

Response: Sheet M-08 was revised to clarify which areas will require aluminum covers.

- Is the ledger angle mounted cover detail highlighted on section D/M8 the type and profile of covers wanted for this project? This detail contradicts Part 2.3 A. 4. of specification section 13 34 23 that reads, "Installed cover system walking surface elevation to be a stepped vertical increase to a maximum of 3/4 inch above tank wall." Either design can be provided. Please advise which type of cover is desired.

Response: The cover shall be set flush with the top of the concrete wall.

- The new bid form issued with addendum #4 still lists the allowance for the Primary Clarifier Equipment (bid item 9) as \$1,087,250, however the revised Ovivo proposal included with the addendum has a new quote of \$1,148,350. Does this allowance need to be changed on the bid form to reflect the new price from Ovivo?

Response: The allowance amount was revised in the Bid Form to match Ovivo's Price Proposal.

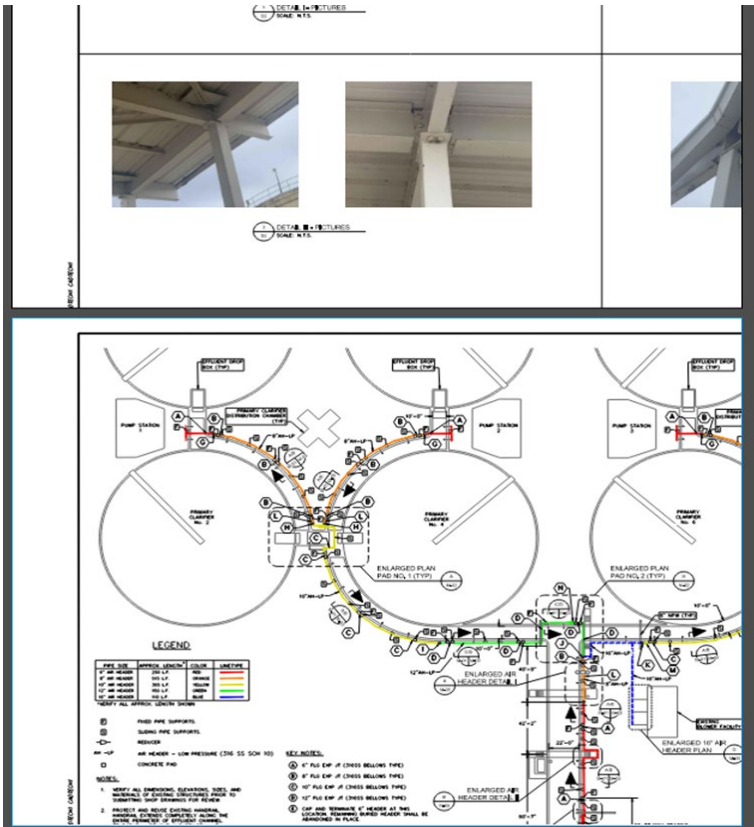
- We request that EDI be listed as an approved manufacturer in Specification Section 46 51 21, Aeration Equipment – Coarse Bubble Diffusers, Sub-section 2.2.A.

Response: Specification Section 46 51 21 was corrected to show EDI.

- We request that Sub-section 46 51 21 2.2.B be modified to include EDI Coarse Bubble MaxAir 24”.

Response: Specification Section 46 51 21 was corrected to show EDI Coarse Bubbler MaxAir 24-inch.

- Several of the plan sheets in Addendum No. 4 appear to have been mis-formatted for 8-1/2 x 11 Sheets instead of 11/17. Can you send out the corrected sheets formatted to the larger page.



Response: The addendum pdf file is formatted to display the addendum document and specifications as 8-1/2 X 11 and Plan Sheets as 11 X 17.

8. Reference plan sheet S-02 – upper left. Are 2 each, 10” flap valves (for a total of 16 each) to be replaced in all, eight drop boxes shown on plan sheet D-03? (Plan sheet D-03 only has four drop boxes called out.)

Response: Each Primary Clarifier includes a single drop box, total of eight (8) drop boxes. Sheet D-03 was revised to identify all eight (8) drop boxes. Two (2) 10-inch Flap Valves are required on each Primary Clarifiers No. 1 to 5, and 8. A total of twelve (12) 10-inch Flap Valves are required for the six (6) Primary Clarifiers. New flap valves are not required on Primary Clarifier No. 6 and 7.

9. Plan sheet M-06 – middle right states the butterfly valves are to be stainless steel. However, spec 40 23 43 – page 4 – number 2 at the top states they are to be carbon steel. Please, clarify.

Response: The 4-inch isolation valves shall be Butterfly Style and 316-Stainless Steel. The larger valves are cast iron. Sheet M-06 and Specification Section 40 23 43, Paragraph 2.3 was modified.

10. Regarding butterfly valve gearing, spec 40 23 43 – part 2.3 –number 8 states manual operators are to be geared. Does this include the 6” and smaller valves that have levers per number 5 –last sentence?

Response: Valves 6-inch and smaller do not need to be geared, provide lever operators with lever actuators. Manual operators for valves 8 to 12-inch, shall be geared. Specification Section 40 23 43, Paragraph 2.3 was modified.

11. Question from Chat: Will this presentation be shared with the participants?

*Response: The pre-bid meeting presentation can be downloaded from the SAWS Website. The presentation can be found in the downloaded section of the website link below:
https://apps.saws.org/business_center/contractsol/Drill.cfm?id=3994&View=Yes*

12. On sheet D-06, detail 11 and keynote U, there is a submersible pump that is shown to be demoed. This doesn't appear to show up anywhere else. Are we just demoing the pump and not replacing it with anything (other than the new channel covers)?

Response: Yes, that is correct. The submersible pump is being permanently removed and not replaced.

13. Keynote Q on sheet D-01 states to “remove and replace all C channels at center feedwells”. Sheet S-03, keynote D indicates that we are replacing the brackets, but doesn't mention replacing the C channels. Ovivo's scope only includes the brackets, and assumes the existing C channels are to be reused. Is this the case, or are we to replace all of the C channels with new?

Response: Only the brackets are being replaced. The C channels will be sandblasted, coated, and reused. Sheet D-01 was revised to clarify.

