**1112 Manatee Avenue West**
**Bradenton, FL 34205**
**purchasing@mymanatee.org**

## Solicitation Addendum

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|---|---|
| Addendum No.: | 2 |
| Solicitation No.: | 22-TA004097CD |
| Project No.: | 6092560 |
| Solicitation Title: | Moccasin Wallow Road- US 41 to Gateway Blvd. |
| Addendum Date: | July 19, 2022 |
| Procurement Contact: | Chris Daley, CPPO, CPPB- Procurement Project Manager |

**IFBC No. 22-TA004097CD is amended as set forth herein. Responses to questions posed by prospective bidders are provided below. This Addendum is hereby incorporated in and made a part of IFBC No. 22-TA004097CD**

**CHANGE TO:**
**ADVERTISMENT PAGE, DATE, TIME, AND PLACE DUE**

The Due Date and Time for submission of Bids in response to this Invitation for Bid Construction (IFBC) **is ~~July 21, 2022~~ August 3, 2022 at 3:00 PM ET.** Bids must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Ave. W., Suite 803, Bradenton, FL 34205 prior to the Due Date and Time.

**CHANGE TO:**
**SECTION A, FIRST PARAGRAPH OF ARTICLE A.01, BID DUE DATE**

The Due Date and Time for submission of Bids in response to this Invitation for Bid Construction (IFBC) **is ~~July 21, 2022~~ August 3, 2022 at 3:00 PM ET.** Bids must be delivered to the following location: Manatee County Administration Building, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205 and time stamped by a Procurement representative prior to the Due Date and Time.

**CHANGE TO:**
**SECTION A, ARTICLE A.51, SOLICITATION SCHEDULE**

The following schedule has been established for this Solicitation process. Refer to the County's website (www.mymanatee.org > Business > *Bids & Proposals*) for meeting locations and updated information pertaining to any revisions to this schedule.

| Scheduled Item | Scheduled Date |
|---|---|
| Non-Mandatory Information Conference | June 1, 2022 at 9:00 AM |
| Question and Clarification Deadline | June 30, 2022 |
| Final Addendum Posted | ~~June 13, 2022~~ July 19, 2022 |
| Bid Response Due Date and Time | ~~July 21, 2022~~ August 3, 2022, 3:00 PM, ET |
| Projected Award | ~~August~~ September 2022 |

**CHANGE TO:**
**APPENDIX A, MINIMUM QUALIFICATIONS, ITEM 4:**

4. Bidder or Bidder's subcontractor has provided roadway construction services in an urbanized area within a public Right of Way for at least four (4) ~~clients~~ projects ~~since March 1, 2017~~ in which each project had a minimum contract value of five million dollars ($5,000,000.00) and included the following components: (i) flexible paving, (ii) underground drainage, (iii) sidewalks, (iv) traffic signals, (v) ITS, (vi) underground water or sewer utilities. Project clients must be agreeable to responding to an inquiry by the County.

**Provide the following information for the four (4) qualifying project references.**

**a) Name of client**
**b) Project name**
**c) Location (City/State)**
**d) Client contact name**
**e) Contact phone**
**f) Contact email**
**g) Service dates (Start/End)**

**CHANGE TO:**
**APPENDIX A, MINIMUM QUALIFICATIONS, ITEM 5:**

5. If bidding as a General Contractor- Bidder, on the day the bid is submitted, has a certified or registered Qualifying Agent, as required by Section 489.119, Florida Statutes, and that Qualifying Agent has been the same Qualifying Agent of Bidder for a period of at least two (2) consecutive years, since June 20, 2020.

**Submit a copy of Bidder's Qualifying Agent's registration or certification along with supporting documentation confirming Qualifying Agent has been the Qualifying Agent for Bidder for two (2) consecutive years, since June 30, 2020.**

**REPLACE:**
**APPENDIX K, BID PRICING FORM, PAGES K-2 THRU K-26**

Replace Bid Pricing Form pages k-2 thru K-26 with the REVISED Bid Pricing form pages K-2 thru K-26 issued with this Addendum 2.

**REPLACE:**
**ELECTRONIC BID PRICING FORM**

Replace Electronic Bid Pricing Form with the REVISED Electronic Bod Pricing Form issued with this Addendum 2.

**REPLACE:**
**BID ATTACHMENT 2, SPECIAL PROVISIONS**

Replace Bid Attachment 2, Special Provisions with the REVISED Bid Attachment 2, Special Provisions issued with this Addendum 2.

**REPLACE:**
**BID ATTACHMENT 3, UTILITY TECHNICAL SPECIFICATIONS**

Replace Bid Attachment 3, Utility Technical Specifications with the REVISED Bid Attachment 3, Utility Technical Specifications issued with this Addendum 2.

**REPLACE:**
**REPLACE BID ATTCHMENT 5, ROADWAY PLANS, PLAN SHEETS 1, 3, 17 THRU 19, 24 THRU 26, 28, 29, 43, 44, 49 THRU 51, 81 THRU 83, 217, 218, 223 THRU 225, 235, 258, 259, 276, 277, 282 THRU 284, 300, 301, 306 THRU 308, 324 THRU 334, 337, AND 338**

Replace Bid Attachment 5 Plan Sheet numbers 1, 3, 17 thru 19, 24 thru 26, 28. 29, 43, 44, 49 thru 51, 81 thru 83, 217, 218, 223 thru 225, 235, 258, 259, 276, 277, 282 thru 284, 300, 301, 306 thru 308, 324 thru 334, 337 and 338 with the REVISED Plan Sheet numbers 1, 3, 17 thru 19, 24 thru 26, 28. 29, 43, 44, 49 thru 51, 81 thru 83, 217, 218, 223 thru 225, 235, 258, 259, 276, 277, 282 thru 284, 300, 301, 306 thru 308, 324 thru 334, 337 and 338 issued with this Addendum 2.

**ADD:**
**ADD PLAN SHEET NUMBERS 2A AND 81A TO BID ATTCHMENT 5, ROADWAY PLANS**

Plan Sheet numbers 2A and 81A to are issued with this Addendum 2 and are hereby added to Bid Attachment 5, Roadway Plans.

**REPLACE:**
**REPLACE BID ATTCHMENT 6, UTILITY PLANS, PLAN SHEETS U3, U4, U6, U9 THRU U22, U29, U30, U34, AND U39**

Replace Bid Attachment 6 Plan Sheet numbers U3, U4, U6, U9 thru U22, U29, U30, U34 and U39 with the REVISED Plan Sheet numbers U3, U4, U6, U9 thru U22, U29, U30, U34 and U39 issued with this Addendum 2.

**REPLACE:**
**REPLACE BID ATTCHMENT 7, SIGNALIZATION PLANS, PLAN SHEETS T1, T15, T17 AND T51**

Replace Bid Attachment 7 Plan Sheet numbers T1, T15, T17 and T51 with the REVISED Plan Sheet numbers T1, T15, T17 and T51 issued with this Addendum 2.

**ADD:**
**ADD PLAN SHEET NUMBER T2A TO BID ATTACHMENT 7, SIGNALIZATION PLANS**

Plan Sheet number T2A is issued with this Addendum 2 and hereby added to Bid Attachment 7, Signalization Plans.

**REPLACE:**
**REPLACE BID ATTCHMENT 8, LIGHTING PLANS, PLAN SHEETS L1, L8, L9, L13, L14 AND L22**

Replace Bid Attachment 8 Plan Sheet numbers L1, L8, L9, L13, L14 and L22 with the REVISED Plan Sheet numbers L1, L8, L9, L13, L14 and L221 issued with this Addendum 2.

**ADD:**
**ADD PLAN SHEET NUMBER L2A TO BID ATTACHMENT 8, LIGHTING PLANS**

Plan Sheet number L2A is issued with this Addendum 2 and hereby added to Bid Attachment 8, Lighting Plans.

**ADD:**
**The following items are issued with this Addendum 2 for informational purposes:**

1. Sample Public Construction Bond form.
2. KMZ file
3.

**CLARIFICATION OF ENGINEER'S CHANGES:**

**Roadway Construction Plans:**

Plan Sheet No. 1. (Sheet added to index & permit num. added)
Plan Sheet No. 2A. (New signature sheet)
Plan Sheet No. 3. (Quantities updated & new pay item added)
Plan Sheet No. 17. (Shared use path thickness updated)
Plan Sheet No. 18. (Shared use path thickness updated)
Plan Sheet No. 19. (Shared use path thickness updated)
Plan Sheet No. 24. (Bollard location table added)
Plan Sheet No. 25. (Detectable warning detail added)
Plan Sheet No. 26. (Drainage structure data updated)
Plan Sheet No. 28. (Drainage structure data updated)
Plan Sheet No. 29. (Drainage structure data updated)
Plan Sheet No. 43. (Drainage structure data updated)
Plan Sheet No. 44. (Drainage structure data updated)
Plan Sheet No. 49. (Drainage structure type changed)
Plan Sheet No. 50. (Drainage structure data updated & retaining wall added)
Plan Sheet No. 51. (Drainage structure data updated)
Plan Sheet No. 81. (Drainage detail added)
Plan Sheet No. 81A. (New sheet)
Plan Sheet No. 82. (Type B fence and gate added)
Plan Sheet No. 83. (Type B fence added)
Plan Sheet No. 217. (Drainage changes)
Plan Sheet No. 218. (Drainage changes)
Plan Sheet No. 223. (Drainage changes)
Plan Sheet No. 224. (Drainage changes)
Plan Sheet No. 225. (Drainage changes)
Plan Sheet No. 235. (Note #6 and #21 updated)
Plan Sheet No. 258. (Retaining wall added)
Plan Sheet No. 225. (Drainage changes)
Plan Sheet No. 276. (Drainage changes)
Plan Sheet No. 277. (Drainage changes)
Plan Sheet No. 282. (Drainage changes)
Plan Sheet No. 283. (Retaining wall added)
Plan Sheet No. 284. (Drainage changes)
Plan Sheet No. 300. (Drainage changes)
Plan Sheet No. 301. (Drainage changes)
Plan Sheet No. 306. (Drainage changes)
Plan Sheet No. 307. (Retaining wall added)
Plan Sheet No. 308. (Drainage changes)
Plan Sheet No. 324. (Update to exist Utility FM and proposed drainage)
Plan Sheet No. 325. (Update to exist Utility FM and proposed drainage)
Plan Sheet No. 326. (Update to exist Utility FM)
Plan Sheet No. 327. (Update to exist Utility FM)
Plan Sheet No. 328. (Update to exist Utility FM)
Plan Sheet No. 329. (Update to exist Utility FM)
Plan Sheet No. 330. (Update to exist Utility FM and proposed drainage)

Plan Sheet No. 331. (Update to exist Utility FM and retaining wall added)
Plan Sheet No. 332. (Update to exist Utility FM and proposed drainage)
Plan Sheet No. 333. (Update to exist Utility FM)
Plan Sheet No. 334. (Update to exist Utility FM)
Plan Sheet No. 337. (Update to exist Utility FM)
Plan Sheet No. 338. (Update to exist Utility FM)

**Utilities Construction Plans:**

Plan Sheet U-3. (Added fitting to FM for connection)
Plan Sheet U-4. (Revise Callout 26 fitting size)
Plan Sheet U-6. (Revise Service Line, clear lighting conflict)
Plan Sheet U-9. (Revise 30" WM Crossing, Revise RCWM profile, Revise FM profile, updated FM by others)
Plan Sheet U-10. (Updated FM by other alignment)
Plan Sheet U-11. (Updated FM by other alignment, relocate FM)
Plan Sheet U-12. (Updated FM by other alignment, relocate FM)
Plan Sheet U-13. (Updated FM by others alignment)
Plan Sheet U-14. (Updated FM by others alignment)
Plan Sheet U-15. (Updated FM by others alignment)
Plan Sheet U-16. (Updated FM by others alignment)
Plan Sheet U-17. (Updated FM by others alignment, revise WM tie in location)
Plan Sheet U-18. (Updated FM by others alignment, Relocate FM)
Plan Sheet U-19. (Updated FM by others alignment)
Plan Sheet U-20. (Updated FM by others alignment)
Plan Sheet U-21. (Reprint to show missing profile lines)
Plan Sheet U-22. (Reprint to show missing profile lines)
Plan Sheet U-29. (Revise profile add 2 fittings to clear conflicts with exist FM)
Plan Sheet U-30. (Revise cross section to clear conflicts with exist FM)
Plan Sheet U-34. (Revise FM profile, removed 2 fittings)
Plan Sheet U-39. (Updated FM by others profile)

**Signalization Construction Plans:**

Plan Sheet No. T-1. (Added Revision 1 information)
Plan Sheet No. T-2A. (Added signature sheet for the Revision 1 Signalization Plans)
Plan Sheet No. T-15. (Shifted Mast Arm Poles 1 and 4 to north)
Plan Sheet No. T-17. (Shifted Mast Arm Poles 1 and 4 to north)
Plan Sheet No. T-51. (Adjusted table values for Mast Arm Pole shifts)

**Lighting Construction Plans:**

Plan Sheet No. L-1. (Added Revision 1 information)
Plan Sheet No. L-2A. (Added signature sheet for the Revision 1 Lighting Plans)
Plan Sheet No. L-8. (Changed Light Pole #22 station and offset from 318+38, 57.4' LT to 318+54. 57.1' LT and changed Light Pole # 24 station and offset from 320+33, 57.5' LT to 320+64, 57.5' LT)
Plan Sheet No. L-9. (Changed Light Pole #80 station and offset from 368+59, 83.7' LT to 368+59. 86.9' LT)
Plan Sheet No. L-13. (Shifted Light Pole #22 and updated the label with the new station and offset 318+54, 57.1' LF)

Plan Sheet No. L-14. (Shifted Light Pole #24 and updated the label with the new station and offset 320+64, 57.5' LF)
Plan Sheet No. L-22. (Shifted Light Pole #80 and updated the label with the new station and offset 368+59, 86.9' LF)

**Roadway special provisions:**
Sheet #12, Post-Construction Storm Pipe Testing (Last sentence was modified)

**County Utility Specifications:**
Specification Section 01590 County's Field Office, Part 1, Paragraph 1.01 Requirements Included (Page 77/211) Language revised to: "Contractor may furnish, install and maintain one temporary field office during the entire construction period for the sole use of the County"

**Bid form:**
Bid Item # 9A. New Bid Item
Bid Item # 21A. New Bid Item
Bid Item # 21B. New Bid Item
Bid Item # 28. Revised quantity
Bid Item # 32. Revised quantity
Bid Item # 35. Revised quantity
Bid Item # 36. Revised quantity
Bid Item # 37. Revised quantity
Bid Item # 45. Revised quantity
Bid Item # 62. Revised quantity
Bid Item # 62A. New Bid Item
Bid Item # 67. Revised quantity
Bid Item # 67A. New Bid Item
Bid Item # 76. Revised description
Bid Item # 76A. New Bid Item
Bid Item # 77A. New Bid Item
Bid Item # 185. Removed from Bid
Bid Item # 192. Revised Unit of Measure
Bid Item # 193. Revised Unit of Measure
Bid Item # 193A. New Bid Item
Bid Item # 194. Revised Unit of Measure
Bid Item # 195. Revised Unit of Measure
Bid Item # 196. Removed from Bid
Bid Item # 204. Revised quantity
Bid Item # 208. Revised quantity
Bid Item # 209. Revised quantity
Bid Item # 210. Revised quantity
Bid Item # 212. Revised quantity
Bid Item # 217. Revised quantity
Bid Item # 218. Revised quantity
Bid Item # 219. Revised quantity
Bid Item # 222. Revised quantity
Bid Item # 225A. New Bid Item

Bid Item # 230. Revised quantity
Bid Item # 232. Revised quantity
Bid Item # 237. Revised quantity
Bid Item # 238. Revised quantity
Bid Item # 238A. New Bid Item
Bid Item # 239. Revised quantity
Bid Item # 240. Revised quantity
Bid Item # 241. Revised quantity
Bid Item # 242. Revised quantity
Bid Item # 243. Revised quantity
Bid Item # 243A. New Bid Item
Bid Item # 244. Revised quantity
Bid Item # 248. Revised quantity
Bid Item # 249. Revised quantity
Bid Item # 250. Revised quantity, Revised Unit of Measure
Bid Item # 251. Revised quantity, Revised Unit of Measure
Bid Item # 251A. New Bid Item
Bid Item # 255. Revised quantity
Bid Item # 256. Revised quantity
Bid Item # 257. Revised quantity
Bid Item # 258. Revised quantity
Bid Item # 258A. New Bid Item
Bid Item # 259. Revised quantity
Bid Item # 260. Revised quantity
Bid Item # 260A. New Bid Item
Bid Item # 262. Revised quantity
Bid Item # 265. Revised quantity
Bid Item # 265A. New Bid Item
Bid Item # 268. Revised quantity
Bid Item # 268A. New Bid Item
Bid Item # 269. Revised quantity
Bid Item # 271. Revised quantity
Bid Item # 273. Revised quantity
Bid Item # 274A. New Bid Item
Bid Item # 279. Revised Unit of Measure
Bid Item # 280. Revised Unit of Measure
Bid Item # 283A. New Bid Item
Bid Item # 286. Revised quantity
Bid Item # 288. Revised quantity
Bid Item # 290. Revised quantity
Bid Item # 291A. New Bid Item
Bid Item # 296A. New Bid Item
Bid Item # 299. Revised quantity
Bid Item # 300A. New Bid Item
Bid Item # 301A. New Bid Item
Bid Item # 309. Revised quantity
Bid Item # 310. Revised quantity
Bid Item # 312. Revised quantity

Bid Item # 312A. New Bid Item
BID FORM. Revised Reclaimed water subtotal description

**QUESTIONS AND RESPONSES:**

**Q1. Add the FDOT AC Index specifications to the special provisions for this project.**

R1. Asphalt concrete for this project shall be constructed per FDOT specifications or as amended by bid documentation.

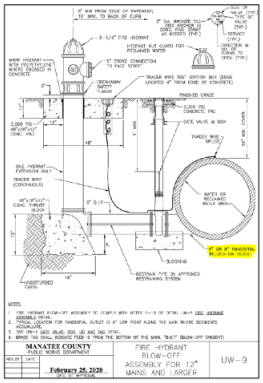
**Q2. Add an item for subsoil excavation as required by the special provisions for this project.**

R2. Pay item added, see revised bid form issued with this Addendum 2.

**Q3. Please update the minimum qualifications requirements to accurately reflect the state statutes, Florida Statute 287.05705. Our concern is that Item no. 4 of Appendix A, Minimum Qualifications, as included in the Invitation to Bid issued by Manatee County for this project, is in direct conflict with the statute**

R3. The minimum requirements of item 4 in Appendix A do not conflict with any state statutes and will remain, except as revised by this Addendum 2.

**Q4. In the below Detail for the Blow off Hydrants it calls for Tangential Weld-on Outlets, these are currently unavailable, will standard MJ tees or Anchor tees be approved as an alternate?**




R4. Yes, County will allow an Anchor Tee tuned downward. Use the MJ-to-MJ adapters instead of nipples between 45's to minimize deflection depth.

**Q5. There are no Bid items for the following material: For Reclaim: (1)- 20x10 reducer on sheet U-9, (12) 20" Gate Valves on multiple sheets; (1) 16" 45 degree Bend on Sheet U-15; For Water: (1) 2" Meter & RPZ assembly on sheet U-8; (2) 6" Sleeve Connection on Sheet U-17.**

R5. See revised bid form issued with this Addendum 2.

**Q6. Reference specifications Section SPECIAL PROVISIONS, page 5, PROJECT SCHEDULE, first paragraph, first sentence, this needs to be deleted as just putting a bid together for a job of this magnitude is enough work let alone preparing "preliminary schedule" leave preparing a schedule to the apparent low bidder, and please delete this language.**

R6. The apparent low bidder shall provide a preliminary schedule within ten days of Notice of Intent to Award.

**Q7. Reference specifications Section SPECIAL PROVISIONS, page 11, MAINTENANCE OF TRAFFIC, third paragraph, third sentence, it is next to impossible to get a quote from a Florida licensed Professional Engineer to perform this service, besides the bid documents include Temporary Traffic Control Plans and appear to be professionally prepared, sheets 235 to 315, please delete this language from the specifications.**

R7. The requirements for a sealed Maintenance of Traffic Plan is not required unless the Contractor proposes a change to the Temporary Traffic Control Plans as signed and sealed in the bid set also the bid was extended.

**Q8. Reference specifications Section SPECIAL PROVISIONS, page 12, POST-CONSTRUCTION STORM PIPE TESTING, first paragraph, last sentence, why is this scope of work being assigned to Mobilization, shouldn't it be incidental to the cost per foot of new storm pipe installed? Putting the cost for televising the storm pipe in Mobilization is not what the Mobilization bid item is for.**

R8: See Revised Special Provisions issued with this Addendum 2.

**Q9. Reference specifications SECTION 01590, COUNTY'S FIELD OFFICE, is this really necessary?**

R9. See Revised Utility Technical Specifications issued with this Addendum 2.

**Q10. Reference specifications SECTION 0800, SPECIAL PROVISIONS, page 4/211, paragraph GENERAL, sub-par B., fifth sentence, how will the Contractor be compensated for replacing PVC pipe that is beneath asphalt pavement with ductile iron pipe?**

R10. There is only one location for 16" PVC under asphalt to be replaced with DIP and that location is shown on Sheet U-2. This pipe is already included in the bid form for 16" DIP.

**Q11. Reference CONTRACT PLANS, plan sheet 29, REMARKS column for Str. S-203, the remark for this structure tells us to refer to DRAINAGE STRUCTURE DETAILS (3), this detail is for a Type J-7 Manhole Control Structure and contradicts the Table shown on plan sheet 78 Detail (2) that shows Structure S-203 as a Type 'D' Inlet Control Structure, please review.**

R11. The correct data is in Sheet 78 (DRAINAGE STRUCTURE DETAILS (2)), SUMMARY OF DRAINAGE STRUCTURES sheet no. 29 quantities has been revised.

**Q12. Our wetland mitigation planting sub-contractor will not warranty the plants for three (3) years, as the contract requires of the Contractor that will build the job, unless a maintenance plan is put in place and items for this scope of work added to the bid form, and paid for by the County. Our sub-contractor suggests the plants be monitored and maintained at least quarterly for the first two (2) years and semi-annually for the third year. Please add bid items for plant maintenance and monitoring.**

R12. All cost for the 3 years of maintenance shall be included in the provided Bid Item No. 73 (WETLAND MITIGATION PLANTING)

**Q13. Reference Bid Form, ROADWAY COMPONENT, Bid Item No. 32, the bid form quantity shows 7-each, the SUMMARY OF DRAINAGE STRUCTURES sheet no. 29 shows 8-each, please review.**

R13. Bid Item No. 32 is correct (7-each). SUMMARY OF DRAINAGE STRUCTURES sheet no. 29 quantities has been revised.

**Q14. Reference CONTRACT PLANS, plan sheet 50, at Sta. 378+90.59, Structure S-117A, the plan view shows constructing gravity walls on each side of the structure with no information given for elevations, how does the gravity wall get paid? Please add a bid item and provide more information about the walls.**

R14. A detail and pay item number has been provided in revised plans and bid form issued with this Addendum 2.

**Q15. Reference Bid Form, ROADWAY COMPONENT, Bid Item 60, the bid quantity shows 2-each the plans show 1-each.**

R15. Bid Item No. 60 is correct (2-each). SUMMARY OF DRAINAGE STRUCTURES sheet no. 29 quantities will be revised.

**Q16. Reference CONTRACT PLANS, plan sheet 29, Structure No. S-131A, it appears this structure has been included in two categories, once as a 24" Mitered End and once as a 30-inch end wall, please review.**

R16. Correct category is 30in end wall. SUMMARY OF DRAINAGE STRUCTURES sheet no. 29 quantities has been revised.

**Q17. Reference Bid Form, Bid Item 67, FENCING, TYPE B, 5.1-6.0, W/VINYL COAT, where is this fence at, cannot find on plans, please provide a drawing that shows fence layout and gate location.**

R17. Response: Bid Item No. 67 is the fence around the Pond A-1. Plan sheet 82 and 83 of CONTRACT PLANS have been revised.

**Q18. Reference CONTRACT PLANS, plan sheet 86, MITIGATION PLANTING PLAN, what are the chances to change the fetterbush (Lyonia lucida) to Virginia willow (Itea virginica), due to lack of availability?**

R18. Fetterbush (Lyonia lucida) can be substituted for Virginia willow (Itea virginica).

**Q19. Reference Bid Form, Bid Item 12, OPTIONAL BASE, BASE GROUP 01, TYPE B-12.5 (CURB PAD), any reason this has to be asphalt when Base Group 01 provides for other material options?**

R19. In our experience asphalt base is the prefer material in terms of performance and provide flat and unyielding surface for the curb.

**Q20. Reference plan sheet 41, the note that reads "EXISTING SIDEWALK TO BE REMOVED", is the surface area of this sidewalk included in the surface area quantity for Bid Item 7, REMOVAL OF EXISTING CONCRETE?**

R20. This area is included in the quantity for Bid Item No. 7.

**Q21, Reference plan sheet 49, Structure S-115, this structure has a 30-inch pipe coming into it at the east side, the FDOT Index 425-052, Sheet 1 of 7, the recommended maximum pipe size for a Type 'C' inlet, according to the notes on this sheet is 24-inch, please review.**

R21. See Revised Plan Sheet 49.

**Q22. Reference Bid Form, Bid Item 28, INLETS, DT BOT, TYPE C MODIFIED-BACK OF SIDEWALK, <10', how does the concrete end walls get paid at each side of the inlet? There is no separate pay item for Concrete Class I (Endwalls), CY. Please review.**

R22. See note on revised Drainage Structure Details (6) "ALL COST ASSOCIATED TO GRAVITY WALL SHALL BE INCLUDED IN THE DRAINAGE STRUCTURE"

**Q23. Reference CONTRACT PLANS, plan sheet 26, Structure No. S-4, this structure is shown in the Table as a Manhole Type J-7, plan sheet 36 shows this structure as a mitered end, please review.**

R23. Plan sheet 26 has been revised.

**Q24. Reference CONTRACT PLANS, plan sheet 38, Structure No. S-26, what is the number "3" referring to in the third note for this structure, "W/TYPE 3 R&C"?**

R24. Refer to Type III ring and cover from FDOT Index 425-001.

**Q25. Please give consideration to using a 'U' shaped end wall in lieu of mitered ends especially at pond areas.**

R25. 'U' shaped end wall can be used in lieu of mitered end section if don't violate safety requirements.

**Q26. Reference UTILITY DESIGN PLANS, plan sheet G-3, Note 41, this note tells us the ductile iron pipe is to be Class 250, this contradicts specifications SECTION 02615, DUCTILE IRON PIPE AND FITTINGS, PART 2 PRODUCTS, paragraph 2.01, MATERIALS, sub-par A., that states the ductile iron pipe will be Pressure Class 350. However, page 151/211 of SECTION 02615 further defines the pipe sizes for each class of pipe, but this contradicts the County's Utility Specifications of 2020, what are we to bid the job by? Please review.**

R26. Response: Please see special Provision Section 0800 includes an amendment to the materials and pressure class of the Ductile Iron Pipe. Per Section 0800- Section 02615- Ductile Iron Pipe and Fittings, Paragraph A, "All Ductile Iron pipe shall be manufactured in accordance with ANSI/AWWA C-151/A21.51 and shall be Class 51 or greater.

**Q27. Reference UTILITY DESIGN PLANS, plan sheet U-2, at the west side of the intersection of US-41 and 97th Street East there is reference to extend existing steel casing at two (2) locations, what is the size of the casing and what is the size of the existing pipe that the casing extensions will be installed around? The reference to Note 1 on UTILITY DESGN PLANS, Plan Sheet U-2 does not help us to analyze the scope of work and or what materials, ie. sizes for bell joint restrainers, casing spacers and end seals that will be needed for our bid pricing, please provide more information.**

R27. Record drawings indicate the existing 16" WM on the south side crossing 97th street and US-41 has a 30" steel casing to be extended.

**Q28. Reference UTILITY DESIGN PLANS, plan sheet U-2, at the east side of the intersection of US-41 and 97th Street East the reference to extend existing steel casing at two (2) locations at what appears to be where an existing 12-inch ductile iron force main pipe is, what is the size of the casing pipe being extended?**

R28. Record drawings indicate the existing 12" FM on the east side crossing 97th street and US-41 has a 24" steel casing to be extended.

**Q29. Reference UTILITY DESIGN PLANS, plan sheet U-2, there is a note at approximately Sta. 300+70 that reads "RESTRAIN 181LF OF EXIST. 12" DIP FM" since this pipe is already inside a casing, isn't it already restrained?**

R29. See detail UG-3 on sheet U-45. In accordance with Manatee County Utility Standards the joints in casing are restrained. Contractor to field verify prior to beginning work and notify the engineer of any discrepancy. Restrain remaining pipe per contract drawings.

**Q30. With regard to Item 29 above, in order to restrain the 12-inch FM pipe, it will require removing it from the casing, install bell joint restraining devices and then reinstall the pipe in the casing, and in order to do this a by-pass piping and pumping system will have to be installed, please provide more information regarding volume of flow and direction of flow.**

R30. See response to Q29.

**Q31. With regard to Item 29 above, on the same plan sheet and just north of the intersection there is the exact same note "RESTRAIN 181LF OF EXIST. 12" DIP FM", could it be that the note referenced in Item 24 above was an accidental duplication?**

R31. The callout is not a duplicate. Restrain 181LF of existing 12" FM both sides of proposed tee.

**Q32. Reference specifications Section 02615, page 152/211, paragraph C, first sentence, the County's latest Utility Standards do not make reference to spiral wrapping the pipe, only to encase in a polyethylene sleeve, what are we to bid by?**

R32 B states “12 inches and smaller shall be entirely polyethylene-wrapped”, C states “pipe greater than 12 inches shall be spiral wrapped”. If using Poly-wrap, D states “Poly-wrap shall be by V-BioTM Enhanced Polyethylene Encasement (or equivalent).” There is no conflicting language.

**Q33. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Items 201 and 202, these bid items are for “Gate Valves”, specification SECTION 02640, page 165/211, paragraph H, states that valves 16-inch and larger are to be butterfly valves, what are we to bid by?**

R33. Contractor to bid gate valves as specified on bid form and contract drawings.

**Q34. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Items 210 – 213, are these restraints specifically for use at mechanical joint fittings or will these bid items also be used to compensate Contractor when these restraints are used at valves with mechanical joint end assemblies?**

R34.Bid items 210-213 are bid items to restrain existing pipe. Restraints for valves and fittings to be included in the price per each respectively.

**Q35. Reference Bid Form, WATER MAIN, FORCE MAIN and RECLAIMED WATER UTILITY COMPONENTS, there are no bid items and the plans do not show locations for restrained joint pipe, how will the Contractor be compensated for providing bell joint restraints and or purchase of factory restrained joint pipe when necessary to install restrained joint pipe?**

R35. See UG-8 and UG-9 in details on U-45 and U-46. These bell joint restraints are to be included in the price per unit per valve and/or fitting on the bid form and on page 38 of the specifications.

**Q36. Reference CONTRACT PLANS, plan sheet 24, TYPICAL DETAILS (1), at the left side of this sheet are details for bollards, where along the shared use path do these bollards get installed and can a bid item be added for them as Note 1 on this plan sheet states?**

R36. See Revised plan Sheet 24 and Bid form issued with this Addendum 2.

**Q37. Reference Bid Form, page Appendix K-13, SHARED USE PATH COMPONENT OPTION #1, Bid Item 76, shouldn’t this bid item description be more specific to include what the detail on plan sheet 19 is requiring to be constructed, TYPE B-12.5 asphalt?**

R37. Bid item 76 description has been revised.

**Q38. Reference Bid Form, page Appendix K-4, SHARED USE PATH COMPONENT, Bid Item 75, the 4” thickness described in this bid item does not match the thickness, 6”, shown in the detail on plan sheet 19 for this Shared Use Path Option what thickness are we to bid?**

R38. Correct thickness of the shared used path is 4”, sheet 18 and 19 have been revised.

**Q39. Reference plan sheet 19, the detail for SHARED USE PATH OPTION #2, in lieu of the 6”x6” #10 wire mesh, will concrete with fiber mesh be allowed?**

R39. No. Fiber mesh is not an acceptable substitution.

**Q40. Reference UTILITY DESIGNS PLAN (2), Sheet U-2, the note to remove existing 16” PVC water main that is currently inside an existing steel casing, does the County know if the annular space at this casing was filled with either concrete or sand and if so can this information be shared with the prospective bidders?**

R40. The current status of the annular space is unknown, please bid with the assumption that the annular space is filled with concrete as a worst-case scenario.

**Q41. With regard to the removal of the existing 16-inch PVC water main mentioned in Item 35 above, how will water service be maintained during the shutdown of this portion of pipe?**

R41. Shut Down with service interruption will be required to complete the tie in.

**Q42. Reference Item 41 above, is the removal of this 16” PVC water main and the valve necessary?**

R42. As a part of Specification Section 0800, General, B: the 16” pvc wm under the asphalt shall be replaced with Ductile Iron Pipe. If the 16” Gate valve does not need to be replaced after it is inspected, then the Gate valve will not be necessary. As such please include the gate valve in the Bid.

**Q43. Reference CONTRACT PLANS, plan sheet 25, with regard to the two driveway details on this sheet, can concrete with fiber mesh be used in lieu of 6”x6” welded wire mesh?**

R43. No. Fiber mesh is not an acceptable substitution.

**Q44. Reference Bid Form, Bid Item 66, DETECTABLE WARNINGS, these detectable warning devices do not do well on asphalt and if the SHARED USE PATH OPTION #1 is awarded then a change to design will be necessary at the locations where these detectable warning devices are to be installed and in accordance with ADA requirements, please review.**

R44. Detectable Warning Detail for Share Use Path Option #1 has been provided I revised plans issued with this Addendum 2.

**Q45. Reference CONTRACT PLANS, plan sheet 235, GENERAL NOTES, Note 6, this note makes reference to PAY ITEM NO. 102-99, there is no pay item on the Bid Form for this item, please review.**

R45. Note no. 6 has been revised to refer to pay item 102-1 (MOT).

**Q46. Reference CONTRACT PLANS, plan sheet 235, GENERAL NOTES, Note 21, this note makes reference to PAY ITEM NO. 334-1-11, there is no pay item on the Bid Form for this item, please review.**

R46. Note no. 21 has been revised to refer to pay item 102-1 (MOT).

**Q47. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 191, what wall thickness will the 48-inch steel casing have to be, the detail drawing, UG-3 on plan sheet U-45, does not address this size casing?**

R47. Contractor to supply shop drawings with proposed wall thickness for approval.

**Q48. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Items 185 and 186, cannot find on plans where are these split casings at?**

R48. Split casings are to be used where existing steel casings are to be extended. See sheet U-2 for example.

**Q49. Reference UTILITY DESIGN PLANS, why is the reclaim water main pipe not being installed in steel casing when going under paved areas at intersections like the force main and potable water main pipe are?**

R49. The material switches from PVC to DIP where the RCWM crosses roads and intersections as directed by the County.

**Q50. Reference UTILITY DESIGN PLANS, plan sheet U-4, the change of pipe type from 10" DIP to 10" PVC at Sta. 313+15, will a mechanical joint sleeve be required? The PVC pipe will be compatible in size with the bell end of the DIP pipe.**

R50. Please include a sleeve to make the transition between PVC and DIP.

**Q51. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item 288, the bid quantity of 1,320LF does not match what the UTILITY DESIGN PLANS show, 120LF, please review.**

R51.See revised Bid form issued with this Addendum 2.

**Q52. Reference UTILITY DESIGN PLANS, sheets U-9 through U-19, the reference to the 12-inch and twenty-inch force main "BY OTHERS", when will these pipe be installed?**

R52. This force main has recently been installed, see revised plans showing the as-built alignment.

**Q53. Reference Bid Form, pages APPENDIX K-12 and K-25, the FORCE MAIN UTILITY COMPONENT SUB-TOTAL description is wrong, it should read RECLAIMED WATER UTILITY COMPONENT SUB-TOTAL, please correct the bid form.**

R53. See revised Bid form issued with this Addendum 2.

**Q54. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Items 192 through 195, shouldn't the unit of measure for each of these items be per EACH and not LUMP SUM? Please review.**

R54. That is correct the Tie-Ins are classified as EACH connection. See revised Bid Form issued with this Addendum 2.

**Q55. Reference UTILITY DESIGN PLANS, the following plan sheets, U-2, the note to restrain 181LF of 12" DIP FM, plan sheet U-9, the note to restrain 376LF of existing 30" DIP WM on Bud Rhoden Rd. and the note to restrain 200LF existing 16" DIP WM on 36th Avenue East, plan sheet U-14 to restrain 140LF existing 16 WM how is the Contractor to be compensated for this scope of work? Please add bid items to the Bid Form for these and any other existing pipe that are designated to be restrained.**

R55. The Bid items for these items are the Utility Fixture MJ Restraint.

**Q56. Reference Bid Form, FORCE MAIN UTILITY COMPONENT, Bid Item 248, bid quantity shows 106LF, plan sheet U-4 shows 119LF, please review.**

R56. See revised Bid Form issued with this Addendum 2.

**Q57. Reference Bid Form, FORCE MAIN UTILITY COMPONENT, Bid Item 249, the bid quantity of 248LF does not match what is shown on the plans, 149LF, please review.**

R57. See revised Bid Form issued with this Addendum 2.

**Q58. Reference UTILITY DESIGN PLANS, plan sheet U-7, at Sta. 329+41, the note to deflect 12" FM and the note to deflect the 10" RCW, what are we deflecting around? The plan view does not show a deflection and the profile views do not show any deflection and no fittings are shown in either view. Please clarify.**

R58. To reduce the number of fittings needed, the plans follow the proposed right of way using the allowable pipe deflections in each bell.

**Q59. Reference Bid Form, FORCE MAIN UTILITY COMPONENT, Bid Item 247, where is this split casing at? Please clarify**

R59. See sheet U-2. The split casing is on the North and South side of Moccasin Wallow Road. It is the steel casing that is to be extended for the 12" FM.

**Q60. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 192, the bid quantity is five (5), but the bid item description shows four (4) locations, please review.**

R60.The bid description has been revised to include the 5th location. To clarify there are two tie-in locations on U-8, one on U-11, one on U-16 and one on U-17

**Q61. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 194, cannot find connection to existing 16-inch WM at station 301+44, but do see where there is a connection required at Station 299+15, please review and confirm.**

R61. Bid form description has been revised to say 299+15 instead of 301+44.

**Q62. Reference UTILITY DESIGN PLANS, plan sheet U-17, Sta. 386+49, connection to existing 30-inch water main, there is no reference to restraining the existing 30-inch pipe to the east of the connection point, should there be?**

R62. Yes, restrain 51 LF of existing 30" WM.

**Q63. Reference UTILITY DESIGN PLANS, plan sheet U-13, Sta. 361+15, there is no bid item to make connection to the 10-inch main at this location as bid items were available for the other pipe sizes, please review.**

R63. For the connection made on U-13 at Sta. 361+15, there is an existing 10” main for the gate valve to tie directly into; no connection sleeve will be needed for this location. If the Contractor determines an additional connecting sleeve is needed, please include the sleeve in the bid for “tie-into existing” bid item(s).

**Q64. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 196, unable to find these 8-inch tapping saddles, where are these?**

R64. 8" tapping saddles have been removed from bid form.

**Q65. Reference UTILITY DESIGN PLANS, plan sheet U-8, there are no bid items for some of the components shown in “INSET A”, please review.**

R65. On Sheet U-8, callouts 12-17 are included in the bid form per individual item. Callouts 18-20 will be included in the bid form under 2" service, short.

**Q66. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 203, where is this check valve assembly at?**

R66. U-8, Insert "A" has a 6" Double Detector Check Valve Assembly. See revised Bid Form issued with this Addendum 2.

**Q67. Reference Bid Form, WATER MAIN UTLITY COMPONENT, Bid Item 204, bid quantity shows 5-each, plans show 1-each on plan sheet U-4 at Sta. 313+32 and this qualifies as a blow off, 1-each Blow Off Hydrant on plan sheet U-12 at Sta. 355+38, 1-each Blow Off Hydrant on plan sheet U-15 at Sta. 373+20, and 1-each Blow Off Hydrant on plan sheet U-17 at Sta. 386+17, the only legitimate blow off assembly is the one on sheet U-4, what makes a Fire Hydrant Blow Off compatible with the one on sheet U-4 and where is the other one (1) blow off?**

R67. See revised Bid Form issued with this Addendum 2 separating the blow off assemblies with the blow off fire hydrant assembly. There is (1) 2" blow off assembly on Sheet U-4 at Sta. 313+32. There are 4 other "1-blow off fire hydrant assemblies" on Sheet U-4 (Sta. 310+49), U-12 (Sta. 355+38), U-15 (Sta. 373+20), U-17 (Sta. 386+17) for the water main utility.

**Q68. With regard to Item 3 above, will the County furnish and install the 2-inch meter for the Automatic Flushing device?**

R68. County will provide the 2” meter for automatic flushing device.

**Q69. With regard to Item 3 above, please provide a detail for a “HYDRANT BLOW OFF”.**

R69. See sheet U-47 detail UW-9

**Q70. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 208, bid quantity shows 4,842LF, plans show 4,424LF, please review.**

R71. See revised Bid Form issued with this Addendum 2.

**Q72. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 227, the bid quantity shows 2-each 16" Unions, plan sheets U-9 and U-14 specifically call out CONNECTION SLEEVES, but there are two other 16-inch connections required for the job, one on plan sheet U-2 at Sta. 299+15 for the connection to the existing Tee and one on plan sheet U-17 at Sta. 385+07 for connection to existing. Please review.**

R72. For the connection made on U-2 at Sta. 299+15, there is an existing 16" Tee to tie directly into; no connection sleeve will be needed for this location. For the connection made on U-17 at Sta. 385+07, there is a proposed 16" 45 degree bend to be used for direct tie-in; no connection sleeve will be needed for this location. If the Contractor determines an additional connecting sleeve is needed, please include the sleeve in the bid for "tie-into existing" bid item(s).

**Q73. Reference UTILITY DESIGN PLANS, plan sheet U-13, at Sta. 361+15, there is no bid item for a 10-inch connection sleeve that will be needed at this location, please review.**

R73. For the connection made on U-13 at Sta. 361+15, there is an existing 10" main for the gate valve to tie directly into; no connection sleeve will be needed for this location. If the Contractor determines an additional connecting sleeve is needed, please include the sleeve in the bid for "tie-into existing" bid item(s).

**Q74. Reference UTILITY DESIGN PLANS, plan sheet U-17, there is no connection sleeve for the 30-inch WM connection at Station 386+44, please review.**

R74. For the connection made on U-17 at Sta. 386+44, there is a proposed 30" 45 degree bend to be used for direct tie-in; no connection sleeve will be needed for this location. If the Contractor determines an additional connecting sleeve is needed, please include the sleeve in the bid for "tie-into existing" bid item(s).

**Q75. Reference UTILITY DESIGN PLANS, plan sheet U-4, plan sheet shows 2-each 8" 45 degree elbow, Bid Form, Bid Item 217 shows 1-each, please review.**

R75. See revised Bid Form issued with this Addendum 2.

**Q76. Reference UTILITY DESIGN PLANS, plan sheet U-4, Sta. 311+64, there is no Bid Item for this 16"x8" MJ Wye, please review.**

R76. This item was placed in the bid form under: UTILITY FITTINGS, DI F&I, TEE, 16" X 8"

**Q77. Reference UTILITY DESIGN PLANS, plan sheet U-8, INSET 'A', Item 17 is a 6" ninety degree bend and the note with it states "Connect to Existing 6" WM" there is no CONNECTION SLEEVE shown for this work. Please review.**

R77. For the connection made on U-8 at Insert 'A', there is a proposed 6" 90 degree bend to be used for direct tie-in; no connection sleeve will be needed for this location. If the Contractor determines an additional connecting sleeve is needed, please include the sleeve in the bid for "tie-into existing" bid item(s).

**Q78. Reference Bid Form, WATER MAIN UTILITY COMPONENT, there are no Bid Items for 6" Connecting Sleeves, why? Plan sheet U-8 at Sta. 332+99 will need one, plan sheet U-11 at Sta. 353+26 will need one, plan sheet U-16 at Sta. 378+21 will need one, plan sheet U-17 at Sta. 385+01 will need at least two (2) if not three (3), please review.**

R78. For the connection made on U-8 at Sta. 332+99, there is an existing 6" Tee to be used for direct tie-in; no connection sleeve will be needed for this location. For the connection made on U-11 at Sta. 353+26, there is a proposed 6" 45 degree bend to be used for direct tie-in; no connection sleeve will be needed for this location. For the connection made on U-16 at Sta. 378+21, there is an existing 6" Tee to tie directly into; no connection sleeve will be needed for this location. If the Contractor determines additional connecting sleeves to these areas are needed, please include the sleeve in the bid for "tie-into existing" bid item(s). For the connection made on U-17 at Sta. 385+01, Cardno has added two (2) 6" connecting sleeves as noted on the Drawings.

**Q79. Reference UTILITY DESIGN PLANS, plan sheet U-2 does not show the size of the existing water main at the west side of U.S.-41, but plan sheet U-21 shows it as a 24-inch, in this case the extension of the existing casing at the north and south side of 97th Street East at the west side of U.S.-41 should probably be 48-inch diameter split casing and there is no bid item for this, please review.**

R79. Record drawings indicate the existing 16" WM on the south side crossing 97th street and US-41 has a 30" steel casing to be extended.

**Q80. Reference UTILITY DESIGN PLANS, plan sheet U-2, removal of the existing 16-inch gate valve at Sta. 299+15 will require shutting down the existing 24-inch main, how long can the 24-inch main be shut down?**

R80. All shut downs will need to be coordinated with the County. The approximate maximum shut down for this main is 8 hours.

**Q81. With regard to item 80 above, what is the distance to the nearest 24-inch valves north and south of the existing 24"x16" Tee? Knowing this will help determine volume of water that will have to be handled when performing the removal work.**

R81. There is a 16" gate valve immediately South of the Tee. The nearest tee to the North of the connection is ~2500 ft.

**Q82. With regard to item #2 above, will it be necessary to install 24-inch line stops in order to maintain flow as well as isolate the Tee? If so, please add bid items for 24-inch line stops.**

R82. In accordance to Manatee County Design standards, Line Stops are not to be used in Potable or Reclaimed water. As a result, connections to existing mains will require shut

downs. All shut downs shall be coordinated with Manatee County Utilities prior to beginning work.

**Q83. Reference UTILITY DESIGN PLANS, plan sheet U-3, at approximately Sta. 302+95 there appears to be a service connection to the new 12-inch force main, please provide the size of this service and a bid item.**

R83. The service connection on U-3 at approximately Sta. 302+95 is a proposed 4" Tie-in to existing connection. Bid form has been revised from 303+93 to 302+93, and an additional 12"x 4" Tee added to the bid form to make the connection.

**Q84. With regard to Item #83 above, it appears that possibly this force main service connection was construed to be a short side water service connection and included in the quantity for Bid Item #237 as the plans show ten (10) each short side water service connections not eleven (11) as the bid form shows, please review.**

R84. There are Ten (10) 1" service short connections for the WM on the following sheets: One (1) on U-2, One (1) on U-4, Three (3) on U-5, Two (2) on U-9, Two (2) on U-10, and One (1) on U-12. There is also One (1) 2" service, short on U-8 accounted for in other bid item added to revised Bid Form issued with this Addendum 2.

**Q85. Reference UTILITY DESIGN PLANS, plan sheet U-9, Sta. 338+35, it appears this 4-inch force main connection was overlooked and not included in the quantity for Bid Item 250, please review.**

R85. See revised Bid Form issued with this Addendum 2.

**Q86. Reference Bid Form, WATER MAIN UTILITY COMPONENT, Bid Item 238, bid quantity shows 5-each, plans show 10-each, please review.**

R86. There are Eleven (11) "1" service, long" items total and all grouped under one (1) bid item. There are three (3) "Install 1" service, long line" connections on the following sheets: Two (2) on U-6 and One (1) on U-10. There are also Eight (8) "install service line connect to relocated backflow preventer" on the following sheets: Three (3) on U-3, One (1) on U-7, Two (2) on U-10 and Two (2) on U-11.

**Q87. Reference Bid Form, FORCE MAIN UTILITY COMPONENT, Bid Item 250, plans do not show a 4-inch force main connection at Sta. 303+93, please review.**

R87. See revised Bid Form issued with this Addendum 2.

**Q88. Reference UTILITY DESIGN PLANS, plan sheet U-2, Sta. 300+72, how long can the 12-inch force main be shut down in order to install the new 12"x12" Tee?**

R88. The largest time available for shut down will be at night. Contractor will need to provide tanker trucks included in the bid price and have 6 hours to complete the work. The approximate time frame is expected to be between, 11pm-5 am. All shut downs will need to be coordinated with the County.

**Q89. With regard to Item #88 above, what is the distance between the nearest upstream and downstream valves on the existing 12-inch force main? Knowing this will help to determine the volume of raw sewage that will have to be handled when installing the new 12" Tee.**

R89. Regarding question #88 above, On U-2 at Sta. 300+72, The approximate distances from the tie in to the nearest valves are ~1300 ft. North ~1800 ft. south of tie in.

**Q90. With regard to Item #88 above, to better isolate the area where the new 12" Tee is to be installed, line stops on the existing 12-inch force main should be installed, this would minimize the volume of raw sewage to be handled, please add bid items for 12-inch line stops.**

R90. Line Stops are permitted on the Force main tie in locations however there will be some force mains that will require to be maintained on bypass. There is a 4" FM that will be required to be maintained in operation with the use of line stops. Up to 2 line stops will be included in the bid form for this tie in location.

**Q91. Reference UTILITY DESIGN PLANS, plan sheet U-4, it appears the 11.25 degree bends one at 313+85 and one at 313+93 have been incorrectly called out in size, each one of these should be 12-inch, please review.**

R91. See revised Plans issued with this Addendum 2.

**Q92. Reference UTILITY DESIGN PLANS, plan sheet U-7, Sta. 326+74, the 12"x4" Wye, there is no bid item for this fitting, please review.**

R92. This item was placed in the bid form under: UTILITY FITTINGS, DI F&I, TEE, 12" X 4".

**Q93. Reference UTILITY DESIGN PLANS, plan sheet U-14, Sta. 367+03, there is no bid item for this 20"x16" Wye, please review.**

R93. This item was placed in the bid form under: UTILITY FITTINGS, DI F&I, TEE, 20" X 16".

**Q94. Reference UTILITY DESIGN PLANS, plan sheet U-17, Sta. 385+84, there is no reference to a "Connection Sleeve" for this tie-in, please review.**

R94. For the connection made on U-17 at Sta. 385+94, there is a proposed 8" 45 degree bend to be used for direct tie-in; no connection sleeve will be needed for this location. If the Contractor would like to add additional connecting sleeves to these areas, please include the sleeve in the bid for "tie-into existing" bid item(s).

**Q95. Reference UTILTIY DESIGN PLANS, plan sheet U-17, Sta. 385+01, how long can the 6-inch water main be shut down to install this tee?**

R95. All shut downs will need to be coordinated with the County. The maximum shut down time for this tie in is expected to be ~4 hours.

**Q96. Reference UTILITY DESIGN PLANS, plan sheet U-17, there is no reference to restraining the existing 6-inch water main to the north and south of the new Tee that is to be installed at Sta. 385+01, please review.**

R96. Restrain 46 LF of 6" WM on both sides of the connection. An additional four (4) 6" MJ Restraints have been added to the bid form.

**Q97. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item 280, cannot find tie-in at Sta. 386+21, please review.**

R97. This tie-in was relocated to STA 385+94. However, the GV is not located here. This tie in will be a cut in connection.

**Q98. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item 312, bid quantity shows four (4) each, plans show three (3) each, please review.**

R98. See revised Bid Form issued with this Addendum 2.

**Q99. Reference UTILITY DESIGN PLANS, plan sheet U-8, the two (2) inch water service shown at Sta. 336+12, how is this service to get paid? There is no bid item for a two (2) inch water service.**

R99. See revised Bid Form issued with this Addendum 2.

**Q100. Reference UTILITY DESIGN PLANS, plan sheet U-14, the Note that reads "RESTRAIN 140LF EXISTING 16" WM, SHOULD READ RCWM", the bid form for RECLAIMED WATER UTILITY COMPONENT does not have a bid item for this size restraint, please review.**

R100. See revised Plans and Bid Form issued with this Addendum 2.

**Q101. Reference UTILITY DESIGN PLANS, plan sheet U-4, what type of 8-inch pipe, PVC or DIP, is to be installed out of the 10"x8" Tee at station 312+75?**

R101. The 8" pipe installed out of the 10"x 8" Tee will be PVC.

**Q102. Reference UTILITY DESIGN PLANS, plan sheet U-9, at Sta. 338+82 there is a 16-inch gate valve, where does the reclaimed water main change size from 10-inch to 16-inch?**

R102. See revised Plans and Bid Form issued with this Addendum 2.

**Q103. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item 283, bid quantity shows 2-each plans show 1-each, please review. The 16" valve shown on plan sheet U-9 at Sta. 338+82 is probably a 10-inch valve that has been incorrectly labeled.**

R103. See revised Plans and Bid Form issued with this Addendum 2.

**Q104. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, there is no bid item for the 20-inch MJ gate valve assembly, plans show nine (9) of these, please review.**

R104. See revised Bid Form issued with this Addendum 2.

**Q105. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item 286, bid quantity shows 925LF, plans show 2,691LF, please review.**

R105. See revised Bid Form issued with this Addendum 2.

**Q106. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item #288, bid quantity shows 1,320LF, plans show 160LF, please review.**

R106. See revised Bid Form issued with this Addendum 2.

**Q107. Will Manatee County want tracing wire test stations every 500LF for the reclaimed water main or will the test station boxes at the in-line reclaim water valves be sufficient?**

R107. See County public works standards Section 1.11.19. "Tracer wire test station boxes shall be provided at plug valves, blowoff valves, gate valves, fire hydrants and backflow prevention assemblies as indicated in these Standards."

**Q108. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item #290, bid quantity shows 6,315LF, plans show 6,409LF, please review.**

R108. See revised Bid Form issued with this Addendum 2.

**Q109. Reference Bid Form, RECLAIMED WATER UTILITY COMPONENT, Bid Item #305, bid quantity shows 3-each, plans show 1-each, but there are two (2) 20-inch caps, should we just group the caps along with the plug in this item?**

R109. See revised Bid Form issued with this Addendum 2.

**Q110. Reference UTILITY DESIGN PLANS, plan sheet U-9, at Sta. 338+88 there is a 20"x10" Reducer, there is no pay item for this reducer, please review**

R110. See revised Bid Form issued with this Addendum 2.

**Q111. Sheet U-2 Water Main: Sta 229+15 calls out connecting to an existing 16" Tee and removing and replacing a 16" Gate Valve. We see no provisions for temporary line stops and no indications of existing valves, please provide the Utility Owner prescribed method and series of events for this work. If this information is unavailable, we will base our bid on the Utility providing water main shut down and containment in close proximity to the tie in.**

R111. In accordance to Manatee County Design standards, Line Stops are not to be used in Potable or Reclaimed water. As a result connections to existing mains will require shut downs. All shut downs shall be coordinated with Manatee County Utilities prior to beginning work.

**Q112. Sheet U-2 Force Main: Sta 300+72 calls out connecting to existing by cutting in a 12" tee, install (2) 12" plug valves, and restrain existing. We see no provisions for temporary line stops and no indications of existing valves, please provide the Utility Owner prescribed method and series of events for this work. If this information is unavailable, we will base our bid on the Utility providing force main shut down and containment in close proximity to the tie in. We must also assume pipe within casing is properly restrained.**

R112. Line Stops are permitted on the Force main tie in locations however there will be some force mains that will require to be maintained on bypass. There is a 4" FM that will be required to be maintained in operation with the use of line stops. Up to 2 line stops will be included in the bid form for this tie in location. To clarify there are 3 plug valves to be installed at this tie in location.

**Q113. American Cast Iron Pipe Company (ACIPCO) currently projected lead times for Ductile Iron Pipe (DIP) for this project are: "… 20-30" looking at 32-36 weeks. 16" might be similar. 12" and down 40 + weeks….". The utility DIP occurs early in the work, and the lead times expressed above will cause project delays. As a potential remedy to a known problem, please provide for a procurement period, prior to start of Contract Time, to accommodate the known material lead times.**

R113. If not able to meet the 650 days for Bid A, leave it blank and fill in for 830 days for Bid B. The County intends to award this IFBC at the September 2022 Board of County Commissioners meeting. Bidders should base their bid on a start date of thirty (30) days after award. Contractor shall secure approved shop drawings and procure volatile materials as early as possible to avoid material price increases. Contractor to keep pre-bid records of manufacture or vendor current schedule and prices and document delays and escalation that beyond control of the contractor.

**Q114. Sheet U-2, sta 300-70, 12" FM: Callout specifies restraining 181 LF of existing FM, however 80 LF of this pipe is in casing, and should already be restrained. Please confirm 80 LF 12" FM in existing casing is currently restrained, requiring Contractor to restrain the balance, 101 LF existing pipe.**

R114. See detail UG-3 on sheet U-45. In accordance with Manatee County Utility Standards the joints in casing are restrained. Contractor to field verify prior to beginning work and notify the engineer of any discrepancy. Restrain remaining pipe per contract drawings.

**Q115. Sheet U-2, sta 300+70, 35' Rt and 45' Lt. – At this location there is a call out for extending casings, however no casing size is indicated. Please provide casing size required. As this omission occurs in 4 instances on U-2, this may be typical of others**

R115. Record drawings indicate the existing 12" FM on the east side crossing 97$^{th}$ street and US-41 has a 24" steel casing to be extended.

**Q116. Sheet U-2, sta 299+15, two casings running north and south are called out for extension, however no casing size is provided. Please specify casing size for each of these locations.**

R116. Record drawings indicate the existing 16" WM on the south side crossing 97$^{th}$ street and US-41 has a 30" steel casing to be extended.

**Q117. On Sheet U-3, the water main and force main service line sizes are not provided. This condition appears consistent throughout the plan set. Please provide all service line sizes for WM, FM, RWM for the project**

R117. The service connection on U-3 at approximately Sta. 302+95 is a proposed 4" Tie-in to existing connection. See revised bid form issued with this Addendum 2.

**Q118. On Sheet U-9, Fitting call out #35 specifies a "Fire Hydrant Blow Off Assembly" on the 20" Reclaimed Water Main. Please clarify what is to be furnished and installed as a "Fire Hydrant Blow Off Assembly".**

R118. See revised bid form issued with this Addendum 2.

**Q119. Sheet U-9 calls out restraining 376 LF of existing 30" water main in center of Bud Rhoden Road, running north offsite. Please provide plan sheets showing this work including profiles so the work can be properly estimated**

R119. Assume up to 4ft of cover for the water main. Bud Rhoden Rd can be closed up to McGuire Rd for detour to allow for the work to be completed. Please see Manatee County GIS website for more location information on restraining 376LF of 30" WM.

**Q120. What are the costs for the below permits: (a) MANATEE COUNTY CONSTRUCTION PERMIT. (b) MANATEE COUNTY R.O.W. USE PERMIT**

R120.No costs for County permits or ROW for this project.

**Q121. Please confirm the Existing 6" FM Removal ends at point 33 Sheet U-9; there is no removal call-out on this sheet.**

R121. Yes, remove 6" FM until Sta. 338+35.

**Q122. Should the utility lines passing under Bud Rhoden Rd be in casing?**

R122. No, casings were removed by utility Owner during design.

**Q123. There doesn't appear to be a pay item for replacing the FM service line at Sta 303 Right Sheet U-3; please clarify.**

R123. See response to Q117.

**Q124. The quantities for 10" DIP RM & PVC RM appear to need adjusting. I can only find the two instances of DIP (163') under the roadway on sheets U-4 & U-8, with the remaining being PVC (2697') – Please clarify.**

R124. See revised Bid form issued with this Addendum 2.

**Q125. Pay item for the 16" Split Bell Restraints (7) is missing.**

R125. See revised Bid form issued with this Addendum 2.

**Q126. Pay item for the RM 16" 45 Bend is missing.**

R126. See revised Bid form issued with this Addendum 2.

**Q127. Pay item for the RM 20" Gate Valves (12) is missing.**

R127. See revised Bid form issued with this Addendum 2.

**Q128. Please confirm sheet locations for the 8" & 16" RM Removals.**

R128. There are 8" RM pipe removal on sheets U-4 and U-17. There is 16" RM pipe removal on sheet U-14 and there is 20" RM pipe removal on sheet U-14. See revised Bid form issued with this Addendum 2.

**Q129. Is there an MBE/DBE goal?**

R129. See Article A.33 of the Bid documents.

**Q130. Does the County have a standard Bid Bond form that should be used?**

R130. No.

**Q131. Does the County have a standard Payment and Performance Bond Form? Can a copy be provided?**

R131. Yes, see sample Public Construction Bond Form issued with this Addendum 2 for informational purposes.

**Q132. Can the Local Preference Affidavit be submitted with the bid, or does it need to be submitted beforehand?**

R132. Submit with Bid.

**Q133. Appendix A, Minimum Qualifications #8 should say "Appendix J," not "Appendix I."**

R133. Confirmed.

**Q134. Is a statement of a non-joint venture required, or will marking the correct blank on Appendix B, Bidder's Questionnaire #2 suffice?**

R134. Submit the statement as required by item 7 of Appendix A.

**Q135. Appendix E states the "Bidder must fully complete and return this form with its Bid," however, the instructions to bidders, A.42, states, "if the bidder is interested in participating in the program, then complete and return." If Bidder is not interested in the program, does the form need to be completed, or will marking the form N/A be acceptable?**

R135. Submit with Bid and mark N/A if not interested.

**Q136. The specs reference asbestos pipe, but there is none shown on the plans for removal. Please confirm there is no asbestos pipe to contend with during removals.**

R136. There is no Asbestos pipe anticipated on this project.

**Q137. Are there any federal funds in this project that requires "Buy American" steel products?**

R137. No.

**Q138. Please confirm all connections for Force Main and Reclaim Water can be performed by open cut method with local isolation valves operated by the County.**

R138. Yes, unless Contractor proposes other means and methods.

**Q139. Please clarify - regarding whether the Sample Agreement is the form that will be used on the Project. If not, can the County provide bidders with contract terms that will apply.**

R139. The sample agreement issued with the IFBC is the Agreement that will be used.

**Q140. Does the County's field office require internet?**

R140. Field office is not required. Internet is up to contractor.

**Q141. Please verify the rim elevation of S-119 located at STA 379+35.75 (54.00 RT.)? [Currently shown as 8.65 with a FL elevation of 23.10]**

R141. See revised Plan Sheet 50 issued with this Addendum 2.

**Q142. Please verify what structure is required for S-4? The roadway plans depict a mitered end section, and the drainage summary designates it as a J-7 manhole.**

R142. See revised Plan Sheet 26 issued with this Addendum 2.

**Q143. Can the engineer provide a summary of quantities for the MOT devices for the 650 day bid?**

R143. MOT is LS, there is no quantities available. At time of pre-con, County request bread down of the LS.

**Q144. Can a .KMZ file be provided for this project?**

R144. Yes, KMZ file has been issued with this Addendum 2 for informational purposes only.

**Q145. Sheet 24 indicates the bollards assembly are paid for under concrete bollard strip assemble. Which pay item is this referring to?**

R145. See response to Q36.

**Q146. What is the anticipated start date for this project?**

R146. Projected Award is estimated for September 2022 and NTP is 30 days later.

**Q147. Will the FDOT Asphalt Price Index apply to this job?**

R147. No

**Q148. On Typical Section 4, the milling and resurfacing detail indicated FC12.5 (Traffic Level B) but the adjacent widening utilizes FC12.5 (Traffic Level C). Also on the typical for Artisan Lakes Drive, the typical indicated a section of roadway should receive Traffic Level B.**

R148. FC 12.5 (Traffic Level C) could be utilized for widening and resurfacing.

**Q149. The specifications state that barrier wall will be required for any drop off greater than 6", however MOT plans do not indicate this. If the contractor meets FDOT standard requirements for drop-offs, will the county approve the elimination of barrier wall?**

R149. According to FDOT index 102-600, temporary barrier is required for any drop off greater than 3 inches. Temporary barrier can be eliminated from any locations in the MOT plans that do not have a drop off greater than 3 inches and meet FDOT standard requirements. Contractor also has option to provide alternative MOT plan, if necessary.

**Q150. Will the county be using the FDOT Price Index for Liquid asphalt and Diesel Fuel for price adjustments on the Asphalt Paving Items for the duration of this project?**

R150. No

**NOTE:**
Deleted items will be ~~struck through~~, added or modified items will be <u>underlined</u>. All other terms and conditions remain as stated in the IFBC.

