further damage and restore damaged property is submitted and approved by the Owner's Representative.

3.05 TESTING

- A. When there is any indication that the installed product has sustained damage and may leak, stop the work, notify the Owner's Representative and investigate damage. The Owner's Representative may require a pressure test and reserves the right to be present during the test. Perform pressure test within 24 hours unless otherwise approved by the Owner's Representative. Furnish a copy of the test results to the Owner's Representative for review and approval. The Owner's Representative shall be allowed up to 72 hours to approve or determine if the product installation is not in compliance with specifications. The Owner's Representative may require non-compliant installations to be filled with excavatable flowable fill.
- B. Testing Methods: Testing may consist of one of the following methods but must always meet or exceed Owner testing requirements.
1. Follow the Product Manufacturer's pressure testing recommendations.
 2. A water tight pipe and joint configuration is required where the casing pipe is installed beneath any roadway. When under the roadway conduct an air pressure test for leaks in the presence of the Owner's Representative at a minimum test pressure of 20 PSI [137.90 kPa] by either of the following methods.
 - a. Standard 24 hour pressure test with a recording chart or,
 - b. A dragnet type leak detector or equivalent device capable of detecting pressure drops of 1 /2 PSI [3.45 kPa] for a time period recommended by the manufacturer.
 3. When a product is not located under the pavement, the casing pipe and joint configuration must meet or exceed soil tight joint requirements. The test for a soil tight joint allows up to 0.1 gallon [0.4 liter] of water leakage at a sustained pressure of 2 PSI [13.79 kPa]. The water tight joint criteria allows no leakage at all for a sustained pressures of 5 PSI [34.47 kPa]. Conduct test for joint integrity for one hour.

3.06 PRODUCT LOCATING AND TRACKING

- A. Install all facilities such that their location can be readily determined by electronic designation after installation.

3.07 DAMAGE RESTORATION

- A. Take responsibility for restoring any damage caused by heaving, settlement, separation of pavement, escaping boring fluid (fracout) of the Jack & Bore operation at no cost to the Owner.

3.08 FAILED BORE PATH

- A. If conditions warrant removal of any materials installed in a failed bore path, as determined by the Owner's Representative, it will be at no cost to the Owner. Promptly fill all voids by injecting all taken out of service products that have any annular space with excavatable flowable fill.

3.09 DOCUMENTATION REQUIREMENTS

- A. **As-Built Plans:** Provide the Owner's Representative with a complete set of As-Built-Plans showing all bores (successful and failed) within 30 calendar days of completion of the work. Plans must be dimensionally correct copies of the Contract plans. Include notes on the plans stating the final bore path diameter, facility diameter, drilling fluid composition, composition of any other materials used to fill the annular void between the bore path and the facility or facility placed out of service. Note the size of the casing(s) as well as the size and type of carrier pipes to be placed within the casing(s) as part of the Contract work. Produce the plans as follows:
1. On the plan view, show the centerline location of each casing, installed or installed and placed out of service to an accuracy within 1 inch [25 mm] at the ends and other points physically observed. Show the remainder of the horizontal alignment of the centerline of each casing installed or installed and placed out of service and note the accuracy with which the installation was monitored.
 2. As directed by the Owner's Representative, provide either a profile plan for each bore path, or a cross-section of the roadway at a station specified by the Owner's Representative, or a roadway centerline profile. Also show the ground or pavement surface and the crown elevation of each casing installed, or installed and placed out of service, accurately to within 1 inch [25 mm] at the ends and other points physically observed. Show the remainder of the vertical alignment of the crown of each facility installed, or installed and placed out of service and note the accuracy with which the installation was monitored. If the profile plan for the bore path is not made on a copy of one of the contract profile or cross-section sheets, use a 10 to 1 vertical exaggeration.
 3. If a bore path is not completed, show on the plans the failed bore path along with the name of the utility owner and the final bore path. Note the failed bore path as "Failed Bore Path." Also show the location and length of the cutting head and any product not removed from the bore path.
 4. Show the crown elevation, diameter and material type of all utilities encountered and physically observed during the subsoil investigation. For all other obstructions encountered during subsoil investigation or the installation, show the type of material, horizontal and vertical location, top elevation and lowest elevation observed, and note if the obstruction continues below the lowest point observed.

3.10 CARRIER PIPE INSTALLATION

- A. The entire length of casing shall be complete before any carrier pipe is placed therein.
- B. The carrier may be pushed or pulled (depending upon piping material, joint type and method of pipe support) into the casing as pipe lengths are assembled. The carrier shall be adequately blocked all around to prevent any movement and to attain the specified grade for gravity lines.
- C. Install casing insulator around barrel of pipe, join pipe, and slide into casing, such that pipe barrel bears continuously on supports.
- D. Pipe installation shall meet the requirements of the applicable pipe being installed, including testing.

3.11 SEALS

- a. Install flexible rubber casing seals as per manufacturer's recommendations and as indicated on the drawings. Casing seals shall be either Link-Seal for small diameter carrier pipe (12 inches and under) or a synthetic rubber seal with stainless steel bands for larger diameters. Rubber seals shall be Model BWM ES by the BWM Co., or approved equal.

3.12 CLEAN-UP

- A. Return the work area to its original conditions, including sod and landscaping appearance, upon completion of the work except that the casing terminal markers must be visible above grade.

END OF SECTION

PART 1 - GENERAL**1.01 WORK INCLUDED**

- A. This section shall include but not be limited to all labor, equipment, tools, materials and incidentals required for the installation of below grade pipeline and/or conduit by the horizontal hydraulic directional drilling method.
- B. The work shall include but not be limited to: High Density Polyethylene Pipe (HDPE), fittings and butt fusion techniques; steel pipe; Schedule 40 or 80 SDR PVC; boring equipment, reaming equipment and techniques; pilot boring; drilling heads and directional control; drill path profiles; drilling mud, treatment, storage and recovery of drilling mud; tensile strength of pipe materials and stresses encountered during pull back; sheeting, shoring and bracing of excavations, dewatering, slope and erosion control and protection; testing of pipe before and after installation, and all other work necessary to complete the installation of pipeline via the hydraulic directional drilling method.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. This specification references the following RCID Specifications, which form a part of this specification to the extent specified herein. In any case of conflict, the most restrictive specification shall apply.

1. Submittals	Section 01330
2. Survey Record	Section 01788
2. Dewatering	Section 02240
3. Excavating and Backfilling for Utilities	Section 02320

1.03 DEFINITIONS

- A. Horizontal Directional Drilling: a steer-able system for the underground installation of pipes, conduits and cables using a surface launched rig. A pilot bore is drilled using a rotating drill string and then is enlarged by a back reamer to the size required for the product pipe. The necessary deviation during pilot boring is provided by a slanted face to the drill head, an asymmetric drill head, eccentric fluid jets or a combination of these, usually in conjunction with an aboveground electronic locator or a remote guidance system.
- B. Maxi (Conventional) HDD: typically used for the largest diameter pipelines/conduits and longest length installations. Pipe diameters are typically 18 inches or larger, lengths can exceed 1000 feet and the pullback force is typically in excess of 70,000 pounds. Remote tracking of the drill string is usually provided from sensors near the leading end of the drill string.
- C. Mini HDD: typically used for the smaller diameter pipelines/conduits and for shorter distances. Pipe diameters are typically 6 inches or smaller, lengths less than 600 feet, and pullback forces are up to 20,000 pounds. Tracking of the drill string is typically achieved with a surface held walkover transmitter/receiver.
- D. Midi HDD: typically used for intermediate sizes and lengths of pipelines/conduits. Pipelines are typically between 6 inches and 18 inches diameter, lengths up to 1000 feet and pullback forces from 20,000 to 70,000 pounds. Midi HDD equipment may employ similar capabilities to the Maxi HDD rigs, but have more limitations on capacity. Tracking of the drill string is typically achieved with a surface held walkover transmitter/receiver.

1.03 QUALITY ASSURANCE

- A. Technical Guidance
 - 1. Plastic Pipe Institute (PPI) Manual TR-4: Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Pipe and Fittings Compounds
 - 2. Plastic Pipe Institute Manual TR-3: Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials

B. Reference Standards

1. ASTM D1248 Polyethylene Plastics
2. ASTM D1785 Schedule 40, 80 and 120 plastic pipe
3. ASTM D3035 Polyethylene Pipe based on Controlled Outside Diameter
4. ASTM D3350 Polyethylene Plastics Pipe and Fittings Materials
5. ASTM D3261 Butt Heat Fusion Polyethylene Plastic Fittings for Polyethylene Plastic Pipe and Tubing
6. ASTM F714 Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter
7. ASTM F2160 Standard Specification for Solid Wall High Density Polyethylene (HDPE) Conduit Based on Controlled Outside Diameter (OD)
8. ASTM F1962 Standard Guide for Use of Maxi-Horizontal Directional Drilling for Placement of Polyethylene Pipe or Conduit Under Obstacles, Including River Crossings
9. ASTM F1804 Standard Practice for Determining Allowable Tensile Load for Polyethylene Gas Pipe during Pull-In Installation
10. API 5L Specification for Steel Line Pipe
11. ASME B31.8 Gas Transmission and Distribution Piping Systems
12. ASME B31.4 Pipeline Transportation Systems for Liquids and Slurries
13. PRCI PR-277-144507-E01 Installation of Pipelines by Horizontal Directional Drilling, an Engineering Design Guide

C. Inspection Upon Delivery

1. All pipe fittings and appurtenances shall be subject to visual inspection by a representative of the Owner's Representative at the point of delivery and again just before being lowered into the trench. All materials found to be defective due to manufacture, or damaged in transit shall be rejected and shall be immediately removed from the job site.
2. The Owner's Representative may perform or cause to be performed all tests as specified in the applicable Standards, to ensure conformance with the standard. In the case of failure of the pipe or appurtenances to comply with such standards, the responsibility for replacement of the defective materials becomes that of the manufacturer or the Contractor.
3. The entire product of any manufacturer may be rejected when, in the opinion of the Owner's Representative, the methods of manufacture fail to secure uniform results, or where the materials are such as to produce pipe and/or fittings of inferior quality.

1.05 EXPERIENCE

- A. The contractor or his qualified subcontractor shall have no less than three (3) years of experience in the installation and construction of hydraulically directionally drilled pipeline of similar diameter and length to the requirements of the specific project.
- B. The contractor shall provide documentation to the Owner/Engineer of his experience in similar projects and provide the names and contact numbers/addresses of at least five such examples. Conventional open trenching experience or bore and jacking experience will not be acceptable substitutes for hydraulic directional drilling experience.
- C. The documentation for experience shall include but not be limited to the following:
 1. Name and description of the projects
 2. Resumes of Project Manager, Superintendent and driller assigned to the specific project
 3. Pipe type, diameter and length
 4. Bore diameter and equipment used

5. Soil conditions encountered
6. Start and completion dates
7. Contact names, numbers and addresses

PART 2 – PRODUCTS

2.01 PIPE AND FITTINGS – HDPE & FPVC

- A. Materials used for the manufacture of polyethylene pipe and fittings shall be PE 3408 High Density Polyethylene (HDPE), meeting the ASTM D3350 cell classification of 345434E or 345434C or fusible PVC (FPVC) or Rigid PVC Schedule 40 & 80 Conduit, Electrical Nonmetallic Tubing (ENT) with locking couplings [Bore-Gard®]. The fusible PVC shall comply with AWWA C-900 or C-905 requirements and the formulation shall meet ASTM 12454B and NSF-61. The materials shall be listed with the name of the pipe and fitting manufacturer in PPI TR-2 or TR-4 and comply with the requirements therein for extrusion formulation.
 - B. The material shall have a minimum hydrostatic design basis of 1600 psi at 73°F when tested in accordance with PPI TR-3.
 - C. Polyethylene pipe and fittings shall be manufactured in accordance with ASTM F714, ASTM F 2160, ASTM D3035 and ASTM 3350.
 - D. HDPE pipeline shall be identified by providing co-extruded longitudinal stripes at three separate locations along the length of the pipe – at 120 degrees, 240 degrees and at 0/360 degrees. Stripes shall be a minimum of 2 inches wide, except on pipe sizes under 6 inch nominal diameter. Background color of the pipe shall pigmented gray color or black with red stripe, on approval, and at least a 2% carbon black. Stripes shall be of the same material as the pipe and shall not be painted or printed on the outside of the pipe wall.
- PVC pipe shall be color pigmented in accord with the pipeline identification requirements of Section 02505 – Pipeline Identification and Marking. Reclaimed water pipeline shall be pigmented purple, potable water blue, sewers and force mains green or brown.
- E. HDPE fittings shall be made from the same material as the pipe and meet the same requirements as that for the pipe. All fittings shall be pressure rated to match or exceed the pressure rating of the pipe to which they are joined. PVC fittings shall be DIPS compatible.
 - F. HDPE fittings shall meet the requirements of ASTM D3261, where applicable. Molded fittings shall have butt fusion compatibility with the pipe to which they are joined.
 - G. Pipe and fittings shall be joined by the method of butt fusion, as outlined in ASTM D2657. The pipe manufacturer's fusion procedures shall be followed at all times as well as the recommendations of the Fusion Machine Manufacturer.
 - H. HDPE pipe used for high-voltage electrical conduit systems shall be SIDR 11.5 or Bore-Guard, minimum. Pipe used for fiber optic communication systems shall match the high-voltage pipe requirement when pulled in the same drill or may be DR-13.5, minimum when pulled separate from high-voltage pipes. Dimension ratios for PVC pipe shall be DR-14 (C-900, 200 psi rated) for potable water and reclaimed water lines 12" diameter and smaller unless specified otherwise on the drawings. Dimension ratios for PVC force mains shall be DR-18 (C-900, 150 psi rated) for lines 12" diameter and smaller unless specified otherwise on the drawings.
 - I. HDPE pipe used for liquid transmission (water, wastewater, reclaimed water) shall have hydraulic equivalency to the nominal pipeline size specified. This usually requires the HDPE to be up-sized by one or more nominal sizes for the application, depending on the dimension ratio required and the nominal line size specified.

2.02 BORING EQUIPMENT

- A. Boring equipment shall be matched to the conditions of the project, but in no circumstances shall the equipment have a pulling force less than twice (2X) the maximum calculated peak-pulling requirement as calculated by industry standard guidelines and proprietary software (such as DrillPath™) for this purpose for the particular job requirements, unless otherwise approved by Owner/Engineer.
- B. Boring equipment shall have a mechanical drilling rig with a controlled directional boring head using either a fluid or mechanical cutting head (or combination of both), assisted and cooled by an approved drilling fluid of low pressure and volume.
- C. Contractor shall provide to Owner/Engineer a description of the rig proposed for the project at each location, showing the method of control of the boring head, head type, pulling force of the equipment, age, reamer type(s), manufacturer type and other germane information. Approved boring equipment shall be that manufactured by American Augers, Case Construction, Charles Machine Works (Ditch Witch), Straight Line, Tulsa Rig Iron, Vermeer, or approved equal.
- D. The location/tracking system employed for determining the location of the drilling head during the pilot bore shall include, but not be limited to: the position of the boring head, the roll angle, the tilt angle, depth below grade, temperature of data transmitter and remaining battery life. The Contractor shall show proof of location/tracking system calibration and roll test within six (6) months of construction start date.
- E. The type of proposed drilling fluid shall be submitted to the Owner/Engineer for approval prior to the commencement of the work. Potable water or reclaimed water will be made available to the contractor, provided it is within a reasonable distance from the project site. Consumption of this water will be metered and invoiced to the contractor at the current effective rate.
- F. For all carrier pipelines larger than 6 inches in diameter and prior to commencement of the work, the contractor shall submit to the Owner/Engineer the results of the proposed drill path profile analysis for approval. The analysis shall include as a minimum, the following:
 - 1. Proposed profile/drill path
 - 2. Proposed entry and exit angles
 - 3. Proposed radii of curvature for all directional changes
 - 4. Pipe deflection and pipe buckling calculations
 - 5. External pressure and comparison to expected fluid pressure
 - 6. A graph showing the calculated stresses along the entire path of the proposed profile
 - 7. Method of buoyancy control (if required/utilized).
- G. For pipelines 4 inches and smaller, the requirements of 2.02 F (above) shall be determined on a case-by-case basis. The Engineer may waive these requirements if the conditions of the project so warrant.
- H. No work or drilling shall commence until the contractor has submitted the required information and received written approval from the Engineer of the drill path and related procedures.

PART 3 – EXECUTION

3.01 DIRECTIONAL DRILLING

- A. The installation of the pipeline by horizontal directional drilling (HDD) shall be accomplished within the limits indicated on the drawings.
- B. Before commencement of the drilling operation, all erosion control devices and dewatering shall be in-place and functional in accordance with project specifications.

- C. Entry and exit angles of the installed pipeline shall not be less than 8 degrees from the horizontal and not more than 20 degrees from the horizontal unless noted on project drawings.
- D. The contractor shall take precautions to protect the pipeline from damage and marring during the installation and pull back operation. Such precautions shall include but not be limited to: the use of rollers, pulleys, idlers and trunnions.
- E. The boring rig shall be sufficiently and adequately anchored for the task.
- F. A pilot hole shall be drilled for all installations of 6 inch diameter pipe and larger diameters. The pilot hole shall be conducted with a wire line guidance system or gyroscopic guidance system as approved by Owner/Engineer. The pilot hole shall follow the designed bore path and shall not exceed the horizontal design plane in either direction by more than two (2) feet, nor more than one (1) foot in either direction, in the vertical plane. The boring shall be conducted using a mechanical boring head, assisted by and cooled by drilling fluid of low pressure and volume.
- G. The contractor shall provide MSDS sheets for all drilling slurry compounds and additives.
- H. The contractor shall submit calculations and data indicating the proposed path of the pilot bore, entry and exit angles, stresses on the pipeline during pull back throughout the length of the bore (both pull back and bending stress), external pressure throughout the length of the pull, proposed drilling flow rates, drilling pressures (maximum), radii of curvature for all directional changes, a chart showing the plan and profile of the proposed installation, and charts comparing the installation tension, tensile stress and bending stress of the pipe to the calculated conditions during pullback. The use of software (such as DrillPath™ as developed by the Gas Research Institute) is recommended for this purpose.
- I. Installed radius of curvature (in feet) for PVC or polyethylene pipe shall be a minimum of 25 times the exterior diameter of the pipeline to be installed (in inches). Actual radii utilized will be dependent on the specific job conditions. For alternate pipe materials, consultation with the Engineer shall be required for approval.
- J. Installed radius of curvature (in feet) for hydronic steel pipe shall be a minimum of 100 times the nominal diameter of the pipeline to be installed (in inches). Actual radii utilized will be dependent on the specific job conditions and verified with a pipe stress analysis completed by an Engineer. For alternate pipe materials, consultation with the Engineer shall be required for approval.
- K. Total maximum stress on the pipeline during pull back shall not exceed one-half ($\frac{1}{2}$) of the tensile strength of the pipeline for HDPE and FPVC pipelines and no more than 60% SMYS for hydronic steel pipeline installations and 40% SMYS for natural gas steel pipeline installations. HDPE and FPVC pipeline installations shall also maintain a minimum factor of safety of 2.0 against buckling, and ring deflection shall not exceed 5% ovality from external pressures during or after construction, unless otherwise specified or approved of Owner/Engineer.
- L. The pulling force of the drilling rig shall be at least twice that required of the maximum stress force calculated for the pull, unless otherwise approved by the Owner/Engineer.
- M. Upon completion of the pull, the contractor shall provide as-built information of the installed pipeline, including entry and exit coordinate locations and elevations (per the WDW Grid Coordinate System and NGVD, respectively), and similar location information at 10 foot intervals along the entire length of the profile for profiles under non-submerged surfaces. For profiles under submerged surfaces (such as a lake, stream, canal or river) the frequency of the location interval shall be at a minimum of 20 foot increments. This information shall be provided to the Owner/Engineer within seven calendar days of the completion of each bore path.
- N. Back reaming shall be required for all bores for pipelines exceeding the nominal diameter. Back reaming shall be conducted in single or multiple passes of the borehole and shall enlarge the borehole to at least 1.4 times the outer diameter of the pipeline to be installed. The number of back reaming passes shall be proposed by the contractor and approved by the Engineer prior to commencement of the work. Larger reaming may be required dependent on subsurface conditions encountered.

- O. In the event significant differing soils or strata (from those provided in the geotechnical data and reports) are encountered during the course of the pilot boring, the contractor shall be responsible for changing the drill head, slurry and other means as may be appropriate for completion of the bore. The Owner shall not be responsible for underground obstacles (such as boulders, tree stumps, loose and unconsolidated soils, hard rock, or other utilities) or structures that may be encountered during the course of the work.
- P. During assembly and pull back of the pipe, the pipe must be laid out in such a way as to minimize disruption to and interference with vehicular and pedestrian traffic or other operational conflicts that the Owner/Engineer may identify.
- Q. The pipe must be laid out such that any radius of curvature (in feet) for HDPE or PVC pipe of any segment is less than 25 times the outer diameter of the pipe (in inches). Steel pipe must be laid out such that any radius of curvature imposed on the pipe does not induce pipe stress in excess of 60% SMYS for hydronic piping and 40% SMYS for natural gas piping. Supporting and lifting equipment utilized during the staging, assembly and installation of the pipe shall be sized appropriately to safely support the product pipe. Pipe supports shall be spaced such that the pipe will not become overstressed or experience excessive deflection and so that the supporting equipment does not become overloaded from the pipe span weight.
- R. The contractor shall be responsible for maintenance of traffic (MOT) in the event the construction activities require such action. A MOT plan shall be submitted to the Owner/Engineer for approval prior to commencement of the work. The plan shall be in accordance with the Manual of Uniform Traffic Control Devices.
- S. The boring profile shall be deep enough to preclude hydraulic fracture or frac-out (loss of drilling fluid to the surface), and the contractor shall submit calculations to verify that the selected profile provides reasonable assurance to preclude fracture. Should hydraulic fracture occur, the contractor shall repair all related damages, including cleanup of fluids, and make corrections to preclude future events. Such corrections may include, but not be limited to: re-profiling the bore or changing the viscosity of the drilling fluid or plugging the fracture or a combination of these. In the event the borehole is abandoned and an alternate route is chosen, the abandoned borehole shall be filled with excavatable flowable fill.
- T. Where construction activities are in close proximity to or under water bodies (lakes, creeks, canals, retention basins) or wetlands, special attention shall be given to the proposed profile to insure that hydraulic fracture does not occur under the water feature. Additionally, silt fences and similar approved erosion control devices shall be used to protect the water body(s) from the construction activities.
- U. The boring profile shall be deep enough below surface features and buried utilities such that excessive settlement is not experienced by these features where intersected by the drill centerline. The contractor shall follow best construction practices and shall make every effort not to over-excavate the borehole beneath important surface features and utilities. The contractor shall submit calculations to verify the expected settlement below crucial infrastructure and utilities such as public roads, railroads, runways, high-pressure pipelines, culverts, and paved canals, as required by Owner.
- V. The contractor shall maintain logs of the construction progress at the job site. Such logs shall include a Guided Drilling Log, Mud Log and Driller's Log. The Guided Drilling Log shall record the progress of the pilot bore. The Mud Log shall record the quantity and quality of the drilling mud, pressure, flow rate and temperature of the mud. The Driller's Log shall record the progress of the reaming operation. Samples of each log sheet shall be submitted to the Owner/Engineer for approval prior to commencement of the work.
- W. Upon completion of the pull back, the contractor shall "rest" the pipe segment to allow for any contraction and shrinkage for at least 24 hours. No additional work on the pulled pipeline segment shall be allowed during the resting period.

3.02 DRILLING FLUIDS AND THEIR DISPOSAL

- A. The drilling fluids shall provide stabilization of the bore hole during the pilot and reaming operations, transport cuttings to the surface, cool the drill bit and controller, and lubricate the pipe during pull back. The drilling fluids shall be a bentonite slurry, polymer slurry, water or some combination of these. Bentonite is the preferred material for most applications, and use of water or a polymer will require the approval of the Owner/Engineer prior to commencement of the work.

- B. Drilling fluids that are petroleum based or that contain additives that may contaminate the surrounding soils or groundwater will not be allowed.
- C. The contractor shall adjust the viscosity of the drilling fluid to match the conditions of the project. The Owner shall bear no responsibility for loss of drilling fluid or loss of drilling equipment should an obstacle or unknown condition be encountered during the course of the work.
- D. The contractor shall be responsible for transporting, containing and storing any water required for the drilling operations, cleanup and other needs.
- E. All drilling fluid excess shall be contained in entry and/or exit pits and pumped/treated/stored as needed so as to preclude spills and escape to the surrounding environment. Ensure that entry and exit pits are of sufficient size and volume to contain the expected return of drilling fluids and cuttings. All excess fluids shall be properly disposed in an approved method and acceptable location. No fluids less than 14% solids content will be allowed to be disposed in a landfill.
- F. Upon completion of the pipe installation, restore the pits, drill rig anchors and work areas to their pre-construction or better condition. Seeding shall not be allowed in lieu of sod unless granted in writing by the Owner/Engineer.

3.03 CHECKING AND CLEANING

- A. The pipe shall be checked prior to its insertion and pull back for any flaws in manufacturing.
- B. After pull back is complete, but before connections are made to adjoining piping, the pulled section shall again be checked for acceptable roundness by passing a segmented mandrel of no less than ½ inch of the pipe D. Pipe failing this required roundness check shall be removed and repaired or abandoned and replaced at no additional cost to the Owner.
- C. The installed and successfully checked pipeline shall be cleaned with stiff brushes followed by a swabbing mandrel sufficient to remove all debris including soils.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Underground warning tape for:
 - 1. Electrical power cables and duct banks.
 - 2. Potable and non-potable water.
 - 3. Reclaimed water.
 - 4. Chilled water.
 - 5. Natural gas.
 - 6. Sanitary sewers and force mains.
 - 7. Compressed air.
 - 8. Chilled water.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Excavating and backfilling for utilities: Section 02320.
- B. Color-tinted red, concrete duct banks: Division 16.
- C. Color-coding/pigmenting of potable water, reclaimed water and sewer pipes: See Sections 02512, 02513, 02515, 02532 or 02533 as appropriate.

1.03 QUALITY ASSURANCE

- A. Reference specifications and standards:
 - 1. ANSI: Z53.1 Safety Color Code for Marking Physical Hazards.

1.04 SUBMITTALS

- A. Procedures: In accord with Section 01330.
- B. Product data:
 - 1. Manufacturer's detailed technical materials data, including technical bulletins, drawings, guides, and manuals, as applicable to the work of this Project.
 - 2. For color coding of specific utilities not indicated on Drawings or not specified herein, submit samples of color coding tape markings for selection by Owner.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Marking tape:
 - 1. Empire Level Manufacturing Corporation (Thor Enterprises), Waukesha, WI, Tel: (414) 521-3171, (800) 558-0722.
 - 2. Mutual Industries North, Inc., Philadelphia, PA, Tel: (215) 927-6000, (800) 523-0888.
 - 3. Reef Industries, Inc. (Terra Tape), Houston, TX, Tel: (713) 507-4295, (800) 231-6074.
 - 4. T. Christy Enterprises, Inc., Anaheim, CA. Tel: (800) 258-4583.
 - 5. Or approved equal.

2.02 MATERIALS

- A. Pipe Detecting Wire For Non-Metallic Pipe: A 12-gauge THHN copper detecting wire shall be attached to the pipe at the 12 o'clock position as shown on the drawings.
- B. Marking tape: Reinforced or unreinforced type, 6 inch wide, inert, virgin resin, plastic film formulated for extended use underground, imprinted with an appropriate legend to define type of utility line it identifies.
 1. Nondetectable: Minimum 4 mils overall thickness. Text shall say "CAUTION BURIED (insert appropriate type of pipe) LINE BELOW".
 - a. ShieldTec by Empire Level Manufacturing Corporation (Thor Enterprises).
 - b. Non-Detectable Underground Marking Tape (No. 17783) by Mutual Industries North, Inc.
 - c. d. Terra Tape Sentry Line 1350 by Reef Industries, Inc.
 - e. Or approved equal.
 2. Adhesive: Minimum 4 mils overall thickness. Text shall indicate type of fluid conveyed.
 - a. Shield-Bond by Empire Level Manufacturing Corporation (Thor Enterprises).
 - b. Or approved equal.
 3. Color code: Black lettering on color backgrounds in accord with APWA/ULCC Uniform Color Code and ANSI Z53.1, except as follows.
 - a. Red: Low voltage electric power .
 - b. Black lettering on yellow: High voltage electric power.
 - c. Yellow: Natural gas distribution and transmission.
 - d. Black or white lettering on blue background: Potable and nonpotable water systems.
 - e. Black or white lettering on brown background: Sanitary and storm sewer force mains.
 - f. Black or Yellow lettering on Pantone 522C purple background: Reclaimed water lines.
 - g. Black lettering on light blue background: Compressed air systems.
 - h. Black lettering on green background with brown band striping: Chilled water systems.
 - i. Black lettering on silver background with orange band striping: Hot water systems.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Pipe Detecting Wire For Non-Metallic Pipe
 1. The wire shall be held in place with nylon cable ties at each end of the pipe and at midpoint. The cable ties shall be Ty-Rap as manufactured by T & B Electrical Co. or approved equal.
 2. The wire shall be extended to the surface at air release and vacuum valves, valve boxes, pumps, etc. so that a current can be induced through the wire to detect the location of the pipe.
 3. The wires shall be brought to the surface at each valve box through a length of 1/2-inch PVC pipe to protect the wire, and shall terminate with a tinned wire connector as shown on the standard detail drawings.
- B. Marking tape:

1. Nondetectable tape: Install over all utility lines. Two (2) marking tapes shall be placed in the trench 12 inches above the pipe and 18 inches each side of the centerline of the pipe for all lines and conduits 4 inches diameter and larger. For single conduits and lines 3 inches diameter and smaller, a single marking tape shall be installed 12 inches above the conduit or line.
2. Adhesive tape. Adhesive tape shall be used on piping that is not color pigmented or painted with the appropriate color striping. Where required, install directly on each utility line (at the 12 o'clock, 3 o'clock and 9 o'clock positions for pipelines 12 inches and larger, and at the 12 o'clock position for smaller diameter lines) and shall be continuous for the entire length of the pipeline.

Care shall be taken that the tape adheres properly to the pipe wall and is not torn, removed, or otherwise damaged upon pipe installation and backfilling. Pipe surface shall be clean and free of dirt, debris, oils and other foreign materials that could reduce the adhesion capabilities of the tape.

END OF SECTION

PART 1 - GENERAL**1.01 WORK INCLUDED**

- A. This section shall include, but not be limited to all labor, equipment, tools, materials and all incidentals required for the construction, installation, testing and disinfection of a potable water distribution system and/or a non-potable water transmission system, including all appurtenances as shown on the plans and as specified herein.
- B. The work shall include but not be limited to, ductile iron pipe, PVC pipe, valves, air release and vacuum relief valves, ductile iron fittings, strainers, tapping sleeves, tapping saddles, cast iron and plastic valve boxes, backflow preventers, master meters, fire hydrants, valve vaults and boxes, all restrained joints and concrete thrust blocking as required for all types of piping, all excavation, sheeting, shoring and bracing, dewatering, jacking and boring, where required, slope protection, backfilling, grading and drainage, concrete work, rip-rap, compaction, grass restoration, pavement restoration where required and all other work necessary to complete the construction, installation, flushing, swabbing, testing and disinfection of the potable water distribution system or non-potable water transmission system.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. This specification references the following RCID standard specifications which form a part of this specification to the extent specified herein. In any case of conflict, the most restrictive specification shall prevail.

1. Submittals	Section 01330
2. Testing Laboratory Services	Section 01410
3. Excavating and Backfilling for Utilities	Section 02320
4. Boring & Jacking	Section 02445
5. Hydraulic Directional Drilling	Section 02448
6. Underground Utilities Marking	Section 02505

1.02 DEFINITIONS

- A. Under this subsection the following definitions shall apply:
1. **DUCTILE IRON PIPE:** Cast ferritic material in which a major part of the carbon content occurs as free carbon in nodules or spheroidal form, and meeting the requirement of ASTM D746.
 2. **DUCTILE IRON PUSH-ON JOINT:** The push-on joint as described in AWWA C151 and the single rubber gasket joint as described in AWWA C111.
 3. **FDEP:** The Florida Department of Environmental Protection.
 4. **FLANGED JOINT:** Bolted and gasketed joint as described in AWWA C115 and ANSI/ASME B16.1.
 5. **MECHANICAL JOINT:** Bolted and gasketed joint as described in AWWA C111

6. POLYVINYL CHLORIDE PIPE: Thermoplastic compounds prepared by combining PVC resins with modifiers, stabilizers, lubricants and pigments to obtain the properties required to meet the dimensional and stability requirements of AWWA C900 or C905.

1.03 QUALITY ASSURANCE

A. Technical Guidance

1. Handbook of Ductile Iron Pipe, latest edition, DIPRA
2. Recommended Standards for Water Works (Ten-State Standards), latest edition
3. Florida Department of Environmental Protection, FAC 62-555.
4. Handbook of PVC Pipe Design & Construction, latest edition, Uni-Bell Plastic Pipe Association.
5. Manual M23: PVC Pipe - Design & Installation, AWWA

B. REFERENCE STANDARDS

This specification references the following standards which form a part of this specification to the extent specified herein. The latest edition of each standard shall apply. In any case of conflict, the most restrictive standard shall prevail.

1. AWWA C104/ANSI A21.4 Cement-Mortar Lining For Ductile Iron Pipe and Fittings For Water.
2. AWWA C105/ANSI A21.5, Polyethylene Encasement For Ductile Iron Piping For Water and Other Liquids.
3. AWWA C110/ANSI A21.10 Ductile Iron Fittings, 3 in. through 48 in., for Water and other liquids
4. AWWA C111/ANSI A21.11 Rubber Gasket Joints For Ductile Iron Pipe and Fittings.
5. AWWA C115/ANSI A21.15, Flanged Ductile Iron Pipe
6. AWWA C151/ANSI 21.51 Ductile Iron Pipe.
7. AWWA C153/ANSI A21.53 Compact Ductile Iron Fittings.
8. AWWA C500, Gate Valves For Water and Sewage Systems.
9. AWWA C503, Wet-Barrel Fire Hydrants.
10. AWWA C504, Rubber-Seated Butterfly Valves.
11. AWWA C509, Resilient Seated Gate Valves For Water and Sewerage Systems.
12. AWWA C600, Installation of Ductile Iron Water Mains and Appurtenances.
13. AWWA C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe & Fittings for Water

14. AWWA C651, Disinfecting Water Mains.
15. AWWA C900, Polyvinyl Chloride (PVC) Pressure Pipe, 4 Inch through 12 Inch, for Water Distribution.
16. AWWA C905, Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14 Inch through 36 Inch
17. ASTM C478, Precast Concrete Valve Boxes and Vaults.
18. ASTM C150, Concrete, Type II.
19. ASTM D1784, Rigid Polyvinyl Chloride PVC Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds.
20. ASTM D2241, Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe.
21. ASTM D3139, Joints For Plastic Pressure Pipes Using Flexible Elastomeric Seals.
22. ASTM F477, Elastomeric Seals For Joining Plastic Pipes.