14. Good afternoon, is the site visit also mandatory for the Steven M. Clouse WRC Primary Clarifier Rehabilitation?

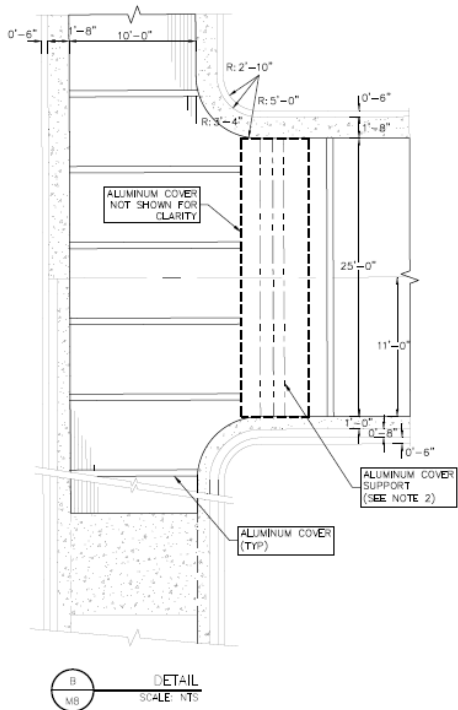
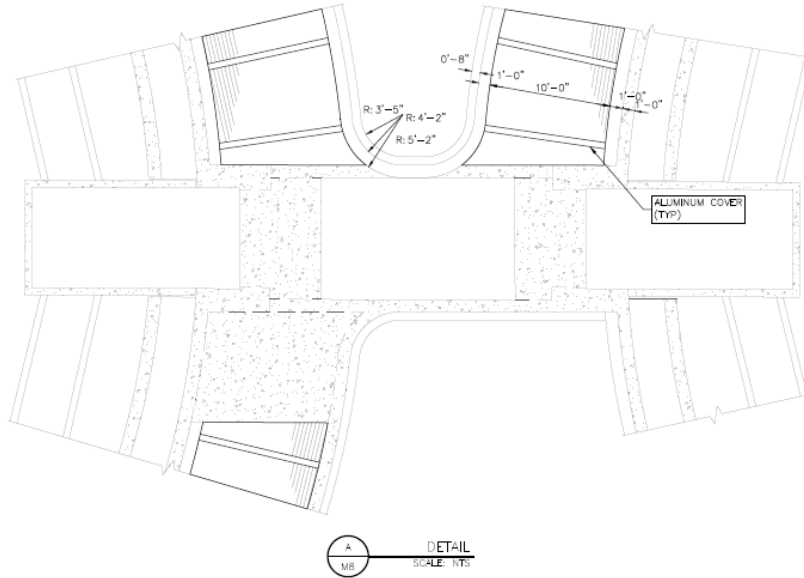
Response: Yes, it is a mandatory site visit. Please see Addendum 2 for details.

15. The contractor is required to inspect all submerged header supports inside the primary effluent channel (and replace 10 per the unit price bid item). The documents state that the channels cannot be drained or isolated for this work. Section A on sheet M-06 shows the water level near the top of wall, but the picture in detail 1 on sheet M-07 show a much lower water level. Is data available for the water elevation and flow rates during peak and low flow periods? How thorough of an inspection is required? If divers are required, the level of inspection will be restricted by the water clarity.

Response: Protocol to conduct actual inspection is left to Contractor's Means and Method but the use of a scuba diver is anticipated. It is also understood that visibility within the existing channel is limited. Inspection may be restricted to hand gripping and checking if supports are broken and confirming if the supports can be reused. The water surface elevation in the primary clarifier effluent channel ranges from 7.25 to 7.75-ft (Elevation 475.25 to 475.75). The

bottom of the channel is at 468.00. The average daily and max month flows at the SMC WRC are 95-mgd and 115-mgd, respectively. A separate bid item, Bid Item 7 was added to cover pricing to perform this inspection.

- We had a question regarding the Aluminum Covers specified for the Steven M Couse WRC job bidding next week. Can you please provide clarifications for the dimensions in the below drawing in order to quote the aluminum cover?



Response: Additional dimensions were added to Sheet M-08. The proposed cover area is approximately 12,050-sf. The area calculation is provided for information purposes only. Contractor is required to confirm cover area from the plans.

- Statement of Bidders Experience for the project request that the bidder provides experience completing three similar wastewater treatment plant projects with plants with a minimum 20 MGD capacity. This project does not

require flow control; therefore, plant experience regarding MGD should not be a factor. Would SAWS consider changing the necessary experience to clarifier experience and drop the 20 MGD plant requirement? Our company has 15 years of clarifier construction and rehab experience, but we would currently not qualify to bid on the project.

Response: Experience to include projects successfully completed within 15-years is acceptable. Bidders shall include clarifier diameter and plant capacity. A minimum capacity of 5-MGD is required for two (2) projects and at least one (1) project of at least 10-MGD.

18. Set Seven:

a. Will SAWS cover pricing escalation above and beyond the 5% as stated to be absorbed in the OVIVO proposal?

Response: Pricing escalation will not be absorbed by SAWS.

b. What is the OVIVO equipment cost reimbursement timeframe to contractor (by SAWS) on approved submittals payment of 10%, and on equipment shipping payment of 80%? And just to clarify, we understand that 10% payment will be required upon submittal "approval", not simply the submittal "submission" before approval by SAWS.

Response: Payment terms shall be between the Contractor. Contract payment terms shall be consistent with SAWS General Conditions (Article VII). Reference to payment terms were deleted from Ovivo's Price Proposal. Refer to Addendum No. 4.

c. What will be the expectation (by SAWS) for effluent aeration nozzle support inspections and replacement?

Response: Refer to response for Question 15.

CHANGES TO THE SPECIFICATIONS

1. Bid Form – Remove in its entirety and replace with the revised version attached to this Addendum. Failure to use the updated Bid Proposal will result in the bidder being found non-responsive.

Revised to correct the Clarifier Manufacturer's Equipment Price Proposal amount.

2. Section 01 22 13 Measurement and Payment – Remove Pages 01 22 13- 4, 5, 6, 7 and 8 and replace with the revised Pages 01 22 13-4, 5, 6, 7, and 8 attached to this Addendum. Changes are highlighted in red.

Clarified description for Bid Items Nos. 4 and 6. These bid items pertain to the work shown in the Supplemental Plan Set issues as part of Addendum No. 4. Added Bid Item 7 to cover inspection of effluent channel submerged supports.

3. Section 40 23 43 Process Valves – Remove Pages 40 23 43– 3, 4, 5, 6 and 7 and replace with the revised Pages 40 23 43- 3,4,5,6, and 7 attached to this Addendum. Changes are highlighted in red.

Corrected the material requirements for the butterfly valves and type of valve operators. Refer to Paragraph 2.2 and 2.3.

4. Section 46 43 21 Sludge Collection Primary Clarifier – Remove Page 46 43 21– 6 and replace with the revised Page 46 43 21- 6 attached to this Addendum. Changes are highlighted in red.

Revised to clarify enclosure for the Mechanism Overload Device to be NEMA 250, Type 4X, Aluminum Epoxy Coated. Refer to Paragraph 2.5 (B) 5.

5. Section 46 51 21 Coarse Bubble Diffuser – Remove Pages 46 51 21– 3 and 4 and replace with the revised Pages 46 51 21- 3 and 4 attached to this Addendum. Changes are highlighted in red.

Modified section to correct reference to EDI as an approved manufacturer. Refer to Paragraph 2.2A and 2.2B.

CHANGES TO THE PLANS

1. Sheet D-01 Demolition/Rehab Plan and Sections (1 of 2) – Remove in its entirety and replace with the revised version attached to this Addendum.
2. Sheet D-03 Primary Clarifier Effluent Chamber Covers and Diffusers – Remove in its entirety and replace with the revised version attached to this Addendum.
3. Sheet S-02 Primary Clarifier Drop Box Plan and Section – Remove in its entirety and replace with the revised version attached to this Addendum.
4. Sheet M-01 Primary Clarifier Plan and Sections – Remove in its entirety and replace with the revised version attached to this Addendum.
5. Sheet M-02 Skimming Arm Plan and Sections – Remove in its entirety and replace with the revised version attached to this Addendum.
6. Sheet M-06 Aeration System Plan – Remove in its entirety and replace with the revised version attached to this Addendum.
7. Sheet M-08 Effluent Chamber Covers Details – Remove in its entirety and replace with the revised version attached to this Addendum.

CLARIFICATIONS

1. Not Applicable.

END OF ADDENDUM

This Addendum, including these six (6) pages, is Twenty-eight (28) pages with attachments in its entirety.