**INSTRUCTIONS**:
Receipt of this Addendum must be acknowledged as instructed in the solicitation document. Failure to acknowledge receipt of this Addendum may result in the response being deemed non-responsive.

**END OF ADDENDUM**

AUTHORIZED FOR RELEASE

Jacob Erickson, MBA, CPPO, NIGP-CPP

Digitally signed by Jacob Erickson, MBA, CPPO, NIGP-CPP
Date: 2022.07.19 08:47:27 -04'00'

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| **ROADWAY COMPONENT** | | | | | | |
| 1 | 101-1 | MOBILIZATION | LS | 1 | | |
| 2 | 102-1 | MAINTENANCE OF TRAFFIC | LS | 1 | | |
| 3 | 104-18 | INLET PROTECTION SYSTEM | EA | 5 | | |
| 4 | 104-10-3 | SEDIMENT BARRIER | LF | 22751 | | |
| 5 | 104-11 | FLOATING TURBIDITY BARRIER | LF | 1765 | | |
| 6 | 110-1-1 | CLEARING AND GRUBBING | LS/AC | 52 | | |
| 7 | 110-4-10 | REMOVAL OF EXISTING CONCRETE | SY | 5037 | | |
| 8 | 110-7-1 | MAILBOX, F&I SINGLE | EA | 21 | | |
| 9 | 120-1 | REGULAR EXCAVATION | CY | 140983 | | |
| 9A | 120-4 | SUBSOIL EXCAVATION | CY | 4500 | | |
| 10 | 120-6 | EMBANKMENT | CY | 66245 | | |
| 11 | 160-4 | TYPE B STABILIZATION | SY | 108959 | | |
| 12 | 285-701 | OPTIONAL BASE, BASE GROUP 01, TYPE B-12.5 (CURB PAD) | SY | 1018 | | |
| 13 | 285-709 | OPTIONAL BASE, BASE GROUP 09 | SY | 88614 | | |
| 14 | 285-715 | OPTIONAL BASE, BASE GROUP 15 | SY | 6286 | | |
| 15 | 327-70-19 | MILLING EXISTING ASPH PAVEMENT, 3/4" AVERAGE DEPTH | SY | 2494 | | |
| 16 | 327-70-6 | MILLING EXISTING ASPH PAVEMENT, 1-1/2" AVERAGE DEPTH | SY | 7965 | | |
| 17 | 334-1-13 | SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C | TN | 15538 | | |
| 18 | 337-7-25 | ASPHALTIC CONCRETE FC, INC BIT, FC-5, PG 76-22 | TN | 100 | | |
| 19 | 337-7-81 | ASPHALTIC CONCRETE FC, TRAFFIC B, FC-12.5, PG 76-22 | TN | 934 | | |
| 20 | 337-7-83 | ASPHALTIC CONCRETE FC, TRAFFIC C, FC-12.5, PG 76-22 | TN | 7493 | | |
| 21 | 339-1 | MISCELLANEOUS ASPHALT PAVEMENT | TN | 5.6 | | |
| 21A | 400-2-11 | CONCRETE CLASS II, RETAINING WALLS | CY | 10.4 | | |
| 21B | 415-1-3 | REINFORCING STEEL - RETAINING WALLS | LB | 962 | | |
| 22 | 425-1-201 | INLETS, CURB, TYPE 9, <10' | EA | 2 | | |
| 23 | 425-1-351 | INLETS, CURB, TYPE P-5, <10' | EA | 5 | | |
| 24 | 425-1-451 | INLETS, CURB, TYPE J-5, <10' | EA | 7 | | |
| 25 | 425-1-461 | INLETS, CURB, TYPE J-6, <10' | EA | 1 | | |
| 26 | 425-1-521 | INLETS, DT BOT, TYPE C, <10' | EA | 1 | | |
| 27 | 425-1-523 | INLETS, DT BOT, TYPE C, J BOT, <10' | EA | 52 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

Legend: New Bid Item | Updated Bid Item | Removed Bid Item

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 28 | 425-1-531 | INLETS, DT BOT, TYPE C MODIFIED-BACK OF SIDEWALK, <10' | EA | 22 | | |
| 29 | 425-1-541 | INLETS, DT BOT, TYPE D, <10' | EA | 6 | | |
| 30 | 425-1-543 | INLETS, DT BOT, TYPE D, J BOT, <10' | EA | 3 | | |
| 31 | 425-1-581 | INLETS, DT BOT, TYPE H, <10' | EA | 1 | | |
| 32 | 425-2-71 | MANHOLES, J-7, <10' | EA | 8 | | |
| 33 | 425-2-91 | MANHOLES, J-8, <10' | EA | 10 | | |
| 34 | 430-175-115 | PIPE CULV, OPT MATL, ROUND, 15" S/CD | LF | 43 | | |
| 35 | 430-175-118 | PIPE CULV, OPT MATL, ROUND, 18" S/CD | LF | 4903 | | |
| 36 | 430-175-124 | PIPE CULV, OPT MATL, ROUND, 24" S/CD | LF | 3238 | | |
| 37 | 430-175-130 | PIPE CULV, OPT MATL, ROUND, 30" S/CD | LF | 1855 | | |
| 38 | 430-175-136 | PIPE CULV, OPT MATL, ROUND, 36" S/CD | LF | 2122 | | |
| 39 | 430-175-142 | PIPE CULV, OPT MATL, ROUND, 42" S/CD | LF | 2022 | | |
| 40 | 430-175-215 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 15" S/CD | LF | 496 | | |
| 41 | 430-175-218 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 18" S/CD | LF | 101 | | |
| 42 | 430-175-224 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 24" S/CD | LF | 225 | | |
| 43 | 430-175-230 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 30" S/CD | LF | 150 | | |
| 44 | 430-175-242 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 42" S/CD | LF | 198 | | |
| 45 | 430-175-248 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 48" S/CD | LF | 1362 | | |
| 46 | 430-175-260 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 60" S/CD | LF | 160 | | |
| 47 | 430-200-25 | FLARED END SECTION, CONCRETE, 18" | EA | 1 | | |
| 48 | 430-536-100 | STRAIGHT CONCRETE ENDWALLS, 36", SINGLE, 0 DEGREES, ROUND | EA | 2 | | |
| 49 | 430-542-100 | STRAIGHT CONCRETE ENDWALLS, 42", SINGLE, 0 DEGREES, ROUND | EA | 1 | | |
| 50 | 430-530-102 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 0 DEGREES, ELLIP | EA | 2 | | |
| 51 | 430-530-110 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 15 DEGREES, ROUND | EA | 1 | | |
| 52 | 430-530-120 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 30 DEGREES, ROUND | EA | 1 | | |
| 53 | 430-963-2 | PVC PIPE FOR BACK OF SIDEWALK, NON STANDARD DIAMETER | LF | 204 | | |
| 54 | 430-984-125 | MITERED END SECTION, OPTIONAL ROUND, 18" SD | EA | 1 | | |
| 55 | 430-984-129 | MITERED END SECTION, OPTIONAL ROUND, 24" SD | EA | 4 | | |
| 56 | 430-984-623 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 15" SD | EA | 10 | | |
| 57 | 430-984-624 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 24" SD | EA | 1 | | |
| 58 | 430-984-640 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 42" SD | EA | 1 | | |
| 59 | 430-984-641 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 48" SD | EA | 2 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 60 | 430-984-643 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 60" SD | EA | 2 | | |
| 61 | 440-1-50 | UNDERDRAIN | LF | 1475 | | |
| 62 | 515-1-1 | PIPE HANDRAIL - GUIDERAIL, STEEL | LF | 277 | | |
| 62A | 519-78 | BOLLARDS | EA | 14 | | |
| 63 | 520-1-10 | CONCRETE CURB & GUTTER, TYPE F | LF | 24269 | | |
| 64 | 520-2-1 | CONCRETE CURB, TYPE A | LF | 171 | | |
| 65 | 201.3 | CONCRETE CURB, TYPE AB | LF | 373 | | |
| 66 | 527-2 | DETECTABLE WARNINGS | SF | 844 | | |
| 67 | 550-10-222 | FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT | LF | 2550 | | |
| 67A | 550-60-623 | FENCE GATE, TYPE B VINYL, DOUBLE, 12.1-18.0' OPENING | EA | 1 | | |
| 68 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 5943 | | |
| 69 | 522-2 | CONCRETE SIDEWALK AND DRIVEWAYS, 6" | SY | 2579 | | |
| 70 | 536-1-1 | GUARDRAIL (W-BEAM, GENERAL, TL-3) | LF | 383 | | |
| 71 | 536-85-24 | GUARDRAIL END TREATMENT- PARALLEL APPROACH TERMINAL | EA | 2 | | |
| 72 | 570-1-2 | PERFORMANCE TURF, SOD | SY | 92121 | | |
| 73 | | WETLAND MITIGATION PLANTING | LS | 1 | | |
| | | | | | **ROADWAY COMPONENT SUB-TOTAL** | |
| | | **SHARED USE PATH COMPONENT** | | | | |
| 74 | 160-4 | TYPE B STABILIZATION | SY | 16578 | | |
| 75 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 12511 | | |
| | | | | | **SHARED USE PATH COMPONENT SUB-TOTAL** | |
| | | **SIGNING AND PAVEMENT MARKINGS COMPONENT** | | | | |
| 79 | 523-1 | PATTERNED PAVEMENT, VEHICULAR AREAS (GREEN PAINT) | SY | 1321 | | |
| 80 | 700-1-11 | SINGLE POST SIGN, F&I, GROUND MOUNT, UP TO 12 SF | AS | 88 | | |
| 81 | 700-1-12 | SINGLE POST SIGN, F&I, GROUND MOUNT, 12-20 SF | AS | 10 | | |
| 82 | 700-2-14 | MULTI- POST SIGN, F&I GROUND MOUNT, 31-50 SF | AS | 1 | | |
| 83 | 700-2-15 | MULTI- POST SIGN, F&I GROUND MOUNT, 51-100 SF | AS | 6 | | |
| 84 | 705-10-1 | OBJECT MARKER, TYPE 1 | EA | 6 | | |
| 85 | 705-11-1 | DELINEATOR, FLEXIBLE TUBULAR | EA | 1 | | |
| 86 | 705-11-3 | DELINEATOR, FLEXIBLE HIGH VISABILITY MEDIAN | EA | 1 | | |

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Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 87 | 710-11-190 | PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, ISLAND NOSE | SF | 6 | | |
| 88 | 710-11-290 | PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, ISLAND NOSE | SF | 377 | | |
| 89 | 710-90 | PAINTED PAVEMENT MARKINGS, FINAL SURFACE | LS | 1 | | |
| 90 | 711-11-123 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" | LF | 3915 | | |
| 91 | 711-11-124 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONAL OR CHEVRON | LF | 525 | | |
| 92 | 711-11-125 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE | LF | 765 | | |
| 93 | 711-11-141 | THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/6-10 GAP EXTENSION, 6" | GM | 0.973 | | |
| 94 | 711-11-160 | THERMOPLASTIC, STANDARD, WHITE, MESSAGE | EA | 12 | | |
| 95 | 711-11-170 | THERMOPLASTIC, STANDARD, WHITE, ARROW | EA | 151 | | |
| 96 | 711-11-224 | THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON | LF | 445 | | |
| 97 | 711-11-241 | THERMOPLASTIC, STD, YELLOW, SOLID, 2-4 DOTTED GUIDELINE, 6" | GM | 0.157 | | |
| 98 | 711-14-125 | THERMOPLASTIC, PREFORMED, WHITE SOLID, 24" FOR CROSSWALK | LF | 2545 | | |
| 99 | 711-14-160 | THERMOPLASTIC,PREFORMED, WHITE, MESSAGE (BICYCLE SYMBOL) | EA | 43 | | |
| 100 | 711-14-170 | THERMOPLASTIC, PREFORMED, WHITE, ARROW (BICYCLE ARROW) | EA | 44 | | |
| 101 | 711-14-660 | THERMOPLASTIC, PREFORMED, MULTI COLOR ROUTE SHIELD | EA | 2 | | |
| 102 | 711-15-101 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SOLID, 6" | GM | 9.627 | | |
| 103 | 711-15-102 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SOLID, 8" | GM | 0.25 | | |
| 104 | 711-15-131 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SKIP, 6", 10-30 SKIP | GM | 3.118 | | |
| 105 | 711-15-133 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SKIP, 12", 3-9 LANE DROP | GM | 0.059 | | |
| 106 | 711-15-201 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, YELLOW, SOLID, 6" | GM | 4.57 | | |
| **SIGNING AND PAVEMENT MARKINGS COMPONENT SUB-TOTAL** | | | | | | |
| **SIGNALIZATION COMPONENT** | | | | | | |
| 107 | 110-4-10 | REMOVAL OF EXISTING CONCRETE | SY | 5 | | |
| 108 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK | SY | 5 | | |
| 109 | 630-2-11 | CONDUIT, FURNISH & INSTALL, OPEN TRENCH | LF | 1105 | | |
| 110 | 630-2-12 | CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE | LF | 21215 | | |
| 111 | 630-2-14 | CONDUIT, FURNISH & INSTALL, ABOVEGROUND | LF | 40 | | |
| 112 | 632-7-1 | SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL | PI | 4 | | |
| 113 | 632-7-6 | SIGNAL CABLE, REMOVE- INTERSECTION | PI | 2 | | |

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# BID FORM

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| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 114 | 633-1-121 | FIBER OPTIC CABLE, F&I, UNDERGROUND,2-12 FIBERS | LF | 4075 | | |
| 115 | 633-1-122 | FIBER OPTIC CABLE, F&I, UNDERGROUND,13-48 FIBERS | LF | 17345 | | |
| 116 | 633-1-620 | FIBER OPTIC CABLE, REMOVE, UNDERGROUND | LF | 3185 | | |
| 117 | 633-2-31 | FIBER OPTIC CONNECTION, INSTALL, SPLICE | EA | 28 | | |
| 118 | 633-2-32 | FIBER OPTIC CONNECTION, INSTALL, TERMINATION | EA | 72 | | |
| 119 | 633-3-11 | FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE | EA | 8 | | |
| 120 | 633-3-12 | FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY | EA | 8 | | |
| 121 | 633-3-16 | FIBER OPTIC CONNECTION HARDWARE, F&I, PATCH PANEL- FIELD TERMINATED | EA | 6 | | |
| 122 | 634-4-600 | SPAN WIRE ASSEMBLY, REMOVE- POLES REMAIN | PI | 1 | | |
| 123 | 635-2-11 | PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE | EA | 71 | | |
| 124 | 635-2-12 | PULL & SPLICE BOX, F&I, 24" X 36" COVER SIZE | EA | 32 | | |
| 125 | 635-2-13 | PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE | EA | 5 | | |
| 126 | 639-1-122 | ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY | AS | 4 | | |
| 127 | 639-1-420 | ELECTRICAL POWER SERVICE, RELOCATE, UNDERGROUND | AS | 1 | | |
| 128 | 639-1-610 | ELECTRICAL POWER SERVICE, REMOVE OVERHEAD | AS | 1 | | |
| 129 | 639-1-620 | ELECTRICAL POWER SERVICE, REMOVE UNDERGROUND | AS | 1 | | |
| 130 | 639-2-1 | ELECTRICAL SERVICE WIRE, FURNISH & INSTALL | LF | 2105 | | |
| 131 | 639-2-6 | ELECTRICAL SERVICE WIRE, REMOVE | LF | 1760 | | |
| 132 | 639-3-11 | ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT | EA | 2 | | |
| 133 | 639-4-6 | EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY | EA | 3 | | |
| 134 | 641-2-12 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE | EA | 6 | | |
| 135 | 641-2-13 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-III | EA | 7 | | |
| 136 | 641-2-60 | PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- PEDESTAL/SERVICE POLE | EA | 2 | | |
| 137 | 641-2-80 | PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- POLE 30' AND GREATER | EA | 2 | | |
| 138 | 646-1-11 | ALUMINUM SIGNALS POLE, PEDESTAL | EA | 30 | | |
| 139 | 646-1-60 | ALUMINUM SIGNALS POLE, REMOVE | EA | 4 | | |
| 140 | 649-21-15 | STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70' | EA | 6 | | |
| 141 | 649-21-21 | STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78' | EA | 7 | | |
| 142 | 649-26-3 | STEEL MAST ARM ASSEMBLY, REMOVE, SHALLOW FOUNDATION- BOLT ON | EA | 1 | | |
| 143 | 650-1-14 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY | AS | 23 | | |
| 144 | 650-1-16 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY | AS | 10 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 145 | 650-1-19 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 | AS | 15 | | |
| 146 | 650-1-60 | VEHICULAR TRAFFIC SIGNAL, REMOVE- POLES TO REMAIN | AS | 3 | | |
| 147 | 653-1-11 | PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY | AS | 31 | | |
| 148 | 660-3-11 | VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET | EA | 10 | | |
| 149 | 660-3-12 | VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT | EA | 29 | | |
| 150 | 660-4-60 | VEHICLE DETECTION SYSTEM- VIDEO, REMOVE | EA | 1 | | |
| 151 | 660-6-121 | VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET | EA | 4 | | |
| 152 | 660-6-122 | VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT | EA | 4 | | |
| 153 | 665-1-11 | PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD | EA | 31 | | |
| 154 | 670-5-110 | TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA | AS | 2 | | |
| 155 | 670-5-111 | TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION | AS | 1 | | |
| 156 | 670-5-400 | TRAFFIC CONTROLLER ASSEMBLY, MODIFY | AS | 1 | | |
| 157 | 670-5-600 | TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET | AS | 2 | | |
| 158 | 676-2-122 | ITS CABINET, FURNISH & INSTALL, POLE MOUNT WITH SUNSHIELD, 336S, 24" W X 46" H X 22" D | EA | 1 | | |
| 159 | 676-2-400 | ITS CABINET, RELOCATE | EA | 1 | | |
| 160 | 676-3-10 | SMALL EQUIPMENT ENCLOSURE, FURNISH AND INSTALL, LESS THAN 10"W X 13"H X | EA | 3 | | |
| 161 | 676-3-30 | SMALL EQUIPMENT ENCLOSURE, RELOCATE, >10" W x 13" H x 11" D | EA | 1 | | |
| 162 | 682-1-133 | ITS CCTV CAMERA, F&I, DOME ENCLOSURE - NON-PRESSURIZED, IP, HIGH DEFINITION | EA | 5 | | |
| 163 | 682-1-400 | ITS CCTV CAMERA, RELOCATE | EA | 1 | | |
| 164 | 684-1-1 | MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL | EA | 5 | | |
| 165 | 685-1-13 | UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE WITH CABINET | EA | 4 | | |
| 166 | 685-1-60 | UNINTERRUPTIBLE POWER SUPPLY, REMOVE- POLE/CABINET REMAINS | EA | 1 | | |
| 167 | 700-3-201 | SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF | EA | 28 | | |
| 168 | 700-5-22 | INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF | EA | 13 | | |
| 169 | 700-5-50 | INTERNALLY ILLUMINATED SIGN, RELOCATE | EA | 1 | | |
| 170 | 700-10-400 | DMS SUPPORT STRUCTURE, RELOCATE | EA | 1 | | |
| | | | | | **SIGNALIZATION COMPONENT SUB-TOTAL** | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| **LIGHTING COMPONENT** | | | | | | |
| 171 | 630-2-11 | CONDUIT, FURNISH & INSTALL, OPEN TRENCH | LF | 285 | | |
| 172 | 630-2-12 | CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE | LF | 20600 | | |
| 173 | 635-2-11 | PULL & SPLICE BOX, F&I, 13" X 24" COVER SIZE | EA | 132 | | |
| 174 | 639-1-122 | ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR | AS | 2 | | |
| 175 | 639-2-1 | ELECTRICAL SERVICE WIRE, FURNISH & INSTALL | LF | 120 | | |
| 176 | 641-2-12 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE (12') | EA | 2 | | |
| 177 | 715-1-12 | LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6 | LF | 70861 | | |
| 178 | 715-4-13 | LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 40' MOUNTING HEIGHT | EA | 1 | | |
| 179 | 715-4-32 | LIGHT POLE COMPLETE, F&I, UTILITY CONFLICT POLE, INDEX 17515/715-002 FOUNDATION, 35' MOUNTING HEIGHT | EA | 114 | | |
| 180 | 715-4-42 | LIGHT POLE COMPLETE, F&I, UTILITY CONFLICT POLE, SPECIAL FOUNDATION, 35' MOUNTING HEIGHT | EA | 8 | | |
| 181 | 715-7-11 | LOAD CENTER, F&I, SECONDARY VOLTAGE | EA | 2 | | |
| 182 | 715-11-211 | LUMINAIRE, F&I- REPLACE EXISTING LUMINAIRE ON EXISTING POLE/ARM, ROADWAY, COBRA HEAD | EA | 4 | | |
| 183 | 715-500-1 | POLE CABLE DISTRIBUTION SYSTEM, FURNISH AND INSTALL, CONVENTIONAL | EA | 123 | | |
| | | | | **LIGHTING COMPONENT SUB-TOTAL** | | |
| **WATER MAIN UTILITY COMPONENT** | | | | | | |
| 184 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| ~~185~~ | ~~1050-61124~~ | ~~UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24"~~ | ~~LF~~ | 0 | | |
| 186 | 1050-61130 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 30" | LF | 197 | | |
| 187 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" | LF | 92 | | |
| 188 | 1050-61114 | UTILITY PIPE -- STEEL, F&I, CASING, 14" | LF | 424 | | |
| 189 | 1050-61130 | UTILITY PIPE -- STEEL, F&I, CASING, 30" | LF | 299 | | |
| 190 | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" | LF | 160 | | |
| 191 | 1050-61142 | UTILITY PIPE -- STEEL, F&I, CASING, 48" | LF | 337 | | |
| 192 | | Tie-into Existing 6" WM, STA 332+99, 336+05, 353+26, 378+21, 385+01 | ~~LS~~ EA | 5 | | |
| 193 | | Tie-into Existing 8" WM, STA 311+54 | ~~LS~~ EA | 1 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 193A | | Tie-into Existing 10" WM STA 361+15 | EA | 1 | | |
| 194 | | Tie-into Existing 16" WM, STA 299+15, 339+78, 368+10, 385+07 | ~~LS~~ EA | 4 | | |
| 195 | | Tie-into Existing 30" WM, STA 339+46, 384+40 | ~~LS~~ EA | 2 | | |
| ~~196~~ | ~~1080-23108~~ | ~~UTILITY FIXTURE -- TAPPING SAD/SL, F&I, 8"~~ | ~~EA~~ | 0 | | |
| 197 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 5 | | |
| 198 | 1080-24106 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 6" | EA | 5 | | |
| 199 | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 8" | EA | 2 | | |
| 200 | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" | EA | 1 | | |
| 201 | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" | EA | 10 | | |
| 202 | 1080-24130 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 30" | EA | 7 | | |
| 203 | 1080-24106 | UTILITY FIXTURE -- CHECK VALVE ASSEMBLY (Double), MJ, F&I, 6" | EA | 1 | | |
| 204 | 1080-25102 | UTILITY FIXTURE -- BLOWOFF ASSEMBLY, F&I, 2" | EA | 1 | | |
| 205 | 1050-51206 | UTILITY PIPE -- DI, F&I, WATER, 6" | LF | 647 | | |
| 206 | 1050-51208 | UTILITY PIPE -- DI, F&I, WATER, 8" | LF | 155 | | |
| 207 | 1050-51210 | UTILITY PIPE -- DI, F&I, WATER, 10" | LF | 4 | | |
| 208 | 1050-51216 | UTILITY PIPE -- DI, F&I, WATER, 16" | LF | 4480 | | |
| 209 | 1050-51230 | UTILITY PIPE -- DI, F&I, WATER, 30" | LF | 5070 | | |
| 210 | 1080-29106 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 6" | EA | 7 | | |
| 211 | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" | EA | 4 | | |
| 212 | 1080-29116 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 16" | EA | 29 | | |
| 213 | 1080-29130 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 30" | EA | 20 | | |
| 214 | 1055-51106 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 6" | EA | 1 | | |
| 215 | 1055-51116 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 16" | EA | 2 | | |
| 216 | 1055-51106 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 6" | EA | 6 | | |
| 217 | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 8" | EA | 3 | | |
| 218 | 1055-51116 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 16" | EA | 13 | | |
| 219 | 1055-51130 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 30" | EA | 12 | | |
| 220 | 1055-51106 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 6" | EA | 6 | | |
| 221 | 1055-51116 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 16" | EA | 6 | | |
| 222 | 1055-51130 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 30" | EA | 4 | | |
| 223 | 1055-51116 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 16" | EA | 2 | | |
| 224 | 1055-51130 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 30" | EA | 4 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

Legend: New Bid Item | Updated Bid Item | Removed Bid Item

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 225 | 1055-51330 | UTILITY FITTINGS, DI F&I, REDUCER,30"x16" | EA | 2 | | |
| 225A | 1055-51406 | UTILITY FITTINGS, DI F&I, UNION, 6" | EA | 2 | | |
| 226 | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" | EA | 1 | | |
| 227 | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" | EA | 2 | | |
| 228 | 1055-5130 | UTILITY FITTINGS, DI F&I, UNION, 30" | EA | 1 | | |
| 229 | 1055-51206 | UTILITY FITTINGS, DI F&I, TEE, 6" X 6" | EA | 1 | | |
| 230 | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 6" | EA | 2 | | |
| 231 | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 8" | EA | 2 | | |
| 232 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 6" | EA | 3 | | |
| 233 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 10" | EA | 1 | | |
| 234 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 16" | EA | 2 | | |
| 235 | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X30" | EA | 1 | | |
| 236 | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X6" | EA | 1 | | |
| 237 | 1080-21101 | 1" Service, Short | EA | 10 | | |
| 238 | 1080-21101 | 1" Service, Long | EA | 11 | | |
| 238A | 1080-21102 | 2" Service, Short | EA | 1 | | |
| 239 | 1050-16003 | UTILITY PIPE,REMOVE & DISPOSE, 5-7.9" -6 | LF | 317 | | |
| 240 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -8 | LF | 80 | | |
| 241 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -16 | LF | 4436 | | |
| 242 | 1050-16005 | UTILITY PIPE,REMOVE & DISPOSE, 20-49.9" -30 | LF | 4791 | | |
| 243 | 1644900 | FIRE HYDRANT, REMOVE | EA | 7 | | |
| 243A | | FIRE HYDRANT, F&I, BLOW OFF ASSEMBLY | EA | 4 | | |
| 244 | 1644112 | FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6" | EA | 13 | | |
| 245 | 9999-3 | RECORD DRAWINGS- WATER MAIN | LS | 1 | | |
| | | **WATER MAIN UTILITY COMPONENT SUB-TOTAL** | | | | |
| | | **FORCE MAIN UTILITY COMPONENT** | | | | |
| 246 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| 247 | 1050-61124 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24" | LF | 53 | | |
| 248 | 1050-61112 | UTILITY PIPE -- STEEL, F&I, CASING, 12" | LF | 112 | | |
| 249 | 1050-61124 | UTILITY PIPE -- STEEL, F&I, CASING,24" | LF | 149 | | |
| 250 | | Tie-into Existing 4" FM, STA 302+93, 310+64, 326+70, 338+35 | ~~LS~~ EA | 4 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 251 | | Tie-into Existing 12" FM, STA 300+72, 339+10, 358+55 | ~~LS~~ EA | 3 | | |
| 251A | | Tie-into Existing 16" FM, STA 353+19, 391+42, 393+10 | EA | 3 | | |
| 252 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 2 | | |
| 253 | 1080-33104 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 4" | EA | 3 | | |
| 254 | 1080-33110 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 10" | EA | 1 | | |
| 255 | 1080-33112 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 12" | EA | 14 | | |
| 256 | 1050-31204 | UTILITY PIPE -- PVC, F&I, SEWER, 4" | LF | 202 | | |
| 257 | 1050-31210 | UTILITY PIPE -- PVC, F&I, SEWER, 10" | LF | 40 | | |
| 258 | 1050-31212 | UTILITY PIPE -- PVC, F&I, SEWER, 12" | LF | 4504 | | |
| 258A | 1050-31216 | UTILITY PIPE -- PVC, F&I, SEWER, 16" | LF | 150 | | |
| 259 | 1080-29104 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 4" | EA | 5 | | |
| 260 | 1080-29112 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 12 | EA | 20 | | |
| 260A | 1080-27112 | UTILITY FIXTURE- LINE STOP ASSEMBLY, F&I, 12" | EA | 2 | | |
| 261 | 1055-51104 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 4" | EA | 2 | | |
| 262 | 1055-51104 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 4" | EA | 3 | | |
| 263 | 1055-51112 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 12" | EA | 2 | | |
| 264 | 1055-51112 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 12" | EA | 8 | | |
| 265 | 1055-51112 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 12" | EA | 5 | | |
| 265A | 1055-51116 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 16" | EA | 4 | | |
| 266 | 1055-51404 | UTILITY FITTINGS, DI F&I, UNION, 4" | EA | 3 | | |
| 267 | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" | EA | 1 | | |
| 268 | 1055-51512 | UTILITY FITTINGS, DI F&I, CAP/PL, 12" | EA | 2 | | |
| 268A | 1055-51316 | UTILITY FITTINGS, DI F&I, REDUCER, 16"x12" | EA | 1 | | |
| 269 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X4" | EA | 4 | | |
| 270 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X10" | EA | 1 | | |
| 271 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X12" | EA | 3 | | |
| 272 | 1050-16002 | UTILITY PIPE, REMOVE & DISPOSE, 2-4.9" -4 | LF | 1092 | | |
| 273 | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 5-7.9" -6 | LF | 3827 | | |
| 274 | 1050-16004 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -12 | LF | 536 | | |
| 274A | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -16 | LF | 20 | | |
| 275 | 9999-3 | RECORD DRAWINGS- FORCE MAIN | LS | 1 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| | | **FORCE MAIN UTILITY COMPONENT SUB-TOTAL** | | | | |
| | | **RECLAIMED WATER UTILITY COMPONENT** | | | | |
| 276 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| 277 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" | LF | 223 | | |
| 278 | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" | LF | 365 | | |
| 279 | | Tie-into Existing 16" PVC RCW, STA 367+14 | EA | 1 | | |
| 280 | | Tie-into Existing 8" RCW GV , STA 310+63, 386+21 | EA | 2 | | |
| 281 | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 8" | EA | 4 | | |
| 282 | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" | EA | 6 | | |
| 283 | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" | EA | 2 | | |
| 281A | 1080-24120 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 20" | EA | 12 | | |
| 282 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 5 | | |
| 285 | 1050-31208 | UTILITY PIPE -- PVC, F&I, RECLAIM, 8" | LF | 29 | | |
| 286 | 1050-31210 | UTILITY PIPE -- PVC, F&I, RECLAIM, 10" | LF | 2670 | | |
| 287 | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 8" | LF | 347 | | |
| 288 | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 10" | LF | 160 | | |
| 289 | 1050-51216 | UTILITY PIPE -- DI, F&I, RECLAIM, 16" | LF | 70 | | |
| 290 | 1050-51220 | UTILITY PIPE -- DI, F&I, RECLAIM, 20" | LF | 6550 | | |
| 291 | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" | EA | 6 | | |
| 291A | 1080-29116 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 16" | EA | 7 | | |
| 292 | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 8" | EA | 6 | | |
| 293 | 1055-51108 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 8" | EA | 2 | | |
| 294 | 1055-51110 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 10" | EA | 4 | | |
| 295 | 1055-51110 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 10" | EA | 2 | | |
| 296A | 1055-51116 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 16" | EA | 1 | | |
| 197 | 1055-51120 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 20" | EA | 6 | | |
| 298 | 1055-51120 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 20" | EA | 6 | | |
| 299 | 1055-51120 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 20" | EA | 14 | | |
| 300 | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" | EA | 1 | | |
| 300A | 1055-51410 | UTILITY FITTINGS, DI F&I, UNION, 10" | EA | 1 | | |
| 301 | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" | EA | 1 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 301A | 1055-51320 | UTILITY FITTINGS, DI F&I, REDUCER, 20" X 10" | EA | 1 | | |
| 302 | 1055-51210 | UTILITY FITTINGS, DI F&I, TEE, 10" X 8" | EA | 2 | | |
| 303 | 1055-51508 | UTILITY FITTINGS, DI F&I, CAP/PL, 8" | EA | 2 | | |
| 304 | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" | EA | 1 | | |
| 305 | 1055-51520 | UTILITY FITTINGS, DI F&I PLUG 20" | EA | 3 | | |
| 306 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X8" | EA | 2 | | |
| 307 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X16" | EA | 1 | | |
| 308 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X20" | EA | 2 | | |
| 309 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -8 | LF | 105 | | |
| 310 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -16 | LF | 50 | | |
| 311 | 1050-16005 | UTILITY PIPE,REMOVE & DISPOSE, 20-49.9" -20 | LF | 152 | | |
| 312 | 1644113 | FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6" | EA | 3 | | |
| 312A | | FIRE HYDRANT, F&I, BLOW OFF ASSEMBLY | EA | 3 | | |
| 313 | 9999-3 | RECORD DRAWINGS- RECLAIMED WATER | LS | 1 | | |
| | | | | | **RECLAIMED WATER UTILITY COMPONENT SUB-TOTAL** | |
| | **TOTAL BASE BID "A" - Based on Completion Time of 650 Calendar Days** | | | | | |
| | **CONTRACT CONTINGENCY WORK (USED ONLY WITH COUNTY APPROVAL)** | | | 10% | | |
| | **TOTAL OFFER FOR BID "A" with Contract Contingency - Based on Completion Time of 650 Calendar Days** | | | | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "A" BASED ON COMPLETION TIME OF 650 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|

**OPTIONAL BID ITEMS FOR SHARED USE PATH COMPONENT**

The following prices are for optional items for the Shared use Path Component and may be awarded as replacement items for bid item 75. Should the County choose to award the optional bid items for the shared Use Path Component, the award shall be made to the responsive and responsible bidder having the lowest total offer, minus bid item 75, plus the optional bid items below.

**SHARED USE PATH COMPONENT OPTION #1**

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 76 | 285-701 | OPTIONAL BASE, BASE GROUP 01, TYPE B-12.5 | SY | 12511 | | |
| 77 | 334-1-11 | SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC A | TN | 1032.1 | | |
| 77A | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 200 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| **ROADWAY COMPONENT** | | | | | | |
| 1 | 101-1 | MOBILIZATION | LS | 1 | | |
| 2 | 102-1 | MAINTENANCE OF TRAFFIC | LS | 1 | | |
| 3 | 104-18 | INLET PROTECTION SYSTEM | EA | 5 | | |
| 4 | 104-10-3 | SEDIMENT BARRIER | LF | 22751 | | |
| 5 | 104-11 | FLOATING TURBIDITY BARRIER | LF | 1765 | | |
| 6 | 110-1-1 | CLEARING AND GRUBBING | LS/AC | 52 | | |
| 7 | 110-4-10 | REMOVAL OF EXISTING CONCRETE | SY | 5037 | | |
| 8 | 110-7-1 | MAILBOX, F&I SINGLE | EA | 21 | | |
| 9 | 120-1 | REGULAR EXCAVATION | CY | 140983 | | |
| 9A | 120-4 | SUBSOIL EXCAVATION | CY | 4500 | | |
| 10 | 120-6 | EMBANKMENT | CY | 66245 | | |
| 11 | 160-4 | TYPE B STABILIZATION | SY | 108959 | | |
| 12 | 285-701 | OPTIONAL BASE, BASE GROUP 01, TYPE B-12.5 (CURB PAD) | SY | 1018 | | |
| 13 | 285-709 | OPTIONAL BASE, BASE GROUP 09 | SY | 88614 | | |
| 14 | 285-715 | OPTIONAL BASE, BASE GROUP 15 | SY | 6286 | | |
| 15 | 327-70-19 | MILLING EXISTING ASPH PAVEMENT, 3/4" AVERAGE DEPTH | SY | 2494 | | |
| 16 | 327-70-6 | MILLING EXISTING ASPH PAVEMENT, 1-1/2" AVERAGE DEPTH | SY | 7965 | | |
| 17 | 334-1-13 | SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC C | TN | 15538 | | |
| 18 | 337-7-25 | ASPHALTIC CONCRETE FC, INC BIT, FC-5, PG 76-22 | TN | 100 | | |
| 19 | 337-7-81 | ASPHALTIC CONCRETE FC, TRAFFIC B, FC-12.5, PG 76-22 | TN | 934 | | |
| 20 | 337-7-83 | ASPHALTIC CONCRETE FC, TRAFFIC C, FC-12.5, PG 76-22 | TN | 7493 | | |
| 21 | 339-1 | MISCELLANEOUS ASPHALT PAVEMENT | TN | 5.6 | | |
| 21A | 400-2-11 | CONCRETE CLASS II, RETAINING WALLS | CY | 10.4 | | |
| 21B | 415-1-3 | REINFORCING STEEL - RETAINING WALLS | LB | 962 | | |
| 22 | 425-1-201 | INLETS, CURB, TYPE 9, <10' | EA | 2 | | |
| 23 | 425-1-351 | INLETS, CURB, TYPE P-5, <10' | EA | 5 | | |
| 24 | 425-1-451 | INLETS, CURB, TYPE J-5, <10' | EA | 7 | | |
| 25 | 425-1-461 | INLETS, CURB, TYPE J-6, <10' | EA | 1 | | |
| 26 | 425-1-521 | INLETS, DT BOT, TYPE C, <10' | EA | 1 | | |
| 27 | 425-1-523 | INLETS, DT BOT, TYPE C, J BOT, <10' | EA | 52 | | |

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Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 28 | 425-1-531 | INLETS, DT BOT, TYPE C MODIFIED-BACK OF SIDEWALK, <10' | EA | 22 | | |
| 29 | 425-1-541 | INLETS, DT BOT, TYPE D, <10' | EA | 6 | | |
| 30 | 425-1-543 | INLETS, DT BOT, TYPE D, J BOT, <10' | EA | 3 | | |
| 31 | 425-1-581 | INLETS, DT BOT, TYPE H, <10' | EA | 1 | | |
| 32 | 425-2-71 | MANHOLES, J-7, <10' | EA | 8 | | |
| 33 | 425-2-91 | MANHOLES, J-8, <10' | EA | 10 | | |
| 34 | 430-175-115 | PIPE CULV, OPT MATL, ROUND, 15" S/CD | LF | 43 | | |
| 35 | 430-175-118 | PIPE CULV, OPT MATL, ROUND, 18" S/CD | LF | 4903 | | |
| 36 | 430-175-124 | PIPE CULV, OPT MATL, ROUND, 24" S/CD | LF | 3238 | | |
| 37 | 430-175-130 | PIPE CULV, OPT MATL, ROUND, 30" S/CD | LF | 1855 | | |
| 38 | 430-175-136 | PIPE CULV, OPT MATL, ROUND, 36" S/CD | LF | 2122 | | |
| 39 | 430-175-142 | PIPE CULV, OPT MATL, ROUND, 42" S/CD | LF | 2022 | | |
| 40 | 430-175-215 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 15" S/CD | LF | 496 | | |
| 41 | 430-175-218 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 18" S/CD | LF | 101 | | |
| 42 | 430-175-224 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 24" S/CD | LF | 225 | | |
| 43 | 430-175-230 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 30" S/CD | LF | 150 | | |
| 44 | 430-175-242 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 42" S/CD | LF | 198 | | |
| 45 | 430-175-248 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 48" S/CD | LF | 1362 | | |
| 46 | 430-175-260 | PIPE CULV, OPT MATL, OTHER SHAPE - ELIP/ARCH, 60" S/CD | LF | 160 | | |
| 47 | 430-200-25 | FLARED END SECTION, CONCRETE, 18" | EA | 1 | | |
| 48 | 430-536-100 | STRAIGHT CONCRETE ENDWALLS, 36", SINGLE, 0 DEGREES, ROUND | EA | 2 | | |
| 49 | 430-542-100 | STRAIGHT CONCRETE ENDWALLS, 42", SINGLE, 0 DEGREES, ROUND | EA | 1 | | |
| 50 | 430-530-102 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 0 DEGREES, ELLIP | EA | 2 | | |
| 51 | 430-530-110 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 15 DEGREES, ROUND | EA | 1 | | |
| 52 | 430-530-120 | STRAIGHT CONCRETE ENDWALLS, 30", SINGLE, 30 DEGREES, ROUND | EA | 1 | | |
| 53 | 430-963-2 | PVC PIPE FOR BACK OF SIDEWALK, NON STANDARD DIAMETER | LF | 204 | | |
| 54 | 430-984-125 | MITERED END SECTION, OPTIONAL ROUND, 18" SD | EA | 1 | | |
| 55 | 430-984-129 | MITERED END SECTION, OPTIONAL ROUND, 24" SD | EA | 4 | | |
| 56 | 430-984-623 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 15" SD | EA | 10 | | |
| 57 | 430-984-624 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 24" SD | EA | 1 | | |
| 58 | 430-984-640 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 42" SD | EA | 1 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 59 | 430-984-641 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 48" SD | EA | 2 | | |
| 60 | 430-984-643 | MITERED END SECTION, OPTIONAL - ELLIPTICAL / ARCH, 60" SD | EA | 2 | | |
| 61 | 440-1-50 | UNDERDRAIN | LF | 1475 | | |
| 62 | 515-1-1 | PIPE HANDRAIL - GUIDERAIL, STEEL | LF | 277 | | |
| 62A | 519-78 | BOLLARDS | EA | 14 | | |
| 63 | 520-1-10 | CONCRETE CURB & GUTTER, TYPE F | LF | 24269 | | |
| 64 | 520-2-1 | CONCRETE CURB, TYPE A | LF | 171 | | |
| 65 | 201.3 | CONCRETE CURB, TYPE AB | LF | 373 | | |
| 66 | 527-2 | DETECTABLE WARNINGS | SF | 844 | | |
| 67 | 550-10-222 | FENCING, TYPE B, 5.1-6.0, W/ VINYL COAT | LF | 2550 | | |
| 67A | 550-60-623 | FENCE GATE, TYPE B VINYL, DOUBLE, 12.1-18.0' OPENING | EA | 1 | | |
| 68 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 5943 | | |
| 69 | 522-2 | CONCRETE SIDEWALK AND DRIVEWAYS, 6" | SY | 2579 | | |
| 70 | 536-1-1 | GUARDRAIL (W-BEAM, GENERAL, TL-3) | LF | 383 | | |
| 71 | 536-85-24 | GUARDRAIL END TREATMENT- PARALLEL APPROACH TERMINAL | EA | 2 | | |
| 72 | 570-1-2 | PERFORMANCE TURF, SOD | SY | 92121 | | |
| 73 | | WETLAND MITIGATION PLANTING | LS | 1 | | |
| | | **ROADWAY COMPONENT SUB-TOTAL** | | | | |
| | | **SHARED USE PATH COMPONENT** | | | | |
| 74 | 160-4 | TYPE B STABILIZATION | SY | 16578 | | |
| 75 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 12511 | | |
| | | **SHARED USE PATH COMPONENT SUB-TOTAL** | | | | |
| | | **SIGNING AND PAVEMENT MARKINGS COMPONENT** | | | | |
| 79 | 523-1 | PATTERNED PAVEMENT, VEHICULAR AREAS (GREEN PAINT) | SY | 1321 | | |
| 80 | 700-1-11 | SINGLE POST SIGN, F&I, GROUND MOUNT, UP TO 12 SF | AS | 88 | | |
| 81 | 700-1-12 | SINGLE POST SIGN, F&I, GROUND MOUNT, 12-20 SF | AS | 10 | | |
| 82 | 700-2-14 | MULTI- POST SIGN, F&I GROUND MOUNT, 31-50 SF | AS | 1 | | |
| 83 | 700-2-15 | MULTI- POST SIGN, F&I GROUND MOUNT, 51-100 SF | AS | 6 | | |
| 84 | 705-10-1 | OBJECT MARKER, TYPE 1 | EA | 6 | | |
| 85 | 705-11-1 | DELINEATOR, FLEXIBLE TUBULAR | EA | 1 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 86 | 705-11-3 | DELINEATOR, FLEXIBLE HIGH VISABILITY MEDIAN | EA | 1 | | |
| 87 | 710-11-190 | PAINTED PAVEMENT MARKINGS, STANDARD, WHITE, ISLAND NOSE | SF | 6 | | |
| 88 | 710-11-290 | PAINTED PAVEMENT MARKINGS, STANDARD, YELLOW, ISLAND NOSE | SF | 377 | | |
| 89 | 710-90 | PAINTED PAVEMENT MARKINGS, FINAL SURFACE | LS | 1 | | |
| 90 | 711-11-123 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 12" | LF | 3915 | | |
| 91 | 711-11-124 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 18" FOR DIAGONAL OR CHEVRON | LF | 525 | | |
| 92 | 711-11-125 | THERMOPLASTIC, STANDARD, WHITE, SOLID, 24" FOR STOP LINE | LF | 765 | | |
| 93 | 711-11-141 | THERMOPLASTIC, STANDARD, WHITE, 2-4 DOTTED GUIDELINE/6-10 GAP EXTENSION, 6" | GM | 0.973 | | |
| 94 | 711-11-160 | THERMOPLASTIC, STANDARD, WHITE, MESSAGE | EA | 12 | | |
| 95 | 711-11-170 | THERMOPLASTIC, STANDARD, WHITE, ARROW | EA | 151 | | |
| 96 | 711-11-224 | THERMOPLASTIC, STANDARD, YELLOW, SOLID, 18" FOR DIAGONAL OR CHEVRON | LF | 445 | | |
| 97 | 711-11-241 | THERMOPLASTIC, STD, YELLOW, SOLID, 2-4 DOTTED GUIDELINE, 6" | GM | 0.157 | | |
| 98 | 711-14-125 | THERMOPLASTIC, PREFORMED, WHITE SOLID, 24" FOR CROSSWALK | LF | 2545 | | |
| 99 | 711-14-160 | THERMOPLASTIC,PREFORMED, WHITE, MESSAGE (BICYCLE SYMBOL) | EA | 43 | | |
| 100 | 711-14-170 | THERMOPLASTIC, PREFORMED, WHITE, ARROW (BICYCLE ARROW) | EA | 44 | | |
| 101 | 711-14-660 | THERMOPLASTIC, PREFORMED, MULTI COLOR ROUTE SHIELD | EA | 2 | | |
| 102 | 711-15-101 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SOLID, 6" | GM | 9.627 | | |
| 103 | 711-15-102 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SOLID, 8" | GM | 0.25 | | |
| 104 | 711-15-131 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SKIP, 6", 10-30 SKIP | GM | 3.118 | | |
| 105 | 711-15-133 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, WHITE, SKIP, 12", 3-9 LANE DROP | GM | 0.059 | | |
| 106 | 711-15-201 | THERMOPLASTIC, STANDARD - OPEN GRADED ASPHALT, YELLOW, SOLID, 6" | GM | 4.57 | | |
| **SIGNING AND PAVEMENT MARKINGS COMPONENT SUB-TOTAL** | | | | | | |
| **SIGNALIZATION COMPONENT** | | | | | | |
| 107 | 110-4-10 | REMOVAL OF EXISTING CONCRETE | SY | 5 | | |
| 108 | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" THICK | SY | 5 | | |
| 109 | 630-2-11 | CONDUIT, FURNISH & INSTALL, OPEN TRENCH | LF | 1105 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 110 | 630-2-12 | CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE | LF | 21215 | | |
| 111 | 630-2-14 | CONDUIT, FURNISH & INSTALL, ABOVEGROUND | LF | 40 | | |
| 112 | 632-7-1 | SIGNAL CABLE- NEW OR RECONSTRUCTED INTERSECTION, FURNISH & INSTALL | PI | 4 | | |
| 113 | 632-7-6 | SIGNAL CABLE, REMOVE- INTERSECTION | PI | 2 | | |
| 114 | 633-1-121 | FIBER OPTIC CABLE, F&I, UNDERGROUND,2-12 FIBERS | LF | 4075 | | |
| 115 | 633-1-122 | FIBER OPTIC CABLE, F&I, UNDERGROUND,13-48 FIBERS | LF | 17345 | | |
| 116 | 633-1-620 | FIBER OPTIC CABLE, REMOVE, UNDERGROUND | LF | 3185 | | |
| 117 | 633-2-31 | FIBER OPTIC CONNECTION, INSTALL, SPLICE | EA | 28 | | |
| 118 | 633-2-32 | FIBER OPTIC CONNECTION, INSTALL, TERMINATION | EA | 72 | | |
| 119 | 633-3-11 | FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE ENCLOSURE | EA | 8 | | |
| 120 | 633-3-12 | FIBER OPTIC CONNECTION HARDWARE, F&I, SPLICE TRAY | EA | 8 | | |
| 121 | 633-3-16 | FIBER OPTIC CONNECTION HARDWARE, F&I, PATCH PANEL- FIELD TERMINATED | EA | 6 | | |
| 122 | 634-4-600 | SPAN WIRE ASSEMBLY, REMOVE- POLES REMAIN | PI | 1 | | |
| 123 | 635-2-11 | PULL & SPLICE BOX, F&I, 17" x 30" COVER SIZE | EA | 71 | | |
| 124 | 635-2-12 | PULL & SPLICE BOX, F&I, 24" X 36" COVER SIZE | EA | 32 | | |
| 125 | 635-2-13 | PULL & SPLICE BOX, F&I, 30" X 60" RECTANGULAR OR 36" ROUND COVER SIZE | EA | 5 | | |
| 126 | 639-1-122 | ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR | AS | 4 | | |
| 127 | 639-1-420 | ELECTRICAL POWER SERVICE, RELOCATE, UNDERGROUND | AS | 1 | | |
| 128 | 639-1-610 | ELECTRICAL POWER SERVICE, REMOVE OVERHEAD | AS | 1 | | |
| 129 | 639-1-620 | ELECTRICAL POWER SERVICE, REMOVE UNDERGROUND | AS | 1 | | |
| 130 | 639-2-1 | ELECTRICAL SERVICE WIRE, FURNISH & INSTALL | LF | 2105 | | |
| 131 | 639-2-6 | ELECTRICAL SERVICE WIRE, REMOVE | LF | 1760 | | |
| 132 | 639-3-11 | ELECTRICAL SERVICE DISCONNECT, F&I, POLE MOUNT | EA | 2 | | |
| 133 | 639-4-6 | EMERGENCY GENERATOR - PORTABLE, INSTALL HOUSING ONLY | EA | 3 | | |
| 134 | 641-2-12 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE | EA | 6 | | |
| 135 | 641-2-13 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-III | EA | 7 | | |
| 136 | 641-2-60 | PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- PEDESTAL/SERVICE POLE | EA | 2 | | |

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| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 137 | 641-2-80 | PRESTRESSED CONCRETE POLE, COMPLETE POLE REMOVAL- POLE 30' AND GREATER | EA | 2 | | |
| 138 | 646-1-11 | ALUMINUM SIGNALS POLE, PEDESTAL | EA | 30 | | |
| 139 | 646-1-60 | ALUMINUM SIGNALS POLE, REMOVE | EA | 4 | | |
| 140 | 649-21-15 | STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 70' | EA | 6 | | |
| 141 | 649-21-21 | STEEL MAST ARM ASSEMBLY, FURNISH AND INSTALL, SINGLE ARM 78' | EA | 7 | | |
| 142 | 649-26-3 | STEEL MAST ARM ASSEMBLY, REMOVE, SHALLOW FOUNDATION- BOLT ON ATTACHMENT | EA | 1 | | |
| 143 | 650-1-14 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 3 SECTION, 1 WAY | AS | 23 | | |
| 144 | 650-1-16 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 4 SECTION, 1 WAY | AS | 10 | | |
| 145 | 650-1-19 | VEHICULAR TRAFFIC SIGNAL, FURNISH & INSTALL ALUMINUM, 5 SECTION CLUSTER, 1 WAY | AS | 15 | | |
| 146 | 650-1-60 | VEHICULAR TRAFFIC SIGNAL, REMOVE- POLES TO REMAIN | AS | 3 | | |
| 147 | 653-1-11 | PEDESTRIAN SIGNAL, FURNISH & INSTALL LED COUNTDOWN, 1 WAY | AS | 31 | | |
| 148 | 660-3-11 | VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL CABINET EQUIPMENT | EA | 10 | | |
| 149 | 660-3-12 | VEHICLE DETECTION SYSTEM- MICROWAVE, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT | EA | 29 | | |
| 150 | 660-4-60 | VEHICLE DETECTION SYSTEM- VIDEO, REMOVE | EA | 1 | | |
| 151 | 660-6-121 | VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, CABINET EQUIPMENT | EA | 4 | | |
| 152 | 660-6-122 | VEHICLE DETECTION SYSTEM- AVI, BLUETOOTH, FURNISH & INSTALL, ABOVE GROUND EQUIPMENT | EA | 4 | | |
| 153 | 665-1-11 | PEDESTRIAN DETECTOR, FURNISH & INSTALL, STANDARD | EA | 31 | | |
| 154 | 670-5-110 | TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA | AS | 2 | | |
| 155 | 670-5-111 | TRAFFIC CONTROLLER ASSEMBLY, F&I, NEMA, 1 PREEMPTION | AS | 1 | | |
| 156 | 670-5-400 | TRAFFIC CONTROLLER ASSEMBLY, MODIFY | AS | 1 | | |
| 157 | 670-5-600 | TRAFFIC CONTROLLER ASSEMBLY, REMOVE CONTROLLER WITH CABINET | AS | 2 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 158 | 676-2-122 | ITS CABINET, FURNISH & INSTALL, POLE MOUNT WITH SUNSHIELD, 336S, 24" W X 46" H X 22" D | EA | 1 | | |
| 159 | 676-2-400 | ITS CABINET, RELOCATE | EA | 1 | | |
| 160 | 676-3-10 | SMALL EQUIPMENT ENCLOSURE, FURNISH AND INSTALL, LESS THAN 10"W X 13"H X 11" D | EA | 3 | | |
| 161 | 676-3-30 | SMALL EQUIPMENT ENCLOSURE, RELOCATE, >10" W x 13" H x 11" D | EA | 1 | | |
| 162 | 682-1-133 | ITS CCTV CAMERA, F&I, DOME ENCLOSURE - NON-PRESSURIZED, IP, HIGH DEFINITION | EA | 5 | | |
| 163 | 682-1-400 | ITS CCTV CAMERA, RELOCATE | EA | 1 | | |
| 164 | 684-1-1 | MANAGED FIELD ETHERNET SWITCH, FURNISH & INSTALL | EA | 5 | | |
| 165 | 685-1-13 | UNINTERRUPTIBLE POWER SUPPLY, FURNISH AND INSTALL, LINE INTERACTIVE WITH CABINET | EA | 4 | | |
| 166 | 685-1-60 | UNINTERRUPTIBLE POWER SUPPLY, REMOVE- POLE/CABINET REMAINS | EA | 1 | | |
| 167 | 700-3-201 | SIGN PANEL, FURNISH & INSTALL OVERHEAD MOUNT, UP TO 12 SF | EA | 28 | | |
| 168 | 700-5-22 | INTERNALLY ILLUMINATED SIGN, FURNISH & INSTALL, OVERHEAD MOUNT, 12-18 SF | EA | 13 | | |
| 169 | 700-5-50 | INTERNALLY ILLUMINATED SIGN, RELOCATE | EA | 1 | | |
| 170 | 700-10-400 | DMS SUPPORT STRUCTURE, RELOCATE | EA | 1 | | |
| **SIGNALIZATION COMPONENT SUB-TOTAL** | | | | | | |
| **LIGHTING COMPONENT** | | | | | | |
| 171 | 630-2-11 | CONDUIT, FURNISH & INSTALL, OPEN TRENCH | LF | 285 | | |
| 172 | 630-2-12 | CONDUIT, FURNISH & INSTALL, DIRECTIONAL BORE | LF | 20600 | | |
| 173 | 635-2-11 | PULL & SPLICE BOX, F&I, 13" X 24" COVER SIZE | EA | 132 | | |
| 174 | 639-1-122 | ELECTRICAL POWER SERVICE, F&I, UNDERGROUND, METER PURCHASED BY CONTRACTOR | AS | 2 | | |
| 175 | 639-2-1 | ELECTRICAL SERVICE WIRE, FURNISH & INSTALL | LF | 120 | | |
| 176 | 641-2-12 | PRESTRESSED CONCRETE POLE, F&I, TYPE P-II SERVICE POLE (12') | EA | 2 | | |
| 177 | 715-1-12 | LIGHTING CONDUCTORS, F&I, INSULATED, NO.8 - 6 | LF | 70861 | | |
| 178 | 715-4-13 | LIGHT POLE COMPLETE, FURNISH & INSTALL STANDARD POLE STANDARD FOUNDATION, 40' MOUNTING HEIGHT | EA | 1 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 179 | 715-4-32 | LIGHT POLE COMPLETE, F&I, UTILITY CONFLICT POLE, INDEX 17515/715-002 FOUNDATION, 35' MOUNTING HEIGHT | EA | 114 | | |
| 180 | 715-4-42 | LIGHT POLE COMPLETE, F&I, UTILITY CONFLICT POLE, SPECIAL FOUNDATION, 35' MOUNTING HEIGHT | EA | 8 | | |
| 181 | 715-7-11 | LOAD CENTER, F&I, SECONDARY VOLTAGE | EA | 2 | | |
| 182 | 715-11-211 | LUMINAIRE, F&I- REPLACE EXISTING LUMINAIRE ON EXISTING POLE/ARM, ROADWAY, COBRA HEAD | EA | 4 | | |
| 183 | 715-500-1 | POLE CABLE DISTRIBUTION SYSTEM, FURNISH AND INSTALL, CONVENTIONAL | EA | 123 | | |
| | | **LIGHTING COMPONENT SUB-TOTAL** | | | | |
| | | **WATER MAIN UTILITY COMPONENT** | | | | |
| 184 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| ~~185~~ | ~~1050-61124~~ | ~~UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24"~~ | ~~LF~~ | 0 | | |
| 186 | 1050-61130 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 30" | LF | 197 | | |
| 187 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" | LF | 92 | | |
| 188 | 1050-61114 | UTILITY PIPE -- STEEL, F&I, CASING, 14" | LF | 424 | | |
| 189 | 1050-61130 | UTILITY PIPE -- STEEL, F&I, CASING, 30" | LF | 299 | | |
| 190 | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" | LF | 160 | | |
| 191 | 1050-61142 | UTILITY PIPE -- STEEL, F&I, CASING, 48" | LF | 337 | | |
| 192 | | Tie-into Existing 6" WM, STA 332+99, 336+05, 353+26, 378+21, 385+01 | ~~LS~~ EA | 5 | | |
| 193 | | Tie-into Existing 8" WM, STA 311+54 | ~~LS~~ EA | 1 | | |
| 193A | | Tie-into Existing 10" WM STA 361+15 | EA | 1 | | |
| 194 | | Tie-into Existing 16" WM, STA 299+15, 339+78, 368+10, 385+07 | ~~LS~~ EA | 4 | | |
| 195 | | Tie-into Existing 30" WM, STA 339+46, 384+40 | ~~LS~~ EA | 2 | | |
| ~~196~~ | ~~1080-23108~~ | ~~UTILITY FIXTURE -- TAPPING SAD/SL, F&I, 8"~~ | ~~EA~~ | 0 | | |
| 197 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 5 | | |
| 198 | 1080-24106 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 6" | EA | 5 | | |
| 199 | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 8" | EA | 2 | | |
| 200 | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" | EA | 1 | | |
| 201 | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" | EA | 10 | | |
| 202 | 1080-24130 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 30" | EA | 7 | | |
| 203 | 1080-24106 | UTILITY FIXTURE -- CHECK VALVE ASSEMBLY (Double), MJ, F&I, 6" | EA | 1 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 204 | 1080-25102 | UTILITY FIXTURE -- BLOWOFF ASSEMBLY, F&I, 2" | EA | 1 | | |
| 205 | 1050-51206 | UTILITY PIPE -- DI, F&I, WATER, 6" | LF | 647 | | |
| 206 | 1050-51208 | UTILITY PIPE -- DI, F&I, WATER, 8" | LF | 155 | | |
| 207 | 1050-51210 | UTILITY PIPE -- DI, F&I, WATER, 10" | LF | 4 | | |
| 208 | 1050-51216 | UTILITY PIPE -- DI, F&I, WATER, 16" | LF | 4480 | | |
| 209 | 1050-51230 | UTILITY PIPE -- DI, F&I, WATER, 30" | LF | 5070 | | |
| 210 | 1080-29106 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 6" | EA | 7 | | |
| 211 | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" | EA | 4 | | |
| 212 | 1080-29116 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 16" | EA | 29 | | |
| 213 | 1080-29130 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 30" | EA | 20 | | |
| 214 | 1055-51106 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 6" | EA | 1 | | |
| 215 | 1055-51116 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 16" | EA | 2 | | |
| 216 | 1055-51106 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 6" | EA | 6 | | |
| 217 | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 8" | EA | 3 | | |
| 218 | 1055-51116 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 16" | EA | 13 | | |
| 219 | 1055-51130 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 30" | EA | 12 | | |
| 220 | 1055-51106 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 6" | EA | 6 | | |
| 221 | 1055-51116 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 16" | EA | 6 | | |
| 222 | 1055-51130 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 30" | EA | 4 | | |
| 223 | 1055-51116 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 16" | EA | 2 | | |
| 224 | 1055-51130 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 30" | EA | 4 | | |
| 225 | 1055-51330 | UTILITY FITTINGS, DI F&I, REDUCER,30"x16" | EA | 2 | | |
| 225A | 1055-51406 | UTILITY FITTINGS, DI F&I, UNION, 6" | EA | 2 | | |
| 226 | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" | EA | 1 | | |
| 227 | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" | EA | 2 | | |
| 228 | 1055-5130 | UTILITY FITTINGS, DI F&I, UNION, 30" | EA | 1 | | |
| 229 | 1055-51206 | UTILITY FITTINGS, DI F&I, TEE, 6" X 6" | EA | 1 | | |
| 230 | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 6" | EA | 2 | | |
| 231 | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 8" | EA | 2 | | |
| 232 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 6" | EA | 3 | | |
| 233 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 10" | EA | 1 | | |

Bidder Name: _____

Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 234 | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 16" | EA | 2 | | |
| 235 | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X30" | EA | 1 | | |
| 236 | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X6" | EA | 1 | | |
| 237 | 1080-21101 | 1" Service, Short | EA | 10 | | |
| 238 | 1080-21101 | 1" Service, Long | EA | 11 | | |
| 238A | 1080-21102 | 2" Service, Short | EA | 1 | | |
| 239 | 1050-16003 | UTILITY PIPE,REMOVE & DISPOSE, 5-7.9" -6 | LF | 317 | | |
| 240 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -8 | LF | 80 | | |
| 241 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -16 | LF | 4436 | | |
| 242 | 1050-16005 | UTILITY PIPE,REMOVE & DISPOSE, 20-49.9" -30 | LF | 4791 | | |
| 243 | 1644900 | FIRE HYDRANT, REMOVE | EA | 7 | | |
| 243A | | FIRE HYDRANT, F&I, BLOW OFF ASSEMBLY | EA | 4 | | |
| 244 | 1644112 | FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6" | EA | 13 | | |
| 245 | 9999-3 | RECORD DRAWINGS- WATER MAIN | LS | 1 | | |
| | | **WATER MAIN UTILITY COMPONENT SUB-TOTAL** | | | | |
| | | **FORCE MAIN UTILITY COMPONENT** | | | | |
| 246 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| 247 | 1050-61124 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24" | LF | 53 | | |
| 248 | 1050-61112 | UTILITY PIPE -- STEEL, F&I, CASING, 12" | LF | 112 | | |
| 249 | 1050-61124 | UTILITY PIPE -- STEEL, F&I, CASING,24" | LF | 149 | | |
| 250 | | Tie-into Existing 4" FM, STA 302+93, 310+64, 326+70, 338+35 | ~~LS~~ EA | 4 | | |
| 251 | | Tie-into Existing 12" FM, STA 300+72, 339+10, 358+55 | ~~LS~~ EA | 3 | | |
| 251A | | Tie-into Existing 16" FM, STA 353+19, 391+42, 393+10 | EA | 3 | | |
| 252 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 2 | | |
| 253 | 1080-33104 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 4" | EA | 3 | | |
| 254 | 1080-33110 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 10" | EA | 1 | | |
| 255 | 1080-33112 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 12" | EA | 14 | | |
| 256 | 1050-31204 | UTILITY PIPE -- PVC, F&I, SEWER, 4" | LF | 202 | | |
| 257 | 1050-31210 | UTILITY PIPE -- PVC, F&I, SEWER, 10" | LF | 40 | | |
| 258 | 1050-31212 | UTILITY PIPE -- PVC, F&I, SEWER, 12" | LF | 4504 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 258A | 1050-31216 | UTILITY PIPE -- PVC, F&I, SEWER, 16" | LF | 150 | | |
| 259 | 1080-29104 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 4" | EA | 5 | | |
| 260 | 1080-29112 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 12 | EA | 20 | | |
| 260A | 1080-27112 | UTILITY FIXTURE- LINE STOP ASSEMBLY, F&I, 12" | EA | 2 | | |
| 261 | 1055-51104 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 4" | EA | 2 | | |
| 262 | 1055-51104 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 4" | EA | 3 | | |
| 263 | 1055-51112 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 12" | EA | 2 | | |
| 264 | 1055-51112 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 12" | EA | 8 | | |
| 265 | 1055-51112 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 12" | EA | 5 | | |
| 265A | 1055-51116 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 16" | EA | 4 | | |
| 266 | 1055-51404 | UTILITY FITTINGS, DI F&I, UNION, 4" | EA | 3 | | |
| 267 | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" | EA | 1 | | |
| 268 | 1055-51512 | UTILITY FITTINGS, DI F&I, CAP/PL, 12" | EA | 2 | | |
| 268A | 1055-51316 | UTILITY FITTINGS, DI F&I, REDUCER, 16"x12" | EA | 1 | | |
| 269 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X4" | EA | 4 | | |
| 270 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X10" | EA | 1 | | |
| 271 | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X12" | EA | 3 | | |
| 272 | 1050-16002 | UTILITY PIPE, REMOVE & DISPOSE, 2-4.9" -4 | LF | 1092 | | |
| 273 | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 5-7.9" -6 | LF | 3827 | | |
| 274 | 1050-16004 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -12 | LF | 536 | | |
| 274A | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -16 | LF | 20 | | |
| 275 | 9999-3 | RECORD DRAWINGS- FORCE MAIN | LS | 1 | | |
| | | **FORCE MAIN UTILITY COMPONENT SUB-TOTAL** | | | | |
| | | **RECLAIMED WATER UTILITY COMPONENT** | | | | |
| 276 | 101-1 | MOBILIZATION/DEMOBILIZATION | LS | 1 | | |
| 277 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" | LF | 223 | | |
| 278 | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" | LF | 365 | | |
| 279 | | Tie-into Existing 16" PVC RCW, STA 367+14 | EA | 1 | | |
| 280 | | Tie-into Existing 8" RCW GV , STA 310+63, 386+21 | EA | 2 | | |
| 281 | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 8" | EA | 4 | | |
| 282 | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" | EA | 6 | | |

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# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 283 | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" | EA | 2 | | |
| 281A | 1080-24120 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 20" | EA | 12 | | |
| 282 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" | EA | 5 | | |
| 285 | 1050-31208 | UTILITY PIPE -- PVC, F&I, RECLAIM, 8" | LF | 29 | | |
| 286 | 1050-31210 | UTILITY PIPE -- PVC, F&I, RECLAIM, 10" | LF | 2670 | | |
| 287 | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 8" | LF | 347 | | |
| 288 | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 10" | LF | 160 | | |
| 289 | 1050-51216 | UTILITY PIPE -- DI, F&I, RECLAIM, 16" | LF | 70 | | |
| 290 | 1050-51220 | UTILITY PIPE -- DI, F&I, RECLAIM, 20" | LF | 6550 | | |
| 291 | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" | EA | 6 | | |
| 291A | 1080-29116 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 16" | EA | 7 | | |
| 292 | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 8" | EA | 6 | | |
| 293 | 1055-51108 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 8" | EA | 2 | | |
| 294 | 1055-51110 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 10" | EA | 4 | | |
| 295 | 1055-51110 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 10" | EA | 2 | | |
| 296A | 1055-51116 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 16" | EA | 1 | | |
| 197 | 1055-51120 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 20" | EA | 6 | | |
| 298 | 1055-51120 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 20" | EA | 6 | | |
| 299 | 1055-51120 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 20" | EA | 14 | | |
| 300 | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" | EA | 1 | | |
| 300A | 1055-51410 | UTILITY FITTINGS, DI F&I, UNION, 10" | EA | 1 | | |
| 301 | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" | EA | 1 | | |
| 301A | 1055-51320 | UTILITY FITTINGS, DI F&I, REDUCER, 20" X 10" | EA | 1 | | |
| 302 | 1055-51210 | UTILITY FITTINGS, DI F&I, TEE, 10" X 8" | EA | 2 | | |
| 303 | 1055-51508 | UTILITY FITTINGS, DI F&I, CAP/PL, 8" | EA | 2 | | |
| 304 | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" | EA | 1 | | |
| 305 | 1055-51520 | UTILITY FITTINGS, DI F&I PLUG 20" | EA | 3 | | |
| 306 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X8" | EA | 2 | | |
| 307 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X16" | EA | 1 | | |
| 308 | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X20" | EA | 2 | | |
| 309 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -8 | LF | 105 | | |

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Authorized Signature: _____

# BID FORM

**MOCCASIN WALLOW ROAD- FROM US41 TO GATEWAY BLVD.**
**BID "B" BASED ON COMPLETION TIME OF 830 CALENDAR DAYS**

| Legend | | |
|---|---|---|
| New Bid Item | Updated Bid Item | Removed Bid Item |

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 310 | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -16 | LF | 50 | | |
| 311 | 1050-16005 | UTILITY PIPE,REMOVE & DISPOSE, 20-49.9" -20 | LF | 152 | | |
| 312 | 1644113 | FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6" | EA | 3 | | |
| 312A | | FIRE HYDRANT, F&I, BLOW OFF ASSEMBLY | EA | 3 | | |
| 313 | 9999-3 | RECORD DRAWINGS- RECLAIMED WATER | LS | 1 | | |
| | | **RECLAIMED WATER UTILITY COMPONENT SUB-TOTAL** | | | | |
| | **TOTAL BASE BID "B" - Based on Completion Time of 830 Calendar Days** | | | | | |
| | **CONTRACT CONTINGENCY WORK (USED ONLY WITH COUNTY APPROVAL)** | | | 10% | | |
| | **TOTAL OFFER FOR BID "B" with Contract Contingency - Based on Completion Time of 830 Calendar Days** | | | | | |

**OPTIONAL BID ITEMS FOR SHARED USE PATH COMPONENT**

The following prices are for optional items for the Shared use Path Component and may be awarded as replacement items for bid item 75. Should the County choose to award the optional bid items for the shared Use Path Component, the award shall be made to the responsive and responsible bidder having the lowest total offer, minus bid item 75, plus the optional bid items below.

