

October 29, 2015
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA

ADDENDUM NO. 5
IFB NO. Y15-771 PH
ORANGE COUNTY SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

BID OPENING: November 10, 2015 at 2:00 PM

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~~.

The bid opening date remains unchanged at November 10, 2015.

A. FRONT END DOCUMENT CHANGES

1. Bid Schedule page D-2 (revised) and D-3 (revised) is attached. **Failure to use the revised Bid Schedule will result in your bid being found non-responsive and ineligible for further consideration.**

B. SPECIFICATIONS

1. Section 01025, 1.03.A. Add the following:

Item 11- Unsuitable Material, Hauling & Disposal

a. This unit cost pay item includes all labor, materials, equipment, supplies, fuel, and disposal fees for the hauling and disposal of Unsuitable Material encountered during execution of the Work. Unsuitable material, by definition, is as described within Section 02200. It shall be disposed of in accordance with all jurisdictional agencies at an authorized disposal location. This bid item shall include any testing required to verify the material is unsuitable. The County reserves the right to require the Contractor to perform such testing on a routine and reasonable frequency based on changes in the visual appearance of soil. This bid item shall also include testing as required by jurisdictional agencies for the determination of an authorized disposal location. Note that the quantity of **10,000 cubic yards** is only to obtain a unit cost for the item and actual quantities may vary from what is identified herein. No adjustments in the unit costs will be made to reflect changes in the quantities based on the execution of the Work.

Addendum No. 5

Y15-771

October 29, 2015

Item 12 - Fill Import

- a. This unit cost pay item includes all labor, materials, equipment, supplies, fuel for the import of Fill to replace job excavated material that was determined to be Unsuitable Material but would have otherwise been used for the completion of the Work. This pay item is intended to apply to situations where there is a shortage of acceptable job excavated fill and where the conditions creating the need for this Fill are unforeseen and could not have been anticipated. Fill, by definition, is as described within Section 02200 for any type of fill such as Structural Fill and Backfill, Select Sand Fill Including Imported Sand for Pipe Zone and Pipe Bedding in Pipe Trenches, Pipe Backfill, and Common Fill. The characteristics of the Fill that is imported shall be in accordance with the requirements specified in Section 02200 for the type of Fill needed to complete the Work. This unit cost pay item shall include the import of the Fill. Placement and compaction within the area of the Work are not included in this pay item as that is included in the Base Lump Sum Bid. Note that the quantity of **10,000 cubic yards** is only to obtain a unit cost for the items and actual quantities may vary from what is identified herein. No adjustments in the unit costs will be made to reflect changes in the quantities based on the execution of the Work.
2. Section 01310, 2-2. Revise as follows: "Revision and Payment Submittal narratives will explain any changes to the approach or planning referred to in ~~Paragraph A~~ above on account of any change, delay, schedule recovery, substitution and/or Contractor-initiated revision occurring since the previous submittal."
 3. Section 01340: Replace Section 01340 in its entirety with the attached Section 01340 issued as part of this addendum.
 4. Section 02200, Part 1: Delete "~~Material Availability. Sufficient earthwork material to complete the work is not available at the site. Secure source of material and permits to complete the project requirements.~~"
 5. Section 02200, Part 2. A. 1. Is revised as follows: Structural backfill shall consist of clean, fine to medium sand, contain less than 1% by weight asbestos ~~or organic matter (peat, humus, leaves, and carbon compounds)~~, and conform to the following gradation requirements:"
 6. Section 02200, Part 2. B. 1. Is revised as follows:" The material used for the select sand fill shall consist of less than 1% by weight asbestos ~~or organic matter (peat, humus, leaves, and carbon compounds)~~, and conforming to the following gradations requirements:

Sieve Size	Percent Passing by weight
3/8 inch	100
No. 4	90 - 100
No. 200	<12
Organic Matter	<43%

7. Section 02200, Part 2. B. 1. Is revised as follows:” The material used for pipe backfill of the trench zone shall consist of less than 1% by weight asbestos ~~or organic matter (peat, humus, leaves, and carbon compounds)~~, and conforming to the following gradations requirements:

Sieve Size	Percent Passing by weight
3/8 inch	100
No. 4	90 - 100
No. 200	<12
Organic Matter	<43%

8. Section 02223, Part 2. C. 1. is revised as follows: Native earth backfill used above the pipe zone shall be excavated fine-grained materials free from roots, debris, rocks larger than 3 inches, asbestos, organic matter, clods, clay balls, broken pavement, and other deleterious materials. Less than 50 30% shall pass a No. 200 sieve. At least 40% shall pass a No. 4 sieve. The coarser materials shall be well distributed throughout the finer material.

9. Section 02223-3, Part 2. C. 2. is revised as follows: Backfill materials that are obtained from trench excavated materials to the extent such material is available shall be either screened directly into the trench or screened during the trenching operation. If screened during trenching, the material shall be maintained free of unscreened material during the handling and backfilling process. Hand selecting of rocks from earth as it is placed into the trench will not be permitted in lieu of the specified screening. ~~Under no circumstances will native earth backfill be allowed or used in the pipe base or pipe zone areas.~~ Native earth backfill may be used in the pipe base and pipe zone areas provided it meets the requirements of Section 02200 2. B. Contractor shall screen, test, and provide evidence of compliance with section 02200 2. B. at no cost to the Owner if native backfill is intended for use in the pipe base or pipe zone. Backfill shall be moisture conditioned to within approximately 2% of the optimum moisture content prior to being placed in trench.

10. Section 02223, Part 3.A is revised as follows:

A. Compaction Requirements

Unless otherwise shown in the drawings or otherwise described in the specifications for the particular type of pipe installed, relative compaction in pipe trenches shall be as follows:

1. Pipe Zone: minimum density equivalent to ~~98~~ 95% of the maximum modified Proctor dry density (ASTM D-1557).
2. Backfill in Trench Zone Not Beneath Paving: minimum density equivalent to ~~98~~ 95% of the maximum modified Proctor dry density (ASTM D-1557).
3. Backfill in Trench Zone to Street Zone in Paved Areas: minimum density equivalent to ~~98~~ 95% of the maximum modified Proctor dry density (ASTM D-1557).
4. Backfill in Street Zone in Paved Areas: minimum density equivalent to 98% of the maximum modified Proctor dry density (ASTM D-1557).
5. Refill for Overexcavation: minimum density equivalent to ~~98~~ 95% of the maximum modified Proctor dry density (ASTM D-1557).

11. Section 02451-12, Part 2.F.2.d is revised as follows;

~~d. Remote Control and Status Indication~~

~~(1) When authorization is requested by phone, authorization will be initiated via SCADA.~~

~~(2) In addition to local commands, it will be possible to close the gate remotely via SCADA.~~

12. Section 03300-11, Part 2.01 G. 7. a. shall be revised as follows: Class A concrete for water retaining structures; a Crystalline waterproofing admixture shall be added to the concrete mixes used in walls and slabs of water retaining structures at manufacturer's recommended dosage rates.

13. Section 11114, Paragraph 2-2: Add to end of test section "The pump shall be hydro-statically tested in accordance with the governing standard. A copy of the hydrostatic test report shall be submitted."

14. Section 11114, Paragraph 2-4.05: Add "Mechanical seal to be Chesterton 442 or equal."
15. Section 11114, paragraph 2-7, delete "The pumping unit shall be shop tested with the motor to be installed in the work."
16. Section 11214, Paragraph ~~4.B.6a~~ 1. E. 6. a., delete "~~Variable frequency motor controllers can be supplied by the Contractor or the pump manufacturer at the Contractor's option.~~" And replace with "Variable frequency motor controllers shall be supplied by the Electrical Contractor."
17. Section 11214-5, Part 2. A. 1. is revised as follows: Vertical turbine pumps, and motors, ~~and the variable frequency drives~~ supplied for this project shall be by the same vendor supplier who shall take complete responsibility for the integration of the equipment and the power delivery equipment as a complete system, without exception.
18. Section 11214-5, Part 2.C. is revised as follows:
- A. Motors
1. Motors shall be provided in accordance with Section 16150.
 2. ~~Shaft Vibration Monitoring System.~~
 - a. ~~For each motor.~~
 - b. ~~Motor: X-Y configuration vibration detectors, with cable for five meter proximeters.~~
 - c. ~~Motor thrust bearing: (axial detector, with cable for five meter proximeters.~~
 - d. ~~Motor velocity transducer: Supply two units, one for each bearing.~~
 - e. ~~Provide skid mounted vibration detectors factory wired to a NEMA 4X junction box at pump and motor.~~
 - f. ~~Provide all relays and switches, for vibration protection, mounted in the variable frequency motor controller.~~
 - g. ~~Vibration monitors for pump and motor: Measure the displacement of the rotating shafts with respect to the bearing housing.~~

~~h. Monitoring systems: Dual channel vibration and thrust monitors, to receive and monitor signals generated by the various probes on the pump and motor.~~

~~(1) Provide monitors mounted with the variable frequency motor controller and provide all appurtenances for a vibration monitoring system.~~

2. Vibration Switches

i. Provide two vibration switches for each vertical turbine pump motor bearing. Vibration switched shall be mounted in the X-Y position at each motor bearing.

j. Vibration switch shall be 120V and have a NEMA 4X enclosure with epoxy coated base. Hazardous location classification shall be per the electrical drawings.

k. Vibration switches shall be equipped with a start delay and monitor delay to avoid startup and nuisance alarms. Startup delay shall be 90 seconds. Monitor delay shall be 5 seconds. Vibration switch shall be furnished with remote reset capability.

l. Vibration switches shall be Robertshaw Model 375A/376A Vibraswitch Malfunction Detectors, or equal.

3. Provide three (3) normally closed temperature switches, one for each winding, in each vertical turbine pump motor. Temperature switches shall be per Section 16150.

19. Section 11214-7, Part 2. E. 1. a. is revised as follows: Provide all baseplate to motor supports as necessary for all variable speed applications per the finite element analysis as required in Part 1 B. of this specification. ~~a minimum of four (4) supports at maximum of 90 degree spacing from baseplate to motor flange for all variable speed applications.~~

20. Section 11214-10, Part 2. N. 1. is revised as follows:

Pump shafts and couplings	Type 316 <u>or 416</u> Stainless Steel
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21. Section 11243 – Paragraph 1-6. Delete “~~Manufacturer shall provide a two-year performance bond, a supply bond and a five-year extended warranty including parts and labor in lieu of lack of experience (installations) of size comparable to~~

~~the South Water Reclamation Facility.”~~ And replace with “Manufacturer shall provide a two-year performance bond for 100% of the equipment cost, a supply bond and a five-year extended warranty including parts and labor in lieu of lack of experience (installations) of size comparable to the South Water Reclamation Facility.”

22. Section 11311, Paragraph 1.02.C, delete ~~“variable frequency drive”~~.
23. Section 11311, Paragraph 2.02.B.2.b.2. Delete ~~“The seal box shall have a 416SS Chesterton, Spiral Trac, Version D, throat bushing installed in the bottom of the seal box for the exclusion of solids and provide for operation if flush water fails.”~~ And replace with “The seal box shall have a 416SS Chesterton, Spiral Trac, Version D (Type A), throat bushing installed in the bottom of the seal box for the exclusion of solids and provide for operation if flush water fails.”
24. Section 11320-3, Part 2.C.3 is revised as follows: Bearings of the drive, ~~including the motor~~, shall have a minimum AFBMA L-10 bearing life of 100,000 hours, except for the turntable bearing which shall have a minimum L-10 bearing life of 20 years. Motor bearings shall be per Section 16150.
25. Section 11320-4, Part 2.H.2 is revised as follows: Provide a control panel in accordance with Section 13500. ~~NEMA 12 enclosure with 480V, 3-phase, 60 Hertz, main circuit breaker, motor starters with overload protection, reset buttons, fused control circuit transformer, relays, switches, contacts, indicating and alarm lights, audible alarm, alarm silence button and all necessary appurtenances, factory wired to provide a complete operating set of controls.~~
26. Section 11320-5, Part 2.H.7 is revised as follows: Control shall be PLC based. The PLC based panel must conform to all applicable Division 13 requirements, ~~and include a Siemens S7-300 series PLC, Ethernet connectivity, operator touchscreen, CAT-5/6 switch, and an internal UPS. Internal PLC wiring shall be allowed to be 18 AWG but shall be rated 600 volts. Internal dividers or barriers shall be provided to allow instrumentation technicians to access the PLC components without being exposed to 480 volts. Equipment supplier shall program the PLC’s for the equipment being supplied.~~
27. Section 11324-1, Part 1.02 A. is deleted.
28. Section 11324-4, Part 1.03 A. 33. is revised as follows: Provide a scaled drawing showing the equipment, motors, ~~hoists and bridge cranes including equipment weights~~, lifting attachments, slings and clearances for equipment removal and maintenance.

29. Section 11324-4, Part 1.04 A. 1. b. is revised as follows: Four (4) replacement ~~Slide Plates~~ Perforated Screen Panels.

30. Section 11324-11, Part 2.03 I.6.B is revised as follows: Enclosure: ~~Class I, Division 2, Group C~~ The hazardous area requirements as identified on the Electrical Drawings.

31. Section 11324-12, Part 2.05 E is revised as follows: Control shall be PLC based. The PLC based panel must conform to all applicable Division 13 requirements; ~~and include a Siemens S7-300 series PLC, Ethernet connectivity, operator touchscreen, CAT-5/6 switch, and an internal UPS. Internal PLC wiring shall be allowed to be 18 AWG but shall be rated 600 volts. Internal dividers or barriers shall be provided to allow instrumentation technicians to access the PLC components without being exposed to 480 volts.~~ Equipment supplier shall program the PLC's for the equipment being supplied.

32. Section 11324-16, Part 2.06 is revised as follows;

<i>Max Headloss at peak flow with 30% blinding, in</i>	16-21.2
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33. Section 11324-17, Part 2.06 the MECHANICALLY CLEANED SCREEN SCHEDULE is revised as follows:

Electrical Classification	Class I, Division 2, Group C Per Electrical Drawings
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34. Section 11324-21 Part 3.06 A. is revised as follows: Provide a written certification from the equipment manufacturer that each grit collecting screen and washer/compactor system has been properly installed according to the Contract Documents and the manufacturer's recommendations, and that the equipment is operating normally. Make all necessary corrections and adjustments including but not limited to parts, labor, or freight at no additional cost to the County.

35. Section 11332-11, Part 2.03 G.2 is revised as follows: Enclosure: ~~Class I, Division 2, Group C~~ The hazardous area requirements as identified on the Electrical Drawings.

36. Section 11332-8, Part 2.07 the SCREENINGS WASHPRESS SCHEDULE is revised as follows:

Electrical Classification	Class I, Division 2, Group C Per Electrical Drawings
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37. Section 11570, Paragraph 2-5.04, modify the fourth paragraph as follows:

“The design provides sufficient cooling in the stainless steel portion of the pipe in each drop leg, so the temperature of the ~~inside~~ wall at any point in the PVC or CPVC pipe to be installed, is below the rated continuous operating temperature of the pipe, and” to “The design provides sufficient cooling in the stainless steel portion of the pipe in each drop leg, so the temperature of the mean wall at any point in the PVC or CPVC pipe to be installed, is below the rated continuous operating temperature of the pipe, and”

38. Section 13530A, add an I/O point to the I/O list to PLC-15B for Equalization High High Wetwell Level.

39. Section 15050-3, Part 2. C. 5 is revised as follows; Bolts used in buried flanges and flange insulation kits shall conform to ASTM A193 (Grade B7). Nuts shall conform to ASTM A194 (Grade 2H). Buried flanges shall be wrapped in cold applied wax tape, Trenton Wax-Tape #1, Denso Densyl Tape, or equal.

40. 13500 1-1 Delete the following:

~~“The System Supplier shall remove decommissioned I/O wiring between PLC6A and no longer used grit equipment and remove artifact logic from the existing PLC6A.~~

~~“The System Supplier shall utilize existing I/O in PLC6A for control of 7 new motorized gates. See the I/O list.~~

~~“The System Supplier shall supply a new PLC CPU for PLC6A.”~~

And replace with:

“The System Supplier shall perform the following:

- Remove decommissioned I/O wiring between PLC6A cabinet and the no longer used grit equipment.
- Replace the existing PLC CPU, I/O and communications modules in the PLC6A panel with new Siemens PLC CPU, I/O and communications modules as specified in section 13530.
- Replace the existing network switch as necessary to provide sufficient copper and fiber ports as specified in section 13590.
- Convert the existing PLC6A program to the “Portal” format and remove any artifact logic for decommissioned equipment from the existing PLC6A program.
- Reconnect in use equipment to the new I/O modules as necessary.
- Utilize new I/O in PLC6A programmed for control of 7 new motorized gates. See section 13530, Instrument Device Schedule and section 13550, Control Descriptions.”

41. Section 13550, add the following language to the end:

A. **Loop Description Title**

Power Monitoring

Each Power Quality Monitor that is connected to the PCS shall be configured in the PCS database and the following values shall be displayed on a power quality monitoring display:

1. Power Factor
2. Volts Phase A
3. Volts Phase B
4. Volts Phase C
5. Amps Phase A
6. Amps Phase B
7. Amps Phase C
8. Instantaneous KVA
9. Instantaneous KW
10. KWH/Day

B. **Loop Description Title**

VFD monitoring

In addition to the hard wired I/O listed in section 13530A, each VFD that is connected to the PCS shall be configured in the PCS database and the following values shall be displayed on a VFD monitoring pop-up display:

1. Input Current per phase
2. Output Current per phase
3. Speed
4. Running
5. Efficiency
6. Phase Loss
7. Configured Alarm value 1
8. Configured Alarm value 2
9. 4 other parameters chosen by the Owner.

C. **Loop Description Title**

Reduced Voltage Solid-state Starter (RVSS) monitoring

In addition to the hard wired I/O listed in section 13530A, each VFD that is connected to the PCS shall be configured in the PCS database and the following values shall be displayed on a VFD monitoring pop-up display:

1. Input Current per phase
2. Output Current per phase
3. Running
4. Bearing RTD Temperature (if available)
5. Stator RTD Temperature (if available)
6. Phase Loss
7. Configured Alarm value 1
8. Configured Alarm value 2

9. 4 other parameters chosen by the Owner.

42. Section 13590 2-3.02: Delete “~~Switches shall be Siemens Scalance X304-2FE, without exception.~~” And replace with “Switches shall be Siemens SCALANCE X300 series modular managed din rail mounted switch with the numbers of fiber and copper ports as required by the application, without exception.”
43. Section 15065, 2-2.06. Delete “~~Material Classification CS-6. Not Used.~~” And replace with “Material Classification CS-6.”

<p>CS-6 – Extra Strong Steel with Buttwelded Fittings.</p> <p>Cake piping, 2-1/2 inches and larger, 251-500 psig.</p>	<p>Pipe ASTM A53, Type E, extra strong, Grade B; or ASTM A106, of equivalent thickness. Bevel ends.</p> <p>Fittings Buttwelded. Fittings shall conform to ANSI/ASME B16.9; extra strong, special long radius (4 x diameter).</p>
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44. Section 15100-14, Part 2.P.3.h is revised as follows;

Type 200—Flanged and Mechanical Joint, Butterfly Valves 4 Through 72 Inches, Class 150B:

Butterfly valves shall be short body, flanged type for exposed valves and valves in vaults or structures, and mechanical joint for buried valves. Butterfly valves larger than 48” shall be flanged. Valve shall conform to AWWA C504, Class 150B. Minimum working differential pressure across the valve disc shall be 150 psi. Flanged ends shall be Class 125, ASME B16.1. Valve shafts shall be stub shaft or one-piece units extending completely through the valve disc. Materials of construction shall be as follows:

Component	Material	Specification
Body	Cast iron or ductile iron	AWWA C504
Exposed body capscrews and bolts and nuts	Stainless steel	ASTM A276, Type 304 or 316
Discs	Cast iron, ductile iron, or Ni-Resist	AWWA C504
Shafts, disc fasteners, seat retention segments, and seat fastening devices	Stainless steel	ASTM A276, Type 304 or 316
Seat material	Viton-rated to 250°F_Buna-N	--

Where the rubber seat is applied to the disc, it shall be bonded to a stainless steel seat retaining ring which is clamped to the disc by Type 304 or 316 stainless steel screw fasteners or secured to a stainless steel seat by a combination of cap screws, a serrated disc retaining ring, and molded shoulders in the seat mating with machined registers in the disc. The rubber valve seat shall be secured to or retained in the valve body. Valves shall be Clow Series 4500 or 1450, DeZurik Series BAW, M&H Series 4500 or 1450, or equal.

45. Section 15100-21, Part 2.P.6.g is revised as follows;

Type 520--Eccentric Plug Valves 14 Inches and larger:

Eccentric plug valves, 14 inches and larger, shall be nonlubricated type. Minimum pressure rating shall be 150 psi. Bodies shall be cast iron per ASTM A126, Class B. Ends shall be flanged, Class 125 per ASME B16.1 or mechanical joint per ANSI/AWWA C111/A21.11. Plug valves larger than 48" shall be flanged. Plugs shall be cast iron (ASTM A126, Class B), or ductile iron (ASTM A536, Grade 65-45-12) with neoprene facing. Design plugs to seat over a pressure range of 0 to 5 psi. Valve body seats shall be Type 304 or 316 stainless steel or have a raised welded-in overlay at least 1/8-inch thick of not less than 90% nickel. Plug shall be of the one-piece design. Body capscrews and bolts and nuts shall be Type 316 stainless steel. Packing shall be

butadiene-filled Teflon. Alternatively, U-cup seals may be provided. Provide 100% port area. Valves shall be DeZurik Series –PEF, Val-Matic Series 5600R or Series 5700R, Milliken Series 601 or equal.