C. INSPECTION AND CERTIFICATION OF PIPE AND FITTINGS

1. All pipe fittings and appurtenances to be installed under this Specification may be inspected and tested for compliance with these specifications at the manufacturer's facility by an independent testing laboratory selected by the Contractor. The manufacturers' cooperation shall be required in these inspections.
2. The Contractor shall obtain from the pipe manufacturer a certificate of inspection stating that the pipe and fittings supplied for this Project has been inspected and tested at the point of origin, and that they meet or exceed the requirements set forth in these specifications.
3. The costs of the inspections and tests shall be borne by the Contractor. Letters of certification shall be furnished for all inspections and tests prior to the installation of the pipe, fittings and appurtenances.

D. INSPECTION UPON DELIVERY

1. All pipe fittings and appurtenances shall be subject to visual inspection by a representative of the Owner's Representative at the point of delivery and again just before being lowered into the trench. All materials found to be defective due to manufacture, or damaged in transit shall be rejected and shall be immediately removed from the job site.
2. The Owner's Representative may perform or cause to be performed all tests as specified in the applicable AWWA Standards, to ensure conformance with the standard. In the case of failure of the pipe or appurtenances to comply with such standards, the responsibility for replacement of the defective materials becomes that of the manufacturer or the Contractor.
3. The entire product of any manufacturer may be rejected when, in the opinion of the Owner's Representative, the methods of manufacture fail to secure uniform results, or where the materials are such as to produce pipe and/or fittings of inferior quality.

E. INSPECTION OF PRECAST CONCRETE PRODUCTS

1. The quality of all materials, the process of manufacture and the finished precast concrete sections shall be subject to inspection and approval by the Owner's Representative. Such inspection may be made at the place of manufacture and/or at the site after the precast products have been delivered.

Even though sample sections may have been approved and accepted as satisfactory at the manufacturer's yard, the finished sections shall be subject to rejection at any time after delivery, due to failure to meet any of the specification requirements.
2. Sections rejected after delivery to the job site shall be marked for identification and shall be removed from the job site within 24 hours. Sections which have been damaged after delivery will be rejected and replaced at the Contractor's expense.
3. At the time of inspection, the precast sections will be carefully examined to assure compliance with ASTM C478, these specifications and the manufacturer's approved shop drawings.
4. All sections shall be examined for general appearance, dimensions, scratch strength, laitance, honeycombs, blisters, cracks, roughness, soundness, etc. The surface of all precast sections shall be dense and close textured.
5. Imperfections may be repaired, subject to the approval of the Owner's Representative, after demonstration by the manufacturer that strong, sound and permanent repairs can result. All repairs shall be carefully inspected before final approval.

1.05 EXPERIENCE

- A. The Contractor shall be a firm with not less than five (5) years of successful experience in the installation and construction of pipelines incorporating products and materials similar to those specified herein.
 1. The Contractor shall take field measurements prior to installation and fabrication.
 2. The Contractor shall comply with all relevant requirements of regulatory agencies having jurisdiction over the project.
 3. The Contractor shall comply with the requirements of Reedy Creek Energy Services (RCES), also known as the Owner's Representative, and the Reedy Creek Improvement District (RCID), also known as the Owner.

1.06 SUBMITTALS

A. PROCEDURES

1. Submit product data, shop drawings, samples, testing laboratory reports, etc. in a timely manner and in accordance with the requirements of Section 01300, Submittals.

B. PRODUCT DATA

1. The data to be submitted shall include, but not be limited to:
 - a. Ductile iron pipe and fittings.
 - b. Polyvinyl chloride (PVC) pressure pipe.

- c. Fusible C-900 PVC
- d. High density polyethylene pipe
- e. Elastomeric seals for ductile iron and PVC pipe joints.
- f. Resilient seated gate valves.
- g. Tapping valves.
- h. Resilient seated butterfly valves.
- i. Air release and vacuum relief valves.
- j. Tapping saddles and tapping sleeves.
- k. Cast iron and plastic valve boxes.
- l. Precast concrete valve vaults.
- m. Valve operators.
- n. Mechanical joint retainer glands.
- o. Corrosion protection materials.
- p. Underground marking and identification tapes.
- q. Underground tracer wire and appurtenances.
- r. Fire hydrants and fittings.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

- A. Ductile iron pipe (DIP) for potable water service shall conform to AWWA C151.
 - 1. Ductile iron pipe shall have a minimum tensile strength of 60,000 psi with minimum yield strength of 42,000 psi
 - 2. Pipe shall be Pressure Class 200, minimum.
 - 3. Ductile iron pipe for potable water main service shall have a cement mortar lining and a bituminous seal coat in accordance with AWWA C104 and a minimum 1.0 mil bituminous coating on the pipe exterior in accordance with AWWA C151.
 - 4. Ductile iron pipe shall be supplied in lengths not in excess of a nominal twenty (20) feet and, unless otherwise specified, shall have rubber-gasket joints conforming to AWWA C111.
 - 5. Single gasket push-on joints shall normally be used where joint restraint is not required.

6. Where joint restraint is required, restrained joints shall: be “T-R Flex” joints as manufactured by U.S. Pipe, “Flex-Ring” and “Lok-Ring” joints as manufactured by American Ductile Iron Pipe, or approved equal.

Joint restraint other than at fittings may also be accomplished with American “Fast Grip” or U.S. Pipe “Field Lok” gaskets, or approved equal.

Restrained joints at fittings shall utilize mechanical joints with a restraining gland. Restraining glands shall be EBAA Iron Series 1100 or 3000, Stargrip Series 3000, Series 3000OS or Series 3100P or approved equals.
 7. High strength, low alloy steel T-bolts and nuts for mechanical joint shall conform to AWWA C110, Appendix, and AWWA C111. Threads shall conform to ANSI B.1.
 8. Where called for on the plans, polyethylene encasement for ductile iron pipe shall conform to AWWA C105.
 9. Acceptable manufacturers:

American, U.S. Pipe, Griffin Pipe or approved equal.
- B. Ductile iron fittings for potable water distribution shall conform to AWWA C110 or C153. Minimum pressure rating shall be 250 psi.
1. Rubber gasket joints shall be mechanical joint in accordance with AWWA C111.
 2. Fittings shall be lined and coated according to section 2.01 A.3 above.
 3. All fittings shall be cast and machined allowing the bolt holes to straddle the vertical centerline.
 4. Only those fittings that are of domestic (United States) manufacture will be acceptable.
 5. Fittings shall have distinctly cast on them the pressure rating, nominal diameter of openings, manufacturer’s identification, country of manufacture, and number of degrees or fraction of the circle. The letters “D.I.” or the word “Ductile” shall also be cast on the outside of the body.
 6. Fusion bonded epoxy coated ductile iron fittings as manufactured by “One-Bolt, Inc.” are acceptable, provided they meet ASTM A 536 grade 65-45-12 and are installed in strict accord with the manufacturer’s instructions.
- C. Flanged ductile iron pipe and fittings with threaded flanges where called for on the plans, shall conform to AWWA C115. Flanges shall be furnished flat faced and drilled to 125 pound template in accordance with ANSI B16.1 full faced gaskets.
- D. Polyvinyl chloride (PVC) pressure pipe for potable water service, in sizes 4-inch through 12-inch shall conform to AWWA C900. For sizes 16” through 36”, PVC pipe shall conform to AWWA C905
1. Laying lengths shall be 20 feet +/- 1 inch for all sizes.
 2. PVC pipe shall exceed pressure Class 200 for all pipe. Use DR 14 for sizes 12” and under with cast iron outside dimensions. PVC pipe for sizes larger than 16” shall be DR18, with cast iron outside dimensions.

3. PVC pipe joints shall have an integral wall-thickened bell end with gasket seal conforming to ASTM D3139. (Solvent weld joints will not be permitted.)
4. PVC pipe for potable water service shall be blue or white pigmented.
5. Fittings for use with AWWA C900 pipe shall be PVC C907-12 Injection-Molded PVC Pressure Fittings. C907 Fittings shall meet AWWA C907 or CSA B137.2. Fittings shall be NSF 61 listed.
6. Where joint restraint is required, restraining glands may be utilized. Restraining glands shall be specifically designed for use with C900 PVC pipe and shall be EBAA Iron "2000PV" or "3000" Series, Romac "GripRing", Sigma "PV-LOK", Tyler "MJR", Stargrip Series 4000 and Series 4100P or approved equals.
7. All PVC pipe shall be identified on the exterior of the pipe with the following information:
 - a. Nominal pipe size and O.D. base: (e.g. 6-inch C.I.)
 - b. Material code designation number: (PVC 1120)
 - c. Dimension ratio (DR) number
 - d. Pressure classification
 - e. AWWA designation: C900 or C905
 - f. Pipe manufacturer's name and production code.
 - g. Date and shift of manufacture
 - h. All PVC pipe shall bear the NSF mark indicating its approval for potable water.
8. Acceptable manufacturers:

Johns Manville, Certainteed, H&W, Clow, or approved equal.
- E. PVC pipe smaller than 4-inch in size shall conform to ASTM D2241, SDR21, with I.P.S. dimensions, and manufactured from PVC 1120 resin. Appropriate requirements of paragraph 2.01.D above shall apply. Schedule 40 PVC shall not be allowed, unless specifically required by the Owner's Representative.
- F. RESILIENT SEATED GATE VALVES 2" and larger, for potable water service shall conform to, or exceed all applicable requirements of AWWA C509/515.
 1. All resilient seated gate valves shall have non-rising stems for counter clockwise operation and a 2-inch square operating nut.
 2. Each valve shall have the manufacturer's name, pressure rating, the year of manufacture, and an arrow to indicate the direction of opening cast into the valve body.
 3. The interior of the valve body and bonnet shall have a factory applied 2-part thermo-setting epoxy resin lining equal to Endurall 3300.
 4. Each valve shall be hydrostatically tested to a pressure equal to twice the specified working pressure prior to shipment from the factory. The manufacturer shall certify each valve.

5. Acceptable manufacturers:
Clow, American Flow Control, Mueller, Crane, M & H, Kennedy, Keystone, U.S. Pipe, or approved equal.
- G. RUBBER SEATED BUTTERFLY VALVES are not acceptable unless specifically required by the Owner and Engineer of Record and identified as such on the contract documents. Butterfly valves so identified for potable water service shall conform to, or exceed, all applicable requirements of AWWA C-504.
1. Butterfly valves shall be of the tight closing, rubber seat type with recess-mounted BUNA-N or equal seats securely fastened to the valve body, or attached to the valve disc.
 2. The valve disc shall rotate a full 90-degrees from the full open position to the tight shut position. Butterfly valves shall meet the full structural requirements of the applicable sections of AWWA C-504, latest edition.
 3. Butterfly valve bodies shall be constructed of cast iron conforming to ASTM A126, Class B (or ASTM A48, Class 40), or ductile iron conforming to ASTM A536, Grade 65-45-12.
 4. Buried valves shall have integrally cast mechanical joint ends. All valves for above ground service shall be flanged. Flange drilling shall be in accordance with ANSI B16.1, Class 125.
 5. Two trunions for shaft bearings shall be integral with each valve body. Valve body thickness shall be in strict accordance with the applicable provisions of AWWA C-504.
 6. Valve discs shall be constructed of NI-RESIST, Type 1, or of ductile iron conforming to ASTM A536, Grade 65-45-12, with stainless steel seating edges. All disc seating edges shall be smooth and polished.
 7. Valve shafts shall be of the "stub-shaft" type or a one piece shaft extending full size through the disc bearings and into the operating mechanism. Valve shafts shall be constructed of stainless steel conforming to ASTM A276, Type 304 minimum. Shafts shall be high tensile steel with stainless steel shaft journals, Teflon bushings and shaft seals.
 8. Valve seats shall be of a natural rubber or a synthetic type rubber compound similar to BUNA-N. Seats shall be molded in, vulcanized and bonded simultaneously into the valve body and seat. The bond shall be capable of withstanding a test pull of not less than 75 pounds without failure in accordance with ASTM D429, Method B.
 9. Valve seats that are attached to the valve disc shall be held in place by a stainless steel retaining ring conforming to ASTM A 296, Grade CF8. Cap screws extending through the rubber seat and the seat retaining ring must be provided for adjustment of the rubber seat. The mating valve body seat shall be constructed of Type 304 stainless steel.
 10. Valves shall be equipped with corrosion resistant, self-lubricated sleeve type bearings. The bearing shall be such that the bearing load will not exceed the published design load for the bearing material.
 11. Valve operators for manual operation shall be of the worm gear type and shall be fully enclosed.

Valves furnished for underground service shall be fully gasketed and grease packed.

Valves located above ground shall be equipped with handwheel operators and shall have a suitable indicator arrow to show the valve position from full open to fully closed.

12. All valves for underground service, designated to be furnished with above ground operators, shall be equipped with handwheel operators on extended bonnets. The operating shaft for buried valves shall be such that the handwheel shall set not less than 3-feet above finished grade. All other underground butterfly valves shall be furnished with a 2-inch square AWWA operating nut with valve box and cover. All valves buried deeper than 30" shall have cast iron valve extensions.
 13. Handwheel operators shall be capable of withstanding a pull of 200 pounds when operator components are positioned at the extreme operator positions without sustaining damage. Valves with operating nuts shall be capable of withstanding an input torque of 300 ft.-lbs. without sustaining damage.
 14. Acceptable manufacturers:

Clow, American Flow Control, Mueller, M & H, Kennedy, Keystone, U.S. Pipe, Centerline, Henry Pratt, or approved equal.
- H. AIR RELEASE / VACUUM RELIEF VALVES for potable water service shall be installed as shown on the plans. The valves shall be constructed with a 316 stainless steel body, cover and baffle, stainless steel float, bronze water diffuser, BUNA-N or Viton seat and stainless steel trim. Air release valves must be installed in an enclosure as shown on the Standard Details. Fittings from the main to the air release valve in the enclosure shall be threaded and made of brass.
1. Air Release Valves shall be APCO 200 Series; Val-Matic Model 15, 22 or 25; Vent-O-Mat Series RBX, H-Tec Model 985 or approved equal.
 2. Air and Vacuum Valves shall be APCO 140 or 150 Series; Val-Matic Series 100; Vent-O-Mat Series RBX, H-Tec Models 992 thru 997 or approved equal.
 3. Combination Air Valves shall be APCO 140C or 1800 Series; Val-Matic Series 200; Vent-O-Mat Series RBX, H-Tec or approved equal.
- Note: APCO Series 140 or 150 or approved equivalent air and vacuum valves are still acceptable.
- I. CORPORATION STOPS. The use of corporation stops for water service connections will not be allowed.
- J. SERVICE SADDLES OR TAPPING SLEEVES shall be used for all potable water service taps.
1. Size-on-size taps using tapping saddles or sleeves will not be permitted.

Where size-on-size outlets are required, a tee shall be installed in lieu of a tapping saddle or sleeve. Tapping saddles and tapping sleeves will only be permitted on lines that are at least one nominal pipe size or diameter larger than the proposed tap.
 2. For taps 2 inches to 2-1/2 inches on mains 4 inches or larger, use a double strap service saddle. Saddle body shall be bronze or fusion-coated ductile iron with BUNA-N gasket. Straps shall be bronze or stainless steel. Taps smaller than 2 inch diameter will not be allowed. If a smaller line is preferred, tap the carrier pipe with a 2 inch tap and provide reducers or bushings after the tap to the desired diameter.

Acceptable manufacturers and models:

Smith-Blair No. 323 or 317, JCM 406, Ford FC202, Mueller BR2B or approved equal.
 3. Tapping sleeves shall be used for taps 4 inches and larger. Tapping sleeves shall be fabricated of stainless steel, fusion-bonded epoxy coated ductile iron, or fusion-bonded

epoxy coated steel and designed for a test pressure of at least 200 psi. The outlet of the tapping sleeve may be either extruded or welded to the tapping sleeve.

The flange shall conform to AWWA C-207, Class D, ANSI 150 lb. drilling. Bolt holes shall straddle the pipe centerline.

The sleeve shall be equipped with a 3/4 inch NPT test plug with a standard square head. The gasket shall be of 360-degree design, and manufactured of gridded virgin GPR compounded for water service and complying with ASTM D-2000-80M 4AA607. An 18-10 stainless steel armor shall be vulcanized to the gasket, to bridge the gap between the securing lugs.

All bolts and nuts shall be stainless steel with 5/8 inch NC threads. Bolt threads shall be fluorocarbon coated to prevent galling. Nylatron G.S. washers shall be provided for lubrication.

Approved manufacturers and models:

Smith-Blair Models 622, 662 or 663; JCM Models 422 or 432; Ford style FAST or FTSC; Mueller H304 or approved equal.

K. TAPPING VALVES

1. Valves for use with tapping sleeves shall meet or exceed all provisions of AWWA C509.
2. Valves for use with tapping sleeves shall be resilient seated wedge gate type and shall be designed for use with tapping equipment. The valves shall have non-rising stems and shall have an alignment ring to prevent misalignment with the tapping sleeves.
3. The valves shall close clockwise (right) and open counter clockwise (left), and shall be equipped with a standard 2-inch square operating nut. Valve outlets shall have a flanged mechanical joint.
4. Acceptable manufacturers:

Clow, Mueller, American Flow Control, U.S. Pipe, Dresser Industries.

- #### L. FIRE HYDRANTS:
- Wet barrel fire hydrants shall meet or exceed all provisions of AWWA C503 and shall be Clow/Rich No. 92, 3-way "Slimline-Low Silhouette with No. 30C break-away riser. Dry barrel fire hydrants shall meet or exceed AWWA C502, UL246, and FM 1510 and shall be American-Darling B-84-B with breakable cast iron flange or Mueller Super Centurion-200 or 250. Weep holes on the dry barrel type hydrants are not required or allowed. All hydrants shall be equipped with two, 2.5" hose connections and one 4.5" pumper connection, complete with all caps and chains. Threads for hose and pumper connections shall be in conformance with the requirements of the RCID Fire Department. Hydrants shall be furnished with the manufacturer's standard prime finish and with an affidavit stating that the hydrant and all material meets the applicable AWWA requirements as stated above, and that all test requirements specified herein have been met.

1. The hydrant shall be furnished with the manufacturer's standard prime finish.
2. The manufacturer shall furnish an affidavit stating that the fire hydrant and all material used in the construction of the hydrant, are in conformance with the applicable requirements of AWWA Standard C-503 and this specification, and that all tests specified therein have been performed and that all test requirements have been met.

3. Acceptable Manufacturer: Clow Corporation, Valve Division Corona, California or American Flow Control, a division of American Cast Iron Pipe Co., Birmingham, Alabama or Mueller Co. Substitutes will not be accepted.
- M. FLANGED COUPLING ADAPTERS. Flanged coupling adapters for ductile iron pipe shall be Smith-Blair Model 912, JCM Model 301, Dresser Model 127, or approved equal.
- N. VALVE BOXES. Valve boxes for potable water service shall be adjustable, cast iron or heavy wall high density polyethylene (HDPE) suitably sized for the size and depth of the buried valve. HDPE boxes shall have all exterior components joined with stainless steel screws and be equipped with a telescoping, plated, square steel tube stem assembly that allows for variable height adjustment. The stem assembly shall be torque tested to 1000 ft-pounds. All valve boxes shall be designed for traffic bearing H-20 wheel loading with round cast iron lids marked "WATER". Valve boxes shall be Tyler Model 6850/6860, U.S. Foundry Model 7500, American Flow Control's Trench Adapter or approved equal.

2.02 PRECAST CONCRETE PRODUCTS

- A. Precast concrete valve vaults and air release valve manholes shall be in accordance with ASTM C478.
1. Concrete for the construction of manhole sections and valve vaults shall be Class A concrete with a compressive strength of 4000 psi at 28-days and shall conform to ASTM C150, Type II cement.
 2. Valve vaults and manholes shall be precast units with integral base slab and wall sections. Poured in place base slabs shall not be approved.
 3. Precast sections shall be cured by an approved method for a minimum of four (4) days prior to painting and shall not be shipped for a minimum of three (3) days after having been painted. Precast sections shall not be shipped for a minimum of seven (7) days after removal from the forms.
 4. The interior and mating surfaces of all precast concrete products shall have a protective coal tar epoxy coating having a minimum dry thickness of 16 mils. The exterior surfaces shall have a protective coal tar epoxy coating with a minimum dry thickness of 9 mils. The coatings shall be applied by the precast manufacturer in strict accordance with the paint manufacturer's recommendations.

Acceptable coating: Koppers 300M, Devtar 5A by ICI Devoe or approved equal.
 5. The date of manufacture of the precast sections and the name or trademark of the manufacturer shall be clearly marked or impressed on the exterior of each precast section when the form is removed, and on the interior after the section has been painted.
 6. Precast sections shall be cast with tongue and groove joints, sealed with "Ramnek" (TM) sealant as manufactured by the T.K. Snyder Company of Houston, Texas or approved equal. Joint sealant shall meet or exceed all requirements of Fed. Spec. SS-S-210A and AASHTO M198.
 7. Rubber ring joint seals for precast sections shall not be permitted.
 8. Shallow valve vaults, where the depth of cover is less than four (4) feet, shall be capable of supporting the overburden plus a live load equivalent to AASHTO H-20 loading.

9. Valve vault base sections shall not be less than eight (8) inches thick and shall be reinforced with number five (5) bars at nine (9) inches on centers, each way and shall have number four (4) bars around each pipe.
10. All precast concrete products shall be wet cast. Dry casting, or low slump concrete will not be acceptable.
11. All precast concrete products shall have proper lifting loops in the base slabs, (minimum of three (3)). Penetrating lifting holes will not be acceptable in any structure.

Where non-penetrating lifting holes are approved, their use will not be permitted within eight (8) inches of any joint or pipe penetration.

12. Precast concrete grade rings for manhole adjustment shall conform to ASTM C478. Grade rings shall be a minimum of two (2) inches thick and a maximum of five (5) inches thick and shall be reinforced with six (6) gauge or thicker reinforcing wire.
13. Acceptable Manufacturers:

Hanson Precast, Inc., Green Cove Springs, FL
 Atlantic Concrete Products, Inc., Sarasota, FL
 Mack Concrete Products, Inc., Astatula, FL
 Southern Precast, Inc., Alachua, FL
 Old Castle Precast, Orlando, FL

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Unless indicated otherwise on the drawings or as specified herein, the minimum cover for potable water mains shall not be less than thirty-six (36) inches.
- B. Unless indicated otherwise on the drawings, separation requirements between potable water lines and other FDEP regulated utilities shall be in accord with Chapter 62-555 FAC, which requires a minimum of 12" of vertical separation and 36" of horizontal separation. Preferred vertical separation is greater than 18 inches and preferred horizontal separation is greater than 10 feet.
- C. Potable water mains shall be laid in the dry. All work occurring at trench depths below groundwater level shall be dewatered and maintained in a dry condition continuously while work is taking place at those elevations.
 1. Dewatering methods shall be at the Contractor's option, subject to the approval of the Owner's Representative.
 2. The groundwater level shall be lowered only to sufficient depth to assure that trench bottom soils will not be saturated or develop quick conditions.
 3. Disposal of dewatering water shall conform to the requirements of RCID and its General Permit.

4. Generally, dewatering will require monitoring of both the quantity and quality of the discharge, and discharge to surface waters cannot exceed a turbidity level of 29 NTU over background.
 5. Consult with and obtain Owner's approval of dewatering means and methods prior to commencement of the work.
- D. Potable water mains and appurtenances shall be constructed using the materials indicated on the drawings and as specified herein. Substitutions shall not be made without the express approval of the Owner's Representative.
- E. The Contractor shall not cover lines until they have been inspected and approved.
- F. Conflict encasement shall be in accordance with the applicable standard.

3.02 HANDLING AND STORAGE OF PIPE FITTINGS AND APPURTENANCES

- A. All pipe, fittings and appurtenances shall be loaded and unloaded by lifting with hoists or skidding in order to avoid shock or damage.
1. Pipe, fittings and appurtenances shall not be dropped, rolled or skidded into or against pipe, fittings or other construction products on the ground.
 2. Slings, hooks, pipe tongs and other lifting devices shall be padded and used in such a manner as to prevent damage to pipe or construction products.
 3. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and appurtenances shall be kept free from dirt, oil, grease and foreign matter at all times.
- B. Pipe shall not be stacked higher than the limits shown in the following table.

MAXIMUM STACKING HEIGHTS FOR PIPE

Nominal Pipe Size (Inches)	6	8	10	12	14	16	18	20	24	30	36	42
Number of Tiers	13	11	10	9	8	7	6	6	5	4	4	3

The bottom tier shall be kept off of the ground on timbers. Pipe in tiers shall be alternated, (i.e.) bell, plain end; bell, plain end, etc. No less than two rows of timbers shall be placed between tiers. Chocks shall be affixed to each, in order to prevent movement. The timbers shall be large enough to prevent contact between pipes in adjacent tiers.

- C. The Contractor shall cover stored PVC pipe to prevent exposure to ultraviolet radiation.
- D. Pipe gaskets shall be used in the work on a first-in, first-out basis.
1. Gaskets for mechanical joint and push-on joint ductile iron pipe and fittings shall be stored in a cool, dry location, out of direct sunlight.
 2. Gaskets shall be stored in such a manner so as to prevent coming into contact with petroleum products.
- E. Mechanical joint bolts and locking segments for push-on joints shall be handled and stored in such a manner that will insure proper use in respect to pipe types and sizes.

3.03 LAYING POTABLE WATER MAINS

- A. Refer to Section 02320, Excavating and Backfilling for Utilities.
- B. Potable water mains shall be laid in accordance with the details shown in the plans and as specified herein.
 - 1. The trench bottom shall be graded to the proposed elevation of the pipeline and the bottom shaped to fit the lower quadrant of the pipe. Holes shall be excavated at each bell so the pipe will be uniformly supported along the entire length of the barrel only.
 - 2. Pipe installation and jointing shall be in strict accordance with the pipe manufacturer's specifications and instructions for the type of pipe used and the applicable standards of the Owner's Representative.
 - 3. Any pipe having a defective joint, bell or spigot shall be rejected, removed from the work site and replaced with a sound unit.
 - 4. All pipe shall be installed to the homing mark on the spigot. On field cut pipe, the Contractor shall provide a homing mark on the spigot end in strict accordance with the manufacturer's recommendations.
 - 5. All pipe shall be retained in position so as to maintain alignment and joint closure until sufficient haunching and backfill has been placed to adequately hold the pipe in place.
 - 6. Foreign materials shall be prevented from entering the pipe while pipe is being placed in the trench. No debris, tools, articles of clothing or other materials shall be placed in the pipe at any time.
 - 7. At all times when pipe laying is not in progress for ten (10) minutes or more the open ends of the pipe shall be closed by a watertight plug to ensure that absolute cleanliness is maintained inside the pipe at all times. Plugs shall be one-piece plastic with gasket as manufactured by Taylor Made Plastics, Inc., Sarasota, FL, or approved equal.

3.04 JOINTING POTABLE WATER MAINS

- A. Pipe installation and jointing shall be in strict accordance with the pipe manufacturer's specifications and instructions for the type of pipe used and the applicable standards of the Owner's Representative. Joints shall be in strict accordance with AWWA C600.
- B. The Contractor shall take all reasonable precautions to provide assurance that the interior of the pipe and the jointing seal shall be free from sand, dirt, trash or other foreign material before installation in the line. Any pipe or fitting that has been installed containing dirt or other detrital material shall be removed, cleaned and relaid. Extreme care shall be taken to keep the bells of the pipe free from sand, dirt or rocks so that the joint may be properly assembled without over stressing the bells.
- C. All pipe shall be installed to the homing mark on the spigot. When field cutting of pipe is required, cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe, cut ends of pipe to be used with push-on bell shall be beveled to conform to the manufacturers spigot end. Care shall be taken to prevent damage to linings.

- D. Deflection at pipe joints shall not exceed one half (1/2) the maximum pipe deflection recommended by the pipe manufacturer. If at any time joint deflections exceed the manufacturer's maximum recommended pipe deflections, an appropriate fitting shall be used.

3.05 PIPE JOINT RESTRAINTS AND THRUST BLOCKING

A MECHANICALLY RESTRAINED JOINTS

Mechanical pipe restraining mechanisms for push-on or mechanical joints will be used unless concrete blocking is specifically indicated on the plans, or as directed by the Owner's Representative.

Restraining glands, tie rods, clamps or other components of dissimilar metals shall be protected against corrosion by the application of a suitable coating at the direction of the Owner's Representative.

B. THRUST BLOCKING

Thrust blocking will not be allowed unless the job conditions dictate that conventional methods of mechanically restraining the pipe are not practical.

Where concrete thrust blocks are required due to the nature of the construction, vertical and horizontal reaction blocking shall be concrete having a compressive strength of not less than 2000 psi at 28 days. Thrust blocking shall be placed between undisturbed soil and the fitting to be restrained. The bearing area of the thrust blocking shall be adequate to prevent movement of the fittings and shall be of the size, weight and dimensions shown on the plans or as directed by the Owner's Representative.

Prior to placing concrete for thrust blocking all pipe joints, glands, flanges, bolts and other appurtenances shall be protected by 15 lb. roofing felt or other approved material. Plastic sheeting or other similar material shall not be used. Wood side forms shall be used when placing concrete for thrust blocking as shown in the applicable detail at the end of this section.

The blocking shall be located so as to contain the resultant force in such a way that the pipe and fittings will be accessible for repair. The blocking shall be sized to include soil conditions, pipe type and fittings, pressure conditions, cover, compaction, and all other variables that could affect the size of the thrust block and restraint required. An appropriate factor of safety shall be applied to all thrust block sizing calculations.

C. RESTRAINT/CONCRETE THRUST BLOCK DESIGN

Mechanical restraints or concrete thrust blocking shall be sized for the working pressure plus surge allowance, or a test pressure of 200 psi, whichever is greater. Adequate factors of safety shall be employed.

D. FUSIBLE PIPING JOINT RESTRAINT

Fusion joining of PVC and HDPE piping materials may be used in lieu of conventional joint restraint where hydraulic directional drilling is required or selected or where special construction conditions may dictate this method of joint restraint. Butt fusion with standard heat fusion equipment shall be used and the fused joint shall have at least 96% of the tensile and burst strength of the pipe material. Pipe ends to be fused shall be machined flush and aligned with each other. Heat fusion shall be accomplished by standard heat fusion equipment in strict accord with the requirements of the pipe manufacturer. Fusible PVC C-900 pipe shall meet ASTM cell classification 12454B.

3.06 PIPELINE IDENTIFICATION

A. PIPE DETECTING WIRE FOR NON-METALLIC PIPE

See Section 02505.

B. PIPE IDENTIFICATION

1. Plastic pipe (PVC and HDPE) shall be pigmented in a “safety” blue color. The entire pipe shall be pigmented or “safety” blue strips on the longitudinal axis of the pipe shall be pigmented. Each stripe shall be at least 2 inches in width. Pipelines smaller than 24 inch outside diameter shall have at least two stripes at the 12 and 6 o’clock positions. Pipelines 24 inch and larger in diameter shall have three stripes at the 12, 4 and 8 o’clock positions.

2. Non-metallic pipe not meeting the above requirements shall, upon approval by the Owner’s Representative, have adhesive marking tapes applied in accordance with Section 02505.

3. Metallic pipe (ductile iron or steel) can be painted with a safety blue stripe to designate potable water in lieu of the marking tape. Stripes shall be painted in 2 inch minimum widths at the same locations as required for plastic pipe. Paint shall be an acrylic aliphatic urethane, Devthane #378 or approved equal. Dry film thickness shall be greater than 2 mils. Paint shall be applied at least 24 hours prior to placement of the piping materials in the trench, to allow adequate time for drying.

C. UNDERGROUND WARNING TAPE

See Section 02505.

D. VALVE BOX I.D. TAG

1. All valve boxes shall have concrete collars and I.D. tags, per the standard detail on the drawings.

3.07 CONNECTIONS FROM NEW TO EXISTING WATER MAINS

A. No connections will be allowed from new to existing potable water mains without written approval from the Owner’s Representative, and cleared for use by FDEP (if an FDEP permit to construct was necessary)..

1. Approval will be made only after a request form for alteration or connection has been submitted with approved plans.

2. The use of fire hydrants by other than authorized persons is prohibited. The Owner’s Representative may permit the use of water from a fire hydrant for construction or other purposes provided the applicant shall properly meet the conditions as described in Section 1500 of these Specifications and as shown in the appropriate standard. The installation shall be under the supervision of the Owner’s Representative.

3. Valves shall not be operated by any person other than Reedy Creek Energy Services Water Department personnel.

3.08 FLUSHING

- A. Foreign material left in the pipelines during installation often result in valve and fire hydrant seat leakage during hydrostatic pressure testing. The Contractor shall make every effort to insure that lines are kept clean during installation.
- B. Thorough flushing is required prior to hydrostatic pressure testing; flushing for pipelines less than 10" diameter shall be accomplished by partially opening valves and fire hydrants several times under actual line pressures with pipeline velocities of not less than 3.0 feet per second in the largest line size to be flushed. The size of the jumper connection shall be large enough to achieve the required 3.0 feet per second velocity in the pipe being flushed yet shall not exceed 10 fps in the jumper connection.

The pipelines shall be flushed full bore and shall not be less than three (3) times the total volume of the section being tested. Lines shall be flushed with only potable water.

3.09 SWABBING

- A. New water mains 10" diameter and larger shall be hydraulically or pneumatically cleaned with a polypropylene swabbing device to remove dirt, sand and debris from main.
- B. If swabbing access and egress points are not provided in the design drawings, it will be the responsibility of the Contractor to provide temporary access and egress points for the cleaning, as required.
- C. Passage of cleaning poly swabs through the system shall be constantly monitored, controlled and all poly swabs entered into the system shall be individually marked and identified so that the exiting of the poly swabs from the system can be confirmed.
- D. Cleaning of the system shall be done in conjunction with the initial filling of the system for its hydrostatic test. After initial slow-fill, pipe shall sit full for 24 hours to facilitate cleaning and collection of debris from interior of pipe.
- E. The Contractor shall insert flexible polyurethane foam swabs (two pounds per cubic foot density) complete with rear polyurethane drive seal, into the first section of pipe. The swabs shall remain there until the pipeline construction is completed.
- F. The line to be cleaned shall only be connected to the existing system at a single connection point.
- G. Locate and open all new in-line valves beyond the point of connection on the pipeline to be cleaned during the swabbing operation.
- H. At the receiver or exit point for the poly swab, the Contractor is responsible for creating a safe environment for collection of debris, water and the swab. Considerations shall be made for protecting surrounding personnel and property and safe retrieval of the swab.
- I. Only RCES utility operations personnel shall operate the supply valve from the existing distribution system. Cleaning and flushing shall be accomplished by propelling the swab down the pipeline to the exit point with potable water. Flushing shall continue until the water is completely clear and swab is retrieved.
- J. Re-apply a series of individual swabs in varying diameters and/or densities as required, to attain proper cleanliness of pipeline.

- K. Swabbing speed shall range between two and five feet per second.
- L. After the swabbing process, pressure testing and disinfection of the pipe shall be completed in accordance with this Section.

