

**August 1, 2014**  
**BOARD OF COUNTY COMMISSIONERS**  
**ORANGE COUNTY, FLORIDA**

**ADDENDUM NO. 4**  
**IFB NO. Y14-748**  
**ORANGE COUNTY EASTERN WATER RECLAMATION FACILITY**  
**PHASE V AND CENTRIFUGE DEWATERING IMPROVEMENTS**

**BID OPENING: August 19, 2014 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 ~~strike through~~.

Due to the volume of questions received, not all questions received to date have been responded to within this Addendum. Future Addendum will be issued in a timely manner to provide response.

Future Addendum will provide clarifications and a unit priced bid allocation for earthwork associated with the Reject Storage Pond.

**A. SPECIFICATIONS**

Not Used.

**B. DRAWINGS**

Bid Package A (Phase V Improvements):

No.	Sheet No.	Sheet Title	Comments
4	G-004	General Notes, Location Map and Flow Stream Identification	Reference Note 7
33	C-121	Yard Piping Plan	Reference Notes 10 & 12
34	C-122	Yard Piping Plan	Reference Note 1
35	C-123	Yard Piping Plan	Reference Note 11

No.	Sheet No.	Sheet Title	Comments
4	G-004	General Notes, Location Map and Flow Stream Identification	Reference Note 7
33	C-121	Yard Piping Plan	Reference Notes 10 & 12
36	C-124	Yard Piping Plan	Reference Note 4
113	S-500-103	Pretreatment Structure Intermediate Plan	Reference Note 8
147	S-580-301	Chlorine Contact Tank Sections	Reference Note 13
169	D-220-106	Phase I-II Blower Improvement Plan and Section	Reference Note 5
258	D-520-101	Supplemental Carbon Feed and Storage Plan	Reference Note 2
261	D-540-301	Secondary Clarifier 11 Sections and Details	Reference Note 6

**Bid Package B (Centrifuge Dewatering Improvements):**

No.	Sheet No.	Sheet Title	Comments
2	G-002	Index of Drawings and General Notes	Reference Note 7
18	C-504	Civil Details	Reference Note 3
48	D-620-103	WAS Holding Tanks Demolition Plan and Section	Reference Note 14
58	D-650-102	Centrifuge Dewatering Building Intermediate Plan	Reference Note 9
59	D-650-103	Centrifuge Dewatering Building Platform Plan	Reference Note 9

**Drawing Notes:**

1. Reference Bidder Question 21
2. Reference Bidder Question 22
3. Reference Bidder Question 45
4. Reference Bidder Questions 86 & 87 & 90
5. Reference Bidder Question 107
6. Reference Bidder Question 84
7. Reference Bidder Question 118
8. Reference Additional Information No. 1
9. Reference Bidder Question 12
10. Reference Bidder Question 88

11. Reference Bidder Question 89
12. Reference Additional Information No. 2
13. Reference Bidder Question 120
14. Reference Bidder Question 139

#### **D. BIDDER QUESTIONS**

1. In reference to Bid Package B, Andritz is one of three (3) suppliers specified in Section 11371, Centrifuges and Appurtenances. We appreciate the opportunity to competitively bid this project, and believe that Andritz has certainly earned this opportunity by being of assistance to the County and the County's consultants throughout the planning and design phases of the project.

As an example of our efforts, Andritz provided a full size centrifuge for pilot testing at no cost to the County at the request of Orange County Utilities and the County's consultant. Testing was performed at each of the following Orange county facilities as follows:

- OCU NWWRF Jan 25-28, 2010
- OCU SWRF Feb. 8-11, 2010
- OCU EWRF Feb 1-4, 2010

Since then we have provided on-going assistance to the County's consultants for specific designs such as the subject project designed by AECOM.

We believe that it is the County's intent to competitively bid the centrifuges, however, after reviewing the specifications, we are concerned that a sole-sourced item Section 11315, Progressive Cavity Pumps may prevent Andritz from being able to offer a competitive bid.

More specifically, because of a recent rep change, it is our understanding that Alfa Laval Centrifuges and Seepex pumps are now represented by the same representative. We believe there is a strong possibility of "packaging" on bid day which would effectively eliminate the opportunity for the other (2) specified centrifuges to bid the project.

We understand that the County may sole source certain items such as the Progressive Cavity Pumps in Bid Package B Section 11315 (or the Grit

System in Bid Package A Section 11320), but given the time and financial investment which Andritz has made in this project, we request the opportunity to bid it competitively and request that that the County eliminate the potential for packaging.

We would suggest that the County modify the bid documents and/or specifications and handle Section 11315, Progressive Cavity Pumps, as the County has already done with the sole source equipment for Grit Removal, in Bid Package A Section 11320.

*Please reference Bid Package B, Drawing D-630-104 regarding the existing Seepex skid and control panel where the Progressive Cavity Pumps (630-P-6 through 630-P-7) will be installed. The existing Seepex skid and control panel were installed less than five years ago and do not yet require replacement. The existing pumps do not have the required capacity for use with the new Centrifuges. Replacement of the pumps with Seepex pumps is more cost effective because the higher capacity pumps are the same size as the existing, thus not requiring replacement of the skid or control panel. In April 10, 2013, the manufacturer's representative provided a budgetary estimate for the pumps in the range of approximately \$37,134. Due to the value of the sole-sourced pumps in relation to the value of the Project, and the increased capital cost and construction cost with the replacement of a new skid to accommodate additional Progressive Cavity Pump manufacturers, Orange County will not revise the specifications to include additional named manufacturers.*

2. Reference Bid Package B, Specification Section 11315 - We would suggest that the County modify the bid documents and/or specifications and handle Section 11315, Progressive Cavity Pumps, as the County has already done with the sole source equipment for Grit Removal, in Bid Package A Section 11320.

*Please reference the response to Addendum 4, Bidder Question 1.*

3. Sorry to burden you with more issues on this project, but this is very important to insure a fair and competitive bid. I have finally had time to go through this project completely and send out requests to each of the manufacturers that I represent so that they can put together their proposals and pricing. As a manufacturer representative, I have been supporting your consulting engineers design effort for many years. We

represent many of the named manufacturers in your specifications. In Specification Section 11284 (High-Density Polymer Slide Gates) we represent one of the named manufacturers (Hambaker). I received an email back from Hambaker that stated the following. "On this occasion unfortunately due to our current workload we regretfully inform you we shall not be providing a quotation on this project." Since Hambaker is not able to bid this project, that leaves only one other NAMED manufacturer (Ashbrook Simon-Hartley) for this equipment item. This in effect "sole sources" Ashbrook Simon-Hartley for the High-Density Polymer Slide Gates. That in itself is not a bad thing as Ashbrook manufacturers excellent gates. However, Ashbrook is represented by MTS and they represent several other manufacturers who are NAMED on this project including Section 11281 (Fabricated Stainless Steel Slide Gates – WACO Environmental), Section 11336 (Secondary Clarifier Equipment – Walker Process), Section 11338 (Mechanical Mixing Equipment – Philadelphia), Section 11345 (Packaged Chemical Feed System – EnPro Technologies), Section 11530 (Biotrickling Filter – BioAir Solutions), Section 11315 (Progressing Cavity Pumps – Sole Sourced Seepex) and Section 11371 (Centrifuge And Appurtenances – Alfa Laval). If Ashbrook Simon-Hartley is the only manufacturer to be approved to bid on the High-Density Polymer Slide Gates and Seepex as the only approved manufacturer of the Progressing Cavity Pumps, then competition will be eliminated on all of the other products that MTS represents because MTS will be able to package the "sole sourced" items with the other equipment that they have named and provide one price thus eliminating contractors from being able to evaluate other manufactures pricing.

The packaging scenario that I described above can be easily avoided and competition can be created by the following:

- a. Pre-negotiate the price and the proposal for the High-Density Polymer Slide Gates and Progressing Cavity Pumps with Ashbrook and Seepex and list the price in the contract document. This is the same approach that you took with Hydro-International and Moss-Kelly on this project.
- b. Open up the specification to allow other manufacturers to bid. There are a few companies that I know who may be able to provide similar products. Those companies are Plasti-Fab and JASH for the Gates and Netzsch for the pumps. I don't represent either company for the gates but both companies do have local Florida representatives.

I am sure that Orange County would like to get a fair and competitive bid for the equipment on this project. I appreciate your consideration of this request and if you have any questions, please do not hesitate to contact me.

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement. Please reference Specification Section 11284, Part 2.A which states the following; High-density polymer slide gates shall be Coplastix® as manufactured by Ashbrook Simon-Hartley, Inc.; Composite2 Series 50 – 40 as manufactured by Ham Baker; or acceptable equal. "Or equal" is stated following the named manufacturers. Orange County Utilities is unable to provide additional named manufacturers upon the basis of a claim received during advertisement that one of the named manufacturers decides not to bid on the project. Following the Notice of Award and during shop drawing submittal phase, alternative manufacturers will be considered on an "or equal" basis to those specified*

4. Refer to Bid Packages A and B. Specification Section 13090 (Polyethylene Storage Tanks) names only Poly Processing Company as the Manufacturer. The representative for Poly Processing also represents other manufacturers specified on this project. Leaving a "sole source" on the Polyethylene Storage Tanks could potentially lead to "packaging" on this project and ultimately reduce competition. Please consider the following change via addendum.

Section 13090 (Polyethylene Storage Tanks), Page 1, Part 2, Paragraph A. AFTER "Poly Processing Company," INSERT "Snyder and Assmann."

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement. Please reference Specification Section 13090, Part 2.A which states the following; XLHDPE tanks shall be manufacturer or supplied by Poly Processing Company, or equal. "Or equal" is stated following the named manufacturer. Following the Notice of Award and during shop drawing submittal phase, alternative manufacturers will be considered on an "or equal" basis to those specified.*

5. Refer to Bid Package B, Specification Section 11371-20, Centrifuges and Appurtenances. Reason for specified beach angle of 11 degrees.

*The reason the beach angle is specified is to differentiate if the centrifuge is utilized for purposes of dewatering or for thickening. Specification Section 11371-20, Part 2.G.1.b is revised as follows;*

*b. Beach: A minimum of 10 11 degree beach with an inside diameter of 14 inches in the cylindrical section, including a conical beach extension.*

6. Refer to Bid Package B, Specification Section 11371-24, Centrifuges and Appurtenances Part 2.L - Vibration monitoring system MUST be clarified. The series 3300 is obsolete. We would strongly recommend deleting the 3300 series and inserting the Westfalia WeWatch system, which provides a system that is specifically designed for this equipment.

*Specification Section 11371-24, Part 2.L.2 is revised as follows;*

2. *Monitor shall be panel mounted on the System Control Panel and shall be similar to Bently-Nevada Corp., Series ~~3300~~ 3500 or equal with velocity sensors similar to Bently-Nevada Corp., Catalog No. 16699 or equal.*

*Please note the “or equal” clauses after the named units in Specification Section 11371-24, Part 2.L.2. The specifications cannot be revised to include a proprietary system based upon a singular manufacturer. Please reference Addendum No. 1, Bidder Question 4 regarding Orange County’s policy regarding evaluation of “or equal” items during advertisement. Following the Notice of Award and during shop drawing submittal phase, alternative vibration monitoring systems will be considered on an “or equal” basis to those specified in Part 2.L.2.*

7. Refer to Bid Package B, Specification Section 11371-36, Centrifuges and Appurtenances Part 2.Q - Motor bearings are specified for 100,000 hours. Typical is 40,000 hours. Verify this is a requirement.

*The requirement within Part 2.Q.3 to provide a minimum B-10 life of 100,000 hours will not be revised.*

8. My name is Cedric Vanderbeken from Drycake. I am interested in participating, as an alternate in the bid for the decanter centrifuges for this Eastern WRF in Orange County, FL. Established in 1995, DRYCAKE offers quality drying, dewatering, screening, materials handling equipment for the industrial and municipal markets. Each of our systems is developed with the particular needs of our customers in mind. DRYCAKE believes in working closely with our customers to find them well-designed cost-effective and practical solutions. Please find attached our DRYCAKE Product Catalog, Technical Data and a Reference List for your consideration. You will notice that while we have the required number of references, they are not all in the lower 48 states.

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement.*

9. Refer to Bid Package B, Specification Section 11371, Centrifuges and Appurtenances Part 2.E.2.-Since the percent cake solids and the polymer dosage are function of the volatile content in the feed sludge, we would request the Volatile content (TVS%) in the feed sludge to the centrifuges to be sure the centrifuges will meet the performance requirements stated in this paragraph of the specification.

*Orange County EWRf does not sample for total volatile solids (TVS) in Waste Activated Sludge (WAS), therefore the data is not available.*

10. Refer to Bid Package B, Specification Section 11371-34, Centrifuges and Appurtenances Part 2.L.2 - We would like to request to consider "equal" our standard vibration sensors with direct input into the PLC. In this case, it would not be necessary the extra remote monitoring system (Bentley Nevada).

*Please reference the response provided to Addendum 4, Bidder Question 6. There is an "or equal" clause following the vibration monitoring systems specified in Specification Section 11371-24, Part 2.L.2. Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy regarding evaluation of "or equal" items during advertisement. Following the Notice of Award and during shop drawing submittal phase, alternative vibration monitoring systems will be considered on an "or equal" basis to those specified in Part 2.L.2.*



11. Refer to Bid Packages A, Specification Section 03740 Modifications & Repair to Concrete. This section lists several different repairs that may be required (i.e. Spall repairs requiring formwork, spall repairs not requiring formwork, joint repairs, rigid and flexible crack repairs, epoxy crack repair, etc.) Bid Items 1.3 and 1.4 do not differentiate between the various spalls and crack repairs. Can the bid items be further defined to include various spall and crack types?

*Please reference Specification Section 01025-9, Parts D.4 and D.5 regarding a description of the unit priced items. These items are for unforeseen conditions. As the unit processes are presently in service and unable to be inspected until they are taken out of service to perform the Work, further differentiation cannot be provided because it is unknown. The particular repair method will be per the processes defined in Specification Section 03740.*

12. Refer to Bid Package B. Drawing D-650-102 line 6 RW-1 has two (2) TEEs drawn in a vertical orientation. There is not a section view showing the continuation of these TEEs. Can you please advise on the intent of these two fittings where the 6" line continues or is it a blind flange and transition to the 2 RW-3 line? Attached is a redlined drawing referencing the two fittings.

*The tees are turned up with a blind flange that is tapped to transition to the RW-3 line providing reclaimed water to the Centrifuges. Please reference Drawing D-650-103, Notes 5 & 6. Each Centrifuge manufacture has a customized orientation regarding polymer, WAS and reclaimed water services. Each of the three manufacturers specified is illustrated on Drawing D-650-103, with the general arrangement of these utilities illustrated on the Drawings. The Contractor is responsible to provide the utilities in the specific orientation and size as required by the selected Centrifuge manufacturer and coordinate those respective locations within the area below the equipment platform. Drawings D-650-102 and D-650-103 are revised to provide additional clarity (**Attachment**).*

13. Refer to Bid Packages A and B. It was explained at the pre-bid conference that where three manufacturers were named, that would be the extent of the owner acceptable manufacturers. Since package A & B are bid in total; named acceptable manufacturers are inconsistent and [Example- 16450, 480 Volt Switchgear] selectively omitted in the same specification between

the two bid packages with only two consistent manufacturers in fact able to bid a complete package; and GE, a major manufacturer of electrical apparatus is omitted. Will Orange County correct proprietary functionally two electrical distribution apparatus manufacturers bid and open up the specifications to qualified competitive bidding?

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement. Please reference Addendum 3, Part A regarding the consistency between named manufacturers between Bid Package A and Bid Package B with respect to the Electrical Equipment.*

14. Refer to Bid Package A. Reference Drawing C-124. Drawing indicates electric actuated BFV YP-V-4 to existing, however the valve schedule (Specification Section 15119-10) indicates the valve to be new. Please clarify.

*The valve is existing, Section 15119-10, Part 3.A is revised as follows;*

YP-V-4	<u>Existing</u> BFV	Water	Modulating	No	Last	Yes
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15. Refer to Bid Package A. Reference Civil Drawings. The butterfly valves shown on the civil drawings do not have call out numbers as shown in Specification Section 15100. Please clarify.

*Please reference Addendum No. 3, Bidder Questions 57 and 77. Please reference Section 15100-17, Part 2.P.3.h for Type 200 butterfly valves.*

16. Refer to Bid Package A. Reference Drawing D-390-102. The 12 RW-1 line calls out Detail 3/C-504 for the gate valve. That detail calls for protection around inlets or similar structures. Please clarify.

*The statement "protection around inlets or similar structures" was not located within Detail 3/C-504. The two gate valves on D-390-102 are standard gate valve installations.*

17. Refer to Bid Package A. Reference Drawing C-124. Drawing calls out Detail 5/C-507, south of the future effluent pump station, does this modification occur twice or one modification and one backflow preventer. Please clarify.

*They are two different improvements. The northern location at the leader for the Detail 5/C-507 callout is the modification to the existing flow meter assembly as illustrated in Detail 5/C-507. The southern location is a 12" Backflow Preventer per Orange County Standards.*

18. Refer to Bid Package A. Reference Drawing C-121. Drawing calls out for a 20x16 wet tap with valve, Tag No. 118; however both lines are 20" in size. Please clarify.

*Reference Addendum No. 3, Bidder Question 59.*

19. Refer to Bid Package A. Reference Drawing C-121. Drawing calls out for 42x30 wet tap with valve, Tag No. 123, however both lines are 42" in size. Please clarify.

*Reference Addendum No. 3, Bidder Question 58.*

20. Refer to Bid Package A. Reference Drawing C-122. Drawing shows the 36RS-1 leaving the pretreatment building going to the PHIII influent meter process 500, however drawing D-500-308 shows the line size to be 30". Please clarify.

*Please reference Drawing D-500-110 illustrating the 30X36 reducer.*

21. Refer to Bid Package A. Reference Drawing C-122 & C-125. Drawing shows the (2) 42 RS-1 lines continuing to Drawing C-125, then on Drawing C-125 one line ends with a sleeve, the other becomes a future line. Where is the stopping point for that future line?

*The transition to the future line is on Drawing C-122 zone A5, next to the Date: in the border. Drawing C-122 is revised to show a 42" cap at the point of termination of the new 42 RS-1 pipeline (**Attachment**).*

22. Refer to Bid Package A. Reference Drawing D-520-101, 301. Are the 4" butterfly valves on the suction lines at the tanks to be CPVC? If so, please provide a specification.

*Reference Bid Package A, Drawing D-520-101. Provide Type 314 ball valves in lieu of the butterfly valves shown (**Attachment**). In addition, Type 314 – Double Union CPVC Ball Valves 4 Inches and Smaller has been*

added to Specification Section 15100, Manual, Check, and Process Valves, Part 2.P.4.i. as follows;

Type 314—Double Union CPVC Ball Valves 4 Inches and Smaller:

CPVC ball valves, 4 inches and smaller, for water and chemical service shall be rated at a pressure of 150 psi at a temperature of 105°F and rated at a pressure of 100 psi at a temperature of 150°F. Body, ball, and stem shall be CPVC conforming to ASTM D1784, Type 4, Grade 1. Seats shall be Teflon. O-ring seals shall be EPDM. Valve ends shall be of the double-union design. Ends shall be socket welded except where threaded or flanged-end valves are specifically shown in the drawings. Valves shall have handle for manual operation. Valves shall be as manufactured by Nibco/Chemtrol, Hayward, R & G Sloan, Spears Manufacturing Company, Plast-O-Matic, IPEX Series VK or VKD, or equal

23. Reference Bid Package A, Specification Section 11336, Secondary Clarifier Equipment, Part 1, 1.01, C, 5, d - Please consider making the changes below suggested by Ovivo USA, LLC for the clarifier:

In preparation of our scope for the Secondary Clarifier (Clarifier No. 11), I noticed that the specifications 11336 Article 1.01 C. 5. d) calls out the Continuous Design Torque to be 42,000 ft.-lbs. Our C40HT which is described in the drive section of the specifications have the following torque ratings

- AGMA 20-Years Continuous Torque of 31,000 ft.-lbs.
- Duty Rated Torque of 70,000 ft.-lbs.
- Momentary Peak Torque of 123,000 ft.-lbs.

The drive we supplied on Clarifier No. 10 (the last 125' diameter unit) was our C40LT which has an AGMA 20-year Continuous Torque of 20,000 ft.-lbs and a Duty Rated Torque of 42,000 ft.-lbs. We also supplied the C40HT drive on clarifier No. 1, 2, 3 and 4.

*Revise Bid Package A, Specification Section 11336, Secondary Clarifier Equipment, Part 1, 1.01, C, 5, d as follows:*

- d) Continuous Design Torque ~~42~~30,000 ft-lb (min)*

24. Reference Y14-748, Information for Bidders, which states a bid opening of July 31, 2014 at 2:00 PM - Note that another large project is bidding the day before this project, please consider moving the bid date for this project.

*Reference Addendum No. 2 changing the bid opening to August 19, 2014 at 2:00 PM.*

25. Addendum No. 1 for this project added Bid Package C to the scope of work; however, this addendum did not include nor mention revising Bid Form pages D2 and D3 to include the pricing for Bid Package C. Please advise.

*The Bid Form will not be revised to include unit pricing for Bid Package C. Please reference Addendum No. 1. The value of the work for Bid Package C is to be included within Bid Package A.*

26. Are the existing Rapid Infiltration Basins operational and in use for effluent disposal? If so how long can they be out of operation to enable the installation of the proposed 42" Reject Pipeline across the existing pond?

*Bid Package A, Specification Section 01040, Part A.4 is revised as follows to include the duration that Rapid Infiltration Basin No. 5 may be taken out of service to construct the 42 SE REJ-1 pipeline through it;*

<u>Rapid Infiltration Basin No. 5</u>	<u>21 days</u>	<u>42 SE REJ-1 to Proc 565</u>
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27. As this is an operating facility it would be extremely difficult to determine the actual electricity consumed by area of the plant for start-up and testing with only one train down. Can this requirement be eliminated as the Owner will be operating the plant to handle the actual flows at all times regardless whether or not it is a new train of equipment?

*Orange County Utilities will provide the electrical power for the operation, system start-up and testing of the unit treatment processes included in the work. The Contractor is responsible to furnish electrical power for the Contractors use in performing the work, including but not limited to Specification Section 01500, Construction Facilities and Temporary Controls, Part A.*

28. Can the requirement for the laboratory testing services in section 01664 be handled by the Owner as the plant must certify the operation to the State and perform testing as needed or at a minimum can a testing allowance be provided to be billed against allowing the Owner to select the laboratory testing service?

*No. The purpose of a third party laboratory required in Section 01664 is for the party to be independent of either the Owner or General Contractor. The compensation for the testing required is to be paid by the General Contractor.*

29. Reference Bid Package A and B, Specification Sections 01025, Measurement and Payment, Part E and Y14-748, Information for Bidders, Article 16 - Please clarify the warranty requirement for this project. It appears that the equipment manufacturers or to provide a 3 year warranty as part of the base bid and then provide an additive alternate for an additional 2 years of warranty and the contractor has a 1 year warranty per page F-29 of the documents.

*In general the majority of equipment furnished on the Project will include a manufacturer's warranty period as noted, standard three year with additive alternative for two additional years. However some basic equipment may have lesser warranty periods noted, e.g. Submersible Pumps (Scum Pumps) per Section 11319-4, Part 1.06 with a two year warranty. Please reference the respective specifications for the appropriate warranty per each respective element within the Project. The One (1) Year Correction Period in Division 0 , F-29 pertains to the General Contractors responsibility to correct deficiencies as they develop over one (1) from the date of Final Acceptance.*

30. Will the air release valve assemblies located on the underground pipe require an enclosure and a tapping saddle?

*Reference Addendum No. 3, Bidder Question 5.*

31. Reference Bid Package A Drawings C-124 and D-580-101. What happens with the 3/4 SH-1 and 1 SH-1 once they get to the chlorine contact process 580?

*1 SH-1 is to be extended down the interior wall to elevation 74.0 with an open termination. 1 SH-1 is to be supported off the wall of the chlorine contact tank with a stainless steel strap pipe support per Detail 5/D-503.*

32. Reference Bid Package A Drawing C-123, WM-1. Item numbers 174 and 176 call out for 8x6 wet tap and valve, the line is 8" in size. Please clarify.

*The 8X6 wet tap is correct with 6" Type 137 tapping valve. A 6X8 reducer is to be installed at the tapping valve to transition to the 8 WM-1.*

33. Reference Bid Package A Drawing C-123, WM-1. Item 244 calls for an 8x3 wet tap and valve, the line coming off the 8" line is 1" in size. Please clarify.

*The wet tap is to be 8X4 wet tap with a 4" Type 137 tapping valve. The 4" tapping valve shall be used for isolation purposes with a valve box per Details 3-5 on C-504. A 4" cap may be tapped to transition to the 1 RW-1 and backflow preventer to the West.*

34. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - Kalwall finish warranty on their Kalwall Corrosion Resistant Finish is up to 10 years. Is this acceptable in lieu of the 20 years noted? Also, the recommended use of the KCRF would be in lieu of the anodized finish noted later in the spec. Is this acceptable?

*Reference Specification Section 08952-4, Fiberglass-Sandwich-Panel Assemblies, Part 1.G.2.b and revise as noted:*

*b. Warranty Period: ~~20~~ 10 years from date of Substantial Completion.*

35. Refer to Bid Packages A and B, Specification Section 08952-4, Fiberglass-Sandwich-Panel Assemblies - The Kalwall panel warranty is not available as a 20-year warranty. Upon review and approval, it can only be issued as a 10-year warranty. Is this acceptable?

*Reference Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies, Part 1.G.2.b and revise as noted:*

b. *Warranty Period: ~~20~~ 10 years from date of Substantial Completion.*

36. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - The spec notes use of the 4" panel/system. Should our standard 2 ¾" panel/system be determined to meet the wind load requirements to span the opening. Would this be acceptable?

*If manufacturer can demonstrate that a 2 ¾" panel/system meets the wind load requirements specified, and other elements of the specification, then the 2 ¾" panel/system is acceptable. Following the Notice of Award, the manufacturer will be required to provide the necessary evidence to demonstrate compliance with the wind load requirements, and other elements of the specification, by either shop drawing submittal and/or RFI.*

37. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - Would the thermal transmittance, light transmission, and solar heat gain coefficient noted on my attached table be acceptable?

*Reference Specification Section 08952-6, Fiberglass-Sandwich-Panel Assemblies, Part 2.B.7.b and revise as noted:*

*b. Solar-Heat-Gain Coefficient: Fixed glazing and framing areas shall have a solar heat gain coefficient of no greater than ~~0.6~~ 0.52 as determined according to NFRC 200.*

38. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - The spec noted use of a 0.060" crystal interior face sheet. That is an exterior face sheet thickness used for hurricane hi-impact requirements. It is only available in white. Would it be acceptable to utilize a standard .045" white interior face sheet?

*Reference Specification Section 08952-9, Fiberglass-Sandwich-Panel Assemblies, Part 2.D.4.b and revise as noted:*

*b. Color: ~~Crystal~~ White.*



39. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - Is a CC2 exterior face sheet acceptable? This would have a flame spread of 185 and a smoke development rating of 179. This would be our standard super-weathering exterior face sheet.

*Reference Specification Section 08952-8, Fiberglass-Sandwich-Panel Assemblies, Parts 2.D.1.b & 2.D.1.d to be revised as noted:*

*b. Smoke-developed Index: ~~450~~ 250 or class per ASTM E 84, ~~or 75 or less per ASTM D 2843.~~*

*d. Combustibility Classification: Class ~~GG1~~ CC2 per ASTM D 635.*

40. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - Our standard interior face sheet is a CC1 class. It has a flame spread of 50 and a smoke development rating of 250. Is this acceptable?

*Reference Specification Section 08952-8, Fiberglass-Sandwich-Panel Assemblies, Part 2.D.1.c to be revised as noted:*

*c. Flame-Spread Index: Not more than ~~25~~ 50 per ASTM E 84.*

41. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - The clear anodic finish noted in spec is available. However it only comes with a 1-year warranty. Should this finish be required is it acceptable with only a 1-year warranty. Note we have a standard KCRF finish available with a 10-year warranty that closely resembles an anodic finish. See attached.

*Reference Specification Section 08952-10, Fiberglass-Sandwich-Panel Assemblies, Part 2.F.1 and revise the following as noted:*

*1. ~~Clear Anodic Finish: AAMA 611, AA-M12c22A41, Class I, 0.018 mm or thicker.~~ KCRF finish with 10-year warranty.*

42. Refer to Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - Is the water spray test noted in the spec an absolute requirement?

Yes.

43. Please reference project spec 15050 page 5 item O. Is bonding of buried piping joint required? This is an unusual request for projects in the southern states, mostly seen in northern states. We have checked our files back many years and we have never provided bonded joints in the state of Florida.

*Bonding of buried ductile iron pipe joints and flexible pipe couplings is not required. Bid Packages A and B, Specification Section 15050-5 is revised by deleting Parts 2.M and N as follows;*

*M. Joint Bonding Wires*

*~~Joint bonding wires shall be No. 2 AWG single-conductor, stranded copper, with 600-volt TW insulation.~~*

*N. Flexible Pipe Coupling Bonds*

*~~Flexible pipe coupling bonds shall be copper straps 1/16 inch thick by 1-1/4 inches wide and shall have an electrical resistance equivalent to a 1/0 stranded copper wire. Each strap shall have five holes punched in it at the locations for thermite welding the strap to the pipe, coupling follower rings, and coupling middle ring or sleeve. The bonding strap shall allow a total of 1-inch expansion or contraction of the pipe joint. Connect the bonding strap to the pipe and coupling by thermite welds (five places) using a 15-gram cartridge as manufactured by Cadweld, Thermoweld, or equal.~~*

44. Refer to Bid Packages A & B, Specification Section 15109, Fire Hydrants - Part 2, B, lists a "Wet Barrel Fire Hydrant," to comply with AWWA C503. In paragraph Part 1.B.2, it asks for a certificate of compliance with AWWA C502 be submitted.

The detail on the drawings, Detail-1/C-502, appears to be showing a standard AWWA C 502 hydrant. There is a note 1 that indicates the hydrant is to be supplied without a weep hole. The Orange County standard detail Fig. A 203 appears to show a standard AWWA C502 dry barrel hydrant. The approved list from OCU lists AWWA C502, dry barrel hydrants. We need to know which type of hydrant is required for this project.

*The Orange County Utilities Standards and Construction Specification are the standards for projects constructed by others within the County, such as private development projects. In certain instances the County will take exception to the Standards and Construction Specifications for work the County is constructing such as this project.*

*Wet Barrel hydrants are to be provided for the project. Please reference the revision to Bid Package A and Bid Package B, Section 15109, Part 1.B.2 as follows:*

*2. Submit certificate of compliance with AWWA C503 ~~C502~~.*

45. With two bid packages, A & B, the valve box detail C-504 in package A does not include a valve position indicator. However, the detail C-504 on bid package B does show the valve box detail with a valve position indicator. So the question is, are valve position indicators required for all buried valves on both bid packages A & B?

*Bid Package B, Detail 4 and Detail 5 on Drawing C-504 are revised to be consistent with the details in Bid Package A (**Attachment**).*

46. APS is the Power Quality Manufacturer's Representative for Eaton and would like to bid our SPD for the Eastern WRF (Phase V) & Centrifuge Dewatering Improvement project. I have attached spec sheets for units that meet and exceed the specified SPD. Please call or e-mail me back at your earliest convenience so that we can discuss this project and our SPD offering.