46. Section 15109, Part 2. B. & 2. C. are revised as follows:

B. Wet-Dry Barrel Fire Hydrant Design

1. Fire hydrants shall comply with AWWA ~~C503~~C502. Provide hydrant head, barrel and bury section. Barrel connecting flange shall be drilled to the dimensions of ASME B16.1, Class 125, 6-inch size, flat face.
2. Head and barrel shall be ductile iron per AWWA ~~C503~~C502.
3. Provide two 2-1/2-inch and one 4-1/2-inch nozzles. Threads on nozzles shall conform to Orange County Fire Department Threads. Provide cap with chain on each nozzle.
4. Bury section shall be ductile iron per Section 15240.
5. Inlet Connection of Bury: mechanical joint or ductile iron push-on with rubber gaskets.
6. Provide a double-grooved break-off riser and check valve. The valve flapper shall be bronze and be housed in a recess out of the waterway.

C. Bolts and Nuts for Flanges (Wet Barrel Hydrants)

Bolts and nuts connecting the top section to the bury section shall be steel, ASTM A307, Grade B, per AWWA ~~C503~~C502. Provide a washer for each nut. Washers shall be of the same material as the nuts.

47. Section 15122-5, Part 2. K is revised as follows;

3. Bolts, nuts, and tie rods for above ground dismantling joints shall be stainless steel ASTM A304 ~~or~~ A316. Bolts, and tie rods for buried dismantling joints shall be ASTM A193 (Grade B7). Nuts shall conform to ASTM A194 (Grade 2H). Buried dismantling joints shall be wrapped in cold applied wax tape, Trenton Wax-Tape #1, Denso Densyl Tape, or equal.
4. All dismantling joints shall be restrained, either integrally, or with an external joint harness assembly per Part 2.C.

48. Section 15240-2, Part 2. C. is revised as follows; Fittings ~~48-60~~ inches and smaller shall conform to AWWA C110 with a minimum pressure rating of 250 psi. Material shall be ductile iron. Flanges shall be flat faced.
49. Section 15240-4, Part 2. M. 2. is revised as follows; Joints in buried piping shall be of the restrained type per AWWA C111 except where flanged joints are required to connect to valves, meters, dismantling joints and other equipment.
50. Section 15240-4, Part 2. M. 5. is revised as follows; Restrained joints for piping 4 to 36 inches shall be American Cast Iron Pipe “Fast Grip Gaskets”, U.S. Pipe “Field Loc Gaskets” or equal. Joint restraint shall be certified to a rated pressure of 250 psi. Restrained joints for piping 36 inches to 64 inches shall be American Cast Iron Pipe “Flex-Ring”, or “Lok-Ring”, U.S. Pipe “TR Flex” or “HP Lok”, or equal. Connections to buried flanges shall be accomplished using Flange x Push-on Restrained spool pieces.
51. Section 15240-5, Part 2. M. 8 is added as follows; Connections to existing ductile iron piping larger than 48” shall be performed using a dismantling joint per Section 15122. Dismantling joint shall be restrained to new piping at a flanged connection. Dismantling joint shall be restrained to existing piping using a ductile iron ring welded to the existing piping by the ductile iron pipe manufacturer for the installation of a joint harness assembly per Section 15122 or alternately using a thrust collar with joint harness similar to the Orange County Utilities Standards and Construction Specifications, Figures A105-1 & A105-2. In the case of the application of a thrust collar, the thrust collars are to be designed by the Contractor’s Engineer that is preparing the detailed shop drawings for the hot taps and line stops per Specification Section 02282.
52. Section 16150, Paragraph 2-2, insert the following seventh sub-paragraph:
“Vertical motors for North Plant Transfer Pumping Station and Equalization Pumping Station Pumps shall be rated for an ambient temperature of 65 degrees celsius.”
53. Section 16150, Paragraph 2-2, insert the following eighth sub-paragraph:
“Vertical windings motors for North Plant Transfer Pumping Station and Equalization Pumping Station Pumps shall be moisture sealed and shall be designed, manufactured and tested in accordance with the latest revised edition of NEMA MG 1.”
54. Section 16160, Paragraph 2-7, delete ~~“The 480V, 3-phase distribution panelboards shall be equipped with a digital metering device capable of communication on the network of choice. Meters shall be Square D POWERLOGIC 4000 Series Circuit Monitor, or equivalent.~~

~~The meter shall have capability for measuring all three phases of Volts-Amps, KW, KWH, PF, for all three phases. The meter shall have wave form capture for 16 to 512 cycles of data at 512 samples/cycle and providing harmonic content up to the 255th harmonic for voltage and current on all three phases. The circuit monitor shall be accurate to .04% of readings +/- .025% of full scale for voltage and current metering and .08% of rating plus .025% for power.” And replace with “Refer to Section 16482 for power monitor requirements.”~~

55. Section 16349, Paragraph 2-8.N, insert the following at the end of the second paragraph: “Each reduced voltage motor starter shall communicate monitoring parameters to the plant control system via Profinet Ethernet communications.”
56. Section 16482, Paragraph 2-3, insert the following sub-paragraph: “2-3.11 Power Monitors: The 480V, 3-phase motor control centers shall be equipped with a digital-metering device capable of communicating with the plant control system by an Ethernet interface using the Profinet protocol. Meters shall be Square D PowerLogic PM8000 series Circuit Monitor, or approved equal.

The meter shall have capability for measuring all three phases of Volts-Amps, KW, KWH, PF, for all three phases. The meter shall have wave form capture for 16 to 512 cycles of data at 512 samples/cycle and providing harmonic content up to the 255th harmonic for voltage and current on all three phases. The circuit monitor shall be accurate to .04% of readings +/- .025% of full scale for voltage and current metering and .08% of rating plus .025% for power.”

57. Section 16500, Paragraph 2-4, delete the following:

- ~~a. Fluorescent lamps shall be medium bi-pin and recessed double contact, rapid start, standard cool white all as indicated on the "Fixture Schedule."~~
- ~~b. Fluorescent ballasts shall be electronic non dimming type, high power factor, CBM certified by E.T.L. and listed by Underwriters Laboratories, Inc., for operation as indicated on the "Fixture Schedule."~~
- ~~c. Metal halide lamps shall be deluxe white of the size and type as called for in the Lighting Fixture schedule on the Drawings.~~
- ~~d. Metal halide ballasts shall be non dimming electronic type of the correct size and voltage for the fixture it is to serve as called for in the Lighting Fixture Schedule on the Drawings, with quartz lamp re-strike option. All ballasts shall be as manufactured by Universal Lighting Technology Model# series: "EC or EP" or approved equal.~~

~~e. Incandescent lamps shall be inside frosted, extended service, 2500 hour life with medium base.~~

~~f. All lamps shall be of one manufacturer and shall be as manufactured by Sylvania Electric Products, Inc., General Electric Company, or Westinghouse Electric Corporation or approved equal.” And replace with:~~

“a. All lighting fixture lamps shall be LED type.

b. All lamps shall be of one manufacturer and shall be as manufactured by Sylvania Electric Products, Inc., General Electric Company, or Westinghouse Electric Corporation or approved equal.”

C. DRAWINGS

1. Sheet G-4, Note 24 is revised as follows, “All Buried piping shall be constructed as shown on the plans. A minimum cover of 36 inches shall be maintained on all buried piping, where it is not otherwise specified on plans or indicated by the engineer. ~~All direction changes in the pipe both horizontal and vertical shall be by joint deflection unless otherwise noted or indicated by the engineer. Joint deflection shall not exceed 50% of manufacturers recommended deflection for ductile iron and steel pipe. No deflection shall be allowed on PVC pipe.~~”
2. Sheet C-25: Replace Sheet C-25 in its entirety with the attached Sheet C-25 issued as part of this addendum.
3. Sheet C-28: Replace Sheet C-28 in its entirety with the attached Sheet C-28 issued as part of this addendum.
4. Sheet C-31 is revised to include two callouts at the outlet of the 36”-EQ-DI pipeline, Detail B/CD-2 and Detail B/SD-6. Detail B/CD-2 is for a Slab Penetration Detail and Detail B/SD-6 is for Aluminum Grating over the 36” outlet.
5. Sheet C-34, the 42” butterfly valve to the west of the EQ pumping station is revised to a 48” butterfly valve, 48 VBF.
6. Sheet C-35: Replace Sheet C-35 in its entirety with the attached Sheet C-35 issued as part of this addendum.
7. Sheet C-36, Utility note 19 is revised from 48x54 wet tap to a 48x48 wet tap.
8. Sheet C-37, item 181 is revised from “54 Tee” to read “54x42 Tee”.
9. Sheet C-37: item 199 is revised to read “36x24 Tee”.

Addendum No. 5

Y15-771

October 29, 2015

10. Sheet CD-7, Detail C, Note 1 is revised as follows: This detail is applicable for pipes 54" or less in diameter.
11. S-26, Section 2 and S-27, Section 9: Slab over CLSM fill is revised to be 4-inches thick. Reinforcement shall be #4@12 EW, with 2-inches cover from the top surface.
12. Sheet M-15 Section 2. Replace the Lok-Ring Bell x PE wall pipe at the underside of the splitter box with a Lok-Ring End x PE wall pipe with a water collar and eliminate the pipe between the wall pipe and 90 bend. The Lok-Ring End of the revised wall pipe will connect to the 90 degree bend. Lower the 90 degree bend as necessary.
13. Sheet M-27, Section A is revised to show the top of the pipe extending into the box with grout fill to provide a flush bottom.
14. Sheets M-31 and M-32: Sump location shall be revised as shown on Sheet S-24.
15. Sheet M-49: Change the references to the radius of the bends in the cake pipe to 4xDia.
16. Sheet E-8: Replace Sheet E-8 in its entirety with the attached Sheet E-8 issued as part of this addendum.
17. Sheet E-14: Replace Sheet E-14 in its entirety with the attached Sheet E-14 issued as part of this addendum.
18. Sheet E-46: Replace Sheet E-46 in its entirety with the attached Sheet E-46 issued as part of this addendum.
19. Sheet E-54, Equalization Pumping Station Electrical Plan: delete symbols "VE" and replace with symbol "VS" for vibration switch.
20. Sheet E-79, North Plant Transfer Pumping Station Electrical Plan: delete symbols "VE" and replace with symbol "VS" for vibration switch.
21. Sheet E-85: Revise the detail reference in Note 7 to detail B/SD-2.
22. Sheet E-94: Replace Sheet E-94 in its entirety with the attached Sheet E-94 issued as part of this addendum.
23. Sheet I-5, I-6 and I-7, modify PLC6A shading from existing to new.
24. Sheet I-10 add a dashed line from the ZSC113 to the interlock diamond in LCP-PSM-113.

25. Sheets I-14 and I-15, change the VE bubble to VS bubble. Change Note 5 in the notes section on both sheets to “Not all vibration switches are shown. Provide 4 vibration switches per pump as specified in section 11214.”
26. Sheet I-14, in addition to the low level indication to the PLC, add an electrical line from the interlock diamond of LCP-TP1 to the interlock diamond of each VFD with the wire transitioning through PLC-16A to each VFD to show the hard wired interlock on low level.
27. Sheet I-15, in addition to the low level indication to the PLC, add a PLC input labeled Equalization High High Wetwell Level. Also add an electrical line from the interlock diamond of LCP-EQ1 to the interlock diamond of each VFD with the wire transitioning through PLC-15B to each VFD to show the hard wired interlock on low level.
28. Sheet 1-23 add a datalink line from the centrifuge 1 and 2 sludge feed pumps to the PLC-5A switch on I-22.
29. Sheet I-27, modify PLC6A shading from existing to new.
30. Sheet I-27, extend the dashed line for the West Electric Building to enclose the DP-USQA/B PQM devices. Delete the note 6 call-out at this location.
31. Sheet I-27 in the center of the page next to FOTC-5A, the existing FOTC is labeled “Solids Building North Wall”. Change the label to say “West Wall Electric Room Solids Building.”
32. Sheet I-27, Delete the new datalink from Generator 1 to the switchgear. The callouts for the new Bi-Fuel No. 1 PLC and Generator No.1 PLC should be changed to No.4 each and moved to the bottom after number 4. Renumber the units 2, 3 and 4 to 1, 2 and 3 such that the generators, etc., are sequential 1,2,3,4 with number 4 shown as new. Add a new datalink line from generator 4 to the Switchgear.
33. Sheet I-28, change the FOTC 16 shown in the North Transfer Pump Power Equipment Center 2 to FOTC 16B.

D. BIDDER QUESTIONS

1. **Please clarify how ANSI Standard S1.11 applies to the Perforated Plate Media Screening Equipment and the Washer/Compactor Equipment? We request this requirement be removed.**

Refer to Part B of this addendum for revisions related to this request.

- 2. Per Section 11324, 1.03 A33. Please confirm that the hoists and bridge cranes are not to be supplied by the Screen Manufacturer.**

*Hoists and bridge cranes for the screens are not included in the project.
Refer to Part B of this addendum for revisions related to this request.*

- 3. Per Section 11324, 1.04 A.1.b. Please confirm that “slide plates” are equivalent to “perforated screen panels”.**

Refer to Part B of this addendum for revisions related to this request.

- 4. Per Section 11324, 2.06 The maximum head loss at a peak flow of 50 mgd is calculated to be 21.2” when the downstream water level is 8.5’ and screen is 30% blinded. Please amend the 16” maximum head loss from 16” to 21.2”.**

Refer to Part B of this addendum for revisions related to this request.

- 5. Per Section 11324, 3.06 A. Please clarify that the Screen and Washer/Compactor Manufacturer is not required to provide or certify a Grit Collecting System.**

Refer to Part B of this addendum for revisions related to this request.

- 6. Both sump elevation drawings M-34 & M-45 show Hydrocones mounted on the sump floor directly under the pump suction bells. Specification 11214 does not say anything about furnishing the Hydrocones in the pump suppliers scope, or even mention them. The referenced drawing MD-3 Hydrocone Detail Notes “Contractor shall coordinate hydrocone height with the pump manufacturer.” Can you please clarify who is to provide the hydrocones, pump supplier or contractor? Also, please provide more detailed information on is what is required for the hydrocones.**

Detail G/MD-3 illustrates the hydrocone materials as ½” 316L SST plate and the welds are identified. Reference Note 1 on Detail G/MD-3 regarding the height of the hydrocone is to be one half of the bowl diameter “D” dimension, as illustrated in the Mechanical Process drawings, reference Drawing M-34, Section 2 and Note 1. The Engineer is not specifying if the Pump Supplier supplies it or the General Contractor. There is no change to the contract documents related to this item.

7. **Per Section 11214 3.A.3.c.1.b, please confirm in the Job VFDs will be required for performance testing. Will factory tested and certified motors be allowed? Since the electrical supplier is now required to supply the VFDs, this will increase the lead time, coordination and costs on the project.**

The job VFDs are required for testing. Factory tested and certified motors will not be allowed in lieu of the requirements of 11214-11, Part 3.A. There is no change to the contract documents related to this item.

8. **Per Section 11243,1-6. WARRANTY AND BONDS. Manufacturer shall provide a two-year performance bond, a supply bond and a five-year extended warranty including parts and labor in lieu of lack of experience (installations) of size comparable to the South Water Reclamation Facility. Refer to Specification Section 01700 for standard warranty requirements. It does not state the percentage amount of the performance and supply bonds required. Since these bonds must be provided by the manufacturer and not the bidding contractor, can you please clarify if the bonds required are for 100% of the equipment value, or if different, the actual percentage amount required?**

Refer to Part B of this addendum for revisions related to this request.

9. **Per drawing E-105 detail 3 note 1 “ this detail to be reviewed & approved by the contractors professional structural engineer and submitted by contractor with fabricated walkway submittal.” Please confirm we do not need to design connection.**

The Contractor shall coordinate with a Professional Structural Engineer and submit lighting pole detail as reviewed and approved by the Contractor's Professional Structural Engineer as noted.

10. **Per Section 01340 Web Based Project Control System: How many dedicated computers will the contractor need to supply? Please confirm the contractor will need to purchase 6 licenses and maintenance agreement with Primavera Systems for the full duration of the project.**

Refer to Part B of this addendum for revisions related to this request.

11. **Per Drawings S-2 &S-3 patching and crack repair identified part of the unit price bid items # 2, 3, 4, and 5?**

Concrete repair work shall be paid for by the reference bid item numbers as unit price work. Estimated quantities for bid are provided on the bid form.

- 12. Is the Filter Media removal included in the unit price bid item #8 material and debris removal from existing structures?**

Filter media removal shall be included in bid item 8 as unit price work.

- 13. Due to the fact that the good faith effort can be a large package please confirm only one copy will be required at bid submission as discussed in the prebid meeting.**

Yes, that is acceptable.

- 14. The electric supply requirements for the motorized ball valves utilized for the water scour system (VBM-103A, 113D, 113G, 104A, 114D, and 114G) are not listed in the equipment specification. These valves are listed if required, and we normally we would use a 120V, single phase bronze body solenoid valve to control this function. Are we required to supply motorized valves and if so, do they require 3-phase power or can we use single phase?**

Solenoid valves are not allowed for this service. Per Section 11320-3 Paragraph 2. F. the motorized ball valves shall be 316 Stainless steel type 324 per Section 15100. Per Specification Section 15119-5, Part 2. G. 8. , small quarter turn electric actuators shall be EIM HQ-006 for NEMA 4X service, EIM HQ-008 for explosion proof service, or equal. These actuators utilize 120VAC power supply.

- 15. Two different Siemens PLC model numbers are mentioned. Section 11320 notes a Siemens S7-300 for control panels LCP-1 and LCP-2, but section 13530-Part2-1.05 specifies all PLCs shall be Siemens model S71516-4 without exception. Which model number should be used at LCP-1 and LCP-2?**

Please reference Section A item #9 in Addendum 3. There is no change to the contract documents related to this item.

- 16. In section 13530, the operator control panel is specified as a Siemens 6AV21240QC020AX0, which is a 15" model. The specification states the unit shall have a 12" display area. Is the 15" display acceptable, or should we use a different model number?**

The operator control panel shall be Siemens 6AV21240QC020AX0.

- 17. Regarding the Electric Motor testing requirements, Section 16150, Part 3-2 requires that all motors be given the standard short commercial test prior to shipment. This conflicts with the Pump Test requirements in Section 11114, sheet 8, Sub section 2-7, which requires pumps to be tested with the motors to installed with the work. In order to meet the Pump Test requirements, a full factory electric motor test must be performed prior to shipment of the motor to the pump manufacturer. We request that the pump testing requirement from Section 11114-8 be modified to allow factory testing using their standard Lab motors, which will align with the requirements in the Electric Motor section.**

Refer to Part B of this addendum for revisions related to this request.

- 18. Please confirm that Type 304 SSSL Grade B8 Bolts and Nuts are required for Exposed, Buried and Above Ground Ductile Iron as stated in 15050 Part 2, C, 1. SSSL Nuts and Bolts are typically only required in a submerged environment, as stated in 15050, Part 2, C, 2. A307 Hot Dipped Galvanized or Zinc Bolts and Nuts are generally accepted for Non-Submerged or Buried Applications.**

304 stainless steel hardware is required for the project per Specification Section 15050-2, Part 2 C. There is no change to the contract documents related to this item.

- 19. Please confirm that Grease & Bolt Caps are required for all Flange Bolts, in all applications per 15050, Part 2, J. With the number of Bolts required on this project, this is a huge adder in terms of labor and material, especially when all of the exposed piping will be painted. Will bolt caps be required on Painted Pipe?**

The caps specified in Specification Section 15050, Part 2, J were removed in Addendum 3. Please reference Section A item #10 in Addendum 3. There is no change to the contract documents related to this item.

- 20. Please confirm whether the Existing 42" and 54" Buried RS Influent Lines from the Influent Pump Station to the Headworks are Ductile Iron or PCCP. If these lines are Ductile Iron Pipe, should we assume that it is restrained? If they are PCCP, please identify the restraint method required to conform to Note 7 on Sheet C-19.**

The drawings have been produced from existing record drawings and survey information. Existing materials from these record drawings and survey information have been provided in so much as they are available. The Engineer does not know if the existing pipelines are restrained or not. Therefore the Contractor is required to verify if the pipelines are restrained or not. The Contractor is to verify existing utility material. Should any existing pipe be modified or connected to it shall be restrained per Detail D/CD-2. Note 21 on drawing G-4 is revised as follows:

The drawings depict the approximate locations, elevations, **materials**, **method of thrust restraint**, and dimensions as shown on the plans of existing utilities and structures. It is the responsibility of the Contractor to include in the bid to verify all utility locations, elevations, **materials**, **method of thrust restraint**, and dimensions by utilizing exploratory investigation and excavations. Verification of existing utility location shall be conducted sufficiently in advance of construction to allow resolution of conflicts in a timely manner. If a potential conflict is located, or an existing utility of structure located in a different location than is illustrated herein, the Contractor is to notify the Resident Project Representative; a dimensioned illustration noting location, elevation, utility type, material and size. Contractor shall provide fittings, adapters, solid sleeve closures, and harnessed mechanical coupling; rotate fittings; deflect joints; and modify existing piping as applicable and as required to make connections, including adjustments for any offsets in centerline elevation between pipelines. Contractor shall provide temporary plug with factory outlet size as required for Contractor's testing and disinfection work before making connection, when applicable. Contractor shall coordinate making each connection with the owner.

21. Please confirm that Gravity Sewer Drains do not have to be restrained per note 7/G-4.

All new pipe on the project is to be mechanically restrained, including the gravity sewer. Please reference Section D item #1 in Addendum 3. There is no change to the contract documents related to this item.

22. Please clarify the minimum reaction block sizing for the required 42" and 54" Line Stops required for the Headworks Bypass. Detail E and F on sheet CD-7 do not give a minimum clearance lengthwise for the tapping sleeve, should we assume it's 6"?

Per specification 02282 1. B., signed and sealed calculations for the sizing of tapping sleeve encasement shall be submitted by the Contractor's Engineer. Reaction block sizing including the referenced dimension should be determined by the Contractor's Engineer.

- 23. Please clarify whether the cofferdams installed for Headwork Bypassing are intended to be permanent, or will they be removed at the conclusion of the Gate & Equipment Installation?**

The Preliminary Treatment Facility (PTF) cofferdams can be removed as detailed in the general sequencing requirements located in Specification Section 01143-5, Part 1.4 B. 2. There is no change to the contract documents related to this item.

