T. Lee, P.E.
BDI/PNS

ADDENDUM NO. 1

March 8, 2024

The following changes have been made to the plans & specifications for the above project:

A. CONTRACT DOCUMENTS/SPECIFICATIONS

ITEM	DOCUMENT	CHANGE
1.	Bid Tab	Line Item 1.01was updated accordingly in the Bid Tab. Line Item 2.39 was added to the Bid Tab. The quantity for Line Item 3.31 was updated accordingly. The quantity for Line Item 3.32 was updated accordingly. Line Item 3.33 was added to the Bid Tab. Line Item 3.50 was added to the Bid Tab. Line Item 4.45 was added to the Bid Tab. Line Item 4.46 was added to the Bid Tab. Line Item 5.49 was added to the Bid Tab. Line Item 6.51 was added to the Bid Tab.
2.	Basis of Bid	The Basis of Bid was updated accordingly to include the new line items added to the Bid Tab (see new line items above).
3.	Technical Specification – Table of Contents	The specification was updated accordingly to include all technical specifications associated with this project.
4.	Specification 33 32 13 – Submersible Centrifugal Pumps	Section 1.4, 2.4, and 3.2 were updated accordingly. Section 2.3 was updated accordingly to reflect the updated pump selection for each lift station site.
5.	Specification 01 35 13 – Special Conditions	New specification items were added. That Contractor is responsible for reviewing the entire specification before the Contractor bid is submitted.
6.	Specification 26 05 00 – Common Work Results For Electrical	New technical specification

B. CONSTRUCTION PLANS

SHEET NO.	CHANGE
C-103	Updated drawing to include three (3) Removable Traffic Rated Bollard. The proposed fence was removed and the proposed gravel for the site was updated accordingly. The Contractor is required to install an emergency contact sign at the Lift Station 6 site.
C-104	Updated drawing to include a Demolition Hatch for the removal of the Existing Air Vent
C-105	Updated drawing to include 4" SS Air Vent to Lift Station 7
C-900	Updated drawing to include an Emergency Contact sign at each lift station site. The Contractor is required to install the emergency contact sign at Lift Station 6 too.
C-902	Updated drawing to include Removable Locking Bollards Detail
M-901	Updated drawing to include the correct pump HP requirements and updated the Emergency Shutoff Level
M-902	Updated drawing to include 4" SS Air Vent to the Lift Station 7 Detail and Updated the Emergency Shutoff Level
M-903	Updated drawing to include a 4" SS J-Vent Detail
E sheets	All electrical drawings were updated accordingly to reflect the correct pump motor HP requirement. All drawings sheets include updated notes for clarification.

C. QUESTIONS/COMMENTS

Q. Please confirm the load rating of the valve box hatch covers for LS1 and LS7 as H-20 for occasional traffic or H-20 for Off Street Truck Traffic.

A. The hatch for Lift Station 1 shall be 00821624C01 Access Hatch by EJ Group, Inc or Approved Equal. An Approved Equal must meet or exceed the minimum standards of the 00821624C01 Access Hatch by EJ Group, Inc. The hatch for Lift Station7 and the Lift Stat 7 valve box shall be F1H Access Door by Halliday Products or Approved Equal. An Approved Equal must meet or exceed the minimum standards of the F1H Access Door by Halliday Products.

Q. Pump base elbows are not available in stainless steel. Would a nitride hardened cast iron be an acceptable alternative?

A. Nitride Hardened Cast Iron discharge base elbows is considered an acceptable alternative. Specification 33 32 13 – Submersible Centrifugal Pumps was updated accordingly to reflect this. The nitride hardened cast iron discharge base elbows shall take place of the 4" 316 Stainless Steel Base Elbow line item.

Q. Please confirm if white powder coated 304 stainless steel will be allowed for the pump control panel enclosures?

A. NEMA 6P White Powder Coated 304 Stainless Steel control panel enclosures are not acceptable for this project.

Q. Please confirm if any or all of the pump control panels will require a remote alert system that can send a text to a programmed number in the event of an alarm. This would add approximately $2,800 cost to a station for the equipment. The City would be required to maintain a SIM card account for each station, estimated at $10-20 per month per station, in order to accommodate the communication.

A. The pump control panels will require remote alert systems that can send text to a programmed number in the event of an alarm. The bid tab and basis of bid is updated accordingly to include the cost of the remote alert system.

Q. Is Tenemc – Epoxytec CPP sprayliner considered an acceptable alternative to Spectrashield 2-Component Modified Polyurea & Closed Cell Polyurethane Foam?
A. Tenemc – Epoxytec CPP sprayliner is considered an acceptable alternative for spray lining the lift station concrete structure. If used for this project, the Contractor will still need to formally submit shop drawings for approval including manufacturer data sheets and proposed installation procedures for the specific products desired to be used.

The CONTRACTOR shall acknowledge the receipt of this ADDENDUM by signing below, including a copy with the BID, and acknowledge where indicated.

CONTRACTOR _____

BY _____

DATE _____

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Basis of Bid

1.00 LUMP SUM

A. 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 item. The lump sum price bid for various items shall be compensation in full for furnishing all materials, labor, equipment, and incidentals with these plans and specification in order to make the system fully functional and operational. All disposal costs shall be included in the bid items.

1. **Bid Item 1.01 – General Conditions**: The **LUMP SUM BID AMOUNT** for all work included under this bid item will be made for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the initial project site, safety equipment and first aid supplies, and sanitary and other facilities. Also included as part of this bid item is the cost for project performance and payment bonds, insurance, indemnifications, photographs, shop drawings, working drawings, schedules, documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement for this bid item will be lump sum. The lump sum price for general provisions will be limited to five percent (5%) of the contract amount. Seventy percent (70%) of the lump sum price will be payable with the first month's partial payment. The remaining thirty (30%) will be payable with the final partial payment.

2. **Bid Item 1.02 – Stormwater Pollution Prevention Plan:** The **LUMP SUM BID AMOUNT** will be to cover the CONTRACTOR's cost to comply with the requirements to prepare and submit a Stormwater Pollution Prevention Plan prior to commencement of construction. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

3. **Bid Item 1.03 – Closeout Documentation:** The **LUMP SUM BID AMOUNT** will be to provide all documentation necessary to close out the project. The CONTRACTOR may apply for payment upon satisfactory submittal and approval of record drawings as required by the Contract Documents, successful completion of testing, consent of surety, assurance satisfactory to OWNER that unsettled claims will be settled, proof to OWNER that taxes, fees, and similar obligations of CONTRACTOR have been paid, waiver of lien from every entity (including the CONTRACTOR) that provided services on the project, submittal of final pay request, and a warranty letter stating CONTRACTOR's obligation for defects and repairs for the duration of the warranty period. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

4. **Bid Item 2.15 – 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The 3" 316 Stainless Steel Pipe Support w/ U-Bolt shall be able to support both the discharge piping and bypass piping. The number of 3" 316 Stainless

Steel Pipe Support Brace w/ U-Bolt shall be installed per the pump manufacturer's recommendation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

5. **Bid Item 2.16 – 2" SCH 40 316 Stainless Steel Guide Rails & Supports**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 40 Stainless Steel Guide Rail & Supports in accordance with the contract documents. Payment shall include, but not be limited to, stainless steel pipes, fittings, anchor bolts, stainless steel plate, and all other items and incidentals required for construction of the guide rails and supports as shown in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

6. **Bid Item 2.17 – 316 Stainless Steel Float/Cable Holder**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 316 Stainless Steel Float/Cable Holder in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct a float and cable holder. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

7. **Bid Item 2.18 – 316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the 316 Stainless Steel Lifting Chains with Hammerlocks & Masterlinks in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct the lifting chains. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

8. **Bid Item 2.19 – Lift Station Controls Floats**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the lift station control floats in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

9. **Bid Item 2.25 – Control Panel (NEMA 6P Enclosure)**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

10. **Bid Item 2.26 – Service Installation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a new main breaker and conduits/wires required to energize the lift station to make it a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

11. **Bid Item 2.27 – Conduits to Wet Well**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to install 2" Sch. 40 PVC conduits below grade to the lift station wet well. The cost shall include all necessary conduits required to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

12. **Bid Item 2.28 – Install Motor Leads & Float Switches**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to pull and terminate motor leads and install float switches. The cost shall include all necessary controls and material to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

13. **Bid Item 2.29 – Startup and Testing**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for start-up and testing services provided to the OWNER by the MANUFACTURER(S). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

14. **Bid Item 2.30 – Maintenance of Traffic (MOT) Plan**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to implement a MOT Plan that meets FDOT, County, and City requirements. The MOT Plan shall be submitted to the Engineer and Owner for review. The MOT Plan shall be utilized during construction of the lift station rehabilitation and shall remain in place until construction is complete. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

15. **Bid Item 2.31 – Bypass Pumping Plan**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, fuel, and all other items and incidentals required to construct, install, and operate the bypass pumping operation as shown and described in the contract documents. Sewage pump out shall be discharged to another collection system manhole, lift station, or Vac Truck. It's the responsibility of the Contractor to understand and implement all local, state, and federal regulator rules during the bypass pumping operation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

16. **Bid Item 2.32 – Roadway Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, select fill, demolition, saw cutting, milling, earthwork, excavation, paving, backfilling, and compaction as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

17. **Bid Item 2.33 – Site Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for sitework including but not limited to protection of existing properties, restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary paving, grassing and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

18. **Bid Item 2.34 – Erosion Control**: The **LUM SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary to keep the site from eroding and preventing soil from leaving the site in accordance with the contract documents. The LUMP SUM AMOUNT BID shall be paid based on the percentages of work completed as approved by the ENGINEER.

19. **Bid Item 2.36 – Existing Lift Station Pump, Piping, and Valves Demolition**: The **LUMP SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary for clearing, grubbing, digging, hauling away, sand fill, proper disposal of debris and removing existing piping, valves, and fittings in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

20. **Bid Item 2.37 – Existing Concrete Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station concrete pad as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

21. **Bid Item 2.38 – Existing Electrical Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station control panel, wiring, conduits, and other existing lift station electrical components as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

22. **Bid Item 2.39 – Remote Telemetry Alert System**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a Remote Telemetry Alert System and associated conduits/wires to ensure the lift station telemetry is a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

23. **Bid Item 3.18 – 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The 3" 316 Stainless Steel Pipe Support w/ U-Bolt shall be able to support both the discharge piping and bypass piping. The number of 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt shall be installed per the pump manufacturer's recommendation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

24. **Bid Item 3.19 – 2" SCH 40 316 Stainless Steel Guide Rails & Supports**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 40 Stainless Steel Guide Rail & Supports in accordance with the contract documents. Payment shall include, but not be limited to, stainless steel pipes, fittings, anchor bolts, stainless steel plate, and all other items and incidentals required for construction of the guide rails and supports as shown in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

25. **Bid Item 3.20 – 316 Stainless Steel Float/Cable Holder**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 316 Stainless Steel Float/Cable Holder in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct a float and cable holder. The

LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

26. **Bid Item 3.21 – 6" 316 Stainless Steel Air Vent**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" 316 Stainless Steel Air Vent for the proposed Lift Station Rehabilitation as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. At a minimum the air vent shall consist of a 6" 316 Stainless Steel Wall Pipe FLG x P.E. and a 2" threadolet. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

27. **Bid Item 3.22 – 316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the 316 Stainless Steel Lifting Chains with Hammerlocks & Masterlinks in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct the lifting chains. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

28. **Bid Item 3.23 – Lift Station Controls Floats**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the lift station control floats in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

29. **Bid Item 3.26 – 2" SCH 80 CPVC Piping and Fittings**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 80 CPVC Piping and Fittings in accordance with the contract documents. Payment shall include, but not be limited to, pipes, fittings, and all other items and incidentals required for construction of the appurtenances as shown in the contract documents. The cost shall include all piping and fittings from the ARVs to the Owner-Purchased Lift Station air vent. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

30. **Bid Item 3.35 – Control Panel (NEMA 6P Enclosure)**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

31. **Bid Item 3.36 – Service Installation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a new main breaker and conduits/wires required to energize the lift station to make it a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

32. **Bid Item 3.37 – Conduits to Wet Well**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to install 2" Sch. 40 PVC conduits below grade to the lift station wet well. The cost shall include all necessary conduits required to make the lift station a complete and operable system. The LUMP

SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

33. **Bid Item 3.38 – Install Motor Leads & Float Switches**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to pull and terminate motor leads and install float switches. The cost shall include all necessary controls and material to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

34. **Bid Item 3.39 – Startup and Testing**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for start-up and testing services provided to the OWNER by the MANUFACTURER(S). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

35. **Bid Item 3.40 – Maintenance of Traffic (MOT) Plan**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to implement a MOT Plan that meets FDOT, County, and City requirements. The MOT Plan shall be submitted to the Engineer and Owner for review. The MOT Plan shall be utilized during construction of the lift station rehabilitation and shall remain in place until construction is complete. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

36. **Bid Item 3.41 – Bypass Pumping Plan**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, fuel, and all other items and incidentals required to construct, install, and operate the bypass pumping operation as shown and described in the contract documents. Sewage pump out shall be discharged to another collection system manhole, lift station, or Vac Truck. It's the responsibility of the Contractor to understand and implement all local, state, and federal regulator rules during the bypass pumping operation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

37. **Bid Item 3.42 – Site Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for sitework including but not limited to protection of existing properties, restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary paving, grassing and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

38. **Bid Item 3.43 – Existing Water Meter Relocation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to relocate the existing water meter and install per the Construction Documents. The cost shall include all necessary piping, fittings, valves, and other appurtenances to make the water meter a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

39. **Bid Item 3.45 – Erosion Control**: The **LUM SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary to keep the site from eroding and preventing soil from leaving the site in accordance with the contract documents. The LUMP SUM

AMOUNT BID shall be paid based on the percentages of work completed as approved by the ENGINEER.

40. **Bid Item 3.47 – Existing Lift Station Pump, Piping, and Valves Demolition**: The **LUMP SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary for clearing, grubbing, digging, hauling away, sand fill, proper disposal of debris and removing existing piping, valves, and fittings in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

41. **Bid Item 3.48 – Existing Concrete Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station concrete pad as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

42. **Bid Item 3.49 – Existing Electrical Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station control panel, wiring, conduits, and other existing lift station electrical components as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

43. **Bid Item 3.50 – Remote Telemetry Alert System**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a Remote Telemetry Alert System and associated conduits/wires to ensure the lift station telemetry is a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

44. **Bid Item 4.19 – 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The 3" 316 Stainless Steel Pipe Support w/ U-Bolt shall be able to support both the discharge piping and bypass piping. The number of 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt shall be installed per the pump manufacturer's recommendation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

45. **Bid Item 4.20 – 2" SCH 40 316 Stainless Steel Guide Rails & Supports**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 40 Stainless Steel Guide Rail & Supports in accordance with the contract documents. Payment shall include, but not be limited to, stainless steel pipes, fittings, anchor bolts, stainless steel plate, and all other items and incidentals required for construction of the guide rails and supports as shown in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

46. **Bid Item 4.21 – 316 Stainless Steel Float/Cable Holder**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 316 Stainless Steel Float/Cable Holder in accordance with the contract documents. Payment shall include, but not be limited

to all 316 Stainless Steel material required to construct a float and cable holder. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

47. **Bid Item 4.22 – 316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the 316 Stainless Steel Lifting Chains with Hammerlocks & Masterlinks in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct the lifting chains. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

48. **Bid Item 4.23 – Lift Station Controls Floats**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the lift station control floats in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

49. **Bid Item 4.28 – FRP Valve Box w/ Aluminum Access Hatch (H20 Traffic Rated)**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the fiberglass valve box in accordance with the contract documents. Payment shall include, but not be limited to, excavation, shoring, compaction, bedding, grading, reinforcement, and installation of fiberglass valve box, hatches, liner, restoration, and all other items and incidentals required to construct a fully functional fiberglass valve box w/ aluminum access hatch. Payment shall also include all stub-outs, link-seals, restraints, supports required to install and connect the valve box to the lift station piping.. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

50. **Bid Item 4.29 – Control Panel (NEMA 6P Enclosure)**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

51. **Bid Item 4.30 – Service Installation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a new main breaker and conduits/wires required to energize the lift station to make it a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

52. **Bid Item 4.31 – Conduits to Wet Well**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to install 2" Sch. 40 PVC conduits below grade to the lift station wet well. The cost shall include all necessary conduits required to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

53. **Bid Item 4.32 – Install Motor Leads & Float Switches**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to pull and terminate motor leads and install float switches. The cost shall include all necessary controls and material to make the lift station a complete and operable system. The

LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

54. **Bid Item 4.33 – Startup and Testing**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for start-up and testing services provided to the OWNER by the MANUFACTURER(S). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

55. **Bid Item 4.34 – Maintenance of Traffic (MOT) Plan**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to implement a MOT Plan that meets FDOT, County, and City requirements. The MOT Plan shall be submitted to the Engineer and Owner for review. The MOT Plan shall be utilized during construction of the lift station rehabilitation and shall remain in place until construction is complete. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

56. **Bid Item 4.35 – Bypass Pumping Plan**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, fuel, and all other items and incidentals required to construct, install, and operate the bypass pumping operation as shown and described in the contract documents. Sewage pump out shall be discharged to another collection system manhole, lift station, or Vac Truck. It's the responsibility of the Contractor to understand and implement all local, state, and federal regulator rules during the bypass pumping operation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

57. **Bid Item 4.36 – Roadway & Concrete Sidewalk Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing asphalt roadway and pedestrian concrete walkway as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

58. **Bid Item 4.37 – Roadway & Concrete Sidewalk Repair**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary to repair the asphalt roadway and pedestrian concrete sidewalk including but not limited to restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary paving, and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

59. **Bid Item 4.38 – Site Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for sitework including but not limited to protection of existing properties, restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary paving, grassing and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

60. **Bid Item 4.39 – Erosion Control**: The **LUM SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary to keep the site from eroding and preventing soil from leaving the site in accordance with the contract documents. The LUMP SUM

AMOUNT BID shall be paid based on the percentages of work completed as approved by the ENGINEER.

61. **Bid Item 4.41 – Existing Lift Station Pump, Piping, and Valves Demolition**: The **LUMP SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary for clearing, grubbing, digging, hauling away, sand fill, proper disposal of debris and removing existing piping, valves, and fittings in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

62. **Bid Item 4.42 – Existing Concrete Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station concrete pad as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

63. **Bid Item 4.43 – Existing Electrical Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station control panel, wiring, conduits, and other existing lift station electrical components as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

64. **Bid Item 4.46 – Remote Telemetry Alert System**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a Remote Telemetry Alert System and associated conduits/wires to ensure the lift station telemetry is a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

65. **Bid Item 5.17 – 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The 3" 316 Stainless Steel Pipe Support w/ U-Bolt shall be able to support both the discharge piping and bypass piping. The number of 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt shall be installed per the pump manufacturer's recommendation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

66. **Bid Item 5.18 – 2" SCH 40 316 Stainless Steel Guide Rails & Supports**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 40 Stainless Steel Guide Rail & Supports in accordance with the contract documents. Payment shall include, but not be limited to, stainless steel pipes, fittings, anchor bolts, stainless steel plate, and all other items and incidentals required for construction of the guide rails and supports as shown in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

67. **Bid Item 5.19 – 316 Stainless Steel Float/Cable Holder**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 316 Stainless Steel Float/Cable Holder in accordance with the contract documents. Payment shall include, but not be limited

to all 316 Stainless Steel material required to construct a float and cable holder. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

68. **Bid Item 5.20 – 6" 316 Stainless Steel Air Vent**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" 316 Stainless Steel Air Vent for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. At a minimum the air vent shall consist of a 6" 316 Stainless Steel Wall Pipe FLG x P.E. and a 2" threadolet. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

69. **Bid Item 5.21 – 316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the 316 Stainless Steel Lifting Chains with Hammerlocks & Masterlinks in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct the lifting chains. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

70. **Bid Item 5.22 – Lift Station Controls Floats**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the lift station control floats in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

71. **Bid Item 5.25 – 2" SCH 80 CPVC Piping and Fittings**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 80 CPVC Piping and Fittings in accordance with the contract documents. Payment shall include, but not be limited to, pipes, fittings, and all other items and incidentals required for construction of the appurtenances as shown in the contract documents. The cost shall include all piping and fittings from the ARVs to the Owner-Purchased Lift Station air vent. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

72. **Bid Item 5.34 – Control Panel (NEMA 6P Enclosure)**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

73. **Bid Item 5.35 – Service Installation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a new main breaker and conduits/wires required to energize the lift station to make it a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

74. **Bid Item 5.36 – Conduits to Wet Well**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to install 2" Sch. 40 PVC conduits below grade to the lift station wet well. The cost shall include all necessary conduits required to make the lift station a complete and operable system. The LUMP

SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

75. **Bid Item 5.37 – Install Motor Leads & Float Switches**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to pull and terminate motor leads and install float switches. The cost shall include all necessary controls and material to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

76. **Bid Item 5.38 – Startup and Testing**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for start-up and testing services provided to the OWNER by the MANUFACTURER(S). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

77. **Bid Item 5.39 – Maintenance of Traffic (MOT) Plan**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to implement a MOT Plan that meets FDOT, County, and City requirements. The MOT Plan shall be submitted to the Engineer and Owner for review. The MOT Plan shall be utilized during construction of the lift station rehabilitation and shall remain in place until construction is complete. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

78. **Bid Item 5.40 – Bypass Pumping Plan**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, fuel, and all other items and incidentals required to construct, install, and operate the bypass pumping operation as shown and described in the contract documents. Sewage pump out shall be discharged to another collection system manhole, lift station, or Vac Truck. It's the responsibility of the Contractor to understand and implement all local, state, and federal regulator rules during the bypass pumping operation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

79. **Bid Item 5.41 – Roadway Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing asphalt roadway and as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

80. **Bid Item 5.42 – Roadway Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary to repair the asphalt roadway including but not limited to restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary paving, and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

81. **Bid Item 5.43 – Site Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for sitework including but not limited to protection of existing properties, restoration of all properties affected by the work to existing or better condition following construction, temporary access, temporary

paving, grassing and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

82. **Bid Item 5.44 – Erosion Control**: The **LUM SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary to keep the site from eroding and preventing soil from leaving the site in accordance with the contract documents. The LUMP SUM AMOUNT BID shall be paid based on the percentages of work completed as approved by the ENGINEER.

83. **Bid Item 5.46 – Existing Lift Station Pump, Piping, and Valves Demolition**: The **LUMP SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary for clearing, grubbing, digging, hauling away, sand fill, proper disposal of debris and removing existing piping, valves, and fittings in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

84. **Bid Item 5.47 – Existing Concrete Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station concrete pad as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

85. **Bid Item 5.48 – Existing Electrical Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station control panel, wiring, conduits, and other existing lift station electrical components as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

86. **Bid Item 5.49 – Remote Telemetry Alert System**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a Remote Telemetry Alert System and associated conduits/wires to ensure the lift station telemetry is a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

87. **Bid Item 6.19 – 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The 3" 316 Stainless Steel Pipe Support w/ U-Bolt shall be able to support both the discharge piping and bypass piping. The number of 3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt shall be installed per the pump manufacturer's recommendation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

88. **Bid Item 6.20 – 2" SCH 40 316 Stainless Steel Guide Rails & Supports**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 40 Stainless Steel Guide Rail & Supports in accordance with the contract documents. Payment shall include, but not be limited to, stainless steel pipes, fittings, anchor bolts, stainless steel plate, and all other items and incidentals required for construction of the guide rails and

supports as shown in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

89. **Bid Item 6.21 – 316 Stainless Steel Float/Cable Holder**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 316 Stainless Steel Float/Cable Holder in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct a float and cable holder. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

90. **Bid Item 6.22 – 6" 316 Stainless Steel Air Vent**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" 316 Stainless Steel Air Vent for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. At a minimum the air vent shall consist of a 6" 316 Stainless Steel Wall Pipe FLG x P.E. and a 2" threadolet. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

91. **Bid Item 6.23 – 316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the 316 Stainless Steel Lifting Chains with Hammerlocks & Masterlinks in accordance with the contract documents. Payment shall include, but not be limited to all 316 Stainless Steel material required to construct the lifting chains. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

92. **Bid Item 6.24 – Lift Station Controls Floats**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing the lift station control floats in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

93. **Bid Item 6.27 – 2" SCH 80 CPVC Piping and Fittings**: The **LUMP SUM BID AMOUNT** will be a payment for furnishing and installing the 2" SCH 80 CPVC Piping and Fittings in accordance with the contract documents. Payment shall include, but not be limited to, pipes, fittings, and all other items and incidentals required for construction of the appurtenances as shown in the contract documents. The cost shall include all piping and fittings from the ARVs to the Owner-Purchased Lift Station air vent. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

94. **Bid Item 6.36 – Wash Down Station Piping, Valves, Fitting, & Meter (Detail A4, M-903)**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, backflow prevention assembly, FRP insulated housing, aluminum post, reinforcing mesh, concrete, hose rack, red rubber hose, and all other items and incidentals required to construct and install the wash down station as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

95. **Bid Item 6.38 – Control Panel (NEMA 6P Enclosure)**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Control Panel (NEMA 6P Enclosure) as shown on

the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

96. **Bid Item 6.39 – Service Installation**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a new main breaker and conduits/wires required to energize the lift station to make it a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

97. **Bid Item 6.40 – Conduits to Wet Well**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to install 2" Sch. 40 PVC conduits below grade to the lift station wet well. The cost shall include all necessary conduits required to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

98. **Bid Item 6.41 – Install Motor Leads & Float Switches**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to pull and terminate motor leads and install float switches. The cost shall include all necessary controls and material to make the lift station a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

99. **Bid Item 6.42 – Startup and Testing**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for start-up and testing services provided to the OWNER by the MANUFACTURER(S). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

100. **Bid Item 6.43 – Maintenance of Traffic (MOT) Plan**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to implement a MOT Plan that meets FDOT, County, and City requirements. The MOT Plan shall be submitted to the Engineer and Owner for review. The MOT Plan shall be utilized during construction of the lift station rehabilitation and shall remain in place until construction is complete. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

101. **Bid Item 6.44 – Bypass Pumping Plan**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, fuel, and all other items and incidentals required to construct, install, and operate the bypass pumping operation as shown and described in the contract documents. Sewage pump out shall be discharged to another collection system manhole, lift station, or Vac Truck. It's the responsibility of the Contractor to understand and implement all local, state, and federal regulator rules during the bypass pumping operation. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

102. **Bid Item 6.45 – Site Restoration**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for sitework including but not limited to protection of existing properties, restoration of all properties affected by the work to

existing or better condition following construction, temporary access, temporary paving, grassing and all sitework related activities. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

103. **Bid Item 6.46 – Erosion Control**: The **LUM SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary to keep the site from eroding and preventing soil from leaving the site in accordance with the contract documents. The LUMP SUM AMOUNT BID shall be paid based on the percentages of work completed as approved by the ENGINEER.

104. **Bid Item 6.48 – Existing Lift Station Pump, Piping, and Valves Demolition**: The **LUMP SUM BID AMOUNT** will be payment for all labor, materials, and equipment necessary for clearing, grubbing, digging, hauling away, sand fill, proper disposal of debris and removing existing piping, valves, and fittings in accordance with the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

105. **Bid Item 6.49 – Existing Concrete Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station concrete pad as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

106. **Bid Item 6.50 – Existing Electrical Demolition**: The **LUMP SUM BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work and demoing of the existing lift station control panel, wiring, conduits, and other existing lift station electrical components as shown and described in the contract documents. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

107. **Bid Item 6.51 – Remote Telemetry Alert System**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required to construct and install a Remote Telemetry Alert System and associated conduits/wires to ensure the lift station telemetry is a complete and operable system. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

108. **Bid Item 8.01 – Lift Station #1 – Powder Coated White NEMA 6P Control Panel**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

109. **Bid Item 8.02 – Lift Station #6 – Powder Coated White NEMA 6P Control Panel**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Powder Coated

White Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

110. **Bid Item 8.03 – Lift Station #7 – Powder Coated White NEMA 6P Control Panel**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

111. **Bid Item 8.04 – Lift Station #9 – Powder Coated White NEMA 6P Control Panel**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

112. **Bid Item 8.05 – Lift Station #10 – Powder Coated White NEMA 6P Control Panel**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, equipment, and materials required for the construction of a 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure) as shown on the contract drawings. Payment shall include, but not be limited to all 316 Stainless Steel material and mounting hardware required to construct and install a fully functional 316 Stainless Steel Powder Coated White Control Panel (NEMA 6P Enclosure). The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

1.01 Unit Price

A. Where payment for items is shown on a unit price basis, payment will be made for the actual quantity installed and will include all labor, material, and equipment necessary for such.

1. **Bid Item 2.01 – Submersible Centrifugal Pumps**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pumps and accessories. This includes, but is not limited to, pumps, cast iron impeller & volute insert, FM explosion proof motors, mix/flush valve for each pump, minimum 100 LF of electrical cord, coatings, mounting brackets, and all other items and incidentals associated with the submersible pumps. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

2. **Bid Item 2.02 – Submersible Pump Base Plate**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's base plate and accessories. This includes, but is not limited to, base plate material, anchors, and mounting brackets. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

3. **Bid Item 2.03 – 4" Nitride Hardened Cast Iron Discharge Base Elbows**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's discharge elbow and accessories. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

4. **Bid Item 2.04– 4" HDPE DR11 Discharge Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" HDPE DR11 Piping for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

5. **Bid Item 2.05 – 4" HDPE DR11 90° Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" HDPE DR11 90° Fitting for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

6. **Bid Item 2.06 – 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

7. **Bid Item 2.07 – 4" 316 Stainless Steel Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install maintain, and all other cost required to install the 4" 316 Stainless Steel Piping as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

8. **Bid Item 2.08 – 4" DIP**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" DIP as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

9. **Bid Item 2.09 – 4"x6" MJ Increaser**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

10. **Bid Item 2.10 – 4" FL Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Check Valves as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

11. **Bid Item 2.11 – 4" FL Plug Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Plug Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

12. **Bid Item 2.12– 4" Stainless Steel FL 90-Degree Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" Stainless Steel FL 90-Degree Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

13. **Bid Item 2.13 – 4" Stainless Steel FL Cross Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" Stainless Steel Cross Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

14. **Bid Item 2.14 – 4" Aluminum Male Kamlock w/ Female Dust Cover**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Kamlock as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

15. **Bid Item 2.20 – ARV**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the ARV's as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

16. **Bid Item 2.21 – 2" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

17. **Bid Item 2.22 – 3/4" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 3/4" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

18. **Bid Item 2.23 – Diaphragm Pressure Gauges**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Diaphragm Pressure Gauges as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

19. **Bid Item 2.24 – Connect to Existing Collection System**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, and all other items and incidentals required to construct, install, and operate the entirety of the connection to the existing collection system FM via open cut as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the number of units connected during the requested period as approved by the Engineer.

20. **Bid Item 2.35 – Access Hatch Assembly**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the Access Hatch w/ Safety Grate (H20 Traffic Rated) for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. It shall be the pump supplier's responsibility to confirm the adequacy of the specified minimum hatch size to enable the pump(s) to be easily removed from the wet well through the hatch without disassembly with a minimum 4" clear. Upsize hatches as required. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

21. **Bid Item 3.01 – Submersible Centrifugal Pumps**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pumps and accessories. This includes, but is not limited to, pumps, cast iron impeller & volute insert, FM explosion proof motors, mix/flush valve for each pump, minimum 100 LF of electrical cord, coatings, mounting brackets, and all other items and incidentals associated with the submersible pumps. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

22. **Bid Item 3.02 – Submersible Pump Base Plate**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's base plate and accessories. This includes, but is not limited to, base plate material, anchors, and mounting brackets. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

23. **Bid Item 3.03 – 4" Nitride Hardened Cast Iron Discharge Base Elbows**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's discharge elbow and accessories. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

24. **Bid Item 3.04 – 4"x6" 316 Stainless Steel Eccentric Increaser**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

25. **Bid Item 3.05– 6" HDPE DR11 Discharge Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Piping for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

26. **Bid Item 3.06 – 6" HDPE DR11 Fused Offset Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Fused Offset Fitting for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer.

27. **Bid Item 3.07 – 6" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

28. **Bid Item 3.08 – 6" 316 Stainless Steel Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install maintain, and all other cost required to install the 6" 316 Stainless Steel Piping as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE

BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

29. **Bid Item 3.09 – 6" PVC – DR18**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" PVC – DR18 as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

30. **Bid Item 3.10 – 6" FL Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" FL Check Valves as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

31. **Bid Item 3.11 – 6" FL Plug Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" FL Plug Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

32. **Bid Item 3.12 – 6" Stainless Steel FL 90-Degree LR Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" 316 Stainless Steel FL 90-Degree LR Fittings as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

33. **Bid Item 3.13– 6" Stainless Steel FL 90-Degree Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" Stainless Steel FL 90-Degree Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

34. **Bid Item 3.14– 6" Stainless Steel FL Tee Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" Stainless Steel FL Tee Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

35. **Bid Item 3.15 – 6" Ductile Iron 90° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install,

maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

36. **Bid Item 3.16 – 6" Ductile Iron 45° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

37. **Bid Item 3.17 – 6" Aluminum Male Kamlock w/ Female Dust Cover**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Kamlock as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

38. **Bid Item 3.24 – ARV**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the ARV's as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

39. **Bid Item 3.25 – 2" SCH 80 CPVC Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" SCH 80 CPVC Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

40. **Bid Item 3.27 – 2" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

41. **Bid Item 3.28 – 3/4" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 3/4" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

42. **Bid Item 3.29 – Diaphragm Pressure Gauges**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Diaphragm Pressure Gauges as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

43. **Bid Item 3.30 – 316 Stainless Steel Pipe Stands**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 316 Stainless Steel Pipe Stands as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

44. **Bid Item 3.31 – Geotextile Fabric**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, trenching, backfilling, and staking for geotextile fabric as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured square footage of geotextile fabric material installed during the requested period as approved by the ENGINEER.

45. **Bid Item 3.32 – 6" Granite #57 Stone**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for the installation of 6" Granite #57 stone as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured cubic yards of granite #57 stone material used during the requested period as approved by the ENGINEER.

46. **Bid Item 3.33 – Removable Lockable Traffic Rated Bollards**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, concrete, and rebar required to install the Removable Lockable Traffic Rated Bollards as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

47. **Bid Item 3.34 – Connect to Existing Collection System**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, and all other items and incidentals required to construct, install, and operate the entirety of the connection to the existing collection system FM via open cut as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

48. **Bid Item 3.44 – Existing Traffic Sign Relocation**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, trenching, backfilling, and staking for relocating the existing traffic signs as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the number of units relocated and installed during the requested period as approved by the ENGINEER.

49. **Bid Item 3.46 – Access Hatch Assembly**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the Access Hatch w/ Safety Grate for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. It shall be the pump supplier's responsibility to confirm the adequacy of the specified minimum hatch size to enable the pump(s) to be easily removed from the wet well through the hatch without disassembly with a minimum 4" clear. Upsize hatches as required. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

50. **Bid Item 4.01 – Submersible Centrifugal Pumps**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pumps and accessories. This includes, but is not limited to, pumps, cast iron impeller & volute insert, FM explosion proof motors, mix/flush valve for each pump, minimum 100 LF of electrical cord, coatings, mounting brackets, and all other items and incidentals associated with the submersible pumps. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

51. **Bid Item 4.02 – Submersible Pump Base Plate**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's base plate and accessories. This includes, but is not limited to, base plate material, anchors, and mounting brackets. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

52. **Bid Item 4.03 – 4" Nitride Hardened Cast Iron Discharge Base Elbows**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's discharge elbow and accessories. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

53. **Bid Item 4.04– 4" HDPE DR11 Discharge Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" HDPE DR11 Piping for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

54. **Bid Item 4.05 – 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

55. **Bid Item 4.06 – 4" 316 Stainless Steel Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install maintain, and all other cost required to install the 4" 316 Stainless Steel Piping as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

56. **Bid Item 4.07 – 6" DIP**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" DIP as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

57. **Bid Item 4.08 – 6" MJ Plug**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

58. **Bid Item 4.09 – 4" FL Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Check Valves as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

59. **Bid Item 4.10 – 4" FL Plug Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Plug Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

60. **Bid Item 4.11– 4" Stainless Steel FL 90-Degree Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" Stainless Steel FL 90-Degree Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

61. **Bid Item 4.12 – 4" Stainless Steel FL Cross Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install,

maintain, and all other cost required to install the 4" Stainless Steel Cross Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

62. **Bid Item 4.13 – 4" Aluminum Male Kamlock w/ Female Dust Cover**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Kamlock as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

63. **Bid Item 4.14 – 6" Ductile Iron 45° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

64. **Bid Item 4.15 – 4"x6" Ductile Iron MJ Increaser**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

65. **Item 4.16 – 6" Tapping Sleeve and Valve w/ Valve Box**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install a 6" Tapping Sleeve & Valve w/ Valve Box as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

66. **Bid Item 4.17 – 2" Schedule 40 PVC Drain Pipe**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, cement, and all other cost required to install the 2" SCH 40 PVC Drain Pipe as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The service line casing quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the casting in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

67. **Bid Item 4.18 – 2" Duck Bill Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Duck Bill Check Valve as described herein and within the contract documents, complete as shown on the plans, specified,

and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

68. **Bid Item 4.24 – ARV**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the ARV's as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

69. **Bid Item 4.25 – 2" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

70. **Bid Item 4.26 – 3/4" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 3/4" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

71. **Bid Item 4.27 – Diaphragm Pressure Gauges**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Diaphragm Pressure Gauges as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

72. **Bid Item 4.40 – Access Hatch Assembly**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the Access Hatch w/ Safety Grate (H20 Traffic Rated) for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. It shall be the pump supplier's responsibility to confirm the adequacy of the specified minimum hatch size to enable the pump(s) to be easily removed from the wet well through the hatch without disassembly with a minimum 4" clear. Upsize hatches as required. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

73. **Bid Item 4.44 – 4" HDPE DR11 90° Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" HDPE DR11 90° Fitting for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall

be paid based on the number of units installed during the requested period as approved by the Engineer.

74. **Bid Item 3.21 – 4" 316 Stainless Steel Air Vent**: The **LUMP SUM BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 4" 316 Stainless Steel Air Vent for the proposed Lift Station Rehabilitation as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. At a minimum the air vent shall consist of a 4" 316 Stainless Steel piping and fittings, concrete collar, and non-shrink grout and seals to make the air vent function as designed. The LUMP SUM BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

75. **Bid Item 5.01 – Submersible Centrifugal Pumps**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pumps and accessories. This includes, but is not limited to, pumps, cast iron impeller & volute insert, FM explosion proof motors, mix/flush valve for each pump, minimum 100 LF of electrical cord, coatings, mounting brackets, and all other items and incidentals associated with the submersible pumps. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

76. **Bid Item 5.02 – Submersible Pump Base Plate**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's base plate and accessories. This includes, but is not limited to, base plate material, anchors, and mounting brackets. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

77. **Bid Item 5.03 – 4" Nitride Hardened Cast Iron Discharge Base Elbows**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's discharge elbow and accessories. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

78. **Bid Item 5.04– 4" HDPE DR11 Discharge Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Piping for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

79. **Bid Item 5.05 – 4" HDPE DR11 Fused Offset Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Fused Offset Fitting for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer.

80. **Bid Item 5.06 – 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost

required to install the 4" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

81. **Bid Item 5.07 – 4" 316 Stainless Steel Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install maintain, and all other cost required to install the 4" 316 Stainless Steel Piping as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

82. **Bid Item 5.08 – 4" PVC – DR18**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" PVC – DR18 as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

83. **Bid Item 5.09 – 4" FL Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Check Valves as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

84. **Bid Item 5.10 – 4" FL Plug Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" FL Plug Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

85. **Bid Item 5.11 – 4" Stainless Steel FL 90-Degree LR Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" 316 Stainless Steel FL 90-Degree LR Fittings as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

86. **Bid Item 5.12– 4" Stainless Steel FL 90-Degree Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" Stainless Steel FL 90-Degree

Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

87. **Bid Item 5.13– 4" Stainless Steel FL Tee Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 4" Stainless Steel FL Tee Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

88. **Bid Item 5.14 – 4" Ductile Iron 90° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

89. **Bid Item 5.15 – 4" Ductile Iron 45° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

90. **Bid Item 5.16 – 4" Aluminum Male Kamlock w/ Female Dust Cover**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Kamlock as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

91. **Bid Item 5.23 – ARV**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the ARV's as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

92. **Bid Item 5.24 – 2" SCH 80 CPVC Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" SCH 80 CPVC Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

93. **Bid Item 5.26 – 2" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install,

maintain, and all other cost required to install the 2" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

94. **Bid Item 5.27 – 3/4" Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 3/4" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

95. **Bid Item 5.28 – Diaphragm Pressure Gauges**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Diaphragm Pressure Gauges as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

96. **Bid Item 5.29 – 316 Stainless Steel Pipe Stands**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 316 Stainless Steel Pipe Stands as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

97. **Bid Item 5.30 – Geotextile Fabric**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, trenching, backfilling, and staking for geotextile fabric as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured square footage of geotextile fabric material installed during the requested period as approved by the ENGINEER.

98. **Bid Item 5.31 – 6" Granite #57 Stone**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for the installation of 6" Granite #57 stone as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured cubic yards of granite #57 stone material used during the requested period as approved by the ENGINEER.

99. **Bid Item 5.32 – 6' Tall Black Vinyl Chain Link Fence w/ Swing Gate**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, concrete, and black vinyl fence as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured black vinyl chain link fence material used during the requested period as approved by the ENGINEER.

100. **Bid Item 5.33 – Connect to Existing Collection System**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited

to, piping, fittings, valves, and all other items and incidentals required to construct, install, and operate the entirety of the connection to the existing collection system FM via open cut as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

101. **Bid Item 5.45 – Access Hatch Assembly**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the Access Hatch w/ Safety Grate for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. It shall be the pump supplier's responsibility to confirm the adequacy of the specified minimum hatch size to enable the pump(s) to be easily removed from the wet well through the hatch without disassembly with a minimum 4" clear. Upsize hatches as required. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

102. **Bid Item 6.01 – Submersible Centrifugal Pumps**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pumps and accessories. This includes, but is not limited to, pumps, cast iron impeller & volute insert, FM explosion proof motors, mix/flush valve for each pump, minimum 100 LF of electrical cord, coatings, mounting brackets, and all other items and incidentals associated with the submersible pumps. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

103. **Bid Item 6.02 – Submersible Pump Base Plate**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's base plate and accessories. This includes, but is not limited to, base plate material, anchors, and mounting brackets. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

104. **Bid Item 6.03 – 4" Nitride Hardened Cast Iron Discharge Base Elbows**: The **UNIT PRICE BID AMOUNT** will be full compensation for furnishing and installing the lift station's submersible pump's discharge elbow and accessories. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

105. **Bid Item 6.04 – 4"x6" 316 Stainless Steel Eccentric Increaser**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

106. **Bid Item 6.05– 6" HDPE DR11 Discharge Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Piping for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the

diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

107. **Bid Item 6.06 – 6" HDPE DR11 Fused Offset Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" HDPE DR11 Fused Offset Fitting for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer.