*Please reference Addendum 1, Question No. 4 regarding the policy of Orange County Utilities regarding "or Equal" substitutions. Following the Notice of Award, alternative manufacturers will be considered on an "or equal" basis.*

47. Reference Section 0040, Figures 2. The legend on Figure 2 lists substantial completions A thru E for the three Treatment Areas (BNR, PTS, and Tertiary). Are these substantial completions related? (i.e., does the contractor need to meet substantial completion A for the PTS, BNR, and Tertiary Treatment, before moving on to substantial completion B portions of the work?)

*No. The BNR and Tertiary Treatment Areas have sequential substantial completions within those respective process areas, but they are not interrelated between the respective areas. The BNR substantial completions A through E are to be constructed in sequence. The Tertiary Treatment substantial completions A through D are to be constructed in sequence. However the Tertiary Treatment Substantial Completion A is not tied to the BNR Substantial Completion A.*

48. We request that the bid date be extended to accommodate the second site walkthrough, and to allow a reasonable amount of time (after the site visit) to co-ordinate subcontractors, answer questions, and formulate our bids. We request a 3 week extension after the site walkthrough date.

*Reference Addendum No. 2 changing the bid opening to August 19, 2014 at 2:00 PM.*

49. Reference Keynotes 241 and 243 on Drawing C-122. These call for a 24" x 18" wet tap. The lines end shortly after the tapping valve. Please provide a routing for the above referenced lines.

*Please reference Utility Note 27 on Drawing C-143. The purpose of the two 24" linestops and 24X18 wet taps is to bypass the flow in the existing 24 RS from the Phase III PTS (Process 300) to the Phase I/II Fermentation Basin (Process 210) to construct the new yard piping. The location of the temporary piping is the responsibility of the Contractor. The Contractor may route the temporary piping as required for the construction of the new work.*

50. Reference Specification Section 11319, Part 1. 1.06 – the Specification only indicates a two-year base bid warranty. Measurement and Payment as specified in 01025 indicates the Base Bid warranty for equipment in Package A is three years. Which governs?

*Reference Specification Section 11319, Part 1. 1.06. A: Provide two (2) year warranty. Please reference Addendum 4, Bidder Question 29. The Base Bid warranty is to include the respective warranty in the technical specifications, not all of which are a standard three year warranty, as in the case of the Submersible Pumps (Scum Pumps) in Section 11319.*

51. Addendum No. 1, Drawing D-360-102 indicates submersible pumps tagged 360-P-1 and 360-P-2 are not in the Contract yet the addendum did not strike them from Spec. Section 11308. Please confirm the pumps are not to be provided as a part of the Phase V Contract.

*Correct. Pumps 360-P-1 and 360-P-2 were eliminated from the contract and Section 11308-11, Part 3.C.1.a will be revised as follows;*

*a. ~~Pump Tag Numbers: 360-P-1 and 360-P-2~~*

<i>Location:</i>	<i>Flocculation Tank (Process 360)</i>
<i>Liquid Pumped:</i>	<i>Clarified Effluent</i>
<i>Service:</i>	<i>Outdoors Environmental temperature range of 20°F to 110°F</i>
<i>Altitude:</i>	<i>66 feet above mean sea level</i>
<i>Relative Humidity:</i>	<i>Up to 100%</i>
<i>Fluid Temperature Range:</i>	<i>50°F to 90°F</i>

*Pump Data*

<b>Capacity (gpm)</b>	<b>Pump Total Head (feet)</b>	<b>Minimum Pump Efficiency (%)</b>
3,300	23	60
3,920*	17	79
4,700	8.5	45
<i>*Design point.</i>		

<i>Maximum Pump Speed:</i>	<i>1200 rpm</i>
<i>Minimum NPSH Available:</i>	<i>40 feet</i>
<i>Motor Horsepower (Maximum):</i>	<i>30 Hp</i>

<del>Variable Speed Drive Required per Section 16260:</del>	<del>No</del>
<del>Suction Elbow Size:</del>	<del>N/A</del>
<del>Discharge Nozzle Size:</del>	<del>12 inches</del>
<del>Manufacturers and Models:</del>	<del>ABS Model XFP 300J-CB3 or Flygt Model NP3171-LT3/613</del>

~~The specified impeller shall be capable of passing a 3-inch sphere or equivalently a 2-inch by 2-inch rectangular shape.~~

52. Please reference Bid Package A Drawings S-540-101, S-540-502, and D-540-301. The structural drawings show a base slab varying in thickness from 2'-6" to 5'-6"+/- while the mechanical drawings show a 2'-6"+/- base slab on uniform thickness for the entire clarifier. Please confirm which slab detail to use.

*Reference Bid Package A, Drawings S-540-101, S-540-502 and D-540-301. The base slab shall be per the structural drawings.*

53. Refer to Bid Package B - Drawing D-650-301 indicates manual knife gates (2 each) as well as motor operated knife gates (2 each) at each screw conveyor. P&ID Drawing I-206 only indicates motorized knife gates (2 each) and no manual knife gates. Which is correct?

*P&ID does not indicate every manual gate or valve. Four gates are required; the two motorized shown on the P&ID plus the two additional manual shown on D-650-301.*

54. Reference Bid Package A Drawing A-500-001 - The Door Schedule shown on calls for details residing on Drawing A-601. This drawing is not listed on the Index of Drawings nor was it a part of the drawing package. Please provide.

*Reference Bid Package A Drawing A-500-001. For the Head and Jamb Detail columns, revise the Drawing from "A-601" to "A-500-601."*

55. Reference Bid Package A, Specification Section 13315 – Several instruments are followed by “(BID ALTERNATE)”. They appear to be associated with the new scum pump systems, but the instruments are not indicated on the P&ID’s or drawings. We cannot locate a bid alternate that may explain the intent of the instrument schedule. Please clarify.

*Reference Bid Package A, Specification Section 13315. The “BID ALTERNATE” listings in 13315.2.D are in error and will be deleted. In Section 13315, delete paragraphs 2.D.6.l, m, s, t, v, bb, cc, dd, & ee, in their entirety.*

56. Reference Bid Package A, Specification Section 13315 - As a follow-up question, would the pressure gauge/switch assembly require a diaphragm seal or annular ring type seal?

*Reference Bid Package A, Specification Section 13315 – All cases where this installation is required shall be deleted.*

57. Reference Bid Package A, Specification Section 13315 - Field Instrumentation, pressure instruments lists gauges/high pressure switches on the suction side of the submersible scum pumps. Please confirm the intent and if possible, provide a detail of how this is to be mounted.

*Reference Bid Package A, Specification Section 13315 – All cases where this installation is required shall be deleted.*

58. Reference Bid Packages A and B, Specification Section 15240, Part 2, paragraph B. This states the minimum wall thickness to be class 150, unless otherwise shown on the drawings. However, Appendix D of Orange County Utilities Standards and Construction Specifications Manual states 14” and less as class 350, 16” thru 24” as class 250, and 30” and larger as class 200. Please clarify whether the project specifications or the Orange County Standards should apply to this Contract.

*The Orange County Utilities Standards and Construction Specification are the standards for projects constructed by others within the County, such as private development projects. In certain instances the County will take exception to the Standards and Construction Specifications for work the County is constructing such as this project.*

*The thickness class noted in the specifications of the Project should be applied for this work.*

59. Reference Bid Package A, Specification Section 13315, Part 2.M - Two pairs of turbidity analyzers are listed. Pair 470-AE/AIT-1 and 2 were deleted by Addendum No. 1 and Instrument Riser Diagram on E-575-902 shows the pair tagged as 570-AE/AIT-1 and 2 as future. They are indicated as bold on Drawing I-112 as well as I-580-301, but we cannot locate on any other drawing. Are these to be provided by the ISS or are they truly future?

*It is correct 470-AE/AIT-1 and 2 were deleted by Addendum No. 1. The pair tagged 570-AE/AIT-1 and 2 shown on Drawing E-575-902 are future instruments associated with future filters, which would be process 570. They will remain as shown as on the drawings as the conduits leaving the west electrical building will be installed in Phase V.*

60. P&ID Drawing I-500-301 is not consistent with the rest of the Contract drawings. First, it indicates both a manual bar rack as well as a manual bar screen. We can only see the manual bar rack that per Drawing D-500-104 indicates the rack between gates 500-SG-6 and 500-SG-7. Per the PI&D, the rack should be in the channel that will become the home to the fourth mechanical screen. How many manual bar screens or bar racks will be installed under this Contract?

*Revise I-101 & I-500-301 as follows: delete the "Manual Bar Rack" between 500-SG-2 and 500-SG-3; rename the equipment between 500-SG-6 and 500-SG-7 to "Bar Rack."*

61. Reference Bid Package A - The Rock Parking Area shown on C-103 calls out to Salvage Limerock within Limits shown. Please identify a location to store the salvaged Limestone and confirm contractor to include hauling limestone to identified location. Additionally, please confirm thickness of Limestone.

*Drawing C-103 is the South Civil Key plan. It does not show the demolition of the existing equipment storage areas noted in the question. Please reference Drawing C-111 and C-112 regarding the demolition of the existing equipment storage area in the location of the new preliminary treatment structure, Process 500. The existing equipment storage lot was constructed*



*per same Detail as Detail 7/C-502 (reference Note 3) and using No. 47 crushed concrete, not limerock. Drawing C-138, zone D2 illustrates the limits of part of the relocated equipment storage lot. Please reference Detail 7/C-502 Note 4. The Orange County Utilities RPR will direct the Contractor where to construct two additional storage lots per Detail 7 within the limits of the WRF Site Plan shown on Drawing C-101. The RPR will direct the Contractor where to construct these two areas during construction as well as a temporary location for temporary storage of the crushed concrete removed.*

62. Reference Bid Package B - Drawing S-650-101 calls for a 20" thick concrete foundation slab while S-650-301 calls for a 22" slab. Please clarify slab thickness.

*Reference Bid Package B Drawing S-650-101. The slab shall be 20-inches thick. Hold the top of slab elevation at 80.50.*

63. Reference Bid Packages A and B, Specification Section 03300 Part 1.05-A – Plant Certification – The plant proposed to supply concrete for this project is certified for concrete production by the FDOT. May the NRMCA certification requirement be waived and/or consider the FDOT certification a permissible equivalent?

*Reference Bid Packages A and B, Specification Section 03300 Part 1.05-A has been revised as follows;*

*A. Plant Certification: Plant or concrete supplier shall comply with requirements of National Ready Mixed Concrete Association (NRMCA) or Florida Department of Transportation (FDOT) certification plan as regards material storage and handling, batching equipment, central mixer, truck mixers with counters, agitators, nonagitating units, and ticketing system.*

64. Reference Bid Packages A and B, Specification Section 03300 Part 2.01-C.1 – Fine Aggregates – Locally available natural sand will not meet the FM requirement of 2.5 to 3.0. However, it is approved for use on all FDOT projects. Please advise if this is a permissible equivalent.

*Reference Bid Packages A and B, Specification Section 03300 Part 2.01-C.1 has been revised as follows;*

1. Clean, sharp, locally sourced natural sand conforming to requirements of ASTM C33 ~~with a fineness modulus between 2.50 and 3.0.~~

65. Reference Bid Packages A and B, Specification Section 03300 Part 3.02-F – Table 03300-3 – Maximum Time to Concrete Discharge. It has been requested that the maximum concrete temperature be increased to 95 or 100 degrees F in accordance with ACI 301 and FDOT Standard Specifications respectively. It has also been asked that any time limits set based on concrete temperature be stricken. All concrete mixes proposed for this project will contain ASTM C494 Type A/D water reducing retarder which will prevent the rapid onset of hydration as a result of concrete temperature at the time of placement.

*Reference Bid Packages A and B, Specification Section 03300 Part 3.02-F has been revised as follows;*

*~~F. Discharge of concrete shall be completed within the limits set out in Table 03300-3.~~*

Table 03300-3	
Maximum Time to Concrete Discharge	
Concrete Temperature	Limit
Over 90 Degree F	<del>Remove concrete from jobsite and discard concrete</del>
86 to 90 Degree F	45 minutes
81 to 85 Degree F	60 minutes
70 to 80 Degree F	75 minutes
Below 70 Degree F	90 minutes

66. Reference Bid Packages A and B, Specification Section 03300 Part 3.03-D – Concrete Acceptance. It has been requested that the rejection of concrete when barrel revolutions exceed 300 be stricken from the specification. For reasons previously mentioned regarding the use of ASTM C494 Type A/D admixtures, the rejection of concrete based on the number of barrel revolutions could result in costly project delays and potential cold joints. If the concrete is not showing signs of rapid slump loss due to the onset of hydration, there is no cause for rejection.

*Reference Bid Packages A and B, Specification Section 03300 Part 3.03.D has been revised as follows;*

*D. The testing agency shall inspect concrete transit truck's barrel revolution counter and gauge for measuring water added to the concrete. ~~Reject concrete that exceeds the maximum barrel revolution of 300, the limits in Table 03300-3 or concrete that has water content exceeding the specified water-cement ratio.~~ Unless otherwise permitted, time for completion of discharge shall comply with ASTM C94. When discharge is permitted after more than 90 minutes have elapsed since batching or after the drum has revolved 300 revolutions, verify that air content of air-entrained concrete, slump, and temperature of concrete are as specified.*

67. Reference Bid Packages A and B, Specification Section 03300 Part 3.07-A.2 – Hot Weather Requirements. As previously discussed here, it has been requested the permissible concrete temperature be increased to 95 or 100 degrees in accordance with ACI 301 and FDOT Standard Specifications respectively.

*Reference Bid Packages A and B, Specification Section 03300 Part 3.07-A.2 has been revised as follows;*

*2. When the weather is such that the temperature of the concrete as placed would exceed ~~90~~ 95 degrees F, use ice or other means of cooling the concrete during mixing and transportation so that the temperature of the concrete as placed will not exceed ~~90~~ 95 degrees F.*

68. Reference Bid Packages A and B, Specification Section 03300 Part 3.07-D.3 – Concrete Testing. It has been requested the supplier be added to the specification requiring the testing agency submit test reports to the contractor, engineer, and supplier.

*Reference Bid Packages A and B, Specification Section 03300 Part 3.07-D.3 has been revised as follows;*

*3. The testing agency will submit test reports of concrete field measurements specified above to the Owner, concrete supplier, and to the Engineer.*

69. Reference Bid Package A - Drawing D-252-102 refers to cleanout detail 1/C-507. Detail 1 on C-507 is a slab detail and not a cleanout detail. Please clarify.

*Detail 1/C-507 is incorrect and it should be Detail 7/C-504.*

70. Reference Bid Package A, Specification Section 11530, Biotrickling Filter, Part 1.B.31 Submittals - This Project is being bid in compliance with the Orange County Utilities Standards and Construction Specifications Manual, Reference Attachment A of the Project Invitation for Bids. The Orange County Utilities Standards and Construction Specifications Manual does not require that the FRP Fabricator possess ISO 9000 series Certification. It is noted that the Engineer's Specification Section for "Certified Shop and Working Drawings", Part 1.B.31 Submittals, is in conflict with the Orange County Utilities Standards and Construction Specifications Manual in that it requests the submittal of the FRP Fabricator's "most recent ISO 9000 series certification."

Please confirm that FRP Fabricators that have consistently been approved for the fabrication of FRP Vessels for Orange County Utilities Projects and that meet the Orange County Utilities Specification Requirements, but that do not have ISO Certification, will be approved for the fabrication of FRP Vessels, Piping, etc.

*The Orange County Utilities Standards and Construction Specification are the standards for projects constructed by others within the County, such as private development projects. In certain instances the County will take exception to the Standards and Construction Specifications for work the County is constructing such as this project.*

*The odor control facilities are critical elements of the Project with respect to the constituency in proximity to the facility. The specifications will not be altered to eliminate the criteria for FRP fabrication quality control.*

71. Reference Bid Package A, Specification Section 11530, Biotrickling Filter, Part 2.P. Nutrient Addition System. This Specification Section states “b. Provide an opaque HDPE nutrient storage/mixing tank with mixer ...” The Nutrient Addition System to be provided does not require the use of a mixer to keep the nutrient in solution. Please confirm our ability to bid the Project without a Nutrient Addition System mixer. Our Proposal will confirm that the Nutrient Addition System will perform as required without the need for a Nutrient Addition System mixer.

*The specification shall not be revised. It cannot be revised based upon a singular manufacturer stating their ability to meet the specification without a nutrient addition system, as other manufacturers may require a nutrient addition system. Confirmation cannot be granted to any manufacturer regarding exceptions to the contract documents based upon a claim submitted by a manufacturer during advertisement. Exceptions will be evaluated during the construction submittal review process.*

72. Reference Bid Package A, Specification Section 11395, FRP Centrifugal Fans, Part 3.C.3 - Motor horsepower (minimum) This Specification Section requires that the Odor Control System Blower be provided with a minimum Motor horsepower of 35 HP. We have sized the required motor for the 7,000 CFM Odor Control Blowers and find that the required Horsepower is 15 HP. Please confirm our ability to bid the Project with 15 HP Odor Control Blower Motors.

*The specification shall not be revised. It cannot be revised based upon a singular manufacturer stating their ability to meet the specification with a lower horsepower motor than is specified. Exceptions will be evaluated during the construction submittal review process.*

73. Refer to Bid Package A. Based on Drawing C-140, Detail A, for the PVC Pond Liner Detail, is the final elevation of the access road berms, located around the Reject Storage Pond, to be 94'? If the existing access road final elevation is to change, please provide the extents of elevation change and the details for the road construction.

*Correct the final elevation of the access road is to be elevation 94', consistent with the existing elevation.*

74. Reference Bid Package C, Specification Section 03301-1.04-C, and Special Provisions Part G, which states the Contractor is responsible for concrete testing. Per Concrete Specifications 03300 (Bid Packs A & B) subsection D., Testing, states:

1. Concrete quality testing shall be performed on the concrete by independent testing agency retained by the Owner.

Can the Owners' testing agency also provide concrete quality testing for Bid Package C, as they will be providing on Bid Packages A & B?

*Yes. Specification Section 03301-3, Part 1.04.C is revised as follows:*

*C. All field testing and inspection services related to laboratory tests required will be provided by the Owner ~~Contractor~~. The cost of such work will be paid for by the Owner ~~Contractor~~. Methods of testing will comply with the latest ASTM methods.*

75. Reference Bid Package A, Drawing C-121 - 42 SE-1 tying into existing 24-FM left center of drawing. Can we use a 24" wet tap in lieu of the 24" x 18" wet tap? Reducer as shown on drawing is not available, we can get a 48" x 24" reducer and run 24" pipe into existing line, thus eliminating the 18" piping.

*Please reference Drawing C-121, the SE-1 utility does not connect to a FM. It is assumed the question is pertaining to the 48 FM-1 connecting to the 24" FM in zone C2. The wet tap may be revised to a 24X24 wet tap with a 24" tapping valve and 24" plug valve, then a 24X48 reducer to transition to the 48 FM-1.*

76. Reference Bid Package A, Drawing C-121 - attachment of 42-SE-1 to existing 42" line shows tapping sleeve 42" x 30". Details do not show a reducer between the two lines. Please see the attached two sketches as an option for attachment or you could use a 42" wet tap, if you are o.k. with this method.

*Please reference Addendum No. 3, Bidder Question 58.*

77. Reference Bid Package A - Drawing C-117 Calls out detail 2/D504 for the ARV Assembly on the Underground FM-1 Pipeline. Please confirm that this ARV is 2" as indicated on 2/D504. Please confirm that Detail 2/D504 is drawn for Above Grade Applications Only, and that an ARV Manhole will be required for all underground ARV's. Please provide a detail.

*Please reference Addendum No. 3, Bidder Question 5.*

78. Reference Bid Package A - When ARV Manholes are required for sewage applications, will the owner or engineer require that the Manhole be lined or coated?

*Please reference Addendum No. 3, Bidder Question 5. ARV manholes will not be required.*

79. Reference Bid Package A Drawing C-502 - Will Integral Ductile Iron Wall Pipes be allowed in lieu of Detail 8/C502 for penetrations into new structures?

*No.*

80. Reference Bid Package A, Drawing C-121 - Please confirm that the unidentified valve east of the 24"x18" Wet Tap for the FM-1 line located on sheet C-121 is in fact required for this project (redundant?), and that it is a plug valve.

*Yes, it is a plug valve and it is part of the contract, the other valve is the tapping valve.*

81. Reference Bid Packages A and B - Please confirm that this project does not have a Domestic or Buy American clause.

*Reference Addendum No. 1, Bidder Question 10.*

82. Please Clarify Flow Stream Identification Note 7 on Sheet G-004 which states, "All Piping Joints are to be Mechanically Restrained," is not in direct conflict with the Thrust Restraint Table shown on sheet C-502, Detail 4. It is our understanding that this table per note 1 is only for Existing Pipe at Tie-ins, and that all new pipe, where identified on the Flow Stream Identification Table should be fully restrained. Is that correct?

*Correct. Reference Addendum No. 3, Bidder Question 16.*

83. Reference Bid Package A, Process 540 - Please Detail the SE-1 Point of Connection at Clarifier 11 (Process 540), sheet D-540-301 shows the connection with a 90 bend, sheet C-126, callout 275 calls for a Tee. If a Tee is required, we would assume that it will be blind flanged off with an ARV in lieu of the 90 w/ARV as shown in Section A/D-540-301. Please clarify the connection, and show a section view.

*Please reference Drawing C-126; zone C3 which shows a 42" tee at callout 275. To the east of the 42" tee is a 42" 90-deg bend turned up. The 90-deg bend on Drawing D-540-301, zone D5 is another 42" 90-deg bend turned down. The civil drawings show the buried fittings at elevation 76.75. Drawing D-540-301 shows the upper fitting at elevation 85.00*

84. Reference Bid Package A, Process 540 - Will the SE-1 Connection at Clarifier 11 be Flanged or Mechanical Joint as called out in section A/D-540-301? The pipe is shown on sheet D-540-301, section A as being half in, and half out of the ground.

*The proposed finished grade in this location is 84.50 per Drawing C-137. The centerline of the 42" 90-deg angle bend is at elevation 85.00 per Drawing D-540-301. The 42" 90-deg angle bend should be flanged with a boss for the 2" manual air release valve (**Attachment**).*

85. Reference Bid Package A, Process 564 - Will Wall Pipes be required for the 30-SE-1 At Process 564 when it passes through the exterior walls, or will a Sleeve and Link Seal be Sufficient?

*Please reference Drawing D-564-101 showing a wall pipe per Detail 1/D-503 in the southwest corner, as a typical detail. Wall pipes are to be provided for the three 30 SE-1 pipelines.*

86. Reference Bid Package A, Drawing C-124 - Please confirm that the unidentified valve east of the 42"x42" Wet Tap for the SE-1 line located on sheet C-124 is in fact required for this project (redundant?), and that it is a plug valve.

*A plug valve was shown on C-124, zone C3 to the west of the 42X42 hot tap at callout 226. Reference Drawing C-124 revising this valve to be a butterfly valve (**Attachment**).*



87. Reference Bid Package A, Drawing C-124 - The 24" Gate Valve Southeast of the Future Disk Filters on sheet C-124 located on the SE REJ-1 Line is depicted as a Butterfly Valve, please confirm that this valve is a Butterfly Valve and not a Gate Valve as called out on the plans.

*Correct, the butterfly valve was shown on C-124, zone B3 to the west of the 36X24 tee at callout 232. Reference Drawing C-124 revising this callout to be a 24 BFV (**Attachment**).*

88. Reference Bid Package A, Drawing C-121 - Please confirm that the unidentified valve At Wet Tap 236 located on the RW-1 Line, sheet C-121 is in fact required for this project (redundant?), and that it is a plug valve.

*The additional plug valve is not required in this location. Drawing C-121 is revised to eliminate that 12" plug valve at Fitting No. 236 (**Attachment**).*

89. Reference Bid Package A, Drawing C-123 - Callout 18 & 28, RW-1, it appears on the drawing that there is a Gate Valve Required in this location, please confirm.

*Please reference Bid Package A, Drawing C-123, zone C1 an 8" gate valve is added along the section of 8 RW-1 at the back of curb (**Attachment**).*

90. Reference Bid Package A, Drawing C-124 - RW-1 – There is a note that says, Reference Process Drawings for Continuation; however Process 360 and 580 have no reference to this line. Sheet D-560-100 has no detail either. Please detail the tie-in, or continuance of this line.

*Please reference Bid Package A, Drawing D-580-101 for the continuation of the 12 RW-1 utility to the pump station Drawing D-390-102. The note on Drawing C-124, zone C3 is revised to reflect this and identify the 12" gate valve at the 12" tee, fitting identification tag 197 (**Attachment**).*

91. Reference Bid Package A, Drawing C-121 - Please confirm that the unidentified valve At Wet Tap 123 located on the SE-1 Line, sheet C-121 is in fact required for this project (redundant?), and that it is a plug valve.

*Please reference Detail 7/C-503 for a Tapping Sleeve. The plug valve is required. Please reference Addendum No. 3, Bidder Question 58.*

92. Reference Bid Package A, Drawing C-121 - Please confirm that the unidentified valve At Wet Tap 118 located on the SE-1 Line, sheet C-121 is in fact required for this project (redundant?), and that it is a plug valve.

*Please reference Detail 7/C-503 for a Tapping Sleeve. The plug valve is required. Please reference Addendum No. 3, Bidder Question 59.*

93. Reference Bid Package A, Drawing C-121 and Drawing C-144 - Please confirm that the Wet Tap 118 on sheet C-121 is 20"x20", not 20"x16" as listed on sheet C-144 item 118.

*Please reference Addendum No. 3, Bidder Question 59.*

94. Reference Bid Package A, Specification Section 15119, Electric Motorized Actuators - Please confirm that the contractor is to retrofit Existing BFV YP-V-2, 3 & 4 with Electric Actuators per 4/C-507 & 15119, and not replace the valves.

*Reference Bid Package A, Specification Section 15119, Electric Motorized Actuators and Drawing C-124. Refer to Addendum 4, Bidder Question 14. Valves YP-V-2, 3 & 4 are existing. Contractor shall retrofit valves with electric motor actuators and not replace the valves.*

95. Reference Bid Packages A and B, Specification Section 15100, Part 2.E – Part 2.E states that all Gate Valves, 4-12" in fire protection service requires a position indicator. Will all Gate Valves on the RW-1 line, 4-12" will require position indicators, or only those at the fire hydrants? Will the Gate Valves at Process 280 Require Position Indicators?

*Indicator posts are required for dedicated fire lines which is not applicable to this Project. Specification Section 15100-6, Part 2.E shall be revised as follows;*

*E. Indicator Posts*

~~*Indicator posts for buried gate valves in fire protection service shall be UL listed, FM approved for use on valves of sizes 4 through 12 inches. Provide a target or sign visible through a window on both sides of the post that indicates the open or shut position of the gate valve. Working parts shall be fully enclosed for weather protection. Body shall be cast or ductile iron. Provide post extension if trench is*~~

~~deeper than can be served by manufacturer's standard post. Coat buried portion of indicator posts per Section 09900, System No. 21. Products: Nibco NIP-1, Stockham Fig. G-951, or equal.~~

96. Reference Bid Package A, Drawing D-580-102 - Please confirm that Note 2 on Sheet D-580-102 no longer applies after the Deletion of Process 470 in Addendum No. 1.

*Reference Bid Package A, Drawing D-580-102 and Addendum No. 1 Item E.2. Drawing D-580-102, Note No. 2 shall be deleted:*

- ~~2. 48 RW-1 TO BE CONCRETE ENCASED FROM EXTERIOR WALL OF TANK TO 5' WEST OF SLAB FOR 470 DF-1, REF D-470-102.~~

97. Reference Bid Package A, Process 580 - Will the SE-1 Connection at the New Chlorine Contact Tank (Process 580) be Flanged or Mechanical Joint? Section C/D-580-302 seems to depict flanged connections. The pipe is shown as being half in, and half out of the ground. Just want to confirm that Flanged Fittings are Acceptable.

*Reference Bid Package A, Drawings D-580-102 and D-580-302 – The SE-1 connection at Process 360 is 42" in diameter. Provide flanged 90 degree 48" x 42" Reducing bend for the partially buried fitting.*

98. Reference Bid Package B. On Drawing I-204 – Does the integrator or the centrifuge provider provide the instruments?

*Reference Bid Package B Drawing I-204 and Specification Section 11371 - The centrifuge provider provides the instruments on Drawing I-204. Drawing I-204, Note 3 indicates that all instruments supplied with centrifuges under specification section 11371.*

99. Reference Bid Package A, Drawing C-121 - Please Detail the WAS-1 Connection at Clarifier No. 8, it is unclear as depicted on sheet C-121. It appears that the line reduces to 4" and 90's up for the connection?

*Reference Bid Package A, Drawing C-121 – the 6 WAS-1 connection near Clarifier No. 8 has a 6" x 4" MJ reducer prior to the 4" 90 degree bend up for connection.*

100. Reference Bid Package A, Drawing C-143 - Per Addendum No. 1 Deletion of Process 470, Please confirm that Utility Note 31, Sheet C-143 should be deleted.

*Reference Bid Package A, Drawing C-143 and Addendum No. 1 Item E.2 – the text for Utility Note No. 31 shall be stricken:*

~~31 ENCASE ALL 18 DR-1 FROM CONNECTION TO EXISTING TO THIS 18 BEND 45, INCLUSIVE OF PIPING UNDER PROCESS 470, SEE SHEET C-124.~~

101. Reference Bid Package A - Will SH-1 Pipe be Double Contained? Please indicate if the callout (2)3/4 SH-1 and (2)1 SH-1 indicates the size of the containment pipe, or the number of pipes required.

*SH-1 for sodium hypochlorite will not require dual containment.*

102. Reference Bid Package A - Will the SP-1 Pipe be Double Contained?

*SP-1 for supplemental carbon will not require dual containment.*

103. Reference Bid Package A - Will monitoring stations and leak detection be required if chemicals are to be double contained?

*Neither SP-1 nor SH-1 require dual containment, therefore leak detection will not be required.*

104. Reference Bid Package A, Drawing G-004 and Bid Package B, Drawing G-002 - Please clarify that Note No. 25 indicates that pipes will be fully grout filled upon abandonment. This is a tremendous amount of grout fill if that is the intent.

*Orange County Utilities requires that all existing utilities which are to be abandoned as part of the Project be grout filled.*

105. Reference Bid Package B. Section 13300, Para. E: Are the magnetic flowmeter manufacturers who listed under Contract A approved for Contract B?

*Yes. The manufacturers listed in Bid Package A will be acceptable for Bid Package B.*

106. Reference Bid Packages A and B, Specification Section 15050 Paragraph J/K states that all Gaskets for Air Service shall be EPDM. Sheet G-004 General Note 20 states that Gaskets shall be Viton. Please Clarify.

*Reference Addendum No. 3, Item C.15.*

107. Reference Bid Package A, Drawing D-220-106 - Please confirm that the Blower Piping inside the Phase I-II Blower Building on D-220-106 is considered AIR-1 and will be Ductile Iron, it is not called out on the drawing.

*Correct the air piping in Process 220 is unlined ductile iron pipe, AIR-1. Please reference Drawing D-220-106 providing this clarification (Attachment).*

108. Reference Bid Package A, Drawing C-141 and C-142 - Note No. 4 is for a Geo-membrane anchoring system what is the extent of the geo-membrane and is there a concrete wall there now? If the wall is to be new what is the extent and location of the wall.

*Please reference to Addendum No. 1, Item E.3.*

109. Reference Bid Package A - Can the reject pond be taken out of service while we are performing the excavation and re-grading and installation of the PVC liner?

*Yes. Please reference Section 01040-1, Part A.4.*

110. Reference Bid Package A - How long can the reject pond be taken out of service?

*270 days. Please reference Section 01040-1, Part A.4.*

111. Reference Bid Package A, Drawing A-155-102 - In reference to the North Control Building notes that read, "Extend wall to underside of roof and fire block" in the South Electrical Room 001 as well as the Electrical Room 002 (previously the lab). There are no sections or details included in the drawings to show elevations or dimensions to determine the extent of that extension and to quantify the scope of work.