Attachments: Bid Form (2 Pages)
01 22 13 Measurement and Payment (5 pages total)
40 23 43 Process Valves (5 pages total)
46 43 21 Sludge Collection Primary Clarifier (1 page total)
46 51 21 Coarse Bubble Diffusers (2 pages total)
Sheet 7 of 28 (D-01)
Sheet 9 of 28 (D-03)
Sheet 14 of 28 (S-02)
Sheet 16 of 28 (M-01)
Sheet 17 of 28 (M-02)
Sheet 21 of 28 (M-06)
Sheet 23 of 28 (M-08)



Javier Garcia, PE
Garcia Infrastructure Consultants, LLC
TBPE Registration No. F-17794



11/8/21

BID PROPOSAL

PROPOSAL OF _____, a corporation
a partnership consisting of _____
an individual doing business as _____

THE SAN ANTONIO WATER SYSTEM:

Pursuant to Instructions and Invitation to Bidders, the undersigned proposes to furnish all labor and materials as specified and perform the work required for the project as specified, in accordance with the Plans and Specifications for the following prices in the bid proposal to wit:

PLEASE SEE ATTACHED LIST OF BID ITEMS.

BIDDER'S SIGNATURE & TITLE

FIRM'S NAME (TYPE OR PRINT)

FIRM'S ADDRESS

FIRM'S PHONE NO. /FAX NO.

FIRM'S EMAIL ADDRESS

The Contractor herein acknowledges receipt of the following: Addendum Nos. _____

OWNER RESERVES THE RIGHT TO ACCEPT THE OVERALL MOST RESPONSIBLE BID.

The bidder offers to construct the Project in accordance with the Contract Documents for the contract price, and to complete the Project within **648** calendar days after the start date, as set forth in the Authorization to Proceed. **The bidder understands and accepts the provisions of the contract Documents relating to liquidated damages of the project if not completed on time.**

Complete the additional requirements of the Bid Proposal which are included on the following pages.

Statement on President's Executive Orders

Has your firm previously performed work subject to the President's Executive Orders Numbers 11246 and 11375 or any preceding similar executive orders (Numbers 10925 and 11114)?

Yes No

Texas Government Code Chapter 2274 Verifications

- (1) Are you, Contractor, held or controlled by individuals who are citizens of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?
Yes No
- (2) Are you, Contractor, held or controlled by a company or other entity, including a governmental entity, that is owned or controlled by citizens of or directly controlled by the government of China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?
Yes No
- (3) Are you, Contractor, headquartered in China, Iran, North Korea, Russia or a country designated by the Governor of the State of Texas pursuant to Texas Government Code Chapter 2274?
Yes No

Item No.	Item Description	Unit	Quantity	Unit Bid Price	Total
1	Primary Clarifier Sandblasting and Coating	LS	1	\$	\$
2	Primary Clarifier Demolition and Replacement Components	LS	1	\$	\$
3	Primary Clarifier Repairs (Steel Plates)	LB	1,000	\$	\$
4	Primary Sludge and Skimming Pump Station Rehabilitation	LS	1	\$	\$
5	Effluent Chamber Covers Demolition and Replacement	LS	1	\$	\$
6	Effluent Chamber Diffuser System Demolition and Replacement	LS	1	\$	\$
7	Effluent Chamber Submerged Diffuser Header Supports Inspection	LS	1	\$	\$
8	Effluent Chamber Diffuser Header Support Replacement	EA	10	\$	\$
9	Primary Clarifier Start-up/Commissioning	LS	1	\$	\$
10	Primary Clarifier Equipment [Refer to Special Conditions (SC9)]	ALW	1	\$ 1,148,350.00	\$ 1,148,350.00
11	Replace Primary Clarifier Materials/Items	ALW	1	\$ 120,000.00	\$ 120,000.00
12	Environmental Abatement Items	ALW	1	\$ 60,000.00	\$ 60,000.00
13	Repair Primary Clarifier Grout	ALW	1	\$ 90,000.00	\$ 90,000.00
14	Subsurface Utility Engineering (SUE)	ALW	1	\$ 15,000.00	\$ 15,000.00
15	Permitting Fees	ALW	1	\$ 5,000.00	\$ 5,000.00
BASE BID AMOUNT (Items 1-15)					\$

Mobilization and Demobilization					
16	Intermediate Demobilization and Remobilization	EA	1	\$	\$
17	Downtime Associated with OWNER's Emergency Clarifier O&M Work	Day	1	\$	\$
18	Mobilization and Demobilization (Max 10% of Line Items 1 to 9)	LS	1	\$	\$
TOTAL MOBILIZATION AND DEMOBILIZATION (Item 16-18)					\$

Mobilization and Prep of ROW shall be limited to the maximum percentage shown. If the percentage exceeds the allowable maximum stated for mobilization and or preparation of ROW, SAWS reserves the right to cap the amount at the percentages shown and adjust the extensions of the bid items accordingly.

TOTAL BID PRICE (TO INCLUDE LINE ITEMS 1-15, 16-18)	\$
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Item No.	Description
	<p><u>Clarifier Nos. 6 and 7</u> shall include remove, disposal, and replacement of the v-notch weirs and Clarifier Control Panel. Modify existing scum box spray water system to provide a secondary water spray water system for the primary clarifier.</p> <p><u>Clarifier No. 6</u> shall include work associated with leveling the squeegees and skimming arm and then welding all existing bolted connections.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Lump sum payment for Item 2 will be full compensation for completing Work, as shown on the Contract Document or indicated under Division 01 through Division 46.</p>
3	<p>PRIMARY CLARIFIER REPAIRS (STEEL PLATES):</p> <p>The total amount for repairs to patch holes at the clarifier feedwell. <u>Applies to Clarifier Nos. 1 to 5, and 8.</u></p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the unit price per pound.</p> <p>Payment: Unit price payment on a LB basis for Item 3 will be full compensation for completing the Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>
4	<p>PRIMARY SLUDGE AND SKIMMING PUMP STATION PLAN REHABILITATION:</p> <p>The total amount for the rehabilitation of all four (4) Primary Sludge and Skimming Pump Stations. This includes sandblasting, shrouding, and coating the canopy structure and associated items as shown on the plans. It also includes the demolition and replacement of the structural members as shown on the plans.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Lump sum payment for Item 4 will be full compensation for completing Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>
5	<p>EFFLUENT CHAMBER COVERS DEMOLITION AND REPLACEMENT:</p> <p>The total amount for the demolition of the effluent channel covers, which includes but not limited to the removal and replacement of the effluent channel covers and all associated anchoring devices. Repair and patch any existing damage to the walls of the channel prior to installing new covers.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Lump sum payment for Item 5 will be full compensation for completing Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>

Item No.	Description
6	<p>EFFLUENT CHAMBER DIFFUSER SYSTEM DEMOLITION AND REPLACEMENT:</p> <p>The total amount for the demolition of the effluent channel diffuser and air header low pressure line, which includes but not limited to the removal and replacement of the effluent channel diffusers and all associated appurtenances. The air header low pressure line shall be abandoned in place and sections will be removed as depicted on the plans.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Lump sum payment for Item 6 will be full compensation for completing Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>
7	<p>EFFLUENT CHAMBER SUBMERGED DIFFUSER HEADER SUPPORTS INSPECTION:</p> <p>The total amount to inspect all primary clarifier effluent channel submerged diffuser header supports. These supports are submerged and use of a scuba diver is anticipated. Visibility is limited and inspection may be limited to hand gripping and lightly tugging to confirm if supports are fixed. The primary clarifier effluent chamber cannot be dewatered.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Lump sum payment for Item 7 will be full compensation for completing Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46</p>
8	<p>EFFLUENT CHAMBER DIFFUSER HEADER SUPPORTS:</p> <p>The total amount to remove and replace effluent chamber diffuser headers supports as shown on the plans. The supports are submerged, and the effluent chamber cannot be dewatered.</p> <p>It shall include, but is not limited to the installation and all labor material, tools, submittals, and incidentals required to perform the work in accordance with the contract documents, complete for the lump sum price.</p> <p>Payment: Unit price payment on a Each basis for Item 8 will be full compensation for completing the Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>
9	<p>PRIMARY CLARIFIER START-UP/COMMISSIONING:</p> <p>This item includes the pre-start up and start-up services that are necessary to provide for an operational and functional system. This shall include furnishing all labor, materials, tools, equipment, and incidentals required to construct these project related items.</p> <p>Payment: Lump sum payment for Item 9 will be full compensation for completing Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>