108. **Bid Item 6.07 – 6" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the 6" DIPS Flange HDPE/316 Stainless Steel Adapter w/ Stainless Steel Backup Rings for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

109. **Bid Item 6.08 – 6" 316 Stainless Steel Piping**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install maintain, and all other cost required to install the 6" 316 Stainless Steel Piping as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the Engineer with deduction for the laid length of valves and fittings. The UNIT PRICE BID AMOUNT shall be paid based on the measured length of pipe installed during the requested period as approved by the ENGINEER.

110. **Bid Item 6.09 – 6" PVC – DR18**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" PVC – DR18 as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT consisting of pipe quantities to be paid for under this section shall be based on the diameter and the horizontal/vertical distance in linear feet of pipe measured along the top centerline of the pipe in place complete and acceptable to the ENGINEER.

111. **Bid Item 6.10 – 6" FL Check Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" FL Check Valves as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

112. **Bid Item 6.11 – 6" FL Plug Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" FL Plug Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

113. **Bid Item 6.12 – 6" Stainless Steel FL 90-Degree LR Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" 316 Stainless Steel FL 90-Degree LR Fittings as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

114. **Bid Item 6.13– 6" Stainless Steel FL 90-Degree Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" Stainless Steel FL 90-Degree Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

115. **Bid Item 6.14– 6" Stainless Steel FL Tee Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 6" Stainless Steel FL Tee Fitting as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

116. **Bid Item 6.15 – 6" Ductile Iron 90° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

117. **Bid Item 6.16 – 6" Ductile Iron 45° MJ Fitting**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the fitting as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

118. **Item 6.17 – 6" Isolation Valve w/ Valve Box**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install a 6" Isolation Valve w/ Valve Box as described herein and within the contract documents, complete as shown on the plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

119. **Bid Item 6.18 – 6" Aluminum Male Kamlock w/ Female Dust Cover**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Kamlock as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall

be paid based on the number of units installed during the requested period as approved by the ENGINEER.

120. **Bid Item 6.25 – ARV**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the ARV's as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

121. **Bid Item 6.26– 2" SCH 80 CPVC Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" SCH 80 CPVC Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

122. **Bid Item 6.28 – 2" 316 Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

123. **Bid Item 6.29 – 3/4" 316 Stainless Steel Ball Valve**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 3/4" Stainless Steel Ball Valves as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

124. **Bid Item 6.30 – Diaphragm Pressure Gauges**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the Diaphragm Pressure Gauges as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

125. **Bid Item 6.31 – 316 Stainless Steel Pipe Stands**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 316 Stainless Steel Pipe Stands as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

126. **Bid Item 6.32 – Geotextile Fabric**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, trenching,

backfilling, and staking for geotextile fabric as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured square footage of geotextile fabric material installed during the requested period as approved by the ENGINEER.

127. **Bid Item 6.33 – 6" Granite #57 Stone**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for the installation of 6" Granite #57 stone as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured cubic yards of granite #57 stone material used during the requested period as approved by the ENGINEER.

128. **Bid Item 6.34 – 6' Tall Black Vinyl Chain Link Fence w/ Swing Gate**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, concrete, and black vinyl fence as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the measured black vinyl chain link fence material used during the requested period as approved by the ENGINEER.

129. **Bid Item 6.35 – 2" Corporation Stop w/ Saddle**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the 2" Corporation Stop w/ Saddle as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the ENGINEER.

130. **Bid Item 6.37 – Connect to Existing Collection System**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials including, but not limited to, piping, fittings, valves, and all other items and incidentals required to construct, install, and operate the entirety of the connection to the existing collection system FM via open cut as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the percentages of work completed as approved by the ENGINEER.

131. **Bid Item 6.47 – Access Hatch Assembly**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, test, maintain, and all other cost required to install the Access Hatch w/ Safety Grate for the Lift Station as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. It shall be the pump supplier's responsibility to confirm the adequacy of the specified minimum hatch size to enable the pump(s) to be easily removed from the wet well through the hatch without disassembly with a minimum 4" clear. Upsize hatches as required. The UNIT PRICE BID AMOUNT shall be paid based on the number of units installed during the requested period as approved by the Engineer.

132. **Bid Item 7.01 – Concrete Class IV (5,500 PSI 28-Day Compressive Strength)**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, vapor barriers, reinforcement, concrete, formwork, finishing, and testing as shown and described in the contract documents. The unit price cost shall also include all costs associate with forming installation of concrete including but not limited to forms, joints, placement of

reinforcing steel, installation of waterstops, and priming of contact surfaces. The UNIT PRICE BID AMOUNT shall be paid based on the amount of measured concrete and material installed during the requested period as approved by the ENGINEER.

133. **Bid Item 7.02 – Grade 60 Carbon Steel Reinforcing:** The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, vapor barriers, reinforcement, concrete, formwork, finishing, and testing as shown and described in the contract documents. The UNIT PRICE BID AMOUNT shall be paid based on the amount of measured concrete and material installed during the requested period as approved by the ENGINEER.

134. **Bid Item 7.03 – Link Type Modular Pipe Wall Penetration Seal**: The **UNIT PRICE BID AMOUNT** will be full compensation for all labor, materials, and equipment necessary to construct, install, maintain, and all other cost required to install the link seal as described herein and within the contract documents, complete as shown on the Plans, specified, and directed by the Engineer. The unit price cost shall also include all costs associate with furnishing and installing modular type wall seals for lift station wall pipe penetrations including but not limited to removing existing non-shrink grout, surface preparation, and core drilling as required. The UNIT PRICE BID AMOUNT shall be paid based on the units installed during the requested period as approved by the ENGINEER.

135. **Bid Item 7.04 – Electrical Panel Support Column and Foundation**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary for site work, earthwork, excavation, backfilling, compaction, vapor barriers, reinforcement, concrete, formwork, finishing, and testing as shown and described in the contract documents. The unit price cost shall also include all costs associate with furnishing and installing electrical control panel supports including but not limited to foundation excavation and shoring, foundation concrete and reinforcing steel, aluminum posts, and mounting hardware. The UNIT PRICE BID AMOUNT shall be paid based on the measured concrete material used during the requested period as approved by the ENGINEER.

136. **Bid Item 7.05 – Multilayer Polymer Liner System:** The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials including but not limited to the installation of spray applied polymer lining system, minor crack and leak repair, and surface cleaning and preparation. The UNIT PRICE BID AMOUNT shall be paid based on the amount of measured multilayer polymer liner system and material installed during the requested period as approved by the ENGINEER.

137. **Bid Item 7.06 – Non-Shrink Grout Repair**: The **UNIT PRICE BID AMOUNT** will be compensation for all labor, equipment, and materials necessary to install non-shrink grout. The UNIT PRICE BID AMOUNT shall be paid based on the amount of measured non-shrink grout and material installed during the requested period as approved by the ENGINEER.

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	AMOUNT
1	**General**				
1.01	General Conditions (**Max 5% of Bid**)	1	LS		
1.02	Stormwater Management Plan	1	LS		
1.03	Closeout Documentation	1	LS		
				SUB-TOTAL GENERAL	
2	**Lift Station #1 Site Rehabilitation**				
2.01	Submersible Centrifugal Pumps	2	EA		
2.02	Submersible Pump Base Plate	2	EA		
2.03	4" 316 Stainless Steel Discharge Elbows	2	EA		
2.04	4" HDPE DR11 Discharge Piping	22	LF		
2.05	4" HDPE DR11 90° Fitting	2	EA		
2.06	4" DIPS Flange HDPE/316 Stainless Steel Adapter	2	EA		
2.07	4" 316 Stainless Steel Piping	6	LF		
2.08	4" DIP	2	LF		
2.09	4"x6" MJ Increaser	1	EA		
2.10	4" FL Check Valve	2	EA		
2.11	4" FL Plug Valve	2	EA		
2.12	4" Stainless Steel FL 90° Fitting	3	EA		
2.13	4" Stainless Steel FL Cross Fitting	1	EA		
2.14	4" Aluminum Male Kamlock w/ Female Dust Cap	1	EA		
2.15	3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt	1	LS		
2.16	2" SCH 40 316 Stainless Steel Guide Rails & Supports	1	LS		
2.17	316 Stainless Steel Float/Cable Holder	1	LS		
2.18	316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks	1	LS		
2.19	Lift Station Control Floats	1	LS		
2.20	ARV	1	EA		
2.21	2" 316 Stainless Steel Ball Valve	1	EA		
2.22	3/4" 316 Stainless Steel Ball Valve	2	EA		
2.23	Diaphragm Pressure Gauges	2	EA		
2.24	Connect to the Existing Collection System	1	EA		
2.25	Control Panel (NEMA 6P Enclosure)	1	LS		
2.26	Service Installation	1	LS		
2.27	Conduits to Wet Well	1	LS		
2.28	Install Motor Leads & Float Switches	1	LS		
2.29	Startup and Testing	1	LS		
2.30	Maintenance of Traffic (MOT) Plan	1	LS		
2.31	Bypass Pumping Plan	1	LS		
2.32	Roadway Restoration	1	LS		
2.33	Site Restoration	1	LS		
2.34	Erosion Control	1	LS		
2.35	Access Hatch Assembly	1	EA		
2.36	Existing Lift Station Pump, Piping, and Valves Demolition	1	LS		
2.37	Existing Concrete Demolition	1	LS		
2.38	Existing Electrical Demolition	1	LS		
2.39	Remote Telemetry Alert System	1	LS		
				SUB-TOTAL LIFT STATION #1 SITE REHABILTATION	
3	**Lift Station #6 Site Rehabilitation**				
3.01	Submersible Centrifugal Pumps	2	EA		
3.02	Submersible Pump Base Plate	2	EA		
3.03	4" Nitride Hardened Cast Iron Discharge Base Elbows	2	EA		
3.04	4"x6" 316 Stainless Steel Eccentric Increaser	2	EA		
3.05	6" HDPE DR11 Discharge Piping	28	LF		

3.06	6" HDPE DR11 Fused Offset Fitting	2	EA		
3.07	6" DIPS Flange HDPE/316 Stainless Steel Adapter	2	EA		
3.08	6" 316 Stainless Steel Piping	10	LF		
3.09	6" PVC - DR18	15	LF		
3.10	6" FL Check Valve	2	EA		
3.11	6" FL Plug Valve	3	EA		
3.12	6" Stainless Steel FL 90° LR Fitting	3	EA		
3.13	6" Stainless Steel FL 90° Fitting	1	EA		
3.14	6" Stainless Steel FL Tee Fitting	2	EA		
3.15	6" Ductile Iron 90° MJ Fitting	1	EA		
3.16	6" Ductile Iron 45° MJ Fitting	1	EA		
3.17	6" Aluminum Male Kamlock w/ Female Dust Cap	1	EA		
3.18	3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt	1	LS		
3.19	2" SCH 40 316 Stainless Steel Guide Rails & Supports	1	LS		
3.20	316 Stainless Steel Float/Cable Holder	1	LS		
3.21	6" 316 Stainless Steel Air Vent	1	LS		
3.22	316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks	1	LS		
3.23	Lift Station Control Floats	1	LS		
3.24	ARV	2	EA		
3.25	2" SCH 80 CPVC Ball Valve	2	EA		
3.26	2" SCH 80 CPVC Piping and Fittings	1	LS		
3.27	2" 316 Stainless Steel Ball Valve	2	EA		
3.28	3/4" 316 Stainless Steel Ball Valve	2	EA		
3.29	Diaphragm Pressure Gauges	2	EA		
3.30	316 Stainless Steel Pipe Stands	3	EA		
3.31	Geotextile Fabric	92	SF		
3.32	6" Granite #57 Stone	2	CY		
3.33	Removable Lockable Traffic Rated Bollard	3	EA		
3.34	Connect to the Existing Collection System	1	EA		
3.35	Control Panel (NEMA 6P Enclosure)	1	LS		
3.36	Service Installation	1	LS		
3.37	Conduits to Wet Well	1	LS		
3.38	Install Motor Leads & Float Switches	1	LS		
3.39	Startup and Testing	1	LS		
3.40	Maintenance of Traffic (MOT) Plan	1	LS		
3.41	Bypass Pumping Plan	1	LS		
3.42	Site Restoration	1	LS		
3.43	Existing Water Meter Relocation	1	LS		
3.44	Existing Traffic Sign Relocation	2	EA		
3.45	Erosion Control	1	LS		
3.46	Access Hatch Assembly	1	EA		
3.47	Existing Lift Station Pump, Piping, and Valves Demolition	1	LS		
3.48	Existing Concrete Demolition	1	LS		
3.49	Existing Electrical Demolition	1	LS		
3.50	Remote Telemetry Alert System	1	LS		
	SUB-TOTAL LIFT STATION #6 SITE REHABILTATION				
4	**Lift Station #7 Site Rehabilitation**				
4.01	Submersible Centrifugal Pumps	2	EA		
4.02	Submersible Pump Base Plate	2	EA		
4.03	4" Nitride Hardened Cast Iron Discharge Base Elbows	2	EA		
4.04	4" HDPE DR11 Discharge Piping	12	LF		
4.05	4" DIPS Flange HDPE/316 Stainless Steel Adapter	2	EA		
4.06	4" 316 Stainless Steel Piping	6	LF		
4.07	6" DIP	10	LF		
4.08	6" MJ Plug	1	EA		

4.09	4" FL Check Valve	2	EA		
4.10	4" FL Plug Valve	3	EA		
4.11	4" Stainless Steel FL 90° Fitting	5	EA		
4.12	4" Stainless Steel FL Cross Fitting	1	EA		
4.13	4" Aluminum Male Kamlock w/ Female Dust Cap	1	EA		
4.14	6" Ductile Iron 45° MJ Fitting	2	EA		
4.15	4"x6" Ductile Iron MJ Increaser	1	EA		
4.16	6" Tapping Sleeve and Valve w/ Valve Box	1	EA		
4.17	2" Schedule 40 PVC Drain Pipe	2	LF		
4.18	2" Duck Bill Check Valve	1	EA		
4.19	3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt	1	LS		
4.20	2" SCH 40 316 Stainless Steel Guide Rails & Supports	1	LS		
4.21	316 Stainless Steel Float/Cable Holder	1	LS		
4.22	316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks	1	LS		
4.23	Lift Station Control Floats	1	LS		
4.24	ARV	1	EA		
4.25	2" 316 Stainless Steel Ball Valve	1	EA		
4.26	3/4" 316 Stainless Steel Ball Valve	2	EA		
4.27	Diaphragm Pressure Gauges	2	EA		
4.28	FRP Valve Box w/ Aluminum Access Hatch (H20 Traffic Rated)	1	LS		
4.29	Control Panel (NEMA 6P Enclosure)	1	LS		
4.30	Service Installation	1	LS		
4.31	Conduits to Wet Well	1	LS		
4.32	Install Motor Leads & Float Switches	1	LS		
4.33	Startup and Testing	1	LS		
4.34	Maintenance of Traffic (MOT) Plan	1	LS		
4.35	Bypass Pumping Plan	1	LS		
4.36	Roadway & Concrete Sidewalk Demolition	1	LS		
4.37	Roadway & Concrete Sidewalk Restoration	1	LS		
4.38	Site Restoration	1	LS		
4.39	Erosion Control	1	LS		
4.40	Access Hatch Assembly	1	EA		
4.41	Existing Lift Station Pump, Piping, and Valves Demolition	1	LS		
4.42	Existing Concrete Demolition	1	LS		
4.43	Existing Electrical Demolition	1	LS		
4.44	4" HDPE DR11 90° Fitting	2	EA		
4.45	4" 316 Stainless Steel Air Vent	1	EA		
4.46	Remote Telemetry Alert System	1	LS		
	SUB-TOTAL LIFT STATION #7 SITE REHABILTATION				
5	**Lift Station #9 Site Rehabilitation**				
5.01	Submersible Centrifugal Pumps	2	EA		
5.02	Submersible Pump Base Plate	2	EA		
5.03	4" Nitride Hardened Cast Iron Discharge Base Elbows	2	EA		
5.04	4" HDPE DR11 Discharge Piping	28	LF		
5.05	4" HDPE DR11 Fused Offset Fitting	2	EA		
5.06	4" DIPS Flange HDPE/316 Stainless Steel Adapter	2	EA		
5.07	4" 316 Stainless Steel Piping	11	LF		
5.08	4" PVC - DR18	4	LF		
5.09	4" FL Check Valve	2	EA		
5.10	4" FL Plug Valve	3	EA		
5.11	4" 316 Stainless Steel FL 90° LR Fitting	3	EA		
5.12	4" Stainless Steel FL 90° Fitting	1	EA		
5.13	4" Stainless Steel FL Tee Fitting	2	EA		
5.14	4" Ductile Iron 90° MJ Fitting	1	EA		
5.15	4" Ductile Iron 45° MJ Fitting	1	EA		

5.16	4" Aluminum Male Kamlock w/ Female Dust Cap	1	EA		
5.17	3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt	1	LS		
5.18	2" SCH 40 316 Stainless Steel Guide Rails & Supports	1	LS		
5.19	316 Stainless Steel Float/Cable Holder	1	LS		
5.20	6" 316 Stainless Steel Air Vent	1	LS		
5.21	316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks	1	LS		
5.22	Lift Station Control Floats	1	LS		
5.23	ARV	2	EA		
5.24	2" SCH 80 CPVC Ball Valve	2	EA		
5.25	2" SCH 80 CPVC Piping and Fittings	1	LS		
5.26	2" 316 Stainless Steel Ball Valve	2	EA		
5.27	3/4" 316 Stainless Steel Ball Valve	2	EA		
5.28	Diaphragm Pressure Gauges	2	EA		
5.29	316 Stainless Steel Pipe Stands	3	EA		
5.30	Geotextile Fabric	81	SF		
5.31	6" Granite #57 Stone	2	CY		
5.32	6' Tall Black Vinyl Chain Link Fence w/ Swing Gate	53	LF		
5.33	Connect to the Existing Collection System	1	EA		
5.34	Control Panel (NEMA 6P Enclosure)	1	LS		
5.35	Service Installation	1	LS		
5.36	Conduits to Wet Well	1	LS		
5.37	Install Motor Leads & Float Switches	1	LS		
5.38	Startup and Testing	1	LS		
5.39	Maintenance of Traffic (MOT) Plan	1	LS		
5.40	Bypass Pumping Plan	1	LS		
5.41	Roadway Demolition	1	LS		
5.42	Roadway Restoration	1	LS		
5.43	Site Restoration	1	LS		
5.44	Erosion Control	1	LS		
5.45	Access Hatch Assembly	1	EA		
5.46	Existing Lift Station Pump, Piping, and Valves Demolition	1	LS		
5.47	Existing Concrete Demolition	1	LS		
5.48	Existing Electrical Demolition	1	LS		
5.49	Remote Telemetry Alert System	1	LS		
	SUB-TOTAL LIFT STATION #9 SITE REHABILTATION				
6	**Lift Station #10 Site Rehabilitation**				
6.01	Submersible Centrifugal Pumps	2	EA		
6.02	Submersible Pump Base Plate	2	EA		
6.03	4" Nitride Hardened Cast Iron Discharge Base Elbows	2	EA		
6.04	4"x6" 316 Stainless Steel Eccentric Increaser	2	EA		
6.05	6" HDPE DR11 Discharge Piping	34	LF		
6.06	6" HDPE DR11 Fused Offset Fitting	2	EA		
6.07	6" DIPS Flange HDPE/316 Stainless Steel Adapter	2	EA		
6.08	6" 316 Stainless Steel Piping	11	LF		
6.09	6" PVC - DR18	7	LF		
6.10	6" FL Check Valve	2	EA		
6.11	6" FL Plug Valve	3	EA		
6.12	6" 316 Stainless Steel FL 90° LR Fitting	3	EA		
6.13	6" Stainless Steel FL 90° Fitting	1	EA		
6.14	6" Stainless Steel FL Tee Fitting	2	EA		
6.15	6" Ductile Iron 90° MJ Fitting	1	EA		
6.16	6" Ductile Iron 45° MJ Fitting	2	EA		
6.17	6" Isolation Valve w/ Valve Box	1	EA		
6.18	6" Aluminum Male Kamlock w/ Female Dust Cap	1	EA		
6.19	3" 316 Stainless Steel Pipe Support Brace w/ U-Bolt	1	LS		

6.20	2" SCH 40 316 Stainless Steel Guide Rails & Supports	1	LS		
6.21	316 Stainless Steel Float/Cable Holder	1	LS		
6.22	6" 316 Stainless Steel Air Vent	1	LS		
6.23	316 Stainless Steel Lifting Chains w/ Hammerlocks & Masterlinks	1	LS		
6.24	Lift Station Control Floats	1	LS		
6.25	ARV	2	EA		
6.26	2" SCH 80 CPVC Ball Valve	2	EA		
6.27	2" SCH 80 CPVC Piping and Fittings	1	LS		
6.28	2" 316 Stainless Steel Ball Valve	2	EA		
6.29	3/4" 316 Stainless Steel Ball Valve	2	EA		
6.30	Diaphragm Pressure Gauges	2	EA		
6.31	316 Stainless Steel Pipe Stands	3	EA		
6.32	Geotextile Fabric	115	SF		
6.33	6" Granite #57 Stone	2.5	CY		
6.34	6' Tall Black Vinyl Chain Link Fence w/ Swing Gate	58	LF		
6.35	2" Corporation Stop w/ Saddle	1	EA		
6.36	Washdown Station Piping, Valves, Fitting, & Meter (Detail A4, M-903)	1	LS		
6.37	Connect to the Existing Collection System	1	EA		
6.38	Control Panel (NEMA 6P Enclosure)	1	LS		
6.39	Service Installation	1	LS		
6.40	Conduits to Wet Well	1	LS		
6.41	Install Motor Leads & Float Switches	1	LS		
6.42	Startup and Testing	1	LS		
6.43	Maintenance of Traffic (MOT) Plan	1	LS		
6.44	Bypass Pumping Plan	1	LS		
6.45	Site Restoration	1	LS		
6.46	Erosion Control	1	LS		
6.47	Access Hatch Assembly	1	EA		
6.48	Existing Lift Station Pump, Piping, and Valves Demolition	1	LS		
6.49	Existing Concrete Demolition	1	LS		
6.50	Existing Electrical Demolition	1	LS		
6.51	Remote Telemetry Alert System	1	LS		
	SUB-TOTAL LIFT STATION #10 SITE REHABILTATION				
7	**Lift Station Structural Components**				
7.01	Concrete Class IV (5,500 PSI 28-Day Compressive Strength)	18	CY		
7.02	Grade 60 Carbon Steel Reinforcing	4,525	LB		
7.03	Link Type Modular Pipe Wall Penetration Seal	16	EA		
7.04	Electrical Panel Support Column & Foundation	10	EA		
7.05	Multilayer Polymer Liner System	1,300	SF		
7.06	Non-Shrink Grout Repair	4.9	CF		
	SUB-TOTAL LIFT STATION STRUCTURAL COMPONENTS				
	TOTAL BASE BID COST				

8	**Lift Station Control Panels (Additive Alternate)**				
8.01	Lift Station #1 - Powder Coated White NEMA 6P Control Panel	1	EA		
8.02	Lift Station #6 - Powder Coated White NEMA 6P Control Panel	1	EA		
8.03	Lift Station #7 - Powder Coated White NEMA 6P Control Panel	1	EA		
8.04	Lift Station #9 - Powder Coated White NEMA 6P Control Panel	1	EA		
8.05	Lift Station #10 - Powder Coated White NEMA 6P Control Panel	1	EA		
	TOTAL LIFT STATION CONTROL PANELS (ADDITIVE ALTERNATE) BID COST				

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CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

Site and Infrastructure Subgroup

Process Equipment Subgroup

END OF TABLE OF CONTENTS

Date: _____ _____

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SECTION 01 35 13 - SPECIAL CONDITIONS

The following Special Conditions take precedence over Plans and Specifications:

1. Sufficient precautions shall be taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the state. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the state or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

2. Special emphasis shall be given to controlling erosion during the entire project. Erosion control measures shall be employed so as to prevent any erosion or off-site degradation.

3. Erosion evident within the limits of construction shall be the responsibility of the CONTRACTOR during the full term of the contract and for the full (1) year guarantee period. Areas subject to erosion during this time shall be fully restored to original or design conditions (as applicable) within 10 days of notice to the CONTRACTOR.

4. Within 20 days of the date of Notice to Proceed, the CONTRACTOR shall submit to the ENGINEER and OWNER a Hurricane Preparedness Plan. The plan should outline the necessary measures which the CONTRACTOR proposes to perform at no additional cost to the OWNER in case of a hurricane warning. Such measures shall be in accordance with local and state requirements

   In the event of inclement weather, CONTRACTOR will, and will cause Subcontractors to protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of ENGINEER, any portion of Work or materials shall have been damaged or injured by reason of failure on the part of the CONTRACTOR or Subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of CONTRACTOR

5. Any disturbance by the Contractor beyond the limits of construction shall be repaired to original condition or better at the Contractor's expense.

6. The Contractor shall maintain prominent and clear labeling of its company name and its local phone number at each project site. The Contractor and each of its major subcontractors shall provide two points of contact with 24-hour phone numbers to Owner prior to beginning construction.

7. Contractor shall maintain a roster of known personnel employed by Contractor, and Subcontractors to be utilized at the project site. Contractor shall update the list on at least a monthly basis.

8. THE "DISTRICT" will issue a final acceptance for the contract once the specified system becomes operational. Final acceptance will also be contingent on the acceptable restoration of all areas disturbed during construction. THE "DISTRICT" will also require the Contractor to provide his written warranty, release of lien, and acceptable "as-builts." Upon final payment to the Contractor by the Owner, the Contractor's warranty will begin.

9. Archeological Finds

During any activities which involve excavation or ground disturbance, Contractor shall monitor all construction activities. In the event that fortuitous finds or unexpected discoveries, such as prehistoric or historic artifacts, including pottery or ceramics, stone tools or metal implements, or other physical remains that could be associated with North American cultures or early colonial or American settlement are encountered at any time within the project areas, the Contractor should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. If the excavation process uncovers items, or evidence thereof, which might be of archaeological, historic, or architectural interest, Contractor shall to stop work immediately and take all reasonable measures to protect the items in a manner sufficient to avoid additional harm until the significance of the discovery can be determined. If items of significance are discovered, the Owner will contact the appropriate agencies for a determination of required actions. Project activities should not resume in the area without written authorization from the Owner.

In the event that any human remains are unearthed, all work shall stop immediately and the area shall be secured in accordance with local, state, and federal statutes.

10. Sewer bypass pumping/piping: On projects requiring temporary sewer bypass pumping/piping, it is the Contractor's responsibility to furnish, install, operate, and remove the appropriate sized materials and equipment and employ the site appropriate means and methods by which to complete this task without causing sewer spills, overflows, sewer backup into customers' homes, or service disruptions to the THE "DISTRICT" sewer customers. Regardless of the means and methods chosen by the Contractor, the following conditions shall be met:
    a. THE "DISTRICT" typically pays a lump sum price for bypass pumping/piping, but still desires the Contractor to minimize the time required to operate its flow diversion strategy. Time is of the essence with whatever flow diversion method chosen and implemented by Contractor.
    b. It is the Contractor's responsibility to minimize, as much as practical, all impacts (i.e. above ground piping across roads and driveways) to local residents and motorists, and to maintain traffic and driveway access as much as practical. Contractor shall perform lane closures and/or detours on days and at hours as directed and allowed by governing roadway agency.
    c. Contractor shall be equipped with tools, equipment, manpower, and material necessary to clean overflows resulting from failure of sewer bypass pumping/piping, to include use of environmentally friendly biodegradable disinfectant. See Special Condition Note concerning fines and penalties to be levied on Contractor due to overflows caused by faulty sewer bypass pumping/piping.
    d. THE "DISTRICT" may not be readily available to assist with potential problems associated with the Contractor's selected bypass pumping/piping system, however, should THE "DISTRICT" respond and/or assist with issues associated with the flow diversion, then Contractor will be charged for THE "DISTRICT" personnel, vehicle, equipment, and material costs.
    e. When possible, the Contractor shall construct the new infrastructure first (i.e. lift station, force main, gravity sewer, manhole) and place into service while the existing infrastructure remains in operation. When not possible to construct the new infrastructure first, the Contractor shall install its bypass pumping/piping and assure its operation prior to beginning work on the new infrastructure. For existing lift stations that must remain in operation, site must remain accessible at all times to THE "DISTRICT" vehicles (service trucks, tanker trucks, vacuum trucks, etc.), utility service trucks, and bypass pumps and generators.
    f. Minimum requirements for bypass pumping/piping with gas powered engines/pumps:
        1. Max dBA rating at 7 meters shall not exceed 72 dBA (less than 72 dBA is desirable) and shall be accomplished via the use of specialized residential grade noise attenuators/mufflers and/or baffles.

2. Primary system shall be backed up with redundant secondary system.
3. Secondary pump system shall be supplied and equipped with emergency float. An auto-dialer shall be installed to notify the Contractor of emergency conditions. Auto-dialer shall dial the following personnel, in order:
    a) Contractor representative #1
    b) Contractor representative #2
    c) Contractor representative #3
    d) Bypass pump company representative #1
    e) Bypass pump company representative #2
    f) THE "DISTRICT" Representative

4. Contractor shall provide name and 2 phone numbers each of at least three Contractor representatives that will be available to respond to emergencies. This info will be supplied to the Engineer, THE "DISTRICT", and the FDEP.
5. Contractor shall have crews, equipment, and supplies capable of making needed repairs on site within two hours of initial notification (first contact attempt) of an emergency situation. Contractor shall pay $1,000 for each hour it is not on site and fully operational after the initial two hour response window.
6. Contractor shall provide repairs and have flow diversion back in full operation within 4 hours of initial notification (first contact attempt). Contractor shall pay $1,000 for each hour the bypass pumping/piping system is not operational after the initial four hour response window.
7. Fuel tanks shall meet all regulatory requirements (i.e. double hull, etc.).
8. All suction and discharge piping shall be welded HDPE and all valves, check valves, and other fittings shall be flanged.

g. Minimum requirements for bypass pumping/piping with vacuum trucks, tanker trucks, or frac (storage) tanks:
    1. All material collected by vacuum trucks, tanker trucks, and frac tanks must be taken to THE "DISTRICT"s WRF in Cedar Key unless otherwise coordinated, allowed, and directed by THE "DISTRICT".

h. Minimum requirements for bypass pumping/piping with usage of collection system storage:
    1. Although heavily discouraged, it is understood that very brief moments of collection system storage are needed from time to time in order to incorporate bypass piping/pumping measures. Contractor shall schedule said moments to very low flow periods and for very brief periods. Contractor is responsible for all damages resulting from sewer back-ups onto private properties as a result of its use of collection system storage. Contractor is responsible for cleaning portions of collection system used for storage should deposition as a result of system storage.

i. Minimum requirements for bypass pumping/piping with other means and methods not contained in this section:
    1. Other bypass pumping/piping methods system requires review and approval by THE "DISTRICT" and the Engineer.

11. The contractor shall be responsible for all bypass pumping associated with the construction of the proposed improvements. Contractor shall provide bypass pumps, piping, valves, fittings, fuel and any other items required for the bypass operation. Contractor shall maintain fuel in the bypass pump such that the pump will operate during times when the contractor is not on-site. Additionally, the bypass piping will need to cross the existing roadway. Contractor shall maintain vehicular traffic access at all times.

12. All internal combustion-powered equipment and/or standby power generators shall have, as a minimum, a residential grade silencer (muffler) for equipment to be operating beyond the hours of operation allowed by local Noise Attenuation Ordinance requirements. The equipment shall be noise attenuated to emit a

maximum noise level of 80 dBA at 30 feet from the equipment, unless otherwise required by local ordinance.

13. In the event that any sanitary sewer overflow (SSOs) occur as a result of Contractor's operations, including but not limited to bypass pumping on flow diversion activities, or any failures therein, Contractor shall be responsible for all cleanup operations required thereby as well as paying all fines issued by the Florida Department of Environmental Protection (FDEP). If FDEP fines THE "DISTRICT" due to an SSO event and demands payment, THE "DISTRICT" may require payment from Contractor in the suggested fine amounts or withhold payment from Contractor in these amounts, at THE "DISTRICT" option.

14. It is the Contractor's responsibility to satisfy any and all requirements as specified by the Florida Department of Environmental Protection (FDEP), the Florida Department of Transportation, or any other regulatory agency relative to Federal, State or County agencies. Contractor shall be liable for and pay fines or penalties associated with his activities as may be levied by authorities having jurisdiction.

15. Unless otherwise specified, the contractor will be required to limit construction to the hours of 7:00 AM to 6:00 PM, or to within daylight hours, whichever is more restrictive, unless written permission has been obtained from the Owner. All internal combustion-powered equipment and/or standby power generators shall have, as a minimum, a residential grade silencer (muffler) for equipment to be operating beyond the hours of operation allowed by local Noise Attenuation Ordinance requirements. The equipment shall be noise attenuated to emit a maximum noise level of 80 dBA at 30 feet from the equipment, unless otherwise required by local ordinance.

16. "Regular work hours" are defined as from 7:00 a.m. to 6:00 p.m. and "legal holidays" are defined as all those recognized by THE "DISTRICT".

17. Discharge from pumps, well points, and any other equipment utilized for dewatering excavations shall not be released to any wetland. Provide temporary piping and hoses as necessary to convey all discharges to a storm drain, the location to be approved by OWNER. The effects of temporary piping and hoses on pedestrian and vehicular access will be evaluated when reviewing a point of discharge for approval.

END OF SECTION 01 35 13

SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

A. Related Documents:
1. Drawings and general provisions of the specifications and/or contract documents apply to this Section.
2. Review these documents for coordination with additional requirements and information that apply to work under this Section.
3. The intent of this specification is to supplement the latest specifications that may be produced by the Cedar Key Water and Sewer District for Wastewater Pumping Stations. It is the intent of the project drawings, notes, and specifications to comply and coordinate with the District's specifications and requirements. Coordination with the Owner and/or Owner's representative concerning the District's specifications is part of the Electrical Contractor's work.

B. Scope of Work:
1. The Electrical Contractor shall furnish services, skilled and common labor, and apparatus and materials required for the complete installation as shown and within the intent of the drawings and these Specifications.
2. The Project consists of the rehabilitation of five (5) Wastewater Lift Stations. The drawings and specifications are provided for each Lift Station. In general, the work shall be to provide work to remove the electrical components of the existing Lift Station and install the equipment, conduit, and wiring for the electrical service to each Lift Station and to install the control equipment (supplied by others) and to supply and install the conduit and wiring to connect the control equipment and motor driven equipment.
3. Work includes, but not limited to, the following and shall be completed in accordance with the project construction drawings and specifications:
    a. Electrical Service to the Lift Stations. Coordination with the serving Utility is part of the work.
    b. The supply and installation of the Main Disconnect/Breaker including conduit, wiring and terminations.
    c. Receiving, storing, and installing the Lift Station Control Panel. Coordination with the Control Panel supplier for a proposed SCADA system and the SCADA panel supplier/integrator is part of the work.
    d. A SCADA System will be added to the control design of the Lift Stations. The SCADA panel will reside in the new control panels. The SCADA System will be cellular phone based (i.e. no additional antennas, poles, external wiring). Configuration of the SCADA System will be by others. The contractor's work will be wiring of devices/inputs to the SCADA terminals (field instrument wiring).
    e. Grounding - supply, installation and testing of Service Grounding, Ground Rods and equipment grounding.
    f. Support for commissioning and start-up of all electrical and control systems for both Lift Stations. Coordination with the Owner and/or the Owner's representative is part of the work.
    g. Demolition work to remove the existing Lift Station control panel and wiring to the wet well is part of the work (determination of wiring, removal of cables, etc.). Coordination of the demolition with the owner, utility, and other contractors is part of the work.

1.2 REFERENCES

A. General:
1. The following documents form part of the Specifications to the extent stated. Where differences exist between codes and standards, the one affording the greatest protection shall apply.
2. Unless otherwise noted, the referenced standard edition is the current one at the time of Award of Contract.
3. Refer to specifications and/or contract documents "General Requirements" for the list of applicable regulatory requirements.

B. ANSI/NFPA 70 - National Electrical Code.

C. ANSI - American National Standards Institute

D. Illuminating Engineering Society of North America (IES)

E. National Electrical Safety Code (NESC)

F. NFPA – National Fire Protection Association:
1. Standard for Electrical Safety in the Workplace (NFPA 70E)

G. NETA ATS - Acceptance Testing Specifications for Electrical Power Distribution Equipment and Systems

1.3 SUBMITTALS

A. Submit under provisions of Division 01 Section "General Requirements" Paragraph X, Submittals and as required by other sections of the Specifications.

B. Shop Drawings: The Subcontractor shall submit for approval Shop Drawings prepared in accordance with Division 01 Section "General Requirements", Paragraph X and as required by other sections of the Specifications.

1.4 QUALITY ASSURANCE

A. Materials and Equipment: Refer to specifications and/or contract documents "General Requirements".

B. If the Drawings or Specifications may not appear clear or definite, the Subcontractor shall request the Project Manager through ‘Request for Information’ (RFI) process for an interpretation and decision of same, and shall have such questions decided before proceeding with the Work.

C. Manufacturer's Directions: Follow manufacturer's directions covering points not shown on the drawings or specified herein. Manufacturer's directions do not take precedence over drawings and Specifications. Where these are in conflict with the Drawings and Specifications, notify the Project Manager for clarification before installing the work.

D. Protection of Equipment:
1. Care shall be exercised during construction to avoid damage or disfigurement. Equipment shall be protected from dust and moisture prior to and during construction. The Electrical

Contractor is cautioned that concrete finishing, painting, etc. in electrical rooms/areas shall not proceed if unprotected equipment is installed.

2. Where required or directed, construct temporary protection for equipment and installations so as to protect same from dust and debris caused by construction.
3. All protection shall be substantially constructed with the use of clean canvas, heavy plastic, and plywood as required, and made tight and dust proof as directed.
4. The Electrical Contractor shall repair by spray or brush painting, after properly preparing the surface, scratches or defects in the finish of the equipment. Only identical paint furnished by the equipment manufacturer shall be used for such purposes.
5. Failure of the Contractor to protect the equipment as outlined herein shall be grounds for rejection of the equipment and its installation.

E. Qualifications and License Requirements:
1. Certified electricians shall have evidence of certification in their possession at all times. Non-certified personnel shall perform electrical work under the continuous supervision of a certified electrician.

F. Materials and Equipment: Materials and equipment shall be new. Materials and equipment for which tests have been established by Underwriter's Laboratories, Inc. shall be approved by that body and shall bear its label of approval or the label of an OSHA approved nationally recognized testing laboratory [NRTL].
1. In lieu of label or listing by Underwriter's Laboratories, Inc. or NRTL, consideration will be given to certified test reports of an adequately equipped, recognized independent test laboratory competent to perform such testing indicating conformance to requirements of the applicable Underwriter's Laboratories, Inc. standards.
2. Unless otherwise approved by the Project Manager, the materials to be furnished under this Specification shall be the standard products of manufacturers regularly engaged in the production of such equipment equal to or superior to material specified, and shall be the manufacturer's latest standard design that complies with the Specification requirements.

G. Approval of Materials:
1. Refer to specification and/or contract documents "General Requirements" concerning approval of materials and equipment.
2. A complete list of materials and equipment proposed shall be submitted to the Project Manager for approval. The list shall include for each item: the manufacturer, the manufacturer's catalog number, type or class, the rating, capacity, size, etc.
3. The Subcontractor shall submit a brochure containing catalog cuts or drawings and data for, but not limited to, the following items:
   a. Main Disconnect/Circuit Breaker with enclosure
   b. Junction Boxes and Pull Boxes
   c. Conduit
   d. Wiring
4. Before installation of the equipment, the Electrical Contractor shall submit for approval detailed construction drawings for each item of fabricated equipment required for the electrical installation. Drawings shall be to scale and fully dimensioned and shall provide sufficient detail to clearly indicate the arrangement of equipment and its components.
5. Installation of approved substituted equipment is the Contractor's responsibility, and changes required to work included under other divisions for installations of approved substituted equipment must be made to the satisfaction of the Owner’s and/or Owner’s representative and without change in contract price. Approval by the Owner’s and/or Owner’s of substituted equipment and/or dimension drawings does not waive these requirements.

1.5 EXISTING CONDITIONS

A. The Lift Station sites are existing, and coordination with the owner and the serving utility is part of the work. Coordination with other contractors' work schedules and installed work by others is part of the Electrical Contractors work.

1.6 COORDINATION

A. Refer to specifications and/or contract documents "General Requirements".

1.7 MAINTENANCE

A. Maintenance and Operating Instructions: The Electrical Contractor shall provide Maintenance and Operating Instruction documents as part of the Final/Record document submittal.

1.8 WARRANTY

A. Refer to specifications and/or contract document "General Requirements". Unless stated otherwise the Electrical Contractor shall warranty material, equipment, and workmanship for one year after start-up of the Lift Stations.

PART 2 - PRODUCTS

2.1 GENERAL

A. In addition to material and equipment specified, the Electrical Contractor shall also provide incidental materials required to affect a complete installation. Such incidental materials include solders, tapes, caulking, mastics, gaskets, conduit support materials (straps, uni-strut, etc.), wire labels and similar items that are approved for the purpose.

B. Materials and equipment shall be uniform throughout the installation. Equipment of the same type shall be of the same manufacturer. Materials and equipment shall be new. Materials and equipment for which tests have been established by the Underwriter's Laboratories, Inc. shall have been approved by that body, or an equivalent testing firm (see Paragraph 1.4.F) and shall bear its label of approval.