*Please reference Bid Package A, Drawing A-155-102 - The elevation of the underside of roof structure is 12'-10". The elevation of the CMU walls is 10'-0". The Drawings illustrate an in-fill with light gauge framing and gypsum board, with fire safe material between the structural metal decking. No fire rating is required for this assembly.*

112. Reference Bid Package A, Architectural drawings - There are no Architectural Elevation Drawings included package for the Preliminary Treatment Building, only sections – are these drawings available?

*Architectural drawings showing elevations of the Preliminary Treatment Structure were not developed for the Project.*

113. Reference Bid Package A - The Preliminary Treatment Building drawings A-500-100 appears to call out Fiberglass Sandwich Panels on the south face – noted with no.5. The typical section for this face shows a height from finished floor to bottom of structure of 11'-5". There is not a section on drawing A-500-302 to show a Fiberglass Sandwich Panel on this face with this height and there is no detail on drawing A-500-001 for a panel to fit in a rough opening of this height. Is it the intent to install Fiberglass Sandwich Panels in these locations?

*Please reference Bid Package A, Drawing A-500-302. Utilize wall section 2/A-500-302 as typical for all labeled #5 windows.*

114. Reference Bid Packages A and B, Specification Section 08952, Fiberglass-Sandwich-Panel Assemblies - There have been inconsistencies in Specification Section 08952 for the Fiberglass Sandwich panels noted by vendor for the specified Kalwall system. See attached notations included on the specifications for details. Please clarify.

*Please reference Addendum 4, Bidder Questions 34 through 42.*

115. The valves on the drawings do not have identifying numbers to match the "V" numbers in Specification Section 15100. Please clarify.

*Refer to Specification Section 15100, Part 2.F and the Taglist included in the Specifications. Valve types can be determined by valve type and service and by matching the valve tags from the drawings to the Taglist.*

116. When will the next site visit be scheduled as we need to examine the Rapid Infiltration Basins as each RIB must be isolated to install the proposed overflow structures?

*Reference Addendum 3, July 28, 2014 at 1:30 PM.*

117. Will PCCP Adapters and Ductile Iron be allowed in lieu of the WSP Connections on the 42" RW-1 Bypass for Clarifier 11?

*No*

118. In reference to Bid Package A, Drawing G-004, General Note 5, please clarify that the contractors are required to clean the entire storm system on-site, whether it be temporary, new or existing once per week. This will be a significant cost to the owner, and will require a dedicated labor force of its own to maintain the weekly cycle.

*The note on Bid Package A, Drawing G-004 and Bid Package B, Drawing G-002, General Note 5 stating "The Contractor shall clean all storm ways and piping once per week" has been deleted (**Attachment**).*

119. In reference to Bid Package A, please confirm whether the Gates on sheet D-230-102 are functional per note 2. We can only assume that they are functional based on the design and scope of work as put together by the owner and engineer. Without field test results, and actually opening and closing of the gates, how are we to determine the functionality?

*OCU Operations has confirmed that the gates illustrated on Drawing D-230-102 pertaining to Note 2 are functional.*

120. Reference Bid Package A, S-580-301 Section 3 shows a wall on line E that has a top of wall above EL. 85.00. This is apparently the area for the Future Disc Filter. Are there dimensions that give the limits and height of this wall area?

*Section 3 is incorrect at wall line E. All of the walls should have a top of wall elevation of 85.00'. In addition, that portion of the section (at wall line E) should be similar to all other areas at the perimeter walls (for example, wall line A in the same section). (**Attachment**)*

121. Reference Bid Packages A, Specification Section 13121 - What is the maximum horizontal allowable drift? H/?

*Reference Bid Package A, Specification Section 13121 Part 2.B – Design Criteria Item 14, which states that the drift shall be a maximum of H/60.*

122. Reference Bid Package A, Specification Section 01040, Section D. 2.b. Specific Construction Sequencing, regarding the BNR process Phase I/II that states that half the system can be taken out of service at a time. (i.e. one pair of two pairs of Aeration basins; one pair of the two pairs of Anoxic basins; one of two of the Fermentation basins and 2nd Anoxic basins). We assume that the owner has the ability to divert and isolate the tanks to allow one half the systems to be taken out of service.

*Correct, please reference the Drawings for additional clarity on the existing capability for isolation.*

123. Reference the Bid Package A Yard Pipe Sheets Drawings C -117 thru C-127 that shows several Structures, Pipe, and Basins that are listed as future. Please confirm that all pipe, structures, basins, etc., that are listed as future are not part of this contract or is by others.

*Correct, future Improvements are shown for reference purposes.*

124. Reference Bid Package A Section 13300 Para. H (Training), Item 9 specifies (3) days of training. Section 13305 Para. B (Training) Item 9 specifies the identical requirement. Are there (3) days or (6) days of training required as far as these two sections?

*Reference Bid Package A Specification Section 13300 Part H.9. The requirement is identical in both sections three (3) days of training.*

*Revise Package A, Section 13305, paragraph 3.B, as follows:*

*B. Training*

- 1. Refer to Section 13300. ~~The cost of Owner training programs shall be included in the Contract price.~~*
- 2. ~~All Technicians, Operators, Engineers, and Managers of the Water Treatment Facility will require training on the System. The ISS shall be responsible for providing detailed Operation and Maintenance (O&M) Manuals and training courses.~~*
- 3. ~~The O&M Manuals shall include specific details of the equipment supplied and details of operations specific to this Project. The training courses will deal with fundamentals of the software and~~*



~~networks utilized in the project, and the specific application programming developed for it.~~

~~4. All instructors must be very familiar with the operation and control of the Owner's facility.~~

~~5. The training shall be structured as follows:~~

~~a. The system training program shall be structured such that the operating personnel will understand the system's operation, and the functions available in the system.~~

~~b. The level and amount of training will be based on the understanding of the individual staff members.~~

~~Preventive and corrective maintenance of system devices and hardware shall be presented.~~

~~c. A number of basic theory courses shall be provided to give the operators an appreciation of how the system can help them perform their jobs.~~

~~6. The ISS shall provide detailed manuals and shall include specific details of equipment supplied and operations specific to the project.~~

~~7. The ISS shall make use of teaching aids, manuals, slide/video presentations, etc. After the training services, such materials shall be delivered to Owner.~~

~~8. All training schedules shall be coordinated with and at the convenience of the Owner. Shift training may be required to correspond to the Owner's working schedule.~~

~~9. On Site Training for operator personnel shall deal with fundamentals of system hardware and software, field devices, instrumentation calibration and maintenance. Training shall cover all aspects of the instrumentation and controls system. Training is expected to cover a period of not less than three (3) eight-hour days.~~

125. Reference Bid Package A. Drawings I-102 and I-103 show venturi flow elements 06A-FE-211, 214, 215, 218 and 09A-FE-301, 302, 303, 304. Typically the venturi is provided with a differential pressure (dP) transmitter but, in this case, no dP transmitter is specified or shown. Instead an "FI" is shown with each venturi. There does not seem to be a specification for this "FI" device. Please define what "FI" is.

*Reference Bid Package A Drawings I-102 and I-103 - "FI", or "Flow Indicator", denotes a differential pressure gauge in flow units. 06A-FI-211,*

214, 215, 218 and 09A-FI-301 thru 304 are listed in specification 13315.2.D.6.c,d,e,f,q.

126. Reference Bid Package A. Under Section 13315 Part 2.D.6, multiple sets of gauges are specified as differential pressure types. How are the gauges measuring the differential? Are orifice plates (or another type of element) required?

*Reference Bid Package A Specification Section 13315 Part 2.D.6 - 06A-FI-211, 214, 215, 218 and 09A-FI-301 thru 304 (13315.2.D.6.c,d,e,f,q) measure differential pressure, and thus flow, across Venturi flow tubes. 06A-PI-133 thru 138 and 09A-PI-301, 302, 307, 308 (13315.2.D.6.a,b,r) are incorrectly labeled and are in fact Gauge Pressure type.*

*Revise Package A, Section 13315, paragraph 2.D.6.a.i, as follows:  
i. Differential Gauge Pressure Type*

*Revise Package A, Section 13315, paragraph 2.D.6.b.i, as follows:  
i. Differential Gauge Pressure Type*

*Revise Package A, Section 13315, paragraph 2.D.6.r.i, as follows:  
i. Differential Gauge Pressure Type*

127. Reference Bid Package A Specification Section 13315 Part 2.D.6-e&f shows a meter size of 8", which is the venturi size. Please clarify the significance of these (2) gauges.

*Reference Bid Package A Specification Section 13315 Part 2.D.6 - They are Differential Pressure type gauges measuring flow across Venturi flow tubes of that size.*

*Revise Package A, Section 13315, paragraph 2.D.6.e, to add the following subparagraph iii:  
iii. Differential Pressure Type*

*Revise Package A, Section 13315, paragraph 2.D.6.f, to add the following subparagraph iii:  
iii. Differential Pressure Type*

128. Reference Bid Package A. Alarm stations are specified under Section 13315 Part 2.Q; however, not found on drawing. Please provide a list of alarm stations required.

*02A-XA-200 on Drawing I-500-301.*

Revise Package A, Section 13315, paragraph 2.Q, to add the following subparagraph 5:

5. Units to be Furnished by ISS:

a. 02A-XA-200: Screening Influent Channel High Level Alarm

129. Reference Bid Package A. Drawing I-102 shows gauge PI-09A-331. Drawing I-103 shows gauges PI-06A-212, 213, 216, 217. These gauges appear to be bold and, therefore, are required. These gauges, however, are not listed under Section 13315 Part 2.D.6.

*Reference Bid Package A Drawing I-102 and Specification Section 13315 Part 2.D.6 - Gauges 06A-PI-211 thru 218 inclusive, as shown on the air pipelines to Phase III Aeration on I-103, are listed in 13315.2.D.6.g. Gauges 09A-PI-331 thru 333, as shown on the air pipelines to Phase I/II Reaeration on I-102, are mislabeled on the drawing. They should be labeled 09A-PI-351 thru 353 / 231-PI-1, 231-PI-2, 232-PI-1. They are shown correctly on the P&ID, Drawing I-230-301. They are listed in 13315.2.D.6.vv,ww,xx. They should be listed as Gauge Pressure type.*

Revise Package A, Drawing I-102, as follows:

*Instrument labeled as 231-PI-1/09A-PI-331 shall be labeled as 231-PI-1/09A-PI-351.*

*Instrument labeled as 231-PI-2/09A-PI-332 shall be labeled as 231-PI-2/09A-PI-352.*

*Instrument labeled as 231-PI-3/09A-PI-333 shall be labeled as 232-PI-1/09A-PI-353.*

Revise Package A, Section 13315, paragraph 2.D.6.vv.i, as follows:

*i. ~~Differential~~ Gauge Pressure Type*

Revise Package A, Section 13315, paragraph 2.D.6.ww.i, as follows:

*i. ~~Differential~~ Gauge Pressure Type*

Revise Package A, Section 13315, paragraph 2.D.6.xx.i, as follows:

*i. ~~Differential~~ Gauge Pressure Type*

130. Reference Bid Package A. Under Section 13315 Part 2.D.6, multiple gauges are specified to be furnished with diaphragm seals, including 09A-PI-332 and 333; however, Drawing I-102 does not show diaphragm seals. Which is correct – the drawing or the specification?

*Reference Bid Package A Specification Section 13315 Part 2.D.6 and Drawing I-102. Reference Addendum 4, Bidder Question 129 for the revisions regarding the labeling on Drawing I-102.*

131. Reference Bid Package A Specification Section 13315 Part 2.D.6 and Drawing I-106 - The tag names for the discharge gauges for Clarifier 3/4 RAS WAS pumps do not match between specification 13315 Para. D-6 and Drawing I-106. It appears the specification is incorrect.

*Revise Package A, Section 13315, paragraph 2.D.6.qq, as follows:*

*qq. 09A PI ~~255~~ 255: Clarifier 3/4 RAS Pump 3 Discharge Suction Pressure*

*Revise Package A, Section 13315, paragraph 2.D.6.ff, as follows:*

*ff. 09A PI ~~332~~ 252: Clarifier 3/4 RAS Pump 1 Discharge Pressure*

*Revise Package A, Section 13315, paragraph 2.D.6.gg, as follows:*

*ff. 09A PI ~~333~~ 254: Clarifier 3/4 RAS Pump 2 Discharge Pressure*

*Revise Package A, Section 13315, paragraph 2.D.6.hh, as follows:*

*ff. 09A PI ~~334~~ 256: Clarifier 3/4 RAS Pump 3 Discharge Pressure*

*Revise Package A, Section 13315, paragraph 2.D.6.ii, as follows:*

*ff. 09A PI ~~335~~ 258: Clarifier 3/4 WAS Pump 1 Discharge Pressure*

*Revise Package A, Section 13315, paragraph 2.D.6.jj, as follows:*

*ff. 09A PI ~~336~~ 260: Clarifier 3/4 WAS Pump 2 Discharge Pressure*

132. Reference Bid Package A. It is difficult to determine what instrumentation equipment is new versus what equipment is existing. On Drawing I-003 the shading of equipment cannot be accurately determined. We request a list of new components required, including patch panels, Ethernet switches, modification of PLC's, as well as new PLCs.

*The following components shown on I-003 shall be furnished as New by the ISS:*

- a. New server rack, as defined in Note 4.*
- b. Secondary Web Server, NAS and UPS in the new server rack.*
- c. Monitor, keyboard and mouse associated with the server rack.*
- d. The UPS in the Control Room.*
- e. All Ethernet switches in the Operations Building.*
- f. Color trend printer denoted as "New".*
- g. Laptop and docking station denoted as "New".*

- h. FB-2, 3, 6, 8, 9, 10, 11. Refer also to Electrical Drawings E-108 and E-901.
- i. PLC-02A and associated control panel and equipment therein.
- j. RIO-02B and associated control panel and equipment therein.
- k. PLC-08A and associated control panel and equipment therein.
- l. PLC-07A, Ethernet switch.

133. Bid Package A, Specification Section 15100-27, Part 2.P.7.c; Type 728-- Swing Check Valves 10 through 66 inches with Controlled Closing Using Bottom--Mounted Hydraulic Buffer: Add Crispin SWC-BD (see attached page 6) Exceptions to existing specified valve: Crispin furnishes 316SS body seat.

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement. "Or equal" is stated following the named manufacturers. Following the Notice of Award and during shop drawing submittal phase, alternative manufacturers will be considered on an "or equal" basis.*

134. Bid Package A, Specification Section 15100-27, Part 2.P.7.g; Type 760-- Double Door Check Valves: Champion Model CV (see attached). Exceptions to existing specified valve: Champion standard body material is Ductile Iron, with Buna Seats (rated to 250F). They also furnish a 304SS disc with 316SS spring material as standard. Viton seats are available.

*Please reference Addendum No. 1, Bidder Question 4 regarding Orange County's policy of naming additional manufacturers during advertisement. "Or equal" is stated following the named manufacturers. Following the Notice of Award and during shop drawing submittal phase, alternative manufacturers will be considered on an "or equal" basis.*

135. On C-117 and C-123 in Bid Package A the drawings call for Air Release Valve Assemblies on the 48" FM indicated as detail 2 on D-504. However, detail 2 on D-504 shows an air release valve assembly which is not suitable for an underground piping system. Can the correct detail be provided?

*Please reference Addendum 3, Bidder Question 5.*

136. Reference Bid Package A, System Start-up Section 01664 requires the contractor to provide all of the Supplemental Carbon – MicroC2000 for start-up and testing for each phase of the project as there are multiple Substantial Completion Milestones on the project. Can this chemical be supplied by the Owner as the feed system will be placed in operation after the first Substantial Completion Date? If we are to furnish this for each phase the contractor would be furnishing the carbon source for the operations of the project for nearly 2 years.

*Section 01664, Part 2.B is revised as follows;*

*The Contractor is responsible to supply all MicroC2000™ product manufactured by Environmental Operating Solutions, Inc. as required for start-up, System Testing and as necessary for issuance of substantial completion for Process 520 and all BNRs; Phase I/II BNR (Process 210 – 250), Phase III BNR (Process 310 – 352), Phase IV BNR (Process 420, 450 and 540). Following issuance of BNR substantial completion “A” (Process 520 and Phase I/II BNR Process Train (South)), as noted in Section 01040, Part D.1.i(1), and all BNRs (noted herein), the Contractor is required to fill all storage tanks within Process 520 to capacity, 520-TK-1 and 520-TK-2. Following the issuance of BNR Substantial Completions “A” through “E” as noted in Section 01040, the Owner will supply the MicroC2000™ product for operating BNR process trains.*

137. Reference Bid Package B. Section 13300 Para. C-b discusses a laptop computer; however, there is no specification for the laptop.

*Insert the following new item 8 into Bid Package B, Specification Section 13300, paragraph D:*

*8. Laptop Operator Workstation. The Laptop Operator Workstation shall be a Dell model M4600 mobile workstation or better running 64-bit Windows 7 Ultimate operating system software and meeting the following additional requirements:*

- a. 15.6” LED-backlit screen*
- b. 16 GB DDR3 SDRAM memory at 1,333 MHz.*
- c. 750 GB, 7,200 rpm, hard drive.*
- d. Ethernet Network Interface Card.*
- e. Microsoft Office Professional software suite.*
- f. HMI application GE Profixy IFix version 5.5 web-client.*

g. Provide with the following options:

(1) Docking station

(2) Wireless Mouse.

138. Reference Bid Package B. There is no specification under Contract B for the fiber optic cable. Please provide a specification.

*Reference Bid Package A, Specification Section 13320 Fiber Optic Data Highway Network shall be used for Bid Package B Fiber Optic Specification.*

139. Reference Bid Package B, Drawing D-620-103, regarding demolition of the WAS Holding Tank. The V- Notch Effluent Weir is not shown to be removed. Please clarify if the V notch weir, which travels on the interior of the effluent launder, is required to be removed.

*Reference Drawing D-620-103 and Specification Section 11336, a new weir and Baffle Assembly is to be provided, The existing weir and baffle assembly is to be demolished, reference revised Drawing D-620-130 (Attachment).*

140. Is the bid date anticipated to change for this project as another WWTP is bidding July 30, 2014?

*Reference Addendum 2, the revised Bid Date is August 19, 2014 at 2:00 PM.*

**D. ADDITIONAL INFORMATION:**

1. Bid Package A, Drawing S-500-103, zone A4 was revised as follows; Provide Coating on all Interior vertical and horizontal surfaces in contact with water, see Notes on S-001. **(Attachment)**
2. Bid Package A, Drawing C-121, zone B5 at the 20X20 Hot Tap at Fitting Identification tag 118, provide an ARV at the Localized highpoint to the West of the tie-in. **(Attachment)**.

**E. 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.**

**F. All other terms and conditions remain the same.**

**G. Receipt acknowledged by:**

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Firm

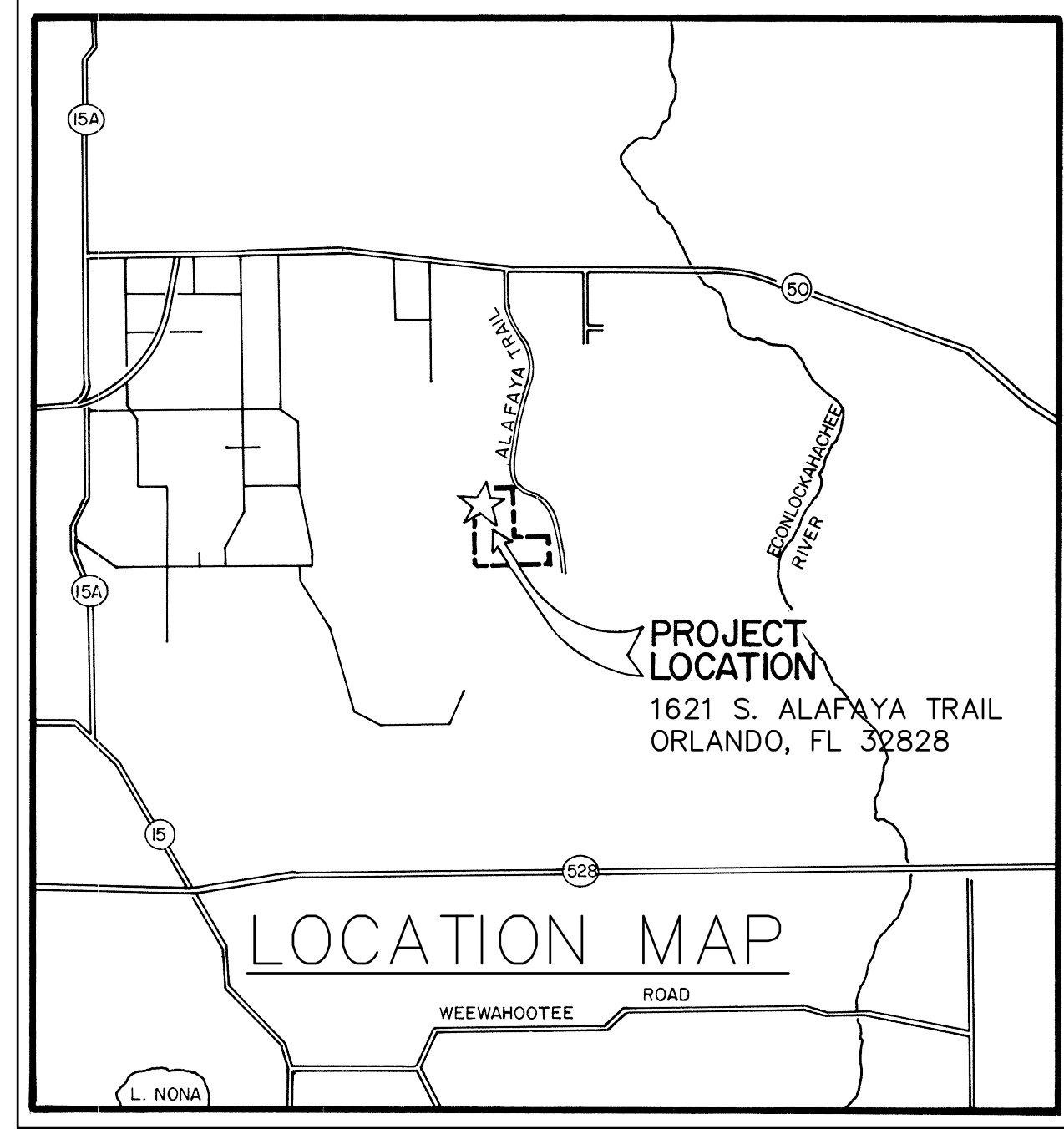


**BOARD OF COUNTY COMMISSIONERS  
ORANGE COUNTY, FLORIDA**

**ADDENDUM NO. 4  
IFB NO. Y14-748**

**ORANGE COUNTY EASTERN WATER RECLAMATION FACILITY  
PHASE V AND CENTRIFUGE DEWATERING IMPROVEMENTS**

**DRAWINGS  
BID PACKAGE A**



ABBREVIATIONS	DESCRIPTION	MATERIAL	PIPE SIZE (INCHES)	SPEC SECTION	INTERIOR LINING	WORKING PRESSURE (PSIG)	TEST PRESSURE (PSIG) (1)	TEST FLUID	EXPOSED COATING SYSTEM	SUBMERGED COATING SYSTEM	BURIED COATING SYSTEM	COLOR	NOTES/REMARKS
AIR-1	PROCESS AIR	DI	4" AND UP	15240	UNLINED, SEE SPEC 15240	10	25	AIR	N/A	N/A	N/A	-	1,2,4,5,6,7,8,9
AIR-2	PROCESS AIR	SST	1" AND UP	15276	N/A	10	25	AIR	N/A	N/A	N/A	GREEN *	1,2,4,5,6,7,8,9,10
DR-1	DRAIN	DI	4" AND UP	15240	CERAMIC EPOXY LINED	G	SECT 02530	NPW	10	1	SECT 15240	BLACK *	2,5,6,7,9
DR-2	DRAIN	PVC	3" AND LESS	15290	N/A	G	SECT 02530	NPW	41	N/A	N/A	BLACK *	2,5,6,9
NPW-1	NON-POTABLE WATER	PVC	3" AND LESS	15290	N/A	90	150	NPW	41	N/A	SECT 15290	PURPLE *	1,2,4,5,8,11
FE-1	FILTERED EFFLUENT	DI	4" AND UP	15240	CEMENT MORTAR LINED	G	150	NPW	10	1	SECT 15240	BROWN *	1,2,4,5,6,7,8,9,11
FM-1	FORCE MAIN	DI	4" AND UP	15240	CERAMIC EPOXY LINED	75	150	NPW	10	1	SECT 15240	GREEN *	1,2,4,5,6,7,8,9,11
FM-2	FORCE MAIN	PVC	14" AND UP	15293	N/A	75	150	NPW	41	N/A	N/A	GREEN *	1,2,4,5,6,7,8,9,11
GS-1	GRIT SLURRY	DI	4" AND UP	15242	GLASS LINED	30	150	NPW	10	1	N/A	-	1,2,4,5,6,7,8,9
ML-1	MIXED LIQUOR	DI	4" AND UP	15240	CERAMIC EPOXY LINED	5	150	NPW	10	1	SECT 15240	DARK BROWN *	1,2,4,5,6,7,8,9,11
OA-1	ODOROUS AIR	FRP	4" AND UP	15299	N/A	SECT 15299	SECT 15299	AIR	SECT 15299	N/A	N/A	WHITE *	6,7
RAS-1	RETURN ACTIVATED SLUDGE	DI	4" AND UP	15240	CERAMIC EPOXY LINED	30	150	NPW	10	1	SECT 15240	DARK BROWN *	1,2,4,5,6,7,8,9,11
REJ-1	REJECT RETURN	DI	4" AND UP	15240	CEMENT MORTAR LINED	60	150	NPW	10	1	SECT 15240	-	1,2,4,5,6,7,8,9
RS-1	RAW SEWAGE	DI	4" AND UP	15240	CERAMIC EPOXY LINED	5	150	NPW	10	1	SECT 15240	GREEN *	1,2,4,5,6,7,8,9,11
RW-1	RECLAIMED WATER	DI	4" AND UP	15240	CEMENT MORTAR LINED	75	150	NPW	10	1	SECT 15240	PURPLE *	1,2,4,5,6,7,8,9,11
RW-2	RECLAIMED WATER	PVC	3" AND LESS	15290	N/A	75	150	NPW	41	N/A	SECT 15290	PURPLE *	1,2,4,5,6,7,8,9,11
RW-3	RECLAIMED WATER	SST	3" AND LESS	15276	N/A	75	150	NPW	N/A	N/A	N/A	-	1,2,3,6,7
SC-1	SCUM	DI	4" AND UP	15240	CERAMIC EPOXY LINED	30	150	NPW	10	1	SECT 15240	DK GRAY *	1,2,4,5,6,7,8,9,11
SD-1	STORM DRAIN	RCP/ERCP	4" AND UP	02615	N/A	G	SECT 02530	NPW	N/A	N/A	N/A	-	5,6,8,9
SE-1	SECONDARY EFFLUENT	DI	4" AND UP	15240	CEMENT MORTAR LINED	5	150	NPW	10	1	SECT 15240	BROWN *	1,2,4,5,6,7,8,9,11
SE REJ-1	SECONDARY EFFLUENT REJECT	DI	4" AND UP	15240	CEMENT MORTAR LINED	40	150	NPW	10	1	SECT 15240	-	1,2,4,5,6,7,8,9
SH-1	SODIUM HYPOCHLORITE	PVC	3" AND LESS	15290	N/A	60	150	NPW	41	N/A	SECT 15290	YELLOW *	1,2,5,8,11
SP-1	SUPPLEMENTAL CARBON	CPVC	4" AND LESS	15294	N/A	40	150	NPW	41	N/A	SECT 15290	RED *	1,2,4,5,8,11
SP-2	SUPPLEMENTAL CARBON	PVC	4" THRU 8"	15291	N/A	A	25	AIR	41	N/A	N/A	RED *	1,2,8
WAS-1	WASTE ACTIVATED SLUDGE	DI	4" AND UP	15240	CERAMIC EPOXY LINED	30	150	NPW	10	1	SECT 15240	BROWN *	1,2,4,5,6,7,8,9,11
WM-1	WATER MAIN	DI	4" AND UP	15240	CEMENT MORTAR LINED	90	150	PW	10	N/A	SECT 15240	BLUE *	1,2,3,5,6,7,8,9,11
WM-2	WATER MAIN	PVC	3" AND LESS	15290	N/A	90	150	PW	41	N/A	SECT 15290	M	1,2,3,5,6,7,8,9,11