3.10 PRESSURE AND LEAKAGE TESTING

- A. Hydrostatic pressure and leakage testing of water mains shall be performed in accordance with Section 4 of AWWA C600 except as modified below. All testing shall be made using only potable water. Air testing shall not be permitted.
 - 1. The Contractor shall furnish all gauges, meters, pressure pumps, and all other equipment required to pressure test the main at no additional cost to the Owner.
 - 2. The Contractor shall submit his plan for testing the system to the Owner's Representative for review not less than ten (10) working days prior to starting the test.
 - 3. The pipelines shall be tested in such sections as may be directed by the Owner's Representative or by installing temporary plugs as required. Pressure tests will not be allowed against closed valves unless approved by the Owner's Representative. In no case shall the test section exceed one thousand (1000) linear feet unless approved by the Owner's Representative.
 - 4. All sections which fail to meet the tests shall be repaired and the leakage eliminated, regardless of the total leakage as shown by the test.
 - 5. All lines which fail to meet the tests shall be repaired and retested as necessary until the test requirements are complied with, at no additional cost to the Owner. All defective materials, pipes, valves and appurtenances shall be removed and replaced at the contractor's expense.
 - 6. The Contractor shall provide accurate means for measuring the water required to maintain the test pressure. The quantity of water required to maintain the test pressure shall be the measure of the leakage.
- B. The required pressure for the field hydrostatic pressure test shall be two (2) times the working pressure at the point of testing, but in no case shall the test be less than 200 psi, with no pressure loss.
 - 1. The Contractor shall provide all temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks, service saddles, pipe risers and angle globe valves shall be provided at each dead-end in order to bleed air from the main. The cost of these items shall be included as part of the testing.
 - 2. The duration of the pressure test shall be a minimum of four (4) hours. The costs of all required items shall be included as part of the testing.
- C. TEST PRESSURE RESTRICTIONS
 - 1. Test pressures shall not exceed the pipe or thrust-restraint design.
 - 2. No test pressure variations for the duration of the test shall be allowed.

D. PRESSURIZATION OF THE LINES

1. Each section of the pipe shall be slowly filled with water and pressurized to the specified test pressure based on the elevation of the lowest point of the line or section under test, and corrected to the elevation of the test gauge by means of a force pump connected to the pipe in a manner satisfactory to the Owner's Representative..
2. In no case shall a line be tested while connected to an existing water main.

E. AIR REMOVAL BEFORE TESTING

1. Prior to applying the specified test pressure, all air shall be expelled from the pipe, valves and hydrants.
2. If permanent air relief valves or air vents are not located at all high points, the Contractor shall install corporation cocks at such points so that all air can be expelled as the line is filled with water. After all air has been expelled from the line, the corporation cocks shall be closed and the test pressure applied.
3. After the main has been tested and accepted, the corporation cocks shall be removed and plugged.

F. EXAMINATION UNDER PRESSURE

All exposed pipe, fittings, valves, hydrants, joints, etc. shall be carefully examined during the test. Defective or damaged pipe, fittings, valves or other appurtenances that are discovered following the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until satisfactory to the Owner's Representative.

G. ACCEPTANCE OF THE INSTALLATION

Final acceptance shall be determined on the basis of zero pressure drop. If the test of any section of pipe discloses leakage, the Contractor, at his own expense, shall locate and make all repairs necessary until all leakage is eliminated

3.11 DISINFECTION OF POTABLE WATER PIPELINES

- A. Prior to placing the water system in service, all potable water pipelines shall be chlorinated in accordance with AWWA C-651, "AWWA Standard For Disinfecting Water Mains" and the requirements of Chapter 62-555 FAC.
- B. The Contractor shall notify the Owner's Representative not less than five (5) working days prior to commencement of disinfection of the lines and shall present his plan for chlorination to the Owner's Representative for approval.
- C. The location of the sampling points and chlorination points shall be determined by the Owner's Representative and shall include all locations referenced in the required permits. All taps for chlorination and sampling shall be uncovered and backfilled by the Contractor at no additional expense to the Owner.
- D. All line disinfection must be witnessed by the Owner's Representative. Owner's Representative will take bacteriological samples and have them tested.

- E. After the line has been tested and accepted, the corporation cocks shall be removed and plugged, or left in place at the discretion of the Owner's Representative. The Contractor shall repair any damage to pipe exterior coating prior to acceptance.
- F. General procedure for disinfection of potable water systems.
1. Prevent contaminating materials from entering the water main during construction, repair or storage.
 2. Remove by flushing any detritus that may have entered the water main during construction.
 3. Chlorinate any residual contamination that may remain in the lines, through a tap at one end of the line.
 4. Flush chlorinated water from the main after the required minimum detention time of 24 hours.
 5. Determine the bacteriological quality of the water by laboratory examination in accordance with "Standard Methods For the Examination of Water or Wastewater" or AWWA Manual M12.
 6. Satisfactory bacteriological test results shall be required before any potable water system is placed into service.
 7. No new potable water piping shall be placed into active service until the line(s) have been cleared for use by the Florida Department of Environmental Protection.

G. FILLING AND CONTACT

When installation has been completed, and flushed clean, the main shall be filled with water from the existing water distribution system or other approved source of supply and shall be made to flow at a constant measured velocity no greater than 1.0 foot per second into the newly laid water main. The Contractor shall furnish a water meter or other approved device for measuring the rate of flow at no additional cost to the Owner.

1. At a point not more than 2.0 feet downstream from the beginning of the new main, the entering water shall be dosed with a 1.0 percent chlorine solution, fed at a constant rate, such that the water will have a free chlorine residual of not less than 25 mg/L at the end of a 24-hour holding period.
2. To assure that this concentration is provided, the Contractor shall provide testing services to measure the chlorine concentration at regular intervals, in accordance with the procedures described in the current edition of "Standard Methods For the Examination of Water or Wastewater", or AWWA Manual M12. Approved standard chlorine test kits may be used.
3. The following table gives the amount of chlorine required for each 100-feet of pipeline of various diameters. Solutions of 1-percent may be prepared using sodium hypochlorite or calcium hypochlorite. (Note: Calcium hypochlorite requires one pound of CaCl_2 to 8 gallons of water to provide the required chlorine concentration.)

CHLORINE REQUIRED TO PRODUCE 25 mg/l CONCENTRATION IN 100-FT. OF PIPE BY DIAMETER		
PIPE DIAMETER (INCHES)	100% CHLORINE (lbs./100 Feet Pipe)	1.0% CHLORINE (lbs. NaOCl / Gal. water)
4	0.013	0.16
6	0.030	0.36
8	0.054	0.65
10	0.085	1.02
12	0.120	1.44
16	0.217	2.60
24	0.411	4.90

4. During the application of chlorine, valves shall be positioned and operated so that the strong chlorine solution in the main being treated will not flow into connecting water mains that are in active service.
5. Chlorine application shall not cease until the entire main is filled with heavily chlorinated water.

The chlorinated water shall be retained in the main for not less than 24 hours, during which time all valves, hydrants and appurtenances in the treated section shall be operated to insure complete disinfection.

At the end of the 24 hour period, the treated water in all portions of the main shall have a residual of not less than 10 mg/L of free chlorine.

6. Hypochlorite solutions shall be applied to the water main using a gasoline powered or electrically powered chemical-feed pump designed for feeding chlorine solutions at a controlled rate of flow. Feed lines shall be of such material and strength as to safely withstand the corrosion caused by the concentrated chlorine solutions and the pressures created by the pumps. All connections shall be checked for tightness before solution is applied to the main.

H. FINAL FLUSHING

After the 24-hour retention period, the heavily chlorinated water shall be flushed from the main until the chlorine residual measurements show that the concentration in the water leaving the main is at least 3.0 mg/L, but not less than 0.5 mg/L.

I. DISPOSING OF CHLORINATED WATER

The environment to which the chlorinated water is to be discharged shall be inspected and approved by Reedy Creek Environmental Permitting and Engineering and the Owner's Representative prior to discharge of chlorinated effluent. If there is any question that the chlorinated discharge will cause damage to the environment, then a dechlorinating agent shall be applied to the water to be wasted to neutralize the chlorine residual remaining in the water.

1. Chlorinated water shall not be discharged into surface waters, including lakes, ponds, reservoirs, canals or streams.
2. The chlorine residual of water being disposed of shall be neutralized by treating with one of the chemicals listed in the following table:

POUNDS OF CHEMICALS REQUIRED TO REDUCE AND NEUTRALIZE VARIED RESIDUAL CHLORINE CONCENTRATIONS IN 100,000 GALLONS OF WATER. *				
RESIDUAL CHLORINE (mg/L)	SULFUR DIOXIDE (SO ₂)	SODIUM BIOSULFATE (NaHSO ₃)	SODIUM SULFITE (Na ₂ SO ₃)	SODIUM THIOSULFAT E (Na ₂ SO ₃ - 5H ₂ O)
1	0.8	1.2	1.4	1.2
2	1.7	2.5	2.9	2.4
10	8.3	12.5	14.6	12.0
50	41.7	62.6	73.0	60.0

* With the exception of chlorine residual, in mg/L, or P.P.M., all amounts shown above are in pounds.

J. BACTERIOLOGICAL TESTING

STANDARD CONDITIONS:

After final flushing and before the water main is placed in service, samples shall be collected from the end of the line and shall be tested for bacteriological quality in accordance with "Standard Methods For the Examination of Water and Wastewater", and shall show the absence of coliform organisms. A standard plate count shall be required.

1. Sampling:

At least two samples shall be collected from the new main and two from each branch, in addition to the sampling points stipulated in the FDEP permit. In the case of extremely long mains (not greater than 1000 linear feet), it is required that samples be collected along the length of the line as well as at its end. The total number of samples and the locations of sampling points shall be as directed by the Owner's Representative and all regulatory agencies.

2. Special Conditions:

If, during construction, trench water has entered the main, or if in the opinion of the Owner's Representative, excessive quantities of dirt and debris have entered the main, bacteriological samples shall be taken at intervals of not more than 200 feet and shall be identified by station or location. Samples shall be taken of water that has been standing in the main for at least 16 hours after final flushing has been completed.

3. Sampling Procedures:

Samples for bacteriological analysis shall be collected in sterile bottles treated with sodium thiosulfate as required by "Standard Methods for the Examination of Water and Wastewater". Hoses and fire hydrants shall not be allowed in the collection of bacteriological samples. Approved sampling points shall be corporation cocks with gooseneck assemblies and terminal blow-off/sampling tap only.

K. RECHLORINATION

1. Should the initial disinfection fail to produce satisfactory bacteriological samples, the main shall be rechlorinated by the continuous feed method until satisfactory results are obtained.
2. Should positive bacteriological samples continue to be recorded, the situation shall be evaluated by the Owner's Representative to determine corrective action, and daily samples recorded.
3. All retesting shall be at the expense of the Contractor.

- L. Prior to placing the water system in service, the water system shall be cleared for use, in writing, by the Florida Department of Environmental Protection and the Owner's Representative.

END OF SECTION

PART 1 - GENERAL**1.01 WORK INCLUDED**

- A. This section shall include, but not be limited to all labor, equipment, tools, materials and all incidentals required for the construction, installation, and testing of a reclaimed water distribution system, including all appurtenances as shown on the plans and as specified herein.
- B. The work shall include but not be limited to, ductile iron pipe, PVC pipe, valves, air release and vacuum relief valves, ductile iron fittings, strainers, tapping sleeves, tapping saddles, cast iron and plastic valve boxes, backflow preventers, master meters, fire hydrants, valve vaults and boxes, all restrained joints and concrete thrust blocking as required for all types of piping, all excavation, sheeting, shoring and bracing, dewatering, jacking and boring, where required, slope protection, backfilling, grading and drainage, concrete work, rip-rap, compaction, grass restoration, pavement restoration where required and all other work necessary to complete the construction, installation, flushing, swabbing, testing and disinfection (when required) of the reclaimed water distribution system.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. This specification references the following RCID standard specifications which form a part of this specification to the extent specified herein. In any case of conflict, the most restrictive specification shall prevail.

1. Submittals	Section 01330
2. Testing Laboratory Services	Section 01410
3. Excavating and Backfilling for Utilities	Section 02320
4. Boring & Jacking	Section 02445
5. Hydraulic Directional Drilling	Section 02448
6. Underground Utilities Marking	Section 02505

1.02 DEFINITIONS

- A. Under this subsection the following definitions shall apply:
1. **DUCTILE IRON PIPE:** Cast ferritic material in which a major part of the carbon content occurs as free carbon in nodules or spheroidal form, and meeting the requirement of ASTM D746.
 2. **DUCTILE IRON PUSH-ON JOINT:** The push-on joint as described in AWWA C151 and the single rubber gasket joint as described in AWWA C111.
 3. **FDEP:** The Florida Department of Regulation.
 4. **FLANGED JOINT:** Bolted and gasketed joint as described in AWWA C115 and ANSI/ASME B16.1.
 5. **MECHANICAL JOINT:** Bolted and gasketed joint as described in AWWA C111

6. POLYVINYL CHLORIDE PIPE: Thermoplastic compounds prepared by combining PVC resins with modifiers, stabilizers, lubricants and pigments to obtain the properties required to meet the dimensional and stability requirements of AWWA C900.

1.03 QUALITY ASSURANCE

A. TECHNICAL GUIDANCE

1. Handbook of Ductile Iron Pipe, latest edition, DIPRA
2. Recommended Standards for Water Works (Ten-State Standards), latest edition
3. Florida Department of Environmental Protection, FAC 62-610.
4. Handbook of PVC Pipe Design & Construction, latest edition, Uni-Bell Plastic Pipe Association.
5. Manual M23: PVC Pipe - Design & Installation, AWWA

B. REFERENCE STANDARDS

This specification references the following standards which form a part of this specification to the extent specified herein. The latest edition of each standard shall apply. In any case of conflict, the most restrictive standard shall prevail.

1. AWWA C104/ANSI A21.4 Cement-Mortar Lining For Ductile Iron Pipe and Fittings For Water.
2. AWWA C105/ANSI A21.5, Polyethylene Encasement For Ductile Iron Piping For Water and Other Liquids.
3. AWWA C110/ANSI A21.10 Ductile Iron Fittings, 3 in. through 48 in., for Water and other liquids
4. AWWA C111/ANSI A21.11 Rubber Gasket Joints For Ductile Iron Pipe and Fittings.
5. AWWA C115/ANSI A21.15, Flanged Ductile Iron Pipe
6. AWWA C151/ANSI 21.51 Ductile Iron Pipe.
7. AWWA C153/ANSI A21.53 Compact Ductile Iron Fittings.
8. AWWA C500, Gate Valves For Water and Sewage Systems.
9. AWWA C503, Wet-Barrel Fire Hydrants.
10. AWWA C504, Rubber-Seated Butterfly Valves.
11. AWWA C509, Resilient Seated Gate Valves For Water and Sewerage Systems.
12. AWWA C600, Installation of Ductile Iron Water Mains and Appurtenances.
13. AWWA C605, Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe & Fittings for Water

14. AWWA C900, Polyvinyl Chloride (PVC) Pressure Pipe, 4 Inch through 12 Inch
15. AWWA C905, Polyvinyl Chloride (PVC) Water Transmission Pipe, Nominal Diameters 14 Inch Through 36 Inch
16. ASTM C478, Precast Concrete Valve Boxes and Vaults.
17. ASTM C150, Concrete, Type II.
18. ASTM D1784, Rigid Polyvinyl Chloride PVC Compounds and Chlorinated Polyvinyl Chloride (CPVC) Compounds.
19. ASTM D2241, Standard Specification for Polyvinyl Chloride (PVC) Plastic Pipe.
20. ASTM D3139, Joints For Plastic Pressure Pipes Using Flexible Elastomeric Seals.
21. ASTM F477, Elastomeric Seals For Joining Plastic Pipes.

C. INSPECTION AND CERTIFICATION OF PIPE AND FITTINGS

1. All pipe fittings and appurtenances to be installed under this Specification may be inspected and tested for compliance with these specifications at the manufacturer's facility by an independent testing laboratory selected by the Contractor. The manufacturers' cooperation shall be required in these inspections.
2. The Contractor shall obtain from the pipe manufacturer a certificate of inspection stating that the pipe and fittings supplied for this Project has been inspected and tested at the point of origin, and that they meet or exceed the requirements set forth in these specifications.
3. The costs of the inspections and tests shall be borne by the Contractor. Letters of certification shall be furnished for all inspections and tests prior to the installation of the pipe, fittings and appurtenances.

D. INSPECTION UPON DELIVERY

1. All pipe fittings and appurtenances shall be subject to visual inspection by a representative of the Owner's Representative at the point of delivery and again just before being lowered into the trench. All materials found to be defective due to manufacture, or damaged in transit shall be rejected and shall be immediately removed from the job site.
2. The Owner's Representative may perform or cause to be performed all tests as specified in the applicable AWWA Standards, to ensure conformance with the standard. In the case of failure of the pipe or appurtenances to comply with such standards, the responsibility for replacement of the defective materials becomes that of the manufacturer or the Contractor.
3. The entire product of any manufacturer may be rejected when, in the opinion of the Owner's Representative, the methods of manufacture fail to secure uniform results, or where the materials are such as to produce pipe and/or fittings of inferior quality.

E. INSPECTION OF PRECAST CONCRETE PRODUCTS

1. The quality of all materials, the process of manufacture and the finished precast concrete sections shall be subject to inspection and approval by the Owner's Representative. Such inspection may be made at the place of manufacture and/or at the site after the precast products have been delivered.

Even though sample sections may have been approved and accepted as satisfactory at the manufacturer's yard, the finished sections shall be subject to rejection at any time after delivery, due to failure to meet any of the specification requirements.

2. Sections rejected after delivery to the job site shall be marked for identification and shall be removed from the job site within 24 hours. Sections which have been damaged after delivery will be rejected and replaced at the Contractor's expense.
3. At the time of inspection, the precast sections will be carefully examined to assure compliance with ASTM C478, these specifications and the manufacturer's approved shop drawings.
4. All sections shall be examined for general appearance, dimensions, scratch strength, laitance, honeycombs, blisters, cracks, roughness, soundness, etc. The surface of all precast sections shall be dense and close textured.
5. Imperfections may be repaired, subject to the approval of the Owner's Representative, after demonstration by the manufacturer that strong, sound and permanent repairs can result. All repairs shall be carefully inspected before final approval.

1.05 EXPERIENCE

- A. The Contractor shall be a firm with not less than five (5) years of successful experience in the installation and construction of pipelines incorporating products and materials similar to those specified herein.
 1. The Contractor shall take field measurements prior to installation and fabrication.
 2. The Contractor shall comply with all relevant requirements of regulatory agencies having jurisdiction over the project.
 3. The Contractor shall comply with the requirements of Reedy Creek Energy Services (RCES) and the Reedy Creek Improvement District (RCID).

1.06 SUBMITTALS

- A. PROCEDURES
 1. Submit product data, shop drawings, samples, testing laboratory reports, etc. in a timely manner and in accordance with the requirements of Section 01330, Submittals.
- B. PRODUCT DATA
 1. The data to be submitted shall include, but not be limited to:
 - a. Ductile iron pipe and fittings.
 - b. Polyvinyl chloride (PVC) pressure pipe.
 - c. Fusible C-900 PVC
 - d. High density polyethylene pipe
 - e. Elastomeric seals for ductile iron and PVC pipe joints.

- f. Resilient seated gate valves.
- g. Tapping valves.
- h. Resilient seated butterfly valves.
- i. Air release and vacuum relief valves.
- j. Tapping saddles and tapping sleeves.
- k. Cast iron and plastic valve boxes.
- l. Precast concrete valve vaults.
- m. Valve operators.
- n. Mechanical joint retainer glands.
- o. Corrosion protection materials.
- p. Underground marking and identification tapes.
- q. Underground tracer wire and appurtenances.
- r. Fire hydrants and fittings.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

- A. Ductile iron pipe (DIP) for reclaimed water service shall conform to AWWA C151.
 - 1. Ductile iron pipe shall have a minimum tensile strength of 60,000 psi with minimum yield strength of 42,000 psi
 - 2. Pipe shall be Pressure Class 200, minimum.
 - 3. Ductile iron pipe for reclaimed water main service shall have a cement mortar lining and a bituminous seal coat in accordance with AWWA C104 and a minimum 1.0 mil bituminous coating on the pipe exterior in accordance with AWWA C151.
 - 4. Ductile iron pipe shall be supplied in lengths not in excess of a nominal twenty (20) feet and, unless otherwise specified, shall have rubber-gasket joints conforming to AWWA C111.
 - 5. Single gasket push-on joints shall normally be used where joint restraint is not required.
 - 6. Where joint restraint is required, restrained joints shall: be “T-R Flex” joints as manufactured by U.S. Pipe, “Flex-Ring” and “Lok-Ring” joints as manufactured by American Ductile Iron Pipe, or approved equal.

Joint restraint other than at fittings may also be accomplished with American “Fast Grip” or U.S. Pipe “Field Lok” gaskets, or approved equal.

- Restrained joints at fittings shall utilize mechanical joints with a restraining gland. Restraining glands shall be EBAA Iron Series "1100" or "3000", Stargrip Series 3000, Series 3000 OS or Series 3100P, or approved equal.
7. High strength, low alloy steel T-bolts and nuts for mechanical joint shall conform to AWWA C110, Appendix, and AWWA C111. Threads shall conform to ANSI B.1.
 8. Where called for on the plans, polyethylene encasement for ductile iron pipe shall conform to AWWA C105.
 9. Acceptable manufacturers:
American, U.S. Pipe, Griffin Pipe or approved equal
- B. Ductile iron fittings for reclaimed water distribution shall conform to AWWA C110 or C153. Minimum pressure rating shall be 250 psi.
1. Rubber gasket joints shall be mechanical joint in accordance with AWWA C111.
 2. Fittings shall be lined and coated according to section 2.01 A.3 above.
 3. All fittings shall be cast and machined allowing the bolt holes to straddle the vertical centerline.
 4. Only those fittings that are of domestic (United States) manufacture will be acceptable.
 5. Fittings shall have distinctly cast on them the pressure rating, nominal diameter of openings, manufacturer's identification, country of manufacture, and number of degrees or fraction of the circle. The letters "D.I." or the word "Ductile" shall also be cast on the outside of the body.
 6. Fusion bonded epoxy coated ductile iron fittings as manufactured by "One Bolt, Inc." are acceptable, provided they meet ASTM A 536 grade 65-45-12 and are installed in strict accordance with the manufacturer's instructions.
- C. Flanged ductile iron pipe and fittings with threaded flanges where called for on the plans, shall conform to AWWA C115. Flanges shall be furnished flat faced and drilled to 125 pound template in accordance with ANSI B16.1 full faced gaskets.
- D. Polyvinyl chloride (PVC) pressure pipe for reclaimed water service, in sizes 4-inch through 12-inch shall conform to AWWA C900. PVC pipe for sizes 16" through 30" shall conform to AWWA C905.
1. Laying lengths shall be 20 feet +/- 1 inch for all sizes.
 2. PVC pipe shall exceed pressure Class 200 for all pipe. Use DR14 for sizes 12" and under with cast iron outside dimensions. PVC pipe for sizes larger than 16" shall be DR18, with outside cast iron dimensions
 3. PVC pipe joints shall have an integral wall-thickened bell end with gasket seal conforming to ASTM D3139. (Solvent weld joints will not be permitted.)
 4. PVC pipe for reclaimed water service shall be purple pigmented.
 5. Fittings for use with AWWA C900 pipe shall be ductile iron conforming to section 2.01.B above.

6. Where joint restraint is required, restraining glands may be utilized. Restraining glands shall be specifically designed for use with C900 PVC pipe and shall be EBAA Iron "2000PV" or "3000" Series, Romac "GripRing", Sigma "PV-LOK", Tyler "MJR", Stargrip Series 4000 and Series 4200P or approved equal.
7. All PVC pipe shall be identified on the exterior of the pipe with the following information:
 - a. Nominal pipe size and O.D. base: (e.g. 6-inch C.I.)
 - b. Material code designation number: (PVC 1120)
 - c. Dimension ratio (DR) number
 - d. Pressure classification
 - e. AWWA designation: C900
 - f. Pipe manufacturer's name and production code.
 - g. Date and shift of manufacture.
8. Acceptable manufacturers:
Johns Manville, Certainteed, H&W, Clow, or approved equal.
- E. PVC pipe smaller than 4-inch in size shall conform to ASTM D2241, SDR21, with I.P.S. dimensions, and manufactured from PVC 1120 resin. Appropriate requirements of paragraph 2.01.D above shall apply. Schedule 40 PVC shall not be allowed, unless specifically required by the Owner's Representative.
- F. RESILIENT SEATED GATE VALVES 3" and larger, for reclaimed water service shall conform to, or exceed all applicable requirements of AWWA C509/515.
 1. All resilient seated gate valves shall have non-rising stems for counter clockwise operation and a 2-inch square operating nut.
 2. Each valve shall have the manufacturer's name, pressure rating, the year of manufacture, and an arrow to indicate the direction of opening cast into the valve body.
 3. The interior of the valve body and bonnet shall have a factory applied 2-part thermo setting epoxy resin lining equal to Endurall 3300.
 4. Each valve shall be hydrostatically tested to a pressure equal to twice the specified working pressure prior to shipment from the factory. The manufacturer shall certify each valve.
 5. Acceptable manufacturers:
Clow, American Flow Control, Mueller, Crane, M & H, Kennedy, Keystone, U.S. Pipe, or approved equal.
- G. RUBBER SEATED BUTTERFLY VALVES are not acceptable unless specifically required by the Owner and Engineer of Record and identified as such on the contract documents. Butterfly valves so identified for reclaimed water service shall conform to, or exceed, all applicable requirements of AWWA C-504.
 1. Butterfly valves shall be of the tight closing, rubber seat type with recess-mounted BUNA-N or equal seats securely fastened to the valve body, or attached to the valve disc.

2. The valve disc shall rotate a full 90-degrees from the full open position to the tight shut position. Butterfly valves shall meet the full structural requirements of the applicable sections of AWWA C-504, latest edition.
3. Butterfly valve bodies shall be constructed of cast iron conforming to ASTM A126, Class B (or ASTM A48, Class 40), or ductile iron conforming to ASTM A536, Grade 65-45-12.
4. Buried valves shall have integrally cast mechanical joint ends. All valves for above ground service shall be flanged. Flange drilling shall be in accordance with ANSI B16.1, Class 125.
5. Two trunions for shaft bearings shall be integral with each valve body. Valve body thickness shall be in strict accordance with the applicable provisions of AWWA C-504.
6. Valve discs shall be constructed of NI-RESIST, Type 1, or of ductile iron conforming to ASTM A536, Grade 65-45-12, with stainless steel seating edges. All disc seating edges shall be smooth and polished.
7. Valve shafts shall be of the "stub-shaft" type or a one piece shaft extending full size through the disc bearings and into the operating mechanism. Valve shafts shall be constructed of stainless steel conforming to ASTM A276, Type 304 minimum. Shafts shall be high tensile steel with stainless steel shaft journals, Teflon bushings and shaft seals.
8. Valve seats shall be of a natural rubber or a synthetic type rubber compound similar to BUNA-N. Seats shall be molded in, vulcanized and bonded simultaneously into the valve body and seat. The bond shall be capable of withstanding a test pull of not less than 75 pounds without failure in accordance with ASTM D429, Method B.
9. Valve seats that are attached to the valve disc shall be held in place by a stainless steel retaining ring conforming to ASTM A 296, Grade CF8. Cap screws extending through the rubber seat and the seat retaining ring must be provided for adjustment of the rubber seat. The mating valve body seat shall be constructed of Type 304 stainless steel.
10. Valves shall be equipped with corrosion resistant, self-lubricated sleeve type bearings. The bearing shall be such that the bearing load will not exceed the published design load for the bearing material.
11. Valve operators for manual operation shall be of the worm gear type and shall be fully enclosed.

Valves furnished for underground service shall be fully gasketed and grease packed.

Valves located above ground shall be equipped with handwheel operators and shall have a suitable indicator arrow to show the valve position from full open to fully closed.
12. All valves for underground service, designated to be furnished with above ground operators, shall be equipped with handwheel operators on extended bonnets. The operating shaft for buried valves shall be such that the handwheel shall set not less than 3-feet above finished grade. All other underground butterfly valves shall be furnished with a 2-inch square AWWA operating nut with valve box and cover. All valves buried deeper than 30" shall have cast iron valve extensions.
13. Handwheel operators shall be capable of withstanding a pull of 200 pounds when operator components are positioned at the extreme operator positions without sustaining damage.

Valves with operating nuts shall be capable of withstanding an input torque of 300 ft.-lbs. without sustaining damage.

14. Acceptable manufacturers:
Clow, American Flow Control, Mueller, M & H, Kennedy, Keystone, U.S. Pipe, Centerline, Henry Pratt, or approved equal.
- H. AIR RELEASE AND/OR VACUUM RELIEF VALVES for reclaimed water service shall be installed as shown on the plans. The valves shall be constructed with a 316 stainless steel body, cover and baffle, stainless steel float, bronze water diffuser, BUNA-N or Viton seat and stainless steel trim. Air release valves must be installed in an enclosure as shown on the Standard Details. Fittings from the main to the air release valve in the enclosure shall be threaded and made of brass.
1. Air Release / Vacuum Release Valves shall be combination type, A.R.I. D-040-ST, H-TEC Model 986 (SS), or approved equal.
- I. CORPORATION STOPS. The use of corporation stops for reclaimed water service connections will not be allowed.
- J. SERVICE SADDLES OR TAPPING SLEEVES shall be used for all reclaimed water service taps.
1. Size-on-size taps using tapping saddles or sleeves will not be permitted.

Where size-on-size outlets are required, a tee shall be installed in lieu of a tapping saddle or sleeve. Tapping saddles and tapping sleeves will only be permitted on lines that are at least one nominal pipe size or diameter larger than the proposed tap.

2. For taps 2 inch to 2-½ inch on mains 4 inches or larger, use a double strap service saddle. Saddle body shall be bronze or fusion-coated ductile iron with BUNA-N gasket. Straps shall be bronze or stainless steel. Taps smaller than 2 inch diameter will not be allowed. If a smaller line is preferred, tap the carrier pipe with a 2 inch tap and provide reducers or bushings after the tap to the desired diameter.

Acceptable manufacturers and models:

Smith-Blair No. 323 or 317, JCM 406, Ford FC202, Mueller BR2B or approved equal.

3. Tapping sleeves shall be used for taps 4 inches and larger. Tapping sleeves shall be fabricated of stainless steel, fusion-bonded epoxy coated ductile iron, or fusion-bonded epoxy coated steel and designed for a test pressure of at least 200 psi. The outlet of the tapping sleeve may be either extruded or welded to the tapping sleeve.

The flange shall conform to AWWA C-207, Class D, ANSI 150 lb. drilling. Bolt holes shall straddle the pipe centerline.

The sleeve shall be equipped with a 3/4 inch NPT test plug with a standard square head. The gasket shall be of 360-degree design, and manufactured of gridded virgin GPR compounded for water service and complying with ASTM D-2000-80M 4AA607. An 18-10 stainless steel armor shall be vulcanized to the gasket, to bridge the gap between the securing lugs.

All bolts and nuts shall be stainless steel with 5/8 inch NC threads. Bolt threads shall be fluorocarbon coated to prevent galling. Nylatron G.S. washers shall be provided for lubrication.

Approved manufacturers and models:

Smith-Blair Models 622, 662 or 663; JCM Models 422 or 432; Ford style FAST or FTSC; Mueller H304 or approved equal.

K. TAPPING VALVES

1. Valves for use with tapping sleeves shall meet or exceed all provisions of AWWA C509/515.
2. Valves for use with tapping sleeves shall be resilient seated wedge gate type and shall be designed for use with tapping equipment. The valves shall have non-rising stems and shall have an alignment ring to prevent misalignment with the tapping sleeves.
3. The valves shall close clockwise (right) and open counter clockwise (left), and shall be equipped with a standard 2-inch square operating nut. Valve outlets shall have a flanged mechanical joint.
4. Acceptable manufacturers:
Clow, Mueller, American, U.S. Pipe, Dresser Industries.

L. FIRE HYDRANTS: Wet barrel fire hydrants shall meet or exceed all provisions of AWWA C503. Hydrants shall be Clow/Rich No 92, 3-way "Slimline-Low Silhouette" with No. 30C break-away riser. Dry barrel hydrants shall meet or exceed AWWA C502, UL246, and FM 1510 and shall be American Darling B-84-B with breakable cast iron flange or Mueller Super Centurion 200 or 250. Weep holes on the dry barrel type hydrants are not required or allowed. The hydrant shall have two, 2-1/2 inch hose connections and one 4-1/2 inch pumper connection, complete with all caps and chains. Threads for hose and pumper connections shall be in conformance with the requirements of the RCID Fire Department.

1. The hydrant shall be furnished with the manufacturer's standard prime finish.
2. The manufacturer shall furnish an affidavit stating that the fire hydrant and all material used in the construction of the hydrant, are in conformance with the applicable requirements of AWWA Standard C-503 and this specification, and that all tests specified therein have been performed and that all test requirements have been met.
3. Acceptable Manufacturer: Clow Corporation, Valve Division Corona, California, or American Flow Control a division of American Cast Iron Pipe Co, Birmingham, Alabama or Mueller Co. Substitutes will not be accepted.

M. FLANGED COUPLING ADAPTERS. Flanged coupling adapters for ductile iron pipe shall be Smith-Blair Model 912, JCM Model 301, Dresser Model 127, or approved equal.

N. VALVE BOXES. Valve boxes for reclaimed water service shall be adjustable, cast iron or heavy wall high density polyethylene (HDPE) suitably sized for the size and depth of the buried valve. HDPE boxes shall have all exterior components joined with stainless steel screws and be equipped with a telescoping, plated, square steel tube stem assembly that allows for variable height adjustment. The stem assemble shall be torque tested to 1000 ft-pounds. All valve boxes shall be designed for traffic bearing H-20 wheel loading with square cast iron lids marked "RECLAIMED". Valve boxes shall be Tyler Model 6850/6860, U.S. Foundry Model 7500, American Flow Control's Trench Adapter or approved equal.

2.02 PRECAST CONCRETE PRODUCTS

- A. Precast concrete valve vaults and air release valve manholes shall be in accordance with ASTM C478.
1. Concrete for the construction of manhole sections and valve vaults shall be Class A concrete with a compressive strength of 4000 psi at 28-days and shall conform to ASTM C150, Type II cement.
 2. Valve vaults and manholes shall be precast units with integral base slab and wall sections. Poured in place base slabs shall not be approved.
 3. Precast sections shall be cured by an approved method for a minimum of four (4) days prior to painting and shall not be shipped for a minimum of three (3) days after having been painted. Precast sections shall not be shipped for a minimum of seven (7) days after removal from the forms.
 4. The interior and mating surfaces of all precast concrete products shall have a protective coal tar epoxy coating having a minimum dry thickness of 16 mils. The exterior surfaces shall have a protective coal tar epoxy coating with a minimum dry thickness of 9 mils. The coatings shall be applied by the precast manufacturer in strict accordance with the paint manufacturer's recommendations.