PART 3 - EXECUTION

3.1 TESTS

A. Upon completion of the electrical construction work, perform tests and provide test reports as specified in this and other sections. Testing shall include:
   a. Grounding – Fall of Potential method. Maximum, ground resistance shall be 10 ohms.
   b. Wiring and termination continuity as part of the commissioning work.

B. The Electrical Contractor shall submit to the Owner and/or Owner's representative three (3) copies of test results, certified in writing, witnessed, signed and dated, immediately upon completion of

work. Unsatisfactory condition revealed by these test results, or unsatisfactory methods of tests and/or testing apparatus and instruments, shall be corrected by the Electrical Contractor to the satisfaction of the Owner and/or Owner's representative.

C. The Project Manager reserves the right to require that the Subcontractor perform and repeat tests that are deemed necessary to complete or check the tests or the certified records of the Subcontractor at any time during the course of the work. The Subcontractor shall correct unsatisfactory portion of his work that is revealed by the tests or that may be due to progressive deterioration during this period, unless the item in question was a direct specification.

3.2 NOT USED

3.3 EQUIPMENT IDENTIFICATION

A. Transformers: Transformers shall be identified by one-inch-high white stenciled-on characters giving bank number and circuit feeding the transformer in agreement with the Drawings.

B. Panelboards: Panel boards shall be identified by circuit number, voltage, phase, and wire as shown on drawings or specified elsewhere in these Specifications.

C. Schedules: Panelboards shall be furnished with a complete 8-1/2" x 11" typewritten schedule mounted on the inside of the inner door. If field changes are necessary, new schedules shall be provided by the Contractor. Forms will be provided by the Project Manager.

3.4 GENERAL INSTALLATION METHODS

A. Carpentry, Cutting, Patching, and Core Drilling:
1. Provide carpentry, cutting, patching, and core drilling required for installation of material and equipment specified in the scope of work.
2. Do not cut, core, or drill structural members without consent of the Project Manager.

B. Waterproof Construction:
1. Maintain waterproof integrity of penetrations of materials intended to be waterproof. Provide flashings at exterior roof penetrations. Caulk penetrations of foundation walls and floors watertight. Provide membrane clamps at penetrations of waterproof membranes.
2. Provide waterproof NEMA 6P enclosures for equipment or devices mounted outside or otherwise exposed to the weather.

C. Equipment Concrete Pads:
1. Equipment located on concrete floors inside the building or on grade outside the building, shall be mounted on a concrete base. The concrete base shall be four inches high and shall extend six inches beyond the edge of equipment base unless indicated otherwise on drawings.
2. Coordinate concrete bases: Concrete bases indicated on Architectural or Structural drawings are specified in other Divisions. Concrete bases not on Architectural or Structural drawings are requirements of this Division.

D. Demolition and Removal:
1. Demolition and removal/salvage of existing electrical equipment (control panels; float switches/cables; motor leads, power and control wiring) is part of the work. Coordinate waste removal with the Owner.

END OF SECTION 260500

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SECTION 33 32 13 - SUBMERSIBLE CENTRIFUGAL PUMPS

PART 1 - GENERAL

1.1 DESCRIPTION

A. The Contractor shall furnish and install the submersible non-clog pumps, related piping, supports, and all other necessary appurtenances as shown on the drawings and specified in these specifications.

1.2 SUBMITTALS

A. Submit shop drawings, technical data, and pump curves in accordance with Section 01 33 00. Submit operation and maintenance data in accordance with Section 01 78 23.

1.3 QUALITY ASSURANCE

A. Reference Standards

1. American Iron & Steel Institute (AISI)
2. American Society for Testing and Materials (ASTM)
3. Factory Mutual (FM)
4. Hydraulic Institute Standards for Centrifugal, Rotary, and Recip Pumps (HI)
5. National Fire Protection Agency (NFPA)
6. National Electric Code(NEC)
7. National Electrical Manufacturers Association(NEMA)
8. Anti-Friction Bearing Manufacturers Association(AFBMA)
9. International Standards Organization (ISO) - ISO9001

1.4 PUMP WARRANTY

A. The pump manufacturer shall warrant the pump, motor and guide system to the Owner against defects in workmanship and materials for a period of seven (7) years under normal use and service. A copy of each warranty shall be provided to the Owner at startup.

PART 2 - PRODUCTS

2.1 GENERAL

A. The Contractor shall furnish and install two (2) submersible non-clog sewage pumps for the existing lift station. Each pump shall be furnished with a stainless steel lifting cable per manufacturers recommendations.

2.2 MANUFACTURER

A. KSB

B. Approved Equal

1. All products, whether named as "acceptable" or proposed as "equal" must fully comply with these specifications. Standard product must be modified, if required, for compliance. The contractor shall base his bid price on product offered by KSB, Inc. for purposes of determining the successful bidder on this project. The contractor may submit, with the bid, an alternate proposal with applicable deduct if any for supplying product other than KSB. Alternate proposals must include a clear statement of each point of difference between the proposed alternate product and these specifications. The Owner and Engineer reserve the right to reject any bid not based on KSB product.

2.3 REQUIREMENTS

A. Lift Station #1 System Description

1. Operating Conditions - Design: 432 GPM @ 36 FT TDH @ 71.3%
2. Secondary: 124 GPM @ 56 FT TDH @ 37%
3. 3rd Condition Point: 700 GPM @ 21 FT TDH @ 54%
4. Minimum Shutoff head: 73 FT
5. Maximum Motor HP: 8.7 HP
6. Minimum Hydraulic Efficiency (at design): 70%
7. Maximum Motor RPM: 1800 RPM

B. Lift Station #6 System Description

1. Operating Conditions - Design: 200 GPM @ 54 FT TDH @ 65%
2. Secondary: 330 GPM @ 47 FT TDH @ 53%
3. Minimum Shutoff head: 85 FT
4. Maximum Motor HP: 8.7 HP
5. Minimum Hydraulic Efficiency (at design): 60%
6. Maximum Motor RPM: 1800 RPM

C. Lift Station #7 System Description

1. Operating Conditions - Design: 100 GPM @ 55 FT TDH @ 29.2%
2. Secondary: 50 GPM @ 70 FT TDH @ 18%
3. 3rd Condition Point: 280 GPM @ 20 FT TDH @ 22%
4. Minimum Shutoff head: 75 FT
5. Maximum Motor HP: 6.3 HP
6. Minimum Hydraulic Efficiency (at design): 28%
7. Maximum Motor RPM: 3600 RPM

D. Lift Station #9 System Description

1. Operating Conditions - Design: 240 GPM @ 52 FT TDH @ 67%
2. Secondary: 120 GPM @ 70 FT TDH @ 36.4%

3. Minimum Shutoff head: 77 FT
4. Maximum Motor HP: 8.7 HP
5. Minimum Hydraulic Efficiency (at design): 55%
6. Maximum Motor RPM: 1800 RPM

E. Lift Station #10 System Description

1. Operating Conditions - Design: 200 GPM @ 61 FT TDH @ 64.3%
2. Secondary: 290 GPM @ 51 FT TDH @ 53%
3. Minimum Shutoff head: 85 FT
4. Maximum Motor HP: 8.7 HP
5. Minimum Hydraulic Efficiency (at design): 63%
6. Maximum Motor RPM: 1800 RPM

2.4 MATERIALS

A. Submersible Sewage Pumps

1. Pump Case: Cast Iron, ASTM A48, Class 35B
2. Motor Housing: Cast Iron, ASTM A48, Class 35B
3. Impeller: High Chrome white iron, A532 IIC, 15% CrMo-Hc (semi-open) or Grey cast iron EN-GJL-250 (A 48 Class 35B) (vortex)
4. Intermediate Housing (Backplate): Cast Iron, ASTM A48, Class 35B
5. Discharge Base Elbow: Cast Iron, ASTM A48, Class 35B, Nitrided for wear and corrosion resistance.
6. Pump/Motor Shaft: Carbon Steel, C 45 N with replaceable ASTM A276 Type 420 shaft protection sleeve or entire shaft to be ASTM A276 Type 420 stainless steel with an ASTM A276 Type 420 shaft protection sleeve.
7. Shaft Sleeve (if applicable): Stainless Steel, ASTM A276 Type 420
8. Wear Plate: Ductile cast iron EN-GJS-600-3 (semi open only)
9. O-Rings: Nitrile Rubber (NBR)
10. Fasteners (including impeller fastener): Stainless Steel, ASTM A276 Type 316Ti.
11. Lower Seal Faces: Silicon Carbide/Silicon Carbide
12. Upper Seal Faces: Silicon Carbide stationary/Carbon rotating
13. Guide rails/cables and mounting brackets: Stainless Steel, ASTM A276 Type 304 or 316
14. Lifting Chain or cable: Stainless Steel, ASTM A276 Type 316
15. Oil-all uses (seal lubrication, etc): Ecologically safe, parifin or mineral base
16. Power/Control Cable Jacket: Chloroprene with non-wicking fillers

2.5 ACCESSORIES

A. Power Cable

1. Provide 50 ft of power/control cable with each Lift Station #6 pump, Lift Station #7 pump, Lift Station #9 pump, and Lift Station #10 pump. Provide 100 ft of power/control cable with each Lift Station #1 pump. The power cable shall be suitable for submersible wastewater application, sized in accordance with NEC requirements. Provide cable terminal box on side of motor housing, with cable entry sealed to ensure that no entry of moisture is possible into the high-voltage motor/ terminal area even if the cable is

damaged or severed below water level. Cable seal shall include a compressed rubber grommet to seal the cable exterior and epoxy fill to seal the interior passages. A strain relief device, in direct contact with both the cable and the cast iron entry housing, shall be provided. The cable entry shall be rated by Factory Mutual (or UL) for submerged operating depths to 85 feet.

B. Temperature Protection

1. Furnish temperature monitoring devices in motor windings for use in conjunction with and supplemental to external motor overload protection. Arrange controls to shut down pump should any of the monitors detect high temperature and automatically reset once motor temperature returns to normal. Set temperature monitors at levels recommended by pump manufacturer.

C. Seal Leak Detection

1. Provide a detector in the motor's stator cavity which allows a control panel mounted relay to indicate leakage into the motor. In addition, on motors 80HP and larger provide a stainless steel float switch in a separate leakage collection chamber to indicate leakage past the inner mechanical seal prior to its entrance into either the motor stator cavity or the lower bearing. Electronic probes which depend on sensing resistance value changes in seal oil will not be acceptable as seal leak indicators.

D. “PumpSafe” Motor Sensor Monitoring Relay

1. The pump supplier shall furnish all relays required for monitoring all motor sensors. The relays shall be installed by others in the motor control panel and properly wired in accordance with pump manufacturer’s instructions. Relays shall mount in standard 12-pin socket bases (provided) and shall operate on available control voltage of 24-240 VAC. If relays require an input voltage that is not available in the motor control panel an adequate transformer (with fused input) shall be provided by the pump supplier. Relays shall have a power consumption of no more than 2.8 watt, and shall be UL approved. Relays shall be modular in design, with each relay monitoring no more than two motor sensor functions.
2. Each relay module shall include a dual color (red/green) LED to indicate the status of each monitored sensor. Green will indicate “status OK”; red will indicate a failure or alarm condition. A self-corrected fault will allow the relay output contacts to reset and cause the LED to change from a steady alarm indication to a flashing signal. The LED shall continue to flash until locally cleared, providing the operator an indication of a potential intermittent fault. Each relay shall also include a power-on LED and both “test” and “reset” pushbuttons.
3. An independent fail-safe (switch on power loss) form-C output contact shall be included for each monitored sensor to provide a normally-open / normally-closed dry contact to initiate a remote alarm device or shut down the motor. Contacts shall be rated for 5 amps at 120 volt.

2.6 FABRICATION

A. General

1. Provide pumps capable of handling raw unscreened wastewater. Design pumps to allow for removal and reinstallation without the need to enter the wet well and without removal of bolts, nuts, or other fasteners. Provide a pump which connects to a permanently mounted discharge connection by simple downward motion, without rotation, guided by at least two non-load-bearing guides. All system components for guide cable systems, including cable, shall be supplied, and warranted by the pump manufacturer. For guide pipe systems the pipe shall be supplied and warranted by the installing contractor. Final connection shall ensure zero leakage between pump and discharge connection flange. Provide a discharge connection/ guide system so that no part of the pump bears directly on the floor of the wet well. Provide Type 316 stainless steel chain of sufficient length to lift pumps properly and safely from the wet well. All exposed cast iron and ferrous surfaces shall be cleaned of dirt and grease, sandblasted to near white finish, and coated with an anti-corrosion reaction primer. The pump shall then be coated with two-component thick coat paint, with an epoxy resin base, having at minimum 83% solids by volume. This coating shall be non-toxic and approved for both wastewater and water applications.

B. Major Components

1. Furnish major components (pump case, impeller, intermediate housing, motor housing) of cast material as specified with smooth surfaces devoid of blow holes and other irregularities. Pump case design shall incorporate a centerline discharge for stability when mounted on the base elbow.
2. Dual Vane, Semi Open

    a. Provide non-clog, dual vane, self-cleaning type impeller capable of handling soils, fibrous materials, heavy sludge and other matter found in wastewater. Statically and dynamically balance the impeller. On semi-open impeller designs, provide wear plate of material hardness specified, to ensure maximum pump/impeller life and continuing high efficiencies. Impellers must incorporate back vanes which reduce axial loads and propel solids away from the seal area. Do not use soft metals (i.e. bronze, cast iron, 304 or 316 stainless) or elastomers as wear plate material.
    b. The impeller(s) shall be of the specified material, dynamically balanced, recessed, non-clogging design capable of handling soils, fibrous materials, heavy sludge and other matter found in wastewater. The impeller(s) shall have a back shroud only with back pump-out vanes to equalize axial thrust, and curved blades which protrude into the pump casing for maximum efficiency. The impeller will create a vortex which carries solids through the pump casing without passing through the blades.

C. Shaft

1. Provide common pump/motor shaft of sufficient size to transmit full driver output with a maximum deflection of 0.002 inches measured at the lower mechanical seal. Machine the shaft of carbon steel or stainless steel and isolate the shaft from the pumped media with a replaceable Type 420 stainless steel shaft sleeve under the lower mechanical seal. Pump shafts without shaft sleeves are not acceptable due to higher maintenance costs associated with repairing shafts / rotor assemblies that are left unprotected.

D. Shaft Seal

1. Provide two totally independent mechanical shaft seals, installed in tandem, each with its own independent single spring system acting in a common direction. Install the upper seal in an oil-filled chamber with drain and inspection plug (with positive anti-leak seal) for easy access from external to the pump. Provide seals requiring neither routine maintenance nor adjustment, but capable of being easily inspected and replaced. Provide seals which are non-proprietary in design, with replacements available from a source other than the pump manufacturer or its distributors. Do not provide seals with the following characteristics: conventional double mechanical seals with single or multiple springs acting in opposed direction; cartridge-type mechanical seals; seals incorporating coolant circulating impellers, seals with face materials other than those specified.

E. Bearings

1. Furnish upper and lower bearings, single row or double row as needed to provide a B10 life of, at minimum, 100,000 hours at all anticipated axial and radial loadings. Provide sealed/shielded (permanently lubricated) bearings. If open-type (non-shielded) bearings are used, provide re-lubrication ports with positive anti-leak plugs for periodic addition of lubrication from external to the pump.

F. Motor

1. Provide a motor which is squirrel cage, induction in design, housed in a completely watertight and air-filled chamber, with a min 1.15 service factor. The motor shall be adequately sized and rated for continuous operation at a maximum fluid temperature of 104º F (40º C). Allowable maximum submergence shall not be less than 100 ft (30 m). Insulate the motor stator with, at minimum, Class H insulation rated for 180 Degrees C. Windings shall be insulated using trickle impregnation process to ensure uniformity with a winding fill factor of at least 95%. The use of multiple step “dip and bake” type stator insulation method shall not be acceptable. The rotors bars and short circuit rings shall be made of cast aluminum. The motor and pump set complete shall be designed and manufactured by the same company. Provide temperature protection and seal leak detection as described in above. Provide adequately rated motor with sufficient surface area for ambient only cooling suited for the intermittent mode of operation in wet well wastewater applications, submerged or partially submerged, without damage. Motors containing di-electric oils used for motor cooling and/or bearing lubrication or motors where the pumped media or externally provided fresh water is directed through the motor shell for cooling is not acceptable.
2. Provide motors which are FM listed for use in Class I Division 1 Groups C&D hazardous locations as defined by the National Electric Code.

PART 3 - EXECUTION

3.1 INSTALLATION OF EQUIPMENT

A. The Contractor shall install equipment as required by the manufacturer's written installation instructions and approved shop drawings unless otherwise directed by the Engineer.

B. Excess motor and control wire shall be carefully coiled and hung inside the wet well. These wires shall not be cut, and all identification tags shall be in place. Cables shall be supported with S.S. basket weave type strain reliefs hung in wet well and be routed in a manner that will not interfere with access to any equipment or terminals in the control panels.

3.2 SPARE PARTS

A. A.The following spare parts shall be supplied by the contractor for each of the pump stations:

1. (1) Set of upper and lower shaft seals
2. (1) Set of upper and lower bearings
3. (1) O-ring kit
4. Semi Open Impeller Pumps Only – (1) wear plate

3.3 PUMP TEST

A. The pump manufacturer shall perform the following inspections and tests on each pump before shipment from factory:

1. Impeller, motor rating and electrical connections shall first be checked for compliance to the customer's purchase order.
2. A motor and cable insulation test for moisture content or insulation defects shall be made.
3. Prior to submergence, the pump shall be run dry to establish correct rotation and mechanical integrity.
4. The pump shall be run for 30 minutes submerged under a minimum of six (6) feet under water.
5. After operational test No. 4, the insulation test (No. 2) is to be performed again.

B. A written report stating the foregoing steps have been done shall be supplied with each pump at the time of shipment upon request.

C. The pump cable end will be sealed with a high quality protective covering, to make it impervious to moisture or water seepage prior to electrical installation.

END OF SECTION 33 32 13

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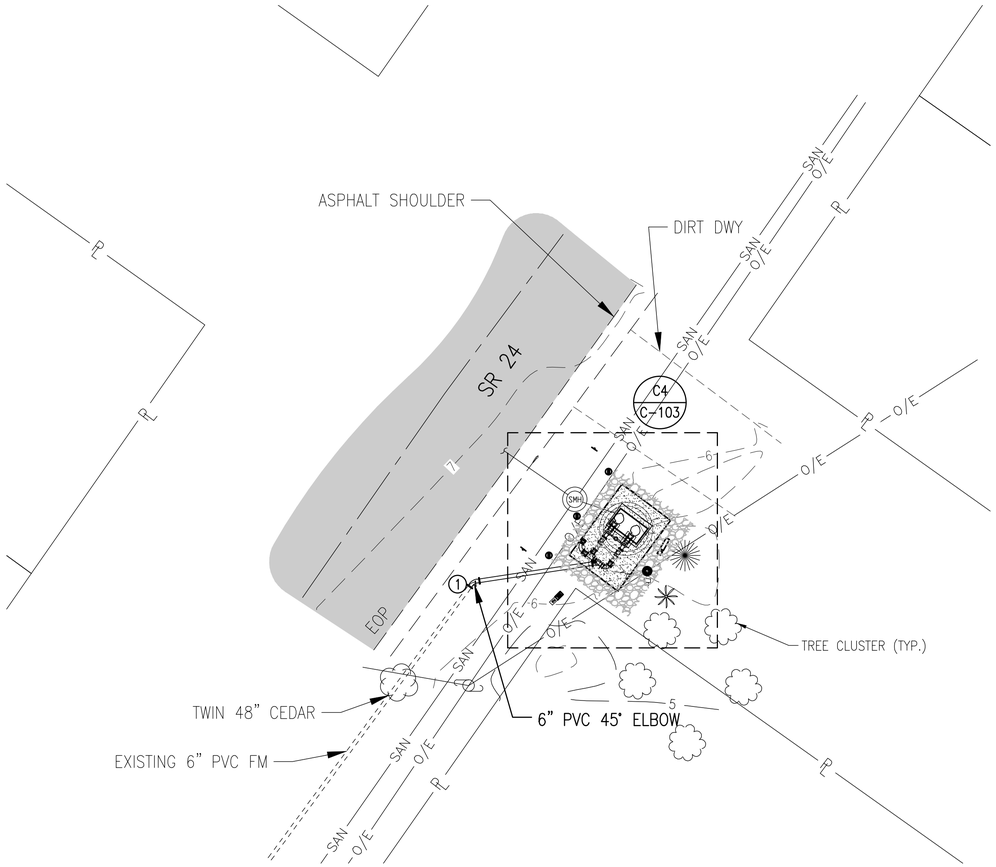
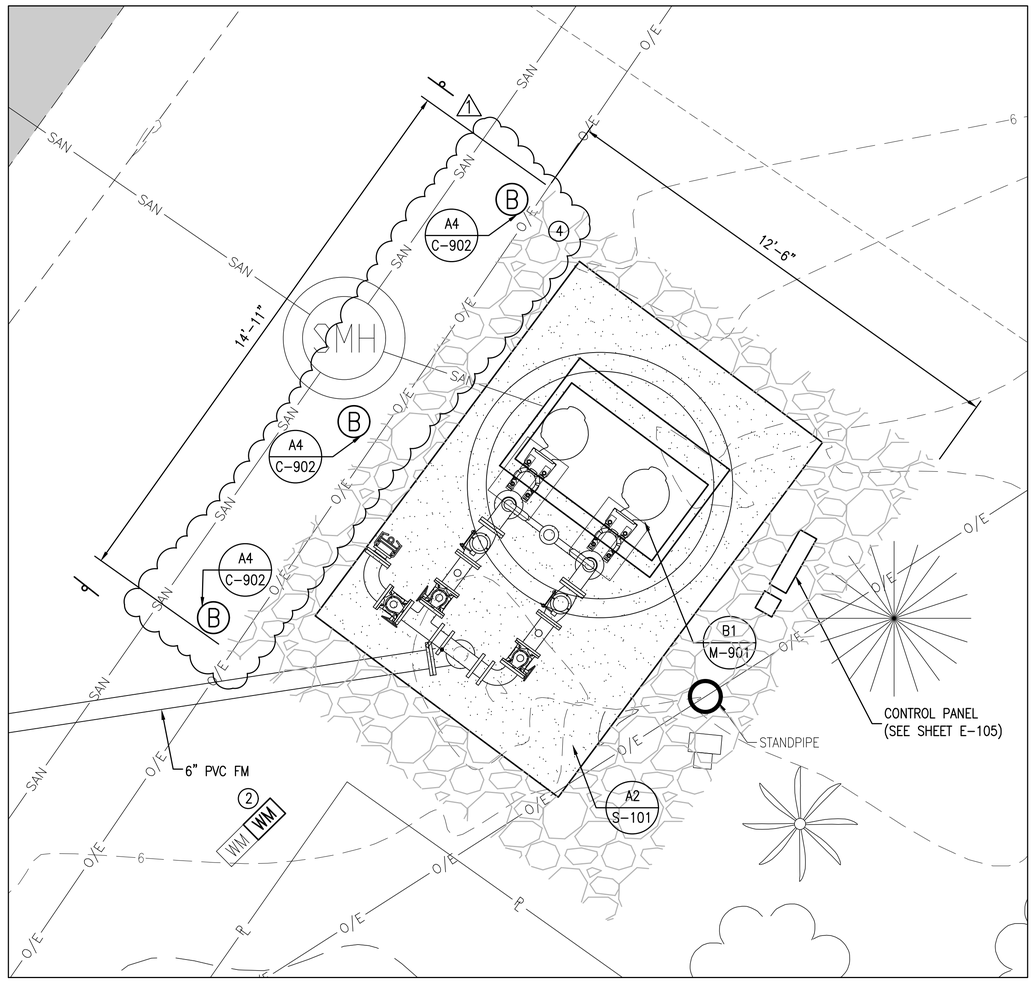
CONSTRUCTION KEY NOTES

1. CONNECT THE PROPOSED 6" DISCHARGE PIPING TO EXISTING 6" PVC FM. COORDINATE WITH OWNER WHEN MAKING THE CONNECTION
2. CONTRACTOR TO RELOCATE EXISTING WATER METER. CONTRACTOR TO FIELD LOCATE WATER METER WITH OWNER.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAKING SURE ADEQUATE CLEARANCE ROOM IS PROVIDED ABOVE THE LIFT STATION HATCH TO INSTALL PUMPS AND PIPING.
4. 6" OF GRANITE #57 STONE PLACED ON MIRAFI 140–N GEOTEXTILE FABRIC OR APPROVED EQUAL.
5. CONTRACTOR TO COORDINATE WITH THE OWNER WHEN CLOSING THE VALVES TO MAKE SURE THE CLOSED VALVES DO NOT IMPACT THE COLLECTION SYSTEM OPERATION.



B3 LS 6 PROPOSED SITE PLAN
SCALE: 1" = 10' 0 5' 10' 20'



C4 LS 6 PROPOSED SITE PLAN
SCALE: 1" = 2' 0 1' 2' 4'

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Pensacola - Panama City Beach - Tallahassee - Mobile

TYLER T. LEE
FL Reg. Engineer #93309

CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN
1	3/24	TTL	ADDENDUM 1

PROJECT NO: 123503.01
DESIGNED BY: TTL
DRAWN BY: RGG
CHK'D BY: RWD
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

NOT RELEASED FOR CONSTRUCTION BY DATE

LS 6
PROPOSED SITE
PLAN

C-103

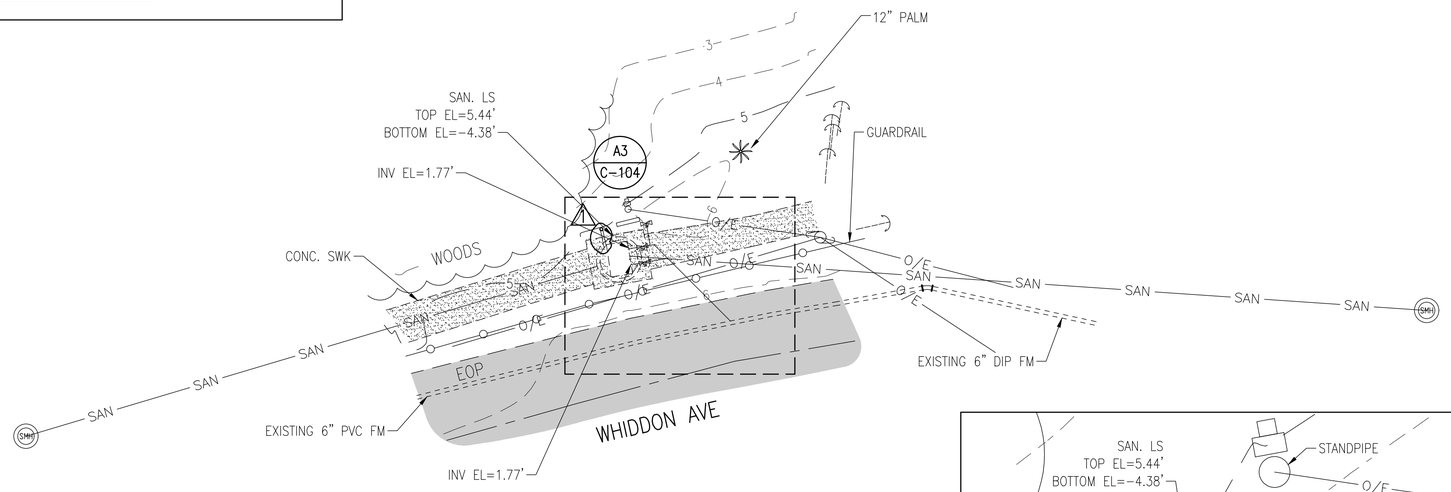
K:\1235 Cedar Key\123503.01 Sanitary Sewer Lift Station Rehabilitation\DWG\C-103 LS 6 Proposed Site Plan FDOT.dwg, Mar 05, 2024 - 1:59:02PM, jwiesner

LEGEND

ITEMS TO DEMOLISH

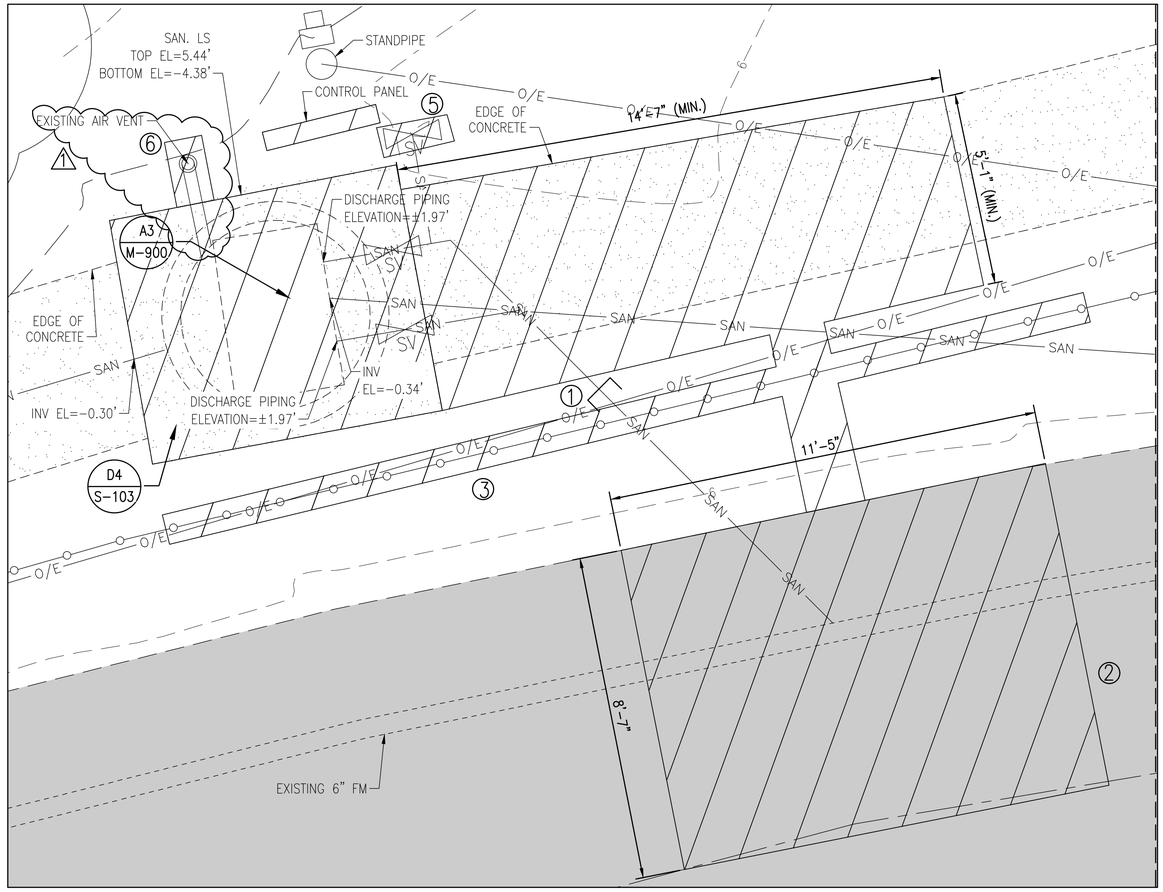
CONSTRUCTION KEY NOTES:

1. CONTRACTOR TO CUT EXISTING FORCE MAIN AND INSTALL A A 4" MJ PLUG. CONTRACTOR TO FIELD VERIFY EXISTING FORCE MAIN SIZE BEFORE INSTALLING MJ PLUG.
2. CONTRACTOR TO SAW CUT EXISTING ASPHALT AS NEEDED TO INSTALL 6" TAPPING SLEEVE AND VALVE. SEE SHEET C-105
3. CONTRACTOR TO REMOVE AND PROTECT GUARDRAIL AS NEEDED TO INSTALL 6" FM
4. ENGINEER AND OWNER TO REVIEW BYPASSING PLAN WITH CONTRACTOR TO SEE IF ADDITIONAL ISOLATION VALVES ARE REQUIRED TO ISOLATE THE LIFT STATION FROM THE SYSTEM.
5. CONTRACTOR TO DEMO AND REMOVE EXISTING PUMP OUT PIPING, VALVES, AND FITINGS.
6. CONTRACTOR TO USE EXISTING AIR VET PENETRATION TO INSTALL NEW 4" AIR VENT. SEE SHEET C-105



C3 LS 7 EXISTING & DEMOLITION PLAN

SCALE: 1" = 10' 0 5' 10' 20'



A4 LS 7 EXISTING & DEMOLITION PLAN

SCALE: 1" = 2' 0 1' 2' 4'

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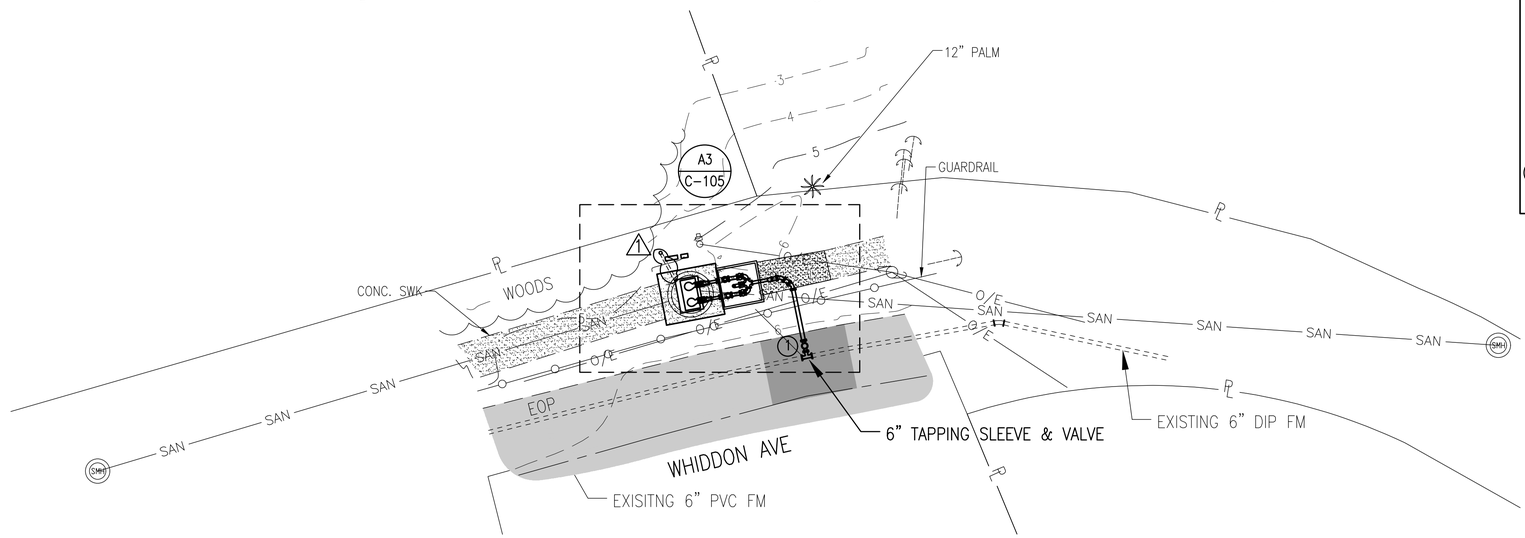
LS 7
EXISTING & DEMOLITION
PLAN

C-104

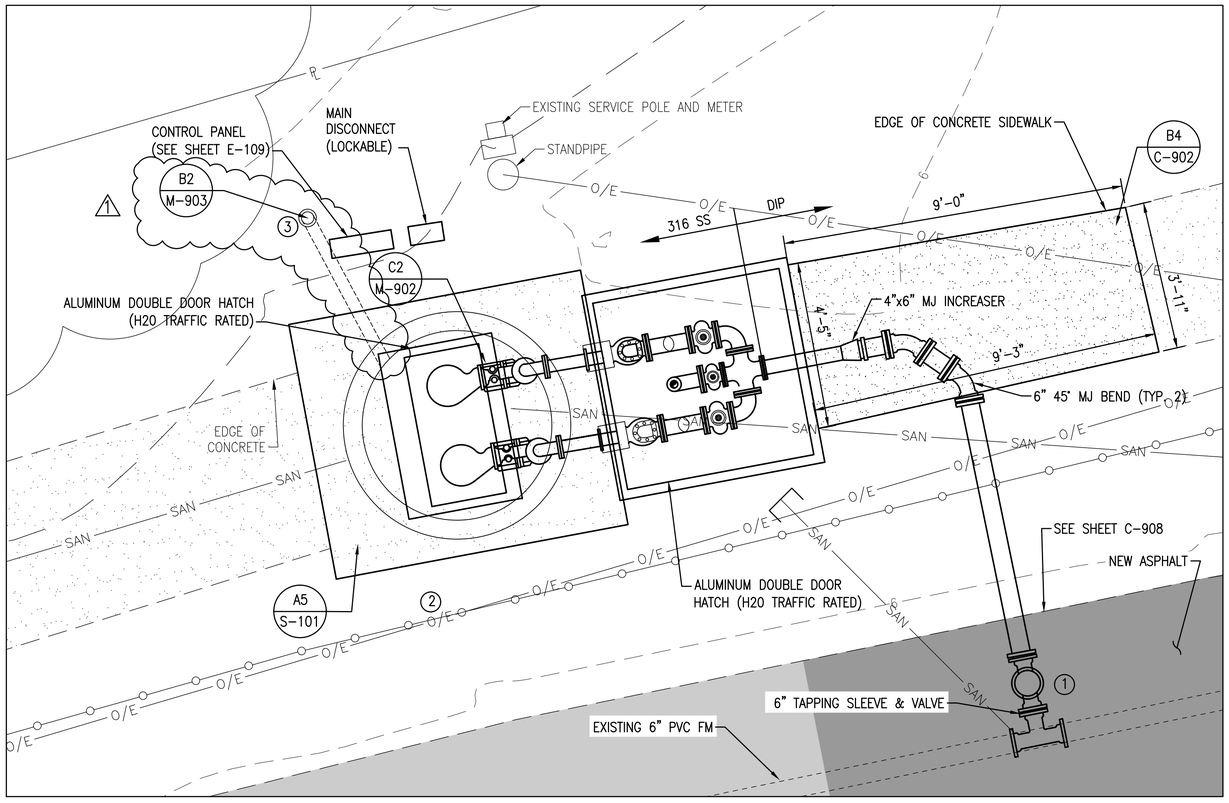
K:\1235 Cedar Key\123503.01 Sanitary Sewer Lift Station Rehabilitation\DWG\C-104 LS 7 Exist-Demo..dwg, Mar 05, 2024 - 5:04:38PM, jwiesner

CONSTRUCTION KEY NOTES:

1. CONNECT THE PROPOSED 6" DISCHARGE PIPING TO EXISTING 6" PVC FM. COORDINATE WITH OWNER WHEN MAKING THE CONNECTION. CONTRACTOR TO FIELD VERIFY FORCE MAIN SIZE, MATERIAL, AND LOCATION BEFORE INSTALLING 6" TAPPING SLEEVE AND VALVE.
2. CONTRACTOR TO REINSTALL EXISTING GUARDRAILS.
3. CONTRACTOR TO FIELD VERIFY LOCATION OF J-VENT WITH OWNER



C3 LS 7 PROPOSED SITE PLAN
SCALE: 1" = 10' 0 5' 10' 20'



A3 LS 7 PROPOSED SITE PLAN
SCALE: 1" = 2' 0 1' 2' 4'

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NO.	DATE	APPR.	REVISION/ACTION TAKEN
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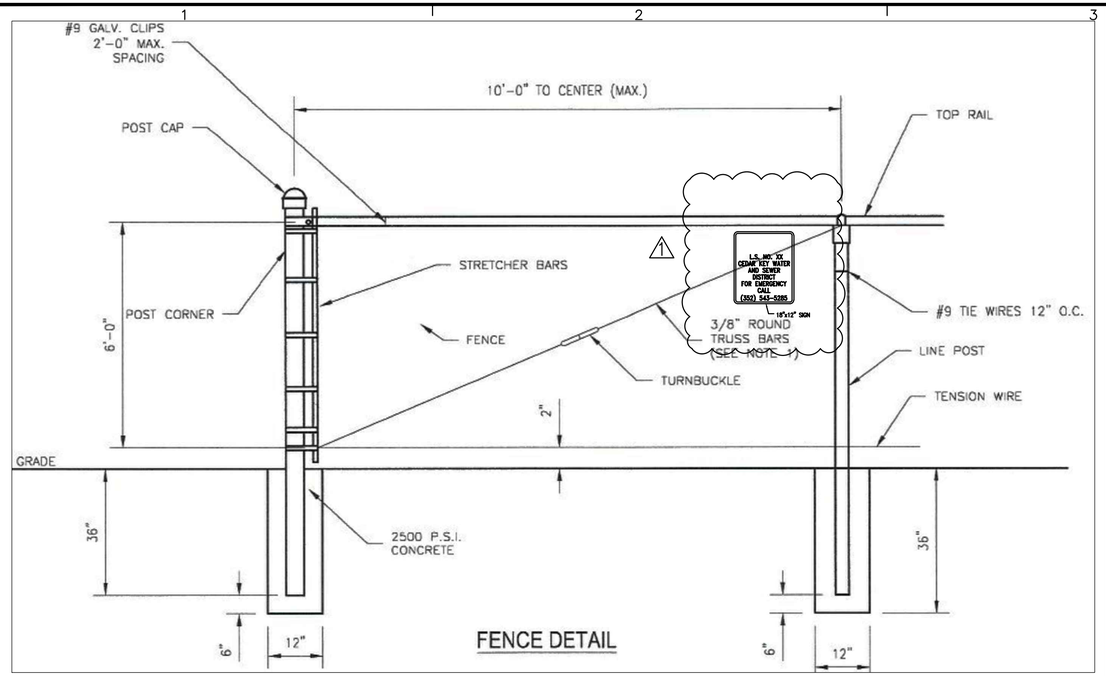
DATE: FEBRUARY 2023

NOT RELEASED FOR CONSTRUCTION BY DATE

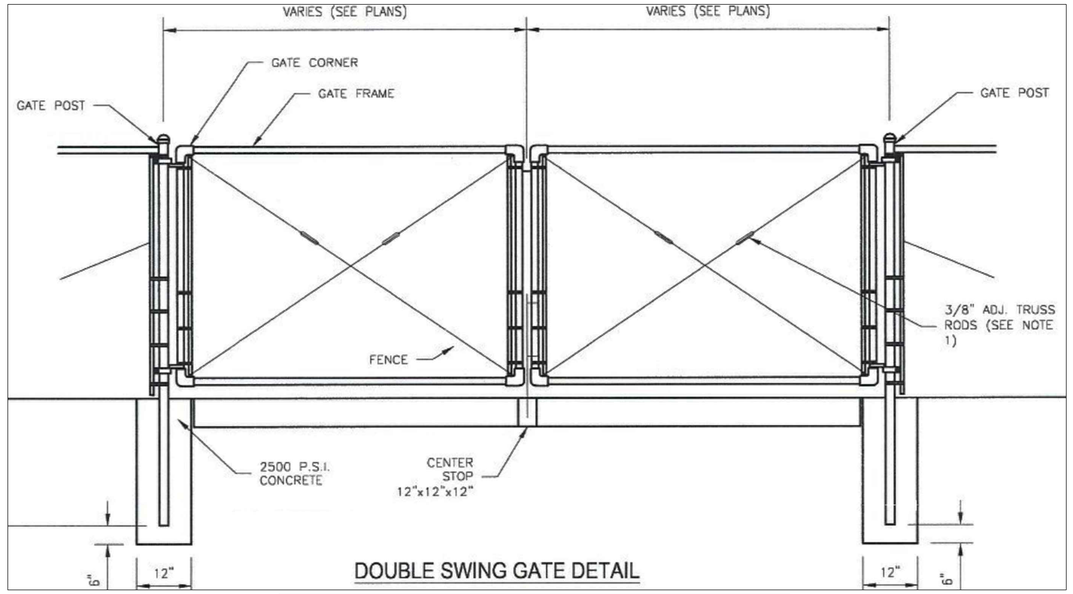
CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

LS 7 PROPOSED SITE PLAN

C-105



FENCE DETAIL



DOUBLE SWING GATE DETAIL

FENCE/GATE NOTES:

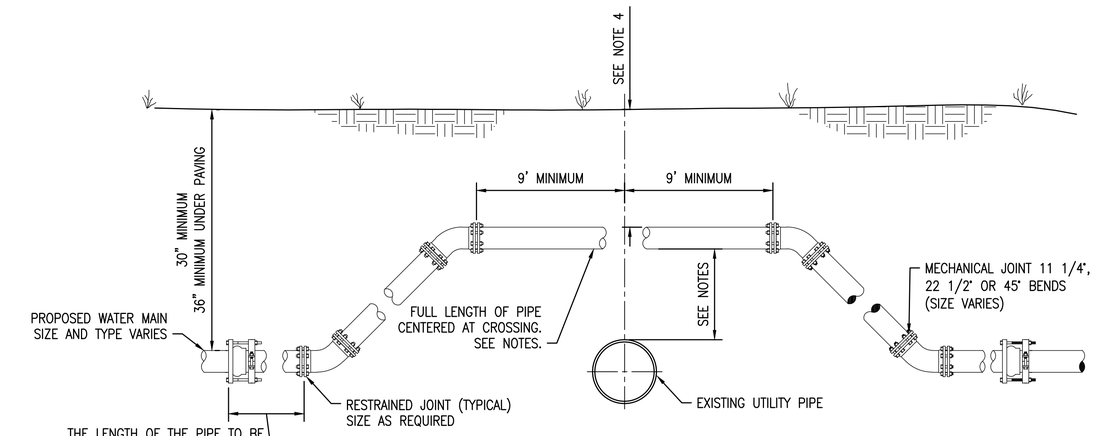
1.) TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.

