

May 08, 2018

BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA

ADDENDUM NO. 3 / IFB NO. Y18-758-TA

SOUTH SERVICE AREA/EAST SERVICE AREA (SSA/ESA) 36-INCH POTABLE
WATER MAIN, 24-INCH RECLAIMED WATER MAIN AND J. LAWSON BLVD
POTABLE WATER RE-PUMP FACILITY

BID OPENING DATE: MAY 15, 2018

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to and shall take precedence over the original documents. Additions are indicated by underlining, deletions are indicated by ~~strikethrough~~.

A. QUESTIONS AND ANSWERS

1. Q: Can a time be provided for a site visit to access the portion of the project on private property prior to the bid date?

A: See Addendum 2 for allotted site visit date and time. There is an existing cattle operation within the easements so the gates will not be allowed to be left open. The gates will need to be manned when open. Contractors to plan and bid accordingly.

2. Q: Bid Item 66 is Lump Sum for the Re-Pump Facility per measurement and payment. Plan pages G-500, G-501, and G-502 Summary of Pay Items include material appearing on page P-101, which is the Re-pump Facility. If Pay Items 28, 29, 30, 35, 37, 39, 40, 41, 43, & 48 are exempt from the Lump Sum requirement; please define the limits of Bid Item 66.

A: All piping and appurtenances associated with the Re-pump Facility will be bid as a contract unit price. See revised Plan Page G-502 and Bid Schedule for updated quantities on the 24-inch reclaimed water main and 36-inch water main.

3. Q: Plan page G-300 General Note 17 is vastly inclusive, with no pay item. Can the scope be defined or pay items added?

A: Contractor is to bid this with Pay Item 44.

4. Q: Plan page G-300 General Note 34 calls for all DIP to be polyethylene encased. Spec Section 15062-6, 2.02 C1 states that encasement is only required when DIP is within 10' of a gas main or as indicated on the

drawings. Please clarify where poly encasement will be required.

A: Contractor to encase all DIP in polyethylene wrap per General Note 34 on Plan Page G-300.

5. Q: Is valve A on Plan Page P-100 a cut-in valve?

A: Valve A is to be an insertion valve.

6. Q: Spec Section 15111-3 2.02 D & G prohibit side actuated gate valves. Profile on Plan page P-102 and detail on EMO valves on page D-101 would seem to require side actuated valves. Please clarify if any or all 24" valves at the Re-pump Station are side actuated.

A: EMO valves located within the Re-Pump Facility will be installed vertically for all new construction; this includes valves B, C, D, and E shown on Plan Page P-100. Contractor to build-up concrete vault in order to accommodate vertical valve showing above grade.

EMO valve A shown on P-100 is to be installed per detail on Plan Page D-102.

7. Q: Does the detail for EMO actuated valves appearing on page D-101 apply to all EMO valves or just the one being cut into the existing line?

A: Revise all actuators within the Re-Pump Facility fencing to be installed above grade on top of the concrete vaults. Provide torque tubes, extension rods, slab penetration, floor stand, and all other ancillary components necessary to accommodate above grade installation of the actuators. Increase concrete vault dimensions to accommodate extension rod through top slab of concrete vault. Hatch cover to be bid as originally depicted on Drawings D101. Valves B, C, D, and E shown on P-100 are to be installed vertically.

Contractors bid shall include all costs associated with raising the actuators above grade as described herein.

The EMO valve outside of the Re-pump Facility fencing (the valve being cut into the existing line) will be installed as depicted in D-101. Contractors will need to provide a sump pump within the vault to prevent flooding. Contractors bid shall include all costs associated with the installation of the sump pump within the concrete vault.

8. Q: Can the section where the new EMO 24" valve is being cut in (P-101) be isolated, or is line stop required? If the section of line can be isolated or if a line is required, may the wet taps be eliminated and tees cut in at the time of the shut down?

A: The 24" valve is an insertion valve so line stops will not be required for installation. The wet taps will remain for the installation of the two (2) 24" water mains. The existing 24" water main can be isolated however; the reliability of the existing valves is unknown. Contractor shall bid as specified.

9. Q: I-02 show the VFD I/O being transmitted via Ethernet whereas E-05 shows a hardwire connection; please clarify which is to be used.

A: VFD I/O to be transmitted via Ethernet except the Pump start/stop (control) which is to be hardwired. See revised drawings E-04, E-05, and I-02.

10. Q: In Spec Section 13300 2.03 B & E, the Quantum CPU is obsolete and the replacement Quantum CPU (Unity version) will soon reach end of life, making it obsolete as well. Please indicate if the soon to be obsolete Quantum CPU is required or if the County has another preferred PLC platform.

A: See revised Technical Specification Section 13300 paragraph 2.03.

11. Q: In Spec Section 13300 2.04 C, is the Firewall to be provided by the owner or the PICS? If by the PICS, please provide a specification.

A: The owner to provide the firewall.

12. Q: Looking through the drawings and specifications, we are unable to locate any information concerning restraint limits. Are all lines to be restrained per Appendix D restrained the entire length of the line, per DIPRA or will an addendum be issued clarifying restraint limits? If we overlooked the restrain limits, can you point us in the right direction?

A: See revised sheet D102, attached and labelled this addendum.

13. Q: Will the Contractor be responsible for obtaining the Orange County Right of Way Utilization permit? If so, will the Contractor be responsible for the fees associated with this permit as well?

A: An Orange County ROW Utilization permit is not required. Orange County Utilities Department projects do not have to obtain an Orange County ROW Utilization Permit from Orange County Public Works.

B. PROJECT SPECIFICATIONS

1. Delete Technical Specification 01065 and replace in its entirety with the attached Technical Specification 01065.
2. Delete Technical Specification 02784 and replace in its entirety with the

attached technical Specification 02820.

3. In Technical Specification Section 08330 delete insert 2.04 B-3 and replace with the revised insert 2.04 B-3 below:

3. Motor Rating: 1/3 hp (120V), 3-phase; continuous duty.

4. In Technical Specification Section 13300 delete paragraph 2.03 and replace with the revised paragraph 2.03 below:

2.03 Programmable Logic Controller

A. Monitoring and control of the site shall be accomplished within the PLC. All control strategies specified in Part 3 of this Specification Section shall be implemented within the PLC.

B. The design is based on the use of Modicon M340 series components. For conformance with OWNER standards, no other PLC manufacturer or model shall be acceptable.

C. The following modules shall be used as necessary to implement the functional requirements of the system:

1. Power Supply Module. 115 VAC powered with supply capability up to 36W and sized as necessary based on the chassis' modules. Modicon BMX CPS 3500.
2. Central Processor Unit (CPU). The CPU shall meet the following requirements:
 - a. Support up to 1024 discrete input/output (I/O) points.
 - b. Support up to 256 analog input/output (I/O) points.
 - c. Be able to have its program downloaded from a remote workstation over a network, or locally programmed from a portable laptop computer.
 - d. Executive firmware shall be stored in Flash memory and can be updated in the field using standard programming tools. Executive firmware files shall be readily available via a public web site.
 - e. The processor shall be provided with an 8Mb SD memory card. This card shall be capable of storing, at a minimum application files, data files, PDF files, CAD files, Microsoft office file.
 - f. Upon power loss, the CPU shall transfer all memory to flash memory prior to RAM power down.
 - g. The CPU shall have a built-in Ethernet port and a USB terminal port for programming.
 - h. Modicon BMX P34 2030.

3. I/O modules. Provide sufficient I/O modules to accommodate the required I/O plus fifteen percent spare of each I/O type. The following modules shall be used:
 - a. Analog Input. Four (4) isolated channels +/- 10V, 0-20mA. Modicon BMX AMI 0410.
 - b. Analog Output. Two (2) isolated channels +/- 10V, 0-20mA. Modicon BMX AMO 0210.
 - c. Discrete Input. Sixteen (16) channel 120VAC. Modicon BMX DAI 1604.
 - d. Discrete Output. Eight (8) channel 24VDC/240VAC isolated relay. Modicon BMX DRA 0805.
 4. All I/O modules shall be equipped with manufacturer supplied cables with connector at one end for the module and flying leads at the other end for connection to field wiring/surge suppression devices.
 5. All spare I/O shall be wired such that it will only be necessary to connect appropriate field wiring in order to utilize the signal.
5. In Technical Specification Section 11210 add insert I shown below to section 2.02 Horizontal Split Case Pumps:
- I. Gantry Crane
 1. Contractor to supply one (1) adjustable aluminum gantry crane with swivel casters having the following dimensions and requirements:
 - a. Height 120 inches minimum – 160 inches maximum
 - b. length +120 inches max
 - c. Width +60 inches max
 - d. Capable of lifting 4,000 lbs

C. PROJECT DRAWINGS

DRAWING G-502

Amend: Delete drawing G-502 and replace with the revised drawing G-502. The revised sheet has updated quantities for the 24-inch reclaimed water main and 36-inch water main.

DRAWING D-102

Amend: Delete drawing D-102 and replace with the revised drawing D-102. The revised drawing displays the restrained pipe table detail.

DRAWING A1.0, E-07, and E-10

Amend: Delete drawings A1.0, E-07, and E-10 and replace with the revised drawings A1.0, E-07, and E-10. The revised drawings show the overhead door 103B on A1.0 being electrically operated and power running to the overhead door.

DRAWINGS E-04, E-05, and I-02

Amend: Delete drawings E-04, E-05, and I-02 and replace with the revised Drawings E-04, E-05, and I-02. The revised drawings show the VFD I/O to be transmitted via Ethernet and the Pump start/stop (control) being hardwired.

D. On Invitation for Bid Documents – Part H – TECHNICAL SPECIFICATIONS

E. REVISED BID SCHEDULE:

Delete: Delete the ~~IFB-Y18-758-Bid Schedule~~ in its entirety.

Add: Add in its place IFB-Y18-758-TA Revised Bid Schedule, attached and labelled this Addendum No. 3.

IMPORTANT: Failure to submit your bid with the “Revised Bid Schedule” per this Addendum No. 3 shall be cause for your bid to be rejected as non-responsive.

F. ACKNOWLEDGEMENT OF ADDENDA

1. The Bidder shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of proposal.

2. All other terms, conditions and specifications remain the same.

Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

**To the Board of County Commissioners
Orange County, Florida**

The Undersigned, hereinafter called "Bidder", having visited the site of the proposed project and familiarized himself with the local conditions, nature and extent of the work, and having examined carefully the Contract Form, General Conditions, Supplementary Conditions, Plans and Specifications and other Contract Documents, with the Bond requirements herein, proposes to furnish all labor, materials, equipment and other items, facilities and services for the proper execution and completion of: **SOUTH SERVICE AREA/EAST SERVICE AREA (SSA/ESA) 36-INCH POTABLE WATER MAIN, 24-INCH RECLAIMED WATER MAIN AND J. LAWSON BLVD POTABLE WATER RE-PUMP FACILITY** in full accordance with the drawings and specifications prepared in accordance with the Contract Documents and, if awarded the Contract, to complete the said work within the time limits specified for the following ESTIMATED TOTAL BASE BID.

It is understood that this is a unit price Contract and the resultant Contract will contain estimated quantities, unit prices, extended totals and that the Estimated Total Base Bid is the sum of all pay item totals from the schedule of prices, Page D-3 through D-5.

The Contract resulting from this solicitation is based on estimated quantities. The contractor shall only be paid for materials installed in the work in accordance with the applicable unit prices for the specific work element (line item). No payment shall be made for excess materials delivered to the jobsite and not incorporated into the work. Therefore, it shall be the contractor's responsibility to determine the quantities of materials necessary to perform the project to its completion.

ESTIMATED TOTAL BASE BID:

_____ DOLLARS
(In Words)

\$ _____

In the event the Contract is awarded to this Bidder, he/she will enter into a formal written agreement with the County in accordance with the accepted bid within ten (10) calendar days after said Contract is submitted to him/her and will furnish to the County a Contract Payment and Performance Bond with good and sufficient sureties, satisfactory to the County, in the amount of 100% of the accepted bid. The Bidder further agrees that in the event of the Bidder's default or breach of any of the agreements of this proposal, the said bid deposit shall be forfeited as liquidated damages.

IFB Y18-758-TA REVISED BID SCHEDULE

BID ITEM	REFERENCE ID	DESCRIPTION	ESTIMATED QUANTITIES	UNIT	UNIT PRICE	EXTENDED PRICE
1	10.110.110	Mobilization, Demobilization, Bonds, and Permits (not to exceed 5% of the total of all bid items 6-66)	1	LS		
2	10.130.110	Indemnification	1	LS	\$100.00	
3	10.120.110	Preconstruction Audio-Video Documentation	1	LS		
4	10.140.110	Project Record Documents	1	LS		
5	10.150.110	Maintenance of Traffic	1	LS		
Site Work						
6	11.110.110	Erosion and Sediment Control	1	LS		
7	11.120.110	Unsuitable Materials	100	CY		
8	11.130.110	Fill Dirt	100	CY		
9	11.140.111	Clearing & Grubbing	1	AC		
Roadway						
10	11.213.110	Roadway Base	51,315	SY		
11	11.230.110	Milling and Resurfacing	56,355	SY		
12	11.241.110	Open Cut and Restore Asphalt Roadway	51,288	SY		
13	11.250.110	Concrete Driveways and Sidewalk Removal and Replacement - 4" Thick Sidewalk	47	SY		
14	11.250.110	Concrete Driveways and Sidewalk Removal and Replacement - 6" Thick Sidewalk	6,740	SY		
15	11.251.112	Construct Public Sidewalk ADA Ramp	7	EA		
16	11.260.110	Storm Pipe Removal and Replacement (15" and 18" diameter)	47	EA		
17	11.260.110	Storm Pipe Removal and Replacement (24" and 30" diameter)	7	EA		
18	11.260.110	Storm Pipe Removal and Replacement (36" and 48" diameter)	4	EA		
19	11.280.110	Remove and Replace Curbing	20,025	LF		
20	11.290.110	Sod Replacement - Bahia	11,805	SY		
21	11.291.110	Seed and Mulch	10	AC		
22	11.292.110	Tree Removal/Replacement within in ROW - Trmyr, Tree, Crepe Myrtle	29	EA		
23	11.530.110	Remove 16" Reclaimed Water Main	6,217	LF		
Driving Range Improvements						
24	11.150.111	Remove and Replace Concrete Slab and Driving Range Building	1	LS		

25	11.150.112	Removal and Replacement of Synthetic Driving Range Mat	1	LS		
26	11.150.113	Removal and Replacement or Relocation of Ancillary Equipment at Driving Range	1	LS		
27	11.150.114	Regrading and Resodding the Driving Range and Putting Green Areas	1	LS		
Water Main & Reclaimed Water Main						
28	12.110.113	Furnish & Install DIP Water Main w/fittings & RJs (12" diameter)	90	LF		
29	12.110.115	Furnish & Install DIP Water Main w/fittings & RJs (20" diameter)	46	LF		
30	12.110.116	Furnish & Install DIP Water Main w/fittings & RJs (24" diameter)	330	LF		
31	12.110.118	Furnish & Install DIP Water Main w/fittings & RJs (36" diameter)	33,564	LF		
32	12.120.115	Furnish & Install DIP Reclaimed Water Main w/fittings & RJs (20" diameter)	200	LF		
33	12.120.116	Furnish & Install DIP Reclaimed Water Main w/fittings & RJs (24" diameter)	33,213	LF		
34	12.210.111	Furnish & Install Gate Valve with Box (6" diameter)	5	EA		
35	12.210.114	Furnish & Install Gate Valve with Box (12" diameter)	6	EA		
36	12.210.115	Furnish & Install Gate Valve with Box (16" diameter)	4	EA		
37	12.210.117	Furnish & Install Gate Valve with Box (24" diameter)	31	EA		
38	12.210.119	Furnish & Install Gate Valve with Box (36" diameter)	24	EA		
39	12.210.120	Furnish & Install Gate Valve with Motor Actuator and Box (24" diameter)	4	EA		
40	12.210.130	Furnish & Install In-Line Gate Valve with Motor Actuator (24" diameter)	1	EA		
41	12.240.114	Furnish & Install Check Valve (12" diameter)	3	EA		
42	12.310.117	Furnish & Install Tapping Sleeve and Valve Assembly (20" diameter)	1	EA		
43	12.310.118	Furnish & Install Tapping Sleeve and Valve Assembly (24" diameter)	2	EA		
44	12.410.118	Cut-in Connection to Existing Water Main Ends at E/W on 36"	1	EA		
45	12.510.115	Line Stop Assembly (16" diameter)	1	EA		
46	12.520.110	Air Release Valve Assembly (2" diameter)	28	EA		
47	12.530.110	Off Set Air Release Valve Assembly (2" diameter)	22	EA		
48	12.540.110	Fire Hydrant Assembly	1	EA		
49	12.610.118	Directional Drill HDPE 36" Water Main	2,046	LF		
50	12.620.116	Directional Drill HDPE 24" Reclaimed Water Main	2,043	LF		
51	12.810.110	Jack and Bore 54" Steel Casing DIP Carrier Pipe - Potable Water Main	175	LF		

52	12.820.110	Jack and Bore 42" Steel Casing DIP Carrier Pipe - Reclaimed Water Main	175	LF		
53	12.920.110	Relocation of Existing Reclaimed Water Mains (3/4" to 2")	2	EA		
54	12.920.110	Relocation of Existing Reclaimed Water Mains (4" to 12")	2	EA		
55	12.920.110	Relocation of Existing Reclaimed Water Mains (16" and greater)	3	EA		
56	12.930.110	Relocation of Existing Force Mains (4" to 12")	2	EA		
57	12.910.110	Reconnection of 4" Reclaimed Service at station 1134+40	1	EA		
58	12.910.110	Reconnection of 16" Reclaimed Service at station 1141+55	1	EA		
59	12.910.110	Reconnection of 4" Reclaimed Service at station 1138+11	1	EA		
60	12.910.110	Reconnection of 16 " Reclaimed Service at station 1143+13	2	EA		
61	12.910.110	Reconnection of 16 " Reclaimed Service at station 1160+06	1	EA		
62	12.910.110	Reconnection of 16" Reclaimed Service at station 1167+65	1	EA		
63	12.910.110	Reconnection of 4" Reclaimed Service at station 1179+98	1	EA		
64	12.910.110	Reconnection of 16" Reclaimed Service at station 1184+90	1	EA		
65	12.910.110	Reconnection of 6" Reclaimed Service at station 1191+54	1	EA		
PIPING SUBTOTAL						
66	14.410.110	J.Lawson Blvd Potable Water Re- pump Facility	1	LS		

TOTAL ESTIMATED BID (ITEMS 1 THROUGH 66) \$ _____

SECTION 01065
PERMITS AND FEES

PART 1 - GENERAL

1.01 REQUIREMENTS

A. General

The Contractor shall:

1. Obtain and pay for all permits and licenses as provided for in the General Conditions, except as otherwise provided herein.
2. Schedule all inspections and obtain all written approvals of the agencies required by the permits and licenses.
3. Comply with all conditions specified in each of the permits and licenses.
4. The Contractor shall, within 14 days of receipt of the Notice-to-Proceed, prepare for and attend a meeting with representatives from the Owner and the Engineer to review requirements for preparation of a Florida Department of Environmental Protection (FDEP) Notice-of-Intent (NOI) application and Storm Water Pollution Prevention Plan (SWPPP) for compliance with the USEPA's NPDES General Permit for construction activities.