**SHARED USE PATH COMPONENT OPTION #1**

| ITEM | PAY ITEM NO. | DESCRIPTION | UNIT | ESTIMATED QUANTITY | UNIT PRICE | TOTAL PRICE |
|---|---|---|---|---|---|---|
| 76 | 285-701 | OPTIONAL BASE, BASE GROUP 01, TYPE B-12.5 | SY | 12511 | | |
| 77 | 334-1-11 | SUPERPAVE ASPHALTIC CONCRETE, TRAFFIC A | TN | 1032.1 | | |
| 77A | 522-1 | CONCRETE SIDEWALK AND DRIVEWAYS, 4" | SY | 200 | | |

Bidder Name: _____

Authorized Signature: _____

**MANATEE COUNTY GOVERNMENT, PUBLIC CONSTRUCTION BOND**
NUMBER _____

BY THIS BOND,

We_____, (Name of Contractor)

located at_____, (Address) as

Principal and _____, (Name of Surety)

a corporation whose address is _____

are bound to Manatee County, a political subdivision of the State of Florida, herein called County, in the sum of $<amount>, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITIONS OF THIS BOND is that if Principal:

1. Performs Agreement No. <number>, (Agreement) between Principal and County for construction of <Title of Project>, the Agreement being made a part of this bond by reference, at the times and in the manner prescribed in the Agreement; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the Work provided for in the Agreement; and
3. Pays County all losses, damages, expenses, costs, and attorney's fees, including appellate proceedings, that County sustains because of a default by Principal under the Agreement; and
4. Performs the guarantee of all Work and materials furnished under the Agreement for the time specified in the Agreement, then this bond is void; otherwise, it remains in full force. Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Section 255.05(2), Florida Statutes.

Any changes in or under the Agreement documents and compliance or noncompliance with any formalities connected with the Agreement, or the changes, do not affect Surety's obligation under this bond.

DATED ON _____

**CONTRACTOR AS PRINCIPAL**

Company Name: _____(Print Name)

Signature: _____

Printed Name and Title: _____

Date: _____

(Corporate Seal)

**SURETY**

Company Name: _____(Print Name)

Signature: _____

Printed Name and Title: _____

Date: _____

(Corporate Seal)

**SURETY AGENT OR BROKER**

Company Name: _____(Print Name)

Address: _____

Telephone: _____

Email: _____

Licensed Florida Insurance Agent? ☐ Yes ☐ No

License No.: _____

State of: _____

County of: _____

City of: _____

# SPECIAL PROVISIONS

FOR

## Moccasin Wallow Road from US 41 to West of I-75
## Roadway Improvements

COUNTY PROJECT No. 6092560, 6092570, 6092590,6066180

April 2022

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Procurement Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-4501

PREPARED BY:

Cardno, Inc.
380 Park Place Boulevard
Suite 300
Clearwater, Florida 33759
(727) 531-3505

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# SPECIAL PROVISIONS

## GENERAL

This Section amends, enhances or otherwise revises the Technical Specifications.

## CONTRACT PLANS

The Contract Plans will include the following plan sets:

1. Roadway Plans
2. Signing & Pavement Marking Plans
3. Signalization Plans
4. Lighting Plans
5. Utility Plans

## STANDARD SPECIFICATIONS

The standard Specifications to be used for this work shall be Division II and III of the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction*, January 2022 Edition and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended under this Contract, or as noted on the construction plans meeting the Manatee County Highway, Traffic & Stormwater Standards (dated 2015).

The Contractor's work shall follow the Manatee County Public Works Utility Standards (dated 2020) and current Specifications for all utility work.

These specifications cover the usual construction requirements for work specified by the County Public Works Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions.

The apparent silence of the Specifications as to any detail or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used. Interpretation of these specifications shall be made upon that basis.

## PRIORITY

In any instance where there is an apparent conflict between these technical specifications, special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these technical specifications shall be controlling.

## NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item.

## CONSTRUCTION STAKING

All construction staking and survey work shall be completed prior to Clearing and Grubbing activities and shall be performed by a Registered Land Surveyor. The right-of-way shall be staked and shall include any easements (TCE or permanent) and maintained through the duration of construction. Right-of- way stakes shall be placed at all right-of-way corners and a maximum of 200 feet between corners, and shall be visible for contractor personnel, utility companies, and County representatives.

## E-BUILDER ENTERPRISE™

a. **e-Builder Enterprise™: Project Management Tool**
The successful bidder shall be required to use the Internet web-based project management tool, e-Builder Enterprise™ (e-Builder), and protocols included in that software during this project; and shall take any training courses required by the Owner, at no additional cost to the Owner. The use of this project management system does not replace or change any contractual responsibilities of the participants.

User registration, electronic and computer equipment, and Internet connections required for e-Builder are the responsibility of the successful Bidder and its subcontractors. The sharing of user accounts is prohibited. Individuals who are granted log-in access to the County e-Builder platform shall be responsible for the proper use of their passwords and access to data as agents of the successful Bidder. For documents requiring original signature such as Contracts, Change Orders, Application and Certification for Payment, and Field Directives, paper documents may be required in addition to submittal via e-Builder.

b. **County Responsibilities**
User licenses for e-Builder Enterprise™ will be provided and paid for by the Owner based on assigned roles for the project including Project Manager, Project Fiscal, Project Superintendent, and others as may be required.

## MATERIALS

a. **Delivery Tickets**: It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

b. **Job Mix Formula for Asphaltic Concrete**: Attention is directed to the requirement that job mix formulas for asphaltic concrete, of the type specified, be

submitted at least 14 days before plant operations begin. The submitted formula should be derived, or approved, by the laboratory approved by the Owner and/or its agents. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.

c. **Job Mix Formula for Portland Cement Concrete**: Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the Owner and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

## LABORATORY TESTING

Testing for the Work shall be performed at no expense to the Contractor. However, any test that fails or is not performed, as a result of the Contractor's action will, in turn, be back-charged to the Contractor, including the cost of all re-testing due to defective materials or construction. The testing laboratory shall be approved by the County.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition.

Testing shall also be in accordance with the applicable portions of the *FDOT Standard Specifications* and these specifications.

## MEASUREMENT AND PAYMENT

a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.

c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.

d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and embraced under this contract. Such compensation shall also

be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the Owner.

e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

f. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The Owner will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities.

   No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the Engineer.

g. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

## RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

## COOPERATION WITH OTHERS

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The Owner shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

The Contractor shall coordinate with owner of the driveways impacted by construction to minimize closures or limited access. Contractor shall make every effort not to disrupt business access during business hours nor during operations unless otherwise approved by owner or County. The contractor shall coordinate impacts to owners abutting ROW.

## SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during prosecution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report.

Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner. The Owner also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

## PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule with the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work at the monthly meeting. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

The Contractor shall provide a revised CPM schedule if, at any time, the County considers the completion date to be in jeopardy because of "activities behind schedule". An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised CPM schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method employed by the Contractor shall be the same as for the original CPM schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

**PROJECT IDENTIFICATION SIGNS**

The Contractor shall be responsible for furnishing, installing and maintaining three (3) County project identification signs and removal of same upon completion of the construction. Project identification sign shall be constructed and maintained at the project site as directed by the Owner. The Contractor shall erect, maintain and relocate the sign as directed for the duration of the Project.

The Contractor shall mount the sign using 4-inch pressure treated lumber or as approved by the Engineer, and other supports as required, at a location mutually agreed by the Engineer and the Contractor.

The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the Owner for the sign verbiage before fabrication. The signs shall be painted with graphic content to include:

- Title of Project
- Name of Owner
- Names and Titles of authorities, as directed by Owner
- Prime Contractor
- Construction Cost

The signs shall be erected prior to commencement of work at a lighted location of high public visibility, adjacent to the main entrance at each end of the project, as approved by the Engineer and Owner.

The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density ¾-inch exterior plywood without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of the project. Hardware shall be galvanized. The surface of the sign shall be of exterior softwood plywood with medium density overlay.

Painting shall be constructed with materials to resist weathering and fading during the construction period. Experienced professionals shall perform painting. Graphic design and style shall be in accordance with the following:

- The signs will be placed in accordance with Manatee County Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles.

Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under Pay Item Number 1 (101-1) for Mobilization. The sign will remain the property of the Owner upon completion of the Project unless otherwise directed.

# MOCCASIN WALLOW ROAD
# FROM US 41 TO WEST OF I-75

Board of County Commissioners

KEVIN VAN OSTENBRIDGE

**CHAIR**

REGGIE BELLAMY

GEORGE KRUSE

VANESSA BAUGH

JAMES SATCHER

MISTY SERVIA

CAROL WHITMORE

CONSTRUCTION COST
$ (Enter Amount)

PRIME CONTRACTOR
(Enter Contractor Name)

## SOIL EROSION AND SILTATION

The Contractor shall plan and control the Work to minimize all soil erosion and the siltation of drains and canals resulting from such erosion.

At the pre-construction meeting, the Contractor shall present his proposed plan and schedule, which shall specifically indicate the proposed usage of temporary erosion control features. The plan shall include:

- **Synthetic Bales** designed, furnished and installed by the Contractor in accordance with the plans, and FDOT Specifications Section 104.

- **Floating turbidity barriers and staked turbidity barriers** furnished and installed by the Contractor as shown on the plans and/or required by conditions of the permits and as outlined in FDOT Specifications Section 104.

## SHOP DRAWINGS

The Contractor shall submit to the Engineer of Record (EOR) for approval, all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Work. The shop drawing shall be submitted in pdf format using the Submittals process in the e-Builder project management tool. Each shop drawing shall have a cover sheet and reference the submittal number, following the sample format provided in the contact documents.

The working and shop drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. The working drawings and shop drawings shall include, but not be limited to:

- Traffic Control Plan
- Erosion Control Plan
- Shop Drawings as required by FDOT Standard Specifications

E-Builder will serve as the Submittal Activity Record (Logbook) and historical record of the activity and can be always accessed by all members of the project. It can serve as a verification of review time, to respond to inquiries of a particular submittal's status and as a record of manpower effort to aid in estimating and allocating future workload. The contractor can request “Submittals Contractors instruction PDF” from Project Manager for instruction or access Training Materials in eBuilder.

## SUBSOIL EXCAVATION

The contractor shall detect and remove all unsuitable material, such as plastic/organic soil, rock, hard plane, debris and trash, within project limit, following FDOT Standard Plans Index 120-002. Payment for subsoil excavation shall be included in the subsoil excavation pay items.

## DEWATERING, SHEETING AND BRACING

The contractor shall determine the need of dewatering, sheeting and bracing to facilitate the construction, conforming to current SWFWMD/FDEP rule and OSHA safety criteria. Payment for dewatering, sheeting and bracing shall be included in the applicable item for earthwork, unless separate pay items are specified.

**Approval of Dewatering Plan**:
At least 10 days prior to the commencement of any dewatering activity, the Contractor shall obtain the approval from SWFMWD, or FDEP (if water needs to be discharged offsite into the state surface water), and submit the permit with a detailed description of the proposed dewatering system to the Project Manager. The dewatering plan shall include design computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

## EARTHWORK

Quantities included on cross-section sheets, if any, represent estimated in-place quantities and do not include shrinkage and expansion factors. The quantities were calculated by the method with average end areas between the station-to-station limits. Payment for Earthwork shall be made based on average end area method calculations. Contractor shall provide supporting survey data (before and after cross-sections) and calculations for payment purposes

The ownership of dirt excavated from the easement area shall be determined by Manatee County engineer.

## TEMPORARY PAVEMENT

Temporary pavement shall consist of a minimum of Optional Base Group 4 and one (1) inch of Type SP structural course (Traffic C) over a firm, unyielding, well-compacted subgrade. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs.

The Temporary pavement shall provide adequate cover and protection of existing utilities. It is the Contractor’s responsibility to coordinate with utility companies to repair any damages to the exiting utilities during the construction at no additional cost to the County.

Payment for the temporary pavement and maintenance of this pavement shall be included under Maintenance of Traffic.

## MAINTENANCE OF TRAFFIC

The Contractor shall provide continual access to local businesses during operational hours and coordinate with residents on driveway closure. Lane closures with major disruption and delays not allowed, must be with alternating traffic, are only permitted under special approval, and during non-rush hour traffic times (9 AM-2 PM). No work on weekends or legal holidays without written permission of the County Inspector, except emergency work. Road closures not allowed between the hours of 7AM to 7PM per County Ordinance. Temporary by-pass lanes may be constructed at all tie-in locations during the MOT phasing. The payment for temporary by-pass lanes shall be included in Maintenance of Traffic. Business Entrance signs per FDOT Standard Plans Index 102-600 shall be placed at all business entrance points and maintained during all phases of construction. Payment for these items shall be included under the pay item for Maintenance of Traffic.

Temporary pavement marking shall be paid under Maintenance of Traffic. Temporary Striping and Marking during 30 day cure time of the asphalt shall be part of the pay item for Maintenance of Traffic, in accordance with FDOT Standard Specifications Section 102-1.

The Contractor shall prepare a Maintenance of Traffic plan and submit it to the Project Manager for review prior to implementation. It must comply with all FDOT safety criteria, FDOT Standard Plans Index 102-series, FHWA and MUTCD standards, and allow for traffic to operate in daytime or nighttime. The Maintenance of Traffic Plan will require the seal of a Florida licensed Professional Engineer with a current FDOT Advance Work Zone certification if any change is made to the FDOT Standard Plans Index 102-series. MOT and road closures require approval from Matt Merucci <Matt.Merucci@mymanatee.org>.

## STORMWATER DRAINAGE PIPES AND STRUCTURES

All proposed storm structures shall have a wall thickness no less than 6 inches.
Metal storm pipe or metal mitered end section shall not be used in the road right of way or carry right of way runoff.

## MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible at all times to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide equivalent capacity alternate forms of stormwater removal adequate to prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item for new storm systems.

## POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. Video DVD and report shall be provided for those pipes whose diameters are equal or smaller than 48 in, with Laser profile data included for non-RCP pipes, following FDOT Specifications latest version. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Payment for this item shall be included ~~under the pay item for Mobilization~~ as incidental to the cost per foot of new storm pipe installed.

## SIDEWALKS TO REMAIN OPEN

Existing sidewalks and proposed sidewalks completed during construction shall remain open at all times unless approved otherwise by the Engineer. Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

## DUST CONTROL

The Contractor shall control dust resulting from construction operations at all times. The locations and frequencies of applications shall be as directed by the Engineer. Contractor shall provide dust control measures using water sources as needed and maintaining dust control throughout duration of the project. Payment for Dust Control shall be made under Maintenance of Traffic unless separate pay item for Dust Control is specified.

## UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify existing underground utility locations by means of subsurface locating or other approved method. All existing utilities shall remain unless otherwise noted on the plans. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with "Sunshine State One Call 811" as well as the individual utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the Owner.

The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

## UTILITY COORDINATION

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project to avoid delays. The work includes remobilization if required after utility relocation is complete. The intent is to coordinate utility construction activities, so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements. Any work in the vicinity of the electric lines shall be coordinated with the power company for the setback requirements.

The Contractor shall hold a utility owners meeting every two weeks / or alternate time schedule agreed to by the Owner at 1022 26th Avenue East. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

## UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

The contractor’s equipment shall maintain a minimum clearance distance to the power line following the latest OSHA and FDOT Roadway Design Bulletin.

## DAILY CLEAN-UP REQUIREMENTS

The Contractor shall clean up the job site at the end of each workday. Clean up will include the elimination of rubble and waste material on public and private property. Driveways shall remain accessible by residents. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use.

## MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as may be required by the Project Manager. All

final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include: Mowing as necessary to prevent grass and other vegetation within the work area from exceeding 18 inches in height or causing unsafe conditions; Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Project Manager. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely housekeeping and restoration of the job site is not accomplished to the satisfaction of the Project Manager, the Project Manager shall make arrangements to affect the necessary housekeeping and restoration by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the Project Manager, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

**NOTICE AND SERVICE THEREOF**

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Owner, unless otherwise specified in writing to the Contractor, shall be delivered to the Project Manager, and any notice to or demand upon the Owner shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in

due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

## REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference may be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

## USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The Owner assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the Owner's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The Owner will coordinate with the Contractor to identify possible storage sites.

## WORKSITE TRAFFIC SUPERVISOR

a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the FDOT Standard Specifications and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.

b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.

c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.

d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.

e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

**CONTRACTOR'S SUPERVISION**

a. Prosecution of Work: The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the Project Manager and with other Contractors at work in the vicinity.

b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Project Manager or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Project Manager and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours, and wherever work is being done by the contractor.

d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

## LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the Owner 48 hours in advance.

## PEDESTRIAN ACCESS

The Contractor shall provide access and make provisions to maintain school zones during construction. The Contractor is to facilitate pedestrian traffic whether for school or public transportation.

## THERMOPLASTIC TRAFFIC STRIPES AND MARKINGS

Do not place thermoplastic traffic stripes and markings on newly constructed final surface courses prior to 30 calendar days after placement of the final surface course. The Engineer may require longer cure periods. Provide temporary pavement markings during the interim period if the road is open to traffic. The price of temporary pavement marking shall be included in the Maintenance of Traffic.

## RECORD DRAWINGS AND PROJECT CERTIFICATION

The County will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed “As-built” records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the County prior to the Work. These results shall be available at all times during construction for reference by the Engineer and shall be delivered to the Engineer upon completion of the Work. All completed “As-builts” must be certified by a Florida Licensed Surveyor or Engineer per Chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes. All Record Drawings shall be in accordance with current Manatee County Standards.

The “Record Drawings” shall, at a minimum, include the following:

A. Roadway centerline profile [100-foot maximum interval].
B. Roadway cross sections [100-foot maximum interval].
C. All underground piping with elevations and dimensions, changes to piping locations, horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed

pipe material, class, etc. Dimensions at these locations shall indicate distance from the centerline of construction.

D. Elevations on all drainage control structures, verifying all plan dimensions.
E. Stormwater ponds with cross sections [25-foot maximum interval] (sufficient to calculate volumes).
F. Flow line elevations on all ditch breaks (vertical and horizontal).
G. Field changes of dimensions and details.
H. Details not on original contract drawings.
I. Equipment and piping relocations.
J. The locations of all headwalls, pipes and any other structures shall be located by station and offset.
K. Benchmarks and elevation datum shall be indicated.
L. Additional elevations or dimensions as required by the Engineer
M. Additional elevations or dimensions as required by the County Representative

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

Upon completion of the work, four (4) sets of draft "Record Drawings" shall be submitted to the Owner for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subject to a field review in the presence of the Engineer or his designated representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The Contractor shall incorporate any comments from the Owner and/or Engineer and shall submit two write-only CD-ROMs, one set of 11-inch by 17-inch mylar record drawings and four sets of 11-inch by 17-inch certified prints with the Surveyor's certification.

All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be AutoCAD format (Release 2010 or later) and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

In addition, $150,000 or five percent (whichever is smaller) of the Contract price shall be retained until the County Representative has approved the "Record Drawings". The County Representative will review and approve the "Record Drawings within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted by SWFWMD for Maintenance and Operation Phase Transfer. Unless there is a separate pay item for

Record Drawings, payment shall be included as part of the lump sum quantity for Mobilization.

## COMPLIANCE WITH THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD) STORMWATER MANAGEMENT AND DISCHARGE PERMIT REQUIREMENTS AND/OR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) DREDGE AND FILL PERMIT REQUIREMENTS

Southwest Florida Water Management District Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Dredge and Fill permit, if any, required for this project have been obtained by the County. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Department of Environmental Protection, the Southwest Florida Water Management District, as well as other duly authorized law enforcement officers of the State.

## CRUSHED CONCRETE BASE

Crushed Concrete Base shall follow FDOT Standard Specifications, Section 911. The layer coefficient of 0.18 with Limerock Bearing Ratio (LBR) minimum 150 is allowed to calculate the base thickness.

Only FDOT certified piles are acceptable to this project. The producing process certified by FDOT without the actual pile certified is not considered solid enough for the acceptance of the material. The contractor shall send the engineer the delivery tickets with FDOT certified pile number, pile location, project name and manufactory contact information shown.

Additional tests and pile inspections will be required for the quality control and the contractor will be responsible for the cost of the initial tests and any re-tests when needed. The material will be rejected by the County if the initial test fails. The rejected material shall be completely removed from the project site.

1) Regarding structural number (SN) on Crushed Concrete Base, Manatee County will approve SN 0.18 if following criteria is met and maintained:

A) Limerock Bearing Ratio value of 150 or greater.

B) Gradation conforms to FDOT Specifications, Section 911.

C) Deleterious materials conform to FDOT Specifications, Section 911.

D) Delivery ticket indicates FDOT approved source, actual lot allocated to a particular project.

E) Piles or lots to be inspected by Manatee County representative prior to acceptance.

2) Regarding Limerock Bearing Ratio value:

A) No Limerock Bearing Ratio value less than 150, with no under tolerance.

3) Regarding source approval:

A) FDOT approved source is required with an allocated lot sufficient to serve project's needs. Delivery tickets stating FDOT approved source, project name, FDOT preapproved lot or pile number are required.

4) Regarding deleterious materials:

A) Deleterious material content in addition to the FDOT Specifications 2021 (July), Section 911, should state that no construction debris such as Styrofoam insulation, telephone wire, lumber, shingles, aluminum window or door frames etc., or household trash i.e.: bottles, cans, paper goods etc. is acceptable.

5) Material source inspection:

A) Prior to acceptance of base product, a representative of Manatee County will visit the Producer's location and obtain a sample of the proposed base for the specified project. In addition to sampling, the pile will be visually inspected for deleterious materials, substantial segregation, or any other undesirable characteristics. The pile shall have a traceable identification by pile number or lot number and an accurate quality assessment.

6) Import and placement of base product:

A) During import of base product, a county inspector or duly designated representative of the county will be onsite monitoring incoming loads, making visual assessments of the product and checking load tickets for verification of materials.

B) After spreading out, prior to compacting, samples of the base product will be obtained by Manatee County approved testing lab, every 500 LF staggering

right, left, center of the roadway for Limerock Bearing Ratio, gradation and deleterious material testing.

7) Rejection of materials:

A) Material not meeting above requirements will be subject to rejection and be removed from the project site. Any three (3) concurrent rejections will require immediate shut down of imported material and require review and remedies prior to restart.

8) Compaction of material:

A) In place material shall achieve 98% of AASHTO T-180 compaction.

**CLARIFICATION OF SPECIFIC LINE ITEMS**

Clarification of the County's expectations of work to be performed as it relates to specific line items and/or Item No. listed on the Bid Form is included in the FDOT Basis of Estimate Manual. Where such item number is not available, the description shown herein will prevail.

**Line Item #1, [FDOT 101-1] – Mobilization,** shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes items such as, but not limited to: preparation and movement of personnel, equipment, supplies and incidentals, i.e. safety and sanitary supplies/facilities. Other items mentioned as part of the Special Provisions shall also be included in Mobilization.

Partial payments for this Bid Item will be made in accordance with the following schedule:

| Percent of Original Contract Amount | Percent Allowable Payment of Mobilization/Demobilization Bid Item Price |
|---|---|
| 5 | 25 |
| 10 | 35 |
| 25 | 45 |
| 50 | 50 |
| 75 | 75 |
| 100 | 100 |

Payments for this line item will be subject to the standard retainage provided in the Contract. Payment for the retainage will be made after completion of the work and demobilization.

**Line Item #2, "Maintenance of Traffic"** shall include the cost of all maintenance of traffic operations unless a separate pay item is provided. Provide quantities, unit prices, and total to equal bid for all MOT as a separate pay item upon receiving bid award, otherwise the quantity will be based on percent of construction completed.

**Line item #6, "Clearing and Grubbing"** shall also include the removal of existing underdrains, existing drainage structures and pipe, trees and bushes, ripraps, fencing and the plugging of the artesian wells. The payment for this line item shall be per LS.

**Line item #9, "Regular Excavation"**; shall include the removal of any unsuitable material such as muck and organic materials, plastic soils, trash, rock fragments and dense soil, etc.

**Line item #10, "Embankment"**; the quantity shall be "in place" value.

**Line Item #65, "Concrete Curb & Gutter, Modified Type AB"** shall follow Manatee County's Highway, Traffic & Stormwater Standards dated 2015.

**Line item #68, "Concrete Sidewalk and Driveways, 4" thick"** shall follow Manatee County's Highway, Traffic & Stormwater Standards 2015.

**Line Item #69, "Concrete Sidewalk and Driveways, 6" thick"** shall follow Manatee County's Highway, Traffic & Stormwater Standards dated 2015. The payment shall include reinforcement and ramps.

**Line item #72, "Performance Turf, Sod"**, shall include litter removal, mowing, fertilizer and watering for the duration of construction.

**Line item #73, "Wetland Mitigation Planting"**, shall include plantings, maintenance and mitigation monitoring for the duration of construction.

**Line item #74 - 78, "Shared Use Path"**, Option 1 or 2 will be decided based on costs and by Public Works.

**CONTRACT CONTINGENCY**

The discretionary work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Owner. Any amount of extra work and/or alterations to the proposed work charged to the allowance shall be fully documented and authorized by the Project Manager before the start of the work. No payment shall be made for work completed without written authorization from the Owner or Engineer.

Date:___/___/_____ Submittal No. _____

**SHOP DRAWING SUBMITTAL COVER SHEET**

(IFB) # [Insert IFB Number]
Project Name: [Insert Full Project Name]
Project File No.: [Insert Project Number]
Specification Title Number: [Insert Section No.] Specification No.: Part *[Insert Part No.]*, *[Insert Item No.]* Page(s): *[Insert Page No.]*
Submittal Description: [Insert Title, Description of Submittal and Use]

SHOP DRAWING REVIEW

| RESPONSE NOT REQUIRED | RESPONSE REQUIRED |
|---|---|
| ☐ NO EXCEPTIONS TAKEN<br>☐ NOTE MARKINGS | ☐ NOTE MARKINGS, CONFIRM<br>☐ NOTE MARKINGS, RESUBMIT<br>☐ REJECTED, RESUBMIT |

Engineer's review is for general conformance with the design concept and contract documents. Markings or comments shall not be construed as relieving the Contractor from compliance with the project drawings and specifications, nor departure therefrom. The Contractor remains responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of assembly, and for performing his work in a safe manner.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT

By:_____ Date:_____

Your Company Logo and/or information
[Contractor's Name]
[Contractor's Title]
[Company Name]
[Company Address]
[Office Number]
[Fax Number]
[email address]
[Approval Signature:_____
[Approval Date:___/___/_____

# CONTRACT DOCUMENTS

# FOR

# MANATEE COUNTY
# MOCCASIN WALLOW ROAD FROM US 41 TO WEST OF I-75

PROJECT # 6092560

April 2022

PROJECT OWNER:

County of Manatee, Florida
c/o Manatee County Procurement Division
1112 Manatee Avenue West
Bradenton, Florida 34205
(941) 748-3014

PREPARED BY:

Cardno
380 Park Place Blvd., Suite 300
Clearwater, FL 33579
(727) 531-3505

INFRASTRUCTURE ENGINEERING STANDARD SPECIFICATIONS


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This specification includes by reference the Manatee County Public Works Standards, Part I Utilities Standards Manual approved February 25, 2020.

All items and/or materials furnished and installed shall conform to the Manatee County Approved Products List. All items listed in the submittal requirements under each section shall be required to be submitted for review and/or acceptance.

# SECTION 0800 SPECIAL PROVISIONS

These special provisions provide additional information and modify the Manatee County Infrastructure Engineering Standard Specifications. Unless noted herein, all conditions of the Standard Specifications apply.

## GENERAL

A. All water and sewer Work shall be completed by the Contractor.

B. During the course of the Work, the Contractor shall excavate within the project limits each existing connection to the 16-inch ductile iron water main. When the connection is excavated, a representative of the Manatee County Utilities Department will determine if the tapping sleeve and valve; or service saddle; and/or connecting pipe material meets County standards or needs to be replaced. In order to limit the number of shut downs of the 16-inch transmission main, each connection shall be backfilled until several connections are identified for replacement. During replacement, the Contractor shall install a new sleeve and valve; or service saddle; and/or connecting pipe at the existing tap location. In addition, if the pipe material at the connection is PVC, the PVC underneath the asphalt shall be replaced with ductile iron pipe at the same line and grade unless shown otherwise on the Drawings. The Contractor shall coordinate all shut downs of the 16-inch water main and issuance of boil water notices with the Manatee County Utilities Department.

C. This utility work is included as part of the Roadway Design Plans and Specifications which includes details that are included as part of this work, such as, but not limited to, maintenance of traffic, sediment and erosion control, etc.

D. Upon completion of water service line relocation or replacement as called for on the Drawings, the Contractor shall relocate the existing water meter and/or reconnect the building service line as directed by the Engineer. A Florida Licensed Plumber shall complete all plumbing work on the discharge side of the water meter. Relocation of backflow preventers shall require testing by a contractor that is registered with the Manatee County Cross Connection Control office who possesses a valid and current plumbing license/Fire Marshal certificate, current insurance and backflow test/repair certification.

## SECTION 02615 – DUCTILE IRON PIPE AND FITTINGS

A. All ductile iron pipe shall be manufactured in accordance with ANSI/AWWA C-151/A21.51 and shall be Class 51 or greater. Ductile iron pipe and fittings for water mains shall have an asphaltic outside coating and a cement lining inside in accordance with ANSI/AWWA C104/A21.4. Ductile iron pipe and fittings for sanitary sewer force main shall have a Protecto 401 ceramic epoxy interior lining with a minimum dry film thickness of 40 mils.

B. Thrust blocks shall not be allowed as a ductile iron pipe restraint mechanism.

## SECTION 02622 – POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (AWWA SPECIFICATIONS C-900 & C-905)

A. PVC pipe 3-inch and less in diameter shall be Schedule 80.

B. All fittings for 4-inch and larger PVC pressure pipe shall be ductile iron and shall conform to the specifications for ductile iron fittings Section 02615.

C. Thrust blocks shall not be allowed as a PVC pipe restraint mechanism.

END OF SECTION

# DIVISION 1 GENERAL REQUIREMENTS

## SECTION 01005 GENERAL REQUIREMENTS

## PART 1 GENERAL

### 1.01 SCOPE AND INTENT

A. Description

The work to be done consists of the furnishing of all labor, materials and equipment, and the performance of all work included in this Contract.

B. Work Included

The Contractor shall furnish all labor, superintendence, materials, plant, power, light, heat, fuel, water, tools, appliances, equipment, supplies, shop drawings, working drawings and other means of construction necessary or proper for performing and completing the work. He shall obtain and pay for all required permits necessary for the work, other than those permits such as the DEP permit and railroad permit, which may have already been obtained. He shall perform and complete the work in the manner best calculated to promote rapid construction consistent with safety of life and property and to the satisfaction of the County, and in strict accordance with the Contract Documents. The Contractor shall clean up the work and maintain it during and after construction, until accepted, and shall do all work and pay all incidental costs. He shall repair or restore all structures and property that may be damaged or disturbed during performance of the work.

The cost of incidental work described in these General Requirements, for which there are no specific Contract Items, shall be considered as part of the general cost of doing the work and shall be included in the prices for the various Contract Items. No additional payment will be made.

The Contractor shall be solely responsible for the adequacy of his workmanship, materials and equipment.

C. Public Utility Installations and Structures

Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, house service connections, vaults, manholes and all other appurtenances and facilities pertaining thereto.

The Contractor shall protect all installations and structures from damage during the work. Access across any buried public utility installation or structure shall be made only in such locations and by means approved by the County. All required protective devices and construction shall be provided by the Contractor at his expense. All existing public utilities damaged by the Contractor, which are shown on the Plans or have been located in the field by the utility, shall be repaired by the Contractor, at his expense, as approved by the County. No separate payment shall be made for such protection or repairs to public utility installations or structures.

Public utility installations or structures owned or controlled by the County or other governmental body, which are required by this contract to be removed, relocated, replaced or rebuilt by the Contractor not identified in any separate bid item shall be considered as a part of the general cost of doing the work and shall be included in the prices bid for the various contract items. No separate payment shall be made.

Where public utility installations or structures owned or controlled by the County or other governmental body are encountered during the course of the work, and are not indicated on the Plans or in the Specifications, and when, in the opinion of the County, removal, relocation, replacement or rebuilding is necessary to complete the work under this Contract, such work shall be accomplished by the utility having jurisdiction, or such work may be ordered, in writing by the County, for the contractor to accomplish. If such work is accomplished by the utility having jurisdiction, it will be carried out expeditiously and the Contractor shall give full cooperation to permit the utility to complete the removal, relocation, replacement or rebuilding as required. If such work is accomplished by the Contractor, it will be in accordance with the General and Supplemental General Conditions.

The Contractor shall give written notice to County and other governmental utility departments and other owners of public utilities of the location of his proposed construction operations, at least forty-eight hours in advance of breaking ground in any area or on any unit of the work. This can be accomplished by making the appropriate contact with the "Sunshine State One-Call of Florida, Inc. Call Center ("Call Sunshine") and per all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).

The maintenance, repair, removal, relocation or rebuilding of public utility installations and structures, when accomplished by the Contractor as herein provided, shall be done by methods approved by the County.

## 1.02 PLANS AND SPECIFICATIONS

A. Plans

When obtaining data and information from the Plans, figures shall be used in preference to scaled dimensions, and large-scale drawings in preference to small-scale drawings.

B. Copies Furnished to Contractor

The Contractor shall furnish each of the subcontractors, manufacturers, and material men such copies of the Contract Documents as may be required for their work. Additional copies of the Plans and Specifications, when requested, may be furnished to the Contractor at cost of reproduction.

C. Supplementary Drawings

When, in the opinion of the County, it becomes necessary to explain more fully the work to be done or to illustrate the work further or to show any changes which may be required, drawings known as Supplementary Drawings, with specifications pertaining thereto, will be prepared by the County and five paper prints thereof will be given to the Contractor.

D. Contractor to Check Plans and Data

The Contractor shall verify all dimensions, quantities and details shown on the Plans, Supplementary Drawings, Schedules, Specifications or other data received from the County, and shall notify him of all errors, omissions, conflicts, and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory work, faulty construction or improper operation resulting therefrom nor from rectifying such conditions at his own expense. He will not be allowed to take advantage of any errors or omissions, as full instructions will be furnished by the County, should such errors or omissions be discovered. All schedules are given for the convenience of the County and the Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in work to be done under the Contract.

E. Specifications

The Technical Specifications consist of three parts: General, Products and Execution. The General Section contains General Requirements which govern the work. Products and Execution modify and supplement these by detailed requirements for the work and shall always govern whenever there appears to be a conflict.

F. Intent

All work called for in the Specifications applicable to this Contract, but not shown on the Plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the Plans or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work, is required and shall be performed by the Contractor as though it were specifically delineated or described.

The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these Specifications shall be made upon that basis.

The inclusion of the Related Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the Contractor, and shall not be interpreted as a complete list of related Specification Sections.

## 1.03 MATERIALS AND EQUIPMENT

A. Manufacturer

All transactions with the manufacturers or subcontractors shall be through the Contractor, unless the Contractor shall request, in writing to the County, that the manufacturer or subcontractor deal directly with the County. Any such transactions shall not in any way release the Contractor from his full responsibility under this Contract.

Any two or more pieces or material or equipment of the same kind, type or classification, and being used for identical types of services, shall be made by the same manufacturer.

B. Delivery

The Contractor shall deliver materials in ample quantities to insure the most speedy and uninterrupted progress of the work so as to complete the work within the allotted time. The Contractor shall also coordinate deliveries in order to avoid delay in, or impediment of, the progress of the work of any related Contractor.

C. Tools and Accessories

The Contractor shall, unless otherwise stated in the Contract Documents, furnish with each type, kind or size of equipment, one complete set of suitably marked high grade special tools and appliances which may be needed to adjust, operate, maintain or repair the equipment. Such tools and appliances shall be furnished in approved painted steel cases, properly labeled and equipped with good grade cylinder locks and duplicate keys.

Spare parts shall be furnished as specified.

Each piece of equipment shall be provided with a substantial nameplate, securely fastened in place and clearly inscribed with the manufacturer's name, year of manufacture, serial number, weight and principal rating data.

D. Installation of Equipment.

The Contractor shall have on hand sufficient proper equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character.

Equipment shall be erected in a neat and workmanlike manner on the foundations at the locations and elevations shown on the Plans, unless directed otherwise by the County during installation. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between the various units.

The Contractor shall furnish, install and protect all necessary anchor and attachment bolts and all other appurtenances needed for the installation of the devices included in the equipment specified. Anchor bolts shall be as approved by the County and made of ample size and strength for the purpose intended. Substantial templates and working drawings for installation shall be furnished.

The Contractor shall furnish all materials and labor for, and shall properly bed in non-shrink grout, each piece of equipment on its supporting base that rests on masonry foundations.

Grout shall completely fill the space between the equipment base and the foundation. All metal surfaces coming in contact with concrete or grout shall receive a coat of coal tar epoxy equal to Koppers 300M or provide a 1/32-inch neoprene gasket between the metal surface and the concrete or grout.

E. Service of Manufacturer's Engineer

The Contract prices for equipment shall include the cost of furnishing (as required by equipment specifications sections) a competent and experienced engineer or superintendent who shall represent the manufacturer and shall assist the Contractor, when required, to install, adjust, test and place in operation the equipment in conformity with the Contract Documents. After the equipment is placed in permanent operation by the County, such engineer or superintendent shall make all adjustments and tests required by the

County to prove that such equipment is in proper and satisfactory operating condition, and shall instruct such personnel as may be designated by the County in the proper operation and maintenance of such equipment.

## 1.04 INSPECTION AND TESTING

A. General

Inspection and testing of materials will be performed by the County unless otherwise specified.

For tests specified to be made by the Contractor, the testing personnel shall make the necessary inspections and tests and the reports thereof shall be in such form as will facilitate checking to determine compliance with the Contract Documents. Three (3) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the County as a prerequisite for the acceptance of any material or equipment.

If, in the making of any test of any material or equipment, it is ascertained by the County that the material or equipment does not comply with the Contract, the Contractor will be notified thereof and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the site or from the work and replace it with acceptable material, without cost to the County.

Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or the IEEE, except as may otherwise be stated herein.

The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the County formally takes over the operation thereof.

B. Costs

All inspection and testing of materials furnished under this Contract will be performed by the County or duly authorized inspection engineers or inspections bureaus without cost to the Contractor, unless otherwise expressly specified.

The cost of shop and field tests of equipment and of certain other tests specifically called for in the Contract Documents shall be borne by the Contractor and such costs shall be deemed to be included in the Contract price.

Materials and equipment submitted by the Contractor as the equivalent to those specifically named in the Contract may be tested by the County for compliance. The Contractor shall reimburse the County for the expenditures incurred in making such tests on materials and equipment which are rejected for non-compliance.

C. Inspections of Materials

The Contractor shall give notice in writing to the County, at least two weeks in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement and the expected date of

completion of the manufacture of preparation of materials. Upon receipt of such notice, the County will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or he will notify the Contractor that inspection will be waived. The Contractor must comply with these provisions before shipping any material. Such inspection shall not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

D. Certificate of Manufacture

When inspection is waived or when the County so requires, the Contractor shall furnish to him authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the work have been manufactured and tested in conformity with the Contract Documents. These certificates shall be notarized and shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

E. Shop Tests of Operating Equipment

Each piece of equipment for which pressure, duty, capacity, rating, efficiency, performance, function or special requirements are specified shall be tested in the shop of the maker in a manner which shall conclusively prove that its characteristics comply fully with the requirements of the Contract Documents. No such equipment shall be shipped to the work until the County notifies the Contractor, in writing, that the results of such tests are acceptable.

The cost of shop tests and of furnishing manufacturer's preliminary and shop test data of operating equipment shall be borne by the Contractor.

F. Preliminary Field Tests

As soon as conditions permit, the Contractor shall furnish all labor, materials, and instruments and shall make preliminary field tests of equipment. If the preliminary field tests disclose any equipment furnished under this Contract which does not comply with the requirements of the Contract Documents, the Contractor shall, prior to the acceptance tests, make all changes, adjustments and replacements required. The furnishing Contractor shall assist in the preliminary field tests as applicable.

G. Final Field Tests

Upon completion of the work and prior to final payment, all equipment and piping installed under this Contract shall be subjected to acceptance tests as specified or required to prove compliance with the Contract Documents.

The Contractor shall furnish labor, fuel, energy, water and all other materials, equipment and instruments necessary for all acceptance tests, at no additional cost to the County. The Supplier shall assist in the final field tests as applicable.

H. Failure of Tests

Any defects in the materials and equipment or their failure to meet the tests, guarantees or requirements of the Contract Documents shall be promptly corrected by the Contractor. The decision of the County as to whether or not the Contractor has fulfilled his obligations under

the Contract shall be final and conclusive. If the Contractor fails to make these corrections or if the improved materials and equipment, when tested, shall again fail to meet the guarantees of specified requirements, the County, notwithstanding its partial payment for work, and materials and equipment, may reject the materials and equipment and may order the Contractor to remove them from the site at his own expense.

In case the County rejects any materials and equipment, then the Contractor shall replace the rejected materials and equipment within a reasonable time. If he fails to do so, the County may, after the expiration of a period of thirty (30) calendar days after giving him notice in writing, proceed to replace such rejected materials and equipment, and the cost thereof shall be deducted from any compensation due or which may become due the Contractor under his Contract.

I. Final Inspection

During such final inspections, the work shall be clean and free from water. In no case will the final pay application be prepared until the Contractor has complied with all requirements set forth and the County has made his final inspection of the entire work and is satisfied that the entire work is properly and satisfactorily constructed in accordance with the requirements of the Contract Document.

## 1.05 TEMPORARY STRUCTURES

A. Temporary Fences

If, during the course of the work, it is necessary to remove or disturb any fence or part thereof, the Contractor shall, at his own expense, if so ordered by the County, provide a suitable temporary fence which shall be maintained until the permanent fence is replaced. The County shall be solely responsible for the determination of the necessity for providing a temporary fence and the type of temporary fence to be used.

## 1.06 TEMPORARY SERVICES

A. First Aid

The Contractor shall keep upon the site, at each location where work is in progress, a completely equipped first aid kit and shall provide ready access thereto at all times when people are employed on the work.

## 1.07 LINES AND GRADES

A. Grade

All work under this Contract shall be constructed in accordance with the lines and grades shown on the Plans, or as given by the County. The full responsibility for keeping alignment and grade shall rest upon the Contractor.

B. Safeguarding Marks

The Contractor shall safeguard all points, stakes, grade marks, monuments and bench marks made or established on the work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying work improperly installed due to not maintaining or protecting or removing without authorization such established points, stakes and marks.

The Contractor shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

C. Datum Plane

All elevations indicated or specified refer to the Mean Sea Level Datum of the NAVD 1988 and/or NGVD 1929.

## 1.08 ADJACENT STRUCTURES AND LANDSCAPING

A. Responsibility

The Contractor shall also be entirely responsible and liable for all damage or injury as a result of his operations to all other adjacent public and private property, structures of any kind and appurtenances thereto met with during the progress of the work. The cost of protection, replacement in their original locations and conditions or payment of damages for injuries to such adjacent public and private property and structures affected by the work, whether or not shown on the Plans, and the removal, relocation and reconstruction of such items called for on the Plans or specified shall be included in the various Contract Items and no separate payments will be made therefore. Where such public and private property, structures of any kind and appurtenances thereto are not shown on the Plans and when, in the opinion of the County, additional work is deemed necessary to avoid interference with the work, payment therefore will be made as provided for in the General Conditions.

Contractor is expressly advised that the protection of buildings, structures, tunnels, tanks, pipelines, etc. and related work adjacent and in the vicinity of his operations, wherever they may be, is solely his responsibility. Conditional inspection of buildings or structures in the immediate vicinity of the project which may reasonably be expected to be affected by the Work shall be performed by and be the responsibility of the Contractor.

Contractor shall, before starting operations, make an examination of the interior and exterior of the adjacent structures, buildings, facilities, etc., and record by notes, measurements, photographs, etc., conditions which might be aggravated by open excavation and construction. Repairs or replacement of all conditions disturbed by the construction shall be made to the satisfaction of the County. This does not preclude conforming to the requirements of the insurance underwriters. Copies of surveys, photographs, reports, etc., shall be given to the County.

Prior to the beginning of any excavations, the Contractor shall advise the County of all buildings or structures on which he intends to perform work or which performance of the project work will affect.

B. Protection of Trees

1. All trees and shrubs shall be adequately protected by the Contractor with boxes and otherwise and in accordance with ordinances governing the protection of trees. No excavated materials shall be placed so as to injure such trees or shrubs. Trees or shrubs destroyed by negligence of the Contractor or his employees shall be replaced by him with new stock of similar size and age, at the proper season and at the sole expense of the Contractor.

2. Beneath trees or other surface structures, where possible, pipelines may be built in short tunnels, backfilled with excavated materials, except as otherwise specified, or the trees or structures carefully supported and protected from damage.
3. The County may order the Contractor, for the convenience of the County, to remove trees along the line or trench excavation. If so ordered, the County will obtain any permits required for removal of trees. Such tree removal ordered shall be paid for under the appropriate Contract Items.

C. Lawn Areas

Lawn areas shall be left in as good condition as before the starting of the work. Where sod is to be removed, it shall be carefully removed, and later replaced, or the area where sod has been removed shall be restored with new sod.

D. Restoration of Fences

Any fence, or part thereof, that is damaged or removed during the course of the work shall be replaced or repaired by the Contractor and shall be left in as good a condition as before the starting of the work. The manner in which the fence is repaired or replaced and the materials used in such work shall be subject to the approval of the County. The cost of all labor, materials, equipment, and work for the replacement or repair of any fence shall be deemed included in the appropriate Contract Item or items, or if no specific Item is provided therefore, as part of the overhead cost of the work, and no additional payment will be made therefore.

## 1.09 PROTECTION OF WORK AND PUBLIC

A. Barriers and Lights

During the prosecution of the work, the Contractor shall put up and maintain at all times such barriers and lights as will effectually prevent accidents. The Contractor shall provide suitable barricades, red lights, "danger" or "caution" or "street closed" signs and watchmen at all places where the work causes obstructions to the normal traffic or constitutes in any way a hazard to the public, in accordance with state and local requirements.

B. Smoke Prevention

A strict compliance with ordinances regulating the production and emission of smoke will be required. No open fires will be permitted.

C. Noise

The Contractor shall eliminate noise to as great an extent as practicable at all times. Air compressing plants shall be equipped with silencers and the exhaust of all engines or other power equipment shall be provided with mufflers. In the vicinity of hospitals and schools, special care shall be used to avoid noise or other nuisances. The Contractor shall strictly observe all local regulations and ordinances covering noise control.

D. Access to Public Services

Neither the materials excavated nor the materials or plant used in the construction of the work shall be so placed as to prevent free access to all fire hydrants, valves or manholes.

E. Dust prevention

The Contractor shall prevent dust nuisance from his operations or from traffic by keeping the roads and/or construction areas sprinkled with water at all times.

## 1.10 CUTTING AND PATCHING

The Contractor shall do all cutting, fitting or patching of his portion of the work that may be required to make the several parts thereof join and coordinate in a manner satisfactory to the County and in accordance with the Plans and Specifications. The work must be done by competent workmen skilled in the trade required by the restoration.

## 1.11 CLEANING

A. During Construction

During construction of the work, the Contractor shall, at all times, keep the site of the work and adjacent premises as free from material, debris and rubbish as is practicable and shall remove the same from any portion of the site if, in the opinion of the County, such material, debris, or rubbish constitutes a nuisance or is objectionable. The Contractor shall remove from the site all of his surplus materials and temporary structures when no further need therefore develops.

B. Final Cleaning

At the conclusion of the work, all equipment, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away, and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

The Contractor shall thoroughly clean all equipment and materials installed by him and shall deliver such materials and equipment undamaged in a bright, clean, polished and new operating condition.

## 1.12 MISCELLANEOUS

A. Protection Against Siltation and Bank Erosion

1. The Contractor shall arrange his operations to minimize siltation and bank erosion on construction sites and on existing or proposed water courses and drainage ditches.
2. The Contractor, at his own expense, shall remove any siltation deposits and correct any erosion problems as directed by the County which results from his construction operations.

B. Protection of Wetland Areas

The Contractor shall properly dispose of all surplus material, including soil, in accordance with Local, State and Federal regulations. Under no circumstances shall surplus material be disposed of in wetland areas as defined by the Florida Department of Environmental Protection or Southwest Florida Water Management District.

C. Existing Facilities

The work shall be so conducted to maintain existing facilities in operation insofar as is possible. Requirements and schedules of operations for maintaining existing facilities in service during construction shall be as described in the Special Provisions.

D. Use of Chemicals

All chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant, or of other classification, must show approval of either EPA or USDA. Use of all such chemicals and disposal of residues shall be in strict conformance with instructions.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01010 SUMMARY OF WORK

## PART 1 GENERAL

### 1.01 WORK COVERED BY CONTRACT DOCUMENTS/REQUIREMENTS INCLUDED

A. The work included in this contract consists of the construction

1. 3,995 linear feet of 16-inch and 4,705 linear feet of 30-inch water transmission main with all appurtenances, valves, fittings, connections and services.
2. 3,940 linear feet of 12-inch force main with all appurtenances, valves, and connections to existing transmission system.
3. 2,840 linear feet of 10-inch and 6,215 linear feet of 20-inch reclaimed water main with all appurtenances, valves, and connections to existing to distribution system.

B. The Contractor shall furnish all shop drawings, working drawings, labor, materials, equipment, tools, services and incidentals necessary to complete all work required by these Specifications and as shown on the Contract Drawings.

C. The Contractor shall perform the work complete, in place and ready for continuous service and shall include any repairs, replacements, and/or restoration required as a result of damages caused prior to acceptance by the County.

D. The Contractor shall furnish and install all materials, equipment and labor which is reasonably and properly inferable and necessary for the proper completion of the work, whether specifically indicated in the Contract Documents or not.

### 1.02 CONTRACTS

Construct all the Work under a single contract.

### 1.03 WORK SEQUENCE

A. All work done under this Contract shall be done with a minimum of inconvenience to the users of the system or facility. The Contractor shall coordinate his work with private property owners such that existing utility services are maintained to all users to the maximum extent possible.

B. The Contractor shall, if necessary and feasible, construct the work in stages to accommodate the County's use of the premises during the construction period; coordinate the construction schedule and operations with the County's Representative.

C. The Contractor shall, where feasible, construct the Work in stages to provide for public convenience and not close off public use of any facility until completion of construction to provide alternative usage.

### 1.04 CONSTRUCTION AREAS

A. The Contractor shall: Limit his use of the construction areas for work and for storage, to allow for:

1. Work by other Contractors.
2. County's Use.

3. Public Use.

B. Coordinate use of work site under direction of County's Representative.

C. Assume full responsibility for the protection and safekeeping of products under this Contract, stored on the site.

D. Move any stored products under the Contractor's control, which interfere with operations of the County or separate contractor.

E. Obtain and pay for the use of additional storage of work areas needed for Contractor operations.

## 1.05 COUNTY OCCUPANCY

A. It is assumed that portions of the Work will be completed prior to completion of the entire Work. Upon completion of construction of each individual facility, including testing, if the County, at its sole discretion, desires to accept the individual facility, the Contractor will be issued a dated certificate of completion and acceptance for each individual facility. The County will assume ownership and begin operation of the individual facility on that date and the three-year guaranty period shall commence on that date. The County has the option of not accepting the entire work as a whole until it is completed, tested and approved by the County.

## 1.06 PARTIAL COUNTY OCCUPANCY

The Contractor shall schedule his operations for completion of portions of the Work, as designated, for the County's occupancy prior to substantial completion of the entire work.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01015 CONTROL OF WORK

## PART 1 GENERAL

### 1.01 WORK PROGRESS

The Contractor shall furnish personnel and equipment which will be efficient, appropriate and adequately sized to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the time stipulated in the Contract. If at any time such personnel appears to the County to be inefficient, inappropriate, or insufficient for securing the quality of work required for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character, or increase the personnel and equipment and the Contractor shall conform to such order. Failure of the County to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

### 1.02 PRIVATE LAND

The Contractor shall not enter or occupy private land outside of easements, except by permission of the affected property owner.

### 1.03 WORK LOCATIONS

Work shall be located substantially as indicated on the drawings, but the County reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

### 1.04 OPEN EXCAVATIONS

A. All open excavations shall be adequately safeguarded by providing temporary barricades, caution signs, lights and other means to prevent accidents to persons and damage to property. The Contractor shall, at his own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access to private property during construction shall be removed when no longer required. If the excavation becomes a hazard, or if it excessively restricts traffic at any point, the County may require special construction procedures such as limiting the length of open trench, prohibiting stacking excavated material in the street and requiring that the trench shall not remain open overnight.

B. The Contractor shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be barricaded and well lighted at all times when construction is not in progress.

### 1.05 DISTRIBUTION SYSTEMS AND SERVICES

A. The Contractor shall avoid interruptions to water, telephone, cable TV, sewer, gas, or other related utility services. He shall notify the County and the appropriate agency well in advance of any requirement for dewatering, isolating, or relocating a section of a utility, so that necessary arrangements may be made.

B. If it appears that utility service will be interrupted for an extended period, the County may order the Contractor to provide temporary service lines at the Contractor's expense.

Inconvenience of the users shall be kept to the minimum, consistent with existing conditions. The safety and integrity of the systems are of prime importance in scheduling work.

## 1.06 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

A. The Contractor shall assume full responsibility for the protection of all buildings, structures and utilities, public or private, including poles, signs, services to building utilities, gas pipes, water pipes, hydrants, sewers, drains and electric and telephone cables and other similar facilities, whether or not they are shown on the Drawings. The Contractor shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the Contractor's operation shall be repaired by the Contractor at his expense.

B. The Contractor shall bear full responsibility for obtaining locations of all underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained and all costs or charges resulting from damage thereto shall be paid by the Contractor.

C. Protection and temporary removal and replacement of existing utilities and structures as described in this Section shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit prices established in the Bid.

D. If, in the opinion of the County, permanent relocation of a utility owned by the County is required, the County may direct the Contractor, in writing, to perform the work. Work so ordered will be paid for at the Contract unit prices, if applicable, or as extra work as classified in the General Conditions. If relocation of a privately owned utility is required, the County will notify the utility to perform the work as expeditiously as possible. The Contractor shall fully cooperate with the County and utility and shall have no claim for delay due to such relocation. The Contractor shall notify public utility companies in writing at least 48 hours (excluding Saturdays, Sundays and legal holidays) before excavating near their utilities.

## 1.07 TEST PITS

Test pits for the purpose of locating underground pipeline or structures in advance of the construction shall be excavated and backfilled by the Contractor immediately after the utility location and the surface shall be restored in a manner equal or better than the original condition. No separate payment will be made.

## 1.08 CARE AND PROTECTION OF PROPERTY

A. The Contractor shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the Contractor, such property shall be restored by the Contractor, at his expense, to a condition equal or better to that existing before the damage was done, or he shall make good the damage in another manner acceptable to the County.

B. All sidewalks which are disturbed by the Contractor's operations shall be restored to their original or better condition by the use of similar or comparable materials. All curbing shall be restored in a condition equal to the original construction and in accordance with the best modern practice.

C. Along the location of this work, all fences, walks, bushes, trees, shrubbery and other

physical features shall be protected and restored in a thoroughly workmanlike manner unless otherwise shown on the drawings. Fences and other features removed by the Contractor shall be replaced in the location indicated by the County as soon as conditions permit. All grass areas beyond the limits of construction which have been damaged by the Contractor shall be regraded and sodded to equal or exceed original conditions.

D. Trees close to the work which drawings do not specify to be removed, shall be boxed or otherwise protected against injury. The Contractor shall trim all branches that are liable to damage because of his operations, but in no case shall any tree be cut or removed without prior notification to the County. All injuries to bark, trunk, limbs and roots of trees shall be repaired by dressing, cutting and painting according to approved methods, using only approved tools and materials.

E. The protection, removal and replacement of existing physical features along the line of work shall be a part of the work under the Contract and all costs in connection therewith shall be included in the unit and/or lump sum prices established under the items in the Bid.

## 1.09 MAINTENANCE OF TRAFFIC

A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended construction stoppage, for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, Contractor shall, at his own expense, provide normal traffic flow during extended construction stoppage. Extended stoppage will be defined by the County.

B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If the Contractor's operations cause traffic hazards, he shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other safety measures which are satisfactory to the County.

C. Any changes to the traffic pattern require a Traffic Control Plan as detailed in section 01570 of this specification..

## 1.10 WATER FOR CONSTRUCTION PURPOSES

A. In locations where public water supply is available, the Contractor may purchase water for all construction purposes.

B. The Contractor shall be responsible for paying for all water tap fees incurred for the purpose of obtaining a potable water service or temporary use meter.

## 1.11 MAINTENANCE OF FLOW

The Contractor shall at his own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully discussed with the County well in advance of the interruption of any flow.

## 1.12 CLEANUP

During the course of the work, the Contractor shall keep the site of his operations in as clean and neat a condition as is possible. He shall dispose of all residue resulting from the

construction work and at the conclusion of the work, he shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and shall leave the entire site of the work in a neat and orderly condition.

## 1.13 COOPERATION WITHIN THIS CONTRACT

A. All firms or person authorized to perform any work under this Contract shall cooperate with the General Contractor and his subcontractors or trades and shall assist in incorporating the work of other trades where necessary or required.

B. Cutting and patching, drilling and fitting shall be carried out where required by the trade or subcontractor having jurisdiction, unless otherwise indicated herein or directed by the County.

## 1.14 PROTECTION OF CONSTRUCTION AND EQUIPMENT

A. All newly constructed work shall be carefully protected from injury in any way. No wheeling or walking or placing of heavy loads on it shall be allowed and all portions injured shall be reconstructed by the Contractor at his own expense.

B. All structures shall be protected in a manner approved by the County. Should any of the floors or other parts of the structures become heaved, cracked, or otherwise damaged, all such damaged portions of the work shall be completely repaired and made good by the Contractor, at his own expense and to the satisfaction of the County. If, in the final inspection of the work, any defects, faults, or omissions are found, the Contractor shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation for the materials and labor required. Further, the Contractor shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the warranty period described in the Contract.

C. Further, the Contractor shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the County.

## 1.15 CONSTRUCTION WITHIN RIGHT-OF-WAY

Where pipe lines are installed within FDOT right-of-way, all excavation backfill and compaction for the purpose of reconstructing roadways and/or adjacent slopes contiguous thereto shall be in accordance with FDOT or Manatee County Standards and Specifications, whichever is applicable. Contractor shall satisfy the authorized representative of the FDOT with respect to proper safety procedures, construction methods, required permitting, etc., within the FDOT right-of-way.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01030 SPECIAL PROJECT PROCEDURES

## PART 1 GENERAL

### 1.01 PERMITS

Upon notice of award, the Contractor shall immediately apply for all applicable permits not previously obtained by the County to do the work from the appropriate governmental agency or agencies. No work shall commence until all applicable permits have been obtained and copies delivered to the County. The costs for obtaining all permits shall be borne by the Contractor.