B. Allowance

Item No.	Description
10	<p>PRIMARY CLARIFIER (EQUIPMENT):</p> <p>Measurement: Allowance for \$1,148,350.00 all the required primary clarifier equipment. This item includes all costs to provide all equipment associated with the Primary Clarifier Equipment as outlined in the Primary Clarifiers Proposal (Special Conditions SC9).</p> <p>It shall include but is not limited to skimming arms, scum box, adjustable plate, and squeegee, spay water system (scum box and clarifier), bridge/walkway, and control panel. It also includes factory and field verification testing. The cost of the equipment shall include submittals, incidentals, freight, start-up, and training.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>
11	<p>REPLACE PRIMARY CLARIFIER MATERIALS/ITEMS:</p> <p>Allowance for \$120,000 to cover the removal and replacement of any primary clarifier components (mechanical or structural) found to be beyond repair (not included in the project scope). Contractor, Engineer and Owner will collectively inspect each clarifier after sandblasting/cleaning. Any components found to be beyond repair shall be replaced. Decision will be made by the Engineer/Owner. This shall include furnishing all labor, materials, tools, equipment, and incidentals required to construct these items at SAWS request, and to be negotiated under the contract terms and conditions for complete in place.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>
12	<p>ENVIRONMENTAL ABATEMENT ITEMS:</p> <p>Allowance for \$60,000 unforeseen lead, asbestos and other items that require abatement and proper disposal. This shall include furnishing all labor, tools, equipment, and incidentals required to abate the items, and to be negotiated under the contract terms and conditions for complete in place.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>
13	<p>REPAIR PRIMARY CLARIFIER GROUT:</p> <p>Allowance for \$90,000 provided to cover repairs to existing clarifier grout. The means and methods to safely repair grout shall be the Contractor's responsibility. Contractor shall submit procedure to repair grout for Engineer's/Owner's approval.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>
14	<p>SUBSURFACE UTILITY ENGINEERING (SUE):</p> <p>Allowance for \$15,000 provided to cover utility location and depth verification to identify underground tie-in locations/utility conflicts with proposed improvements. This shall include furnishing all labor, tools, equipment, and incidentals required to complete this task, and to be negotiated under the contract terms and conditions for complete in place.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>
15	<p>PERMITTING FEES:</p> <p>Allowance for \$5,000 fees associated with this project. This shall include furnishing all labor, materials, tools, equipment, incidentals, required to obtain all necessary permits. Contractor to pay and be reimbursed actual amount by SAWS. Refer to Special Conditions SC6.</p> <p>Payment: Contractor to pay and be reimbursed actual amount by OWNER.</p>

C. Mobilization and Demobilization

Item No.	Description
16	<p>INTERMEDIATE DEMOBILIZATION AND REMOBILIZATION:</p> <p>Measurement: This item shall govern Contractor expenses for an Owner-directed intermediate Project demobilization of personnel and equipment that occurs after the Contract Notice to Proceed has been given and work has been commenced, and the subsequent remobilization of personnel and equipment to complete the project. Related work shall include furnishing all labor, materials, tools, equipment, testing, and incidentals required to demobilize and remobilize for the Project, in accordance with the Contract Documents, Complete in Place.</p> <p>Payment: Each Intermediate Demobilization and Remobilization shall only be authorized upon a written directive by Owner. Unit price payment for Item 16 will be full compensation for completing the Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46 for actual intermediate mobilization/demobilization up to quantity shown in the Proposal Form.</p>
17	<p>DOWNTIME ASSOCIATED WITH OWNER'S EMERGENCY CLARIFIER O&M WORK:</p> <p>Measurement: This item shall govern Contractor expenses for an Owner-directed request to take a Primary Clarifier out of service for emergency corrective maintenance outside the Contractor's schedule.</p> <p>Payment: Payment shall be considered at SAWS approval and with adequate documentation showing that action by OWNER has a direct financial impact to Contractor. Payment for Item 17 will be made on a per day basis.</p>
18	<p>MOBILIZATION AND DEMOBILIZATION, MAX 10% OF LINE ITEMS 1 - 9:</p> <p>Measurement: This item shall include project move-in and move-out of personnel and equipment, for all work including furnishing all labor, materials, tools, equipment, and incidentals required to mobilize, demobilize, clean site upon project completion, and bond and insure the Work for the Project, in accordance with the Contract Documents, complete in place. Maximum of 10% of the total of Line Items 1 through 9.</p> <p>Payment: Lump sum payment for Item 18 will be full compensation for completing the Work, as shown on the Contract Documents, or indicated under Division 01 through Division 46.</p>

1.10 NONPAYMENT FOR REJECTED OR UNUSED PRODUCTS

- A. Payment will not be made for following:
1. Loading, hauling, and disposing of rejected material.
 2. Quantities of material wasted or disposed of in manner not called for under Contract Documents.
 3. Rejected loads of material, including material rejected after it has been placed by reason of failure of CONTRACTOR to conform to provisions of Contract Documents.
 4. Material not unloaded from transporting vehicle.
 5. Defective Work not accepted by OWNER.
 6. Material remaining on hand after completion of Work.

1.11 PARTIAL PAYMENT FOR STORED MATERIALS AND EQUIPMENT

- A. Partial Payment: No partial payments will be made for materials and equipment delivered or stored unless Shop Drawings or preliminary operation and maintenance manuals are acceptable to OWNER.
- B. Final Payment: Will be made only for products incorporated in Work; remaining products, for which partial payments have been made, shall revert to CONTRACTOR unless otherwise agreed, and partial payments made for those items will be deducted from final payment.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

- b. Tools: Furnish two sets of special tools (excluding metric tools, if applicable) for each size and type of valve furnished.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Packing, Shipping, Handling, and Unloading:
 1. Deliver materials and equipment to Site to ensure uninterrupted progress of the Work. Deliver anchorage products that are to be embedded in concrete in ample time to prevent delaying the Work.
 2. Inspect boxes, crates, and packages upon delivery to Site and notify ENGINEER in writing of loss or damage to materials and equipment. Promptly remedy loss and damage to new condition in accordance with manufacturer' s instructions.
 3. Conform to Section 01 60 00, Product Delivery and Storage Requirements.
- B. Storage and Protection:
 1. Keep products off ground using pallets, platforms, or other supports. Store equipment in covered storage and prevent condensation and damage by extreme temperatures. Store in accordance with manufacturer's recommendations. Protect steel, packaged materials, and electronics from corrosion and deterioration.
 2. Conform to Section 01 60 00, Product Delivery and Storage Requirements.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Valves, General:
 1. Provide each valve with manufacturer' s name and rated pressure cast in raised letters on valve body.
 2. Provide valves to tum clockwise to close, unless otherwise specified.
 3. Provide valves with permanent markings for direction to open.
 4. Manually operated valves, with or without extension stems, shall require not more than 40-pound pull on manual operator to open or close valve against specified criteria. Gear actuator and valve components shall be able to withstand minimum pull of 200 pounds on manual operator and input torque of 300-foot pounds to actuator nut. Manual operators include handwheel, chainwheel, crank, lever, and T-handle wrench.
- B. Valve Materials:
 1. Valve materials shall be suitable for the associated valve' s service or application, as shown.
 2. Protect wetted parts from galvanic corrosion caused by contact of different metals.
 3. Clean and descale fabricated stainless-steel items in accordance with ASTM A380 and the following:
 - a. Passivate all stainless steel welded fabricated items after manufacture by immersing in pickling solution of six percent nitric acid and three percent hydrofluoric acid. Temperature and detention time shall be sufficient for removing oxidation and ferrous contamination without etching surface. Perform complete neutralizing operation by immersing in trisodium phosphate rinse followed by clean water wash.
 - b. Scrub welds with same pickling solution or pickling paste and clean with stainless steel wire brushes or by grinding with non-metallic abrasive tools to remove weld discoloration, and then neutralize and wash clean.
- C. Valve Joints:
 1. Exposed Valves: Unless otherwise specified, provide with flanged ends conforming to ANSI B16.1. Pressure class of flanges shall be equal to or greater than specified pressure rating of the associated valve.
 2. Buried Valves: Provide with mechanical restrained joints, as required by piping with which valve is installed.
 3. For stainless steel bolting, except where nitride nuts are required, use graphite-free anti-seize compound to prevent galling. Strength of joint shall not be affected by using anti-seize compound.