**GENERAL NOTES**

- THE EXISTING TOPOGRAPHICAL FEATURES SHOWN ON THE DRAWINGS WERE OBTAINED FROM GROUND SURVEY AND REPRESENT CONDITIONS AS THEY EXIST AS OF NOVEMBER 2006, JUNE 2012 AND OCTOBER 2012. AS PART OF THE BID PROCESS, AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXAMINE THE SITE OF THE PROPOSED WORK AND MAKE ALL NECESSARY INVESTIGATIONS TO THOROUGHLY DEFINE ALL DIFFICULTIES INVOLVED IN THE COMPLETION OF ALL WORK REQUIRED PURSUANT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETE.
- THE DRAWINGS DEPICT THE APPROXIMATE LOCATIONS, ELEVATIONS 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 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 OR STRUCTURE LOCATED IN A DIFFERENT LOCATION THAN IS ILLUSTRATED HEREIN, THE CONTRACTOR IS TO NOTIFY THE RESIDENT PROJECT REPRESENTATIVE IMMEDIATELY. AT A MINIMUM, THE FOLLOWING INFORMATION SHALL BE PROVIDED BY THE CONTRACTOR TO THE RESIDENT PROJECT REPRESENTATIVE; A DIMENSIONED ILLUSTRATION NOTING LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.
- RESTORE ALL PROPERTY AND INFRASTRUCTURE, INCLUDING UTILITIES DISTURBED BY CONSTRUCTION OPERATIONS TO THE CONDITIONS WHICH EXISTED PRIOR TO CONSTRUCTION OR BETTER. THE COST OF SUCH RESTORATION SHALL BE INCLUDED IN THE BID. ANY DAMAGE TO EXISTING PROPERTY, UTILITIES, STRUCTURES AND/OR SERVICES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE IN A MANNER AS DIRECTED BY THE ENGINEER AND OWNER. REMOVE AND REPLACE ALL PIPE, CONDUIT AND CULVERTS DAMAGED DURING CONSTRUCTION, AT NO EXPENSE TO THE OWNER. CONTRACTOR SHALL REMOVE AND REPLACE, OR TEMPORARILY RELOCATE, STORM SEWERS, CULVERTS AND OTHER UTILITIES AS REQUIRED DURING THE INSTALLATION OF PIPE. CONTRACTOR SHALL PROVIDE A TEMPORARY MEANS OF CONVEYING STORMWATER. WHERE TEMPORARY SUPPORT OF UTILITIES IS REQUIRED, THE CONTRACTOR SHALL PAY ALL ASSOCIATED COSTS AND COORDINATE WITH THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL NOT ADVERSELY IMPACT DRAINAGE SYSTEMS DURING CONSTRUCTION. TEMPORARILY RECONFIGURE THE DRAINAGE SYSTEMS, WHICH MIGHT BE IMPACTED BY CONSTRUCTION AS THE WORK PROCEEDS, SO AS TO NOT CAUSE ADVERSE IMPACTS TO SURFACE WATER DRAINAGE EFFICIENCY. DO NOT IMPAIR SURFACE WATER DRAINAGE CAPACITY. FOLLOW THE REQUIREMENTS OF THE STORMWATER POLLUTION PREVENTION PLAN.
- MAINTAIN ACCESS TO AND OPERATION OF ALL EXISTING PLANT OPERATIONS UNTIL NEW OPERATIONS HAVE BEEN ACCEPTED.
- AT A MINIMUM, ALL WORK TO BE IN ACCORDANCE WITH THE CURRENT EDITION OF ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL.
- STORM SEWER, GRAVITY WASTEWATER, AND RECLAIMED WATER MAINS CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE DIP, AND THE MINIMUM VERTICAL SEPARATION SHALL BE SIX (6) INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM TWELVE (12) INCH VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE DIP IRRESPECTIVE OF SEPARATION. DIP IS NOT REQUIRED FOR STORM SEWERS.
- MAINTAIN MINIMUM SIX (6) FEET HORIZONTAL SEPARATION BETWEEN POTABLE WATER MAIN AND FINISHED/SECONDARY EFFLUENT, WASTEWATER GRAVITY MAIN, FORCE MAIN OR MIXED LIQUOR. MAINTAIN MINIMUM THREE (3) FEET CLEAR (OUTSIDE BARREL TO OUTSIDE BARREL) HORIZONTAL DISTANCE BETWEEN POTABLE WATER MAIN AND STORM SEWER.
- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- SOD ALL DISTURBED UNPAVED AREAS, SEED AND MULCH WILL NOT BE ALLOWED.
- INSTALL OR CONSTRUCT STORMWATER AND DEWATERING SEDIMENT CONTROL ELEMENTS SUCH AS SILT FENCES, HAY BALES, ETC. PRIOR TO COMMENCING CONSTRUCTION. MAINTAIN SEDIMENT CONTROL ELEMENTS FOR THE DURATION OF THE PROJECT, REFER TO SPECIFICATION SECTION 02270 FOR SPECIFIC EROSION AND SEDIMENTATION CONTROL.
- PRESERVE AND PROTECT THE EXISTING CONCRETE SIDEWALKS NOT INTENDED TO BE REMOVED DURING CONSTRUCTION. REPAIR DAMAGED SIDEWALKS PER SPECIFICATION SECTION 02778 AND DETAIL 9/C-505. FOR CLARITY, NOT ALL SIDEWALKS ARE SHOWN.
- CONTRACTOR IS TO NOTE ON THE AS-BUILT DRAWINGS THE LOCATION AND ELEVATION OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION.
- A CONSTRUCTION ASSISTANCE REQUEST (C.A.R) WILL BE REQUIRED FOR ALL CONTACT WITH EXISTING OPERATION PERSONAL I.E.: TIE IN, SPARE PARTS, TRAINING ETC.. A 7-DAY NOTICE IS REQUIRED FOR ALL C.A.R.'S.
- ALL EXISTING PIPING REQUIRING A NEW CONNECTION IS TO BE MECHANICALLY RESTRAINED PER DETAIL 4, C-502.
- CONSTRUCTION AREA WILL BE CLEANED UP DAILY. ALL EXCAVATIONS WILL BE BACKFILLED BY END OF DAY, OR WITH PERMISSION FROM THE RESIDENT PROJECT REPRESENTATIVE, MAY LEFT OPEN WITH PROPER SAFETY PRECAUTIONS. CONTRACTOR SHALL HANDLE ALL SPILLS, DRAINING PIPES OR TIE-IN CONNECTIONS. CONTRACTOR WILL HAVE TANKER TRUCKS AND LINE EXCAVATIONS WITH POLY LINER IN ORDER TO HANDLE SPILLS AND TO CAPTURE AND DISPOSE OF FLUIDS ENCOUNTERED.
- POLYETHYLENE SHEET ENCASE ALL DUCTILE IRON PIPE EXCEPT FOR AIR-1, REFER TO SPECIFICATION SECTION 09954.
- ALL ELECTRICAL BOXES, PANELS ETC... IN NON CLIMATE CONTROLLED AREAS SHALL BE 316 SST, NEMA 4X.
- ALL DUCTILE IRON PIPING AND APPURTENANCES FOR AIR-1 SERVICE SHALL UTILIZE VITON GASKETS, REFERENCE SPECIFICATION 15240.
- CONTRACTOR SHALL TAKE CARE TO PROVIDE PROPER GRADE, ELEVATIONS AND ALIGNMENT TO PROVIDE FOR FUTURE CONNECTIONS.
- WHEN TRENCH EXCAVATION EXCEEDS FIVE (5) FEET IN DEPTH, PERFORM THE FOLLOWING:
  - CONTRACTOR SHALL CONFORM TO OSHA STD. 29CFR. SECTION 1926.650 WHICH IS INCORPORATED IN FLORIDA STATE 90-96.
  - CONTRACTOR SHALL PROVIDE WRITTEN ASSURANCE OF COMPLIANCE WITH THIS LAW.
- THE TRENCH SAFETY SYSTEM IS TO BE SUBMITTED BY THE CONTRACTOR.
- ALL PIPING SHALL BE PRESSURE AND LEAK TESTED IN ACCORDANCE WITH THE SPECIFICATIONS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY PLUGS, BLOCKING, TAPS AND TESTING EQUIPMENT REQUIRED TO COMPLETE THE TESTING AS SPECIFIED.
- ALL PIPING UNDER STRUCTURES TO BE CONCRETE ENCASED PER DETAIL 2/C-510.
- ALL EXISTING PIPE TO BE ABANDONED TO BE GROUT FILLED.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INCLUDE IN THE BID TO EXCAVATE BY HAND ALL AREAS.
- NOT ALL PIPE SUPPORTS ARE SHOWN. PIPE SUPPORTS FOR PIPING 3" AND LESS NOT SHOWN. PROVIDE PIPE SUPPORTS IN ACCORDANCE WITH SECTION 15064.
- STORM DRAIN IMPROVEMENTS TO BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE FDOT DESIGN STANDARDS.
- THE CONTRACTOR SHALL PUMP STORMWATER, OR GROUND WATER INTRUSION INTO THE STORMWATER COLLECTION SYSTEM IF REQUIRED, REF NOTE 5.

**FLOW STREAM IDENTIFICATION**

\* REF FLOW STREAM IDENTIFICATION NOTE 11

**SURVEYORS NOTES**

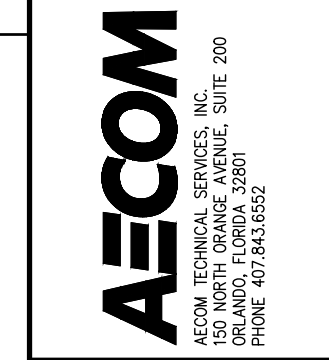
HORIZONTAL ROTATION AND COORDINATES ARE BASED ON THE ORANGE COUNTY GIS SYSTEM, (FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 1983/90 ADJUSTMENT). THESE COORDINATES WERE DERIVED FROM A FIELD TRAVERSE THROUGH PUBLISHED POSITIONS.

ELEVATIONS SHOWN HEREON ARE BASED ON ORANGE COUNTY DATUM (NGVD 29) AS DERIVED FROM BENCHMARK C-1022-005, AN ORANGE COUNTY DISC IN CURB INLET AT THE NE CORNER OF ALAFAYA TRAIL AND GOLFWAY BLVD, ELEVATION 83.574 AND BENCHMARK L-668-011, AN ORANGE COUNTY DISC IN HEADWALL ON THE NORTH SIDE OF ALAFAYA TRAIL, WEST OF PLANT SITE, ELEVATION 80.857.

**FLOW STREAM IDENTIFICATION NOTES**

- TEST PIPING IN ACCORDANCE W/ SPEC SECTION 15144 UNLESS OTHERWISE NOTED (UON).
- LABEL PIPING IN ACCORDANCE W/ SPEC SECTION 15075.
- DISINFECT PIPING IN ACCORDANCE W/ SPEC SECTION 15141.
- WHEN CONNECTING FLANGES OR THREADS OF DISSIMILAR METALS, USE FLANGE OR UNION INSULATION KITS AS SPECIFIED IN SECTION 15122 AND DETAIL 2/D-503.
- MINIMUM COVER FOR PIPING SHALL BE 3 FEET, UON, REFERENCE GENERAL NOTE 8.
- ALL PIPING IS TO HAVE A CONSTANT SLOPE BETWEEN THE INVERT OR CENTERLINE POINT SHOWN ON THE DRAWINGS, UON.
- ALL PIPING JOINTS ARE TO BE MECHANICALLY RESTRAINED.
- COORDINATE CONNECTION AND ELEVATIONS AT STRUCTURES W/ PROCESS, MECHANICAL AND PLUMBING DRAWINGS.
- PROVIDE MINIMUM SEPARATION OF PIPING AS IDENTIFIED IN THE GENERAL NOTES.
- DO NOT COAT STAINLESS STEEL PIPE AND FITTINGS.
- COLOR OF COATING TO BE IN ACCORDANCE W/CURRENT ORANGE COUNTY STANDARD COLORS FOR PROCESS DESIGNATION.
- WORKING PRESSURE "G" INDICATES GRAVITY
- WORKING PRESSURE "A" INDICATES ATMOSPHERIC

PATH/FILENAME: X:\ORANGE COUNTY\UTILITY\WRF\60222491\ENR\_5-FINAL-DESIGN\000 CAD\SHETS\G-C-004.DWG  
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 PLOTTED: MarsholliW  
 ANSI D - 1-Aug-14

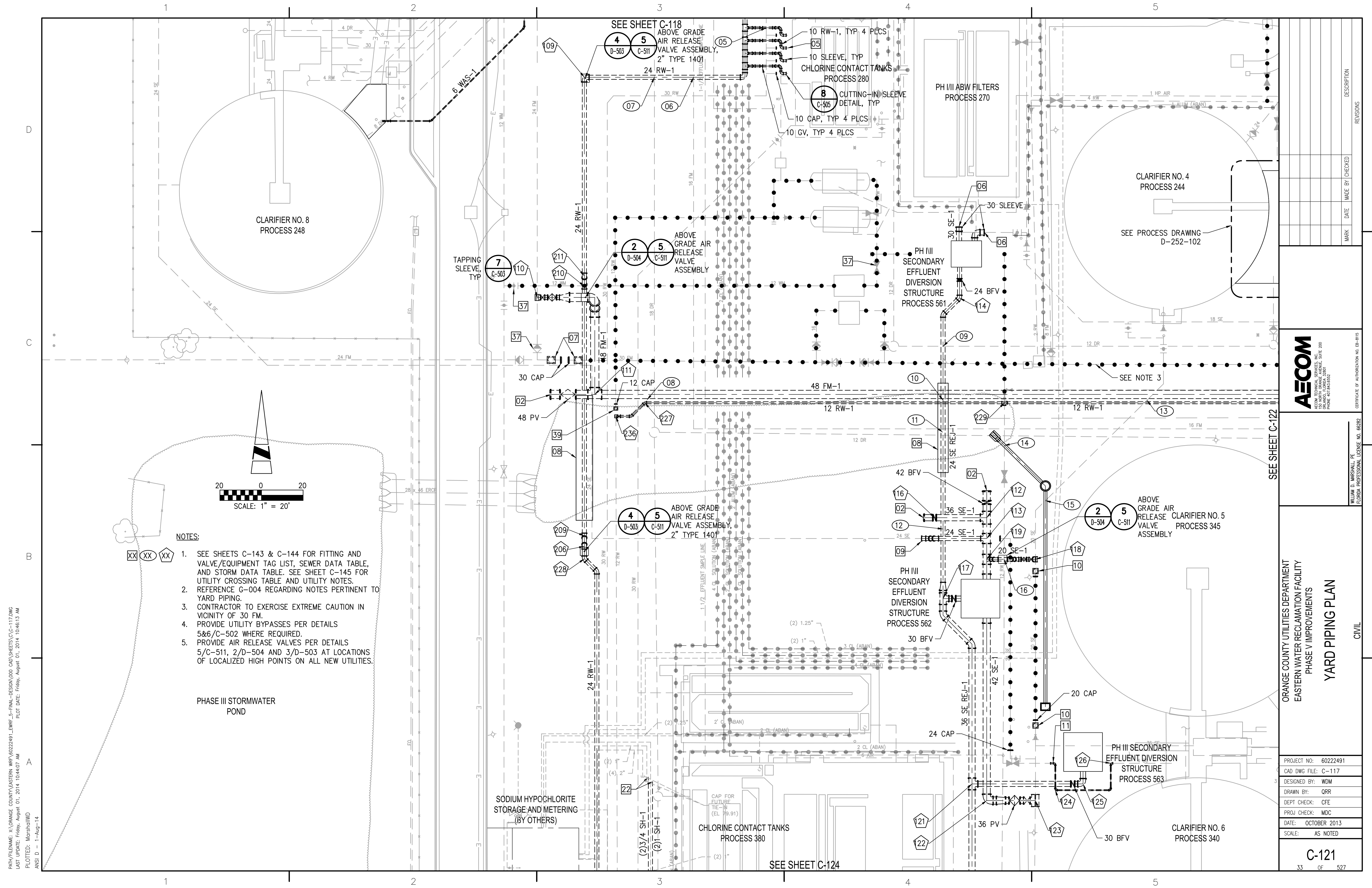


WILLIAM D. MARSHALL, PE  
 FLORIDA PROFESSIONAL LICENSE NO. 16252

ORANGE COUNTY UTILITIES DEPARTMENT  
 EASTERN WATER RECLAMATION FACILITY  
 PHASE V IMPROVEMENTS  
**GENERAL NOTES, LOCATION MAP AND  
 FLOW STREAM IDENTIFICATION**  
 GENERAL

PROJECT NO:	60222491
CAD DWG FILE:	G-004
DESIGNED BY:	WDM
DRAWN BY:	QRR
DEPT CHECK:	CPE
PROJ CHECK:	MDC
DATE:	OCTOBER 2013
SCALE:	AS NOTED

**G-004**



- NOTES:**
- SEE SHEETS C-143 & C-144 FOR FITTING AND VALVE/EQUIPMENT TAG LIST, SEWER DATA TABLE, AND STORM DATA TABLE. SEE SHEET C-145 FOR UTILITY CROSSING TABLE AND UTILITY NOTES.
  - REFERENCE G-004 REGARDING NOTES PERTINENT TO YARD PIPING.
  - CONTRACTOR TO EXERCISE EXTREME CAUTION IN VICINITY OF 30 FM.
  - PROVIDE UTILITY BYPASSES PER DETAILS 5&6/C-502 WHERE REQUIRED.
  - PROVIDE AIR RELEASE VALVES PER DETAILS 5/C-511, 2/D-504 AND 3/D-503 AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.

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 LAST UPDATE: Friday, August 01, 2014 10:44:07 AM  
 PLOTTED: Marsh/IWD  
 ANSI D - 1-Aug-14

MARK	DATE	MADE BY	CHECKED	DESCRIPTION

**AECOM**  
AECOM TECHNICAL SERVICES, INC.  
 2000 UNIVERSITY BLVD., SUITE 200  
 ORLANDO, FLORIDA 32801  
 PHONE: 407.843.6522

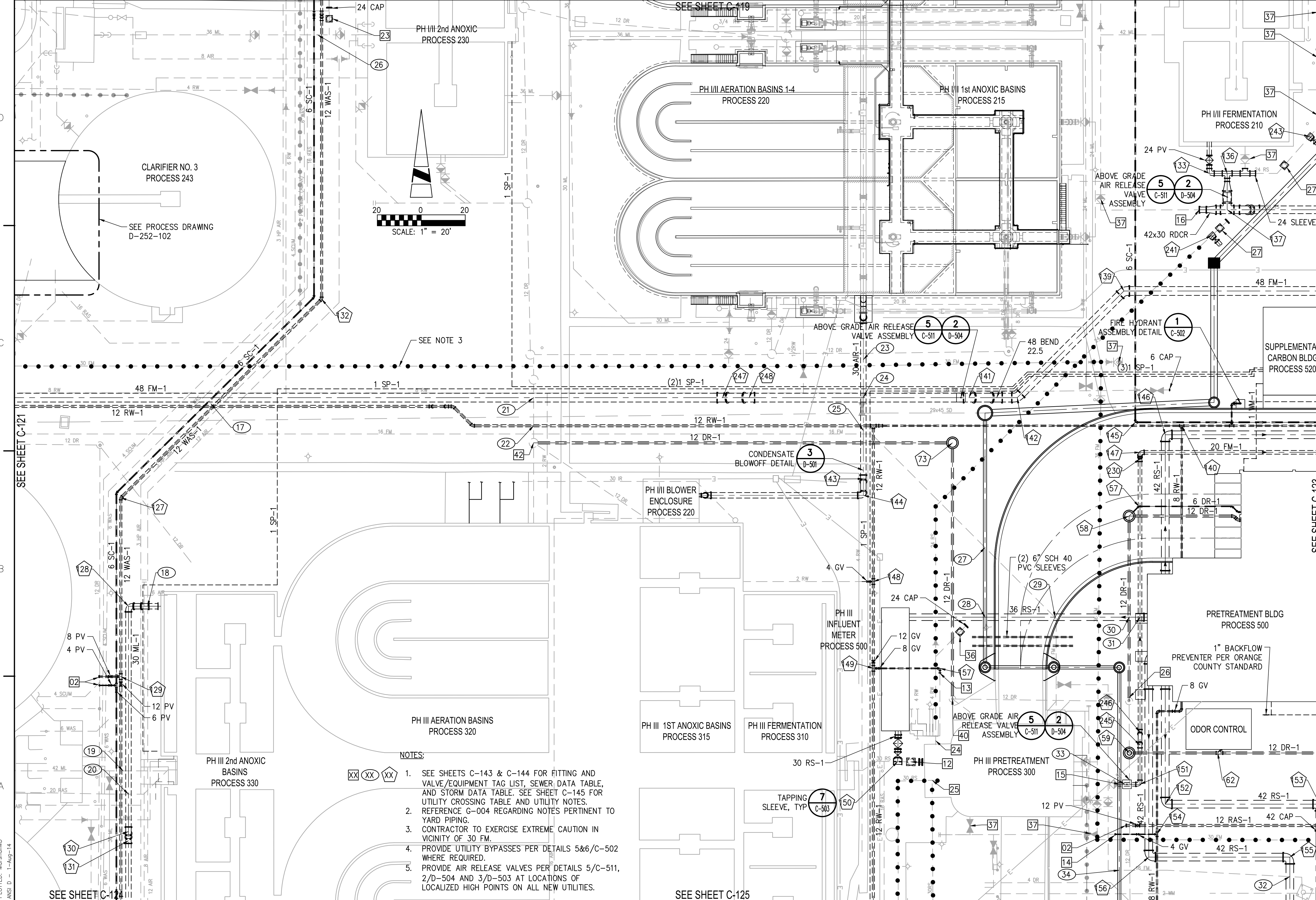
WILLIAM D. MARSHALL, PE  
 FLORIDA PROFESSIONAL LICENSE NO. 66292

ORANGE COUNTY UTILITIES DEPARTMENT  
 EASTERN WATER RECLAMATION FACILITY  
 PHASE V IMPROVEMENTS  
**YARD PIPING PLAN**  
 CIVIL

PROJECT NO:	60222491
CAD DWG FILE:	C-117
DESIGNED BY:	WDM
DRAWN BY:	QRR
DEPT CHECK:	CFE
PROJ CHECK:	MDC
DATE:	OCTOBER 2013
SCALE:	AS NOTED

**C-121**  
33 OF 527

PATH/FILENAME: X:\ORANGE COUNTY\WATER WRF\60222491\ENR\_5-FINAL-DESIGN\WOD CAD\SHETS\C-117.DWG  
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 PLOTTED: Marsh/WJD  
 ANSI D - 1-Aug-14



- NOTES:
- 1. SEE SHEETS C-143 & C-144 FOR FITTING AND VALVE/EQUIPMENT TAG LIST, SEWER DATA TABLE, AND STORM DATA TABLE. SEE SHEET C-145 FOR UTILITY CROSSING TABLE AND UTILITY NOTES.
  - 2. REFERENCE G-004 REGARDING NOTES PERTINENT TO YARD PIPING.
  - 3. CONTRACTOR TO EXERCISE EXTREME CAUTION IN VICINITY OF 30 FM.
  - 4. PROVIDE UTILITY BYPASSES PER DETAILS 5&6/C-502 WHERE REQUIRED.
  - 5. PROVIDE AIR RELEASE VALVES PER DETAILS 5/C-511, 2/D-504 AND 3/D-503 AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.

MARK	DATE	MADE BY	CHECKED	DESCRIPTION

**AECOM**

AECOM TECHNICAL SERVICES, INC. SUITE 200  
 690 ANDALUSIA AVENUE, SEASIDE, FLORIDA 32081  
 PHONE: 407.943.8522

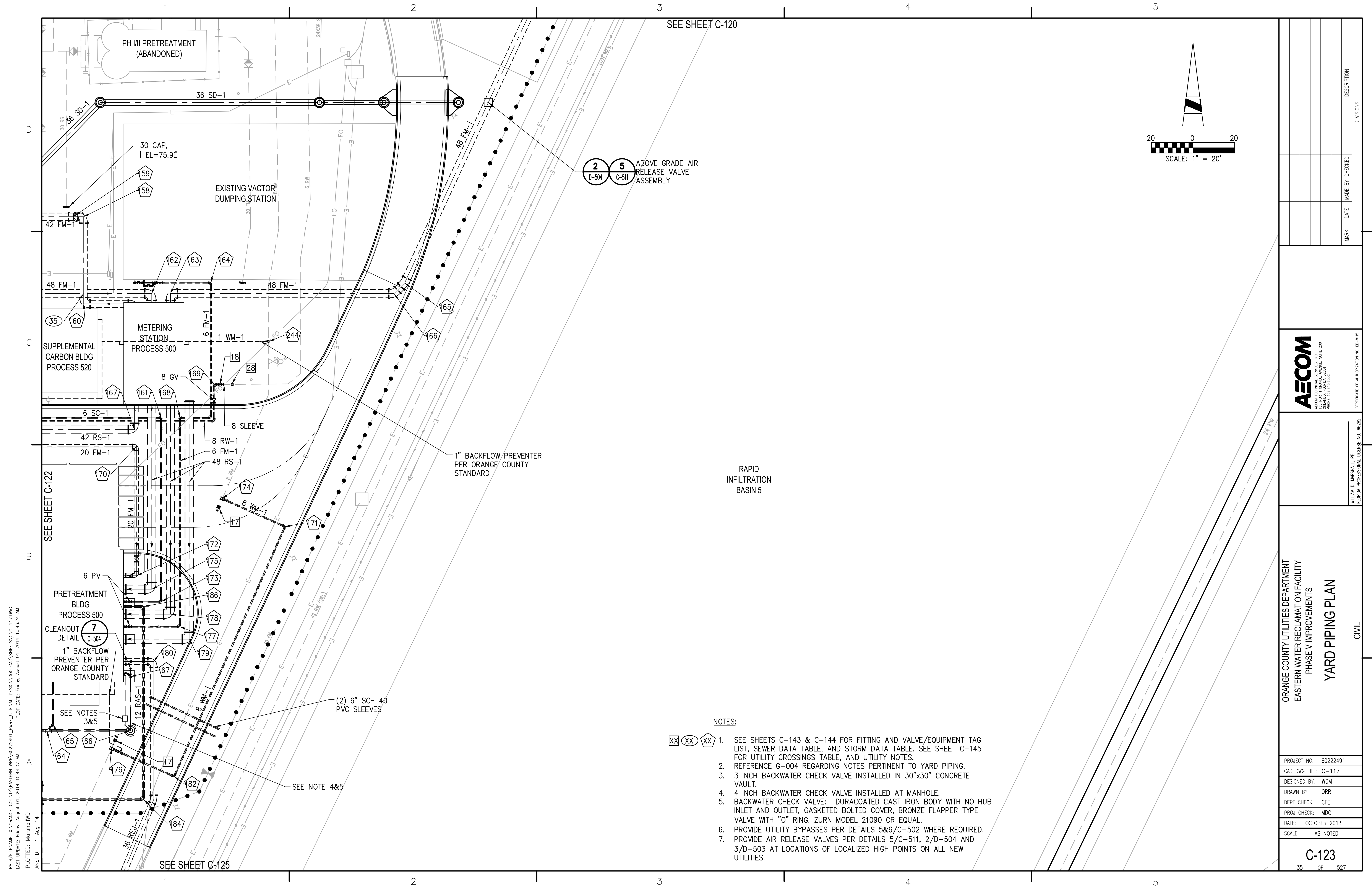
WILLIAM D. MARSHALL, PE  
 FLORIDA PROFESSIONAL LICENSE NO. 66592

ORANGE COUNTY UTILITIES DEPARTMENT  
 EASTERN WATER RECLAMATION FACILITY  
 PHASE V IMPROVEMENTS  
**YARD PIPING PLAN**  
 CIVIL

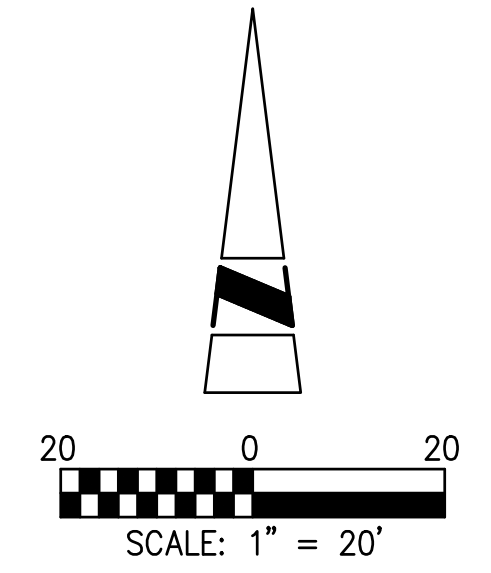
PROJECT NO:	60222491
CAD DWG FILE:	C-117
DESIGNED BY:	WDM
DRAWN BY:	QRR
DEPT CHECK:	CFE
PROJ CHECK:	MDC
DATE:	OCTOBER 2013
SCALE:	AS NOTED

**C-122**

34 OF 527



SEE SHEET C-120



2 5  
D-504 C-511  
ABOVE GRADE AIR  
RELEASE VALVE  
ASSEMBLY

1" BACKFLOW PREVENTER  
PER ORANGE COUNTY  
STANDARD

RAPID  
INFILTRATION  
BASIN 5

SEE SHEET C-122

SEE SHEET C-125

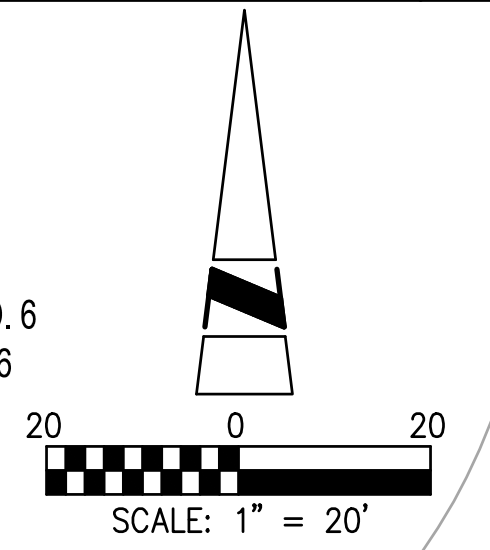
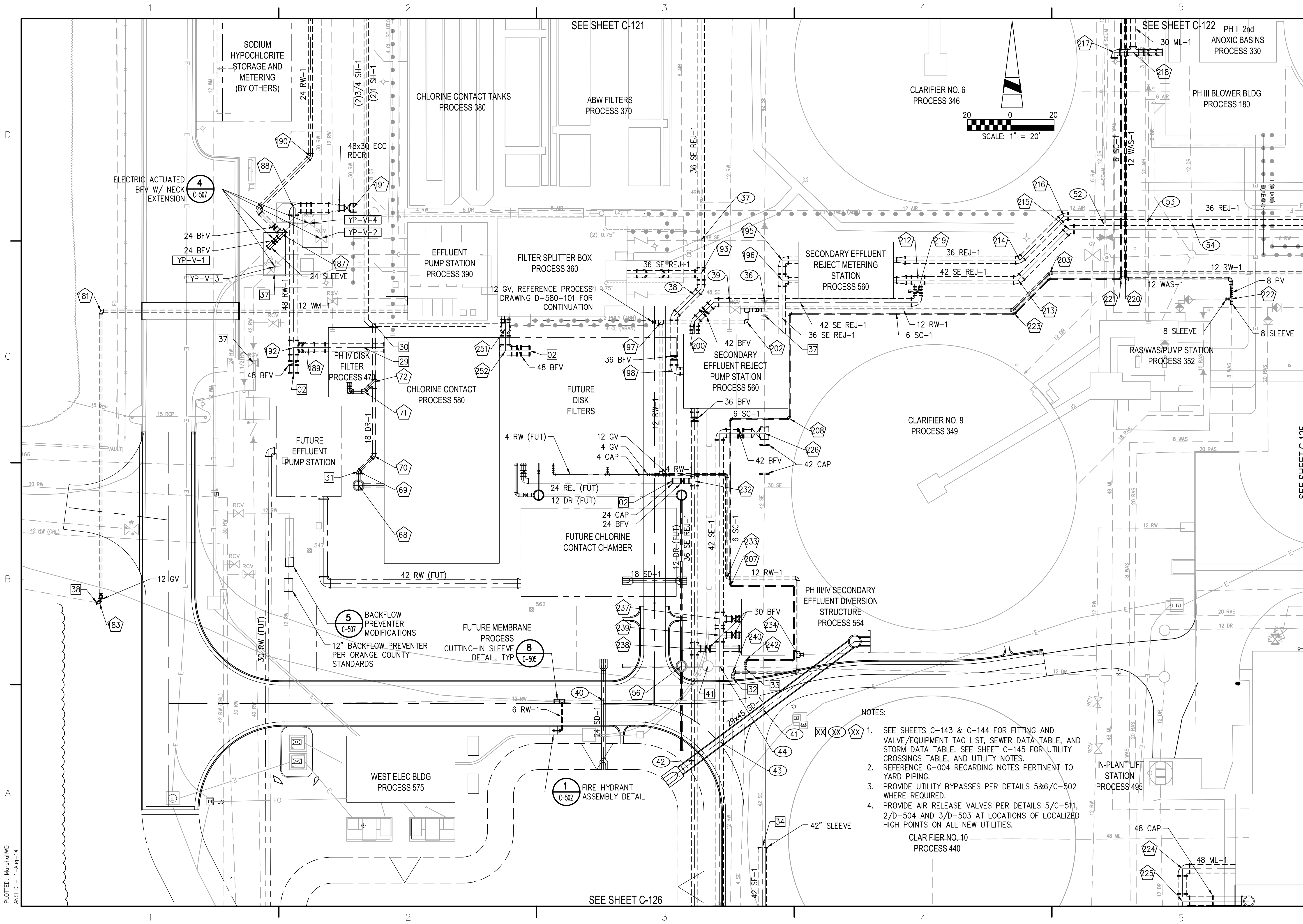
NOTES:

- 1. SEE SHEETS C-143 & C-144 FOR FITTING AND VALVE/EQUIPMENT TAG LIST, SEWER DATA TABLE, AND STORM DATA TABLE. SEE SHEET C-145 FOR UTILITY CROSSINGS TABLE, AND UTILITY NOTES.
- 2. REFERENCE G-004 REGARDING NOTES PERTINENT TO YARD PIPING.
- 3. 3 INCH BACKWATER CHECK VALVE INSTALLED IN 30"x30" CONCRETE VAULT.
- 4. 4 INCH BACKWATER CHECK VALVE INSTALLED AT MANHOLE.
- 5. BACKWATER CHECK VALVE: DURACOATED CAST IRON BODY WITH NO HUB INLET AND OUTLET, GASKETED BOLTED COVER, BRONZE FLAPPER TYPE VALVE WITH "O" RING. ZURN MODEL 21090 OR EQUAL.
- 6. PROVIDE UTILITY BYPASSES PER DETAILS 5&6/C-502 WHERE REQUIRED.
- 7. PROVIDE AIR RELEASE VALVES PER DETAILS 5/C-511, 2/D-504 AND 3/D-503 AT LOCATIONS OF LOCALIZED HIGH POINTS ON ALL NEW UTILITIES.