Acceptable coating: Koppers 300M or Devtar 5A by ICI Devoe.
 5. The date of manufacture of the precast sections and the name or trademark of the manufacturer shall be clearly marked or impressed on the exterior of each precast section when the form is removed, and on the interior after the section has been painted.
 6. Precast sections shall be cast with tongue and groove joints, sealed with "Ramnek" (TM) sealant as manufactured by the T.K. Snyder Company of Houston, Texas or approved equal. Joint sealant shall meet or exceed all requirements of Fed. Spec. SS-S-210A and AASHTO M198.
 7. Rubber ring joint seals for precast sections shall not be permitted.
 8. Shallow valve vaults, where the depth of cover is less than four (4) feet, shall be capable of supporting the overburden plus a live load equivalent to AASHTO H-20 loading.
 9. Valve vault base sections shall not be less than eight (8) inches thick and shall be reinforced with number five (5) bars at nine (9) inches on centers, each way and shall have number four (4) bars around each pipe.
 10. All precast concrete products shall be wet cast. Dry casting, or low slump concrete will not be acceptable.
 11. All precast concrete products shall have proper lifting loops in the base slabs, (minimum of three (3)). Penetrating lifting holes will not be acceptable in any structure.

Where non-penetrating lifting holes are approved, their use will not be permitted within eight (8) inches of any joint or pipe penetration.
 12. Precast concrete grade rings for manhole adjustment shall conform to ASTM C478. Grade rings shall be a minimum of two (2) inches thick and a maximum of five (5) inches thick and shall be reinforced with six (6) gauge or thicker reinforcing wire.
 13. Acceptable Manufacturers:

Hanson Precast, Inc., Green Cove Springs, FL
Atlantic Concrete Products, Inc., Sarasota, FL
Mack Concrete Products, Inc., Astatula, FL
Southern Precast, Inc., Alachua, FL
Old Castle Precast, Orlando, Fla.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION REQUIREMENTS

- A. Unless indicated otherwise on the drawings or as specified herein, the minimum cover for reclaimed water mains shall not be less than thirty-six (36) inches.
- B. Unless indicated otherwise on the drawings, separation requirements between reclaimed water lines and other FDEP regulated utilities shall be in accord with Chapter 62-555 FAC, which requires a minimum of 12" of vertical separation and 36" of horizontal separation. Preferred vertical separation is greater than 18 inches and preferred horizontal separation is greater than 10 feet.
- C. Reclaimed water mains shall be laid in the dry. All work occurring at trench depths below groundwater level shall be dewatered and maintained in a dry condition continuously while work is taking place at those elevations.
 - 1. Dewatering methods shall be at the Contractor's option, subject to the approval of the Owner's Representative.
 - 2. The groundwater level shall be lowered only to sufficient depth to assure that trench bottom soils will not be saturated or develop quick conditions.
 - 3. Disposal of dewatering water shall conform to the requirements of RCID and its General Permit.
 - 4. Generally, dewatering will require monitoring of both the quantity and quality of the discharge, and discharge to surface waters cannot exceed a turbidity level of 29 NTU over background.
 - 5. Consult with and obtain Owner's approval of dewatering means and methods prior to commencement of the work.
- D. Reclaimed water mains and appurtenances shall be constructed using the materials indicated on the drawings and as specified herein. Substitutions shall not be made without the express approval of the Owner's Representative.
- E. The Contractor shall not cover lies until they have been inspected and approved.
- F. Conflict encasement shall be in accordance with the applicable standard.

3.02 HANDLING AND STORAGE OF PIPE FITTINGS AND APPURTENANCES

- A. All pipe, fittings and appurtenances shall be loaded and unloaded by lifting with hoists or skidding in order to avoid shock or damage.
 - 1. Pipe, fittings and appurtenances shall not be dropped, rolled or skidded into or against pipe, fittings or other construction products on the ground.

2. Slings, hooks, pipe tongs and other lifting devices shall be padded and used in such a manner as to prevent damage to pipe or construction products.
 3. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and appurtenances shall be kept free from dirt, oil, grease and foreign matter at all times.
- B. Pipe shall not be stacked higher than the limits shown in the following table.

MAXIMUM STACKING HEIGHTS FOR PIPE

Nominal Pipe Size (Inches)	6	8	10	12	14	16	18	20	24	30	36	42
Number of Tiers	13	11	10	9	8	7	6	6	5	4	4	3

The bottom tier shall be kept off of the ground on timbers. Pipe in tiers shall be alternated, (i.e...) bell, plain end; bell, plain end, etc. No less than two rows of timbers shall be placed between tiers. Chocks shall be affixed to each, in order to prevent movement. The timbers shall be large enough to prevent contact between pipes in adjacent tiers.

- C. The Contractor shall cover stored PVC pipe to prevent exposure to ultraviolet radiation.
- D. Pipe gaskets shall be used in the work on a first-in, first-out basis.
1. Gaskets for mechanical joint and push-on joint ductile iron pipe and fittings shall be stored in a cool, dry location, out of direct sunlight.
 2. Gaskets shall be stored in such a manner so as to prevent coming into contact with petroleum products.
- E. Mechanical joint bolts and locking segments for push-on joints shall be handled and stored in such a manner that will insure proper use in respect to pipe types and sizes.

3.03 LAYING RECLAIMED WATER MAINS

- A. Refer to Section 02320, Excavating and Backfilling for Utilities.
- B. Reclaimed water mains shall be laid in accordance with the details shown in the plans, and as specified herein.
1. The trench bottom shall be graded to the proposed elevation of the pipeline and the bottom shaped to fit the lower quadrant of the pipe. Holes shall be excavated at each bell so the pipe will be uniformly supported along the entire length of the barrel only.
 2. Pipe installation and jointing shall be in strict accordance with the pipe manufacturer's specifications and instructions for the type of pipe used and the applicable standards of the Owner's Representative.
 3. Any pipe having a defective joint, bell or spigot shall be rejected, removed from the work site and replaced with a sound unit.

4. All pipe shall be installed to the homing mark on the spigot. On field cut pipe, the Contractor shall provide a homing mark on the spigot end in strict accordance with the manufacturer's recommendations.
5. All pipe shall be retained in position so as to maintain alignment and joint closure until sufficient haunching and backfill has been placed to adequately hold the pipe in place.
6. Foreign materials shall be prevented from entering the pipe while pipe is being placed in the trench. No debris, tools, articles of clothing or other materials shall be placed in the pipe at any time.
7. At all times when pipe laying is not in progress for ten (10) minutes or more the open ends of the pipe shall be closed by a watertight plug to ensure that absolute cleanliness is maintained inside the pipe at all times. Plugs shall be one-piece plastic with gasket as manufactured by Taylor Made Plastics, Inc., Sarasota, FL, or approved equal.

3.04 JOINTING RECLAIMED WATER MAINS

- A. Pipe installation and jointing shall be in strict accordance with the pipe manufacturer's specifications and instructions for the type of pipe used and the applicable standards of the Owner's Representative. Joints shall be in strict accordance with AWWA C600.
- B. The Contractor shall take all reasonable precautions to provide assurance that the interior of the pipe and the jointing seal shall be free from sand, dirt, trash or other foreign material before installation in the line. Any pipe or fitting that has been installed containing dirt or other detrital material shall be removed, cleaned and re-laid. Extreme care shall be taken to keep the bells of the pipe free from sand, dirt or rocks so that the joint may be properly assembled without over stressing the bells.
- C. All pipe shall be installed to the homing mark on the spigot. When field cutting of pipe is required, cutting shall be done by machine, leaving a smooth cut at right angles to the axis of the pipe, cut ends of pipe to be used with push-on bell shall be beveled to conform to the manufacturer's spigot end. Care shall be taken to prevent damage to linings.
- D. Deflection at pipe joints shall not exceed one half (1/2) the maximum pipe deflection recommended by the pipe manufacturer. If at any time joint deflections exceed the manufacturer's maximum recommended pipe deflections, an appropriate fitting shall be used.

3.05 PIPE JOINT RESTRAINTS AND THRUST BLOCKING

A MECHANICALLY RESTRAINED JOINTS

Mechanical pipe restraining mechanisms for push-on or mechanical joints will be used unless concrete blocking is specifically indicated on the plans, or as directed by the Owner's Representative.

Restraining glands, tie rods, clamps or other components of dissimilar metals shall be protected against corrosion by the application of a suitable coating at the direction of the Owner's Representative.

B. THRUST BLOCKING

Thrust blocking will not be allowed unless the job conditions dictate that conventional methods of mechanically restraining the pipe are not practical.

Where concrete thrust blocks are required due to the nature of the construction, vertical and horizontal reaction blocking shall be concrete having a compressive strength of not less than 2000 psi at 28 days. Thrust blocking shall be placed between undisturbed soil and the fitting to be restrained. The bearing area of the thrust blocking shall be adequate to prevent movement of the fittings and shall be of the size, weight and dimensions shown on the plans or as directed by the Owner's Representative.

Prior to placing concrete for thrust blocking all pipe joints, glands, flanges, bolts and other appurtenances shall be protected by 15 lb. roofing felt or other approved material. Plastic sheeting or other similar material shall not be used. Wood side forms shall be used when placing concrete for thrust blocking as shown in the applicable detail at the end of this section.

The blocking shall be located so as to contain the resultant force in such a way that the pipe and fittings will be accessible for repair. The blocking shall be sized to include soil conditions, pipe type and fittings, pressure conditions, cover, compaction, and all other variables that could affect the size of the thrust block and restraint required. An appropriate safety factor shall be applied to all thrust block sizing calculations.

C. RESTRAINT/CONCRETE THRUST BLOCK DESIGN

Mechanical restraints or concrete thrust blocking shall be sized for the working pressure plus surge allowance, or a test pressure of 200 psi, whichever is greater. Adequate factors of safety shall be employed.

E. FUSIBLE PIPING JOINT RESTRAINT

Fusion joining of PVC and HDPE piping materials may be used in lieu of conventional joint restraint where hydraulic directional drilling is required or selected or where special construction conditions may dictate this method of joint restraint. Butt fusion with standard heat fusion equipment shall be used and the fused joint shall have at least 96% of the tensile and burst strength of the pipe material. Pipe ends to be fused shall be machined flush and aligned with each other. Heat fusion shall be accomplished by standard heat fusion equipment in strict accord with the requirements of the pipe manufacturer. Fusible PVC C-900 pipe shall meet ASTM cell classification 12454B.

3.06 PIPELINE IDENTIFICATION

A. PIPE DETECTING WIRE FOR NON-METALLIC PIPE

See Section 02505

B. PIPE IDENTIFICATION

1. Plastic pipe (PVC and HDPE) shall be pigmented in a purple color matching Pantone 522C. The entire pipe shall be pigmented or purple strips on the longitudinal axis of the pipe shall be pigmented. Each stripe shall be at least 2" in width. Pipelines smaller than 24 inches outside diameter shall have at least two stripes at the 12 and 6 o'clock positions. Pipelines 24" and larger in diameter shall have three stripes at the 12, 4 and 8 o'clock positions.

2. Non-metallic pipe not meeting the above requirements shall, upon approval by the Owner's Representative, have adhesive marking tapes applied in accordance with Section 02505.

3. Metallic pipe (ductile iron or steel) can be painted with a safety purple stripe to designate reclaimed water in lieu of the marking tape. Stripes shall be painted in 2" minimum widths at the same locations as required for plastic pipe. Paint shall be an acrylic aliphatic urethane, Devthane #378 or approved equal. Use a safety purple color or color similar to Pantone 522C; dry film thickness shall be greater than 2 mils. Paint shall be applied at least 24 hours prior to placement of the piping materials in the trench, to allow adequate time for drying.

C. VALVE BOX I.D. TAG

1. All valve boxes shall have concrete collars and I.D. tags, per the standard detail on the drawings.

3.07 CONNECTIONS FROM NEW TO EXISTING RECLAIMED WATER MAINS

A. No connections will be allowed from new to existing reclaimed water mains without written approval from the Owner's Representative, and cleared for use by FDEP (if an FDEP permit to construct was necessary).

1. Approval will be made only after a request form for alteration or connection has been submitted with approved plans.

2. Valves shall not be operated by any person other than Reedy Creek Energy Services Water Department personnel.

3.08 FLUSHING

A. Foreign material left in the pipelines during installation often result in valve and fire hydrant seat leakage during hydrostatic pressure testing. The Contractor shall make every effort to insure that lines are kept clean during installation.

B. Thorough flushing is required prior to hydrostatic pressure testing; flushing for pipelines less than 10" diameter shall be accomplished by the introduction of clean water (potable water or reclaimed water) to achieve pipeline velocities of not less than 3.0 feet per second in the largest line size to be flushed. An air gap or similar approved backflow prevention device shall be used between the reclaimed water main and water supply source. The size of the jumper connection shall be large enough to achieve the required 3.0 feet per second velocity in the pipe being flushed yet shall not exceed 10 fps in the jumper connection.

The pipelines shall be flushed full bore and shall not be less than three (3) times the total volume of the section being tested.

3.09 SWABBING

A. New reclaimed water mains 10" diameter and larger shall be hydraulically or pneumatically cleaned with a polypropylene swabbing device to remove dirt, sand and debris from main.

B. If swabbing access and egress points are not provided in the design drawings, it will be the responsibility of the Contractor to provide temporary access and egress points for the cleaning, as required.

C. Passage of cleaning poly swabs through the system shall be constantly monitored, controlled and all poly swabs entered into the system shall be individually marked and identified so that the exiting of the poly swabs from the system can be confirmed.

- D. Cleaning of the system shall be done in conjunction with the initial filling of the system for its hydrostatic test. After initial slow-fill, pipe shall sit full for 24 hours to facilitate cleaning and collection of debris from interior of pipe.
- E. The Contractor shall insert flexible polyurethane foam swabs (two pounds per cubic foot density) complete with rear polyurethane drive seal, into the first section of pipe. The swabs shall remain there until the pipeline construction is completed.
- F. The line to be cleaned shall only be connected to the existing system at a single connection point.
- G. Locate and open all new in-line valves beyond the point of connection on the pipeline to be cleaned during the swabbing operation.
- H. At the receiver or exit point for the poly swab, the Contractor is responsible for creating a safe environment for collection of debris, water and the swab. Considerations shall be made for protecting surrounding personnel and property and safe retrieval of the swab.
- I. Only RCES utility operations personnel shall operate the supply valve from the existing distribution system. Cleaning and flushing shall be accomplished by propelling the swab down the pipeline to the exit point with reclaimed or potable water. Flushing shall continue until the water is completely clear and swab is retrieved.
- J. Re-apply a series of individual swabs in varying diameters and/or densities as required, to attain proper cleanliness of pipeline.
- K. Swabbing speed shall range between two and five feet per second.
- L. After the swabbing process, pressure testing and disinfection of the pipe shall be completed in accordance with this section.

3.10 PRESSURE AND LEAKAGE TESTING

- A. Hydrostatic pressure and leakage testing of water mains shall be performed in accordance with Section 4 of AWWA C600 except as modified below. All testing shall be made using potable or reclaimed water. Air testing shall not be permitted.
 - 1. The Contractor shall furnish all gauges, meters, pressure pumps, and all other equipment required to pressure test the main at no additional cost to the Owner.
 - 2. The Contractor shall submit his plan for testing the system to the Owner's Representative for review not less than ten (10) working days prior to starting the test.
 - 3. The pipelines shall be tested in such sections as may be directed by the Owner's Representative or by installing temporary plugs as required. Pressure tests will not be allowed against closed valves unless approved by the Owner's Representative. In no case shall the test section exceed one thousand (1000) linear feet unless approved by the Owner's Representative.
 - 4. All sections which fail to meet the tests shall be repaired and the leakage eliminated, regardless of the total leakage as shown by the test.
 - 5. All lines which fail to meet the tests shall be repaired and retested as necessary until the test requirements are complied with, at no additional cost to the Owner. All defective

materials, pipes, valves and appurtenances shall be removed and replaced at the contractor's expense.

6. The Contractor shall provide accurate means for measuring the water required to maintain the test pressure. The quantity of water required to maintain the test pressure shall be the measure of the leakage.
- B. The required pressure for the field hydrostatic pressure test shall be two (2) times the working pressure at the point of testing, but in no case shall the test be less than 200 psi, with no pressure loss.
1. The Contractor shall provide all temporary plugs and blocking necessary to maintain the required test pressure. Corporation cocks, service saddles, pipe risers and angle globe valves shall be provided at each dead-end in order to bleed air from the main. The cost of these items shall be included as part of the testing.
 2. The duration of the pressure test shall be a minimum of four (4) hours. The costs of all required items shall be included as part of the testing.

C. TEST PRESSURE RESTRICTIONS

1. Test pressures shall not exceed the pipe or thrust-restraint design.
2. No test pressure variations for the duration of the test shall be allowed.

D. PRESSURIZATION OF THE LINES

1. Each section of the pipe shall be slowly filled with potable or reclaimed water and pressurized to the specified test pressure based on the elevation of the lowest point of the line or section under test, and corrected to the elevation of the test gauge by means of a force pump connected to the pipe in a manner satisfactory to the Owner's Representative.
2. In no case shall a line be tested while connected to an existing reclaimed water main.

E. AIR REMOVAL BEFORE TESTING

1. Prior to applying the specified test pressure, all air shall be expelled from the pipe, valves and hydrants.
2. If permanent air relief valves or air vents are not located at all high points, the Contractor shall install corporation cocks at such points so that all air can be expelled as the line is filled with water. After all air has been expelled from the line, the corporation cocks shall be closed and the test pressure applied.
3. After the main has been tested and accepted, the corporation cocks shall be removed and plugged.

F. EXAMINATION UNDER PRESSURE

All exposed pipe, fittings, valves, hydrants, joints, etc. shall be carefully examined during the test. Defective or damaged pipe, fittings, valves or other appurtenances that are discovered following the pressure test shall be repaired or replaced with sound material, and the test shall be repeated until satisfactory to the Owner's Representative.

G. ACCEPTANCE OF THE INSTALLATION

Final acceptance shall be determined on the basis of zero pressure drop. If the test of any section of pipe discloses leakage, the Contractor, at his own expense, shall locate and make all repairs necessary until all leakage is eliminated

END OF SECTION

4. SUBMITTALS

A. Submit the following manufacturer's catalog data to the Owner:

1. Conduit data shall include all technical information including, but not limited to, strength, size and tensions.
2. Electronic locating equipment, direct buried markers.
3. Grounding materials.
4. Manhole materials.

B. Submit all ductbank measuring tape lengths to the Owner.

5. DEFINITIONS

A. In the text of this section, the words conduit and duct are used interchangeably and have the same meaning.

6. MATERIALS

Plastic conduit and tubing for direct buried and ductbank applications shall conform to NEMA TC 2 and be of Type EPC-40-PVC, EPC-80-PVC and EB-PVC.

Polyethylene conduit for directional drilling applications shall be continuous, flexible, high density polyethylene SIDR 11.5 or Bore-Guard pipe.

Fiber optic conduit shall be 1 inch HDEP SDR 11 conduits or Owner approved equivalents.

PVC fittings shall conform to NEMA TC 9.

Prefabricated, inter-locking intermediate and base spacers for EB-PVC conduit shall be made of specification grade high-density polyethylene.

Couplings shall be from the same manufacturer as the PVC conduit, with UL approval.

Mandrels shall be Condux International 08059560 or Owner approved equivalent.

Wire brush mandrels shall be Aeroquip or Owner approved equivalent. Size shall be based on the conduit size.

Pull string shall have a minimum tensile strength of 500 pounds and be Poly Line by Greenlee, catalog number 37959, or an Owner approved equivalent.

Conduit measuring tape shall have a minimum tensile strength of 130 pounds and be by Greenlee, catalog number 435, or an Owner approved equivalent.

Tape for locating fiber optic cable shall have a minimum tensile strength of 900 pounds and be Detectable Muletape by Neptco, catalog number DP900N, or an Owner approved equal.

Red tint concrete protective barrier shall be used.

Electronic locating equipment shall be ScotchMark, manufactured by 3M, 4 inch ball markers, Catalog Number 1402.

Manholes shall be Brooks Products or Quikset/De Kalb 10 foot by 10 foot octagonal pre-cast electric manholes or Reedy Creek Energy Services Engineering Department approved equal.

Power cable racks in manholes shall be Chance catalog number PS1225 or approved equal.

Power cable 15 inch cable rack hook in manholes shall be Chance catalog number 1233 or approved equal.

Fiber optic cable 6 inch cable rack hook in manholes shall be Chance number 1231 or approved equal

Cable rack insulators in manholes shall be Chance catalog number 1121 or approved equal.

Pull boxes shall be of non-conductive concrete or polymer with watertight covers.

Large traffic junction boxes shall be concrete or polymer with solid bases and watertight covers HD20 loading.

Window.

7. EXECUTION

Conduit system

Conduit systems shall be treated as direct buried cable.

The top of the conduit shall be not less than 30 inches below grade and shall have a minimum slope of 3 inches in each 100 feet.

Slope ducts to drain to manholes.

Run conduit in straight lines except where a change of direction is necessary.

Wide angle, long radius sweeps with a minimum radius of 50 feet shall be used at all conduit bends, unless otherwise specified by the Owner.

All primary conduit stub-ups into equipment shall be PVC SCH 40, unless indicated otherwise in the Contract Documents. Conduit with a 6 inch diameter shall have a minimum 60 inch radius bend and conduit with a 4 inch diameter shall have a minimum 48 inch radius bend.

Fiber optic conduit system

Fiber optic cable shall be installed in 2 inch SCH 40 PVC conduit in all applications, except where fiber optic cable is to be installed in an existing 4 inch or 6 inch conduit or ductbank system.

Prior to installing fiber optic cable in an existing conduit or ductbank system, a fiber optic duct shall be pulled through the existing duct. The size of the fiber optic duct shall be as determined by the size of the existing duct and as specified in the Contract Documents.

Bored conduit system: Section 02445

A boring machine shall install bored conduits without disturbing the elevation or original condition of existing pavement.

The machine shall be so constructed that dirt is exhausted and removed as the conduit is installed.

Directional drilled duct system (Installation NFPA 70 and ANSI/IEEE C2-2007)

Any drilling or installation activity that causes an upheaving of earth or moling effect shall not

occur.

Conduit shall be installed in the locations indicated and as near as practicable to the coordinates indicated on the Contract Drawings.

Directional drilling shall be accomplished under all golf greens and tees.

Level runs of conduits must maintain a minimum of 96 inches below finished grade, below canal and lake inverts.

The depths at the conduit ends shall match, on horizontal plane, that of the adjoining ductbank, conduit or direct buried cable, whichever is applicable.

The conduit shall not deviate more than 18 inches from the horizontal centerline shown on the Contract Drawings without the approval of the Owner.

Avoid crossing between existing underground structures.

A minimum clearance of 18 inches shall be maintained where the directional drilled conduit crosses other utilities or underground structures.

Once the conduit attains a flat running level on the vertical plain, it shall not descend in elevation again.

Minimum bending radius shall be 50 feet and the sum of all bends including the descending and ascending curves shall not exceed 270 degrees.

Any conduit run having a number of bends adding to 180 degrees or more shall require a cable pulling analysis by the Reedy Creek Energy Services Engineering Department before acceptance.

Duct bank system

Duct bank trench shall be shored, framed and braced for installing ducts as per Section 02260 of these Specifications. Frames and braces shall be either wood or steel.

A maximum of 300 feet of trenching for duct bank shall be opened at any one time.

Trench forming of duct bank may be utilized when approved by the Owner.

Duct type EB or Schedule 40 PVC shall be used for concrete encasement.

Concrete encased duct bank shall be completely encased in a minimum of 3 inches of concrete. For concrete requirements see FDOT Specifications.

Duct bank shall be securely anchored to prevent movement during the placement of concrete.

Duct bank shall be of a monolithic construction top to bottom and side to side, but not necessarily end to end.

All PVC duct shall be protected prior to installation.

Spacers shall be installed not more than 5 feet center to center along entire length of duct bank including top pipes. Tie down spacers to reinforcing bars.

Concrete encased duct bank shall be reinforced as indicated in the Details Section of this Specification and in the Contract Documents.

Where a connection or bulkhead is made in a duct bank, the concrete encasement shall be doweled with 1 number 4 reinforcement rod 36 inches long per duct to the existing

encasement.

Variations in outside dimensions of the completed duct bank shall not exceed 2 inches on the vertical nor 4 inches on the horizontal from the dimensions shown in the Details Section of these Specifications.

Do not place backfill for a period of at least 24 hours after the pouring of concrete or as approved by the Owner.

Duct banks at railroad crossings shall be provided with 6 inches of concrete at the bottom and top. The concrete top and bottom shall be reinforced with number 4 reinforcing bars and number 3 ties as shown in the Details Section of these Specifications.

Duct banks shall be laid to a minimum grade slope of 4 inches per 100 feet. This slope shall be from one manhole to the next or both ways from a high point between manholes, depending upon the contour of the finished grade.

Duct banks shall be installed so that the top of the concrete encasement shall be not less than 30 inches below finished grade or pavement.

At railroad crossings the top of the concrete encasement shall be not less than 60 inches below the base of the rail.

Changes in direction of runs either vertical or horizontal shall be accomplished by long sweep bends having a minimum radius of curvature of 50 feet. Manufactured long radius bends may be used in runs of 100 feet or less with the Owner's approval.

All primary conduit stub-ups into equipment shall be Schedule 40 PVC with 90 degree sweep elbows, unless indicated otherwise in the Contract Documents. Conduit with a 6 inch diameter shall have a minimum 60 inch radius bend and conduit with a 4 inch diameter shall have a minimum 48 inch radius bend.

Duct joints

Duct joints in concrete encasement may be placed side by side horizontally, but shall be staggered at least 6 inches vertically.

All joints shall be made in accordance with the manufacturer's recommendations for the particular type of duct and coupling selected.

In the absence of specific recommendations, the joints shall be made by brushing a plastic solvent cement on the inside of a plastic coupling fitting and on the outside of the duct's ends. The duct and the fitting shall then be slipped together with a quick 1/4 turn to set the joint.

Ground all duct bank sections.

After the installation of a conduit, bored conduit, directional drilled conduit or duct bank system:

Test each conduit with a non-flexible testing mandrel no less than 7 inches in length with a diameter 1/4 inch less than the internal diameter of the conduit. A tag line is required on each end of the mandrel during the testing process.

After testing, draw a stiff bristle brush, of the nominal conduit size, through until the conduit is clear of particles of earth, sand and gravel. The stiff bristle brush may be pulled in along with the testing mandrel.

Provide a non-decaying pull string in each empty conduit installed. Leave 24 inches of spare at each end of the pull.

Provide conduit measuring tape through one conduit in all conduit and ductbank sections.

If only one conduit exists in a section, then provide conduit measuring tape and a pull string.

Provide a fiber optic duct pull tape with a metallic signal tracing conductor and a pull string in one fiber optic duct in each fiber optic conduit and ductbank section.

Provide non-decaying pull strings in all other empty fiber optic ducts.

Install end bells at all conduit ends.

Install conduit plugs at all fiber optic conduit ends and caps at all other conduit ends.

Provide and install Owner specified 4 inch ball markers at the ends of all conduit runs.

Manholes

Manholes shall be pre-cast.

Provide a 6 inch crushed rock base under all manholes to insure uniform distribution of soil pressure on the floor.

Manholes shall be constructed so that cables may be pulled into them and spliced after installation.

Manholes shall be of the size and type required and spaced as directed by the Owner.

Vertical clearance from finished floor to ceiling shall be 7 feet.

A minimum of 4 straight 7 foot long walls, 6 inches thick in pre-cast manholes and 9 inches thick in cast-in-place manholes, shall be provided for the cable splicing area.

Duct entrances into manholes shall be so located that sharp bends of cable at the duct mouth will be unnecessary.

All manholes shall be waterproofed. No seepage into the manhole shall be allowed.

Duct termination in manholes shall be made with Formex manufacturing company terminator modules or end bells as indicated in the Contract Documents.

All duct window entrances shall have duct stub-outs a minimum of 2 feet beyond the outside wall of the manhole. See Detail C308 in the Details Section of this Specification.

All duct stub-outs shall be capped for future use.

Frames and covers

Frames and covers shall be made of gray cast iron.

A recessed seat shall be provided to insure a perfect joint between the frame and cover.

Frames shall be given two coats of asphalt paint.

Covers shall be provided with a Walt Disney World or Reedy Creek Improvement District logo, as specified by the Owner, and the letter "E", to denote electric, and the manhole ID number stamped or welded into frame ring as indicated in the Contract Documents.

In paved areas, the top of manhole covers shall be installed flush with the finished surface

of paving.

In unpaved areas, the top of manhole covers shall be installed approximately 1/2 inch above finished grade.

Where existing grades that are higher than finished grades are encountered, pre-cast concrete rings shall be used between the top of the manhole and the manhole frame to temporarily elevate the cover to the existing grade.

A sump shall be provided, minimum size 12 inch by 12 inch by 12 inch or 12 inches deep and 14 inches round, encased in the floor of the manhole.

Pulling eyes made of heavy galvanized steel spider inserts welded to reinforcement bars shall be cast in the concrete walls below each duct bank entrance and in the ceiling above each duct bank entrance as shown on the Contract Drawings. The minimum pulling tension for each pulling eye shall be 10,000 pounds.

Power cable racking

Galvanized 15 inch minimum length cable racks shall be provided and installed as indicated in the Contract Documents.

Use 5/8 inch diameter anchor bolts and concrete inserts to support each cable rack.

Each cable rack shall contain adjustable heavy duty brackets of the number indicated in the Contract Documents.

Each bracket shall contain a minimum of three porcelain insulators placed on the bracket so that the top surface of the insulator will be in contact with the PVC cable jacket.

After the cables are installed on the insulators, they shall be double tie-wrapped to the insulator and bracket.

The use of supporting members made of metallic or other conducting materials, which will be in actual physical contact with the cable jacket, is prohibited.

Fiber optic cable racking

Galvanized 6 inch minimum length brackets shall be provided and installed as indicated in the Contract Documents and on Detail E301 in the Details Section of these Specifications.

Brackets shall be installed at the highest position on the wall rack.

Each bracket shall contain a minimum of one porcelain insulator placed on the bracket so that the top surface of the insulator will be in contact with the PVC fiber optic cable jacket.

If a bracket cannot be installed at the highest position on the wall rack, an L Bracket, Kendorf Channel and an insulator shall be installed for racking the fiber optic cable. See Detail E302 in the Details Section of this Specification.

After the cables are installed on the insulators, they shall be double tie-wrapped to the insulator and bracket.

The use of supporting members made of metallic or other conducting materials, which will be in actual physical contact with the cable jacket, is prohibited.

Pull boxes

Secondary pull boxes or large traffic junction boxes shall be installed at locations indicated on the Contract Drawings or as recommended by the cable manufacturer.

When a pull box is used for fiber optic cable, the Contractor shall provide 15 feet of coiled fiber optic cable inside the pull box.

END OF SECTION

GENERAL

1.01 DESCRIPTION

- A. **Scope of Work:** The work included under this Section consists of furnishing all labor, materials, equipment and incidentals required to provide resolution of conflicts between existing utility lines, appurtenances and proposed work, both within this contract or under separate contract to be accomplished by others. Items addressed herein include:
1. Relocation of Existing Pipe in Place
 2. Connection to Existing Pipes, Structure and Appurtenances
 3. Concrete Thrust Collars (only allowed upon Owner's/Engineer's approval)
 4. Conflict Transitions
 5. Relocation of Existing Fire Hydrant and Valve Assemblies
 6. Relocation of Existing Valves
 7. Existing Manhole Rim Adjustment
 8. Existing Valve Box Adjustment
 9. Temporary Bypass Connection
- B. **General Design:** The equipment and materials specified herein is intended to be standard types of utility piping, fittings and appurtenances as specified in related sections of these specifications and as acceptable to the respective owner of the utility to be relocated.

1.02 QUALITY ASSURANCE

- A. **Qualifications:** All of the new equipment and materials specified herein shall be furnished by manufacturers who are fully experienced, reputable, and qualified in the manufacture of the equipment and materials to be furnished. Equipment and materials shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these specifications as applicable.
- B. **Standards:**
1. Because many of the relocation projects are accomplished along with roadway improvements, many of the references in this section are made to the FDOT Standard Specifications for Road and Bridge Construction, Latest Edition (Standards). Where differences exist between standards, the more stringent shall apply.
 2. All new materials and equipment for the utility work shall be in accordance with the materials and approved manufacturers as specified in the respective specifications herein.
- C. **Quality Control (new material):**
1. The manufacturer shall establish the necessary quality control and inspection practice to ensure compliance with the referenced standards.
 2. In addition to the manufacturer's quality control procedures, the Owner may select an independent testing laboratory to inspect the material at the manufacturing facility or compliance with these specifications. The cost of manufacturing facility inspection requested by the Owner will be paid for by the Owner.

1.03 SUBMITTALS

- A. **Materials and Shop Drawings**

1. Shop drawings, including layouts, for all materials and equipment to be furnished under this section shall be submitted for Owner's approval prior to placing orders. Shop drawings shall include dimensioning, methods and locations of supports and all other pertinent technical specifications. Shop drawings shall be prepared by the manufacturer.
2. Contractor shall submit construction sequence/phasing plan at the time of pre-construction meeting for approval by Owner/Engineer. Plan shall ensure construction sequencing of all utilities and shut-downs are coordinated with RCID/RCES. Proposed connections to existing system are possible via the closure of existing system valves, unless otherwise shown. Contractor shall coordinate with RCID/RCES prior to any connections to the existing system.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Delivery and Storage: Delivery and storage of the materials and equipment shall be in accordance with the manufacturer's recommendations.
- B. Handling: Care shall be taken in loading, transporting and unloading to prevent damage to the materials and equipment and their respective interior and/or exterior coatings. Pipe, fittings and appurtenances shall not be rolled off the carrier or dropped. Unloading and material handling per manufacturer's recommendation shall be done by lifting with a forklift or crane. All materials and equipment shall be examined before installation, and no piece shall be installed which is found to be defective.

PRODUCTS

2.01 PIPE AND FITTINGS

- A. Ductile iron pipe and fittings are as specified in Section 02515.
- B. Polyvinyl Chloride (PVC) pipe and fittings are as specified in Section 02515

2.02 CONCRETE PRODUCTS

- A. Precast concrete structures are as specified in Section 02515.
- B. Concrete formwork, concrete reinforcement and cast-in-place concrete are as specified in Section 02515.

2.03 MANHOLE GRADE ADJUSTING RINGS

- A. The grade adjustment rings shall be manufactured from a corrosion resistant, synthetic polymer.
- B. "Grade" adjustment rings may contain either an upper and lower keyway (tongue and groove) for vertical alignment and/or an adhesive trench on the underside with a flat top. These rings shall be available in heights (thicknesses) which will allow final adjustment of the frame and cover or grate to within ¼" (one quarter inch) to ½" (one half inch) of the specified final elevation.
- C. Manhole grade adjusting rings shall not exceed a total "stacked" height of 18 inches.
- D. Adhesive or sealant used for watertight installation of the manhole grade adjustment rings shall be per Manufacturer requirements.