2.) CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION.

3.) FENCING SHALL BE BLACK VINYL COATED.

4.) TYPICAL GATE IS 16'. VERIFY WITH OWNER PRIOR TO CONSTRUCTION.

A1 CHAIN LINK FENCE DETAIL
NOT TO SCALE



NOTES:

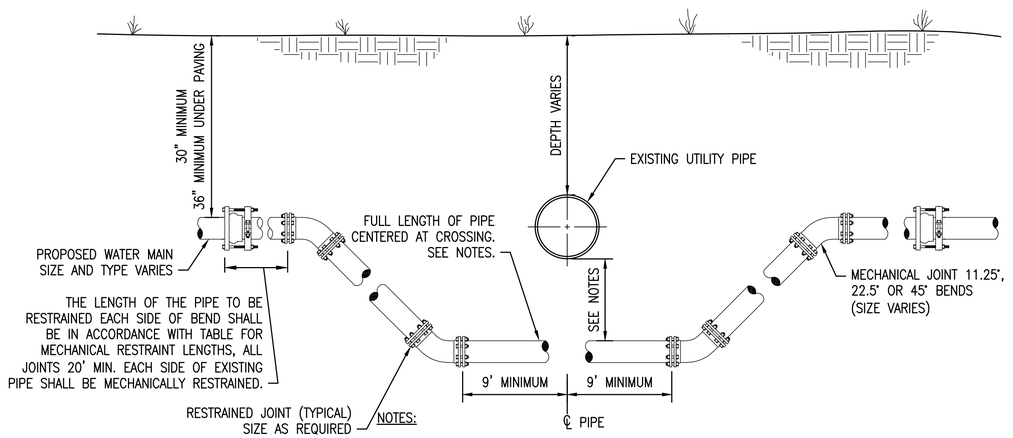
1. IF EXISTING UTILITY PIPE IS A WATER MAIN, 12–INCHES OF SEPARATION IS REQUIRED.

2. IF EXISTING UTILITY PIPE IS A FORCE MAIN, SANITARY SEWER, RECLAIMED WATER MAIN OR STORM SEWER, 18 INCHES OF SEPARATION IS REQUIRED. IF THIS IS IMPRACTICAL AND EXISTING UTILITY MAIN IS C900, C905 OR D.I. PIPE, SEPARATION CAN BE REDUCED TO 6–INCHES. A FULL LENGTH OF PIPE SHALL BE CENTERED OVER EXISTING UTILITY MAIN TO PROVIDE MAXIMUM JOINT SPACING FOR ALL CROSSINGS.

3. LOCATING WIRING REQUIRED.

4. DEPTH OF BURY TO BE 36" MINIMUM IN PAVED AREAS MEASURED FROM FINISHED GRADE. DEPTH OF BURY TO BE 30" MINIMUM IN UNPAVED AREAS.

C4 ADJUSTMENT OVER EXISTING UTILITIES
SCALE: NONE



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3. LOCATING WIRING REQUIRED.

A4 ADJUSTMENT UNDER EXISTING UTILITIES
SCALE: NONE

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TYLER T. LEE
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CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN
1	3/24	TTL	ADDENDUM 1

PROJECT NO: 123503.01
DESIGNED BY: TTL
DRAWN BY: RGG
CHK'D BY: RWD
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

NOT RELEASED FOR CONSTRUCTION BY DATE

STANDARD DETAILS

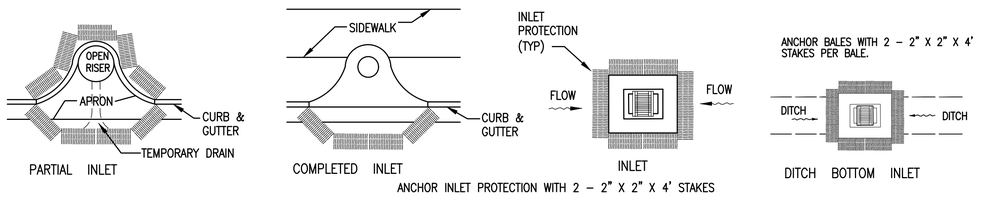
C-900

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

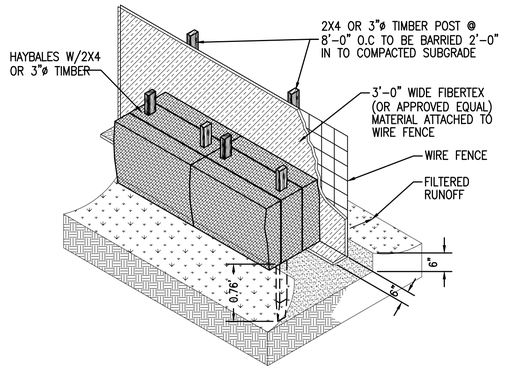
OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2)	WATER MAIN 10 FT PREFERRED 6 FT. MINIMUM (3)	WATER MAIN 12 INCHES IS THE MINIMUM, EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS THE PREFERRED.	ALTERNATE 3 FT. MINIMUM WATER MAIN
ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM	10 FT. MINIMUM	———	———

1. WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
2. RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
3. 3 FT. FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
4. PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

C1 WATER MAIN OFFSET REQUIREMENT
SCALE: NONE



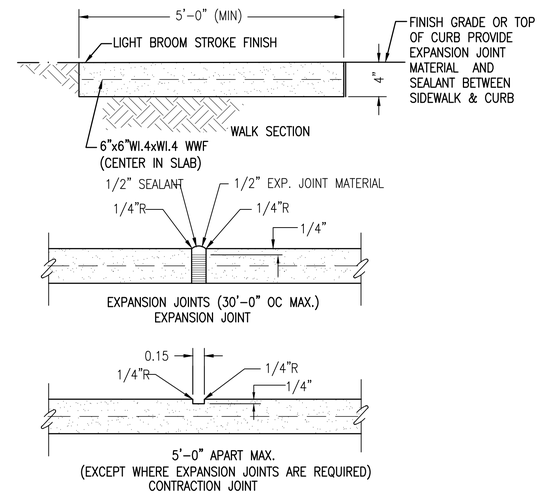
D3 PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
SCALE: NONE



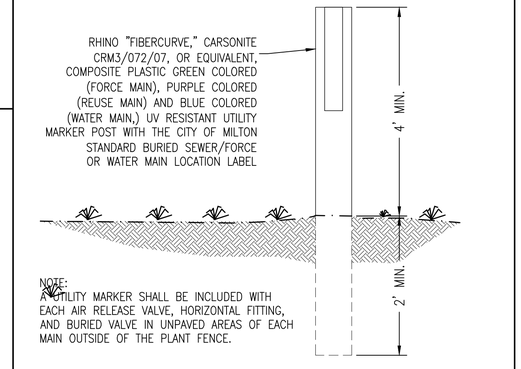
NOTE: AT THE COMPLETION OF THE PROJECT AND AFTER SOIL STABILIZATION AND VEGETATIVE GROWTH HAVE BEEN ASSURED, THE SILT FENCE MUST BE COMPLETELY REMOVED AND THE EMBEDMENT TRENCH RESTORED TO A NATURAL CONDITION.

B3 SILT FENCE DETAIL
NTS

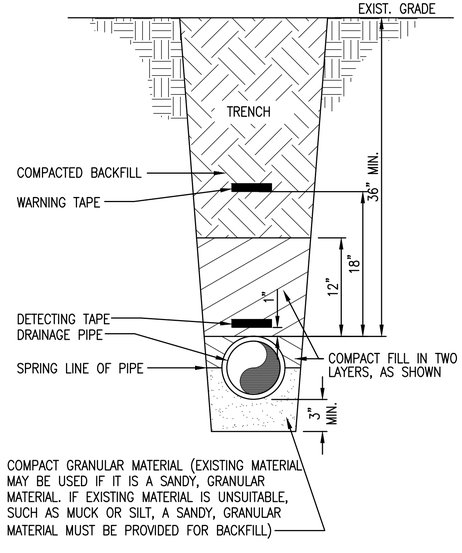
NOT TO SCALE
NOTE: WALK SLOPE VARIES, SEE PLAN OR SECTION



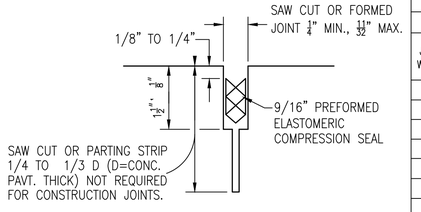
B4 TYPICAL CONCRETE SIDEWALK DETAILS
NOT TO SCALE



B2 UTILITY MARKER DETAIL
NOT TO SCALE



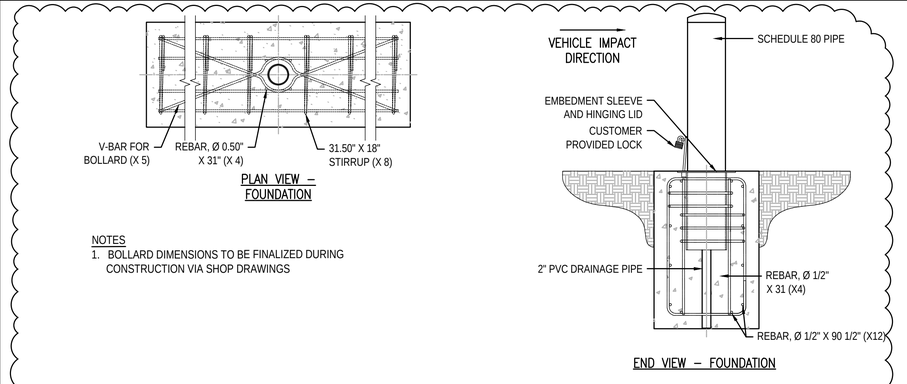
A1 TYPICAL PIPE BEDDING
NOT TO SCALE



BACKER ROD BOND BREAKER (CONCRETE-CONCRETE JOINTS)				
JOINT DIMENSIONS (INCHES)				
JOINT WIDTH	SEALANT BEAD THICKNESS	BACKER ROD DIAMETER	MINIMUM JOINT DEPTH	BACKER ROD PLACEMENT DEPTH
1/4	1/4	3/8	1	1/2
3/8	1/4	1/2	1 1/4	1/2
1/2	1/4	5/8	1 1/4	1/2
5/8	5/16	3/4	1 1/2	9/16
3/4	3/8	1	1 1/2	5/8
7/8	7/16	1 1/8	1 3/4	11/16
1	1/2	1 1/4	2	3/4
>1	1/2	1 1/4 +	2+	3/4

UNLESS OTHERWISE INDICATED ON THE PLANS THE JOINT WIDTH FOR NEW CONSTRUCTION WILL BE 1/4" FOR CONSTRUCTION JOINTS, 3/8" FOR ALL OTHER JOINTS.

A3 CONCRETE-CONCRETE JOINTS
NOT TO SCALE



NOTES
1. BOLLARD DIMENSIONS TO BE FINALIZED DURING CONSTRUCTION VIA SHOP DRAWINGS

A4 M40-P2 REMOVABLE LOCKING BOLLARDS
NOT TO SCALE

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PROJ. MGR: JWJ
DATE: FEBRUARY 2023
NOT RELEASED FOR CONSTRUCTION BY
DATE

STANDARD DETAILS

C-902

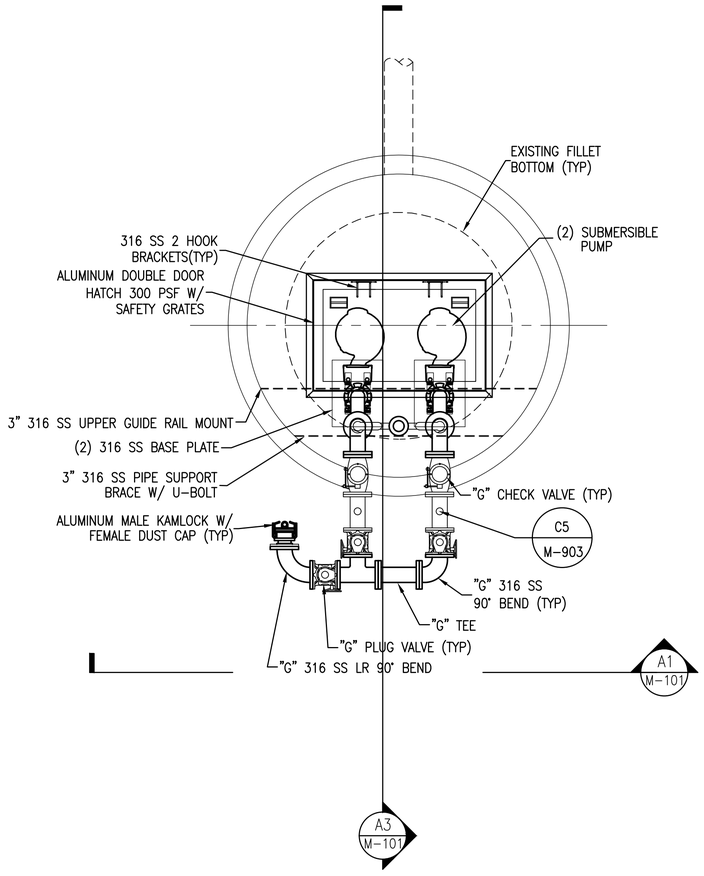
CONSTRUCTION KEY NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL PIPING, FITTINGS & VALVES ABOVE THE HDPE/316 S.S. TRANSITION FITTING.
2. CONTRACTOR TO ROTATE 90° BEND AS REQUIRED TO CONNECT TO THE EXISTING FORCE MAIN

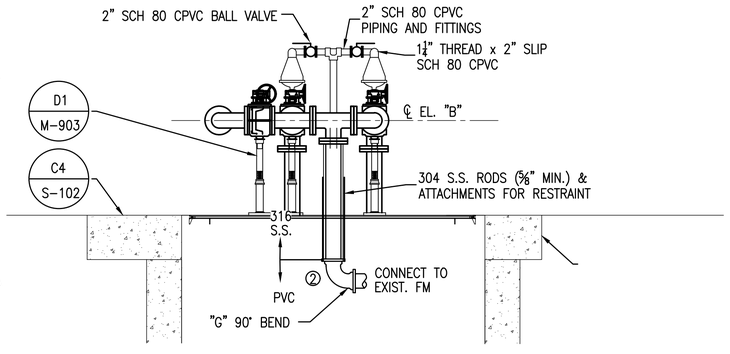
PUMPING STATION IMPROVEMENT SCHEDULE

DESCRIPTION	GPM	TDH	"A" (HP)	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	"P"	REMARKS
P S No. 6	200/330	44/37	10.00	9.11	± 6.61	± −6.25	± 12'−10"	4"	6"	−3.79	−3.81	−2.81	−2.31	−1.81	± −1.55	–	–	6'−0"	UTILIZE 4"x6" ECCENTRIC INCREASER
P S No. 9	100/240	52/42	10.00	10.09	± 7.59	± −6.55	± 14'−2"	4"	4"	−5.48	−4.09	−3.11	−2.61	−2.11	± −2.59	–	–	5'−0"	
P S No. 10	200/275	51/40	10.00	9.59	± 7.09	± −8.66	± 15'−9"	4"	6	−6.20	−6.22	−5.22	−4.72	−4.22	± 0.92	–	–	6'−0"	UTILIZE 4"x6" ECCENTRIC INCREASER

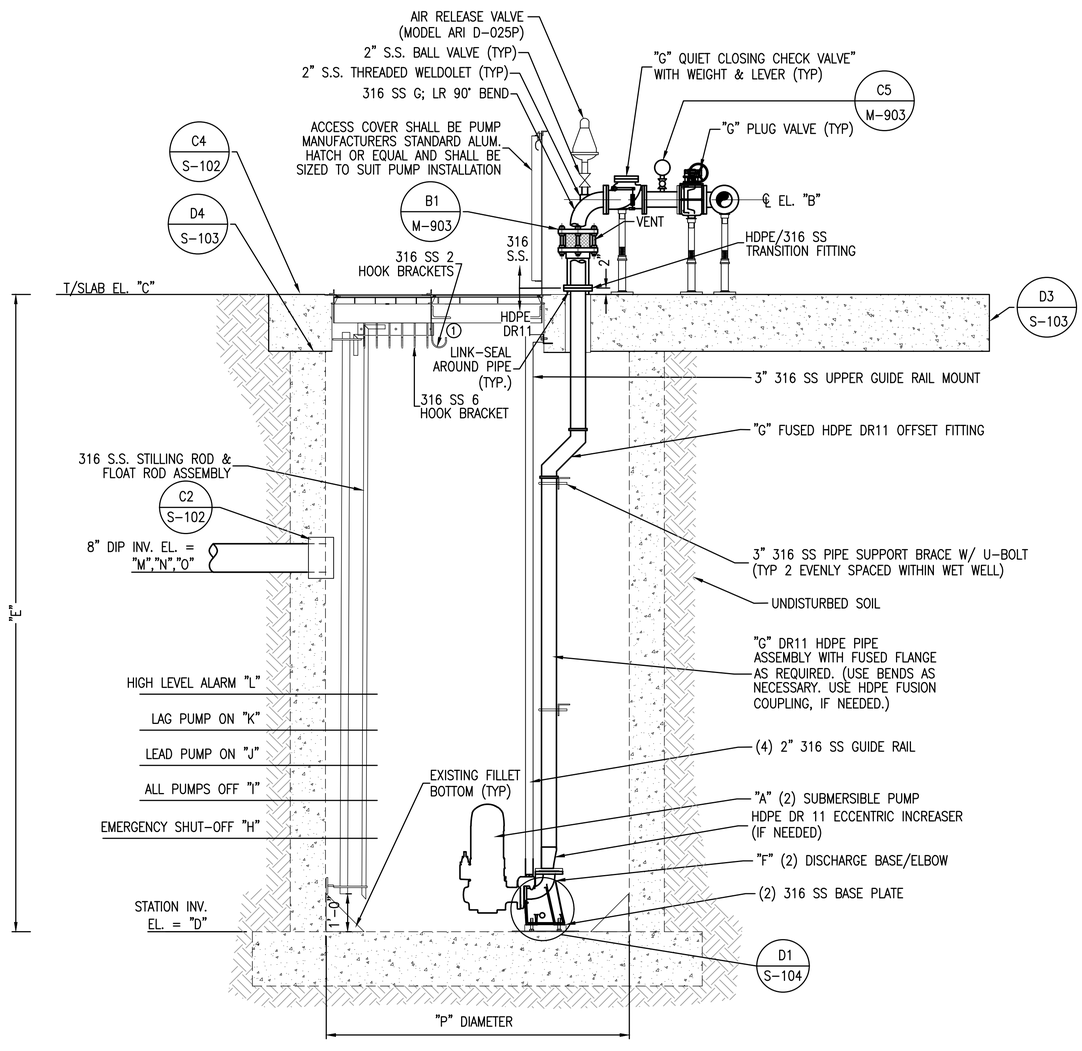
1



B1 LIFT STATION – TOP VIEW
SCALE: 1/2" = 1'−0" 0 1' 2' 4'



A1 LIFT STATION PIPING SECTION
NOT TO SCALE



A3 LIFT STATION PIPING SECTION
NOT TO SCALE

SHEET NOTE:

1. CONTRACTOR SHALL FINALIZE EMERGENCY SHUT-OFF AND HIGH LEVEL ALARM FLOAT ELEVATIONS WITH PUMP MANUFACTURER AND OWNER

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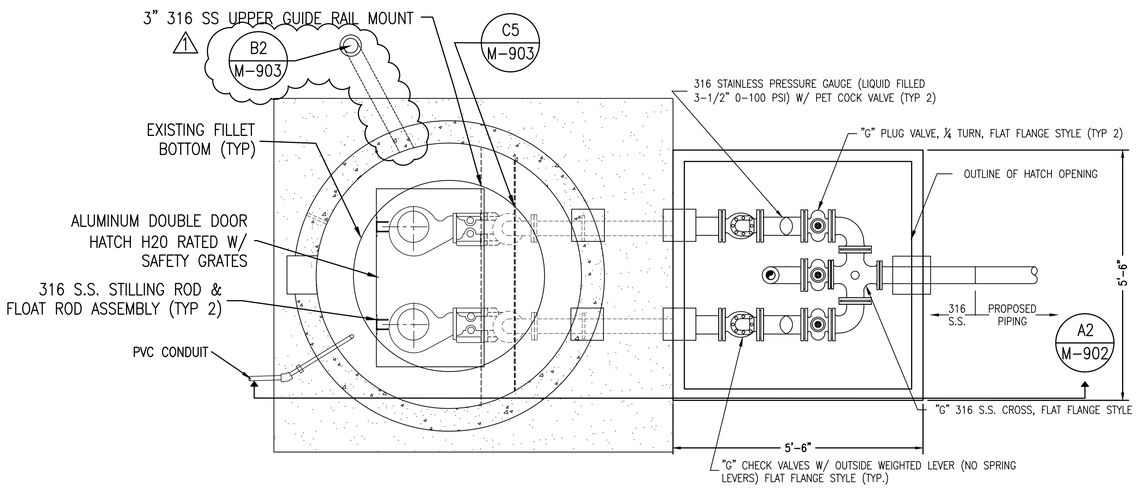
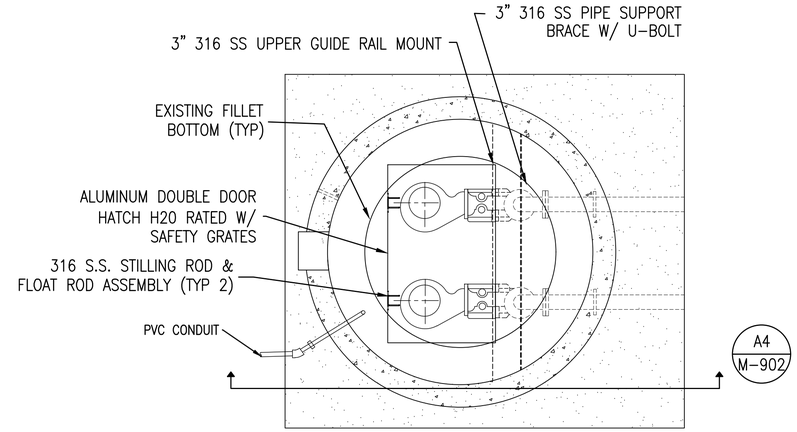
STANDARD DETAILS
FOR LIFT STATION 6, 9, & 10 IMPROVEMENTS

M-901



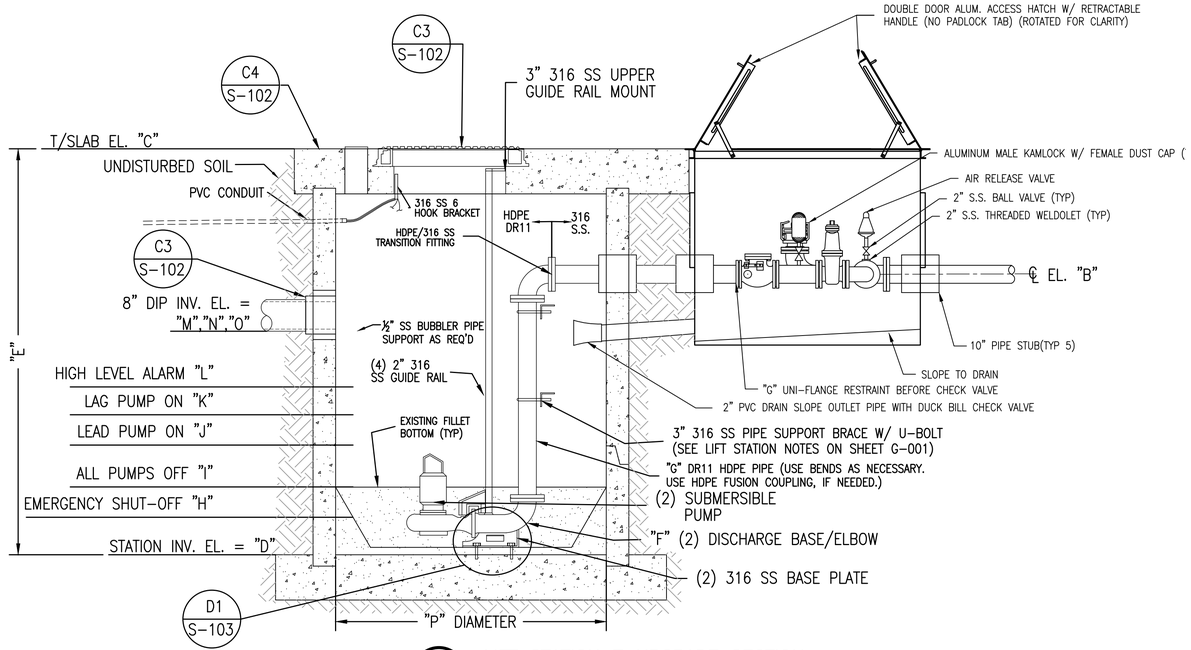
C2 LIFT STATION 7 UPGRADE PLAN

SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'



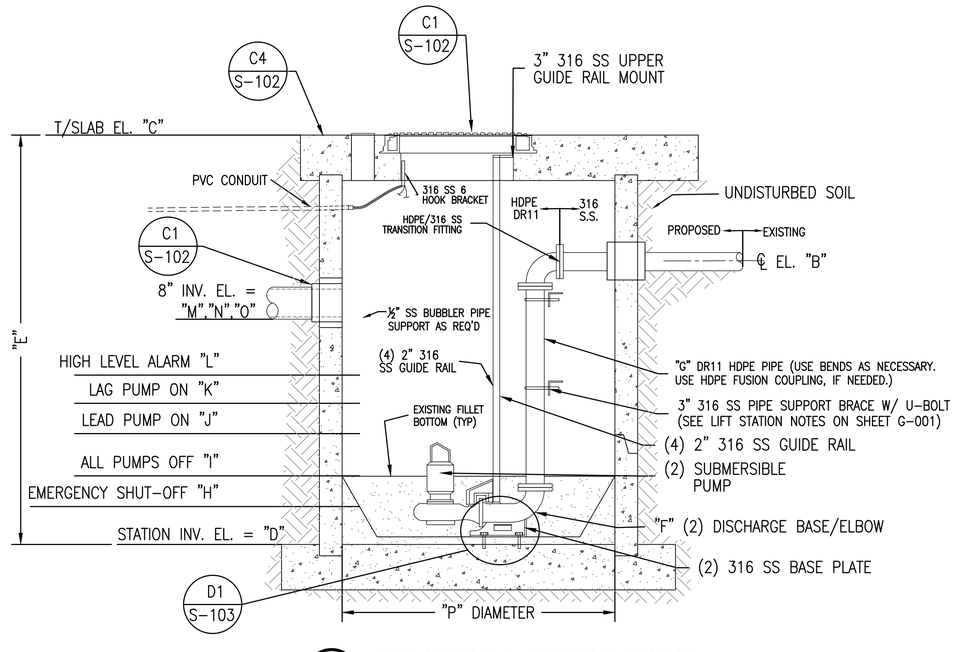
C4 LIFT STATION 1 UPGRADE PLAN

SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'



A2 LIFT STATION 7 UPGRADE SECTION

SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'



A4 LIFT STATION 1 UPGRADE SECTION

SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'

PUMP STATION IMPROVEMENT SCHEDULE

DESCRIPTION	GPM	TDH	"A" (HP)	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"I"	"J"	"K"	"L"	"M"	"N"	"O"	"P"	REMARKS
P S No. 1	124/730	14/ 56	10.0	± 0.54	± 3.71	± -11.09	± 14'-10"	4"	4"	-8.59	-8.23	-2.47	-0.47	–	± -6.11	± -6.31	± -7.53	6'-0"	
P S No. 7	50/250	70/28	7.5	± 2.27	± 5.44	± -4.38	± 9'-10"	4"	4"	-2.90	-2.05	-1.05	-0.05	-0.05	± -0.30	± -0.34	–	5'-0"	

1

SHEET NOTE:

1. CONTRACTOR SHALL FINALIZE EMERGENCY SHUT-OFF AND HIGH LEVEL ALARM FLOAT ELEVATIONS WITH PUMP MANUFACTURER AND OWNER

BASKERVILLE-DONOVAN, INC.
ENGINEERING THE SOUTH SINCE 1927
449 W. MAIN ST., PENSACOLA, FL 32502 (850)438-9661
ENGINEERING BUSINESS: EB-0000340
Pensacola - Panama City Beach - Tallahassee - Mobile

TYLER T. LEE
FL Reg. Engineer #93309

CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

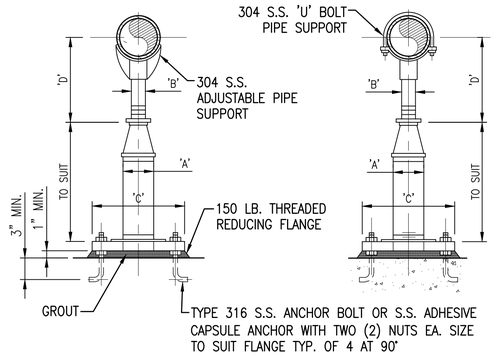
NO.	DATE	APPR.	REVISION/ACTION TAKEN
1	3/24	TTL	ADDENDUM 1

PROJECT NO: 123503.01
DESIGNED BY: TTL
DRAWN BY: RGG
CHK'D BY: RWD
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

NOT RELEASED FOR CONSTRUCTION BY DATE

STANDARD DETAIL
FOR LIFT STATION 1 & 7
IMPROVEMENTS

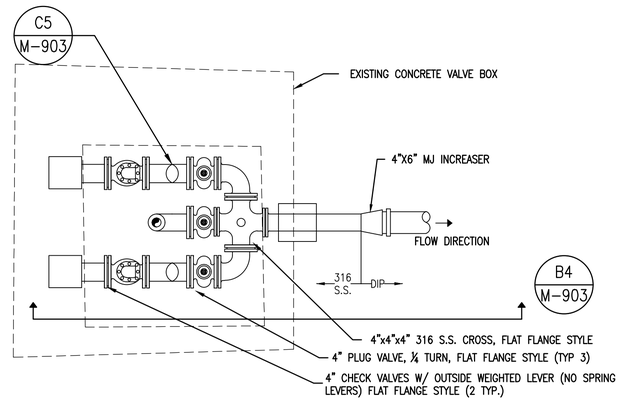
M-902



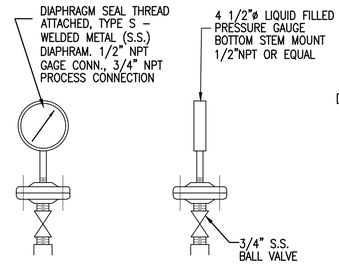
ADJUSTABLE PIPE SUPPORT APPROX. DIMENSIONS IN INCHES					
PIPE SIZE	BA	C	D MIN.	D MAX.	
2 1/2	2 1/2	1 1/2	8	11 1/2	
3	2 1/2	1 1/2	9	8 1/4	11 3/4
3 1/2	2 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	10 1/4	14
6	3	2 1/2	9	11 5/8	15 1/4
8	3	2 1/2	9	13 5/8	16 1/2
10	3	2 1/2	9	14 5/8	18 1/4
12	3	2 1/2	9	15 5/8	19 3/4
14	4	3	11	18 5/8	20 3/4
16	4	3	11	19 1/4	22 1/4
18	6	3 1/2	13 1/2	21 1/4	24
20	6	3 1/2	13 1/2	23 1/4	25 1/2
24	6	4	13 1/2	26 1/2	28 1/4

NOTE:
1. UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABLE TO ENGINEER

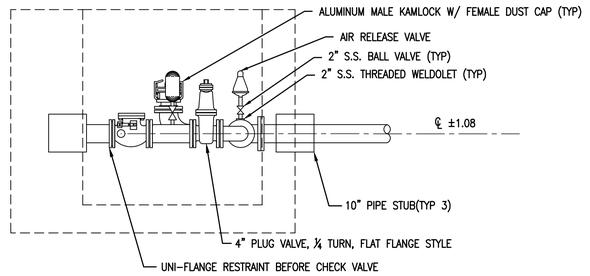
D1 ADJUSTABLE PIPE SUPPORT DETAIL
NOT TO SCALE



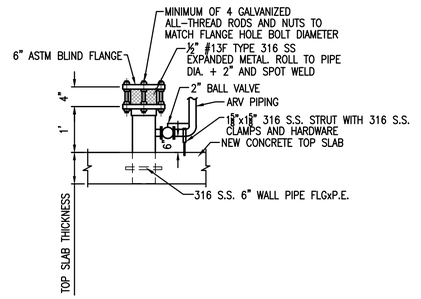
C4 LIFT STATION 1 VALVE BOX UPGRADE PLAN
SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'



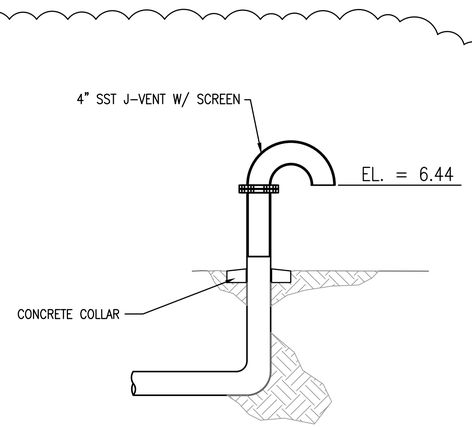
C5 PRESSURE GAUGE DETAIL
NOT TO SCALE



B4 LIFT STATION 1 VALVE BOX UPGRADE ELEVATION
SCALE: 1" = 1.25' 0 0.625' 1.25' 2.5'

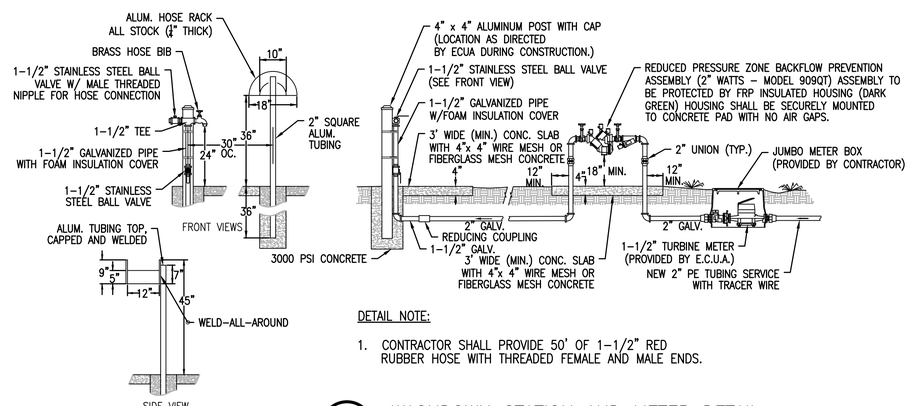


B1 AIR VENT CONNECTION DETAIL
NOT TO SCALE



B2 J-VENT DETAIL
NOT TO SCALE

DETAIL NOTE:
1. 4" SST J-VENT W/ SCREEN SHALL EXIT THE WET WELL UNDERGROUND CONCRETE COLLAR SHALL BE INSTALLED.
2. REMOVE EXISTING PIPE GROUT PATCH. REPAIR USING PRE-PACKAGED NON-SHRINK GROUT. PLACE ¾" THICK TRIANGULAR CONTINUOUS BEAD OF SIKASWELL S-2 HYDROPHILIC WATERSTOP OR APPROVED EQUAL PRIOR TO GROUTING.



DETAIL NOTE:
1. CONTRACTOR SHALL PROVIDE 50' OF 1-1/2" RED RUBBER HOSE WITH THREADED FEMALE AND MALE ENDS.