PATH/FILENAME: X:\ORANGE COUNTY\UTILITY\WRF\60222491\ENR\_5-FINAL-DESIGN\000 CAD\SHETS\C-117.DWG  
 LAST UPDATE: Friday, August 01, 2014 10:44:07 AM PLOT DATE: Friday, August 01, 2014 10:46:24 AM  
 PLOTTED: MarsholliWD  
 ANSI D - 1-Aug-14

<b>ORANGE COUNTY UTILITIES DEPARTMENT</b> <b>EASTERN WATER RECLAMATION FACILITY</b> <b>PHASE V IMPROVEMENTS</b> <b>YARD PIPING PLAN</b>		CIVIL
PROJECT NO: 60222491 CAD DWG FILE: C-117 DESIGNED BY: WDM DRAWN BY: QRR DEPT CHECK: CFE PROJ CHECK: MDC DATE: OCTOBER 2013 SCALE: AS NOTED		<b>C-123</b> 35 OF 527
		CERTIFICATE OF AUTHORIZATION NO. EB-616 WILLIAM D. MARSHALL, PE FLORIDA PROFESSIONAL LICENSE NO. 65292
	REVISIONS MARK DATE MADE BY CHECKED DESCRIPTION	

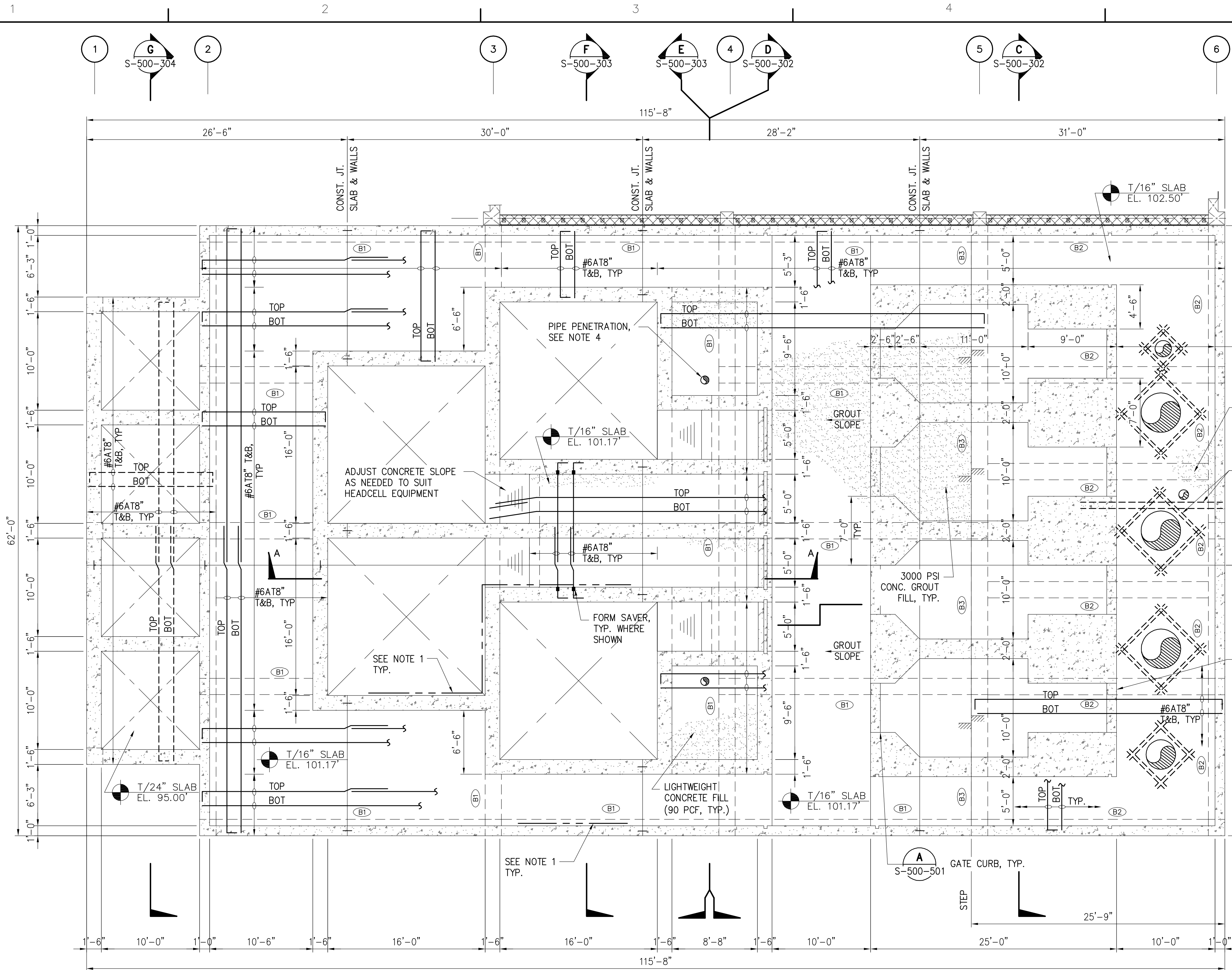
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 PLOTTED: MarshiW  
 ANSI D - 1-AUG-14



- NOTES:
- SEE SHEETS C-143 & C-144 FOR FITTING AND VALVE/EQUIPMENT TAG LIST, SEWER DATA TABLE, AND STORM DATA TABLE. SEE SHEET C-145 FOR UTILITY CROSSINGS TABLE, AND UTILITY NOTES.
  - REFERENCE G-004 REGARDING NOTES PERTINENT TO YARD PIPING.
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DESCRIPTION		REVISIONS
MARK	DATE	MADE BY
<b>AECOM</b> <small>AECOM TECHNICAL SERVICES, INC.            3300 W. BOYSSON BOULEVARD            ORLANDO, FLORIDA 32835            PHONE: 407.843.8822</small>		<small>CERTIFICATE OF AUTHORIZATION NO. EB-616            WILLIAM D. MARSHALL, P.E.            FLORIDA PROFESSIONAL LICENSE NO. 66592</small>
<b>ORANGE COUNTY UTILITIES DEPARTMENT            EASTERN WATER RECLAMATION FACILITY            PHASE V IMPROVEMENTS            YARD PIPING PLAN</b>		
PROJECT NO: 60222491 CAD DWG FILE: C-117 DESIGNED BY: WDM DRAWN BY: QRR DEPT CHECK: CFE PROJ CHECK: MDC DATE: OCTOBER 2013 SCALE: AS NOTED		<b>C-124</b> <small>36 OF 527</small>

PATH: \\FLENMIE.F\AECOM\10-176 EWRP PHASE V\A00\STRU\S-500-103.DWG  
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 ANSI D - 2-04-13

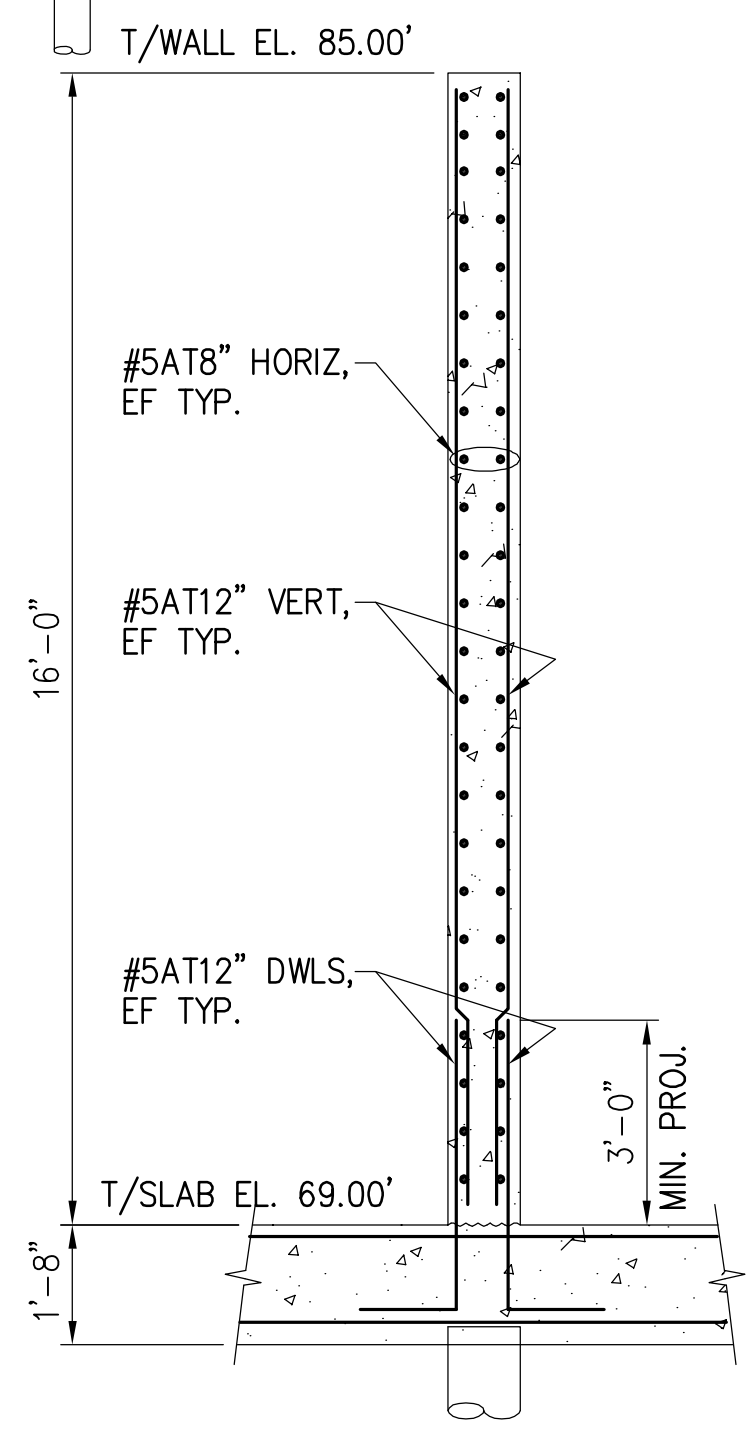
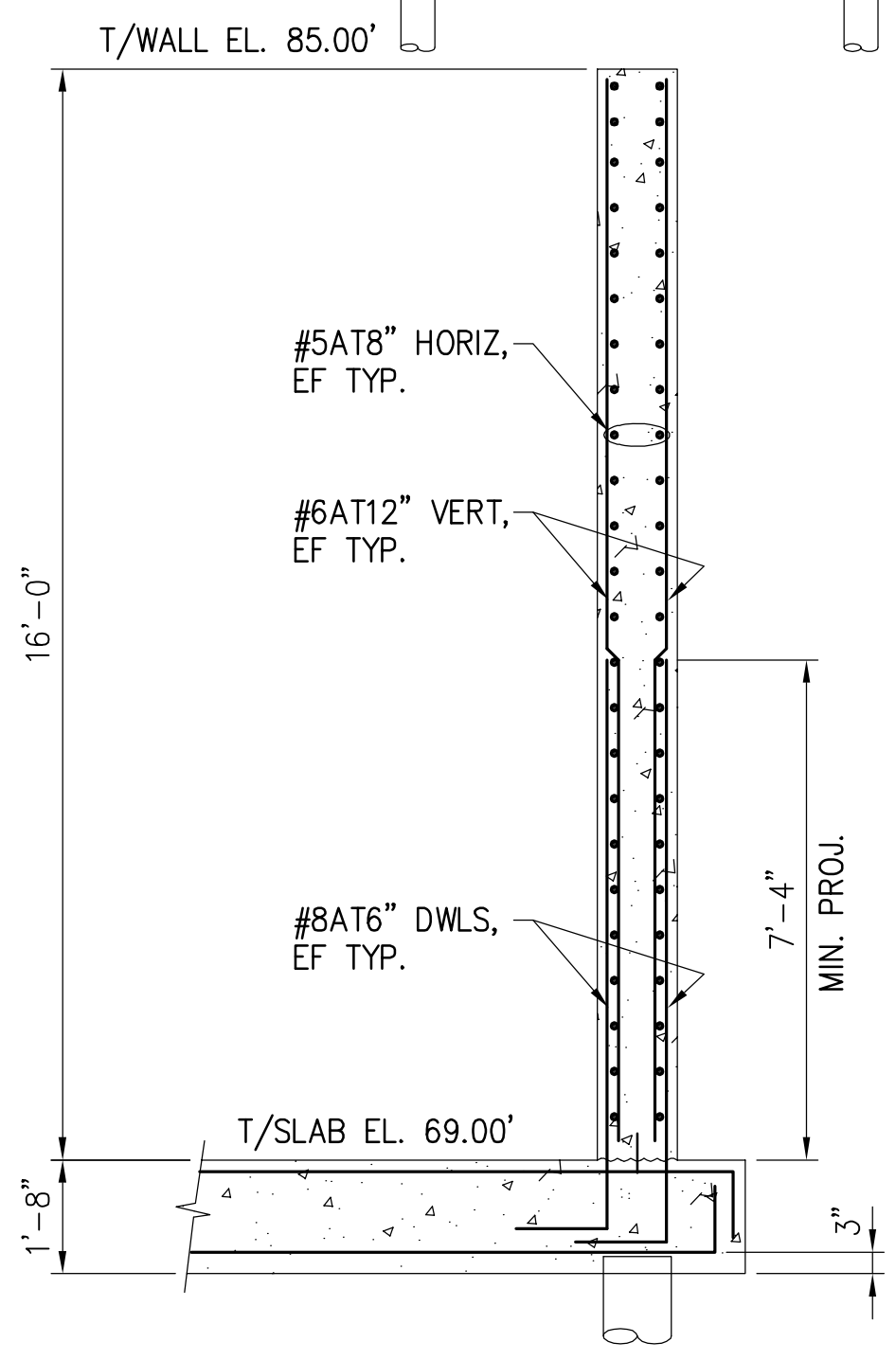
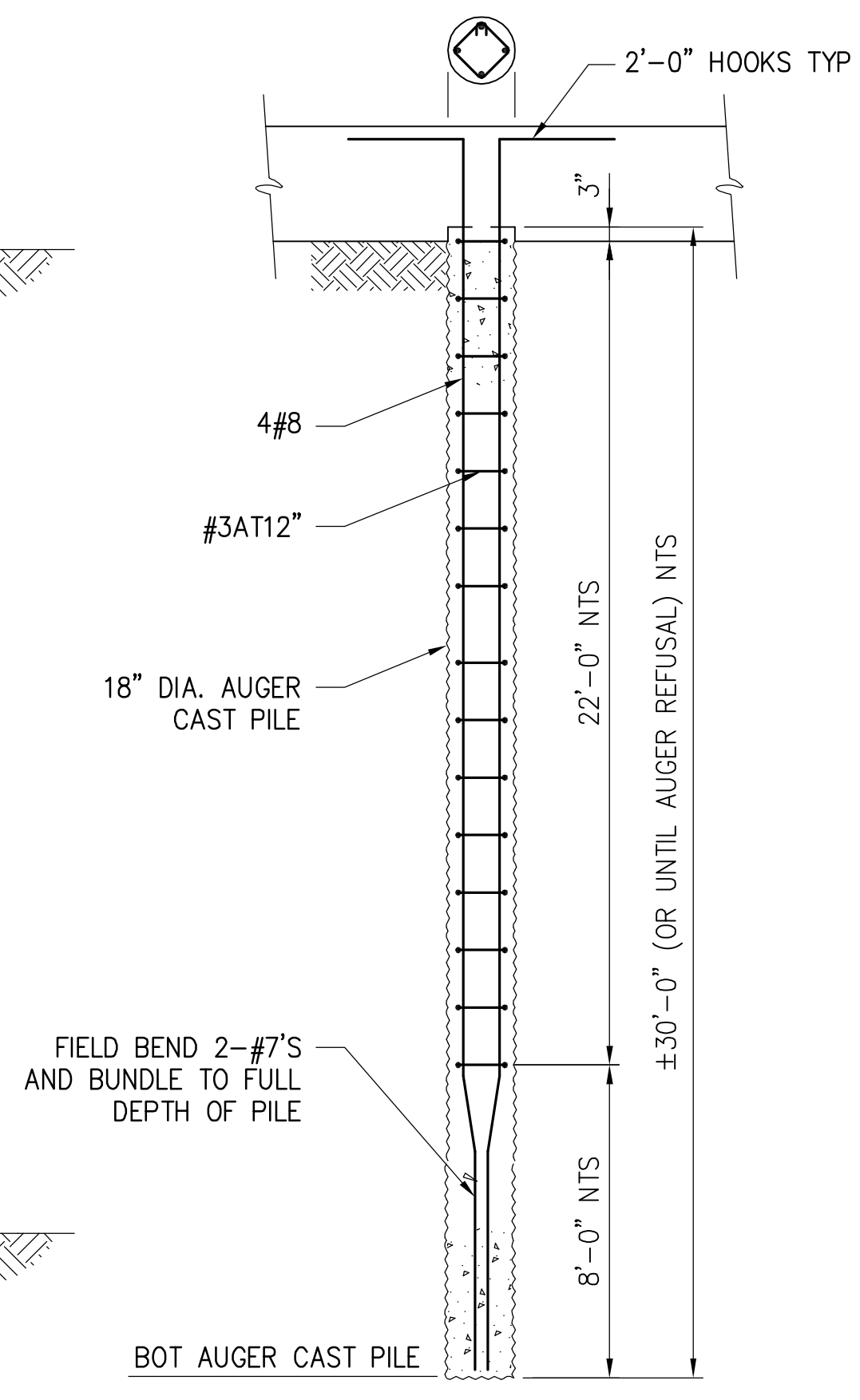
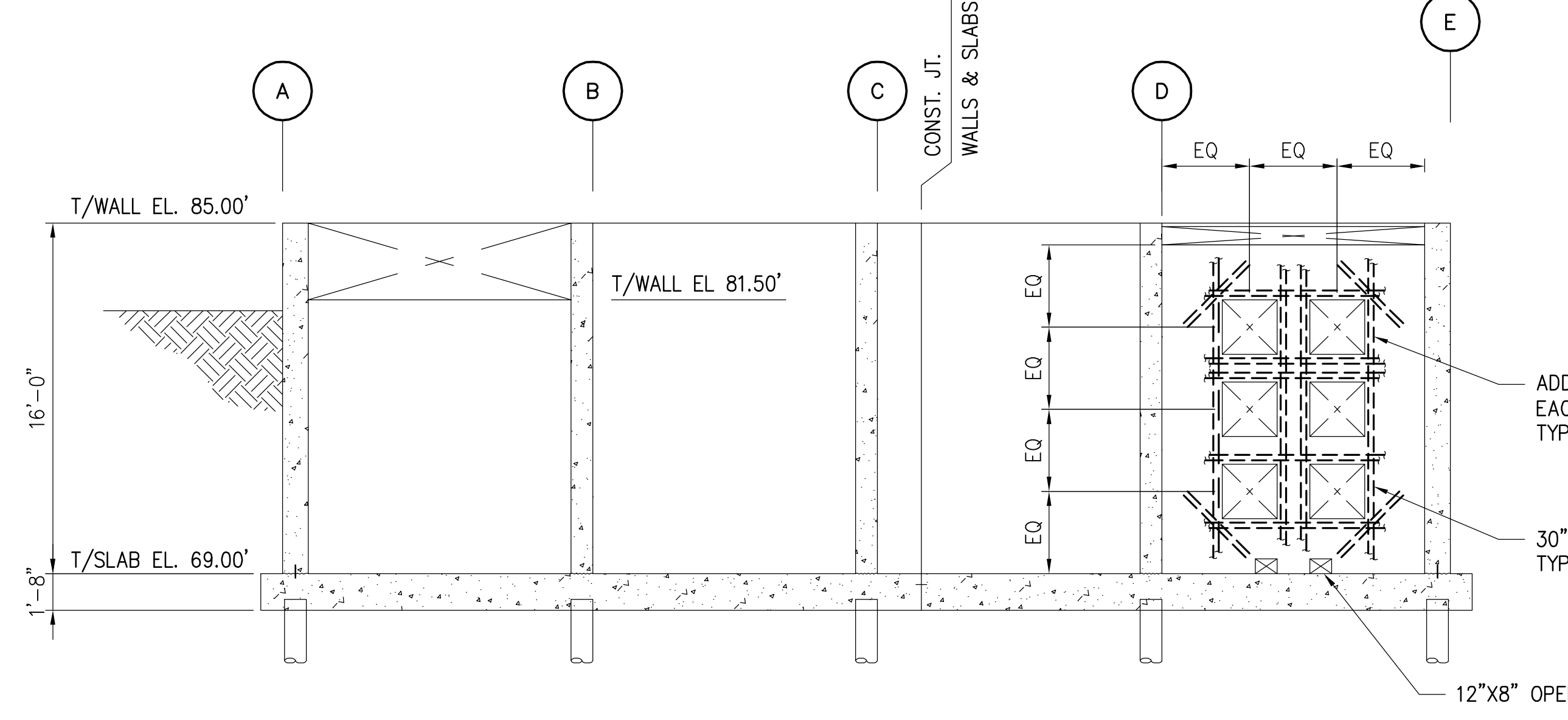
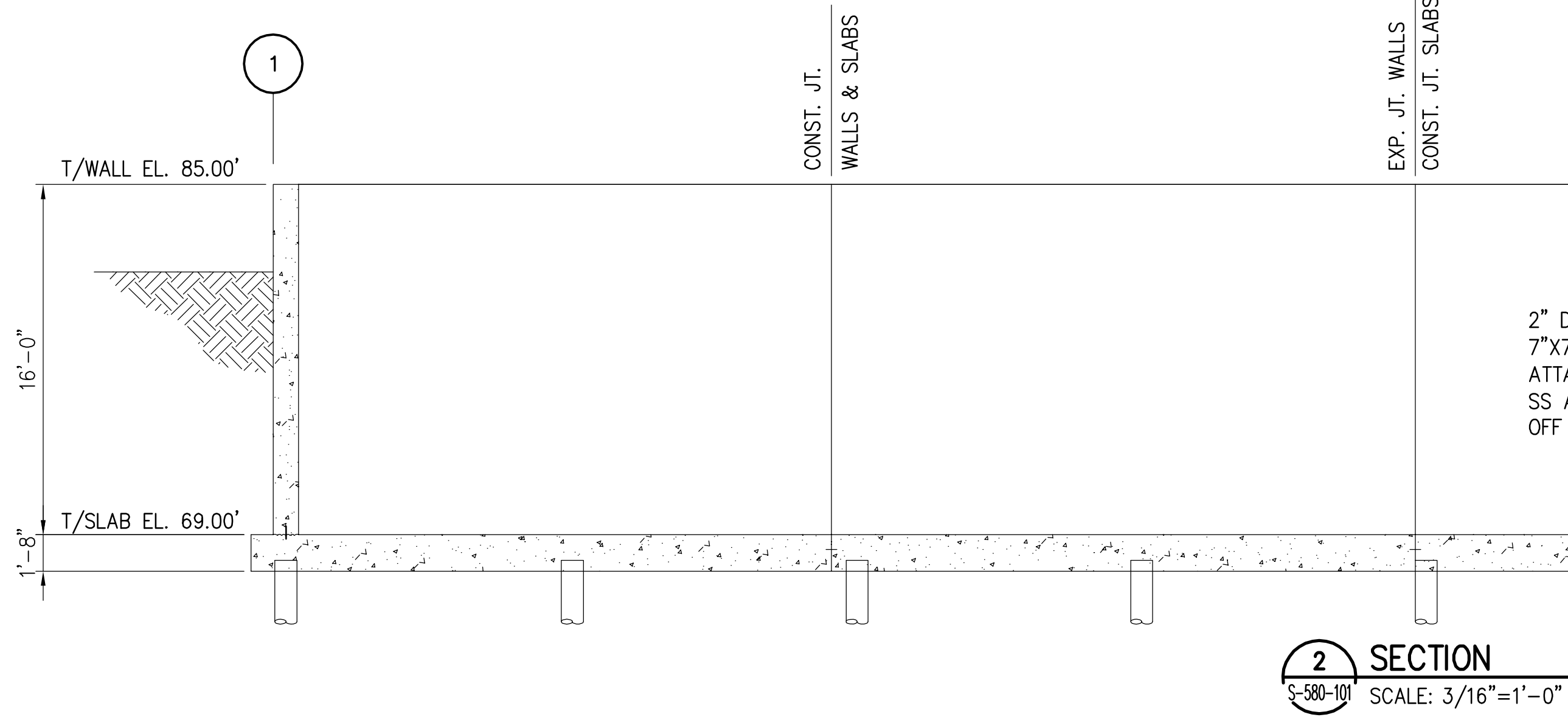
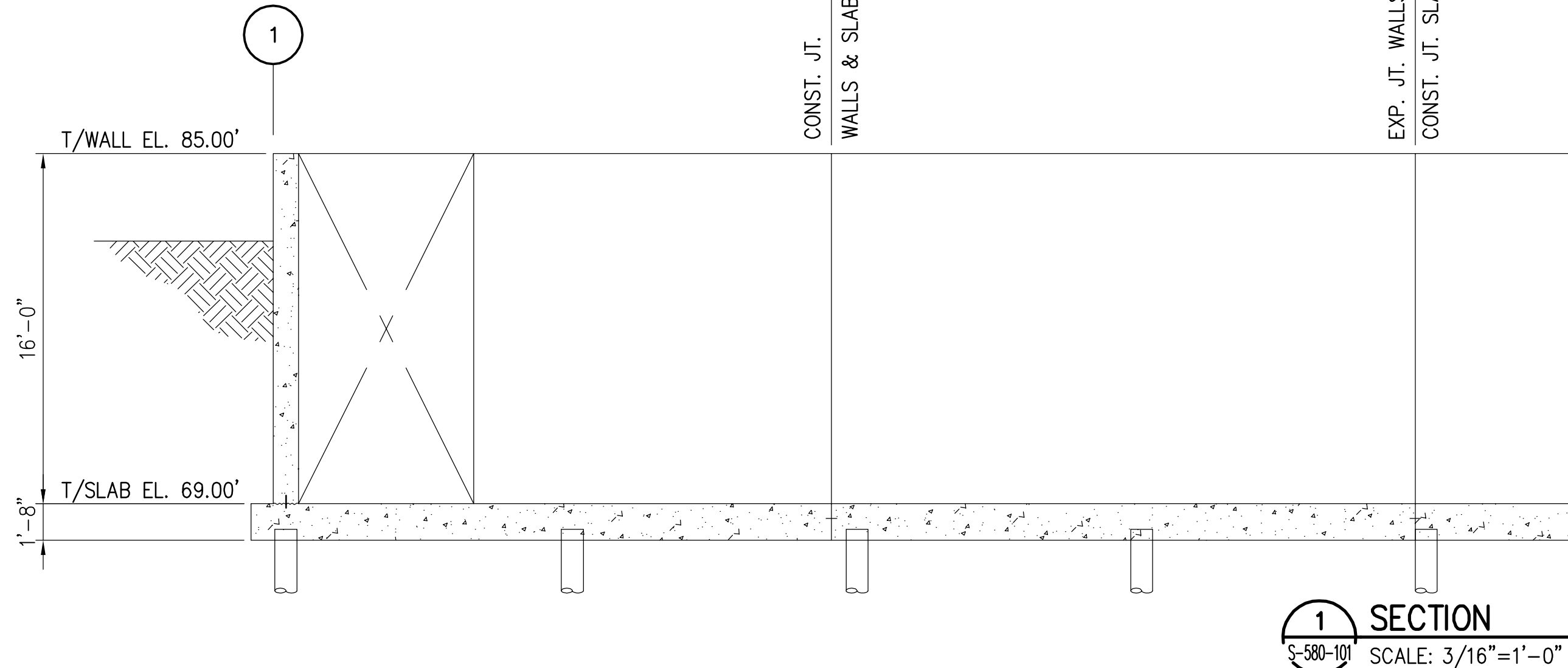


**INTERMEDIATE PLAN**  
 SCALE: 3/16"=1'-0"

NOTE: 1) PROVIDE COATING ON ALL INTERIOR VERTICAL AND HORIZONTAL CONCRETE SURFACES IN CONTACT WITH WATER, SEE NOTES ON S-001.  
 2) GROUT FILL UPSTREAM OF HEADCELLS. COORDINATE GROUT LOCATIONS AND THICKNESS WITH SECTIONS AND EQUIPMENT MANUFACTURERS.  
 3) COORDINATE ALL PENETRATIONS WITH ALL OTHER DISCIPLINES.  
 4) PROVIDE PVC PIPE SLEEVE AROUND ODOR CONTROL PIPING. EXTEND SLEEVE 4" ABOVE TOP OF SLAB AT EL. 112.00'. PROVIDE RUBBER ANNULAR HYDROSTATIC SEALING DEVICE PER SPECIFICATIONS AT TOP AND BOTTOM OF PVC SLEEVE.