### 1.02 CONNECTIONS TO EXISTING SYSTEM

The Contractor shall perform all work necessary to locate, excavate and prepare for connections to the existing systems all as shown on the Drawings or where directed by the County. The cost for this work and for the actual connection shall be included in the price bid for the project and shall not result in any additional cost to the County. The termination point for each contract shall be as shown on the Contract Drawings.

### 1.03 RELOCATIONS

The Contractor shall be responsible for the coordination of the relocation of structures, including but not limited to light poles, power poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. No relocation of the items under this Contract shall be done without approval from the County.

### 1.04 EXISTING UNDERGROUND PIPING, STRUCTURES AND UTILITIES

A. The attention of the Contractor is drawn to the fact that during excavation, the possibility exists of the Contractor encountering various utility lines not shown on the Drawings. The Contractor shall exercise extreme care before and during excavation to locate and flag these lines as to avoid damage to the existing lines.

B. It is the responsibility of the Contractor to ensure that all utility or other poles, the stability of which may be endangered by the close proximity of excavation, are temporarily stayed in position while work proceeds in the vicinity of the pole and that the utility or other companies concerned be given reasonable advance notice.

C. The existing utility locations are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered. The Contractor shall be responsible for notifying the various utility companies to locate their respective utilities in advance of construction in conformance with all requirements provided for in the Florida Underground Facilities Damage Prevention and Safety Act (Florida Statutes, Title XXXIII, Chapter 556).

D. The existing piping and utilities that interfere with new construction shall be rerouted as shown, specified, or required. Before any piping and utilities not shown on the Drawings are disturbed, the Contractor shall notify the County and shall provide suggestions on how best to resolve the issue.

E. The Contractor shall exercise care in any excavation to locate all existing piping and utilities. All utilities which do not interfere with complete work shall be carefully protected against damage. Any existing utilities damaged in any way by the Contractor shall be restored or replaced by the Contractor at his expense as directed by the County.

F. It is intended that wherever existing utilities such as water, sewer, gas, telephone, electrical, or other service lines must be crossed, deflection of the pipe within recommended limits and cover shall be used to satisfactorily clear the obstruction unless otherwise indicated in the Drawings. However, when in the opinion of the County this procedure is not feasible, he may direct the use of fittings for a utilities crossing as detailed on the Drawings. No deflections will be allowed in gravity sanitary sewer lines or in existing storm sewer lines.

## 1.05 SUSPENSION OF WORK DUE TO WEATHER

Refer to FDOT Standards and Specifications Book, Section 8.

## 1.06 HURRICANE PREPAREDNESS PLAN

A. Within 30 days of the date of Notice to Proceed, the Contractor shall submit to the County a Hurricane Preparedness Plan. The plan should outline the necessary measures which the Contractor proposes to perform at no additional cost to the County in case of a hurricane warning.

B. In the event of inclement weather, or whenever County shall direct, Contractor shall insure that he and his Subcontractors shall carefully protect work and materials against damage or injury from the weather. If, in the opinion of the County, any portion of work or materials is damaged due to the failure on the part of the Contractor or Subcontractors to protect the work, such work and materials shall be removed and replaced at the expense of the Contractor.

## 1.07 POWER SUPPLY

Electricity as may be required for construction and permanent power supply shall be secured and purchased by the Contractor.

## 1.08 SALVAGE

Any existing equipment or material, including, but not limited to, valves, pipes, fittings, couplings, etc., which is removed or replaced as a result of construction under this project may be designated as salvage by the County and if so shall be protected for a reasonable time until picked up by the County. Any equipment or material not worthy of salvaging, as directed by the County, shall be disposed of by the Contractor at no additional cost.

## 1.09 DEWATERING

A. The Contractor shall do all groundwater pumping necessary to prevent flotation of any part of the work during construction operations with his own equipment.

B. The Contractor shall pump out water and wastewater which may seep or leak into the excavations for the duration of the Contract and with his own equipment. He shall dispose of this water in an appropriate manner.

## 1.10 ADDITIONAL PROVISIONS

A. Before commencing work on any of the existing pipelines, structures or equipment, the Contractor shall notify the County, in writing, at least 10 calendar days in advance of the date he proposes to commence such work.

B. The Contractor shall provide, at his own expense, all necessary temporary facilities for access to and for protection of, all existing facilities. The County's personnel must have ready access at all times to the existing facilities. The Contractor is responsible for all damage to existing structures, equipment and facilities caused by his construction operations and must repair all such damage when and as ordered by the County.

## 1.11 CONSTRUCTION CONDITIONS

The Contractor shall strictly adhere to the specific requirements of the governmental unit(s) and/or agency(ies) having jurisdiction over the work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.

## 1.12 PUBLIC NUISANCE

A. The Contractor shall not create a public nuisance including but not limited to encroachment on adjacent lands, flooding of adjacent lands, excessive noise or dust.

B. Sound levels must meet Manatee County Ordinance #87-34, (which amends Ordinance 81-3, The Manatee County Noise Control Ordinance). Sound levels in excess of such ordinance are sufficient cause to have the work halted until equipment can be quieted to these levels. Work stoppage by the County for excessive noise shall not relieve the Contractor of the other portions of this specification.

C. No extra charge may be made for time lost due to work stoppage resulting from the creation of a public nuisance.

## 1.13 WARRANTIES

A. All material supplied under these Specifications shall be warranted by the Contractor and the manufacturers for a period of three (3) years. Warranty period shall commence on the date of County acceptance.

B. The material shall be warranted to be free from defects in workmanship, design and materials. If any part of the system should fail during the warranty period, it shall be replaced at no expense to the County. All material and installation costs shall be 100% borne by the Contractor.

C. The manufacturer's warranty period shall run concurrently with the Contractor's warranty or guarantee period. No exception to this provision shall be allowed. The Contractor shall be responsible for obtaining warranties from each of the respective suppliers or manufacturers for all the material specified under these contract specifications,

D. In the event that the manufacturer is unwilling to provide a three-year warranty commencing at the time of County acceptance, the Contractor shall obtain from the manufacturer a four (4) year warranty starting at the time of equipment delivery to the job site. This four-year

warranty shall not relieve the Contractor of the three-year warranty starting at the time of County acceptance of the equipment.

## 1.14 FUEL STORAGE & FILLING

A. If the contractor is storing fuel on site, or doing his own fuel filling of portable equipment (other than hand-held equipment), he is responsible for any required response, clean-up or reporting required, at no additional cost to the county.

B. The Contractor shall prepare and submit a fuel storage / spill abatement plan prior to start of construction if required.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01045 CUTTING AND PATCHING

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall be responsible for all cutting, fitting and patching, including excavation and backfill, required to complete the work or to:

1. Make its several parts fit together properly.
2. Uncover portions of the work to provide for installation of ill-timed work.
3. Remove and replace defective work.
4. Remove and replace work not conforming to requirements of Contract Documents.
5. Provide penetrations of non-structural surfaces for installation of piping and electrical conduit.

## PART 2 PRODUCTS

### 2.01 MATERIALS

Comply with specifications and standards for each specific product involved.

## PART 3 EXECUTION

### 3.01 INSPECTION

A. Inspect existing conditions of project, including elements subject to damage or to movement during cutting and patching.

B. After uncovering work, inspect conditions affecting installation of products, or performance of work.

C. Report unsatisfactory or questionable conditions to County. Do not proceed with work until County has provided further instructions.

### 3.02 PREPARATION

A. Provide adequate temporary support as necessary to assure structural value to integrity of affected portion of work.

B. Provide devices and methods to protect other portions of project from damage.

C. Provide protection from elements for that portion of the project which may be exposed by cutting and patching work and maintain excavations free from water.

### 3.03 PERFORMANCE

A. Execute cutting and demolition by methods which will prevent damage to other work and will provide proper surfaces to receive installation of repairs.

B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.

C. Fit and adjust products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

D. Restore work which has been cut or removed; install new products to provide completed work in accordance with the requirements of the Contract Documents.

E. Replace surfaces airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

F. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.

END OF SECTION

# SECTION 01050 FIELD ENGINEERING AND SURVEYING

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall provide and pay for field surveying service required for the project.

B. The Contractor shall furnish and set all necessary stakes to establish the lines and grades as shown on the Contract Drawings and layout each portion of the Work of the Contract.

### 1.02 QUALIFICATION OF SURVEYOR AND ENGINEER

All construction staking shall be conducted by or under the supervision of a Florida Registered Professional Surveyor and Mapper. The Contractor shall be responsible for the layout of all such lines and grades, which will be subject to verification by the County.

### 1.03 SURVEY REFERENCE POINTS

A. Existing basic horizontal and vertical control points for the Project are designated on the Contract Drawings.

B. Locate and protect all survey monumentation, property corners and project control points prior to starting work and preserve all permanent reference points during construction. All costs associated with the replacement of all survey monumentation, property corners and project control points shall be borne by the Contractor.

Make no changes or relocations without prior written notice to County.

Report to County when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

Require surveyor to replace project control points which may be lost or destroyed.

Establish replacements based on original survey control.

### 1.04 PROJECT SURVEY REQUIREMENTS

The Contractor shall establish temporary bench marks as needed, referenced to data established by survey control points.

### 1.05 RECORDS

The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings per Section 01720.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01090 REFERENCE STANDARDS

## PART 1 GENERAL

### 1.01 REQUIREMENTS

Abbreviations and acronyms used in Contract Documents to identify reference standards.

A. Application: When a standard is specified by reference, comply with requirements and recommendations stated in that standard, except when requirements are modified by the Contract Documents, or applicable codes established stricter standards.

B. Publication Date: The most recent publication in effect on the date of issue of Contract Documents, except when a specific publication date is specified.

### 1.03 ABBREVIATIONS, NAMES AND ADDRESSES OR ORGANIZATIONS

Obtain copies of reference standards direct from publication source, when needed for proper performance of work, or when required for submittal by Contract Documents.

AA Aluminum Association
818 Connecticut Avenue, N.W.
Washington, DC 20006

AASHTO American Association of State Highway and Transportation Officials
444 North Capital Street, N.W.
Washington, DC 20001

ACI American Concrete Institute
Box 19150
Reford Station
Detroit, MI 48219

AI Asphalt Institute
Asphalt Institute Building
College Park, MD 20740

AISC American Institute of Steel Construction
1221 Avenue of the Americas
New York, NY 10020

AISI American Iron and Steel Institute
1000 16th Street NW
Washington, DC 20036

ANSI American National Standards Institute
1430 Broadway
New York, NY 10018

ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers
179l Tullie Circle, N.E.
Atlanta, GA 30329

| | |
|---|---|
| ASME | American Society of Mechanical Engineers<br>345 East 47th Street<br>New York, NY 10017 |
| ASTM | American Society for Testing and Materials<br>1916 Race Street<br>Philadelphia, PA 19103 |
| AWWA | American Water Works Association<br>6666 West Quincy Avenue<br>Denver, CO 80235 |
| AWS | American Welding Society<br>2501 N.W. 7th Street<br>Miami, FL 33125 |
| CRSI | Concrete Reinforcing Steel Institute<br>180 North LaSalle Street, Suite 2110<br>Chicago, IL 60601 |
| FDEP | Florida Department of Environmental Protection<br>3900 Commonwealth Blvd.<br>Tallahassee, Florida 32399 |
| FDOT | Florida Department of Transportation Standards Specifications for Road and Bridge Construction<br>Maps & Publication Sales - Mail Station 12<br>605 Suwannee St.<br>Tallahassee, FL 32399-0450 |
| FS | Federal Specification<br>General Services Administration Specifications and Consumer Information Distribution Section (WFSIS)<br>Washington Navy Yard, Bldg. 197<br>Washington, DC 20407 |
| MCPW UTIL STD | Manatee County Utility Engineering<br>1022 26th Ave E<br>Bradenton, FL 34208 |
| MLSFA | Metal Lath/Steel Framing Association<br>221 North LaSalle Street<br>Chicago, IL 60601 |
| MMA | Monorail Manufacturer's Association<br>1326 Freeport Road<br>Pittsburgh, PA 15238 |
| NAAMM | National Association of Architectural Metal Manufacturers<br>221 North LaSalle Street<br>Chicago, IL 60601 |
| NEMA | National Electrical Manufacturer's Assoc. |

2101 L Street N.W.
Washington, DC 20037

OHSA Occupational Safety and Health Assoc.
5807 Breckenridge Pkwy., Suite A
Tampa, FL 33610-4249

PCA Portland Cement Association
5420 Old Orchard Road
Skokie, IL 20076

PCI Prestressed Concrete Institute
20 North Wacker Drive
Chicago, IL 60606

SDI Steel Door Institute
712 Lakewood Center North
Cleveland, OH 44107

SMACNA Sheet Metal and Air Conditioning Contractor's National Association
8224 Old Court House Road
Vienna, VA 22180

SSPC Steel Structures Painting Council
402 24th Street, Suite 600
Pittsburgh, PA 15213

SWFWMD Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899

UL Underwriter's Laboratories, Inc.
333 Pfingston Road
Northbrook, IL 60062

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01150 MEASUREMENT AND PAYMENT

## PART 1 GENERAL

### 1.01 SCOPE

A. The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Form section of the Contract Documents. Payment will be made based on the specified items included in the description in this section for each bid item.

B. All contract prices included in the Bid Form section will be full compensation for all shop drawings, working drawings, labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the Drawings and/or as specified in the Contract Documents to be performed under this Contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the Specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this Contract.

### 1.02 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The County does not assume any responsibility for the final quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactorily completed quantity of each item.

### 1.03 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

### 1.04 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

### 1.05 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

### 1.06 LUMP SUM ITEMS

Where payment for items is shown to be paid for on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum items. Lump sum contracts shall be complete, tested and fully operable prior to request for final payment. Contractor may be required to provide a break-down of the lump sum totals.

### 1.07 UNIT PRICE ITEM

Separate payment will be made for the items of work described herein and listed on the Bid Form. Any related work not specifically listed, but required for satisfactory completion of the

work shall be considered to be included in the scope of the appropriate listed work items.

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work. Final payments shall not be requested by the Contractor or made by the County until as-built (record) drawings have been submitted and approved by the County.

1. Project signs and photographs.
2. Removal, repair, replacement or relocation of all signs, walls, private irrigation systems and related items.
3. Rubbish and spoil removal.
4. Shop Drawings, Working Drawings.
5. Clearing, grubbing and grading except as hereinafter specified.
6. Trench excavation, including necessary pavement removal and rock removal, except as otherwise specified.
7. Dewatering and disposal of surplus water.
8. Structural fill, backfill, and grading.
9. Replacement of unpaved roadways, and shrubbery plots.
10. Cleanup & miscellaneous work.
11. Foundation and borrow materials, except as hereinafter specified.
12. Testing and placing system in operation.
13. Any material and equipment required to be installed and utilized for the tests.
14. Pipe, structures, pavement replacement, asphalt and shell driveways and/or appurtenances included within the limits of lump sum work, unless otherwise shown.
15. Maintaining the existing quality of service during construction.
16. Appurtenant work as required for a complete and operable system.
17. Seeding and hydromulching.

## BID SCHEDULE

### MOBILIZATION

A. Measurement and payment for this Bid Item shall include full compensation for the required 100 percent (100%) Performance Bond, 100 Percent (100%) Payment Bond, all required insurance for the project and the Contractor's mobilization and demobilization costs as shown in the Bid Form. Mobilization includes, but it not limited to: preparation and movement of personnel, equipment, supplies and incidentals such as safety and sanitary supplies/ facilities

B. Payment for mobilization shall not exceed 10 percent (10%) of the total Contract cost unless the Contractor can prove to the County that his actual mobilization cost exceeds 10 percent (10%).

Partial payments for this Bid Item will be made in accordance with the following schedule:

| Percent of Original Contract Amount: | Percent Allowable Payment of Mobilization/Demobilization Bid Item Price: |
|---|---|
| 5 | 25 |
| 10 | 35 |
| 25 | 45 |
| 50 | 50 |
| 75 | 75 |

| | |
|---|---|
| 100 | 100 |

These payments will be subject to the standard retainage provided in the Contract. Payment of the retainage will be made after completion of the work and demobilization.

C. Payment will be made under:

101-1 MOBILIZATION/DEMOBILIZATION

## MAINTENANCE OF TRAFFIC:

A. Description: The work specified in this Item consists of maintaining traffic within the limits of the project for the duration of the construction period including any temporary suspensions of the work. It shall include the construction and maintenance of any necessary detour facilities; the preparation of maintenance of traffic plans prepared, signed, and sealed by a Florida Professional Engineer; the providing of necessary facilities for access to residences, businesses, etc. along the project; the furnishing, installing and maintaining of traffic control and safety devices during construction, the control of dust, and any other special requirements for safe and expeditious movement of traffic as may be called for on the plans. The term, maintenance of traffic, as used herein, shall include all of such facilities, devices and operations as are required for the safety and convenience of the public as well as for minimizing public nuisance, all as specified in this Section.

B. Measurement: The quantity of maintenance of traffic to be paid for under this Item shall be measured as one lump sum quantity. Partial payments will be prorated throughout the duration of construction of this Project in direct proportion to the percent completion of the work, as determined by the ratio of the payment requested to the total contract price.

C. Payment: The quantities, as determined above, shall be paid for at the contract lump sum price set out in the Proposal, which price and payment constitutes full compensation for all the work described herein.

D. Payment will be made under:

102-1 MOT

## WATER MAIN UTILITY COMPONENT

## BID SCHEDULE ITEM NO. 1 - 3: CASING EXTENSIONS, SPLIT STEEL CASING FOR WATER MAIN

A. Measurement for payment for casing extensions, split steel casing will be on a linear foot basis.

E. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total linear feet furnished and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe casing, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

B. Payment will be made under:

| | | |
|---|---|---|
| Items 1-3 | 1050-61124 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24" |
| | 1050-61130 | UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 30" |

## BID SCHEDULE ITEM NO. 4 - 8: STEEL CASING, NEW PIPE FOR WATER MAIN

A. Measurement for payment for steel casing, new pipe will be on a linear foot basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total linear feet furnished and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe casing, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 4-8 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" |
| | 1050-61114 | UTILITY PIPE -- STEEL, F&I, CASING, 14" |
| | 1050-61130 | UTILITY PIPE -- STEEL, F&I, CASING, 30" |
| | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" |
| | 1050-61142 | UTILITY PIPE -- STEEL, F&I, CASING, 48" |

## BID SCHEDULE ITEM NO. 9 - 12: TIE-INTO EXISTING PIPE FOR WATER MAIN

A. Measurement for payment for tie-into existing pipe will be on a lump sum basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total lump sum to furnish and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe, by-pass pumping as needed, notification to residence of service interruptions as needed, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | |
|---|---|
| Items 9-12 | Tie-into Existing 6" WM, STA 332+99, 353+25, 378+21, 385+01 |
| | Tie-into Existing 8" WM, STA 311+54 |
| | Tie-into Existing 16" WM, STA 301+44, 340+01, 368+10, 385+07 |
| | Tie-into Existing 30" WM, STA 339+46, 386+49 |

## BID SCHEDULE ITEM NO. 13 - 22: VALVES AND BLOWOFF ASSEMBLIES FOR WATER MAIN

A. Measurement for payment for furnishing and installing tapping saddle(s), air/vacuum valve(s),

gate valve(s) with assembly, check valve(s) with assembly and blowoff(s) assembly completely and acceptably installed per the contract drawings.

B. Measurement: Measurement will be on an individual basis for each saddle, valve assembly, and blowoff assembly as shown on the drawings or where directed by the Project Representative.

C. Payment: Payment will be according to the listed diameter or type of saddle/stop, valve assembly, and blowoff assembly as set forth on the Proposal. These bid item includes, but is not limited to, saddles and stopes, valves, valve case and lid, blowoff and blowoff assemblies, trench adapter and extensions, equipment and materials for the furnishing and laying of the pipe, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing, pavement, and other materials not specifically designated in the Bid Schedule. The work may also include restoration, cleaning, concrete pad for the valve box and brass tag except where such are shown to be paid for under a separate item. These unit bid prices includes furnishing and installing all incidental items required for a complete assembly.

D. Prior to the tapping operation, the Contractor will contact the County as to the date and time of the proposed work. The tapping operation itself up to 12-inches in diameter will be performed by the County. All tapping operations larger than 12 inches in diameter shall be performed by the Contractor with the County's Representative present. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction testing, disinfection and equipment required to complete these Bid Items.

E. Payment will be made under:

| | | |
|---|---|---|
| Items 13-22 | 1080-23108 | UTILITY FIXTURE -- TAPPING SAD/SL, F&I, 8" |
| | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" |
| | 1080-24106 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 6" |
| | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 8" |
| | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" |
| | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" |
| | 1080-24130 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 30" |
| | 1080-24106 | UTILITY FIXTURE -- CHECK VALVE ASSEMBLY, MJ, F&I, 6" |
| | 1080-25102 | UTILITY FIXTURE -- BLOWOFF ASSEMBLY, F&I, 2" |

## BID SCHEDULE ITEM NO. 21 - 25: PIPE FOR WATER MAIN

A. Measurement for payment for water main piping will be on a linear foot basis.

B. Payment for all work included in this Bid Schedule shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter ductile iron water main (Ductile Iron Pipe 6"-30" Cement lined) pipe as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials including; warning tape, casing spacers for pipe being installed in steel casings, and excavation, including; rock, dewatering, bedding, backfill, compaction, hydrostatic testing and disinfection and equipment required to complete these Bid Schedules. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 21-25 | 1050-51206 | UTILITY PIPE -- DI, F&I, WATER, 6" |
| | 1050-51208 | UTILITY PIPE -- DI, F&I, WATER, 8" |
| | 1050-51210 | UTILITY PIPE -- DI, F&I, WATER, 10" |
| | 1050-51216 | UTILITY PIPE -- DI, F&I, WATER, 16" |
| | 1050-51230 | UTILITY PIPE -- DI, F&I, WATER, 30" |

## BID SCHEDULE ITEM NO. 26 - 58: MISC. FITTINGS FOR WATER MAIN

A. Measurement for payment for the quantity shall be per each ductile iron pipe fitting acceptably installed as shown on the drawings or where directed by the Project Representative. This bid schedule describes measurement and payment for ductile iron pipe fittings and restraint assemblies used in installing fittings on ductile iron pipe used in the construction of the water main. This bid item includes, but is not limited to, restraining devices, bends, reducers, unions, tees, crosses, sleeves, plugs and caps.

B. Payment: Payment will be per each fitting. The unit bid price includes furnishing and installing all fittings and materials above or below ground along the pipeline alignment; joints, and jointing materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; disposal of spoil; hydrostatic testing; erosion control maintenance of flow, by-pass pumping (as required), surface restoration and all other related and necessary materials, work and equipment required to construct a complete, operable restrained joint pipeline.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 26-58 | 1080-29106 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 6" |
| | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" |
| | 1080-29116 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 16" |
| | 1080-29130 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 30" |
| | 1055-51106 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 6" |
| | 1055-51116 | UTILITY FITTINGS, DI F&I, 90 DEG ELBOW, 16" |
| | 1055-51106 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 6" |
| | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 8" |
| | 1055-51116 | UTILITY FITTINGS, DI F&I, 45 DEG ELBOW, 16" |
| | 1055-51130 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 30" |
| | 1055-51106 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 6" |
| | 1055-51116 | UTILITY FITTINGS, DI F&I, 22.5 DEG ELBOW, 16" |
| | 1055-51130 | UTILITY FITTINGS, DI F&I, 22.5 DEG ELBOW, 30" |
| | 1055-51116 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 16" |
| | 1055-51130 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 30" |
| | 1055-51330 | UTILITY FITTINGS, DI F&I, REDUCER,30"x16" |
| | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" |
| | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" |
| | 1055-5130 | UTILITY FITTINGS, DI F&I, UNION, 30" |
| | 1055-51206 | UTILITY FITTINGS, DI F&I, TEE, 6" X 6" |
| | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 6" |
| | 1055-51216 | UTILITY FITTINGS, DI F&I, TEE, 16" X 8" |
| | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 6" |

| | | |
|---|---|---|
| | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 10" |
| | 1055-51230 | UTILITY FITTINGS, DI F&I, TEE, 30" X 16" |
| | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X30" |
| | 1055-51230 | UTILITY FITTINGS, DI F&I, CROSS, 30"X6" |

## BID SCHEDULE ITEM NO. 46 - 47: WATER SERVICE

A. Measurement for payment for Water Service (short and long) will be based on each Potable Water Service (short and long) installed or adjusted. A “short side” service is considered to be a service where the meter service connection is on the same side of the centerline of the roadway as the mainline pipe or the 1” service line from the supply source to the “wye fitting” or “service branch” is less than or equal to 30 linear feet in length. A “long side” service is considered to be a service where the meter service connection is on the opposite side of the centerline of the roadway as the mainline pipe or the 1” service line is greater than 30 linear feet in length

B. The price and payment for the Potable Water Service (short and long) shall include but not be limited to all labor, materials and equipment necessary for the protection of existing facilities, minor modifications, deflections under/over new services or mains, replacement of irrigation heads, damaged mains. Also included is miscellaneous excavation related items including rock, backfilling, compaction, bedding, fittings, removal of similar appurtenances, erosion and sedimentation devices, culverts and storm sewers, mailboxes, sidewalks and other materials not specifically designated in the Bid, cleanup, testing, any testing required by the regulatory agencies, plugs and incidentals in place and all other required work for the adjustment of existing potable water service.

C. This item also includes the connection and all related appurtenances of potable water service to temporary main and connection to permanent main in order to maintain continued potable water service to the residences/businesses.

D. Payment will be made under:

| | | |
|---|---|---|
| Items 46-47 | 1080-21101 | 1" Service, Short |
| 1080-21101 | 1" Service, Long | |

## BID SCHEDULE ITEM NO. 48 - 52: PIPE REMOVAL FOR WATER MAIN

A. Measurement: The quantity shall be per linear foot of force main removed as shown on the drawings or where directed by the Project Representative. This bid item describes measurement and payment for removal of existing force main per the Contract Drawings or as directed by the Owner or Owner’s representative.

B. Payment will be per liner foot of pipeline removed and per hydrant removed based on size and configuration. The unit bid price includes furnishing and installing all fittings and materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; protection of existing utilities, surface restoration and all other related and necessary materials, work and equipment required.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 48-52 | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 5-7.9" -6 |
| | 1050-16004 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -8 |
| | 1050-16004 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -16 |
| | 1050-16005 | UTILITY PIPE, REMOVE & DISPOSE, 20-49.9" -30 |

1644900 FIRE HYDRANT, REMOVE

## BID SCHEDULE ITEM NO. 53: FIRE HYDRANT ASSEMBLY – WATER MAIN

A. Measurement for payment for furnishing and installing will be on an individual basis for each fire hydrant assembly completely and acceptably installed per the contract drawings.

B. Payment will be made at the Bid Schedule unit price for each new Fire Hydrant Assembly, including all labor, equipment, and materials for a complete installation. The Work includes, but is not limited to, a hydrant tee and locked 90° bend (where required), 6-inch gate valve, valve extensions if required, valve box, concrete pad with brass ID tag and tracer wire locator box, 6-inch DI hydrant branch piping, new hydrant assembly, restraint joints, and all other incidentals necessary to complete the installation as specified. The work shall include, but is not limited to, excavation, disposal of excess material, bedding material, backfill, compaction, installation of new hydrant assembly and accessories, connection to reclaimed water main, reflective pavement marker at hydrant, painting of hydrant, concrete valve pad complete with tracer wire access point, restoration, cleaning and leak testing, and all other equipment and all other incidentals necessary to complete the work.

C. Payment will be made under:

Item 53 1644113 FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6"

## BID SCHEDULE ITEM NO. 54: RECORD DRAWINGS – WATER MAIN

A. Payment for all work included under this Bid Item shall be made at the Contract lump sum price bid listed in the Bid Form and shall represent full compensation for all labor, materials and equipment required to generate and provide record drawings approved and accepted by the County. Record drawings shall be in strict accordance with Section 1.15 of the Manatee County Public Work Utility Standards.

B. Payment will be made under

Item 54 9999-3 RECORD DRAWINGS – WATER MAIN

# FORCE MAIN UTILITY COMPONENT

## BID SCHEDULE ITEM NO. 1: CASING EXTENSIONS, SPLIT STEEL CASING FOR FORCE MAIN

A. Measurement for payment for casing extensions, split steel casing will be on a linear foot basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total linear feet furnished and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe casing, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

Items 1 1050-61124 UTILITY PIPE -- STEEL, F&I, SPLIT CASING, 24"

## BID SCHEDULE ITEM NO. 2 - 3: STEEL CASING, NEW PIPE FOR FORCE MAIN

A. Measurement for payment for steel casing, new pipe will be on a linear foot basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total linear feet furnished and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe casing, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 2-3 | 1050-61112 | UTILITY PIPE -- STEEL, F&I, CASING, 12" |
| | 1050-61124 | UTILITY PIPE -- STEEL, F&I, CASING, 24" |

## BID SCHEDULE ITEM NO. 4 - 6: TIE-INTO EXISTING PIPE FOR FORCE MAIN

A. Measurement for payment for tie-into existing pipe will be on a lump sum basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total lump sum to furnish and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, equipment and materials for the furnishing and laying of the pipe, by-pass pumping as needed, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | |
|---|---|
| Items 4-6 | Tie-into Existing 4" FM, STA 303+93, 310+64, 326+76 |
| | Tie-into Existing 12" FM, STA 300+72 |
| | Tie-into Existing 12" FM, STA 339+02 |

## BID SCHEDULE ITEM NO. 7 - 10: VALVES FOR FORCE MAIN

A. Measurement for payment for furnishing and installing will be on an individual basis for each air/vacuum valve(s), plug valve(s) with assembly, completely and acceptably installed per the contract drawings.

B. Payment: Payment will be according to the listed diameter or type of valve assembly as set forth on the Proposal. These bid item includes, but is not limited to, air/vacuum valve(s), plug valve(s) with assembly, trench adapter and extensions, equipment and materials for the furnishing and laying of the pipe, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing, pavement, and other materials not specifically designated in the Bid Schedule. The work may also include restoration, cleaning, hydrostatic leak testing, concrete pad for valve boxes and brass tag except where such are shown to be paid for under a separate item. These unit

bid prices includes furnishing and installing all incidental items required for a complete assembly.

C. Prior to the tapping operation, the Contractor will contact the County as to the date and time of the proposed work. The tapping operation itself up to 12-inches in diameter will be performed by the County. All tapping operations larger than 12 inches in diameter shall be performed by the Contractor with the County's Representative present. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction testing, disinfection and equipment required to complete these Bid Items.

D. Payment will be made under:

| | | |
|---|---|---|
| Items 7-10 | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" |
| | 1080-33104 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 4" |
| | 1080-33110 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 10" |
| | 1080-33112 | UTILITY FIXTURE -- PLUG VALVE, MJ, F&I, 12" |

## BID SCHEDULE ITEM NO. 11 - 15: PIPE FOR FORCE MAIN

A. Measurement for payment for water main piping will be on a linear foot basis.

B. Payment for all work included in this Bid Schedule shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter PVC force main (PVC 4"-12" C-900 & C-905) pipe as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, including; tracer wire and or detectable warning tape, casing spacers for pipe installed in steel casings, excavation, including rock, dewatering, bedding, backfill, compaction, hydrostatic testing and equipment required to complete these Bid Schedules. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 11-15 | 1050-31204 | UTILITY PIPE -- PVC, F&I, SEWER, 4" |
| | 1050-31210 | UTILITY PIPE -- PVC, F&I SEWER 10" |
| | 1050-31212 | UTILITY PIPE -- PVC, F&I, SEWER, 12" |

## BID SCHEDULE ITEM NO. 16 -38: MISC. FITTINGS FOR FORCE MAIN

A. Measurement for payment for the quantity shall be per each ductile iron pipe fitting acceptably installed as shown on the drawings or where directed by the Project Representative. This bid schedule describes measurement and payment for ductile iron pipe fittings and restraint assemblies used in installing fittings on PVC pipe used in the construction of the sewer force main. This bid item includes, but is not limited to, restraining devices, bends, reducers, unions, tees, sleeves, plugs and caps.

B. Payment: Payment will be per each fitting. The unit bid price includes furnishing and installing all fittings and materials above or below ground along the pipeline alignment; joints, and jointing materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; constructing the specified protection and adjusting of existing above ground and underground utilities and service

connections; disposal of spoil; hydrostatic testing; erosion control maintenance of flow, by-pass pumping (as required), surface restoration and all other related and necessary materials, work and equipment required to construct a complete, operable restrained joint pipeline.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 16-38 | 1080-29104 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 4" |
| | 1080-29112 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 12" |
| | 1055-51104 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 4" |
| | 1055-51104 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 4" |
| | 1055-51112 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 12" |
| | 1055-51112 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 12" |
| | 1055-51112 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 12" |
| | 1055-51404 | UTILITY FITTINGS, DI F&I, UNION, 4" |
| | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" |
| | 1055-51512 | UTILITY FITTINGS, DI F&I, CAP/PL, 12" |
| | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X4" |
| | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"x10" |
| | 1055-51212 | UTILITY FITTINGS, DI F&I, TEE, 12"X12" |

## BID SCHEDULE ITEM NO. 39 - 40: PIPE REMOVAL FOR FORCE MAIN

A. Measurement: The quantity shall be per linear foot of force main removed as shown on the drawings or where directed by the Project Representative. This bid item describes measurement and payment for removal of existing force main per the Contract Drawings or as directed by the Owner or Owner's representative.

B. Payment: Payment will be per liner foot of pipeline removed based on size and configuration. The unit bid price includes furnishing and installing all fittings and materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; protection of existing utilities, surface restoration.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 39-40 | 1050-16002 | UTILITY PIPE, REMOVE & DISPOSE, 2-4.9" -4 |
| | 1050-16003 | UTILITY PIPE, REMOVE & DISPOSE, 5-7.9" -6 |

## BID SCHEDULE ITEM NO. 41: RECORD DRAWINGS – FORCE MAIN

A. Payment for all work included under this Bid Item shall be made at the Contract lump sum price bid listed in the Bid Form and shall represent full compensation for all labor, materials and equipment required to generate and provide record drawings approved and accepted by the County. Record drawings shall be in strict accordance with Section 1.15 of the Manatee County Public Work Utility Standards.

B. Payment will be made under

| | | |
|---|---|---|
| Item 41 | 9999-3 | RECORD DRAWINGS – FORCE MAIN |

## RECLAIMED WATER MAIN UTILITY COMPONENT

### BID SCHEDULE ITEM NO. 1 - 2: STEEL CASING, NEW PIPE FOR RECLAIMED WATER

A. Measurement for payment for steel casing, new pipe will be on a linear foot basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total linear feet furnished and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, including but not limited to, equipment and materials for the furnishing and laying of the pipe casing, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 1-2 | 1050-61118 | UTILITY PIPE -- STEEL, F&I, CASING, 18" |
| | 1050-61136 | UTILITY PIPE -- STEEL, F&I, CASING, 36" |

### BID SCHEDULE ITEM NO. 3-4:TIE-INTO EXISTING PIPE FOR RECLAIMED WATER

A. Measurement for payment for tie-into existing pipe will be on a lump sum basis.

B. Payment for work under this Bid Schedule shall be made at the Contract unit price for the total lump sum to furnish and installed. Such price and payment shall be full compensation for all equipment, labor and materials required for a complete installation, including but not limited to, including but not limited to, equipment and materials for the furnishing and laying of the pipe, by-pass pumping as needed, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, tracer wire riser, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing.

C. Payment will be made under:

| | |
|---|---|
| Items 3-4 | Tie-into Existing 16" PVC RCW, STA 367+14 |
| | Tie-into Existing 8" RCW GV , STA 310+63, 386+21 |

### BID SCHEDULE ITEM NO. 5 - 10: VALVES FOR RECLAIMED WATER MAIN

A. Measurement for payment for furnishing and installing will be on an individual basis for each air/vacuum valve(s), gate valve(s) with assembly, completely and acceptably installed per the contract drawings.

B. Payment: Payment will be according to the listed diameter or type of valve assembly as set forth on the Proposal. These bid item includes, but is not limited to, air/vacuum valve(s) and gate valve(s) with assembly, trench adapter and extensions, equipment and materials for the furnishing and laying of the pipe, dewatering, compaction, pipe bedding, backfilling, furnishing and installing sheeting, shoring and bracing, sheeting design and analysis, detectable tape, tracer wire riser, polyethylene encasement, sleeves, clamps, harnessing, adapters, excavation of all material encountered including rock, backfill, sod, clearing and grubbing, pavement, and other materials not specifically designated in the

Bid Schedule. The work may also include restoration, cleaning, hydrostatic leak testing, concrete pad for valve boxes and brass tag except where such are shown to be paid for under a separate item. These unit bid prices includes furnishing and installing all incidental items required for a complete assembly.

C. Prior to the tapping operation, the Contractor will contact the County as to the date and time of the proposed work. The tapping operation itself up to 12-inches in diameter will be performed by the County. All tapping operations larger than 12 inches in diameter shall be performed by the Contractor with the County's Representative present. Payment shall represent full compensation for all labor, material, excavation, including rock as necessary, bedding, backfill, compaction testing, disinfection and equipment required to complete these Bid Items.

D. Payment will be made under:

| | | |
|---|---|---|
| Items 5-10 | 1080-24108 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ,F&I, 8" |
| | 1080-24110 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 10" |
| | 1080-24116 | UTILITY FIXTURE -- GATE VALVE ASSEMBLY, MJ, F&I, 16" |
| | 1080-26102 | UTILITY FIXTURE -- VAC/AIR ASSEMB, F&I, 2" |

## BID SCHEDULE ITEM NO. 11 - 17: PIPE FOR RECLAIMED WATER MAIN

A. Measurement for payment for reclaimed water main piping will be on a linear foot basis.

B. Payment for all work included in this Bid Schedule shall be made at the applicable Contract unit price bid per the schedule of prices for furnishing and installing the listed diameter Ductile Iron and PVC pipe reclaimed force main (PVC 8"-10" C-900 &C-905, Ductile Iron Pipe 8"- 20" Cement Lined) pipe as shown on the Contract Drawings and listed in the Bid Form. Measurement and Payment shall be made for the actual length of the listed diameter pipe installed and will represent full compensation for all labor, materials, including; detectable warning tape and or tracer wire with risers, casing spacers for pipe installed in steel casings, and excavation, including rock, dewatering, bedding, backfill, compaction, hydrostatic testing and equipment required to complete these Bid Schedules. No additional compensation will be made for excavation below the bottom of the pipe, for rock removal or bedding and backfill materials, or for repair of any trench settlement.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 11-17 | 1050-31208 | UTILITY PIPE -- PVC, F&I, RECLAIM, 8" |
| | 1050-31210 | UTILITY PIPE -- PVC, F&I, RECLAIM, 10" |
| | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 8" |
| | 1050-51210 | UTILITY PIPE -- DI, F&I, RECLAIM, 10" |
| | 1050-51216 | UTILITY PIPE -- DI, F&I, RECLAIM, 16" |
| | 1050-51220 | UTILITY PIPE -- DI, F&I, RECLAIM, 20" |

## BID SCHEDULE ITEM NO. 18 -37: MISC. FITTINGS FOR RECLAIMED WATER MAIN

A. Measurement for payment for the quantity shall be per each ductile iron pipe fitting acceptably installed as shown on the drawings or where directed by the Project Representative. This bid schedule describes measurement and payment for ductile iron pipe fittings and restraint assemblies used in installing fittings on Ductile Iron and PVC pipe used in the construction of the reclaimed force main. This bid item includes, but is not limited to, restraining devices, bends, unions, tees, sleeves, plugs and caps.

B. Payment: Payment will be per each fitting. The unit bid price includes furnishing and installing all fittings and materials above or below ground along the pipeline alignment; joints, and jointing materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; constructing the specified protection and adjusting of existing above ground and underground utilities and service connections; disposal of spoil; hydrostatic testing; erosion control maintenance of flow, by-pass pumping (as required), surface restoration and all other related and necessary materials, work and equipment required to construct a complete, operable restrained joint pipeline.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 18-37 | 1080-29108 | UTILITY FIXTURE, MJ RESTRAINT, F&I, 8" |
| | 1055-51108 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 8" |
| | 1055-51108 | UTILITY FITTINGS, DI F&I 90 DEG ELBOW 8" |
| | 1055-51110 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 10" |
| | 1055-51110 | UTILITY FITTINGS, DI F&I, 45 DEGREE ELBOW, 10" |
| | 1055-51116 | UTILITY FITTINGS, DI F&I, 22.5 DEGREE ELBOW, 16" |
| | 1055-51120 | UTILITY FITTINGS, DI F&I 11.25 DEG ELBOW 20" |
| | 1055-51120 | UTILITY FITTINGS, DI F&I 22.5 DEG ELBOW 20" |
| | 1055-51120 | UTILITY FITTINGS, DI F&I 45 DEG ELBOW 20" |
| | 1055-51408 | UTILITY FITTINGS, DI F&I, UNION, 8" |
| | 1055-51416 | UTILITY FITTINGS, DI F&I, UNION, 16" |
| | 1055-51210 | UTILITY FITTINGS, DI F&I, TEE, 10" X 8" |
| | 1055-51508 | UTILITY FITTINGS, DI F&I, CAP/PL, 8" |
| | 1055-51510 | UTILITY FITTINGS, DI F&I, CAP/PL, 10" |
| | 1055-51520 | UTILITY FITTINGS, DI F&I PLUG 20" |
| | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X8" |
| | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X16" |
| | 1055-51220 | UTILITY FITTINGS, DI F&I, TEE, 20"X20" |

## BID SCHEDULE ITEM NO. 38 - 40: PIPE REMOVAL FOR RECLAIMED WATER MAIN

A. Measurement: The quantity shall be per linear foot of force main removed as shown on the drawings or where directed by the Project Representative. This bid item describes measurement and payment for removal of existing force main per the Contract Drawings or as directed by the Owner or Owner's representative.

B. Payment: Payment will be per liner foot of pipeline removed based on size and configuration. The unit bid price includes furnishing and installing all fittings and materials; thrust bracing, shoring, and sheeting; dewatering, clearing, grubbing, and stripping; trenching, bedding and backfill; protection of existing utilities, surface restoration.

C. Payment will be made under:

| | | |
|---|---|---|
| Items 38-40 | 1050-16004 | UTILITY PIPE, REMOVE & DISPOSE, 8-19.9" -8 |
| | 1050-16004 | UTILITY PIPE,REMOVE & DISPOSE, 8-19.9" -16 |
| | 1050-16005 | UTILITY PIPE,REMOVE & DISPOSE, 20-49.9" -20 |

## BID SCHEDULE ITEM NO. 41: FIRE HYDRANT ASSEMBLY – RECLAIMED WATER MAIN

C. Measurement for payment for furnishing and installing will be on an individual basis for each fire hydrant assembly completely and acceptably installed per the contract drawings.

D. Payment will be made at the Bid Schedule unit price for each new Fire Hydrant Assembly, including all labor, equipment, and materials for a complete installation. The Work includes, but is not limited to, a hydrant tee (where required), 6-inch gate valve, valve extensions if required, valve box, concrete pad with brass ID tag and tracer wire locator box, 6-inch DI hydrant branch piping, new hydrant assembly, restraint joints, and all other incidentals necessary to complete the installation as specified. The work shall include, but is not limited to, excavation, disposal of excess material, bedding material, backfill, compaction, installation of new hydrant assembly and accessories, connection to reclaimed water main, reflective pavement marker at hydrant, painting of hydrant, concrete valve pad complete with tracer wire access point, restoration, cleaning and leak testing, and all other equipment and all other incidentals necessary to complete the work.

E. Payment will be made under:

Item 411644113 FIRE HYDRANT, F&I, STD 2 HOSE, 1 P, 6"

**BID SCHEDULE ITEM NO. 42: RECORD DRAWINGS – FORCE MAIN**

A. Payment for all work included under this Bid Item shall be made at the Contract lump sum price bid listed in the Bid Form and shall represent full compensation for all labor, materials and equipment required to generate and provide record drawings approved and accepted by the County. Record drawings shall be in strict accordance with Section 1.15 of the Manatee County Public Work Utility Standards.

B. Payment will be made under

Item 42 9999-3 RECORD DRAWINGS – FORCE MAIN

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

**END OF SECTION**

# SECTION 01152 REQUESTS FOR PAYMENT

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

Submit Applications for Payment to the Project Manager or as directed at the preconstruction meeting, in accordance with the schedule established by Conditions of the Contract and Agreement between County and Contractor.

### 1.02 FORMAT AND DATA REQUIRED

A. Submit payment requests in the form provided by the County with itemized data typed in accordance with the Bid Form.

B. Provide construction photographs in accordance with Contract Documents.

### 1.03 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When the County requires substantiating data, Contractor shall submit suitable information with a cover letter.

B. Submit one copy of data and cover letter for each copy of application.

### 1.04 PREPARATION OF APPLICATION FOR FINAL PAYMENT

Fill in application form as specified for progress payments.

### 1.05 SUBMITTAL PROCEDURE

A. Submit applications for payment at the times stipulated in the Agreement.

B. Number: Three (3) copies of each application; all signed and certified by the Contractor.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01153 CHANGE ORDER PROCEDURES

## PART 1 GENERAL

### 1.01 DEFINITION

A. Change Order: A written order signed by the Owner, the Architect/Engineer and the Contractor authorizing a change in the Project Plans and/or Specifications and, if necessary, a corresponding adjustment in the Contract Sum and/or Contract Time, pursuant to Article V of the General Conditions of the Construction Agreement.

B. Administrative Change Adjustment: Minor change order under 10% of project cost or 20% time, does not have to be Board approved.

C. Field Directive: A written order issued by Owner which orders minor changes in the Work not involving a change in Contract Time, to be paid from the Owner's contingency funds.

D. Field Order: Minor change to contract work that does not require adjustment of contract sum or expected date of completion.

### 1.02 REQUIREMENTS INCLUDED

A. The Contractor shall promptly implement change order procedures:

1. Provide full written data required to evaluate changes.
2. Maintain detailed records of work done on a time-and-material/force account basis.
3. Provide full documentation to County on request.

B. The Contractor shall designate a member of the Contractor's organization who:

1. Is authorized to accept changes to the Work.
2. Is responsible for informing others in the Contractor's employ of the authorized changes into the Work.

### 1.03 PRELIMINARY PROCEDURES

A. Project Manager may initiate changes by submitting a Request to Contractor. Request will include:

1. Detailed description of the change, products, costs and location of the change in the Project.
2. Supplementary or revised Drawings and Specifications.
3. The projected time extension for making the change.
4. A specified period of time during which the requested price will be considered valid.
5. Such request is for information only and is not an instruction to execute the changes, nor to stop work in progress.

B. Contractor may initiate changes by submitting a written notice to the Project Manager, containing:

1. Description of the proposed changes.
2. Statement of the reason for making the changes.
3. Statement of the effect on the Contract Sum and the Contract Time.

4. Statement of the effect on the work of separate contractors.
5. Documentation supporting any change in Contract Sum or Contract Time, as appropriate.

## 1.04 FIELD ORDER CHANGE

A. In lieu of a Change Order, the Project Manager may issue a Field Order for the Contractor to proceed with additional work within the original intent of the Project.

B. Field Order will describe changes in the work, with attachments of backup information to define details of the change.

C. Contractor must sign and date the Field Order to indicate agreement with the terms therein.

## 1.05 DOCUMENTATION OF PROPOSALS AND CLAIMS

A. Support each quotation for a lump sum proposal and for each unit price which has not previously been established, with sufficient substantiating data to allow the County to evaluate the quotation.

B. On request, provide additional data to support time and cost computations:

1. Labor required.
2. Equipment required.
3. Products required.
    a. Recommended source of purchase and unit cost.
    b. Quantities required.
4. Taxes, insurance and bonds.
5. Credit for work deleted from Contract, similarly documented.
6. Overhead and profit.
7. Justification for any change in Contract Time.

C. Support each claim for additional costs and for work done on a time-and-material/force account basis, with documentation as required for a lump-sum proposal.

1. Name of the County's authorized agent who ordered the work and date of the order.
2. Date and time work was performed and by whom.
3. Time record, summary of hours work and hourly rates paid.
4. Receipts and invoices for:
    a. Equipment used, listing dates and time of use.
    b. Products used, listing of quantities.
    c. Subcontracts.

## 1.06 PREPARATION OF CHANGE ORDERS

A. Project Manager will prepare each Change Order.

B. Change Order will describe changes in the Work, both additions and deletions, with attachments as necessary to define details of the change.

C. Change Order will provide an accounting of the adjustment in the Contract Sum and in the Contract Time.

## 1.07 LUMP SUM/FIXED PRICE CHANGE ORDER

A. Project Manager initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by the Contractor, or requests from the County, or both.

B. Once the form has been completed, all copies should be sent to Contractor for approval. After approval by Contractor, all copies should be sent to County for approval. The County will distribute executed copies after approval by the Board of County Commissioners.

## 1.08 UNIT PRICE CHANGE ORDER

A. Contents of Change Orders will be based on, either:

1. County's definition of the scope of the required changes.
2. Contractor's Proposal for a change, as approved by the County.
3. Survey of completed work.

B. The amounts of the unit prices to be:

1. Those stated in the Agreement.
2. Those mutually agreed upon between County and Contractor.

## 1.09 TIME AND MATERIAL/FORCE ACCOUNT CHANGE ORDER/CONSTRUCTION CHANGE AUTHORIZATION

A. Refer to Article V.5.6 of the General Conditions of the Construction Agreement.

## 1.10 CORRELATION WITH CONTRACTOR'S SUBMITTALS

A. Periodically revise Schedule of Values and Application for Payment forms to record each change as a separate item of work, and to record the adjusted Contract Sum.

B. Periodically revise the Construction Schedule to reflect each change in Contract Time. Revise sub schedules to show changes for other items of work affected by the changes.

C. Upon completion of work under a Change Order, enter pertinent changes in Record Documents.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01200 PROJECT MEETINGS

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The County shall schedule the pre-construction meeting, periodic progress meetings and special meetings, if required, throughout progress of work.

B. Representatives of contractors, subcontractors and suppliers attending meetings shall be qualified and authorized to act on behalf of the entity each represents.

C. The Contractor shall attend meetings to ascertain that work is expedited consistent with Contract Documents and construction schedules.

### 1.02 PRE-CONSTRUCTION MEETING

A. Attendance:

1. County's Engineer.
2. County's Project Manager
3. Contractor.
4. Resident Project Representative.
5. Related Labor Contractor's Superintendent.
6. Major Subcontractors.
7. Major Suppliers.
8. Others as appropriate.

B. Suggested Agenda:

1. Distribution and discussion of:
    a. List of major subcontractors.
    b. Projected Construction Schedules.
    c. Coordination of Utilities
2. Critical work sequencing.
3. Project Coordination.
    a. Designation of responsible personnel.
    b. Emergency contact persons with phone numbers.
4. Procedures and processing of:
    a. Field decisions.
    b. Submittals.
    c. Change Orders.
    d. Applications for Payment.
5. Procedures for maintaining Record Documents.
6. Use of premises:
    a. Office, work and storage areas.
    b. County's REQUIREMENTS.
7. Temporary utilities.
8. Housekeeping procedures.
9. Liquidated damages.
10. Equal Opportunity Requirements.
11. Laboratory testing.
12. Project / Job meetings: Progress meeting, other special topics as needed.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01310 CONSTRUCTION SCHEDULE & PROJECT RESTRAINTS

## PART 1 GENERAL

### 1.01 GENERAL

A. Construction under this contract must be coordinated with the County and accomplished in a logical order to maintain utilization and flow through existing facilities and public properties and rights-of-way and to allow construction to be completed within the time allowed by Contract Documents and in the manner set forth in the Contract.

### 1.02 CONSTRUCTION SCHEDULING GENERAL PROVISIONS

A. No work shall be done between 7:00 p.m. and 7:00 a.m. nor on weekends or legal holidays without written permission of the County. However, emergency work may be done without prior permission.

B. Night work may be established by the Contractor as regular procedure with the written permission of the County. Such permission, however, may be revoked at any time by the County if the Contractor fails to maintain adequate equipment and supervision for the proper execution and control of the work at night.

C. Due to potential health hazards and requirements of the State of Florida and the U.S. Environmental Protection Agency, existing facilities must be maintained in operation.

D. The Contractor shall be fully responsible for providing all temporary piping, plumbing, electrical hook-ups, lighting, temporary structure, or other materials, equipment and systems required to maintain the existing facility's operations. All details of temporary piping and temporary construction are not necessarily shown on the Drawings or covered in the Specifications. However, this does not relieve the Contractor of the responsibility to insure that construction will not interrupt proper facility operations.

E. The Contractor shall designate an authorized representative of his firm who shall be responsible for development and maintenance of the schedule and of progress and payment reports. This representative of the Contractor shall have direct project control and complete authority to act on behalf of the Contractor in fulfilling the commitments of the Contractor's schedule.

## PART 2 PRODUCTS

### 2.01 GENERAL REQUIREMENTS

A. The Contractor shall submit a critical path schedule as described herein.

B. The planning, scheduling, management and execution of the work is the sole responsibility of the Contractor. The progress schedule requirement is established to allow County to review Contractor's planning, scheduling, management and execution of the work; to assist County in evaluating work progress and make progress payments and to allow other contractors to cooperate and coordinate their activities with those of the Contractor.

### 2.02 FORM OF SCHEDULES

A. Prepare schedules using the latest version of Microsoft Project, or other County approved

software, in the form of a horizontal bar chart diagram. The diagram shall be time-scaled and sequenced by work areas. Horizontal time scale shall identify the first work day of each week.

B. Activities shall be at least as detailed as the Schedule of Values. Activity durations shall be in whole working days. In addition, man-days shall be shown for each activity or tabulated in an accompanying report.

C. Diagrams shall be neat and legible and submitted on sheets at least 8-1/2 inches by 11 inches suitable for reproduction. Scale and spacing shall allow space for notations and future revisions.

## 2.03 CONTENT OF SCHEDULES

A. Each monthly schedule shall be based on data as of the last day of the current pay period.

B. Description for each activity shall be brief, but convey the scope of work described.

C. Activities shall identify all items of work that must be accomplished to achieve substantial completion, such as items pertaining to Contractor's installation and testing activities; items pertaining to the approval of regulatory agencies; contractor's time required for submittals, fabrication and deliveries; the time required by County to review all submittals as set forth in the Contract Documents; items of work required of County to support pre-operational, startup and final testing; time required for the relocation of utilities. Activities shall also identify interface milestones with the work of other contractors performing work under separate contracts with County.

D. Schedules shall show the complete sequence of construction by activities. Dates for beginning and completion of each activity shall be indicated as well as projected percentage of completion for each activity as of the first day of each month.

E. Submittal schedule for shop drawing review, product data, and samples shall show the date of Contractor submittal and the date approved submittals will be required by the County, consistent with the time frames established in the Specifications.

F. For Contract change orders granting time extensions, the impact on the Contract date(s) shall equal the calendar-day total time extension specified for the applicable work in the Contract change orders.

G. For actual delays, add activities prior to each delayed activity on the appropriate critical path(s). Data on the added activities of this type shall portray all steps leading to the delay and shall further include the following: separate activity identification, activity description indicating cause of the delay, activity duration consistent with whichever set of dates below applies, the actual start and finish dates of the delay or, if the delay is not finished, the actual start date and estimated completion date.

H. For potential delays, add an activity prior to each potentially delayed activity on the appropriate critical path(s). Data for added activities of this type shall include alternatives available to mitigate the delay including acceleration alternatives and further show the following: separate activity identification, activity description indicating cause of the potential delay and activity duration equal to zero work days.

## 2.04 SUPPORTING NARRATIVE

A. Status and scheduling reports identified below shall contain a narrative to document the project status, to explain the basis of Contractor's determination of durations, describe the Contract conditions and restraints incorporated into the schedule and provide an analysis pertaining to potential problems and practical steps to mitigate them.

B. The narrative shall specifically include:

1. Actual completion dates for activities completed during the monthly report period and actual start
   dates for activities commenced during the monthly report period.
2. Anticipated start dates for activities scheduled to commence during the following monthly report period.
3. Changes in the duration of any activity and minor logic changes.
4. The progress along the critical path in terms of days ahead or behind the Contract date.
5. If the Monthly Status Report indicates an avoidable delay to the Contract completion date or interim completion dates as specified in the Agreement, Contractor shall identify the problem, cause and the activities affected and provide an explanation of the proposed corrective action to meet the milestone dates involved or to mitigate further delays.
6. If the delay is thought to be unavoidable, the Contractor shall identify the problem, cause, duration, specific activities affected and restraints of each activity.
7. The narrative shall also discuss all change order activities whether included or not in the revised/current schedule of legal status. Newly introduced change order work activities and the CPM path(s) that they affect, must be specifically identified. All change order work activities added to the schedule shall conform with the sequencing and Contract Time requirements of the applicable Change Order.
8. Original Contract date(s) shall not be changed except by Contract change order. A revision need not be submitted when the foregoing situations arise unless required by County. Review of a report containing added activities will not be construed to be concurrence with the duration or restraints for such added activities; instead the corresponding data as ultimately incorporated into the applicable Contract change order shall govern.
9. Should County require additional data, this information shall be supplied by Contractor within 10 calendar days.

## 2.05 SUBMITTALS

A. Contractor shall submit estimated and preliminary progress schedules (as identified in the Terms and Conditions of the Contract and the General Conditions), monthly status reports, a start-up schedule and an as-built schedule report all as specified herein.

B. All schedules, including estimated and preliminary schedules, shall be in conformance with the Contract Documents.

C. The finalized progress schedule discussed in the Contract Documents shall be the first monthly status report and as such shall be in conformance with all applicable specifications contained herein.

D. Monthly Status Report submittals shall include a time-scaled (days after notice to proceed) diagram showing all contract activities and supporting narrative. The initial detailed schedule shall use the notice to proceed as the start date. The finalized schedule, if

concurred with by County, shall be the work plan to be used by the contractor for planning, scheduling, managing and executing the work.

E. The schedule diagram shall be formatted as above. The diagram shall include (1) all detailed activities included in the preliminary and estimated schedule submittals, (2) calendar days prior to substantial completion, (3) summary activities for the remaining days. The critical path activities shall be identified, including critical paths for interim dates, if possible.

F. The Contractor shall submit progress schedules with each application for payment.

## 2.06 MONTHLY STATUS REPORTS

A. Contractor shall submit detailed schedule status reports on a monthly basis with the Application for Payment. The first such status report shall be submitted with the first Application for Payment and include data as of the last day of the pay period. The Monthly Report shall include a "marked-up" copy of the latest detailed schedule of legal status and a supporting narrative including updated information as described above. The Monthly Report will be reviewed by County and Contractor at a monthly schedule meeting and Contractor will address County's comments on the subsequent monthly report. Monthly status reports shall be the basis for evaluating Contractor's progress.

B. The "marked-up" diagram shall show, for the latest detailed schedule of legal status, percentages of completion for all activities, actual start and finish dates and remaining durations, as appropriate. Activities not previously included in the latest detailed schedule of legal status shall be added, except that contractual dates will not be changed except by change order. Review of a marked-up diagram by County will not be construed to constitute concurrence with the time frames, duration, or sequencing for such added activities; instead the corresponding data as ultimately incorporated into an appropriate change order shall govern.

## 2.07 STARTUP SCHEDULE

A. At least 60 calendar days prior to the date of substantial completion, Contractor shall submit a time-scaled (days after notice to proceed) diagram detailing the work to take place in the period between 60 days prior to substantial completion, together with a supporting narrative. County shall have 10 calendar days after receipt of the submittal to respond. Upon receipt of County's comments, Contractor shall make the necessary revisions and submit the revised schedule within 10 calendar days. The resubmittal, if concurred with by County, shall be the Work Plan to be used by Contractor for planning, managing, scheduling and executing the remaining work leading to substantial completion.

B. The time-scaled diagram shall use the latest schedule of legal status for those activities completed ahead of the last 60 calendar days prior to substantial completion and detailed activities for the remaining 60-day period within the time frames outlined in the latest schedule of legal status.

C. Contractor will be required to continue the requirement for monthly reports, as outlined above. In preparing this report, Contractor must assure that the schedule is consistent with the progress noted in the startup schedule.

## 2.08 REVISIONS

A. All revised Schedule Submittals shall be made in the same form and detail as the initial submittal and shall be accompanied by an explanation of the reasons for such revisions, all of which shall be subject to review and concurrence by County. The revision shall incorporate all previously made changes to reflect current as-built conditions. Minor changes to the approved submittal may be approved at monthly meetings; a minor change is not considered a revision in the context of this paragraph.

B. A revised schedule submittal shall be submitted for review when required by County.

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01340 SHOP DRAWINGS, PROJECT DATA AND SAMPLES

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the County for review and approval: working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this section called data) that have been produced within the last three (3) years, and material samples (hereinafter in this section called samples) as are required for the proper control of work, including, but not limited to those working drawings, shop drawings, data and samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings. Submittals may be done electronically via PDF documents.

B. The Contractor is to maintain an accurate updated submittal log and will bring this log to each scheduled progress meeting with the County. The County will provide the initial submittal log in electronic format. The electronic log (excel file) shall be passed back and forth between the Contractor and the County for each submittal package. This log shall include the following items:

1. Submittal description and number assigned.
2. Date to County.
3. Date returned to Contractor (from County).
4. Status of Submittal (No exceptions taken, returned for confirmation or resubmittal, rejected).
5. Date of Resubmittal and Return (as applicable).
6. Date material released (for fabrication).
7. Projected date of fabrication.
8. Projected date of delivery to site.
9. Projected date and required lead time so that product installation does not delay contact.
10. Status of O&M manuals submitted.

### 1.03 CONTRACTOR'S RESPONSIBILITY

A. It is the duty of the Contractor to check all drawings, data and samples prepared by or for him before submitting them to the County for review. Each and every copy of the Drawings and data shall bear Contractor's stamp showing that they have been so checked. Shop drawings submitted to the County without the Contractor's stamp will be returned to the Contractor for conformance with this requirement. Shop drawings shall indicate any deviations in the submittal from requirements of the contract Documents.

B. The Contractor shall ensure that all submitted cut sheets, product sheets, product documentation, etc. are current versions of the product information and are not older than three (3) years. Product certification(s) shall be no older than three (3) years. Any submitted documents found to be beyond the acceptable date ranges shall be rejected.

C. Determine and verify:

1. Field measurements.
2. Field construction criteria.
3. Catalog numbers and similar data.
4. Conformance with Specifications and indicate all variances from the Specifications.

D. The Contractor shall furnish the County a schedule of Shop Drawing submittals fixing the respective dates for the submission of shop and working drawings, the beginning of manufacture, testing and installation of materials, supplies and equipment. This schedule shall indicate those that are critical to the progress schedule.

E. The Contractor shall not begin any of the work covered by a drawing, data, or a sample returned for correction until a revision or correction thereof has been reviewed and returned to him, by the County, with No Exceptions Taken or Approved As Noted.

F. The Contractor shall submit to the County all drawings and schedules sufficiently in advance of construction requirements to provide no less than twenty-one (21) calendar days for checking and appropriate action from the time the County receives them. Submittals are to be scheduled, submitted, reviewed, and approved prior to the acquisition of the material or equipment. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. Allow time for potential resubmittal.

G. No delay costs or time extensions will be allowed for time lost in late submittals or resubmittals.

H. All material & product submittals, other than samples, may be transmitted electronically as a pdf file. All returns to the contractor will be as a pdf file only unless specifically requested otherwise.

I. The Contractor shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of work prior to the completion of the review by County of the necessary Shop Drawings.

## 1.04 COUNTY'S REVIEW OF SHOP DRAWINGS AND WORKING DRAWINGS

A. The County's review of drawings, data and samples submitted by the Contractor shall cover only general conformity to the Specifications, external connections and dimensions which affect the installation.

B. The review of drawings and schedules shall be general and shall not be construed:

1. As permitting any departure from the Contract requirements.
2. As relieving the Contractor of responsibility for any errors, including details, dimensions and materials.
3. As approving departures from details furnished by the County, except as otherwise provided herein.

C. If the drawings or schedules as submitted describe variations and show a departure from the Contract requirements which the County finds to be in the interest of the County and to be so minor as not to involve a change in Contract Price or time for performance, the County may return the reviewed drawings without noting any exception.

D. When reviewed by the County, each of the Shop and Working Drawings shall be identified as having received such review being so stamped and dated. Shop Drawings stamped "REJECTED" and with required corrections shown shall be returned to the Contractor for correction and resubmittal.

E. Resubmittals will be handled in the same manner as first submittals. On resubmittals, the Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, to revisions other than the corrections requested by the County on previous submissions. The Contractor shall make any corrections required by the County.