2.2 BUTTERFLY VALVE

- A. Wafer Butterfly Valve, 4-inch for Low Pressure Process Air Service:

1. Butterfly valves for air systems shall be specifically designed for this service and meet or exceed the design, strength, performance, and testing standards of ANSI/AWWA C 504 – Rubber Seated Butterfly Valves. They shall be suitable for pressures from vacuum to 125 psi, and temperatures from minus 40 degrees F to 250 degrees F.
 2. Body- The valve body shall be of 316 Stainless Steel with wafer type design as indicated, drilled to match pipe flange.
 3. Disk- The disc shall be of 316 stainless-steel hand polished for minimum torque and sealing capabilities. The disc shall be designed with the air-profile or other suitable shape. Sprayed or plated disc edges are not acceptable.
 4. Seat- The elastomer seat shall be in the body. It shall be field-replaceable without special tools. Except for use with petroleum-based fluid, the seat material shall be Fluorinated Hydrocarbon Elastomers (FKM), or other suitable material, to provide a tight shutoff at the above-mentioned temperatures.
 5. Stem- The valve stem shall be one piece and shall be of 316 stainless-steel with sufficient strength to allow for the increased torque for air service.
 6. All shaft bearings shall be of the self-lubricating corrosion resistant sleeve type.
 7. The packing shall be of the adjustable or self-adjustable (O-ring) type, suitable for the temperature and service conditions.
 8. Manufacturers: Provide products of one of the following:
 - a. Brays International
 - b. M&H Valve Company
 - c. US Pipe Foundry
- B. Wafer Butterfly Valve, 6 to 12-inch for Low Pressure Process Air Service:
1. Butterfly valves for air systems shall be specifically designed for this service and meet or exceed the design, strength, performance, and testing standards of ANSI/AWWA C 504 – Rubber Seated Butterfly Valves. They shall be suitable for pressures from vacuum to 125 psi, and temperatures from minus 40 degrees F to 250 degrees F.
 2. Body- The valve body shall be of carbon steel with wafer type design as indicated, drilled to match pipe flange.
 3. Disk- The disc shall be of 316 stainless-steel hand polished for minimum torque and sealing capabilities. The disc shall be designed with the air-profile or other suitable shape. Sprayed or plated disc edges are not acceptable.
 4. Seat- The elastomer seat shall be in the body. It shall be field-replaceable without special tools. Except for use with petroleum-based fluid, the seat material shall be Fluorinated Hydrocarbon Elastomers (FKM), or other suitable material, to provide a tight shutoff at the above-mentioned temperatures.
 5. Stem- The valve stem shall be one piece and shall be of 316 stainless-steel, with sufficient strength to allow for the increased torque for air service.
 6. All shaft bearings shall be of the self-lubricating corrosion resistant sleeve type.
 7. The packing shall be of the adjustable or self-adjustable (O-ring) type, suitable for the temperature and service conditions.
 8. Manufacturers: Provide products of one of the following:
 - a. Brays International
 - b. M&H Valve Company
 - c. US Pipe Foundry

2.3 VALVE OPERATOR

- A. All valves shall be equipped with operators. The operator shall be compatible with the valve with which it will be used and shall be manufactured by the same manufacturer of the valve, or a product that is recommended by the valve manufacturer. The operator shall be sized to operate the valve in consideration of the flows and pressures depicted.
- B. Manual Operators
 1. Operating force requirements shall not exceed 40 pounds under any operating condition, including valve seating and unseating conditions. Provide additional mechanical advantage through gear reduction or increased lever arm length, as appropriate.
 2. Operators shall be self-locking type or equipped with self-locking device.
 3. Position indicators shall be provided on all quarter-turn and non-rising stem valves.

4. Worm gearbox type operators shall be factory lubricated and shall consist of a high strength alloy steel input worm gear mated to an output spur gear or yoke nut driven output yoke, as applicable. Spur gears shall be of alloy bronze or ductile iron construction. Yoke nuts shall be of ductile iron construction with stainless steel yoke nut bearings and alloy steel yokes. Worm gearboxes shall include adjustable stops of either the traveling nut or stud screw variety, as applicable. Worm gearboxes shall include gasketed access covers and shaft seals designed to provide weathertight or submersible duty service, as required, and include a mechanically driven valve position indicator. All trim and fastening hardware shall be of stainless-steel construction.
5. Lever type operators shall include lever actuator of appropriate length and locking mechanism capable of locking the valve securely in a minimum of 10 positions from fully open to fully closed. Levers shall be of galvanized steel or ductile iron construction. Locking mechanism and hardware shall be of stainless-steel construction. Level type operators for valves 6-inch and smaller.
6. Handwheels for direct or gearbox driven valve actuation shall be appropriately sized to limit operator force requirements to that specified. Handwheels used in conjunction with any type of gearbox shall include bearing mounted hand crank of stainless steel or composite, non-metallic, construction. Handwheel for valves 8-inch and larger.
7. All manual valve actuators shall conform to AWWA C504.
8. Manual valve actuator shall be equipped with a totally enclosed worm gearing (valve sizes 8-inch and larger) . Gears shall be permanently lubricated.
9. Manual valve actuators shall have a position indicator.

2.4 APPURTENANCES FOR EXPOSED METALLIC VALVES

- A. General:
 1. For valves located less than five feet above operating floor, provide levers on four-inch diameter quarter-turn valves, and provide handwheels on all other valves, unless otherwise shown or specified.
 2. For valves located five feet or more above operating floor, provide chain operators.
 3. Where indicated, provide extension stems and floorstands.
- B. Handwheels:
 1. Conform to applicable AWWA standards.
 2. Material of Construction: Ductile iron, or cast aluminum.
 3. Arrow indicating direction of opening and word " OPEN" shall be cast on trim of hand wheel.
 4. Maximum Handwheel Diameter: 2.5 feet.
- C. Chain Operators:
 1. Chains shall extend to three feet above operating floor.
 2. Provide 1/2-inch stainless steel hook bolt to keep chain out of walking area.
 3. Materials of Construction:
 - a. Chain: Type 316 Stainless steel.
 - b. Chainwheel: Recessed groove type made of Type 316 stainless steel.
 - c. Guards and Guides: Type 316L stainless steel.
 4. Chain Construction:
 - a. Chain shall be of welded link type with smooth finish. Chain that is crimped or has links with exposed ends is unacceptable.
 5. Provide geared operators where required to position chainwheels in vertical position.