B. Permits by Contractor ~~** Modify RED as Needed**~~

Contractor shall apply and pay for at least the following permits and pay costs to keep permits active:

1. FDEP Notice of Intent to use the Generic Construction NPDES permit (See Section 02270)
2. Orange County Right-of-Way Permit
 - a. The Right-of-Way permit will require an MOT plan, which has been developed by the Engineer.
3. City of Orlando Right-Of-Way Permit
 - a. The Right-of-Way permit will require an MOT plan, which has been developed by the Engineer.
4. City of Orlando Building Department
 - a. The Contractor shall apply and pay for all fees associated with obtaining a Foundation Permit as well as an Electrical Permit for the relocation of the concrete slab and installation of the driving range open-sided building.
5. Contractor will be required to file for a Notice of Commencement with the Orange County Clerk.

6. Tree Removal Permit:
 - a. Contractor shall apply for all tree removal permits within Orange County Right-of-Way. All fees associated with the permits are to be paid by the County.
7. Contractor shall apply and pay for all fees associated with obtaining a tree removal permit within the City of Orlando Right-of-Way.
8. Orange County Division of Building Safety – Commercial Building Permit (s).
 - a. General Commercial Building Permit – The County will pay all fees associated with the General Commercial Building Permit from the Orange County Division of Building safety. Orange County Utilities Engineering will provide Resident Project Representatives for inspection services associated with the Utilities Engineering Division.
 - b. Sub-trade Commercial Building Permit (s) – The Contractor shall pay for and obtain all the Sub-trade Commercial Building Permits associated with the General Building Permit. The Contractor shall be responsible for scheduling and paying for all inspection services associated with the Building Permit in order to obtain final approval.
 - c. Fire Alarm System – The Contractor is responsible for paying for and submitting fire alarm drawings signed and sealed by an electrical engineer registered in the state of Florida. These drawings shall be submitted to the Orange County Division of Building Safety within six (6) weeks of issuance of the Notice to Proceed for this project. The Contractor will be responsible for providing timely responses to any comments received from the Building Department to avoid delaying issuance of the Building Permit. The Contractor shall be responsible for scheduling and paying for all inspection services associated with the Fire Alarm System in order to obtain final approval.
 - d. Fence Permit – The Contractor shall pay for and obtain a permit for the chain link fence surrounding the proposed improvements.

9. Central Florida Expressway Authority Right of Entry Permit for J. Lawson Blvd and Moss Park Road permits will require a submission of the Right of Entry document and Insurance certificates from the selected Contractor. There is no fee for these permits. The MOT plan, which has been developed by the Engineer, has already been approved by the Authority. However, should the Contractor make changes to that MOT, the Contractor is required to submit revised MOT plans to the Authority.

C. Permits by County

1. The County will apply and pay for the following permits:
 - a. FDEP Construction of Water Main Extension for Public Water Services (Appendix C)
 - b. Orlando Utilities Commission Railroad Right-of-Way

- ~~e~~ Central Florida Expressway Authority Utility Permit for J. Lawson Blvd and Moss Park Road
- ~~dc~~ FDEP Individual Permit for State Wide Environmental Resource Permit
- ~~ed~~ U.S. Army Corps of Engineers Section 404 Individual Permit
- ~~fe~~ FFWCC Conservation Permit for relocation of gopher tortoises

2. A copy of the FDEP permits obtained by the County will be furnished to the Contractor at the time when the Notice to Proceed is issued.
3. The County will pay all fees associated with the General Commercial Building Permit from the Orange County Division of Building Safety. Orange County Utilities Engineering will provide Resident Project Representatives for inspection services associated with Utilities Engineering Division. The Contractor shall pay for and obtain all the Sub-trade Commercial Building Permits associated with the General Building Permit. The Contractor shall be responsible for scheduling and paying for all inspection services associated with the Building Permit in order to obtain final approval.

D. Dewatering Activities

If dewatering is required, the Contractor shall coordinate with the St. John's River Water Management District regarding the applicable rules and regulation. If a dewatering permit is required, the Contractor shall prepare an application to the District and pay any fee.

The Contractor shall apply and pay for all fees associated with obtaining Florida Department of Environmental Protection District Office construction dewatering permits, if required. The Contractor shall provide all materials and equipment to comply with the permit requirements at no additional cost to the County.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

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SECTION 02820
FENCES AND GATES

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. General Fence Requirements
- B. Fence Gates

1.02 REFERENCES

Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction and Roadway and Traffic Design Standards, latest implemented editions:

- A. Index No. 802 - Fence Type B
- B. Specification Section 550 - Fencing

1.03 SCOPE OF WORK

Furnish all materials, equipment, transportation, tools and labor, unless otherwise specified, to construct fencing and other appurtenances, and all items called for or that could reasonably be inferred from the drawings, including fabric, posts, frame, bracing, gates, motor gate operator, controls, card/access reader, and all accessories for a complete job ready to operate. If any items, for a complete job, are omitted or not shown, the Contractor shall furnish and install the same without cost to the County. The Contractor shall maintain security of the project site at the fence for the duration of the project. Any gaps in the fence made for construction shall be secured when the site is not active.

1.04 SUBMITTALS

- A. Provide product data and shop drawings for all posts, rails, chain link fence fabric, tension wire, gates, motor operators, and control systems.
- B. Provide drawings indicating the location of all pull posts and gate locations.

PART 2 - PRODUCTS

2.01 GENERAL

All fence and gate material shall be FDOT Fence Type B, per FDOT Roadway and Traffic Design Standards and Standard Specifications for Road and Bridge Construction. Per these standards, there are a number of options for the fence materials. Listed below are the material options selected by the County to be used for this project.

2.02 LINE POSTS

- A. Zinc galvanized steel pipe (galvanized at 1.8 oz per square foot), Schedule 40, vinyl coated black, class A bonded.
- B. Required size is 2-3/8 inch nominal diameter.

2.03 CORNER, END AND PULL POSTS

- A. Zinc galvanized steel pipe (galvanized at 1.8 oz per square foot), Schedule 40, vinyl coated black, class A bonded.
- B. Required size is 3 inch nominal diameter.

2.04 RAIL

- A. Zinc galvanized steel pipe (galvanized at 1.8 oz per square foot), Schedule 20, vinyl coated black, class A bonded.
- B. Required size is 1-5/8 inch nominal diameter.

2.05 CHAIN LINK FABRIC

- A. No. 9 gage steel wire zinc coated (coated at 1.8 oz per square foot). The gage requirement refers to the wire plus zinc coated diameter, and does not include any other coatings.
- B. Wire to be vinyl coated black, class A bonded.
- C. Top to be twisted and barbed, bottom to be knuckles.
- D. Required mesh size is 2 inch.
- E. Required height (measured from bottom of fabric to top of fabric) is 8 feet.

2.06 TENSION WIRE

- A. No. 7 gage steel wire zinc galvanized (galvanized at 1.8 oz per square foot). The gage requirement refers to the wire plus zinc coated diameter, and does not include any other coatings.

- B. Wire to be vinyl coated black, class A bonded.

2.07 TIE WIRE

- A. No. 9 gage steel wire zinc galvanized (galvanized at 1.8 oz per square foot). The gage requirement refers to the wire plus zinc coated diameter, and does not include any other coatings.
- B. Wire to be vinyl coated black, class A bonded.

2.08 BARBED WIRE

- A. Fencing shall be topped with 3 strands of barbed wire per FDOT Index 802.

2.09 GATES

- A. Provide rolling gates as shown on the drawings. Also provide latches, locking device, and gate stop keeper (cane bolt and cane bolt anchor base embedded in concrete).
- B. All materials to match fencing materials identified above.
- C. Height of gate to match height of fence.

2.10 ELECTRIC MOTORIZED GATE

- A. The facility gate system shall be furnished as a complete package by the System Supplier consisting of a vehicular motorized cantilever slide gate as shown on the drawings and as specified herein. The gate system shall include the slide gate, automatic gate operator, and all required structural and safety equipment. Facility ingress shall be by the card access system, Specification Section 16725, Card Access System. Facility egress shall be by road imbedded proximity vehicle detector. The gate controller and gate operation shall be integrated with the card access control system and the SCADA system.
- B. The slide gate shall meet the following mechanical specifications:
 1. The slide gate construction shall be an ornamental, aluminum box frame design. Gate shall conform to UL 325 standards. Field verify actual gate size.
 2. Gate frame shall be 2" x 3" x 1/8" aluminum tubing.
 3. Vertical gate pickets shall be 1" x 1" x 1/8" spaced such that there is less than a 1-1/2" gap between pickets.
 4. Gate shall have a minimum counterbalance length of 50% opening width which provides a 36% increase in lateral resistance (when compared to ASTM minimum of 40% counterbalance). If gate is ever to be automated, counterbalance section shall be filled with fabric or other specified material.

5. The gate frame is to be supported from the track by two (2) swivel type, self-aligning, 4-wheeled, sealed lubricant, ball-bearing truck assemblies.
6. Gate shall be painted with electrostatically applied acrylic enamel. Verify color with County.
7. Provide crawl bar to eliminate crawl space under gate frame.
8. The bottom of each support post shall have a bracket equipped with a pair of 3" (76mm) UHMW guide wheels. Wheel cover protectors shall be included with bottom guides to comply with UL325.
9. Gap protectors shall be provided and installed, compliant with ASTM F 2200-05.
10. The gate frame shall have a separate semi-enclosed "keyed" track, extruded from 6005A-T61 or 6105-T5 aluminum alloy, weighing not less than 2.9 lb/lf (4.2kg/m). The track member is to be located on only one side of the top primary. Welds to be placed alternately along the top and side of the track at 9" (229mm) centers with welds being a minimum of 2" (51mm).
11. Slide Gate Operator:
 - a. Gate operation shall be by means of a metal rail passing between a pair of solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, roller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 4000 pounds. Gate panel velocity shall not be less than 2.0 feet per second and shall be stopped gradually to prevent shock loads to the gate and operator assembly. The "soft stop" feature of the gate operator shall be controlled by two adjustable hydraulic brake valves (one for each direction). The "soft start" feature shall allow the pump to start at zero pressure, then progressively increase the pressure, over a period not less than two seconds, to 1,000 PSI. The gate operator shall be interfaced to the PCS for remote operation and override.
 - b. Operator Code Requirements:
 - 1) The gate operator shall meet the following regulatory requirements:
 - a) Operators shall be built to UL325 standards.
 - b) Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction.
 - c) Current safety standards require gate operators to be designed and labeled for specific usage classes. HySecurity Model 222 EX gate operators are to be used on Class III and Class IV installations only.
 - c. Functionality:

- 1) The gate operator shall include the following specifications components and functionality.
 - a) Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
 - b) Limit switches: Fully adjustable, toggle types, with plug connection to control panel for gate open and gate closed.
 - c) Two (2) vehicle proximity detection loops for safety and/or free egress operation.
 - d) Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories. Enclosure shall be NEMA Type 4X stainless steel.
 - e) Hydraulic hose: Shall be 1/4" synthetic, rated to 2750 psi.
 - f) Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.
 - g) Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
 - h) Hydraulic fluid: High performance type with a viscosity index greater than 375.
 - i) A zero to 2000-PSI pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
 - j) The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.
 - k) Pump motor: Shall be a single phase, 60Hz, 208 VAC, 2 HP, 56C, TEFC, continuous duty motor, with a service factor of 1.15, or greater. All components shall have overload protection and NEMA Type 4X local disconnect/enclosure.
 - l) Heater with thermostat control for cold or damp climates.
 - m) Gate controller: HySecurity Smart Touch Controller Board with 128K memory or approved equal containing: inherent entrapment sensor; built in "warn before operate" system; built in timer to close; liquid crystal display for reporting of functions; 19 programmable output relay options; anti-tailgate mode; built-in power surge/lightening strike protection; RS232 port for connection to

- laptop or other computer peripheral and RS485 connection of Master/Slave systems.
 - n) Required external sensors installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
 - o) Radio controlled Miller safety edge or approved equal
 - p) UL approved EMX IRB photo safety beam with NEMA Type 4X enclosure or approved equal
 - q) Siren operated sensor for fire department emergency ingress. Fire department to specify sensor frequency.
 - r) The gate operator shall be HySecurity Model 222EX Heavy Duty Industrial Slide Gate Operator or approved equal.
- 2) Warranty. The gate and gate operator warranty is:
- a) System Supplier one (1) year warranty on all labor and materials.
 - b) Manufacturer's warranty on gate operator for five (5) years.
 - c) Manufacturers warranty on gate drive wheels for two (2) years.
 - d) Manufacturers warranty on all labor for one (1) year.
 - e) Manufacturers warranty to commence upon COUNTY'S approval of satisfactory installation and startup.

2.11 MISCELLANEOUS HARDWARE

Zinc-coated commercial grade steel. Paint black, or as directed by County.

PART 3 - EXECUTION

3.01 POSTS

Embed all posts in 3000 psi concrete bases. All posts to extend 3 feet minimum into concrete base. All concrete base diameters to be 12 inches, top of base to be crowned 1 inch above grade, bottom of base to be 6 inches below bottom of post.

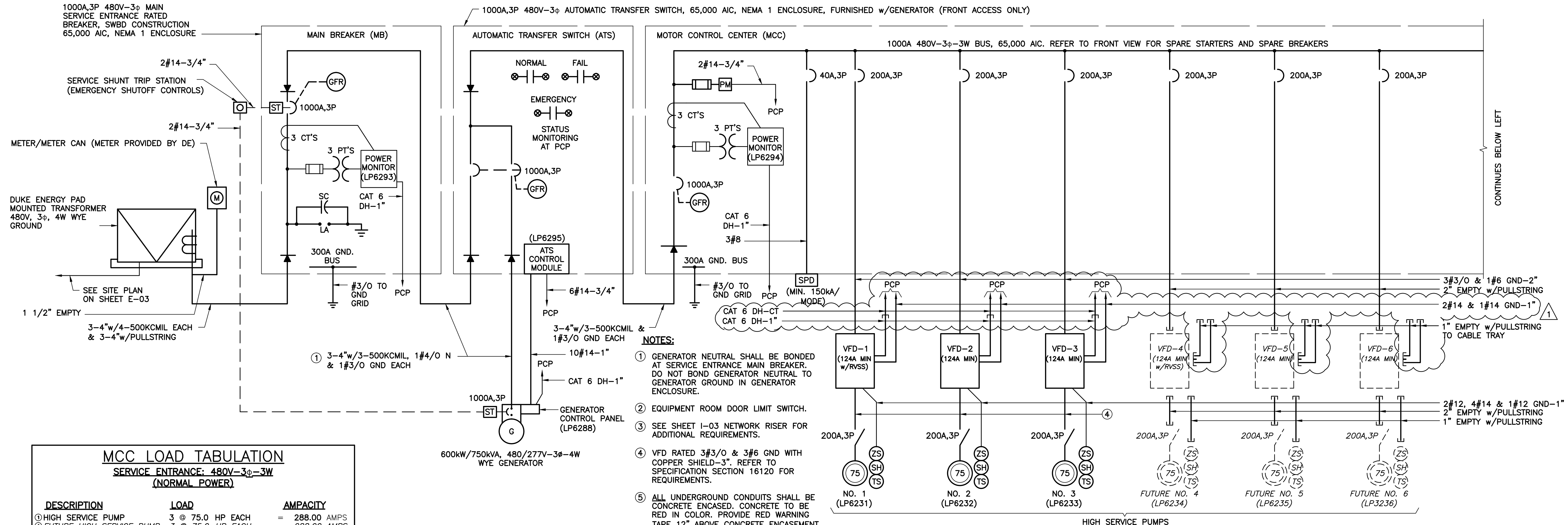
3.02 FENCE FABRIC, WIRE, RAILS and ACCESSORIES

Install per FDOT requirements.

3.03 GATES

Provide cantilever gate and operator as shown on the drawings.