F. If the Contractor considers any correction indicated on the drawings to constitute a change to the Contract Drawings or Specifications, the Contractor shall give written notice thereof to the County.

G. The County shall review a submittal/resubmittal a maximum of three (3) times after which cost of review shall be borne by the Contractor. The cost of engineering shall be equal to the County's actual payroll cost.

H. When the Shop and Working Drawings have been completed to the satisfaction of the County, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the County.

I. No partial submittals shall be reviewed. Incomplete submittals shall be returned to the Contractor and shall be considered not approved until resubmitted.

## 1.05 SHOP DRAWINGS

A. When used in the Contract Documents, the term "Shop Drawings" shall be considered to mean Contractor's plans for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop Drawings shall consist of fabrication, drawings, setting drawings, schedule drawings, manufacturer's scale drawings and wiring and control diagrams. Cuts, catalogs, pamphlets, descriptive literature and performance and test data, shall be considered only as supportive to required Shop Drawings as defined above.

B. Drawings and schedules shall be checked and coordinated with the work of all trades involved, before they are submitted for review by the County and shall bear the Contractor's stamp of approval and original signature as evidence of such checking and coordination. Drawings or schedules submitted without this stamp of approval and original signature shall be returned to the Contractor for resubmission.

C. Each Shop Drawing shall have a blank area 3-1/2 inches by 3-1/2 inches, located adjacent to the title block. The title block shall display the following:

1. Number and title of the drawing.
2. Date of Drawing or revision.
3. Name of project building or facility.
4. Name of contractor and subcontractor submitting drawing.
5. Clear identification of contents and location of the work.
6. Specification title and number.

D. If drawings show variations from Contract requirements because of standard shop practice or for other reasons, the Contractor shall describe such variations in his letter of transmittal. If acceptable, proper adjustment in the contract shall be implemented where appropriate. If the Contractor fails to describe such variations, he shall not be relieved of the responsibility of executing the work in accordance with the Contract, even though such drawings have been reviewed.

E. Data on materials and equipment shall include, without limitation, materials and equipment lists, catalog sheets, cuts, performance curves, diagrams, materials of construction and similar descriptive material. Materials and equipment lists shall give, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, size, finish and all other pertinent data.

F. For all mechanical and electrical equipment furnished, the Contractor shall provide a list including the equipment name and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained.

G. All manufacturers or equipment suppliers who proposed to furnish equipment or products shall submit an installation list to the County along with the required shop drawings. The installation list shall include at least five installations where identical equipment has been installed and have been in operation for a period of at least one (1) year.

H. Only the County will utilize the color "red" in marking shop drawing submittals.

## 1.06 SUBMITTAL PREPARATION

A. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

B. Collect required data for each specific material, product, unit of work, or system into a single submittal. Prominently mark choices, options, and portions applicable to the submittal. Partial submittals will not be accepted for expedition of construction effort. Submittal will be returned without review if incomplete.

C. If available product data is incomplete, provide Contractor-prepared documentation to supplement product data and satisfy submittal requirements.

D. All irrelevant or unnecessary data shall be removed from the submittal to facilitate accuracy and timely processing. Submittals that contain the excessive amount of irrelevant or unnecessary data will be returned with review.

E. Provide a transmittal form for each submittal with the following information:
   1. Project title, location and number.
   2. Construction contract number.
   3. Date of the drawings and revisions.
   4. Name, address, and telephone number of subcontractor, supplier, manufacturer, and any other subcontractor associated with the submittal.
   5. List paragraph number of the specification section and page number; and sheet number of the contract drawings by which the submittal is required.
   6. When a resubmission, the resubmittal document name shall remain the same, but shall add an alphabetic suffix on submittal description. For example, submittal 18 would become 18A, to indicate resubmission.
   7. Product identification and location in project.

F. The Contractor is responsible for reviewing and certifying that all submittals are in compliance with contract requirements before submitting to the County for review.

G. Stamp, sign, and date each submittal transmittal form indicating action taken.

H. Stamp used by the Contractor on the submittal transmittal form to certify that the submittal meets contract requirements is to be similar to the following:

CONTRACTOR
(Firm Name)

_____ Approved

_____ Approved with corrections as noted on submittal data and/or attached sheet(s).

I certify that the following document and information has been verified to be is not more than three (3) years old.

SIGNATURE:_____

TITLE:_____

DATE:_____

## 1.07 WORKING DRAWINGS

A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the Contractor's fabrication and erection drawings for structures such as roof trusses, steelwork, precast concrete elements, bulkheads, support of open cut excavation, support of utilities, groundwater control systems, forming and false work; underpinning; and for such other work as may be required for construction of the project.

B. Copies of working drawings as noted above, shall be submitted to the County where required by the Contract Documents or requested by the County and shall be submitted at least thirty (30) days (unless otherwise specified by the County) in advance of their being required for work.

C. Working drawings shall be signed by a registered Professional Engineer, currently licensed to practice in the State of Florida and shall convey, or be accompanied by, calculation or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such work, working drawings must have been reviewed without specific exceptions by the County, which review will be for general conformance and will not relieve the Contractor in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the Contractor; the County and Engineer shall not have responsibility therefor.

## 1.08 SAMPLES

A. The Contractor shall furnish, for the review of the County, samples required by the Contract Documents or requested by the County. Samples shall be delivered to the County as specified or directed. The Contractor shall prepay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in work until reviewed by the County.

B. Samples shall be of sufficient size and quantity to clearly illustrate:

1. Functional characteristics of the product, with integrally related parts and attachment devices.

2. Full range of color, texture and pattern.
3. A minimum of two samples of each item shall be submitted.

C. Each sample shall have a label indicating:

1. Name of product.
2. Name of Contractor and Subcontractor.
3. Material or equipment represented.
4. Place of origin.
5. Name of Producer and Brand (if any).
6. Location in project.
   (Samples of finished materials shall have additional markings that will identify them under the finished schedules.)
7. Reference specification paragraph.

D. The Contractor shall prepare a transmittal letter in triplicate for each shipment of samples containing the information required above. He shall enclose a copy of this letter with the shipment and send a copy of this letter to the County. Review of a sample shall be only for the characteristics or use named in such and shall not be construed to change or modify any Contract requirements.

E. Reviewed samples not destroyed in testing shall be sent to the County or stored at the site of the work. Reviewed samples of the hardware in good condition will be marked for identification and may be used in the work. Materials and equipment incorporated in work shall match the reviewed samples. If requested at the time of submission, samples which failed testing or were rejected shall be returned to the Contractor at his expense.

## 1.09 APPROVED SUBMITTALS

A. County approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

B. County approval of a submittal does not relieve the Contractor of the responsibility for any error which may exist. The Contractor is responsible for fully complying with all contract requirements and the satisfactory construction of all work, including the need to check, confirm, and coordinate the work of all subcontractors for the project. Non-compliant material incorporated in the work will be removed and replaced at the Contractor's expense.

C. After submittals have been approved, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

D. Retain a copy of all approved submittals at project site, including approved samples.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01370 SCHEDULE OF VALUES

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall submit to the County a Schedule of Values allocated to the various portions of the work, within 10 days after date of Notice to Proceed.

B. Upon request of the County, the Contractor shall support the values with data which will substantiate their correctness.

C. The Schedule of Values shall be used only as the basis for the Contractor's Applications for Payment.

### 1.02 FORM AND CONTENT OF SCHEDULE OF VALUES

A. Schedule of Values will be considered for approval by County upon Contractor's request. Identify schedule with:

1. Title of Project and location.
2. Project number.
3. Name and address of Contractor.
4. Contract designation.
5. Date of submission.

B. Schedule of Values shall list the installed value of the component parts of the work in sufficient detail to serve as a basis for computing values for progress payments during construction.

C. Follow the table of contents for the Contract Document as the format for listing component items for structures:

1. Identify each line item with the number and title of the respective major section of the specification.
2. For each line item, list sub values of major products or operations under item.

D. Follow the bid sheets included in this Contract Documents as the format for listing component items for pipe lines.

E. The sum of all values listed in the schedule shall equal the total Contract sum.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01380 CONSTRUCTION PHOTOGRAPHS

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall employ a competent photographer to take construction record photographs or perform video, recording including furnishing all labor, materials, equipment and incidentals necessary to obtain photographs and/or video recordings of all construction areas.

B. Preconstruction record information shall consist of video recordings on digital video disks (DVD).

C. Construction progress information shall consist of photographs and digital photographs on a recordable compact disc (CD-R).

### 1.02 QUALIFICATIONS

A. All photography shall be done by a competent camera operator who is fully experienced and qualified with the specified equipment.

B. For the video recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

### 1.03 PROJECT PHOTOGRAPHS

A. Provide one print of each photograph with each pay application.

B. Provide one recordable compact disc with digital photographs with each pay application.

C. Negatives:

1. All negatives shall remain the property of photographer.
2. The Contractor shall require that photographer maintain negatives or protected digital files for a period of two years from date of substantial completion of the project.
3. Photographer shall agree to furnish additional prints to County at commercial rates applicable at time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as an expert witness.

D. The Contractor shall pay all costs associated with the required photography and prints. Any parties requiring additional photography or prints shall pay the photographer directly.

E. All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy and all prints shall be 8 inches x 10 inches.

F. Each print shall have clearly marked on the back, the name of the project, the orientation of view, the date and time of exposure, name and address of the photographer and the photographers numbered identification of exposure.

G. All project photographs shall be taken from locations to adequately illustrate conditions prior

to construction, or conditions of construction and state of progress. The Contractor shall consult with the County at each period of photography for instructions concerning views required.

## 1.04 VIDEO RECORDINGS

A. Video, recording shall be done along all routes that are scheduled for construction. Video, recording shall include full, recording of both sides of all streets and the entire width of easements plus 10 feet on each side on which construction is to be performed. All video recording shall be in full color.

B. A complete view, in sufficient detail with audio description of the exact location shall be provided.

C. The engineering plans shall be used as a reference for stationing in the audio portion of the recordings for easy location identification.

D. Two complete sets of video recordings shall be delivered to the County on digital video disks (DVD) for the permanent and exclusive use of the County prior to the start of any construction on the project.

E. All video recordings shall contain the name of the project, the date and time of the video, recording, the name and address of the photographer and any other identifying information required.

F. Construction shall not start until preconstruction video recordings are completed, submitted and accepted by the County. In addition, no progress payments shall be made until the preconstruction video recordings are accepted by the County.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01410 TESTING AND TESTING LABORATORY SERVICES

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. County shall employ and pay for the services of an independent testing laboratory to perform testing specifically indicated on the Contract Documents or called out in the Specifications. County may elect to have materials and equipment tested for conformity with the Contract Documents at any time.

1. Contractor shall cooperate fully with the laboratory to facilitate the execution of its required services.
2. Employment of the laboratory shall in no way relieve the Contractor's obligations to perform the work of the Contract.

### 1.02 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

A. Laboratory is not authorized to:

1. Release, revoke, alter or enlarge on requirements of Contract Documents.
2. Approve or accept any portion of the Work.
3. Perform any duties of the Contractor.

### 1.03 CONTRACTOR'S RESPONSIBILITIES

A. Cooperate with laboratory personnel; provide access to Work and/or to Manufacturer's operations.

B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.

C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, and other material mixes which require control by the testing laboratory.

D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are indicated in the Contract Documents. The County may require the Contractor to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the Contractor and no extra charge to the County shall be allowed on account of such testing and certification.

E. Furnish incidental labor and facilities:

1. To provide access to work to be tested.
2. To obtain and handle samples at the project site or at the source of the product to be tested.
3. To facilitate inspections and tests.
4. For storage and curing of test samples.

F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.

1. When tests or inspections cannot be performed due to insufficient notice, Contractor shall reimburse County for laboratory personnel and travel expenses incurred due to Contractor's negligence.

G. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required for the Contractor's convenience and as approved by the County.

H. If the test results indicate the material or equipment complies with the Contract Documents, the County shall pay for the cost of the testing laboratory. If the tests and any subsequent retests indicate the materials and equipment fail to meet the requirements of the Contract Documents, the contractor shall pay for the laboratory costs directly to the testing firm or the total of such costs shall be deducted from any payments due the Contractor.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01510 TEMPORARY AND PERMANENT UTILITIES

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

The Contractor shall be responsible for furnishing all requisite temporary utilities, i.e., power, water, sanitation, etc. The Contractor shall obtain and pay for all permits required as well as pay for all temporary usages. The Contractor shall remove all temporary facilities upon completion of work.

### 1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Comply with National Electric Code.

B. Comply with Federal, State and Local codes and regulations and with utility company requirements.

C. Comply with County Health Department regulations.

## PART 2 PRODUCTS

### 2.01 MATERIALS, GENERAL

Materials for temporary utilities may be "used". Materials for electrical utilities shall be adequate in capacity for the required usage, shall not create unsafe conditions and shall not violate requirements of applicable codes and standards.

### 2.02 TEMPORARY ELECTRICITY AND LIGHTING

Arrange with the applicable utility company for temporary power supply. Provide service required for temporary power and lighting and pay all costs for permits, service and for power used.

### 2.03 TEMPORARY WATER

A. The Contractor shall arrange with Manatee County Utilities Customer Service office to provide water for construction purposes, i.e., meter, pay all costs for installation, maintenance and removal, and service charges for water used.

B. The Contractor shall protect piping and fitting against freezing.

### 2.04 TEMPORARY SANITARY FACILITIES

A. The Contractor shall provide sanitary facilities in compliance with all laws and regulations.

B. The Contractor shall service, clean and maintain facilities and enclosures.

## PART 3 EXECUTION

### 3.01 GENERAL

A. The Contractor shall maintain and operate systems to assure continuous service.

B. The Contractor shall modify and extend systems as work progress requires.

## 3.02 REMOVAL

A. The Contractor shall completely remove temporary materials and equipment when their use is no longer required.

B. The Contractor shall clean and repair damage caused by temporary installations or use of temporary facilities.

END OF SECTION

# SECTION 01570 TRAFFIC REGULATION

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. The Contractor shall be responsible for providing safe and expeditious movement of traffic through construction zones. A construction zone is defined as the immediate areas of actual construction and all abutting areas which are used by the Contractor and which interfere with the driving or walking public.

B. The Contractor shall remove temporary equipment and facilities when no longer required, restore grounds to original or to specified conditions.

### 1.02 TRAFFIC CONTROL

A. The necessary traffic control shall include, but not be limited to, such items as proper construction warning signs, signals, lighting devices, markings, barricades, channelization and hand signaling devices. The Contractor shall be responsible for installation and maintenance of all devices and detour routes and signage for the duration of the construction period. The Contractor shall utilize the appropriate traffic plan from the FDOT Maintenance of Traffic Standards, Series 600 of the FDOT Roadway & Traffic Design Standards, Latest Edition.

B. Should there be the necessity to close any portion of a roadway carrying vehicles or pedestrians the Contractor shall submit a Traffic Control Plan (TCP) at least 5 days before a partial or full day closure, and at least 8 days before a multi-day closure. TCP shall be submitted, along with a copy of their accreditation, by a certified IMSA or ATSA Traffic Control Specialist.

1. At no time will more than one (1) lane of a roadway be closed to vehicles and pedestrians without an approved road closure from the County Transportation Department. With any such closings, adequate provision shall be made for the safe expeditious movement of each.
2. All traffic control signs must be in place and inspected at least 1 day in advance of the closure. Multi-day closures notification signs shall be in place al least 3 days in advance of the closure. All signs must be covered when no in effect, and checked twice a day by the Worksite Traffic Supervisor when they are in effect.

C. The Contractor shall be responsible for removal, relocation, or replacement of any traffic control device in the construction area which exists as part of the normal preconstruction traffic control scheme. Any such actions shall be performed by the Contractor under the supervision and in accordance with the instructions of the applicable highway department unless otherwise specified.

D. The Contractor will consult with the County immediately on any vehicular or pedestrian safety or efficiency problem incurred as a result of construction of the project.

E. The Contractor shall provide ready access to businesses and homes in the project area during construction. The Contractor shall be responsible for coordinating this work with affected homeowners.

F. When conditions require the temporary installation of signs, pavement markings and traffic

barriers for the protection or workers and traffic, the entire array of such devices shall be depicted on working drawings for each separate stage of work. These drawings shall be submitted to the County for review and approval prior to commencement of work on the site.

G. Precast concrete traffic barriers shall be placed adjacent to trenches and other excavations deeper than six inches below the adjacent pavement surface.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01580 PROJECT IDENTIFICATION AND SIGNS

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Furnish, install and maintain County project identification signs.

B. Remove signs on completion of construction.

C. Allow no other signs to be displayed except for traffic control and safety.

### 1.02 PROJECT IDENTIFICATION SIGN (COUNTY)

A. Two painted sign, of not less than 32 square feet (3 square meters) area, with painted graphic content to include:

1. Title of Project.
2. Name of County.
3. Names and titles of authorities as directed by County.
4. Prime Contractor.

B. Graphic design, style of lettering and colors: As approved by the County.

C. Erect on the site at a lighted location of high public visibility, adjacent to main entrance to site, as approved by the County

### 1.03 INFORMATIONAL SIGNS

A. Painted signs with painted lettering, or standard products.

1. Size of signs and lettering: as required by regulatory agencies, or as appropriate to usage.
2. Colors: as required by regulatory agencies, otherwise of uniform colors throughout project.

B. Erect at appropriate locations to provide required information.

### 1.04 QUALITY ASSURANCE

A. Sign Painter: Professional experience in type of work required.

B. Finishes, Painting: Adequate to resist weathering and fading for scheduled construction period.

### 1.05 PUBLIC NOTIFICATION

A. Door Hangers: The Contractor shall generate and distribute door hangers to all residents who will be impacted by project construction.

1. Residents impacted include anyone who resides inside, or within 500 feet of project limits of construction.

B. Door Hangers shall be distributed prior to start of construction of the project. Hangers shall be affixed to doors of residents via elastic bands or tape.

EXAMPLE:

PLEASE PARDON THE INCONVENIENCE WHILE THE ROADWAY IS BEING RECONSTRUCTED IN YOUR NEIGHBORHOOD

This project consists of utility improvements and the reconstruction of ??? Boulevard from U.S. ??? to ??? Street West. The project is expected to begin in August, 200X and be completed in July 200X.

| Location Map |
| --- |
| |

WE HOPE TO KEEP ANY INCONVENIENCE TO A MINIMUM. HOWEVER, IF YOU HAVE ANY PROBLEMS, PLEASE CONTACT THE FOLLOWING:

A. Contractor
Contractor Address
Contractor Phone (Site Phone)

Project Manager
PM Address
PM Phone No. & Ext.

B. Project Inspector
Inspector Phone Number

AFTER HOURS EMERGENCY NUMBER – (941) 747-HELP
THANK YOU FOR YOUR UNDERSTANDING AND PATIENCE
MANATEE COUNTY GOVERNMENT – PROJECT MANAGEMENT DEPT.

## PART 2 PRODUCTS

### 2.01 SIGN MATERIALS

A. Structure and Framing: May be new or used, wood or metal, in sound condition structurally adequate to work and suitable for specified finish.

B. Sign Surfaces: Exterior softwood plywood with medium density overlay, standard large sizes to minimize joints.

1. Thickness: As required by standards to span framing members, to provide even, smooth surface without waves or buckles.

C. Rough Hardware: Galvanized.

D. Paint: Exterior quality, as specified in the Contract Documents.

## PART 3 EXECUTION

## 3.01 PROJECT IDENTIFICATION SIGN

A. Paint exposed surface or supports, framing and surface material; one coat of primer and one coat of exterior paint.

B. Paint graphics in styles, size and colors selected.

## 3.02 MAINTENANCE

The Contractor shall maintain signs and supports in a neat, clean condition; repair damages to structures, framing or sign.

## 3.03 REMOVAL

The Contractor shall remove signs, framing, supports and foundations at completion of project.

END OF SECTION

# SECTION 01590 COUNTY'S FIELD OFFICE

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

Contractor ~~shall~~ may furnish, install and maintain one temporary field office during the entire construction period for the sole use of the County.

### 1.02 OTHER REQUIREMENTS

A. Prior to installation of the County's field office, the Contractor shall consult with the County on location, access and related facilities.

B. All site use approvals shall be obtained by the Contractor.

C. Upon completion of construction, the Contractor shall remove the field office and restore the site to its original condition.

### 1.03 REQUIREMENTS FOR FACILITIES

A. Construction:

1. The field office shall be structurally sound, weather tight, with floors raised aboveground.
2. At Contractor's option, portable or mobile buildings may be used.

B. Office for Field Engineer:

1. A separate office for sole use of the County with secure entrance doors, key and lock shall be provided.
2. Area: 250 sq. ft. minimum, with minimum dimension of 8 feet.
3. Windows:
   a. Minimum of three (3).
   b. Operable sash and insect screens.
   c. Locate field office to provide maximum view of construction areas.
4. Furnishings:
   a. Two standard size chairs and desks with three drawers each.
   b. One drafting table: 39"x72"x36" high, with one equipment drawer.
   c. One metal, double-door storage cabinet with lock and key.
   d. One plan rack to hold a minimum of six sets of project drawings.
   e. One standard four-drawer legal-size metal filing cabinet with lock and key.
   f. Six linear feet of bookshelves.
   g. One swivel arm chair.
   h. Two straight chairs.
   i. One drafting table stool.
   j. One waste basket.
   k. One tackboard, 36"x30".
   l. One fire extinguisher.
   m. One first aid kit.
5. Services:
   a. Adequate lighting.
   b. Exterior lighting at entrance door.

c. Automatic heating and mechanical cooling equipment to maintain comfort conditions.
d. Minimum of four 110 volt duplex electric convenience outlets, at least one on each wall.
e. Electric distribution panel: Two circuits minimum 110 volt, 60 hertz service.
f. Convenient access to drinking water and toilet facilities.
g. Telephone: One private direct line instrument.
h. Fax: combination fax/duplicator.

## PART 2 PRODUCTS

### 2.01 MATERIALS, EQUIPMENT, FURNISHINGS

May be new or used, but must be serviceable, adequate for required purpose and must adhere to all applicable codes or regulations including the Manatee County Building Codes.

## PART 3 EXECUTION

### 3.01 PREPARATION

Fill and grade site as necessary for temporary structure to provide positive surface drainage.

### 3.02 INSTALLATION

A. Construct temporary field office on proper foundation and provide connections for all utility services.

1. Secure portable or mobile building when used.
2. Provide steps and landings at entrance doors.

END OF SECTION

# SECTION 01600 MATERIAL AND EQUIPMENT

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the work:

1. Conform to applicable specifications and standards.
2. Comply with size, make, type and quality specified, or as specifically approved in writing by the County.
3. Manufactured and Fabricated Products:
   a. Design, fabricate and assemble in accordance with the best engineering and shop practices.
   b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.
   c. Two or more items of the same kind shall be identical and manufactured by the same manufacturer.
   d. Products shall be suitable for service conditions.
   e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.
4. Do not use material or equipment for any purpose other than that for which it is specified.
5. All material and equipment incorporated into the project shall be new.

### 1.02 MANUFACTURER'S INSTRUCTIONS

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including two copies to County. Maintain one set of complete instructions at the job site during installation and until completion.

B. Handle, install, connect, clean, condition and adjust products in strict accordance with such instructions and in conformity with specified requirements. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with County prior to proceeding. Do not proceed with work without clear instructions.

### 1.03 TRANSPORTATION AND HANDLING

A. Arrange deliveries of products in accordance with construction schedules, coordinate to avoid conflict with work and conditions at the site.

1. Deliver products in undamaged condition, in manufacturer's original containers or packaging, with identifying labels intact and legible.
2. Immediately on delivery, inspect shipments to assure compliance with requirements of Contract Documents and approved submittals and that products are properly protected and undamaged.

B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

### 1.04 SUBSTITUTIONS AND PRODUCT OPTIONS

Contractor's Options:

1. For products specified only by reference standard, select any product meeting that standard.
2. For products specified by naming one or more products or manufacturers and "or equal", Contractor must submit a request for substitutions of any product or manufacturer not specifically named in a timely manner so as not to adversely affect the construction schedule.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01620 STORAGE AND PROTECTION

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

Provide secure storage and protection for products to be incorporated into the work and maintenance and protection for products after installation and until completion of Work.

### 1.02 STORAGE

A. Store products immediately on delivery and protect until installed in the Work, in accord with manufacturer's instructions, with seals and labels intact and legible.

B. Exterior Storage

1. Provide substantial platform, blocking or skids to support fabricated products above ground to prevent soiling or staining.
   a. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.
   b. Prevent mixing of refuse or chemically injurious materials or liquids.

C. Arrange storage in manner to provide easy access for inspection.

### 1.03 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.
2. Required environmental conditions are maintained on continuing basis.
3. Surfaces of products exposed to elements are not adversely affected. Any weathering of products, coatings and finishes is not acceptable under requirements of these Contract Documents.

B. Mechanical and electrical equipment which requires servicing during long term storage shall have complete manufacturer's instructions for servicing accompanying each item, with notice of enclosed instructions shown on exterior of package.

1. Equipment shall not be shipped until approved by the County. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than one month prior to installation without written authorization from the County.
2. All equipment having moving parts such as gears, electric motors, etc. and/or instruments shall be stored in a temperature and humidity controlled building approved by the County until such time as the equipment is to be installed.
3. All equipment shall be stored fully lubricated with oil, grease, etc. unless otherwise instructed by the manufacturer.
4. Moving parts shall be rotated a minimum of once weekly to insure proper lubrication and to avoid metal-to-metal "welding". Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to insure that the equipment does not deteriorate from lack of use.
5. Lubricants shall be changed upon completion of installation and as frequently as

required, thereafter during the period between installation and acceptance.

6. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guaranty the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

## 1.04 PROTECTION AFTER INSTALLATION

A. Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, prior to completion of work.

B. Control traffic to prevent damage to equipment and surfaces.

C. Provide coverings to protect finished surfaces from damage.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01700 CONTRACT CLOSEOUT

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

Comply with requirements stated in Conditions of the Contract and in Specifications for administrative procedures in closing out the work.

### 1.02 SUBSTANTIAL COMPLETION

A. The Contractor shall submit the following items when the Contractor considers the work to be substantially complete:

1. A written notice that the work, or designated portion thereof, is substantially complete.
2. A list of items to be completed or corrected.

B. Within a reasonable time after receipt of such notice, the County shall make an inspection to determine the status of completion.

C. Project record documents and operations and maintenance manuals must be submitted before the project shall be considered substantially complete.

D. If the County determines that the work is not substantially complete:

1. The County shall notify the Contractor in writing, stating the reasons.
2. The Contractor shall remedy the deficiencies in the work and send a second written notice of substantial completion to the County.
3. The County shall reinspect the work.

E. When the County finds that the work is substantially complete:

1. The Engineer shall prepare and deliver to the County a tentative Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a tentative list of the items to be completed or corrected before final payment.
2. The Engineer shall consider any objections made by the County as provided in Conditions of the Contract. When the Engineer considers the work substantially complete, he will execute and deliver to the County a definite Certificate of Substantial Completion (Manatee County Project Management Form PMD-8) with a revised tentative list of items to be completed or corrected.

### 1.03 FINAL INSPECTION

A. When the Contractor considered the work to be complete, he shall submit written certification stating that:

1. The Contract Documents have been reviewed.
2. The work has been inspected for compliance with Contract Documents.
3. The work has been completed in accordance with Contract Documents.
4. The equipment and systems have been tested in the presence of the County's representative and are operational.
5. The work is completed and ready for final inspection.

B. The County shall make an inspection to verify the status of completion after receipt of such certification.

C. If the County determines that the work is incomplete or defective:

1. The County shall promptly notify the Contractor in writing, listing the incomplete or defective work.
2. The Contractor shall take immediate steps to remedy the stated deficiencies and send a second written certification to County that the work is complete.
3. The County shall reinspect the work.

D. Upon finding the work to be acceptable under the Contract Documents, the County shall request the Contractor to make closeout submittals.

E. For each additional inspection beyond a total of three (3) inspections for substantial and final completion due to the incompleteness of the work, the Contractor shall reimburse the County's fees.

## 1.04 CONTRACTOR'S CLOSEOUT SUBMITTALS TO COUNTY

A. Project Record Documents (prior to substantial completion).

B. Operation and maintenance manuals (prior to substantial completion).

C. Warranties and Bonds.

D. Evidence of Payment and Release of Liens: In accordance with requirements of General and Supplementary Conditions.

E. Certification letter from Florida Department of Transportation and Manatee County Department of Transportation, as applicable.

F. Certificate of Insurance for Products and Completed Operations.

G. Final Reconciliation, Warranty Period Declaration, and Contractor's Affidavit (Manatee County Project Management Form PMD-9).

## 1.05 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the County.

B. Statement shall reflect all adjustments to the Contract Sum:

1. The original Contract Sum.
2. Additions and deductions resulting from:
    a. Previous Change Orders
    b. Unit Prices
    c. Penalties and Bonuses
    d. Deductions for Liquidated Damages
    e. Other Adjustments
3. Total Contract Sum, as adjusted.
4. Previous payments.

5. Sum remaining due.

C. Project Management shall prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.

## 1.06 FINAL APPLICATION FOR PAYMENT

Contractor shall submit the final Application for Payment in accordance with procedures and requirements stated in the Conditions of the Contract.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01710 CLEANING

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

Execute cleaning during progress of the work and at completion of the work, as required by the General Conditions.

### 1.02 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations to comply with all Federal, State and Local codes, ordinances, regulations and anti-pollution laws.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

## PART 3 EXECUTION

### 3.01 DURING CONSTRUCTION

A. Execute periodic cleaning to keep the work, the site and adjacent properties free from accumulation of waste materials, rubbish and wind-blown debris, resulting from construction operations.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

### 3.02 DUST CONTROL

A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

### 3.03 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

C. Prior to final completion or County occupancy, Contractor shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas to verify that the entire work is clean.

END OF SECTION

# SECTION 01720 PROJECT RECORD DOCUMENTS

## PART 1 STANDARDS

### 1.01 MINIMUM RECORD DRAWING STANDARDS FOR ALL RECORD DRAWINGS SUBMITTED TO MANATEE COUNTY

A. Record drawings shall be submitted to at least the level of detail in the contract documents. It is anticipated that the original contract documents shall serve as at least a background for all record information. Original drawings in CAD format may be requested of the County.

B. Drawings shall meet the criteria of paragraph 2.04 D below and as mentioned in Section 1.15 and/or 1.16 Record Drawings in the Manatee County Public Works Standards, Part I Utilities Standards Manual approved February 2020.

## PART 2 STANDARDS

### 2.01 REQUIREMENTS INCLUDED

A. Contractor shall maintain at the site for the County one record copy of:

1. Drawings.
2. Specifications.
3. Addenda.
4. Change Orders and other modifications to the Contract.
5. County's field orders or written instructions.
6. Approved shop drawings, working drawings and samples.
7. Field test records.
8. Construction photographs.

### 2.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store documents and samples in Contractor's field office apart from documents used for construction.

1. Provide files and racks for storage of documents.
2. Provide locked cabinet or secure storage space for storage of samples.

B. File documents and samples in accordance with CSI format.

C. Maintain documents in a clean, dry, legible, condition and in good order. Do not use record documents for construction purposes.

D. Make documents and samples available at all times for inspection by the County.

### 2.03 MARKING DEVICES

A. Provide felt tip marking pens for recording information in the color code designated by the County.

### 2.04 RECORDING DRAWINGS PREPARATION

A. Record information concurrently with construction progress.

B. Do not conceal any work until required information is recorded.

C. Drawings; Legibly mark to record actual construction:

1. All underground piping with elevations and dimensions. Changes to piping location. Horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements. Actual installed pipe material, class, etc. Locations of drainage ditches, swales, water lines and force mains shall be shown every 200 feet (measured along the centerline) or alternate lot lines, whichever is closer. Dimensions at these locations shall indicate distance from centerline of right-of-way to the facility.
2. Field changes of dimension and detail.
3. Changes made by Field Order or by Change Order.
4. Details not on original contract drawings.
5. Equipment and piping relocations.
6. Locations of all valves, fire hydrants, manholes, water and sewer services, water and force main fittings, underdrain cleanouts, catch basins, junction boxes and any other structures located in the right-of-way or easement, shall be located by elevation and by station and offset based on intersection P.I.'s and centerline of right-of-way. For facilities located on private roads, the dimensioning shall be from centerline of paving or another readily visible baseline.
7. Elevations shall be provided for all manhole rim and inverts; junction box rim and inverts; catch basin rim and inverts; and baffle, weir and invert elevations in control structures. Elevations shall also be provided at the PVI's and at every other lot line or 200 feet, whichever is less, of drainage swales and ditches. Bench marks and elevation datum shall be indicated.
8. Slopes for pipes and ditches shall be recalculated, based on actual field measured distances, elevations, pipe sizes, and type shown. Cross section of drainage ditches and swales shall be verified.
9. Centerline of roads shall be tied to right-of-way lines. Elevation of roadway centerline shall be given at PVI's and at all intersections.
10. Record drawings shall show bearings and distances for all right-of-way and easement lines, and property corners.
11. Sidewalks, fences and walls, if installed at the time of initial record drawing submittal, shall be located every 200 feet or alternate lot lines, whichever is closer. Dimensions shall include distance from the right-of-way line and the back of curb and lot line or easement line.
12. Sanitary sewer mainline wyes shall be located from the downstream manhole. These dimensions shall be provided by on-site inspections or televiewing of the sewer following installation.
13. Elevations shall be provided on the top of operating nuts for all water and force main valves.
14. Allowable tolerance shall be ± 6.0 inches for horizontal dimensions. Vertical dimensions such as the difference in elevations between manhole inverts shall have an allowable tolerance of ± 1/8 inch per 50 feet (or part thereof) of horizontal distance up to a maximum tolerance of ± 2 inch.
15. Properly prepared record drawings on mylar, together with two copies, shall be certified by a design professional (Engineer and/or Surveyor registered in the State of Florida), employed by the Contractor, and submitted to the County.

D. Specifications and Addenda; Legibly mark each Section to record:

1. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
2. Changes made by field order or by change order.

E. Shop Drawings (after final review and approval):

1. Five sets of record drawings for each process equipment, piping, electrical system and instrumentation system.

## 2.05 SUBMITTAL

A. Prior to substantial completion and prior to starting the bacteria testing of water lines, deliver signed and sealed Record Documents and Record Drawings to the County. These will be reviewed and verified by the inspector. If there are any required changes or additions, these shall be completed and the entire signed and sealed set resubmitted prior to final pay application.

B. The Contractor shall employ a Professional Engineer or Surveyor registered in the State of Florida to verify survey data and properly prepare record drawings. Record drawings shall be certified by the professional(s) (Engineer or Surveyor licensed in Florida), as stipulated by the Land Development Ordinance and submitted on signed and sealed paper drawings, signed and dated mylar drawings together with an AutoCAD version on a recordable compact disk (CD).

C. The CD shall contain media in AutoCad Version 2020 or later, or in any other CAD program compatible with AutoCad 2020 in DWG or DXF form. All fonts, line types, shape files, external references, or other pertinent information used in the drawing and not normally included in AutoCad shall be included on the media with a text file or attached noted as to its relevance and use.

D. Accompany submittal with transmittal letter, containing:

1. Date.
2. Project title and number.
3. Contractor's name and address.
4. Title and number of each Record Document.
5. Signature of Contractor or his authorized representative.

Note: The data required to properly prepare these record drawings shall be obtained at the site, at no cost to the County by the responsible design professional or his/her duly appointed representative. The appointed representative shall be a qualified employee of the responsible design professional or a qualified inspector retained by the responsible design professional on a project-by-project basis.

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01730 OPERATING AND MAINTENANCE DATA

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Compile product data and related information appropriate for County's maintenance and operation of products furnished under Contract.

Prepare operating and maintenance data as specified in this and as referenced in other pertinent sections of Specifications.

B. Instruct County's personnel in maintenance of products and equipment and systems.

C. Provide three (3) sets of operating and maintenance manuals for each piece of equipment provided within this Contract.

### 1.02 FORM OF SUBMITTALS

A. Prepare data in form of an instructional manual for use by County's personnel.

B. Format:

1. Size: 8-1/2 inch x 11 inch
2. Paper: 20 pound minimum, white, for typed pages
3. Text: Manufacturer's printed data or neatly typewritten
4. Drawings:
   a. Provide reinforced punched binder tab, bind in with text.
   b. Fold larger drawings to size of text pages.
5. Provide fly-leaf for each separate product or each piece of operating equipment.
   a. Provide typed description of product and major component parts of equipment.
   b. Provide indexed tabs.
6. Cover: Identify each volume with typed or printed title "OPERATING AND MAINTENANCE INSTRUCTIONS". List:
   a. Title of Project.
   b. Identity of separate structures as applicable.
   c. Identity of general subject matter covered in the manual.

C. Binders:

1. Commercial quality three-ring binders with durable and cleanable plastic covers.
2. Maximum ring size: 1 inch.
3. When multiple binders are used, correlate the data into related consistent groupings.

### 1.03 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Submit three copies of complete manual in final form.

B. Content for each unit of equipment and system, as appropriate:

1. Description of unit and component parts.
   a. Function, normal operating characteristics and limiting conditions.

b. Performance curves, engineering data and tests.
c. Complete nomenclature and commercial number of replaceable parts.

2. Operating Procedures:
   a. Start-up, break-in, routine and normal operating instructions.
   b. Regulation, control, stopping, shut-down and emergency instructions.
   c. Summer and winter operating instructions.
   d. Special operating instructions.
3. Maintenance Procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair and reassembly.
   d. Alignment, adjusting and checking.
4. Servicing and lubricating schedule.
   a. List of lubricants required.
5. Manufacturer's printed operating and maintenance instructions.
6. Description of sequence of operation by control manufacturer.
7. Original manufacturer's parts list, illustrations, assembly drawings and diagrams required for maintenance.
   a. List of predicted parts subject to wear.
   b. Items recommended to be stocked as spare parts.
8. As installed control diagrams by controls manufacturer.
9. Each contractor's coordination drawings.
   a. As installed color coded piping diagrams.
10. Charts of valve tag numbers, with location and function of each valve.
11. List of original manufacturer's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
12. Other data as required under pertinent sections of specifications.

C. Content, for each electric and electronic system, as appropriate:

1. Description of system and component parts.
   a. Function, normal operating characteristics and limiting conditions.
   b. Performance curves, engineering data and tests.
   c. Complete nomenclature and commercial number of replaceable parts.
2. Circuit directories of panelboards.
   a. Electrical service.
      b. Controls.
   c. Communications.
3. As-installed color coded wiring diagrams.
4. Operating procedures:
   a. Routine and normal operating instructions.
   b. Sequences required.
   c. Special operating instructions.
5. Maintenance procedures:
   a. Routine operations.
   b. Guide to "trouble-shooting".
   c. Disassembly, repair and reassembly.
   d. Adjustment and checking.
6. Manufacturer's printed operating and maintenance instructions.
7. List of original manufacture's spare parts, manufacturer's current prices and recommended quantities to be maintained in storage.
8. Prepare and include additional data when the need for such data becomes apparent during instruction of County's personnel.

D. Prepare and include additional data when the need for such data becomes apparent during instruction on County's personnel.

E. Additional requirements for operating and maintenance data: Respective sections of Specifications.

## 1.04 SUBMITTAL SCHEDULE

A. Submit one copy of completed data in final form fifteen days prior to substantial completion.

1. Copy will be returned after substantial completion, with comments (if any).

B. Submit two copies of approved data in final form. Final acceptance will not be provided until the completed manual is received and approved.

## 1.05 INSTRUCTION OF COUNTY'S PERSONNEL

A. Prior to final inspection or acceptance, fully instruct County's designated operating and maintenance personnel in operation, adjustment and maintenance of products, equipment and systems.

B. Operating and maintenance manual shall constitute the basis of instruction.

1. Review contents of manual with personnel in full detail to explain all aspects of operations and maintenance.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# SECTION 01740 WARRANTIES AND BONDS

## PART 1 GENERAL

### 1.01 REQUIREMENTS INCLUDED

A. Compile specified warranties and bonds.

B. Compile specified service and maintenance contracts.

C. Co-execute submittals when so specified.

D. Review submittals to verify compliance with Contract Documents.

E. Submit to County for review and transmittal.

### 1.02 SUBMITTAL REQUIREMENTS

A. Assemble warranties, bonds and service and maintenance contracts, executed by each of the respective manufacturers, suppliers and subcontractors.

B. Number of original signed copies required: Two each.

C. Table of Contents: Neatly typed, in orderly sequence. Provide complete information for each item.

1. Product or work item.
2. Firm, with name of principal, address and telephone number.
3. Scope.
4. Date of beginning of warranty, bond or service and maintenance contract.
5. Duration of warranty, bond or service maintenance contract.
6. Provide information for County's personnel:
    a. Proper procedure in case of failure.
    b. Instances which might affect the validity of warranty or bond.
7. Contractor, name of responsible principal, address and telephone number.

### 1.03 FORM OF SUBMITTALS

A. Prepare in duplicate packets.

B. Format:

1. Size 8-1/2 inch x 11 inch punched sheets for standard 3-ring binder. Fold larger sheets to fit into binders.
2. Cover: Identify each packet with typed or printed title "WARRANTIES AND BONDS". List:
    a. Title of Project.
    b. Name of Contractor.

C. Binders: Commercial quality, three-ring, with durable and cleanable plastic covers.

### 1.04 TIME OF SUBMITTALS

A. Make submittals within ten days after date of substantial completion and prior to final request for payment.

B. For items of work, where acceptance is delayed materially beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

## 1.05 SUBMITTALS REQUIRED

A. Submit warranties, bonds, service and maintenance contracts as specified in respective sections of Specifications.

B. Approval by the County of all documents required under this section is a pre-requisite to requesting a final inspection and final payment

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION (NOT USED)

END OF SECTION

# DIVISION 2 SITE WORK

## SECTION 02064 MODIFICATIONS TO EXISTING STRUCTURES, PIPING AND EQUIPMENT

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to modify, alter and/or convert existing structures as shown or specified and as required for the installation of piping, mechanical equipment and appurtenances. Existing piping and equipment shall be removed and dismantled as necessary for the performance of facility alterations in accordance with the requirements herein specified.

## PART 2 PRODUCTS

A. Epoxy mortar shall be fiberglass fiber mixed with an epoxy filler.

B. Non-shrink grout shall be a sand-cement, non-metallic formulation, having a 28-day strength of 4,000 psi and 0.0 percent shrinkage per ASTM C1090.

C. Liners to be installed in existing manholes and wetwells shall be spray-applied, monolithic, reinforced urethane resin. Urethane resin-based manhole liner material shall be resistant to hydrogen sulfide gas, and other common contents found in a sanitary sewer environment.

D. Approved spray liners can be found in the Utility Approved Product List approved on Feb 2020.

## PART 3 EXECUTION

### 3.01 GENERAL

A. Cut, repair, reuse, excavate, demolish or otherwise remove parts of the existing structures or appurtenances, as indicated on the construction drawings, or as necessary to complete the work as required. Dispose of surplus materials resulting from the above work in an approved manner. The work shall include all necessary cutting and bending of reinforcing steel, structural steel, or miscellaneous metal work found embedded in the existing structures.

B. Dismantle and remove all existing equipment, piping, and other appurtenances required for the completion of the work. Where called for or required, cut existing pipelines for the purpose of making connections thereto.

C. Anchor bolts for equipment and structural steel to be removed shall be cut off one inch below the concrete surface. Surfaces shall then be refinished using non-shrink grout or epoxy mortar or as indicated on the construction drawings. Repairs to the interior surfaces of existing concrete structures in sanitary sewers shall be made with epoxy mortar. Repairs to be made on other existing concrete surfaces using non-shrink grout shall be made using a bonding agent such as Acrylbond by Concrete Producers Solutions or an equal approved by the County. Remove all dirt, curing compounds, sealers, paint, rust or other foreign material, and etch with muriatic acid solution. Flush with clean water and while still damp,

apply a coating of the bonding agent. Place the new grout patch onto the treated area immediately.

D. At the time that a new connection is made to an existing pipeline, additional new piping, extending to and including a new valve, shall be installed. Pipe restraint devices, if required, shall also be installed as required. At the time when a new potable or reclaimed water service is installed, a pipe locator tracer wire shall be installed and connected to the tracer wire at the main.

E. No existing structure, equipment, or appurtenance shall be shifted, cut, removed, or otherwise altered except with the express approval of and only to the extent approved by the County. All existing valve boxes, fire hydrants, air release valve cabinets, and manholes shall be relocated to meet the new finished grade elevations after construction.

F. When removing materials or portions of existing utility pipelines or structures or when making openings in walls and partitions, take all precautions and use all necessary barriers and other protective devices so as not to damage the structures beyond the limits necessary for the new work, and not to damage the structures or contents by falling or flying debris. Unless otherwise approved by the County, saw-cutting, rotary core-boring, or line drilling will be required in removing material from existing concrete structures or pipes.

G. Materials and equipment removed in the course of making alterations and additions shall remain the property of the County, except that items not salvageable, as determined by the County, shall be disposed of off the work site.

H. All alterations to existing utility pipes and structures shall be done at such time and in such a manner as to comply with the approved time schedule. Before any part of the work is started, all tools, equipment, and materials shall be assembled and made ready so that the work can be completed without delays.

I. All cutting of existing concrete or other material to provide suitable bonding to new work shall be done in a manner to meet the requirements of the respective section of these Standards covering the new work. When not covered, the work shall be carried on in the manner and to the extent directed by the County or per the construction drawings.

J. Surfaces of seals visible in the completed work shall be made to match as nearly as possible the adjacent surfaces.

K. Non-shrink cementatious grout shall be used for setting wall castings, sleeves, leveling pump bases, doweling anchors into existing concrete and elsewhere as shown on the construction drawings. The surface to which grout is to be applied shall be wetted to facilitate good bonding.

L. Where necessary or required for the purpose of making connections; cut existing pipelines in a manner to provide an approved joint. Where required, use flanges, couplings, or adapters, all as required.

M. Provide flumes, hoses, piping, pumps and well points, and other related items to divert or provide suitable plugs, bulkheads, or other means to hold back the flow of water or other liquids, all as required in the performance of the work.

N. Care shall be taken not to damage any part of existing buildings or foundations or outside structures.

O. Prior to entering confined spaces in sanitary sewer structures, conduct an evaluation of the atmosphere within, in accordance with local, state, and federal regulations. Provide ventilation equipment and other equipment as required to assure safe working conditions.

## 3.02 CONNECTING TO EXISTING PIPING AND EQUIPMENT

The Contractor shall verify exact location, material, alignment, joint, etc. of existing piping and equipment prior to making the connections called out in the Drawings. The verifications shall be performed with adequate time to correct any potential alignment or other problems prior to the actual time of connection. A County Inspector must be present for all tie-ins for a visual inspection.

## 3.03 REMOVAL AND ABANDONMENT OF ASBESTOS CEMENT PIPE AND APPURTENANCES

A. All work associated with the removal or abandonment of existing asbestos cement pipe and appurtenances shall be performed by a licensed asbestos removal Contractor registered in the State of Florida.

B. The asbestos Contractor shall contact the appropriate regulatory agencies prior to removal or abandonment of any asbestos material and shall obtain all required permits and licenses and issue all required notices. The cost for all fees associated with permits, licenses and notices to the governing regulatory agencies shall be borne by the asbestos Contractor.

C. All work associated with removal or abandonment of asbestos cement pipe and appurtenances shall be performed in accordance with the standards listed below and all other applicable local, State, or Federal standards.

(1) Florida Administrative Code, Chapter 62-257, ASBESTOS PROGRAM
(2) Title 40 CFR, Part 61, Subpart M, NATIONAL EMISSION STANDARD FOR ASBESTOS
(3) Occupational Safety and Health Act, Title 29 CFR
(4) Title 40 CFR, Part 763, ASBESTOS
(5) Florida Statute Title XXXII, Chapter 469, ASBESTOS ABATEMENT

D. All asbestos cement pipe sections indicated on the construction drawings to be removed, and all related tees, valves, fittings and appurtenances shall be removed in their entirety and disposed of by the asbestos Contractor in accordance with this Section. Asbestos cement nipples between tees and valves shall be replaced. After removal of the pipelines, all excavations shall be backfilled in accordance with the applicable provisions of the Trenching and Excavation Section of these Standards. The cost of disposing of the removed materials shall be borne by the asbestos Contractor.

E. The cutting of existing asbestos-cement (A/C, a.k.a. "Transite") pipe shall be by hand tools only. No powered machine cutting is allowed. Removal of all fragments of pipe shall be double bagged prior to shipment. Longer sections of pipe removed may be shipped without double bagging. An asbestos manifest form must accompany each shipment of such pipe or pipe material waste to the Manatee County Lena Road Landfill. Prior to each shipment, a minimum of 24 hours notice to the Landfill field office (telephone (941) 748-5543) is required.

## 3.04 IN-PLACE GROUTING OF EXISTING PIPE

A. Where water and wastewater utility pipes are to be abandoned in place, they shall be filled with a nonshrinking sand-cement grout. When such pipes are made of asbestos-cement materials, the abandonment activities shall be performed by a licensed asbestos Contractor. It is completely the Contractor's responsibility to obtain all regulatory clearances and provide documentation in cases where they have determined that an asbestos-cement pipe abandonment activity by in-place grouting does not require a licensed asbestos Contractor.

B. The ends of the pipe sections to be grout-filled shall be capped or plugged with suitable pipe fittings. The grout material shall be of suitable properties and the pumping pressure shall be such that the pipe sections are filled completely with grout. All above ground features shall be removed: hydrants, meters, valve & meter boxes, pads, vaults, etc. Existing tees, crosses, and valves left in service shall be plugged and restrained.

C. The County shall be given timely notice so that the County's representative may be present to monitor all pipe grouting operations. Provide standpipes and/or additional means of visual inspection as required to determine if adequate grout material has filled the entire pipe sections.

D. All tees, crosses, and valves left in service shall be plugged and restrained.

## 3.05 SPRAY-APPLIED LINERS

A. Use a high-pressure water spray to remove all foreign material from the walls and bench of the structure. Loose or protruding masonry materials shall be removed using a hammer and chisel. Fill any voids, holes or cracks using a hand trowel with epoxy mortar to form a uniform surface. Place covers over all pipe openings to prevent extraneous material from entering the pipes. Block or divert sewer flow from entering the structure. Any infiltration leaks shall be stopped by using such methods as approved by the County.

B. The liner material shall be sprayed onto the invert, bench and wall areas. The sprayed-on material shall be applied such that the entire structure is lined with a structurally enhanced monolithic liner. The thickness of the wall liner material shall be such that it will withstand the hydraulic load generated by the surrounding groundwater table, using a factor of safety of two, and using the assumption that the groundwater table is at the level of the top of the structure. The invert and bench liner material shall be the same thickness as that required for the base of the wall.

C. Special care shall be used to provide a smooth transition between the intersecting pipelines and the manhole inverts such that flow is not impaired. Remove concrete material from the existing manhole base channel in depth to the required thickness of the new liner material.

D. No active sewer flow shall be allowed in the newly lined structure, nor shall any vacuum tests be performed, until the liner material has had adequate time to cure, as recommended by the liner material manufacturer.

E. Install the coating systems per manufacturer's recommendation and completely protect the structure from corrosion. The liner or coating systems must extend and seal onto manhole ring, onto and around pipe openings and any other protrusions, and completely cover the bench and flow invert. Provide a five (5)-year unlimited warranty on all workmanship and products. The work includes the surface preparation and application of the coating or liner system, and shall protect the structure for at least five (5) years from all leaks and from failure due to corrosion from exposure to corrosive gases such as hydrogen sulfide.

## 3.06 CONNECTION TO EXSTING MANHOLE

A. Where required or as indicated on the construction drawings, make connection of new pipelines to existing manhole structures. If pipe stub-outs of the correct size and position are not available, make connections by removing a portion of the manhole wall by mechanical rotary core boring. The connection between pipe and concrete manhole shall be complete with resilient seals meeting the requirements of ASTM C923.

B. A new channel shall be formed in the manhole base by removing and reforming or by providing new concrete to convey the new flow into the existing channel in accordance with the standard requirements for new sewer manhole structures. Flow direction shall not change by more than 90 degrees within the manhole base.

C. Repair internal coating of existing manholes cored during connection of new sewers by applying approved coating material as listed above in accordance with the manufacturer's recommendations. If existing manhole has an internal coating other than that listed above, sandblast the interior of the existing manhole and apply an approved coating in accordance with the manufacturer's recommendations.

D. When connecting a force main to an existing manhole, the force main termination manhole and the next two manholes downstream shall be rehabilitated and lined with a currently approved liner. If the existing manholes are lined with a non-conforming liner according to Part 2.D above, the existing liner shall be removed and replaced, unless otherwise noted on the plans or with written approval by the County.

END OF SECTION

# SECTION 02100 SITE PREPARATION

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. This Section covers clearing, grubbing and stripping of the project site and/or along the pipeline route.

B. The Contractor shall clear and grub all of the area within the limits of construction or as required, which includes, but is not limited to utility easements. The width of the area to be cleared shall be reviewed by the County prior to the beginning of any clearing.

C. The Contractor's attention is directed to any Soil Erosion and Sediment Control Ordinances in force in Manatee County. The Contractor shall comply with all applicable sections of these ordinances.

## PART 2 PRODUCTS (NOT USED)

## PART 3 EXECUTION

### 3.01 CLEARING

The surface of the ground, for the area to be cleared and grubbed shall be completely cleared of all timber, brush, stumps, roots, grass, weeds, rubbish and all other objectionable obstructions resting on or protruding through the surface of the ground. However, trees shall be preserved as hereinafter specified unless otherwise designated by the County. Clearing operations shall be conducted so as to prevent damage to existing structures and installations and to those under construction, so as to provide for the safety of employees and others. Soil erosion control devices such as hay bales and silt fences shall be installed to satisfy all Federal, State and County requirements.

### 3.02 GRUBBING

Grubbing shall consist of the complete removal of all stumps, roots larger than 1-1/2 inches in diameter, matted roots, brush, timber, logs and any other organic or metallic debris not suitable for foundation purposes, resting on, under or protruding through the surface of the ground to a depth of 18 inches below the subgrade. All depressions excavated below the original ground surface for or by the removal of such objects, shall be refilled with suitable materials and compacted to a density conforming to the surrounding ground surface.

### 3.03 STRIPPING

In areas so designated, topsoil shall be stockpiled. Topsoil so stockpiled shall be protected until it is placed as specified. The County shall have the option to receive all excess topsoil materials. The Contractor shall pay all equipment and labor cost to deliver excess top soil material to a remote site chosen by the County within a five mile radius of the construction site. Should County not choose to receive any or all excess topsoil materials, the Contractor shall dispose of said material at no additional cost to County.

### 3.04 DISPOSAL OF CLEARED AND GRUBBED MATERIAL

The Contractor shall dispose of all material and debris from the clearing and grubbing

operation by hauling such material and debris off site. The cost of disposal (including hauling) of cleared and grubbed material and debris shall be considered a subsidiary obligation of the Contractor; the cost of which shall be included in the prices bid for the various classes of work.

## 3.05 PRESERVATION OF TREES

Those trees which are not designated for removal by the County shall be carefully protected from damage. The Contractor shall erect such barricades, guards and enclosures as may be considered necessary by him for the protection of the trees during all construction operation.

## 3.06 PRESERVATION OF DEVELOPED PRIVATE PROPERTY

A. The Contractor shall exercise extreme care to avoid unnecessary disturbance of developed private property adjacent to proposed project site. Trees, shrubbery, gardens, lawns and other landscaping, which are not designated by the County to be removed, shall be replaced and replanted to restore the construction easement to the condition existing prior to construction.

B. All soil preservation procedures and replanting operations shall be under the supervision of a nursery representative experienced in such operations.

C. Improvements to the land such as fences, walls, outbuildings and other structures which of necessity must be removed, shall be replaced with equal quality materials and workmanship.

D. The Contractor shall clean up the construction site across developed private property directly after construction is completed upon approval of the County.

## 3.07 PRESERVATION OF PUBLIC PROPERTY

The appropriate paragraphs of these Specifications shall apply to the preservation and restoration of public lands, parks, rights-of-way, easements and all other damaged areas. This includes, but is not limited to the trimming of trees damaged by contractor's equipment.

END OF SECTION

# SECTION 02220 EXCAVATION, BACKFILL, FILL AND GRADING FOR STRUCTURES

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. Structural excavation shall consist of the removal of material for the construction of foundations for structures and other excavation designated on the drawings or in these specifications.

B. Structural excavation and backfill shall consist of furnishing material, if necessary and placing and compacting backfill material around structures to the lines and grades designated on the drawings, as specified or directed by the County.

C. Structural excavation and backfill shall include the furnishing of all materials, equipment and other facilities which may be necessary to perform the excavations, place and compact the backfill, install sheeting and bracing, and carry out any necessary dewatering. It shall also include the wasting or disposal of surplus excavated material in a manner and in locations approved by the County.

D. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to, protecting the root systems and adjusting grades as necessary for tree/root protection.

### 1.02 QUALITY ASSURANCE

A. Testing Agency:

1. In place soil compaction tests shall be performed by a qualified testing laboratory.
2. Compaction tests shall be taken every 500 feet, except in the road crossings or road shoulders. Tests are to be taken according to current FDOT Standards.

B. Reference Standards:

1. American Society for Testing and Materials (ASTM):
   a. ASTM D1557, Moisture-Density Relations of Soils Using 10-lb. (4.5-kg) Rammer and 18-in. (457-mm) Drop.

### 1.03 JOB CONDITIONS

A. The Contractor shall provide, operate and maintain all necessary pumps, discharge lines, well points, etc., in sufficient number and capacity to keep all excavation, bases, pits, etc., free from seepage, standing or running water at all times throughout the period of construction.

B. The Contractor shall assume all responsibility for the security of the excavation required, employing bracing, lining or other accepted means necessary to accomplish same.

C. Excavated areas shall be cleared of all debris, water, slush, muck, clay and soft or loose earth and shall be conditioned to the entire satisfaction of the County.

D. All excavated material unsuitable for use or which will not be used shall be disposed of in a manner consistent with State and County regulation.

E. All unsuitable organic materials, roots, logs, etc., found during excavation shall be removed by the Contractor and the trench shall be refilled with suitable material.

## PART 2 PRODUCTS

### 2.01 MATERIAL FOR CONTROLLED FILL

A. Composition: Only approved material free from organic matter and lumps of clay, shall be used for backfill. Excavated earth free from debris or organic material may be used for backfilling foundations or fill.

B. Crushed stone and shell shall meet or exceed current FDOT Standards.

### 2.02 UNSUITABLE MATERIAL

Unsuitable material shall be defined as highly organic soil per ASTM D2487 Group PT. This includes, but is not limited to, such items as topsoil, roots, vegetable matter, trash, debris, and clays that cannot be dried sufficiently to obtain specified compaction.

## PART 3 EXECUTION

### 3.01 INSPECTION

A. The Contractor shall verify that work preceding the affected work of this Section has been satisfactorily completed.

B. Conditions adversely affecting the work of this Section shall be corrected to the satisfaction of the County.

### 3.02 REMOVAL OF UNSUITABLE MATERIALS

A. The Contractor shall remove unsuitable material from within the limits of the Work.

B. Materials meeting requirements for controlled fill shall be stockpiled as necessary and in such a manner satisfactory to the County.

C. All material excavated shall be placed so as to minimize interference with public travel and to permit proper access for inspection of the work.

### 3.03 EXCAVATION

A. When concrete or shell subbase footing is to rest on an excavated surface, care shall be taken not to disturb the natural soil. Final removal and replacement of the foundation material and subbase compaction to grade shall not be made until just before the concrete or masonry is placed.

B. When any structural excavation is completed, the Contractor shall notify the County who will make an inspection of the excavation. No concrete or masonry shall be placed until the excavation has been approved by the County.

C. The elevations of the footing bottom and the base slab as shown on the Drawings, shall be considered as approximate and the County may order in writing, such changes in dimensions or elevations of the footings and slab base as necessary to secure satisfactory foundations.

D. All excavation shall be made within an area bounded by lines five feet outside and parallel to the exterior walls of the structure to allow for correct forming, shoring and inspection of foundation work. Pouring of concrete against earth side walls shall not be permitted.

E. If the ground is excavated below the grade called for by the Drawings or becomes unstable due to the Contractor's carelessness or operations, the ground shall be excavated to undisturbed native soil before continuing concreting operations.

F. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and if so directed, replaced by crushed stone or washed shell.

## 3.04 STRUCTURAL BACKFILL

A. Structural backfill shall not be placed until the footings or other portions of the structure or facility have been inspected by the County and approved for backfilling.

B. A minimum of 1-1/2" layer of lean concrete shall be placed as a working mat for the concrete base slabs and footings if required by the County.

C. Fill shall be placed in uniform layers not more than 12" thick and compacted to a minimum of 98 percent of the maximum density determined by ASTM D1557, Method A or C, or as directed by the County. The Contractor shall securely tamp the backfill with pneumatic rammer around all wall foundations. The method of compaction shall be satisfactory to the County.

D. Compaction of structural backfill by ponding and jetting may be permitted when, as determined by the County: the backfill material is of such character that it will be self-draining when compacted; foundation materials will not soften or be otherwise damaged by the applied water; no damage from hydrostatic pressure will result to the structure. Ponding and jetting within two feet below finished subgrade shall not be permitted in roadway areas. At the discretion of the County, ponding and jetting may be permitted with compaction layers not to exceed four feet.

E. Surplus material not used on-site shall be removed and disposed of off-site by the Contractor. In no case shall surplus material be deposited on adjacent lands. Fill used for grading shall be placed in layers not to exceed 12 inches in thickness and shall be compacted to a density equal or greater to that of the surrounding natural ground.

## 3.05 BACKFILLING AROUND STRUCTURES

A. Common fill and structural fill are specified for use as backfill against the exterior walls of the structures. Fill shall be placed in layers having a maximum thickness of eight (8) inches in loose state and shall be compacted sufficiently to prevent settlement. If compaction is by rolling or ramming, material shall be wetted down as required. Where material can be suitably compacted by jetting or puddling, the Contractor may use one of these methods. No boulders shall be allowed to roll down the slopes and hit the walls.

B. Backfilling shall be carried up evenly on all walls of an individual structure simultaneously. A variation of two (2) feet in elevation will be the maximum allowable. No backfill shall be allowed against walls until the walls and their supporting slabs, if applicable, have attained sufficient strength. Backfilling shall be subjected to approval by the County.

C. In locations where pipes pass through building walls, the Contractor shall take the following precautions to consolidate the refill up to an elevation of at least one foot above the bottom of the pipes:

1. Place structural fill in such areas for a distance of not less than three feet either side of the center line of the pipe in level layers not exceeding 6-inches in depth.
2. Wet each layer to the extent directed and thoroughly compact each layer with a power tamper to the satisfaction of the County.
3. Structural fill shall be of the quality specified under Part 2 of this Section.

D. The surface of filled areas shall be graded to smooth true lines, strictly conforming to grades indicated on the grading plan. No soft spots or uncompacted areas shall be allowed in the work.

E. Temporary bracing shall be provided as required during construction of all structures to protect partially completed structures against all construction loads, hydraulic pressure and earth pressure. The bracing shall be capable of resisting all loads applied to the walls as a result of backfilling.

## 3.06 FIELD QUALITY CONTROL

A. The density of soil in place shall be a minimum of 95 percent in accordance with ASTM test 1557-70T, Method A or C.

## END OF SECTION

# SECTION 02221 TRENCHING, BEDDING AND BACKFILL FOR PIPE

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals necessary to perform all dewatering, excavation, backfill, fill, grading, trench protection or other related work required to complete the piping work shown on the Drawings and specified herein. The work shall include, but not be limited to: vaults; duct conduit; pipe; roadways and paving; backfilling; required fill or borrow operations; grading; disposal of surplus and unsuitable materials; and all related work such as sheeting, bracing and dewatering.

B. Prior to commencing work, the Contractor shall examine the site and review test borings if available, or undertake his own subsurface investigations and take into consideration all conditions that may affect his work.

C. The Contractor is responsible for the protection of every tree which is scheduled to remain in the project area. This includes trees which may or may not be shown on the plans. Every tree shall be adequately protected in place at no additional cost to the County. This includes, but is not limited to protecting the root systems and adjusting grades as necessary for tree/root protection.

### 1.02 PROTECTION

A. Sheeting and Bracing in Excavations:

1. In connection with construction of underground structures, the Contractor shall properly construct and maintain cofferdams. These shall consist of: sheeting and bracing as required to support the sides of excavations, to prevent any movement which could in any way diminish the width of the excavation below that necessary for proper construction and to protect adjacent structures, existing yard pipe and/or foundation material from disturbance, undermining, or other damage. Care shall be taken to prevent voids outside of the sheeting, but if voids are formed, they shall be immediately filled and rammed.