A4 WASHDOWN STATION AND METER DETAIL
NOT TO SCALE

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Pensacola - Panama City Beach - Tallahassee - Mobile

TYLER T. LEE
FL Reg. Engineer #93309

CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

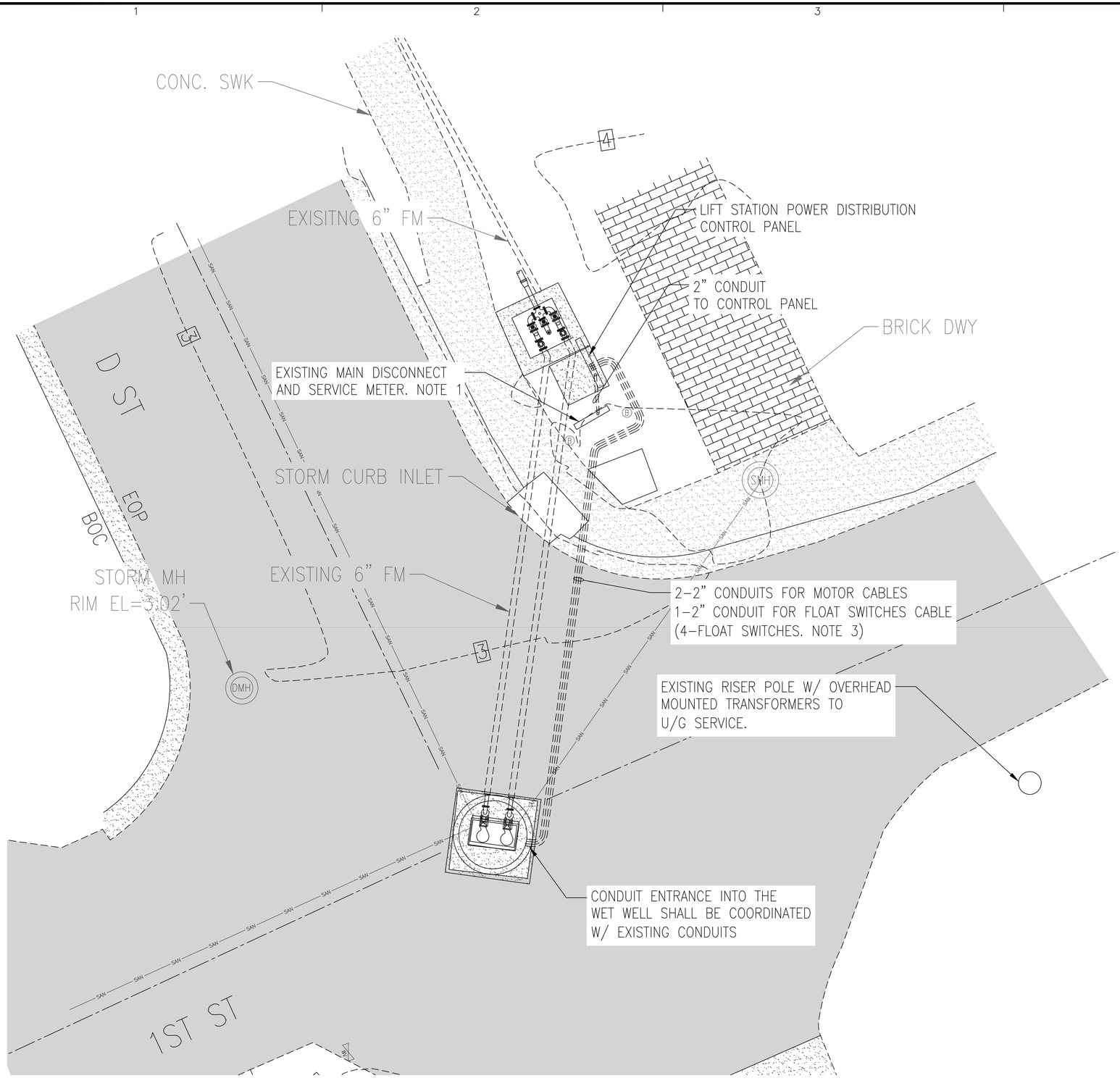
NO.	DATE	APPR.	REVISION/ACTION TAKEN
1	3/24	TTL	ADDENDUM 1

NOT RELEASED FOR CONSTRUCTION BY DATE

PROJECT NO: 123503.01
DESIGNED BY: TTL
DRAWN BY: ROG
CHK'D BY: RWD
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

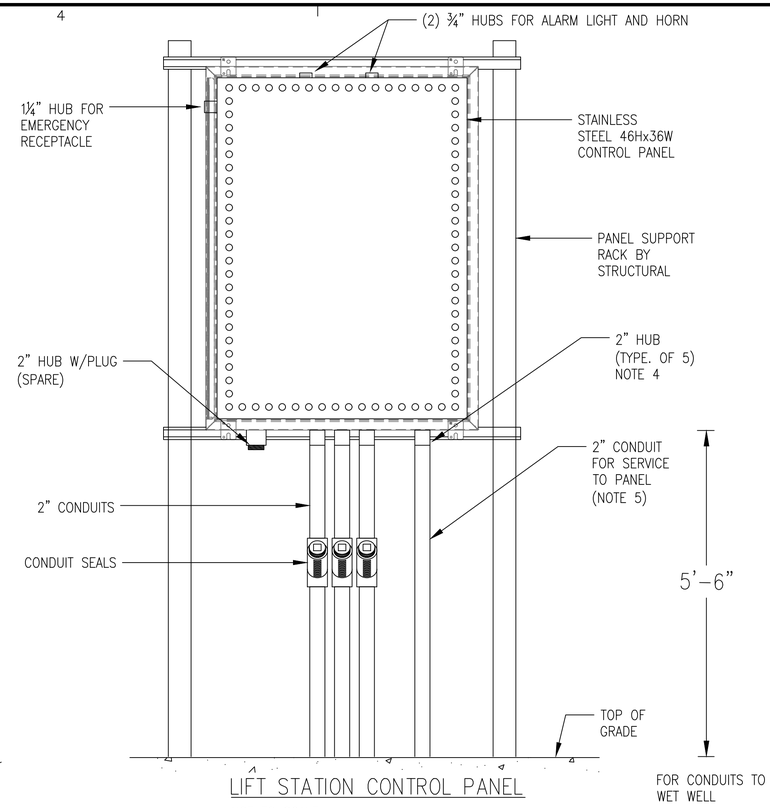
STANDARD DETAILS

M-903



LIFT STATION 1: ELECTRICAL DETAIL

SCALE: 1" = 5'



LIFT STATION CONTROL PANEL

NOT TO SCALE

NOTES:

1. COORDINATE REWORKING OF SERVICE CONDUITS AND METER ENCLOSURE WITH THE SERVING UTILITY (CENTRAL FLORIDA ELECTRICAL CO-OP; CHIEFLAND,FL)
2. THE CONTROL PANEL SHALL BE INSTALLED ON THE SUPPORT STRUCTURE (SUPPLIED BY OTHERS) AT 5'-6" ABOVE GRADE TO THE BOTTOM OF THE PANEL. THE SUPPLY AND INSTALLATION OF STRUT/HARDWARE TO MOUNT THE PANEL TO THE SUPPORT IS PART OF THE ELECTRICAL WORK.
3. THE FLOAT SWITCHES SHALL BE ANCHOR SCIENTIFIC MINI-FLOATS (SUSPENDED-TYPE-S) OR EQUAL. PROVIDE CABLES OF ADEQUATE LENGTH.
4. CONDUIT FITTINGS/HUBS ARE PART OF THE PANEL/ENCLOSURE. THEY ARE INTENDED TO BE ATTACHED AS PART OF THE MANUFACTURING PROCESS. THE PURCHASE/CONTRACTOR SHALL INDICATE THE LOCATION AND SIZE OF HUBS TO THE VENDOR AS PART OF THE PURCHASING PROCESS. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE NEMA 6 RATING OF THE ENCLOSURE DURING INSTALLATION.
5. THE CONDUIT FOR THE SERVICE SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT ON BOTH ENDS.
6. ALL BELOW GRADE CONDUIT SHALL BE SCH.40 PVC. ALL ABOVE GROUND CONDUIT SHALL BE RIGID IMC. ANY BELOW GRADE METALLIC CONDUIT SHALL BE COATED WITH CORROSION RESISTANT PAINT/COATINGS.BELOW GRADE CONDUIT SHALL BE AT A DEPTH OF 18" MINIMUM.

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Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
-	1-31-24	-	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 1
ELECTRICAL SITE PLAN

E-101

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
850-893-7722 PROJECT NO: 23027

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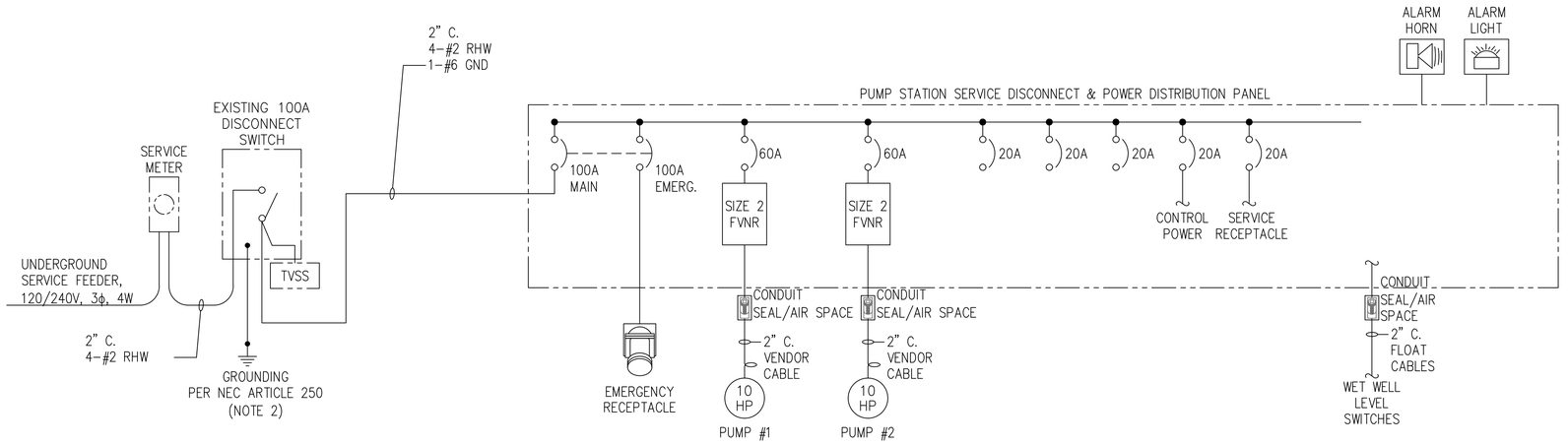

LIFT STATION #1 RISER DIAGRAM

BILL OF MATERIAL				
ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	NEMA 6P ENCLOSURE W/6P HINGED DOOR AND GASKETS 304SS 48Hx36Wx12D NOMINAL	NEMACO	N6P-483612-304	1
2	BACK PANEL EPOXY COATED STEEL	NEMACO	N69-IP4836	1
3	HINGED SWING-OUT PANEL - 304SS W/3 POINT TURN LATCH HANDLE	NEMACO	-	1
4	POWER DISTRIBUTION BLOCK 3-POLE 400-#6 1 IN, 2-#14 6 OUT	SQUARE-D	9080LBA363106	1
5	POWER DISTRIBUTION BLOCK 1-POLE 400-#6 1 IN, 2-#14 6 OUT	SQUARE-D	9080LBA163106	1
6	EQUIPMENT GROUND BAR	SQUARE-D	PK9GTA	1
7	PHASE MONITOR RELAY SOCKET	ATC DIVERSIFIED	SLA-230-ALA RB-08	1 1
8	ALTERNATING RELAY - DUPLEX	ATC DIVERSIFIED	ARA-24-ADA	1
9	BREAKER-60A, THREE POLE	SQUARE-D	HDL36060	2
9A	EMERGENCY BREAKER - 100A, THREE-POLE	SQUARE-D	HDL36100	1
9B	MAIN BREAKER - 100A, THREE-POLE	SQUARE-D	HDL36100	1
9C	H/J FRAME MECHANICAL INTERLOCK FOR TOGGLE HANGLE	SQUARE-D	S29354	2
10	BREAKER-20A, SINGLE POLE	SQUARE-D	BDL16020	5
11	FULL VOLTAGE NON-REVERSING SIZE 2 STARTER	SQUARE-D	85365DO1V02H305	2
12	SURGE PROTECTIVE DEVICE	SURGE SUPPRESSION, INC	LSED-3Y1-D1XS	1
13	35mm DIN RAIL	SQUARE-D	9080MH320	AS REQ'D
14	FEED THROUGH TERMINAL	SQUARE-D	9080GM6	AS REQ'D
15	END BARRIER	SQUARE-D	9080GM6B	AS REQ'D
16	END CLAMP	SQUARE-D	9080MHA10	AS REQ'D
17	INTRINSICALLY SAFE RELAY	R-K ELECTRONICS	ISR-24V-10K	2
18	GEMS ZENER BARRIER	TEQUIPMENT	54801	2
19	PUMP MONITORING/CONTROL RELAY w BASE	PUMP VENDOR		2
20	RELAY, OCTAL PLUG-IN, 3PDT 120VAC w/RELAY SOCKET	EATON	D3RF3A D3PA7	2
21	(NOT USED)	-	-	-
22	RELAY, OCTAL PLUG-IN, 3PDT 24VDC w/RELAY SOCKET	SQUARE-D	D3RF3T1 D3PA7	7
23	MINIATURE PLUG-IN RELAY - 24VDC	SQUARE-D	RXM4AB2BDPVM	1
24	PILOT LIGHT - w/GREEN LENSE	ALLEN-BRADLEY	800T-QTH2G	2
25	3 POSITION SELECTOR SWITCH w/"H-O-A" LEGEND PLATE	ALLEN-BRADLEY	800T-J2B 800T-X511	2
26	HOUR COUNTER PANEL METER	GRASSLIN	UWZ48E-12050U	3
27	PILOT LIGHT - w/RED LENSE	ALLEN-BRADLEY	800T-QTH2R	7
28	EXTERNAL RESET MECHANISM	SQUARE-D	9066RA1	1
29	DUPLEX SERVICE RECEPTACLE 20A, 125VAC, G.F.I. w/COVER	LEVITON	GFWT2-T	1
30	WIREWAY DUCT 2"x4" w/COVER	HOFFMAN	A200400WH A200CWH	AS REQ'D
31	LED ALARM BEACON - 12-24VDC, NEMA 4X	EDWARDS SIGNALING	94PLEDMR24AD	1
32	ALARM HORN - WEATHERPROOF, 24VDC, NEMA 4X	EDWARDS SIGNALING	877-G1	1
33	PUSH BUTTON - MOMENTARY CONTACT, BLACK, 1 NO	ALLEN-BRADLEY	800T-B2D1	1
34	BREAKER-10A, THREE POLE	SQUARE-D	Q0U310	1
35	EMERGENCY RECEPTACLE - 100A, 3ϕ 4 WIRE, NEMA 6P/IP67 W/BACK BOX	LEVITON	4100R9W BX100-V	1
36	VIBRATING HORN 120VAL NEMA 4X	EDWARDS	876-N5	1
37	FLASHING ALARM LIGHT - RED LED MICROLERT NEMA 6P CAPABLE	TOMAR ELECTRONICS	290LF-120-240	1

BOM NOTES:

1 VIBRATING HORN HAS A NEMA 4X ENCLOSURE. THEREFORE CONDUIT INTO THE NEMA 6P PANEL SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT.

NOTE:

1 PUMP STATION WET WELL IS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION THAT REQUIRES THE USE OF CONDUIT SEALS, OR AIR SPACE PROVISION, BETWEEN THE WET WELL AND POSSIBLE SOURCES OF IGNITION. CONDUIT SEALS, OR AIR SPACE, SHALL BE PLACED WITHIN (18)EIGHTEEN INCHES OF THE PUMP STATION CONTROL PANEL ENCLOSURE.

2 GROUNDING SHALL BE TESTED TO VERIFY THAT RESISTANCE TO EARTH/GROUND IN LESS THAN 26 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED (AS REQUIRED) TO ESTABLISH A GROUNDING RESISTANCE OF LESS THAN 26 OHMS. THE GROUNDING TEST SHALL BE COORDINATED WITH AND WITNESSED BY THE OWNER'S REPRESENTATIVE. REFER TO THE OWNER'S STANDARD SPECIFICATIONS.

BASKERVILLE-DONOVAN, INC.
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Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
-	1-31-24	-	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 1
ELECTRICAL
RISER/1-LINE DIAGRAM

E-102

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027

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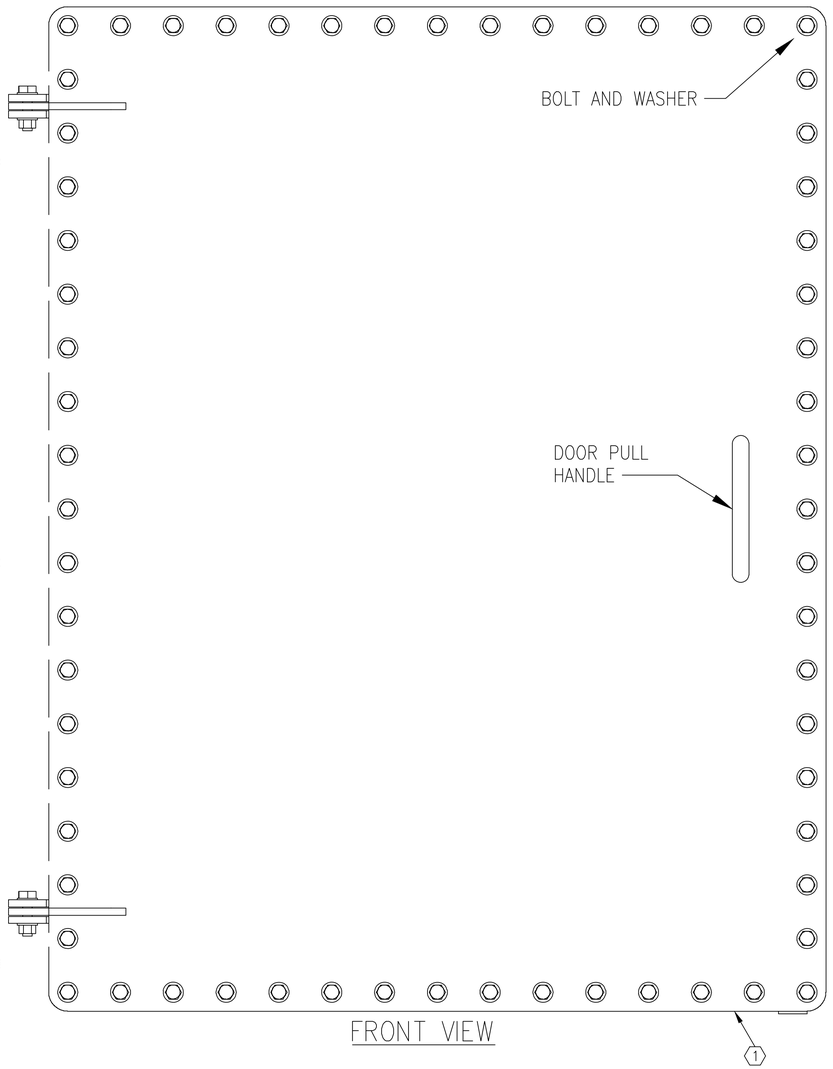
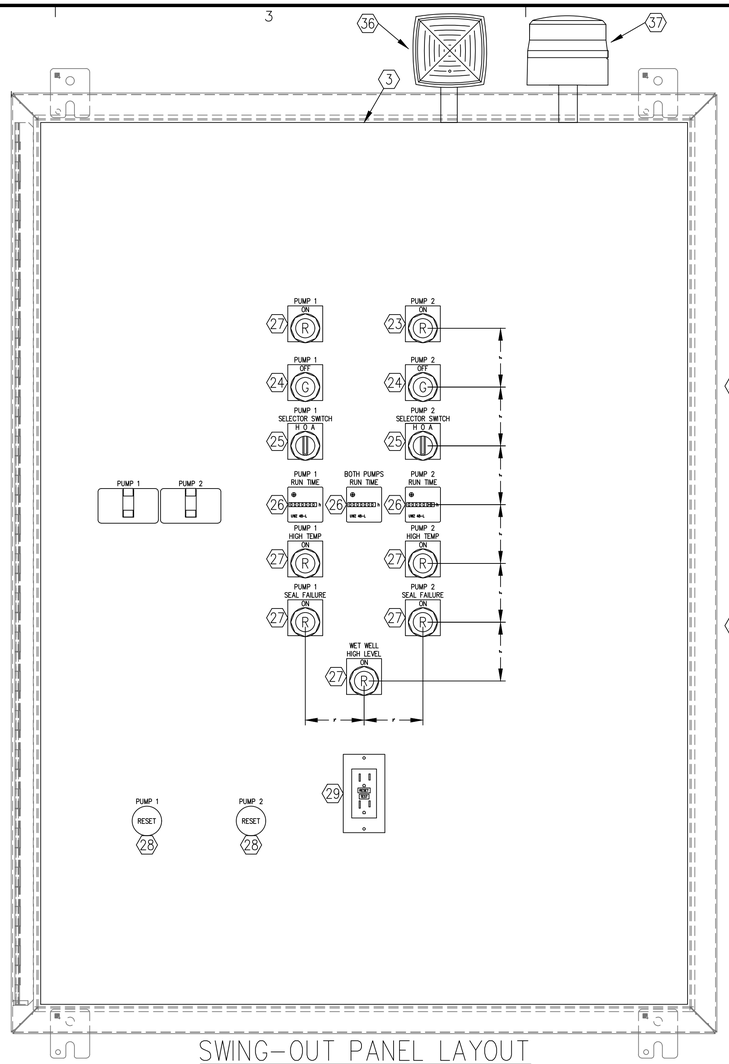
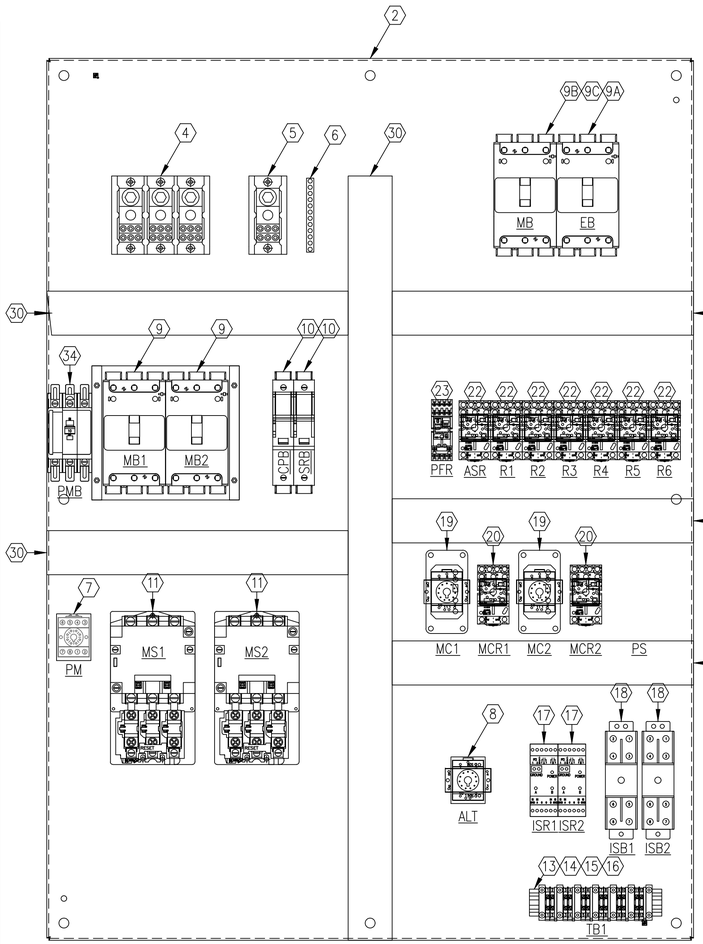


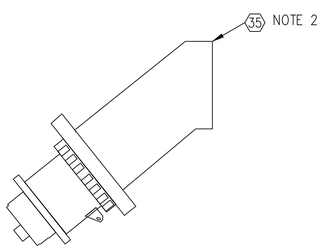
FRONT VIEW



SWING-OUT PANEL LAYOUT



BACK PANEL LAYOUT



NOTES:

1. THE EQUIPMENT AND MATERIALS REFERENCED ON THESE DRAWINGS ARE MEANT TO ESTABLISH A MINIMUM STANDARD FOR CAPABILITY AND QUALITY ASSURANCE. SUBSTITUTIONS OF ANY EQUIPMENT AND/OR MATERIALS ARE TO BE EQUAL OR BETTER THAN THE AFOREMENTIONED EQUIPMENT AND MATERIALS AND ARE SUBJECT TO APPROVAL BY THE OWNER/ENGINEER.

2. THE EMERGENCY RECEPTACLE IS TO BE MOUNTED ON THE LEFT SIDE OF THE ENCLOSURE 4" FROM THE TOP. UTILIZE THE 1 ¼" HUB OF THE ENCLOSURE TO CONNECT THE BACK BOX AND RECEPTACLE.

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Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1-31-24	–	100% SUBMITTAL	

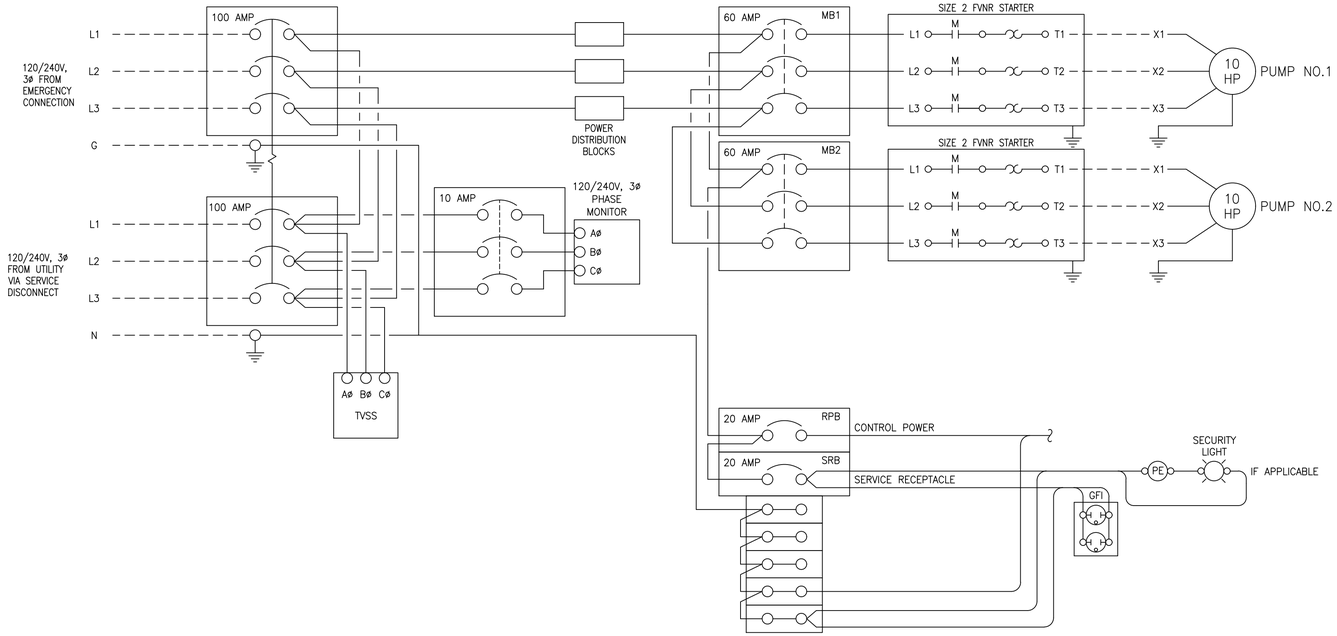
NOT RELEASED FOR CONSTRUCTION BY

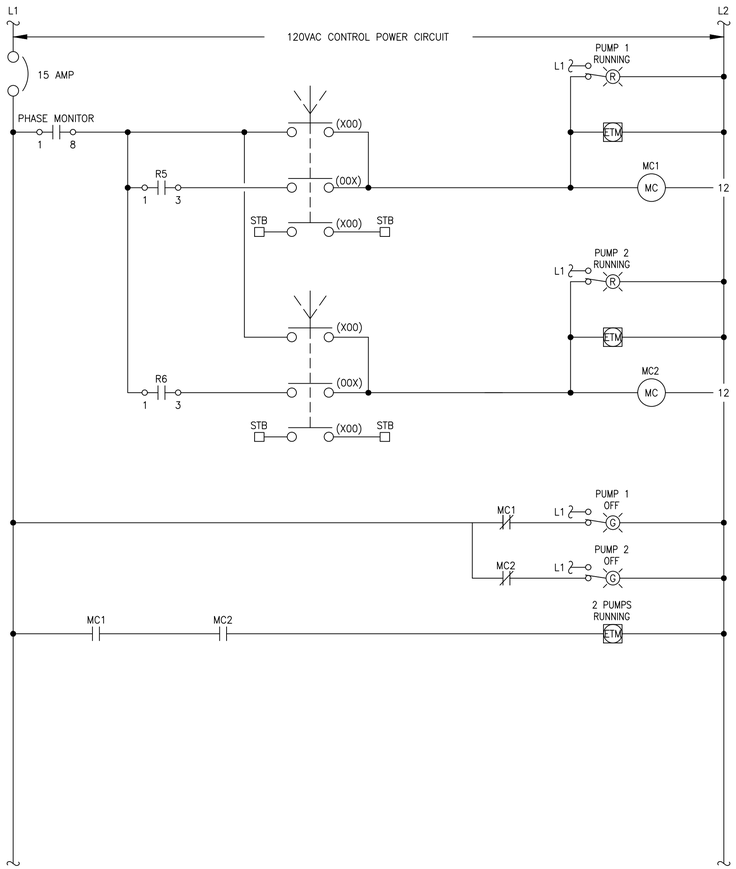
PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

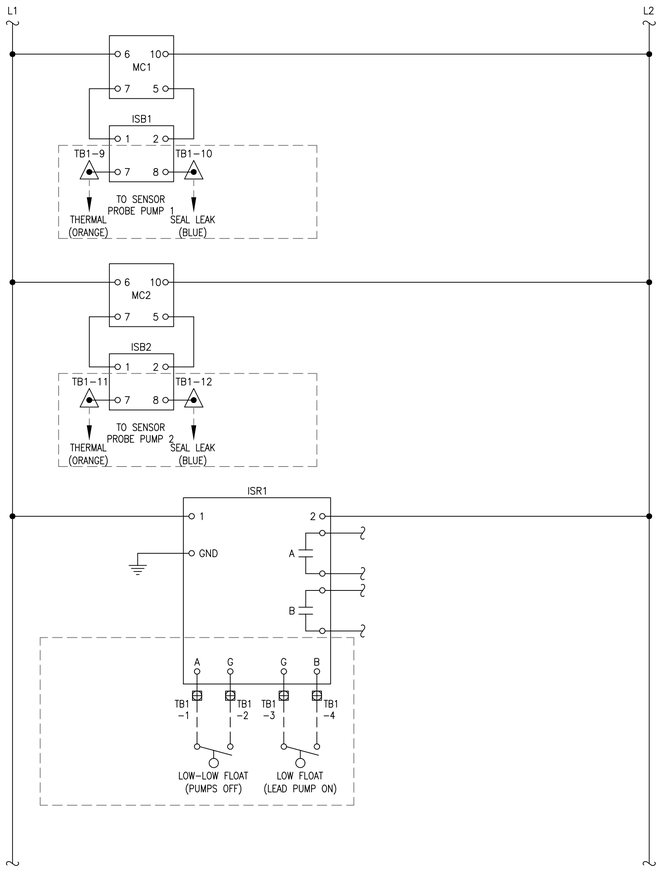
LS 1
ELECTRICAL CONTROL
PANEL LAYOUT

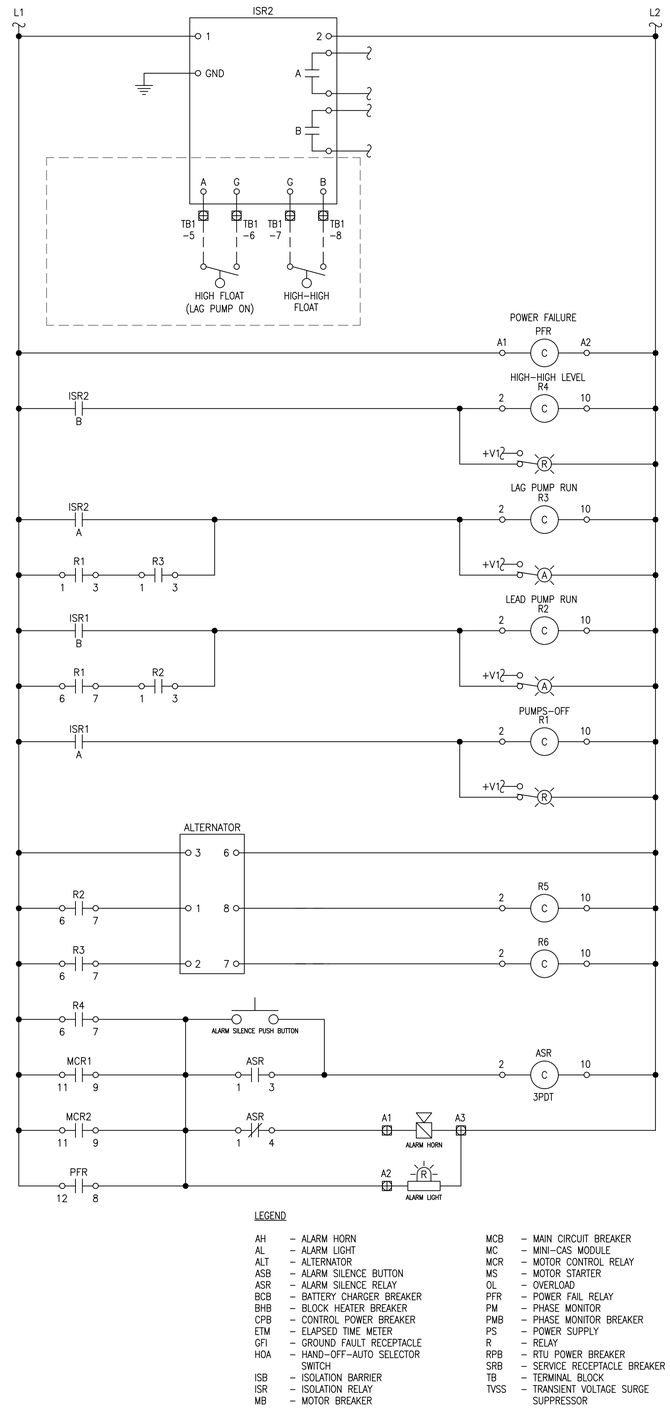
E-103

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
850-893-7722 PROJECT NO: 23027









LEGEND

AH	– ALARM HORN	MCB	– MAIN CIRCUIT BREAKER
AL	– ALARM LIGHT	MC	– MINI–CAS MODULE
ALT	– ALTERNATOR	MCR	– MOTOR CONTROL RELAY
ASB	– ALARM SILENCE BUTTON	MS	– MOTOR STARTER
ASR	– ALARM SILENCE RELAY	OL	– OVERLOAD
BCB	– BATTERY CHARGER BREAKER	PFR	– POWER FAIL RELAY
BHB	– BLOCK HEATER BREAKER	PM	– PHASE MONITOR
CPB	– CONTROL POWER BREAKER	PMB	– PHASE MONITOR BREAKER
ETM	– ELAPSED TIME METER	PS	– POWER SUPPLY
GFI	– GROUND FAULT RECEPTACLE	R	– RELAY
HOA	– HAND–OFF–AUTO SELECTOR SWITCH	RPB	– RTU POWER BREAKER
		SRB	– SERVICE RECEPTACLE BREAKER
ISB	– ISOLATION BARRIER	TB	– TERMINAL BLOCK
ISR	– ISOLATION RELAY	TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR
MB	– MOTOR BREAKER		

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CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN
–	1–31–24	–	100% SUBMITTAL

NOT RELEASED FOR CONSTRUCTION BY — DATE

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 1
ELECTRICAL WIRING DIAGRAM

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027

E–104

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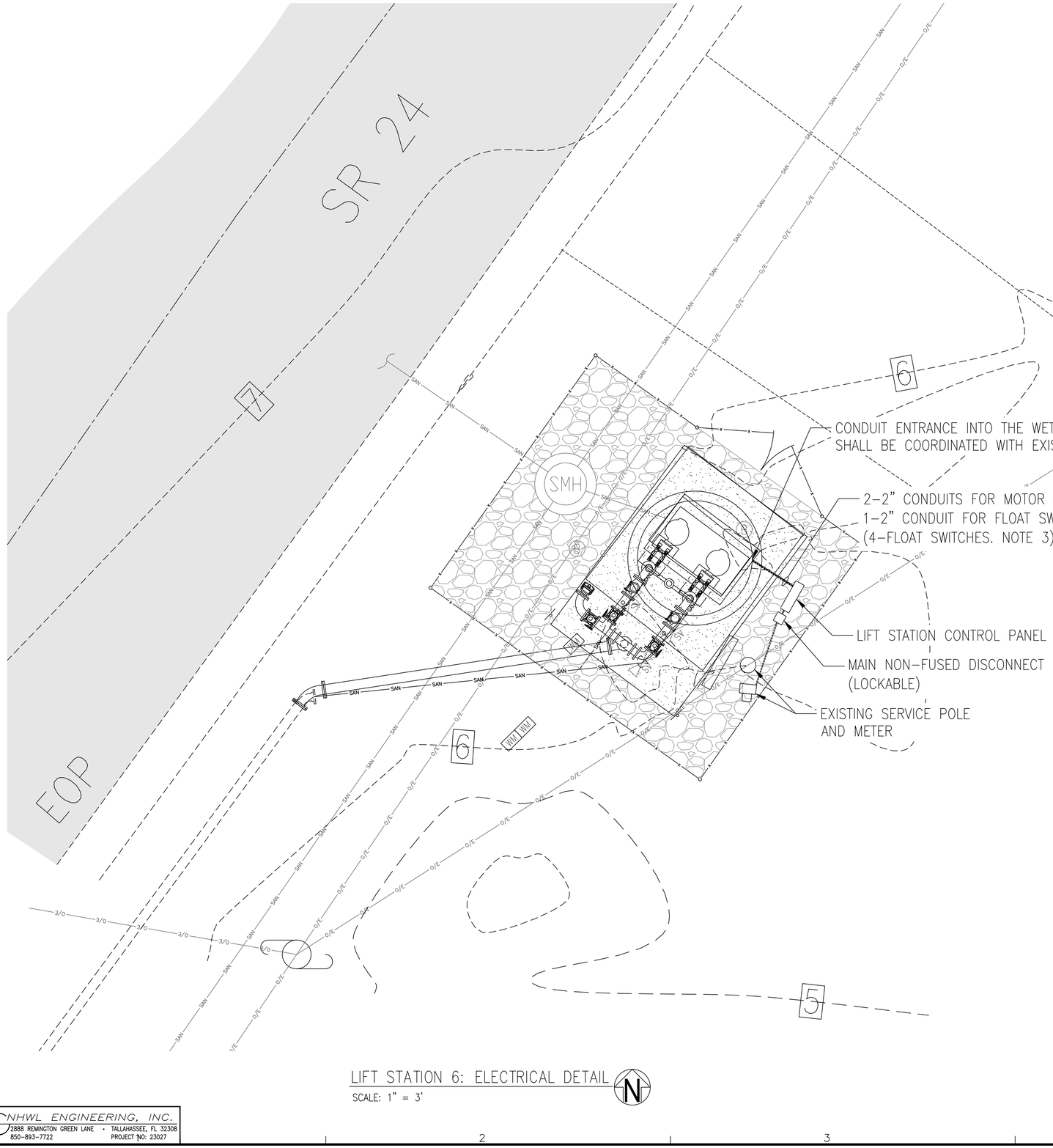
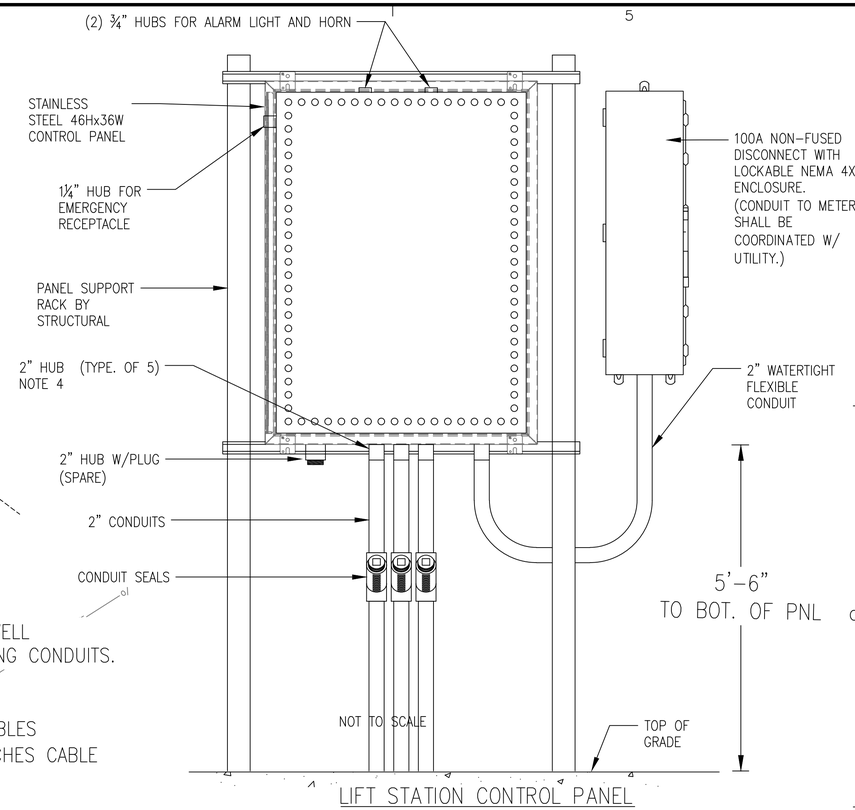


LIFT STATION 6: ELECTRICAL DETAIL

SCALE: 1" = 3'



LIFT STATION CONTROL PANEL

NOTES:

1. COORDINATE REWORKING OF SERVICE CONDUITS AND METER ENCLOSURE WITH THE SERVING UTILITY (CENTRAL FLORIDA ELECTRICAL CO-OP; CHIEFLAND,FL)

2. THE CONTROL PANEL SHALL BE INSTALLED ON THE SUPPORT STRUCTURE (SUPPLIED BY OTHERS) AT 5'-6" ABOVE GRADE TO THE BOTTOM OF THE PANEL. THE SUPPLY AND INSTALLATION OF STRUT/HARDWARE TO MOUNT THE PANEL TO THE SUPPORT IS PART OF THE ELECTRICAL WORK.

3. THE FLOAT SWITCHES SHALL BE ANCHOR SCIENTIFIC MINI-FLOATS (SUSPENDED-TYPE-S) OR EQUAL. PROVIDE CABLES OF ADEQUATE LENGTH.

4. MAIN DISCONNECT MAY BE MOUNTED ON THE BACK OF THE SUPPORT FRAME. MOUNT DISCONNECT AS HIGH AS POSSIBLE ON THE SUPPORT FRAME. THE CONDUIT FOR THE SERVICE SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT ON BOTH ENDS.

5. CONDUIT FITTINGS/HUBS ARE PART OF THE PANEL/ENCLOSURE. THEY ARE INTENDED TO BE ATTACHED AS PART OF THE MANUFACTURING PROCESS. THE PURCHASE/CONTRACTOR SHALL INDICATE THE LOCATION AND SIZE OF HUBS TO THE VENDOR AS PART OF THE PURCHASING PROCESS. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE NEMA 6 RATING OF THE ENCLOSURE DURING INSTALLATION.

6. ALL BELOW GRADE CONDUIT SHALL BE SCH.40 PVC. ALL ABOVE GROUND CONDUIT SHALL BE RIGID IMC. ANY BELOW GRADE METALLIC CONDUIT SHALL BE COATED WITH CORROSION RESISTANT PAINT/COATINGS. BELOW GRADE CONDUIT SHALL BE AT A DEPTH OF 18" MINIMUM.