- 24. Sheet M-15 Section 2 Shows a 54"x1'0" Wall Pipe entering the underside of the New Mixed Liquor Splitter Box (typ of 2), see below for clarifications needed:**

a. The configuration of this pipe will need to be Lock Ring Bell x PE. In this configuration, the minimum length of the wall pipe would be 2'6", it is not manufactured in a 1' length.

Replace the Lok-Ring Bell x PE wall pipe with a Lok-Ring End x PE wall pipe with a water collar. Refer to Part C of this addendum for revisions related to this request.

b. The configuration of the cut piece of pipe in between the proposed wall pipe and 90 will be a Lok-Ring End x Lok-Ring End, it is currently shown at 0'8", and this pipe configuration has a minimum length of 2'6".

Eliminate the pipe between the wall pipe and 90 bend. The Lok-Ring End of the wall pipe will connect to the 90 degree bend. Refer to Part C of this addendum for revisions related to this request.

c. Please confirm that there is no Water Collar Required for the Wall Pipe as shown in Detail 2/M-15.

A water collar is required for the wall pipe.

d. Please confirm that lowering the pipe has no direct effect on the hydraulic flows to the clarifiers because the pressures are directly related to the water level in the Splitter Box, and that based on that, the contractor may lower the 90 to accommodate commercially

available fabricated pipe with no adverse effects to the hydraulic flow.

Confirmed.

25. **Sheet C-25, Spec 01143, 1.5, d, Connection of 54" MXL to North Clarifier No. 2 Influent Line, please detail the connection at this location for the following reasons:**

- a. **54" Sleeves are not available; they are not made by any of the pipe manufacturers. The contractor will have to make a hard restrained (proprietary) connection at the nearest bell to restrain this pipe, or install an underground harness coupling if approved by the engineer to allow for flexibility of the tie in. Please clarify which type of connection is desired.**

Please reference Drawing C-25 (Attachment). Regarding this question the following specifications are revised as noted in Part B of this Addendum;

- *Specification Section 15050 – Piping Schedule and General Piping Requirements*
- *Specification Section 15100 – Manual, Check and Process Valves*
- *Specification Section 15122 – Flexible Pipe Couplings and Expansion Joints*
- *Specification Section 15240 – Ductile Iron Pipe*

- b. **Please indicate whether the plug valves required are Mechanical Joint or Flanged, if they are Mechanical Joint, there will be no restraint, only a gland. If MJ Valves are required, will the contractor be required to install dead men and rod the valve to it?**

Please reference the revisions to Specification Section 15100 in Part B of this Addendum.

- c. **Please clarify how the Valve to the Northeast of the new 54" Tee is to be restrained? Megalugs are not available in 54", and proprietary joint systems such as MJ Couple Joint by American, or MJ Harness Lock by US Pipe are not made in these sizes. The only options we see are to pour a dead man and rod to the valve, or install a flanged tee, and tie in mechanically to the existing 45.**

Please reference Drawing C-25 (Attachment). Regarding this question the following specifications are revised as noted in Part B of this Addendum;

- *Specification Section 15050 – Piping Schedule and General Piping Requirements*
- *Specification Section 15100 – Manual, Check and Process Valves*
- *Specification Section 15122 – Flexible Pipe Couplings and Expansion Joints*
- *Specification Section 15240 – Ductile Iron Pipe*

d. If the valves are required to be flanged, will a vault need to be added at both locations, or will an above ground floorstand or torque tube be considered?

Please reference Drawing C-25 (Attachment).

26. Sheet M-21, 54” MXL Influent, just outside of the concrete encasement, a 54” Sleeve is shown. Sleeves are not available in these sizes, please allow the use of a proprietary cut piece or underground Harness Coupling.

Contractor will be allowed to provide pipe restraint using sleeves with mechanical restraint or other methods such as proprietary cut piece or underground harness coupling (that provide an equivalent level of deflection and restraint) for this application. Details of the method proposed must be provided by the Contractor during the shop drawing review process.

27. Please confirm that Concrete Encased pipe does not need to be restrained joint.

All new pipe on the project is to be mechanically restrained, including if it is encased in concrete. Please reference Section D item #1 in Addendum 3. There is no change to the contract documents related to this item.

28. Please confirm that Concrete Encased Pipe does not need to be polywrapped.

Per Drawing C-19 Note #8 all ductile iron pipe is to be polyethylene encased. There is no change to the contract documents related to this item.

29. **Sheet M-26 shows the ML Influent Line under the tank, turning up in the center sump with a 90 bend. Sheet M-27, Typical Section shows the pipe ending at the inside face of the center sump. Please clarify that there is no 90 needed for the 54" ML at Clarifier 3.**

There is no 90 needed for the 54" ML at Clarifier 3.

30. **Please confirm that sheet M-27 Shows the Top of Slab at 82.8, and the CL Elevation of the 54" Influent at 76.4 at the outside wall. With the slab being 4' thick, the bottom elevation would be 78.8, and the top elevation of the pipe would be 78.65 at the outside wall. With a floor slope of 1/16" to the center sump and using the elevation given at the center sump, the top of pipe will rest within the slab about halfway across the radius, and almost 3" into the slab at the center sump wall. Please confirm that this is correct.**

It is acceptable for the MLSS to be within the slab. Note that on Detail E/S-21, minimum cover requirement for bottom steel in clarifier slab is 4-inches to avoid conflict with this pipe.

31. **Please confirm that note 6 on sheet C-36 is correct, there is no valve shown, or any apparent reason for the additional 90 bend.**

The note is correct, an 8-inch valve is not shown for clarity due to the size of the scale on the drawing. Install plug valve per Detail C/CD-4. Reference Drawing M-15, Section 2 for a continuation of the scum piping. There is no change to the contract documents related to this item.

32. **Please provide a concrete encasement detail for Pipe 54" and larger, Detail C/CD-7 Note 1 States that this detail is only applicable to pipes 48" or less in diameter.**

Refer to Part C of this addendum for revisions related to this request.

33. **Please clarify whether Slabs on Grade are considered Structures (RAS/WAS Pumping Station, Etc.), and that all Pipe under slabs will be concrete encased.**

All below grade piping that is under concrete slab shall be concrete encased.

34. **Please confirm that Note 1 on Sheet M-22 only applies to the DR-1 Piping, and not the 18" RAS/Drain, as it is a process line under variable pressure, depending on Clarifier water levels.**

Note 1 applies to the DR-1 pipe designation.

35. Sheet C-35 Section A, References Utility Note 32, and Spec Section 01143 1.5, j., please see below for comments:

- a. 54” Sleeves are not available, they are not made by any of the pipe manufacturers. The contractor will have to make a hard restrained (proprietary) connection at the nearest bell to restrain this pipe, or install an underground harness coupling if approved by the engineer to allow for flexibility of the tie in. Please clarify which type of connection is desired.**

Please reference Drawing C-35 (Attachment). Regarding this question the following specifications are revised as noted in Part B of this Addendum;

- *Specification Section 15050 – Piping Schedule and General Piping Requirements*
- *Specification Section 15100 – Manual, Check and Process Valves*
- *Specification Section 15122 – Flexible Pipe Couplings and Expansion Joints*
- *Specification Section 15240 – Ductile Iron Pipe*

- b. Please indicate whether the 54” BFV’s required are Mechanical Joint or Flanged, if they are Mechanical Joint, there will be no restraint, only a gland. If MJ Valves are required, will the contractor be required to install dead men and rod the valve to it?**

Please reference the revisions to Specification Section 15100 in Part B of this Addendum.

- c. Please clarify how the Valves East & West of the new 54” Tee are to be restrained? Megalugs are not available in 54”, and proprietary joint systems such as MJ Couple Joint by American, or MJ Harness Lock by US Pipe are not made in these sizes. The only options we see are to pour a dead man and rod to the valve.**

Please reference Drawing C-35 (Attachment). Regarding this question the following specifications are revised as noted in Part B of this Addendum;

- *Specification Section 15050 – Piping Schedule and General Piping Requirements*
- *Specification Section 15100 – Manual, Check and Process Valves*
- *Specification Section 15122 – Flexible Pipe Couplings and Expansion Joints*
- *Specification Section 15240 – Ductile Iron Pipe*

36. Sheet C-28, References Utility Note 24, and Spec Section 01143 1.5, f., please see below for comments:

- a. 54" Sleeves are not available, they are not made by any of the pipe manufacturers. The contractor will have to make a hard restrained (proprietary) connection at the nearest bell to restrain this pipe, or install an underground harness coupling if approved by the engineer to allow for flexibility of the tie in. Please clarify which type of connection is desired.**

Please reference Drawing C-28 (Attachment). Regarding this question the following specifications are revised as noted in Part B of this Addendum;

- *Specification Section 15050 – Piping Schedule and General Piping Requirements*
- *Specification Section 15100 – Manual, Check and Process Valves*
- *Specification Section 15122 – Flexible Pipe Couplings and Expansion Joints*
- *Specification Section 15240 – Ductile Iron Pipe*

37. Please confirm that Sheet C-28, Call out 181 should be a 54"x42" Tee, not a 54" Tee as listed on Sheet C-37.

Refer to Part C of this addendum for revisions related to this request.

38. Sheet M-27, Section A shows a 42" 90 Bend Turned up into the Effluent Drop Box of Clarifier No. 3, within the thickened edge of the slab. It appears that there is a short PE piece that is required for penetration into the Drop Box, as the 90 does not appear flush. Is it the engineer's intent to have the fitting flush with the bottom of the drop box?

The top should extend into the box with grout fill to provide a flush bottom. Refer to Part C of this addendum for revisions related to this request.

39. Plan Sheet C-26 references Utility Note No. 19 which states, that this connection is a 54"x48" Wet Tap. It appears that this line is connecting to an existing 48" CE line, making this a size on size 48"x48" Wet Tap. Please confirm that the owner and engineer will allow a size on size wet tap as shown. If no, please detail where the connection should occur, we would assume it would be upstream of the ROF No. 1 Bypass.

The Utility notes are listed on Drawing C-36. Drawing C-36, Utility note 19 is incorrect. Refer to Part C of this addendum for revisions related to this request.

- 40. Spec Section 15240, Part 2, Section B states that the Minimum Wall Thickness for Pipe having push on or restrained Mechanical Joints shall be Class 150. This is not standard for these type of projects, nor is Class 150 available in sizes 4-24". Please confirm that the following pipe classes will be acceptable: a. 4-12" – Class 350 b. 16"-24" – Class 250. c. 30" and Larger – Class 150.**

The specification identifies pressure class 150 as the minimum required wall thickness. Pressure classes which exceed the minimum are acceptable. There is no change to the contract documents related to this item.

- 41. Please confirm that suitable excavated material may NOT be used as Pipe Bedding per Spec Section 02223, Part 2, Section C, Paragraph 2 which states, under no Circumstances will native earth backfill be allowed or used in the pipe base or pipe zone areas.**

Refer to Part B of this addendum for revisions related to this request.

- 42. Please confirm that No. 57 Stone, or pea gravel are the only acceptable pipe bedding material for Ductile Iron Pipe per Spec Section 02223.**

Please reference Specification Section 02200, Part 2 where the allowable pipe bedding materials are listed. There is no change to the contract documents related to this item.

- 43. Please confirm that Imported Sand is the only acceptable pipe zone material for Ductile Iron Pipe per Spec Section 02223, Part 3, Section I, Paragraph 8.**

Please reference Specification Section 02200, Part 2 where the allowable pipe bedding materials are listed. There is no change to the contract documents related to this item.

- 44. Please confirm that all Excess Excavated Soils must be hauled from the site, and can't be stored on-site.**

Confirmed.

- 45. Per Spec Section 01516, All Temporary Bypass Pumping Operations must have a pumping capacity of 150%. If the system is designed to handle the peak flow, is this necessary? Is the spec referring to 150% of Average Daily Flow, or 150% of Peak Flow?**

150% of peak flow.

- 46. Please confirm that Orange County is going to allow the contractor's Bypass Pumping Operations to have One Standby Pump, with capacity equal to the largest pump as stated in Spec Section 01516. Orange County has in the past required 100% Full Redundancy for Bypass Pumping. Please confirm that 100% Redundancy will not be required on this project.**

Bypass pumping requirements are as stated in Section 01516. There is no change to the contract documents related to this item.

- 47. Please confirm that the Orange County Appendix D will supersede the specifications in regard to "or equal" products, or named products within the specifications. Just One example would be Gate Valves, per Appendix D, only AFC, Clow and Mueller are acceptable, should the contractor assume that the "or equal" in spec section 15100 does not apply?**

In cases where there is a conflict, the more stringent will apply. Where "or equal" is listed, substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

- 48. Please clarify that in the event of a conflict between the 2011 Orange County Standards, and the project plans and specifications, which will supersede?**

In cases where there is a conflict, the more stringent will apply. Where "or equal" is listed, substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

- 49. Please confirm that there are no requirements for (2) pipe Joints within 4' of a structural wall or concrete encasement required on this project.**

The requirements at each structure are illustrated within the contract documents. Flexible Pipe couplings at structures is shown as a Detail A/CD-4. Concrete encasement under structures is shown in Detail C/CD-7. The conditions at each structure are customized on a case by case basis, e.g. Drawing M-34 at the GSTs. The conditions at each structure are not covered by a singular catchall condition for the application of this Detail A/CD-4.

- 50. Please confirm that all Stainless Steel Pipe pickled and passivated, however, there are no requirements for full immersion pickling and passivating, is that correct?**

Pickling and passivation of stainless steel pipe shall be performed per ASTM A380 as detailed in specification Section 15064-6, Part 2-3. There is no change to the contract documents related to this item.

- 51. Please clarify whether the CCTV inspections for All Gravity Mains, sewers, culverts, drains and manholes will apply to this project.**

All gravity pipelines identified in specification section 02530, Part 1 A. 1. are to be CCTV inspected. There is no change to the contract documents related to this item.

- 52. Please confirm that Kor-N-Seal Boots can be used for all Piping connections at all Manholes, and that there are no pipe size requirements where the contractor must use A-Lok Gaskets.**

Manhole connection details are illustrated per Detail B/CD-1. There is no change to the contract documents related to this item.

- 53. Please confirm that the 48" VBF shown on sheet M-44 should be a 42" VBF as shown on sheet C-34.**

Drawing C-34 is incorrect. The configuration shown on drawing M-44 is correct, a 48"x42" reducer and 48" butterfly valve is to be installed. Refer to Part C of this addendum for revisions related to this request.

- 54. Please detail the 36" & 48" Pipe Connections to the Equalization Pond on Sheet C-31, we assume that the 90 turns up into the slab, should we just link seal the penetration, or will a wall pipe be required at this location?**

Reference Drawing C-31 and Section 1/MD-5. The 48"-EQ-DI pipeline increases to 60"-EQ-DI piping at the vault illustrated on Section 1/MD-5.

Section 1/MD-5 is revised to include a callout for Detail E/MD-3 at the 60" penetration. Detail E/MD-3 is for a Pipe Penetration through Concrete Wall using a rubber annular hydrostatic sealing device per Specification Section 15062. Drawing C-31 is revised to include two callouts at the outlet of the 36"-EQ-DI pipeline, Detail B/CD-2 and Detail B/SD-6. Detail B/CD-2 is for a Slab Penetration Detail and Detail B/SD-6 is for Aluminum Grating over the 36" outlet. Refer to Part C of this addendum for revisions related to this request.

- 55. Please confirm that Fitting No. 199 Should be a 36"x24" Tee, as shown on sheet C-31.**

Confirmed. Refer to Part C of this addendum for revisions related to this request.

- 56. Sheet M-37 Shows a Leader to the New 8" Drain Line that says 8" Plug, It is drawn like a 8" Gate Valve, and is called out as such on Sheet C-34? Please clarify whether these drain lines valves should be Gate Valves or Plug Valves.**

Both a gate valve and a ductile iron plug are required. A ductile iron plug is to be installed south of the new gate valve. There is no change to the contract documents related to this item.

- 57. Section 13129, there is mention of bullet resisting but not any mention of the level of protection. Does this guard house need bullet resisting? If so do you know the protection level?**

The Guardhouse's current design is not to include bullet resistant glazing; only use of fixed tempered safety glazing.

- 58. When is this guard house needed on site?**

There is no specific milestone related to the installation of the guard house.

- 59. How did our company "Little Buildings" get added to the manufacturers list?**

This specific company was listed as an acceptable equal within Master Spec to the basis of design product and included on the manufacturer's list.

60. **Sections 1+2/S-26 indicate sloping grout to a drain at the two bays containing Disk Filters No. 1, 2, 6, 7, 11 and 12. Section 1/M-32 appears to also show grout fill in another bay containing new Disk Filter No. 3 as well as under the Influent Channel containing the new influent piping. Sections 5+6/S-27 also show this grout fill near Disk Filter No. 3. Please clarify which areas are to receive grout fill and also provide HP and LP elevations so we can accurately quantify this fill.**

Grout fill is required in the two bays containing Disk Filters No. 1, 2, 6, 7, 11 and 12 as well as in the new influent channel containing the new influent piping. Grout fill is not required in the bay containing Disk Filter No.3. Grout shall be minimum 1 ½ inches thick at the low point at the two sumps. High point of grout shall be established based on a minimum slope of 1/16-inch/ft. All concrete pads shall be constructed prior to grout installation. Pads shall be a minimum 1-inch above adjacent grout in addition to meeting pad height requirements depicted on applicable details.

61. **Sheet S-24 indicates the location of four new sumps to be created within the existing base slab, at opposite ends of Concrete Basins No. 4 and No. 5 at the North Plant Filters and Chlorine Contact Basin. Sheets M-31 and M-32 both appear to show these sumps, much closer, surrounding Disk Filters No. 11 and No. 12. There also is a discrepancy in the size of these sumps when comparing Sheets D-34 and S-24. Please clarify the size and location of these sumps.**

Sump location shall be as shown on Sheet S-24. Sump size shall be as shown on Detail A on Sheet S-24. Refer to Part C of this addendum for revisions related to this request.

62. **Sheet S-25 details 4” slabs to be located over CLSM fill at the west side of the North Plant Filters and Chlorine Contact Basin. Section 2/S-26 indicate that these slabs are 8” thick. Section 9/S-27 shows these slabs as 6” thick, by scale. Please clarify the thickness of these slabs over the CLSM fill and whether or not they have any reinforcing requirements.**

Slab over CLSM fill shall be 4-inches thick. Reinforcement shall be #4@12 EW, with 2-inches cover from the top surface. Refer to Part C of this addendum for revisions related to this request.

- 63. Section 01143, Paragraph 1.4-B-2, states that 54” and 42” line stops “may” be required in order to perform the bypass and gate installation sequence at the Preliminary Treatment Facility. If they are required, these line stops will be very expensive. Should bidders carry the cost of these line stops in their bids, or will this work, if necessary, be handled as a change order?**

The existing influent slide gates to the Preliminary Treatment Facility (PTF), PT-SLD-24 & PT-SLD-25, are to be replaced as part of the Project. Because of the volume of existing flow to SWRF, neither the existing 54” or 42” raw sewage lines to the PTF can be shut down, unless bypass pumping is performed upstream of them. Per Specification Section 01143-2 Paragraph 1.1 H, the Contractor is to provide temporary watertight plugs, bulkheads, and line stops as required to perform the work. Per Specification Section 01143-6, Part 1.4 B. 2, line stops may be required on the 54” and 42” raw sewage lines. The utilization of temporary linestops for purposes of isolating and bypassing the PTF is up to the Contractor, regarding their approach to performing the work and their establishment of a bypass pumping system. It is the Contractor’s responsibility to isolate the Preliminary Treatment Facility to perform the work. The means and methods that the Contractor utilizes to perform the work is the responsibility of the Contractor. Neither Orange County Utilities nor the Engineer can direct the Contractor to utilize temporary linestops for their method of the isolation of the PTF to perform the work. There is no change to the contract documents related to this item.

- 64. Sheet C-36 describes numerous tie-ins to existing pipe lines. Please provide the material types of the existing lines.**

The drawings have been produced from existing record drawings and survey information. Existing materials from these record drawings and survey information have been provided in so much as they are available. The Engineer does not know if the existing pipelines are restrained or not. Therefore the Contractor is required to verify if the pipelines are restrained or not. The Contractor is to verify existing utility material. Should any existing pipe be modified or connected to it shall be restrained per Detail D/CD-2. Note 21 on drawing G-4 is revised as follows: *The drawings depict the approximate locations, elevations, materials, method of thrust restraint, and dimensions as shown on the plans of existing utilities and structures. It is the responsibility of the Contractor to include in the bid to verify all utility locations, elevations, materials, method of thrust restraint,*

and dimensions by utilizing exploratory investigation and excavations. Verification of existing utility location shall be conducted sufficiently in advance of construction to allow resolution of conflicts in a timely manner. If a potential conflict is located, or an existing utility of structure located in a different location than is illustrated herein, the Contractor is to notify the Resident Project Representative; a dimensioned illustration noting location, elevation, utility type, material and size. Contractor shall provide fittings, adapters, solid sleeve closures, and harnessed mechanical coupling; rotate fittings; deflect joints; and modify existing piping as applicable and as required to make connections, including adjustments for any offsets in centerline elevation between pipelines. Contractor shall provide temporary plug with factory outlet size as required for Contractor's testing and disinfection work before making connection, when applicable. Contractor shall coordinate making each connection with the owner.

- 65. Sheet E-85 details four new E/SD-2 equipment pads, per Note #7, at the Dewatering Building. This detail indicates that these pads are isolated, from the slab, therefore requiring cutting openings in the existing base slab. Is concrete demolition required for the installation of these pads?**

The detail reference in Note 7 on drawing E-85 is revised to detail B/SD-2. Refer to Part C of this addendum for revisions related to this request.

- 66. Sheets S-34 and S-36 both detail Type B/SD-2 equipment pads for the relocated Belt Filter Press No. 1 and No. 2 Cake Pumps. These two pads are shown, by scale, as having an 11' x 2.5' footprint. Sheet M-49 and Section 3/M-51 appear to show these pads, substantially larger, with an approximate 18' x 4.5' footprint, once again by scale. Please clarify the size and location of these pads.**

Location of pads shall be as shown on Sheet M-49. Contractor to coordinate location with equipment supplier. Preliminary pad size shall be as shown on M-49, however the contractor to coordinate final pad size with equipment supplier selected for the project by the General Contractor.