END OF SECTION



MCC LOAD TABULATION

SERVICE ENTRANCE: 480V-3 ϕ -3W (NORMAL POWER)

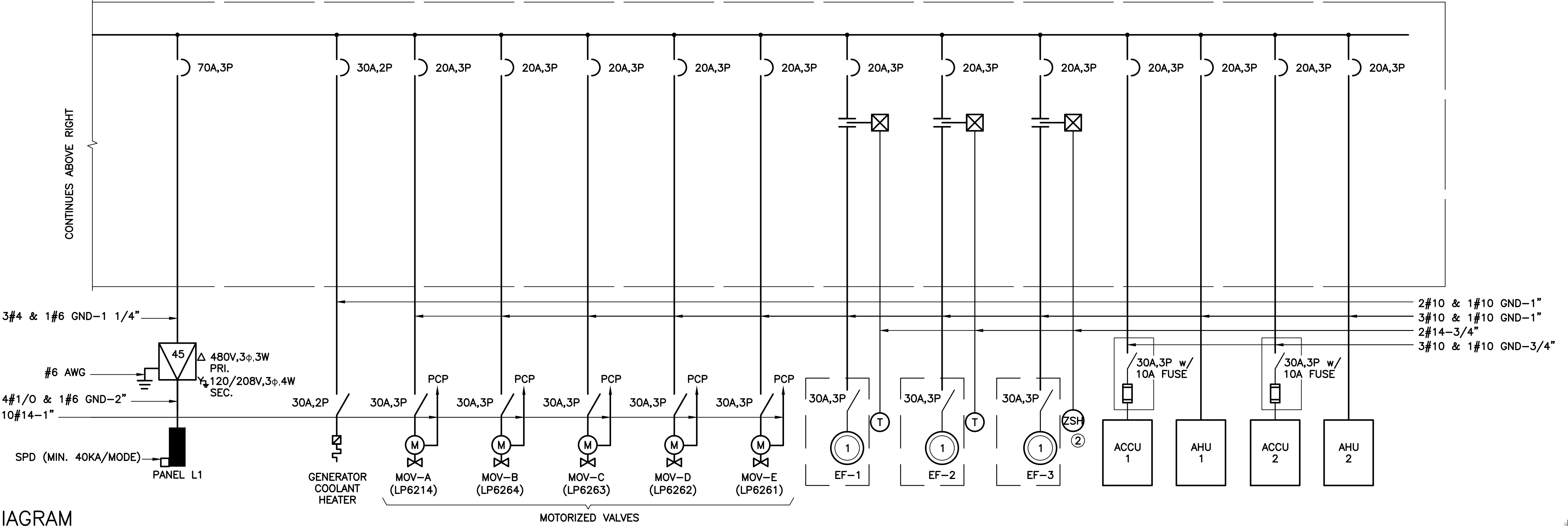
DESCRIPTION	LOAD	AMPACITY
① HIGH SERVICE PUMP	3 @ 75.0 HP EACH	= 288.00 AMPS
① FUTURE HIGH SERVICE PUMP	3 @ 75.0 HP EACH	= 288.00 AMPS
① EXHAUST FAN	2 @ 1.0 HP EACH	= 6.30 AMPS
① MOTOR VALVE PANEL 'L1'	5 @ 1.0 HP EACH	= 10.50 AMPS
① AHU ACCU GEN. HEATER	2 @ 1.0 HP EACH	= 4.20 AMPS
		= 15.60 AMPS
		= 16.65 AMPS
CONNECTED LOAD		= 683.38 AMPS
② SERVICE ENTRANCE = 683.38 AMPS + (0.25)(96.0)		= 707.38 AMPS

(STAND-BY POWER)

① HIGH SERVICE PUMP	3 @ 75.0 HP EACH	= 288.00 AMPS
① FUTURE HIGH SERVICE PUMP	3 @ 75.0 HP EACH	= 288.00 AMPS
① EXHAUST FAN	3 @ 1.0 HP EACH	= 6.30 AMPS
① MOTOR VALVE PANEL 'L1'	5 @ 1.0 HP EACH	= 10.50 AMPS
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		= 15.60 AMPS
		= 16.65 AMPS
CONNECTED LOAD		= 683.38 AMPS
② SERVICE ENTRANCE = 683.38 AMPS + (0.25)(96.0)		= 707.38 AMPS

NOTES:
 ① AMPACITIES PER TABLE 430-250 OF THE NATIONAL ELECTRICAL CODE.
 ② SERVICE ENTRANCE MINIMUM SIZE AS PER ARTICLE 230 OF THE NATIONAL ELECTRICAL CODE.

MCC SINGLE LINE DIAGRAM
SCALE: N.T.S.



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 LILLIAN M. REYES, P.E.
 Florida P.E. No. 50780

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Δ	5/01/18	ADDENDUM NO. 3

LINE IS 2 INCHES
AT FULL SIZE
(IF NOT SCALE ACCORDINGLY)

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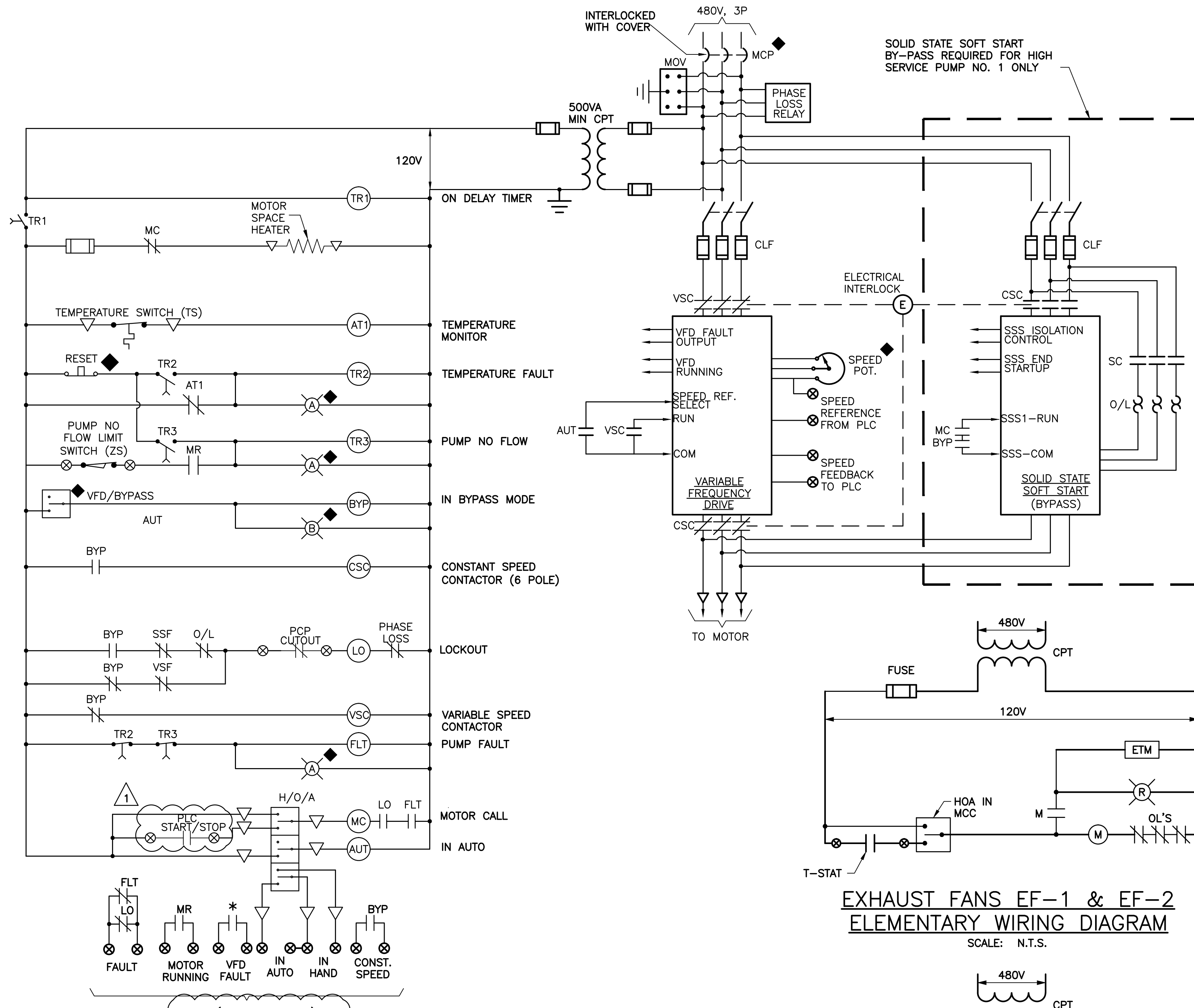
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SSA-ESA
 36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
 SINGLE LINE DIAGRAM

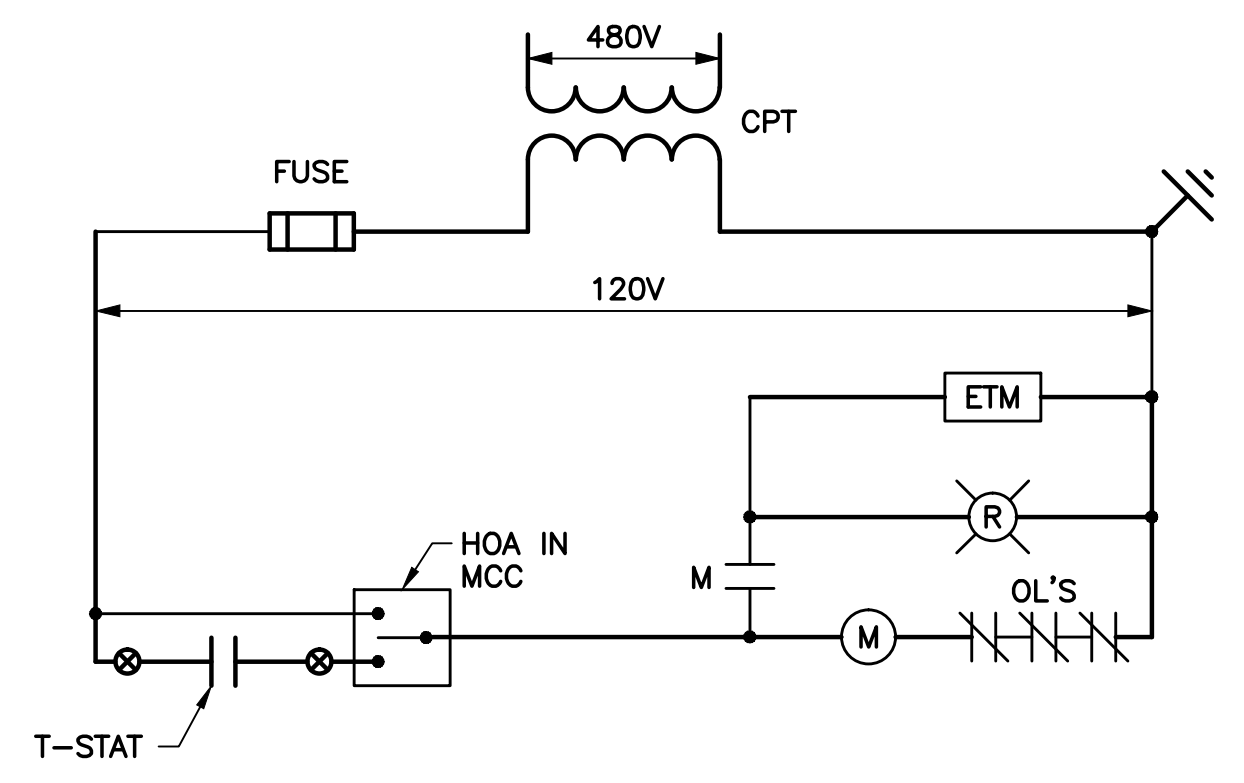
OCU FILE NO.:
 DESIGNED BY: LMR
 DRAWN BY: RRM
 CHECKED BY: LMR
 CADD FILE: E-04 RISER

SCALE: AS SHOWN
 DRAWING NO.: **E-04**
 SHEET: 161 OF 292

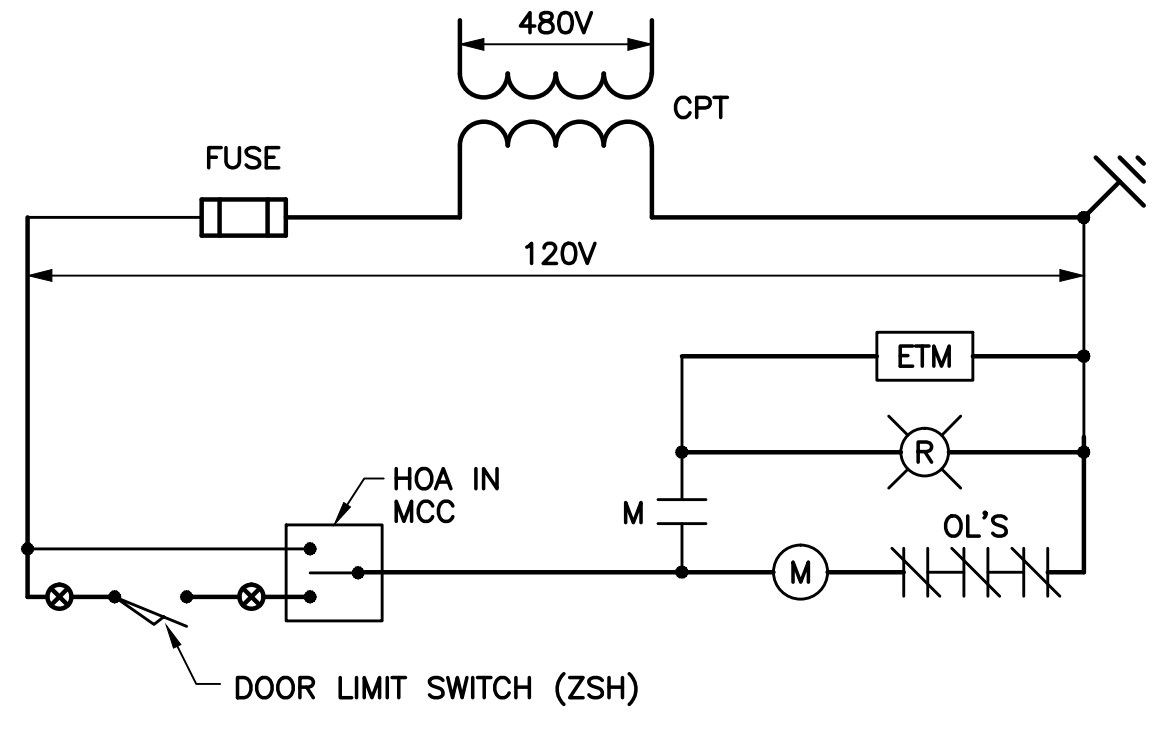


VFD ELEMENTARY DIAGRAM FOR HIGH SERVICE PUMP
SCALE: N.T.S.

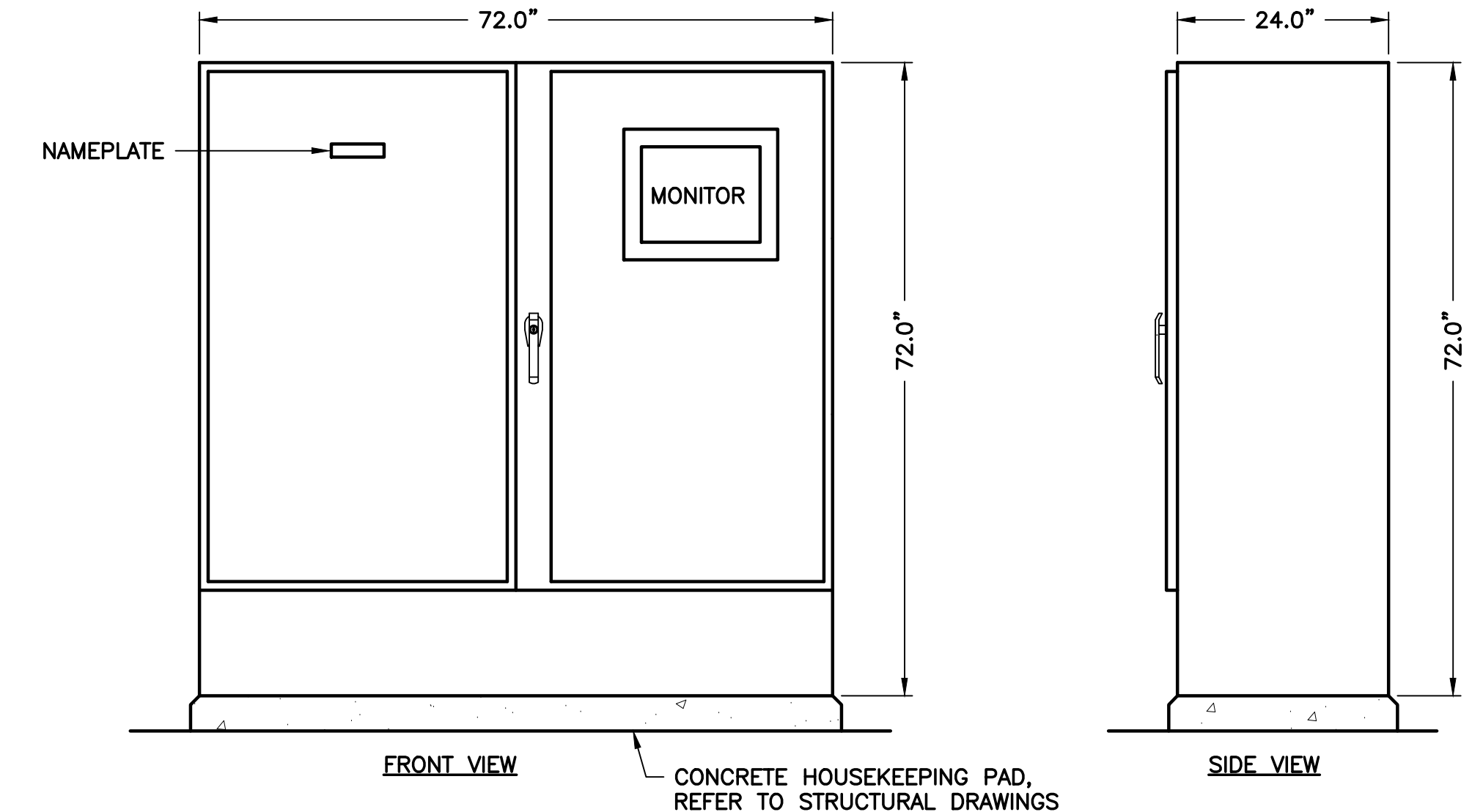
- NOTES:**
- ◆ MOUNTED ON FRONT PANEL
 - KEY TO TERMINALS:
○ LOCAL CONTROL PANEL
⊗ PROCESS CONTROL PANEL
▽ MOTOR
 - CHECK VALVE LIMIT SWITCH IS WIRED DIRECTLY TO THE PLC.
 - * INDICATES ANY DRIVE FAULT.