EXECUTION

3.01 PREPARATION

- A. Dewatering shall be in accordance with Section 02240 – Dewatering. Site Clearing and Excavation shall be per FDOT Specifications. Care shall be taken to avoid damage to items which are to remain in service or those which are to be reinstalled/relocated. Any damage shall be repaired by the Contractor, in a manner acceptable to the Engineer, at no additional cost to the Owner.
- B. Materials and/or equipment removed under this contract that are found satisfactory to be reused shall be thoroughly pressure washed, inside and out, by the Contractor and inspected by the Owner Representative (OR) prior to re-installation/relocation. Where items are found to be defective by the OR, the Contractor shall furnish either a substitute item from another location on the project or new material and/or equipment meeting the specification herein. Where new materials and equipment are furnished by the Contractor, the Owner shall reimburse the actual cost of the item purchased with no additional compensation for delays incurred by ordering, cost of delivery, or incidentals required for installation of the item.
- C. As directed by the OR, the Contractor shall replace components of the item to be re-installed/relocated including but not limited to:
 1. Rubber gaskets, washers or O-rings.
 2. M.J. follower glands, nuts, bolts and washers.
 3. Restraining devices.
 4. Support devices.
- D. All items to be reinstalled above ground shall receive new paint in accordance with the respective specifications herein. Surface preparation and prime coats shall be in accordance with the manufacturer's recommendations to assure satisfactory adhesion of the finish coating.
- E. Following preparation, the items shall be handled and stored as specified in the General Requirements. Items damaged or lost due to improper handling or storage shall be repaired or replaced by the Contractor at no expense to the Owner. All valves, valve boxes, hydrants, hydrant tees, water meters, etc. removed, prepared and stored shall remain property of the Owner whether used on this project or not, unless otherwise designated.
- F. Where disruption of service is required for connection, removal, relocation or construction; the Contractor shall coordinate the disruption with the proper Owner or division a minimum of 48 hours prior to the disruption of service. Except in an emergency, all service disruptions, valve operation, pumping station operation shall be done by a representative of the respective Owner. Unless otherwise authorized, each disruption shall be limited to a duration not to exceed two (2) hours.

3.02 INSTALLATION

- A. Relocation of Existing Pipe in Place:
 1. Where existing pipeline segments are identified to be relocated, raised or lowered in place, the Contractor shall remove and properly dispose of the contents of the pipe prior to beginning the relocation operations.
 2. The Contractor shall observe caution when excavating around the segment to be relocated to avoid damage to the existing pipe. Any damage resulting from the Contractors excavation or handling of the pipe shall be repaired at no additional cost to the Owner. If in the opinion of the OR, any pipe joint that has been pushed beyond the joint deflection as recommended by the manufacturer, the Contractor shall dismantle the joint and replace the gasket material and any restraining device on the subject joint.

3. Where the pipe is to undergo a change of material conveyance (i.e.: water main to force main or reclaimed water main), the Contractor shall provide the necessary cross connection control markings for the pipes intended use. This shall include repainting the marking stripe to the proper color coding for ductile iron pipe, adding the respective color coded stripe on PVC pipe and replacing or providing the 10 gauge copper locating wire for the duration of the relocation.
- B. Connection to Existing Pipes, Structures and Appurtenances:
1. Tapping Sleeve and Valve: Tapping sleeve shall be steel fusion epoxy coated body with stainless steel straps, bolts, nuts and washers. Tapping valve shall be standard resilient seat gate valve meeting the requirements of AWWA C509. Contractor shall determine the type and exact outside diameter of the existing main prior to ordering the sleeve.
 - a. Sufficient length of existing main shall be exposed to allow for installation of the tapping sleeve and valve and the operation of the tapping machinery. The main shall be supported on concrete pedestals or bedding rock at sufficient intervals to properly carry its own weight, plus the weight of the tapping sleeve valve and machinery. Any damage to the main due to improper or insufficient supports shall be repaired at the Contractor's expense.
 - b. After the tapping sleeve has been mounted on the main, the tapping valve shall be bolted to the outlet flange, making a pressure tight connection. Prior to beginning the tapping operation, the sleeve and valve shall be pressure tested at 200 psi to ensure that no leakage will occur.
 - c. For pressure connections, the tapping sleeve shall be mechanical joint - split body or steel fusion epoxy coated body with stainless steel straps, bolts, nuts and washers. Contractor shall determine the outside diameter of the existing main prior to ordering sleeve. Taps are not permitted for single connections or distribution systems smaller than six inches or on transmission mains 30-inches or larger. For pressure connections 4-inch through 20-inch installations, the minimum diameter cut shall be ½-inch less than the nominal diameter of the pipe to be attached. For larger taps, the allowable minimum diameter shall be two to three inches less than the nominal diameter of the pipe being attached. After the tapping procedure is complete, the Contractor shall submit the coupon to the OR.
 - d. See Section 02515 for additional information.
 2. Mechanical Joint Sleeve: Where new mains (sizes 4" and larger) are to join end to end with an existing pipe to remain in service, the connection shall be made with a ductile or cast iron mechanical joint solid or transition sleeve. M.J. sleeve shall have a minimum pressure rating of 250 psi and meet all the requirements of ANSI/AWWA C110/A21.10 and ANSI/AWWA C111/A21.11.
- C. Concrete Thrust Collar (only allowed upon Owner's/Engineer's approval):
1. Where restraint of an existing line segment is required due to connection to a proposed fitting or main within the required restrained joint length, as specified, the Contractor shall expose joints and use mechanical restraint. Where mechanical restrain is not applicable, only upon Owner's/Engineer's approval, the contractor shall construct a concrete thrust collar to counteract the vertical and/or horizontal thrust. Bearing area and tie rods shall be detailed on the Drawings.
 2. Concrete and reinforcing shall be as specified in the Standards with a minimum 28-day compressive strength of 3000 psi. Thrust collars shall be cured a minimum of five (5) days prior to testing unless a high-early cement is used. All form boards shall be removed prior to backfilling.
 3. Tie rods and tie bolts shall conform to the requirements of the Standard Drawings and specifications. Connections to mechanical joints shall be in strict accordance with the minimum requirement of the pipe or fitting manufacturer for the test pressure required.
 4. Precast concrete thrust collars may be substituted if accepted by the RCES/RCID and all the requirements specified herein or detailed on the Drawings are met or exceeded.

D. Conflict Transition

1. General: The item "Conflict Transition" shall only be applicable for transitions of existing pipeline segments to remain in service. Where transitions are shown within new pipeline construction, the Contractor shall have the option of transitioning by joint deflection, thus eliminating the bends and respective thrust restraint as shown on the drawings, at no additional cost to the Owner.
2. Conflict transitions shall be constructed in accordance with the detail as shown in the Drawings utilizing ductile iron pipe and fittings with mechanically restrained joints as specified in Section 02515.
3. Thrust restraint on each side of the existing main shall be provided by the use of concrete thrust collars as specified above and herein.

E. Relocation of Existing Fire Hydrant and Valve Assemblies:

1. Where shown on the Drawings, Fire Hydrant and Valve Assemblies shall be removed and prepared as specified herein and reinstalled/relocated to another location within this project or stored for salvage by the Owner. Hydrants and valves that have been salvaged shall be verified by the Contractor and witnessed by the OR for proper operation prior to reuse.
2. Reinstallation of the Fire Hydrant and Valve Assembly may be shown on the Drawings as follows:
 - a. Furnish and install new M.J. Locking Hydrant Tee, and 6-inch ductile iron pipe to the proposed hydrant location as designated by the Owner (approximately shown on the Drawings), install the prepared hydrant and valve (with box), and furnish required height adjustment materials necessary to bring the hydrant and valve box to the proposed finish grade.
 - b. Furnish and install 6-inch ductile iron pipe to the proposed hydrant location as designated by the Owner (approximately shown on the Drawings), install the prepared hydrant and valve (with box) and furnish required height adjustment materials necessary to bring the hydrant and valve box to the proposed finish grade.
 - c. Install the prepared hydrant only, to the dead end location as shown on the Drawings. Furnish required height adjustment materials to bring the hydrant to the proposed finish grade.
3. Contractor shall furnish all necessary restraining devices, bedding rock, shear pad, valve collar and identification disc to provide a complete fire hydrant and valve assembly as detailed in the Drawings.

F. Relocation of Existing Valves

1. Where existing valves are designated on the Drawings for relocation or removal, each shall be prepared and reinstalled/relocated to another location within this project or stored for salvage by the Owner.
2. Reinstallation of the valve shall include all necessary restraint, valve box and height adjustment components, concrete collar and valve identification disc including all items as detailed in the Drawings. Where valves reinstalled/relocated fall within the pavement or sidewalk area, valve box adjustment shall be accomplished as specified herein with no additional cost to the Owner.

G. Existing Manhole Rim Adjustment

1. Manholes under this item may include but not be limited to, sanitary manholes, conflict manholes, or ARV manholes/structures and may be in various sizes, weights, shapes and condition. Manholes may be located in 1) proposed pavement, 2) existing pavement to be overlaid, 3) curb line or sidewalk or 4) open areas. It is the intent of this item to adjust the elevation of the manhole rim to the proposed surface elevation regardless of the type, height adjustment required or the location in the field.

2. The Contractor shall make the necessary rim adjustment by raising or lowering the casting (ring and cover by using manhole grade adjusting rings meeting the requirements of Section 2.01. Manhole rims shall be adequately marked to avoid damage by subsequent construction operations.
3. The joint between the first grade ring and top of the manhole, catch basin or utility structure shall be sealed using an adhesive/sealant meeting the requirements of the Manufacturer.
4. No other materials shall be used in the construction of the grade adjustment area beyond those specified above. Prohibited materials include, but are not limited to wood or wood shims of any kind, concrete, brick, block, stones, etc.
5. Adjustment of manholes located in pavement areas to be overlaid with no additional base work, shall be raised or lowered to proposed finished grade. All existing pavement and/or base damaged by adjustment of the manhole rim shall be repaired and not additional cost to the Owner.
6. Adjustment of manholes located in proposed curb or sidewalk areas (including track areas for machine pours) shall be coordinated with the Engineer to determine the method of adjustment as described herein.
7. Adjustment of manholes located in open areas shall be raised or lowered in a "single step" construction operation to proposed finished grade.
8. Manholes proposed to be constructed under this project shall be adjusted utilizing the above requirements and methods as they are initially installed. No separate payment will be made for adjustment of new manhole rims.

H. Existing Valve Box Adjustment

1. Valve boxes under this item may be associated with but not be limited to, gate valves, butterfly valves, plug valves, service valves and hydrant valves and may be located in 1) proposed pavement, 2) existing pavement to be overlaid, 3) curb line or sidewalk or 4) open areas. It is the intent of this item to adjust the elevation of the valve box to the proposed surface elevation regardless of the height adjustment required or the location in the field.
2. The Contractor shall make the necessary valve box adjustment by raising or lowering the box to the proposed finish grade. Valve boxes shall be adequately marked to avoid damage by subsequent construction operations.
3. Adjustment of valve boxes located in pavement areas to be overlaid with no additional base work, shall be raised or lowered to proposed finish grade. All existing pavement and/or base damaged by adjustment of the valve box shall be repaired at no additional cost to the Owner.
4. Adjustment of valve boxes located in proposed curb or sidewalk areas (including track areas for machine pours) shall be coordinated with the OR to determine the method of adjustment as described herein.
5. Adjustment of valve boxes located in open areas shall be raised or lowered in a "single step" construction operation to proposed finish grade.
6. Following final adjustment of the valve box, the Contractor shall construct the required concrete collar (in open areas) and bronze identification disc (in the concrete collar or on the concrete past, in paved areas) and all associated required items as detailed on the Drawings.
7. Valve boxes proposed to be constructed under this project shall be adjusted utilizing the above requirements and methods as they are initially installed. No separate payment will be made for adjustment of new valve boxes installed on a proposed valve or relocated valve.

3.03 CLEANING AND DISINFECTION

- A. Prior to installation, items shall be thoroughly cleaned inside and out to remove dirt, stones, debris or other foreign material.
- B. For potable water systems, the inside of the tapping sleeves, valves, and appurtenances, the outside of the existing main, and the tapping machine shall be cleaned and disinfected with a solution containing 10% free chlorine prior to beginning installation.

3.04 CORRECTION OF NON-CONFORMING WORK:

- A. All non-conforming work shall be repaired or replaced by the Contractor at no additional expense to the Owner. Non-conforming work shall be defined as failure to adhere to any specific or implied directive of this Project Manual and/or the drawings, including but not limited to pipe not laid straight, true to the lines and grades as shown on the drawings, damaged or unacceptable materials, misalignment or diameter ring deflection in pipe due to bedding or backfilling, visible or detectable leakage and failure to pass any specified test or inspection.

END OF SECTION

1. SUBMITTALS

- A. Submit the following Manufacturer catalog data to the Owner:
 - 1. Wire - each type and size, including sag and tension data, if applicable
 - 2. Cable - each type and size
 - 3. Cable lubricant
- B. Submit all test reports and testing information to the Owner.
- C. Submit conductor sag and tension data, if applicable, which shall include the following:
 - 1. Initial sag and tension after one hour of conductor creep.
 - 2. Final sag and tension data 10 years of conductor creep.
 - 3. Additional data to enable the field correction of initial conductor sag after the occurrence of conductor creep from the time the conductor is installed to the actual conductor sag-in, covering a period of 1,000 hours.
- D. Submit a record of all sagging measurements, if applicable.

2. MATERIALS

- A. Instrumentation and control cable
 - 1. All single conductor cables rated 600 volts and lower shall be Contractor furnished.
 - 2. All multi-conductor cables shall be Contractor furnished or as indicated on the Contract Documents.
 - 3. All conductors shall be stranded copper.
 - 4. Mutli-conductor control cable shall be rated for 90 degrees Celsius, 600 volts, be Class B stranded, type TC, type THHN/THWN, with PVC insulation and shall be sized as specified in the Contract Documents.
 - 5. Multi-conductor control cable wiring and conductor accessories shall be furnished by the Contractor in quantities sufficient for complete modifications as specified.
 - 6. Accessories including, but not limited to, cable terminals, ring lugs, tape, cable ties, terminal blocks and cable identification tags shall be furnished in accordance with these Specifications.
 - 7. Control, switchboard metering and instrument secondary wire shall be 600 volts, 90 degrees Celsius rated, type SIS Class K stranded, tinned copper, size number 14 AWG for control circuits, number 12 AWG for potential circuits and number 10 AWG for current circuits, as required.
 - 8. Wiring installed across door hinges shall be extra flexible.
- B. Power cable, underground-Owner furnished
 - 1. The cable to be installed shall be shielded with copper concentric wires and shall be insulated for a 15 kV grounded neutral system.

2. Conductor sizes shall include but not limited to;
 - a. #1/0 AWG Compressed Class B Strand Aluminum.
 - b. #4/0 AWG Compressed Class B Strand Copper.
 - c. 500 kcmil Compact Class B Strand Copper.
 - d. 500 kcmil Compressed Class B Strand Copper.
 - e. 750 kcmil Compressed Class B Strand Copper.
 - f. 750 kcmil Compressed Class B Strand Aluminum.
 - g. 1000 kcmil Compressed Class B Strand Aluminum.as specified by the Contract Documents.
 3. The insulation system shall be Extruded Ethylene Propylene Rubber (EPR)
 4. The insulation shall be for use in wet or dry locations with a conductor temperature of 105 degrees Celsius continuous, 140 degrees Celsius for emergency overloads and 250 degrees Celsius for short circuit conditions.
 5. The nominal insulation thickness shall be not less than 220 millimeters for a grounded system.
 6. The cable shall be provided with an anti-corrosive a polyethylene (PE) jacket.
 7. The cable shall be suitable for installing in duct, trays, conduit or trenches.
- C. Power cable, underground-Contractor furnished
1. The cable to be installed shall be cross-linked polyethylene insulated, shielded, jacketed power cables rated 5,000 through 35,000 volts.
 2. Grounded cable shall have an insulation level of 100 percent, while ungrounded cable shall have an insulation level of 133 percent.
 3. The insulation shall be of high quality thermosetting cross-linked polyethylene and be resistant to the effects of heat, moisture, ozone and corona.
 4. The cable shall be capable of operating at a conductor temperature of 90 degrees Celsius for continuous operation, 130 degrees Celsius under emergency operating conditions and 250 degrees Celsius under short circuit conditions.
 5. The conductors shall be of EC grade, hard-drawn aluminum or annealed copper, either coated or uncoated.
 6. Class B concentric or compact round stranding shall be used for all conductor sizes.
 7. The conductor shield shall consist of an extruded semi-conducting thermosetting compound applied over the conductor.
 8. A semi-conducting tape may be applied between the conductor and the extruded conductor shield to facilitate manufacture.

9. The conductor shield shall be of a material compatible with the conductor metal, shall be uniformly and firmly bonded to the overlying insulation and shall be free stripping from the conductor.
10. This cable shall only be used for temporary installations and as specified by the Owner.
- D. Cable pulling lubricant shall be Polywater J, Polywater Dyna-Blue, or a Manufacturer approved equivalent pulling compound.
- E. Power conductors, overhead-Contractor furnished
 1. The conductors shall be bare cable with the size and characteristics as specified in the Contract Documents.
 2. Conductors shall conform to the following standards:
 - a. ASTM B230/B230M-07 Aluminum 1350-H19 Wire for Electrical Purposes.
 - b. ASTM B231/B231M-04 Concentric-Lay-Stranded Aluminum 1350 Conductors.
 - c. ASTM B232/B232M-01e1, Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced (ASCR).
 - d. ASTM B401-04 Compact Round Concentric-Lay-Stranded Aluminum Conductors, Steel Reinforced (ASCR/COMP).
 - e. ASTM B498/B498M-08 Zinc Coated (Galvanized) Steel Core Wire for Use in Overhead Electrical Conductors.
 - f. ASTM B500/B500M-09 Metallic Coated Stranded Steel Core for Use in Overhead Electrical.
 3. The shielding conductors shall be of a steel cored aluminum, covered type as manufactured by Alumoweld and of the type specifically manufactured for use as an overhead ground or shield wire.
 - a. Each conductor shall be composed of seven strands of number 10 AWG wires; weighing 164.7 pounds per 1,000 feet with a minimum breaking strength of 10,200 pounds and a diameter of 0.306 inches.
 - b. The overhead shield wire shall conform in all respects to ASTM B415-98(2007), hard-drawn aluminum-clad steel wire, and ASTM B416-98(2007), concentric-lay-stranded aluminum-clad steel conductor.

3. EXECUTION

- A. Install all cable and wire in conduit, duct, trench or tray or as specified and as required for continuous service operation.
- B. Installation shall be defined to include the placement, splicing, terminating, coiling and taping of spare conductor, identification, testing and verification of each cable and conductor for AC and DC power.
- C. Cable, conductor and accessories shall be thoroughly cleaned of all shipping material, dust and dirt prior to installation.

- D. All wires and cables shall be identified according to Section 16075 of these Specifications.
- E. Instrumentation and control cable
1. Immediately prior to the placement of each cable or cable group, the raceway route to be followed shall be inspected and ascertained to be complete in installation and free of all materials detrimental to the cable or its placement.
 2. If at any time during the progress of the work, the Contractor finds raceways that appear inadequate to accommodate the assigned cable, he shall notify the Owner at once and shall discontinue any further work on the questionable raceway until advised by the Owner as to how to proceed.
 3. Cable pulling
 - a. All cable shall be carefully checked both as to size and length before being pulled into conduits or ducts.
 - b. All cable assigned to a particular duct or conduit shall be grouped and pulled in simultaneously using acceptable methods and lubricants.
 - c. The maximum tensions recommended by the cable manufacturer shall not be exceeded.
 - d. The cable reel shall be firmly mounted on a portable stand and secured while pulling cable.
 - e. Cable pulled into the wrong conduit or duct or cut too short to rack, train and splice as specified herein, shall be removed and replaced by and at the expense of the Contractor.
 4. Installation in cable trays
 - a. All cable installed in trays shall be carefully laid in or pulled through the tray system so that neither the cable nor the trays are damaged.
 - b. Cable may be laid along the side of the tray system during placement, provided it is protected from dirt, water, oil or other detrimental materials and from mechanical injury.
 - c. Cable shall be cut sufficiently long to conform to the contour of the trays, with particular attention paid to vertical inside bends.
 - d. All excessive slack shall be removed from the cable so that it lies parallel to the sides of the trays.
 - e. The cable shall be tied to the trays with nylon ties at 10 foot intervals to hold it in place.
 - f. Cable clamps designed for holding the cable inside the trays shall be installed at all vertical bends.
 5. Do not subject non-shielded cables to a bending radius of less than 8 times the cable outside diameter during installation.

6. Do not subject shielded cables to a bending radius of less than 12 times the cable outside diameter during installation.
 7. Install cable supports in vertical runs of conduit, at boxes and at terminations and in equipment as required to meet the intermediate support requirements of the NEC 345-12.
 8. Tie together all single conductor cable on each individual circuit in each junction box, piece of equipment or manhole with cable ties at intervals not to exceed 6 feet.
 9. Clamp, snub and tie cable for proper support at each terminal block or connection so that any strain on the cable will not be transmitted to the terminal connections.
 10. Do not tie wires from different cables together.
 11. Multiple single conductor cable that constitutes a single power circuit shall be grouped together to minimize magnetic influence on other cable in the area.
 12. All spare conductors of multi-conductor cable shall be left at their maximum lengths for possible replacement of any other conductors in the cable.
 13. Each spare conductor shall be neatly coiled and then taped to the conductors being used.
- F. Underground power cable
1. All cables transported to job site by the Contractor from the Owner's storage facility shall be transported on a Contractor furnished trailer specifically designed for cable reels.
 2. Install cables as indicated using due care not to exceed the Manufacturer's recommended minimum bending radius.
 3. Provide cables in one piece without splices between terminations except where the distance exceeds the lengths in which cables can be stored on reels.
 4. Bends in cables shall have an inner radius not less than 12 times the cable diameter.
 5. Cable pulling
 - a. Prior to installing cables in existing or new duct lines, test the conduit with a non-flexible testing mandrel no less than 7 inches in length with a diameter 1-1/4 inch less than the internal diameter of the conduit. The mandrel shall be Condux International part number 08059560 or Owner approved equivalent. A tag line is required on each end of the mandrel during the testing process.
 - b. After testing, draw a stiff bristle brush, of the nominal conduit size, through the conduit until it is clear of particles of earth, sand, gravel and water. The stiff bristle brush may be pulled in along with the testing mandrel.
 - c. Pull cables down grade with the feed-in point at the highest elevation.
 - d. Use lubricants that are specifically recommended by the cable manufacturer and approved by the Owner for assisting in pulling jacketed cables. Lubricants shall

- not be deleterious to the cable sheath, jacket or outer coverings. The use of soap, detergent and grease-type lubricants for this purpose is prohibited.
- e. All pulls shall be as straight as possible with due care being given to avoid twisting, kinking and scraping the cable jacket against sharp edges and exceeding the minimum allowable bending radius for the cable being pulled.
 - f. The maximum allowable pulling tension, if a pulling eye is used on the conductor, shall be 10,000 pounds or, if a basket weave grip is used, it shall be 1,000 pounds using the following formula:

$$TM = 0.008 \times N \times CM \text{ (pounds)}$$

$$N = \text{Number of conductors}$$

$$CM = \text{Circular MIL area of each conductor}$$
 - g. To limit the sidewall pressure at bends, the pulling tension shall not exceed:

$$TB = 200 \times R \text{ (pounds)}$$

$$R = \text{Radius at bend in feet}$$
 - h. Use the following formula for calculating tension on straight pulls:

$$T = 0.5 \times L \times W \times N \text{ (pounds)}$$

$$L = \text{Length of cable run in feet}$$

$$W = \text{Weight of cable in pounds per foot}$$

$$N = \text{Number of conductors being pulled}$$
 - i. A tension indicator or dynamometer, calibrated within 30 days of use, may be required during the cable pulling operation. This tension indicator shall be used primarily to avoid the possibility of over stressing the cable during the installation operation. This indicator or dynamometer shall be used when requested by the Owner at no additional cost to the Owner.
 - j. Adequate pulling equipment shall be furnished by the Contractor to assure that the cable can be pulled in smoothly and that the tension during the installation will not exceed the maximum pulling tension calculated in the equation shown in this Section.
 - k. Cables shall be pulled off reels and into manholes using a flexible snout.
 - l. Feed-in tubes of sufficient length shall be utilized at all times to allow the entering end to be above the top of the manhole in feeding cable into the duct line.
 - m. The cable to be pulled shall be attached to the main pulling wire through a swivel by means of a factory installed pulling eye or a suitable cable grip. The cable sheath or jacket shall be lubricated immediately prior to its entering the duct during the pulling operations.
6. Leave a horizontal slack of approximately 3 feet in the ground on each end of the cable run at points where connections are brought aboveground.
 7. Where cable is brought aboveground, leave additional slack to make the necessary connections.

8. In the forming of all cable offsets and loops in manholes, to allow for splicing and thermal expansion and contraction, the minimum allowable bending radius of the cable being installed shall not be exceeded.
 9. In the forming of all offsets and loops, sufficient straight length shall be allowed for the making of all necessary splicing.
 10. Cables shall be adequately supported in manholes on each side of all splices by suitable cable support racks in order to prevent excessive cable sag by such splices.
 11. Sufficient straight length of cable shall be allowed at the duct entrance before beginning any bend to prevent the cable sheath from scraping against any sharp edges.
 12. Following the pulling operation, the cable shall be cut to the necessary length, and unless splices are to be done immediately, the cut end shall be sealed watertight with the cut end being held pointing upward during the application of the seal.
 13. Tape the ends of the installed cable and the ends of the cable remaining on the reel immediately after cutting to prevent moisture from entering the cable. Use two layers of 130C and two layers of 33 or 88 plastic electrical tape.
 14. Secure the cable ends of the cable remaining on the reel to the reel.
 15. All cable connections shall be properly phased, as indicated on the Contract Drawings, before terminations are made.
- G. Overhead power conductor
1. Conductor stringing
 - a. Extreme care shall be taken in stringing conductors to avoid interference with traffic or contact with other lines or obstructions which might result in accidents, damage to persons and property, or interruption of service.
 - b. The conductor shall be strung by the tension stringing method.
 - c. The conductor shall be maintained in the air during the entire stringing operation and methods shall be employed to keep the pulling line and conductor taut.
 - d. The Contractor shall provide and use radios or other direct means of communication between the cable reels and the winch trucks during all stringing operations. This requirement shall also include the pulling in of the bull line.
 - e. Under no circumstances shall the conductor or pulling lines be allowed to sag down to the ground or into roads or water.
 - f. No conductor or shield wire shall be rolled off the reel and dragged into position along the ground or pavement.
 - g. If the conductor or shield wire is accidentally dropped on the ground or in the water during the stringing, the conductor shall be raised off the ground or water sufficiently to allow for an inspection of the conductor by the Owner.
 - h. If, after a thorough inspection, it is determined that the conductors are damaged to such extent that an early fatigue or deterioration would occur, the Owner shall have

- the right to request the Contractor to remove the damaged conductor and replace it with new conductor.
- i. The new conductor may be spliced to the existing undamaged conductor.
 - j. Snubbing or tying off conductors shall be allowed only when approved grips are used, such as the come along type as manufactured by the Aluminum Company of America. The size and method of application of the grip shall be in accordance with the recommendations of the Manufacturer of the grip.
 - k. The ends of the conductor for dead-ending that have been twisted and snubbed for a pulling eye attachment or come along, shall not be used as a part of the permanent construction, but shall be clipped and discarded.
 - l. Should any section of the conductor receive noticeable abrasion, kinking or other damage during the stringing and pulling in operations, it shall be cut out and replaced with a perfect section and spliced in an approved manner before the corresponding section length is cut for permanent dead-ending.
 - m. All points of attachments of the conductor and the shield wire, except at the dead-end bodies and the dead-end clamps, shall be supported by an armor grip unit as specified in the Contract Documents.
 - n. Jumpers shall be the same size as the main conductor and shall be installed with clearances as shown on the Contract Drawings.
 - o. The Contractor shall furnish and install vibration dampers in spans based on the recommendations of the conductor manufacturer.
2. Conductor sagging
- a. The sag of all conductors installed in each line shall be in accordance with the sagging schedule and curves approved by the Owner.
 - b. The Contractor shall complete the supporting structures of the line between two dead-ending structures or poles before the conductor is sagged.
 - c. All sagging shall be done by means of suitable sag blocks and, in no case, shall any conductor be resting on an arm or other attachment during the sagging operation
 - d. Tensioning shall be performed in a methodical manner so as not to exceed the design capabilities of the structures.
 - e. Before the conductors are permanently dead-ended, the sag of the conductors shall be measured by the target method or the return wave method utilizing a stopwatch calibrated for this specific purpose.
 - f. Measurement of the sag of all conductors shall be witnessed and approved by the Owner before the conductor is dead-ended.
 - g. The maximum tension during this operation shall not exceed the initial tension allowable for the conductor at the air temperature specified.

- h. The air temperature at the time of stringing shall be determined by a certified etched-glass thermometer, which the Contractor shall furnish and maintain on the job during the sagging operations.
 - i. After the conductors have been given the initial sag, they shall be allowed to remain in the sagging blocks for a period of not less than twenty-four hours. Conductors shall then be given permanent sag and dead-ended.
 - j. The conductors or shield wire shall not be pulled up to initial tension or dead-ended if the temperature is below 30 degrees Fahrenheit.
 - k. The conductors shall not be permitted to remain in the blocks for any one period of time exceeding 72 hours, without being repositioned.
 - l. In the event the suspension clamps are not installed within 72 hours after initial sag, the conductor shall be pulled through the blocks approximately 30 feet. The conductor may then be returned to its original position immediately before clipping in. All tangent structures and wire suspension assemblies shall be plumbed true before the section of the line is clipped in.
 - m. After conductors have been permanently sagged and dead-ended and the section length checked for uniformly distributed sag, the conductor shall be positioned in the suspension clamps and the clamps securely drawn up.
 - n. The Contractor shall measure the sag, by the target method, within certain spans as selected by the Owner, to insure that the phase-to-phase clearance and phase-to-ground clearance is not below the minimum required value.
 - o. No compression type joint or dead-end shall be installed out of the Owner's presence unless prior written approval is obtained.
3. Sag and tension requirements
- a. Sag and tension data shall be based on the following limitations:

Conductor	Ruling Span (feet)	Ruling Span Sag (feet)	Conductor Temperature (Fahrenheit)
7#10AW	280	3.74	120
	300	4.36	120
795 ACSR	130	6.26	266
	300	7.16	266
	300	5.20	120

- b. The sag in any span within the ruling span shall not exceed: $(\text{Span}/\text{Ruling Span})^2(\text{Ruling Span Sag})$.
- c. Tension shall not exceed the following limits in percent of ultimate strength.

Loading Condition	Tension Limits
NESC (Light Loading District), no ice, 9 psf wind at 30 degrees Fahrenheit, initial, plus code constant of K = 0.05	30%
NESC Extreme Wind Loading, no ice, 26 psf wind at 60 degrees Fahrenheit, initial	30%
30 degrees Fahrenheit unloaded, initial	15%
30 degrees Fahrenheit unloaded, final	25%
60 degrees Fahrenheit unloaded, initial	20%
60 degrees Fahrenheit unloaded final	15%

d. Sag and tension data shall be furnished for the following loading conditions for each ruling span specified:

1. No ice, 26 psf wind and 60 degrees Fahrenheit.
2. No ice, 9 psf wind and 30 degrees Fahrenheit, plus code constant of K = 0.05.
3. At temperatures ranging from 30 to 120 degrees Fahrenheit in steps of 10 degrees Fahrenheit, no load.
4. At 266 degrees Fahrenheit, no load.
5. At 120 degrees Fahrenheit, no load.

4. INSPECTION AND TESTING

- A. All cable, such as heat tracing, instrument, power and control, shall be tested for insulation resistance before energizing, with the neutral ground disconnected.
- B. A high potential, high voltage DC test shall be made by the Owner after installation on metallic shielded or metallic sheathed cables, and test data shall be recorded to include, for record purposes, the measured values of the leakage current versus time for all cables operating on a 5,000 volt nominal system or above.
 1. Test values shall be approximately as listed below:

Conductor Capacity (amperes)	Resistance (ohms)
0-24	1,000,000
25-50	250,000
51-100	100,000
101-200	50,000
201-400	25,000
401-800	12,000
Over 800	5,000

2. Confirm the above values with all switchboards, panelboards, fuse holders, safety and fuse switches and overcurrent devices in place.
 3. Disconnect motors and transformers during Meggering.
 4. Megger® wire and cable only after installation and not on the reel. Multiple conductor runs shall be tested with all conductors bonded together by phase
 5. Record all measurements.
- C. Short time insulation resistance measurements for cable rated up to 15 kV shall be made with a megaohm instrument (Megger®) rated at 500 volts DC output. Resistance measurements shall be recorded after 60 seconds of applying a voltage, preferably during dry temperate weather. Record results on Megger® report form at the end of this Section.
- D. Short runs of cable (below 2,000 feet) rated for service 2,400 volts and above shall be considered as satisfactorily installed if the Meggered insulation resistance reads above the following minimum values:

Cable Size	Grounded Neutral	Ungrounded Neutral
No. 6 - No. 3 AWG	5 MΩ	6 MΩ
No. 2 - No. 1/0 AWG	4 MΩ	5 MΩ
No. 4/0 - No. 250 MCM	3 MΩ	3 MΩ
No. 500 - No. 750 MCM	2 MΩ	3 MΩ
No. 1,000 MCM	1.5 MΩ	2 MΩ

- E. Insulation resistance for satisfactory power installation shall not be lower than the following minimum permissible insulation resistance values (in MΩ for 1,000 foot runs and below):

Cable Size	Voltage Rating		
	600 V Max*	3 kV Max.	5 kV Max.
No. 12 AWG	1.5	5.0	---
No. 10 AWG	1.5	4.0	---
No. 08 AWG	1.5	4.0	5.0
No. 06 AWG	1.0	3.0	4.0
No. 04 AWG	0.4	3.0	3.0
No. 02 AWG	0.4	2.0	3.0
No. 01 AWG	0.4	2.0	2.0
No. 1/0 AWG	0.4	2.0	2.0
No. 4/0 AWG	0.3	1.0	2.0
No. 250 MCM	0.3	1.0	2.0
No. 500 MCM	0.2	1.0	1.5
No. 1,000 MCM	0.2	1.0	1.0

Example: 600 volts maximum, 250 MCM, length below 1,000 feet = 0.3 MΩ minimum insulation resistance.

* Minimum permissible values of insulation resistance for lighting branch circuits (600 volts) shall be 1/2 of the indicated values when fixtures (before lamping) and receptacles are included in the test.

F. Instrumentation and control cable

1. All equipment and hardware shall be inspected for visual defects and missing parts prior to installation.
2. Missing parts shall be replaced and damage corrected prior to installation by the Contractor.
3. Check all control wiring for proper connection in accordance with the schematic diagrams.
4. Check for tightness of terminal contacts and continuity through each run of control circuitry.
5. Megger® all 600 volt cable with a 500 volt Megger® for one minute.
6. Megger® each control and instrumentation cable after installation, but with the circuits disconnected from control panels and other equipment.
7. After completing these checks and tests on a given control circuit, a responsible electrician shall attach a temporary cardboard tag on each end of the cables tested, which shall bear his name and the date on which the cable is checked.