- 67. Regarding the pump mechanical seals specified in Section 11311 – Sub section 2.02.B.2, the seal box is required to have a “416SS Chesterton, Spiral Trac, Version D”, however there is not specification for installation option. Version D is normally available with Counterbore Fit, Impeller side installation and Externally Keyed. Is there a preference in these options?**

Refer to Part B of this addendum for revisions related to this request.

- 68. Will the County accept a Spiral Trac Version F in addition to Version D? Version F is normally installed with Split mechanical seals, which are the style required in the specification, and also provides for reduced flush.**

No. Substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

- 69. Section 11114-6, there is no specification for mechanical seal manufacturer or a requirement for the Spiral Trac. Can you please clarify if this was intentional or not?**

Mechanical seal to be Chesterton 442 or equal. Refer to Part B of this addendum for revisions related to this request.

- 70. Section 11114, Paragraph 2-2: Please confirm if hydrostatic testing is required on the pump casings. It is mentioned briefly in this paragraph but is not included in 2-7, "shop tests".**

Add to end of test section "The pump shall be hydro-statically tested in accordance with the governing standard. A copy of the hydrostatic test report shall be submitted." Refer to Part B of this addendum for revisions related to this request.

- 71. Section 11114, Paragraph 2-4.05: Is there a specific manufacturer / type of seal required? Please advise.**

Mechanical seal to be Chesterton 442 or equal. Refer to Part B of this addendum for revisions related to this request.

- 72. Section 11214, Paragraph 2.A.1: Please revise to indicate VFD is by electrical contractor as per addendum 1.**

Refer to Part B of this addendum for revisions related to this request.

- 73. Section 11214, Paragraph 2.E.1.a: Typical Peerless head designs do not utilize supports which are specifically designed as described in this paragraph. Are standard head designs acceptable provided the required FEA analysis is completed as specified?**

Refer to Part B of this addendum for revisions related to this request.

- 74. Section 11214, Paragraph 2.L: The Peerless pump model utilized during the design stage of this project for the EQPS has an open style impeller. Please confirm that impellers can be of the open or enclosed style.**

Provide enclosed impeller per Specification Section 11214-10, Paragraph 2. L. There is no change to the contract documents related to this item.

- 75. Section 11214, Paragraph 3.A.3.c.1.b: Please reconsider the requirement for testing with a job VFD. The pump manufacturer will not assume responsibility for a VFD provided by others.**

Variable speed tests are required per Specification Section 11214-12, Part 3. A. 3. b. Per Specification Section 11214-13, Parts 3. A. 3. c. (1) (a) and 3. A. 3. c. (1) (b), one job motor and one job variable frequency drive shall be shipped to the pump testing facility for testing purposes. There is no change to the contract documents related to this item.

- 76. Section 11214, Paragraph 3.A.6: The pump manufacturer will typically only guarantee performance at one point on the performance curve. Please confirm this is acceptable and the Grade 1U tolerance shall apply to the specified “design point”.**

Specification Section 11214-13, Part 3. A. 6. states that the ANSI/HI 14.6 Acceptance Grade: 1U. There is no change to the contract documents related to this item.

- 77. Section 11214, Paragraph 3.F: Please confirm that minor deviations in the secondary duty points are acceptable provided that the “design point” is met within the Grade 1U tolerance as specified.**

Specification Section 11214-13, Part 3. A. 3. b. (4) states to run additional tests for each reduced speed operating condition specified and indicated. Specification Section 11214-17, Part 3. F. 3 includes a table of the additional points other than the “design point” for each pump station. Per Hydraulic Institute Table 14.6.3.4, if other points are specified for testing other than the design point, but no tolerance is specified for these points in the contract documents, then the default acceptance grade for these additional points shall be Grade 3B. There is no change to the contract documents related to this item.

- 78. Section 11214, Paragraph 2.N.1: Are 416 stainless steel pump shafts with 410 stainless steel couplings an acceptable alternative to 316SS?**

416 stainless steel pump shafts with 410 couplings are acceptable. Refer to Part B of this addendum for revisions related to this request.

- 79. Section 11214, Paragraph 3.A.3.b: Variable speed tests are not available from the pump manufacturer; the factory is not equipped with VFDs to provide this testing. The full speed factory test curves can be used to generate reduced speed curves through the use of the affinity laws. Is this acceptable?**

No. Variable speed tests are required per Specification Section 11214-12, Part 3. A. 3. b of the contract documents. Per Specification Section 11214-13, Parts 3. A. 3. c. (1) (a) and 3. A. 3. c. (1) (b), one job motor and one job variable frequency drive shall be shipped to the pump testing facility for testing purposes. One job motor and one job variable frequency drive per individual pump station may be used for testing. There is no change to the contract documents related to this item.

- 80. Section 11214, Paragraph 3.A.3.c.1.a: Is the use of a calibrated lab motor acceptable for factory testing in lieu of the actual job motor? Please note that if the actual job motors are to be used, a complete initial test for the motors must be specified. This does not appear to be currently specified in section 16150.**

No. A job motor is required for the factory testing per Specification Section 11214-13, Parts 3. A. 3. c. (1) (a). There is no change to the contract documents related to this item.

- 81. Section 11311, Paragraph 1.02.C: Please revise to indicate VFD is by electrical contractor as per addendum 1.**

Refer to Part B of this addendum for revisions related to this request.

- 82. Please advise if the existing SCADA system at this plant is operating on Win CC or iFix.**

iFix.

- 83. Please confirm the centrifuge dewatering system supplier is furnishing PLC 5H, PLC-5I and their associated RIO panels referenced on drawing I-27.**

Confirmed.

84. **Drawing I-28 indicates a segment of fiber optic to be 12 pair multimode cable, please confirm the rest of the fiber optic network on drawings I-27, I-28, and I-29. Advise if otherwise.**

New fiber links shown on I-27 and I-28 are 12 pair multimode.

85. **Please advise the type of instrument programming device(s) intended by part 2, subsection 2-8 on page 13500-4, is this a HART handheld communicator?**

This is the programming device that would be required by the equipment supplied. The type of programmer depends on what is supplied. This may be Hart or some other protocol.

86. **Please advise the type of programming software intended by part 2, subsection 2-9 on page 13500-5, is this some kind of configuration/parameter documentation software?**

Yes.

87. **Section 15109 on page 15109-1, Parts 1 and 2 requires fire hydrants to be of the Wet Barrel Fire Hydrant Design conforming to AWWA C503. Orange County uses only dry barrel non-draining fire hydrants conforming to AWWA C502. There are three approved fire hydrant manufacturers listed in Appendix D of OCU documents.**

Dry barrel fire hydrants shall be supplied for the Project. Refer to Part B of this addendum for revisions related to this request.

88. **On pages 15100-9, 15100-10, 15100-11 and the top of page 15100-12, there are several references to gate valve manufacturers other than the three approved manufacturers in Appendix D of OCU documents. Please clarify the only approved gate valve manufacturers are American Flow Control, Clow and Mueller. Valves should be manufactured in accordance to AWWA C515 and not AWWA C500 (The latter is a metal seated design.)**

Per specification section 15100 Part 2 P. 3., the listed manufacturers for gate valves are Mueller, American Flow Control, and Clow which match the listed manufacturers in OCU Appendix D. There is no change to the contract documents related to this item.

89. **Reference Specification 03300-11, Item 7a States: Integral Waterproofing Admixture, "Class A concrete for water retaining**

structures; a Crystalline waterproofing admixture added to the concrete mixes used in walls and slabs of water retaining structures at manufacturer’s recommended dosage rates.” I am unable to locate the typical terminology “shall be” or “Contractor must include” in this statement, nor can any notes be found on the drawings identifying the use of this. Please verify that the contractor must include a crystalline waterproofing ad-mixture in all slabs and walls of water retaining structures.

Refer to Part B of this addendum for revisions related to this request.

- 90. Reference Sheet S-23: There is a contradiction between details 1 and 2 regarding the dowel spacing. Please clarify if the dowel spacing should be 5” or 10”.**

Reinforcement shown on Sheet S-23 is correct. In the long wall (30’-0”), dowel spacing is 5-inches, in the short wall (14’-0”), dowel spacing is 10-inches. There is no change to the contract documents related to this item.

- 91. Reference Detail no.2 Sheet MD-2. I cannot locate where these weir plates are on the drawings, please advise.**

It appears that this detail was provided as a standard detail and there is no specific reference on this project.

- 92. Please refer to Sheet E-40 regarding PLC-15A panel. It shows a communications link between the blower RVSS and PLC-15A. However, when I looked at Section 16349 (RVSS Spec), I could not find any requirements for communications.**

Refer to Part B of this addendum for revisions related to this request.

- 93. Please confirm that the intent is for the RVSS to communicate to PLC-15A and identify communications protocol. Please confirm that the intent is to receive all data points shown on I/O listing 13530A Page 71 – 75 via communications from the RVSS to PLC-15A for monitoring.**

PROFINET, is the protocol. It is the intent that the RVSS communicate with the switch in PLC-15A, not specifically PLC-15A. It is the intent that RVSS communications links should provide similar data points and to provide a data link for the Owner to be able to monitor the RVSS per 13550 loop description updated in this addenda.

94. Section 11613-1 indicates that the aeration controls, to include monitoring DO and controlling the basin valves for the North Plant, will be provided by the Systems Supplier. However, for the new Southwest basin and future Southeast basin, the specification requires that the blower MCP handle the DO and basin valve control. Yet the contract drawings only indicate that the blower MCP will be responsible for header pressure maintenance (not DO or basin valve control). It would seem that the DO and basin valve control for the Southwest and Southeast basin should be provided by the Systems Supplier to be consistent with the North plant. Please confirm your intent. Additionally, if it is in fact the intent for the blower MCP to be sized for the future implementation of DO and basin valve control for the Southwest and Southeast basins, please provide an I/O listing so that we can adequately size the future remote I/O that is being requested.

There is no new DO control for the South Basins in this contract. The specification states "In addition, the MACP PLC shall be sufficiently sized for future implementation of DO and most open valve control for the existing Southwest basin as well as a future Southeast basin." It is the intent that the MACP-PLC processor and memory be sufficiently sized to implement a remote I/O solution in the future. The last sentence of the scope paragraph says "A future remote I/O rack shall be provided for Southwest and Southeast basin valves, flow meters, and DO probes." This last statement is incorrect and should say, Space for a future remote I/O rack will be provided for Southwest and Southeast basin valves, flow meters, and DO probes. Space in the PLC room has been provided for a future remote I/O rack and is shown on the electrical plan but no RIO panel is to be provided as part of this contract. In this phase, the MCP-PLC is responsible for maintaining south aeration header pressure as described in Section 13550. With improved header pressure control (provided as part of this contract), the existing programming of PLC-8 should control the dissolved oxygen and basin air valves as currently programmed. Improvements to existing PLC-08 is not part of this contract.

95. Request for Versico to be named as an equivalent PVC KEE single-ply roofing system.

No. Substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

96. **Request for WACO Products to be named as an acceptable manufacturer for specification section 15114 Fabricated Stainless Steel Slide Gates.**

No. Substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

97. **Section 13129 Prefabricated Control Booth. The specification details all manner of windows and doors. 2 R 12, 13, and 14 deal with glass. Please define the areas where the Ballistic-Resistant Glazing (Bullet Proof Glass) is required.**

The Guardhouse's current design is not to include bullet resistant glazing; only use of fixed tempered safety glazing.

98. **Section 13570-S01-2 lists the PLC panels furnished in the ISS section, however, it appears to leave out the Ethernet switch and UPS. Please advise if the Ethernet switch, media converters and UPS can be housed within the corresponding PLC panels PLC-03B, 05B, 14A, 15B, 16A.**

The Ethernet switch, media converters and UPS can be housed within the corresponding PLC panels.

99. **Section 13570-S01-2 references the PLC to have redundancy, please confirm redundant I/O modules are not required.**

PLC Processors , Power Supplies and other components necessary for a redundant PLC processor configuration are required. Redundant I/O modules are not required.

100. **Section 13570-S01-3 references FOTC-16A & B, however, only FOTC-16 can be found in the network drawings (I-27 through 29), please advise.**

Refer to Part C of this addendum for revisions related to this request.

101. **13590-3 lists Siemens Scalance X304-2FE Ethernet switch for the new panels. The Siemens Scalance X304-2FE provides 2 fiber ports, 4 copper Ethernet ports and is non-expandable. Network drawings indicate the Ethernet switch associated with the following equipment outnumber the available connections, please advise.**

- **PLC-03B switch requires 2 fiber ports and 14 copper Ethernet ports**
- **PLC-05B switch requires 2 fiber ports and 10 copper Ethernet ports**
- **PLC-15B switch requires 2 fiber ports and 11 copper Ethernet ports**
- **PLC-14A switch requires 2 fiber ports and 11 copper Ethernet ports**
- **PLC-16A switch requires 2 fiber ports and 10 copper Ethernet ports**

Refer to Part B of this addendum for revisions related to this request.

102. **Section 11570, page 12, the minimum diameter of the laterals for each of the aeration zones is listed. There are 8-inch and 6-inch laterals listed. The maximum diameter for a standard fine bubble aeration system lateral is 4 inches.**

4 in laterals are acceptable, so long as the maximum initial pressure loss through system is not exceeded, as stated in 11570-4.

103. **Section 11570, there is mention of cooling loops for the aeration piping. Are cooling loops required on the drop pipes? If so, could you list the lengths that are required so all aeration equipment manufacturers provide the same quantity of cooling loop piping? No cooling loops have been provided for Orange County in the past.**

Refer to Part B of this addendum for revisions related to this request.

104. **Section 11570 2-2 Aeration Basin No. 1 (North Plant 1), It states that the minimum diameter of the lateral is 6 inches. Both Aquarius and Sanitaire have standard lateral diameters of 4 inches. Can you please advise if 4 inch laterals are acceptable as this is the only size lateral that we will supply with our diffuser holder and is all that is needed for this application.**

4 in laterals are acceptable, so long as the maximum initial pressure loss through system is not exceeded, as stated in 11570-4.

105. **We request the opportunity to visit the site to take soil samples. This will provide additional information than what is provided in the geotechnical report to meet specification 02200.**

In order to address questions on suitability of existing soils, 2 unit price line items were added to the bid form by this addendum.

106. **Please confirm if existing diffusers in North Plant #1 are to be removed and all anchors to be patched for placement of new diffusers per specification 11570 and drawing M-10. Note existing diffusers are not identified on demolition drawing D-26.**

Confirmed.

107. **Please confirm all existing lines above 12” that we will be tying into, demolishing or abandoning is Ductile Iron Pipe other than what is identified as Stainless Steel.**

The drawings have been produced from existing record drawings and survey information. Existing materials from these record drawings and survey information have been provided in so much as they are available. The Engineer does not know if the existing pipelines are restrained or not. Therefore the Contractor is required to verify if the pipelines are restrained or not. The Contractor is to verify existing utility material. Should any existing pipe be modified or connected to it shall be restrained per Detail D/CD-2. For existing pipelines greater than 48-inch in diameter, restraint shall be performed using a thrust collar a thrust collar with joint harness similar to the Orange County Utilities Standards and Construction Specifications, Figures A105-1 & A105-2. The thrust collars are to be designed by the Contractor’s Engineer that is preparing the detailed design shop drawings for the hot taps and line stops per Section 02282. Note 21 on drawing G-4 is revised as follows:

The drawings depict the approximate locations, elevations, materials, method of thrust restraint, and dimensions as shown on the plans of existing utilities and structures. It is the responsibility of the Contractor to include in the bid to verify all utility locations, elevations, materials, method of thrust restraint, and dimensions by utilizing exploratory investigation and excavations. Verification of existing utility location shall be conducted sufficiently in advance of construction to allow resolution of conflicts in a timely manner. If a potential conflict is located, or an existing utility of structure located in a different location than is illustrated herein, the

Contractor is to notify the Resident Project Representative; a dimensioned illustration noting location, elevation, utility type, material and size. Contractor shall provide fittings, adapters, solid sleeve closures, and harnessed mechanical coupling; rotate fittings; deflect joints; and modify existing piping as applicable and as required to make connections, including adjustments for any offsets in centerline elevation between pipelines. Contractor shall provide temporary plug with factory outlet size as required for Contractor's testing and disinfection work before making connection, when applicable. Contractor shall coordinate making each connection with the owner.

108. **Please confirm if this project will be held to the Buy American Act.**

Buy American Act not required.

109. **Please confirm additive bid item will not be included in the evaluation for award of this project.**

ADDITIVE/DEDUCTIVE BID ITEMS:

1. If it is deemed to be in the best interest of the County to accept the additive or deductive items, award will be made to the Bidder that offers the lowest aggregate amount for the base bid, plus or minus (in the order listed on the bid form), those additive or deductive bid items that provide the most features of the work.
2. All bids will be evaluated on the basis of the same additive or deductive bid items.
3. Failure of the Bidder to provide pricing for all unit priced items and/or the Base Bid and ALL requested additive/deductible bid items, or alternate bids shall be cause for rejection of the bid as non-responsive.

110. **Please confirm depth of concrete and reinforcing for the concrete equalization pond #1 to be demolished as shown on D-11.**

Refer to Addendum No. 3, Part D, Bidder Question 11. There is no change to the contract documents related to this item.

111. **Please confirm existing reinforcing for the concrete fillets to be demolished on D-29.**

Per Drawing D-29 and D-31 the concrete fillets are to be demolished. There is no change to the contract documents related to this item.

112. **Benshaw is requesting approval for the 4160VAC MV Soft Starters for your project.**

No. Substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

113. **Section 11520, 2-5.03. Request that the specification is modified as follows: Axial flow impellers shall be of the open type hydrofoil, pitched blade, ~~or~~ HE turbine type or closed plate raggless design. The impeller shall be an ~~open type~~ without balancing rings or discs. For open type axial flow impellers, a metal cone boot element shall be provided at the bottom of the shaft but above the impeller. The cone shall be attached to the shaft and impeller blades by stainless steel set screws and shall be removable for mixer disassembly. The cone shall be 10-inches in height and shall have a diameter of 20-inches minimum. The purpose of the cone is to prevent impeller ragging.**

No. Substitute material and equipment may be considered after execution of the contract in accordance with Part C-Instructions to Bidders, Paragraph 7.

114. **Please provide a material classification for raw water piping and equalization stainless steel piping.**

Please reference Drawing G-4 and the Flow Stream Identification Table. There is no Raw Water utility on the project. "RW" is the abbreviation for Reclaimed Water and there are three types of materials for reclaimed water identified in the Flow Stream Identification Table. Equalization is Ductile Iron Pipe identified in the Flow Stream Identification Table.

115. **The piping schedule says the material classification for the carbon steel CAKE piping is in spec. 15065. I was unable to find it. Can you please provide it?**

Refer to Part B of this addendum for revisions related to this request.

116. **The diffused aeration system requires extra cooling pipe on the drop pipes as the maximum temperature at the top of drop leg is 275 ° F. We request that the specification be amended to require that all diffused aeration provide additional cooling pipe to reduce the temperature at the transition from SST to PVC to 130°F and submit calculations in the submittal to confirm the design.**

Refer to Part B of this addendum for revisions related to this request.

117. **Paragraph 3.3 calls for “Test shall be conducted in US & all costs associated with testing are the responsibility of manufacturer”. SSI Aeration conducts SOTE testing by an independent third party at Barcelona, Spain with a Member of the ASCE Standards Committee (American Society of Civil Engineers) on Oxygen Transfer in Wastewater Treatment Plants. We request that the requirement that testing to be performed in the US be deleted since the physical location of the test facility is not relevant while the qualifications of the testing entity is.**

Section 11570, 3-3 states “All testing shall occur at the manufacturer’s test facility or at a facility identified by the manufacturer. The test facility shall be located within the continental United States, unless the Engineer and Owner grant special permission to test elsewhere. All costs associated with the testing are the responsibility of the manufacturer.” There is no change to the contract documents related to this item.

118. **Per specification 02200 Part 2 A, B & C material shall contain less than 1% by weight asbestos or organic material. The geotechnical report completed by Antillian Engineering Associates, Inc. (dated July 8, 2015) and provided in Appendix B does not provide information on organic content in the material that was sampled onsite. Without clear data on the organic content of onsite material it would need to be assumed that all structural fill, pipe zone fill and pipe trench backfill material will need to be imported to meet the criteria of the project specifications. This would also mean that the same volume of material associated with these areas will need to be exported off-site as it will become excess material (02200 Part 1 C). Based on the current information available this will be a substantial amount/cost of import and export of material to the project. Please provide information on organic content for the material that was sampled on-site. Otherwise please provide additional time/opportunity for contractors to perform additional site exploration and soil sampling**

so that clear data of the organic content of on-site material can be established.

In order to address questions on suitability of existing soils, 2 unit price line items were added to the bid form by this addendum.

E. ADDITIONAL INFORMATION:

1. There have been multiple requests regarding Section 01700 – Equipment Warranties, including requests to review manufacturer’s standard warranties. Equipment warranties are to be provided as stipulated in Section 01700. Requests to review manufacturer’s standard warranties are denied.

F. ATTACHMENTS:

1. REVISED BID SCHEDULE
- 2 Replaced Section 01340
3. Record Drawing C-8
4. Revised Drawing C-25
5. Revised Drawing C-28
6. Revised Drawing C-35
7. Revised Drawing E-8
8. Revised Drawing E-14
9. Revised Drawing E-46
10. Revised Drawing C-94

- G 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 the bid.**

All other terms and conditions 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 WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS** 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 LUMP SUM.