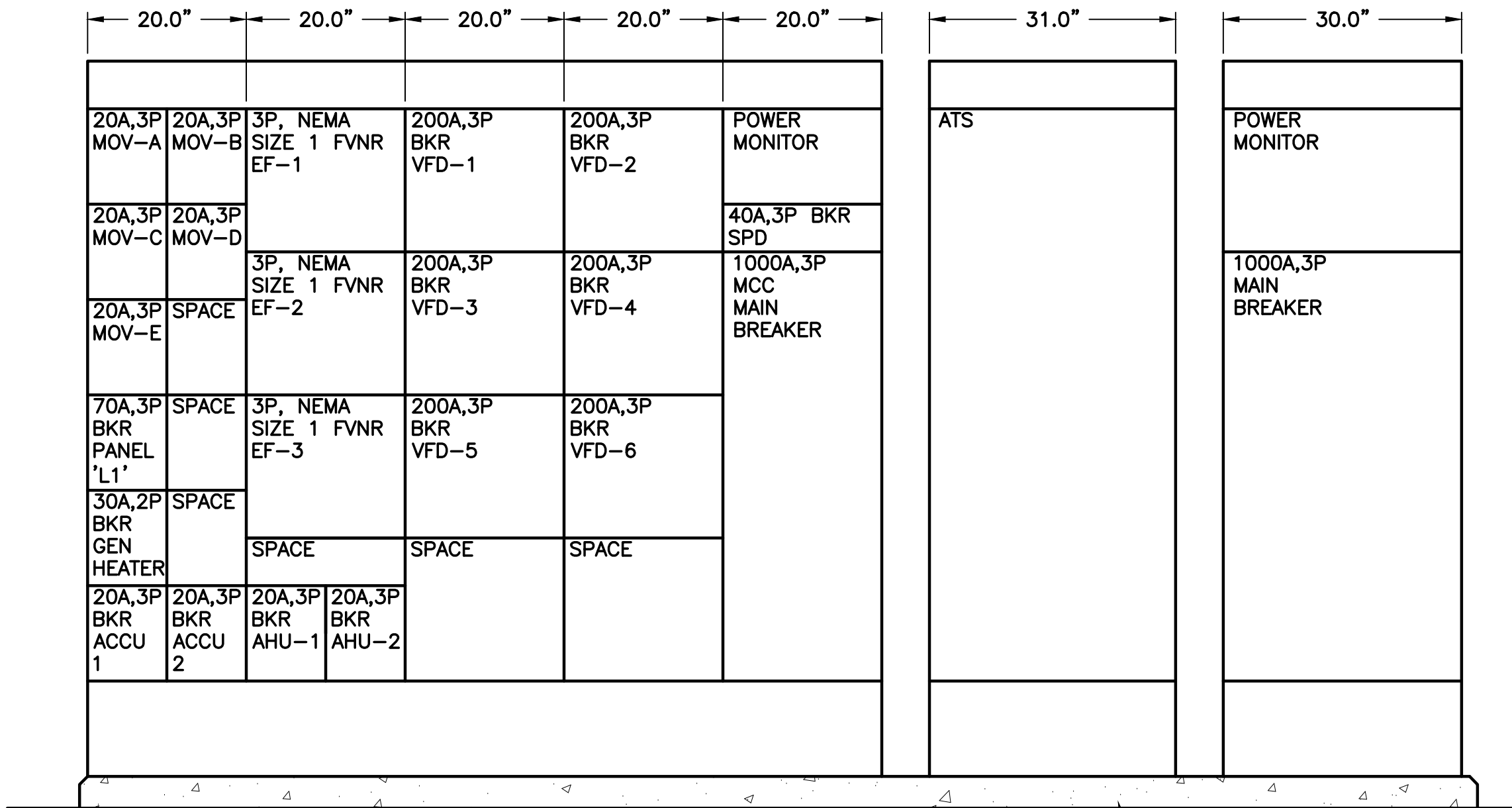
EXHAUST FANS EF-1 & EF-2 ELEMENTARY WIRING DIAGRAM
SCALE: N.T.S.



EXHAUST FANS EF-3 ELEMENTARY WIRING DIAGRAM
SCALE: N.T.S.



PCP EQUIPMENT VIEWS
SCALE: 3/4"=1'-0"
6" 0 1 2'



EQUIPMENT FRONT VIEW
SCALE: 3/4"=1'-0"
6" 0 1 2'

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LINE IS 2 INCHES
AT FULL SIZE
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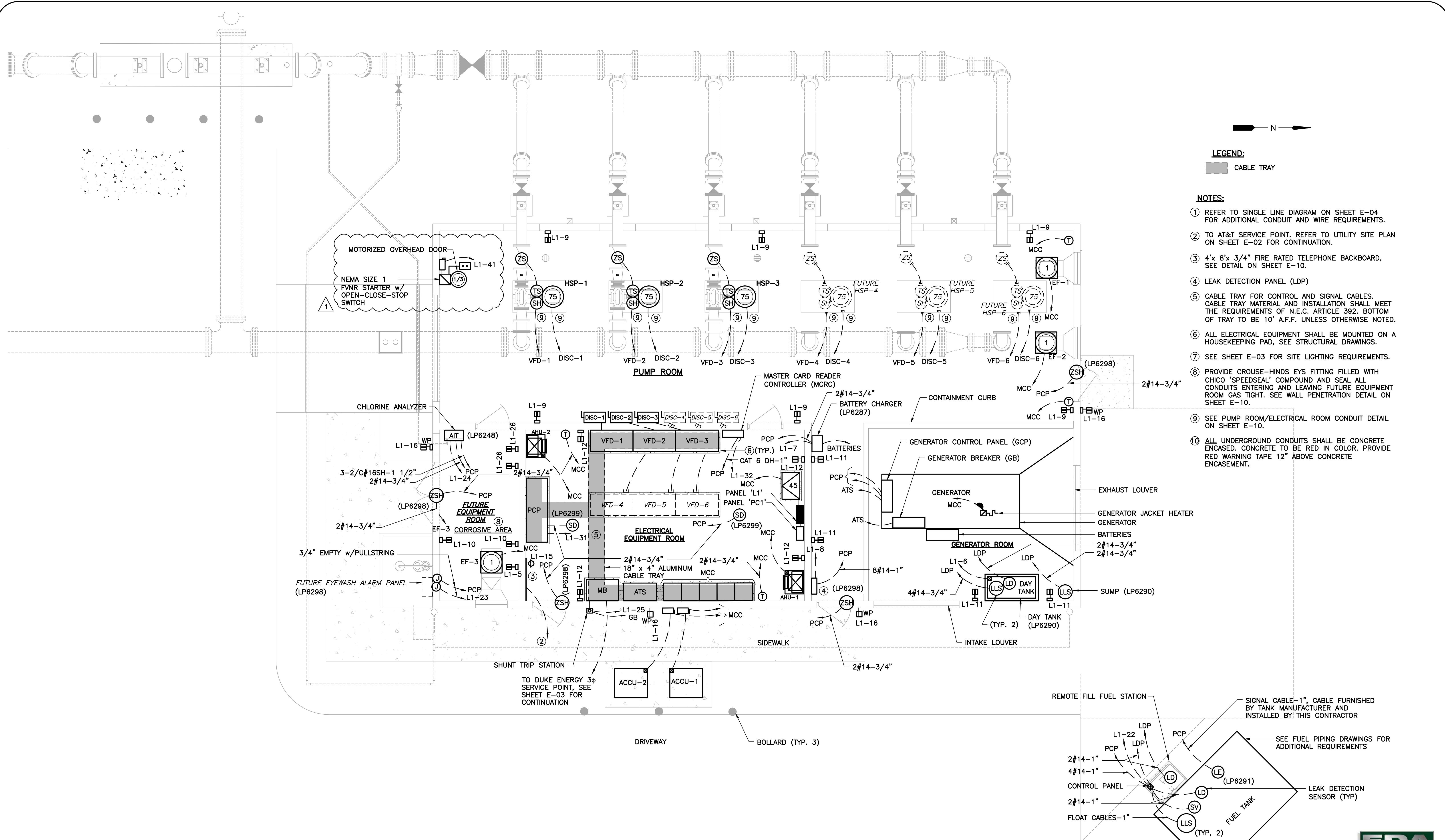
Licenses:
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Arch. Lic. No. AA2600926
Landscape Lic. No. LC0000298

SSA-ESA
36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
ELEMENTARY DIAGRAMS & EQUIPMENT FRONT VIEWS

OCU FILE NO.:
DESIGNED BY: LMR
DRAWN BY: RRM
CHECKED BY: LMR
CADD FILE: E-05 ELEM

LILLIAN M. REYES, P.E.
FLORIDA LICENSE # 50780

SCALE: AS SHOWN
DRAWING NO.:
E-05
SHEET: 162 OF 292



LEGEND:
 [Symbol] CABLE TRAY

- NOTES:**
- ① REFER TO SINGLE LINE DIAGRAM ON SHEET E-04 FOR ADDITIONAL CONDUIT AND WIRE REQUIREMENTS.
 - ② TO AT&T SERVICE POINT, REFER TO UTILITY SITE PLAN ON SHEET E-02 FOR CONTINUATION.
 - ③ 4'x 8'x 3/4" FIRE RATED TELEPHONE BACKBOARD, SEE DETAIL ON SHEET E-10.
 - ④ LEAK DETECTION PANEL (LDP)
 - ⑤ CABLE TRAY FOR CONTROL AND SIGNAL CABLES. CABLE TRAY MATERIAL AND INSTALLATION SHALL MEET THE REQUIREMENTS OF N.E.C. ARTICLE 392. BOTTOM OF TRAY TO BE 10" A.F.F. UNLESS OTHERWISE NOTED.
 - ⑥ ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED ON A HOUSEKEEPING PAD, SEE STRUCTURAL DRAWINGS.
 - ⑦ SEE SHEET E-03 FOR SITE LIGHTING REQUIREMENTS.
 - ⑧ PROVIDE CROUSE-HINDS EYS FITTING FILLED WITH CHICO 'SPEEDSEAL' COMPOUND AND SEAL ALL CONDUITS ENTERING AND LEAVING FUTURE EQUIPMENT ROOM GAS TIGHT. SEE WALL PENETRATION DETAIL ON SHEET E-10.
 - ⑨ SEE PUMP ROOM/ELECTRICAL ROOM CONDUIT DETAIL ON SHEET E-10.
 - ⑩ ALL UNDERGROUND CONDUITS SHALL BE CONCRETE ENCASED. CONCRETE TO BE RED IN COLOR. PROVIDE RED WARNING TAPE 12" ABOVE CONCRETE ENCASEMENT.

POWER PLAN
 SCALE: 1/4"=1'-0"
 0 1 2 3 4 5 6 7

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Δ	5/01/18	ADDENDUM NO. 3

LINE IS 2 INCHES
 AT FULL SIZE
 (IF NOT SCALE ACCORDINGLY)

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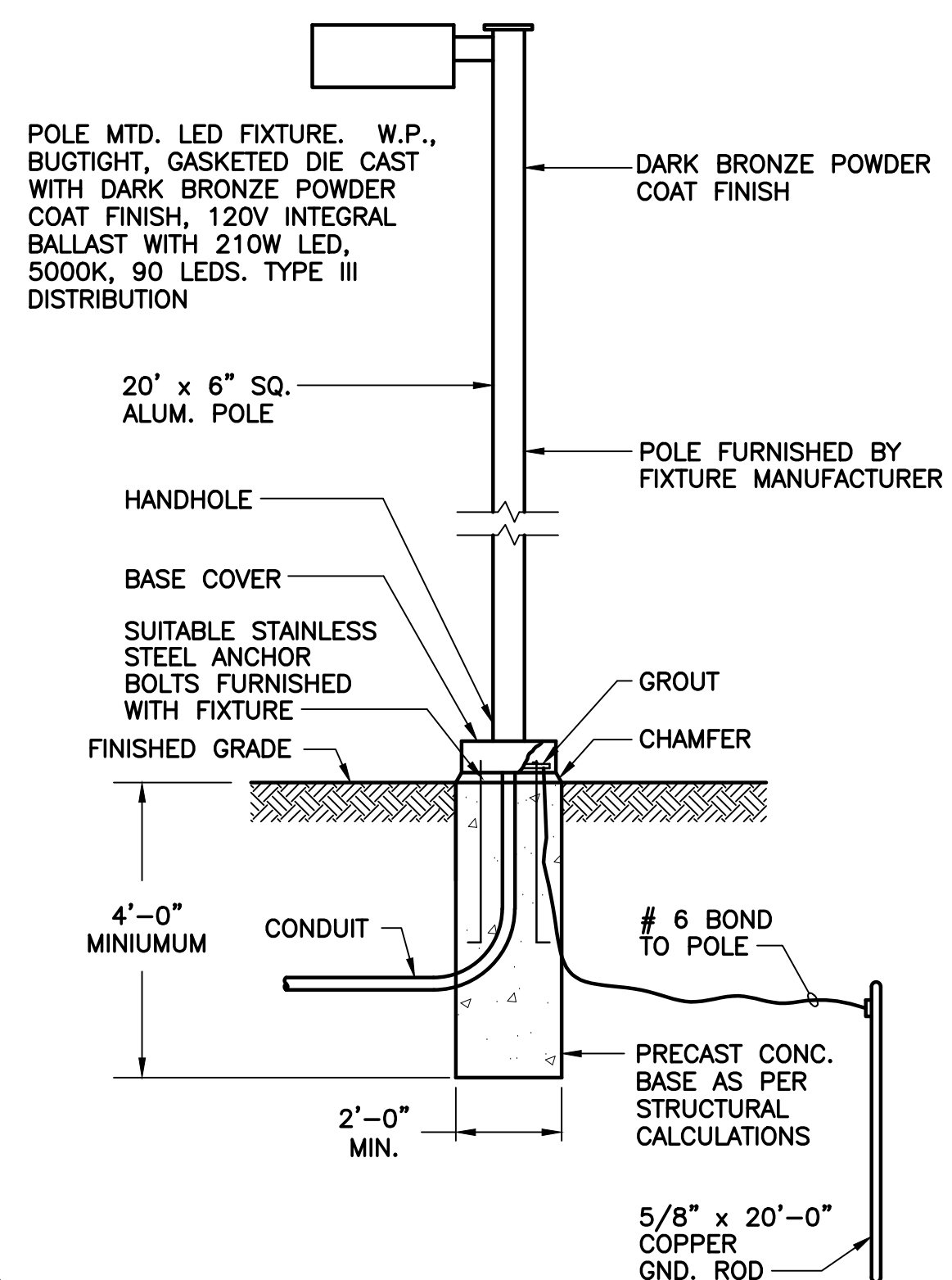
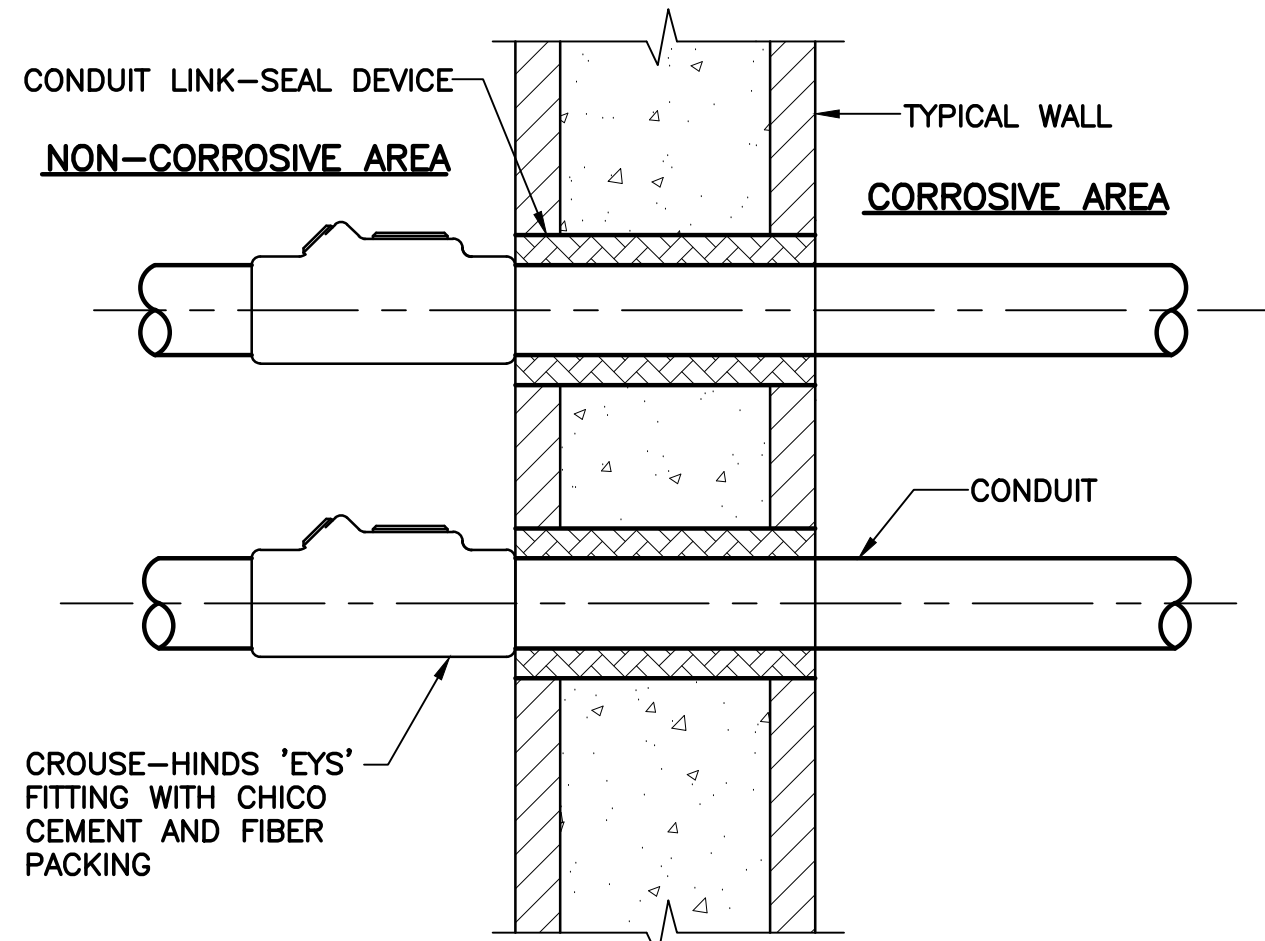
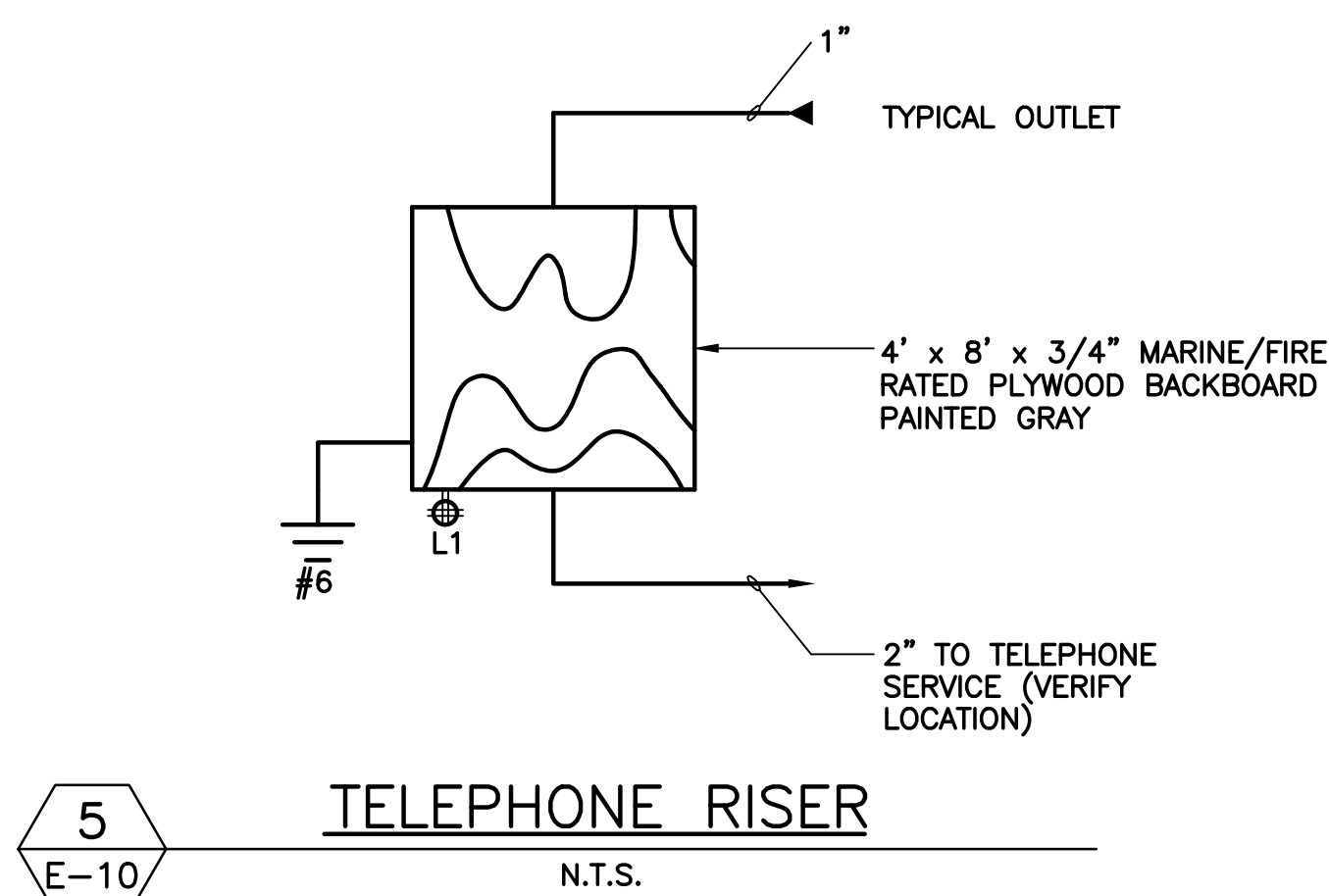
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 Landscp. Lic. No. LC0000298