2. Trench sheeting for pipes: no sheeting is to be withdrawn if driven below, mid-diameter of any pipe and no wood sheeting shall be cut off at a level lower than one foot above the top of any pipe unless otherwise directed by the County. During the progress of the work, the County may direct the Contractor in writing to leave additional wood sheeting in place. If steel sheeting is used for trench sheeting, removal shall be as specified above, unless written approval is given for an alternate method of removal.

3. All sheeting and bracing not left in place shall be carefully removed in such a manner as not to endanger the construction or other structures, utilities, existing piping, or property. Unless otherwise approved or indicated on the Drawings or in the Specification, all sheeting and bracing shall be removed after completion of the piping or structure, care being taken not to disturb or otherwise injure the pipeline or finished masonry. All voids left or caused by withdrawal of sheeting shall be immediately refilled with sand by ramming with tools specifically made for that purpose, by watering, or as may otherwise be directed.

4. The Contractor shall construct, to the extent he deems it desirable for his method of operation, the cofferdams and sheeting outside the neat lines of the pipeline trench or foundation unless otherwise indicated on the Drawings or directed by the County. Sheeting shall be plumb and securely braced and tied in position. Sheeting, bracing and cofferdams shall be adequate to withstand all pressures to which the pipeline or structure will be subjected. Pumping, bracing and other work within the cofferdam shall be done in a manner to avoid disturbing any construction of the pipeline or the enclosed masonry. Any movement or bulging which may occur shall be corrected by the Contractor at his own expense so as to provide the necessary clearances and dimensions.

5. Drawings of the cofferdams and design computations shall be submitted to the County and approved prior to any construction. However, approval of these drawings shall not relieve the Contractor of the responsibility for the cofferdams. The drawings and computations shall be prepared and stamped by a Registered Professional Engineer in the State of Florida and shall be in sufficient detail to disclose the method of operation for each of the various stages of construction, if required, for the completion of the pipeline and substructures.

B. Dewatering, Drainage and Flotation

1. The Contractor shall construct and place all pipelines, concrete work, structural fill, bedding rock and limerock base course, in-the-dry. In addition, the Contractor shall make the final 24" of excavation for this work in-the-dry and not until the water level is a minimum of 18 below proposed bottom of excavation.

2. The Contractor shall, at all times during construction, provide and maintain proper equipment and facilities to remove promptly and dispose of properly all water entering excavation and keep such excavations dry so as to obtain a satisfactory undisturbed subgrade foundation condition until the fill, structure, 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 elevations. At all times during the construction operations, the groundwater levels shall be maintained at an elevation 18 inches below the lowest level where structures are being installed.

3. Dewatering shall at all times be conducted in such a manner as to preserve the natural undisturbed bearing capacity of the subgrade soils at proposed bottom of excavation.

4. Wellpoints may be required for dewatering the soil prior to final excavation for deeper in-ground structures or piping and for maintaining the lowered groundwater level until construction has been completed to avoid the structure, pipeline, or fill from becoming floated or otherwise damaged. Wellpoints shall be surrounded by suitable filter sand and no fines shall be removed by pumping. Pumping from wellpoints shall be continuous and standby pumps shall be provided.

5. The Contractor shall furnish all materials and equipment to perform all work required to install and maintain the proposed drainage systems for handling groundwater and surface water encountered during construction of structures, pipelines and compacted fills.

6. Where required, the Contractor shall provide a minimum of two operating groundwater observation wells at each structure to determine the water level during

construction of the pipeline or structure. Locations of the observation wells shall be at structures and along pipelines as approved by the County prior to their installation. The observation wells shall be extended to 6 inches above finished grade, capped with screw-on caps protected by 24" x 24" wide concrete base and left in place at the completion of this Project.

7. Prior to excavation, the Contractor shall submit his proposed method of dewatering and maintaining dry conditions to the County for approval. Such approval shall not relieve the Contractor of the responsibility for the satisfactory performance of the system. The Contractor shall be responsible for correcting any disturbance of natural bearing soils for damage to pipeline or structures caused by an inadequate dewatering system or by interruption of the continuous operation of the system as specified.

8. As part of his request for approval of a dewatering system, the Contractor shall demonstrate the adequacy of the proposed system and wellpoint filter sand by means of a test installation. Discharge water shall be clear, with no visible soil particles in a one quart sample. Discharge water shall not flow directly into wetlands or Waters of the State as defined by FDEP and SWFWMD.

9. During backfilling and construction, water levels shall be measured in observation wells located as directed by the County.

10. Continuous pumping will be required as long as water levels are required to be below natural levels.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. General

1. Materials for use as fill and backfill shall be described below and shall be from an FDOT certified pit. For each material, the Contractor shall notify the County of the source of the material and shall furnish the County, for approval, a representative sample weighing approximately 50 pounds, at least ten calendar days prior to the date of anticipated use of such material.

2. Additional materials shall be furnished as required from off-site sources and hauled to the site.

B. Bedding - shall conform to FDOT Standard Specifications for Road and Bridge Construction, Section 901 Coarse Aggregate, and shall be either coarse aggregate of Size No. 57 or coarse sand of Size No. 9. Washed shell size No.57 may be used as an alternate bedding material.

C. Structural Fill

1. Structural fill in trenches shall be used below spread footing foundations, slab-on-grade floors and other structures as backfill within three feet of the below grade portions of structures.

2. Shall be either soil classification A-1, A-2 or A-3, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials, and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill. Minimum acceptable density shall be 98 percent of the maximum density as determined by AASHTO T-180.

D. Selected Common Fill - shall have the same material classification and requirements as Structural Fill, as described above.

E. Common Fill

1. Shall be either soil classification A-1, A-2, A-3, A-4, A-5 or A-6, per AASHTO M-145, and shall be free of organic matter, lumps of clay or marl, muck, compressible materials and rock exceeding 2.5 inches in diameter. Broken concrete, masonry, rubble or other similar materials shall not be used as backfill.

2. Material falling within the above specification, encountered during the excavation, may be stored in segregated stockpiles for reuse. All material which, in the opinion of the County, is not suitable for reuse shall be spoiled as specified herein for disposal of unsuitable materials by the Contractor.

E. Unsuitable Material - soil classification A-7 and A-8, per AASHTO M-145, shall not be used as backfill material.

## PART 3 EXECUTION

### 3.01 EXCAVATION

A. Excavate trenches and pits for structures to the elevations indicated on the construction drawings. Take special care to avoid over-excavating or disturbing the bottom of the trench or pit, so that the soil at the bottom of the hole remains in a naturally compacted condition. Excavate to widths sufficient to provide adequate working room to install the required structures. Do not excavate the final layer of soil to the designed grade until just before placing the bedding, foundation, pipe, structure, or masonry work required. Remove boulders, rocks, logs or any unforeseen obstacles encountered.

B. In case the foundation soil found at the bottom of the trench or pit is soft, plastic or mucky, or does not conform to the soils classification specified as suitable foundation material, over-excavation to a greater depth will be required. Soils not meeting the classification required for foundation material shall be removed to a depth at least four inches below the bottom of the pipe, bedding or structure bottom elevation. Rock, boulders or other hard or lumpy material shall be removed to a depth 12 inches below the bottom of the pipe, bedding or structure bottom elevation. Remove muck, clay or other soft material to a depth as needed to establish a firm foundation.

C. Where possible, the sides of trenches should be vertical up to at least the spring line of the installed pipe.

D. Trench excavation shall be performed in accordance with Florida Statute Title XXXIII, Chapter 553, Part III, Trench Safety Act.

### 3.02 BACKFILLING

A. Backfill materials shall be placed on solid, firm, naturally compacted or compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, dry or dewatered in place soil foundations.

B. Where over-excavation is required due to nonconforming soil classification or rocky, unstable, or otherwise undesirable soil conditions, place Structural Fill or Selected Common Fill in the over-excavated zone up to the base of the bedding material layer. Compact the over-excavated zone to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.

C. When backfilling in an over-excavated zone where moist or watery conditions exist, backfill shall be coarse No. 9 sand or a mixture of No. 57 coarse aggregate with either No. 9 coarse sand, A-1, or A-3 material.

D. After compaction, backfill material in the over-excavation zone shall form a solid and firm foundation on which to build up successive layers of backfill and structures.

E. Bedding materials shall be placed on solid, firm soil foundations and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180.

F. Concrete and masonry structures shall be backfilled using Structural Fill. Backfilling and compaction shall be underneath the structure and carried up evenly on all walls of an individual structure simultaneously. The maximum allowable difference in backfill elevations shall be two feet. No backfilling shall be allowed against concrete or masonry walls until the walls and their supporting slabs have been in place at least seven days or until the specified 28-day strength has been attained. Compaction of Structural Fill underneath the base and along the walls shall be 98 percent of the maximum dry density of the material as determined by AASHTO T-180. The Structural Fill shall be either dried or shall have water added so that the moisture content of the material is within a range that will allow the required density to be achieved.

G. Trenching backfill for pipe installation shall be Selected Common Fill for the pipe bedding zone. The pipe bedding envelope shall begin at the level four inches, six inches, or nine inches, depending on pipe diameter, below the bottom of the pipe, and shall extend vertically up to a level 12 inches above the top of the pipe. Where the in-place soil material within the four inch, six inch, or nine inch pipe bedding zone beneath the bottom of the pipe meets the soil classification for Selected Common Fill, undercutting of the trench below the bottom of the pipe will not be required. In this case, loosen the soil in the bottom of the trench immediately below the middle third of the pipe diameter, and place the pipe upon it. Where the in-place soil material within the pipe bedding zone does not meet the soil classification for Selected Common Fill, undercutting shall be required, and the bedding zone shall be backfilled with Selected Common Fill. In this case, place the pipe bedding material and leave it in a moderately firm uncompacted condition under the middle third of the pipe diameter, and compact the outer portions of the trench bottom to 98 percent of the maximum dry density. Soils that were over-excavated due to rocky, soft or otherwise unsuitable soil foundation conditions shall also be replaced with Selected Common Fill. Compaction of Selected Common Fill shall be 98 percent of the maximum dry density as determined by AASHTO T-180. Such backfill material shall have an optimized moisture content that will allow the required density to be achieved.

H. Pipe sections for gravity flow systems shall be laid with spigots downstream and bells upstream. Excavate for pipe bells before laying pipe. Lay pipe true to the lines and grades indicated on the construction plans. Place backfill material on both sides of the pipe and

compact to 98 percent of the maximum dry density of the material as determined by AASHTO T-180. Take special care to effectively fill and compact the material in the haunch areas under the sides of the pipe.

I. For pipes that are not installed under roadways or driveways, trenching backfill for pipe installation shall be Common Fill above the pipe envelope zone, and shall be compacted to 95 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density. For pipes that are installed under roadways or driveways, trenching backfill for pipe installation shall be Selected Common Fill above the pipe envelope zone, and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density. Selected Common Backfill shall be placed in layers not to exceed 6 inches. Common Backfill shall be placed in layers not to exceed 12 inches.

J. Backfill compaction tests shall be performed every 500 feet in pipe line trenches and for every utility structure. Test reports shall be presented to the County Inspector.

## 3.03 GRADING AND CLEAN UP

A. Surplus and unsuitable soil materials not used on-site shall be removed and disposed of off-site in a manner that is consistent with state and local regulations. In no case shall surplus or unsuitable material be deposited on-site or on adjacent lands.

B. The surface of backfilled areas shall be graded smooth and true to the lines and grades indicated on the construction plans. No soft spots or uncompacted areas shall be allowed in the work.

C. Upon completion of the work, leave the work areas and all adjacent areas in a neat and presentable condition, clear of all temporary structures, rubbish and surplus materials. Pile any salvageable materials that have been removed in neat piles for pickup by County crews, unless otherwise directed.

END OF SECTION

# SECTION 02223 EXCAVATION BELOW GRADE AND CRUSHED STONE OR SHELL REFILL

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. If in the opinion of the County, the material at or below the normal grade of the bottom of the trench is unsuitable for pipe or structure foundation, it shall be removed to the depth directed by the County and replaced by crushed stone or washed shell.

## PART 2 PRODUCTS (NOT USED)

## PART 3 MATERIALS

### 3.01 EXCAVATION AND DRAINAGE

A. Whatever the nature of unstable material encountered or the groundwater conditions, trench stabilization shall be complete and effective.

B. Should the Contractor excavate below the grade shown on the Contract drawings because of negligence or for his own convenience; due to failure in properly dewatering the trench; disturbs the subgrade before dewatering is sufficiently complete; he shall be directed by the County to excavate below grade. The work of excavating below grade and furnishing and placing the approved refill material shall be performed at the Contractor's expense.

### 3.02 REFILL

A. Soils not meeting the classification required for foundation material shall be removed to a depth at least four inches below the bottom of the pipe, bedding or structure bottom elevation. Rock, boulders or other hard or lumpy material shall be removed to a depth 12 inches below the bottom of the pipe, bedding or structure bottom elevation. Remove muck, clay or other soft material to a depth as needed to establish a firm foundation.

END OF SECTION

# SECTION 02260 FINISH GRADING

## PART 1 GENERAL

### 1.01 WORK INCLUDED

A. The Contractor shall finish grade sub-soil.

B. The Contractor shall cut out areas to receive stabilizing base course materials for paving and sidewalks.

C. The Contractor shall place, finish grade and compact top soil.

### 1.02 PROTECTION

The Contractor shall prevent damage to existing fencing, trees, landscaping, natural features, bench marks, pavement and utility lines. Damage shall be corrected at no cost to the County.

## PART 2 PRODUCTS

A. Topsoil: Shall be friable loam free from subsoil, roots, grass, excessive amount of weeds or other organics, stones, and foreign matter; acidity range (pH) of 5.5 to 7.5; containing a minimum of 4 percent and a maximum of 25 percent organic matter. The Contractor may use topsoil stockpiles on site if they conform to these requirements.

## PART 3 EXECUTION

### 3.01 SUB-SOIL PREPARATION

A. The Contractor shall rough grade sub-soil systematically to allow for a maximum amount of natural settlement and compaction. Uneven areas and low spots shall be eliminated. Debris, roots, branches or other organics, stones, and sub-soil shall be removed by the Contractor and disposed of in a manner consistent with the latest Manatee County Standards as well as any affected regulatory agency. Should contaminated soil be found, the Contractor shall notify the County.

B. The Contractor shall cut out areas to sub-grade elevation to stabilize base material for paving and sidewalks and shall be compacted to 98 percent of the maximum dry density of the material as determined by AASHTO T-180, and shall have moisture content optimized to allow the required density.

C. The Contractor shall bring sub-soil to required profiles and contour graces gradually; and blend slopes into level areas.

D. The Contractor shall slope the structure grade a minimum of two (2) inches in ten (10) feet unless indicated otherwise on the Drawings.

E. The Contractor shall cultivate sub-grade to a depth of 3 inches where the topsoil is to be placed. He shall repeat cultivation in areas where equipment use has compacted sub-soil.

F. The Contractor shall not make grade changes which causes water to flow onto adjacent lands.

## 3.02 PLACING TOPSOIL

A. The Contractor shall place topsoil in areas where seeding, sodding and planting is to be performed. He shall place from the following minimum depths, up to finished grade elevations:

1. 6 inches for seeded areas
2. 4-1/2 inches for sodded areas
3. 24 inches for shrub beds
4. 18 inches for flower beds

B. The Contractor shall use topsoil in a dry state as determined by the County. He shall place the material during dry weather.

C. The Contractor shall use fine grade topsoil eliminating rough and low areas to ensure positive drainage. He shall maintain levels, profiles and contours of the sub-grades.

D. The Contractor shall remove stone, roots, grass, weeds, debris, and other organics or foreign material while spreading the material.

E. The Contractor shall manually spread topsoil around trees, plants and structures to prevent damage which may be caused by grading equipment.

F. The Contractor shall lightly compact and place the topsoil.

## 3.03 SURPLUS MATERIAL

A. The Contractor shall remove surplus sub-soil and topsoil from site at his expense.

B. The Contractor shall leave stockpile areas and entire job site clean and raked, ready for landscaping operations.

END OF SECTION

# SECTION 02276 TEMPORARY EROSION AND SEDIMENTATION CONTROL

## PART 1 GENERAL

### 1.01 DESCRIPTION

A. The work specified in this Section consists of the design, provision, maintenance and removal of temporary erosion and sedimentation controls as necessary.

B. Temporary erosion controls include, but are not limited to: grassing, mulching, netting, watering, and the reseeding of on-site surfaces and spoil and borrow area surfaces, interceptor ditches at ends of berms and other such work at those locations which will ensure that erosion during construction will be either eliminated or maintained within acceptable limits as established by the County.

C. Temporary sedimentation controls include, but are not limited to: silt dams, traps, barriers, and appurtenances at the foot of sloped surfaces which shall ensure that sedimentation pollution will be either eliminated or maintained within acceptable limits as established by the County.

D. The Contractor is responsible for providing effective temporary erosion and sediment control measures during construction or until final controls become effective.

### 1.02 REFERENCE DOCUMENTS

A. Florida Building Code.

B. FDEP/COE Dredge and Fill Regulations and/or Permit as applicable.

C. SWFWMD Permit Regulations and/or Permit as applicable.

D. Florida Stormwater, Erosion and Sedimentation Control Inspector's Manual.

## PART 2 PRODUCTS

### 2.01 EROSION CONTROL

A. Netting - fabricated of material acceptable to the County.

B. Seed and sod.

### 2.02 SEDIMENTATION CONTROL

A. Bales - clean, seed free cereal hay type.

B. Netting - fabricated of material acceptable to the County.

C. Filter stone - crushed stone conforming to Florida Dept of Transportation specifications.

D. Concrete block - hollow, non-load-bearing type.

E. Concrete - exterior grade not less than one inch thick.

## PART 3 EXECUTION

### 3.01 EROSION CONTROL

A. Minimum procedures for grassing shall be:

1. Scarify slopes to a depth of not less than six inches and remove large clods, rock, stumps, roots larger than 1/2 inch in diameter and debris.
2. Sow seed within twenty-four (24) hours after the ground is scarified with either mechanical seed drills or rotary hand seeders.
3. Apply mulch loosely and to a thickness of between 3/4-inch and 1-1/2 inches.
4. Apply netting over mulched areas on sloped surfaces.
5. Roll and water seeded areas in a manner which will encourage sprouting of seeds and growing of grass. Reseed areas which exhibit unsatisfactory growth. Backfill and seed eroded areas.

### 3.02 SEDIMENTATION CONTROL

A. The Contractor shall install and maintain silt dams, traps, barriers, and appurtenances as shown on the approved descriptions and working drawings. Deteriorated hay bales and dislodged filter stone shall be replaced by the Contractor at his expense.

### 3.03 PERFORMANCE

A. The Contractor, at his own expense, shall immediately take whatever steps are necessary to correct any deficiencies of the temporary erosion and sediment control measures employed if they fail to produce results or do not comply with the requirements of the State of Florida or any other federal, governmental or regulatory agency.

END OF SECTION

# SECTION 02325 ROAD AND RAILROAD CROSSINGS

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor, equipment, materials and incidentals required to install road or railroad crossings as shown on the Drawings and as specified herein.

### 1.02 OPERATIONS ON MANATEE COUNTY OR STATE OF FLORIDA PROPERTY

A. All work affecting Manatee County, Florida Department of Transportation, any other governmental agency's right-of-way or facilities, or railroad right-of-way shall be carried out to the full satisfaction of the applicable Department's authorized representative. The Contractor shall be responsible to meet any and all requirements of the Department of Transportation, railroad, or other agency pertaining to the specific project and shall conduct all his work accordingly.

B. Prior to the start of the jacking operation, a detailed jacking plan shall be submitted to the County for review and approval. No work shall be permitted until the submittals are accepted. A Bore Path Report shall be submitted with in three (3) days of completion of the bore.

C. Prior to construction, a minimum of three working days written notice prior to start of the actual work shall be given to the County and to the Florida Department of Transportation or other applicable agency.

D. The Contractor shall install, maintain and leave in place any sheeting, underpinning, cribbing and other related items (other than that required for the jacking pits) to support any structures or facility on the right-of-way owned by either Manatee County, Florida Dept. of Transportation or other governmental agency or railroad entity. The Contractor, at his expense, may be directed by the Department of Transportation, other applicable agency, or the County, to leave sheeting in place.

E. The Contractor shall perform all necessary soil test borings to determine actual soil conditions and shall utilize the results of said borings to determine the procedures required for each jack and bore operation, including, but not limited to, the presence of rock and necessary dewatering requirements.

F. No wires, equipment, or other appurtenances shall be permitted to be placed across or pass across State property without the express written permission of the Department of Transportation’s authorized representative.

G. All equipment used by the Contractor on State property may be inspected by the State and shall not be used if it is deemed unsatisfactory by an authorized State representative. State highways shall be kept free of obstructions at all times.

H. No blasting shall be permitted under or adjacent to any State highways.

I. The Contractor shall be responsible for all damages arising from his negligence or failure to comply with any State or Manatee County regulations or requirements or deviations from the Contract Documents.

J. All State highway crossings shall be performed and completed in a manner fully satisfactory to the Department of Transportation and Manatee County.

K. Traffic control requirements and procedures are detailed in Section 01570 of this specification.

## 1.03 SHOP DRAWINGS

The Contractor shall furnish working drawings showing all fabrication and construction details for the jacked crossings.

## 1.04 SUBMITTALS

A. Contractor shall submit a Jacking Plan that includes the following:

1. Site layout plan for entry and exit pit locations, drawn to scale, depicting the position of all required equipment, access points, existing facilities to remain in place, existing traffic lanes to be maintained in operation, office trailers and storage sites.
2. Qualification information on jack/bore contractor.
3. Manufacturer's information on equipment to be used.
4. Methods and materials for retaining walls for jacking and receiving pits.

B. Bore Report that details final alignment, dimensions, and record documentation.

# PART 2 PRODUCTS

## 2.01 MATERIALS

Sleeve, carrier pipe, skids, insulation, bulkheads, etc. shall be per contract plans.

# PART 3 EXECUTION

## 3.01 JACKING SLEEVE

A. The Contractor shall provide all labor, material, equipment and appurtenances required for jacking the sleeves beneath the roadway or railroad tracks. The steel sleeve shall be welded steel pipe and jacked in one continuous operation at the locations shown on the drawings. Once the operation starts, jacking shall not be discontinued. Proper alignment and elevation of the sleeves shall be consistently maintained throughout the jacking operation.

B. The Contractor shall shore the jacking pits with sheeting or such other materials as required. Sheeting shall be driven to a sufficient depth below the invert of the steel sleeve to resist any pressure developed by the soil outside the jacking pit. Sheeting shall terminate not less than 3-feet, 6-inches above existing grade.

C. The sections of steel sleeve shall be field welded in accordance with the applicable portions of AWWA C-206 for field welded water pipe joints. Steel sleeve shall receive one coat of Tnemec 46H-413 Hi-Build Tnemec-tar applied in accordance with manufacturer's recommendation.

D. At the completion of the jacking operations, the Contractor shall be required to leave all sheeting in place. The top of the sheeting shall be cut off 36-inches below finished grade.

E. The Contractor shall be responsible for preventing voids outside the steel sleeves. Should they occur, the Contractor may be directed to fill them with grout in a method approved by the County. The Contractor shall exercise care in the sleeve removal to prevent voids.

F. The Contractor shall be responsible for furnishing, installing and removing the thrust block or restraint which was employed in driving the sleeve forward. No additional payment for the jacking restraint shall be made other than the unit price for this item. The entire jacking operation shall be discussed and accepted by the County prior to commencing jack and bore operation. After completion, the backup structures shall be removed in part or whole to permit construction of the pipeline in the sleeve.

## 3.02 INSTALLING PIPE IN SLEEVE

A. The Contractor shall install the pipe in full conformity with the Contract Documents. The pipe shall be installed to the lines and grades required within the sleeve and placed to the approval of the County. The pipe shall be braced to the side and the top of the sleeve to prevent flotation or motion.

B. A bulkhead shall be placed at the ends of the sleeve to keep the surrounding soil and material from migrating into the voids in the sleeve..

## 3.03 TESTING

The pipe shall be tested as provided in the Contract Document.

END OF SECTION

# SECTION 02480 LANDSCAPING

## PART 1 GENERAL

### 1.10 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment, and incidentals required to install trees, ground cover, and shrubs, to place accessory planting materials, to maintain and guarantee all planted areas. All work shall be in strict accordance with sound nursery practice and shall include maintenance and watering of all of the work of this Contract until final completion and acceptance by the County.

B. The landscaping shall be performed by a contractor or subcontractor who specializes in landscaping and who is fully familiar and experienced in projects of this type and scope. The landscaping contractor or subcontractor shall be subject to the approval of the County.

C. The Contractor shall provide all landscaping complete and ready for use as specified in the Contract Documents and as shown on the Drawings.

### 1.02 SUBMITTALS

A. The Contractor shall submit to the County for review and approval, shop drawings and complete written maintenance instructions for each type of plant furnished under this Contract.

B. The Contractor shall submit representative samples of any or all of required accessory planting materials as requested by the County.

### 1.03 OBSTRUCTIONS BELOW GROUND

A. The County may change the location of plant material if underground construction, utilities or obstructions are encountered in excavation of planting areas or pits.

B. The Contractor shall make such changes without additional compensation from the County.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Plant species and size shall conform to those indicated in the Plant List and in plan locations shown on the Drawings. Nomenclature shall conform to the Florida Department of Agriculture: "Grades and Standards for Nursery Plants". The designated authority for identification of plants shall be in conformance with FDOT Standard Specification Section 580-2.1.1 Plants.

B. Plants shall be sound, healthy, vigorous, free from plant diseases, insects, pests, or their eggs and shall have healthy normal root systems. Plants shall be nursery grown stock, freshly dug. No heeled in, cold storage, or collected stock shall be accepted.

C. Shape and Form

1. Plant material shall be symmetrical, typical for the variety and species, and shall conform to the measurements specified in the Plant List.

2. Plants used where symmetry is required shall be matched as nearly as possible.
3. Plants shall not be pruned prior to delivery except as authorized by the County.
4. All plants shall have been transplanted or root pruned at least once in the past three years.
5. Unless otherwise noted, street trees shall be free of branches up to six feet, with the single leader well branched, and with straight trunks.
6. Shrubs shall have been transplanted twice, have fully developed root systems, be heavily canned with foliage to base, fulfill dimensions required, and be typical of species.
7. Ground covers shall have sturdy fibrous root systems and shall be heavily leafed.

D. Measurement: The height and/or width of trees shall be measured from the ground or across the normal spread of branches with the plants in their normal position. This measurement shall not include the immediate terminal growth.

E. Substitutions in plant species or size shall be made only with the written approval of the County.

F Ground cover plants shall be planted in beds of four inches of approved topsoil. The beds shall be thoroughly disked into the soil. The compacted and settled finished surface shall be set to the required grade. Plants shall be spaced as described in the Contract Documents or shown on the Contract Drawings, or otherwise directed by the County in accordance with the best practices of the trade.

G. Planting Soil

1. Soil for backfilling around plants and planting beds shall be a good grade of garden loam as approved by the County. Soil shall be free of heavy clay, coarse sand, stones, lumps, sticks, or other foreign material. The soil shall not be delivered or used in a muddy condition.
2. The soil shall be taken from ground that has never been stripped. There shall be a slight acid reaction to the soil with no excess of calcium or carbonate. The soil shall be free from excess weeds or other objectionable material.
3. Soil for trees and shrubs shall be delivered in a loose, friable condition. All trees shall average approximately one cubic yard per tree, except Sabal Palmetto, which shall be planted with clean sand. There shall be a minimum of 4-inches of planting soil in ground cover areas and 1/8 cubic yard per shrub or vine.
4. No marl shall be allowed in ground cover planting beds.

H. Before plants are backfilled with planting soil, fertilizer tablets, Agriform 20-10-5 or equal, shall be placed in each pit. The Contractor shall provide three tablets for each tree and one for each shrub or vine.

I. Tree Staking: All tree staking and bracing shall be included herein in accordance with sound nursery practice and shall be in accordance with the Contract Documents. The Contractor shall furnish all materials required for staking and bracing as approved.

J. Landscaping stones shall be inert and nonleaching. The Contractor shall provide physical samples for approval prior to installation. Crushed limerock shall not be acceptable.

## PART 3 EXECUTION

### 3.01 PLANTING PROCEDURES

A. Plant Locations: All plants shall be located as shown on the Drawings, to dimensions if shown, to scale if not dimensioned. Large areas or beds shall be scaled and the plants spaced evenly. Approval by the County is required before any plants may be installed.

B. Tree Pits: Pits for trees shall be at least two feet greater in diameter than the specified diameter of the ball. Pits shall be of sufficient depth to allow a 12-inch layer of planting soil under the ball when it is set to grade. Bottom of pit shall be loosened prior to backfilling.

C. Digging and Handling

1. Plants shall be handled at all times so that roots or balls are adequately protected from sun or drying winds. Tops or roots of plant allowed to dry out will be rejected.
2. Balled and burlapped plants shall be moved with firm, natural balls of soil, not less than one foot diameter of ball to every one inch caliper of trunk, and a depth of not less than 2/3 of ball diameter. No plant shall be accepted when the ball of earth surrounding its roots has been cracked or broken. All trees, except palms, shall be dug with ball and burlapped. Root pruning shall have been done at minimum of four weeks before planting at the job.
3. Bare root plants shall be dug with spread of root and of sufficient depth to insure full recovery of plant.

D. Cabbage Palms (Sable Palmetto):

1. Cabbage Palms shall be taken from moist black sand areas. Only a minimum of fronds shall be removed from the crown to facilitate moving and handling. Clear trunk or overall height shall be as specified after the minimum of fronds have been removed.
2. Cabbage Palms buds shall be tied to a suitable support with a burlap strip, to be left in place until the tree is well established in its new location.
3. Cabbage Palms shall be planted in sand, thoroughly washed in during planting operations, and with a dished or saucer depression left at the soil line for future waterings. Palms with marred or burned trunks will be accepted at the discretion of the County only.
4. Trees moved by winch or crane shall be thoroughly protected from chain marks, girdling or bark slippage by means of burlap, wood battens, or other approved method.

E. When balled or burlapped plants are set, planting soil shall be carefully tamped under and around the base of the balls to prevent voids. All burlap, rope, wires, etc., shall be removed from the sides and tops of balls, but no burlap shall be pulled from underneath. Roots of bare rooted plants shall be properly spread out and planting soil carefully worked in among them.

F. All plants shall be set straight or plumb, in locations shown on the Drawings. Except as otherwise specified, plants shall be planted in pits which shall be set at such level that, after settlement, they bear the same relation to the finished grade or the surrounding ground as they bore to the grade of the soil from which they are taken.

G. Pruning shall be carefully done by experienced plantsmen. Prune immediately upon acceptance by the County, including any broken branches, thinning small branches and tipping back main branches (except main leaders).

H. Excess soil and debris shall be disposed of off the project site unless ordered stockpiled by the County.

## 3.02 NORMAL MAINTENANCE OF PLANT MATERIALS

A. Plant material maintenance shall begin when planting operations start and shall extend until final acceptance of work.

B. Maintain all plant materials under this Contract to the satisfaction of the County. Maintenance shall include necessary watering, cultivation, weeding, pruning, spraying, tightening and repair to guy wires, removal of dead material, resetting, and other work required to conform with referenced standards and accepted nursery standards as approved.

C. Plant materials which are in a tilted or in a leaning position shall be properly righted.

D. After final acceptance by the County and until one calendar year after acceptance of all plantings, the landscaping contractor or subcontractor shall make monthly inspections of materials and report in writing to the County the conditions of the plants and the necessary requirements to keep the plants in a healthy growing condition.

## 3.03 TREE AND PLANT PROTECTION

A. The Contractor shall remove all trees (if any) within the limit of landscaping shown on the detail sheet except those designated to be salvaged (if any). Prior to removal of said trees, the Contractor shall obtain a tree removal permit, if required. All other trees in the vicinity of the work shall be protected against damage by the Contractor until all work under the Contract has been completed.

B. Consult with the County, and remove agreed-on roots and branches which interfere with construction. Employ qualified tree surgeon to remove, and to treat cuts.

C. Provide temporary barriers to a height of six feet around each group of trees and plants.

D. Protect root zones of trees and plants

1. Do not allow vehicular traffic or parking.
2. Do not store materials or products.
3. Prevent dumping or refuse or chemically injurious materials or liquids.
4. Prevent puddling or continuous running water.

E. Carefully supervise excavating, grading, and filling, and subsequent construction operations, to prevent damage.

F. In case of inadvertent damage to any tree or plant by the Contractor or any of his subcontractors or employees, the Contractor shall provide replacement of each such damaged tree or plant with a new one of acceptable type, size and quality.

G. Completely remove barricades, including foundations, when construction has progressed to the point that they are no longer needed, and when approved by the County.

H. Clean and repair damage caused by installation, fill and grade the areas of the site to required elevations and slopes, and clean the area.

## 3.04 GUARANTEE

The life and satisfactory condition of all plant material planted shall be guaranteed by the Contractor for a minimum of one calendar year. Guarantee shall include complete replacement with material of the same kind and size as in the original work if not in a healthy condition, as determined by the County, at the end of the guarantee period.

## 3.05 REPLACEMENT

A. At the end of the guarantee period, any plant required under this Contract that is dead or not in satisfactory growth as determined by the County, shall be removed. Plants replaced shall be guaranteed for 90 days after date of replacement.

B. Replacement of plants necessary during guarantee period shall be the responsibility of the Contractor, except for possible replacements of plants resulting from removal, vandalism, acts of neglect on the part of others, or acts of God.

C. All replacements shall be plants of the same kind and size as specified in the Drawings. They shall be furnished and planted as herein specified. The cost shall be the responsibility of the Contractor.

END OF SECTION

# SECTION 02485 SEEDING AND SODDING

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials and equipment necessary to satisfactorily return all construction areas to their original conditions or better.

B. Work shall include furnishing and placing seed or sod, fertilizing, planting, watering and maintenance until acceptance by County.

### 1.02 RELATED WORK NOT INCLUDED

Excavation, filling and grading required to establish elevation shown on the Drawings are included under other sections of these Specifications.

### 1.03 QUALITY ASSURANCE

A. It is the intent of this Specification that the Contractor is obliged to deliver a satisfactory stand of grass as specified. If necessary, the Contractor shall repeat any or all of the work, including grading, fertilizing, watering and seeding or sodding at no additional cost to the County until a satisfactory stand is obtained. For purposes of grassing, a satisfactory stand of grass is herein defined as a full lawn cover over areas to be sodded or seeded, with grass free of weeds, alive and growing, leaving no bare spots larger than 3/4 square yard within a radius of 8 feet.

B. All previously grassed areas where pipelines are laid shall be sodded. All sodding and grassing shall be installed in accordance with these Specifications or as directed by the County.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Fertilizer: The fertilizer shall be of the slow-release type meeting the following minimum requirements: 12 percent nitrogen, 8 percent phosphorus, 8 percent potassium; 40 percent other available materials derived from organic sources. At least 50 percent of the phosphoric acid shall be from normal super phosphate or an equivalent source which will provide a minimum of two units of sulfur. The amount of sulfur shall be indicated on the quantitive analysis card attached to each bag or other container. Fertilizer shall be uniform in composition, dry and free flowing delivered to sites in original unopened containers bearing manufacturer's statement or guarantee.

B. Seeding/Grassing: The Contractor shall grass all unpaved areas disturbed during construction which do not require sod. All grassing shall be completed in conformance with FDOT Specifications, Sections 570 and 981. The grassed areas shall be mulched and fertilized in accordance with FDOT Specifications, except that no additional payment will be made for mulching, fertilizing and/or watering.

C. Sodding: Sod shall be provided as required on the construction drawings or at locations as directed by the County in accordance with Florida Department of Transportation, Specifications Section 575 and 981. The Contractor shall furnish bahia grass sod or match

existing sod. Placement and watering requirements shall be in accordance with FDOT Specifications Section 575, except that no additional payment will be made for placement and/or watering. This cost shall be included in the Contract price bid for sodding.

D. Topsoil: Topsoil stockpiled during excavation may be used as necessary. If additional topsoil is required to replace topsoil removed during construction, it shall be obtained off site at no additional cost to the County. Topsoil shall be fertile, natural surface soil, capable of producing all trees, plants and grassing specified herein.

E. Water: It is the Contractor's responsibility to supply all water to the site, as required during seeding and sodding operations and through the maintenance period and until the work is accepted. The Contractor shall make whatever arrangements that may be necessary to ensure an adequate supply of water to meet the needs for his work. He shall also furnish all necessary hose, equipment, attachments and accessories for the adequate irrigation of lawns and planted areas as may be required. Water shall be suitable for irrigation and free from ingredients harmful to plant life.

## PART 3 EXECUTION

### 3.01 INSTALLATION

A. When the trench backfill has stabilized sufficiently, the Contractor shall commence work on lawns and grassed areas, including fine grading as necessary and as directed by the County.

B. Finish Grading: Areas to be seeded or sodded shall be finish graded, raked, and debris removed. Soft spots and uneven grades shall be eliminated. The County shall approve the finish grade of all areas to be seeded or sodded prior to seed or sod application.

C. Areas to be sodded shall be excavated or cut-down to accept the approximate 2” thick sod, so finish grade matches existing. Sod shall not be thrown over top of existing sod or debris.

D. Protection: Seeded and sodded areas shall be protected against traffic or other use by placing warning signs or erecting barricades as necessary. Any areas damaged prior to acceptance by the County shall be repaired by the Contractor as directed by the County.

### 3.02 CLEANUP

Soil or similar materials spilled onto paved areas shall be removed promptly, keeping those areas as clean as possible at all times. Upon completion of seeding and sodding operations, all excess soil, stones and debris remaining shall be removed from the construction areas.

### 3.03 LANDSCAPE MAINTENANCE

A. Any existing landscape items damaged or altered during construction by the Contractor shall be restored or replaced as directed by the County.

B. Maintain landscape work for a period of 90 days immediately following complete installation of work or until County accepts project. Watering, weeding, cultivating, restoration of grade, mowing and trimming, protection from insects and diseases, fertilizing and similar operations as needed to ensure normal growth and good health for live plant material shall be included at no additional cost to the County.

## 3.04 REPAIRS TO LAWN AREAS DISTURBED BY CONTRACTOR'S OPERATORS

Lawn areas planted under this Contract and all lawn areas damaged by the Contractor's operation shall be repaired at once by proper soil preparation, fertilizing and sodding, in accordance with these Specifications.

END OF SECTION

# SECTION 02513 ASPHALT CONCRETE PAVING

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials and equipment necessary to complete all milling asphalt pavement and asphalt concrete paving (including restoration of driveways) as called out on the Contract Documents or as shown on the Drawings.

### 1.02 QUALITY ASSURANCE

A. Qualifications of Asphalt Concrete Producer: The only materials permitted shall be furnished by a bulk asphalt concrete producer exclusively engaged in the production of hot-mix, hot-laid asphalt concrete.

B. Qualification of Testing Agency: The County may employ a commercial testing laboratory to conduct tests and evaluations of asphalt concrete materials and design. The Contractor shall:

1. Provide asphalt concrete testing and inspection service acceptable to County.
2. Include sampling and testing asphalt concrete materials proposed, and tests and calculations for asphalt concrete mixtures.
3. Provide field testing facilities for quality control testing during paving operations.

C. Requirements of Regulatory Agencies: The Contractor shall comply with the applicable requirements of:

1. Manatee County Utility Operations Department
2. Manatee County Transportation Department
3. State of Florida Dept. of Transportation

### 1.03 PAVING QUALITY REQUIREMENTS

A. General: In addition to other specified conditions, the Contractor shall comply with the following minimum requirements:

1. In-place asphalt concrete course shall be tested for compliance with requirements for density, thickness and surface smoothness.
2. Final surface shall be provided of uniform texture, conforming to required grades and cross sections.
3. A minimum of four inch diameter pavement specimens for each completed course shall be taken from locations as directed by the County.
4. Holes from test specimens shall be repaved as specified for patching defective work.

B. Density:

1. When subjected to 50 blows of standard Marshall hammer on each side of an in place material specimen, densities shall be comparable to a laboratory specimen of same asphalt concrete mixture.
2. The minimum acceptable density of in-place course material shall be 98% of the recorded laboratory specimen density.

C. Thickness: In-place compacted thicknesses shall not be acceptable if less than the minimum thicknesses shown on the Drawings.

D. Surface Smoothness:

1. Finished surface of each asphalt concrete course shall be tested for smoothness, using a 10 ft. straightedge applied parallel to and at right angles to centerline of paved areas.
2. Surface areas shall be checked at intervals directed by County.
3. Surfaces shall not be acceptable if they exceed the following:
   a. Base Course: 1/4 in. in 10 ft.
   b. Surface Course: 3/16 in. in 10 ft.
   c. Crowned Surfaces:
      (1) Test crowned surfaces with a crown template, centered and at right angles to the crown.
      (2) Surfaces will not be acceptable if varying more than 1/4 in. from the template.

## 1.04 SUBMITTALS

A. Samples: The Contractor may be required to provide samples of materials for laboratory testing and job-mix design.

B. Test Reports: The Contractor shall submit laboratory reports for following materials tests:

1. Coarse and fine aggregates from each material source and each required grading:
   a. Sieve Analysis: ASTM C 136 (AASHO T 27).
   b. Unit Weight of Slag: ASTM C29 (AASHO T 19).
   c. Soundness: ASTM C 88 (AASHO T 104) for surface course aggregates only.
   d. Sand Equivalent: ASTM D 2419 (AASHO T 176).
   e. Abrasion of Coarse Aggregate: ASTM C131 (AASHO T 96),for surface course aggregates only.
2. Asphalt cement for each penetration grade:
   a. Penetration: ASTM D5 (AASHO T49).
   b. Viscosity (Kinematic): ASTM D2170 (AASHO T 201).
   c. Flash Point: ASTM D92 (AASHO T 48).
   d. Ductility: ASTM D 113 (AASHO T 51).
   e. Solubility: ASTM D 4 (AASHO T 44).
   f. Specific Gravity: ASTM D 70 (AASHO T 43).
3. Job-mix design mixtures for each material or grade:
   a. Bulk Specific Gravity for Coarse Aggregate: ASTM C 117(AASHO T 85).
   b. Bulk Specific Gravity for Fine Aggregate: ASTM C 128(AASHO T 84).
4. Uncompacted asphalt concrete mix: Maximum Specific Gravity: ASTM D 2041 (AASHO T 209).
5. Compacted asphalt concrete mix:
   a. Bulk Density: ASTM D 1188 (AASHO T 166).
   b. Marshall Stability and Flow: ASTM D 1559.
6. Density and voids analysis:
   a. Provide each series of asphalt concrete mixture text specimens, in accordance with A.I. MS-2 "Mix Design Methods for Asphalt Concrete".
   b. Use Marshall method of mix design unless otherwise directed or acceptable to the County.
   c. Report the quantity of absorbed asphalt cement in pounds of dry aggregate,

percent air voids, and percent voids in mineral aggregate.

7. Sampling and testing of asphalt concrete mixtures for quality control during paving operations:
   a. Uncompacted asphalt concrete mix.
      (1) Asphalt Cement Content: ASTM D 2172 (AASHO T 164).
      (2) Penetration of Recovered Asphalt Cement: ASTM D 5(AASHO T 49).
      (3) Ductibility of Recovered Asphalt Cement: ASTM D 113(AASHO T 51).
   b. Compacted asphalt concrete mix:
      (1) Bulk Density: ASTM D 1188 (AASHO T 166).
      Marshall Stability and Flow: ASTM D1559).
   c. Perform at least one test for each day's paving.
8. Asphalt plant inspection: ASTM D 290.
9. Additional testing:
   a. Retesting shall be required if previous tests indicate insufficient values, or if directed by the County.
   b. Testing shall continue until specified values have been attained.
10. Asphalt concrete materials which do not comply with specified requirements shall not be permitted in the work.

## 1.05 JOB CONDITIONS

A. Weather Limitations:

1. Apply bituminous prime and tack coats only when the ambient temperature in the shade is 50 degrees F. and when the temperature has not been below 35 degrees F. for 12 hours immediately prior to application.
2. Do not apply when the base surface is wet or contains an excess of moisture which would prevent uniform distribution and the required penetration.
3. Construct asphalt concrete surface course only when atmospheric temperature is above 40 degrees F., when the underlying base is dry, and when weather is not rainy.
4. Base course may be placed when air temperature is not below 30 degrees F. and rising, when acceptable to the County.

B. Grade Control: Establish and maintain the required lines and grades, including crown and cross-slope, for each course during construction operations.

C. Traffic Control: Maintain vehicular and pedestrian traffic during paving operations, as required for other construction activities.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. Soil Cement or Shell Base Course: as specified in FDOT Section 270, "Material for Base and Stabilized Base", and as called for in the Contract Documents.

B. Aggregate for Asphalt Concrete, General:

1. Sound, angular crushed stone, crushed gravel, or crushed slag: ASTM D 692.
2. Sand, stone, or slag screening: ASTM D 1073.

3. Provide aggregate in gradations for various courses to comply with local highway standards.

C. Surface Course Aggregates:

1. Provide natural sand, unless sand prepared from stone, slag, or gravel or combinations are required to suit local conditions.

D. Asphalt Cement: Comply with ASTM D 946 for 85-100 penetration grade.

E. Prime Coat:

1. Cut-back liquid asphalt.
2. Medium-Curing type: ASTM D 2027, Grade MC-70.

## 2.02 ASPHALT-AGGREGATE MIXTURES

A. Job-mix criteria:

1. Provide job-mix formulas for each required asphalt-aggregate mixture.
2. Establish a single percentage of aggregate passing each required sieve size, a single percentage of asphalt cement to be added to aggregate, and a single temperature at which asphalt concrete is to be produced.
3. Comply with the mix requirements of local governing highway standards.
4. Maintain material quantities within allowable tolerances of the governing standards.

## 2.03 TRAFFIC AND PARKING MARKING MATERIALS

A. Traffic lane marking paint with chlorinated rubber base.

B. Factory mixed, quick drying and non bleeding, FS TT-P-115C, Type III.

C. Color: Driving Lane Dividers - White
No Parking Zone - Yellow
Parking Dividers - White

# PART 3 EXECUTION

## 3.01 SURFACE PREPARATION

A. Subbase Preparation:

1. The Contractor shall remove from the area all organic substance encountered to a depth of six or eight inches (6" or 8"), or to such depth and width as directed by the County. The entire area shall be plowed and dragged prior to placing a stabilizing additive, if required to meet minimum bearing value.
2. Subbase shall be compacted to a minimum density of 98 percent of the maximum as determined by the Modified Proctor Density AASHTO T180, and shall have a minimum bearing value of 40 pounds per square inch as determined by the Florida Bearing Test.

B. Base Course:

1. Check subgrade for conformity with elevations and section immediately before placing base material.
2. Place base material in compacted layers not more than 6 inches thick, unless continuing tests indicate the required results are being obtained with thicker layers.
3. In no case will more than 8-inches of compacted base be placed in one lift.
4. Spread, shape, and compact all base material deposited on the subgrade during the same day.
5. Compact base course material to be not less than 98% of maximum density: ASTM D 1557, Method D (98 percent maximum density: AASHTO T-180).
6. Test density of compacted base course: ASTM D 2167.
7 Conduct one test for each 250 sq. yds. of in-place material, but in no case not less than one daily for each layer.

C. Loose and Foreign Material:

1. Remove loose and foreign material from compacted subbase surface immediately before application of paving.
2. Use power brooms or blowers, and brooming as required.
3. Do not displace subbase material.

D. Prime Coat:

1. Uniformly apply at rate of 0.20 to 0.5 gal. per sq. yd. over compacted and cleaned subbase surface.
2. Apply enough material to penetrate and seal, but not flood the surface.
3. Allow to cure and dry as long as required to attain penetration and evaporation of volatile, and in no case less than 24 hours unless otherwise acceptable to the County.
4. Blot excess asphalt with just enough sand to prevent pick-up under traffic.
5. Remove loose sand before paving.

E. Tack Coat:

1. Dilute material with equal parts of water and apply to contact surfaces of previously constructed asphalt concrete or portland cement concrete and similar surfaces.
2. Apply at rate of 0.05 to 0.15 gal. per sq. yd. of surface.
3. Apply tack coat by brush to contact surfaces of structures projecting into or abutting asphalt concrete pavement.
4. Allow surfaces to dry until material is at condition of tackiness to receive pavement.

## 3.02 MANHOLE FRAME / VALVE BOX ADJUSTMENTS (IF APPLICABLE)

A. Placing Manhole frames:

1. Surround manhole frames set to elevation with a ring of compacted asphalt concrete base prior to paving.
2. Place asphalt concrete mixture up to 1 in. below top of frame, slope to grade, and compact by hand tamping.

B. Adjust manhole frames to proper position to meet paving.

C. If permanent covers are not in place, provide temporary covers over openings until completion of rolling operations.

D. Set cover manhole frames to grade, flush with surface of adjacent pavement.

## 3.03 PREPARING THE MIXTURE

A. Comply with ASTM D 995 for material storage, control, and mixing, and for plant equipment and operation.

B. Stockpiles:

1. Keep each component of the various-sized combined aggregates in separate stockpiles.
2. Maintain stockpiles so that separate aggregate sizes shall not be intermixed.

C. Heating:

1. Heat the asphalt cement at the mixing plant to viscosity at which it can be uniformly distributed throughout mixture
2. Use lowest possible temperature to suit temperature-viscosity characteristics of asphalt.
3. Do not exceed 350 degrees F. (176.6 degrees C.).

D. Aggregate:

1. Heat-dry aggregates to reduce moisture content to not more than 2.0%.
2. Deliver dry aggregate to mixer at recommended temperature to suit penetration grade and viscosity characteristics of asphalt cement, ambient temperature, and workability of mixture.
3. Accurately weigh or measure dry aggregates and weigh or meter asphalt cement to comply with job-mix formula requirements.

E. Mix aggregate and asphalt cement to achieve 90-95% of coated particles for base mixtures and 85-90% of coated particles for surface mixture, when tested in accordance with ASTM D 2489.

F. Transporting:

1. Transport asphalt concrete mixtures from mixing site in trucks having tight, clean compartments.
2. Coat hauling compartments with a lime-water mixture to prevent asphalt concrete mixture from sticking.
3. Elevate and drain compartment of excess solution before loading mix.
4. Provide covers over asphalt concrete mixture when transporting to protect from weather and to prevent loss of heat.
5. During periods of cold weather or for long-distance deliveries, provide insulation around entire truck bed surfaces.

## 3.04 EQUIPMENT

A. Provide size and quantity of equipment to complete the work specified within project time schedule.

B. Bituminous Pavers: Self-propelled that spread hot asphalt concrete mixtures without tearing, shoving or gouging surfaces, and control pavement edges to true lines without use

of stationary forms.

C. Rolling Equipment:

1. Self-propelled, steel-wheeled and pneumatic-tired rollers that can reverse direction without backlash.
2. Other type rollers may be used if acceptable to the County.

D. Hand Tools: Provide rakes, lutes, shovels, tampers, smoothing irons, pavement cutters, portable heaters, and other miscellaneous small tools to complete the work specified.

## 3.05 PLACING THE MIX

A. Place asphalt concrete mixture on prepared surface, spread and strike-off using paving machine.

B. Spread mixture at a minimum temperature of 225 degrees F. (107.2 degrees C.).
C. Inaccessible and small areas may be placed by hand.

D. Place each course at thickness so that when compacted, it will conform to the indicated grade, cross-section, finish thickness, and density indicated.

E. Paver Placing:

1. Unless otherwise directed, begin placing along centerline of areas to be paved on crowned section, and at high side of sections on one-way slope, and in direction of traffic flow.
2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
3. Complete base courses for a section before placing surface courses.
4. Place mixture in continuous operation as practicable.

F. Hand Placing:

1. Spread, tamp, and finish mixture using hand tools in areas where machine spreading is not possible, as acceptable to County.
2. Place mixture at a rate that will insure handling and compaction before mixture becomes cooler than acceptable working temperature.

G. Joints:

1. Carefully make joints between old and new pavements, or between successive days' work, to ensure a continuous bond between adjoining work.
2. Construct joints to have same texture, density and smoothness as adjacent sections of asphalt concrete course.
3. Clean contact surfaces free of sand, dirt, or other objectionable material and apply tack coat.
4. Offset transverse joints in succeeding courses not less than 24 inches.
5. Cut back edge of previously placed course to expose an even, vertical surface for full course thickness.
6. Offset longitudinal joints in succeeding courses not less than 6 inches.
7. When the edges of longitudinal joints are irregular, honeycombed, or inadequately compacted, cut back unsatisfactory sections to expose an even, vertical surface for

full course thickness.

## 3.06 COMPACTING THE MIX

A. Provide sufficient rollers to obtain the required pavement density.

B. Begin rolling operations as soon after placing when the mixture will bear weight of roller without excessive displacement.

C. Do not permit heavy equipment, including rollers to stand on finished surface before it has thoroughly cooled or set.

D. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.

E. Start rolling longitudinally at extreme lower side of sections and proceed toward center of pavement. Roll to slightly different lengths on alternate roller runs.

F. Do not roll centers of sections first under any circumstances.

G. Breakdown Rolling:

1. Accomplish breakdown or initial rolling immediately following rolling of transverse and longitudinal joints and outside edge.
2. Operate rollers as close as possible to paver without causing pavement displacement.
3. Check crown, grade, and smoothness after breakdown rolling.
4. Repair displaced areas by loosening at once with lutes or rakes and filling, if required, with hot loose material before continuing rolling.

H. Second Rolling:

1. Follow breakdown rolling as soon as possible, while mixture is hot and in condition for compaction.
2. Continue second rolling until mixture has been thoroughly compacted.

I. Finish Rolling:

1. Perform finish rolling while mixture is still warm enough for removal of roller marks.
2. Continue rolling until roller marks are eliminated and course has attained specified density.

J. Patching:

1. Remove and replace defective areas.
2. Cut-out and fill with fresh, hot asphalt concrete.
3. Compact by rolling to specified surface density and smoothness.
4. Remove deficient areas for full depth of course.
5. Cut sides perpendicular and parallel to direction of traffic with edges vertical.
6. Apply tack coat to exposed surfaces before placing new asphalt concrete mixture.

## 3.07 MARKING ASPHALT CONCRETE PAVEMENT

A. Cleaning:

1. Sweep surface with power broom supplemented by hand brooms to remove loose material and dirt.
2. Do not begin marking asphalt concrete pavement until acceptable to the County.

B. Apply paint with mechanical equipment.

1. Provide uniform straight edges.
2. Not less than two separate coats in accordance with manufacturer's recommended rates.

## 3.08 CLEANING AND PROTECTION

A. Cleaning: After completion of paving operations, clean surfaces of excess or spilled asphalt materials to the satisfaction of the County.

B. Protection:

1. After final rolling, do not permit vehicular traffic on asphalt concrete pavement until it has cooled and hardened, and in no case sooner than 6 hours.
2. Provide barricades and warning devices as required to protect pavement.
3. Cover openings of structures in the area of paving until permanent coverings are placed (if applicable).

END OF SECTION

# SECTION 02575 PAVEMENT REPAIR AND RESTORATION

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment, obtain County or State right-of-way permits and incidentals required and remove and replace pavements over trenches excavated for installation of water or sewer lines and appurtenances as shown on the Contract Drawings.

### 1.02 GENERAL

A. The Contractor shall take before and after photographs.

B. The Contractor shall repair in a manner satisfactory to the County or State, all damage done to existing structures, pavement, driveways, paved areas, curbs and gutters, sidewalks, shrubbery, grass, trees, utility poles, utility pipe lines, conduits, drains, catch basin, flagstones, or stabilized areas or driveways and including all obstructions not specifically named herein, which results from this Project.

C. The Contractor shall keep the surface of the backfilled area of excavation in a safe traffic bearing condition and firm and level with the remaining pavement until the pavement is restored in the manner specified herein. All surface irregularities that are dangerous or obstructive to traffic are to be removed. The repair shall conform to applicable requirements of Manatee County Transportation Department requirements for pavement repair and as described herein, including all base, subbase and asphalt replacement.

D. All materials and workmanship shall meet or exceed the County requirements and as called for in the Contract Documents and nothing herein shall be construed as to relieve the Contractor from this responsibility.

E. All street, road and highway repair shall be made in accordance with the FDOT and County details indicated on the Drawings and in accordance with the applicable requirements and approval of affected County and State agencies.

## PART 2 PRODUCTS

### 2.01 PAVEMENT SECTION

A. Asphaltic concrete shall consist of asphalt cement, coarse aggregate, fine aggregate and mineral filler conforming to FDOT Type S-III Asphalt. Pavement replacement thickness shall match that removed but in no case shall be less than 1-1/2" compacted thickness. All asphalt concrete pavement shall be furnished, installed and tested in accordance with FDOT Specifications for Road and Bridge Construction.

B. Asphalt or crushed concrete or approved equal base material shall be furnished and installed under all pavement sections restored under this Contract. Asphalt base shall have a minimum 6" compacted thickness, meet requirements for FDOT ABC III (Minimum Marshall Stability of 1000) and be furnished, installed and tested in accordance with the requirements of the FDOT Standards. Crushed concrete base shall be 10" minimum compacted thickness. Crushed concrete aggregate material shall have a minimum LBR of

140 compacted to 98% T-180 AASHTO density. Asphalt base and crushed concrete base are acceptable. Other bases shall be submitted for approval.

C. Prime and tack will be required and applied in accordance with Section 300 - FDOT Specifications: Prime and Tack Coat for Base Courses.

## PART 3 EXECUTION

### 3.01 CUTTING PAVEMENT

A. The Contractor shall saw cut in straight lines and remove pavement as necessary to install the new pipelines and appurtenances and for making connections to existing pipelines.

B. Prior to pavement removal, the Contractor shall mark the pavement for cuts nearly paralleling pipe lines and existing street lines. Asphalt pavement shall be cut along the markings with a rotary saw or other suitable tool. Concrete pavement shall be scored to a depth of approximately two (2) inches below the surface of the concrete along the marked cuts. Scoring shall be done by use of a rotary saw, after which the pavement may be broken below the scoring with a jackhammer or other suitable equipment.

C. The Contractor shall not machine pull the pavement until it is completely broken and separated along the marked cuts.

D. The pavement adjacent to pipe line trenches shall neither be disturbed nor damaged. If the adjacent pavement is disturbed or damaged, irrespective of cause, the Contractor shall remove and replace the pavement. In addition, the base and sub-base shall be restored in accordance with these Specifications, Florida Dept. of Transportation Standard Specifications and as directed by the County.

### 3.02 PAVEMENT REPAIR AND REPLACEMENT

A. The Contractor shall repair, to meet or exceed original surface material, all existing concrete or asphaltic pavement, driveways, or sidewalks cut or damaged by construction under this Contract. He shall match the original grade unless otherwise specified or shown on the Drawings. Materials and construction procedures for base course and pavement repair shall conform to those of the Florida Dept. of Transportation.

B. The Contractor's repair shall include the preparation of the subbase and base, place and maintain the roadway surface, any special requirements whether specifically called for or implied and all work necessary for a satisfactory completion of this work. Stabilized roads and drives shall be finished to match the existing grade. Dirt roads and drives shall have the required depth of backfill material as shown on the Contract Drawings.

C. The asphaltic concrete repairs shall be in accordance with the Manatee County Public Works Standards, Part I Utilities Standards Manual, Detail UG-12. The asphaltic concrete repairs shall extend the full width and length of the excavation or to the limits of any damaged section. The edge of the pavement to be left in place shall be cut to a true edge with a saw or other approved method so as to provide a clean edge to abut the repair. The line of the repair shall be reasonably uniform with no unnecessary irregularities. The existing asphalt beyond the excavation or damaged section shall be milled 25' back from the saw cut. Final overlay shall match existing with no discernable "bump" at joint.

### 3.03 MISCELLANEOUS RESTORATION

Sidewalks or driveways cut or damaged by construction shall be restored in full sections or blocks to a minimum thickness of four inches. Concrete curb or curb and gutter shall be restored to the existing height and cross section in full sections or lengths between joints. RCP pipe shall be repaired or installed in accordance with manufacturer's specifications. Grassed yards, shoulders and parkways shall be restored to match the existing sections with grass sod of a type matching the existing grass.

## 3.04 SPECIAL REQUIREMENTS

The restoration of all surfaces, as described herein, disturbed by the installation of pipelines shall be completed as soon as is reasonable and practical. The complete and final restoration of both paved and shell stabilized roads within a reasonable time frame is of paramount importance. To this end, the Contractor shall, as part of his work schedule, complete the restoration of any area of road within five weeks after removing the original surface. Successful leak testing shall be performed prior to restoring any area of road. All restoration and replacement or repairs are the responsibility of the Contractor.

## 3.05 CLEANUP

After all repair and restoration or paving has been completed, all excess asphalt, dirt and other debris shall be removed from the roadways. All existing storm sewers and inlets shall be checked and cleaned of any construction debris.

## 3.06 MAINTENANCE OR REPAIR

All wearing surfaces shall be maintained by the Contractor in good order suitable for traffic prior to completion and acceptance of the work.

END OF SECTION

# SECTION 02590 WATER SERVICES ON PRIVATE PROPERTY

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals necessary for complete installation of potable water services for and on the lots identified on the Drawings when authorized by the County and Property Owner. The Contractor shall construct water service lines on private property from the proposed County meter to a connection point within the customer's water system. In addition, the Contractor shall remove the existing water meter and box assembly and cap and abandon the existing water service at the service line, or as directed by the County. Backflow Preventers and associated Thermal Expansion Tanks and vacuum breakers on all outside hose bibbs shall be installed by the Contractor where cross connection risks are present, as required by the applicable County Ordinances and Plumbing Codes. Installation of Expansion Tanks will often require the Contractor to access inside existing buildings and coordinate work and timing with individual property owners.

### 1.02 GENERAL

A. The work shall include furnishing and installing a pipe, fittings, valves, and appurtenances necessary to convey water from the customer's water meter at the property line to the house service connection, including restoration of all lawns, drives, walkways, plants, customer private property, and other activities necessary to restore the site to a condition equal to or better than that which existed prior to construction. The Contractor shall carefully examine the Drawings and shall be responsible for the proper fittings of materials and equipment in each building and on each lot or site. All work shall comply with local code requirements.

B. Plumbing fixtures, devices and pipe shall be installed in such a manner to prohibit a cross connection or interconnection between a potable water supply and a polluted supply. The plumbing installation shall further prohibit the backflow of sewage, polluted water, or waste into the water supply system. The Contractor shall install vacuum breakers on all outside hose bibs where backflow preventers are required.

C. Required materials not covered by the Specifications shall meet the requirements of the local Plumbing Code, other applicable State and Local Ordinances and Codes, the AWWA, NSF, and shall conform to accepted plumbing practice.

D. The Contractor shall coordinate all work called for in the Contract Documents with the County Meter Superintendent and other involved parties, and shall establish a work plan to install the new water service lines which results in minimal impact to customer private property.

E. All work on customer service lines conducted on private property shall be performed by a plumber licensed in Manatee County and experienced in furnishing and installing potable water plumbing systems.

F. Upon completion of water service construction on private property, the Contractor shall obtain a Building Department inspection and approval to place the system into operation.

G. Pipe openings shall be closed with caps or plugs during installation. Fixtures and

equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work, the fixtures, materials and equipment shall be thoroughly cleaned, adjusted and operated.

## 1.03 SUBMITTALS

A. The Contractor shall submit to the Engineer for review and approval in accordance with the Contract Documents: complete shop drawings, working drawings, and product data for all materials and equipment furnished under this Section. The Contractor shall meet with each property owner to coordinate the routing of the water service line on private property prior to the commencement of any work and shall document the agreed upon route on a sketch signed and dated by all parties and submit them to the Engineer.

## 1.04 CODES, ORDINANCES AND PERMITS

A. The Contractor shall comply with all of the laws, ordinances, and codes, rules and regulations of the local and state authorities having jurisdiction over any of the work specified herein. He shall apply and pay for all necessary permits, including Manatee County Building Permits for all lots. Up to 11 permits at $75 each may be required, with up to 10 adjacent lots on each permit.

B. If any part of the Plans and Specifications conflict with existing laws and codes, the Contractor shall call it to the Engineer's attention prior to the commencement of work.

## 1.05 GUARANTEE

A. The Contractor shall warrant all labor and materials free from defects for a period of one (1) year from the date of acceptance and shall, upon notification during this period, promptly repair or replace any defective items of material or equipment at no additional cost.

## 1.06 ACCESSIBILITY

A. The Contractor shall inform himself fully regarding the peculiarities and limitations of the space available for the installation of all material in this Contract.

B. The Contractor is responsible for obtaining access to the private properties identified on the Drawings. The County will issue notices to the Owners of the Properties requesting their cooperation with the Contractor.

# PART 2 PRODUCTS

## 2.01 MATERIALS

A. Refer to Manatee County Utility Standards (Manual) for details. All pipe, fittings, materials, and appurtenances shall be furnished and installed to meet the requirements of this project and the requirements of the Florida Building Code - Plumbing, and Residential Chapter 29 (Water Supply & Distribution).