G. Underground power cable

1. After installing, but before connecting to a bus and placing in service, medium and high voltage cables, notify the Owner to perform DC high potential tests on the terminated cables.
2. Testing shall be performed prior to the cable being connected to equipment.
3. Cables will be DC tested by the Owner. The Contractor shall assist the Owner during all testing.
4. The cable shall be gradually stressed to minimize harmful surge currents.
5. There shall be a minimum of eight steps to reach the high potential voltage level.
6. The final test voltage shall be sustained for ten minutes.
7. A steady leakage current indicates a satisfactory installation.
8. Leakage currents should be observed during voltage build-up. Faulty installations will cause leakage values to steadily rise after 30 seconds.
9. Cables failing the leakage current test shall be considered as inadequate and must be corrected or replaced at the Contractor's expense.
10. Following the high potential test, a residual test shall be performed.

END OF SECTION

1. SUBMITTALS

A. Submit the following manufacturer catalog data to the Owner:

1. Low voltage wire connectors.
2. Low voltage wire terminator connectors.
3. High and medium voltage conductor joint connectors.
4. High and medium voltage cable terminator connectors.
5. Splicing and terminating tapes.
6. Manufactured Splice Kits with instructions.
7. Manufactured Termination Kits with instructions.

B. Certificate of Competency for cable splicer/terminator

1. Shall be submitted for approval 30 days before splices or terminations are to be made on high and medium voltage cables.
2. Shall include the training and experience of the individual on the specific type and classification of cable to be installed under each contract.
3. Shall indicate that the individual has had three (3) or more years recent experience splicing and terminating Extruded Ethylene Propylene Rubber (EPR) high and medium voltage cables.
4. Shall show that the individual has a current splicer certification for Manufactured Kits (splices and terminations) to be used on the project, or for Hand-applied Tape Splices from the National Cable Splicers Certification Board (NCSCB). For additional cable splicer qualifications, see Section 01440 of these Specifications.
5. Shall list a minimum of three EPR splices and/or terminations that have been in operation for more than one year.

C. Prior to purchasing any splicing and terminating materials from a distributor, submit a list of materials along with drawings showing the proposed construction of the splice or termination to the Reedy Creek Energy Services, Electrical Operations Department for approval.

2. MATERIALS

A. Underground power cable connectors

1. Shall be designed and sized for the specific wire or cable being connected.
2. Shall have a rated current carrying capacity equal to or greater than the wire or cable being connected.
3. Shall be solderless, pressure-type compression or bolted clamp type connectors constructed of non-corrodible material for low voltage applications.

4. Connectors for splices shall be compression-type, long-barrel aluminum or short-barrel copper connectors, compatible with the conductor material, with tapered ends and center stops. Shear Bolt connectors shall be the product of the splice kit manufacturer for the cable and conductor size to be spliced.
 5. Uninsulated rectangular tongue compression connectors shall be used for terminating wire sizes number 2 AWG to 1,000 kcmil.
 6. Potheads
 - a. Molded rubber type potheads shall be 3M Quick Term II or an approved equal and shall be rated 15 kV, 110 kV BIL.
 - b. Porcelain type potheads shall be 3M Scotchcast 5900 series or approved equal and shall be rated 15 kV, 110 kV BIL.
- B. Overhead power conductor connectors
1. All steel shall be hot-dip galvanized conforming to ASTM A123/A123M-09, A143/A143M-07, A153/A153M-09 and ASTM A239-95(2004).
 2. Joints for ACSR conductors shall have two compression type sleeves, one for the galvanized steel core wire and one for the overall conductor.
 3. Splices shall be of a type which will produce a joint with a rated breaking strength in excess of the conductor without a reduction in the conductivity of the cable.
 4. Dead-end bodies for compression type dead-end joints shall be of the two-piece, tubular, aluminum type with a four-hole pad type jumper terminal made as an integral part of the dead-end body.
 5. Dead-end joints shall be furnished with steel clevis type dead-ends for compression to the steel strand core wire.
 6. Jumper terminals shall be of a compression type with a four-hole pad for connection to the four-hole pad on the dead-end body.
 7. Compression dead-end clamps for shield wires shall be of an aluminum alloy, rated for an ultimate strength of at least 15,000 pounds and shall be suitable for a conductor 0.306 inch in diameter.
- C. Instrument and control wire connectors
1. Shall be designed and sized for the specific wire being connected.
 2. Shall be solderless, pressure-type UL listed connectors constructed of non-corrodible tinplated copper.
 3. Vinyl pre-insulated ring tongue connectors shall be used for all connections.
 4. The interior surface of the connector wire barrel shall be serrated, and the exterior surface of the connector wire barrel shall be provided with crimp guides.
 5. Pre-insulated terminal connectors shall include a vinyl insulating sleeve, color coded to indicate conductor size.

- D. Lighting and power wire connectors for number 10 AWG and smaller shall be preinsulated twist-on type with “live-action” spring, Ideal Industries “Wing-Nut” or crimp-type with a separate insulating sleeve, Ideal Industries crimp connector with “Wrap-Cap” or approved equal.
 - E. Make all wire and cable crimps with manufacturer approved tools.
 - F. Acceptable connectors included with Owner furnished equipment may be used.
 - G. Insulating compounds for splice and termination insulation shall conform to the recommendations of the cable manufacturer.
 - H. Tapes for splice and termination insulation shall conform to the recommendations of the cable manufacturer.
 - 1. UL 510, plastic insulating tape shall be capable of performing in a continuous temperature environment of 80 degrees Celsius.
 - 2. Electrical tape for 600 volts cable splices shall be 3/4 inch wide 3M Company Scotch No. 33, Scotch No. 88 or equal.
 - I. Arc-proofing tape shall be Scotch No. 77.
 - J. Lacing materials for field installed cable shall be non-releasing nylon ties manufactured by Thomas & Betts Company, Panduit Corporation or approved equal.
3. EXECUTION
- A. All connections shall be made in accordance with the Contract Documents.
 - B. Supplier’s installation instructions for cable accessories shall be obtained and be in the possession of the craftsmen while installing the accessories and shall be available to the Owner for reference.
 - C. Cabling and accessories shall be thoroughly cleaned of all shipping material, dust and dirt prior to installation.
 - D. Splices/joints
 - 1. Control wire
 - a. Installed cable shall be continuous between the terminal points indicated without intermediate splices or taps unless otherwise approved by the Owner.
 - b. No splices shall be permitted in CT secondary circuits, VT secondary circuits, communication grade circuits, control circuits or instrumentation circuits.
 - 2. Building power and lighting wire
 - a. Make splices only in junction or terminal boxes.
 - b. Filler compound shall be used at sharp or irregular edges to provide a smooth surface before taping.
 - c. Three layers of 3/4 inch wide electrical tape, half-lapped, shall be used on 600 volts cable splices.
 - 3. Underground power cable

- a. The Contractor shall provide cable splicers skilled in splicing high and medium voltage EPR power cables. For additional cable splicer qualifications, see Section 01440 of these Specifications.
 - b. Contractor shall provide cable splice tape materials and connectors for splices as indicated in the contract documents.
 - c. All splicing materials shall be approved by the Owner.
 - d. The cable splicer shall not start a splice until all material and tools are available and all protective equipment is in place, so that, once started, the construction of the joint may proceed without interruption.
 - e. All cable connections shall be properly phased before splices are made.
 - f. The environment of the area of the splice shall be clean and dry, and cables shall be trained in such a manner as to avoid sharp bends.
 - g. The conductor shall be thoroughly cleaned prior to installing the connection.
 - h. The cable splicer shall employ means to avoid joint contamination and moisture, such as conditions drippings, perspiration and any other material.
 - i. The installed conductor shall have a smooth outer surface to reduce the electrical stresses and to facilitate taping.
 - j. Crimp type connectors shall be installed with a hydraulic crimping tool to insure uniform and positive crimping. Shear Bolt connectors shall be installed according to manufacturer's instructions.
 - k. I-dent dies shall not be used.
 - l. Ball markers shall be installed at each underground splice location as specified on the Contract Drawings and in Section 02580 of these Specifications.
4. Fireproofing and arc-proofing
- a. All cables and splices in manholes and vaults shall be individually fireproofed and arc-proofed from duct mouth to duct mouth or terminator by the application of layers of fireproof material to the sheath of the jacket of the cable.
 - b. All cable sheaths and jackets shall be thoroughly cleaned prior to the application of fireproofing and arc-proofing material.
 - c. Cable sheaths and sleeve fittings shall be wrapped with one wrap of 1/2 lapped arc-proofing tape.
 - d. The fireproofing tape shall be held in place after application with a pressure-sensitive glass cloth tape a minimum of 1/2 inch wide.

5. Overhead power conductor
 - a. All connections shall be made with full tension compression joints as specified in the Contract Documents.
 - b. Joints shall be made in strict accordance with the Manufacturer's recommendations in all respects.
 - c. All connections between shield wires or from the shield wire to the grounding conductor shall be made by means of a compression type connector.
 - d. All connections not requiring a full tension joint shall be made by means of aluminum compression connectors, designed and rated to ensure a conductivity equal or greater than that of the conductor.
 - e. The connector to be used at each location shall be of the proper size to fit the application and shall be installed with the proper tool and as recommended by the Manufacturer.
 - f. Wherever possible, joints shall be made up on the ground.
 - g. A joint may be made in the air only when it is not feasible to perform the work on the ground.
 - h. Repair sleeves shall be installed where the condition of the conductor warrants its use and only when approved by the Owner.
 - i. In no case shall there be two joints in the same conductor in the same span.
 - j. Joints shall not occur in the same conductor in adjacent spans.
 - k. No joint shall occur in a conductor within two spans of a dead-end structure.
 - l. Tension joints shall be made up within the spans in which they occur and shall not be pulled through the blocks or sheaves.
 - m. Tension joints shall be positioned within a span so they are a minimum of 50 feet from a structure.
 - n. Conductors shall be clean and free from dirt or corrosion before joint sleeves are installed.
 - o. Joint sleeves shall be installed so that a maximum length of each conductor will be entirely within the sleeve in order to obtain the maximum holding power of the joint.
- E. Terminations
 1. Terminating a conductor shall include attaching the conductor to its designated location using specified materials and insulating the entire connection where specified or as required by the application.

2. Control wire
 - a. The interior surface of the connector wire barrel shall be serrated and the exterior surface of the connector wire barrel shall be provided with crimp guides.
 - b. Make terminations clean and tight to assure a low-resistance joint.
 - c. Make terminations only in junction boxes, equipment or other acceptable enclosures and not in conduits.
 - d. Install connectors with tooling as recommended by the connector manufacturer. Tooling shall be equal to Tyco Electronic, having die or piston stops to prevent over crimping and a CERTI-CRIMP feature or a DYNA-CRIMP pressure relief feature to prevent under crimping. The die of all application tooling shall provide dot or wire size coding for quality control verification.
 - e. Apply an oxide-inhibiting compound compatible with the insulation, conductor and connector as required and recommended by Manufacturer.
3. Control cable copper shield
 - a. Unwrap and fold tape back over the cable outer jacket so that the tape strip runs parallel to the cable axis.
 - b. All tape folds and bends must be clean and neat with no sharp edges that might cut the conductor insulation.
 - c. Cut off all excess tape and solder a grounding wire, number 12 AWG stranded or a suitable braided ground strap, to the tape tail.
 - d. Tape the complete assembly to prevent the contamination of metal parts.
4. Underground power cable
 - a. The Contractor shall provide cable splicers/terminators skilled in terminating high and medium voltage EPR power cables. For additional cable splicer/terminator qualifications, see Section 01440 of these Specifications.
 - b. Contractor shall provide all cable termination materials.
 - c. Make terminations with materials and methods as indicated or specified herein or as designated by the written instructions of the cable manufacturer and termination kit manufacturer.
 - d. Contractor shall provide load-break or non-load-break elbows and connectors as indicated on the drawings and shall meet the requirements of IEEE 48. Elbow terminations shall be made in accordance with the elbow manufacturer's recommendations.
 - e. Contractor shall submit for approval all cable termination material.
 - f. Use caution when terminating T-OP assemblies on S&C switchgear. Avoid damaging the threads on the LRTP that mates with the compression connector.
 - g. All terminating materials shall be designed for use with EPR cable.

- h. When cables are to be terminated in slip-on molded rubber type potheads or in slip-on porcelain type potheads, they shall be installed in accordance with the Manufacturer's recommendations.
 - i. Where aluminum terminal connectors are terminated to a copper bus with a Class 5 steel or silicon-bronze stud or bolt, place the connector on the stud or bolt, followed by a flat steel washer, a conical spring washer and a steel or silicon-bronze nut, in that order. Torque wrenches shall not be used on conical spring washers.
 - j. See Detail E211 in the Details Section of these Specifications for bolted connection details.
 - k. Bolt lengths shall be sized so that a minimum of 2 threads to a maximum of 1/2 inch extends past the end of the nut.
 - l. The torque values listed in Detail E212 in the Details Section of these Specifications shall apply to all clamping hardware used for connectors and fittings when conical spring washers are not utilized.
 - m. Secondary terminations to transformers and equipment shall be made with compression type connectors with a NEMA standard double hole connector.
 - n. The grounding of terminations shall conform to the cable manufacturer's approved methods and procedures.
5. Overhead power conductor
- a. All full tension terminations for the ACSR conductors shall be made by means of a compression type dead-end joint.
 - b. The installation of the dead-ends shall be made in strict accordance with the recommendations of the Manufacturer.

4. INSPECTION AND TESTING

- A. All high voltage splices and terminations may be examined by means of X-rays. The Owner will be responsible for arranging and covering the cost of this type of test.
- B. After completion of the test and upon examination of the X-rays, if any splice or termination is in question as to its quality, the Contractor shall be responsible for making a new splice at his expense.
- C. After installing, but before placing in service, the high and medium voltage cable terminations, notify the Owner to perform a DC high potential test.
- D. Potheads and terminators isolated, by switches or other means, from other equipment shall be stressed at the test voltage along with the cable.
- E. Terminators failing the leakage current test shall be considered as inadequate and must be corrected or replaced at the Contractor's expense.

END OF SECTION

RCES ECS Specification Reference and Modifications

The RCES Electrical Construction Specifications (ECS), 2009 Rev. 3 Division 2 Site Construction, Division 3 Concrete, Division 5 Metals Materials, Division 13 Special Construction, Division 16 Electrical, and Details are hereby incorporated into the Division 2 and 3 Specifications. All work required by these specifications shall be included in the price and format required by the Owner's Representative. The specifications above will prevail over any conflict with the ECS.

CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT

BOARD OF SUPERVISORS REPORT 8.5

Board Meeting Date: 11/20/2024

Subject: Skid-Mounted Centrifuge Dewatering System for Water Resource Recovery Facility.

Presented By: Chris Ferraro, Director, Reedy Creek Energy Services

Department: Utility Services

STAFF RECOMMENDATION (Motion Ready): Approve Agenda Item #8.5 Contract #C006619 for three years with Synagro South, LLC to supply, operate, and maintain a skid-mounted centrifuge dewatering system to process waste sludge and produce dewatered solids in the amount of \$1,912,540.00

RELEVANT STRATEGIC GOALS: Quality of Place

PROOF OF PUBLICATION: Bid Posting Date: 8/01/2024

BACKGROUND:

The Central Florida Tourism Oversight District owns a Water Resource Recovery Facility (WRRF) permitted to treat 20 million gallon per day (MGD) of wastewater on an annual average daily flow (AADF) basis. The existing biosolids handling equipment at the facility consists of sludge thickening, storage, dewatering and conveyance systems. There are four (4) belt filter presses associated with the dewatering process that have reached the end of their useful life and are no longer in service.

Since Harvest Power Orlando ceased operations in July 2020, the District has contracted the supply, operations, and maintenance of a skid-mounted centrifuge dewatering system while steps are taken to plan, design, and construct a new dewatering process at the facility. Design of a new dewatering process is complete, however value engineering, bidding, and construction are anticipated to take an additional 2-3 years.

This agreement provides for continued dewatering services until the new process is constructed and fully commissioned

FINDINGS AND CONCLUSIONS:

On August 01, 2024, Invitation to Bid #C006619 was issued for supply, operation, and maintenance of a skid-mounted centrifuge dewatering system. Five (5) bids were received as follows:

Vendor	Location	Amount
Synagro South LLC	Baltimore, Maryland	\$1,912,540.00
Diamond T Services Inc.	Arvada, Colorado	\$2,155,895.24
Eagle Dynamic Solutions LLC	Evans, Georgia	\$2,555,228.00
Handex Consulting	Winter Park, Florida	\$3,503,679.00
Rental Pumps	Mobile, Alabama	\$3,760,195.00

Synagro South, LLC was the lowest responsive and responsible bidder.

Utility Services is requesting approval of Contract #C006619 with Synagro South, LLC for the Skid-Mounted Centrifuge Dewatering System for Water Resource Recovery Facility. Staff recommends approving the contract for the period of **December 1, 2024** through **November 30, 2027**.

FISCAL IMPACT:

Funding for this contract will be budgeted annually as an operating expense for the wastewater utility as follows:

Estimated Fiscal Impact				
Accounting Line	FY25	FY26	FY27	FY28
333-108-5307012 (wastewater)	\$555,883.00	\$612,000.00	\$612,000.00	\$132,657.00

PROCUREMENT REVIEW:

This agreement has been reviewed and approved for compliance with the District’s procurement policies.

LEGAL REVIEW:

The agenda item has been reviewed by the District’s general counsel.

ALTERNATIVE:

- Deny
- Amend
- Table

SUPPORT MATERIALS:

- Synagro South, LLC – Submitted Bid



WATER RESOURCE RECOVERY FACILITY SKID-MOUNTED CENTRIFUGE DEWATERING SYSTEM SERVICES AGREEMENT

THIS AGREEMENT, is made effective as of November 20, 2024 by and between **Central Florida Tourism Oversight District** (herein referred to as the “Owner” or “District”), whose mailing address is 10450 Turkey Lake Road, Box #690519, Orlando, Florida 32869, and **Synagro South, LLC**, (herein referred to as the “Contractor”), whose mailing address is 435 Williams Court, Baltimore, Maryland 21220.

W I T N E S S E T H

WHEREAS, Central Florida Tourism Oversight District issued an Invitation to Bid (“ITB”) No. C006619 on August 1, 2024 for skid-mounted centrifuge dewatering system for the Water Resource Recovery Facility;

WHEREAS, five (5) bidders responded, and Synagro South, LLC was the lowest responsive and responsible bidder. The Contractor was subsequently selected as the intended awardee for these services; and

WHEREAS, Owner desires to employ the services of Contractor for a period beginning **December 1, 2024** and ending **November 30, 2027**, or as otherwise modified as set forth in this Agreement, to perform the hereinafter described Services, and Contractor desires to be so employed. This Agreement may be renewed for up to three, one-year renewal terms by mutual written consent. The optional renewal terms shall be subject to annual Consumer Price Index (“CPI”) adjustment for all services, based on the CPI-U for All Urban Consumers according to the published calculation from the US Bureau of Labor Statistics for the previous calendar year.

NOW THEREFORE, in consideration of the premises and the mutual covenants and obligations contained in this Agreement, the parties agree as follows:

1. DEFINITIONS.

a. Agreement. The Agreement represents the entire and integrated Agreement between the parties hereto and supersedes all prior negotiations, representations or agreements, either written or oral. The Agreement may be amended or modified only as set forth below in Section 6.

b. Services. The term “Services” or “Work” as used in this Agreement shall be construed to include all Services set forth in Exhibit A, all obligations of Contractor under this Agreement and where any Changed Service Authorizations have been issued pursuant to Section 6 of this Agreement.

2. SCOPE OF SERVICES. A description of the nature, scope and schedule of Services to be performed by Contractor under this Agreement in accordance with the Exhibits outlined in the Section 25 - Contract Documents.

3. BASIS FOR COMPENSATION AND PAYMENTS.

Not to Exceed Amount

a. Owner shall pay to Contractor, for its Services and in consideration of the terms and conditions of this Agreement, an amount for time reasonably and properly incurred by Contractor in performance of its Services based upon the rates shown on the Rate Schedule below incorporated herein by reference. However, in no event shall the amount exceed **ONE MILLION, NINE HUNDRED TWELVE THOUSAND, FOUR HUNDRED SEVENTY-ONE AND ZERO ONE-HUNDREDTHS DOLLARS (\$1,912,471.00)**; and the Reimbursable Expenses shall in no event exceed **(N/A)**.

RATE SCHEDULE					
Skid-Mounted Centrifuge Dewatering System for Water Resource Recovery Facility					
Item	Description	Unit	Qty	Unit Price	Extended Price
1	Mobilization	EA	1	\$45,882.60	\$45,882.60
2	Monthly Operations and Maintenance	MO	36	\$51,000.00	\$1,836,000.00
3	Demobilization	EA	1	\$30,588.40	\$30,588.40
NOT TO EXCEED TOTAL					\$1,912,471.00



Alternates				
4	Disposal, if needed	TON	1	\$68.75
5	Mobilization and Setup of Secondary Centrifuge	EA	1	\$45,882.60
6	Demobilization of Secondary Centrifuge	EA	1	\$30,588.40
7	Monthly Secondary Centrifuge Operation	MO	36	\$51,000.00
8	Daily Generator Rental	DAY	1	\$3,570.00
9	Sunday Operations and Maintenance	DAY	1	\$3,187.50

b. Payments shall be made monthly for Services plus Reimbursable Expenses incurred. Contractor shall invoice Owner, in the form required by Owner, on the first day of each calendar month for Services rendered during the preceding month plus Reimbursable Expenses incurred.

c. Reimbursable Expenses shall include only the actual and necessary costs and expenses, without markup, reasonably and properly incurred by Contractor in connection with the Services rendered under this Agreement. Direct expenses are determined and pre-approved by Owner.

d. Contractor shall provide any and all backup required by Owner in connection with time spent and Reimbursable Expenses incurred.

e. Owner shall pay each invoiced amount (or uncontested portion thereof) on or about the thirtieth day following receipt of each invoice.

f. All invoices should reference the contract number and be submitted to the following address:

Central Florida Tourism Oversight District
C/O: Reedy Creek Energy Services – Utilities Division
Attention: Accounts Payable
P.O. Box 690519
Orlando, Florida 32869

All invoices shall be sent to wdw.rces.billing@disney.com

g. Contractor shall be compensated for any Additional Services based upon the Rate Schedule; such amounts to be invoiced and paid in accordance with the terms of Paragraphs b, c, d, and e herein; provided, however, that Contractor shall not be entitled to compensation for Additional Services unless Contractor has obtained prior written authorization of Owner to perform the same.

h. Owner retains the right to reduce any portion of Contractor's Services at any time.

i. Return of Funds. Contractor will return any overpayments due to unearned funds or funds disallowed pursuant to the terms of the Agreement that were disbursed to the Contractor. The Contractor must return any overpayment within forty (40) calendar days after either discovery by the Contractor, its independent auditor, or notification by the Owner of the overpayment.

4. REPRESENTATIONS, WARRANTIES, AND COVENANTS.

Contractor hereby represents to Owner that: (a) it has the experience and skill to perform the Services as set forth in this Agreement; (b) that it shall comply with all applicable federal, state, and local laws, rules, codes, and orders of any public, quasi-public or other government authority; (c) it is duly licensed to observe and perform the terms, covenants, conditions and other provisions on its part to be observed or performed under this Agreement; (d) it has by careful examination satisfied itself as to: (i) the nature, location and character of the general area in which the Services are to be performed including, without limitation, the surface conditions of the land and all structures and obstructions thereon, both natural and manmade, the surface water conditions of the general area and, to the extent pertinent, all other conditions; and (ii) all other matters or things which could in any manner affect the performance of the Services.



5. INSURANCE; INDEMNIFICATION.

a. The Contractor shall at its expense procure and maintain during the life of this Contract and for two (2) years thereafter (and shall require the same from its Subcontractors and Sub-subcontractors) the following types and minimum amounts of insurance:

- i. Commercial General Liability Insurance including liability assumed under written contract, bodily injury, property damage, personal and advertising injury, and products/completed operations liability written on an occurrence basis with minimum combined single limits for bodily injury and property damage of \$1,000,000 per occurrence;
- ii. Automobile Liability coverage for all owned, non-owned and hired vehicles written on an occurrence basis, with minimum combined single limits of \$1,000,000 per occurrence;
- iii. Workers' Compensation Insurance providing statutory benefits and Employer's Liability Insurance with minimum limits of \$1,000,000 per occurrence;
- iv. Umbrella Liability on a follow-form basis providing coverage excess of the underlying policies required by i, ii, and iii above in an amount of at least \$1,000,000 per occurrence;
- v. If Contractor is providing any kind of professional service or advice including design, architectural, surveying, legal, financial, accounting or similar then Contractor will also carry Professional Liability/Errors & Omissions insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least two (2) years following the conclusion of work.
- vi. If Contractor is using, transporting or disposing of any hazardous materials, potentially harmful materials, chemicals, waste or similar then Contractor will also carry Pollution Liability insurance with a limit of at least \$1,000,000 per occurrence. This insurance may be on a claims-made form if there is a retroactive date that precedes the first date of work or services under this agreement and is maintained for at least two (2) years following the conclusion of work.
- vii. If work will include the use or operation of any crane, total limit of Umbrella liability insurance will be at least \$4,000,000.
- viii. If Contractor is using any kind of aircraft including unmanned aerial vehicles (drones) then use must be approved by Owner and liability insurance satisfactory to Owner must be obtained.
- ix. Contractor is not required to commercially insure its owned, rented or borrowed machinery, tools, equipment, office trailers, vehicles, and other property but agrees that Owner is not responsible for and Contractor holds Owner harmless for loss, damage or theft of such items.

b. All insurance required under this Section shall be with companies and on forms authorized to issue insurance in Florida and with an insurer financial strength rating from AM Best of no less than A- or an equivalent rating from a similar, recognized ratings agency unless such requirements are waived, in writing, by the Owner's Risk Manager. Certificates of insurance (or copies of policies, if required by the Owner) shall be furnished to the Owner.

c. CANCELLATION. All such insurance required by this Section shall provide that the coverage thereunder may not be reduced or canceled unless thirty (30) days unrestricted prior written notice thereof is furnished to Contractor, who agrees to promptly relay any such notice received to Owner.



d. **ADDITIONAL INSUREDS.** Each liability policy required herein (except Workers' Compensation or Professional Liability) shall schedule as Additional Insureds, on a primary and non-contributory basis, the Owner and its affiliated entities and their supervisors, officers, employees, agents and assigns.

e. **WAIVERS.** The Contractor hereby waives, and will require its Subcontractors and Sub-subcontractors to waive and to require its and their insurers to waive their rights of recovery or subrogation against the Owner and its affiliated entities, supervisors, officers, employees, agents and assigns.

f. **CLAIMS.** The Contractor and its Subcontractors and Sub-subcontractors shall assist and cooperate in every manner possible in connection with the adjustment of all claims arising out of the operations conducted under or in connection with the Work and shall cooperate with the insurance carrier or carriers of the Owner and of the Contractor, its Subcontractors and Sub-subcontractors in all litigated claims and demands which arise out of said operations and which the said insurance carrier or carriers are called upon to adjust or resist.

g. **INDEMNIFICATION.** The Contractor shall indemnify the Owner from and against any and all claims, suits, judgments, damages, losses and expenses (including attorneys' fees) of any nature whatsoever to the extent caused by the negligence, recklessness or intentional wrongful misconduct (which includes, without limitation, any failure of the Contractor or any of its Subcontractors or Sub-subcontractors to perform and complete the Work in strict compliance with the Contract Documents, unless such failure has been specifically waived by the Owner in writing upon final acceptance of the Work) of the Contractor or any persons employed or utilized by the Contractor in the performance of the Contract, including without limitation, any Subcontractor or Sub-subcontractor (or their employees), utilized by the Contractor in the performance of the Work. The provisions of this paragraph shall survive the expiration or sooner termination of this Agreement.

6. **MODIFICATIONS, ADDITIONS, OR DELETIONS TO THE SERVICES.**

a. A Changed Service Authorization shall be a writing by the Owner that shall consist of additions, deletions, or other modifications to the Agreement agreed to by the Contractor.

b. The Owner may, from time to time, without affecting the validity of the Agreement, or any term or condition thereof, issue Changed Service Authorizations which may identify additional or revised Scope of Services, or other written instructions and orders, which shall be governed by the provisions of the Agreement. The Contractor shall comply with all such orders and instructions issued by the Owner. Upon receipt of any such Changed Service Authorization, the Contractor shall promptly proceed with the Changed Service Authorization, and the resultant decrease or increase in the amount to be paid the Contractor, if any, shall be governed by the provisions of Section 3 in this Agreement.

7. **NO WAIVER OF SOVEREIGN IMMUNITY.**

Nothing herein is intended to waive sovereign immunity by the District to which sovereign immunity may be applicable, or of any rights or limits of liability existing under Florida Statute § 768.28. This term shall survive the termination of all performance or obligations under this Agreement and shall be fully binding until any proceeding brought under this Agreement is barred by any applicable statute of limitations.

8. **PROTECTION OF PERSONS AND PROPERTY.**

a. The Contractor shall be responsible for initiating, maintaining and supervising safety precautions and programs in connection with the Services, and shall provide all protection to prevent injury to all persons involved in any way in the Services and all other persons, including, without limitation, the employees, agents, guests, visitors, invitees and licensees of the Owner who may visit or be affected thereby.

b. All Services, whether performed by the Contractor, its Subcontractors, or anyone directly or indirectly employed by any of them, and all applicable equipment, machinery, materials, tools and like items used in the Services, shall be in compliance with, and conform to: (a) all applicable laws, ordinances, rules, regulations and orders of any public, quasi-public or other governmental authority; and (b) all codes, rules, regulations and requirements of the Owner and its insurance carriers relating thereto. In the event of conflicting requirements, the more stringent shall govern.



c. The Contractor shall at all times keep the general area in which the Services are to be performed clean and free from accumulation of waste materials or rubbish (including, without limitation, hazardous waste), caused by performance of the Services, and shall continuously throughout performance of the Services remove and dispose of all such materials. The Owner may require the Contractor to comply with such standards, means and methods of cleanup, removal or disposal as the Owner may make known to the Contractor. In the event the Contractor fails to keep the general area in which the Services are to be performed clean and free from such waste or rubbish, or to comply with such standards, means and methods, the Owner may take such action and offset any and all costs or expenses of whatever nature paid or incurred by the Owner in undertaking such action against any sums then or thereafter due to the Contractor.

9. BOOKS AND RECORDS.

Contractor shall maintain comprehensive books and records relating to any Services performed under this Agreement, which shall be retained by Contractor for a period of at least four (4) years from and after the completion of such Services. Owner, or its authorized representatives, shall have the right to audit such books and records at all reasonable times upon prior notice to Contractor. The provisions of this paragraph shall survive the expiration or early termination of this Agreement.

10. PROMOTION/CONFIDENTIALITY.

The Contractor, by virtue of this Agreement, shall acquire no right to use, and shall not use, the name of the Owner or the Owner's Representative (either alone or in conjunction with or as a part of any other word, mark or name) or any marks, fanciful characters or designs of either of them or any related, affiliated or subsidiary companies: in any advertising, publicity or promotion; to express or imply any endorsement of the Contractor's Work or services; or in any other manner whatsoever (whether or not similar to the uses hereinabove specifically prohibited). Contractor may, during the course of its engagement hereunder, have access to and acquire knowledge regarding plans, concepts, designs, materials, data, systems and other information of or with respect to Owner or Owner's Representative, or any subsidiaries or affiliated companies thereof, which may not be accessible or known to the general public ("Confidential Information"). Confidential Information that is specific as to techniques, equipment, processes, products, concepts or designs, etc. shall not be deemed to be within the knowledge of the general public merely because it is embraced by general disclosures in the public domain. Any knowledge acquired by Contractor from such Confidential Information or otherwise through its engagement hereunder shall not be used, published or divulged by Contractor to any other person, firm or corporation, or used in any advertising or promotion regarding Contractor or its services, or in any other manner or connection whatsoever without first having obtained the written permission of Owner, which permission Owner may withhold in its sole discretion. Contractor specifically agrees that the foregoing confidentiality obligation applies to, but is not limited to, any information disclosed to Contractor in any document provided to Contractor pursuant to or in connection with this Agreement, including but not limited to, a Request for Proposal, Request for Estimate, Request for Quotation or Invitation to Bid, except to the extent Contractor must disclose such information to compile and prepare its proposed price for work or services performed hereunder. The provisions of this Section shall survive the expiration or earlier termination of this Agreement.

11. ASSIGNMENT.

This Agreement is for the personal services of Contractor and may not be assigned by Contractor in any fashion, whether by operation of law, or by conveyance of any type including, without limitation, transfer of stock in Contractor, without the prior written consent of Owner, which consent Owner may withhold in its sole discretion. Owner retains the right to assign all or any portion of this Agreement at any time. Upon such assignment, and provided the Assignee shall, in writing, assume Owner's obligations under this Agreement, Owner shall be automatically released and discharged from any and all of its obligations under this Agreement, and Contractor shall thenceforth look solely to the Assignee for performance of Owner's obligations under this Agreement.

12. SUSPENSION OR TERMINATION.

Anything in this Agreement to the contrary notwithstanding, Owner shall, in its sole discretion and with or without cause, have the right to suspend or terminate this Agreement upon seven (7) days prior written notice to Contractor. In the event of termination, Owner's sole obligation and liability to Contractor, if any, shall be to pay to Contractor that portion of the fee earned by it, plus any earned amounts for extra Services performed pursuant to Sections 3 and 6, through the date of termination. Owner and Contractor agree in advance that if the Owner exercises its discretionary



right to terminate for convenience, the Owner will pay Contractor for fair and reasonable documented expenses directly incurred by Contractor resulting from early termination.

13. SUBCONTRACTORS.

If the Contractor desires to employ Subcontractors in connection with the performance of its Services under this Agreement:

a. Nothing contained in the Agreement shall create any contractual relationship between the Owner and any Subcontractor. However, it is acknowledged that the Owner is an intended third-party beneficiary of the obligations of the Subcontractors related to the Services.

b. Contractor shall coordinate the services of any Subcontractors, and remain fully responsible under the terms of this Agreement, Contractor shall be and remain responsible for the quality, timeliness and the coordination of all Services furnished by the Contractor or its Subcontractors.

c. All subcontracts shall be in writing. Each subcontract shall contain a reference to this Agreement and shall incorporate the terms and conditions of this Agreement to the full extent applicable to the portion of the Services covered thereby. Each Subcontractor must agree, for the benefit of the Owner, to be bound by such terms and conditions to the full extent applicable to its portion of the Services.

14. NOTICE.

a. Notices required or permitted to be given under this Agreement shall be in writing, may be delivered personally or by mail, telex, facsimile, cable, or courier service, and shall be deemed given when received by the addressee. Notices shall be addressed as follows:

If to Owner: CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
10450 Turkey Lake Road, Box #690519
Orlando, Florida 32869
Attention: Contracting Officer

If to Contractor: SYNAGRO SOUTH, LLC
435 Williams Court
Baltimore, Maryland 21220
Attention: Emil Kneis

or to such other address as either party may direct by notice given to the other as hereinabove provided.

b. Notwithstanding the foregoing, any notice sent to the last designated address of the party to whom a notice may be or is required to be delivered under this Agreement shall not be deemed ineffective if actual delivery cannot be made due to a change of address of the party to whom the notice is directed or the failure or refusal of such party to accept delivery of the notice.