1.0 SOUTH WATER RECLAMATION FACILITY - PHASE V IMPROVEMENTS

\$ _____

ITEM NO.	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL
2.0	Concrete Rehabilitation for Crack Repairs	450	LF	\$	\$
3.0	Concrete Rehabilitation for Concrete Spall Repairs Less Than or equal to 1" Deep	300	Sq Ft	\$	\$
4.0	Concrete Rehabilitation for Concrete Spall Repairs Greater Than 1" Deep	15	Cu Ft	\$	\$
5.0	Repair of Expansion Joint	450	LF	\$	\$
6.0	Coating of PTF and IPS After All Repairs Have Been Made	500	Sq Ft	\$	\$
7.0	Replacement of Metal Covers	200	Sq Ft	\$	\$
8.0	Material and Debris Removal from Existing Structures	1,000	Tons	\$	\$
9.0	Gravity Belt Thickener Equipment	1	LS	\$	\$
10.0	Diesel Engine Driven Generator	1	LS	\$	\$
<u>11.0</u>	<u>Unsuitable Material Hauling and Disposal</u>	<u>10,000</u>	<u>CY</u>	<u>\$</u>	<u>\$</u>
<u>12.0</u>	<u>Fill Import</u>	<u>10,000</u>	<u>CY</u>	<u>\$</u>	<u>\$</u>

13.0 TOTAL BASE BID (1.0 PLUS 2.0 PLUS 3.0 PLUS 4.0 PLUS 5.0 PLUS 6.0 PLUS 7.0 PLUS 8.0 PLUS 9.0 PLUS 10.0 PLUS 11 PLUS 12 EQUALS 13.0):

_____ DOLLARS

(In Words)

\$ _____

REVISED D-2

Additive Bid Item:

ADDITIVE BID ITEM – Phase V Improvements – 2 Year Additional Equipment Warranty increasing the Base Bid 3 Year Equipment Warranty up to 5 Years)

\$_____

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.

Failure of the Bidder to provide pricing for all unit priced items and/or the Base Bid and ALL requested additive/deductive bid items, or alternate bids shall be *cause for rejection of the bid as non-responsive.*

REVISED D-3

Section 01340

WEB BASED PROJECT CONTROLS SYSTEM

PART 1 GENERAL

1.01 PROJECT CONTROLS

The Project Controls on this project shall be performed through the use of web-based project controls software. In fulfilling this requirement the Contractor shall provide the following:

- Utilization of Primavera Contract Management (BCM), Business Intelligence Publisher Edition Version 14.2 or version as required by the County of Primavera Contract Management web-based software hosted and managed by a third party provider. No other software shall be acceptable. The intended users on the individual license shall include the Owner (seven (7) users), Construction Consultant (three (3) users), Engineer (three (3) users), and Contractor (minimum of two (2) users). The software, owner's manuals, licensing and database shall be owned and retained by the County. If the Contractor requires additional users, additional user licenses shall be provided to the County by the Contractor at no cost to the County and those additional licenses may be retained by the Contractor at project final completion.
- OCU reserves the right to migrate to another software during the course of the project, the contractor will be properly notified and may be required to attend a training session for the new system.
- A maintenance agreement including but not limited to technical support, training, maintenance and software upgrades shall be provided from the software supplier on the software for the duration of the project.
- A web-based hosting service to provide individual user access for a minimum of fifteen (15) named PCM licenses, including sequel server database software, BI Publisher as the report engine, email functionality, minimum of 100 gigabytes of memory shall be provided for the duration of the contract. Contract Management shall be hosted by LoadSpring Solutions Inc.
 - Contractor shall provide and attend a one day joint training session for the Owner, owner construction consultant, Engineer and Contractor, for all components of the software in the manner detailed in section 3.01 of this specification.
 - Contract Management and the LoadSpring Solutions access portal shall be operational within 14 calendar days after issuance of Notice to Proceed and once the County approves Version 14.2 software.
 - The Contractor shall be responsible for providing all the necessary connections at the temporary office facility including but not limited to, patch panels,

switches routers, etcetera, at both ends of the fiber optic cables, also, installing a single mode fiber optic cable exterior and Multi-Mode interior, from the existing Administration Building to the temporary Contractor's and Owner's field offices to be located in the general vicinity of the South Effluent Pump Station.

- Contractor shall provide two fiber optic patch panels with four fiber adapters PN# FAP6WST2. Contractor shall terminate fiber optic cable to patch panel at each end.
- The Contractor shall be responsible for providing internet connection averaging download speeds of 45 Mbps. The download speed shall be no less than specified elsewhere in the contract specifications. The contractor is to provide internet connectivity for the duration of the project and until no longer necessary as determined by the RPR.
- The Primavera Contract Management 14.2 application (PCM) utilizes BI Publisher to allow users to run pre-defined reports. The user may select filters or parameters to only view data of interest, and report access is permission based making for a secure environment. The contractor will also be required to purchase two Business Intelligence Publisher for Oracle Applications licenses.
- At least 8 custom reports and forms are to be provided under this contract. OCU will determine and identify the required reports/forms. These reports/forms will be created and tested in the OCU environment on the LoadSpring cloud. The contractor shall budget at least 5 hours per report/form for LoadSpring to create, test and implement each report/form.
- All project correspondence and documentation including but not limited to Requests for information, Notices, Change Orders / Change Management, noncompliance notices, Notice of claims, requests for clarification, updates, meeting minutes, shop drawing transmittals, shop drawings in PDF format, shop drawing comments, letters, memos, etc. shall be created and managed in Contract Management. **The use of emails as project correspondence and documentation is unacceptable and shall be considered to be noncompliance with this specification.**
- Statement of capability and cooperation - The Contractor shall have the capability of preparing and utilizing the specified document control software, critical path scheduling techniques and specified software packages. A statement of capability shall be submitted in writing to the Engineer with the return of the executed Agreement to the Owner and will verify that either the Contractor's organization has in-house capability qualified to use the technique or that the Contractor employs a consultant who is so qualified. The statement shall include the name of the individual on the Contractor's staff or qualified Consultant who will be responsible for the use of Contract Management and associated reports and for providing the required updating information of same.

1.02 SUBMITTALS

Addendum No. 5

Y15-771

October 29, 2015

- A. Provide a statement of Capability and Cooperation per 1.01.
- B. Provide for approval a minimum of fifteen (15) user licenses in Orange County Utilities' name for the latest version (at the Notice to Proceed preconstruction meeting) of Contract Management.
- C. Provide for approval two Business Intelligence Publisher for Oracle Applications licenses
- D. Maintenance Agreement – Provide proof of maintenance agreement with Oracle/Primavera Systems that will last for the duration of the project.
- E. Provide proof of web hosting services for the duration of the project.

PART 2 PRODUCTS

A. Web-based Project Controls Software – Primavera Contract Management 14.2 or latest edition. Software. Collaboration by all parties on a single project database storing all project documentation during construction and through project final completion.

B. Web based hosting services to be provided by.

LoadSpring Solutions, Inc.

15 Union Street, #401

Lawrence, MA 01840

Scott D Harrison

Account Executive | LoadSpring Solutions, Inc.

Mobile: +1 781.820.0704

Office: +1 978.685.9715 x125

Web: www.loadspring.com

PART 3 EXECUTION

3.01 REQUIREMENTS FOR OPERATION OF CONTRACT MANAGEMENT

The Contractor, Owner and Engineer shall use the following functions of the Contract Management Software:

A. Project Information Modules

1. Companies – All contact information for parties involved in this project will be entered by the County. Contractor shall provide a digital list of all contact information (Full Name with middle initial, Company Name, address, phone number, cell phone, email address, title, etc).
2. Issues – Issues shall be created as necessary to monitor potential problems on the project. Issues shall be assigned from items in requests for information, meeting minutes, or independently generated items. The project team shall be responsible for entering data and maintaining this list.

B. Communication Modules

1. Transmittal – All transmittals between the Contractor, Owner and Engineer shall be generated in the Contract Management software including but not limited to shop drawing transmittal cover letters, submittals and other project related packages or documentation.
2. Requests for Information - All requests for information shall be generated and performed through Contract Management. Requests for Information shall be performed completely electronically. All requests shall be complete. If necessary, the Contractor shall attach electronic attachments of all sketches, photographs or other documentation as necessary to provide full details of the issue or concern. References to all pertinent details, drawings, schedule activities, and issues shall be noted in each request for information. All project participants shall be responsible for electronic updates for their action items. Contractor shall submit all RFI's with a ball in court (BIC) to the Engineer. The Engineer shall provide a response and submit the RFI with a ball in court to the County. RFI's shall not be considered answered and shall not be acted upon by the Contractor until the County has officially CLOSED the RFI.
3. Notices – All notices be performed in this module. Notices shall be comprised of all documentation previously written in the form of letters, memo's, emails, test requests, Notice of claim, general correspondence, clarification, schedule update, bulletin, etc and shall be created in Contract Management with the appropriate attachments as required.
4. Notices of Non-compliance – All notices of non-compliance shall be generated and performed through Contract Management. Both the original notice from the Owner/Engineer and the proposed corrective action by the Contractor shall be completed in web-based software. Owner/Engineer shall submit all notices of non compliance with a ball in court (BIC) to the Contractor. The Contractor shall provide a response and submit the NCN with a ball in court to the Engineer. NCN's shall not be considered answered and shall not be acted upon by the Contractor until the County has officially CLOSED the NCN.
5. Meeting Minutes – All meetings shall be documented in Contract Management. Business Items and Attendees will be documented, and attachments will be attached as appropriate. Recurring meetings shall be generated using delivered functionality within Contract Management, and will be updated by the meeting organizer. Logs presented at the meetings including but not limited to Shop drawing logs, RFI logs, Change Order Logs, Test Request & Results logs, and correspondence logs shall be generated from Contract Management, dispersed and attached to the meeting minutes module. Logs shall be downloaded as of the date of the meeting to provide the most current status of all logs.

C. Contract Information Modules

1. Change Management – Change Management shall be used to organize all related documents for each change to scope of work, schedule, or budget. Related documents shall be linked via Issues and included in the CPM schedule. Estimates, proposals, and final change orders shall be linked as Attachments. The contractor shall input data and maintain this module. The Change Management process shall only be initiated from a request for information in the RFI module.
2. Payment Requisition – The Contractor shall utilize the Payment Requisition module for the purpose of inputting the monthly pay applications into Contract Management for the project record as well as for the required approval of the “pencil copy” or preliminary submittal for approval by the County inspector prior to submitting each month’s printed copy through normal means.

D. Logs Modules

1. Submittal Packages – Submittals will be combined into Submittal Packages as appropriate, when workflow is similar and using Packages increase efficiency.
2. Submittals – Contract Management shall be used to create all transmittals between the Engineer, Owner and Contractor for all submittals. The printed copy of the submittals will be transmitted through normal means. Contractor shall enter a complete list of all known submittals for the project at the start of the project. Submittals shall include required by dates so that all parties are aware of upcoming submittals, and will use industry standard specification codes to categorize the submittals and shall be included in the Primavera CPM schedule. Contractor shall provide and attach a digital copy of the shop drawing submittal including all revisions, in PDF format for a complete project record and access for all users. However, only hard copy shop drawings submittals shall be reviewed and approved by the Engineer.
3. Contractor Daily Reports – Daily Reports shall be inputted daily through Contract Management by the Contractor. Daily Reports shall be complete and include electronic attachments, photographs, or other documentation as appropriate. Daily Reports shall be documented in accordance with the Standard Specifications for the project.

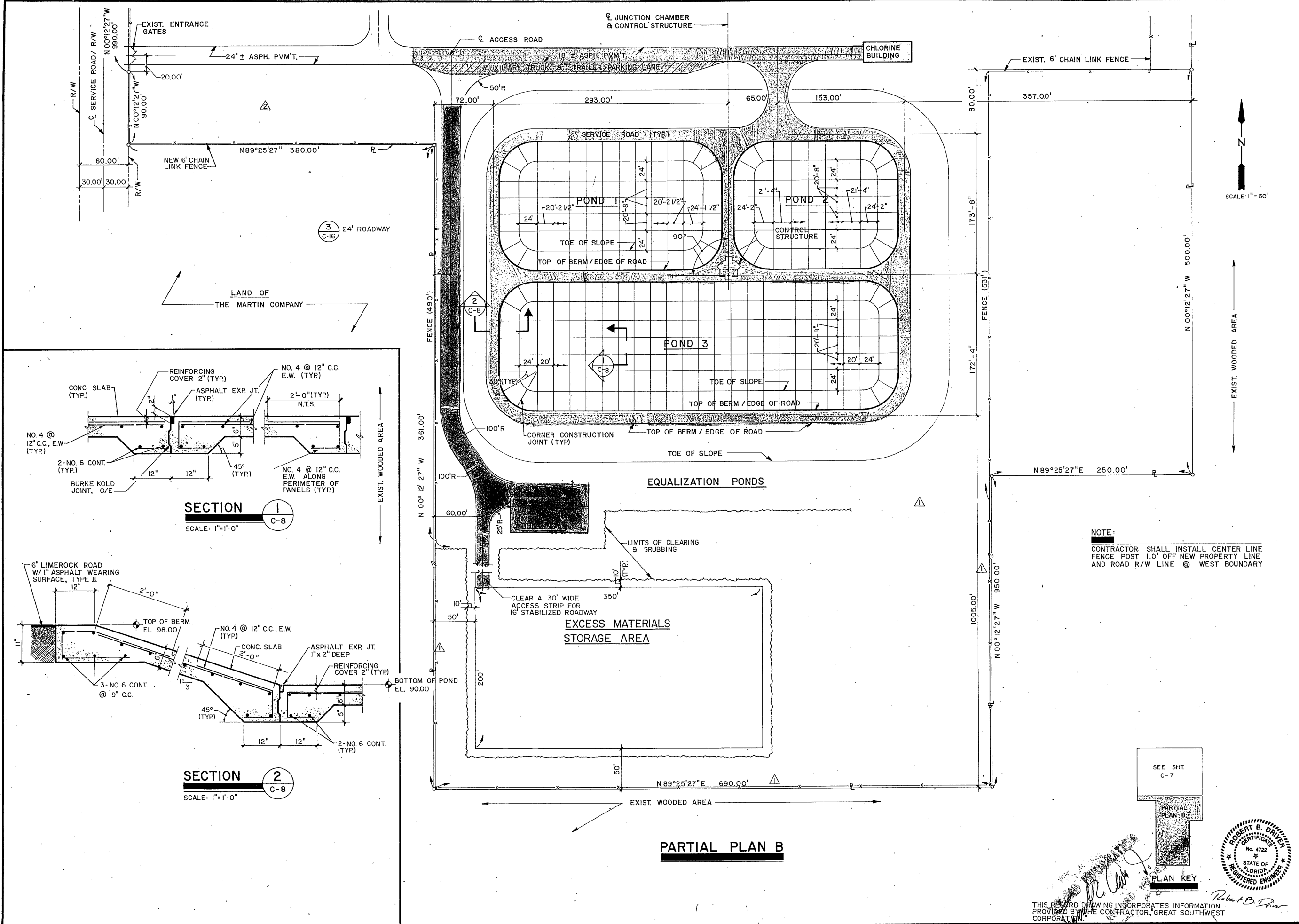
E. Other

1. Correspondence Sent – All correspondence sent shall be logged within Contract Management by the originating party in the appropriate module. Documents generated within Contract Management shall be recorded via delivered functionality within Contract Management. Documents generated

external to Contract Management shall be kept to an absolute minimum and shall be manually added to appropriate contract Management module. Digitally Attach applicable documents as appropriate to Contract Management.

2. Correspondence Received – All correspondence received from outside parties pertinent to the project shall be logged within Contract Management by the receiving party. Receipt of submittals or other documents that originated out of Contract Management shall be recorded by the contractor via delivered functionality within Contract Management in the appropriate module. Digitally Attach applicable documents as appropriate to Contract Management.

End of Section



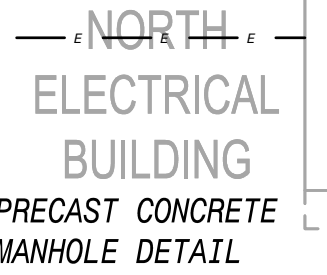
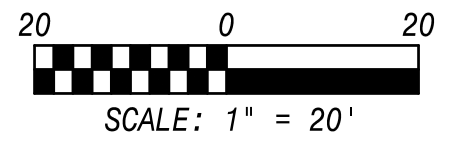
SOUTHWEST ORANGE COUNTY REGIONAL WASTEWATER TREATMENT FACILITIES		PHASE I - PLANT MODIFICATIONS	
PHASE I - SITE LOCATION PLAN			
ORANGE COUNTY, FLORIDA			
PROJECT NO. 6059-WWTP		SHEET NO. C-8	
CONTRACTOR: CAMP DRESSER & MCKEE INC.		ENGINEER: ROBERT B. DRIVER, REGISTERED ENGINEER, No. 4722, STATE OF FLORIDA	

RECORD DRAWING

MATCHLINE SEE SHEET C-22

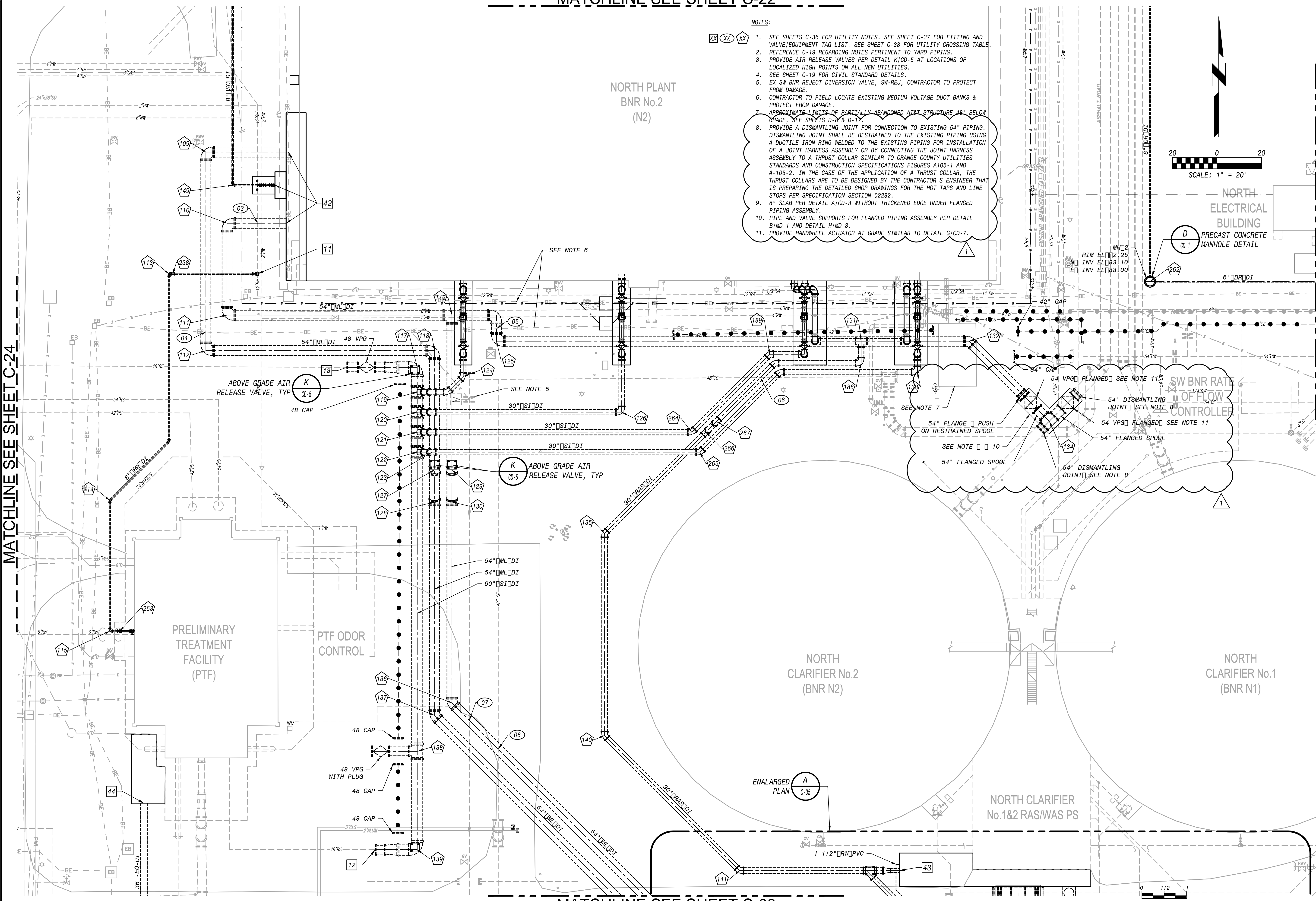
NOTES:

- 1. SEE SHEETS C-36 FOR UTILITY NOTES. SEE SHEET C-37 FOR FITTING AND VALVE/EQUIPMENT TAG LIST. SEE SHEET C-38 FOR UTILITY CROSSING TABLE.
- 2. REFERENCE C-19 REGARDING NOTES PERTINENT TO YARD PIPING.
- 3. PROVIDE AIR RELEASE VALVES PER DETAIL K/CD-5 AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.
- 4. SEE SHEET C-19 FOR CIVIL STANDARD DETAILS.
- 5. EX SW BNR REJECT DIVERSION VALVE, SW-REJ, CONTRACTOR TO PROTECT FROM DAMAGE.
- 6. CONTRACTOR TO FIELD LOCATE EXISTING MEDIUM VOLTAGE DUCT BANKS & PROTECT FROM DAMAGE.
- 7. APPROXIMATE LIMITS OF PARTIALLY ABANDONED AT&T STRUCTURE 48" BELOW GRADE, SEE SHEETS D-8 & D-17.
- 8. PROVIDE A DISMANTLING JOINT FOR CONNECTION TO EXISTING 54" PIPING. DISMANTLING JOINT SHALL BE RESTRAINED TO THE EXISTING PIPING USING A DUCTILE IRON RING WELDED TO THE EXISTING PIPING FOR INSTALLATION OF A JOINT HARNESS ASSEMBLY OR BY CONNECTING THE JOINT HARNESS ASSEMBLY TO A THRUST COLLAR SIMILAR TO ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS FIGURES A105-1 AND A-105-2. IN THE CASE OF THE APPLICATION OF A THRUST COLLAR, THE THRUST COLLARS ARE TO BE DESIGNED BY THE CONTRACTOR'S ENGINEER THAT IS PREPARING THE DETAILED SHOP DRAWINGS FOR THE HOT TAPS AND LINE STOPS PER SPECIFICATION SECTION 02282.
- 9. 8" SLAB PER DETAIL A/CD-3 WITHOUT THICKENED EDGE UNDER FLANGED PIPING ASSEMBLY.
- 10. PIPE AND VALVE SUPPORTS FOR FLANGED PIPING ASSEMBLY PER DETAIL B/MD-1 AND DETAIL H/MD-3.
- 11. PROVIDE HANDWHEEL ACTUATOR AT GRADE SIMILAR TO DETAIL G/CD-7.