2.5 APPURTENANCES FOR BURIED METALLIC VALVES

- A. Wrench Nuts:
 1. Provide wrench nuts on buried valves of nominal two-inch size, in accordance with AWWA C500.
 2. Arrow indicating direction of opening the valve shall be cast on the nut along with the word " OPEN".
 3. Material: Ductile iron or cast-iron.
 4. Secure nut to stem by mechanical means.
- B. Extension Stems for Plug Valves:
 1. Provide extension stems to bring operating nut to six inches below valve box cover.
 2. Materials of Stems and Stem Couplings: Type 316 stainless steel.
 3. Maximum Slenderness Ratio (L/R): 100

4. Provide top nut and bottom coupling of ductile iron or cast-iron with pins and set screws of Type 316 stainless steel.
- C. Valve Boxes:
1. Valve boxes shall be required for all buried valves.
 2. Type: Heavy-duty, suitable for highway loading, two-piece telescopic, and adjustable. Lower section shall enclose valve operating nut and stuffing box and rest on valve bonnet.
 3. Material: Cast-iron or ductile iron.
 4. Coating: Two coats of asphalt varnish conforming to FS TT-C-494.
 5. Marking: As required for service.

2.6 ANCHORAGES AND MOUNTING HARDWARE

- A. General:
1. Comply with Section 05 05 33, Anchor Systems, except as modified in this Section.
 2. Obtain bolts, nuts, and washers for connection of valve and appurtenances to concrete structure or other structural members from valve Supplier.
 3. Bolts, nuts, and washers shall be of ample size and strength for purpose intended. Anchorages in concrete shall be at least 5/8-inch diameter.
 4. Provide stem guide anchorages of required strength to prevent twisting and sagging of guides under load. 5. Materials: Provide bolts and washers of Type 316 stainless steel and nitride nuts. Bolts shall have rolled threads. Bolts and nuts shall be electropolished to remove burrs.

2.7 TOOLS, LUBRICANTS, AND SPARE PARTS

- A. Lubricants: For valves, actuators, and appurtenances requiring lubricants, provide suitable lubricants for initial operation and for first year of use following Substantial Completion. Lubricants for equipment associated with conveying potable water or water that will be treated to become potable shall be food-grade and ANSI/NSF 61-listed.

2.8 PAINTING OF EXPOSED VALVES, HYDRANTS, AND APPURTENANCES

- A. Exterior steel, cast-iron, and ductile iron surfaces, except machined surfaces of exposed valves and appurtenances, shall be finish painted in manufacturer's shop. Surface preparation, priming, finish painting, and field touch-up painting shall conform to Section 09 91 00, Painting.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Examine conditions under which materials and equipment are to be installed and notify ENGINEER in writing of conditions detrimental to proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. General:
1. Install valves and appurtenances in accordance with:
 - a. Supplier's instructions and the Contract Documents.
 - b. Requirements of applicable AWWA standards.
 - c. Applicable requirements of Section 40 23 39 Process Piping General.
 2. Install valves plumb and level. Install all valves to be free from distortion and strain caused by misaligned piping, equipment, and other causes.
 3. Position swing check valves and butterfly valves so that, when valve is fully open, valve disc does not conflict with piping system elements upstream and downstream of valve.
- B. Exposed Valves:
1. Provide supports for large or heavy valves and appurtenances as shown or required to prevent strain on adjoining piping.
 2. Operators:
 - a. Install valves so that operating handwheels or levers can be conveniently turned from operating floor without interfering with access to other valves, piping, structure, and equipment, and as approved by ENGINEER.

- b. Avoid placing operators at angles to floors or walls.
- c. Orient chain operators out of way of walking areas.
- d. Install valves so that indicator arrows are visible from floor level.
- e. For motor-operated valves located lower than five feet above operating floor, orient motor actuator to allow convenient access to pushbuttons and handwheel.

C. Buried Valves:

- 1. Install valve boxes plumb and centered, with soil carefully tamped to a lateral distance of four feet on all sides of box, or to undisturbed trench face if less than four feet.

3.3 FIELD QUALITY CONTROL

A. Field Tests:

- 1. Adjust all parts and components as required to provide correct operation of valves.
- 2. Conduct functional field test on each valve in presence of ENGINEER to demonstrate that each valve operates correctly.
- 3. Verify satisfactory operation and controls of motor operated valves.
- 4. Demonstrate satisfactory opening and closing of valves at specified criteria requiring not more than 40 pounds effort on manual actuators.
- 5. Test ten percent of valves of each type by applying 200 pounds effort on manual operators. There shall be no damage to gear actuator or valve.

END OF SECTION

1. Mechanical: Actuate integral contacts to indicate impending overload and shutoff drive motor at predetermined load.
2. Impending Overload Contact (Alarm Torque): Actuate at 50 percent of Design Running Torque. CONTRACTOR TO VERIFY WITH CLARIFIER MANUFACTURER.
3. Motor Shutdown Contact (Cutout Torque): Actuate at 60 percent of Design Running Torque. CONTRACTOR TO VERIFY WITH CLARIFIER MANUFACTURER.
4. Contacts: Single-pole, double-throw rated 5 amps, 120V ac.
5. Enclosure: NEMA 250, Type 4X, Aluminum epoxy coated.
6. Indicating Pointer: Indicate relative load on graduated scale up to Ultimate Torque.
7. Provide shear pin device or backup motor cutout switch to protect drive unit in case of control system failure. Shear pin shall be rated at 45 percent (82,840-ft-lb) dual drive unit (164,800-ft-lb overall shear point) of Design Running Torque. CONTRACTOR TO VERIFY WITH CLARIFIER MANUFACTURER.

2.6 SLUDGE SCAPER ARMS WITH BOLTED SQUEEGEE PLATE

- A. Squeegees:
 1. Materials: 20-gauge, type 304 stainless steel.
 2. Attached to existing sludge scraper blades. Do not replace scraper blades.
 3. Bolts, Nuts, and Washers: Type 316 stainless steel.
 4. Vertical Alignment: Between ½-inch minimum and 1 ½-inch maximum clearance above grouted clarifier bottom.

2.7 SCUM SKIMMING SYSTEM

- A. Mechanically collect and discharge surface scum from annular space between center influent stilling well and outer perimeter scum baffle.
- B. Skimming Arm and Skimmer Blade Assemblies: Support from sludge collector truss.
 1. Quantity: Two (2)
 2. Supports: Maximum 10-foot centers.
 3. Bolted Connections: Permit plate removal.
- C. Skimming Arm:
 1. Extend tangentially from, but not necessarily attached to, center influent stilling well continuously outward to skimmer blade assembly at perimeter of clarifier.
 2. A36 Painted Steel (ASTM A123/123M), plate and shapes, minimum thickness 1/4 inch
 3. Extend plate from 3 inches above to 3 inches below static liquid level (weir invert elevation) in clarifier.
- D. Skimmer Blade Assembly:
 1. A36 Painted Steel (ASTM A123/123M), plate and shapes, minimum thickness 1/4 inch
 2. Trap scum at perimeter scum baffle and discharge it into scum trough.
 3. Hinged, adjustable unit designed such that when passing over scum trough bottom, blade edge is always in contact with trough even if trough is not horizontal or plumb.
 4. Lockout Device: Permits unit to be raised and maintained out of liquid.
 5. Lift Mechanism: Operable from exterior walkway or bridge deck.
 6. Blade: Extend full width of scum trough.
 - a. Bottom and Edges: Replaceable neoprene seal strips to ensure continued entrapment and discharge of scum into scum trough.
 - b. Inner and Outer Edges: Suitable, separate wearing surfaces.
 7. Adjustable, spring-loaded device, minimum applied force of 5 pounds, or flexible neoprene wiper to constantly force seal with perimeter scum baffle.
- E. Scum Trough Assembly:
 1. One per clarifier, including horizontal submerged shelf and inclined beach.
 2. Scum trough, plate, and shapes, 304 Stainless Steel minimum thickness ¼ inch.
 3. Radial Width: Minimum 10-ft.
 4. Circumferential Length (Including Inlet and Outlet Beaches): Match existing scum box dimensions (4-ft Minimum).
 5. Inlet Inclined Beach Length: Minimum 65 percent of total circumferential length of trough.
 6. Trough Opening: Minimum 7 inches, radially sloped bottom, with 6-inch outlet.
 7. Support from basin weir wall and connect to scum baffle with adequate supports.