ORANGE COUNTY UTILITIES DEPARTMENT EASTERN WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS <b>PRETREATMENT STRUCTURE          INTERMEDIATE PLAN</b> STRUCTURAL											
PROJECT NO: 60222491 CAD DWG FILE: S-500-103 DESIGNED BY: JS DRAWN BY: DM DEPT CHECK: ---- PROJ CHECK: BE DATE: OCTOBER 2013 SCALE: AS NOTED	REVISIONS <table border="1"> <thead> <tr> <th>MARK</th> <th>DATE</th> <th>MADE BY</th> <th>CHECKED</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	MARK	DATE	MADE BY	CHECKED	DESCRIPTION					
MARK	DATE	MADE BY	CHECKED	DESCRIPTION							
113 OF 527											

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 LAST UPDATE: Wednesday, October 02, 2013 4:31:57 PM PLOT DATE: Wednesday, July 30, 2014 2:01:12 PM  
 PLOTTED: S:\GET\VAR\??\ANSI D - 2-04-13



REVISIONS	
MARK	DESCRIPTION

AECOM TECHNICAL SERVICES, INC.  
 1001 N. WEST AVE. SUITE 200  
 ORLANDO, FLORIDA 32801  
 PHONE: 407.843.6252

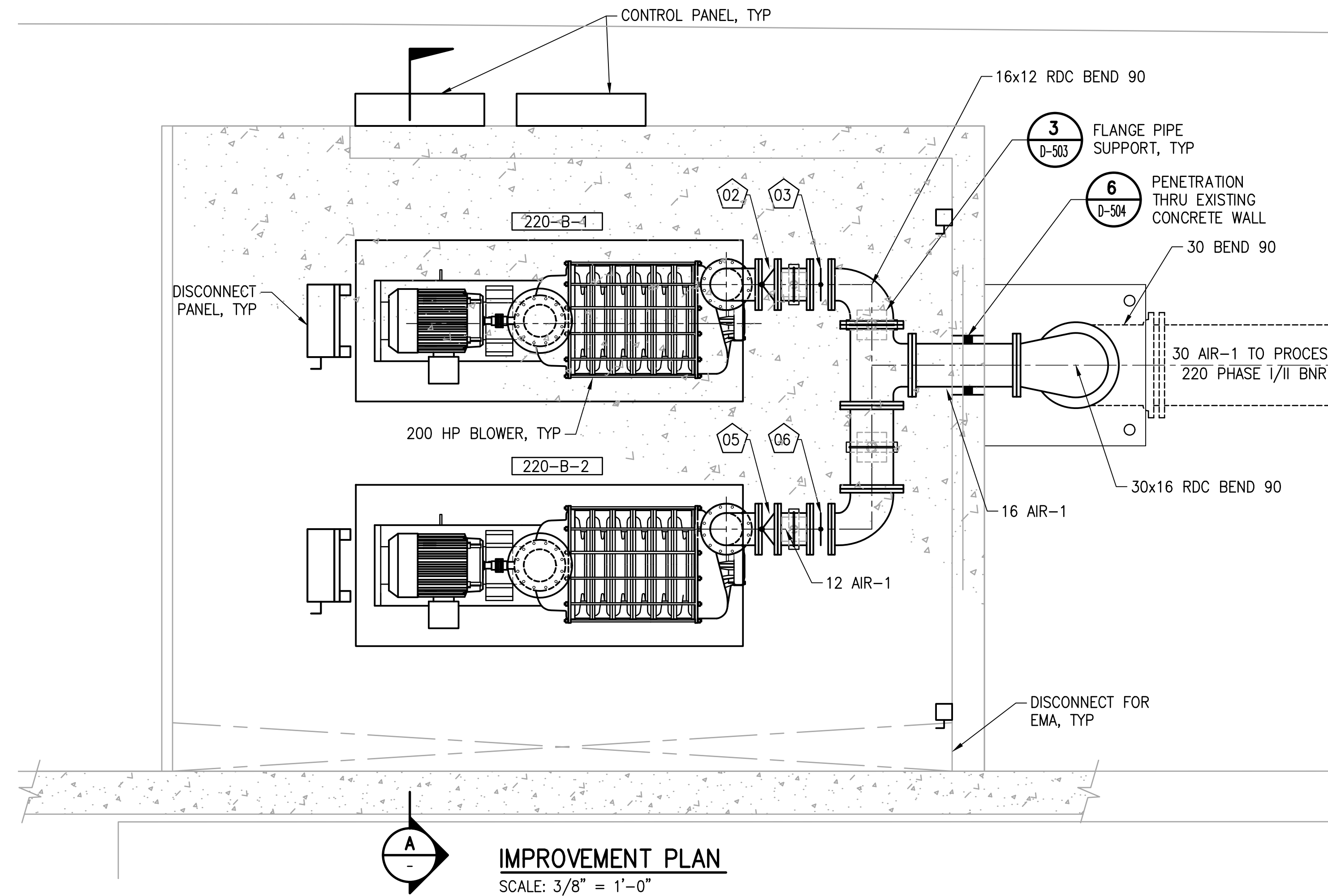
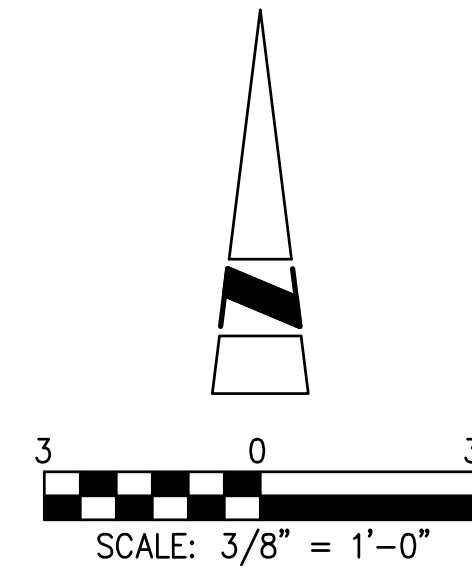
ORANGE COUNTY UTILITIES DEPARTMENT  
 EASTERN WATER RECLAMATION FACILITY  
 PHASE V IMPROVEMENTS  
**CHLORINE CONTACT TANK SECTIONS**  
 STRUCTURAL

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CAD DWG FILE:	S-580-301
DESIGNED BY:	JS
DRAWN BY:	DM
DEPT CHECK:	----
PROJ CHECK:	BE
DATE:	OCTOBER 2013
SCALE:	AS NOTED

**S-580-301**

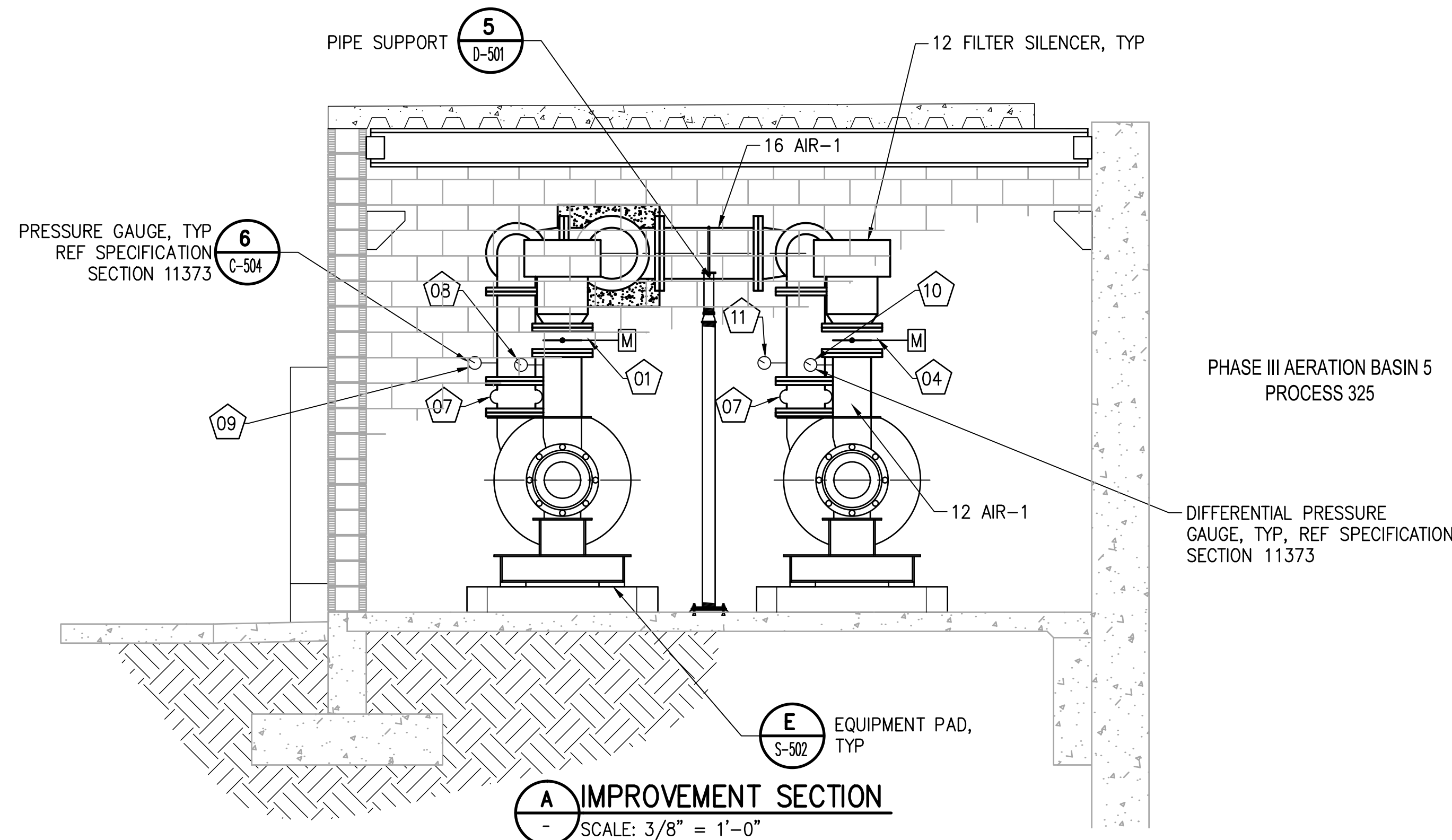
147 OF 527





**IMPROVEMENT PLAN**  
SCALE: 3/8" = 1'-0"

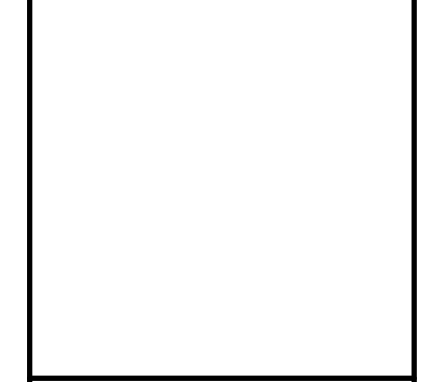
PHASE III AERATION BASIN 5  
PROCESS 325



**IMPROVEMENT SECTION**  
SCALE: 3/8" = 1'-0"

X VALVE/EQUIPMENT TAG LIST		
NUMBER	DESC	TAG
01	12 MOTORIZED BFV	220-V-1
02	12 CV	220-V-2
03	12 BFV	220-V-3
04	12 MOTORIZED BFV	220-V-4
05	12 CV	220-V-5
06	12 BFV	220-V-6
07	12 EXP JT	-
08	DIFFERENTIAL PRESSURE GAUGE	220-PI-1
09	PRESSURE GAUGE	220-PI-2
10	DIFFERENTIAL PRESSURE GAUGE	220-PI-3
11	PRESSURE GAUGE	220-PI-4

REVISIONS	DESCRIPTION	DATE	MARK	MADE BY	CHECKED



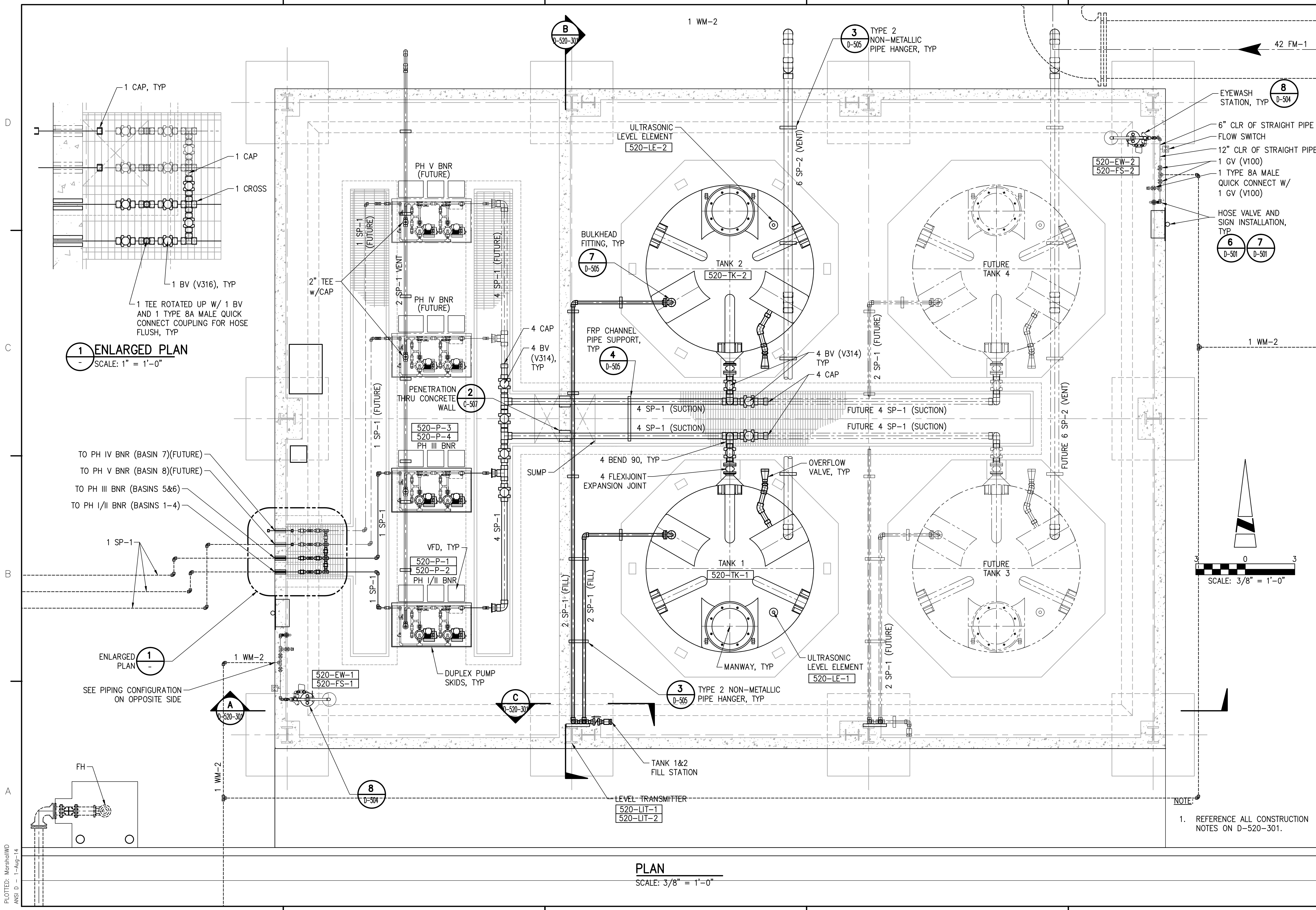
WILLIAM D. MARSHALL, P.E.  
FLORIDA PROFESSIONAL LICENSE NO. 65292

ORANGE COUNTY UTILITIES DEPARTMENT  
EASTERN WATER RECLAMATION FACILITY  
PHASE V IMPROVEMENTS  
**PH I-II BLOWER IMPROVEMENT  
PLAN & SECTION**  
MECHANICAL PROCESS

PROJECT NO:	60222491
CAD DWG FILE:	D-220-106
DESIGNED BY:	WDM
DRAWN BY:	QRR
DEPT CHECK:	CFE
PROJ CHECK:	MDC
DATE:	OCTOBER 2013
SCALE:	AS NOTED

**D-220-106**  
169 OF 527

PATH/FILENAME: X:\ORANGE COUNTY UTILITIES DEPARTMENT\ORANGE COUNTY WATER RECLAMATION FACILITY\DESIGN\DWG\520-101.DWG  
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 PLOTTED: MarsholliW  
 ANS: D - 1-Aug-14

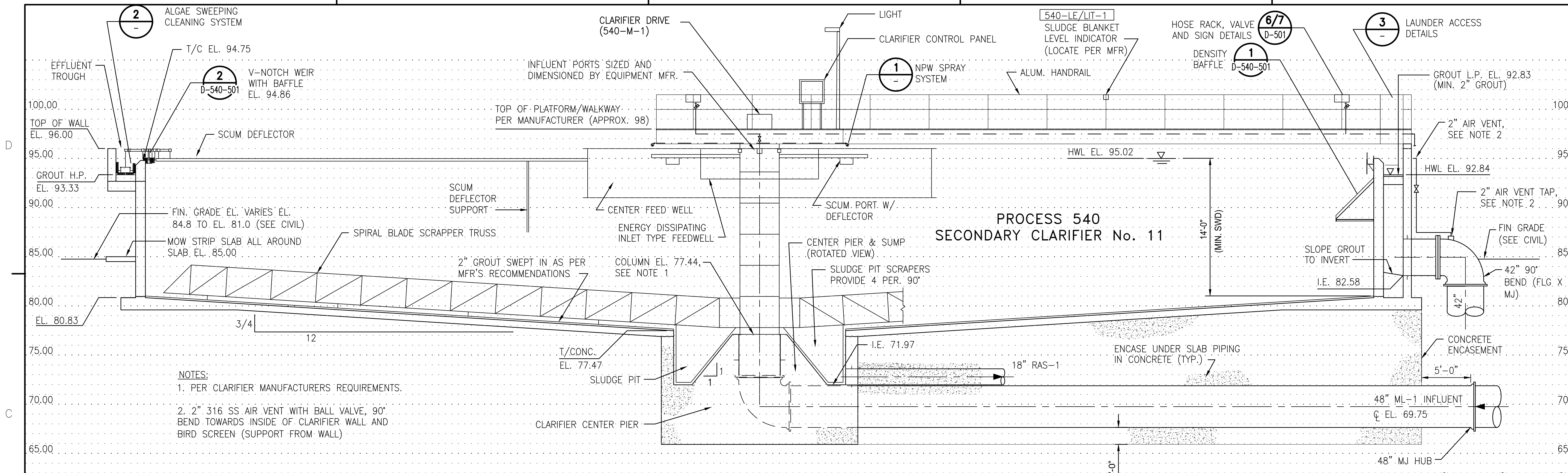


**1 ENLARGED PLAN**  
 SCALE: 1" = 1'-0"

**PLAN**  
 SCALE: 3/8" = 1'-0"

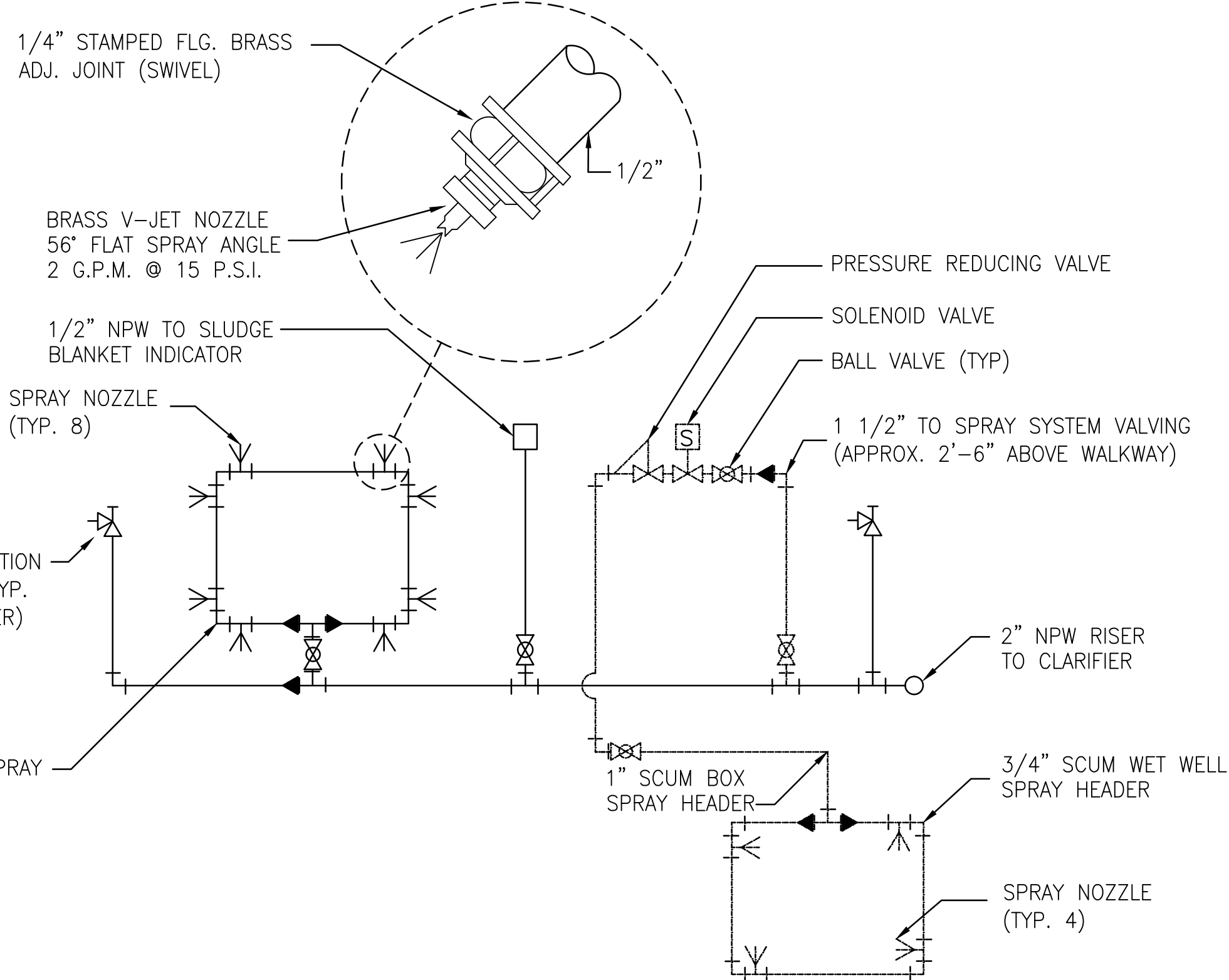
NOTE:  
 1. REFERENCE ALL CONSTRUCTION NOTES ON D-520-301.

ORANGE COUNTY UTILITIES DEPARTMENT EASTERN WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS <b>SUPPLEMENTAL CARBON FEED AND STORAGE PLAN</b> MECHANICAL PROCESS	
PROJECT NO: 60222491 CAD DWG FILE: D-520-101 DESIGNED BY: WDM DRAWN BY: QRR DEPT CHECK: CFE PROJ CHECK: MDC DATE: OCTOBER 2013 SCALE: AS NOTED	DESCRIPTION REVISIONS MARK DATE MADE BY CHECKED
D-520-101 258 OF 527	



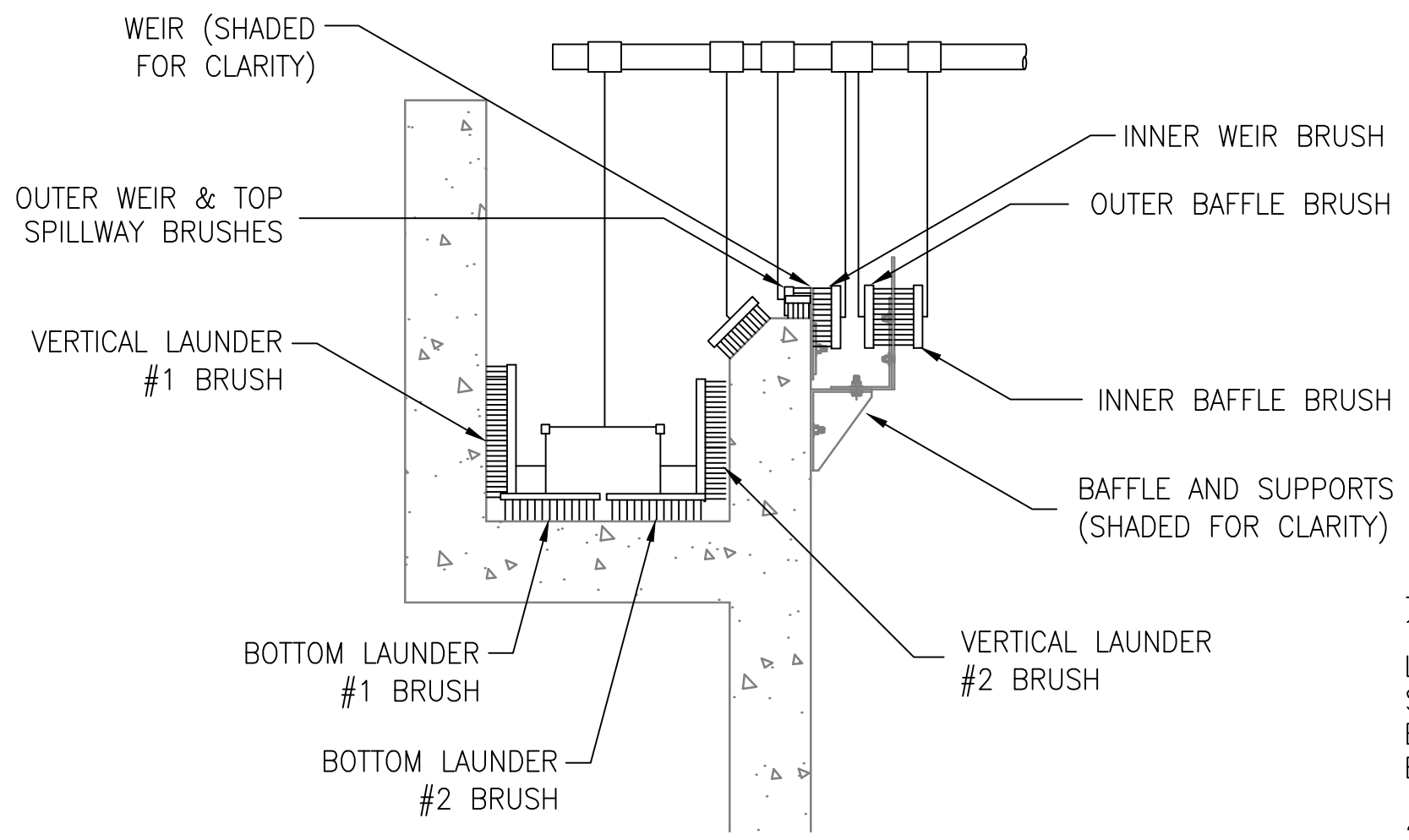
**A SECTION**  
D-540-101 SCALE: 3/16"=1'-0"

(FOR ORIENTATION OF PIPING - SEE SHT D-540-101)



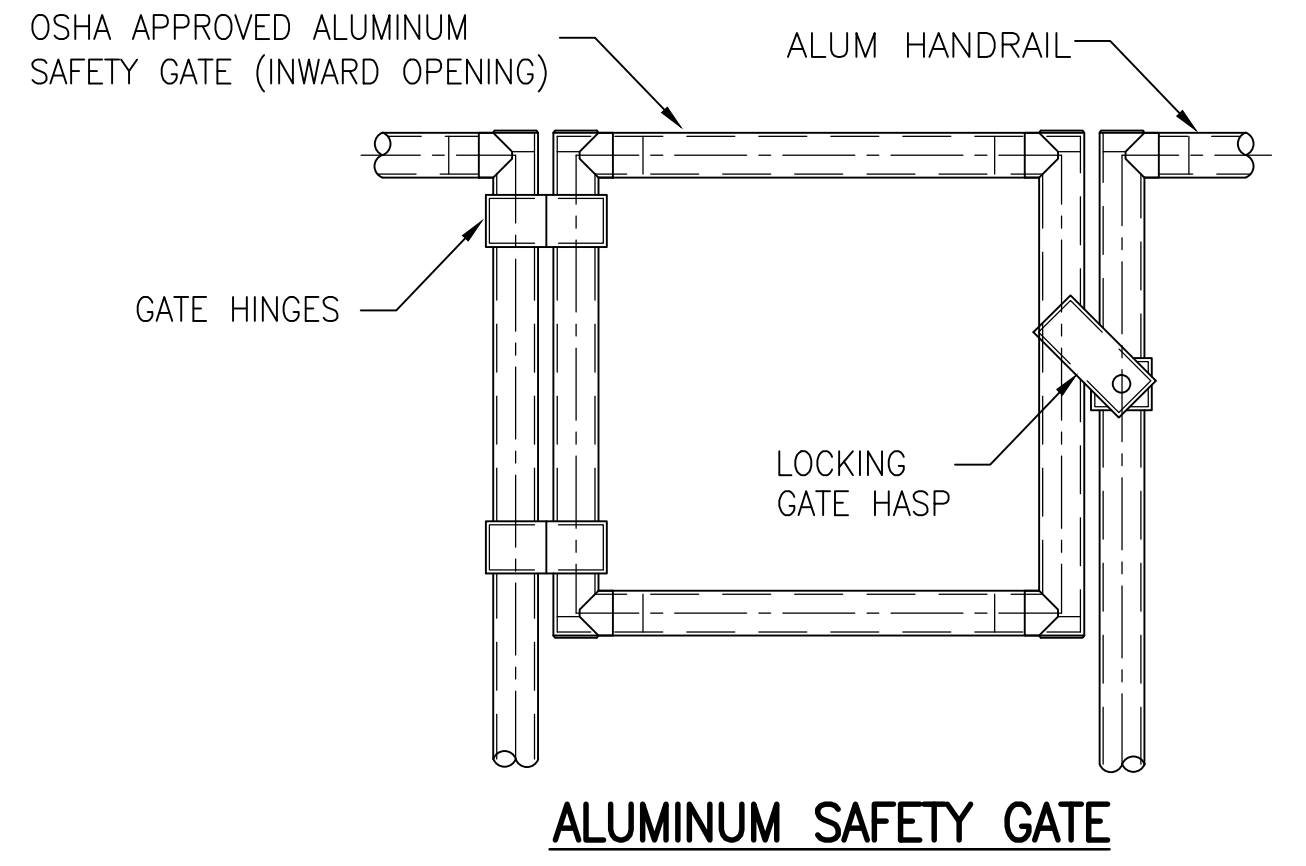
- NOTES:**
1. ALL VALVES SHALL BE ACCESSIBLE FROM THE WALKWAY.
  2. PIPE MATERIAL SHALL BE SCHED. 80 PVC.
  3. ALL FITTINGS AND VALVES SHALL BE LINE SIZE.
  4. NOT ALL FITTINGS ARE SHOWN, FIELD ROUTE AS REQUIRED.

**1 NPW SPRAY SYSTEM AND SUPPLY DETAIL**  
NTS



**NOTE:**  
BRUSH LAYOUT WILL CHANGE ACCORDING TO LAUNDER CONFIGURATION

**2 ALGAE SWEEPING CLEANING SYSTEM DETAIL**  
NTS



- NOTES:**
1. COORDINATE SLIDING EXTENSION LADDER LENGTH WITH W/ ALGAE SWEEPING CLEANING SYSTEM. WHEN EXTENDED, LADDER SHALL REACH BOTTOM OF LAUNDER.
  2. PROVIDE CROSSOVER AND PIN TO LOCK LADDER IN UP POSITION.
  3. (2) LADDERS ARE REQUIRED.
  4. LADDER SHALL BE BY FACTORY SUPPLY, INC. OR APPROVED EQUAL.

**3 LADDER TO LAUNDER**  
NTS

REVISIONS	DESCRIPTION	DATE	MADE BY	CHECKED

ORANGE COUNTY UTILITIES DEPARTMENT EASTERN WATER RECLAMATION FACILITY PHASE V IMPROVEMENTS <b>SEC CLARIFIER 11</b> SECTION AND DETAILS MECHANICAL PROCESS	
PROJECT NO: 6022491 CAD DWG FILE: D-540-301 DESIGNED BY: RDW DRAWN BY: BLA DEPT CHECK: ---- PROJ CHECK: RDW DATE: OCTOBER 2013 SCALE: AS NOTED	RICHARD D. WILSON, PE FLORIDA PROFESSIONAL LICENSE NO. 42807
<b>D-540-301</b> 261 SHEET OF 527	

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 LAST UPDATE: Thursday, July 24, 2014 4:16:28 PM  
 PLOTTED: Rick Wilson  
 ANSI D - 24-Jul-14

**BOARD OF COUNTY COMMISSIONERS  
ORANGE COUNTY, FLORIDA**

**ADDENDUM NO. 4  
IFB NO. Y14-748**

**ORANGE COUNTY EASTERN WATER RECLAMATION FACILITY  
PHASE V AND CENTRIFUGE DEWATERING IMPROVEMENTS**

**DRAWINGS  
BID PACKAGE B**

Sheet List Table

Table with columns: NO., SHEET NO., SHEET TITLE. Includes General, Civil, Architectural, and Structural sections.

Sheet List Table

Table with columns: NO., SHEET NO., SHEET TITLE. Includes Mechanical Process, HVAC, and Electrical sections.

Sheet List Table

Table with columns: NO., SHEET NO., SHEET TITLE. Includes Electrical, Instrumentation & Control, and miscellaneous sections.

SURVEYORS NOTES

- 1. HORIZONTAL ROTATION AND COORDINATES ARE BASED ON THE ORANGE COUNTY GIS SYSTEM...
2. ELEVATIONS SHOWN HEREON ARE BASED ON ORANGE COUNTY DATUM (NGVD 29) AS DERIVED FROM BENCHMARK C-1022-005...