MATCHLINE SEE SHEET C-24

MATCHLINE SEE SHEET C-26



DESIGNED: EW	PROJECT NO. 180761
DETAILED: DLP	C-25 SHEET 79 OF 364
CHECKED: CE/DA	
APPROVED: WDM	
DATE: JANUARY 2015	
ENGINEER OF RECORD: WILLIAM D. MARSHALL, PE FLORIDA LICENSE NO.: 66282	

10/26/15	ADDENDUM NO. 4	NO. BY CK	APP
7/20/15	BID ISSUE		
REVISIONS AND RECORD OF ISSUE			
CYGNET ID:	WF:	SAVED:	PLOTTED:
USER:	USER:	USER:	USER:

AECOM
AECOM TECHNICAL SERVICES, INC.
 1000 ALAQUA DRIVE, SUITE 200
 ORLANDO, FLORIDA 32825
 CERTIFICATE OF AUTHORIZATION NO. 03-815

BLACK & VEATCH
 Building a world of difference:
 Black & Veatch Corporation
 201 South Orange Avenue, Suite 500
 Orlando, Florida 32801
 Certificate No. 8132

ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY
 PHASE V IMPROVEMENTS

CIVIL
 YARD PIPING
 GRID 7

MATCHLINE SEE SHEET C-28

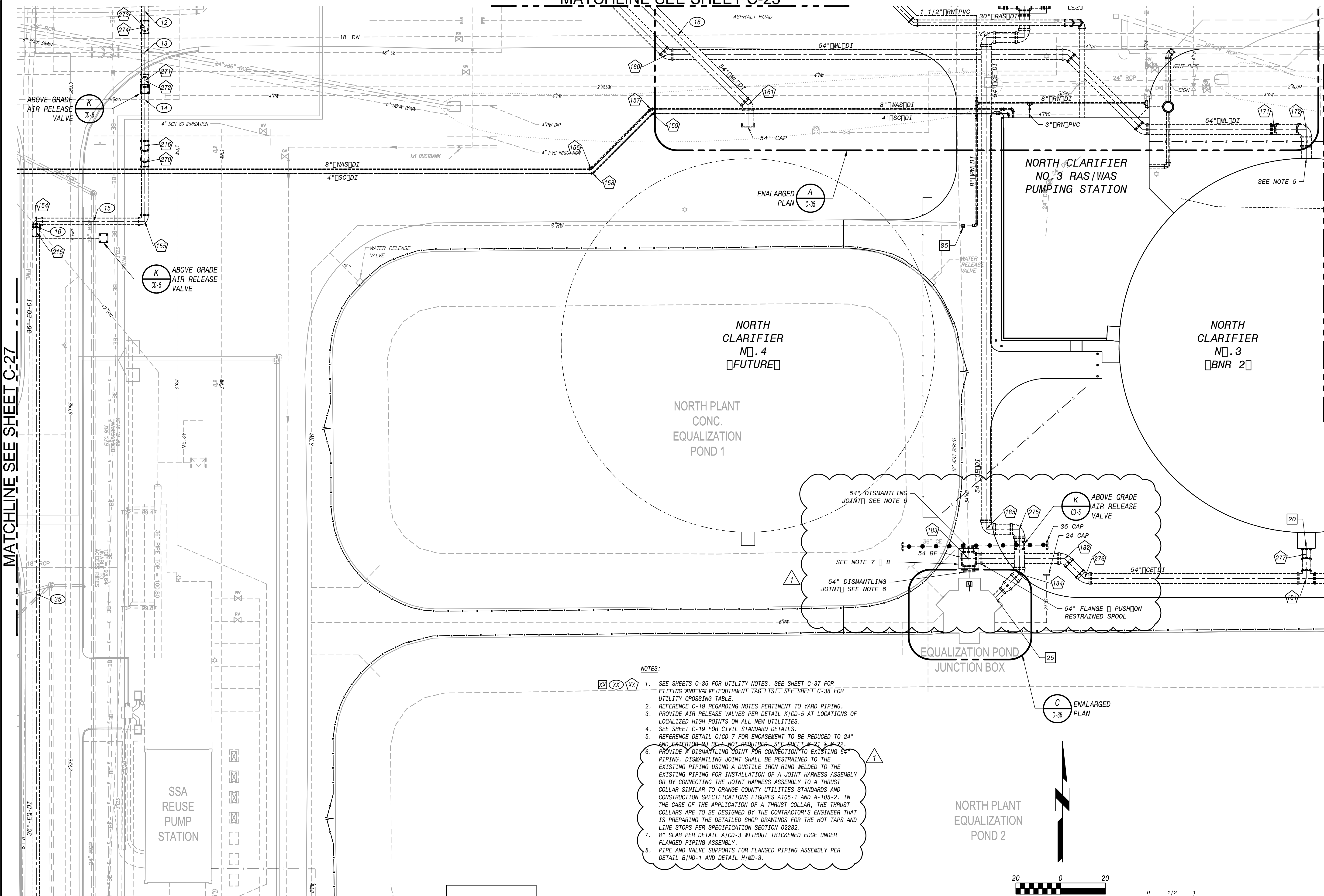
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

01/06/2015 09:00:00

MATCHLINE SEE SHEET C-27

MATCHLINE SEE SHEET C-25

MATCHLINE SEE SHEET C-29



NOTES:

- SEE SHEETS C-36 FOR UTILITY NOTES. SEE SHEET C-37 FOR FITTING AND VALVE/EQUIPMENT TAG LIST. SEE SHEET C-38 FOR UTILITY CROSSING TABLE.
- REFERENCE C-19 REGARDING NOTES PERTINENT TO YARD PIPING.
- PROVIDE AIR RELEASE VALVES PER DETAIL K(CD-5) AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.
- SEE SHEET C-19 FOR CIVIL STANDARD DETAILS.
- REFERENCE DETAIL C(CD-7) FOR ENCASEMENT TO BE REDUCED TO 24" AND EXTERIOR 1/2" BELL NOT REQUIRED. SEE SHEET M-21 & M-22.
- PROVIDE A DISMANTLING JOINT FOR CONNECTION TO EXISTING 54" PIPING. DISMANTLING JOINT SHALL BE RESTRAINED TO THE EXISTING PIPING USING A DUCTILE IRON RING WELDED TO THE EXISTING PIPING FOR INSTALLATION OF A JOINT HARNESS ASSEMBLY OR BY CONNECTING THE JOINT HARNESS ASSEMBLY TO A THRUST COLLAR SIMILAR TO ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS FIGURES A105-1 AND A-105-2. IN THE CASE OF THE APPLICATION OF A THRUST COLLAR, THE THRUST COLLARS ARE TO BE DESIGNED BY THE CONTRACTOR'S ENGINEER THAT IS PREPARING THE DETAILED SHOP DRAWINGS FOR THE HOT TAPS AND LINE STOPS PER SPECIFICATION SECTION 0282.
- 8" SLAB PER DETAIL A(CD-3) WITHOUT THICKENED EDGE UNDER FLANGED PIPING ASSEMBLY.
- PIPE AND VALVE SUPPORTS FOR FLANGED PIPING ASSEMBLY PER DETAIL B(MD-1) AND DETAIL H(MD-3).

1

54" DISMANTLING JOINT SEE NOTE 6

SEE NOTE 7 & 8

54" DISMANTLING JOINT SEE NOTE 6

54" AIR BRASS

54" WELDED

54" FLANGE PUSH ON RESTRAINED SPOOL

ENLARGED PLAN C-36

NORTH PLANT EQUALIZATION POND 2

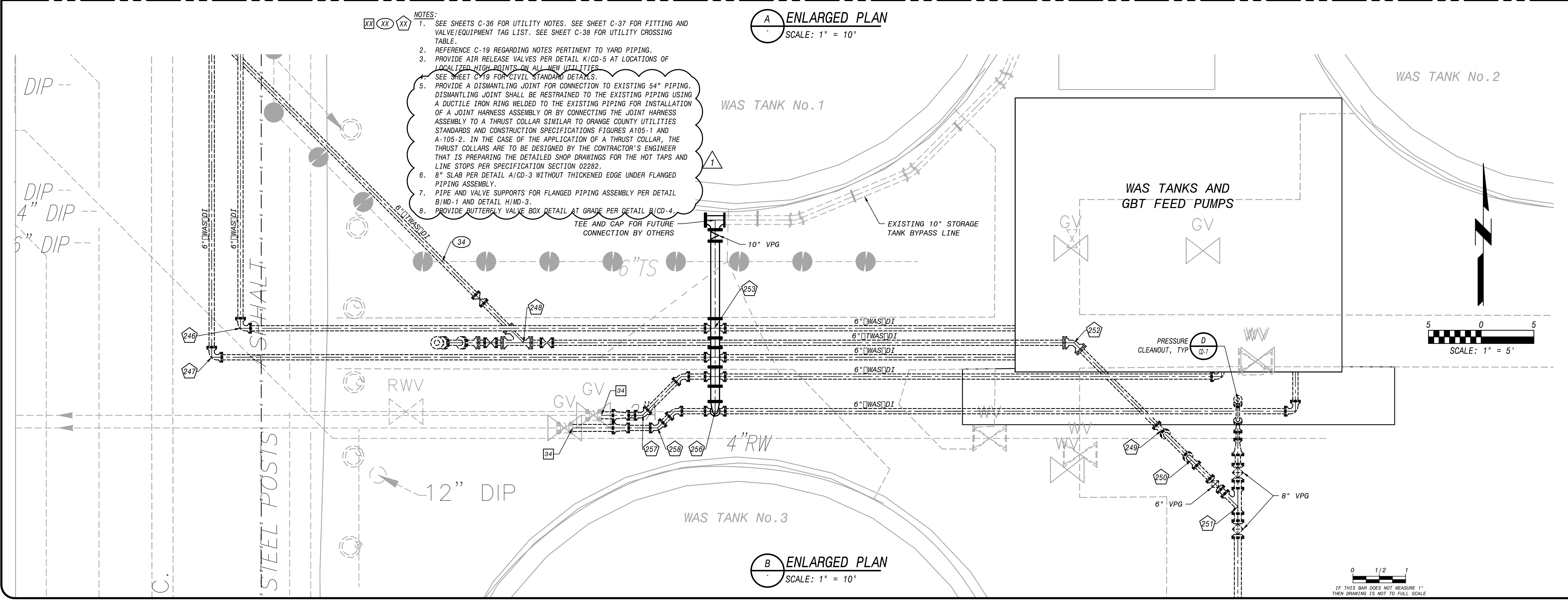
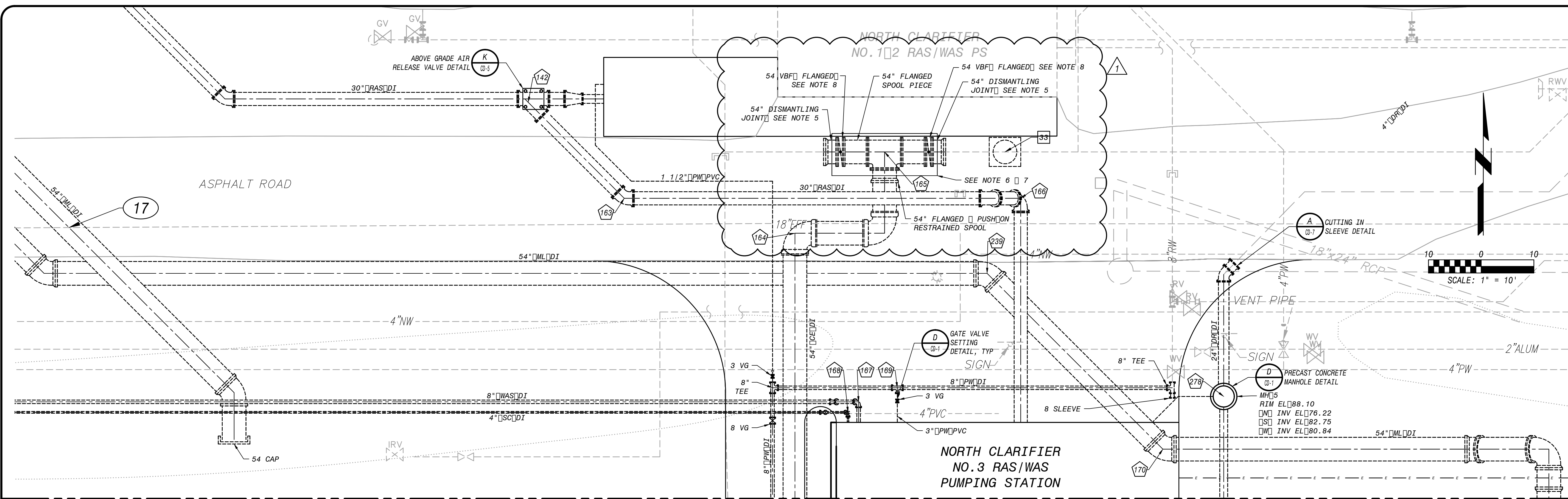


IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

FD 180761
07/07/21

MATCHLINE SEE SHEET C-31

<p>AECOM <small>AECOM TECHNICAL SERVICES, INC. 1000 N. GULF BLVD., SUITE 200 ORLANDO, FLORIDA 32801</small></p>		<p>BLACK & VEATCH <small>Building a world of difference</small></p> <p>Black & Veatch Corporation 201 South Orange Avenue, Suite 500 Orlando, Florida 32801</p>	
<p>DESIGNED: EW</p> <p>DETAILED: DLP</p> <p>CHECKED: CE/DA</p> <p>APPROVED: WDM</p> <p>DATE: JANUARY 2015</p> <p>ENGINEER OF RECORD: WILLIAM D. MARSHALL, PE FLORIDA LICENSE NO.: 66282</p>	<p>PROJECT NO. 180761</p> <p>C-28 SHEET 82 OF 364</p>	<p>10/26/15 ADDENDUM NO. 4</p> <p>7/20/15 BID ISSUE</p> <p>DATE</p> <p>REVISIONS AND RECORD OF ISSUE</p> <p>CYGNET ID:</p> <p>WF:</p> <p>SAVED:</p> <p>PLOTTED:</p> <p>USER:</p>	<p>1 BW W/M</p> <p>NO. BY CK APP</p> <p>DATE</p> <p>ISSUE</p> <p>DATE</p> <p>ISSUE</p> <p>DATE</p> <p>ISSUE</p> <p>DATE</p> <p>ISSUE</p>
<p>ORANGE COUNTY UTILITIES SOUTH WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS</p> <p>CIVIL YARD PIPING GRID 10</p>			



- NOTES:**
- SEE SHEETS C-36 FOR UTILITY NOTES. SEE SHEET C-37 FOR FITTING AND VALVE/EQUIPMENT TAG LIST. SEE SHEET C-38 FOR UTILITY CROSSING TABLE.
 - REFERENCE C-19 REGARDING NOTES PERTINENT TO YARD PIPING.
 - PROVIDE AIR RELEASE VALVES PER DETAIL K/CD-5 AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.
 - SEE SHEET C-19 FOR CIVIL STANDARD DETAILS.
 - PROVIDE A DISMANTLING JOINT FOR CONNECTION TO EXISTING 54" PIPING. DISMANTLING JOINT SHALL BE RESTRAINED TO THE EXISTING PIPING USING A DUCTILE IRON RING WELDED TO THE EXISTING PIPING FOR INSTALLATION OF A JOINT HARNESS ASSEMBLY OR BY CONNECTING THE JOINT HARNESS ASSEMBLY TO A THRUST COLLAR SIMILAR TO ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS FIGURES A105-1 AND A-105-2. IN THE CASE OF THE APPLICATION OF A THRUST COLLAR, THE THRUST COLLARS ARE TO BE DESIGNED BY THE CONTRACTOR'S ENGINEER THAT IS PREPARING THE DETAILED SHOP DRAWINGS FOR THE HOT TAPS AND LINE STOPS PER SPECIFICATION SECTION 02282.
 - 8" SLAB PER DETAIL A/CD-3 WITHOUT THICKENED EDGE UNDER FLANGED PIPING ASSEMBLY.
 - PIPE AND VALVE SUPPORTS FOR FLANGED PIPING ASSEMBLY PER DETAIL B/MD-1 AND DETAIL H/MD-3.
 - PROVIDE BUTTERFLY VALVE BOX DETAIL AT GRADE PER DETAIL R/CD-4. TEE AND CAP FOR FUTURE CONNECTION BY OTHERS.

10/26/15	ADDENDUM NO. 4	1	BW	WM	MM	NO.	BY	CHK	APP
7/20/15	BID ISSUE								
	DATE								
	CYGNET ID:								
	WF:								
	SAVED:								
	PLOTTED:								
	USER:								

AECOM
AECOM TECHNICAL SERVICES, INC.
1000 N. WINDY HILL ROAD, SUITE 200
ORLANDO, FLORIDA 32828
CERTIFICATE OF AUTHORIZATION NO. 0B-815

BLACK & VEATCH
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Certificate No. 8132

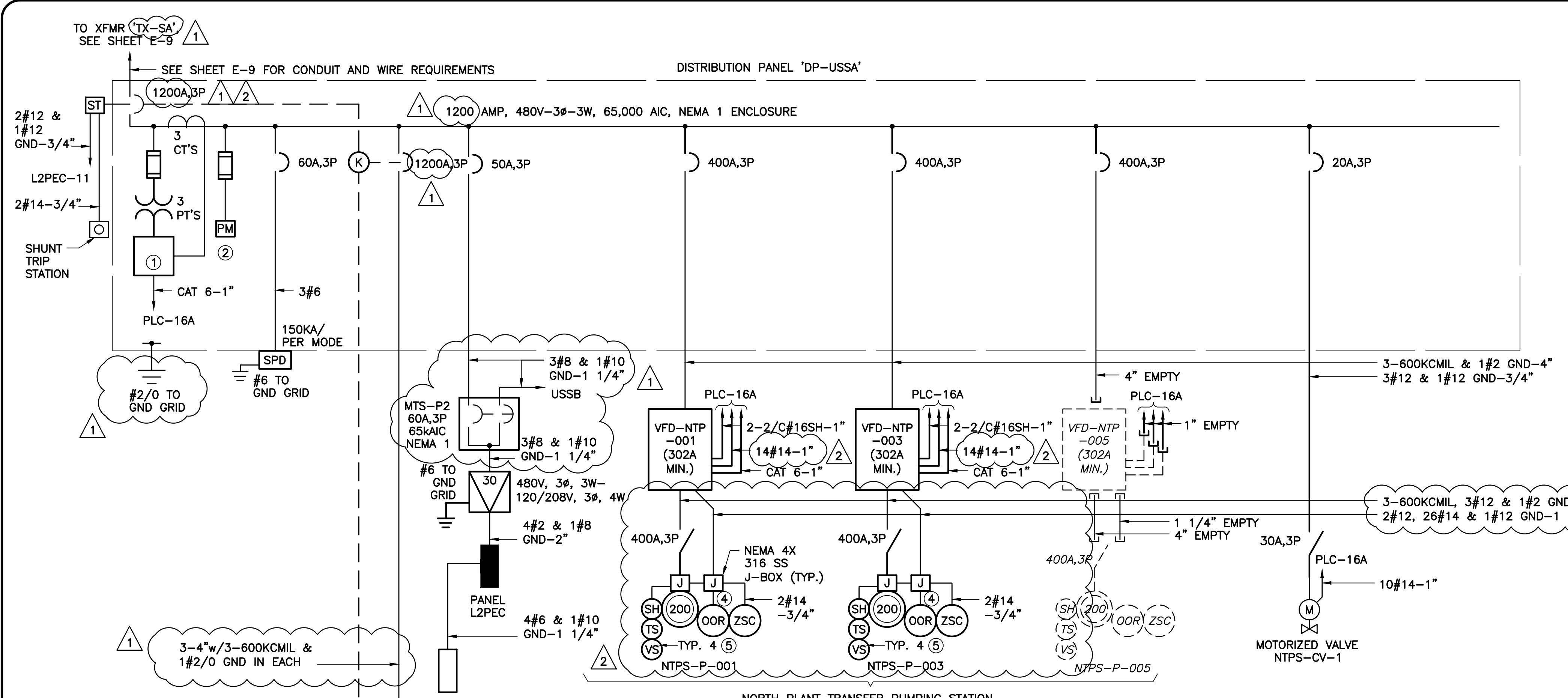
ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