B. If required by site specific conditions, the Backflow Preventer, Thermal Expansion Tank, and vacuum breakers shall be in accordance with Manatee County Utility Standards, latest edition and are subject to the approval of the Engineer.

C. Water service pipe shall be per Section 02620 of these Specifications.

D. A dielectric coupling shall be provided between ferrous and nonferrous materials.

E. The Contractor shall furnish certified statements from the manufacturer that the material conforms to the requirements specified above.

## PART 3 EXECUTION

### 3.01 PLANNING AND COORDINATION

A. The Contractor shall coordinate with each water customer, property owner and the County Meter Superintendent to establish a reasonable plan and location for installation of each new customer water service line. The Contractor shall perform exploratory work and have all materials in hand at the commencement of construction to reduce the risk of delays in completion of the work associated with lack of materials.

B. The Contractor shall schedule the installation of the new water service lines to coordinate with the installation of the new County water line, water services and water meters as a part of this project. The Contractor shall carefully schedule the work of subcontractor licensed plumbers to ensure that customer water service disruption is minimized and is not interrupted for longer than the period specified in the Specifications. The Contractor shall schedule the inspection of the work by Manatee County Building officials as necessary to allow for timely use of the new customer service.

C. The County will provide new and/or existing water meters to the Contractor to install in proposed meter boxes. The Contractor shall remove existing meters from meter boxes as part of this Contract, return the meters to the County Meter Division, and shall verify with the County Meter Division which meters shall be reinstalled new and which will be reused. Just prior to removing an existing meter from service, the Contractor shall notify the customer, record the existing meter reading, and record the serial number prior to returning meters to the County meter division.

### 3.02 PRIVATE WATER SERVICE CONSTRUCTION

A. The Contractor shall install new 1 inch diameter water service lines at a location on the customer's property that is agreed to by the property owner, minimizes impact to existing site features and private property improvements and which most directly connects the new water meter location with the connection point for the customers water service.

B. The new water service connection on private property shall include new customer service line from the new meter location to the agreed upon point of connection with the customer house water service line; piping, fittings, valves, and appurtenances, excavation and backfill as required; restoration of grass, shrubs, drives, walkways, and other customer property damaged by construction and related work required to result in a new customer service line system that meets code requirements.

### 3.03 STERILIZATION

The entire potable water collection and distribution system shall be thoroughly sterilized with a

solution of not less than 50 parts per million of available chlorine. The sterilizing solution shall be allowed to remain in the system for a period of three hours after which time all valves and faucets shall be opened and the system shall be flushed with clean water until the residual chlorine content is not greater than 0.92 parts per million, unless otherwise directed.

END OF SECTION

# SECTION 02614 STEEL PIPE AND FITTINGS

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment, and incidentals required and install, complete, ready for operation and field test all steel pipe as shown on the drawings and specified herein.

B. Steel pipe shall include black steel, galvanized steel, and stainless steel pipe and fittings.

C. Provide steel pipe only where specifically called out on the drawings.

### 1.02 DESCRIPTION OF SYSTEM

A. All of the equipment specified herein is intended to be standard steel pipe for use in transporting certain chemicals and liquids as shown on the drawings and specified herein.

### 1.03 QUALIFICATIONS

A. All steel pipe shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the steel pipe to be furnished. The equipment shall be designed, constructed, installed in accordance with the best practices and methods and shall comply with all these specifications.

B. Steel pipe and fittings shall conform to all applicable standards of ASTM, ANSI and AWWA.

### 1.04 SUBMITTALS

A. Submit to the County for approval in accordance with the General Conditions and Section 01340, shop drawings to include dimensioning and technical specifications for all pipe to be furnished.

## PART 2 MATERIALS

### 2.01 STEEL PIPE AND FITTINGS FOR PIPING

A. Black Steel Pipe: All black steel pipe shall be seamless, Grade B and in conformance with ASTM Designation A-53 and ANSI B36.10.

B. Stainless Steel Pipe:

Stainless steel pipe shall be provided as shown on the drawings. Pipe shall be Schedule 40S, Type 316L, annealed, white pickle finish and shall be in accordance with ASTM Specification A312 and ANSI B36.19. Where indicated on the Drawings, holes shall be drilled in the pipe at the factory by the manufacture.

C. Steel Pipe Sleeves:

Sleeves for pipe that passes through floors and walls shall be galvanized Schedule 40 steel pipe conforming to ASTM Designation A120. Sleeve dimensions shall conform to the details shown on the drawings. Sleeve ends shall be cut and ground smooth. Sleeves shall be flush with walls and ceilings, but shall extend above the floor as shown on the drawings.

Sleeves for use with mechanical type seals shall be sized in conformance with the seal manufacturer's requirements.

## 2.02 STEEL PIPE FOUR (4) INCHES AND LARGER

A. Except as modified or supplemented herein, all steel pipe, fittings and specials shall conform to the applicable requirements of the following standard specifications latest editions:

AWWA Standards

C200 Steel Water Pipe 6 Inches and Larger

C203 Coal-Tar Protecting Coatings and Linings for Steel Water Pipelines - Enamel and Tape-Hot-Applied.

C205 Cement-Mortar Protective Lining and Coating for Steel Water Pipe - 4 inches and larger - Shop Applied.

C206 Field Welding of Steel Water Pipe

C207 Steel Pipe Flanges for Waterworks Service - Sizes 4 inches through 144 inches, Class D.

C208 Dimensions for Steel Water Pipe Fittings

B. All steel pipe shall be manufactured and tested in accordance with the standards set forth in AWWA C200 latest edition for fabricated or mill type water pipe. The pipe shall be made from sheet or plate rolled into sections having longitudinal or spirally formed butt-welded seams. Girth seams shall be butt welded and shall be at least 8 feet apart except in specials and fittings. The steel shall conform to the standards established in Section 2 and Section 3 AWWA C200.

1. Minimum Physical Properties of Steel Plate or Sheet:

a. All steel pipe, specials and fittings shall be manufactured from steel plate or sheet having a specified minimum yield of 35,000 psi and specified minimum tensile of 60,000 psi. Test reports verifying the actual physical and chemical properties of the piping must be submitted to the County as soon as possible after manufacturing and fabrication. The test reports shall state the hydrotest pressure applied to all sections of straight pipe and to straight pipe used in fabrication of specials and fittings.

b. All steel pipe, specials and fittings shall be manufactured or fabricated to the diameter as shown on the drawings. The normal size shall be the outside diameter of 14 inches and larger. For sizes less than 14 inches, the pipe shall be the normal steel pipe dimensions as listed in ASTM A53 specification. All diameters of steel pipe, specials and fittings shall have minimum nominal wall thicknesses as stated herein below:

| Diameter | Minimum Wall Thickness |
|---|---|
| 54" | .375 |
| 48" | .375 |
| 42" | .375 |

| | |
|---|---|
| 36" | .375 |
| 30" | .375 |
| 24" & smaller | .250 |

C. All fittings and specials shall be provided with ends as required for installation and shall be fabricated to the dimensions as shown on the drawings. All fittings shall be fabricated in accordance with the standards set forth in AWWA C208 latest edition. Fittings and specials shall be fabricated from hydrostatically tested pipe meeting AWWA C200 and will not require any further hydrostatic test in the shop. In reducing sections, the wall thickness will be governed by the largest end. Elimination of joints shown on the drawings must be approved by the County prior to the fabrication process.

D. Flanged and Coupling Standards:

1. All flanges, bolts, nuts and gaskets shall meet standards established in AWWA C207. Flanges shall be Class D suitable for pressure up to and including 150 psi with facing and drilling as stated in Section 3 of C207. Procedure for attachment of flanges shall be in accordance with Section 10 of AWWA C207. Blind flanges shall conform in diameter drilling and thickness to the flanges to which they attach and shall produce a watertight joint under the specified test pressure.
2. Mechanical couplings shall be Dresser Style 38, Rockwell Style 411 or equal. The middle ring of each coupling shall have a minimum thickness at least equal to that specified for the size of pipe on which the coupling is to be used and shall be 7 inches long for pipe 30 inches and smaller, 10 inches long for pipe 36 inches and larger. The pipe stop shall be omitted from the inner surface of the middle rings and the couplings shall be cleaned and shop primed with the manufacturer's standard rust inhibitive primer. The filter backwash header and where shown on the drawings shall the mechanically coupled joints be restrained with harness bolts and lugs. Joint harnesses, where applicable, shall conform to the details on the drawings. Lugs shall be attached to the pipe in the shop and coated as specified for the adjacent pipe. The dimensions shall be stated in AWWA M011 19.8.

E. Pipe supports, anchors, blocking and hangers shall be fabricated in accordance with the details shown on the drawings and shall be installed complete with all accessories required for proper operation of the system. Should it be necessary to modify the details for proper installation, all such modifications shall be subject to approval by the County. Lugs required for anchorage of the piping system shall be attached in the shop and coated as the adjacent pipe.

F. All steel pipe, fittings, specials and appurtenances shall be prepared, primed, coated and lined as specified herein below:

1. Exterior surfaces of all steel pipe, fittings, specials, flanges, anchors and pipe supports exposed in above ground or interior locations shall be thoroughly cleaned in the shop by blasting with grit, shot or sand to SSPC SP6. One coat of primer shall be applied to the cleaned dry surface in a proper workmanship like manner and as recommended by the primer manufacturer. The primer shall be subject to approval of the County and compatible to the finish coat as specified in the paid section of the specifications. Field painting of the installed system shall be as specified in the painting section.

2. Interior surfaces of all steel pipe, fittings, and specials, which are to be installed exposed aboveground or in interior locations shall be thoroughly cleaned in the shop by blasting with grit, shot or sand to SSPC SP6. Two coats of paint shall be applied to the interior of the pipe at the shop. The paint coats shall be Koppers Bitumastic Super Tank Solution applied at a minimum of 8 mils D.F.T. per coat.
3. Exterior surfaces of all steel pipe, fittings and specials which are to be installed underground and in manholes which will not be encased in concrete shall be coated in the shop with coal tar enamel in accordance with the standards established in AWWA C203-78, except as modified or supplemented herein.
4. The exterior coating system for below ground steel pipe shall consist of coal tar enamel, fibrous glass mat, asbestos pipelines felt wrap and finally wrapped with kraft paper and shall be applied by the procedure described in AWWA C203. The coating shall be held back 12 inches from ends to be mechanically coupled with uncoated areas primed with coat tar primer. The coating system must be done in the shop by an established pipe coating applicator acceptable to the coating materials manufacture and the County. Repairs of the any damage to the coating system incurred during the shipment and the field coating of couplings and ends where coatings have held back for joints shall be done by experienced and qualified personnel approved by the County. Procedure for such field coating shall be as described in AWWA C203.
5. The interior surfaces of all steel pipe, fittings, and specials which are to be installed below ground shall be cleaned and lined with cement mortar conforming to the standards set forth in AWWA C205-80. All work performed in the lining process shall be done in a thorough and workmanship like manner by trained personnel under the supervision of experienced men skilled in the operations they supervise. The lining thickness shall be as follows:

| Pipe Size (Inches) | Coating Thickness (Inches) | Tolerance (Inches) |
|---|---|---|
| 4-10 | 1/4 | -1/32 + 1/32 |
| 11-23 | 5/16 | -1/16 + 1/8 |
| 24-36 | 3/8 | -1/16 + 1/8 |
| over 36 | 1/2 | -1/16 + 1/8 |

Handling and transporting of cement mortar lined pipe shall be in accordance with Section 6 of AWWA C205 and Section 2.14 of AWWA C203.
6. The interior surface of all steel air piping shall be coated with a two part epoxy coating system equivalent to 7.0 mils DFT of Mobil Chemical 78-D-7 followed by 7.0 mils DFT of Mobil Chemical 78-W-3 or equal.

## 2.03 STEEL PIPE AND FITTING AND CHLORINE GAS PIPING

A. If steel pipes are used for chlorine gas lines, they shall be Schedule 80 seamless steel pipe conforming to ASTM A120. All joints shall be threaded. Threaded joints shall be made up with a cement prepared from litharge and glycerin, or teflon tape. The cement shall be applied to the male thread only. Fitting except unions, shall be carbon steel 2,000 pounds CWP. Unions shall be of the flanged, ammonia type, either two-bolt or four-bolt square.

## PART 3 EXECUTION

### 3.01 INSTALLATION AND TESTING

A. Steel pipe shall be installed true to alignment and rigidly supported anchors shall be provided where indicated.

After installation, the piping shall be tested by undergoing a four-hour pressure test at 20 percent above the designed operating pressure plant water supply lines. If any joint or pipe proves to be defective, it shall be repaired to the satisfaction of the County.

B. Screwed joints shall be made up with good quality thread compound and applied to the male thread only. After having been set up, a joint must not be backed off unless the joint is completely broken, the threads cleaned and new compound applied. All joints shall be air tight.

C. Stainless steel pipe shall have threaded joints or otherwise as required and shall be installed as shown on the Drawings.

D. Sleeves of the proper size shall be installed for pipes passing through floors and walls as indicated on the drawings. Sleeves shall be given a prime coat of rust inhibitive primer such as Koppers No. 621, or equal.

E. When cutting of pipe is required, the cutting shall be done by machine in a neat workmanlike manner without damage to the pipe. Cut ends shall be smooth and at right angles to the axis of the pipe.

F. All field welding shall be in accordance with the American Welding Society Standards. The strength of the field weld shall develop the strength of the pipe. Welds shall receive a field coating of paint as specified in Section 09900 and as approved by the County.

G. All galvanized steel pipe thread shall be clean, machine cut, and all pipe shall be reamed before erection. Each length of pipe as erected shall be up-ended and rapped to dislodge dirt and scale.

H. All galvanized steel piping shall have a sufficient number of unions to allow convenient removal of piping. Unions shall be compatible with pipe.

### 3.02 PAINTING

A. Pipe and fittings exposed to view, except stainless steel, shall receive a prime coating of rust inhibitive primer such as Koppers 621 or equal. Prior to prime coating, all surfaces shall be cleaned of all mill scale, rust, dirt, grease and other foreign matter.

B. All piping and fittings exposed to view except stainless steel pipe shall be painted as specified.

END OF SECTION

# SECTION 02615 DUCTILE IRON PIPE AND FITTINGS

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install ductile iron pipe and restrained joint ductile iron pipe and cast iron or ductile iron restrained joint fittings, complete, as shown on the Drawings and specified in these Standards.

B. Fittings are noted on the drawings for the Contractor's convenience and do not relieve him from laying and jointing different or additional items where required.

C. The Contractor shall furnish all labor, materials, equipment and incidentals required to install push-on joint or restrained joint ductile iron pipe, complete as shown on the Drawings and Specifications.

D. Newly installed pipe shall be kept clean and free of all foreign matter. All DI pipe installed underground shall be poly wrapped unless noted otherwise on the plans.

### 1.02 SUBMITTALS

A. The Contractor shall submit to the County, within ten days after receipt of Notice to Proceed, a list of materials to be furnished, the names of the suppliers and the appropriate shop drawings for all ductile iron pipe and fittings.

B. The Contractor shall submit the pipe manufacturer's certification of compliance with the applicable sections of the Specifications.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Ductile iron pipe shall conform to AWWA C150 and AWWA C151. Pipe shall be Pressure Class 350. All ductile iron pipe used in above ground applications shall be Special Thickness Class 53. All pipe materials used in potable water systems shall comply with NSF Standard 61.

B. Unrestrained joint pipe shall be supplied in lengths not to exceed 21 ft. and shall be either the rubber-ring compression-type push-on joint or standard mechanical joint pipe as manufactured by the American Cast Iron Pipe Company, U.S. Pipe and Foundry Company, or an approved equal.

C. All mechanical joint fittings shall be pressure rated for 350 psi for sizes 4-24 inches and 250 psi for sizes 30 inches and larger. All flanged fittings shall be pressure rated for 250 psi for all sizes. All fittings shall meet the requirements of AWWA C110 or AWWA C153.

D. Rubber gaskets shall conform to AWWA C111 for mechanical and push-on type joints and shall be Ethylene Propylene Diene Monomer (EPDM) rubber for potable water and reclaimed water pipelines. Standard gaskets shall be such as Fastite as manufactured by American Cast Iron Pipe Company, or an approved equal. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with low molecular-weight petroleum products or non-chlorinated organic solvents or non-

aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that are located in soil that is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons. Fluorocarbon (FKM) gaskets shall be used where both classes of contaminates are found.

E. Water Main and Reclaimed Water Main Coatings: All ductile iron pipe used in water and reclaimed water systems shall have a standard thickness cement lining on the inside in accordance with AWWA C104 and a standard 1-mil asphaltic exterior coating per AWWA C151. All ductile iron or gray iron fittings used in water and reclaimed water systems shall have standard thickness cement linings on the inside per AWWA C104 and an asphaltic exterior coating or they shall have factory-applied fusion bonded epoxy coatings both inside and outside in accordance with AWWA C550.

F. Wastewater Main Coatings: All ductile iron pipe and fittings used in wastewater sewer systems shall have a factory applied dry film thickness 40-mil Protecto 401 or 40-mil Novocoat SP2000W amine cured novalac ceramic epoxy lining on the inside. The interior lining application is to be based on the manufacturer's recommendation for long-term exposure to raw sewage. To ensure a holiday-free lining, documentation must be provided, prior to shipment, showing each section of lined pipe has passed holiday testing at the time of production per ASTM G62. The lining shall have a minimum one year warranty covering failure of the lining and bond failure between liner and pipe.

Exterior coatings for ductile iron pipe and fittings used in wastewater systems shall be either an asphaltic coating per AWWA C151 or a factory-applied epoxy coating per AWWA C550.

G. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations specifically indicated on the construction drawings. Thrust restraint devices shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000 PV, or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from the bends or fittings at distances as required by these Standards. Restrained joint pipe fittings shall be designed and rated for the following pressures:

350 psi for pipe sizes up to and including 24" diameter
250 psi for pipe sizes 30" diameter and above

## 2.02 DETECTION

A. Pipe shall have a 3-inch wide warning tape of the proper color placed directly above the pipe 12 inches below finished grade or a 6-inch warning tape between 12 inches and 24 inches below finished grade.

B. Pipe shall have a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color installed along the pipe alignment as detailed in these standards. Tracer wire shall be manufactured by Copperhead Industries or Manatee County approved equal.

## 2.03 IDENTIFICATION

A. Each length of pipe and each fitting shall be marked with the name of the manufacturer, size and class, lining type, and shall be clearly identified as ductile iron pipe. All gaskets shall be marked with the name of the manufacturer, size and proper insertion direction.

B. All ductile iron pipe 12 inches and smaller shall be entirely polyethylene-wrapped blue for water mains, purple (Pantone 522 C) for reclaimed water mains and green for sewer mains, per AWWA C105.

C. All ductile iron pipe greater than 12 inches shall be spiral wrapped with color coded polyethylene at a six-inch minimum spacing, If soil testing, in accordance with AWWA C105, indicates that the soil at the site is corrosive, the ductile iron pipe shall be entirely polyethylene-wrapped with color coded polyethylene.

D. Poly-wrap shall be by V-BioTM Enhanced Polyethylene Encasement (or equivalent).

E. All above ground potable water mains and appurtenances shall be painted safety blue.

END OF SECTION

# SECTION 02616 DISINFECTING POTABLE WATER PIPE LINES

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to clean and disinfect potable water pipe lines. This work is required to place all types of pipe into service as potable water lines.

### 1.02 CLEANING WATER MAINS

At the conclusion of the work, the Contractor shall thoroughly clean all of the new pipes to remove all dirt, stones, pieces of wood or other material which may have entered during the construction period per Section 02618.

### 1.03 DISINFECTING & BACTERIOLOGICAL TESTING OF POTABLE WATER PIPE LINES

A. All record drawing requirements must be submitted to the County prior to starting the bacteriological testing of the water lines.

B. After the new potable water pipelines have been hydrostatically tested, or after existing potable water pipelines have been modified or repaired, they shall be cleaned, disinfected and sampled and tested for the presence of coliform organisms in accordance with AWWA C651.

C. The County Inspector shall have been notified and shall be present at the time of the introduction of the chlorine disinfectant and water from the supply system into the main.

D. At the end of the chlorine contact period, the chlorine residual shall be determined by sampling and testing, and the results shall be reported to the regulatory agencies with the County and State. The pipelines shall then be flushed thoroughly with clean potable water until chlorine measurements show that the concentration is no higher than the chlorine concentration that is acceptable for domestic use.

E. Discharge flows from cleaning or flushing operations, and heavily chlorinated water from disinfecting operations, shall be disposed of in a manner consistent with US EPA, FDEP and SWFWMD regulations. Chapter 62-302 F.A.C. water quality standard for residual chlorine in Class III waters is <0.01 mg/L (ppm).

F. After final flushing and before the new main is connected to the distribution system, sampling and analysis of the replacement water shall be performed by an approved laboratory or by the Department of Health. Sampling locations shall be as required by AWWA C651 or as determined by the FDEP representative. Pipelines that are tested and return an unsatisfactory test result shall be reflushed and resampled, or redisinfected, or otherwise reconditioned, until a satisfactory result is attained.

G. No potable water main shall be placed into service until the results of the bacteriological tests are satisfactory and the FDEP has provided the County with a written letter of acceptance. Potable water services, fire service, and fire hydrant leads that are exempt from a permit from the FDEP but still require bacteriological sampling in accordance with Chapter 62-555, Florida Administrative Code, shall not be placed into service until the results of the

bacteriological tests are satisfactory and the Manatee County Public Works Engineering Department has provided written acceptance.

H. Special disinfecting procedures when approved by the County, may be used where the method outlined above is not practical.

END OF SECTION

# SECTION 02617 INSTALLATION AND TESTING OF PRESSURE PIPE

## PART 1 GENERAL

Reference Section 1.8, Installation of Pipelines in the Manatee County Public Works Utility Standards Part 1-Utility Standards Manual.

## 1.01 GENERAL

A. Furnish and install pipe, fittings, valves, fire hydrants, services, and all other appurtenances and incidentals complete and in-place as required by the construction drawings.

B. Where potable or reclaimed water mains are to be installed under pavement, in parking lots, etc., the main shall be DI or protected by a steel casing pipe.

C. All pipe crossing state or federal roads or local arterials & thoroughfares shall be installed in a casing pipe.

D. Services under any kind of pavement shall be Type “L” copper or Schedule 40 stainless steel.

E. Water mains 16-inches and larger shall be ductile iron. High density polyethylene or PVC (for 16” only). The use of HDPE pipe must be authorized by the County prior to ordering and installation.

F. Soil testing in accordance with AWWA C105 shall be performed during the design phase to determine if the soil is corrosive to ductile iron pipe. One (1) soil test shall be performed for pipe lengths under 500 lineal feet, with an additional soil test every 500 of additional ductile iron pipe to be installed. The soil testing shall be performed by a Florida licensed geotechnical engineering and signed and sealed report shall be supplied to the County for review prior to installation of the ductile iron pipe for evaluation. The soil testing results shall be used to determine if additional requirements for the installation of ductile iron pipe and/or the restrained joints is warranted.

G. Ductile iron pipe, with gasket materials as required in these Standards, shall be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents.

H. Trees shall not be planted or located within 10 feet of any potable water main, reclaimed water main, sanitary force main or gravity sanitary sewer main that is owned and maintained by County. With prior approval, an approved root barrier may be used with 5 feet of clearance.

I. All distribution waterlines that enter private property become private lines and shall have a back-flow preventer installed at the right-of-way. BFP can be part of a meter assembly or a BFP / detector check assembly.

J. Installation tolerances of Pipe Lines:

1. Direct Bury:
    a. Vertical Alignment = ±0.5 feet
    b. Horizontal Alignment = ±1.0 feet

2. Horizontal Directional Drill (Trenchless Technologies):
    a. Vertical Alignment:
        1) max. slope shall not exceed 2% (2.0 feet within a length of 100 feet).
        2) No reverse curvature within 200 feet
        3) No vertical deviation greater than ten (10) percent of the proposed depth of cover at that specific station.
    b. Horizontal Alignment:
        1) max. rate of deviation shall not exceed 1.5% (1.5 feet within a length of 100 feet
        2) No reverse curvature
        3) Total deviation not to exceed 2.0 feet

## 1.02 HANDLING AND STORAGE

A. Prior to installation, all pipe and fittings shall be inspected. Cracked, broken, or otherwise defective materials not in compliance with these standards shall not be used and shall be removed from the project site.

B. The pipeline installer shall take care in the handling, storage and installation of the pipe and fittings to prevent injury to the materials or coatings. Use proper implements, tools and facilities for the safe and proper protection of the work. Lower the pipe and fittings from the truck to the ground and from the ground into the trench in a manner to avoid any physical damages. Under no circumstances shall the pipe or fittings be dropped onto the ground or into the trenches.

C. The pipeline installer shall not distribute material on the job site faster than it can be used to good advantage. Unless otherwise approved by the County, installer shall not distribute more than one week's supply of material in advance of laying. Any materials not to be installed within two weeks of delivery shall be protected from the sunlight, atmosphere and weather by suitable enclosures or protective wrapping until ready for installation. Stored PVC pipe shall be placed on suitable racks with bottom tiers raised above the ground to avoid damage. Storage of pipe on the job site shall be done in accordance with the pipe manufacturer's written instructions.

## 1.03 SURVEY MARKINGS

A. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of pipe for potable water mains, reclaimed water mains and sanitary force mains at intervals no greater than 200 feet apart and at locations where there is a substantial grade change. The pipe markers shall indicate the pipe diameter and shall be labeled PWM in "safety" blue, RWM in purple, and FM in green, for potable water mains, reclaimed water mains and sanitary force mains, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.

B. As a marker for the Surveyor, a PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor on the top of all pipe fittings (other than sanitary sewer service wyes, potable water saddles and reclaimed water saddles). The markers for fittings shall indicate the type of fitting and shall be labeled PWF in "safety" blue, RWF in purple, and FMF in green, for

potable water fittings, reclaimed water fittings, and sanitary force main fittings, respectively. The Contractor is responsible for making the aforementioned markers available to the Surveyor. The Contractor shall field locate the mains and fittings when markers are not made available to the Surveyor.

C. A PVC pipe marker or 2" x 4" marker shall be inserted by the Contractor at the beginning and end of each horizontal directional drill (HDD). The HDD Contractor shall provide a certified report and bore log indicating the horizontal and vertical location every 25 linear feet or less along the pipe.

D. A 2" PVC pipe marker with a painted end cap shall be inserted by the Contractor at the ROW line indicating each individual new service location or stub out. The marker shall be a 6 foot length of PVC pipe inserted 2 feet into the ground and shall be painted "safety" blue for potable water, purple for reclaimed water, and green for sewer.

## 1.04 PROCEDURE FOR TESTING WATER LINES, FORCE MAINS AND RECLAIMED WATER LINES

A. A 48-hour notice is needed prior to testing. A letter stating the reasons testing should be scheduled ahead of other jobs must accompany all emergency testing requests.

B. County and Contractor must be present for all testing, except for testing tapping valves and sleeves.

C. HYDROSTATIC TESTING

1. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7.

## 1.05 INSPECTION/TESTING PROCEDURE COVERING BORED PIPE LINES OR CASING AND CONDUITS INSTALLED ACROSS PREVIOUSLY TESTED AND/OR COUNTY ACCEPTED WATER AND SEWER PIPE WITHIN DEVELOPMENT PROJECTS UNDER ACTIVE CONSTRUCTION

A. Prior to testing water and sewer lines, every effort will be made to install sleeves for underground utilities that will cross these water and sewer lines or services.

B. Where it has not been possible to pre-install sleeves prior to testing and bores or conduits are required, it is the responsibility of the utility company and/or their Contractor performing the work to provide Manatee County Utility Operations Department or the Engineer of Record with accurate horizontal and vertical as-built information of the sleeves, bores and conduits installed by said utility company. This applies to all bores and conduits crossing water and sewer lines.

C. Procedures to be followed for installation of conduits, pipe lines and bores that will cross, or be closer than 5'-0" horizontally and 18 inches vertically to, previously tested water and sewer lines that are still under the ownership of the developer/contractor.

1. Notify the County and obtain the best as-built information available. Allow sufficient time for the County to field locate the existing pipe lines.
2. Submit drawings of proposed location to the County and Manatee County Utility Operations Dept. Utility Locations Section for review.
3. Obtain a County Right-of-Way Use Permit if the work area is within a dedicated area of right-of-way.

4. Perform installation in the presence of a County representative. Call (941) 792-8811, ext. 5061 or ext. 5069 with at least two (2) working days notice.
5. Submit two (2) copies of as-built information to the County to incorporate into the record drawings to be submitted to the County.
6. Failure to follow steps 2) thru 5) will result in additional charges for retesting the previously tested water and sewer lines.

D. Procedures to be followed for installation of conduits, pipe lines and bores crossing or closer than 5'-0" horizontally and 18 inches vertically to previously tested water and sewer lines that have been previously accepted by Manatee County:

1. Obtain record drawing information from the County.
2. If roadway has been dedicated to Manatee County, obtain Right-of-Way Use Permit and copy the Project Management Department Locations Section with proposed location drawing.
3. Follow procedures in "Sunshine State One-Call", paying special attention to the requirements of Section VII.

E. Should water or sewer lines be damaged during the bore pipe line or casing installation, the cost of any repairs and retesting will be paid for by the utility company that installed the bore. The actual clearance between a bored casing crossing a water or sewer pipe should not be less than 18 inches.

## 1.06 DETECTION

A. Direct buried pipe shall have 3" detectable metallic tape of the proper color placed directly above the pipe and 12" below finished grade or 6" detectable tape between 12" and 24" below finished grade.

B. Direct buried or horizontal directional drilled non-metalic pipe shall also have tracer wire installed along the pipe alignment. The tracer wire to be used shall be a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color manufactured by Copperhead Industries or Manatee County approved equal.

## END OF SECTION

# SECTION 02618 PIPELINE CLEANING

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to clean all new lines 4" and larger, and existing pipelines as specified in this specification and as indicated on the Drawings.

B. This work shall include the furnishing and installation of all pig launching and retrieval devices and the appropriate pigs for the cleaning procedure, and all necessary excavations, shutdowns, fittings and valves required.

### 1.02 RELATED WORK

A. The contractor is responsible for all necessary supply water.

B. The contractor is responsible for all necessary bypass pumping.

C. The contractor is responsible for the proper disposal of any materials removed from the pipe lines as a result of the cleaning procedure.

### 1.03 SUBMITTALS

B. The Contractor shall submit prior to construction, a cleaning plan, Shop Drawings, and layout diagram for approval to the County.

B. The Contractor shall submit to the County a list of materials to be furnished, and the names of suppliers.

### 1.04 QUALIFICATIONS

A. The Contractor performing this work shall be fully qualified, experienced and equipped to complete this work expeditiously and in a satisfactory manner.

B. The Contractor shall also be capable of providing crews as needed to complete this work without undue delay.

C. The County reserves the right to approve or disapprove the Contractor, based on the submitted qualifications.

## PART 2 PRODUCTS

### 2.01 GENERAL

A. The contractor shall be responsible for furnishing pigs in sufficient numbers and sizes, of appropriate densities, coatings and configurations to properly clean the piping systems.

B. All pigs used for the cleaning of sewer or reclaimed water lines shall not be used in the cleaning of potable water lines.

### 2.02 MATERIALS

A. The pig launching and retrieval equipment shall be of the latest design and construction and shall include the means to maintain constant monitoring of the in-line flows and pressures of the system being cleaned and the constant location of the cleaning pigs in the system. Launching and retrieval systems shall be fabricated, designed and manufactured according to ANSI standards and capable of withstanding working pressures of 150 psi. Launching and receiving devices shall be sized one diameter larger than the system to which it will be attached with a minimum length of 2.5 times the diameter.

B. The contractor shall have available for immediate use an electronic pig detector for use in the system being cleaned to provide a means of tracking the passage of the pig in the system to locate areas of potential or suspected blockage and other disparities in the system.

C. The pig shall be constructed of elastomer polyurethane with an open cell construction and a density equal to or suitable for use in the piping system being cleaned. Pig configuration shall consist of a parabolic nose with a concave base and coated with a resilient surface material that will maintain a peripheral seal and will effectively clean the piping system without over abrading the interior pipe wall. Pig characteristics shall include the ability to navigate through 90 degree bends, 180 degree turns, bi-directional fittings, full port valves, reduce its cross sectional area and return to its original design configuration and be propelled by hydraulic pressure.

## PART 3 EXECUTION

### 3.01 PIPELINE CLEANING

A. The cleaning of the pipe line shall be done by the controlled and pressurized passage of a polyurethane pig of varying dimensions, coatings and densities as determined by the County through the piping system.

B. A series of pigs shall be entered into the system at a point as near to the beginning as is logistically and mechanically feasible.

C. A launching assembly shall be used as the entrance point for the pig. This assembly shall allow for the following:

1. The entering of pigs into the system by providing the means to induce flow from an external source, independent of the flows and pressures immediately available from the system, on the back of the pig to develop sufficient pressure to force the pig through the system.
2. A means to control and regulate the flow.
3. A means to monitor the flows and pressures.
4. A means to connect and disconnect from the system without any disruption to the operation of the system.

D. The pig shall be removed or discharged from the system at a point as near to the end as is logistically and mechanically feasible.

E. The contractor shall be responsible for the retrieval of the pig at the discharge point. This may include setting a trap that will not disrupt normal flow and operations but will capture the pig and any debris. A retrieval assembly may also be used but said assembly shall be able to connect and disconnect from the system without any disruption to the operation of

the system.

F. Alternative launching and retrieval methods shall be done with the prior approval of the County.

G. Any pig that cannot progress through the piping system shall be located by the contractor and removed by excavation of the pipe in order to remove the blockage. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.

H. Any increase in pressure that cannot be accounted for, i.e. fittings or valves or additional cleaning runs, shall be investigated, per the Engineers' approval, by locating the pig at the beginning of the increased pressure and excavating to determine the cause of the pressure increase. All pipe repairs shall be the responsibility of the contractor and shall be performed with as little disruption to the system as possible.

I. Final flushing of the cleansed lines shall be performed after the last successful run of the pig as determined by the County. The contractor shall be responsible for all applicable flushing and disinfection requirements for potable water lines.

## 3.02 ACCEPTANCE

A. The contractor shall maintain and provide a report at the end of the cleaning procedure containing the following:

1. The pressures in the pipe during the pigging procedure.
2. Any inline problems encountered during the procedure including all excavations with detailed locations, reason for the excavation and any corrective measures taken to the pipeline.
3. A record of the pigs used, their sizes, styles and other pertinent information regarding what materials were used during the cleaning.
4. An analysis of the condition of the pipeline before and after the cleaning procedure.

## END OF SECTION

# SECTION 02622 POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS (AWWA SPECIFICATIONS C-900 & C-905)

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. Furnish all labor, materials, equipment and incidentals required to install the PVC piping, iron fittings and other appurtenances complete and ready for use as indicated on the construction drawings.

B. Provide and install complete all fittings and appurtenances not noted specifically on the construction plans as required to complete the utility system in accordance with these Standards.

### 1.02 DESCRIPTION OF SYSTEM

The Contractor shall install the piping in the locations as shown on the Drawings.

### 1.03 QUALIFICATIONS

All plastic pipe, fittings and appurtenances shall be furnished by a single manufacturer who is fully experienced, reputable, qualified and specializes in the manufacture of the items to be furnished. The pipe and fittings shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.

### 1.04 SUBMITTALS

A. The Contractor shall submit shop drawings to the County including, but not limited to, dimensions and technical specifications for all piping.

B. The Contractor shall submit to the County, samples of all materials specified herein.

C. The Contractor shall submit and shall comply with pipe manufacturer's recommendation for handling, storing and installing pipe and fittings.

D. The Contractor shall submit pipe manufacturer's certification of compliance with these Specifications.

### 1.05 TOOLS

The Contractor shall supply special tools, solvents, lubricants, and caulking compounds required for proper installation.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Polyvinyl chloride (PVC) pressure pipe, 4 - 12 inches in diameter, shall be Class 235, DR 18, meeting the requirements of AWWA C900 used for potable and reclaimed water. Mains shall be cast-iron-pipe-equivalent outside diameters (also known as ductile iron pipe size (DIPS)). Each length of pipe shall be hydrostatically tested to four times its pressure class of the pipe by the manufacturer in accordance with AWWA C900.

B. Polyvinyl chloride (PVC) pressure pipe, 14 inches in diameter, shall be ductile iron pipe size (DIPS) outside diameter and shall meet the requirements of AWWA C905. Pipe used in water, sewer, and reclaimed water service shall be DR 18 and Pressure Class 235. Each length of pipe shall be hydrostatically tested at twice its pressure class in accordance with AWWA C905. Pipe shall be furnished in standard lengths of approximately 20 feet.

PVC pipe shall not be used for potable and reclaimed water mains 16 inches and larger.

C. Polyvinyl chloride (PVC) pressure pipe, 2-3 inches in diameter, shall be Pressure Rated 200, SDR21, conforming to ASTMD2241, and shall have Iron Pipe Size (IPS) outside diameters. SDR 21 PVC pipe 2-3 inches in diameter shall not be used for working pressures greater than 125 psi. PVC pipe shall not be used in applications, which require pipes that are less than 2 inches in diameter for wastewater force mains. PVC Pipe shall not be used in applications which require pipes that are less than 3 inches in diameter for potable water piping and reclaimed water piping.

D. Standard PVC pressure pipe joints shall be bell and spigot push-on type with elastomeric ring seals. Ring seal gaskets used at push-on joints shall conform to ASTM F 477 and shall be EPDM rubber for potable and reclaimed water pipes.

E. Lubricant furnished for lubricating the push-on joints in potable water pipes shall be nontoxic, water soluble, shall not support the growth of bacteria, shall have no deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water, and shall be an approved substance per NSF 61.

F. Thrust restraint devices shall be provided at all horizontal and vertical bends and fittings, in casings under roads and railroads and at other locations as indicated on the construction drawings. Thrust restraint devices for PVC pipe and fittings shall be either concrete thrust blocks or restraining glands as manufactured by Star Pipe Products, Stargrip 3000 and 3100, Allgrip 3600, or as manufactured by EBAA Iron Sales, Megaflange, 2000PV or other approved equal restraining gland products. Restrained joints, where used, shall be installed at bend and fitting locations and at pipe joint locations both upstream and downstream from bends or fittings at distances as required by these Standards.

G. All fittings for PVC pipe shall be ductile iron or gray iron with mechanical joints and shall conform to AWWA C110 or AWWA C153 and to the applicable sections of these Standards for ductile iron and gray iron fittings.

H. All pipe materials used in potable water systems shall comply with NSF Standard 61.

## PART 3 EXECUTION

### 3.01 INSTALLATION

The Contractor shall install the plastic pipe in strict accordance with the manufacturer's technical data and printed instructions.

### 3.02 DETECTION

A. Direct buried pipe shall have 3" warning tape of the proper color placed directly above the pipe 12" below finished grade or 6" warning tape between 12" and 24" below grade.

B. PVC pipe shall have a solid, 10 gauge, high strength, copper clad steel wire with a polyethylene jacket of appropriate color installed along the pipe alignment as detailed in these standards. Tracer wire shall be manufactured by Copperhead Industries or Manatee County approved equal.

## 3.03 IDENTI FICATION

A. PVC pipe shall bear identification markings in accordance with AWWA C900, AWWA C905 or ASTM D2241.

B. PVC pipe shall be color coded blue for water, purple (Pantone purple 522C) for reclaimed water or green for pressure sewer using a solid pipe color pigment.

## 3.04 INSPECTION AND TESTING

All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak testing. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7. Prior to testing, the pipe lines shall be supported in a manner approved by the County to prevent movement during tests.

END OF SECTION

# SECTION 02640 VALVES AND APPURTENANCES

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation all valves and appurtenances as shown on the Drawings and as specified herein.

B. All of the types of valves and appurtenances shall be products of well established reputable firms who are fully experienced and qualified in the manufacture of the particular equipment to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these standards as applicable. Valves used in waterworks applications shall comply with Section 8 of NSF Standard 61 for mechanical devices.

C. All of the equipment and materials specified herein are intended to be standard for use in controlling the flow of potable water, reclaimed water, wastewater, etc., depending on the applications.

D. All valves and appurtenances shall be of the size shown on the drawings and, to the extent possible, all equipment of the same type on the project shall be from a single manufacturer.

E. All valves and appurtenances shall have the name of the manufacturer, year of the valve and the working pressure for which they are designed cast in raised letters upon some visible part of the body.

F. Special tools, if required for the normal operation or maintenance, shall be supplied with the equipment.

G. All hand actuated buried valves shall have three-piece adjustable valve boxes and 2-inch square AWWA operating nuts. Provide stainless steel extension stems and alignment rings where needed to bring the operating nut to within 4 feet below the box lid.

H. Water and reclaimed water system isolation valves shall be gate valves for sizes 2-inch through 12-inch and shall be butterfly valves for sizes 16-inch and larger.

I. Isolation valves for sewer force main pipelines shall be gate valves, unless otherwise noted on the plans. Tapping valves shall be used for tapping force mains. Plug valves shall be full port, have a 100% circular cross section, and must have prior written authorization from the County for use.

J. Valves shall open when turning the operating nut or wheel counterclockwise and shall close when turning clockwise.

K. All bonnet bolts, gland bolts, flange connection bolts, nuts, washers, and other trim hardware exposed to the outside environment shall be stainless steel. Thrust collar tie-rod bolts shall be stainless steel. All MJ-type underground bolts, nuts, and washers shall be COR-TEN or stainless steel.

L. All valves shall have a factory applied, holiday free, fusion bonded epoxy coating on the interior and exterior unless otherwise noted in the plans or the following specification. All

other painted items exposed to sunlight, including field painted box lids, etc., shall be painted the appropriate color with an epoxy type paint.

M. No valves with a break-way stem shall be allowed.

N. The equipment shall include, but not be limited to, the following:

1. Gate valves (Sec. 2.01)
2. Combination Pressure Reducing and Pressure Sustaining with Check Valves Option (Sec. 2.02)
3. Ball Valves (Sec. 2.03)
4. Butterfly Valves (Sec. 2.04)
5. Plug Valves (Sec. 2.05)
6. Valve Actuators (Sec. 2.06)
7. Air Release Valves (Sec. 2.07)
8. Valves Boxes (Sec. 2.08)
9. Corporation Stops and Saddles (Sec. 2.09)
10. Flange Adapters and Plain End Couplings (Sec. 2.10)
11. Hose Bibs (Sec. 2.11)
12. Swing Check Valves (Sec. 2.12)
13. Hydrants (Sec. 2.13)
14. Restrained Joints (Sec. 2.14)
15. Tapping Sleeves and Tapping Valves (Sec. 2.15)
16. Tracer Wire Boxes (Sec. 2.16)

## 1.02 SUBMITTALS

A. Submit to the County within 30 days after execution of the contract a list of materials to be furnished, the names of the suppliers and the date of delivery of materials to the site.

B. Complete shop drawings of all valves and appurtenances shall be submitted to the County for approval in accordance with the Specifications.

## 1.03 TOOLS

Special tools, if required for normal operation and maintenance shall be supplied with the equipment.

# PART 2 PRODUCTS

## 2.01 GATE VALVES

A. Where indicated on the drawings or necessary due to locations, size, or inaccessibility, chain wheel operators shall be furnished with the valves. Such operators shall be designed with adequate strength for the valves with which they are supplied and provide for easy operation of the valve. Chains for valve operators shall be galvanized.

B. Gate valves installed underground shall be provided with a box cast in a concrete pad and a box cover. Stainless steel or equivalent valve extension stems shall be provided to place the valve operating nut no more than 4 feet deep. One valve wrench, 6 feet in length, shall be provided for every 15 valves installed.

C. Gate valves 2 inches to 14 inches in diameter shall be resilient seated, manufactured to meet or exceed the requirements of AWWA C509 or AWWA C515 and shall be UL listed and FM approved where applicable. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve.

D. The valves shall have a non-rising stainless steel stem to eliminate lead content. All bolts, nuts and washers shall be stainless steel to eliminate exterior corrosion and maintain fastener strength. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the thrust collar. Valves that are located above grade and located in valve vaults shall be OS&Y with flanged joints.

E. The wedge shall be ductile iron fully encapsulated with an EPDM rubber. The Elastomer type shall be permanently indicated on the disc or body of the valve. The resilient sealing mechanism shall provide zero leakage at the water working pressure when installed with the line flow in either direction.

F. The valve body, bonnet, and bonnet cover shall meet or exceed all the requirements of AWWA C515.

G. Valves meeting AWWA C515 requirements shall be rated for an operating pressure of 250 psi and shall be tested in accordance with AWWA C515.

H. The valves are to have 2-inch cast or ductile iron AWWA operating nuts and shall open left or counterclockwise.

I. The valves shall be covered by a Manufacturer's 10 year warranty on manufacturer's defects and reasonable labor costs for replacement. Warranty shall become effective from the date of purchase by the end user and delivered within 30 days from the receipt of the purchase order. For publicly owned and maintained utilities, the end user is Manatee County Government.

J. Gate valves shall be assembled and tested in a certified ISO 9001:2000 manufacturing facility within the United States and provide their certification of meeting internationally recognized quality control procedures.

## 2.02 COMBINATION PRESSURE REDUCING & PRESSURE SUSTAINING WITH CHECK VALVE OPTION

A. Pressure sustaining and check valve shall be pilot operated diaphragm actuated valve with cast iron body, bronze trim, and 125-pound flanged ends. The valve shall be hydraulically operated, diaphragm type globe valve. The main valve shall have a single removable seat and a resilient disc, of rectangular cross section, surrounded on three and a half sides. No external packing glands are permitted and there shall be no pistons operating the main valve or any controls. The valve shall be equipped with isolation valves to service the pilot system while permitting flow if necessary. Main valve and all pilot controls shall be manufactured in the United States of America. Valve shall be single chamber type, with stainless steel stem.

B. Valve shall automatically reduce pressure for the downstream distribution network and sustain a minimum pressure in the high pressure main regardless of distribution demand, and as an option, shall also close when a pressure reversal occurs for check valve operations. The pilot system shall consist of two direct acting, adjustable, spring loaded diaphragm valves.

C. Valve shall be cast iron or ductile iron with main valve trim of brass and bronze. The pilot control valves shall be cast brass with 303 stainless steel trim. Valve shall be similar in all respects to Cla-Val Company, Model 92-01 or a similar control valve such as Bermad Model 723, GA Industries Model 4700 or an approved equal.

## 2.03 BALL VALVES

A. Ball valves for water and reclaimed water, in sizes 3/4-inch through 2-inch, shall be brass body, stem and ball per ASTM B 62, alloy 85-5-5-5, full port, full flow, 1/4-turn check, ball curb valves, rated for 300 psi, Mueller 300 (as specified in the table below), Ford B-Series, or approved equal, with compression, pack joint, flare, threaded or flanged ends as required. Ball valves for wastewater, 2-inch through 3-inch, shall be 316 stainless steel body, cap, stem and ball per ASTM A351, full port, full flow, 1/4-turn check, ball valves, steam rated for 150 psi, pressure rating 1,000 psi CWT, Apollo 76F or approved equal, with threaded or flanged ends as required.

Curb Stops for Water and Reclaimed Water

| Pipe Material | Type of Connection | Model |
|---|---|---|
| HDPE | Compression x FIP | B-25170 * |
| HDPE | Pack Joint x FIP | P-25170 * |
| Copper | Compression x FIP | B-25170 |
| Copper | Flare x FIP | B-25166 |
| Stainless Steel | FIP x FIP Thread | B-20200 |
| * Insert required, part number per manufacturer product information | | |

B. All valves shall be mounted in such a position that valve position indicators are plainly visible. Above grade ball valves shall have a vinyl coated lever handle. Lever handle, handle nut, and lever packing gland shall be 304 or 316 stainless steel.

C. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.

## 2.04 BUTTERFLY VALVES

A. Butterfly valves shall conform to AWWA C504, Class 250 B, Mueller Lineseal XPII, DeZurik AWWA, Pratt HP-250II, or an approved equal.

B. Valve seats shall be an EPDM elastomer. Valve seats 24 inches and larger shall be field adjustable and replaceable without dismounting operator dise or shaft and without removing the valve from the line. Valves 20 inches and smaller shall have bonded or mechanically restrained seats as outlined in AWWA C504.

C. All valves shall be subject to hydrostatic and leakage tests at the point of manufacture. The hydrostatic test for Class 250 valves shall be performed with an internal hydrostatic pressure equal to 500 psi applied to the inside of the valve body of each valve. During the hydrostatic test, there shall be no leakage through the metal, the end joints or the valve shaft seal. The leakage test for the Class 250 valves shall be performed at a differential pressure of 250 psi

and against both sides of the valve. No adjustment of the valve disc shall be necessary after pressure test for normal operation of valve. All valves shall be leaktight in both directions.

D. Butterfly valve actuators shall conform to AWWA C504. Gearing for the actuators shall be totally enclosed in a gear case. Actuators shall be capable of seating and unseating the disc against the full design pressure and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.

E. The valve shaft shall be constructed of 18-8, ASTM A-276, Type 304 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. Shaft shall be of either a one piece unit extending full size through the valve disc and valve bearing or it may be of a stub shaft design. Shaft bearings shall be teflon or nylon, self-lubricated type.

F. Gearing for the operators shall be totally enclosed in a gear case in accordance with paragraph 3.8.3 of the above mentioned AWWA Standard Specification.

G. Operators shall be capable of seating and unseating the disc against the full design pressure of velocity, as specified for each class, into a dry system downstream and shall transmit a minimum torque to the valve. Operators shall be rigidly attached to the valve body.

H. The manufacturer shall certify that the required tests on the various materials and on the completed valves have been satisfactory and that the valves conform with all requirements of this Specification and the AWWA standard.

I. Where indicated on the Drawings, extension stems, floor stands, couplings, stem guides, and floor boxes as required shall be furnished and installed.

## 2.05 PLUG VALVES

A. Plug valves shall be eccentric, non-lubricating type with integral plug and shafts and shall be furnished with end connections and with actuating mechanisms as called for on the construction plans or as otherwise required. Valves shall seal bubble-tight or water drop-tight in both directions when tested according to the Leakage Test method of AWWA C504 with a hydrostatic pressure of 150 psi.

B. Plug valves shall also be subjected to the internal, full body Hydrostatic Test of AWWA C504 at a pressure two times the rated pressure or a minimum pressure of 300 psi, whichever is greater. During the test, there shall be no leakage through the metal, or through the end joints or shaft seal, nor shall any part of the valve be deformed. Plug valves shall be Kennedy or Dezurik.

C. Flanged valve ends shall be faced and drilled according to ANSI B 16.1, Class 125. Mechanical joint valve ends shall conform to AWWA C111. Threaded ends shall conform to the NPT requirements of ANSI B1.20.1.

D. The plug valve body, bonnet and gland shall be ductile iron per ASTM A 126, Class B. The integral plug and shafts shall be cast iron ASTM A 126, Class B, or 316 stainless steel. The entire plug, except for the shafts, shall be covered with nitrile (Buna N) rubber. The rubber compound shall have been vulcanized to the metal plug and shall have a peel strength of not less than 75 pounds per inch when tested according to ASTM D 429, method B. The

valve seat shall be at least 90 percent pure nickel, welded-in overlay into the cast iron body. The top and bottom bearings shall be 316 stainless steel.

E. Plug valves shall have a full port area of 100 percent of the nominal pipe size area.

F. Valves shall have worm gear type actuators with 2-inch square operating nuts.

G. Plug valves shall be installed side-ways with plug shaft horizontal so that the plug rotates upward when it opens, with the flow entering the seat end of the valve.

H. Plug valves shall be coated inside with Protecto 401 or amine-cured novolac ceramic epoxy or another two-part epoxy suitable for sanitary sewer service which has been approved by Manatee County.

## 2.06 VALVE ACTUATORS

A. Butterfly valve and plug valve actuators.

Butterfly valve and plug valve actuators shall conform to the requirements for actuators presented in AWWA C 504 and shall be either manual or motor operated. Actuators shall be capable of seating and unseating the disc against the full design pressure and velocity, as specified for each class, into a dry system downstream, and shall transmit a minimum torque to the valve. Actuators shall be rigidly attached to the valve body.

B. Manual Actuators.

Manual actuators shall have permanently lubricated, totally enclosed gearing with handwheel and gear ratio sized on the basis of actual line pressure and velocities. Actuators shall be equipped with handwheel, position indicator, and mechanical stop-limiting locking devices to prevent over travel of the disc in the open and closed positions. They shall turn counter-clockwise to open valves. Manual actuators shall be of the traveling nut, self-locking type or of the worm gear type and shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. Valves located above grade shall have handwheel and position indicator, and valves located below grade shall be equipped with a 2-inch square AWWA operating nut located at ground level and cast iron extension type valve box.

C. Motor Actuators (Modulating)

(1) The motor actuated valve controller shall include the motor, actuator unit gearing, limit switch gearing, limit switches, position transmitter which shall transmit a 4-20 mA DC signal, control power transformer, electronic controller which will position the valve based on a remote 4-20 milliamp signal, torque switches, bored and key-wayed drive sleeve for non-rising stem valves, declutch lever and auxiliary handwheel as a self-contained unit.

(2) The motor shall be specifically designed for valve actuator service using 480 volt, 60 Hertz, three phase power as shown, on the electrical drawings. The motor shall be sized to provide an output torque and shall be the totally enclosed, non-ventilated type. The power gearing shall consist of helical gears fabricated from heat treated alloy steel forming the first stage of reduction. The second reduction stage shall be a single stage worm gear. The worm shall be of alloy steel with carburized threads hardened and ground for high efficiency. The worm gear shall be of high tensile strength bronze with

hobbed teeth. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout. Preference will be given to units having a minimum number of gears and moving parts. Spur gear reduction shall be provided as required.

(3) Limit switches and gearing shall be an integral part of the valve control. The limit switch gearing shall be made of bronze and shall be grease lubricated, intermittent type and totally enclosed to prevent dirt and foreign matter from entering the gear train. Limit switches shall be of the adjustable type capable of being adjusted to trip at any point between fully opened valve and fully closed valve.

(4) The speed of the actuator shall be the responsibility of the system supplier with regard to hydraulic requirements and response compatibility with other components within the control loop. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing. The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Gear limit switches must be geared to the driving mechanism and in step at all times whether in motor or manual operation. Provision shall be made for two additional rotors as described above, each to have two normally open and two normally closed contacts. Each valve controller shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve, should excessive load be met by obstructions in either direction of travel. The torque switch shall be provided with double-pole contacts.

(5) A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operations, but must be responsive to manual operation at all times except when being electrically operated. The motor shall not rotate during hand operation nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve operator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. This movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running. The gear limit switches and torque switches shall be housed in a single easily accessible compartment integral with the power compartment of the valve control. All wiring shall be accessible through this compartment. Stepping motor drives will not be acceptable.

(6) The motor with its control module must be capable of continuously modulating over its entire range without interruption by heat protection devices. The system, including the operator and control module must be able to function, without override protection of any kind, down to zero dead zone.

(7) All units shall have strip heaters in both the motor and limit switch compartments.

(8) The actuator shall be equipped with open-stop-close push buttons, an auto-manual selector switch, and indicating lights, all mounted on the actuator or on a separate locally mounted power control station.

(9) The electronics for the electric operator shall be protected against temporary submergence.

(10) Actuators shall be Limitorque L120 with Modutronic Control System containing a position transmitter with a 4-20MA output signal or equal.

D. Motor Actuators (Open-Close)

(1) The electronic motor-driven valve actuator shall include the motor, actuator gearing, limit switch gearing, limit switches, torque switches, fully machined drive sleeve, declutch lever, and auxiliary handwheel as a self-contained unit.

(2) The motor shall be specifically designed for valve actuator service and shall be of high torque totally enclosed, nonventilated construction, with motor leads brought into the limit switch compartment without having external piping or conduit box.

(3) The motor shall be of sufficient size to open or close the valve against maximum differential pressure when voltage to motor terminals is 10% above or below nominal voltage.

(4) The motor shall be prelubricated and all bearings shall be of the anti-friction type.

(5) The power gearing shall consist of helical gears fabricated from heat treated steel and worm gearing. The worm shall be carburized and hardened alloy steel with the threads ground after heat treating. The worm gear shall be of alloy bronze accurately cut with a hobbing machine. All power gearing shall be grease lubricated. Ball or roller bearings shall be used throughout.

(6) Limit switches and gearing shall be an integral part of the valve actuator. The switches shall be of the adjustable rotor type capable of being adjusted to trip at any point between fully opened valve and fully closed valve. Each valve controller shall be provided with a minimum of two rotor type gear limit switches, one for opening and one for closing (influent valves require additional contacts to allow stopping at an intermediate position). The rotor type gear limit switch shall have two normally open and two normally closed contacts per rotor. Additional switches shall be provided if shown on the control and/or instrumentation diagrams. Limit switches shall be geared to the driving mechanism and in step at all times whether in motor or manual operation. Each valve actuator shall be equipped with a double torque switch. The torque switch shall be adjustable and will be responsive to load encountered in either direction of travel. It shall operate during the complete cycle without auxiliary relays or devices to protect the valve should excessive load be met by obstructions in either direction of travel. Travel and thrusts shall be independent of wear in valve disc or seat rings.

(7) A permanently mounted handwheel shall be provided for manual operation. The handwheel shall not rotate during electric operation except when being electrically operated. The motor shall not rotate during hand operation, nor shall a fused motor prevent manual operation. When in manual operating position, the unit will remain in this position until motor is energized at which time the valve actuator will automatically return to electric operation and shall remain in motor position until handwheel operation is desired. Movement from motor operation to handwheel operation shall be accomplished by a positive declutching lever which will disengage the motor and motor gearing mechanically, but not electrically. Hand operation must be reasonably fast. It shall be impossible to place the unit in manual operation when the motor is running.

(8) Valve actuators shall be equipped with an integral reversing controller and three phase overload relays, Open-Stop-Close push buttons, local-remote-manual selector switch, control circuit transformer, three-phase thermal overload relays and two pilot lights in a NEMA 4X enclosure. In addition to the above, a close coupled air circuit breaker or disconnect switch shall be mounted and wired to the valve input power terminals for the purpose of disconnecting all underground phase conductors.

(9) The valve actuator shall be capable of being controlled locally or remotely via a selector switch integral with the actuator. In addition, an auxiliary dry contact shall be provided for remote position feedback.

(10) Valve A.C. motors shall be designed for operation on a 480 volt, 3-phase service. Valve control circuit shall operate from a fuse protected 120 volt power supply.

(11) Motor operators shall be as manufactured by Limitorque Corporation, Type L120 or approved equal.

## 2.07 AIR RELEASE VALVES

A. Air release valves shall be automatic float operated, GA Industries fig-929 for sewer applications, Fig-920 for water and reclaimed water application, or an approved equal, with inlet size and working pressure ratings as required and NPT connections.

B. Valve bodies shall be ductile iron per ASTM A 126, Class B. The orifice, float and linkage shall be stainless steel. The seat shall be (Buna N) nitrile elastomer.

## 2.08 VALVE BOXES

A. Buried valves shall have adjustable cast iron or HDPE valve boxes. Lids shall be cast iron drop type, and shall have “WATER”, “SEWER”, or “RECLAIM”, as applicable, cast into the top. Lids will be painted “safety” blue for potable, purple for reclaimed, and green for sanitary sewer.

B. Cast iron boxes shall be two-piece, or three-piece, as required, screw type, Tyler Pipe, 6850 Series, Box 461-S through 668-S, with extensions, as required to make the desired box length, or an approved equal. Bottom barrel shall be 5-1/4 inches inside diameter, with a flanged bottom with sufficient bearing area to prevent settling.

C. HDPE boxes shall be two-piece, adjustable, 1/4-inch thick minimum heavy wall, high density polyethylene, with cast iron top and stainless steel adjustable stem, Trench Adapter, as manufactured by American Flow Control, or an approved equal. Bottom barrel shall have flanged bottom to prevent settling. All bolts, screws and pins shall be stainless steel.

D. Reclaimed Valve Boxes shall be square 9-inch x 9-inch load bearing marked “Reclaimed Water” and painted Pantone 522C purple.

E. All valves shall either have operating nuts within 4 feet below the top of the lid or shall have extension stems with centering guides to provide an extended operating nut within 4 feet below the lid. Extension stems shall be fixed to the valve operating nut with a stainless steel fastener.

F. All potable water, sewer, and reclaimed water grade-adjustment risers shall be cast iron material just like the valve box. No plastic or steel risers shall be allowed.

G. A centering device BoxLok or equal shall be installed in the valve box.

H. Stand pipe shall match color code of the system being installed, (blue for potable, Pantone purple 522 C for reclaimed, and green for sanitary sewer).

## 2.09 CORPORATION STOPS AND SADDLES

A. Corporation stops for connections to ductile iron and PVC water and reclaimed water mains shall be all red brass, alloy 85-5-5-5, per ASTM B 62, and shall conform to AWWA C800. 1-inch through 2-inch corporation stops shall be ball type, 300 psi working pressure rated, with AWWA MIP threaded inlets and compression, pack joint, flare, or FIP threaded joint outlets, Mueller as shown in the table below, or an approved equal. All joints made to CTS size HDPE tubing shall use stainless steel insert stiffeners.

Corporation Stops

| Pipe Material | Type of Connection | Mueller 300 Model |
|---|---|---|
| HDPE | Compression x AWWA IP Thread | B-25028 (Saddle) * |
| HDPE | Compression x AWWA Taper Thread | B-25008 (Direct Tap) * |
| HDPE | Pack Joint x AWWA IP Thread | P-25028 (Saddle) * |
| HDPE | Pack Joint x AWWA Taper Thread | P-25008 (Direct Tap) * |
| Copper | Compression x AWWA IP Thread | B-25028 (Saddle) |
| Copper | Pack Joint x AWWA Taper Thread | B-25008 (Direct Tap) |
| Copper | Pack Joint x AWWA IP Thread | P-25028 (Saddle) |
| Copper | Pack Joint x AWWA Taper Thread | P-25008 (Direct Tap) |
| Copper | Flare x AWWA IP Thread | B-25025 (Saddle) |
| Copper | Flare x AWWA Taper Thread | B-25000 (Direct Tap) |
| Stainless Steel | FIP Thread x AWWA IP Thread | B-20046 (Saddle) |
| Stainless Steel | FIP Thread x AWWA Taper Thread | B-20045 (Direct Tap) |
| * Insert required, part number per manufacturer product information | | |

B. Potable plastic service pipe material and compression and pack joint connectors shall not be used in soil that is contaminated with low molecular-weight petroleum products, aromatic hydrocarbons, chlorinated hydrocarbons or organic solvents. Appropriate service tubing shall apply.

C. Water and reclaimed water service connections to PVC and DIP mains shall be made using red brass saddles, alloy 85-5-5-5, per ASTM B 62. Straps, washers and nuts shall be brass or stainless steel. No ductile iron, cast iron or steel saddles will be allowed. Saddles shall be Smith Blair 325 Bronze saddles with Stainless Steel or brass extra wide strap or equivalent.

D. Connections to PVC sanitary force mains for services up to 2 inches shall be made using Romac Style 306 double bolt stainless steel service saddles or equivalent.

E. Service and air release valve (ARV) connections to HDPE water, reclaimed water and sewer mains may be made using Romac Style 306H saddle or approved equal. All saddles shall be properly sized per the manufacturer product information and be installed according to the manufacturer's written instructions. Connections to HDPE mains shall not be made using narrower saddles similar to the Smith-Blair 325.

## 2.10 FLANGED ADAPTERS AND PLAIN END COUPLINGS

Plain end couplings and adapters shall be fusion-bonded epoxy coated carbon steel with Ethylene Propylene Diene Monomer (EPDM) rubber gaskets and stainless steel nuts, bolts and spacers. Acrylonitrile butadiene (NBR) gaskets shall be used for potable water mains that are located in soil that is contaminated with low molecular-weight petroleum products or non- chlorinated organic solvents or non-aromatic organic solvents. Fluorocarbon (FKM) gaskets shall be used for potable water mains that are located in soil that is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons. Fluorocarbon (FKM) gaskets shall be used for potable water mains if the soil is contaminated with aromatic hydrocarbons or chlorinated hydrocarbons, and is also contaminated with low molecular-weight petroleum products or organic solvents. Couplings shall be Dresser Style 38, or another approved equal. Flange adapters shall have a plain end compression seal similar to the style 38, with an ANSI 125 Class flange on the opposite end, and shall be Dresser Style 128W or an approved equal. Stainless steel backup rings shall be used for force mains that are located in corrosive environments including wetwells and valve vaults.

## 2.11 HOSE BIBS

Hose bibs shall be 3/4" or 1" brass, polished chromium plated brass, with vacuum breaker as noted on the drawings.