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
850-893-7722 PROJECT NO: 23027

BASKERVILLE-DONOVAN, INC.
ENGINEERING THE SOUTH SINCE 1927
449 W. MAIN ST. PENSACOLA FL 32502 (850)438-9661
Pensacola - Panama City Beach - Tallahassee - Mobile
ENGINEERING BUSINESS: EB-0000340

CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1-31-24	–	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JNJ
DATE: FEBRUARY 2023

LS 6
ELECTRICAL SITE PLAN

E-105

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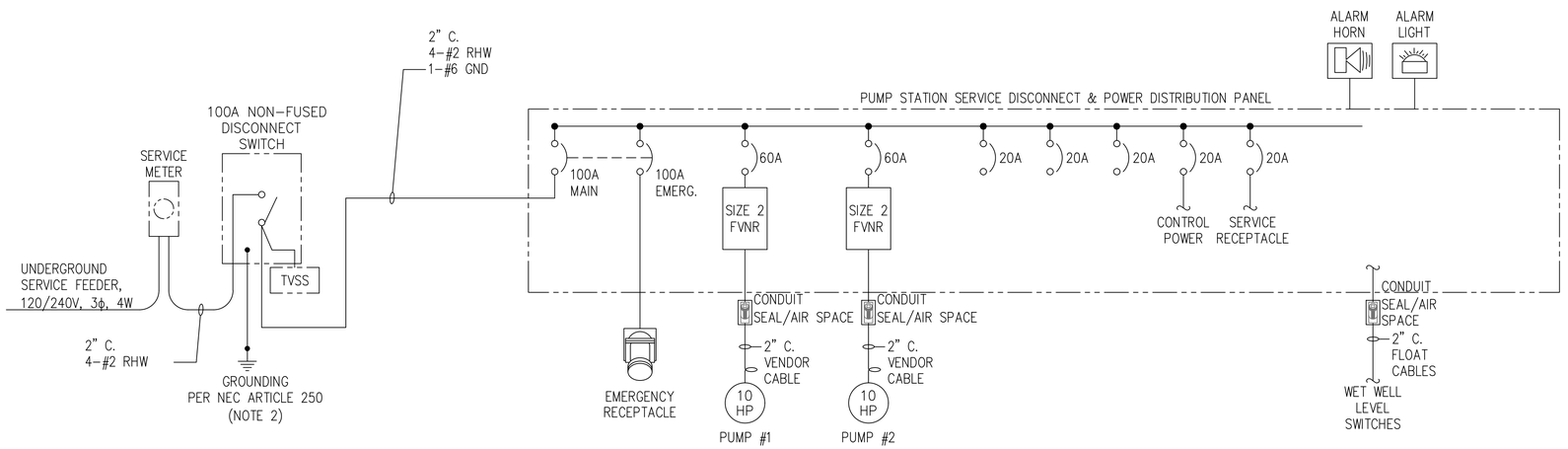


LIFT STATION #6 RISER DIAGRAM

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	NEMA 6P ENCLOSURE W/6P HINGED DOOR AND GASKETS 304SS 48Hx36Wx12D NOMINAL	NEMACO	N6P–483612–304	1
2	BACK PANEL EPOXY COATED STEEL	NEMACO	N69–IP4836	1
3	HINGED SWING–OUT PANEL – 304SS W/3 POINT TURN LATCH HANDLE	NEMACO	–	1
4	POWER DISTRIBUTION BLOCK 3–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA363106	1
5	POWER DISTRIBUTION BLOCK 1–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA163106	1
6	EQUIPMENT GROUND BAR	SQUARE–D	PK9GTA	1
7	PHASE MONITOR RELAY SOCKET	ATC DIVERSIFIED	SLA–230–ALA RB–08	1 1
8	ALTERNATING RELAY – DUPLEX	ATC DIVERSIFIED	ARA–24–ADA	1
9	BREAKER–60A, THREE POLE	SQUARE–D	HDL36060	2
9A	EMERGENCY BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9B	MAIN BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9C	H/J FRAME MECHANICAL INTERLOCK FOR TOGGLE HANGLE	SQUARE–D	S29354	2
10	BREAKER–20A, SINGLE POLE	SQUARE–D	BDL16020	5
11	FULL VOLTAGE NON–REVERSING SIZE 2 STARTER	SQUARE–D	85365D01V02H305	2
12	SURGE PROTECTIVE DEVICE	SURGE SUPPRESSION, INC	LSED–3Y1–D1XS	1
13	35mm DIN RAIL	SQUARE–D	9080MH320	AS REQ'D
14	FEED THROUGH TERMINAL	SQUARE–D	9080GM6	AS REQ'D
15	END BARRIER	SQUARE–D	9080GM6B	AS REQ'D
16	END CLAMP	SQUARE–D	9080MHA10	AS REQ'D
17	INTRINSICALLY SAFE RELAY	R–K ELECTRONICS	ISR–24V–10K	2
18	GEMS ZENER BARRIER	TEQUIPMENT	54801	2
19	PUMP MONITORING/CONTROL RELAY w BASE	PUMP VENDOR		2
20	RELAY, OCTAL PLUG–IN, 3PDT 120VAC w/RELAY SOCKET	EATON	D3RF3A D3PA7	2
21	(NOT USED)	–	–	–
22	RELAY, OCTAL PLUG–IN, 3PDT 24VDC W/RELAY SOCKET	SQUARE–D	D3RF3T1 D3PA7	7
23	MINIATURE PLUG–IN RELAY – 24VDC	SQUARE–D	RXM4AB2BDPVM	1
24	PILOT LIGHT – w/GREEN LENSE	ALLEN–BRADLEY	800T–QTH2G	2
25	3 POSITION SELECTOR SWITCH w/"H–O–A" LEGEND PLATE	ALLEN–BRADLEY	800T–J2B 800T–X511	2
26	HOUR COUNTER PANEL METER	GRASSLIN	UWZ48E–12050U	3
27	PILOT LIGHT – w/RED LENSE	ALLEN–BRADLEY	800T–QTH2R	7
28	EXTERNAL RESET MECHANISM	SQUARE–D	9066RA1	1
29	DUPLEX SERVICE RECEPTACLE 20A, 125VAC, G.F.I. w/COVER	LEVITON	GFWT2–T	1
30	WIREWAY DUCT 2"x4" w/COVER	HOFFMAN	A200400WH A200CWH	AS REQ'D
31	LED ALARM BEACON – 12–24VDC, NEMA 4X	EDWARDS SIGNALING	94PLEDMR24AD	1
32	ALARM HORN – WEATHERPROOF, 24VDC, NEMA 4X	EDWARDS SIGNALING	877–G1	1
33	PUSH BUTTON – MOMENTARY CONTACT, BLACK, 1 NO	ALLEN–BRADLEY	800T–B2D1	1
34	BREAKER–10A, THREE POLE	SQUARE–D	QOU310	1
35	EMERGENCY RECEPTACLE – 100A, 3ϕ 4 WIRE, NEMA 6P/IP67 W/BACK BOX	LEVITON	4100R9W BX100–V	1
36	VIBRATING HORN 120VAL NEMA 4X	EDWARDS	876–N5	1
37	FLASHING ALARM LIGHT – RED LED MICROLERT NEMA 6P CAPABLE	TOMAR ELECTRONICS	290LF–120–240	1

BOM NOTES:

1 VIBRATING HORN HAS A NEMA 4X ENCLOSURE. THEREFORE CONDUIT INTO THE NEMA 6P PANEL SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT.

NOTE:

1 PUMP STATION WET WELL IS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION THAT REQUIRES THE USE OF CONDUIT SEALS, OR AIR SPACE PROVISION, BETWEEN THE WET WELL AND POSSIBLE SOURCES OF IGNITION. CONDUIT SEALS, OR AIR SPACE, SHALL BE PLACED WITHIN (18)EIGHTEEN INCHES OF THE PUMP STATION CONTROL PANEL ENCLOSURE.

2 GROUNDING SHALL BE TESTED TO VERIFY THAT RESISTANCE TO EARTH/GROUND IN LESS THAN 26 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED (AS REQUIRED) TO ESTABLISH A GROUNDING RESISTANCE OF LESS THAN 26 OHMS. THE GROUNDING TEST SHALL BE COORDINATED WITH AND WITNESSED BY THE OWNER'S REPRESENTATIVE. REFER TO THE OWNER'S STANDARD SPECIFICATIONS.

BASKERVILLE-DONOVAN, INC.
ENGINEERING THE SOUTH SINCE 1927
449 W. MAIN ST. PENSACOLA FL 32502 (850)438-9661
ENGINEERING BUSINESS: EB-0000340
Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1–31–24	–	100% SUBMITTAL	

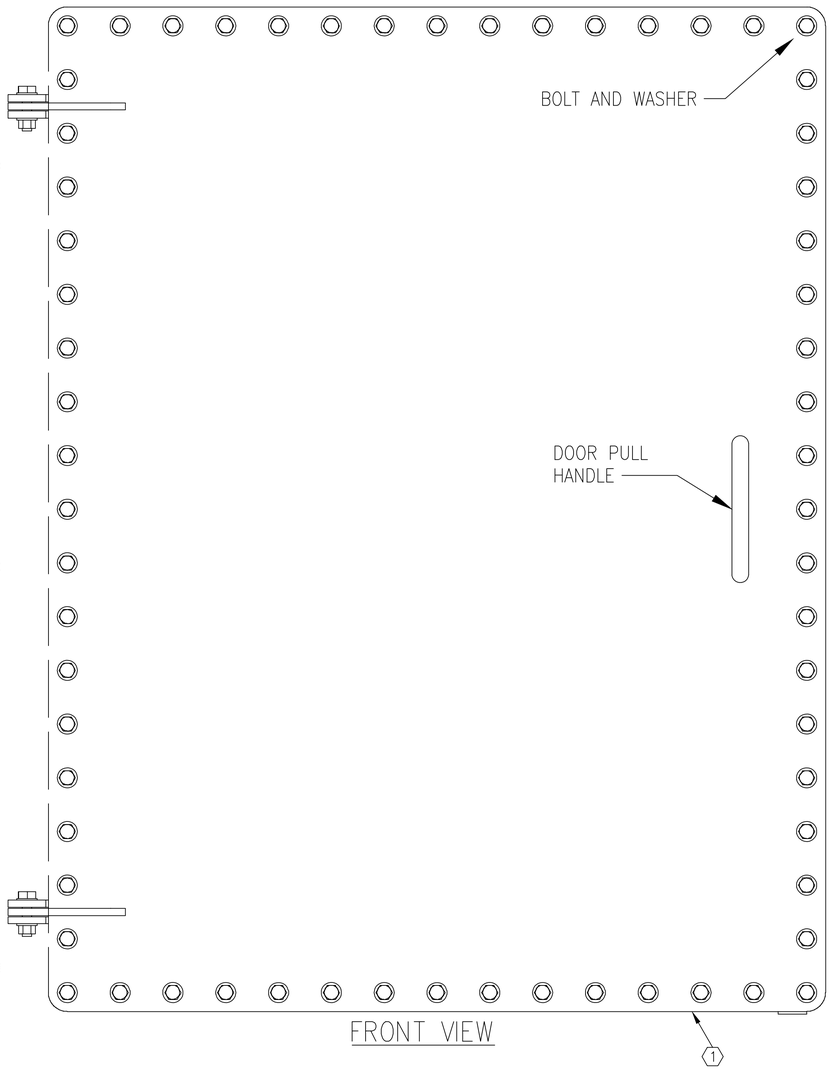
NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JNJ
DATE: FEBRUARY 2023

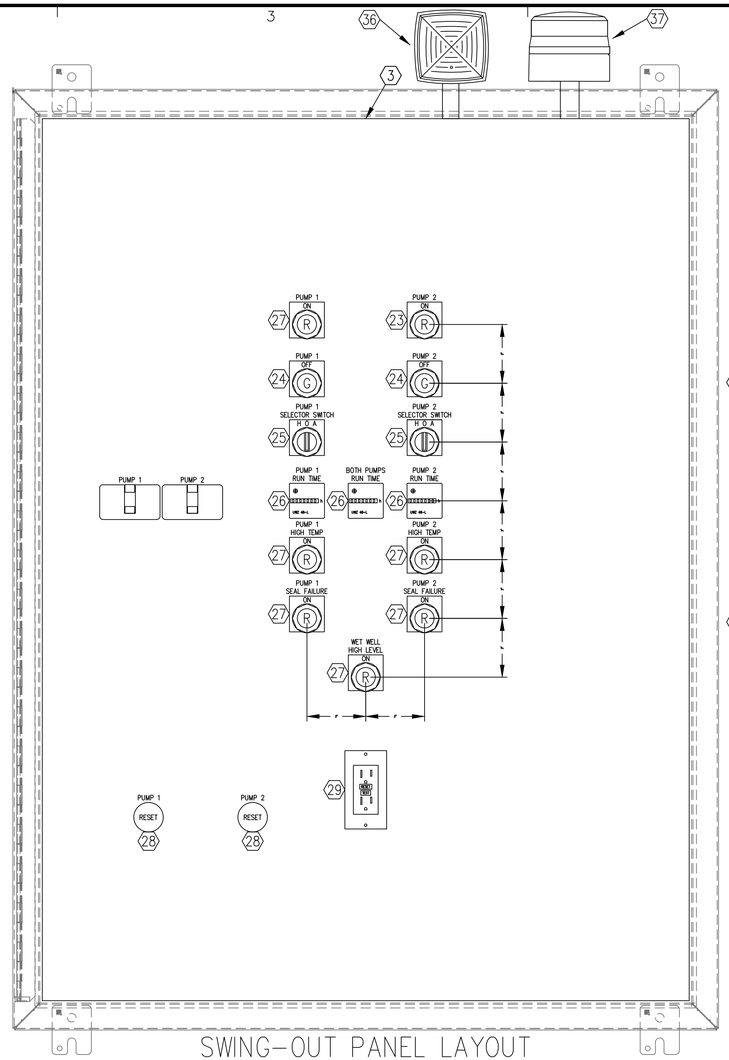
LS 6
ELECTRICAL
RISER/1-LINE DIAGRAM

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027

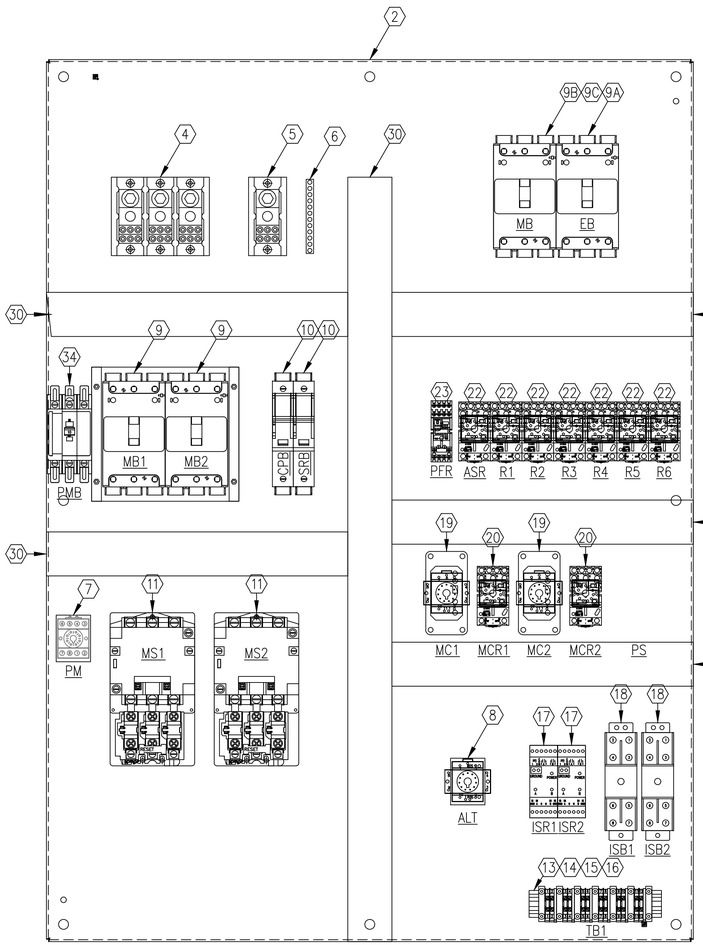
E–106



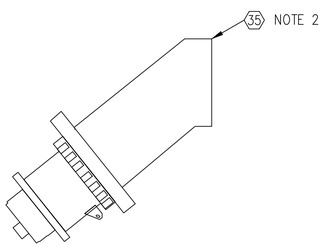
FRONT VIEW



SWING-OUT PANEL LAYOUT



BACK PANEL LAYOUT



NOTES:

1. THE EQUIPMENT AND MATERIALS REFERENCED ON THESE DRAWINGS ARE MEANT TO ESTABLISH A MINIMUM STANDARD FOR CAPABILITY AND QUALITY ASSURANCE. SUBSTITUTIONS OF ANY EQUIPMENT AND/OR MATERIALS ARE TO BE EQUAL OR BETTER THAN THE AFOREMENTIONED EQUIPMENT AND MATERIALS AND ARE SUBJECT TO APPROVAL BY THE OWNER/ENGINEER.

2. THE EMERGENCY RECEPTACLE IS TO BE MOUNTED ON THE LEFT SIDE OF THE ENCLOSURE 4" FROM THE TOP. UTILIZE THE 1 ¼" HUB OF THE ENCLOSURE TO CONNECT THE BACK BOX AND RECEPTACLE.

BASKERVILLE-DONOVAN, INC.
ENGINEERING THE SOUTH SINCE 1927
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ENGINEERING BUSINESS: EB-0000340
Pensacola · Panama City Beach · Tallahassee · Mobile

CEDAR KEY
SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1-31-24	–	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 6
ELECTRICAL CONTROL
PANEL LAYOUT

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE · TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027

E-107

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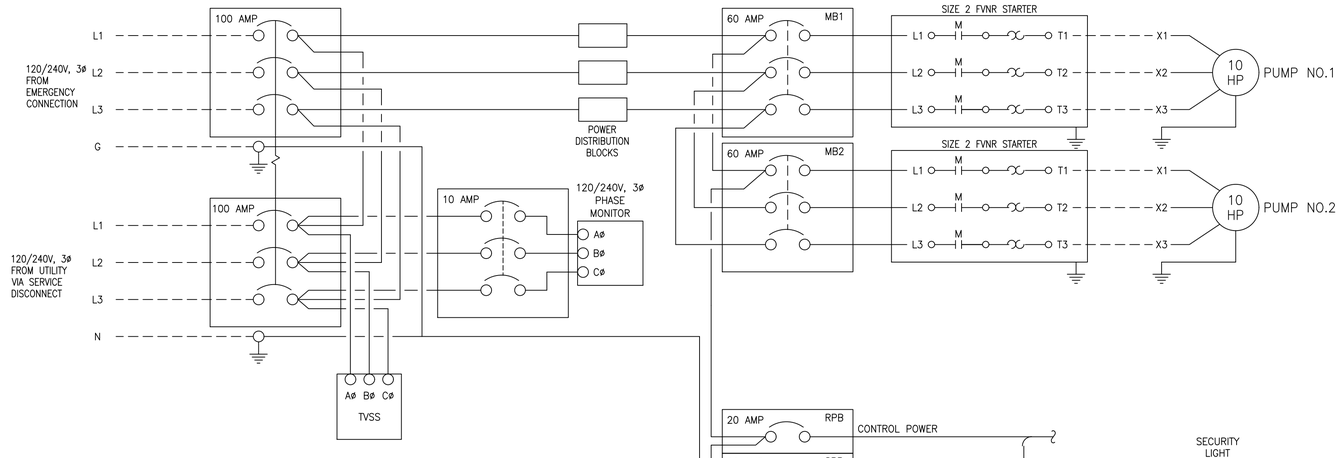

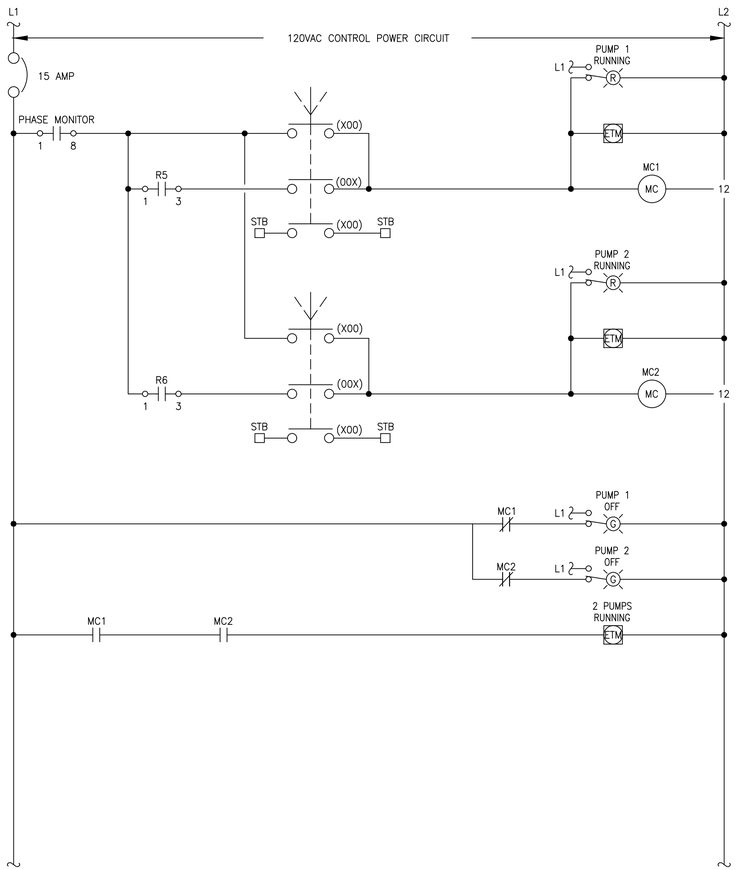

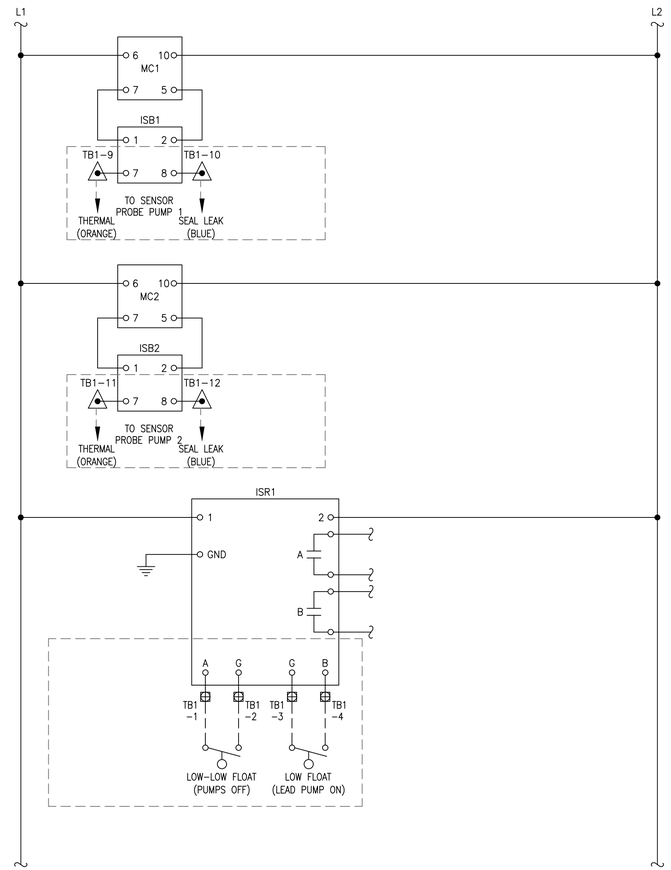

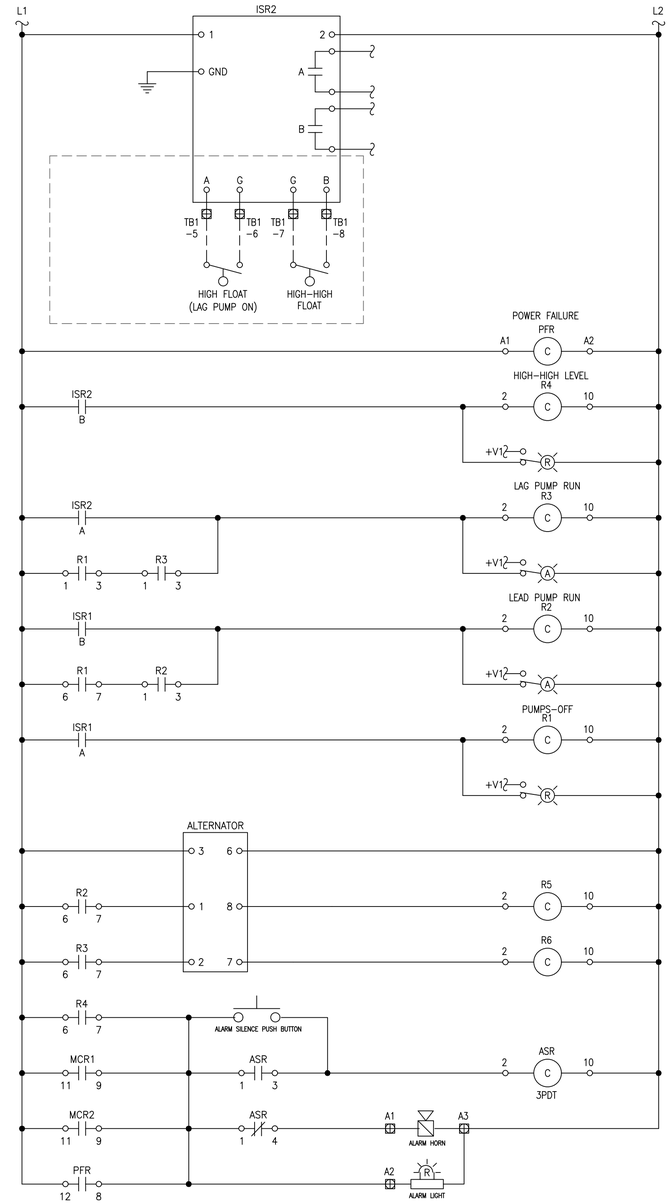

LEGEND

AH	– ALARM HORN	MCB	– MAIN CIRCUIT BREAKER
AL	– ALARM LIGHT	MC	– MINI–CAS MODULE
ALT	– ALTERNATOR	MCR	– MOTOR CONTROL RELAY
ASB	– ALARM SILENCE BUTTON	MS	– MOTOR STARTER
ASR	– ALARM SILENCE RELAY	OL	– OVERLOAD
BCB	– BATTERY CHARGER BREAKER	PFR	– POWER FAIL RELAY
BHB	– BLOCK HEATER BREAKER	PM	– PHASE MONITOR
CPB	– CONTROL POWER BREAKER	PMB	– PHASE MONITOR BREAKER
ETM	– ELAPSED TIME METER	PS	– POWER SUPPLY
GFI	– GROUND FAULT RECEPTACLE	R	– RELAY
HOA	– HAND–OFF–AUTO SELECTOR SWITCH	RPB	– RTU POWER BREAKER
		SRB	– SERVICE RECEPTACLE BREAKER
ISB	– ISOLATION BARRIER	TB	– TERMINAL BLOCK
ISR	– ISOLATION RELAY	TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR
MB	– MOTOR BREAKER		

BASKERVILLE-DONOVAN, INC.
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Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1–31–24	–	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 6
ELECTRICAL WIRING DIAGRAM

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850)-893-7722 PROJECT NO: 23027

E–108

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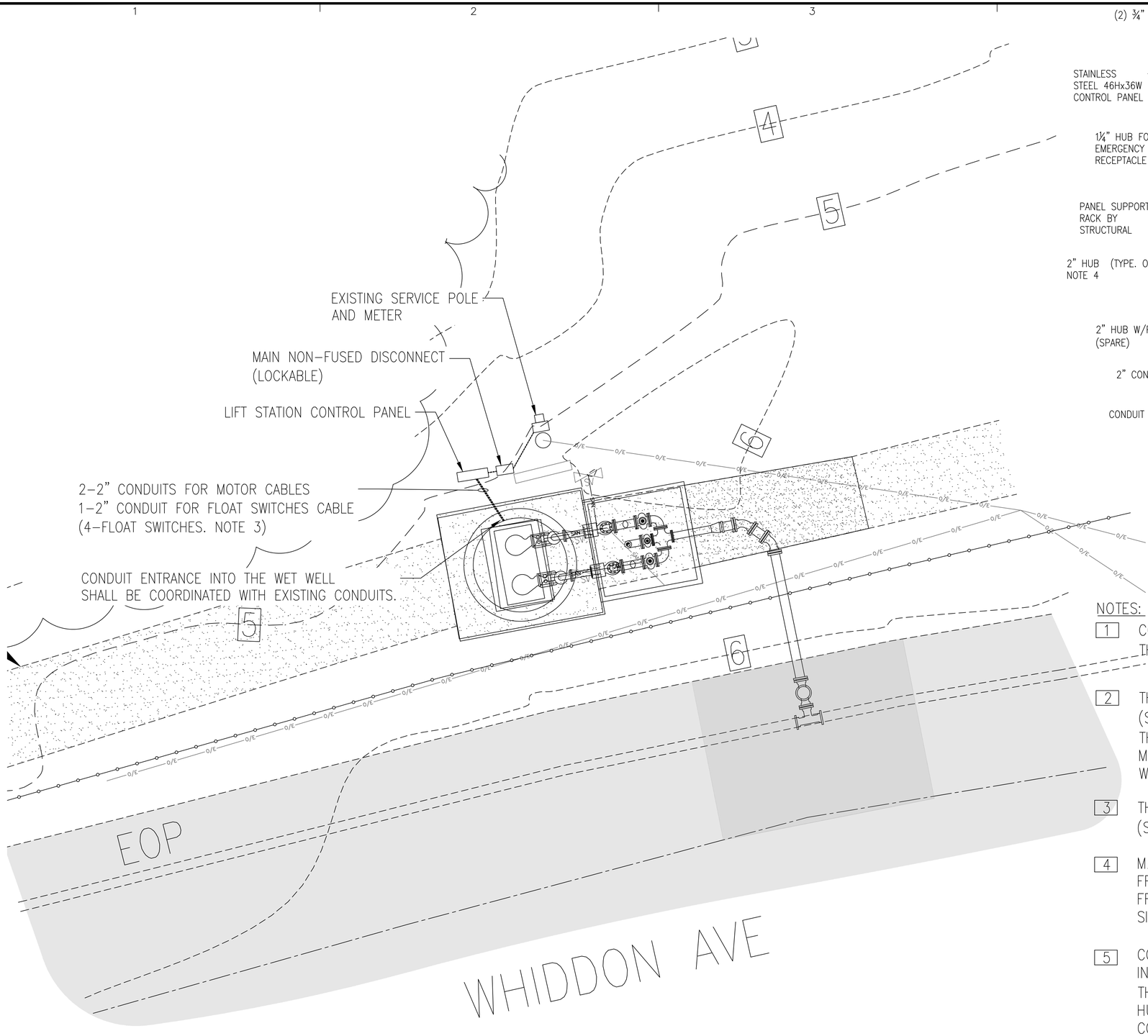
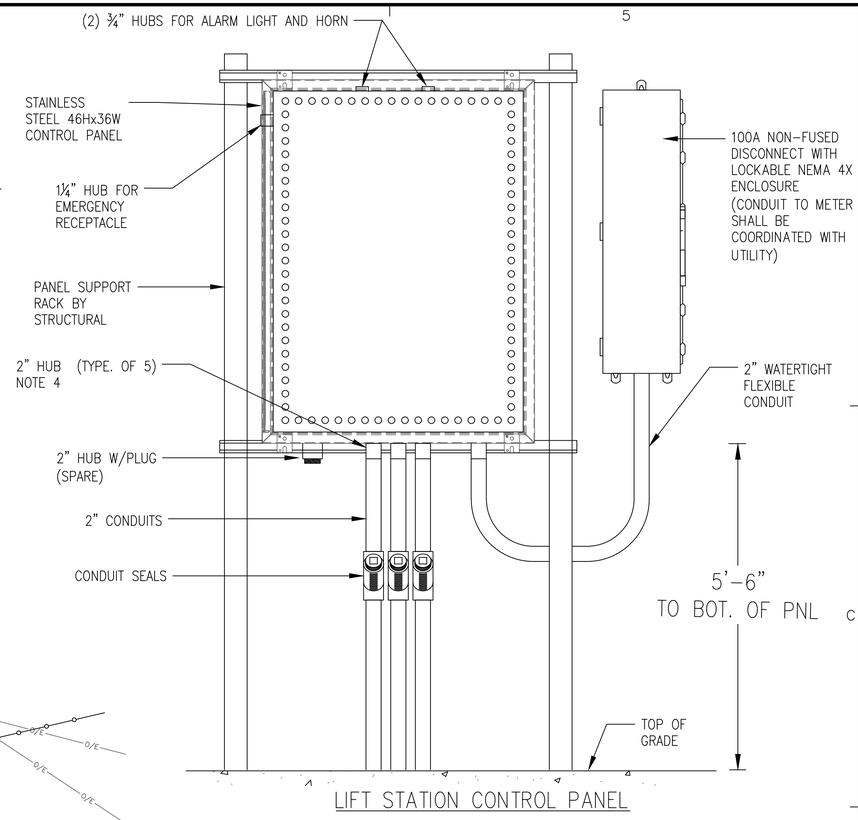


LIFT STATION 7: ELECTRICAL DETAIL

SCALE: 1" = 3'



LIFT STATION CONTROL PANEL

NOT TO SCALE

NOTES:

1. COORDINATE REWORKING OF SERVICE CONDUITS AND METER ENCLOSURE WITH THE SERVING UTILITY (CENTRAL FLORIDA ELECTRICAL CO-OP; CHIEFLAND,FL)

2. THE CONTROL PANEL SHALL BE INSTALLED ON THE SUPPORT STRUCTURE (SUPPLIED BY OTHERS) AT 5'-6" ABOVE GRADE TO THE BOTTOM OF THE PANEL. THE SUPPLY AND INSTALLATION OF STRUT/HARDWARE TO MOUNT THE PANEL TO THE SUPPORT IS PART OF THE ELECTRICAL WORK.

3. THE FLOAT SWITCHES SHALL BE ANCHOR SCIENTIFIC MINI-FLOATS (SUSPENDED-TYPE-S) OR EQUAL. PROVIDE CABLES OF ADEQUATE LENGTH.

4. MAIN DISCONNECT MAY BE MOUNTED ON THE BACK OF THE SUPPORT FRAME. MOUNT DISCONNECT AS HIGH AS POSSIBLE ON THE SUPPORT FRAME. THE CONDUIT FOR THE SERVICE SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT ON BOTH ENDS.

5. CONDUIT FITTINGS/HUBS ARE PART OF THE PANEL/ENCLOSURE. THEY ARE INTENDED TO BE ATTACHED AS PART OF THE MANUFACTURING PROCESS. THE PURCHASE/CONTRACTOR SHALL INDICATE THE LOCATION AND SIZE OF HUBS TO THE VENDOR AS PART OF THE PURCHASING PROCESS. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE NEMA 6 RATING OF THE ENCLOSURE DURING INSTALLATION.

6. ALL BELOW GRADE CONDUIT SHALL BE SCH.40 PVC. ALL ABOVE GROUND CONDUIT SHALL BE RIGID IMC. ANY BELOW GRADE METALLIC CONDUIT SHALL BE COATED WITH CORROSION RESISTANT PAINT/COATINGS. BELOW GRADE CONDUIT SHALL BE AT A DEPTH OF 18" MINIMUM.

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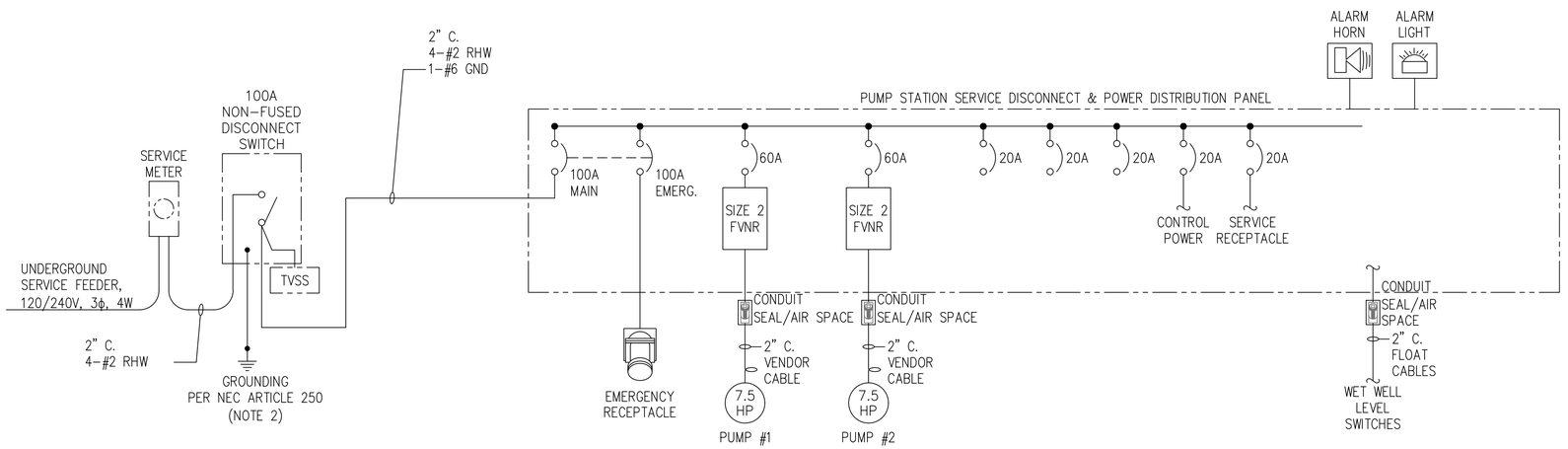
PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 7
ELECTRICAL SITE PLAN

E-109



LIFT STATION #7 RISER DIAGRAM

NOTE:

1. PUMP STATION WET WELL IS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION THAT REQUIRES THE USE OF CONDUIT SEALS, OR AIR SPACE PROVISION, BETWEEN THE WET WELL AND POSSIBLE SOURCES OF IGNITION. CONDUIT SEALS, OR AIR SPACE, SHALL BE PLACED WITHIN (18)EIGHTEEN INCHES OF THE PUMP STATION CONTROL PANEL ENCLOSURE.
2. GROUNDING SHALL BE TESTED TO VERIFY THAT RESISTANCE TO EARTH/GROUND IN LESS THAN 26 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED (AS REQUIRED) TO ESTABLISH A GROUNDING RESISTANCE OF LESS THAN 26 OHMS. THE GROUNDING TEST SHALL BE COORDINATED WITH AND WITNESSED BY THE OWNER'S REPRESENTATIVE. REFER TO THE OWNER'S STANDARD SPECIFICATIONS.

BILL OF MATERIAL

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	NEMA 6P ENCLOSURE W/6P HINGED DOOR AND GASKETS 304SS 48Hx36Wx12D NOMINAL	NEMACO	N6P–483612–304	1
2	BACK PANEL EPOXY COATED STEEL	NEMACO	N69–IP4836	1
3	HINGED SWING–OUT PANEL – 304SS W/3 POINT TURN LATCH HANDLE	NEMACO	–	1
4	POWER DISTRIBUTION BLOCK 3–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA363106	1
5	POWER DISTRIBUTION BLOCK 1–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA163106	1
6	EQUIPMENT GROUND BAR	SQUARE–D	PK9GTA	1
7	PHASE MONITOR RELAY SOCKET	ATC DIVERSIFIED	SLA–230–ALA RB–08	1 1
8	ALTERNATING RELAY – DUPLEX	ATC DIVERSIFIED	ARA–24–ADA	1
9	BREAKER–60A, THREE POLE	SQUARE–D	HDL36060	2
9A	EMERGENCY BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9B	MAIN BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9C	H/J FRAME MECHANICAL INTERLOCK FOR TOGGLE HANGLE	SQUARE–D	S29354	2
10	BREAKER–20A, SINGLE POLE	SQUARE–D	BDL16020	5
11	FULL VOLTAGE NON–REVERSING SIZE 2 STARTER	SQUARE–D	85365D01V02H305	2
12	SURGE PROTECTIVE DEVICE	SURGE SUPPRESSION, INC	LSED–3Y1–D1XS	1
13	35mm DIN RAIL	SQUARE–D	9080MH320	AS REQ'D
14	FEED THROUGH TERMINAL	SQUARE–D	9080GM6	AS REQ'D
15	END BARRIER	SQUARE–D	9080GM6B	AS REQ'D
16	END CLAMP	SQUARE–D	9080MHA10	AS REQ'D
17	INTRINSICALLY SAFE RELAY	R–K ELECTRONICS	ISR–24V–10K	2
18	GEMS ZENER BARRIER	TEQUIPMENT	54801	2
19	PUMP MONITORING/CONTROL RELAY w BASE	PUMP VENDOR		2
20	RELAY, OCTAL PLUG–IN, 3PDT 120VAC w/RELAY SOCKET	EATON	D3RF3A D3PA7	2
21	(NOT USED)	–	–	–
22	RELAY, OCTAL PLUG–IN, 3PDT 24VDC W/RELAY SOCKET	SQUARE–D	D3RF3T1 D3PA7	7
23	MINIATURE PLUG–IN RELAY – 24VDC	SQUARE–D	RXM4AB2BDPVM	1
24	PILOT LIGHT – w/GREEN LENSE	ALLEN–BRADLEY	800T–QTH2G	2
25	3 POSITION SELECTOR SWITCH w/"H–O–A" LEGEND PLATE	ALLEN–BRADLEY	800T–J2B 800T–X511	2
26	HOUR COUNTER PANEL METER	GRASSLIN	UWZ48E–12050U	3
27	PILOT LIGHT – w/RED LENSE	ALLEN–BRADLEY	800T–QTH2R	7
28	EXTERNAL RESET MECHANISM	SQUARE–D	9066RA1	1
29	DUPLEX SERVICE RECEPTACLE 20A, 125VAC, G.F.I. w/COVER	LEVITON	GFWT2–T	1
30	WIREWAY DUCT 2"x4" w/COVER	HOFFMAN	A200400WH A200CWH	AS REQ'D
31	LED ALARM BEACON – 12–24VDC, NEMA 4X	EDWARDS SIGNALING	94PLEDMR24AD	1
32	ALARM HORN – WEATHERPROOF, 24VDC, NEMA 4X	EDWARDS SIGNALING	877–G1	1
33	PUSH BUTTON – MOMENTARY CONTACT, BLACK, 1 NO	ALLEN–BRADLEY	800T–B2D1	1
34	BREAKER–10A, THREE POLE	SQUARE–D	QOU310	1
35	EMERGENCY RECEPTACLE – 100A, 3ϕ 4 WIRE, NEMA 6P/IP67 W/BACK BOX	LEVITON	4100R9W BX100–V	1
36	VIBRATING HORN 120VAL NEMA 4X	EDWARDS	876–N5	1
37	FLASHING ALARM LIGHT – RED LED MICROLERT NEMA 6P CAPABLE	TOMAR ELECTRONICS	290LF–120–240	1

BOM NOTES:

1. VIBRATING HORN HAS A NEMA 4X ENCLOSURE. THEREFORE CONDUIT INTO THE NEMA 6P PANEL SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT.