CIVIL
YARD PIPING
GRID 17

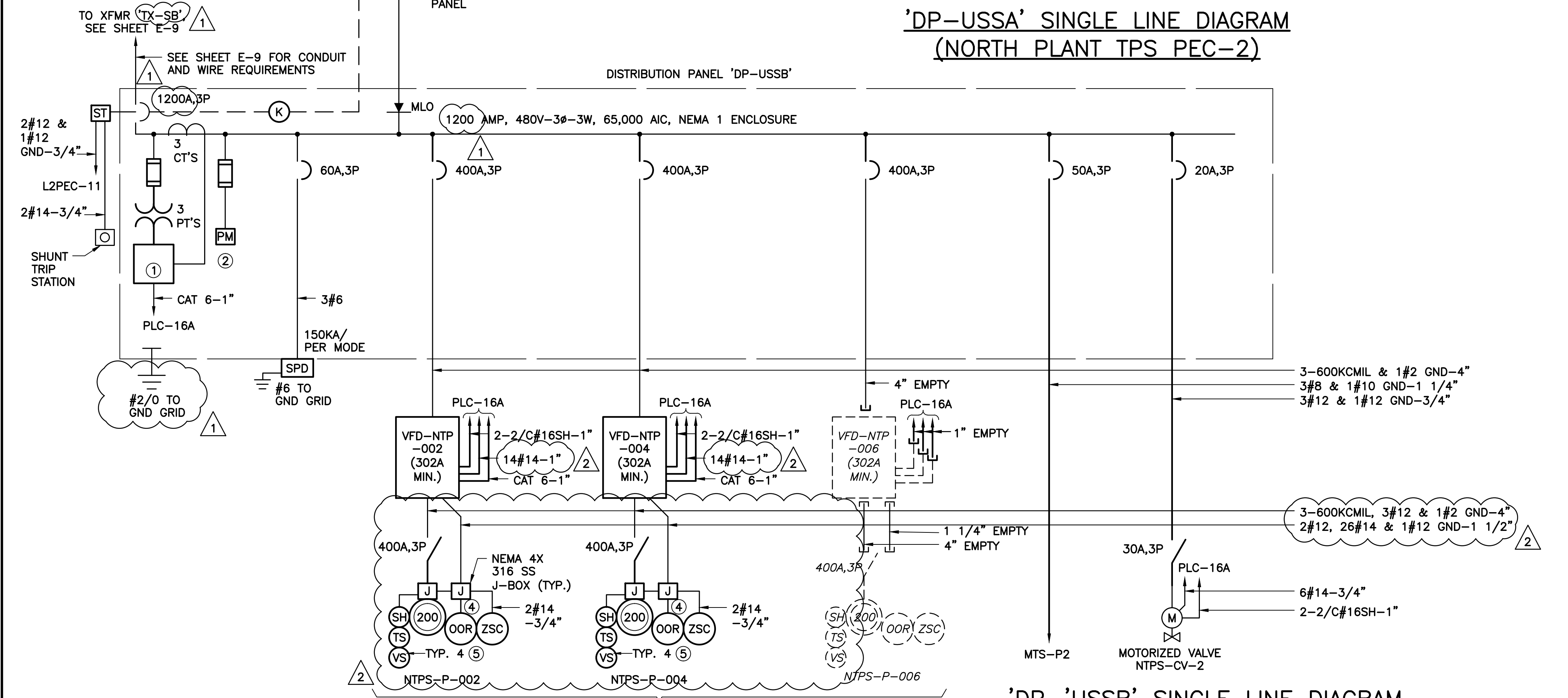
DESIGNED: EW
 DETAILED: DLP
 CHECKED: CE/DA
 APPROVED: WDM
 DATE: JANUARY 2015
 ENGINEER OF RECORD:
 WILLIAM D. MARSHALL, PE
 FLORIDA LICENSE NO.:
 66282

PROJECT NO.
180761
C-35
SHEET
89 OF 364

5/18/2015
D:\180761



**'DP-USSA' SINGLE LINE DIAGRAM
(NORTH PLANT TPS PEC-2)**



**'DP-USSB' SINGLE LINE DIAGRAM
(NORTH PLANT TPS PEC-2)**

**'DP-USSA' LOAD TABULATION
480V-3Ø**

DESCRIPTION	LOAD	AMPACITY
① TRANSFER PUMP	2 @ 200 HP	= 480.00 AMPS
① FUTURE TRANSFER PUMP	1 @ 200 HP	= 240.00 AMPS
① MOTORIZED VALVE	1 @ 1 HP	= 2.10 AMPS
PANEL L2PEC VIA XFMR	1 @ 30 KVA	= 36.08 AMPS
CONNECTED LOAD		= 758.18 AMPS
② SERVICE ENTRANCE = 758.18 AMPS + (0.25)(240.00)		= 818.18 AMPS

**'DP-USSB' LOAD TABULATION
480V-3Ø**

DESCRIPTION	LOAD	AMPACITY
① TRANSFER PUMP	2 @ 200 HP	= 480.00 AMPS
① FUTURE TRANSFER PUMP	1 @ 200 HP	= 240.00 AMPS
① MOTORIZED VALVE	1 @ 1 HP	= 2.10 AMPS
CONNECTED LOAD		= 722.10 AMPS
② SERVICE ENTRANCE = 722.10 AMPS + (0.25)(240.00)		= 782.10 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.

- NOTES:**
- POWER MONITOR. SEE SPECIFICATION SECTION 16482 FOR REQUIREMENTS.
 - PROVIDE 2#14-3/4" FROM PHASE MONITOR TO PHASE MONITOR CONTROLS IN PLC-16A.
 - PANELBOARD TO BE AN I-LINE HCM TYPE PANELBOARD, (1200A, 3P) P-J-FRAME MAIN BREAKER WITH TOTAL BREAKER MOUNTING SPACE TO BE NOT LESS THAN 72 INCHES, RATED AT 65,000 AIC. BRANCH BREAKERS RATED AT 65,000 AIC,
 - * 15A - 150A HJ FRAME
 - * 150A - 250A JJ FRAME
 - * 250A - 600A LJ FRAME
 - 6#14-3/4".
 - SEE SPECIFICATION SECTION 11214 FOR REQUIREMENTS ON MOTOR VIBRATION SWITCHES.

ADDENDUM NO.	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	APP.
2	DD LMR LMR				
1	DD LMR LMR				
1	10/12/15	BID ISSUE			
1	7/20/15	REVISED AND RECORD OF ISSUE			

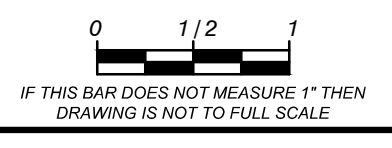
EDDA
 Electrical Design Associates, Inc.
 4783 SOUTH CONWAY ROAD, STE. E
 ORLANDO, FLORIDA 32812
 PHONE (407) 745-6604
 FAX (407) 745-6603
 P.O. BOX 8079
 LILLIAN M. REYES, P.E.
 FLORIDA P.E. NO. 50780

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 Orlando, Florida 32801
 Certificate No. 8132

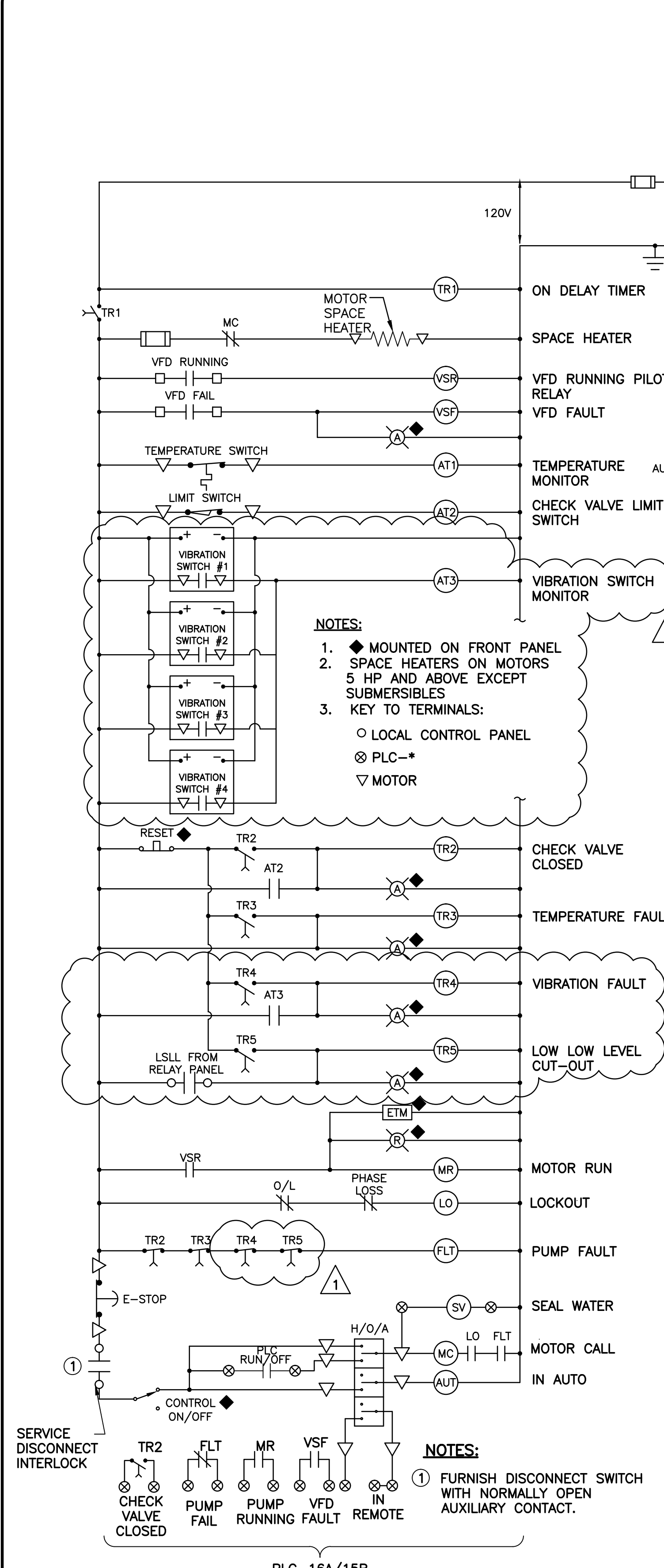
**ORANGE COUNTY UTILITIES
 SOUTH WATER RECLAMATION FACILITY
 PHASE V IMPROVEMENTS**
 ELECTRICAL
 'DP-USSB' & 'DP-USSA'
 SINGLE LINE DIAGRAMS

DESIGNED: DD
 DETAILED: RRM
 CHECKED: LMR
 APPROVED: LMR
 DATE: JANUARY 2015
 ENGINEER OF RECORD:
 LILLIAN M. REYES
 FLORIDA LICENSE NO.:
 50780

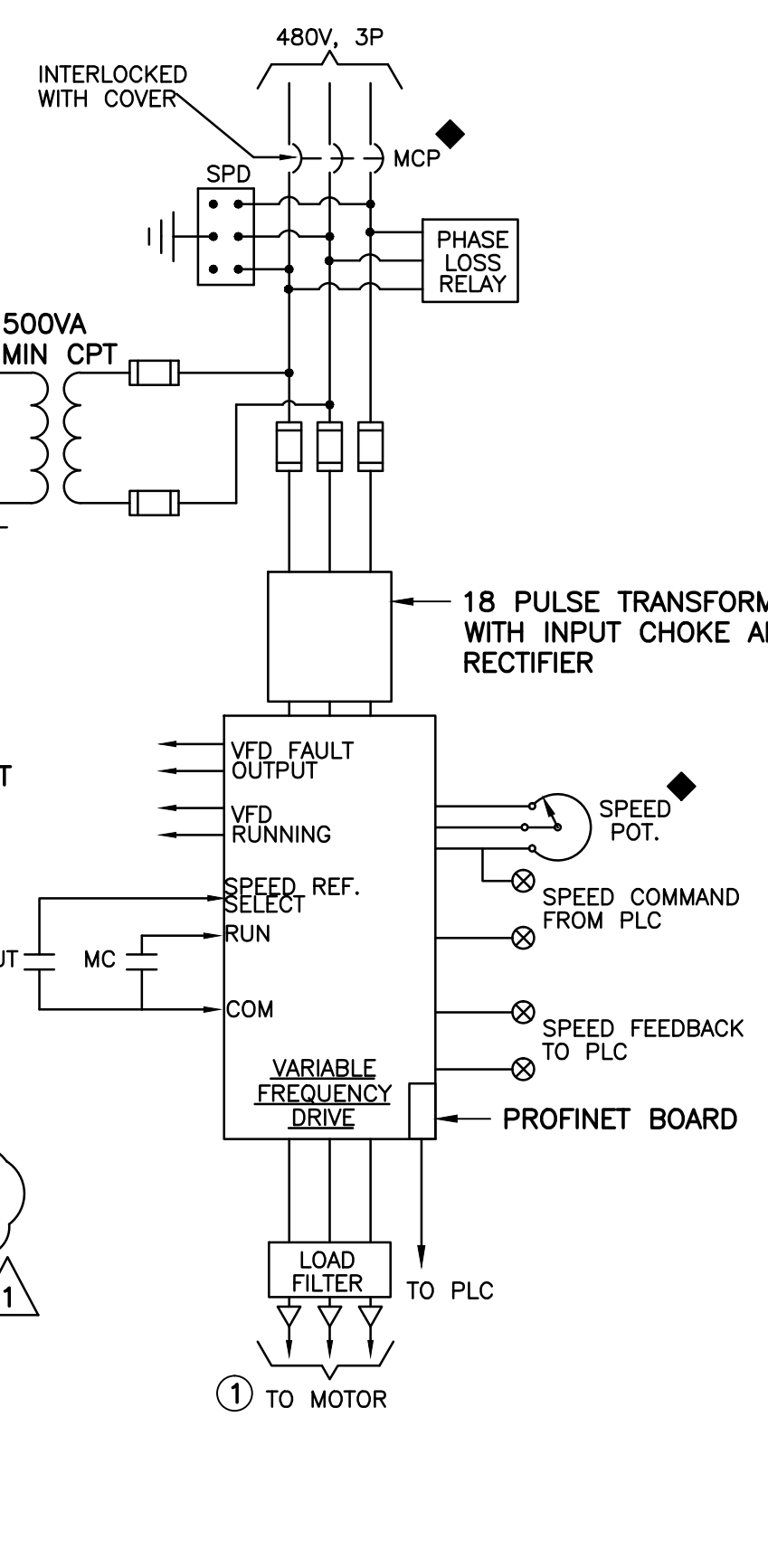
PROJECT NO.
 180761
E-14
 SHEET
 233 OF 364



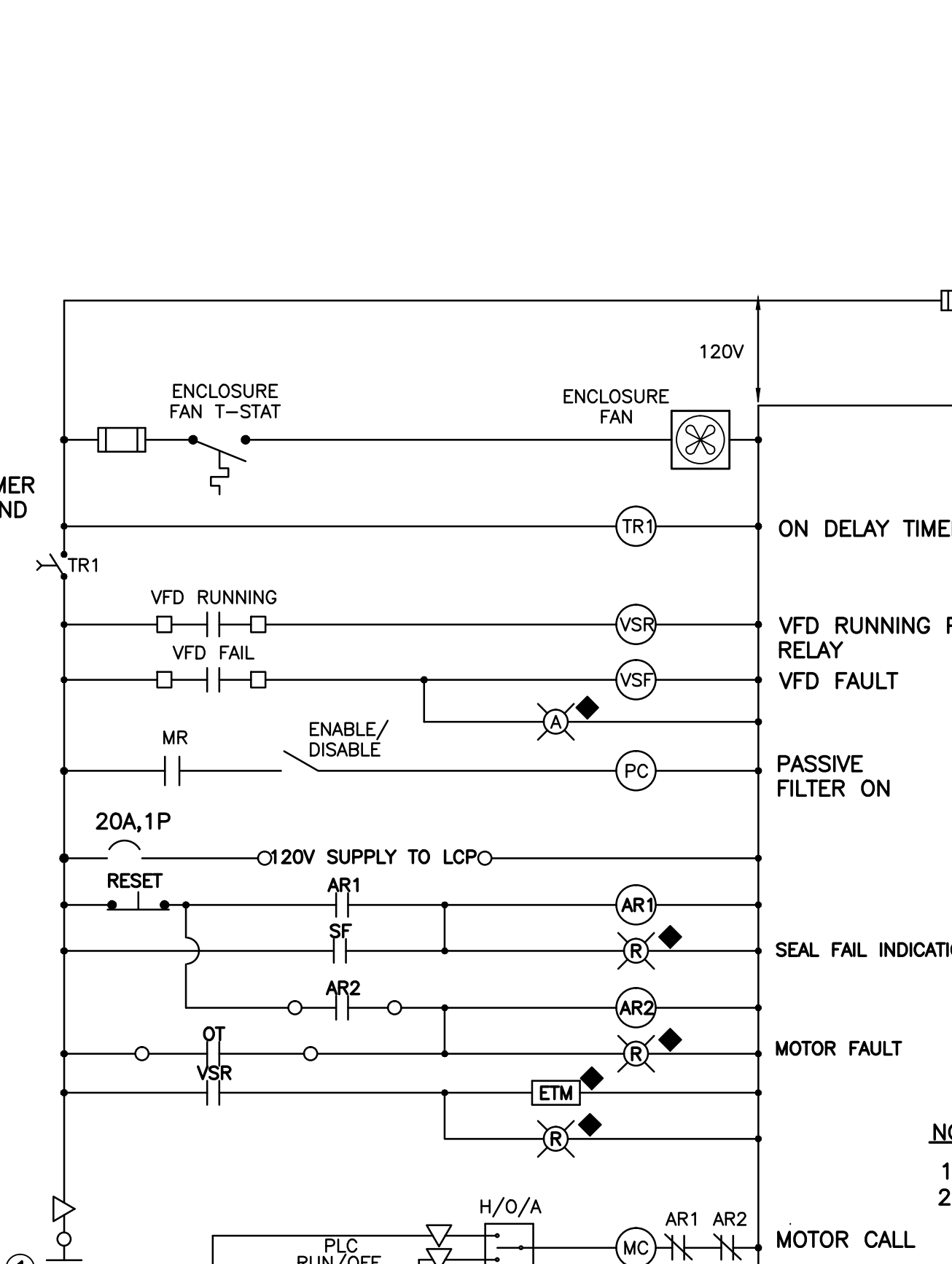
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 dmmh



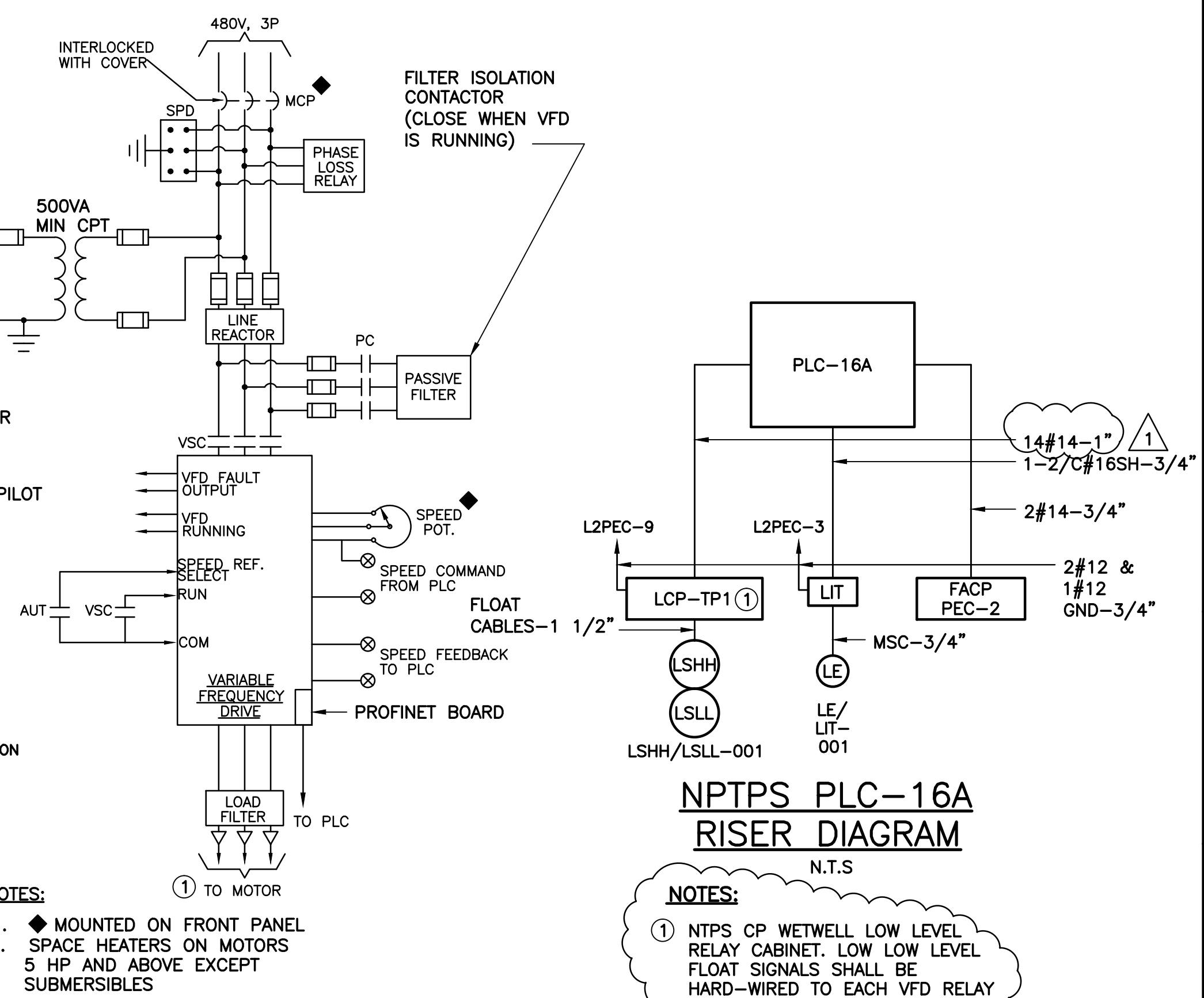
NORTH PLANT TRANSFER PUMP & EQ PUMP VFD ELEMENTARY DIAGRAM (TYP.)