## 2.12 SWING CHECK VALVES

A. Check valves shall be swing type, weighted lever, conforming to AWWA C508. Valves shall be iron-body, bronze-mounted, single disk, 175 psi working pressure for 2- through 12-inch, 150 psi for 14- through 30-inch, with ANSI B16.1 Class 125 flanged ends, by Mueller; No. A-2600-6-01 (sewer), No. A-2602-6-01 (water), or AVK Series 41, or an approved equal.

B. When there is no flow through the line, the disc shall hang lightly against its seat in practically a vertical position. When open, the disc shall swing clear of the waterway.

C. Check valves shall have bronze seat and body rings, extended bronze or stainless steel hinge pins and stainless steel nuts and bolts on bolted covers.

D. Valves shall be so constructed that disc and body seat may easily be removed and replaced without removing the valve from the line. Valves shall be fitted with an extended hinge arm with outside lever and weight.

## 2.13 HYDRANTS

Hydrants shall be dry barrel, nostalgic style, and shall be AVK Series 2780, American Darling B-84-B, Mueller Super Centurian 250, or approved equal and shall conform to AWWA C502 and UL/FM certified, and shall in addition meet the specific requirements and exceptions which follow:

A. Hydrants shall be according to manufacturer's standard pattern or nostalgic style and of standard size, and shall have one 5-inch Storz connection or equivalent with two 2½- inch hose nozzles.

B. Hydrant inlet connections shall have mechanical joints for 6-inch pipe.

C. Hydrant valve opening shall have an area at least equal to that area of a 5 1/4-inch minimum diameter circle and be obstructed only by the valve rod. Each hydrant shall

be able to deliver 500 gpm minimum through its two 2 1/2 -inch hose nozzles when opened together with a loss of not more than 2 psi in the hydrant per AWWA C502.

D. The upper and lower stem rod shall be stainless steel and shall have a breakable stem-rod coupling of stainless steel, or cast iron or ductile iron with a fusion bonded epoxy coating, with stainless steel pins and clips.

E. Hydrants shall be hydrostatically tested as specified in AWWA C502 and shall be rated at 250 psi minimum.

F. The operating nut shall be 1½ -inch pentagon shaped with a protective weather cover, and open counter clockwise.

G. All nozzle threads shall be American National Standard.

H. Each nozzle cap shall be provided with a Buna N rubber washer.

I. All hydrants shall be traffic break away type and allow for 360 degree rotation to position the Storz connection/nozzle in the desired direction after installation.

J. Hydrants must be capable of being extended without removing any operating parts.

K. Hydrant extensions shall be fusion bonded epoxy coated inside and outside with a stainless steel stem. The breakaway coupling can be fusion bonded epoxy coated or stainless steel. Only one hydrant extension is allowed per hydrant.

L. Weepholes shall be excluded from fire hydrants.

M. Hydrant main valve closure shall be of the compression type opening against the pressure and closing with the pressure. The main valve shall be faced or covered with EPDM elastomer, which shall seat on a bronze ring.

N. Hydrant bonnets, weather cover, nozzle section, caps and shoe shall be cast iron or ductile iron, and shall be holiday free fusion-bonded epoxy coated at the factory, per AWWA C550, inside and outside. Lower barrel shall be fusion bonded epoxy coated inside and outside. Aboveground parts shall also have a top coat of Sherwin-Williams Acrolon 218 HS acrylic polyurethane or approved equal; color Safety Yellow for fire hydrants that are connected to the potable water system or Pantone 522C purple for fire hydrants that are connected to the reclaimed water system.

O. Exterior nuts, bolts and washers shall be stainless steel. Bronze nuts may be used below grade.

P. All internal operating parts shall be removable without requiring excavation.

## 2.14 RESTRAINED JOINTS

A. Pipe joints shall be restrained by poured-in-place concrete thrust blocks or by other mechanical methods, including tie rods, Stargrip and Allgrip, as manufactured by Star Pipe Products or Megaflange and 2000 PV, as manufactured by EBAA Iron Sales. Flanged joints may be used above ground.

B. All T-bolts, bolts, nuts, washers, and all thread rods shall meet ASTM A-588 requirements (Cor-ten or equivalent) “weathering steel” or be 316 stainless steel. The use of rebar with welded thread is prohibited.

A certification from the supplier shall be provided to the County during the shop drawing review process ensuring all T-bolts, bolts, nuts, washers, and all thread rods meet the A-588 requirements and shall state the project name and contractor in the certification letter. If stainless steel is to be used, no certification letter is required.

C. Restrained joints may also be Lok-Ring, as manufactured by American Cast Iron Pipe Company, or an approved equal.

D. Restrained joint designs, which require wedges and/or shims to be driven into the joints in order to disassemble the pipe shall not be allowed.

## 2.15 TAPPING SLEEVES AND VALVES

A. Tapping valves shall meet the requirements of AWWA C509/C515 with ductile iron body and shall be rated for a pressure of 250 psi. The valves shall be flanged with alignment ring by mechanical joint with a nonrising stainless steel stem. All bolts, nuts and washers shall be stainless steel. Manufacturer shall use Never-Seez or equivalent during assembly of bolt and nut sets to prevent galling of similar metals. Stem seals shall be provided and shall be of the O-ring type, two above and one below the valve’s thrust collar. Valve shall be designed for vertical burial and shall open counterclockwise. Operating nut shall be AWWA standard 2-inch square for valves 2 inches and up. Valves shall have an unobstructed waterway equal to or greater than the full nominal diameter of the valve to accommodate full size shell cutter. Gaskets shall cover the entire area of the flange surface and be 1/8-inch minimal thickness of red rubber. The wedge shall be ductile iron fully encapsulated with EPDM rubber. All bolts, nuts and washers between the sleeve and valve shall be stainless steel.

B. Tapping sleeves and saddles shall be stainless steel, seal to the pipe by the use of a gasket compounded for water or sewer, and shall be able to withstand a pressure test of 180 psi for water lines or 150 psi for sewer force mains for one hour with no leakage in accordance with AWWA C110. A stainless steel 3/4-inch NPT test plug shall be provided for pressure testing. All bolts joining the two halves shall be stainless steel and shall be included with the sleeve or saddle; Romac SST III or Romac SST-H.

## 2.16 TRACER WIRE TEST STATION BOXES

Tracer wire test station boxes shall be provided at plug valves, butterfly valves, blowoff valves, gate valves, fire hydrants and backflow preventers as indicated in these Standards. Tracer wire test station boxes for yard service shall be 2 ½ inch diameter, 15 inch length, ABS plastic with a cast iron rim and lid, P200NFGT as manufactured by Bingham & Taylor, or equal approved by Manatee County. Where test boxes will be in streets or subject to vehicular traffic, use B&T Model P525RD, 5 ¼ -inch diameter or equal, centered in a separate concrete pad similar to a valve box pad.

# PART 3 EXECUTION

## 3.01 INSTALLATION

A. All valves and appurtenances shall be installed in the location shown, true to alignment and rigidly supported. Any damage occurring to the above items before they are installed shall be repaired to the satisfaction of the County.

B. After installation, all valves and appurtenances shall be tested at least two hours at the working pressure corresponding to the class of pipe, unless a different test pressure is specified. If any joint proves to be defective, it shall be repaired to the satisfaction of the County.

C. Install all floor boxes, brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings that are in masonry floors or walls, and install concrete inserts for hangers and supports as soon as forms are erected and before concrete is poured. Before setting these items, the Contractor shall check all plans and figures which have a direct bearing on their location and he shall be responsible for the proper location of these valves and appurtenances during the construction of the structures.

D. Pipe for use with flexible couplings shall have plain ends as specified in the respective pipe sections.

E. Flanged joints and mechanical joints shall be made with high strength, low alloy Corten or 316 stainless steel bolts, nuts and washers.

F. Prior to assembly of split couplings, the grooves as well as other parts shall be thoroughly cleaned. The ends of the pipes and outside of the gaskets shall be moderately coated with petroleum jelly, cup grease, soft soap or graphite paste, and the gasket shall be slipped over one pipe end. After the other pipe has been brought to the correct position, the gasket shall be centered properly over the pipe ends with the lips against the pipes. The housing sections then shall be placed. After the bolts have been inserted, the nuts shall be tightened until the housing sections are firmly in contact, metal-to-metal, without excessive bolt tension.

G. Prior to the installation of sleeve-type couplings, the pipe ends shall be cleaned thoroughly for a distance of 8". Soapy water may be used as a gasket lubricant. A follower and gasket, in that order, shall be slipped over each pipe to a distance of about 6" from the end.

H. Valve boxes with concrete bases shall be installed as shown on the Drawings. Mechanical joints shall be made in the standard manner. Valve stems shall be vertical in all cases. Place cast iron box over each stem with base bearing on compacted fill and the top flush with final grade. Boxes shall have sufficient bracing to maintain alignment during backfilling. Knobs on cover shall be parallel to pipe. Remove any sand or undesirable fill from valve box.

## 3.02 HYDRANTS

A. Hydrants shall be set at the locations designated by the County and/or as shown on the Drawings and shall be bedded on a firm foundation. A drainage pit on crushed stone as shown on the Drawings shall be filled with gravel or crushed stone and satisfactorily compacted. During backfilling, additional gravel or crushed stone shall be brought up around and 6" over the drain port. Each hydrant shall be set in true vertical alignment and shall be properly braced. Concrete thrust blocks shall be placed between the back of the hydrant inlet and undisturbed soil at the end of the trench. Minimum bearing area shall be as shown on the plans. Felt paper shall be placed around the hydrant elbow prior to placing concrete. CARE MUST BE TAKEN TO INSURE THAT CONCRETE DOES NOT PLUG

THE DRAIN PORTS. Concrete used for backing shall be as specified herein.

B. When installations are made under pressure, the flow of water through the existing main shall be maintained at all times. The diameter of the tap shall be a minimum of 2" less than the inside diameter of the branch line.

C. The entire operation shall be conducted by workmen thoroughly experienced in the installation of tapping sleeves and valves, and under the supervision of qualified personnel furnished by the manufacturer. The tapping machine shall be furnished by the Contractor if tap is larger than 12" in diameter.

D. The Contractor shall determine the locations of the existing main to be tapped to confirm the fact that the proposed position for the tapping sleeve will be satisfactory and no interference will be encountered such as the occurrence of existing utilities or of a joint or fitting at the location proposed for the connection. No tap will be made closer than 30" from a pipe joint.

E. Tapping valves shall be set in vertical position and be supplied with a 2" square operating nut for valves 2" and larger. The valve shall be provided with an oversized seat to permit the use of full sized cutters.

F. Tapping sleeves and valves with boxes shall be set vertically or horizontally as indicated on the Drawings and shall be squarely centered on the main to be tapped. Adequate support shall be provided under the sleeve and valve during the tapping operation. Sleeves shall be no closer than 30" from water main joints. Thrust blocks shall be provided behind all tapping sleeves. Proper tamping of supporting earth around and under the valve and sleeve is mandatory. After completing the tap, the valve shall be flushed to ensure that the valve seat is clean.

## 3.03 SHOP PAINTING

Ferrous surfaces of valves and appurtenances shall receive a coating of rust-inhibitive primer. All pipe connection openings shall be capped to prevent the entry of foreign matter prior to installation.

## 3.04 FIELD PAINTING

All metal valves and appurtenances specified herein and exposed to view shall be painted safety blue.

## 3.05 INSPECTION AND TESTING

All pipelines shall remain undisturbed for 24 hours to develop complete strength at all joints. All pipelines shall be subjected to a hydrostatic pressure and leak testing. Refer to Manatee County Public Works Utility Standards Part 1-Utility Standards Manual Section 1.8.7. Prior to testing, the pipe lines shall be supported in a manner approved by the County to prevent movement during tests.

All leaks shall be repaired and lines retested as approved by the County.

## END OF SECTION

# SECTION 02720 SANITARY SEWER BYPASS PUMPING

## PART 1 GENERAL

### 1.01 SCOPE

The Contractor shall furnish all labor, materials, equipment and incidentals required to maintain existing and anticipated flows within the affected portion of the collection system throughout the construction period.

### 1.02 PUBLIC IMPACTS

The contractor shall not create a public nuisance due to excessive noise or dust, nor impact the public with flooding of adjacent lands, discharge of raw sewage, or release of other potential hazards, nor shall he encroach on or limit access to adjacent lands. No extra charge may be made for increased costs to the contractor due to any of the above.

### 1.03 SUBMITTALS

A. The Contractor shall, within 30 days of the date of the Notice to Proceed, submit to the Project Manager a detailed Pumping Plan for each site by-pass pumping will be needed. The Pumping Plan shall address all measures and systems to prevent a sanitary sewer overflow (SSO) as defined by the EPA. The Plan shall include as a minimum:

1. Working drawings and sketches showing work location, pump location, piping layout & routing. Show all proposed encroachment and access impacts on adjacent properties or facilities.
2. Pump, control, alarm and pipe specifications or catalog cuts. Detailed sketch of controls and alarm system.
3. Power requirements and details on methods to provide by-pass power or fueling.
4. Calculation and determination of response times to prevent an SSO after a high water alarm. If anticipated peak flows are 750 G.P.M. or greater, an operator is required on site at all times pump is in service. If the anticipated peak flows are less than 750 G.P.M. an operator may not be required to be on site at all times; show operator on-site schedule.
5. Procedures to be taken in case of power, pump, or piping failures; including contact names and numbers for emergency notifications.
6. Frequency and specific responsibility for monitoring pump operation, fuel levels, pump maintenance and entire length of piping.

## PART 2 PRODUCTS

### 2.01 EQUIPMENT

A. Pumps:

1. By-pass pumping system shall consist of at least a primary pump and a backup pump. Each pump shall have a minimum pumping capacity of 100% of the anticipated peak flows. When bypassing a pump station, 100% of the lift station capacity (G.P.M. & T.D.H) shall be provided.
2. Pumps shall be low noise or sound attenuated. The noise level at any operating condition, in any direction, shall not exceed 70dBA at a distance of twenty three (23)

feet (7 meters) from the pump and/or power source.

B. Controls:

The by-pass pump system shall be equipped with automatic controls and an alarm system. The automatic controls will automatically start the backup pump in the event of a high water condition or failure of the primary pump. The alarm system will immediately notify the Contractor of a pump failure or high water condition.

C. Pipe:

Pipe shall be of adequate size and capacity to match the pumps. Pipe type and materials will depend on the particulars of the site conditions, and shall be detailed in the Pumping Plan. Contractor will provide all connections.

## PART 3 EXECUTION

### 3.01 SITE CONDITIONS

Site conditions will vary by site. Contractor is responsible to determine and address requirements such as traffic control, excavation, connections & fittings, impacts on access to adjacent properties, routing and support of by-pass piping, etc., in the Pumping Plan.

### 3.02 ON-SITE MONITORING

A. All by-pass operations where the anticipated flow rates are 750 G.P.M or greater shall require an employee on-site at all times (full-time on-site monitoring attended by personnel experienced with the pumps and controls, with demonstrated ability to monitor, turn on & off, and switch between pumps while the by-pass pump system is in service.

B. By-pass operations where the anticipated flow rates are less than 750 G.P.M may not require an employee on-site at all times while the by-pass pump system is in operation. The Contractor shall have personnel experienced with the pumps and controls on site within the calculated response time to prevent an SSO after a high water alarm.

C. During by-pass operations, the Contractor shall have posted on site with the permit, a copy of the approved Plan and the name and 24 hour contact number of the primary response person, the job site superintendent, and the construction company owner.

### 3.03 OPERATIONS

A. The Contractor is responsible for securing and providing power, fuel, site security, traffic control and all other supplies, materials and permits required for the by-pass pumping.

B. Contractor shall demonstrate automatic pump switching and alarm system to the satisfaction of: the County inspector, Project Manager, or Lift Stations Superintendent prior to beginning by-pass pumping. Satisfactory demonstration shall be documented by the inspector's, PM's or Lift Station Superintendent's dated signature on the posted copy of the approved Pumping Plan.

### 3.04 DAMAGE RESTORATION & REMEDIATION

A. The Contractor shall be responsible for any pre-pump notifications, all restoration of pre-pump conditions and any damage caused by by-pass operations.

B. Should there be an SSO caused by or as a direct result of the by-pass pumping, the contractor is responsible for all immediate & long term response, notifications, clean up, mitigation, etc. Copies of all written response plans, notifications, documentation, mitigation plans, etc., shall be submitted to the County Project Manager.

END OF SECTION

# DIVISION 3 CONCRETE

## SECTION 03200 CONCRETE REINFORCEMENT

### PART 1 GENERAL

### 1.01 WORK INCLUDED

A. Reinforcing steel bars and welded steel wire fabric for cast-in-place concrete, complete with tie wire.

B. Support chairs, bolsters, bar supports and spacers, for reinforcing.

### 1.02 QUALITY ASSURANCE

Perform concrete reinforcing work in accordance with ACI 318 unless specified otherwise in this Section.

### 1.03 REFERENCES

A. ACI 318 - Building Code Requirements for Reinforced Concrete.

B. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.

C. ASTM A615 - Deformed and Plain Billet Steel Bars for Concrete Reinforcement.

D CRSI 63 - Recommended practice for placing reinforcing bars.

E. CRSI 65 - Recommended practice for placing bar supports, specifications and nomenclature.

F. ACI 315 - American Concrete Institute - Manual of Standard Practice.

### 1.04 SHOP DRAWINGS

A. Submit shop drawings in accordance with Contract Documents.

B. Indicate bar sizes, spacings, locations and quantities of reinforcing steel and wire fabric, bending and cutting schedules and supporting and spacing devices.

C. Manufacturer's Literature: Manufacturer's specifications and installation instructions for splice devices.

### PART 2 PRODUCTS

### 2.01 REINFORCING

A. Reinforcing steel: Grade 60, Minimum Yield Strength 60,000 psi, deformed billet steel bars, ASTM A615; plain finish.

B. Welded steel wire fabric: Deformed wire, ASTM A497; smooth wire ASTM A185 in flat

sheets; plain finish.

## 2.02 ACCESSORY MATERIALS

A. Tie wire: Minimum 16 gauge annealed type, or patented system accepted by County.

B. Chairs, bolsters, bar supports, spacers: Sized and shaped for strength and support of reinforcing during construction conditions.

C. Special chairs, bolsters, bar supports, spacers (where adjacent to architectural concrete surfaces): Stainless steel type sized and shaped as required.

## 2.03 FABRICATION

A. Fabricate concrete reinforcing in accordance with ACI 315.

B. Locate reinforcing splices, not indicated on Drawings, at points of minimum stress. Location of splices shall be reviewed by County.

C. Where indicated, weld reinforcing bars in accordance with AWS D12.1.

# PART 3 EXECUTION

## 3.01 PLACEMENT

A. Reinforcing shall be supported and secured against displacement. Do not deviate from true alignment.

B. Before placing concrete, ensure reinforcing is clean, free of loose scale, dirt, or other foreign coatings which would reduce bond to concrete.

## 3.02 QUALITY ASSURANCE

A. Acceptable Manufacturers: Regularly engaged in manufacture of steel bar and welded wire fabric reinforcing.

B. Installer Qualifications: Three years experience in installation of steel bar and welded wire fabric reinforcing.

C. Allowable Tolerances:

1. Fabrication:
   a. Sheared length: +l in.
   b. Depth of truss bars: +0, -1/2 in.
   c. Stirrups, ties and spirals: $\pm$1/4 in.
   d. All other bends: $\pm$1 in.
2. Placement:
   a. Concrete cover to form surfaces: $\pm$1/4 in.
   b. Minimum spacing between bars: 1 in.
   c. Top bars in slabs and beams:
      (1) Members 8 in. deep or less: $\pm$1/4 in.
      (2) Members more than 8 in.: $\pm$1/2 in.
   d. Crosswise of members: Spaced evenly within 2 in. of stated separation.

e. Lengthwise of members: Plus or minus 2 in.

3. Maximum bar movement to avoid interference with other reinforcing steel, conduits, or embedded items: 1 bar diameter.

## 3.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

## 3.05 INSTALLATION

A. Placement:

1. Bar Supports: CRSI 65.
2. Reinforcing Bars: CRSI 63.

B. Steel Adjustment:

1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, or embedded items.
2. Do not move bars beyond allowable tolerances without concurrence of County.
3. Do not heat, bend, or cut bars without concurrence of County.

C. Splices:

1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.
2. Splice devices: Install in accordance with manufacturer's written instructions.
3. Do not splice bars without concurrency of County, except at locations shown on Drawings.

D. Wire Fabric:

1. Install in longest practicable length.
2. Lap adjoining pieces one full mesh minimum, and lay splices with 16 gauge wire.
3. Do not make end laps midway between supporting beams, or directly over beams of continuous structures.
4. Offset end laps in adjacent widths to prevent continuous laps.

E. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.

F. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

END OF SECTION

# SECTION 03300 CAST-IN-PLACE CONCRETE

## PART 1 GENERAL

### 1.01 WORK INCLUDED

Poured-in-place concrete slabs, thrust blocks, pile caps and pipe support cradles.

### 1.02 QUALITY ASSURANCE

Perform cast-in-place concrete work in accordance with ACI 318, unless specified otherwise in this Section.

### 1.03 TESTING LABORATORY SERVICES

A. Inspection and testing will be performed by the testing laboratory currently under contract to Manatee County in accordance with the Contract Documents.

B. Provide free access to work and cooperate with appointed firm.

C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of work.

D. Tests of cement and aggregates may be performed to ensure conformance with requirements stated herein.

E. Three concrete test cylinders will be taken for every 100 cu. yds. or part thereof of each class of concrete placed each day. Smaller pours shall have cylinders taken as directed by the County.

F. One slump test will be taken for each set of test cylinders taken.

### 1.04 REFERENCES

A. ASTM C33 - Concrete Aggregates

B. ASTM C150 - Portland Cement

C. ACI 318 - Building Code Requirements for Reinforced Concrete

D. ASTM C260 - Air Entraining Admixtures for Concrete

E. ASTM C94 - Ready-Mixed Concrete

F. ACI 304 - Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete

G. ACI 305 - Recommended Practice for Hot Weather Concreting

## PART 2 PRODUCTS

### 2.01 CONCRETE MATERIALS

A. Cement: Moderate-Type II, High early strength-Type III, Portland type, ASTM C150.

B. Fine and Coarse Aggregates: ASTM C33.

C. Water: Clean and free from injurious amounts of oil, alkali, organic matter, or other deleterious material.

## 2.02 ADMIXTURES

A. Air Entrainment: ASTM C260.

B. Chemical: ASTM C494 Type A - water reducing admixture.

## 2.03 ACCEPTABLE MANUFACTURERS

Acceptable Products:

1. Pozzolith
2. WRDA

## 2.04 ACCESSORIES

Non-shrink grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2400 psi in 2 days and 7000 psi in 28 days.

## 2.05 CONCRETE MIXES

A. Mix concrete in accordance with ASTM C94.

B. Provide concrete of following strength:

1. Required concrete strengths as determined by 28 day cylinders shall be as shown on the Drawings, but shall not be less than 3000 psi.
2. Select proportions for normal weight concrete in accordance with ACI 301 3.8 Method 1, Method 2, or Method 3. Add air entraining agent to concrete to entrain air as indicated in ACI 301 Table 3.4.1.
3. All mixes shall be in accordance with FDOT Specifications.

C. Use set-retarding admixtures during hot weather only when accepted by County.

D. Add air entraining agent to concrete mix for concrete work exposed to exterior.

## 2.06 FORMS

A. Forms shall be used for all concrete masonry, including footings. Form shall be so constructed and placed that the resulting concrete will be of the shape, lines, dimensions, appearance and to the elevations indicated on the Drawings.

B. Forms shall be made of wood, metal, or other approved material. Wood forms shall be constructed of sound lumber or plywood of suitable dimensions, free from knotholes and loose knots; where used for expose surfaces, boards shall be dressed and matched. Plywood shall be sanded smooth and fitted with tight joints between panels. Metal forms

shall be of an approved type for the class of work involved and of the thickness and design required for rigid construction.

C. Edges of all form panels in contact with concrete shall be flush within 1/32-inch and forms for plane surfaces shall be such that the concrete will be plane within 1/16-inch in four feet. Forms shall be tight to prevent the passage of mortar and water and grout.

D. Forms for walls shall have removable panels at the bottom for cleaning, inspection and scrubbing-in of bonding paste. Forms for walls of considerable height shall be arranged with tremies and hoppers for placing concrete in a manner that will prevent segregation and accumulation of hardened concrete on the forms or reinforcement above the fresh concrete.

E. Molding or bevels shall be placed to produce a 3/4-inch chamfer on all exposed projecting corners, unless otherwise shown on the Drawings. Similar chamfer strips shall be provided at horizontal and vertical extremities of all wall placements to produce "clean" separation between successive placements as called for on the Plans.

F. Forms shall be sufficiently rigid to withstand vibration, to prevent displacement or sagging between supports and constructed so the concrete will not be damaged by their removal. The Contractor shall be entirely responsible for their adequacy.

G. Forms, including new pre-oiled forms, shall be oiled before reinforcement is placed, with an approved nonstaining oil or liquid form coating having a non-paraffin base.

H. Before form material is re-used, all surfaces in contact with concrete shall be thoroughly cleaned, all damaged places repaired, all projecting nails withdrawn, all protrusions smoothed and in the case of wood forms pre-oiled.

I. Form ties encased in concrete shall be designed so that after removal of the projecting part, no metal shall be within 1-inch of the face of the concrete. That part of the tie to be removed shall be at least 1/2-inch diameter or be provided with a wood or metal cone at least 1/2-inch in diameter and 1-inch long. Form ties in concrete exposed to view shall be the cone-washer type equal to the Richmond "Tyscru". Throughbolts or common wire shall not be used for form ties.

## PART 3 EXECUTION

### 3.01 PLACING CONCRETE

A. Place concrete in accordance with ACI 304.

B. Notify County minimum 24 hours prior to commencement of concreting operations.

C. Verify anchors, seats, plates and other items to be cast into concrete are placed, held securely and will not cause hardship in placing concrete. Rectify same and proceed with work.

D. Maintain records of poured concrete items. Record date, location of pour, quantity, air temperature and test samples taken.

E. Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement.

F. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's recommendations.

G. Pour concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

H. In locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels and pack solidly with non-shrink grout.

I. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify County upon discovery.

J. Conform to ACI 305 when concreting during hot weather.

## 3.02 SCREEDING

Screed surfaces level, maintaining flatness within a maximum deviation of 1/8" in 10 feet.

## 3.03 PATCHING

Allow County to inspect concrete surfaces immediately upon removal of forms. Patch imperfections as directed. All patching procedures shall be submitted to and approved by the County prior to use.

## 3.04 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required lines, details and elevations.

B. Repair or replace concrete not properly placed resulting in excessive honeycomb and other defects. Do not patch, fill, touch-up, repair, or replace exposed architectural concrete except upon express direction of County for each individual area.

## 3.05 CONCRETE FINISHING

Provide concrete surfaces to be left exposed, columns, beams and joists with smooth rubbed finish.

## 3.06 CURING AND PROTECTION

Beginning immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures and mechanical injury. Maintain concrete with minimal moisture loss at relatively constant temperature for a period of 7 days or until concrete strengths reaches 75% of the 28 day design strength.

Protection against moisture loss may be obtained with spray on curing compounds or plastic sheets. Protection against heat or cold may be obtained with insulated curing blankets or forms.

## 3.07 CONCRETE DRIVEWAY RESTORATION

Concrete driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

## 3.08 CONCRETE SIDEWALK RESTORATION

Concrete sidewalks across driveways shall be restored with 6 inches of 3,000 psi concrete with W2.5 X W2.5, 6X6 wire mesh. Place ½ inch expansion joint between back of curb and new concrete. Area beneath restoration shall be mechanically tamped prior to placing concrete.

Concrete sidewalks outside of driveways shall be restored with 4 inches of 3,000 psi concrete per FDOT Design Standards, Sections 522 & 310

END OF SECTION

# SECTION 03350 CONCRETE FINISHES

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required to finish cast-in-place concrete surfaces as specified herein.

### 1.02 SUBMITTALS

Submit to the County as provided in the Contract Documents, the proposed chemical hardener manufacturer's surface preparation and application procedures.

### 1.03 SCHEDULE OF FINISHES

A. Concrete for the Project shall be finished in the various specified manners either to remain as natural concrete or to receive an additional applied finish or material under another Section.

B. The base concrete for the following conditions shall be finished as noted and as further specified herein:

1. Exterior, exposed concrete slabs and stairs - broomed finish.
2. Interior, exposed concrete slabs - steel trowel finish.
3. Concrete on which process liquids flow or in contact with sludge - steel trowel finish.
4. Concrete where not exposed in the finished work and not scheduled to receive an additional applied finish or material - off-form finish.
5. Provide concrete surfaces to be left exposed such as walls, columns, beams and joists with smooth rubbed finish.

### 1.04 RESPONSIBILITY FOR CHANGING FINISHES

A. The surface finishes specified for concrete to receive additional applied finishes or materials are the finishes required for the proper application of the actual products specified under other Sections. Where different products are approved for use, it shall be the Contractor's responsibility to determine if changes in finishes are required and to provide the proper finishes to receive these products.

B. Changes in finishes made to accommodate product different from those specified shall be performed at no additional cost to the County. Submit the proposed new finishes and their construction methods to the County for approval.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Portland cement and component materials required for finishing the concrete surfaces shall be as specified in the Contract Documents.

B. Hardener shall be Lapidolith as manufactured by Sonneborn Building Products or approved equal. Hardener shall be used on all floors, stair treads and platforms.

## PART 3 EXECUTION

### 3.01 FORMED SURFACES

A. Forms shall not be stripped before the concrete has attained a strength of at least 50 percent of the ultimate design strength. This is equivalent to approximately five "100 day-degrees" of moist curing.

B. Care shall be exercised to prevent damaging edges or obliterating the lines of chamfers, rustications, or corners when removing the forms or doing any work adjacent thereto.

C. Clean all exposed concrete surfaces and adjoining work stained by leakage of concrete, to the satisfaction of the County.

D. Off-form finish. Fins and other projections shall be removed as approved. Tie cone holes and other minor defects shall be filled with non-shrink grout specified under the Contract Documents.

### 3.02 FLOORS AND SLABS

A. Floors and slabs shall be screeded to the established grades and shall be level with a tolerance of 1/8-inch when checked with a 10 foot straight edge, except where drains occur, in which case floors shall be pitched to drains as indicated. Failure to meet either of above shall be cause for removal, grinding, or other correction as approved by the County.

B. Following screeding as specified above, power steel trowel as follows:

1. Immediately after final screeding, a dry cement/sand shake in the proportion of 2-sacks of portland cement to 350-pounds of coarse natural concrete sand shall be sprinkled evenly over the surface at the rate of approximately 500 pounds per 1,000 square feet of floor. Neat, dry cement shall not be sprinkled on the surface. This shake shall be thoroughly floated into the surface with an approved disc type power compacting machine weighing at least 200 pounds if a 20-inch disc is used or 300 pounds if a 24-inch disc is used (such as a "Kelly Float" as manufactured by the Weisner-Rapp Corporation of Buffalo, New York). A mechanical blade-type float or trowel is not acceptable for this work.
   NOTE: This operation (application of the cement/sand shake) may be eliminated at the discretion of the County if the base slab concrete exhibits adequate fattiness and homogeneity.
2. In lieu of power steel troweling, small areas as defined by the County shall be compacted by hand steel troweling with the dry cement/sand shake as ordered.
3. The floor or slab shall be compacted to a smooth surface and the floating operation continued until sufficient mortar is brought to the surface to fill all voids. The surfaces shall be tested with a straight edge to detect high and low spots which shall be eliminated.
4. Compaction shall be continued only until thorough densification is achieved and a small amount of mortar is brought to the surface. Excessive floating shall be avoided.

C. After Paragraph 3.02 A and B procedures are accomplished, floors and slabs for particular conditions shall be completed as scheduled in one of the following finishes:

1. Wood float finish. Hand wood float, maintaining the surface tolerance to provide a

grained, nonslip finish as approved.

2. Broomed finish. Hand wood float maintaining the surface tolerance and then broom with a stiff bristle broom in the direction of drainage to provide a nonslip finish as approved.
3. Steel trowel finish. Hand steel trowel to a perfectly smooth, hard even finish free from high or low spots or other defects as approved.

D. Floors, stair treads and platforms shall be given a floor hardener. Application shall be according to manufacturer's instructions.

## 3.03 APPROVAL OF FINISHES

A. All concrete surfaces will be inspected during the finishing process by the County.

B. Surfaces which, in the opinion of the County, are unsatisfactory shall be refinished or reworked until approved by the County.

END OF SECTION

# DIVISION 5 METALS

## SECTION 05500 MISCELLANEOUS METAL

### PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. Furnish all labor, equipment and incidentals required and install covers, grates, frames and other miscellaneous metals as shown on the Drawings and specified herein. The miscellaneous metal items include but are not limited to the following:

1. All metal frames, ladders, stairs, stair rails, floor opening frames including gratings and supports.
2. Prefabricated access hatches and frames.
3. Anchors and anchor bolts except those specified to be furnished with all equipment.
4. Railings, posts and supports both interior and exterior.
5. Cast iron frames, covers, grates, drain leaders and drains.
6. Bridge crane track supports.
7. Stair nosings, steel plates, overhead steel door frames, angle frames, plates and channels.
8. Exterior H.V.A.C. hoods.
9. Pump guide rail system.

### 1.02 COORDINATION

A. The work in this Section shall be completely coordinated with the work of other Sections. Verify at the site both the dimensions and work of other trades adjoining items of work in this Section before fabrication and installation of items herein specified.

B. Furnish to the pertinent trades all items included under this Section that are to be built into the work of other Sections.

### 1.03 SHOP DRAWINGS AND SAMPLES

A. Detail drawings, as provided for in the Contract Documents, showing sizes of members, method of assembly, anchorage, and connection to other members shall be submitted to the County for approval before fabrication.

B. Samples shall be submitted at the request of the County for concurrent review with Shop Drawings.

### 1.04 FIELD MEASUREMENTS

A. Field measurements shall be taken at the site to verify or supplement indicated dimensions and to insure proper fitting of all items.

### 1.05 REFERENCED SPECIFICATIONS

A. Unless otherwise specified, materials shall conform to the following:

| | |
|---|---|
| Structural Steel | ASTM A36 |
| Welded & Seamless Steel Pipe | ASTM A53 |

| | |
|---|---|
| Gray Iron Castings | ASTM A48, Class 30 |
| Galvanizing, general | ASTM A123 |
| Galvanizing, hardware | ASTM A153 |
| Galvanizing, assemblies | ASTM A386 |
| Aluminum (Extruded Shapes) | 6061-T6 (Alum. alloy) |
| Aluminum (Extruded Pipe) | 6061-T6 (Alum. alloy) |
| Aluminum Bar Structural | 6061-T6 (Alum. alloy) |
| Bolts and Nuts | ASTM, A307 |
| Stainless Steel Bolts, Fasteners | AISI, Type 316 |
| Stainless Steel Plate and Sheet, Wire | AISI, Type 316 |
| Welding Rods for Steel | AWS Spec. for Arc Welding |

## PART 2 PRODUCTS

### 2.01 ANCHORS, BOLTS AND FASTENING DEVICES

A. Anchors, bolts, etc., shall be furnished as necessary for installation of the work of this Section.

B. Compound masonry anchors shall be of the type shown or required and shall be equal to Star Slug in compounded masonry anchors manufactured by Star Expansion Industries, equal by Phillips Drill Co., Rawlplug, or equal. Anchors shall be minimum "two unit" type.

C. The bolts used to attach the various members to the anchors shall be the sizes shown or required. Stainless steel shall be attached to concrete or masonry by means of stainless steel machine bolts and iron or steel shall be attached with steel machine bolts unless otherwise specifically noted.

D. For structural purposes, unless otherwise noted, expansion bolts shall be Wej-it "Ankr-Tite", Phillips Drill Co. "Wedge Anchors", or Hilti "Kwik-Bolt". When length of bolt is not called for on the Drawings, the length of bolt provided shall be sufficient to place the wedge portion of the bolt a minimum of 1-inch behind the reinforcing steel within the concrete. Material shall be as noted on the Drawings. If not listed, all materials shall be stainless steel.

### 2.02 ALUMINUM ITEMS

A. Aluminum gratings shall be of serrated I-Bar Aluminum Alloy 6061-T6, fabricated to the depths and thicknesses shown on the Drawings and shall be Reliance Steel Products Company, I-Lok Type 7/8 R4 Aluminum Grating; IKG Industries, "Galok" Aluminum I-Bar Grating Type S194-I, or equal. All openings 2 inches and greater in diameter shall be banded with a bar of the same depth and thickness as the main bearing bars of the grating, or furnished with continuous cross bridges. Each cut bar shall be welded to the band if banding is utilized. The ends of all grating sections shall be likewise banded. Clamps and bolts used for attaching grating to supporting members shall be stainless steel. All grating shall be clamped unless noted otherwise. Clamps shall be as recommended by the manufacturer.

B. Stair treads shall be as specified above for grating and shall have abrasive nonslip nosing.

C. Aluminum nosing at concrete stairs shall be an extrusion of 4-inch minimum width with abrasive filled and shall be Wooster Products, Inc., Alumogrit Treads, Type 116; equal by Barry Pattern and Foundry Co.; Andco; or equal. Embedded anchors shall be furnished with a minimum of three anchors per tread.

D. Aluminum ladders shall be fabricated to the dimensions and details and installed as shown on the Drawings. Treads to be of cast aluminum by Dixie Metals, Inc. of Fort Lauderdale, Florida or equal.

E. Aluminum Handrails, Mechanically Fastened Type:

1. All aluminum mechanically fastened type pipe handrails and guardrails shall be clear anodized aluminum finish and installed as specified herein and indicated on the Drawings. Handrails shall be made of nominal 1-1/2 inches inside diameter pipe (Schedule 40) fabricated or seamless 6063-T6 alloy. The supplier of the handrail system shall supply all necessary fittings, rackets, transition, corner and connector pieces, toeboards, protective gaskets, etc., for a complete job at the locations, indicated on the Drawings. All mounting hardware including bolts, studs, nuts, etc., shall be stainless steel Type 316. Bends shall be smooth and accurate to the details shown. Railings shall be the "Rigid Rail System" as manufactured by Reynolds Aluminum of Reynolds Metal Company as Reynolds II pipe railing system or the "Connectorail System" as manufactured by Julius Blum & Co., Inc., Carlstadt, New Jersey. The handrail systems shall comply with all OSHA and D Section 1208.2 of the Standard Building Code.
2. Spacing of posts where posts are required shall be as noted on shop drawings, but in all cases, shall be uniform and shall not exceed the requirements of OSHA and Section 1208.2 of the Standard Building Code. Shorter spacing may be used where required to maintain the maximum spacing. The fabricator of the aluminum handrail and guardrail system shall be responsible for the design and preparation of shop drawings and design calculations (signed and sealed by Florida Registered Engineer) to meet OSHA requirements and Section 1208.2 of Standard Building Code.
3. All railings shall be erected in line and plumb. Field splicing and expansion compensation shall be accomplished using internal splice sleeves. Make provisions for removable railing sections as detailed and where shown on the Drawings.
4. Where handrail or guardrail posts are set in concrete as per the manufacturer's requirements the posts shall be set into aluminum sheeves cast in the concrete and firmly cemented with 1651 epoxy resin by E-Bond Epoxies, Oakland Park, Florida, Moulded Reinforced Plastics, Inc., Fort Lauderdale, Florida or equal. Collars shall be placed on the posts and fastened in place, as shown and as detailed on approved shop drawings.
5. Where handrail is supported from structural members, it shall be done by the use of approved sockets, flanges, brackets, or other approved means which will provide neat and substantial support for the pipe railing.
6. All railing shall be properly protected by paper, or by an approved coating or by both against scratching, splashes or mortar, paint, or other defacements during transportation and erection and until adjacent work by other trades has been completed.

F. Toeboards: Contractor shall furnish and install aluminum toeboards conforming to latest OSHA requirements on all railings and other locations where indicated on the Drawings.

1. Toeboards shall consist of an extruded 6063-T6 aluminum shape bolted by means of a pipe clamp to the railing posts without requiring any drilling or welding of the toeboard to the railing posts as manufactured by Reynolds Aluminum, Julies Blum & Company, Thompson Fabricating Company or equal. Toeboards shall have pitched top and tear drop bottom to prevent accumulation of dirt, or other material.

2. All fastening hardware shall be Type 316 stainless steel.

G. Kickplates, if required, shall be fabricated and installed as shown on the Drawings.

H. Aluminum safety gate shall be fabricated of extruded aluminum.

I. Prefabricated checkerplate aluminum floor hatches shall be Type "JD", or "KD" as manufactured by Bilco Co., Babcock-Davis Associates, Inc.; Type "AM" Inland-Ryerson Construction Products Co., Milcor Division; or equal, sized as shown. Hatches with either dimension over 3 feet-6 inches shall be double leaf type. Hatches shall be designed for a live load of 300 pounds per square foot. Hatches shall be watertight.

J. Ship ladders shall be of all aluminum construction as detailed. Treads shall have abrasive nosing as manufactured by Reliance Steel Products Co., IKG Industries, or equal.

K. Checkplate aluminum cover plates shall be fabricated to the details shown and installed at the locations shown.

L. Structural aluminum angle and channel door frames shall be provided as shown on the Drawings and shall be anodized. Frames shall be fabricated with not less than three anchors on each jamb.

M. Miscellaneous aluminum shapes and plates shall be fabricated as shown. Angle frames for hatches, beams, grates, etc., shall be furnished complete with welded strap anchors attached. Furnish all miscellaneous aluminum shown, but not otherwise detailed. Structural shapes and extruded items shall conform to the detail dimensions on the Plans within the tolerances published by the American Aluminum Association.

## 2.03 STEEL ITEMS

A. Sleeves shall be steel or cast iron pipe in walls and floors with end joints as shown on the Drawings. All pipe sleeves shall have center anchor around circumference as shown.

B. Miscellaneous steel pipe for sleeves and lifting attachments and other uses as required shall be Schedule 40 pipe fabricated according to the details as shown on the Drawings.

C. Miscellaneous steel shall be fabricated and installed in accordance with the Drawings and shall include: beams, angles, support brackets, closure angles in roof at edge of T-beams; base plates to support ends of T-beams; door frames; splice plates, anchor bolts; lintels and any other miscellaneous steel called for on the Drawings and not otherwise specified.

## 2.04 CAST IRON ITEMS

A. Outside pipe clean-out frames and covers shall be heavy duty, R-6013-R-6099 series as manufactured by Neenah Foundry Co., or equal. All outside pipe clean-outs shall be 6-inch diameter.

B. Frames and covers for valve vaults and manholes shall be of a good quality, strong, tough even grained cast iron except as otherwise specified below. Castings shall be as manufactured by the U. S. Foundry, Neenah Foundry, Mechanics Iron Foundry, or equal. Covers to have letters "WATER", "SEWER" or "DRAIN", as applicable, embossed on top.

# PART 3 EXECUTION

## 3.01 FABRICATION

A. All miscellaneous metal work shall be formed true to detail, with clean, straight, sharply defined profiles and smooth surfaces of uniform color and texture and free from defects impairing strength or durability.

B. Connections and accessories shall be of sufficient strength to safely withstand stresses and strains to which they will be subjected. Steel accessories and connection to steel or cast iron shall be steel, unless otherwise specified. Threaded connections shall be made so that the threads are concealed by fitting.

C. Welded joints shall be rigid and continuously welded or spot welded as specified or shown. The face of welds shall be dressed flush and smooth. Exposed joints shall be close fitting and jointed where least conspicuous.

D. Welding of parts shall be in accordance with the Standard Code of Arc and Gas Welding in Building Construction of the AWS and shall only be done where shown, specified, or permitted by the County. All welding shall be done only by welders certified as to their ability to perform welding in accordance with the requirements of the AWS Code. Component parts of built-up members to be welded shall be adequately supported and clamped or held by other adequate means to hold the parts in proper relation for welding.

E. Welding of aluminum work shall be on the unexposed side as much as possible in order to prevent pitting or discoloration.

F. All aluminum finish exposed surfaces, except as specified below, shall have manufacturer's standard mill finish. Aluminum handrails shall be given an anodic oxide treatment in accordance with the Aluminum Association Specification AA-C22-A41. A coating of methacrylate lacquer shall be applied to all aluminum shipment from the factory.

G. Castings shall be of good quality, strong, tough, even-grained, smooth, free from scale, lumps, blisters, sand holes, and defects of any kind which render them unfit for the service for which they are intended. Castings shall be thoroughly cleaned and will be subjected to a hammer inspection in the field by the County. All finished surfaces shown on the Drawings and/or specified shall be machined to a true plane surface and shall be true and seat at all points without rocking. Allowances shall be made in the patterns so that the thickness specified or shown shall not be reduced in obtaining finished surfaces. Castings will not be acceptable if the actual weight is less than 95 percent of the theoretical weight computed from the dimensions shown. The Contractor shall provide facilities for weighing castings in the presence of the County showing true weights, certified by the supplier.

H. All steel finish work shall be thoroughly cleaned, in accordance with the Contract Documents, of all loose mill scale, rust, and foreign matter before shipment and shall be given one shop coat of primer compatible with finish coats specified in Painting Section after fabrication but before shipping. Paint shall be applied to dry surfaces and shall be thoroughly and evenly spread and well worked into joints and other open spaces. Abrasions in the field shall be touched up with primer immediately after erection. Final painting is specified in the Contract Documents.

I. Galvanizing, where required, shall be the hot-dip zinc process after fabrication. Following all manufacturing operations, all items to be galvanized shall be thoroughly cleaned, pickled, fluxed, and completely immersed in a bath of molten zinc. The resulting coating shall be

adherent and shall be the normal coating to be obtained by immersing the items in a bath of molten zinc and allowing them to remain in the bath until their temperature becomes the same as the bath. Coating shall be not less than 2 oz. per sq. ft. of surface.

## 3.02 INSTALLATION

A. Install all furnished items imbedded in concrete or other masonry. Items to be attached to concrete or masonry after such work is completed shall be installed in accordance with the details shown. Fastening to wood plugs in masonry will not be permitted. All dimensions shall be verified at the site before fabrication is started.

B. All steel surfaces to come in contact with exposed concrete or masonry shall receive a protective coating of an approved heavy bitumastic troweling mastic applied in accordance with the manufacturer's instructions prior to installation or provide a 1/32-inch neophrene gasket between the steel surface and the concrete or masonry.

C. Where aluminum is embedded in concrete, apply a heavy coat of approved bitumastic troweling mastic in accordance with the manufacturer's instructions prior to installation.

D. Where aluminum contacts masonry or concrete, provide a 1/32-inch neophrene gasket between the aluminum and the concrete or masonry.

E. Where aluminum contacts a dissimilar metal, apply a heavy brush coat of zinc-chromate primer and provide a 1/32-inch neoprene gasket between the aluminum and the dissimilar metal.

Where aluminum contacts wood, apply two coats of aluminum metal and masonry paint to the wood.

END OF SECTION

# SECTION 05550 AIR RELEASE ENCLOSURE

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

The Contractor shall furnish all labor, materials, equipment and incidentals required to install the above ground air release enclosure as listed in the specifications and as shown on the Drawings.

### 1.02 RELATED WORK

The contractor shall be responsible for any related work necessary for the proper installation of enclosure. This shall include, but is not limited to, any required bypass pumping, any required earthwork and any required concrete work.

### 1.03 SUBMITTALS

A. Submit to the County shop drawings and schedules of all enclosure systems and appurtenances required. Submit design data and specification data sheets listing all parameters used in the enclosure system design.

B. Submit to the County the name of the enclosure supplier and a list of materials to be furnished.

### 1.04 REFERENCE STANDARDS

A. American Water Works Association (AWWA).

B. American Society for Testing and Materials (ASTM).

C. Where reference is made to the above standard, the revision in effect at the time of bid opening shall apply.

### 1.05 QUALITY ASSURANCE

The enclosure manufacturer shall be a company specializing in the manufacture of such enclosures with at least five (5) years of successful field experience and being lab certified as meeting A.S.S.E 1060 requirements.

### 1.06 DELIVERY, STORAGE AND HANDLING

A. Care shall be taken in shipping, handling and placing to avoid damaging. Any material damaged in shipment shall be replaced as directed by the County.

B. Any material showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage can be seen, shall be marked as rejected and removed at once from the work.

## PART 2 PRODUCTS

### 2.01 GENERAL

All enclosures shall comply with the standard detail for shape and size and shall include a 22” square by 24” tall enclosure with a hasp for a padlock. The enclosure shall be securely attached to a concrete base with anchor brackets installed on the interior of the enclosure, through the flange base of the enclosure itself or through a stainless steel anchor hinge.

### 2.02 ALUMINUM ENCLOSURE

A. The roof, walls and access panels shall be constructed of mill finish aluminum, ASTM B209, solid sheet construction, with a wall thickness of one eighth inch.

B. All structural members shall be aluminum. No wood or "particle board" shall be allowed in assembly.

C. Multi-sectional enclosures shall fit together with overlapping "tongue and groove" joints and be secured internally with mechanical fasteners.

D. All assembly fasteners shall be stainless steel or aluminum.

### 2.03 STAINLESS STEEL ENCLOSURE

A. The roof, walls and access panels shall be constructed stainless steel, type 316, solid sheet construction, with a wall thickness of one eighth inch.

B. All structural members shall be stainless steel. No wood or "particle board" shall be allowed in assembly.

C. Multi-sectional enclosures shall fit together with overlapping "tongue and groove" joints and be secured internally with mechanical fasteners.

C. All assembly fasteners shall be stainless steel.

### 2.04 FIBERGLASS ENCLOSURE

A. Enclosure shall be a one-piece molded fiberglass/resin enclosure with polyester coating; a base flange for mounting to the concrete slab and a full recessed door opening with a lip. Enclosure shall be by Allied Molded Products, or equivalent. Color shall be as directed by the County.

B. Full length piano style hinge, door latch, padlock hasp and all bolts and other hardware shall be of stainless steel.

## PART 3 EXECUTION

### 3.01 INSTALLATION

Enclosure shall be assembled and mounted plumb, level and square on the concrete pad according to the manufacturer’s instructions and the contract drawings.

END OF SECTION

# DIVISION 9 PAINTING

## SECTION 09865 SURFACE PREPARATION AND SHOP PRIME PAINTING

### PART 1 GENERAL

#### 1.01 SCOPE OF WORK

Furnish all labor, materials, equipment and incidentals required for the surface preparation and application of shop primers on ferrous metals, excluding stainless steels, as specified herein.

#### 1.02 SUBMITTALS

A. Submit to the County for approval, as provided in the Contract Drawings for shop drawings, manufacturer's specifications and data on the proposed primers and detailed surface preparation, application procedures and dry mil thickness.

B. Submit representative physical samples of the proposed primers, if required by the County.

### PART 2 PRODUCTS

#### 2.01 MATERIALS

A. Submerged Services: Shop primer for ferrous metals which will be subject to splash action or which are specified to be considered submerged service shall be sprayed with one coat of Koppers 654 epoxy Primer or Koppers Inertol Primer 621-FDA, dry film thickness 3.5 to 4.5 mils by Koppers Co., Inc., or equal.

B. Nonsubmerged Services: Shop primer for ferrous metals other than those covered by paragraph 2.01 A shall be sprayed with one coat of Koppers Pug Primer, dry film thickness 3.0 to 4.0 mils by Koppers Co., Inc. or equal.

C. Nonprimed Surfaces: Gears, bearing surfaces, and other similar surfaces obviously not to be painted shall be given a heavy shop coat of grease or other suitable rust-resistant coating. This coating shall be maintained as necessary to prevent corrosion during all periods of storage and erection and shall be satisfactory to the County up to the time of the final acceptance.

D. Compatibility of Coating Systems: Shop priming shall be done with primers that are guaranteed by the manufacturer to be compatible with their corresponding primers and finish coats specified in the Contract Documents for use in the field and which are recommended for use together.

### PART 3 EXECUTION

#### 3.01 APPLICATION

A. Surface Preparation and Priming:

1. Non submerged components scheduled for priming, as defined above, shall be sandblasted clean in accordance with SSPC-SP-6, Commercial Grade, immediately

prior to priming. Submerged components scheduled for priming, as defined above, shall be sandblasted clean in accordance with SSPC-SP-10. Near White, immediately prior to priming.

2. Surfaces shall be dry and free of dust, oil, grease, dirt, rust, loose mill scale and other foreign material before priming.
3. Shop prime in accordance with approved paint manufacturer's recommendations.
4. Priming shall follow sandblasting before any evidence of corrosion has occurred and within 24 hours.

END OF SECTION

# SECTION 09970 SURFACE PROTECTION SPRAY SYSTEM

## PART 1 GENERAL

### 1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, equipment and incidentals required to install and test the coating system complete and ready for operation for the structures listed in the specifications and as shown on the Drawings.

B. The work includes coating of all surfaces as shown and specified on the Drawings. This includes, but is not limited to stairs, walls, floors, concrete divider, concrete slabs, manholes wet wells, and all other work obviously required to be coated unless otherwise specified herein or on the Drawings. The omission of minor items in the Schedule of Work shall not relieve the Contractor of his obligation to include such items where they come within the general intent of the Specification as stated herein.

### 1.02 RELATED WORK

A. Bypass pumping is the responsibility of the General Contractor.

B. Concrete surface cleaning in each lift station is the responsibility of the General contractor.

C. Removal and offsite disposal of rubble is the responsibility of the General Contractor.

### 1.03 SUBMITTALS

A. Submit to the County shop drawings and schedules of all surfacing systems and appurtenances required. Submit design data and specification data sheets listing all parameters used in the surfacing system design and thickness calculations based on applicable provisions of ASTM.

B. Submit to the County the name of the surfacing supplier, a list of materials to be furnished, and the qualification (per 1.05 A) of the application contractor.

### 1.04 REFERENCE STANDARDS

A. American Society for Testing and Materials (ASTM)

ASTM D-638
ASTM D-790

B. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

### 1.05 QUALIFICATIONS

A. The Contractor performing the surfacing work shall be fully qualified, experienced a minimum of seven years and equipped to complete this work expeditiously and in a satisfactory manner. The Contractor shall submit the following information to the County for review and approval before any surfacing work is performed.

1. The number of years of experience in performing this type of specialized work must

be seven years minimum.

2. Name of the surfacing manufacturer and supplier for this work and previous work listed below. The Contractor shall be an approved installer as certified and licensed by the surfacing manufacturer and equipment supplier.

3. A list of clients that the Contractor has performed this type of work.

   a. The list shall contain names and telephone numbers of persons who can be called to verify previous satisfactory performance.

   b. Installation dates and a description of the actual work performed.

   c. The surfacing manufacturer shall provide an installation list of his product used for similar sewer rehabilitation projects. The list shall provide the same information as required in paragraphs 3.a and 3.b above.

B. The County reserves the right to approve or disapprove the Contractor, based on the submitted qualifications.

## 1.06 GUARANTEE

All surfacing shall be guaranteed by the Contractor for a period of five years from the date of acceptance. During this period, all defects discovered in the surfacing, as determined by the County, shall be repaired or replaced in a satisfactory manner at no cost to the County, this shall include, but is not limited to, all work and costs associated with the shut down of any pump stations and all bypass operations needed for the proper repairs to be made.

## 1.07 QUALITY ASSURANCE

A. All surfacing products shall be from a single manufacturer. The supplier shall be responsible for the provisions of all test requirements specified in ASTM Standards D-638 and D-790 as applicable.

B. The Contractor shall employ specialty workers who have proven ability to perform the Work included herein. This will consist of a minimum of two years or two project experiences installing this product. This is a requirement for each and every employee.

## 1.08 DELIVERY, STORAGE AND HANDLING

A. Care shall be taken in shipping, handling and placing to avoid damaging. Any material damaged in shipment shall be replaced as directed by the County.

B. Any material showing deterioration, or which has been exposed to any other adverse storage condition that may have caused damage, even though no such damage can be seen, shall be marked as rejected and removed at once from the work.

# PART 2 PRODUCTS

## 2.01 GENERAL

A. The material sprayed onto the surface shall be a urethane resin system formulated for the application within a sanitary sewer environment. The urethane will exhibit suitable corrosion

resistance to corrosive gases and fluids found within domestic sanitary sewage. Unless dictated by varying effluent, the spray system shall be a urethane and exhibit the cured physical strengths specified herein.

B. When cured, the surface coating shall form a continuous, tight-fitting, hard, impermeable surfacing data which is suitable for sewer system service and chemically resistant to any chemicals or vapors normally found in domestic sewage.

C. The surface shall be an integral part of the structure being rehabilitated after being placed and cured. The surface shall cover the complete interior of the existing structure. The surface shall provide a continuous watertight seal or barrier.

1. The surface shall effectively seal the interior surfaces of the structure and prevent any penetration or leakage of groundwater infiltration.

2. Provide water resistance data on surface based on ASTM Standards.

3. The surface shall be compatible with the thermal conditions of existing sewer lift stations and manholes. Surface temperature will range from 30 to 80 degrees F. Provide test data on thermal compatibility based on ASTM Standards.

## 2.02 MATERIALS

A. Approved materials include

1. Aquatapoxy A-6 and Raven 405 epoxy by Raven Lining Systems
2. Green Monster
3. Sauereisen 210 system (210T & 210GL - Manatee County Light Brown Formula)

B. Polyurethane spray application shall comply with the following specifications:

The cured urethane system shall conform to the minimum physical standards, as listed below. The long-term data is for a 50-year design life of the process.

| Cured Urethane | Standard | Long-Term Data |
|---|---|---|
| Tensile Stress | ASTM D-638 | 5,000 psi |
| Flexural Stress | ASTM D-790 | 10,000 psi |
| Flexural Modulus | ASTM D-790 | 550,000 psi |

C. Epoxy spray application shall be 100% VOC free / 100% solids.

# PART 3 EXECUTION

## 3.01 SURFACE PREPARATION

A. The contractor shall clean each structure and shall dispose of any resulting material.

B. All contaminants including: oils, grease, incompatible existing coatings, waxes, form release, curing compounds, efflorescence, sealers, salts, or other contaminants shall be removed.

C. All concrete or mortar that is not sound or has been damaged by chemical exposure shall be removed to a sound concrete surface or replaced.

D. Surface preparation method(s) should be based upon the conditions of the substrate, service environment and the requirements of the protective coating to be applied.

E. Surfaces to receive protective coating shall be cleaned and abraded to produce a sound surface with adequate profile and porosity to provide a strong bond between the protective coating and the substrate. Generally, this can be achieved with a high pressure water cleaning using equipment capable of 5,000 psi at 4 gpm. Other methods such as abrasive blasting, shotblasting, grinding, scarifying or acid etching may also be used. Detergent water cleaning and hot water blasting may be necessary to remove oils, grease or other hydrocarbon residues from the concrete. Whichever method(s) are used, they shall be performed in a manner that provides a uniform, sound clean neutralized surface that is not excessively damaged.

F. A concrete structure suitably prepared for coating shall have all loose, soft, discolored or otherwise deteriorated material removed from the manhole and the surface profile of the manhole shall be in accordance with ICRI Guidelines No. 03732. Expose aggregate and obtain a uniform surface texture resembling an ICRI – CPS (Concrete Surface Profile) #4-6. The County may use one or more of the following observations/tests to determine whether the manhole substrate has been properly cleaned and prepared:
   a. Visual appearance of the manhole – The prepared substrate shall have the appearance of sound concrete, free from discolored, white, chalky and cracked areas.
   b. Aural observations – When struck with a metal hammer or similar metal tool, the prepared substrate shall exhibit the characteristic sound of solid, competent concrete (or brick). Care should be taken not to fracture sound concrete.
   c. Mechanical abrasion tests – The substrate should be competent enough such that it cannot be scraped off with the claw of a hammer or similar metal tool.
   d. pH testing – The County may use wetted litmus paper applied to the surface of the substrate to ensure that the pH of the substrate is 7 or higher.
   e. Phenolthalein testing – The County may apply a few drops of phenolthalein to the surface of the concrete, which if the concrete is competent should yield a purple color.

G. The County is not obligated to use all of the above tests, but may do so at the County's sole discretion. Often visual, mechanical and/or aural observations and tests alone will be adequate, but the pH and/or phenolthalein tests may be used if there is still some uncertainty.

H. If after cleaning, a new or existing manhole does not meet these requirements, the County shall have authority to require additional cleaning effort and/or increased blasting pressure as required to adequately prepare the manhole. If necessary, the County may also require acid etching of the concrete surface to create the desired texture. For existing manholes, the County may also require mechanical removal of deteriorated concrete or other substrate materials.

I. A mild chlorine solution may be used to neutralize the surface to diminish microbiological bacteria growth prior to final rinse and coating system if approved by the Manufacturer’s Representative.

J. The time between structure cleaning and preparation activities and application of the first coating layer shall be within the coating manufacturer’s recommendation.

K. All infiltration shall be stopped by using a material which is compatible with and is suitable for topcoating with the specified protective coating.

L. The area between the manhole and the manhole ring and any other area that might exhibit movement or cracking due to expansion and contraction, shall be grouted with a flexible grout or gel before surface coating spray application.

M. All surfaces should be inspected by the Inspector during and after preparation and before the repair material is applied.

N. No separate payment shall be made for any preparatory work required prior to application of the surface coating.

## 3.02 INSTALLATION

A. The Contractor shall notify the Project Manager at least 48 hours in advance, giving the date, start time and estimated completion time for the work being conducted.

B. The Contractor shall provide bypass pumping of sewage flows (as required) where and when the rehabilitation work is being performed. No flows will be permitted in the structure until the spray coating has properly cured to the manufactures specifications.

C. The installation of the surface coating shall be in complete accordance with the applicable provisions of ASTM and the manufacturer's specifications. A representative of the manufacturer shall be present during the actual installation.

1. Prior to placing the surface coating, the manufacturer's representative must approve the surface preparation work and installation conditions including temperatures.

2. All surfaces shall be sufficiently smooth and even, to ensure good flow handling characteristics when complete.

3. All surfaces shall have the surface coating applied to the required thickness by spray application.

D. Application procedures shall conform to the recommendations of the protective coating manufacturer, including material handling, mixing, environmental controls during application, safety, and spray equipment.

E. The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials and shall be regularly maintained and in proper working order.

F. The protective coating material must be spray applied by a Certified Applicator of the protective coating manufacturer.

G. Polyurethane spray application shall be applied such that all surfaces shall be coated in accordance with the manufactures recommended thickness but not be less than 125 mils.

H. Epoxy spray application shall be applied such that all surfaces shall be coated in accordance with the following:

1. Specified surfaces shall be coated by spray application of a moisture tolerant,

solvent-free, 100% solids, epoxy protective coating as further described herein. Spray application shall be to a minimum wet film thickness in accordance with the following table or manufacturer's recommendation, whichever is greater:

| | |
|---|---|
| Concrete, New/Smooth | 80-100 mils for immersion, 60-80 mils for atmospheric, splash and spill exposure |
| Concrete, Rough | 100-125+ mils |
| Masonry/Brick | 125-150+ mils |
| Steel | 16-80 mils for immersion, 16-40 mils for atmospheric, splash and spill exposure; also profile dependent |
| Fiberglass Systems | 40-60 mils tack coat, 9 oz/yd2 fabric, 40-60 mils top coat. Varies with circumstances |

2. Airless spray application equipment approved by the coating manufacturer shall be used to apply each coat of the protective coating. Air assisted spray application equipment may be acceptable, especially for thinner coats (<10 mils), only if the air source is filtered to completely remove all oil and water.

3. If necessary, subsequent topcoating or additional coats of the protective coating should occur as soon as the basecoat becomes tack free, ideally within 12 hours but no later than the recoat window for the specified products. Additional surface preparation procedures will be required if this recoat window is exceeded.

## 3.03 FIELD TESTING AND ACCEPTANCE

A. Field acceptance of surface coatings shall be based on the County's evaluation of the proper surfacing of the structure and the appropriate installation and curing test data along with review of the structure inspections.

B. The surface coatings shall provide a continuous monolithic surfacing with uniform thickness throughout the structure interior. If the thickness of the coating surface is not uniform or is less than specified, it shall be repaired or replaced at no additional cost to the County.

1. The County will measure the surface cured thickness from a specimen retrieved by the Contractor. The Contractor shall retrieve the specimen by physically cutting through the surfacing (by drilling or coring). There will be up to three thickness measurement locations in each structure. A suitable non-destructive type of thickness measurement may also be used.

2. All the surface coating thickness measurement locations shall be repaired by the Contractor in accordance with the manufacturer's recommendations. These repairs shall be included in the five year surface coating guarantee.

C. All pipe connections shall be open, clear, and watertight.

D. There shall be no cracks, voids, pinholes, uncured spots, dry spots, lifts, delaminations or other type defects.

E. If any defective surface coating is discovered after it has been installed, it shall be repaired or replaced in a satisfactory manner within 72 hours and at no additional cost to the County. This requirement shall apply for the entire five year guarantee period.

END OF SECTION