GENERAL NOTES

- 1. THE EXISTING TOPOGRAPHICAL FEATURES SHOWN ON THE DRAWINGS WERE OBTAINED FROM GROUND SURVEY AND REPRESENT CONDITIONS AS THEY EXIST AS OF NOVEMBER 2006, JUNE 2012 AND OCTOBER 2012.
2. ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETE.
3. THE DRAWINGS DEPICT THE APPROXIMATE LOCATIONS, ELEVATIONS AND DIMENSIONS AS SHOWN ON THE PLANS OF EXISTING UTILITIES AND STRUCTURES...

Table with columns: MARK, DATE, MADE BY, CHECKED, DESCRIPTION, REVISIONS.

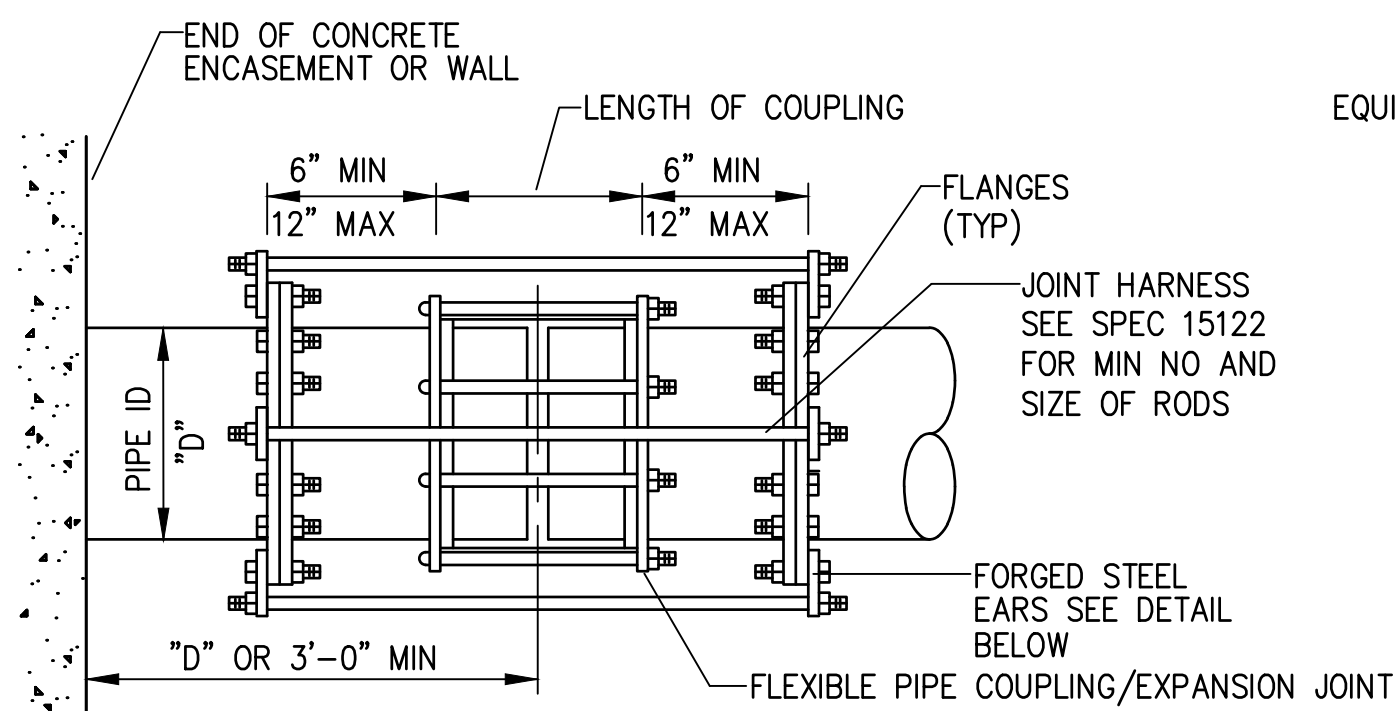


CERTIFICATE OF AUTHORIZATION NO. EB-816
WILLIAM D. MARSHALL, P.E.
FLORIDA PROFESSIONAL LICENSE NO. 65292

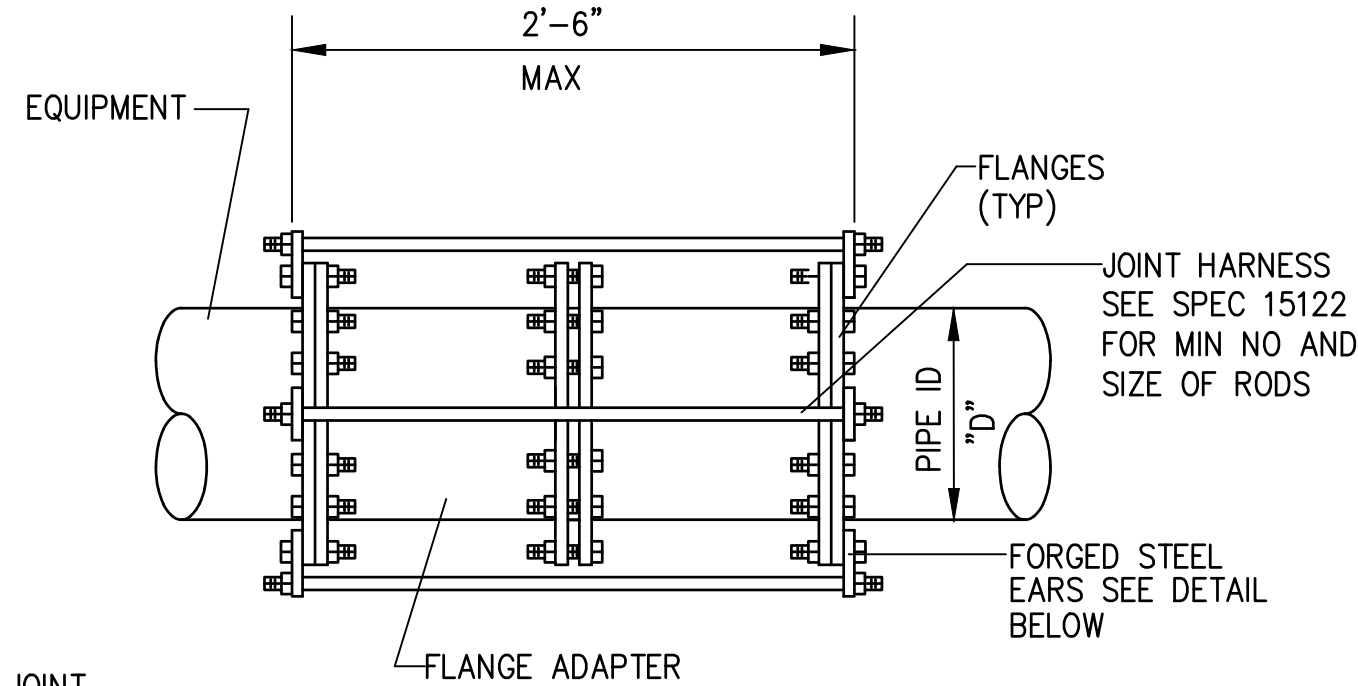
ORANGE COUNTY UTILITIES DEPARTMENT
EASTERN WATER RECLAMATION FACILITY
CENTRIFUGE DEWATERING IMPROVEMENTS
INDEX OF DRAWINGS & GENERAL NOTES

Table with project details: PROJECT NO., CAD DWG FILE, DESIGNED BY, DRAWN BY, DEPT CHECK, PROJ CHECK, DATE, SCALE.

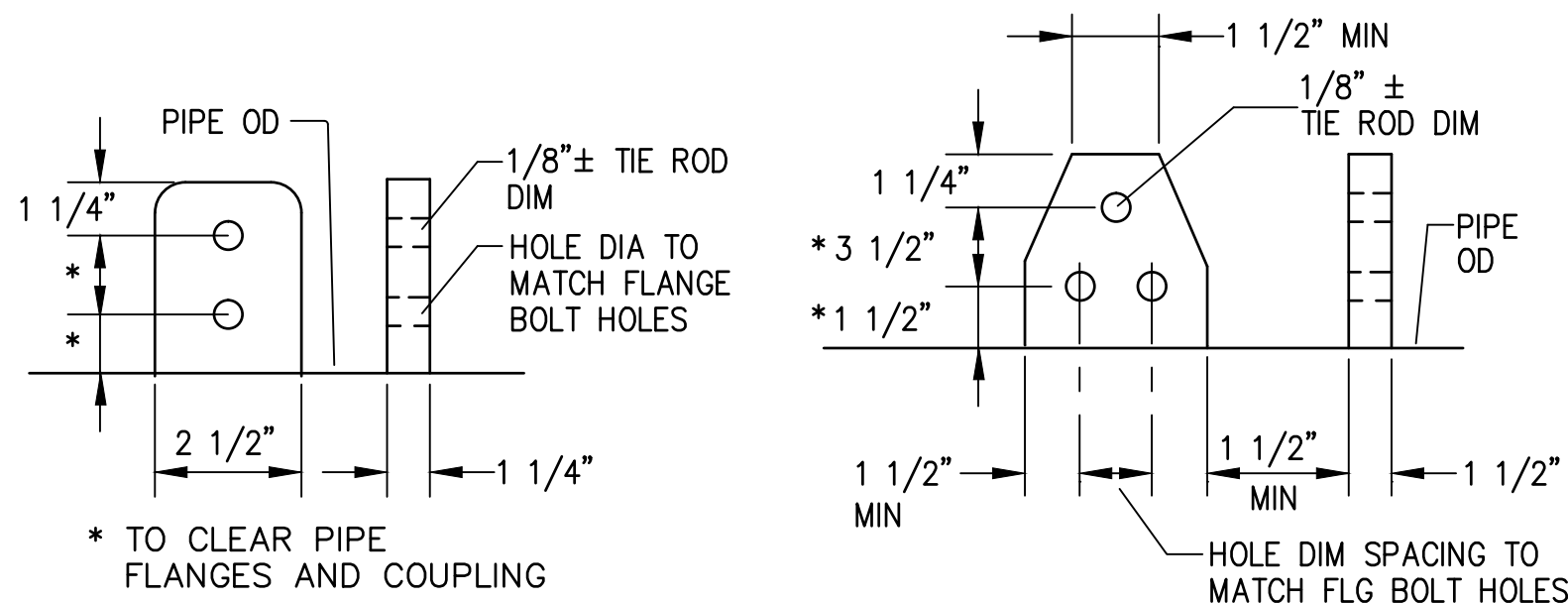
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LAST UPDATE: Thursday, July 31, 2014 9:34:15 AM
PLOT DATE: Friday, August 01, 2014 10:55:40 AM
PLOTTED: MarsholliW
ANSI D - 31-Jul-14



FLEXIBLE PIPE COUPLING/EXPANSION JOINT



FLANGED COUPLING ADAPTER



FORGED STEEL EAR - TYPE "A" FORGED STEEL EAR - TYPE "B"

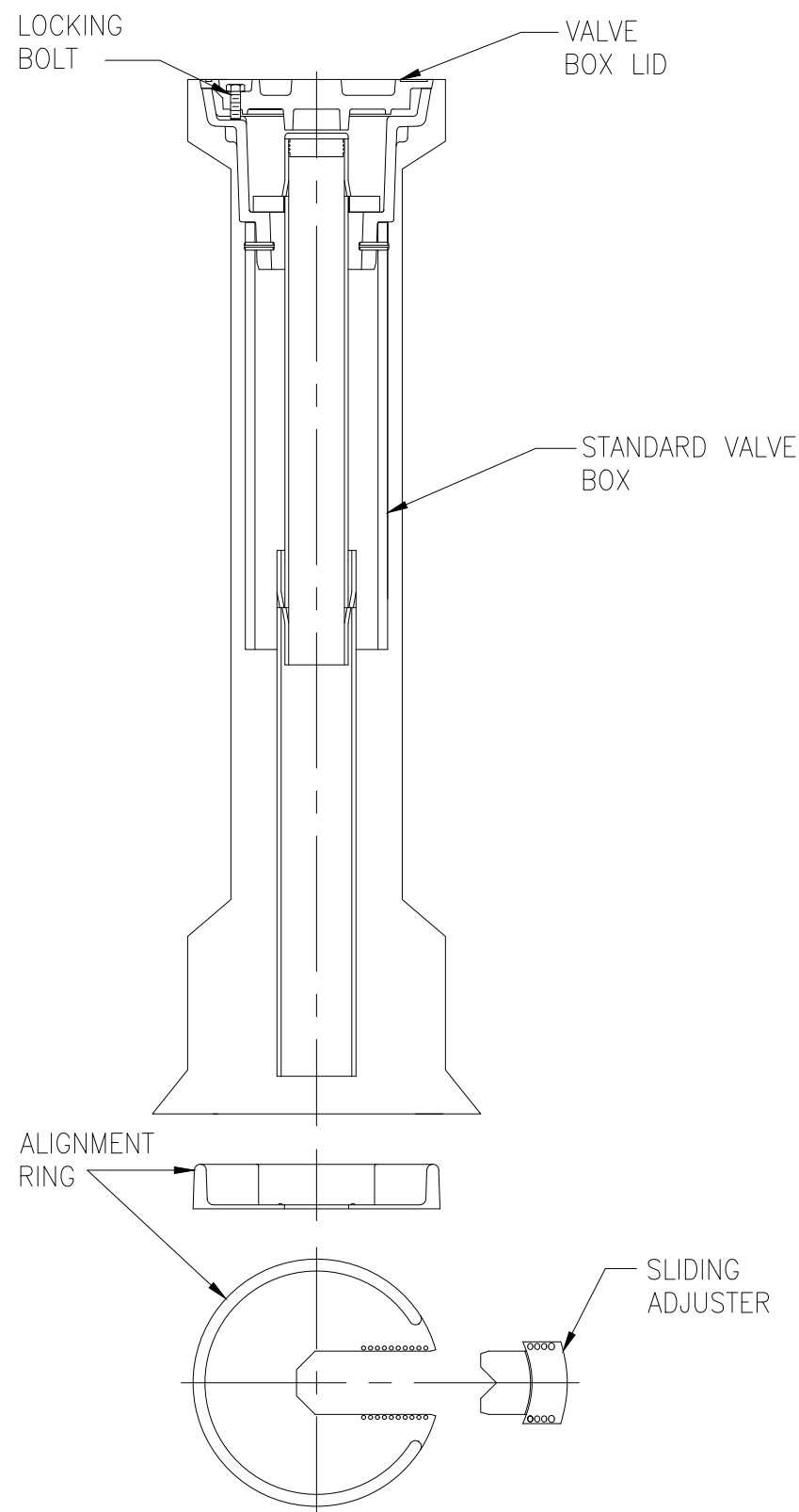
NOTES

- DUCTILE IRON PIPE**
- EARS AND RODS SHALL BE SST IN BURIED OR PARTIALLY BURIED APPLICATIONS.
  - MEGA-LUG OR ACCEPTABLE EQUIVALENT MAY BE USED INSTEAD OF FLANGES FOR CONNECTIONS TO EXISTING BURIED PIPE.
- SST PIPE**
- EARS AND RODS SHALL BE SST IN ALL APPLICATIONS.
  - WHERE FLANGED CONNECTIONS ARE NOT PROVIDED FOR SST PIPE, THE SST EARS MAY BE WELDED DIRECTLY TO THE SST PIPE INSTEAD OF BOLTING TO FLANGES.
- EXPANSION JOINTS**
- THE RESTRAINING RODS SHALL ALLOW EXPANSION AND CONTRACTION. THE RESTRAINING RODS SHALL BE ADJUSTED TO LIMIT THE MAXIMUM EXPANSION AND CONTRACTION PER THE EXPANSION JOINT MANUFACTURER'S RECOMMENDATIONS.

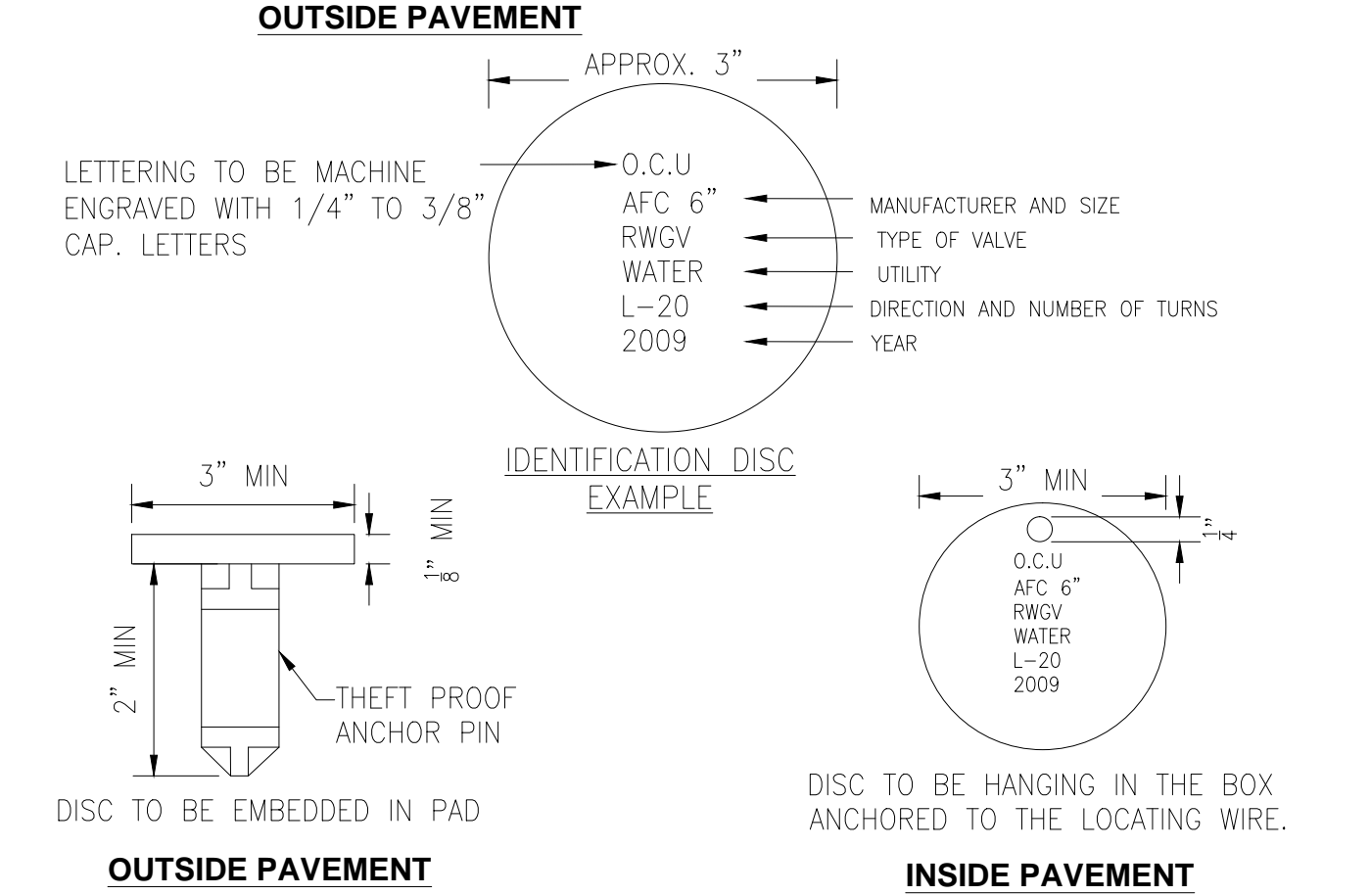
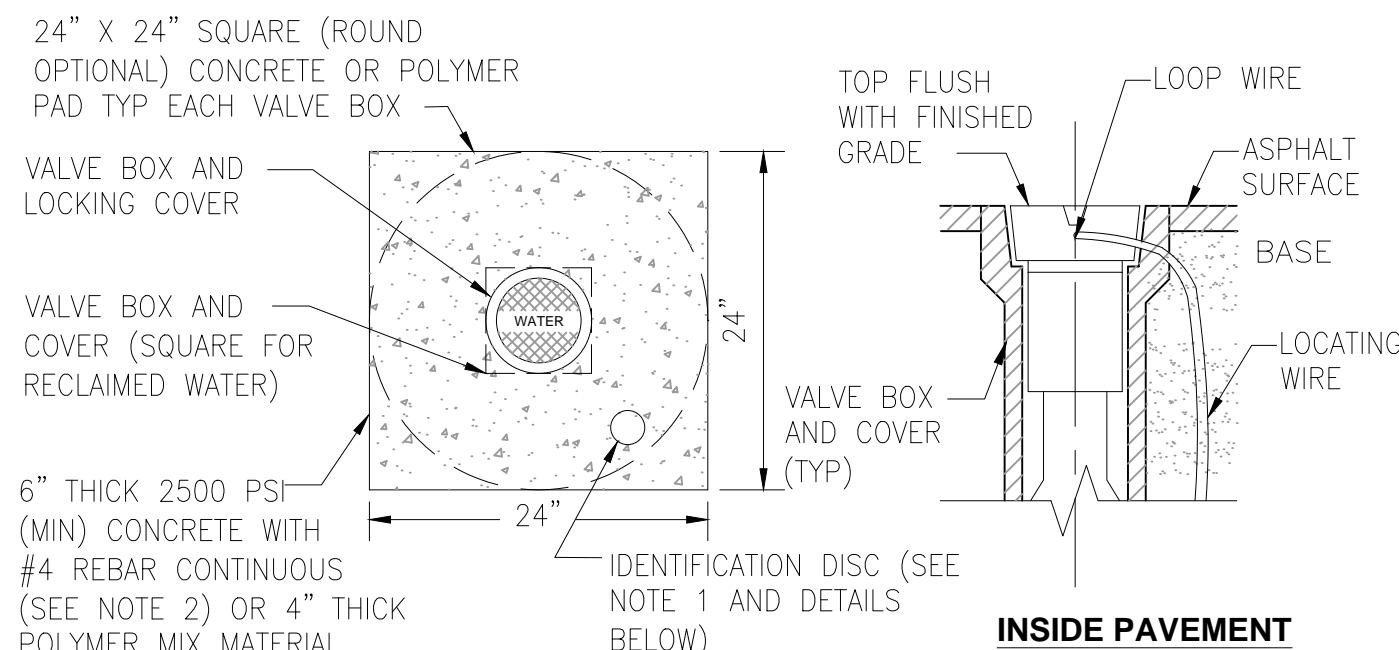
1 FLEXIBLE PIPE CPLG AND EXPANSION JOINT TIE RODS SCALE: NONE

2 BUTTERFLY OR PLUG VALVE AND BOX DETAIL SCALE: NONE

3 GATE VALVE AND PLUG VALVE SETTING SCALE: NONE

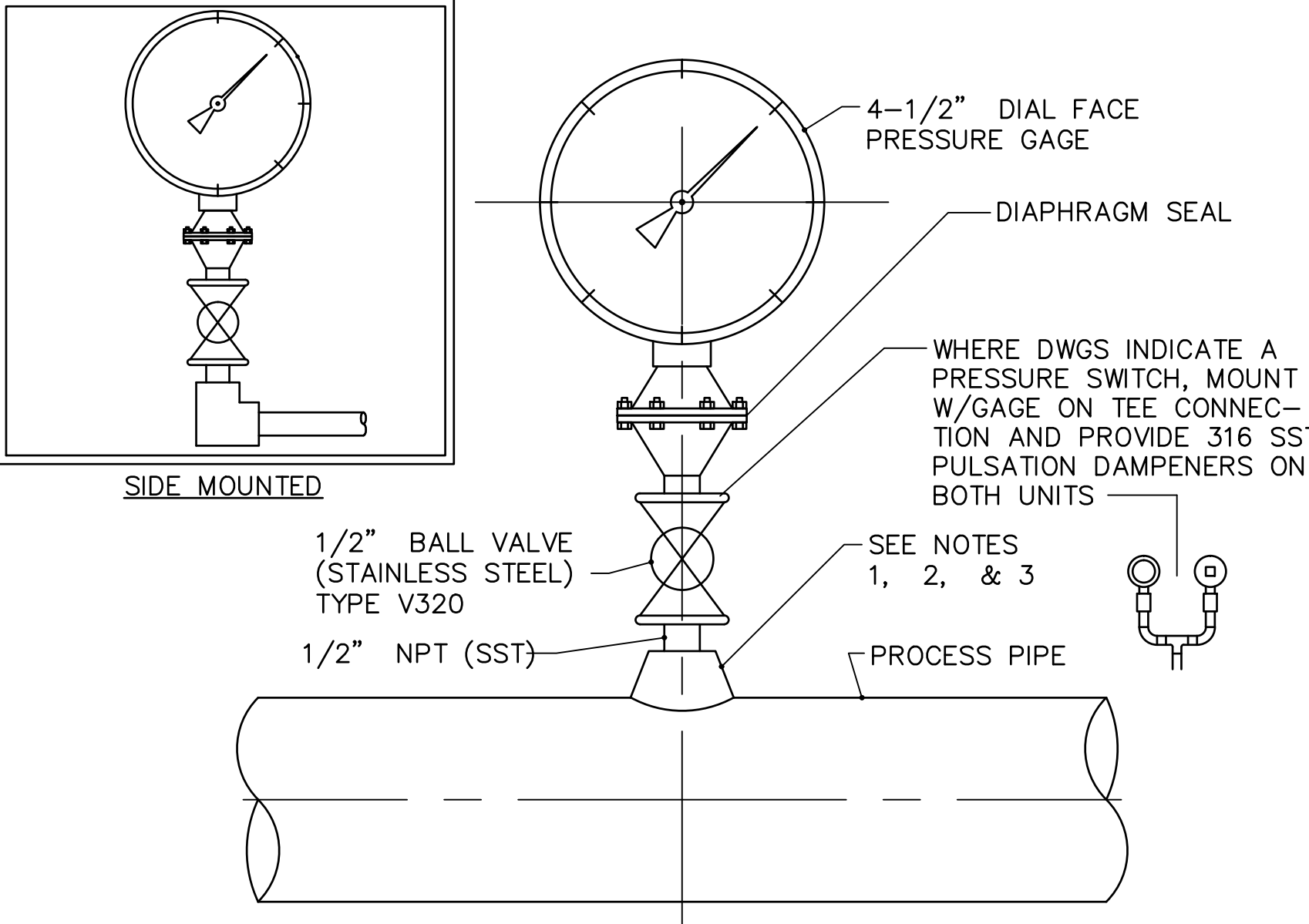


4 VALVE BOX SETTING SCALE: NONE



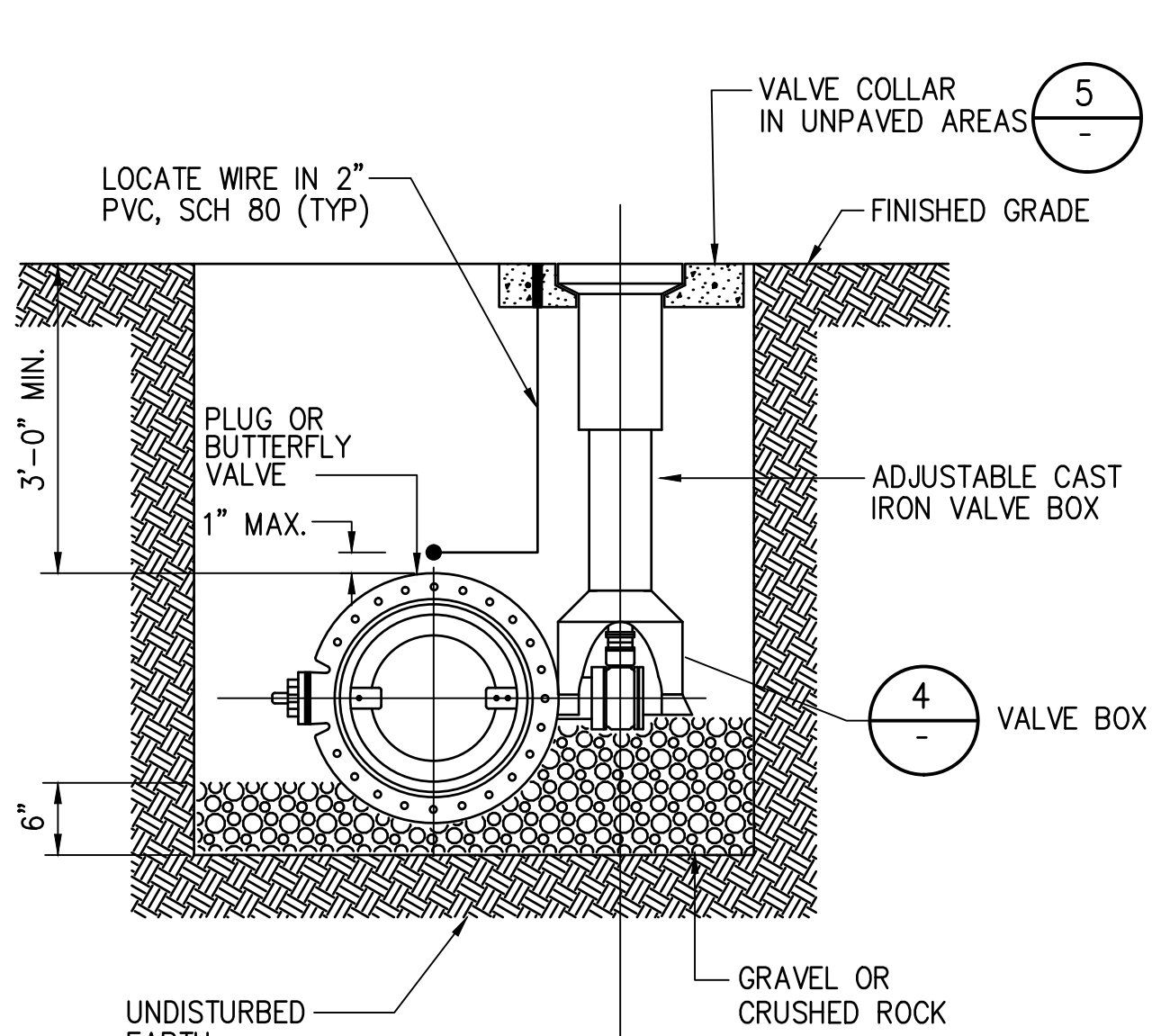
- NOTES:
- BRONZE (OR STAINLESS STEEL) IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES, EXCEPT HYDRANT VALVES.
  - IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED CONCRETE PAD WITH TWO #4 REBAR AROUND PERIMETER MAY BE USED.