- 5) Ability of piping system to withstand lateral forces.
4. Submit all test results:
 - a. Describe all testing setups, procedures, calculations, and specific test samples.
 - b. Describe all observations during testing and submit along with all data.
 - c. Arrange data in simple readable form for comparison with specification requirements.
 - d. Including but not limited to:
 - 1) Quality control tests.
 - 2) Uniformity test.
 - 3) Strength testing.
 - e. Reports signed by registered professional engineer.
- B. Information Submittals:
 1. Factory test results, reports, and certifications.
 2. MANUFACTURER Certificate of Conformance: Manufactured/commercial products.
 3. Special shipping, storage and protection, and handling instructions.
 4. MANUFACTURER Certificate of Compliance.
 5. Operation and Maintenance Manual: Include MANUFACTURER's written/printed installation instructions with erection drawings indicating, by piece marking, how entire assembly (for each basin service) is to be shipped and field assembled.
 6. MANUFACTURER's special guarantee.
- C. Service records for maintenance performed during construction.

1.7 OPERATIONS AND MAINTENANCE MANUAL

- A. Provide manufacturer's Operation and Maintenance Manual(s) (O&M) and Maintenance Summary Form(s) in accordance with OPERATION AND MAINTENANCE DATA in Section 01782.

1.8 WARRANTY

- A. Equipment warranty shall comply with Section 01740, WARRANTIES.
- B. Submit warranty from the equipment manufacturer clearly stipulating that manufacturer's warranty period shall be for five (5) years commencing at final acceptance by the OWNER. MANUFACTURER shall be responsible for material replacement of parts or materials that fail during warranty period.

1.9 PRODUCT, DELIVERY, AND STORAGE

- A. Product delivery, storage, and handling shall comply with Section 01610, BASIC PRODUCT REQUIREMENTS.

1.10 MANUFACTURER'S CERTIFICATES

- A. Provide manufacturer's certificate(s) in accordance with Paragraph 3.03 MANUFACTURER'S CERTIFICATES OF COMPLIANCE in Section 01640.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Furnish diffused air aeration equipment system as a complete package including, but not necessarily limited to the liftout drops, distribution headers, diffusers, supports, and miscellaneous appurtenances.
- B. Furnish complete, engineered systems. Drawings indicate air manifold, header, and diffuser orientations only. Details such as air distribution header sizes and spacing, header supports and spacing, diffuser spacing, etc., shall be defined by and be the responsibility of CONTRACTOR and shall be consistent with requirements in this Section.

2.2 MANUFACTURERS

- A. Materials, equipment, and accessories specified in this Section shall be products of:
 1. Sanitaire/Xylem
 2. Aquarius
 3. Environmental Dynamics International (EDI)

- B. The Allowable Diffuser Types shall be:
 1. Sanitaire's Coarse Bubble, D24
 2. Aquarius Coarse Bubble, 24-inch Wide Band Diffuser
 3. EDI Bubble MaxAir 24-inch

2.3 REMOVABLE AERATION HEADERS AND DROPLEGS

- A. Provide a dropleg assembly for connection to the air control valve on the air main including top and bottom flange connections, dropleg, and lift lugs.
 1. Provide an adaptor flange with thru bolts for connection to the valve and to hold valve in place when the dropleg is disconnected for removal.
 2. Provide a seat on the adaptor flange with an "O" ring to seal connection at the top of the dropleg.
 3. Provide loose follower flange, face ring, and bolts at top of dropleg for connection to the adaptor flange. Design bolts with retainer to hold connector bolts in place when dropleg is disconnected.
 4. Provide lift lugs at the top elbow and at suitable intervals on the dropleg for attachment of the hoist lifting cable.
 5. Connection between header and drop will be per selected manufacturer. At a minimum provide a solid 150-lb Class flanges with a sealing gasket.
- B. Provide an air header assembly for connection to the dropleg complete with header, flanged connection tee, and diffuser connectors.
 1. Provide a connecting and leveling tee on the header with o-ring seat gasket.
 - a. Design tee with free flow design, ½ flange and two (2) eleven (11) gauge gussets for reinforcement of the tee/header connection.
 - b. Design tee with two (2) 7/8 inch holes for connection to dropleg flange.
 - c. Provide two (2) threaded holes and adjusting screws to level and lock the header assembly.
 - d. Alternative assemblies may be considered based on selected manufacturer.
 2. Provide bolted removable end caps with gaskets at both ends of the header for cleanout purposes.
 3. Provide duplex diffuser connectors per paragraph 2.03D.
 4. Fabricate headers of twelve (12) gauge stainless steel material and stainless steel flanges per section 2.02A.
- C. Duplex Diffuser Connectors
 1. Factory weld to the invert centerline of the air header.
 2. Design diffuser connectors for two diffusers.
 3. Furnish PVC plugs for all unused diffuser connectors.
 4. Provide connectors of length appropriate to the header diameter and positioned so that air exiting the diffusers clears the header.
 5. Design header and diffuser connectors as follows:
 - a. Reinforce the connector header weld joint by providing gussets continuously welded between the vertical side wall of the header and the connector ends to limit long term flexure failure. Minimum gusset thickness is 0.125 inch.
 - b. Weld connector to the header with a full penetration butt weld to minimize potential for crevice corrosion between header and connector. Use of fillet welds at the connection between the diffuser connector and header is NOT permitted.
 - c. Resist a vertical dead load applied to the threaded end of the connector that results in a bending moment of 1000 inch-lbs without exceeding 24,000 PSI design stress in any part of the header wall or connector.
 - d. Header wall thickness for unreinforced connectors must comply with Section 2.02, A.4.b.
- D. Header Supports and Anchor Bolts
 1. Provide two (2) supports per header fabricated of 5/8 inch threaded rod and two (2) ½ inch wedge anchors.
 2. Provide two (2) locator fins on front and back side of the support and a support cradle fabricated of eleven (11) gauge material.
 3. Design supports for 3 inches of total vertical adjustment.
 4. Fabricate supports of 304L stainless steel per Section 2.02A.