SSA-ESA
 36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
 POWER PLAN

OCU FILE NO.:
 DESIGNED BY: LMR
 DRAWN BY: RRM
 CHECKED BY: LMR
 CADD FILE: E-07 PWR PLAN

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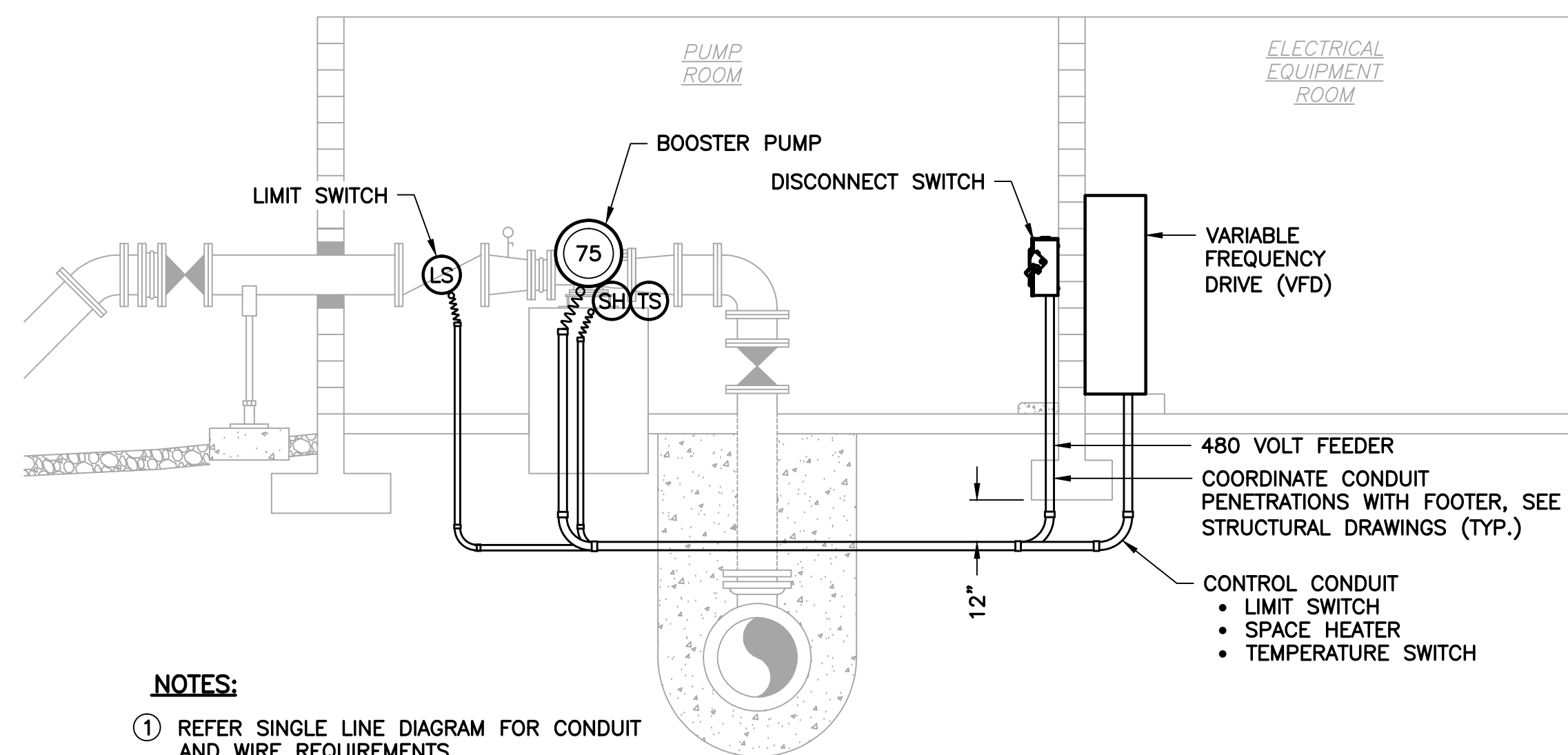
SCALE: AS SHOWN
 DRAWING NO.:
E-07
 SHEET: 164 OF 292



6
E-10
WALL PENETRATION DETAIL
SCALE: NOT TO SCALE

7
E-10
SITE LIGHTING POLE DETAIL
SCALE: N.T.S.

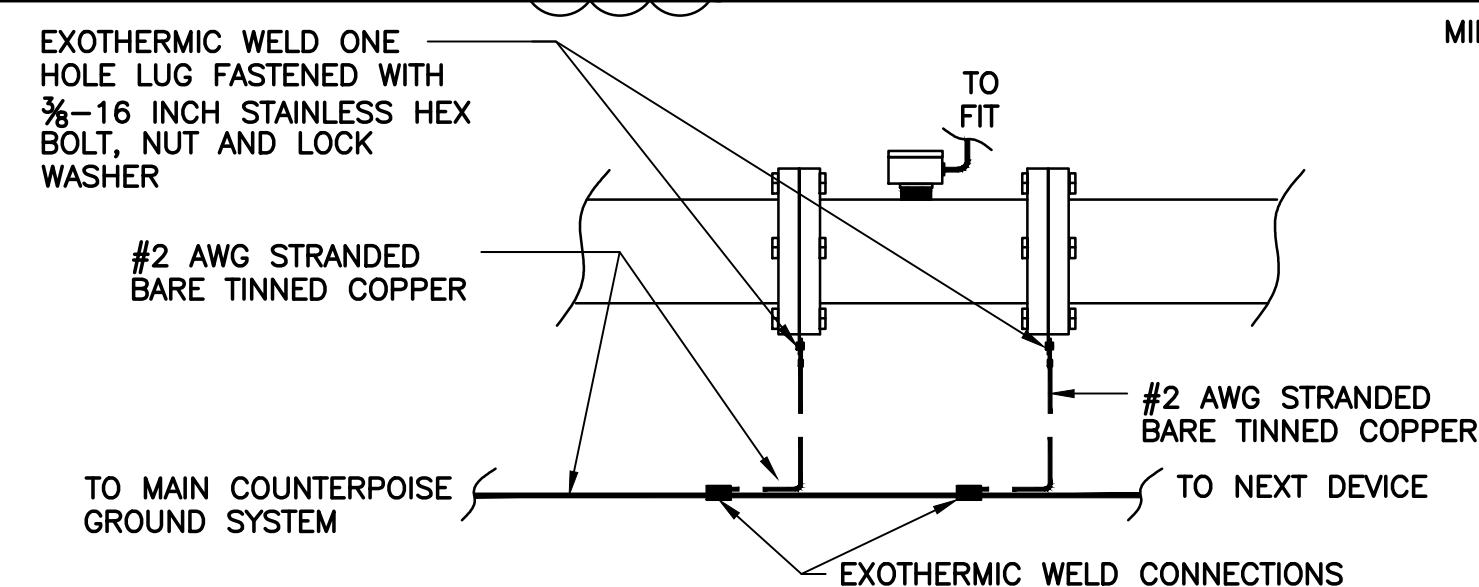
- NOTES:**
- LIGHT SHALL BE FUSED IN-LINE WITH BUSS TRON IN-LINE WP. FUSEHOLDER WITH WEATHERPROOF BOOT CAP AND 10 AMP ONE TIME FUSE.
 - CONTRACTOR TO PROVIDE STRUCTURAL AND FOOTING DETAILED DRAWINGS AND WIND LOAD CALCULATIONS SIGNED AND SEALED BY A LICENSED STATE OF FLORIDA STRUCTURAL ENGINEER IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA BUILDING CODE.
 - DETAIL AS SHOWN IS NOT INTENDED AS AN INSTALLATION BUT RATHER A GUIDE. ACTUAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND AS REQUIRED BY THE STRUCTURAL CALCULATIONS, SEE NOTE 2.



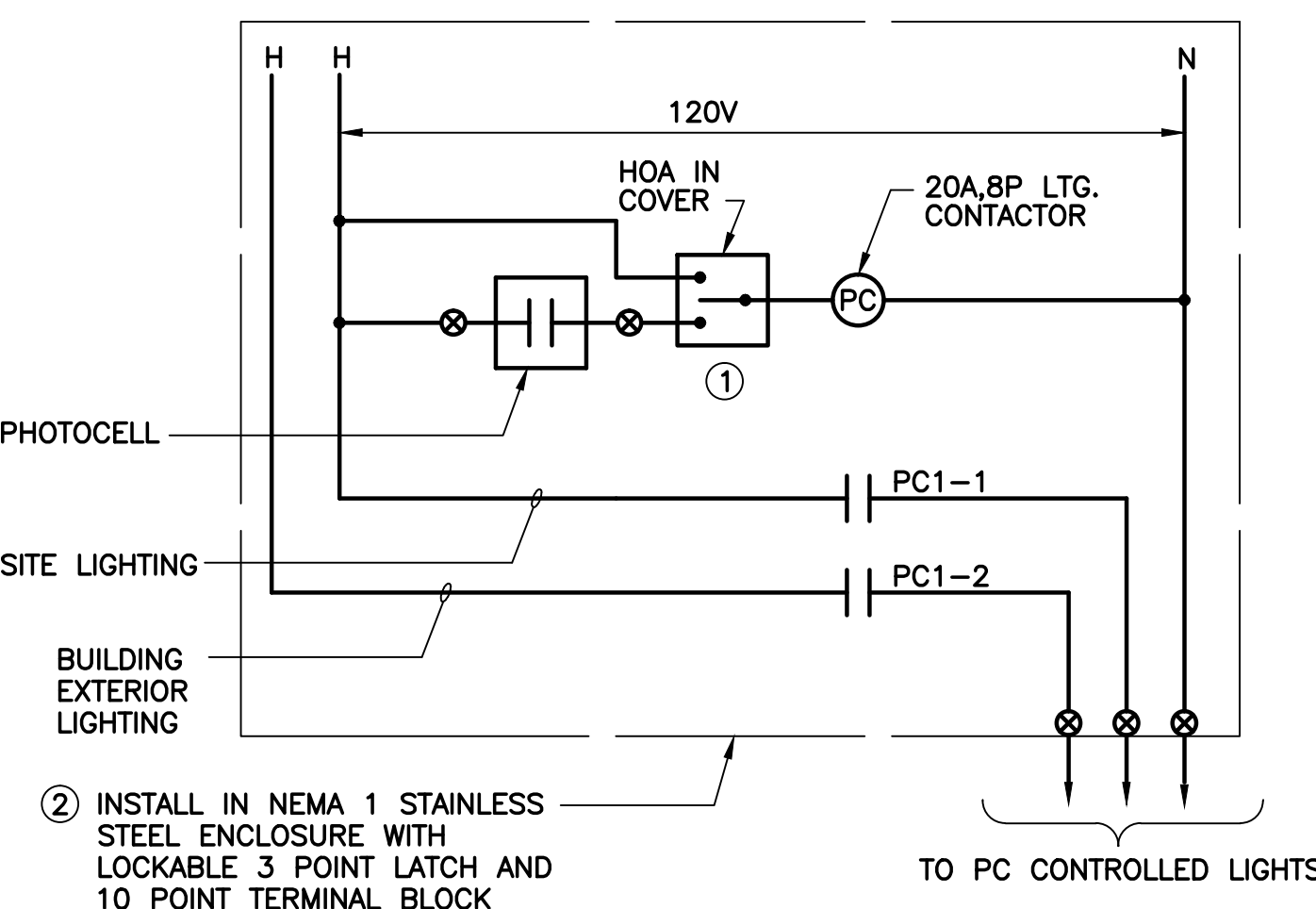
8
E-10
PUMP ROOM/ELECTRICAL ROOM CONDUIT SECTION
SCALE: N.T.S.

- NOTES:**
- REFER SINGLE LINE DIAGRAM FOR CONDUIT AND WIRE REQUIREMENTS.

PANEL: L1		BUS: 225 AMP RATED		VOLT: 120/208V-3 ϕ -4W														
LOCATION: ELECTRICAL ROOM		MAINS: 150A,3P		REMARKS: PROVIDE SPD (MIN. 40KA/MODE)														
MOUNTING: SURFACE		POLES: 42		A.I.C. SYMM: 10,000														
AMPS	POLE	WIRE	GND.	COND.	LOAD SERVED	BUS KVA			BUS KVA			LOAD SERVED	WIRE	GND.	COND.	POLE	AMPS	
						A	B	C	A	B	C							
20	1	10	10	1"	PC1-1 SITE LIGHTING	0.74			1	2	0.88		GATE EQUIPMENT	8	10	2"	2	20
20	1	12	12	3/4"	FIT		0.10		3	4		0.88						
20	1	12	12	3/4"	EQUIPMENT ROOM RECEPT.			0.18	5	6		0.30	DAY TANK	12	12	3/4"	1	20
20	1	12	12	3/4"	GEN. BATTERY CHARGER	0.50			7	8	0.30		LEAK DETECTION PANEL	12	12	3/4"	1	20
20	1	12	12	3/4"	PUMP ROOM RECEPTS.		1.08		9	10		0.36	EQUIPMENT ROOM RECEPT.	12	12	3/4"	1	20
20	1	12	12	3/4"	GEN. ROOM RECEPTS.			0.72	11	12		0.72	ELEC. ROOM RECEPTS.	12	12	3/4"	1	20
20	1	12	12	3/4"	ELEC. RM. EM/EXIT LTG	0.10			13	14	0.10		PUMP RM. EM/EXIT LTG.	12	12	3/4"	1	20
20	1	12	12	3/4"	TELEPHONE BKBD RECEPT.		0.36		15	16		0.72	EXTERIOR RECEPTS.	12	12	3/4"	1	20
20	1	12	12	3/4"	PC1-2 EXT. WALL MTD. LTG			0.65	17	18		0.10	EQUIPMENT ROOM LIGHTING	12	12	3/4"	1	20
20	1	12	12	3/4"	GEN ROOM LIGHTING	0.30			19	20	0.40		ELEC. ROOM LIGHTING	12	12	3/4"	1	20
20	1	-	-	-	SPARE	-	-	-	21	22		0.20	REMOTE FILL FUEL STATION	12	12	1"	1	20
20	1	-	-	3/4"	FUTURE EYEWASH PANEL	-		0.10	23	24		0.10	CL2 AIT	12	12	3/4"	1	20
20	1	-	-	-	SPARE	-	-	-	25	26	0.36		FUTURE METERING PUMP RECEPTS	-	-	3/4"	1	20
20	1	-	-	-	SPARE	-		0.10	27	28		0.10	GEN. RM. EM/EXIT LTG.	12	12	3/4"	1	20
20	1	12	12	3/4"	EQUIP. ROOM EM/EXIT LTG			0.10	29	30		0.10	CARD READER CONTROLLER	12	12	3/4"	1	20
20	1	12	12	3/4"	PCP	1.00			31	32	0.20		MCRC	12	12	3/4"	1	20
20	1	12	12	3/4"	PUMP ROOM LIGHTING		0.38		33	34		-	SPARE	-	-	-	1	20
20	1	12	12	3/4"	PUMP ROOM LIGHTING		0.38		35	36		-	SPARE	-	-	-	1	20
20	1	-	-	-	SPARE	-	-	-	37	38	0.10		SPD	-	-	-	3	30
20	1	-	-	-	SPARE	-	-	-	39	40		0.10		-	-	-	-	-
20	1	10	10	1"	OVERHEAD DOOR		0.36		41	42		0.10		-	-	-	-	-
TOTAL (PHASE):						2.64	1.92	2.49				2.34	2.36	1.42	NOTES:			
TOTAL KVA:									13.17			① PROVIDE LOCKABLE CIRCUIT BREAKER.						
TOTAL AMPS:									36.56			② LIGHTING PANEL ENCLOSURE SHALL BE STAINLESS STEEL.						
TOTAL DEMAND AMPS:									36.56									



9
E-10
FLOW METER PIPE GROUNDING DETAIL
NOT TO SCALE

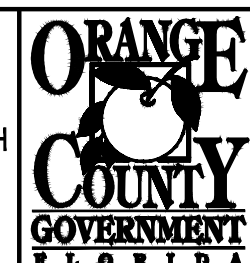


- NOTES:**
- HOA SWITCH SHALL BE INSTALLED THROUGH OUTER DOOR OF CONTACTOR PANEL.
 - LIGHTING CONTACTOR PANEL TO BE BUILT TO U.L. 508 STANDARDS.