15. OWNERSHIP OF WORK PRODUCT.

a. All drawings, data, ideas, concepts, molds, models, tooling, improvements, inventions, or other tangible or intangible work product in whole or in part conceived, produced, commissioned or acquired by Contractor hereunder ("Work Product") shall be and remain the sole and exclusive property of Owner when produced, whether or not fixed in a tangible medium of expression, except that Contractor may retain copies of such Work Product for its permanent reference, but shall not use such copies in any manner whatsoever without the express written consent of Owner and shall keep same confidential in accordance with the requirements of Section 10 entitled Promotion/Confidentiality. In the event of early termination of this Contract, in whole or in part, Contractor shall deliver to Owner all Work Product whether complete or not.

b. Without limiting the forgoing, Contractor agrees that any and all Work Product shall be deemed to be "works made for hire" for Owner as the author, creator, or inventor upon creation; provided, however, that in the event and to the extent that such Work Product is determined not to constitute "works made for hire" as a matter of law, Contractor hereby irrevocably assigns and transfers such property, and all right, title and interest therein, whether now known or hereafter existing including, but not limited to, patents and copyrights, to Owner and its



successors and assigns. Contractor grants to Owner all rights including, without limitation, reproduction, manufacturing and moral rights, throughout the universe in perpetuity and in all languages and in any and all media whether now or hereafter known, with respect to such Work Product. Contractor acknowledges that Owner is the motivating force and factor, and for purposes of copyright or patent, has the right to such copyrightable or patentable Work Product produced by Contractor under this Contract. Contractor agrees to execute any and all documents and do such other acts as requested by Owner to further evidence any of the transfers, assignments and exploitation rights provided for herein.

16. LEGAL PROCEEDINGS.

a. The Contract Documents shall be construed and interpreted in accordance with the laws of the State of Florida, to the exclusion of its rules concerning conflicts of laws, and shall constitute the entire and sole understanding of the parties hereto notwithstanding any prior oral or written statements, instructions, agreements, representations, or other communications.

b. Any legal proceeding of any nature brought by either party against the other to enforce any right or obligation under this Agreement, or arising out of any matter pertaining to this Agreement, the Contract Documents or the Work to be performed hereunder (a "Proceeding"), shall be submitted for trial, without jury, solely and exclusively before the Circuit Court of the Ninth Judicial Circuit in and for Orange County, Florida; provided, however, that if such Circuit Court does not have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before the United States District Court for the Middle District of Florida (Orlando Division); and provided further that if neither of such courts shall have jurisdiction, then such Proceeding shall be so submitted solely and exclusively before any other court sitting in Orange County, Florida, having jurisdiction. The parties (i) expressly waive the right to a jury trial, (ii) consent and submit to the sole and exclusive jurisdiction of the requisite court as provided herein, (iii) agree to accept service of process outside the State of Florida in any matter related to a Proceeding in accordance with the applicable rules of civil procedure, and (iv) neither party shall be liable for consequential or punitive damages on any claims arising out of the performance or non-performance of obligations under the Contract.

c. In the event that any provision of any of the Contract Documents is judicially construed to be invalid by a court of competent jurisdiction, such provision shall then be construed in a manner allowing its validity or, if this leads to an impracticable result, shall be stricken but, in either event, all other provisions of the Contract Documents shall remain in full force and effect.

17. MISCELLANEOUS PROVISIONS.

a. Any failure by Owner to require strict compliance with any provision of this Agreement shall not be construed as a waiver of such provision, and Owner may subsequently require strict compliance at any time, notwithstanding any prior failure to do so.

b. The acceptance of final payment under this Agreement, or the acceptance of final payment upon early termination hereof, shall constitute a full and complete release of Owner by Contractor from any and all claims, demands and causes of action whatsoever which Contractor may have against Owner in any way related to the subject matter of this Agreement and Contractor shall as a condition precedent to receipt of final payment from Owner, submit to the Owner a fully and properly executed General Release, in the form attached to this Agreement. Neither the Owner's review, approval or acceptance of, nor payment for, any of the Services required under this Agreement shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Contractor shall be and remain liable to Owner in accordance with law for all damages to Owner caused by the Contractor's performance of any of the Services furnished pursuant to this Agreement.

c. It is understood and agreed that Contractor is acting as an independent contractor in the performance of its Services hereunder, and nothing contained in this Agreement shall be deemed to create an agency relationship between Owner and Contractor.

d. The rights and remedies of Owner provided for under this Agreement are cumulative and are in addition to any other rights and remedies provided by law.



18. THE OWNER'S REPRESENTATIVE.

Reedy Creek Energy Services, whose designated representative is **Kylie Canarina** and whose mailing address is 10450 Turkey Lake Road, Box #690519, Orlando, Florida 32869, shall act as the Owner's authorized representative (herein referred to as the "Owner's Representative"); provided, however, that the Owner may, without liability to the Contractor, unilaterally amend this Section from time to time by designating a different person or organization to act as its representative and so advising the Contractor in writing, at which time the person or organization so designated shall be the Owner's Representative for purposes of this Agreement. Except as otherwise provided in this Agreement, and until the Contractor is notified in writing to the contrary, all actions to be taken by, all approvals, notices, consent, directions and instructions to be given by, all notices and other matters to be delivered to, all determinations and decisions to be made by and, in general, all other action to be taken by, or given to, the Owner shall be taken, given and made by, or delivered or given to, the Owner's Representative in the name of and on behalf of the Owner; provided, however, that the Owner (and not the Owner's Representative) shall be solely obligated to the Contractor for all sums required to be paid by the Owner to the Contractor hereunder.

Nothing contained in this Agreement shall create any contractual relationship between the Contractor and the Owner's Representative; provided, however, that the Owner's Representative shall be deemed to be a third party beneficiary of those obligations of the Contractor to the Owner as imposed by this Agreement.

19. PUBLIC RECORDS.

The Contractor shall comply with all applicable provisions of the Florida Public Records Act, Chapter 119, Florida Statutes. Specifically, the Contractor shall:

- a. Keep and maintain public records required by the public agency to perform the service.
- b. Upon request from the public agency's custodian of public records, provide the public agency with a copy of the requested records or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in this chapter or as otherwise provided by law.
- c. Ensure that public records that are exempt or confidential and exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the contract term and following completion of the contract if the Contractor does not transfer the records to the public agency.
- d. Upon completion of the contract, transfer, at no cost, to the public agency all public records in possession of the Contractor or keep and maintain public records required by the public agency to perform the service. If the Contractor transfers all public records to the public agency upon completion of the contract, the Contractor shall destroy any duplicate public records that are exempt or confidential and exempt from public records disclosure requirements. If the Contractor keeps and maintains public records upon completion of the contract, the Contractor shall meet all applicable requirements for retaining public records. All records stored electronically must be provided to the public agency, upon request from the public agency's custodian of public records, in a format that is compatible with the information technology systems of the public agency.

IF THE CONTRACTOR HAS QUESTIONS REGARDING THE APPLICATION OF CHAPTER 119, FLORIDA STATUTES, TO THE CONTRACTOR'S DUTY TO PROVIDE PUBLIC RECORDS RELATING TO THIS AGREEMENT, CONTACT THE OWNER'S CUSTODIAN OF PUBLIC RECORDS AT TELEPHONE NUMBER 407-939-3240, EMAIL ADDRESS PUBLICRECORDS@OVERSIGHTDISTRICT.ORG, MAILING ADDRESS CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT, ATTN: PUBLIC RECORDS ADMINISTRATOR, P.O. BOX # 690519, ORLANDO, FLORIDA 32869.



20. NON-FUNDING.

In the event that budgeted funds for this Agreement are reduced, terminated, or otherwise become unavailable, Owner may terminate this Agreement upon written notice to Contractor without penalty to Owner. Owner shall be the final authority as to the availability of the funding.

21. SCRUTINIZED COMPANIES.

By executing this Agreement, the Contractor certifies that it is eligible to bid on, submit a proposal for, enter into or renew a contract with the Owner for goods or services pursuant to Section 287.135, Florida Statutes.

a. Specifically, by executing this Agreement, the Contractor certifies that it is **not**: on the Scrutinized Companies that Boycott Israel List, created pursuant to Section 215.4725, Florida Statutes, or is engaged in a boycott of Israel.

b. Additionally, if this Agreement is for an amount of \$1,000,000 or more, by executing this Agreement, the Contractor certifies that it is **not**:

- i. On the "Scrutinized Companies with Activities in Sudan List" or the "Scrutinized Companies with Activities in the Iran Petroleum Energy Sector List," created pursuant to Section 215.473 Florida Statutes; and/or
- ii. Engaged in business operations in Cuba or Syria.

c. The Owner reserves the right to terminate the Agreement immediately should the Contractor be found to:

- i. Have falsified its certification herein pursuant to Section 287.1358, Florida Statutes; and/or
- ii. Have become ineligible to bid on, submit a proposal for, enter into or renew a contract with the Owner for goods or services pursuant to Section 287.135, Florida Statute subsequent to entering into this Agreement with the Owner.

d. If this Agreement is terminated by the Owner as provided in paragraph c above, the Owner reserves the right to pursue any and all legal remedies against the Contractor, including, but not limited to the remedies described in Section 287.135, Florida Statutes.

e. If this Agreement is terminated by the Owner as provided in paragraph above, the Contractor shall be paid only for the work completed as of the date of the Owner's termination.

f. Unless explicitly stated in this Section, no other damages, fees or costs may be assessed against the Owner for its termination of the Agreement pursuant to this Section.

22. E-VERIFY COMPLIANCE.

The Contractor and its subcontractors warrant compliance with all federal immigration laws and regulations that relate to their employees. The Contractor agrees and acknowledges that the Owner is a public employer that is subject to the E-verify requirements as set forth in Section 448.095, Florida Statutes, and that the provisions of F.S. Sec. 448.095 apply to this Agreement. Notwithstanding the provisions of this Section hereof, if the Owner has a good faith belief that the Contractor has knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws of the Attorney General of the United States for employment under this Agreement, the Owner shall terminate the Agreement. If the Owner has a good faith belief that a subcontractor performing work under this Agreement knowingly hired, recruited or referred an alien who is not duly authorized to work by the immigration laws or the Attorney General of the United States for employment under this Agreement, the Owner shall promptly notify the Contractor and order the Contractor to immediately terminate the contract with the subcontractor. The Contractor shall be liable for any additional costs incurred by the Owner as a result of termination of a contract based on Contractor's failure to comply with E-verify requirements referenced herein.

23. WARRANTY.

Contractor warrants all labor, materials, and equipment furnished under the agreement are new, of the type and quality required for the Project, and installed in a good and workmanlike manner in accordance with the Contract Documents. Contractor shall guarantee the Work shall be free from any defects in workmanship for a period of not less than ONE



(1) year from the date of project completion. Contractor shall guarantee the materials provided shall be free from any defects for the longer of: (a) ONE (1) year from the date of project completion; or (b) the period of warranty provided by any supplier or manufacturer. All written manufacturers' warranties for materials supplied must be provided to the Owner's Representative before final payment will be authorized.

24. FORCE MAJEURE/UNCONTROLLABLE CIRCUMSTANCES; CHANGE IN LAW.

Neither Party shall be liable to the other Party for breach or for failure or delay in the performance of its obligations hereunder caused by any act or occurrence beyond its reasonable control, including, but not limited to: fires; floods; strikes (except any strikes involving a Party's personnel); a change in Federal, State, or local law or ordinance; orders or judgments of any Federal, State or local court, administrative agency or governmental body; change in permit conditions or requirements; accidents; extreme weather conditions including, for example, hurricanes, tornadoes, unusually high amounts of precipitation, unusual extremes of temperature or wind, or unusually extended periods of adverse weather conditions; acts of war, aggression or terrorism (foreign or domestic); riot, insurrection; and acts of God. It is specifically understood that, without limitation, none of the following acts, events or circumstances shall constitute an act or occurrence beyond a Party's reasonable control reasonably anticipated weather conditions normal for the region in which the work is performed. Whenever the provisions of this Section are believed to apply, the Party relying thereon shall give prompt notice to the other Party of the circumstances, the basis for applicability of this Section and the time required to cure such breach or delay. Contractor shall promptly provide notice of the need, if any, for additional compensation or for renegotiation of terms in order to mitigate the effects of such event or to comply with a change in law or regulation or interpretation thereof. Contractor shall be entitled to additional time and compensation if such event delays performance into a season different from that assumed when this Contract was executed. Contractor and Owner shall use reasonable best efforts to agree on appropriate mitigating actions under the circumstances.

25. CONTRACT DOCUMENTS.

a. The Contract Documents which comprise the entire understanding between the Owner and Contractor shall only include this Agreement and those documents listed in this section as Exhibits to the Agreement. Each Exhibit is incorporated herein by reference for all purposes.

- Exhibit A: Scope of Services (A-1 through A-4)
- Exhibit B: Special Contract Conditions (B-1 through B-15)
- Exhibit C: Project Specific Safety Plan Requirements (C-1 through C-3)

b. If there is a conflict between the terms of this Agreement and the Exhibits, then the terms of this Agreement shall control, amend, and supersede any conflicting terms contained in the Exhibits.

IN WITNESS WHEREOF, the parties have caused this Agreement to be duly executed effective as of the day and year first above written.

OWNER
CENTRAL FLORIDA TOURISM
OVERSIGHT DISTRICT

CONTRACTOR
SYNAGRO SOUTH, LLC

Signature: _____

Signature: Rhylee Callan

Print Name: Charbel Barakat

Print Name: Rhylee Callan

Title: Vice Chairman of the Board of Supervisors

Title: Contract Administration Manager

Date: November 20, 2024

Date: November 4, 2024

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SCOPE OF SERVICES
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Contractor shall provide all labor, material, equipment, supervision, transportation, tools, and all other things necessary to provide a skid-mounted centrifuge dewatering system and a dewatering equipment operator and perform monthly operations and management of the system as described below.

SECTION 1. SCOPE OF SERVICES OVERVIEW

- 1.1 The Central Florida Tourism Oversight District (“District”) owns a 20 million gallon per day (“MGD”) annual average daily flow (“AADF”) Water Resource Recovery Facility (“WRRF”) which is operated by Reedy Creek Energy Services (“RCES”). The existing WRRF biosolids handling facilities consist of sludge thickening, storage, dewatering and conveyance systems. Although the thickened waste activated sludge (“TWAS”) pumping, thickening, and storage facilities are in fair to good condition, the belt filter presses associated with the dewatering process have approached the end of their useful life and are no longer in service.
- 1.2 Since July 2020, the District has contracted the equipment and operations of a skid-mounted centrifuge dewatering system while a permanent dewatering process is implemented. This Statement of Work is for the continuation of a skid-mounted centrifuge dewatering system that can process the sludge generated from the WRRF and produce dewatered solids that meet the disposal requirements.

SECTION 2. SCOPE OF SERVICES

- 2.1 The WRRF currently produces about 40,000 gallons of TWAS daily, and this production fluctuates depending on the treatment process requirements. Additionally, future development is anticipated for the WRRF’s service area, and the TWAS production may increase relative to this anticipated growth. Given that the onsite storage is limited, the skid-mounted centrifuge dewatering system and operations must be capable of processing the current and future daily TWAS production and produce dewatered solids with a minimum solids concentration of 16.5% to meet the WRRF’s disposal requirements.
- 2.2 The scope shall include the skid-mounted centrifuge dewatering system and a dewatering equipment operator. The skid-mounted centrifuge system shall consist of all the necessary components and include, but not limited to, the following: connection hoses, electrical cable, polymer mixing and pumping system, polymer day tank, centrifuge dewatering unit, screw auger conveyor system that conveys dewatered cake to trailers, means to swap trailers, and centrate pump. *NOTE: The District shall provide feed solids, reclaimed water, electricity, polymer, trailers, centrate auto sampler, and centrate discharge point.*
- 2.3 SUMMARY OF THE WORK.
 - A. The improvements will consist principally of the following:
 - (1) Consistent and reliable equipment and operations that can process the current and future daily TWAS production and produce dewatered solids with a minimum solids content of 16.5% by weight.
 - (2) Continuity of operations during the mobilization phase.
 - (3) Back-up and/or redundant equipment to be onsite within twenty-four (24) hours.
- 2.4 WORK SEQUENCE
 - A. **Project Setup:** Includes the preparation of a Project Specific Safety Plan (“PSSP”), Waste Management Plan (“WMP”), site visits, and project setup.
 - B. **Mobilization:** Includes equipment mobilization, setup, and troubleshooting for a total duration of four (4) days. The Contractor shall field-verify the appropriate service and connections are available for the skid-mounted centrifuge dewatering system prior to delivery and installation. The District will supply a 90-ton crane to lift the estimated 37,000-pound centrifuge unit from the transport truck and set into the desired location. During the mobilization phase, the Contractor shall coordinate with the WRRF to ensure continuity of operations. During this transition period, the Contractor will need to provide the means of hauling offsite the TWAS at a 5.5% solids concentration until the dewatering equipment is up and running.
 - C. **Monthly Operations and Maintenance of the Skid-Mounted Centrifuge Dewatering System:** Includes the operations and maintenance of the skid-mounted centrifuge dewatering system. The Contractor understands that while TWAS from the WRRF is generated daily, the Contractor will be processing six (6) days per week (i.e., Monday through Saturday), twelve (12) hours per day.

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- (1) The Contractor assumes processing a maximum of 70,000 gallons per day, six (6) days per week or 420,000 gallons per week. Operations of the skid-mounted centrifuge dewatering system shall be maintained.
 - (2) Back-up and/or redundant equipment shall be provided within twenty-four (24) hours of notice.
 - (3) The Contractor should provide a yard dog and be able to move and swap the trailer as needed.
- D. Demobilization and Project Closeout:** Includes equipment demobilization, electrical disconnect, site cleanup and project closeout. The District will supply a 90-ton crane to lift the estimated 37,000-pound centrifuge onto the transport truck for demobilization.
- E. Alternates**
- (1) **Mobilization and Setup of Secondary Centrifuge:** Includes equipment mobilization and setup of a secondary skid-mounted centrifuge dewatering system to replace or supplement the base centrifuge dewatering unit. The Contractor shall verify that the appropriate service and connections are available for the skid-mounted centrifuge dewatering system prior to delivery and installation. The District will supply a 90-ton crane to lift the estimated 37,000-pound centrifuge unit from the transport truck and set into the desired location.
 - (2) **Demobilization of Secondary Centrifuge:** Includes equipment demobilization, electrical disconnect, site cleanup and project closeout. The District will supply a 90-ton crane to lift the estimated 37,000-pound centrifuge onto the transport truck for demobilization.
 - (3) **Monthly Secondary Centrifuge Operation:** Includes rental of a secondary skid-mounted centrifuge dewatering system to supplement the base centrifuge dewatering unit. Includes the operations and maintenance of the secondary skid-mounted centrifuge dewatering system. The Contractor understands that while TWAS from the WRRF is generated daily, the Contractor will be processing six (6) days per week (i.e., Monday through Saturday), twelve (12) hours per day.
 - (4) **Daily Generator Rental:** The Contractor will provide an onsite generator as well as the fuel to power the secondary skid-mounted centrifuge dewatering system.
 - (5) **Sunday Operations and Maintenance:** Owner can request the Contractor to operate the skid-mounted centrifuge dewatering unit on Sunday(s). This daily rate is based on processing twelve (12) hours on Sunday(s) and will be billed monthly.

SECTION 3. EMPLOYEES

The following applies to ALL contract work:

- 3.1 The Contractor shall perform the basic services outlined within this Scope of Work twelve (12) hours per day, with the exception of mechanical/electrical tie-ins which may necessitate third shift sequencing to minimize impact to park operations. All mechanical/electrical tie-ins shall be coordinated with Owner prior to proceeding. All work hours are subject to change depending on the time of year and as a result of special events or holidays.
- 3.2 Owner will designate where Contractor's crew will take breaks, lunches, and use restroom facilities. Employee personal vehicles will be parked only in areas designated by the Owner.
- 3.3 Owner reserves the right to refuse any Contractor's employee who does not meet or conform to Owner's policies. Contractor's employees shall be required to maintain a level a professional appearance at all times while performing required tasks in or out of guest view. This includes a level of professional hygiene that includes all Contractor-provided uniforms.
- 3.4 Contractor shall be responsible for initiating, maintaining and supervising safety precautions and programs in connection with the services, and shall provide all protection to prevent injury to all persons involved in any way in the Services.
- 3.5 Any and all complaints or calls for assistance from Owner or its agents or representatives shall be responded to by Contractor within twenty-four (24) hours of Owner's issuance of such complaints or calls and all repairs or work which precipitated such complaint shall be diligently and professionally completed by Contractor.
- 3.6 Contractor shall cause all of its employees to behave in a friendly, respectable, and courteous manner towards Owner, guests, staff, and management. In the event the Owner believes that any of Contractor's employees are

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acting other than as herein required, or Owner or its agents determine that any of such employees are not performing their duties in a competent manner, Owner shall so advise Contractor and Contractor shall promptly arrange to correct the deficiencies or to replace such employee as reasonably approved by Owner. Contractor shall maintain continuous and regular communications with Owner concerning safety and other factors that relate to the performance requirements hereunder and concerning any injury or damage to guests or Contractor's employees that may result or occur in connection with the services to be provided by Contractor hereunder.

- 3.7 All services shall be approved by and scheduled through the Owner or its authorized representative.
- 3.8 Contractor shall make walk/ride-through reviews of the entire site related to visual observations and shall make repairs and adjustments necessary. Owner may attend the walk/ride-through.
- 3.9 Contractor shall be required to provide response correspondence to any service requests sent via the Owner.
- 3.10 All services, whether performed by the Contractor, its subcontractors, or anyone directly or indirectly employed by any of them, and all applicable equipment, machinery, materials, tools, and like items used in the services, shall be in compliance with, and conform to: (a) all applicable laws, ordinances, rules, regulations, and orders of any public, quasi-public, or other governmental authority; and (b) all codes, rules, regulations, and requirements, of the Owner and its insurance carriers relating thereto. In the event of conflicting requirements, the more stringent shall govern.
- 3.11 The Contractor shall at all times keep the general area in which the services are to be performed clean and free from accumulation of waste materials or rubbish (including, without limitation, hazardous waste), caused by performance of the services, and shall continuously throughout performance of the services remove and dispose of all such materials. The Owner may require the Contractor to comply with such standards, means, and methods of cleanup, removal, disposal as the Owner may make known to the Contractor and/or as required by any applicable laws. In the event the Contractor fails to keep clean of such rubbish and waste in the affected areas, and the Owner incurs the clean-up cost, the Owner will deduct the expenses incurred from any sums then or thereafter due the Contractor.

SECTION 4. QUALITY CONTROL

- 4.1 Contractor shall establish a quality control/quality assurance program specific to this contract scope and shall maintain and monitor the program throughout the life of the contract.
- 4.2 Owner will have the right at any stage of the operation to reject any or all work and material that in the Owner's opinion does not meet the requirements of this scope of services.

SECTION 5. DAMAGE

- 5.1 Any damages caused by the Contractor shall be repaired by the Contractor within twenty-four (24) hours, or shall be repaired by the Owner and back-charged at the current rate per man hour plus material plus twenty percent (20%) on material only. Any materials required to correct damages caused by the Contractor shall be the responsibility of the Contractor.
- 5.2 Should the Owner elect to have the Contractor perform any work outside the scope of services, the Owner may request a lump sum proposal for the work or may direct the Contractor to proceed on a time and material basis.
- 5.3 Contractor shall report all damages to the Owner immediately.

SECTION 6. SAFETY

- 6.1 All Contractors' equipment shall be properly maintained with all safety equipment intact and operational.
- 6.2 Contractor shall acquire all necessary certifications and ensure all employees hold such certifications as applicable for their work on the project.
- 6.3 Contractor shall be responsible for the safety of its employees and shall, at a minimum, require applicable personal protective equipment ("PPE") including, but not limited to, hardhat, safety vest, eye and hand protection.

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- 6.4 Contractor shall provide a Waste Management Plan (“WMP”).
- 6.5 Contractor shall provide a Project Specific Safety Plan (“PSSP”), as described in **Exhibit C-Project Specific Safety Plan Requirements**, to Owner’s Construction Safety Consultant prior to start of any work to include the following:
 - Contractor company name and contact information;
 - Project number and name;
 - Summary of work to be performed;
 - Job hazards present and how to mitigate;
 - Personnel names to be working onsite;
 - Equipment to be utilized in performance of the work; and
 - Job hazard analysis (“JHA”).

SECTION 7. ADDENDA CLARIFICATIONS

- 7.1 Usage will not exceed 70,000 gallons/day.
- 7.2 Generator shall be onsite within 24-hours. Setup not included in that time.
- 7.3 If needed, and if due to Contractor's equipment failure or fault of the Contractor, the Contractor will be responsible for trucking the TWAS off-site until the secondary centrifuge comes on line. For District-directed use of the secondary centrifuge, the District will pay that line item during those periods.
- 7.4 The secondary centrifuge will need to process up to 70,000 since it has to be able to take over when the primary is down.
- 7.5 The secondary centrifuge would be needed whenever Contractor’s equipment is broken, or down for maintenance or repair. The District may also determine the need to process more material or direct Contractor to start up secondary centrifuge. The District expects the Contractor to be able to mobilize the secondary centrifuge within 24 hours of notification.
- 7.6 The base rental period is three (3) years.
- 7.7 Belt filter presses are not an option for or the sludge dewatering.
- 7.8 TWAS storage tank capacity is 113,000 gallons per tank, there are two (2) tanks for a total of 226,000 gallons.
- 7.9 The Contractor will only be responsible for processing the thickened sludge and will not be responsible for regulated samples. The District will collect daily samples to ensure TWAS production of dewatered solids are within range of the 16.5% minimum percentage for proper disposal.
- 7.10 During the mobilization/demobilization period, the Contractor is the responsible party for hauling the TWAS off-site. The targeted percentage range for daily operations is 4.5%-5.5% TWAS concentration going to the sludge holding tanks for centrifuge operations. For the month of August 2024, our monthly daily average was 5.30%.
- 7.11 The District has a contract with Compost USA for all hauling of dewatered sludge to any one of their three (3) composting locations. The Contractor will not be responsible for hauling any dewatered sludge off-site via a trailer with the exception of 7.3 and 7.10 above.
- 7.12 Hauling costs during current contractor demobilization: Upon invoicing, the District will be responsible for payments when all proper documentation has been supplied, i.e. weight tickets and disposal costs from the disposal facility. The demobilization of the current contractor is anticipated to be approximately four (4) days.

End of Exhibit A

Exhibit B
CENTRAL FLORIDA TOURISM OVERSIGHT DISTRICT
SPECIAL CONTRACT CONDITIONS
SEPTEMBER 2023 EDITION
Contract No. C006619

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(ii) Definitions:

The following is a list of defined terms and their corresponding meaning as they appear within this document:

Contractor: The word, Contractor, as it appears within this document, means the Contractor or the Consultant as named and as defined within the Agreement. The Contractor’s, rights, privileges, duties and obligations, as set forth herein also apply to each of its Sub-contractors and Sub-subcontractors and the suppliers of each and to the Consultant and each of its Sub-consultants and Sub-subconsultants and the suppliers of each.

Owner: The word, Owner, as it appears within this document, means the Owner, acting on its own behalf, or the Owner’s Representative, acting on the Owner’s behalf, each as named and defined within the Agreement, together with their designated representative(s).

I. GENERAL SAFETY REQUIREMENTS, CONTRACTOR PARKING AND ACCESS, BREAK AREAS

The Owner is dedicated to establishing and maintaining a safe work environment on all of its sites. Accordingly, the Contractor is obligated to strictly abide by the safety regulations and requirements set forth within these Special Contract Conditions. Flagrant disregard for safety regulations and requirements by the Contractor may result in disciplinary action up to and including immediate suspension of all relevant work activities and permanent removal of the responsible party, individual (or both) from the Owner’s property.

All workers must maintain appropriate and respectful behavior at all times. The following behaviors are not allowed and may result in disciplinary action up to and including immediate removal from the property:

- a) Fighting
- b) Horseplay
- c) Possession of firearms
- d) Possession/use of alcohol/drugs

Work performed must be planned and communicated prior to starting and must incorporate safety into the planning. This shall take the form of a Project Site-Specific Safety Plan (“PSSP”), a hazard analysis, pre-task planning, etc. The type of planning used should be based on the complexity of the project and the associated

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safety hazards. Do not begin work before safety measures are in place and training is complete. Any changes to the PSSP must be communicated to the Owner.

All workers, including managers and supervisors, shall have the proper training and instruction on general safety requirements for the project as well as any task or equipment specific training required to complete the project. This also includes temporary workers. Awareness-type training is not sufficient where task or equipment specific training is required.

No one shall knowingly be permitted to work while their ability or alertness is so impaired by fatigue, illness, or other cause that they may expose themselves or others to injury.

All jobsite emergencies shall be reported immediately. For fire or medical emergencies, call 911 and ask for Reedy Creek Fire Department. Report all emergencies to an immediate supervisor, the project manager and the Owner.

All work-related materials must be stored in an orderly fashion, keeping exits, access ways, walkways and sidewalks unobstructed. Work areas must be kept as clean and free of debris as practicable. Trash cans must be provided for refuse.

Smoking, “vaping”, and smokeless tobacco use will be permitted in designated areas only. The Owner reserves the right to designate these areas on a project.

Workers shall not engage in any activity, including cell phone usage, which diverts their attention while actually engaged in performing work. This includes operating vehicles and equipment. If cell phone usage is the primary means of communication, then it must be used in hands-free mode. The use of ear buds is prohibited.

No one shall ride in a vehicle or mobile equipment unless they are on a seat, with the exceptions of aerial work platforms (“AWPs”) and other equipment designed to be ridden while standing. Riding in the back of pick-ups shall not be allowed.

Seatbelts must be used when provided in any type of vehicle, including but not limited to, personal vehicles, industrial trucks, haulage, earth moving, and material handling vehicles. Seatbelts must also be used in a personal transport vehicle (“PTV”) if so equipped.

Posted speed limits and other traffic signs shall be observed at all times. Stop for personnel in and/or entering a crosswalk as they have the right of way.

Do not pass or drive around busses when they are loading, unloading, or stopped in a driving lane.

Park in authorized areas only. Do not block or obstruct intersections, fire lanes or fire hydrants, traffic lanes, pedestrian walkways, driveways or parking lot entrances. Vehicles parked in unauthorized places may be towed without notice at the vehicle owner’s expense.

Fresh drinking water must be provided at construction job sites. If a cooler is used instead of bottled water, then it must be maintained in a sanitary condition, be capable of being tightly closed, equipped with a tap, and clearly marked as to its content. Disposable cups must be provided. Trash cans must be provided for the disposable cups and/or bottles.

Portable restrooms and hand washing facilities must be provided, if needed, and must be maintained in a clean and sanitary condition. Portable restrooms must meet Florida Administrative Code 64E-6.0101. The Owner reserves the right to determine the location of these facilities.

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II. CONSTRUCTION SITE MINIMUM PERSONAL PROTECTIVE EQUIPMENT (“PPE”) AND CLOTHING REQUIREMENTS

The Contractor shall require that all workers within the construction limits always wear/utilize personal protective equipment (“PPE”), including but not limited to the following: hard hats, safety glasses, high visibility vests or shirts, construction/work-grade footwear and long pants. Additional PPE shall be utilized when other specific hazards are present as defined by the Project Specific Safety Plan (“PSSP”). All PPE must meet current Occupational Safety and Health Administration (“OSHA”) and American National Standards Institute (“ANSI”) requirements. The Owner reserves the right of final decision, in its sole and absolute discretion, as to whether the PPE utilized meets project requirements. “Cowboy” and similar novelty hard hats are not permitted. Sleeveless shirts are not permitted. All high-visibility clothing is to be monitored closely to ensure that all items retain the protective qualities provided by the manufacturer. Vests and shirts that have become faded are to be replaced and shall not be worn while performing work on the Owner’s job site. Shirts designed to be worn by the general public, such as those endorsing sports teams or other products or services, even if they are yellow, green, or orange, are not considered high-visibility shirts and do not meet the requirements set forth herein. In the event that any of the requirements set forth within this Section conflict with the requirements set forth elsewhere within this document or within any of the Contract Documents, the more stringent requirements shall apply.

III. RESERVED.

IV. ASBESTOS/CADMIUM OR LEAD/CFCs

A. ASBESTOS

Contractor acknowledges that it has been made aware that Asbestos-Containing Materials (“ACM”) and/or Presumed Asbestos-Containing Materials (“PACM”), including without limitation, thermal system insulation, and sprayed on or troweled on surfacing material that is presumed to contain asbestos, exists or may exist at the Job Site and that Contractor may be performing Work or services in or near areas that contain ACM and/or PACM as specified in the Contract Documents. Contractor takes full and complete responsibility for communicating existing conditions to all Subcontractors, Sub-subcontractors and employees thereof in accordance with the Occupational Safety and Health Administration Hazard Communication Standard 29 CFR Part 1926.59. The Owner and Contractor agree that the quantities of ACM and/or PACM referred to in the Contract Documents are approximate and are enumerated for the sole purpose of providing notification pursuant to the Occupational Safety and Health Administration Asbestos Standards, 29 CFR Parts 1910, 1915, and 1926.

B. CADMIUM and/or LEAD

Contractor acknowledges that it has been made aware that cadmium and/or lead exists, or may exist, at the Job Site and that Contractor may be performing Work or services in or near areas that contain cadmium and/or lead as specified in the Contract Documents. Contractor takes full and complete responsibility for communicating existing conditions to all subcontractors and employees thereof in accordance with the Occupational Safety and Health Administration Hazard Communication Standard 29 CFR Part 1926.59. The Owner and Contractor agree that the cadmium and/or lead referred to in the Contract Documents are described for the sole purpose of providing notification pursuant to the Occupational Safety and Health Administration Cadmium Standard 29 CFR 1926.63 and/or Lead Standard 29 CFR 1926.62.

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C. CHLOROFLUOROCARBONS (“CFCs”)

Contractor acknowledges that it has been made aware that chlorofluorocarbons (“CFCs”) exist, or may exist at the Job Site and that Contractor may be performing Work or services in or near areas that contain CFCs as specified in the Contract Documents. Should the Contractor’s work result in (i) any loss or release of CFCs from any source, including any equipment or containers, or (ii) any addition by Contractor of CFCs to any equipment or container, then Contractor shall provide all necessary documentation concerning such loss, release or addition, including the quantities of CFCs affected, to the Owner. The Owner and Contractor agree that the quantities of CFCs referred to in the Contract Documents are approximate and are enumerated for the sole purpose of providing notification to the Contractor.