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CEDAR KEY SANITARY SEWER
LIFT STATION
REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN	DATE
–	1–31–24	–	100% SUBMITTAL	

NOT RELEASED FOR CONSTRUCTION BY

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JNJ
DATE: FEBRUARY 2023

LS 7
ELECTRICAL
RISER/1-LINE DIAGRAM

E–110

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850–893–7722 PROJECT NO: 23027

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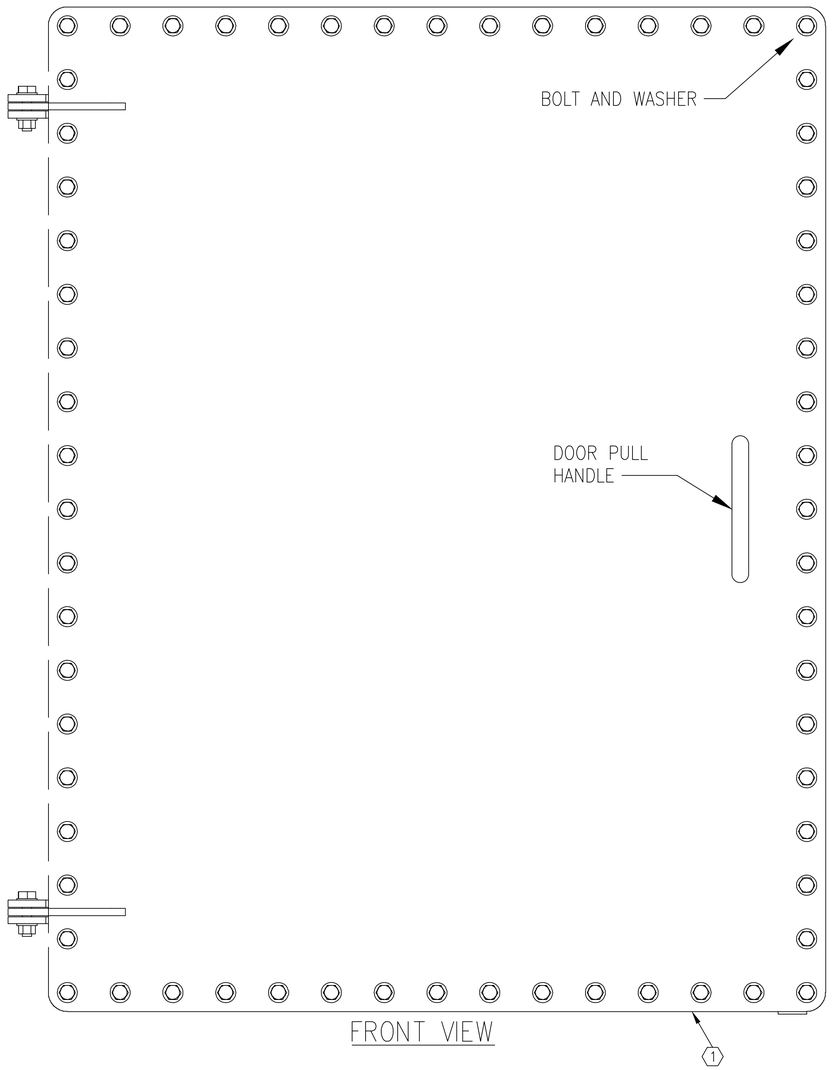
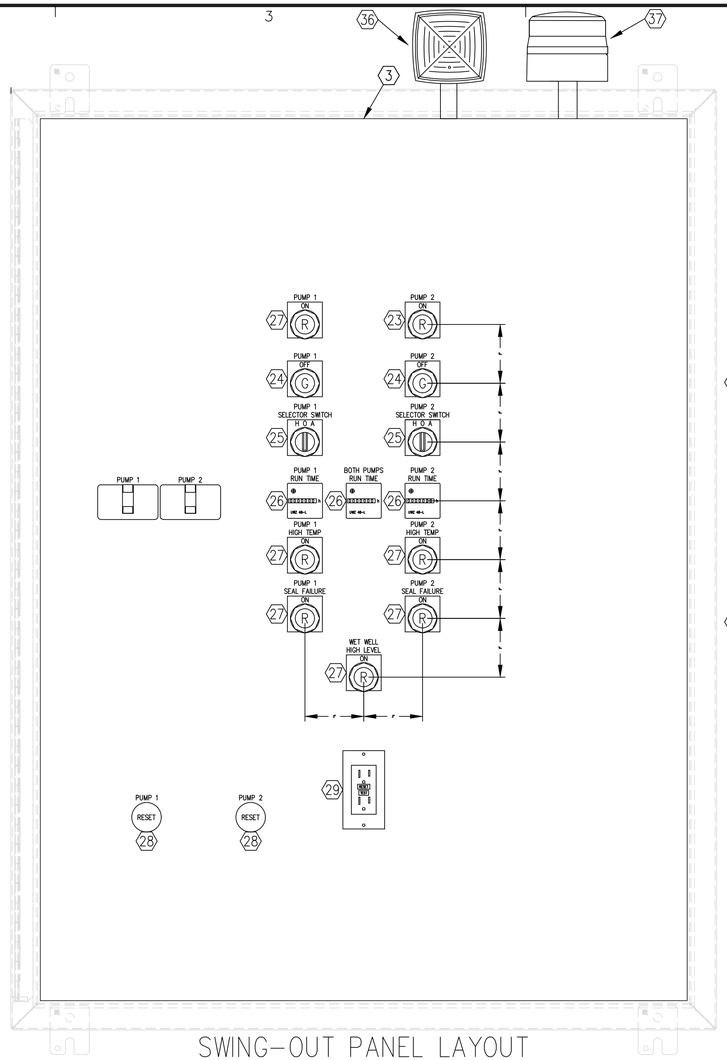
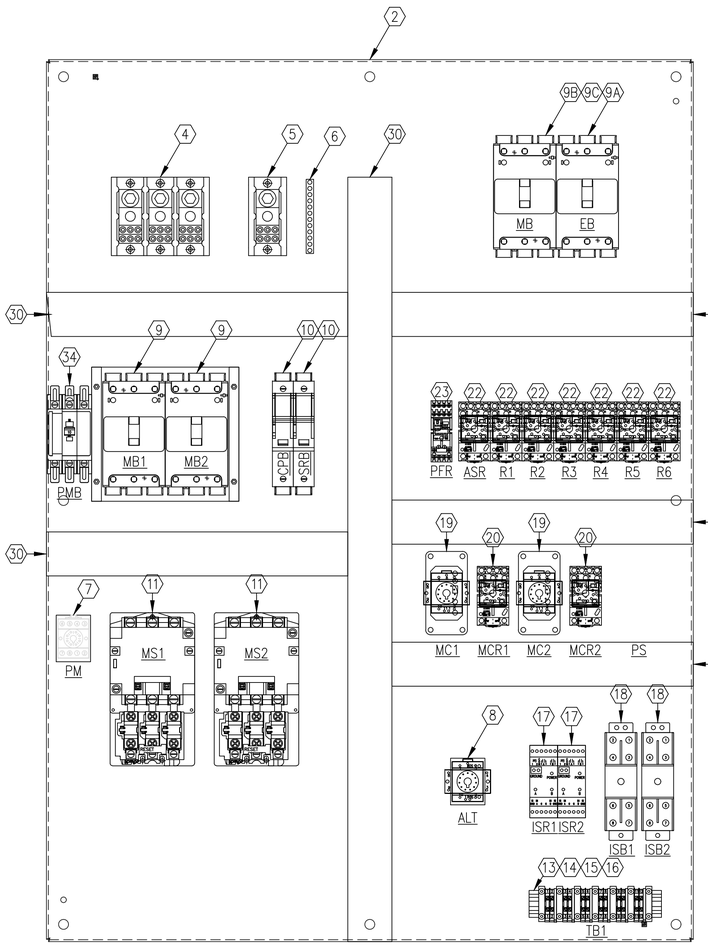


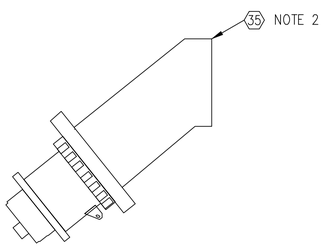
FRONT VIEW



SWING-OUT PANEL LAYOUT



BACK PANEL LAYOUT



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Pensacola - Panama City Beach - Tallahassee - Mobile
ENGINEERING BUSINESS: EB-0000340

CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

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–	1-31-24	–	100% SUBMITTAL	

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PROJECT NO: 123503.01
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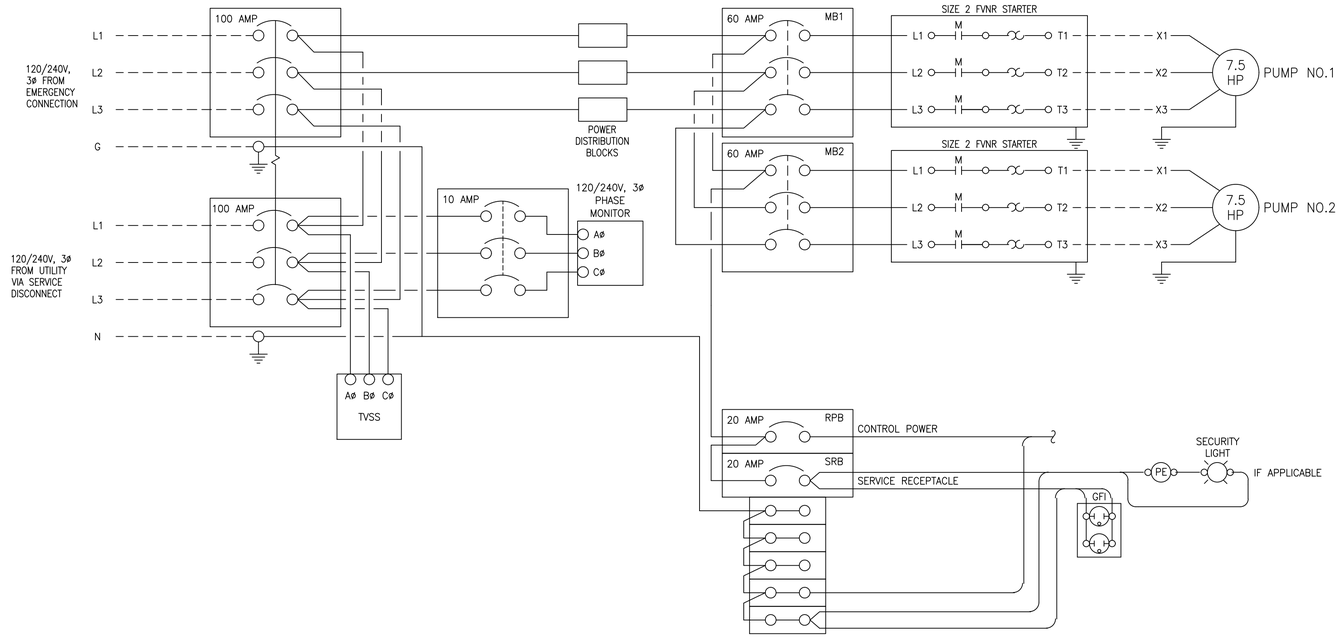
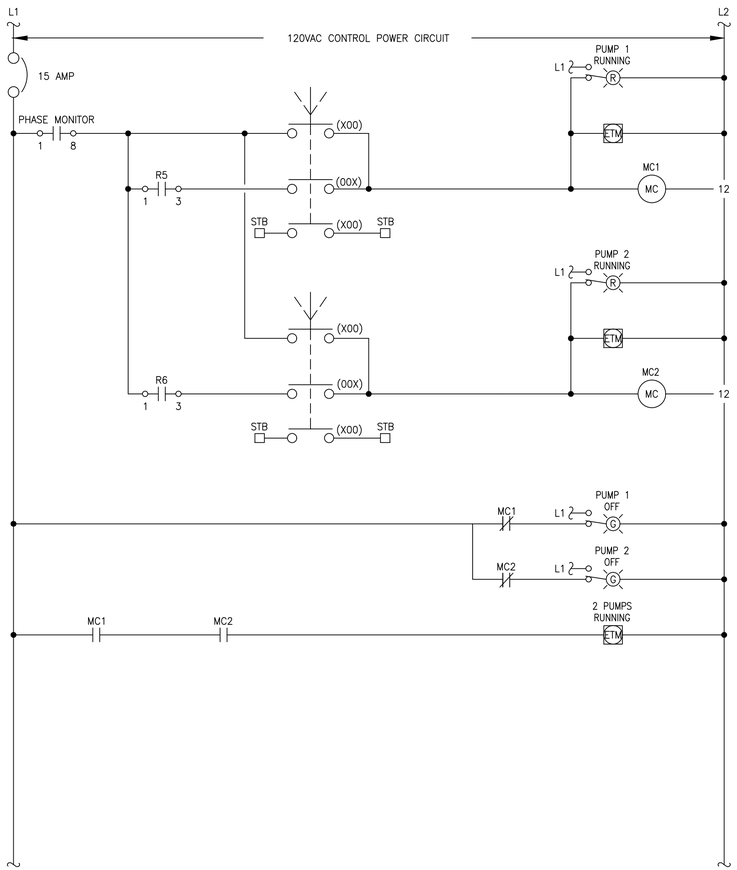
DATE: FEBRUARY 2023

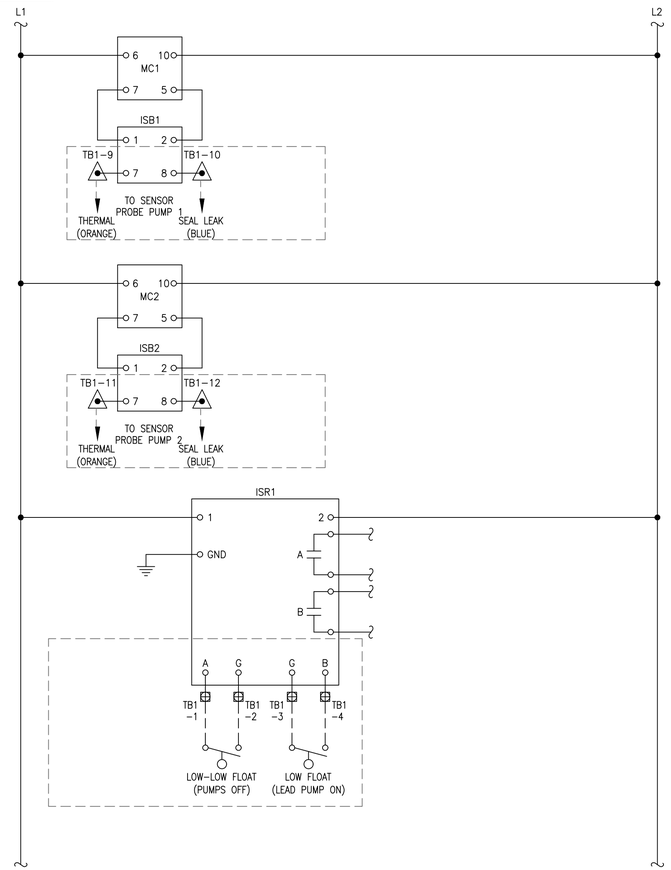
LS 7
ELECTRICAL CONTROL PANEL LAYOUT

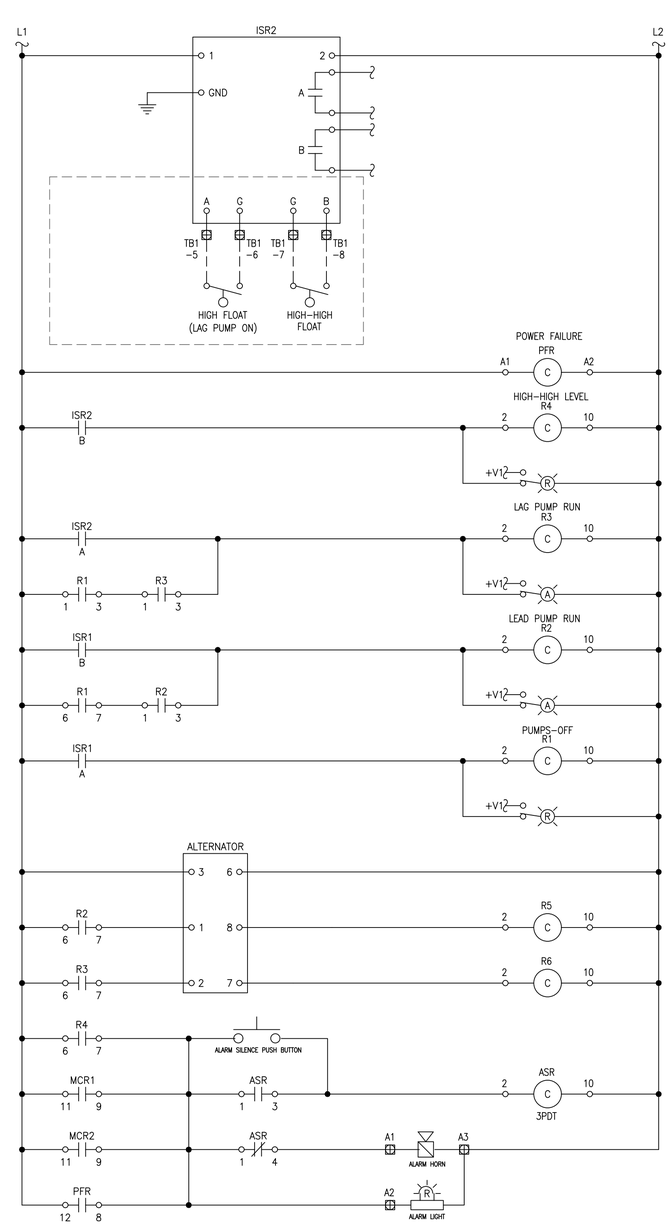
E-111

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027









LEGEND

AH	– ALARM HORN	MCB	– MAIN CIRCUIT BREAKER
AL	– ALARM LIGHT	MC	– MINI–CAS MODULE
ALT	– ALTERNATOR	MCR	– MOTOR CONTROL RELAY
ASB	– ALARM SILENCE BUTTON	MS	– MOTOR STARTER
ASR	– ALARM SILENCE RELAY	OL	– OVERLOAD
BCB	– BATTERY CHARGER BREAKER	PFR	– POWER FAIL RELAY
BHB	– BLOCK HEATER BREAKER	PM	– PHASE MONITOR
CPB	– CONTROL POWER BREAKER	PMB	– PHASE MONITOR BREAKER
ETM	– ELAPSED TIME METER	PS	– POWER SUPPLY
GFI	– GROUND FAULT RECEPTACLE	R	– RELAY
HOA	– HAND–OFF–AUTO SELECTOR SWITCH	RPB	– RTU POWER BREAKER
		SRB	– SERVICE RECEPTACLE BREAKER
ISB	– ISOLATION BARRIER	TB	– TERMINAL BLOCK
ISR	– ISOLATION RELAY	TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR
MB	– MOTOR BREAKER		

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CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

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LS 7
ELECTRICAL WIRING DIAGRAM

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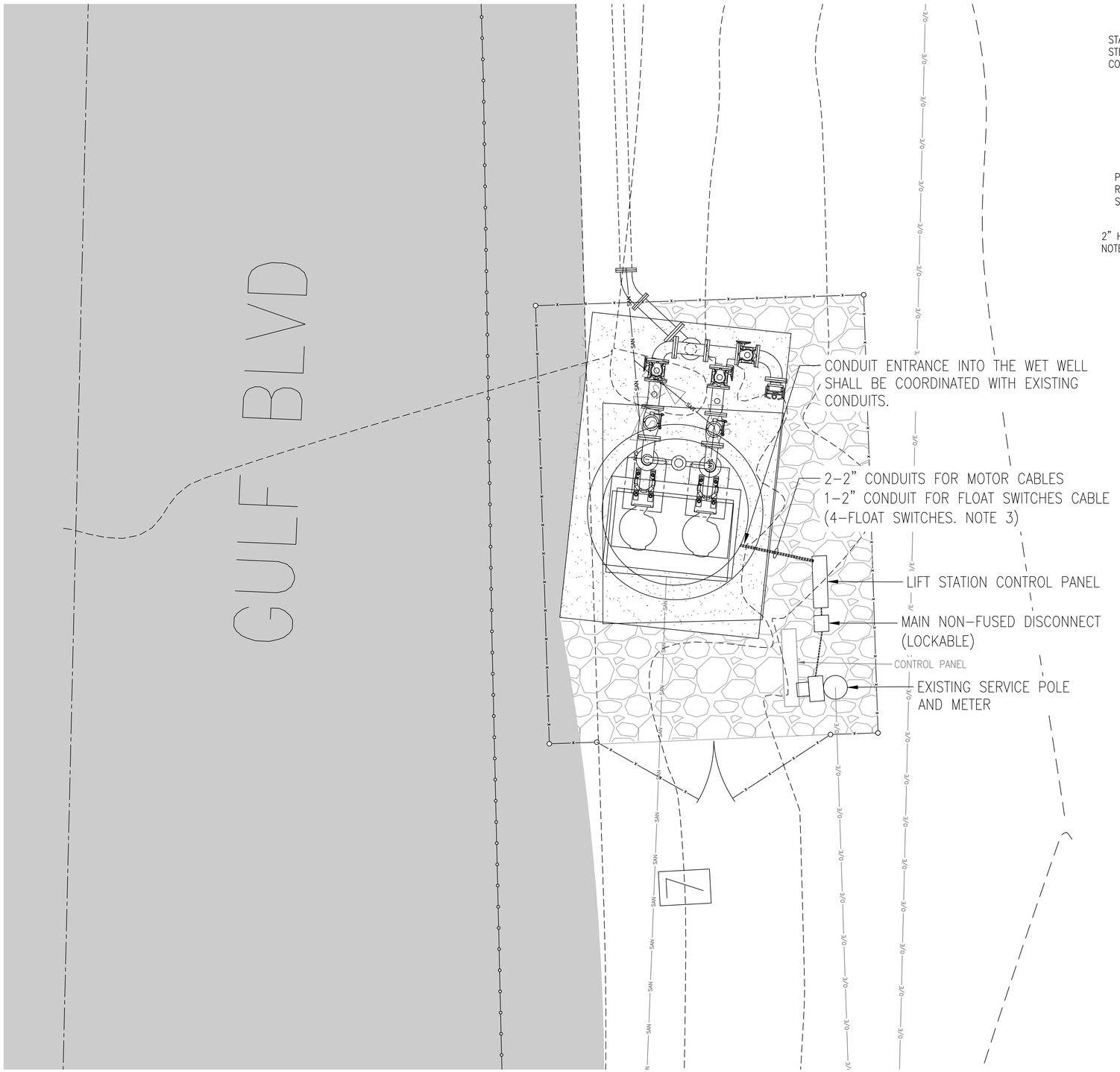
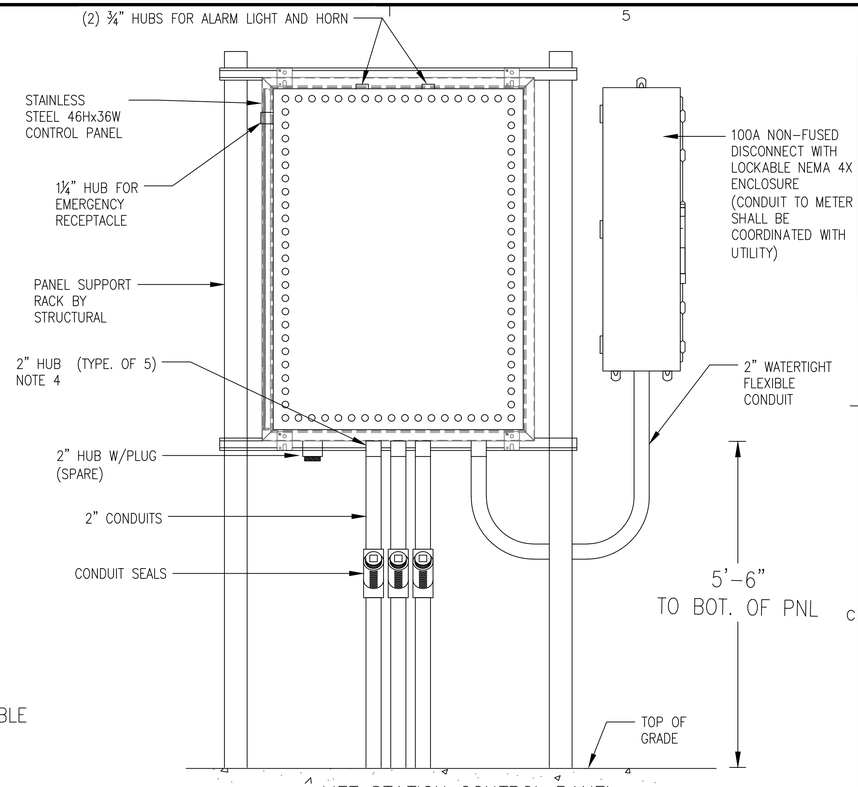
E–112



LIFT STATION 9: ELECTRICAL DETAIL

SCALE: 1" = 2'



LIFT STATION CONTROL PANEL

NOT TO SCALE

NOTES:

1. COORDINATE REWORKING OF SERVICE CONDUITS AND METER ENCLOSURE WITH THE SERVING UTILITY (CENTRAL FLORIDA ELECTRICAL CO-OP; CHIEFLAND,FL)

2. THE CONTROL PANEL SHALL BE INSTALLED ON THE SUPPORT STRUCTURE (SUPPLIED BY OTHERS) AT 5'-6" ABOVE GRADE TO THE BOTTOM OF THE PANEL. THE SUPPLY AND INSTALLATION OF STRUT/HARDWARE TO MOUNT THE PANEL TO THE SUPPORT IS PART OF THE ELECTRICAL WORK.

3. THE FLOAT SWITCHES SHALL BE ANCHOR SCIENTIFIC MINI-FLOATS (SUSPENDED-TYPE-S) OR EQUAL. PROVIDE CABLES OF ADEQUATE LENGTH.

4. MAIN DISCONNECT MAY BE MOUNTED ON THE BACK OF THE SUPPORT FRAME. MOUNT DISCONNECT AS HIGH AS POSSIBLE ON THE SUPPORT FRAME. THE CONDUIT FOR THE SERVICE SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT ON BOTH ENDS.

5. CONDUIT FITTINGS/HUBS ARE PART OF THE PANEL/ENCLOSURE. THEY ARE INTENDED TO BE ATTACHED AS PART OF THE MANUFACTURING PROCESS. THE PURCHASE/CONTRACTOR SHALL INDICATE THE LOCATION AND SIZE OF HUBS TO THE VENDOR AS PART OF THE PURCHASING PROCESS. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE NEMA 6 RATING OF THE ENCLOSURE DURING INSTALLATION.

6. ALL BELOW GRADE CONDUIT SHALL BE SCH.40 PVC. ALL ABOVE GROUND CONDUIT SHALL BE RIGID IMC. ANY BELOW GRADE METALLIC CONDUIT SHALL BE COATED WITH CORROSION RESISTANT PAINT/COATINGS. BELOW GRADE CONDUIT SHALL BE AT A DEPTH OF 18" MINIMUM.

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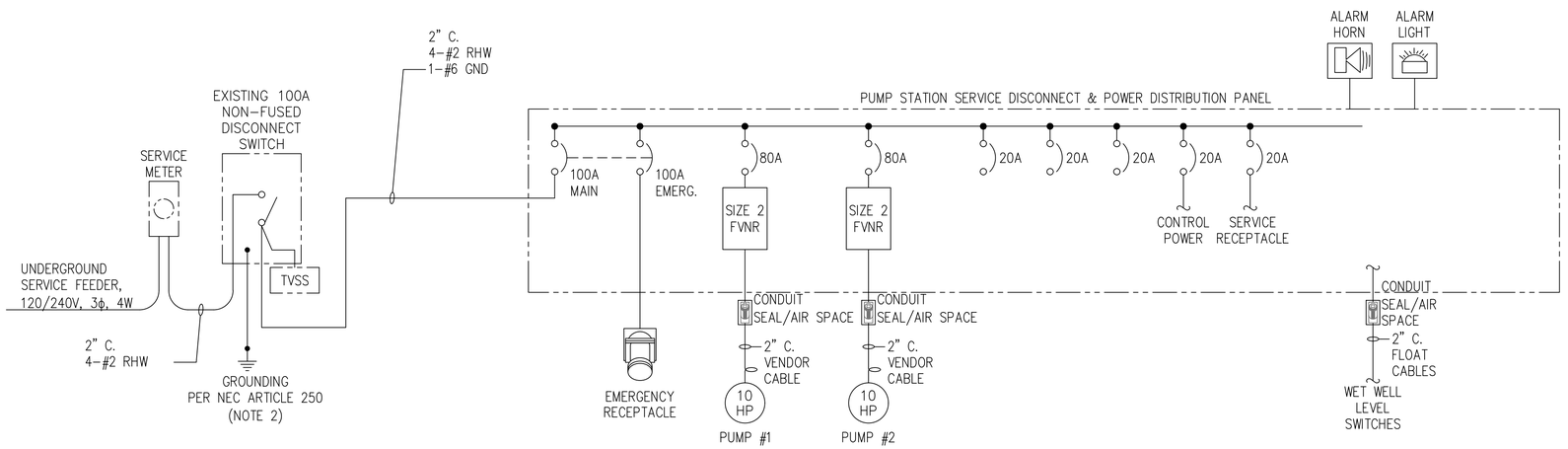
LS 9
ELECTRICAL SITE PLAN

E-113



LIFT STATION #9 RISER DIAGRAM

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	NEMA 6P ENCLOSURE W/6P HINGED DOOR AND GASKETS 304SS 48Hx36Wx12D NOMINAL	NEMACO	N6P–483612–304	1
2	BACK PANEL EPOXY COATED STEEL	NEMACO	N69–IP4836	1
3	HINGED SWING–OUT PANEL – 304SS W/3 POINT TURN LATCH HANDLE	NEMACO	–	1
4	POWER DISTRIBUTION BLOCK 3–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA363106	1
5	POWER DISTRIBUTION BLOCK 1–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA163106	1
6	EQUIPMENT GROUND BAR	SQUARE–D	PK9GTA	1
7	PHASE MONITOR RELAY SOCKET	ATC DIVERSIFIED	SLA–230–ALA RB–08	1 1
8	ALTERNATING RELAY – DUPLEX	ATC DIVERSIFIED	ARA–24–ADA	1
9	BREAKER–60A, THREE POLE	SQUARE–D	HDL36060	2
9A	EMERGENCY BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9B	MAIN BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9C	H/J FRAME MECHANICAL INTERLOCK FOR TOGGLE HANGLE	SQUARE–D	S29354	2
10	BREAKER–20A, SINGLE POLE	SQUARE–D	BDL16020	5
11	FULL VOLTAGE NON–REVERSING SIZE 2 STARTER	SQUARE–D	85365D01V02H305	2
12	SURGE PROTECTIVE DEVICE	SURGE SUPPRESSION, INC	LSED–3Y1–D1XS	1
13	35mm DIN RAIL	SQUARE–D	9080MH320	AS REQ'D
14	FEED THROUGH TERMINAL	SQUARE–D	9080GM6	AS REQ'D
15	END BARRIER	SQUARE–D	9080GM6B	AS REQ'D
16	END CLAMP	SQUARE–D	9080MHA10	AS REQ'D
17	INTRINSICALLY SAFE RELAY	R–K ELECTRONICS	ISR–24V–10K	2
18	GEMS ZENER BARRIER	TEQUIPMENT	54801	2
19	PUMP MONITORING/CONTROL RELAY w BASE	PUMP VENDOR		2
20	RELAY, OCTAL PLUG–IN, 3PDT 120VAC w/RELAY SOCKET	EATON	D3RF3A D3PA7	2
21	(NOT USED)	–	–	–
22	RELAY, OCTAL PLUG–IN, 3PDT 24VDC W/RELAY SOCKET	SQUARE–D	D3RF3T1 D3PA7	7
23	MINIATURE PLUG–IN RELAY – 24VDC	SQUARE–D	RXM4AB2BDPVM	1
24	PILOT LIGHT – w/GREEN LENSE	ALLEN–BRADLEY	800T–QTH2G	2
25	3 POSITION SELECTOR SWITCH w/"H–O–A" LEGEND PLATE	ALLEN–BRADLEY	800T–J2B 800T–X511	2
26	HOUR COUNTER PANEL METER	GRASSLIN	UWZ48E–12050U	3
27	PILOT LIGHT – w/RED LENSE	ALLEN–BRADLEY	800T–QTH2R	7
28	EXTERNAL RESET MECHANISM	SQUARE–D	9066RA1	1
29	DUPLEX SERVICE RECEPTACLE 20A, 125VAC, G.F.I. w/COVER	LEVITON	GFWT2–T	1
30	WIREWAY DUCT 2"x4" w/COVER	HOFFMAN	A200400WH A200CWH	AS REQ'D
31	LED ALARM BEACON – 12–24VDC, NEMA 4X	EDWARDS SIGNALING	94PLEDMR24AD	1
32	ALARM HORN – WEATHERPROOF, 24VDC, NEMA 4X	EDWARDS SIGNALING	877–G1	1
33	PUSH BUTTON – MOMENTARY CONTACT, BLACK, 1 NO	ALLEN–BRADLEY	800T–B2D1	1
34	BREAKER–10A, THREE POLE	SQUARE–D	QOU310	1
35	EMERGENCY RECEPTACLE – 100A, 3ϕ 4 WIRE, NEMA 6P/IP67 W/BACK BOX	LEVITON	4100R9W BX100–V	1
36	VIBRATING HORN 120VAL NEMA 4X	EDWARDS	876–N5	1
37	FLASHING ALARM LIGHT – RED LED MICROLERT NEMA 6P CAPABLE	TOMAR ELECTRONICS	290LF–120–240	1

BOM NOTES:

1 VIBRATING HORN HAS A NEMA 4X ENCLOSURE. THEREFORE CONDUIT INTO THE NEMA 6P PANEL SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT.

NOTE:

1 PUMP STATION WET WELL IS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION THAT REQUIRES THE USE OF CONDUIT SEALS, OR AIR SPACE PROVISION, BETWEEN THE WET WELL AND POSSIBLE SOURCES OF IGNITION. CONDUIT SEALS, OR AIR SPACE, SHALL BE PLACED WITHIN (18)EIGHTEEN INCHES OF THE PUMP STATION CONTROL PANEL ENCLOSURE.

2 GROUNDING SHALL BE TESTED TO VERIFY THAT RESISTANCE TO EARTH/GROUND IN LESS THAN 26 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED (AS REQUIRED) TO ESTABLISH A GROUNDING RESISTANCE OF LESS THAN 26 OHMS. THE GROUNDING TEST SHALL BE COORDINATED WITH AND WITNESSED BY THE OWNER'S REPRESENTATIVE. REFER TO THE OWNER'S STANDARD SPECIFICATIONS.

BASKERVILLE-DONOVAN, INC.
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CEDAR KEY SANITARY SEWER
LIFT STATION
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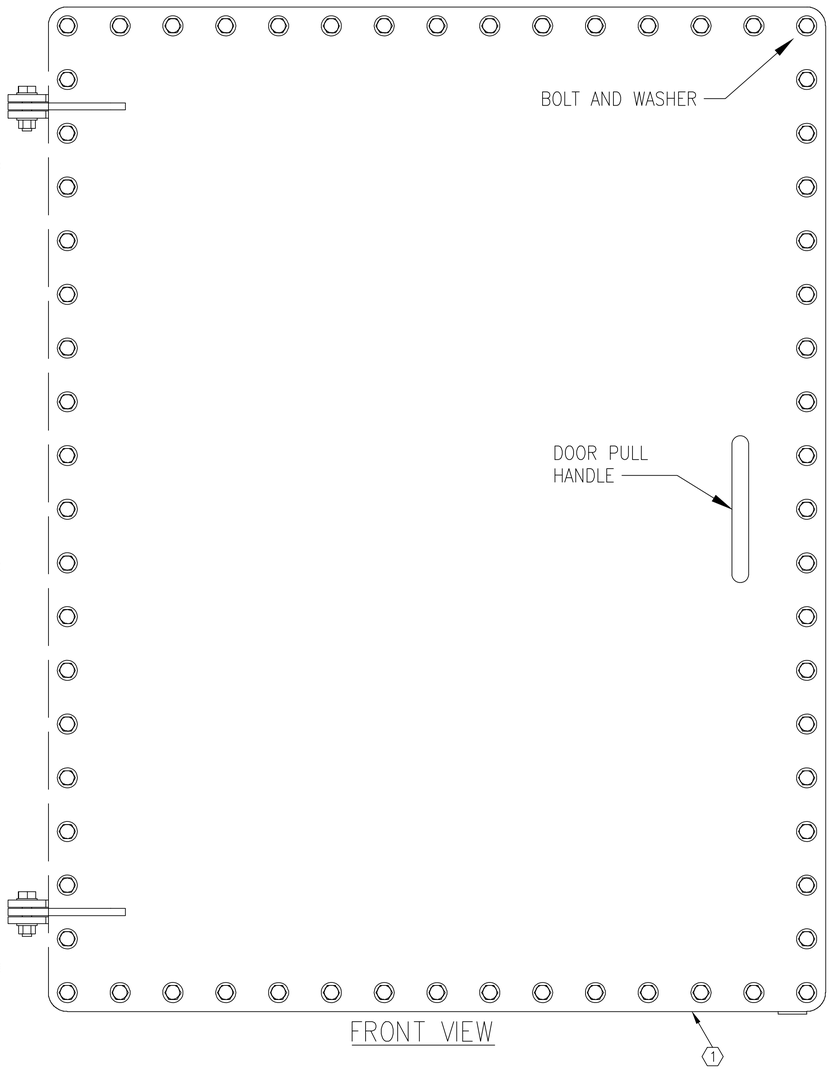
LS 9
ELECTRICAL
RISER/1-LINE DIAGRAM

E–114

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027



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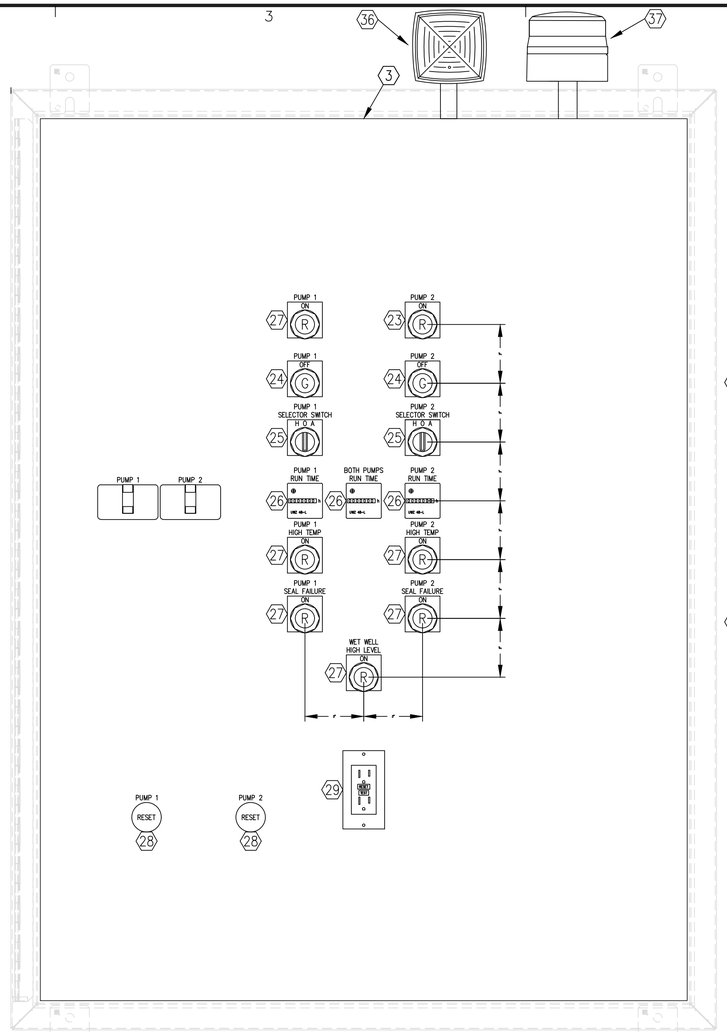
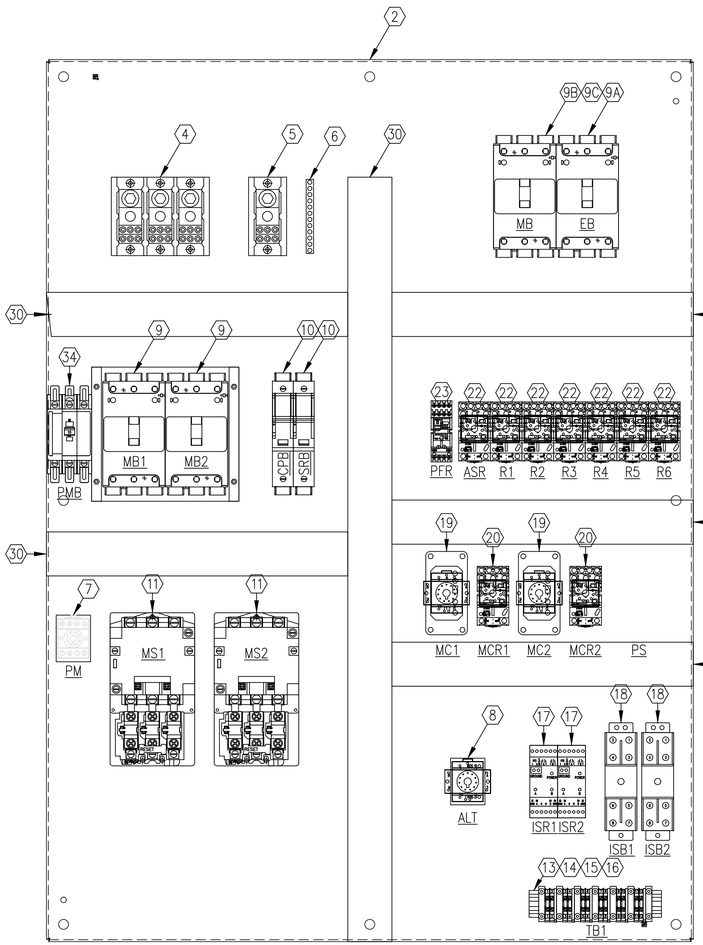
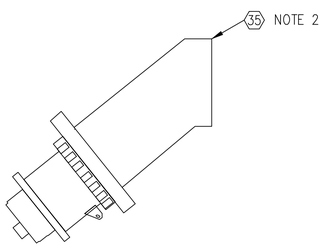