10
E-10
LIGHTING CONTACTOR PANEL PC1
N.T.S.

REV	DATE	DESCRIPTION
A	5/01/18	ADDENDUM NO. 3

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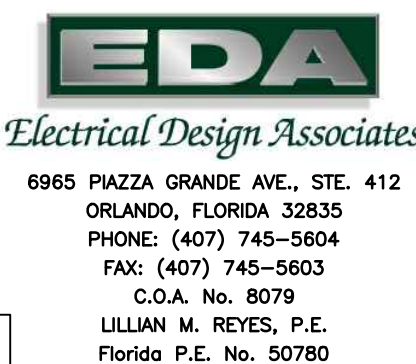


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36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
PANEL SCHEDULE & DETAILS

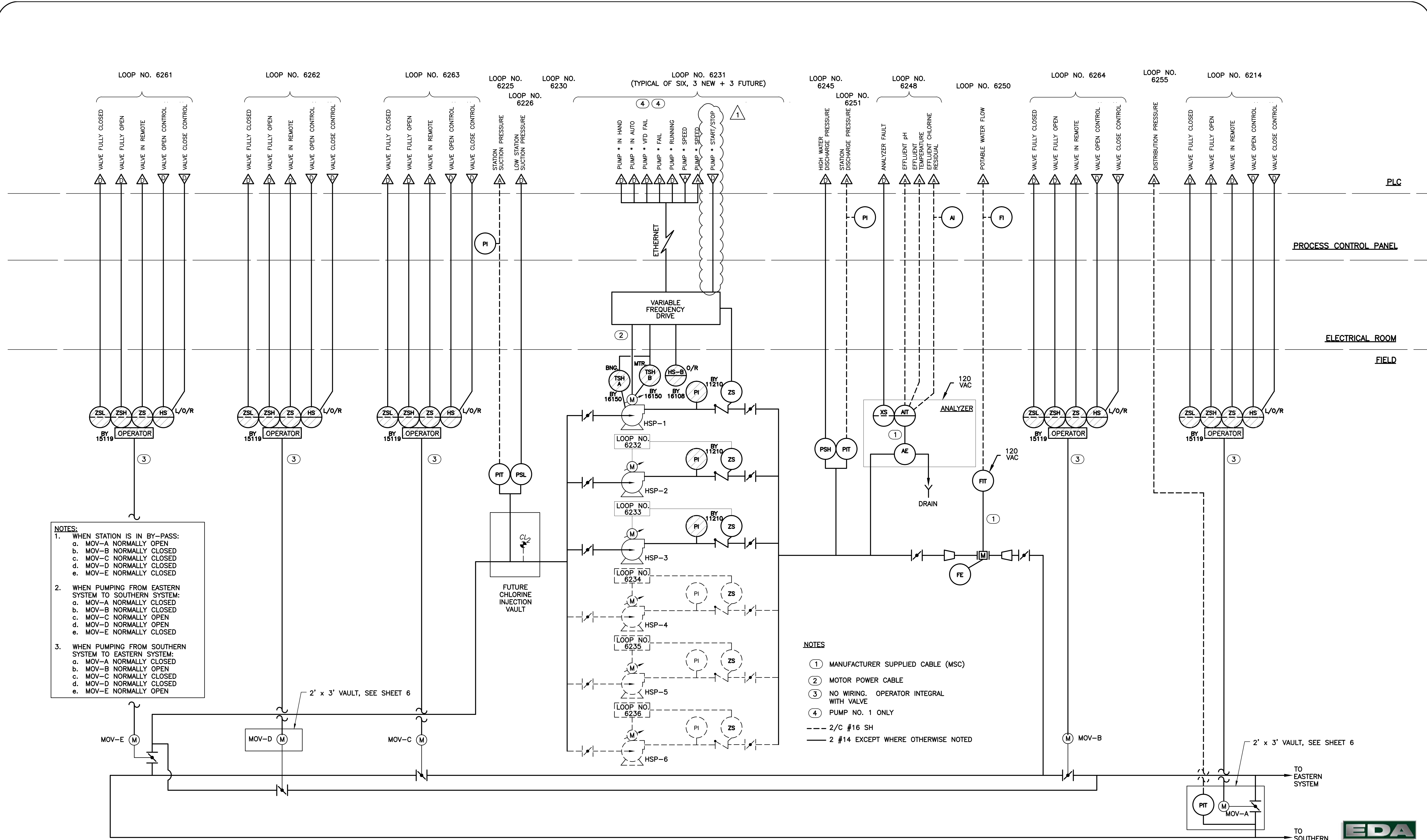
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DESIGNED BY: LMR
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CHECKED BY: LMR
CADD FILE: E-10 SCH

SCALE: AS SHOWN
DRAWING NO.:
E-10
SHEET: 167 OF 292



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Florida P.E. No. 50780

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- NOTES:**
- WHEN STATION IS IN BY-PASS:
 - MOV-A NORMALLY OPEN
 - MOV-B NORMALLY CLOSED
 - MOV-C NORMALLY CLOSED
 - MOV-D NORMALLY CLOSED
 - MOV-E NORMALLY CLOSED
 - WHEN PUMPING FROM EASTERN SYSTEM TO SOUTHERN SYSTEM:
 - MOV-A NORMALLY CLOSED
 - MOV-B NORMALLY CLOSED
 - MOV-C NORMALLY OPEN
 - MOV-D NORMALLY OPEN
 - MOV-E NORMALLY CLOSED
 - WHEN PUMPING FROM SOUTHERN SYSTEM TO EASTERN SYSTEM:
 - MOV-A NORMALLY CLOSED
 - MOV-B NORMALLY OPEN
 - MOV-C NORMALLY CLOSED
 - MOV-D NORMALLY CLOSED
 - MOV-E NORMALLY OPEN

- NOTES**
- MANUFACTURER SUPPLIED CABLE (MSC)
 - MOTOR POWER CABLE
 - NO WIRING. OPERATOR INTEGRAL WITH VALVE
 - PUMP NO. 1 ONLY
- 2/C #16 SH
 — 2 #14 EXCEPT WHERE OTHERWISE NOTED

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 ORLANDO, FLORIDA 32835
 PHONE: (407) 745-5604
 FAX: (407) 745-5603
 C.O.A. No. 8079
 LILLIAN M. REYES, P.E.
 Florida P.E. No. 50780

BID SET

REV	DATE	DESCRIPTION
Δ	5/01/18	ADDENDUM NO. 3

LINE IS 2 INCHES
 AT FULL SIZE
 (IF NOT SCALE ACCORDINGLY)

ORANGE COUNTY UTILITIES DEPARTMENT ENGINEERING DIVISION
 9150 CURRY FORD ROAD ORLANDO, FL. 32825

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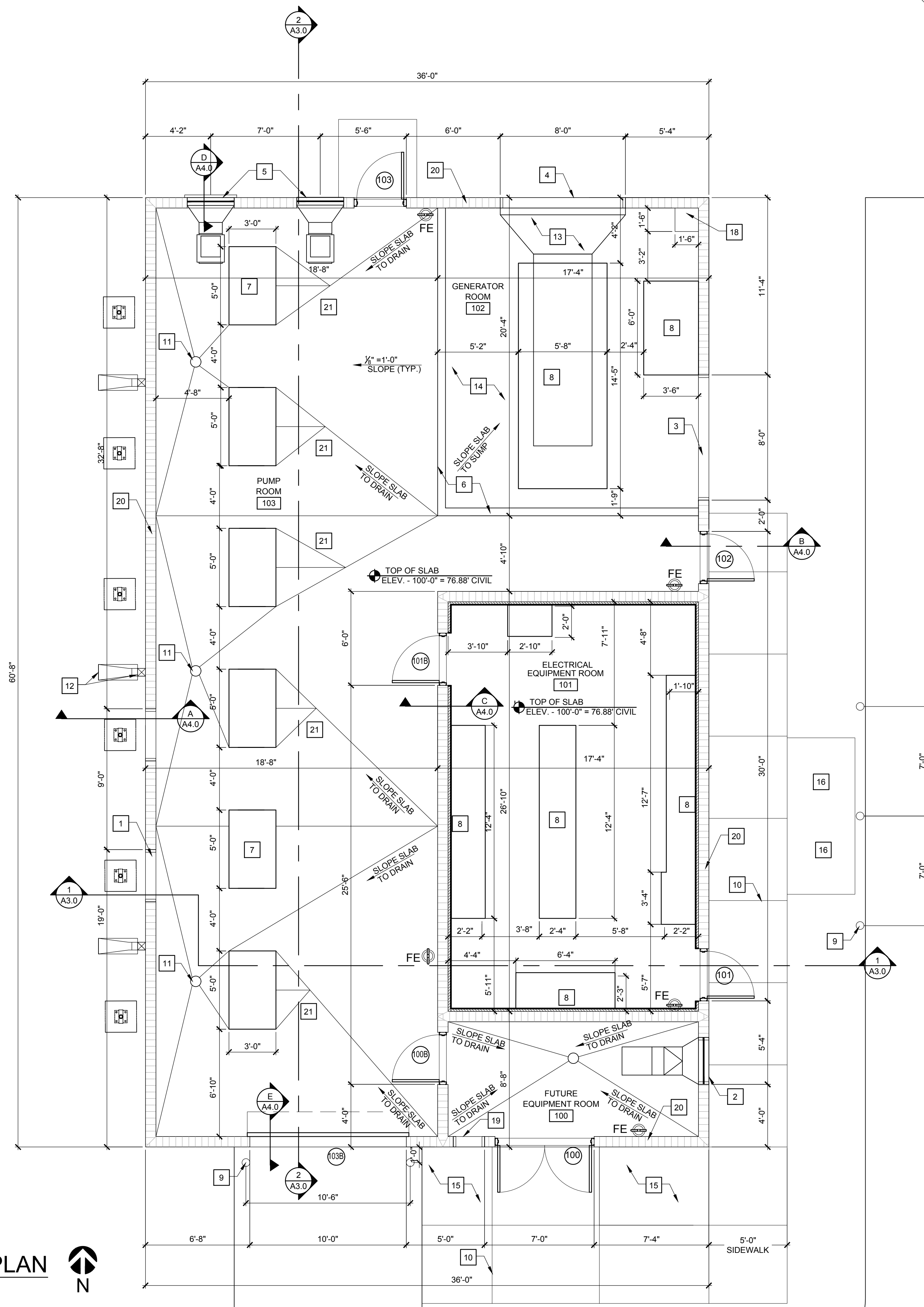
Licenses:
 Eng. C.O.A. No. 3215
 Survey L.B. No. 7143
 Arch. Lic. No. AA2600926
 Lndscp. Lic. No. LC0000298

SSA-ESA
 36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
 PROCESS & INSTRUMENTATION DIAGRAM - A

OCU FILE NO.:
 DESIGNED BY: LMR
 DRAWN BY: RRM
 CHECKED BY: LMR
 CADD FILE: I-02 PID-A

LILLIAN M. REYES, P.E.
 FLORIDA LICENSE # 50780

SCALE: AS SHOWN
 DRAWING NO.:
I-02
 SHEET: 176 OF 292



BUILDING CODES:
 BUILDING CODE EDITION: FLORIDA EXISTING BUILDING CODE 2014
 MECHANICAL CODE EDITION: FLORIDA MECHANICAL CODE 2014
 ELECTRICAL CODE EDITION: NATIONAL ELECTRICAL CODE 2011, NFPA 70
 PLUMBING CODE EDITION: FLORIDA PLUMBING CODE 2014
 ADDITIONAL CODE EDITION: FLORIDA FIRE PREVENTION CODE 2014
 NFPA 101 FLORIDA EDITION & NFPA 1 2012
 FLORIDA ACCESSIBILITY CODE 2014

BUILDING DATA:
 OCCUPANCY: USE GROUP - F1 (WATER, DISINFECTANTS)
 CONSTRUCTION TYPE: IIB
 NUMBER OF STORIES: 1
 BUILDING HEIGHT: 16'-9"
 GROSS BUILDING AREA: 2,184 GROSS S.F.
 INDUSTRIAL AREA: OLF = 100

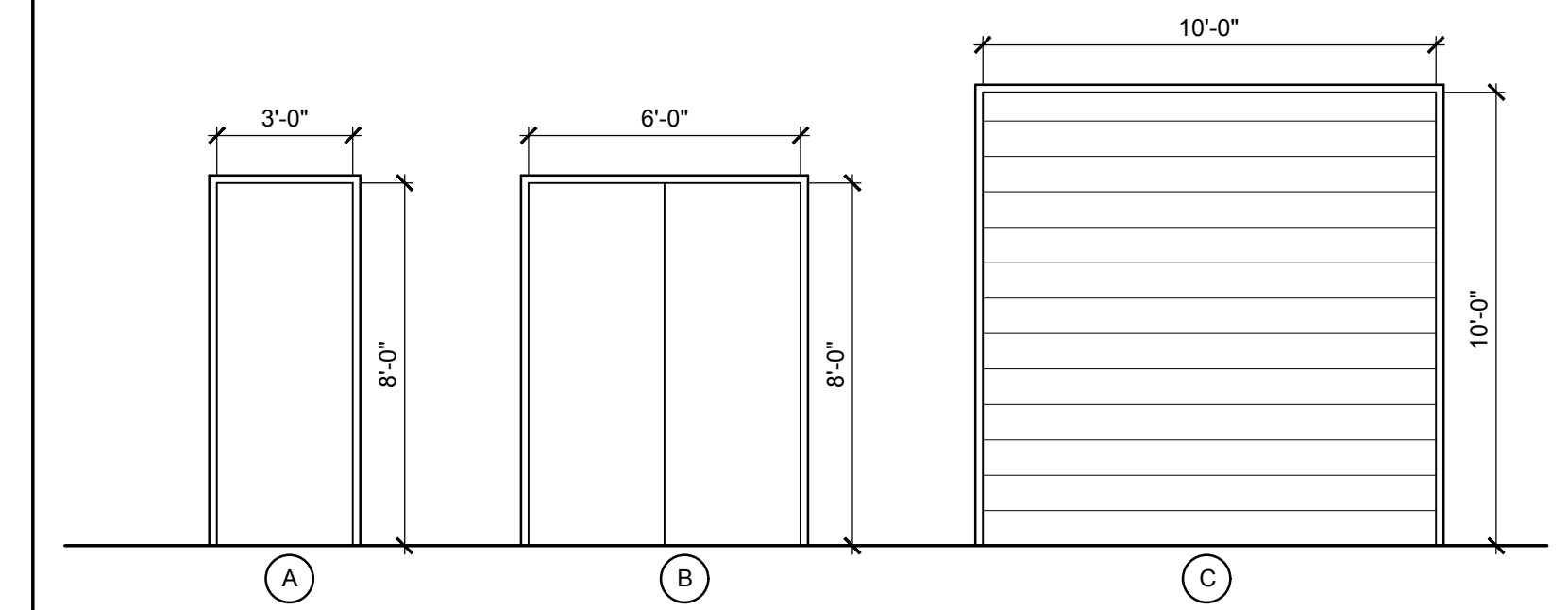
LIFE SAFETY SYSTEM:
 EMERGENCY LIGHTING: YES NO
 EXIT SIGNS: YES NO
 FIRE ALARM AND SMOKE DETECTION SYSTEM: YES NO
 PANIC HARDWARE: YES NO
 FIRE SPRINKLERS: YES NO