D. USE OF ASBESTOS/LEAD/CADMIUM CONTAINING MATERIALS

Contractor shall not utilize or install any asbestos, lead, or cadmium-containing products on the Owner’s property or within the scope of Work or services contemplated by this Agreement. It is the responsibility of the Contractor to obtain appropriate Material Safety Data Sheets for all materials to be used, and verify that the products do not contain asbestos, lead or cadmium. This requirement extends to any materials that may be specified in the Contract Documents. Specification of a particular material by the Owner in the Contract Documents does not relieve the Contractor from its responsibility to verify that the specified material does not contain asbestos, lead or cadmium. If a specified material does contain asbestos, lead or cadmium, then Contractor shall notify Owner immediately, and submit a proposed alternate material to be used in lieu of the specified material. Contractor shall submit Material Safety Data Sheets for all installed products, as part of the As-Built package. If Contractor installs any product containing asbestos, lead or cadmium, without previously obtaining the written consent of the Owner, Contractor shall be responsible for all costs associated with removal of the asbestos, lead, or cadmium containing material.

V. CONFINED SPACES

Contractor acknowledges that it has been made aware that permit-required confined spaces exist or may exist at the Job Site and that the Contractor may be performing Work or Services in or near permit-required confined spaces as specified in the Contract Documents. The Contractor shall fully comply with the requirements of 29 CFR Part 1910.146 in connection with all Work in any permit-required confined space (“PRCS”), as defined by OSHA. The Contractor must have a written confined space program when performing Permit Required Confined Space (“PRCS”) entry. Accordingly, site specific conditions related to confined space entry must be addressed in the Contractor’s Project Specific Safety Plan (“PSSP”). In support of the Contractor’s preparation the PSSP, the Contractor shall obtain from the Owner the following information: (i) the elements that make the space in question a permit-required confined space, including the hazards identified and the Owner’s experience with the space, and (ii) any precautions or procedures that the Owner has implemented for the protection of employees in or near any PRCS where the Contractor’s personnel will be working.

The Contractor shall provide its own confined space permits when working on the Owner’s job site. All workers entering a confined space must have training commensurate with the role or task they will be performing. This includes: entrant, attendant entry supervisor, air monitoring, rescue, site-specific training for those workers exposed to hazards posed by PRCS, but who may not be performing work inside of confined space or supporting confined space entry.

Confined spaces that have been evaluated and designated by the Owner as a PRCS will be treated as such, despite whether or not the Contractor agrees or disagrees with that designation. Trenches may also be treated as a PRCS under certain conditions. The Owner reserves the right to designate any trench as a PRCS in its

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sole and absolute discretion.

Alternate entry procedures or reclassification may be used if all requirements of 29CFR1926.1200 are met. When certain conditions described in the OSHA standard are met, the Contractor may use alternate entry procedures for worker entry into a PRCS, however, the Contractor must first consult with the Owner prior to using any alternate entry procedures.

The Owner shall provide information to the Contractor respecting any known hazards associated with a given PRCS. However, it is ultimately the Contractor's responsibility to determine, with reasonable certainty, the existence of any and all hazards prior to any worker's entry into the confined space. The Owner is NOT responsible for providing additional services prior to or during entry into a given confined space, including but not limited to: atmospheric monitoring, emergency response services, including rescue, attendants or entry supervisors.

The Owner reserves the right to order the immediate discontinuation of the performance of work and the immediate removal of the Contractor's personnel from a confined space if an unsafe condition or behavior is observed. In such instances, the space will be immediately evacuated until concerns are resolved to the satisfaction of the Owner.

When both the Owner's personnel and the Contractor's personnel will be working in or near any PRCS, prior to entering such PRCS, the Contractor shall coordinate entry operations with the Owner. The Contractor shall inform the Owner at the conclusion of the entry operations regarding the PRCS program followed and regarding any hazards encountered or created within any PRCS during entry operations. The Contractor takes full and complete responsibility for communicating existing conditions to all Subcontractors, Sub-subcontractors and to the employees thereof.

VI. HAZARDOUS AND CHEMICAL WASTE DISPOSAL.

All hazardous, regulated, universal and chemical wastes generated by the Contractor during the performance of the Work shall be managed in accordance with applicable federal, state and local law and regulations, including but not limited to Title 40 CFR Subchapter I, Parts 260 through 265, 273, 279, 302; Title 49 CFR Chapter I, Subchapter A and Rule 62-730 of the Florida Administrative Code as applicable to "Large Quantity Generators of Hazardous Wastes". Packaging, labeling, storage and disposal of such wastes shall also comply with Owner's policies, which are available from Owner. Such wastes must be properly placed in U.S. Department of Transportation approved packaging, with appropriate markings at the time of generation. Packages containing such wastes must be labeled to identify the contents, date of accumulation and the Contractor's name and telephone number. Such packages must be stored at a secure location and not exposed to weather. Upon completion of the Project or before 60 days has elapsed from the date of the first accumulation of wastes in each specific container, whichever is earlier, Contractor shall contact Owner to arrange for disposal. Owner will arrange for the disposal of such wastes by Owner's approved hazardous waste disposal vendor. Upon Owner's receipt of the invoice for disposal costs, a copy of the invoice will be forwarded to the Contractor and Contractor shall reimburse Owner therefor. The Contractor shall be responsible for all packaging, storage, and labeling costs.

VII. ELECTRICAL SAFETY POLICY

Implicit on all electrical work performed at any of the Owner's properties is the Contractor's (and its Subcontractor's and Sub-subcontractor's) strict compliance with the Owner's Electrical Safety Policy ("Policy").

The Policy is that all electrical work *shall* be performed de-energized as a standard work practice. This Policy applies to the Contractor, Subcontractors, Sub-subcontractors, Subconsultants, Sub-subconsultants and anyone who performs electrical work on or near electrical conductors or circuit parts which are or may

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be energized. Contractor is expected to exercise good judgment and take personal responsibility for reducing the hazard risk to its lowest level and to ensure strict compliance with all applicable federal, state and local laws, codes, regulations and rules.

The Contractor agrees that its employees and agents and the employees of any Subcontractor, Sub-subcontractor, Subconsultant, Sub-subconsultant or anyone who performs electrical work as described herein shall adhere to all posted warnings, wear appropriate personal protective equipment (“PPE”) and protective clothing and use appropriate tools until exposed energized electrical conductors or circuit parts are verified to be at a zero energy state. For systems up to 1000V, the zero-energy state shall be verified by the Contractor and those greater than 1000V shall be verified by the Owner. Any work performed within six feet (6’) of systems greater than 1000V at a zero energy state and where there are exposed cables, all personnel shall wear a minimum of 8cal daily wear Flash Resistant Clothing (“FRC”).

In the narrowly limited circumstances when exposed energized parts are not de-energized, excluding diagnostic testing that cannot be performed de-energized, a documented job briefing must first be completed by the Contractor and submitted to the Owner for approval. The intent of the briefing is to provide notification for performing energized work to the Owner prior to performing the work. The job briefing shall include, but not be limited to, the following:

- Validation for energized work
- Hazards associated with scheduled work such as working in roadways or work performed within boundary, etc.
- Work procedures
- Energy source controls such as physical barriers or meter verification
- PPE to be utilized
- Job work plan summary
- A complete list of the names of all individuals involved in the work/briefing

The Contractor understands and agrees that the Owner, throughout the term of the Contract, may review the Contractor's, Subcontractor's, and Sub-subcontractor's safe work plan to confirm for its operations and the safety and wellbeing of its employees, guests and invitees that adequate contingency plans have been considered in the event of an inadvertent interruption of electrical service.

Contractor shall establish or shall cause its Subcontractor or Sub-subcontractor to establish appropriate boundaries to restrict access around the Work based on the type of hazard present as called for in NFPA 70. The boundaries shall be either:

A **flash protection boundary**, which shall be established by the qualified person of the Contractor or its Subcontractor or Sub-subcontractor a minimum of four feet away (600V, 600A max) from the exposed energized electrical conductors or circuit parts where the potential exists for an arc flash to occur, unless specific information is available indicating a different flash boundary is appropriate. Persons must not cross the flash protection boundary unless they are wearing the appropriate PPE and are under direct supervision of a qualified person.

A **limited approach boundary**, which shall be established by the qualified person of the Contractor or its Subcontractor or Sub-subcontractor a minimum of three feet six inches (3’6”) away from the exposed fixed energized electrical conductors or circuit parts, 600V max, where the potential exists for an electric shock to occur, unless specific information is available indicating a different limited approach boundary is appropriate. The purpose of the limited approach boundary is to advise unqualified persons that an electrical shock hazard exists and to reduce the risk of contact with an exposed energized conductor. Only qualified persons and immediately supervised unqualified persons are allowed to cross the limited approach boundary.

The Contractor understands and agrees that it is the responsibility of the Contractor to ensure compliance with all applicable safety laws, codes regulations and rules as well as adherence to the Policy for all electrical

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work. The Owner reserves the right to observe and/or audit the Contractor's (or its Subcontractor's or Sub-subcontractor's) work without notice. The Contractor expressly understands and unequivocally agrees that any failure to strictly comply with any applicable safety laws, codes, regulations, and the rules of this Policy constitutes a material breach of the Contract and may result in an immediate work stoppage or termination of the Contract at no additional cost to the Owner.

VIII. LOCK OUT / TAG OUT

The Contractor shall have and maintain a program consisting of energy control procedures, employee training and periodic inspections prior to performing Lock Out / Tag Out ("LOTO"). The program shall have steps for notification, shutting down, isolating, blocking and securing machines, applying LOTO devices, dissipating stored energy equipment or facilities to control hazardous energy. It shall also have steps for the removal and transfer of LOTO devices and tags.

The Contractor must verify by testing that the machine or equipment has been isolated and secured from all energy sources before work begins. All affected personnel must be notified prior to starting.

Proper PPE must be worn in accordance with NFPA70E as referenced in RCES Electrical Safety, latest revision.

LOTO devices shall indicate the identity of the employee applying the device(s) as well as their department/company, contact number and date if the work will extend beyond one shift. A lock and tag must be used for all energy isolation. LOTO devices shall be standardized by color, shape or size and shall not be used for any other purpose. LOTO devices shall only be used for performing service or maintenance on equipment, not to be used for any other use. LOTO shall be performed only by the person(s) who are performing the servicing or maintenance. Each person performing LOTO must have individual locks and tags.

Before LOTO devices are removed by the worker who applied the device(s), the work area shall be inspected to ensure that nonessential items have been removed, all workers have been safely positioned or removed, and affected workers have been notified of re-energization of the equipment.

Hot tap operations for pressurized pipelines carrying natural gas, steam or water do not require LOTO if it is demonstrated that:

- a) Continuity of service is essential, and
- b) Shutdown of the system is impractical, and
- c) Procedures are documented and followed, and
- d) Special equipment is used to provide effective protection for workers

Systems shall be de-energized and taken to a zero-energy state using applicable LOTO procedures and verified before work begins. Work on an energized system (e.g. diagnostic testing that cannot be performed de-energized) shall require validation accepted by the Owner and project manager.

If an equipment/machine is not capable of accepting a lock, a tag may be used without a lock as long as additional means can be used to prevent accidental activation of the device (e.g., removal of a lever, handle, switch, or valve).

Group LOTO is permitted when all of the following are met:

- a) A single authorized employee must assume the overall responsibility for the control of hazardous energy for all workers in the group. Authorized employees must have knowledge and training in the following:
- b) Skills necessary for the safe application, use and removal of energy-isolating devices
- c) Hazardous energy source recognition
- d) Type and magnitude of the hazardous energy sources in the workplace

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e) Energy-control procedures, including methods and means to isolate and control energy sources

The authorized employee must communicate and implement LOTO procedures, coordinate the operation to all affected workers, and verify that all LOTO procedural steps have been taken.

Each worker must affix their own personal LOTO device and tag to the group LOTO device or group lockbox before work begins.

The authorized employee must not remove the group LOTO device until each worker in the group has removed their personal LOTO device. The authorized employee will be the first lock on and the last lock off unless their responsibilities have been handed over to another authorized employee.

The authorized employee must make sure that there is a continuity of LOTO protection during a shift change. It is the responsibility of the oncoming worker to verify the machine, equipment or facilities is still in a zero-energy state. If there will be a lapse in time between the outgoing worker removing their LOTO device and the oncoming worker placing their LOTO device, the oncoming authorized employee must repeat the LOTO process and place their personal LOTO device on the machine, equipment or system.

In the event that a worker leaves the jobsite without removing their LOTO device and cannot be located, and it is necessary to restore the equipment to its normal operating state, the LOTO device may be removed after all of the following have been completed:

- a) Contractor has had no success in contacting the worker to determine if they are available to remove the LOTO device.
- b) Contractor's supervisory personnel, the authorized person, and the Owner have determined that it is safe to re-energize the machine, equipment or facility.
- c) The authorized person has notified all affected individuals that the machine, equipment or facility is being reenergized.
- d) After removal of the LOTO device, the Contractor must notify the worker whose lock was removed, prior to their return to work, that their LOTO device was removed and the machine, equipment or facility has been reenergized.

When the Contractor is performing work on existing machines, equipment or facilities owned and operated by the Owner, the Owner's responsible Project / Engineering Management and responsible Contractor supervisory personnel shall inform each other of their respective LOTO programs. The Owner reserves the right to determine if the Contractor's LOTO program meets the Owner's requirements.

IX. FALL PROTECTION

The Contractor shall provide training to all affected workers regarding the proper use of fall protection systems. Workers using fall protection improperly (e.g. harness slightly loose, D-ring in the wrong position on the back, etc.) can correct the condition and then continue working. Repeated misuse or misuse which results in an extremely hazardous condition (e.g. using an improper anchor point, using the wrong type or length of lanyard, etc.) will be considered cause for the Owner to demand an immediate stop to the performance of all related work (hereinafter deemed a "STOP WORK" condition), and the Contractor shall then immediately discontinue the performance of such work. When workers are observed being exposed to an unmitigated fall hazard, it will also be considered a STOP WORK condition. Work will not resume until the Contractor has reevaluated the situation and developed corrective measures to ensure the hazard(s) will not occur again.

Fall restraint systems shall be used instead of fall arrest systems whenever feasible. These systems allow a person to reach an area to perform their duties but prevent them from reaching a point where a fall could occur.

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Self-retracting lifelines or lanyards (“SRLs”) must be anchored at the height of the harness D-ring or above. It should be positioned directly overhead in order to prevent swing falls. When it isn’t feasible to anchor overhead, and anchorage is only possible below the D-Ring, then fall protection equipment specifically designed for that application must be used. All SRLs must be used in accordance with the SRL manufacturer’s instructions.

The Contractor shall use anchorage connection points designated by the Owner when available. If no such designated anchorages are available, then the Contractor’s qualified person must select structures suitable as fall protection anchorage points for their workers.

Fall protection is not required when using portable ladders unless the ladder cannot be placed to prevent slipping, tilting or falling. If ladders must be used under these circumstances (e.g. lifts are not feasible), a Personal Fall Arrest System (“PFAS”), independent of the ladder, must be used. Working height on portable ladders is limited to twenty-five feet (25’).

The use of a ladder, or similar, in close proximity (i.e., ladder length plus 4 feet) to a guardrail or parapet may create an exposure to the fall hazard. Fall protection must be provided by raising the height of the guardrail/parapet or a PFAS, independent of the ladder, must be used. Ladders or work platforms with a built-in guarded work platform do not require additional fall protection.

Workers shall be protected from falling into excavations five feet (5’) or more in depth.

Slopes with an angle of measure from horizontal grade that exceed 40⁰ require the use of fall protection.

Fall protection is required for work conducted six feet (6’) or more above water. Where fall protection completely prevents falling into the water, personal flotation devices (“PFDs”) are not required.

X. AERIAL WORK PLATFORMS (“AWP”)

All operators must be trained in safe and proper AWP operation. Training documents must be provided to the Owner immediately upon the Owner’s request.

Written permission from the manufacturer is required before modifications, additions or alterations can be made to an AWP.

Operators shall be responsible for following the requirements of the AWP operating manual and ensuring that the vehicle is in proper operating condition. Operators shall immediately report any item of non-compliance to a supervisor for corrective action. AWP’s that are not in proper operating condition shall be immediately removed from service until repaired. The key shall be removed from the vehicle and a tag shall be attached to the control panel to identify the machine as “out of service” the vehicle shall not to be operated until it has been repaired.

The primary purpose of AWP equipment is to raise personnel and necessary tools to a temporary height for work; the AWP shall not be used as a crane. AWP equipment is not designed to lift materials except on the platform and within the manufacturer’s capacity limits. Lifting items on the guardrails or by attaching them to the AWP equipment in any manner not approved by the manufacturer is strictly prohibited.

AWP occupants shall wear a fall restraint system, which includes a safety harness along with a fixed lanyard or self-retracting lifeline (“SRL”) of appropriate length (e.g. 3 feet). If the AWP is being used at heights of 18 ft. or less, then a SRL shall be utilized. The fall restraint system shall be connected to an anchorage point provided by the manufacturer at all times when the AWP is in use.

Transfer at Height (in or out of the basket/platform) is permitted however one hundred percent (100%) tie-off is required during the maneuver.

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Some AWP's are equipped with an external fall protection system. These systems are either a halo system or rigid rail engineered to safely allow personnel to exit the basket with 270-degree (270°) mobility around the basket. These systems are designed to provide an anchorage for fall arrest and can be used as such. Fall restraint is also an option depending upon the situation. When an individual is attached outside of the AWP basket, the AWP shall be emergency stopped and the basket shall not be moved. If an individual must reach an area that is not within the current radius of the attached fall protection system (harness/lanyard) they shall re-enter the AWP basket, move the unit to a closer location, emergency stop the AWP and then exit the basket to perform the given task from the new location.

XI. LADDERS

Consideration must be given to the method of transporting tools and materials to the work location. Workers are not permitted to hand-carry items up the ladder. Hands must be free to climb the ladder.

Ladders placed in areas such as passageways, walkways, doorways or driveways, or where they can be displaced by workplace activities or traffic should be barricaded to prevent accidental movement.

Never place a ladder in front of doors unless the door is locked and access is controlled.

Never climb the back-bracing of a step/A-frame ladder unless it is a twin (double-sided) ladder.

Only one person is permitted on a ladder at a time, unless it is designed for two-person use.

Do not use ladders as scaffold.

All manufacturer stickers/labels must be affixed and in readable condition.

Prior to each use, the Contractor must visually check the ladder for the following:

- a) Free of cracks, splits, and corrosion.
- b) Steps/rungs free of oil/grease.
- c) Steps/rungs firmly attached to side rails.
- d) Steps/rungs not bent.
- e) Safety feet/base and other moveable hardware in good working condition.
- f) Ropes/pulleys in good condition (extension ladders).

Temporary fixes shall not be used to make repairs to a damaged ladder. Any repair to a ladder must be with manufacturer approved parts or kits. Any accessories used with a ladder must be approved by the manufacturer.

Work shall not be performed from a permanent fixed ladder unless a fall protection system, such as a ladder climbing device, is installed and used.

Extension, straight, and portable ladders cannot be made of wood (except job-made ladders on construction sites); fiberglass is preferred. Ladders made of aluminum cannot be used for electrical work or near energized equipment.

The working height for an extension shall be limited to under 25 feet.

Workers shall not sit, kneel, step, or stand on the pail shelf, top cap, or the first step below the top cap of an A-frame/step ladder.

If ladders are used within 1.5 times their height to a leading edge or drop in elevation (measured horizontally), fall protection devices must be used.

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Do not use an A-frame/step ladder to transition to another elevated work surface unless it has been specifically designed for this.

Use ladders correctly. Do not over-reach. Prevent belt buckles from extending outside the side rails of the ladder. A-frame/step ladders should be used only for front-facing work. Do not perform “side-load” work.

XII. TRENCHING AND EXCAVATION

Utility locate tickets must be obtained prior to breaking ground by each and every contractor performing trenching/excavation and the operator performing the trenching/excavation must have reviewed the ticket. Third party locates may also be required for trenching/excavations located beyond the utility provider’s service point.

All soil shall be considered as Class C soil. Class A and B soils do not exist on property. All sloping of trenches must be at a 1.5:1.0 ratio. Benching is not allowed in Class C soil.

Any shoring, bracing, shielding or trench boxes used must be in good condition. Tabulated data must be made available upon request.

Trenches or excavations that have a hazardous atmosphere or the potential to contain a hazardous atmosphere must be monitored by the competent person and may have to be treated as a confined space if appropriate.

The Contractor must provide appropriate barricades to protect people from falling or driving into the trench or excavation. Lighted and/or reflective barricades are preferable at night. Caution tape is not a sufficient barricade.

Barricades must be placed at least six feet (6’) from the edge of the trench or excavation. Trenches and excavation that are left open and unattended shall be barricaded until work resumes. These barricades shall be checked at least daily to assure no changes have occurred.

XIII. UTILITY LOCATES

Routine Locate Tickets:

The Contractor must request the locate ticket a minimum of three (3) full business days before digging.

If the dig site is in an area that is under water, the Contractor must call for the locate ten (10) full business days before digging.

Locate ticket requests can be submitted anytime on-line at Sunshine One but must be submitted to Reedy Creek Energy Services (“RCES”) between 7:00 AM and 4:00 PM, Monday through Friday, excluding weekends and holidays.

Obtain a completed locate ticket through Sunshine State One Call of Florida (“SSOCOF”) by calling 811.

Call the Reedy Creek Energy Services (“RCES”) Utility Locate Office at (407) 560-6539.

Provide the Sunshine One Call locate ticket number.

Mark up the RCES supplied map to show limits of excavation.

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The Contractor is expressly forbidden from performing any excavation work until it has received and reviewed the RCES Utility Locate Office response and notes for utility presence, conflicts or special conditions.

Emergency Locate Tickets:

An emergency is defined as any condition constituting a clear and present danger to life or property; a situation caused by the escape of any substance transported by means of an underground facility; any interruption of vital public service or communication caused by any break or defect in an underground facility; or any impairment of public roads or utilities that requires immediate repair (collectively, incident(s)), as determined by the authority having jurisdiction within the area where the incident has occurred. Difficulties experienced by the Contractor in properly scheduling the performance of planned work activities will not constitute justification for obtaining an emergency locate ticket.

During the hours of 7:00 AM to 4:00 PM, Monday through Friday, call the Reedy Creek Energy Services ("RCES") Utility Locate Office at (407) 560-6539. Call the SSOCOF at 811 or 1-800-432-4770. Provide the SSOCOF locate ticket number to the RCES Utility Locate Office.

The Contractor shall not begin emergency excavation until it has received verbal clearance from the RCES Utility Locate Office.

On weekdays between 4:00 PM and 7:00 AM, or Weekends and Holidays: Call the RCES Control Room Emergency Number at 407-824-4185. Provide the nature of the emergency and exact location. Contact SSOCOF at 811. Provide the SSOCOF locate ticket number to the RCES Control Room. The Contractor shall not begin emergency excavation until it has received verbal clearance from the RCES Control Room.

No excavation will be permitted until the excavator has submitted a Locate Ticket request and received clearance as described above.

Each company that performs digging must obtain and follow their own locate ticket. The excavator shall have a copy of the locate ticket at the excavation site.

Requirements must be communicated directly to the person(s) performing the digging.

Exposed underground utilities must be protected.

Each company must locate utilities when cutting or drilling into concrete.

Secondary utilities must be considered when performing digging activities.

The Contractor shall IMMEDIATELY STOP EXCAVATION if an underground facility is contacted (even if there is no noticeable damage) and immediately notify the Owner of such. Warning signs that indicate the potential of contacting a buried, underground utility include buried red concrete, unpainted buried concrete, wooden boards, warning tape, etc.

It is important to understand tolerance zones. Locate marks show the approximate location of underground facilities. The lines can actually be located anywhere within the tolerance zone. Proceed cautiously when digging within 24 inches on either side of the locate marks.

When any mechanized equipment is used within the tolerance zone, supervisory personnel shall be present to supervise the operation.

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XIV. MOBILE CRANES

Operators must be certified on the specific type of crane they are operating. Certification must come from an accredited crane operator testing organization, such as The National Commission for the Certification of Crane Operators (“NCCCO”).

A Lift Plan shall be submitted on all critical lifts and should be completed and submitted for review and acceptance, with the exception of emergency lifts, 72 hours, prior to lift.

A critical lift plan is required for the following lifts:

- a) Lift is $\geq 75\%$ of the cranes rated capacity as determined by the load chart
- b) Two or more cranes involved in the lift or adjacent to each other
- c) Hoisting personnel
- d) Lift from floating platform, barge, or vessel
- e) Any lift where boom intersects within 20 feet of monorail
- f) Any lift deemed critical by the Owner
- g) Any lift where boom intersects within 25 feet of a populated area

A critical lift plan should include a Pre-Lift Crane Data Worksheet, step-by-step work instructions, a list of all personnel involved and their assignments, and a diagram of the lift and swing area. A 3-D plan or comparable CAD rendering is preferable. A rigging plan is required to be submitted for critical lifts. If the crane will be set up on top of, or within 10-feet of a tunnel, manhole, or utility vault; or within 10-feet of a seawall, bridge, or water’s edge, Ground Bearing Pressures (“GBP”) for each outrigger (below the crane mats) must be submitted with the lift plan.

The use of a crane to hoist personnel is prohibited except where it can be demonstrated that conventional means of reaching the work area (scaffold, ladders, aerial lifts, etc.) would be more hazardous or is not possible due to worksite conditions. Hoisting personnel shall comply with all parts of 29 CFR 1926.1431.

The crane hook or other part of the load line may be used as an anchor for a personal fall arrest system where all of the following requirements are met:

- a) Approved by a qualified person
- b) Equipment operator must be at the worksite
- c) No load is suspended from the load line when the personal fall arrest system is anchored to it or the hook.

Tag lines must be used for all lifts to control the load unless the use of a tag line is deemed unsafe or unfeasible. The decision to not use a tag line must be included in the lift plan and accepted by the Owner.

All crane operations near, adjacent to, or within 10 feet of the monorail or skyway transportation system, require a special precautions are taken. All work must be coordinated with the Owner prior to commencing. Any contact with anything associated with these systems must be reported immediately to the Owner. At no time will any materials be lifted over the systems. A spotter is required when a crane travels under the systems.

Barricades and notices should be used to prevent people from entering the fall zone (the area where the load will land if dropped). No one is allowed to be under a suspended load, with the exception of steel workers working in accordance with 29 CFR 1926.753(d).

In congested areas where barriers are not feasible, an audible signal (horn, whistles, etc.) must precede each lift to alert nearby personnel working in the proximity of the crane that the lift is in progress. Evening lifts may use alternative signaling methods in lieu of audible signals, if requested.

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The qualified signal person shall be the only person signaling the crane operator; however, anyone can signal a stop if there is a perceived emergency situation.

XV. HEAVY EQUIPMENT OPERATIONS

The operator must not wear earbuds or headphones while operating heavy equipment. These devices may create a distraction and may prevent the operator from hearing important sounds in the work area (e.g. backup alarms, evacuation horns, etc.). They do not serve as hearing protection or attenuation which may be needed when operating heavy equipment.

Unless the cab is totally enclosed, the operator must wear appropriate personal protective equipment (“PPE”) which may include safety glasses, hearing or respiratory protection. When exiting the cab in a construction zone, the operator must wear the required site PPE. Seat belts are required at all times.

Chase (escort) vehicles / Spotters are required when:

- a) Heavy equipment travels to and from work zones
- b) Anticipated pedestrian or vehicle traffic intrudes within the safe work zone, in the judgment of the operator
- c) Space is restricted, and a safe work zone cannot be maintained
- d) The back-up alarm is muted
- e) Safe movement is in question
- f) Overhead hazards are present

The equipment shall be operated at a safe speed. Equipment inspections shall be documented and available upon request.

Check the area for overhead utility lines to ensure the equipment will remain at least 10 feet away from the lines at all times.

Avoid backing up the equipment unless it is absolutely necessary. Attempt to always travel forward if possible. Backing up the equipment usually does not present a clear field of view.

Never allow an individual to ride on running boards or any other part of the equipment. Only the operator should be on the equipment.

Maintain three points of contact when exiting or entering the vehicle.

Never exit a running vehicle. The vehicle must be turned off if the operator is leaving the cab. Remove keys from unattended vehicles.

Always park the vehicle on level ground. Lower buckets, shovels, dippers, etc. and set the parking brake.

XVI. DIVING OPERATIONS

Before conducting dive operations, a job hazard assessment shall be developed by the Contractor and submitted to the Owner in the form of a dive plan (“Dive Plan”). A complete Dive Plan shall be developed and documented for each diving operation. The primary purpose of the Dive Plan is to provide a written document capturing the details of the dive operations. The Owner must approve all Dive Plans prior to beginning the dive operations. Dive Plans shall be reviewed on a periodic basis to ensure they remain relevant for the actual diving activity and have been updated as warranted (i.e., staff safety concerns are conveyed, new equipment or procedures are to be implemented, or an injury/incident has occurred).

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The Dive Plan shall include the following:

- a) Site & project information
- b) Immediate contact name(s) and telephone number(s)
- c) Information regarding personnel involved, including the Designated Person in Charge (“DPIC”), dive team roles and qualifications, assignment of responsibilities and verification of training records, and the verification of the physical fitness of dive team members
- d) Minimum equipment requirements
- e) Sequence of basic job steps and the recommended safe operational procedures and protection.
- f) Known and/or potential hazards, including environmental, surface, overhead and underwater conditions and hazards, including any anticipated hazardous conditions or confined spaces
- g) Activities, equipment or processes in the area of operations that may interfere with the dive or that pose a safety hazard to dive team members (i.e., watercraft, ride vehicles, chemicals, potentially dangerous aquatic wildlife and other types of hazards)
- h) Limited access or penetration situations. A diver entering a pipe, tunnel, wreck, or similarly enclosed or confining structure, (other than a habitat).

Activities, equipment or processes in the area of operation that may interfere with the dive or that pose a safety hazard to dive team members shall require that proper controls be developed, documented and implemented to ensure the dive area is secured from such hazards impeding and/or entering the area.

A diver-carried reserve breathing supply that meets the emergency air volume requirements for the dive profile with a separate first and second stage regulator shall be provided to each diver for all diving operations.

XVII. RESERVED

END OF SPECIAL CONTRACT CONDITIONS

End of Exhibit B



CENTRAL FLORIDA TOURISM OVERSIGHT PROJECT SPECIFIC SAFETY PLAN REQUIREMENTS

Section 1. INTRODUCTION

A Project Specific Safety Plan ("PSSP") is a communication tool between contractors and the Owner's Representative. Used correctly, the PSSP ensures that relevant project/site-specific safety information is identified, monitored and communicated to all involved with the project.

Section 2. PURPOSE

The PSSP will allow all those involved with the project to easily identify the existing and potential hazards associated with the scope of work and what methods the contractor shall utilize to mitigate the hazards to an acceptable level.

This should not be an overly complex document. It should be easily referenced by all those working on the project. The document should be able to be used as part of the daily pre task planning and for onsite safety meetings (toolbox talks).

The PSSP should not be a version of the company safety plan. It is Project / Site / Task specific. The PSSP shall include the applicable information commensurate with the size, complexity and risk level of the project.

The PSSP shall make it clear that everyone on the project has the right to report hazards and unsafe practices without fear of reprisal.

Contractor shall submit a PSSP to the Owner's Representative for review prior to project commencement with appropriate time for review. The Owner's Representative reserves the right to ask the Contractor to resubmit the PSSP if safety critical items related to the project are missing or incomplete.

The submittal of the PSSP does not relieve the Contractor from any other submittals required by the Contract Documents, including but not limited to:

- Construction & Demolition Safety Plan
- Crane Critical Lift Plan
- Hazardous Materials Disposal Plan
- Maintenance of Traffic Plan
- Hurricane / Weather Contingency Plan



Section 3. FORMAT

The Owner's Representative will not dictate the exact format of the PSSP. However, there are four critical components of the PSSP:

- Responsibilities / Contacts
- Scope of work
- Job Safety Analysis (JSA)
- Pre-Task / Daily Safety Planning

Section 4. RESPONSIBILITIES / CONTACTS

This section shall simply and clearly define the duties and responsibilities of the Contractor's personnel regarding the work to be completed and safety and health program implementation. It should also include means to contact those listed (i.e. phone, email, etc.)

- Contractor's President/Owner (of company)
- Contractor's Project Manager
- Contractor's Safety Manager (if applicable)
- Contractor's Field Supervision/ Superintendent
- All of Contractor's Subcontractors and Sub-Subcontractors (if any)

Section 5. SCOPE OF WORK

The Scope of Work shall include translating the contract scope of work into a specific detailed work plan. It shall identify location(s), means and methods of accomplishing the plan, anticipated sequence of events, equipment to be used, etc. Please note that this includes all work to be performed by the Contractor and Subcontractors of every tier.

The scope shall also identify the following:

- Maximum height and depth of work activities
- Industrial hygiene issues
- Exposure to high hazard areas including but not limited to:
 - Water ways
 - Diving
 - Crane lifts
 - Energized electrical systems
 - Confined spaces
 - Temporary Traffic Control ("TTC"), formerly maintenance of traffic ("MOT")
 - Guest areas



Section 6. JOB SAFETY ANALYSIS (JSA)

The JSA is a task/operation-driven document to ensure that the job task or operation receives proper safety planning prior to beginning work. In actuality, the JSA is a written work plan that incorporates safety procedures into the work practices. The JSA should be prepared far enough in advance of the task or activity to ensure that changes or revisions will not affect the scheduled execution of the task or activity. A JSA is to be developed by the Contractor or Subcontractors for any high-hazard or high-risk activity as identified by the Owner's Representative in its sole and absolute discretion, the Contractor or all Subcontractors of every tier.

The specific format of the JSA is to be determined by the Contractor, however, it must include the following information:

- A breakdown of the job into successive steps involved with the work activity.
- Identification of the hazards and the potential incidents associated with each work activity.
- Identification of methods to reduce or eliminate the hazards and potential incidents.

Section 7. PRE-TASK PLANNING

Pre-task Planning is an activity that occurs at the start of each day, prior to beginning any work shift during which work is to be performed by the Contractor or any Sub-contractor of any tier, as well as any time the daily cope of the work changes. It helps everyone involved in performing, supervising and overseeing the work to align the objectives to be accomplished before the day of work begins. A Pre-task Planning form is required to be completed and a meeting is required to be held with the crew by the supervisor prior to the start of each work shift. At a minimum, the supervisor will include the following in the Pre-task Planning:

- Identify the specific actions and work methods required to perform the work.
- Identify the specific hazards associated with the performance of the work and the measures necessary to eliminate or minimize the workers' exposure to the hazard.
- Provide the necessary training needed to safely perform the work.
- Identify and provide the necessary tools, equipment, and PPE required to protect the workers from the hazards.
- Review any items that may be applicable to their work activity previously identified on the JSA.

The Pre-Task Plan will be documented and kept in the work location for the duration of the shift or activity. As acknowledgment of its contents, the Pre-Task Plan must be signed by all members of the work crew and its supervisor, and others identified by, and in the sole and absolute discretion of, the Owner's Representative. .

Pre-Task Planning is not something that is to be submitted with the PSSP however it must be maintained on the jobsite throughout the project duration for review by the Owner's Representative and, at the request of the Owner's Representative, must be provided to the Owner's Representative as part of the Contract Close-out documentation