SWING-OUT PANEL LAYOUT



BACK PANEL LAYOUT



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LS 9
ELECTRICAL CONTROL PANEL LAYOUT

E-115

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
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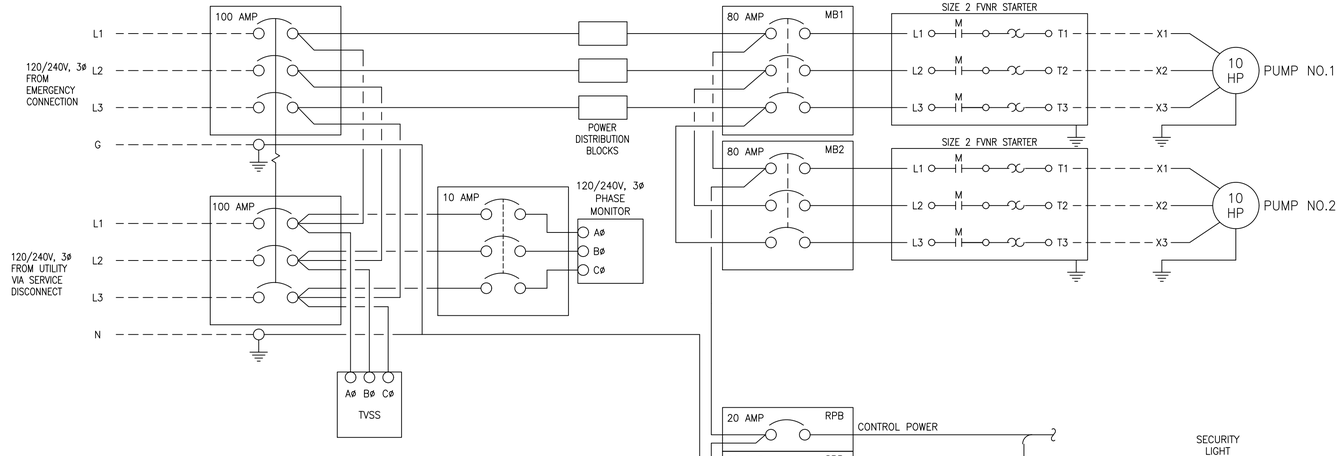

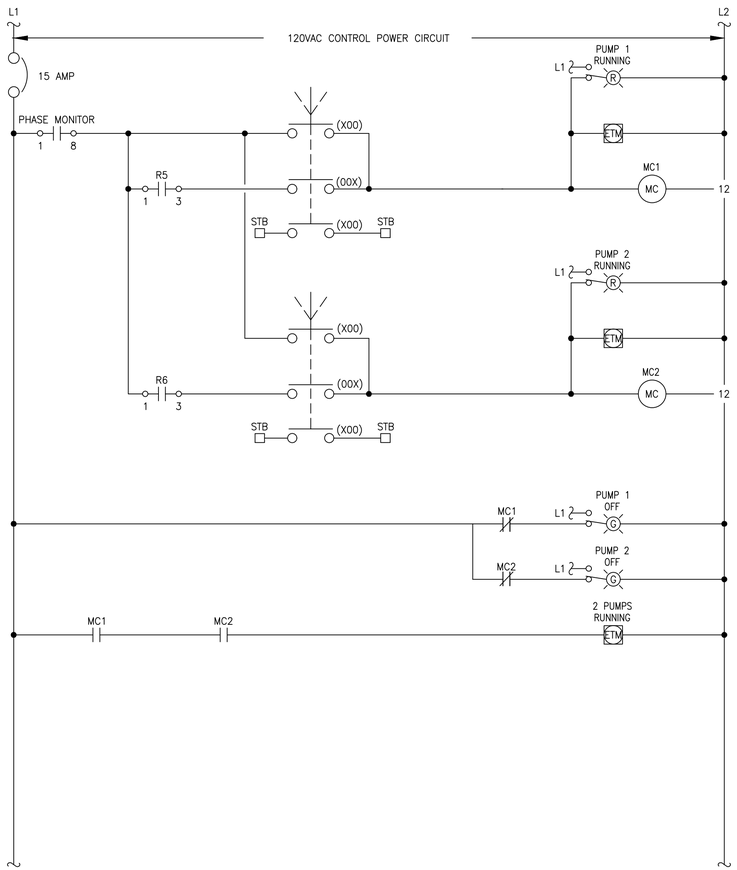

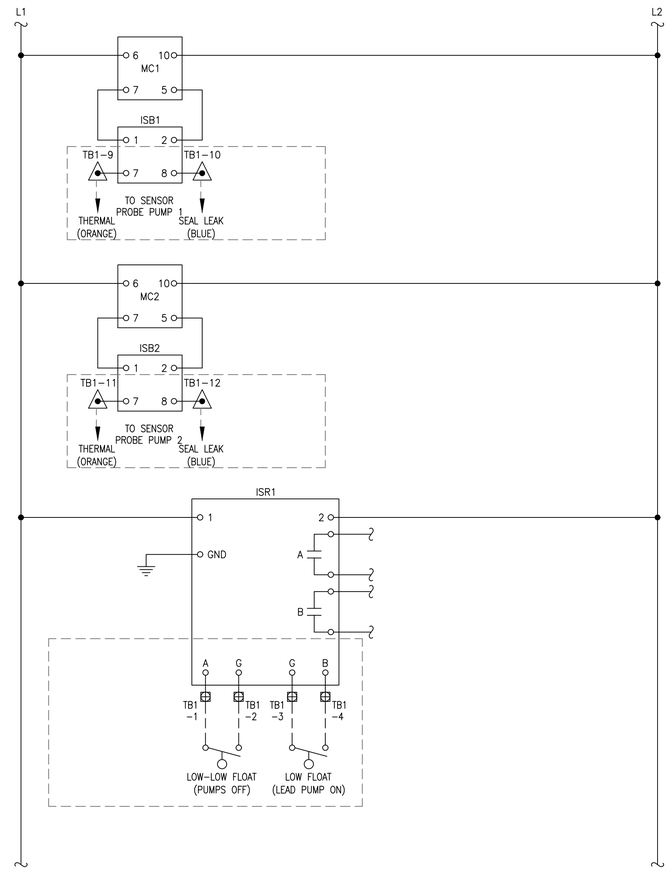

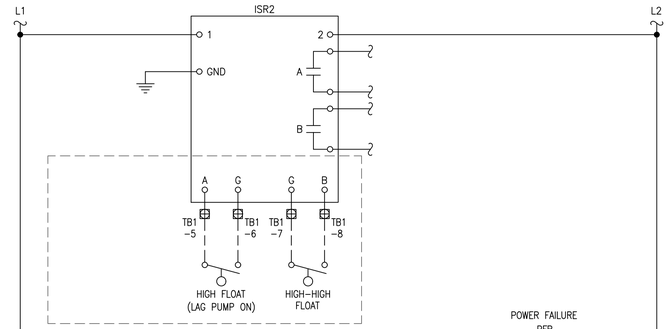

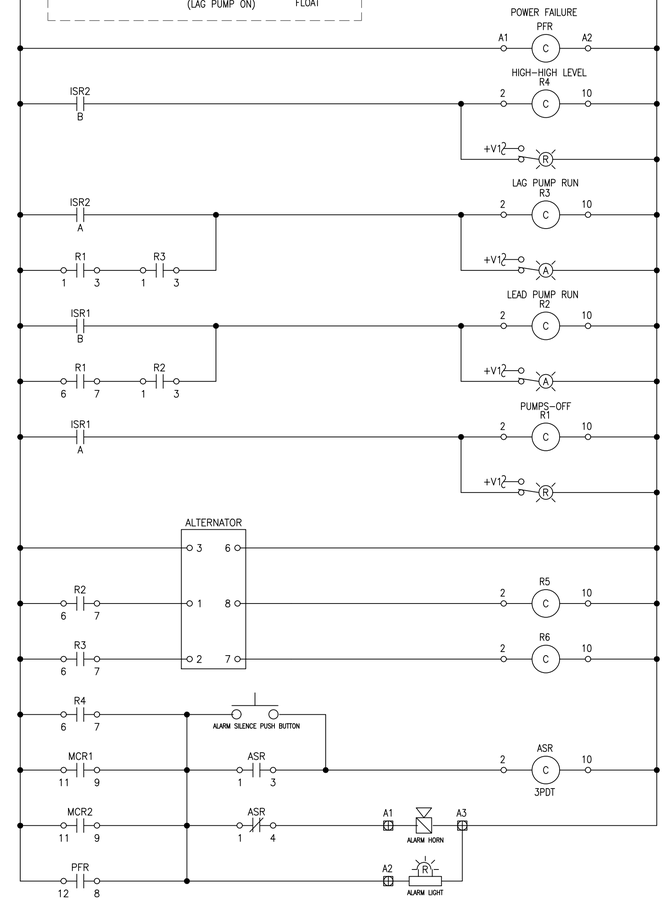

LEGEND

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ELECTRICAL WIRING
DIAGRAM

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E–116

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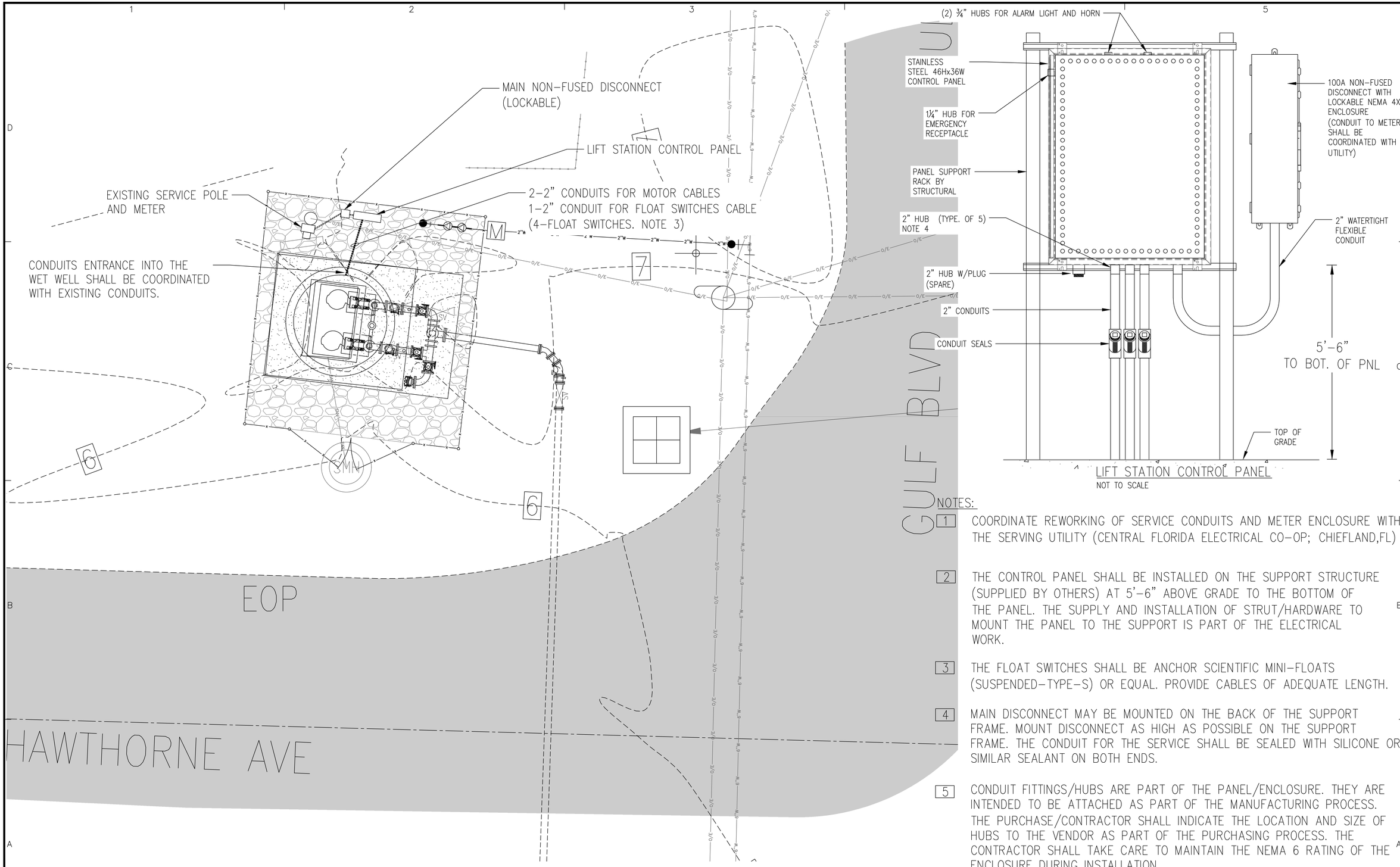

LIFT STATION CONTROL PANEL
NOT TO SCALE

NOTES:

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3. THE FLOAT SWITCHES SHALL BE ANCHOR SCIENTIFIC MINI-FLOATS (SUSPENDED-TYPE-S) OR EQUAL. PROVIDE CABLES OF ADEQUATE LENGTH.
4. MAIN DISCONNECT MAY BE MOUNTED ON THE BACK OF THE SUPPORT FRAME. MOUNT DISCONNECT AS HIGH AS POSSIBLE ON THE SUPPORT FRAME. THE CONDUIT FOR THE SERVICE SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT ON BOTH ENDS.
5. CONDUIT FITTINGS/HUBS ARE PART OF THE PANEL/ENCLOSURE. THEY ARE INTENDED TO BE ATTACHED AS PART OF THE MANUFACTURING PROCESS. THE PURCHASE/CONTRACTOR SHALL INDICATE THE LOCATION AND SIZE OF HUBS TO THE VENDOR AS PART OF THE PURCHASING PROCESS. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN THE NEMA 6 RATING OF THE ENCLOSURE DURING INSTALLATION.
6. ALL BELOW GRADE CONDUIT SHALL BE SCH.40 PVC. ALL ABOVE GROUND CONDUIT SHALL BE RIGID IMC. ANY BELOW GRADE METALLIC CONDUIT SHALL BE COATED WITH CORROSION RESISTANT PAINT/COATINGS. BELOW GRADE CONDUIT SHALL BE AT A DEPTH OF 18" MINIMUM.

BASKERVILLE-DONOVAN, INC.
ENGINEERING THE SOUTH SINCE 1927
449 W. MAIN ST. PENSACOLA FL 32502 (850)438-9661
ENGINEERING BUSINESS: EB-0000340
Pensacola - Panama City Beach - Tallahassee - Mobile

CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

NO.	DATE	APPR.	REVISION/ACTION TAKEN
-	1-31-24	-	100% SUBMITTAL

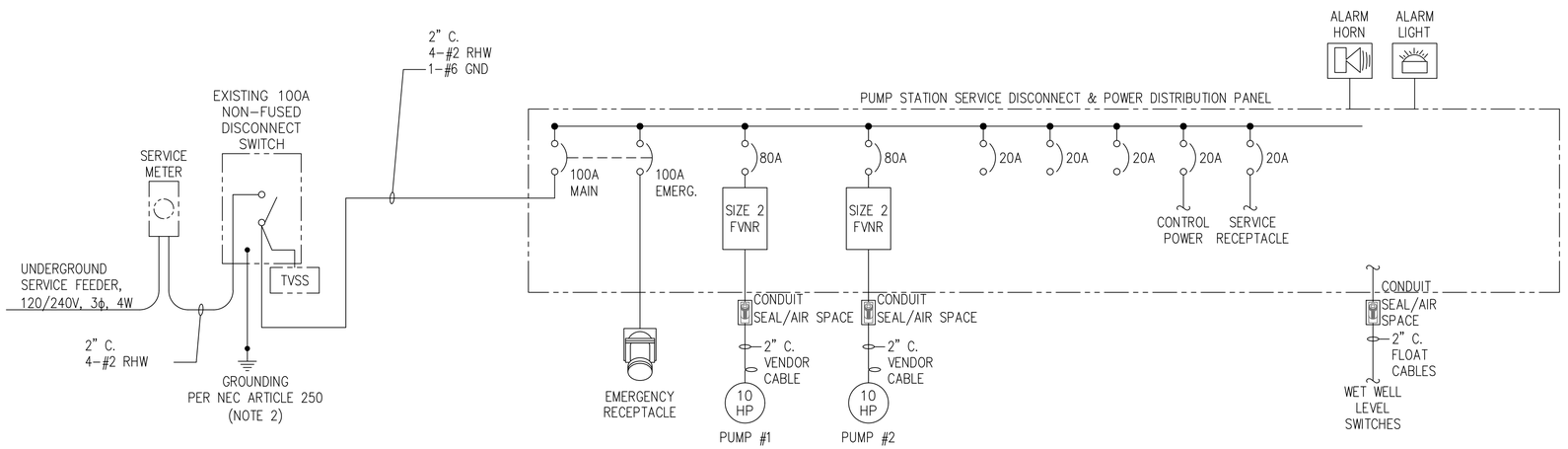
NOT RELEASED FOR CONSTRUCTION BY DATE

PROJECT NO: 123503.01
DESIGNED BY:
DRAWN BY:
CHK'D BY:
PROJ. MGR: JWJ
DATE: FEBRUARY 2023

LS 10
ELECTRICAL SITE PLAN

E-117

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
850-893-7722 PROJECT NO: 23027



LIFT STATION #10 RISER DIAGRAM

ITEM	DESCRIPTION	MANUFACTURER	CATALOG NO.	QTY.
1	NEMA 6P ENCLOSURE W/6P HINGED DOOR AND GASKETS 304SS 48Hx36Wx12D NOMINAL	NEMACO	N6P–483612–304	1
2	BACK PANEL EPOXY COATED STEEL	NEMACO	N69–IP4836	1
3	HINGED SWING–OUT PANEL – 304SS W/3 POINT TURN LATCH HANDLE	NEMACO	–	1
4	POWER DISTRIBUTION BLOCK 3–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA363106	1
5	POWER DISTRIBUTION BLOCK 1–POLE 400–#6 1 IN, 2–#14 6 OUT	SQUARE–D	9080LBA163106	1
6	EQUIPMENT GROUND BAR	SQUARE–D	PK9GTA	1
7	PHASE MONITOR RELAY SOCKET	ATC DIVERSIFIED	SLA–230–ALA RB–08	1 1
8	ALTERNATING RELAY – DUPLEX	ATC DIVERSIFIED	ARA–24–ADA	1
9	BREAKER–60A, THREE POLE	SQUARE–D	HDL36060	2
9A	EMERGENCY BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9B	MAIN BREAKER – 100A, THREE–POLE	SQUARE–D	HDL36100	1
9C	H/J FRAME MECHANICAL INTERLOCK FOR TOGGLE HANGLE	SQUARE–D	S29354	2
10	BREAKER–20A, SINGLE POLE	SQUARE–D	BDL16020	5
11	FULL VOLTAGE NON–REVERSING SIZE 2 STARTER	SQUARE–D	85365D01V02H305	2
12	SURGE PROTECTIVE DEVICE	SURGE SUPPRESSION, INC	LSED–3Y1–D1XS	1
13	35mm DIN RAIL	SQUARE–D	9080MH320	AS REQ'D
14	FEED THROUGH TERMINAL	SQUARE–D	9080GM6	AS REQ'D
15	END BARRIER	SQUARE–D	9080GM6B	AS REQ'D
16	END CLAMP	SQUARE–D	9080MHA10	AS REQ'D
17	INTRINSICALLY SAFE RELAY	R–K ELECTRONICS	ISR–24V–10K	2
18	GEMS ZENER BARRIER	TEQUIPMENT	54801	2
19	PUMP MONITORING/CONTROL RELAY w BASE	PUMP VENDOR		2
20	RELAY, OCTAL PLUG–IN, 3PDT 120VAC w/RELAY SOCKET	EATON	D3RF3A D3PA7	2
21	(NOT USED)	–	–	–
22	RELAY, OCTAL PLUG–IN, 3PDT 24VDC W/RELAY SOCKET	SQUARE–D	D3RF3T1 D3PA7	7
23	MINIATURE PLUG–IN RELAY – 24VDC	SQUARE–D	RXM4AB2BDPVM	1
24	PILOT LIGHT – w/GREEN LENSE	ALLEN–BRADLEY	800T–QTH2G	2
25	3 POSITION SELECTOR SWITCH w/"H–O–A" LEGEND PLATE	ALLEN–BRADLEY	800T–J2B 800T–X511	2
26	HOUR COUNTER PANEL METER	GRASSLIN	UWZ48E–12050U	3
27	PILOT LIGHT – w/RED LENSE	ALLEN–BRADLEY	800T–QTH2R	7
28	EXTERNAL RESET MECHANISM	SQUARE–D	9066RA1	1
29	DUPLEX SERVICE RECEPTACLE 20A, 125VAC, G.F.I. w/COVER	LEVITON	GFWT2–T	1
30	WIREWAY DUCT 2"x4" w/COVER	HOFFMAN	A200400WH A200CWH	AS REQ'D
31	LED ALARM BEACON – 12–24VDC, NEMA 4X	EDWARDS SIGNALING	94PLEDMR24AD	1
32	ALARM HORN – WEATHERPROOF, 24VDC, NEMA 4X	EDWARDS SIGNALING	877–G1	1
33	PUSH BUTTON – MOMENTARY CONTACT, BLACK, 1 NO	ALLEN–BRADLEY	800T–B2D1	1
34	BREAKER–10A, THREE POLE	SQUARE–D	QOU310	1
35	EMERGENCY RECEPTACLE – 100A, 3ϕ 4 WIRE, NEMA 6P/IP67 W/BACK BOX	LEVITON	4100R9W BX100–V	1
36	VIBRATING HORN 120VAL NEMA 4X	EDWARDS	876–N5	1
37	FLASHING ALARM LIGHT – RED LED MICROLERT NEMA 6P CAPABLE	TOMAR ELECTRONICS	290LF–120–240	1

BOM NOTES:

1 VIBRATING HORN HAS A NEMA 4X ENCLOSURE. THEREFORE CONDUIT INTO THE NEMA 6P PANEL SHALL BE SEALED WITH SILICONE OR SIMILAR SEALANT.

NOTE:

1 PUMP STATION WET WELL IS A CLASS 1, DIVISION 1, GROUP D HAZARDOUS LOCATION THAT REQUIRES THE USE OF CONDUIT SEALS, OR AIR SPACE PROVISION, BETWEEN THE WET WELL AND POSSIBLE SOURCES OF IGNITION. CONDUIT SEALS, OR AIR SPACE, SHALL BE PLACED WITHIN (18)EIGHTEEN INCHES OF THE PUMP STATION CONTROL PANEL ENCLOSURE.

2 GROUNDING SHALL BE TESTED TO VERIFY THAT RESISTANCE TO EARTH/GROUND IN LESS THAN 26 OHMS. ADDITIONAL GROUND RODS SHALL BE INSTALLED (AS REQUIRED) TO ESTABLISH A GROUNDING RESISTANCE OF LESS THAN 26 OHMS. THE GROUNDING TEST SHALL BE COORDINATED WITH AND WITNESSED BY THE OWNER'S REPRESENTATIVE. REFER TO THE OWNER'S STANDARD SPECIFICATIONS.

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CEDAR KEY SANITARY SEWER
LIFT STATION
#10
REHABILITATION

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PROJECT NO: 123503.01
DESIGNED BY:
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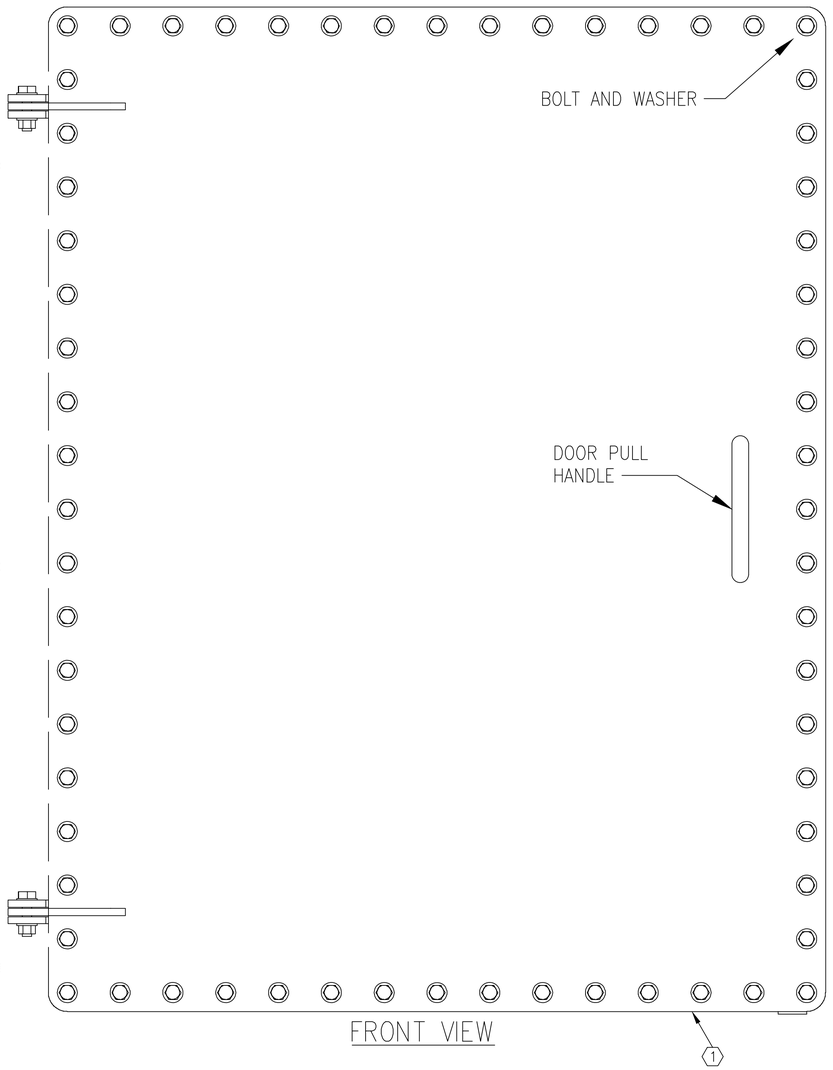
CHK'D BY:
PROJ. MGR: JNJ
DATE: FEBRUARY 2023

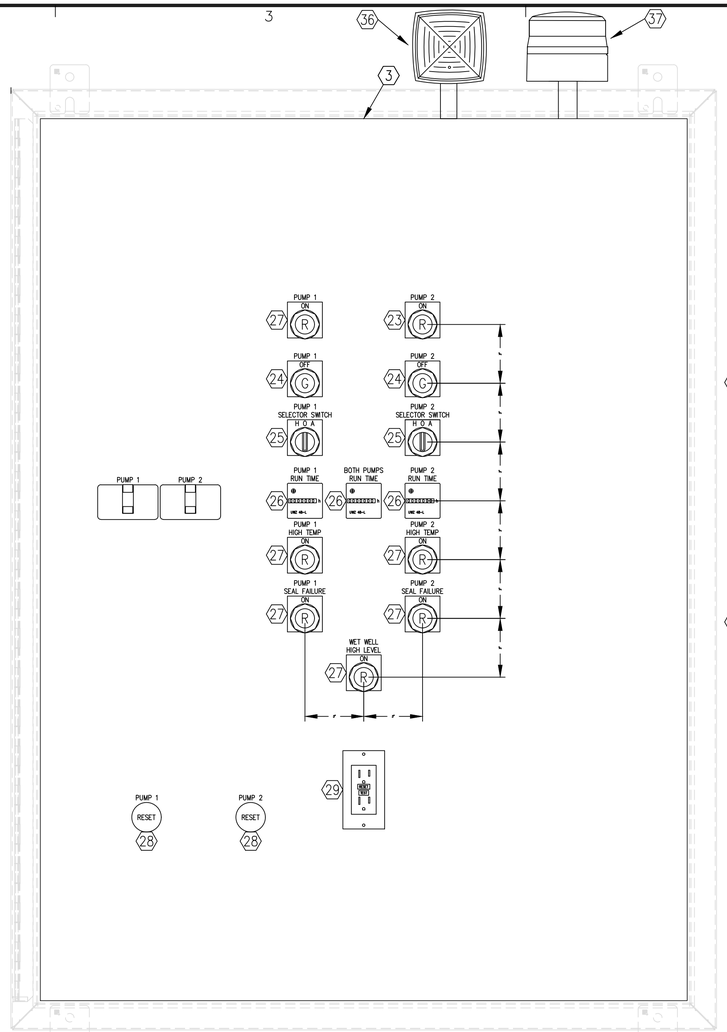
LS 10
ELECTRICAL
RISER/1-LINE DIAGRAM

E–118

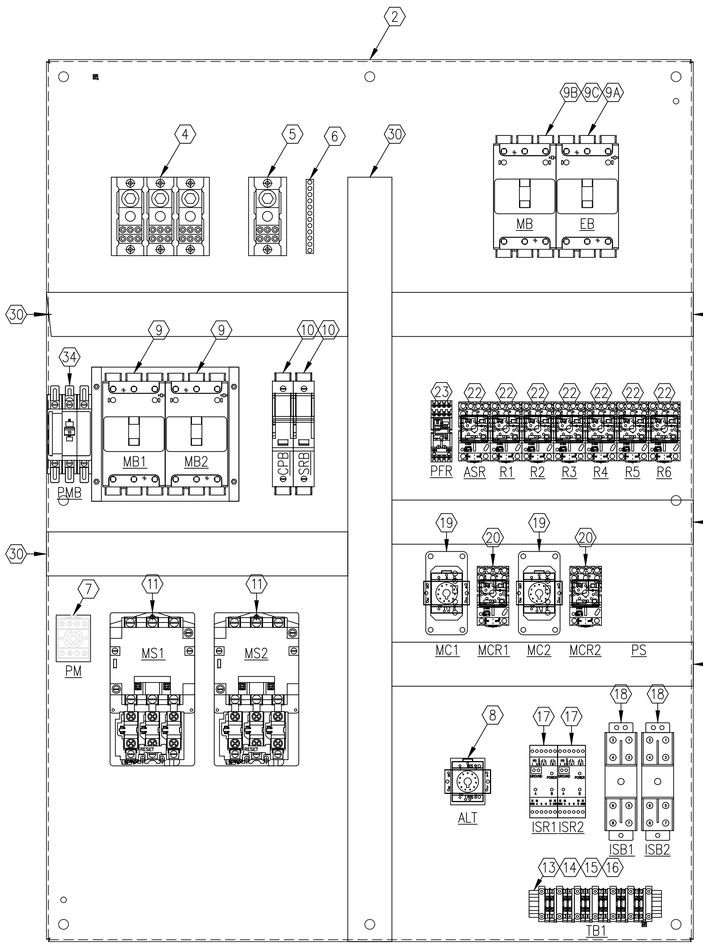
NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027



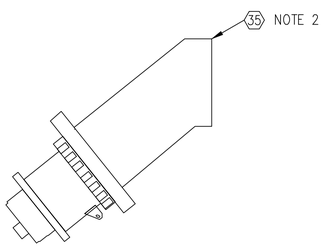
FRONT VIEW



SWING-OUT PANEL LAYOUT



BACK PANEL LAYOUT



NOTES:

1. THE EQUIPMENT AND MATERIALS REFERENCED ON THESE DRAWINGS ARE MEANT TO ESTABLISH A MINIMUM STANDARD FOR CAPABILITY AND QUALITY ASSURANCE. SUBSTITUTIONS OF ANY EQUIPMENT AND/OR MATERIALS ARE TO BE EQUAL OR BETTER THAN THE AFOREMENTIONED EQUIPMENT AND MATERIALS AND ARE SUBJECT TO APPROVAL BY THE OWNER/ENGINEER.

2. THE EMERGENCY RECEPTACLE IS TO BE MOUNTED ON THE LEFT SIDE OF THE ENCLOSURE 4" FROM THE TOP. UTILIZE THE 1 ¼" HUB OF THE ENCLOSURE TO CONNECT THE BACK BOX AND RECEPTACLE.

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CEDAR KEY SANITARY SEWER LIFT STATION REHABILITATION

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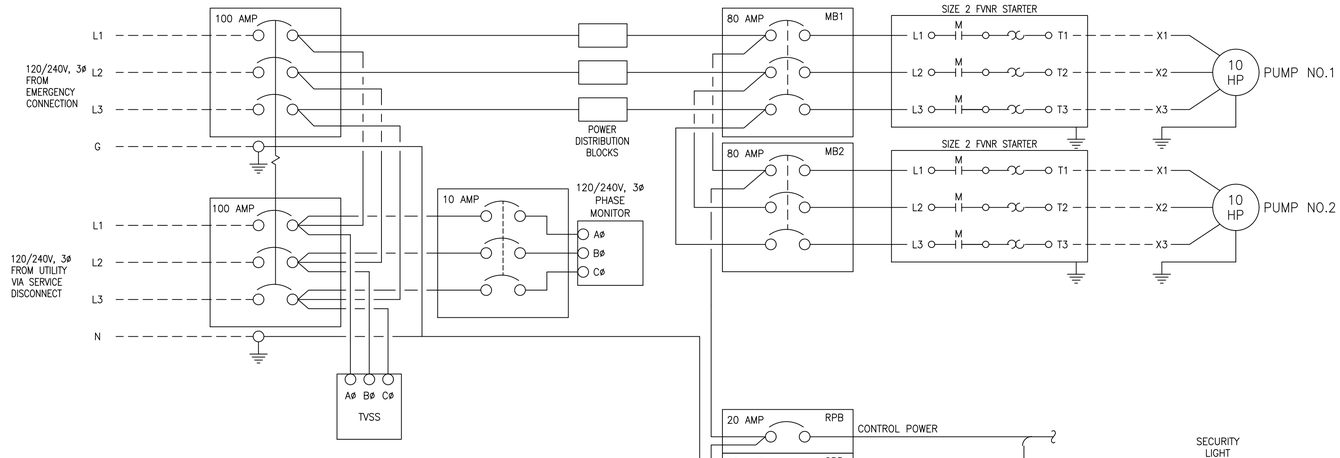
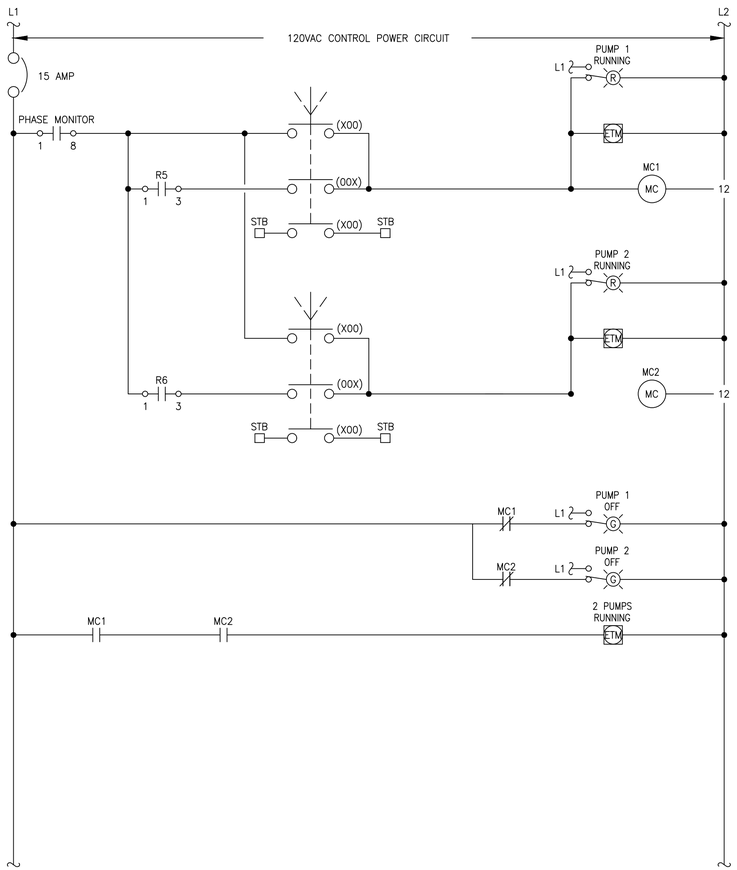
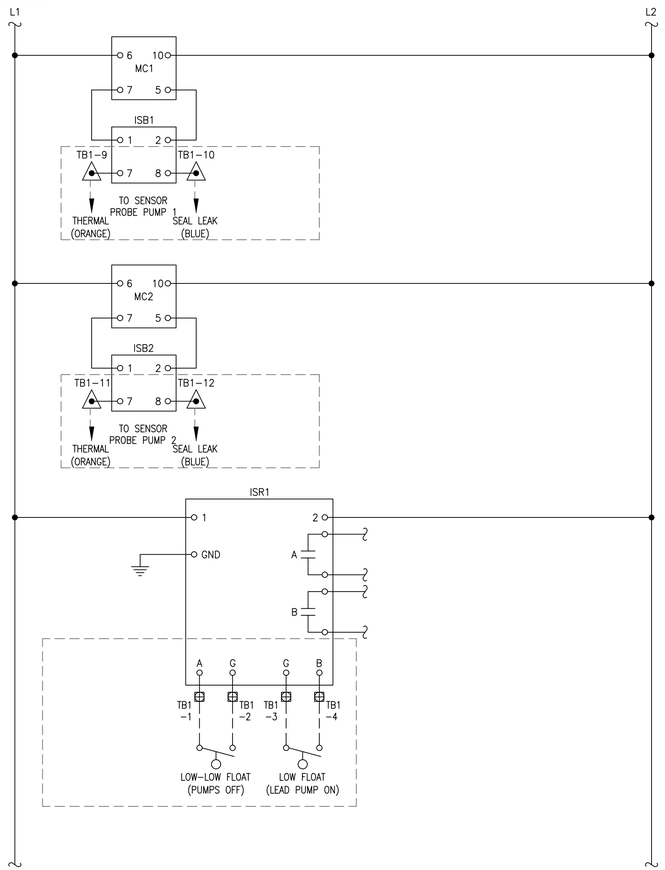
LS 10 ELECTRICAL CONTROL PANEL LAYOUT

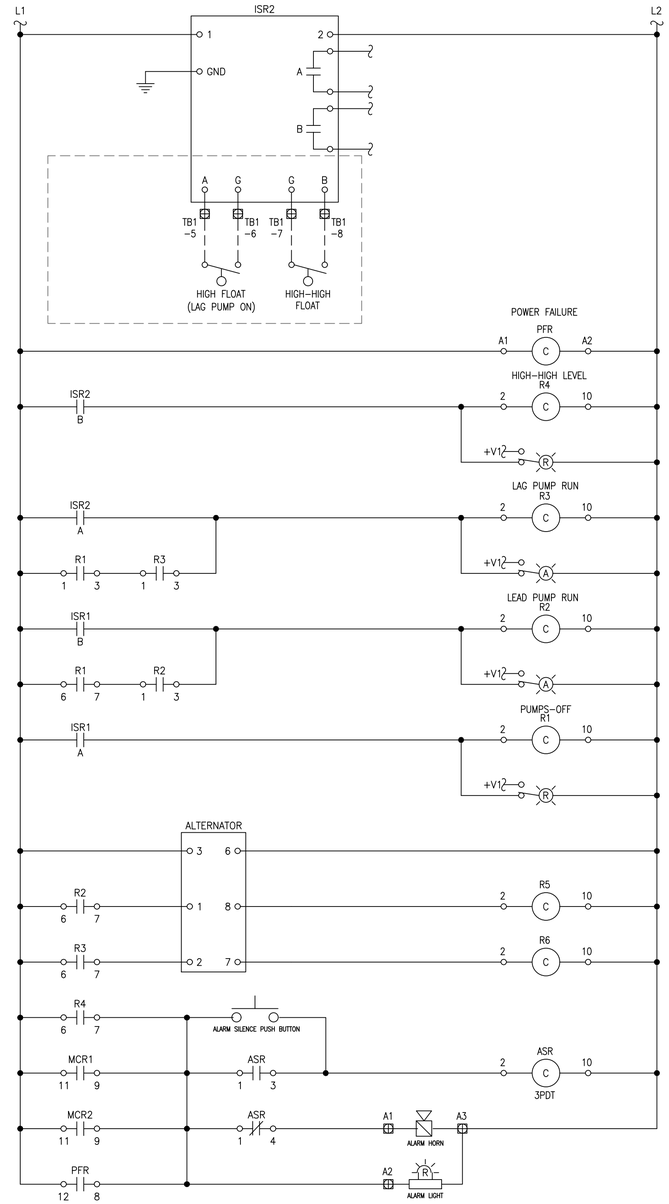
NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE · TALLAHASSEE, FL 32308
(850-893-7722 PROJECT NO: 23027

E-119









LEGEND

AH	– ALARM HORN	MCB	– MAIN CIRCUIT BREAKER
AL	– ALARM LIGHT	MC	– MINI–CAS MODULE
ALT	– ALTERNATOR	MCR	– MOTOR CONTROL RELAY
ASB	– ALARM SILENCE BUTTON	MS	– MOTOR STARTER
ASR	– ALARM SILENCE RELAY	OL	– OVERLOAD
BCB	– BATTERY CHARGER BREAKER	PFR	– POWER FAIL RELAY
BHB	– BLOCK HEATER BREAKER	PM	– PHASE MONITOR
CPB	– CONTROL POWER BREAKER	PMB	– PHASE MONITOR BREAKER
ETM	– ELAPSED TIME METER	PS	– POWER SUPPLY
GFI	– GROUND FAULT RECEPTACLE	R	– RELAY
HOA	– HAND–OFF–AUTO SELECTOR SWITCH	RPB	– RTU POWER BREAKER
		SRB	– SERVICE RECEPTACLE BREAKER
ISB	– ISOLATION BARRIER	TB	– TERMINAL BLOCK
ISR	– ISOLATION RELAY	TVSS	– TRANSIENT VOLTAGE SURGE SUPPRESSOR
MB	– MOTOR BREAKER		

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LS 10
ELECTRICAL WIRING DIAGRAM

NHWL ENGINEERING, INC.
2888 REMINGTON GREEN LANE • TALLAHASSEE, FL 32308
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E–120