LEGEND

- 1 KEY NOTE
 - # NEW DOOR TAG, REFER TO DOOR SCHEDULE
- KEY NOTES**
- 1 3'-4" X 3'-4" INTAKE LOUVER, TYPICAL. TOP OF LOUVER @ 12'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 2 3'-0" X 2'-0" INTAKE LOUVER. TOP OF LOUVER AT 12'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 3 8'-0" X 12'-0" INTAKE LOUVER. TOP OF LOUVER AT 12'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 4 8'-0" X 8'-0" EXHAUST LOUVER. TOP OF LOUVER AT 8'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 5 3'-0" X 2'-0" EXHAUST LOUVER. TOP OF LOUVER AT 12'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 6 6" CONCRETE CURB WITH WATER STOPS
 - 7 PUMP BASE; TYPICAL. VERIFY WITH CIVIL DRAWINGS OR SELECTED PUMP MANUFACTURER
 - 8 6" THICK CONCRETE HOUSEKEEPING PAD; REFER TO DETAIL 5/S4.0
 - 9 6" PIPE BOLLARDS FILLED W/ CONCRETE; TYPICAL
 - 10 SIDEWALK CONTROL JOINT; TYPICAL
 - 11 FLOOR DRAIN; TYPICAL. REFER TO CIVIL FOR UNDERGROUND PIPE SIZE, INVERT AND CONNECTIONS
 - 12 6" SQ. DOWNSPOUT W/ 30" SPLASH BLOCK; TYPICAL
 - 13 STAINLESS STEEL RADIATOR DISCHARGE EXHAUST COWLING ATTACHED TO GENERATOR. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS.
 - 14 ISOLATE PORTION OF CONCRETE SLAB FROM REMAINDER OF THE BUILDING
 - 15 GRAVEL AREA; REFER TO CIVIL DRAWINGS
 - 16 CONDENSING UNITS; REFER TO MECHANICAL DRAWINGS
 - 17 FUEL TANK SLAB; SIZE AND THICKNESS PER MANUFACTURER. REFER TO SITE PLAN FOR LOCATION.
 - 18 18" x 18" x 8" DEEP SUMP AREA FOR FLOAT SWITCH
 - 19 2'-0" X 3'-0" EXHAUST LOUVER. TOP OF LOUVER AT 3'-8" A.F.F. REFER TO MECHANICAL DRAWINGS.
 - 20 8"X8"X16" REINFORCED CMU WITH VERTICAL AND HORIZONTAL JOINT REINFORCING PER STRUCTURAL. INSULATE WITH INJECTED AMINO-PLAST EXPANDABLE FOAM TYPE INSULATION IN CELLS THAT ARE NOT BEING POURED/GROUTED SOLID. PROVIDE CONCRETE CRICKET NEXT TO PUMP PAD TO PREVENT PONDING
 - 21

DOOR SCHEDULE

MARK	DOOR	MATL	SIZE	TYPE	FRAME	MATL	SIZE	HARDWARE	NOTE
100	ALUM	(2)	3'-0" x 8'-0" x 1 3/4"	B	ALUM	2" JAMB & HEAD		ENTRANCE	
100B	ALUM		3'-0" x 8'-0" x 1 3/4"	A	ALUM	2" JAMB & HEAD		PASSAGE	
101	ALUM		3'-0" x 8'-0" x 1 3/4"	A	ALUM	2" JAMB & HEAD		ENTRANCE	
101B	ALUM		3'-0" x 8'-0" x 1 3/4"	A	ALUM	2" JAMB & HEAD		PASSAGE	
102	ALUM		3'-0" x 8'-0" x 1 3/4"	A	ALUM	2" JAMB & HEAD		ENTRANCE	
103	ALUM		3'-0" x 8'-0" x 1 3/4"	A	ALUM	2" JAMB & HEAD		ENTRANCE	
103B	ALUM		10'-0" x 10'-0"	C	ALUM	MANUFACTURER	MANUFAC.	ELECTRICALLY OPERATED	



1 FLOOR PLAN
 A1.0 SCALE: 1/4" = 1'-0"
 N

REV	DATE	DESCRIPTION
1	5/1/2018	ADDENDUM #3

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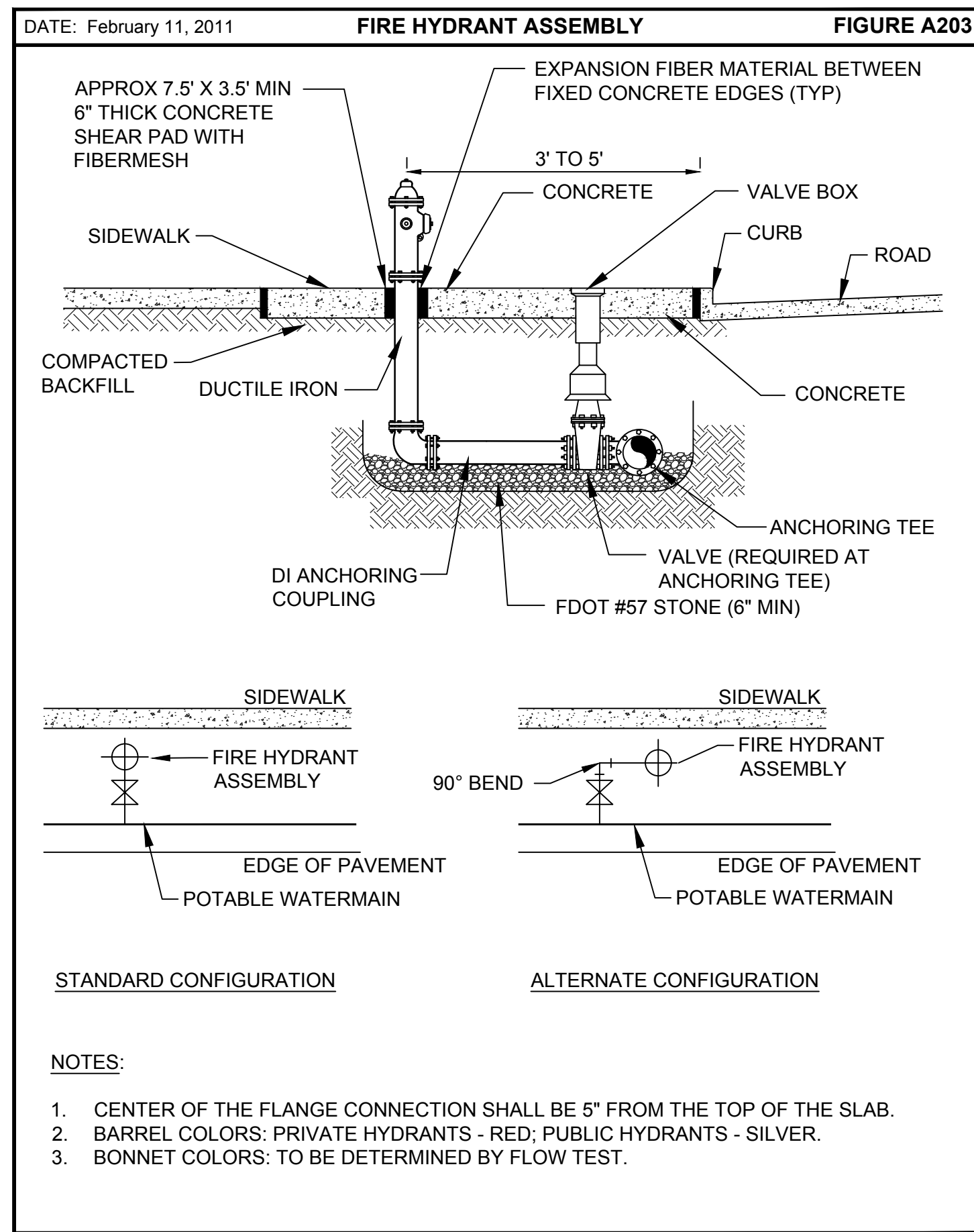
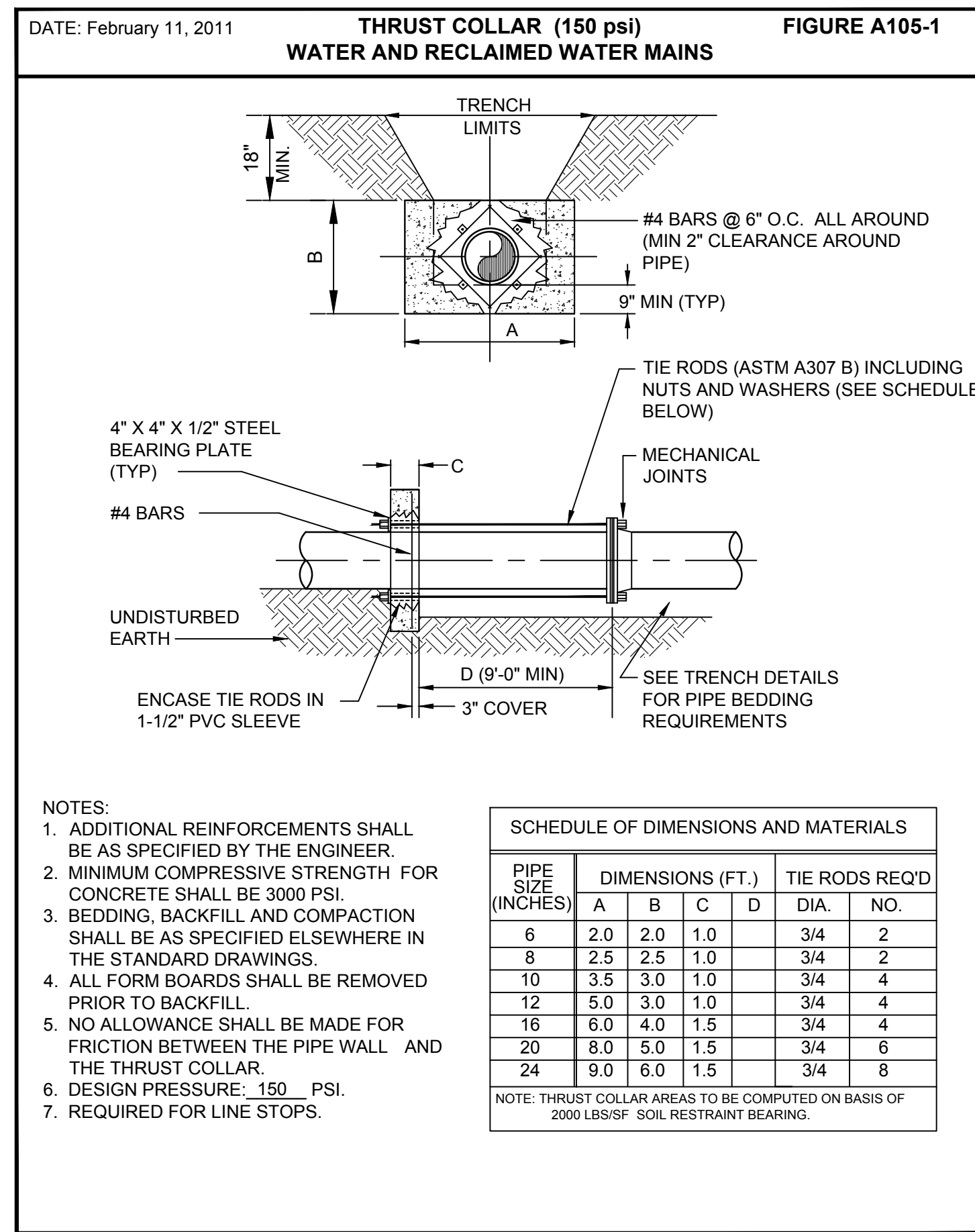
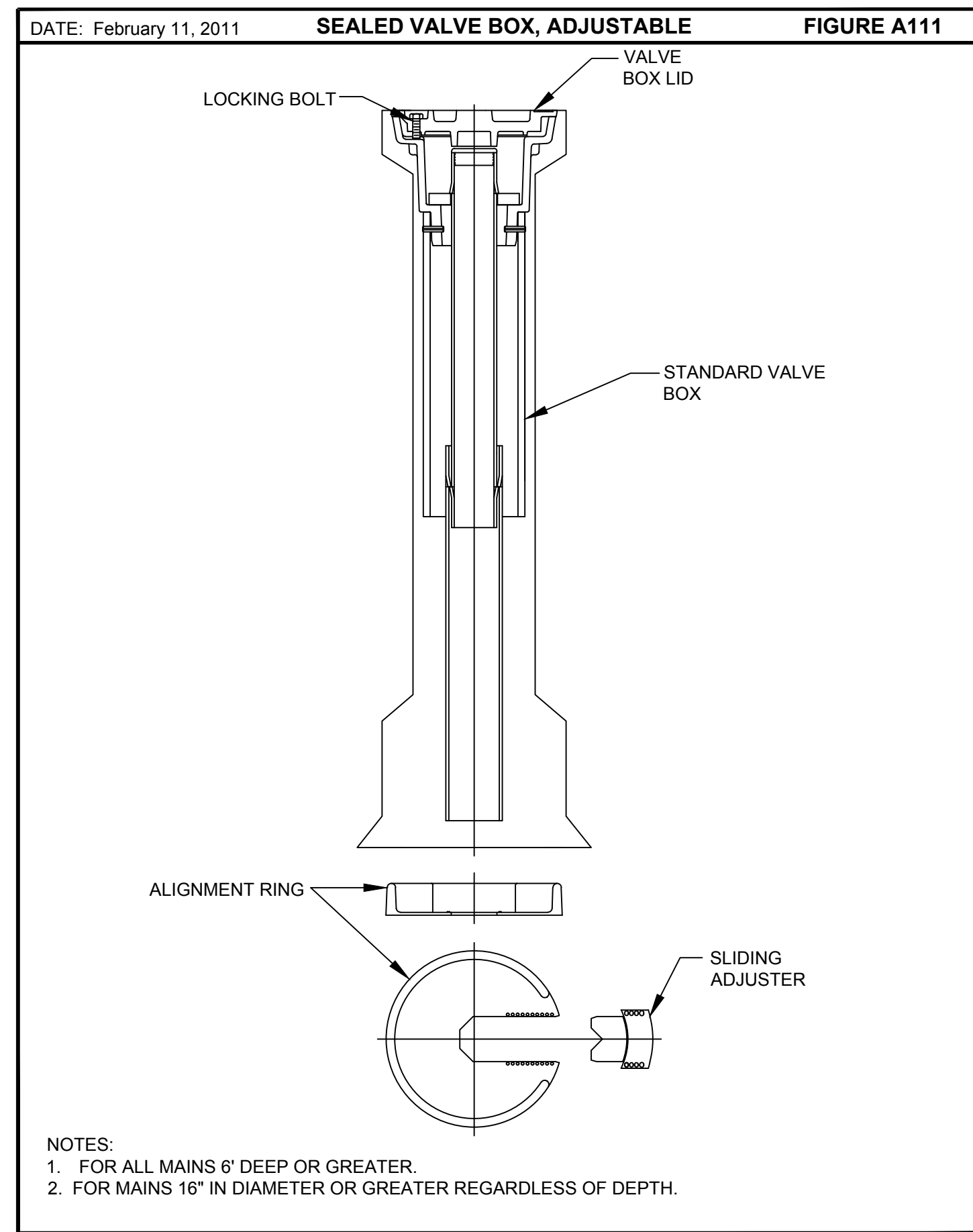
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SSA-ESA
 36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION
 FLOOR PLAN LAYOUT