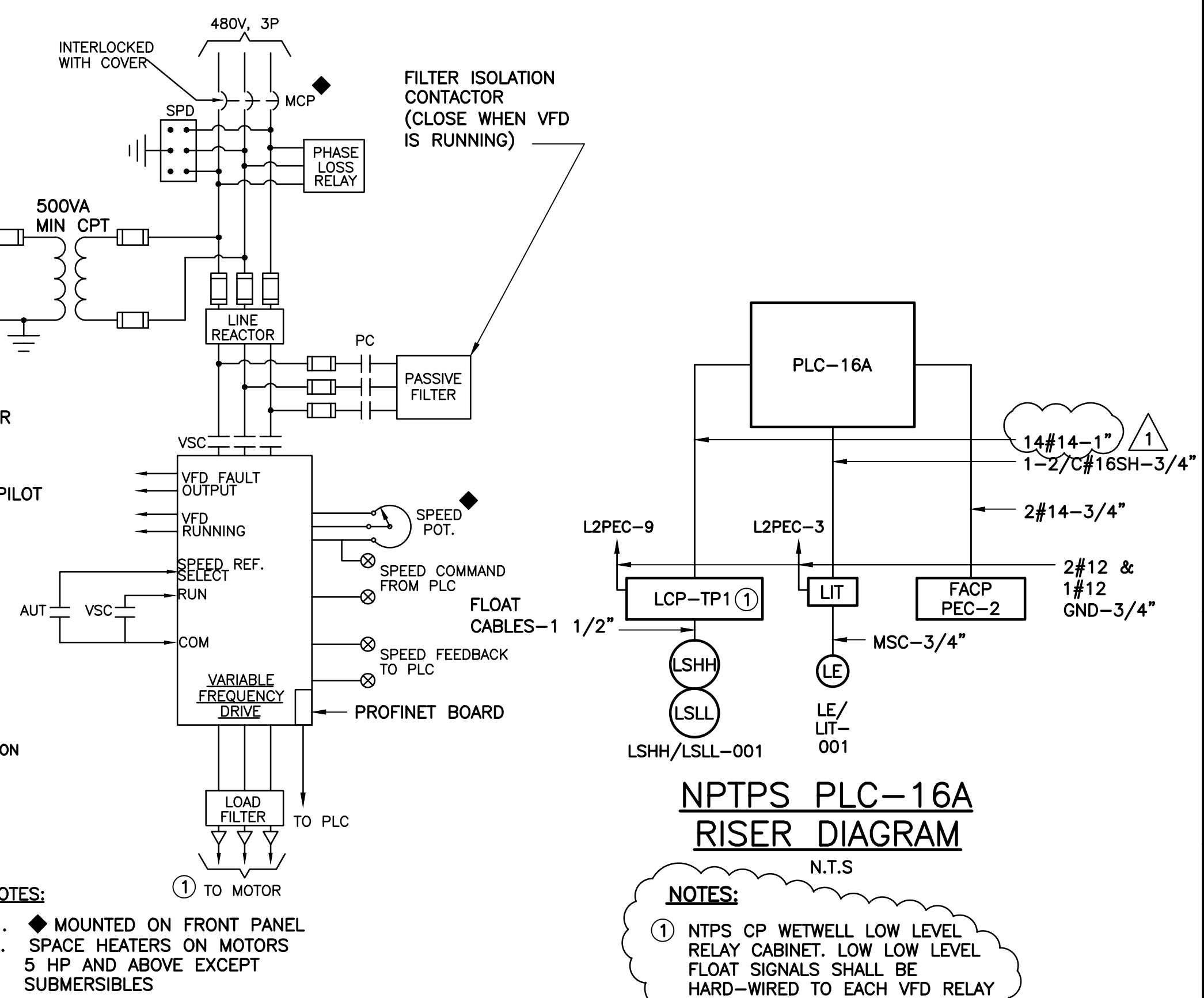
N2 IR PUMP LCP DIAGRAM (TYP.)



N2 INTERNAL RECYCLE PUMP VFD ELEMENTARY DIAGRAM (TYP.)



EQPS PLC-15B RISER DIAGRAM



NTPS PLC-16A RISER DIAGRAM

ADDENDUM NO. 4	DD	LMR	LMR
BID ISSUE	2	DD	LMR
REVISIONS AND RECORD OF ISSUE			
DATE	10/26/15	DATE	7/20/15
CYBNET ID:		CYBNET ID:	
ORLANDO, FLORIDA 32812		ORLANDO, FLORIDA 32812	
PHONE (407) 745-6604		PHONE (407) 745-6604	
FAX (407) 745-6603		FAX (407) 745-6603	
SAVED:	WF: 265_E-46_ELEM_7	SAVED:	WF: 265_E-46_ELEM_7
XREF1:		XREF2:	
XREF3:		XREF4:	
XREF5:		XREF6:	
USER:		USER:	

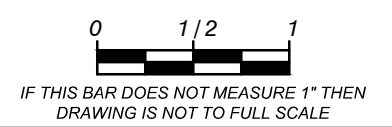
EDDA
Electrical Design Associates
4783 SOUTH CONWAY ROAD, STE. E
ORLANDO, FLORIDA 32812
PHONE (407) 745-6604
FAX (407) 745-6603

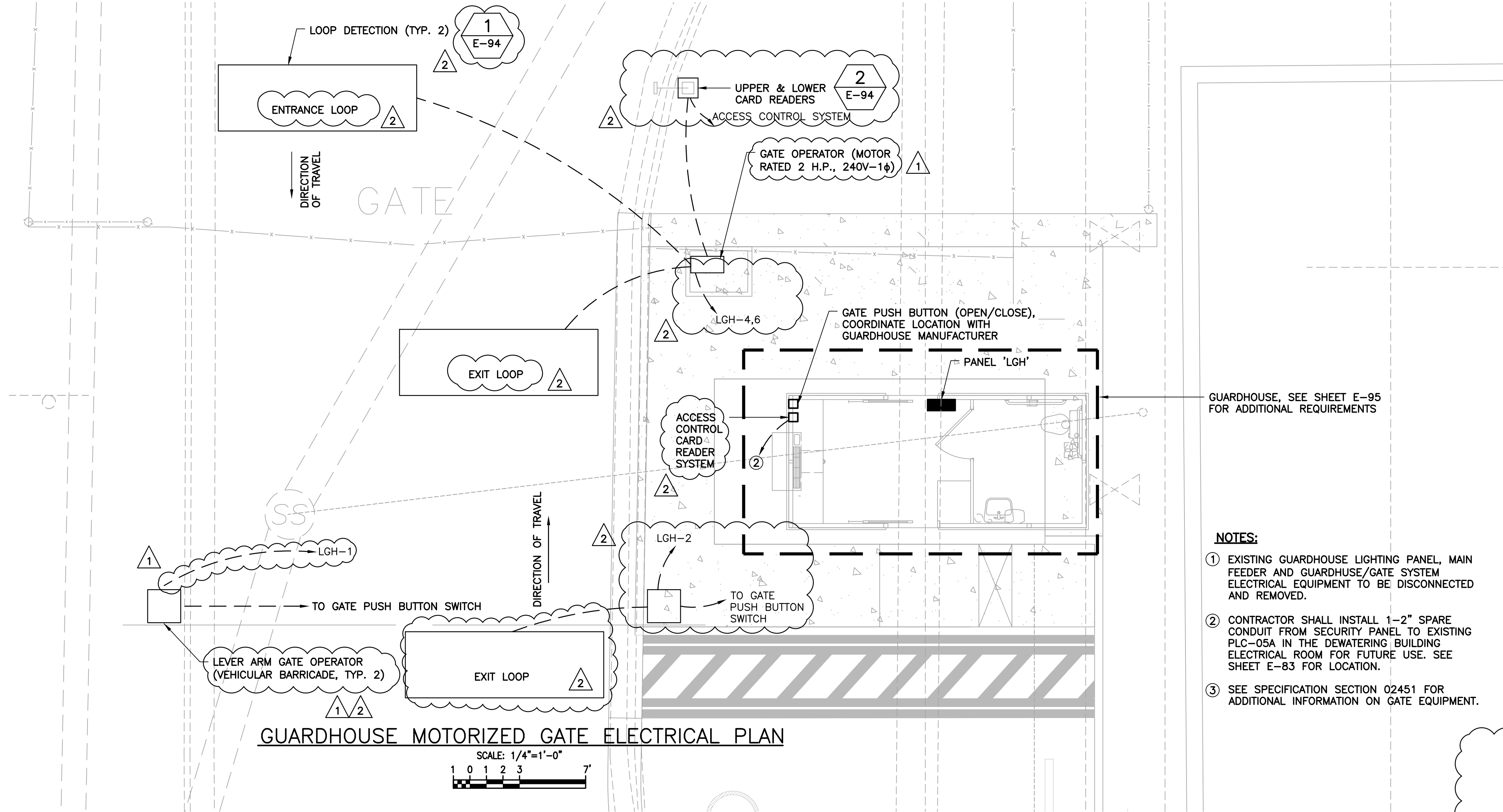
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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS

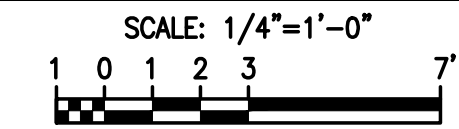
ELECTRICAL
ELEMENTARY DIAGRAMS - SHEET 7

DESIGNED: DD
DETAILED: ARM
CHECKED: LMR
APPROVED: LMR
DATE: JANUARY 2015
ENGINEER OF RECORD:
LILLIAN M. REYES
FLORIDA LICENSE NO.:
50780
PROJECT NO.
180761
E-46
SHEET
265 OF 364

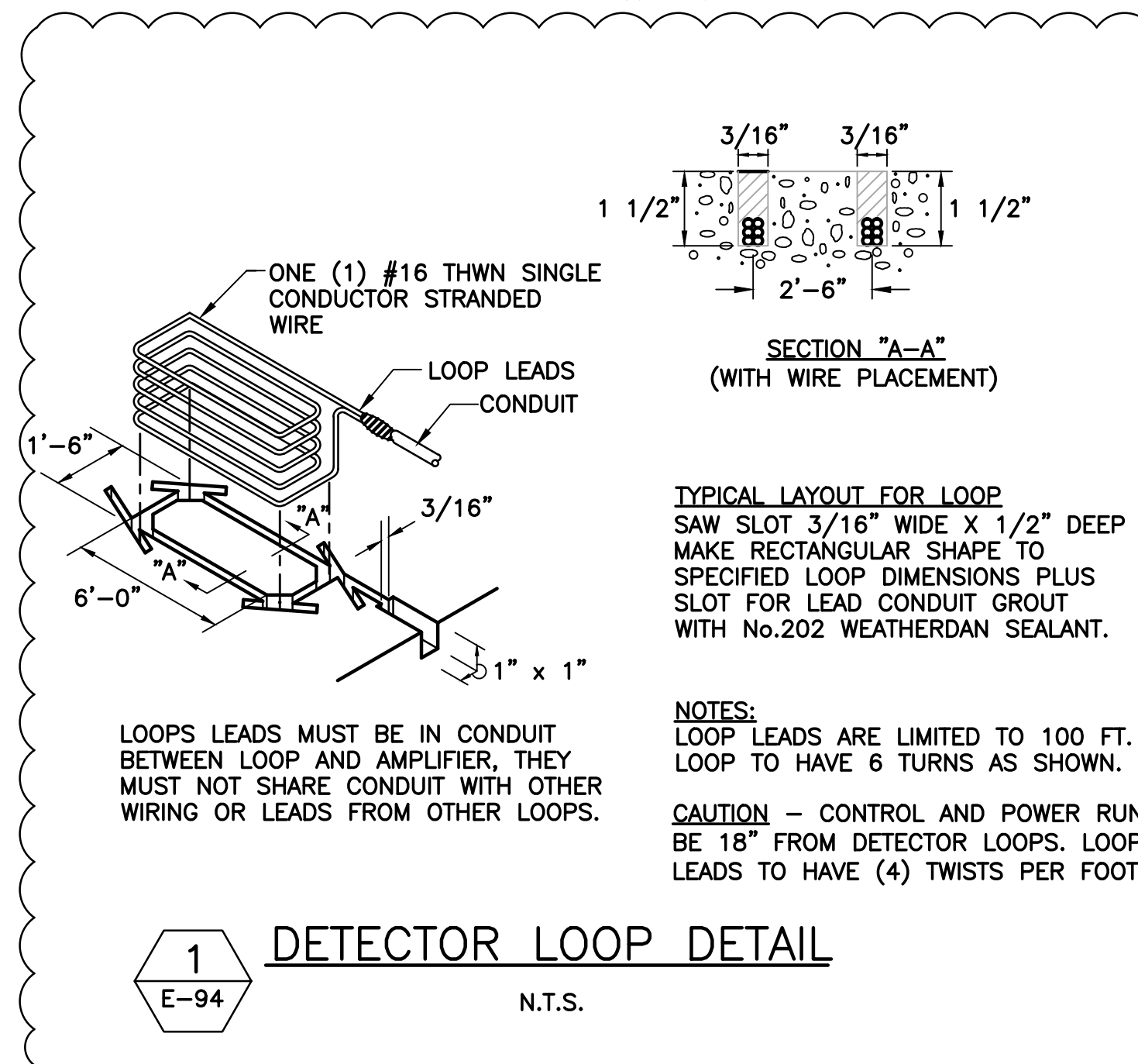




GUARDHOUSE MOTORIZED GATE ELECTRICAL PLAN

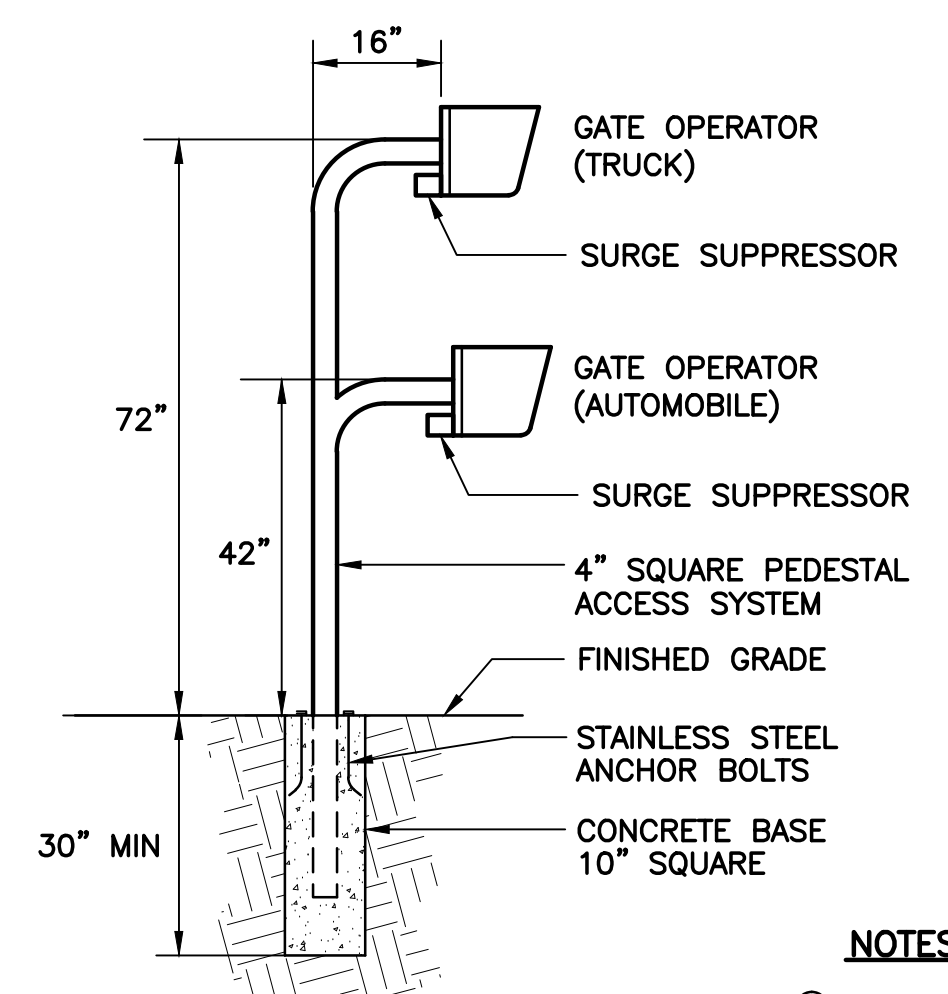


- NOTES:**
- EXISTING GUARDHOUSE LIGHTING PANEL, MAIN FEEDER AND GUARDHOUSE/GATE SYSTEM ELECTRICAL EQUIPMENT TO BE DISCONNECTED AND REMOVED.
 - CONTRACTOR SHALL INSTALL 1-2" SPARE CONDUIT FROM SECURITY PANEL TO EXISTING PLC-05A IN THE DEWATERING BUILDING ELECTRICAL ROOM FOR FUTURE USE. SEE SHEET E-83 FOR LOCATION.
 - SEE SPECIFICATION SECTION 02451 FOR ADDITIONAL INFORMATION ON GATE EQUIPMENT.



1 DETECTOR LOOP DETAIL

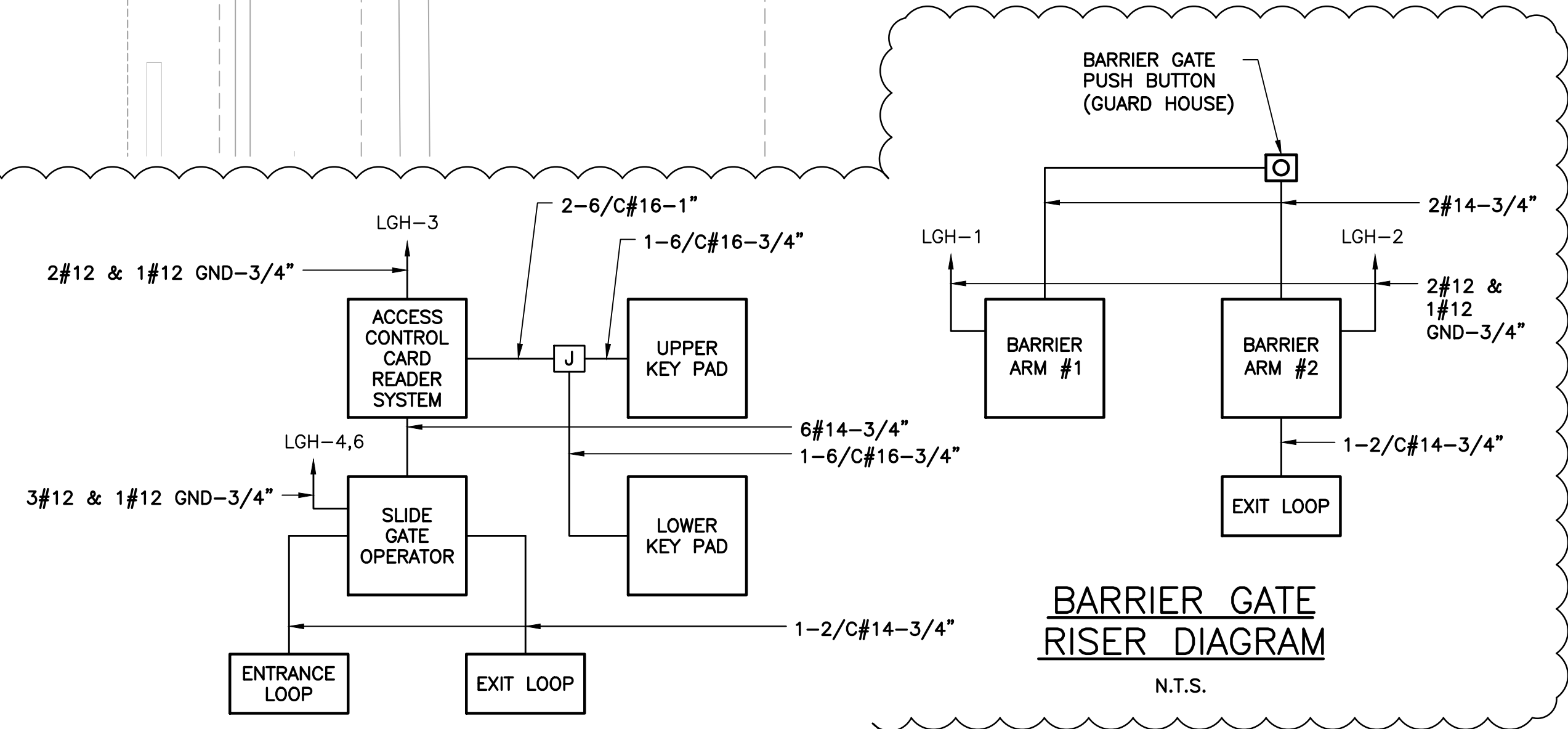
N.T.S.



2 DUAL GATE OPERATOR STANCHION MOUNT DETAIL

N.T.S.

- NOTES**
- CONTRACTOR TO SUBMIT STRUCTURAL CALCULATIONS FOR PEDESTAL SIGNED AND SEALED BY A STATE OF FLORIDA LICENSED STRUCTURAL ENGINEER.



SLIDE GATE EQUIPMENT RISER DIAGRAM

N.T.S.

BARRIER GATE RISER DIAGRAM

N.T.S.

10/26/15	ADDITIONAL NO. 4	DD	LMR	APP
10/12/15	ADDITIONAL NO. 2	DD	LMR	APP
7/20/15	BID ISSUE	1	DD	LMR
	REVISED AND RECORD OF ISSUE			
	DATE			
	CYNET ID:			
	WF: 312, E-94 GUARD_GATE			
	SAVED:			
	PLOTTED:			
	USER:			
	DATE:			
	BY:			
	NO.:			
	ISSUE:			

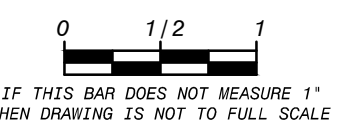
EDA
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ORANGE COUNTY UTILITIES
SOUTH WATER RECLAMATION FACILITY
PHASE V IMPROVEMENTS
ELECTRICAL
GUARDHOUSE MOTORIZED GATE
ELECTRICAL PLAN

DESIGNED:	DD
DETAILED:	ARM
CHECKED:	LMR
APPROVED:	LMR
DATE:	JANUARY 2015
ENGINEER OF RECORD:	LILLIAN M. REYES
FLORIDA LICENSE NO.:	50780

PROJECT NO.
180761
E-94
SHEET
313 OF 364



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

G:\Active Projects\Black & Veatch\Orange County\SWRF Phase V\Improvements\1 - Phase V\17 - Addendum No. 4\DWG\313_E-94_GUARD_GATE.dwg, 22 X 34, 10/26/2015 12:54:25 PM, dlorandson

E-94
313 OF 364