5 VALVE COLLAR DETAIL SCALE: NONE

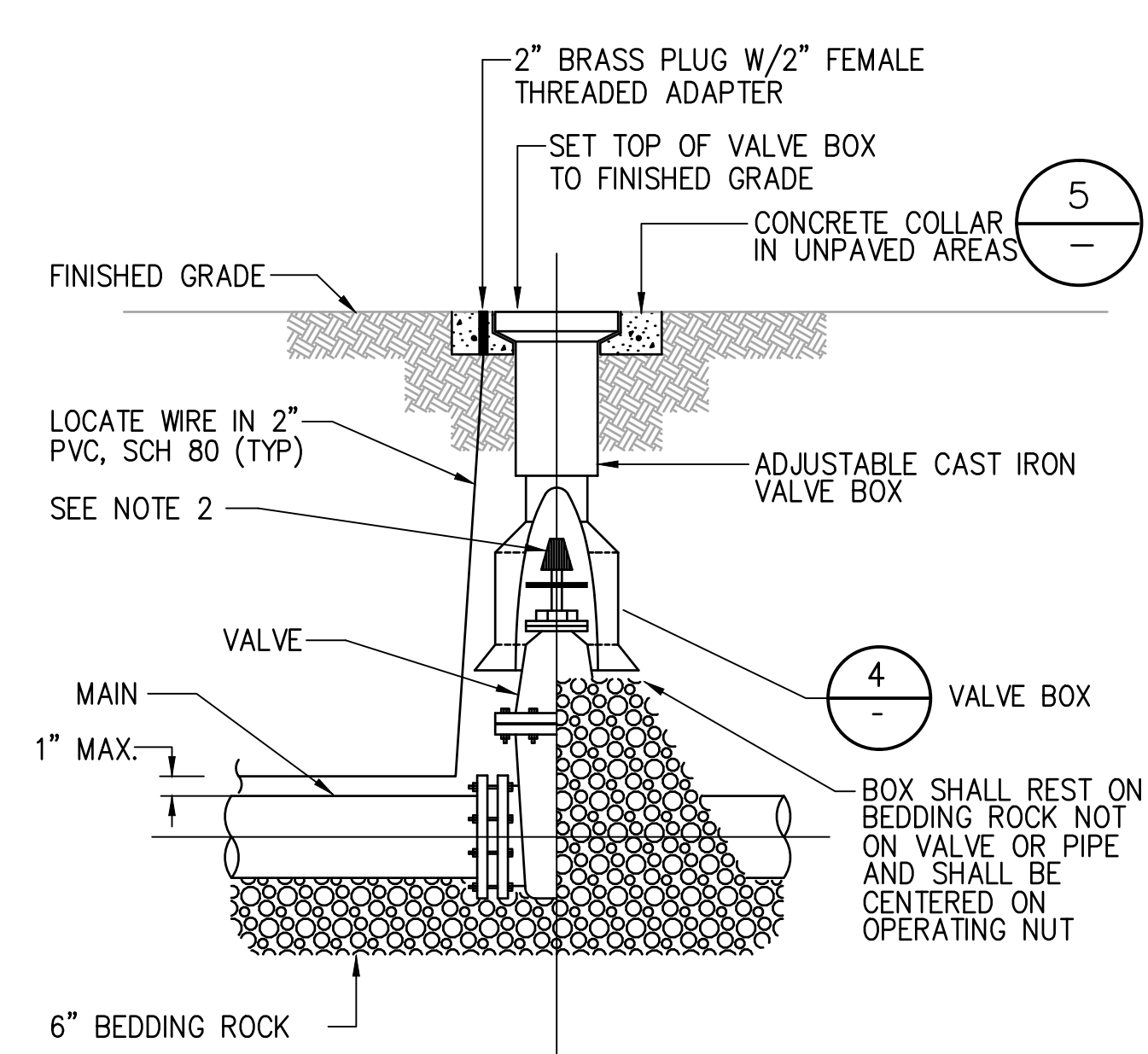


- NOTES:
- FOR STL, GALVS & PVC 2-1/2" & SMALLER USE A BUSHING IN A TEE
  - FOR DI & FRP ALL SIZES, USE PIPE SADDLE W/BUSHING
  - FOR STL & SST PIPES 3" & LARGER, & PRESSURE VESSELS, USE THRED-O-LET AS SHOWN
  - PROVIDE CHEMICAL RESISTANT DIAPHRAGM
  - SST = TYPE 316 SST

6 PRESSURE GAUGE MOUNTING SCALE: NONE

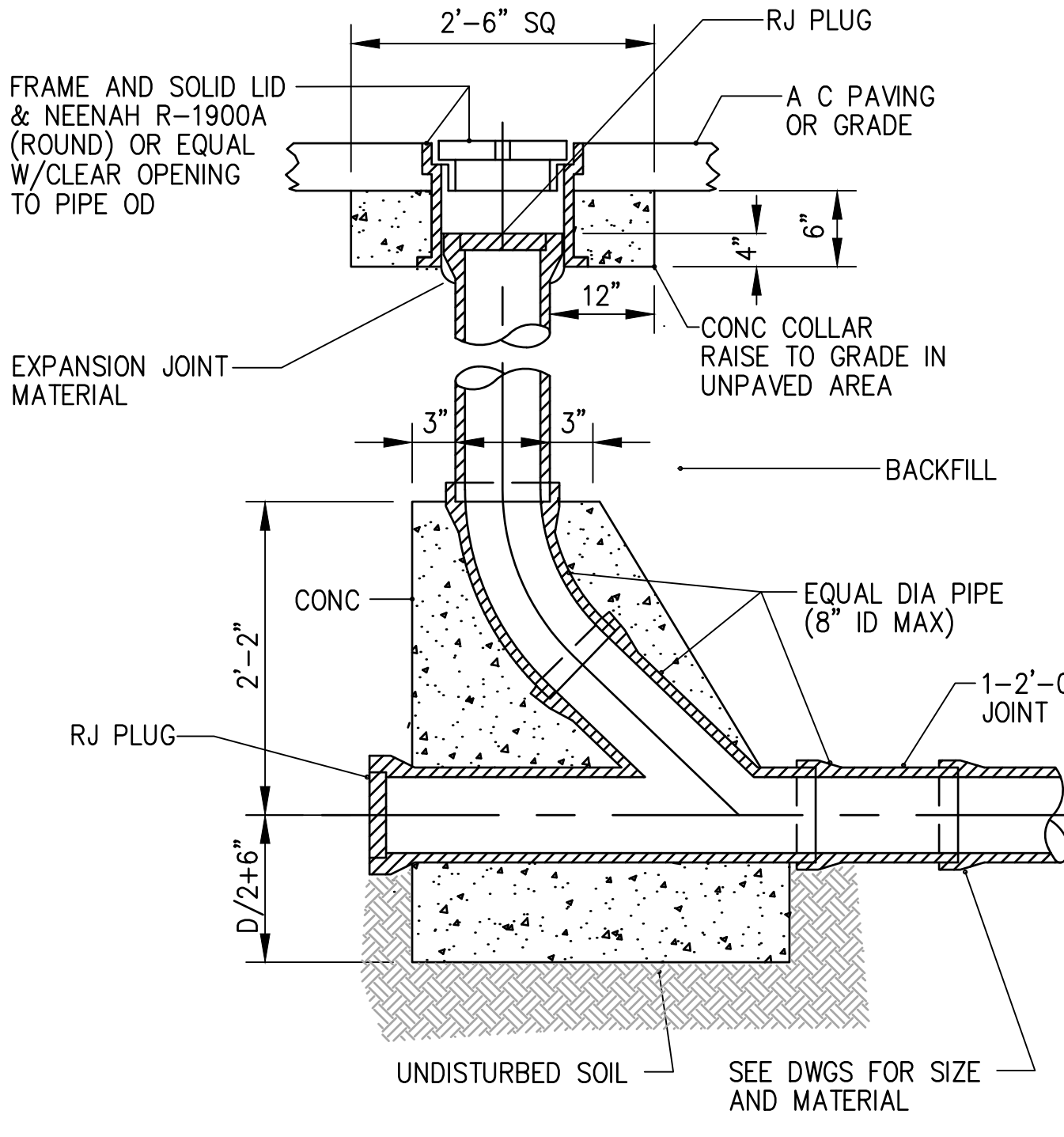


- NOTES:
- PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
  - ALL POTABLE AND RECLAIMED WATER VALVES SIXTEEN (16) INCHES AND LARGER SHALL BE BUTTERFLY VALVES.



- NOTES:
- PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
  - THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.

7 CLEANOUT DETAIL SCALE: NONE



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 LAST UPDATE: Thursday, July 31, 2014 9:48:04 AM  
 PLOTTED: MarshiWID  
 ANSI D - 31-Jul-14

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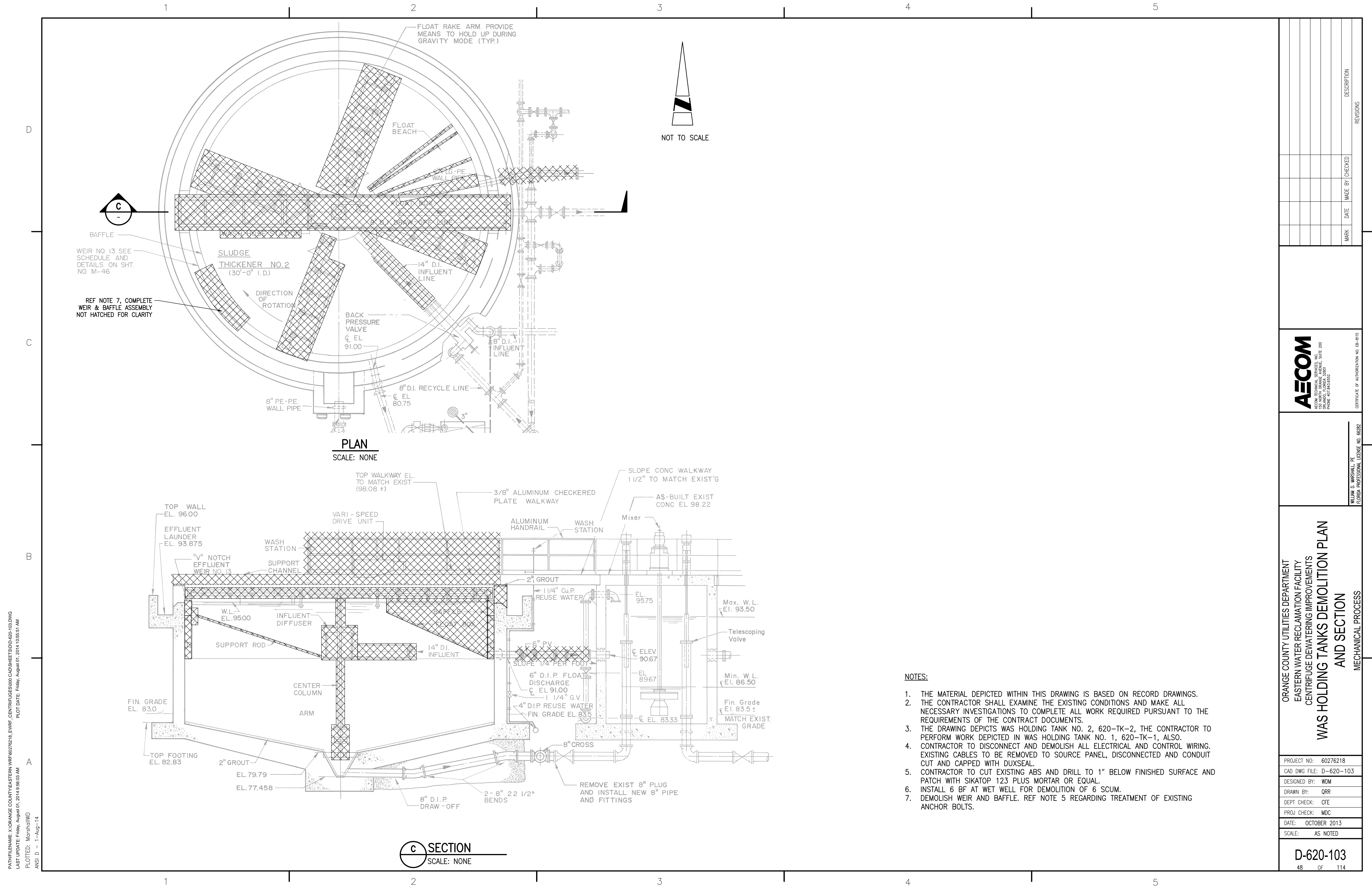
**AECOM**  
 AECOM TECHNICAL SERVICES, INC.  
 10000 WEST BOULEVARD, SUITE 200  
 ORLANDO, FLORIDA 32835  
 PHONE: 407.643.6522

CERTIFICATE OF AUTHORIZATION NO. EB-616  
 WILLIAM D. MARSHALL, PE  
 FLORIDA PROFESSIONAL LICENSE NO. 66592

ORANGE COUNTY UTILITIES DEPARTMENT  
 EASTERN WATER RECLAMATION FACILITY  
 CENTRIFUGE DEWATERING IMPROVEMENTS

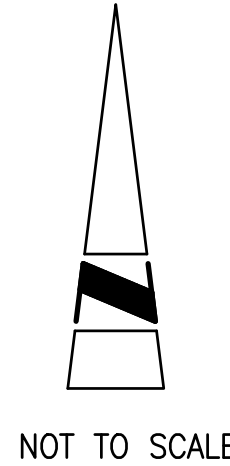
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DESIGNED BY:	WDM
DRAWN BY:	QRR
DEPT CHECK:	CFE
PROJ CHECK:	MDC
DATE:	OCTOBER 2013
SCALE:	AS NOTED



**PLAN**  
SCALE: NONE

**SECTION**  
SCALE: NONE

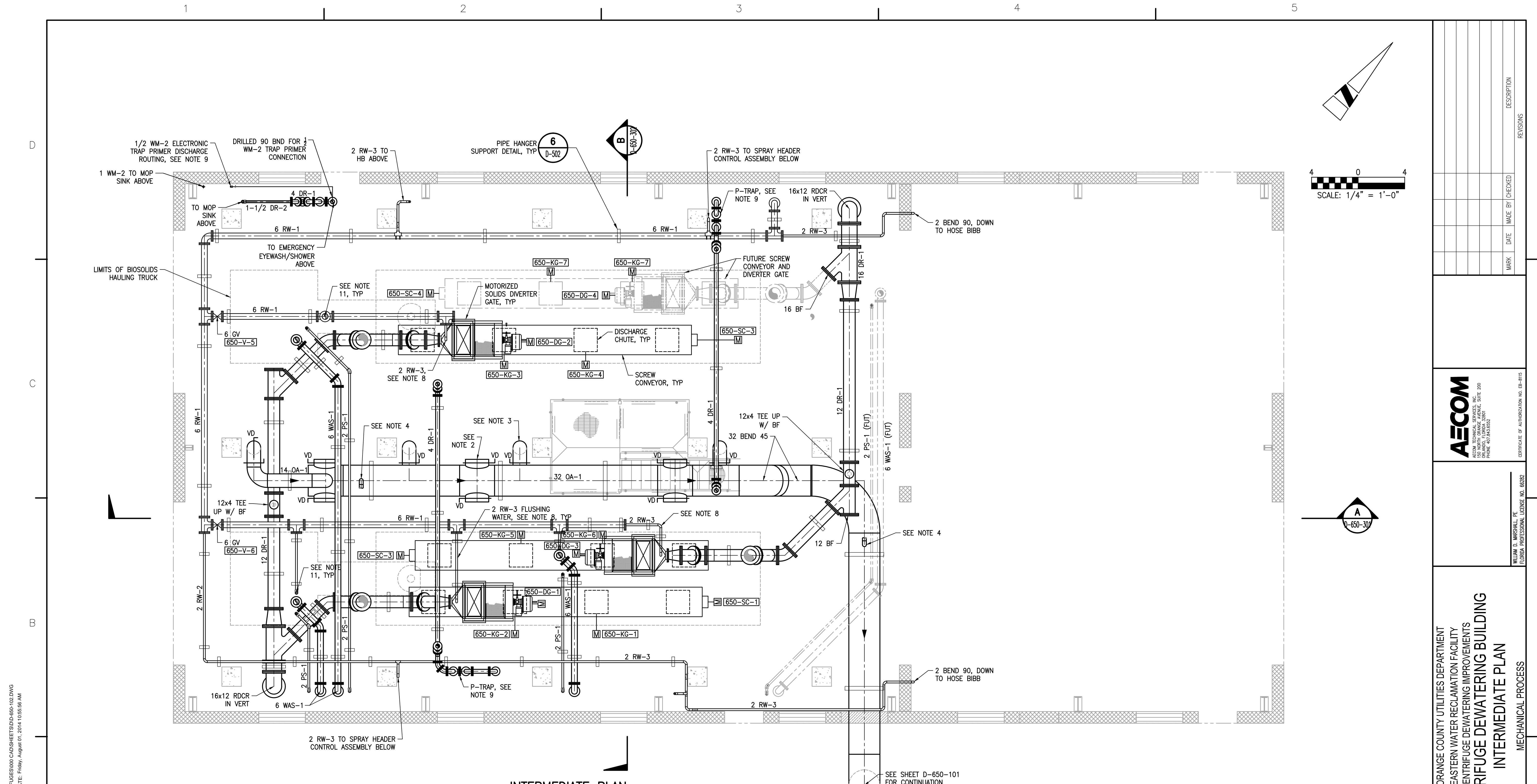


**NOTES:**

1. THE MATERIAL DEPICTED WITHIN THIS DRAWING IS BASED ON RECORD DRAWINGS.
2. THE CONTRACTOR SHALL EXAMINE THE EXISTING CONDITIONS AND MAKE ALL NECESSARY INVESTIGATIONS TO COMPLETE ALL WORK REQUIRED PURSUANT TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
3. THE DRAWING DEPICTS WAS HOLDING TANK NO. 2, 620-TK-2, THE CONTRACTOR TO PERFORM WORK DEPICTED IN WAS HOLDING TANK NO. 1, 620-TK-1, ALSO.
4. CONTRACTOR TO DISCONNECT AND DEMOLISH ALL ELECTRICAL AND CONTROL WIRING. EXISTING CABLES TO BE REMOVED TO SOURCE PANEL, DISCONNECTED AND CONDUIT CUT AND CAPPED WITH DUXSEAL.
5. CONTRACTOR TO CUT EXISTING ABS AND DRILL TO 1" BELOW FINISHED SURFACE AND PATCH WITH SIKATOP 123 PLUS MORTAR OR EQUAL.
6. INSTALL 6 BF AT WET WELL FOR DEMOLITION OF 6 SCUM.
7. DEMOLISH WEIR AND BAFFLE. REF NOTE 5 REGARDING TREATMENT OF EXISTING ANCHOR BOLTS.

PATH: I:\PROJECTS\ORANGE COUNTY UTILITIES DEPARTMENT\WRF\60276218\WRF\_CENTRIFUGES\00 CAD\SHSHEETS\002-103.DWG  
 LAST UPDATE: Friday, August 01, 2014 9:56:03 AM  
 PLOTTED: Marshall W  
 ANS: D - 1-Aug-14

<p>ORANGE COUNTY UTILITIES DEPARTMENT          EASTERN WATER RECLAMATION FACILITY          CENTRIFUGE DEWATERING IMPROVEMENTS  <b>WAS HOLDING TANKS DEMOLITION PLAN          AND SECTION</b>          MECHANICAL PROCESS</p>	<p>PROJECT NO: 60276218          CAD DWG FILE: D-620-103          DESIGNED BY: WDM          DRAWN BY: QRR          DEPT CHECK: CFE          PROJ CHECK: MDC          DATE: OCTOBER 2013          SCALE: AS NOTED</p>																				
<p><b>AECOM</b>  <small>AECOM TECHNICAL SERVICES, INC.          2000 N. WINDY HILL BLVD., SUITE 200          ORLANDO, FLORIDA 32801          PHONE: 407.843.6522</small></p>	<p>CERTIFICATE OF AUTHORIZATION NO. EB-616  <small>WILLIAM D. MARSHALL, PE          FLORIDA PROFESSIONAL LICENSE NO. 66982</small></p>																				
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MARK	DATE	MADE BY	CHECKED	DESCRIPTION																	

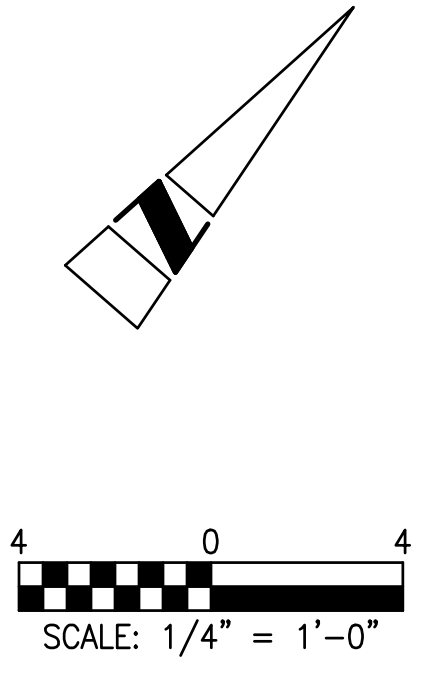


**INTERMEDIATE PLAN**  
SCALE: 1/4" = 1'-0"

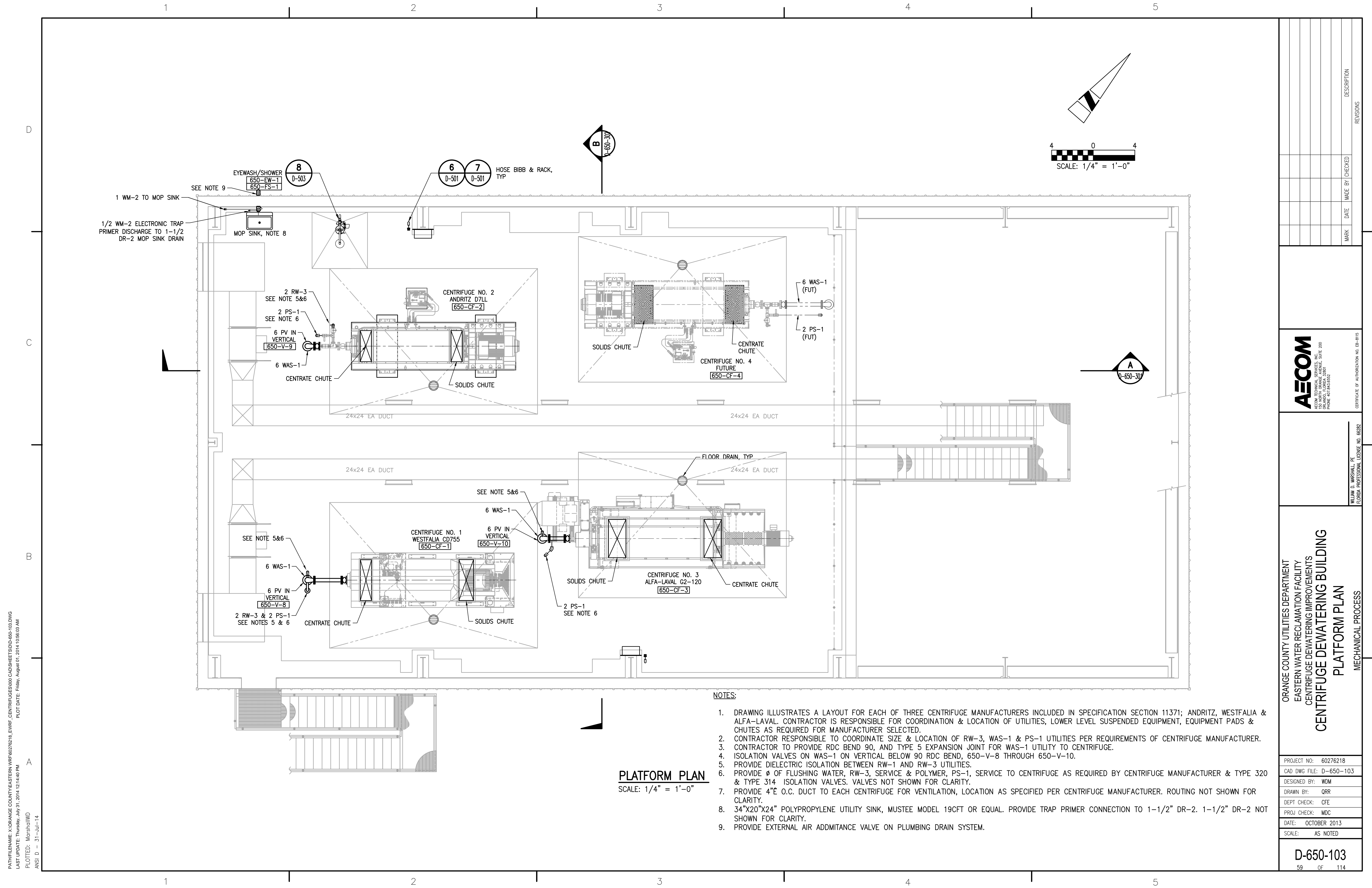
- NOTES:**
- TEST AND ADJUST OA EXHAUST FANS 650-B-1 AND 650-B-2. BALANCE OA DUCTWORK VOLUME DAMPERS TO INDICATED AIR FLOW RATES (CFM).
  - 24x14 316 SST GRILLE. 3/4" BLADE SPACING, 45 DEG FIXED DEFLECTION, BLADES PARALLEL TO LONG DIMENSION, SURFACE-MOUNT TYPE BORDER AND 316 SST FASTENERS TYP OF 6 GRILLES AT 980 CFM EACH.
  - 14" O.C. DUCT DOWN; TERMINATE 12" AFF W/ 1/2" 316 SST WMM, TYP OF 4 INLETS AT 1475 CFM EACH.
  - PROVIDE 4" O.C. DUCT TO EACH CENTRIFUGE FOR VENTILATION, LOCATION AS SPECIFIED PER CENTRIFUGE MANUFACTURER. ROUTING NOT SHOWN FOR CLARITY.
  - REFERENCE SPECIFICATIONS FOR PIPE & EQUIPMENT SUPPORT REQUIREMENTS, NOT ALL SUPPORTS & HANGERS SHOWN FOR CLARITY.
  - REFERENCE NOTE 1, 6-650-103. PIPING & SUSPENDED EQUIPMENT ILLUSTRATED REFLECTS CRITERIA OF THREE CENTRIFUGE MANUFACTURERS LISTED IN SPECIFICATION SECTION 11371; ANDRITZ, WESTFALIA & ALFA-LAVAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATION & LOCATION OF UTILITIES, SUSPENDED EQUIPMENT & CHUTES AS REQUIRED FOR MANUFACTURER SELECTED.
  - PROVIDE DIELECTRIC ISOLATION BETWEEN RW-1 & RW-3 UTILITIES.
  - PROVIDE Ø OF FLUSHING WATER SERVICE, RW-3, TO DIVERTER GATE AS REQUIRED BY MANUFACTURER & TYPE 320 ISOLATION VALVE. VALVE NOT SHOWN FOR CLARITY.
  - SEE D-650-101, ROUTING OF ELECTRONIC TRAP PRIMER DISCHARGE PIPING NOT SHOWN FOR CLARITY. ROUTE BRANCH 1/2 WM-2 TO DESIGNATED LOCATIONS.
  - PROVIDE RW-3 FLUSH WATER TO SCREW CONVEYOR WITH E AS SPECIFIED BY SCREW CONVEYOR MANUFACTURER. PROVIDE TYPE 320 BV 48" A.F.F. FOR ISOLATION. PROVIDE INDIVIDUAL SERVICE & ISOLATION VALVE PER INDIVIDUAL SCREW CONVEYOR. SERVICE NOT SHOWN FOR CLARITY.
  - PROVIDE Ø OF FLUSHING WATER, RW-3, SERVICE TO CENTRIFUGE AS REQUIRED BY THE CENTRIFUGE MANUFACTURER & TYPE 320 ISOLATION VALVES.

PATH: \\ORANGE\COUNTY\UTILITY\WRF\60276218\EWRF\_CENTRIFUGES\000 CAD\SHSHEETS\000\650-102.DWG  
 LAST UPDATE: Thursday, July 31, 2014 12:14:49 PM  
 PLOTTED: M0rsh01\WD  
 ANS: D - 31-Jul-14

<p><b>ORANGE COUNTY UTILITIES DEPARTMENT</b>  <b>EASTERN WATER RECLAMATION FACILITY</b>  <b>CENTRIFUGE DEWATERING IMPROVEMENTS</b>  <b>INTERMEDIATE PLAN</b>  <b>MECHANICAL PROCESS</b></p>	<p><b>AECOM</b>  <small>AECOM TECHNICAL SERVICES, INC.        2000 CENTRAL EXPRESSWAY, SUITE 200        ORLANDO, FLORIDA 32801        PHONE: 407.843.6522</small></p>										
<p>PROJECT NO: 60276218          CAD DWG FILE: D-650-102          DESIGNED BY: WDM          DRAWN BY: QRR          DEPT CHECK: CFE          PROJ CHECK: MDC          DATE: OCTOBER 2013          SCALE: AS NOTED</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">MARK</th> <th style="width: 20%;">DATE</th> <th style="width: 10%;">MADE BY</th> <th style="width: 10%;">CHECKED</th> <th style="width: 15%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	MARK	DATE	MADE BY	CHECKED	DESCRIPTION					
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<p><b>D-650-102</b> 58 OF 114</p>											







PATH: I:\ORANGE COUNTY\ESTERN WRF\60276218\E\WRF\_CENTRIFUGES\000 CAD\SHETS\000-103.DWG  
 LAST UPDATE: Thursday, July 31, 2014 12:14:40 PM  
 PLOT DATE: Friday, August 01, 2014 10:56:03 AM  
 PLOTTED: Marsh@10/14  
 ANSI D - 31-Jul-14

**PLATFORM PLAN**  
 SCALE: 1/4" = 1'-0"

- NOTES:
- DRAWING ILLUSTRATES A LAYOUT FOR EACH OF THREE CENTRIFUGE MANUFACTURERS INCLUDED IN SPECIFICATION SECTION 11371; ANDRITZ, WESTFALIA & ALFA-LAVAL. CONTRACTOR IS RESPONSIBLE FOR COORDINATION & LOCATION OF UTILITIES, LOWER LEVEL SUSPENDED EQUIPMENT, EQUIPMENT PADS & CHUTES AS REQUIRED FOR MANUFACTURER SELECTED.
  - CONTRACTOR RESPONSIBLE TO COORDINATE SIZE & LOCATION OF RW-3, WAS-1 & PS-1 UTILITIES PER REQUIREMENTS OF CENTRIFUGE MANUFACTURER.
  - CONTRACTOR TO PROVIDE RDC BEND 90, AND TYPE 5 EXPANSION JOINT FOR WAS-1 UTILITY TO CENTRIFUGE.
  - ISOLATION VALVES ON WAS-1 ON VERTICAL BELOW 90 RDC BEND, 650-V-8 THROUGH 650-V-10.
  - PROVIDE DIELECTRIC ISOLATION BETWEEN RW-1 AND RW-3 UTILITIES.
  - PROVIDE Ø OF FLUSHING WATER, RW-3, SERVICE & POLYMER, PS-1, SERVICE TO CENTRIFUGE AS REQUIRED BY CENTRIFUGE MANUFACTURER & TYPE 320 & TYPE 314 ISOLATION VALVES. VALVES NOT SHOWN FOR CLARITY.
  - PROVIDE 4"Ø O.C. DUCT TO EACH CENTRIFUGE FOR VENTILATION, LOCATION AS SPECIFIED PER CENTRIFUGE MANUFACTURER. ROUTING NOT SHOWN FOR CLARITY.
  - 34"x20"x24" POLYPROPYLENE UTILITY SINK, MUSTEE MODEL 19CFT OR EQUAL. PROVIDE TRAP PRIMER CONNECTION TO 1-1/2" DR-2. 1-1/2" DR-2 NOT SHOWN FOR CLARITY.
  - PROVIDE EXTERNAL AIR ADMITTANCE VALVE ON PLUMBING DRAIN SYSTEM.

ORANGE COUNTY UTILITIES DEPARTMENT EASTERN WATER RECLAMATION FACILITY CENTRIFUGE DEWATERING IMPROVEMENTS <b>CENTRIFUGE DEWATERING BUILDING</b> <b>PLATFORM PLAN</b> MECHANICAL PROCESS	
PROJECT NO: 60276218 CAD DWG FILE: D-650-103 DESIGNED BY: WDM DRAWN BY: QRR DEPT CHECK: CFE PROJ CHECK: MDC DATE: OCTOBER 2013 SCALE: AS NOTED	AECOM <small>AECOM TECHNICAL SERVICES, INC.          2000 CENTRAL EXPRESSWAY, SUITE 200          ORLANDO, FLORIDA 32801          PHONE: 407.843.6522</small> CERTIFICATE OF AUTHORIZATION NO. EB-616 WILLIAM D. MARSHALL, PE FLORIDA PROFESSIONAL LICENSE NO. 66982
REVISIONS MARK DATE MADE BY CHECKED DESCRIPTION	REVISIONS MARK DATE MADE BY CHECKED DESCRIPTION