OCU FILE NO.:
 DESIGNED BY: JAB
 DRAWN BY: GEG
 CHECKED BY: JF
 CADD FILE: 03811 Architectural

SCALE: AS SHOWN
 DRAWING NO.:
A1.0
 SHEET: 152 OF 292



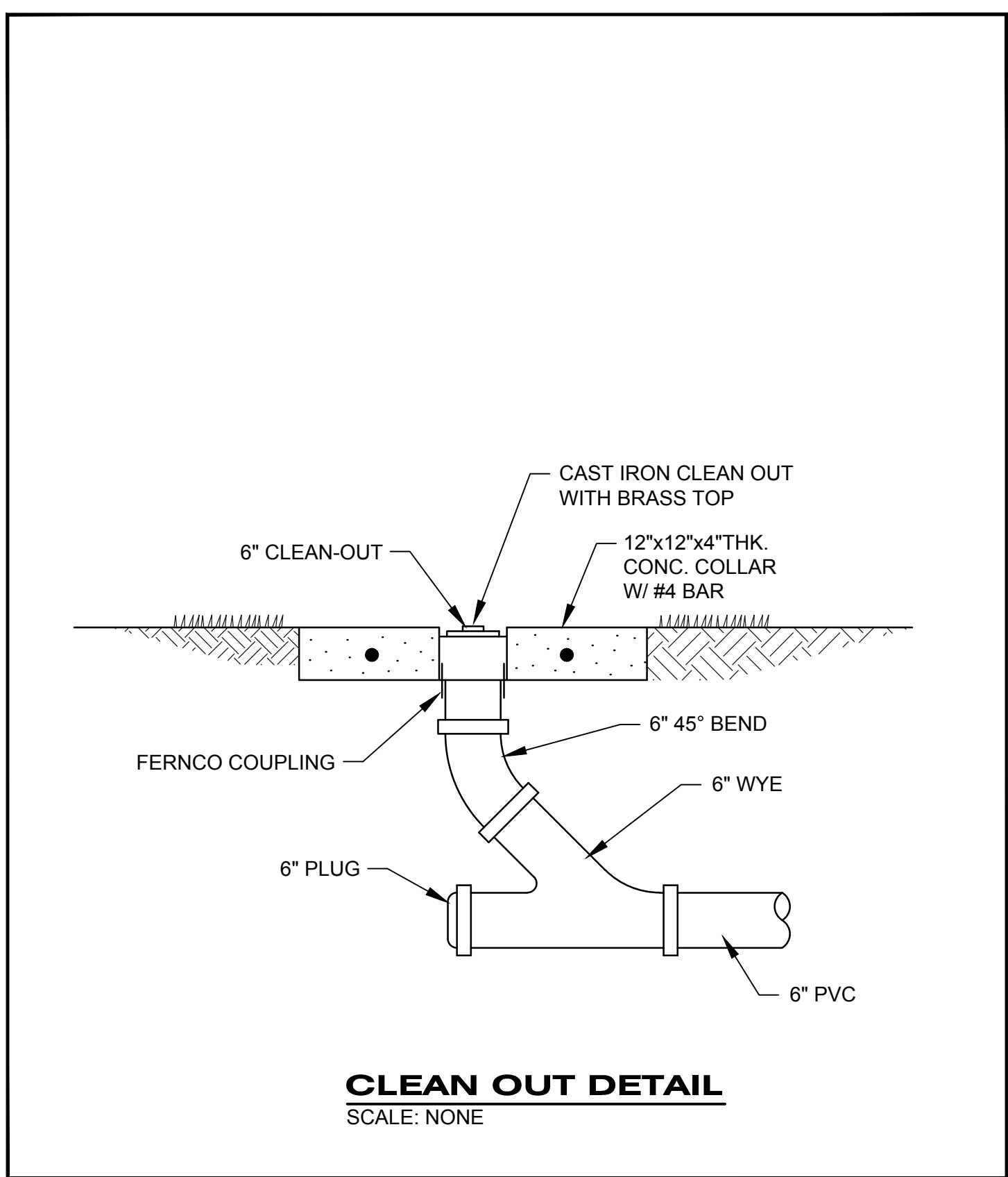
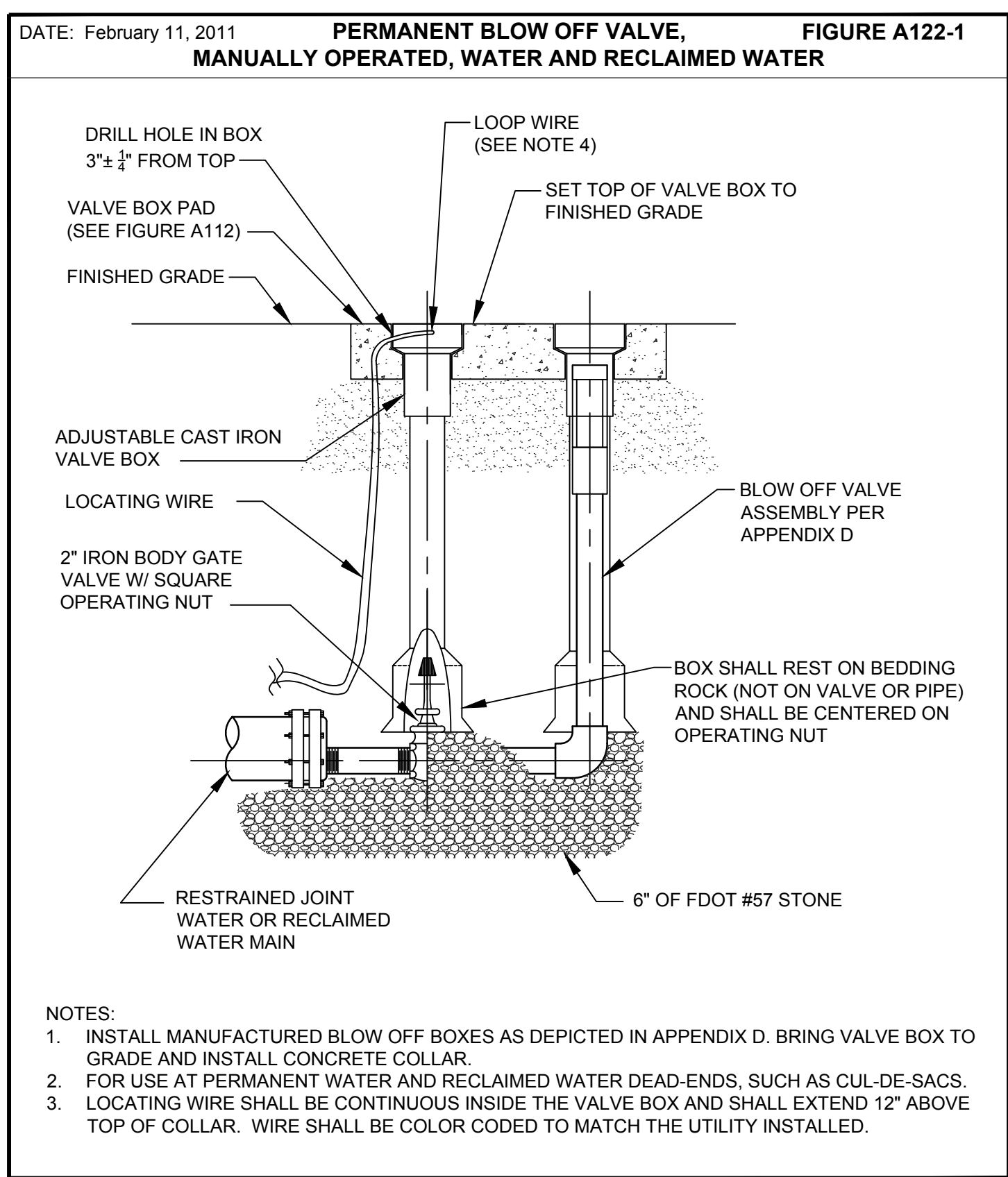
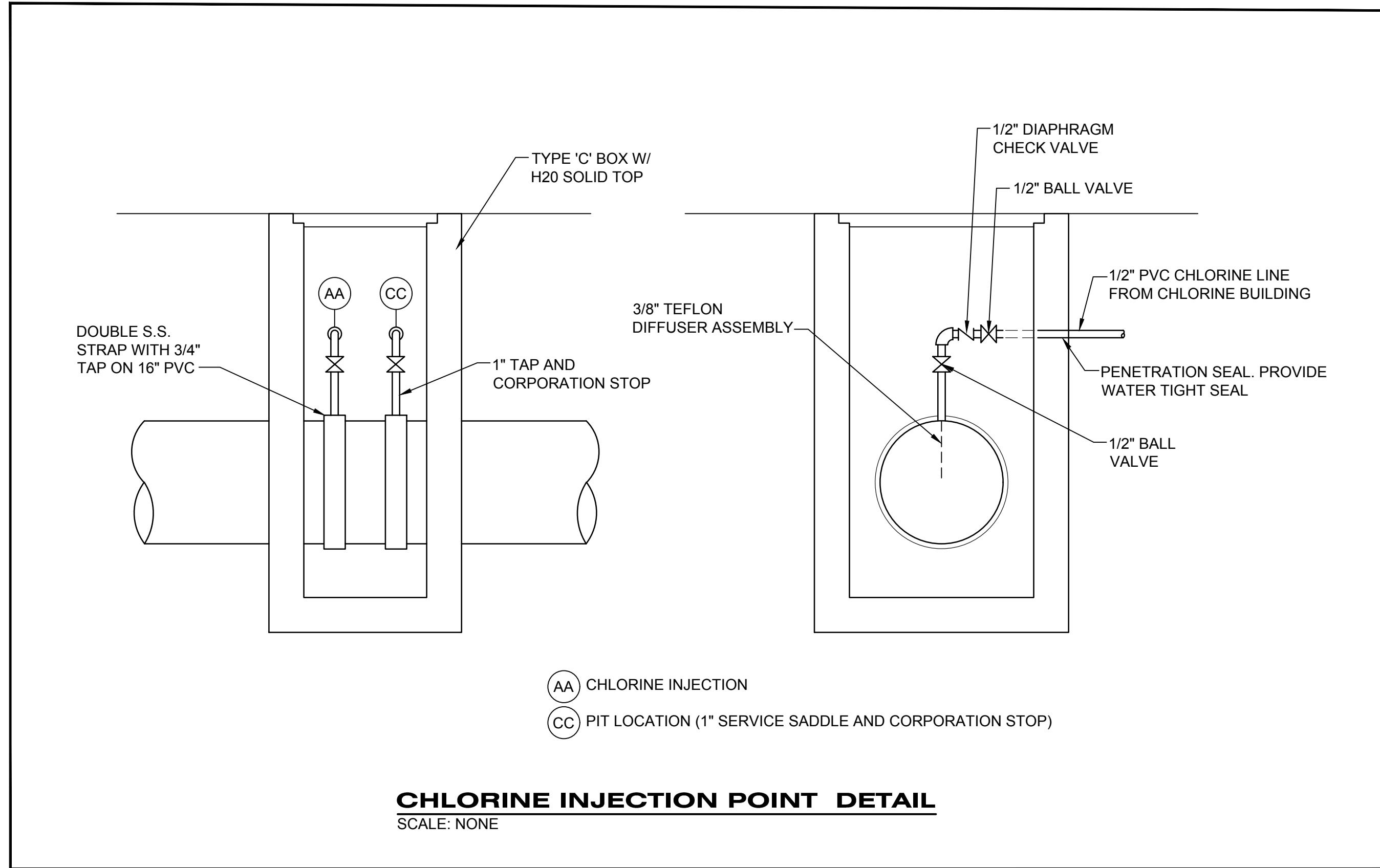
DATE: February 11, 2011 **RESTRAINED PIPE TABLE** **WATER AND RECLAIMED WATER MAINS** **FIGURE A104-1**

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)											
	PVC						DIP					
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"		
90° BEND	25	36	46	55	64	65	77	89	105	120		
45° BEND	10	15	19	23	26	27	32	37	44	50		
22-1/2° BEND	5	8	9	11	13	13	15	18	21	24		
11-1/4° BEND	3	4	5	6	8	7	8	9	10	12		
PLUG OR BRANCH OF TEE	53	74	97	117	135	138	166	194	231	265		
VALVE	27	38	49	59	68	69	83	97	116	133		
REDUCER	VARIES BY SIZE; TO BE DETERMINED BY THE DESIGN ENGINEER.											

NOTES:
 1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
 2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
 3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.
 4. ALL INLINE VALVES SHALL BE RESTRAINED.
 5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
 6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:

WORKING PRESSURE: 150 PSI
 SOIL DESIGNATION: SM (SAND SILT)
 LAYING CONDITIONS: 3
 DEPTH OF COVER: 3 FT
 SAFETY FACTOR: 1.5
 CONVERSION FACTOR FOR PVC PIPE: 1.25

THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC SOIL DESIGNATIONS, LAYING CONDITIONS, PIPE MATERIAL, ETC. FOR DIP ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUE BY A FACTOR OF 1.25.



REV	DATE	DESCRIPTION
1	5/1/2018	ADDENDUM #3

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SSA-ESA
 36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION CONSTRUCTION DETAILS

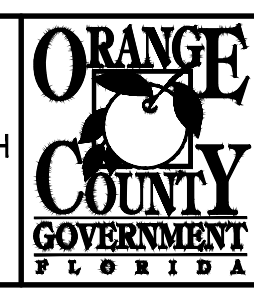
OCU FILE NO.:
 DESIGNED BY: DEM
 DRAWN BY: GNP
 CHECKED BY: DEM
 CADD FILE: Details.dwg

BID SET
 SCALE:
 DRAWING NO.: **D-102**
 SHEET: 185 OF 292

BID ITEM	REFERENCE ID	DESCRIPTION	ESTIMATED QUANTITIES	UNIT	C-154	C-155	C-156	C-157	C-158	C-159	C-160	C-161	C-162	C-163	C-164	C-165	C-166	p-101
1	10.110.110	Mobilization, Demobilization, Bonds, and Permits (not to exceed 5% of the total of all bid items except bid items under section 10.1 General)	1	LS														
2	10.130.110	Indemnification	1	LS														
3	10.120.110	Preconstruction Audio-Video Documentation	1	LS														
4	10.140.110	Project Record Documents	1	LS														
5	10.150.110	Maintenance of Traffic	1	LS														
Site Work																		
6	11.110.110	Erosion and Sediment Control	1	LS														
7	11.120.110	Unsuitable Materials	100	CY														
8	11.130.110	Fill Dirt	100	CY														
9	11.140.111	Clearing & Grubbing	1	AC														
Roadway																		
10	11.213.110	Roadway Base	51,315	SY	914	571	478				540	541	354	481	1183	642	82	
11	11.230.110	Milling and Resurfacing	56,355	SY		495	505	160			303	483	1519	1219	872	380	404	
12	11.241.110	Open Cut and Restore Asphalt Roadway	51,288	SY	914	571	478				540	514	354	481	1183	642	82	
13	11.250.110	Concrete Driveways and Sidewalk Removal and Replacement - 4" Thick Sidewalk	47	SY														
14	11.250.110	Concrete Driveways and Sidewalk Removal and Replacement - 6" Thick Sidewalk	6,740	SY		295	824	752	800	800	746	777	276	23	726	634	87	
15	11.251.112	Construct Public Sidewalk ADA Ramp	7	EA		2					1	1				1	1	
16	11.260.110	Storm Pipe Removal and Replacement (15" and 18" diameter)	47	EA		1	1	2	2	1	1	1	1	2	2			
17	11.260.110	Storm Pipe Removal and Replacement (24" and 30" diameter)	7	EA										1				
18	11.260.110	Storm Pipe Removal and Replacement (36" and 48" diameter)	4	EA	1				1									
19	11.280.110	Remove and Replace Curbing	20,025	LF	285	339	719	731	600	569	685	766	23	444	516	396		
20	11.290.110	Sod Replacement - Bahia	11,805	SY		576	1163	1132	1182	1196	1085	1085	275	68	1017	989	380	
21	11.291.110	Seed and Mulch	10	AC														
22	11.292.110	Tree Removal/Replacement within in ROW - Trmmyr, Tree, Crepe Myrtle	29	EA				9	12	3			5					
23	11.530.110	Remove 16" Reclaimed Water Main	6,211	LF		367	600	600	600	600	600	600	600	600	600	444		
Driving Range Improvements																		
24	11.150.111	Remove and Replace Concrete Slab and Driving Range Building	1	LS														
25	11.150.112	Removal and Replacement of Synthetic Driving Range Mat	1	LS														
26	11.150.113	Removal and Replacement or Relocation of Ancillary Equipment at Driving Range	1	LS														
27	11.150.114	Regrading and Resodding the Driving Range and Putting Green Areas	1	LS														
Water Main & Reclaimed Water Main																		
28	12.110.113	Furnish & Install DIP Water Main w/fitings & RJs (12" diameter)	90	LF														90
29	12.110.115	Furnish & Install DIP Water Main w/fitings & RJs (20" diameter)	46	LF														46
30	12.110.116	Furnish & Install DIP Water Main w/fitings & RJs (24" diameter)	330	LF														330
31	12.110.118	Furnish & Install DIP Water Main w/fitings & RJs (36" diameter)	33,564	LF	307	373	600	557	600	600	600	600	616	610	600	600	123	
32	12.120.115	Furnish & Install DIP Reclaimed Water Main w/fitings & RJs (20" diameter)	200	LF														
33	12.120.116	Furnish & Install DIP Reclaimed Water Main w/fitings & RJs (24" diameter)	33,213	LF	307	373	600	557	600	600	600	600	600	600	600	560		
34	12.210.111	Furnish & Install Gate Valve with Box (10" diameter)	5	EA														
35	12.210.114	Furnish & Install Gate Valve with Box (12" diameter)	6	EA														6
36	12.210.115	Furnish & Install Gate Valve with Box (16" diameter)	4	EA			1			1			1					
37	12.210.117	Furnish & Install Gate Valve with Box (24" diameter)	31	EA	1	1	1			1			1	1	1			2
38	12.210.119	Furnish & Install Gate Valve with Box (36" diameter)	24	EA	1	1		1			1		1			1		
39	12.210.120	Furnish & Install Gate Valve with Motor Actuator and Box (24" diameter)	4	EA														4
40	12.210.130	Furnish & Install In-Line Gate Valve with Motor Actuator (24" diameter)	1	EA														1
41	12.240.114	Furnish & Install Check Valve (12" diameter)	3	EA														3
42	12.310.117	Furnish & Install Tapping Sleeve and Valve Assembly (20" diameter)	1	EA														
43	12.310.118	Furnish & Install Tapping Sleeve and Valve Assembly (24" diameter)	2	EA														2
44	12.410.118	Cut-in Connection to Existing Water Main Ends at E/W on 36"	1	EA														
45	12.510.115	Line Stop Assembly (16" diameter)	1	EA													1	
46	12.520.110	Air Release Valve Assembly (2" diameter)	28	EA				1	3	1	2			1				
47	12.530.110	Off Set Air Release Valve Assembly (2" diameter)	22	EA														
48	12.540.110	Fire Hydrant Assembly	1	EA														1
49	12.610.118	Directional Drill HDPE 36" Water Main	2,046	LF														
50	12.620.116	Directional Drill HDPE 24" Reclaimed Water Main	2,043	LF														
51	12.810.110	Jack and Bore 54" Steel Casing DIP Carrier Pipe - Potable Water Main	175	LF				43										
52	12.820.110	Jack and Bore 42" Steel Casing DIP Carrier Pipe - Reclaimed Water Main	175	LF				43										
53	12.920.110	Relocation of Existing Reclaimed Water Mains (3/4" to 2")	2	EA				2										
54	12.920.110	Relocation of Existing Reclaimed Water Mains (4" to 12")	2	EA		1	1											
55	12.920.110	Relocation of Existing Reclaimed Water Mains (16" and greater)	3	EA			1			1		1						
56	12.930.110	Relocation of Existing Force Mains (4" to 12")	2	EA										1		1		
57	12.910.110	Reconnection of 4" Reclaimed Service at station 1134+40	1	EA		1												
58	12.910.110	Reconnection of 16" Reclaimed Service at station 1141+55	1	EA			1											
59	12.910.110	Reconnection of 4" Reclaimed Service at station 1138+11	1	EA			1											
60	12.910.110	Reconnection of 16" Reclaimed Service at station 1143+13	2	EA				2										
61	12.910.110	Reconnection of 16" Reclaimed Service at station 1160+06	1	EA					1									
62	12.910.110	Reconnection of 16" Reclaimed Service at station 1167+65	1	EA						1								
63	12.910.110	Reconnection of 4" Reclaimed Service at station 1179+98	1	EA										1				
64	12.910.110	Reconnection of 16" Reclaimed Service at station 1184+90	1	EA										1				
65	12.910.110	Reconnection of 6" Reclaimed Service at station 1191+54	1	EA													1	
66	14.410.110	J. Lawson Blvd Potable Water Re-Pump Facility	1	LS														

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SSA-ESA
36 INCH WATER MAIN & 24 INCH RECLAIMED WATER MAIN & J. LAWSON RE-PUMP STATION SUMMARY OF PAY ITEMS

DAVID E. MAHLER, P.E.
PROFESSIONAL ENGINEER
FLORIDA LICENSE # 50041

BID SET
OCU FILE NO.: 32965
DESIGNED BY: DEM
DRAWN BY: GNP
CHECKED BY: DEM
CADD FILE: Summary of Pay Items.dwg
SCALE: DRAWING NO.: G-502
SHEET: 9 OF 292