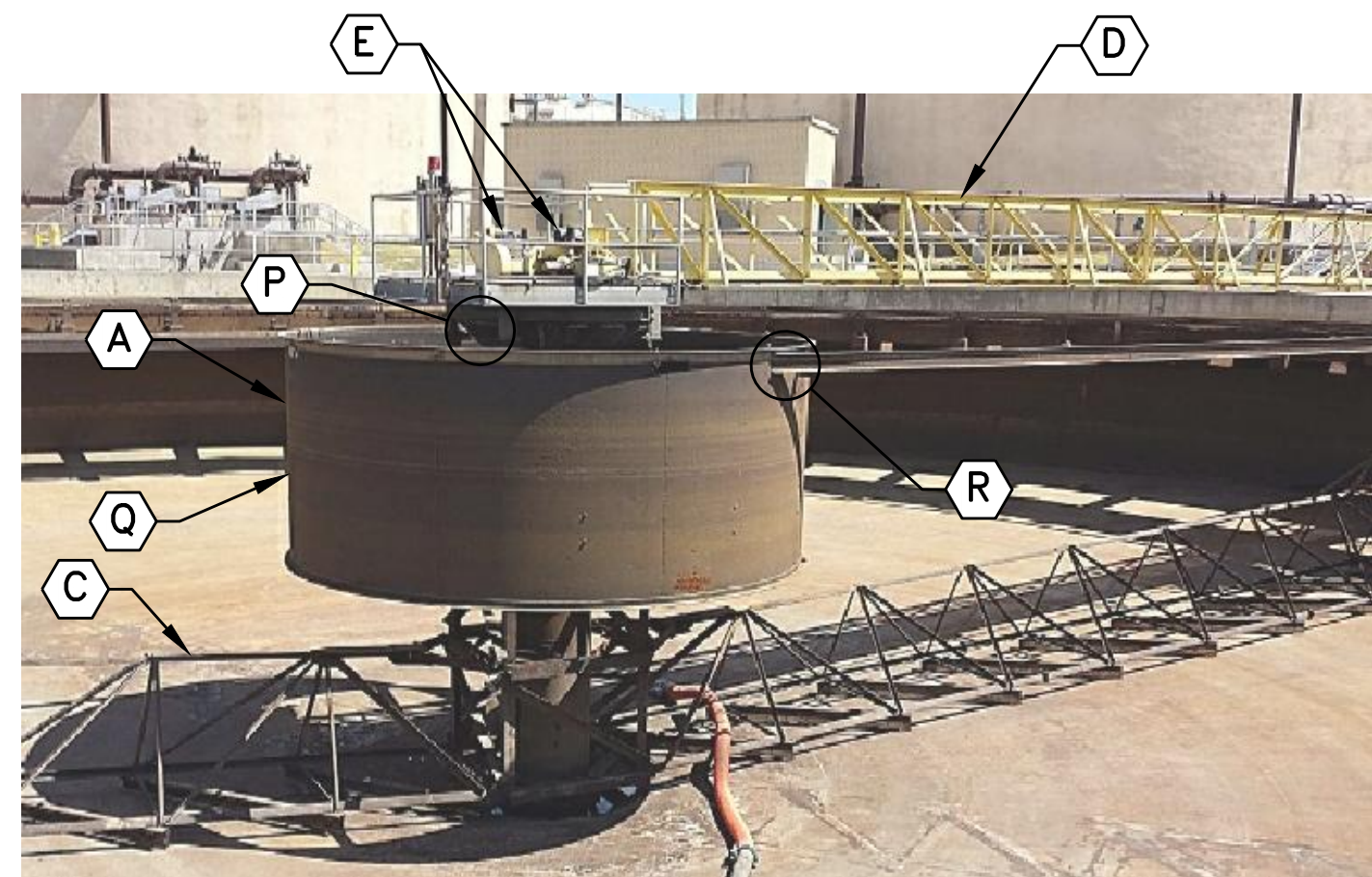
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LEGEND

☒ EQUIPMENT TO BE REMOVED/DEMOLISHED AND REPLACED

NOTES:

- THIS DRAWING IS A REPRODUCTION OF THE EXISTING DOS RIOS WASTEWATER TREATMENT PLANT DRAWINGS AND IS INTENDED TO PROVIDE GENERAL INFORMATION FOR FACILITY DEMOLITION AND MAY NOT FULLY REFLECT ALL SITE EQUIPMENT AND APPURTENANCES. REFER TO SITE PHOTOGRAPHS AS NECESSARY. FIELD VERIFY ALL ITEMS SHOWN OR NOT SHOWN ON THIS DRAWING.
- THE BASE DRAWING FOR THIS SHEET IS NOT TO SCALE.
- REMOVE AND DISPOSE OF FOLLOWING CLARIFIER MECHANICAL COMPONENTS:
 - SCUM BOX
 - SCUM BOX 6" PIPE
 - SCUM BOX WATER SPRAY PIPING AND NOZZLES
 - SKIMMING ARM AND SUPPORT
 - SCRAPER BLADES AND STAINLESS STEEL SQUEEGEES
 - CLARIFIER BRIDGE/WALKWAY
 - WEIRS
 - SCUM BAFFLE PLATE
- COORDINATE ALL DEMOLITION ACTIVITIES WITH SAWS INSPECTOR AND OPERATIONS. MAINTAIN UNINTERRUPTED SERVICE AT ALL TIMES. NOTIFY SAWS OPERATIONS AT LEAST 7 DAYS IN ADVANCE AND AGAIN 3 DAYS PRIOR TO ANY SHUTDOWNS.
- PLANS WERE PREPARED WITHOUT THE BENEFIT OF A FIELD SURVEY. ALL DIMENSIONS AND ELEVATIONS ARE FROM RECORD DRAWINGS. FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS SHOWN OR NOT SHOWN ON THE PLANS PRIOR TO FABRICATING EQUIPMENT. NOTIFY ENGINEER OF ANY DISCREPANCIES.
- ANY DAMAGE TO CONCRETE OR ITEMS TO REMAIN DURING CONSTRUCTION SHALL BE FULLY REPAIRED TO SAWS' SATISFACTION AT CONTRACTOR'S EXPENSE.
- ALL EQUIPMENT DESIGNATED FOR DEMO, UNLESS SPECIFICALLY NOTED, SHALL BECOME CONTRACTOR'S PROPERTY. CONTRACTOR IS FULLY RESPONSIBLE FOR THE PROPER REMOVAL AND DISPOSAL OF ALL ITEMS IN ACCORDANCE TO LOCAL, STATE, AND FEDERAL REGULATIONS.
- PRESSURE WASH ALL WALLS AND FLOOR INCLUDING THE EFFLUENT TROUGH SCUM BOX, AND EFFLUENT BOX.
- CONTRACTOR TO FIELD VERIFY LOCATIONS OF PIPING, ELECTRICAL, CONDUITS AND OTHER UTILITIES PRIOR TO REHAB WORK.
- UNLESS OTHERWISE NOTED, THIS DRAWING IS INTENDED TO REFLECT WORK AT PRIMARY CLARIFIERS No. 1-5 AND No. 8.
- TYPICAL PLAN SHOWN FOR ONE (1) PRIMARY CLARIFIER. SAME WORK APPLIES AT PRIMARY CLARIFIERS No. 1-5 AND No. 8.
- OWNER SHALL ASSIST IN DRAINING EACH PRIMARY CLARIFIER. ASSISTANCE IS LIMITED TO OPERATING SLUICE GATES AT PRIMARY SETTLING TANK DISTRIBUTION CENTER AND UTILIZING PRIMARY SLUDGE PUMPS.
- APPROXIMATELY 6 TO 12 INCHES OF STANDING WATER, SLUDGE, GRIT AND DEBRIS WILL REMAIN AFTER OWNER DRAINS CLARIFIER. IN ADDITION, THE CENTER COLUMN IS FULL OF WASTEWATER. IT IS CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF ALL REMAINING WATER, SLUDGE, AND GRIT IN EACH PRIMARY CLARIFIER AT CLARIFIER SPLITTER BOX UNDER SAWS' DIRECTION. ANY DEBRIS REMAINING SHALL BE CONTRACTOR'S RESPONSIBILITY TO DISPOSE OF OFFSITE AT CONTRACTOR'S EXPENSE.
- REFER TO SPEC. SECTION 09800 FOR SURFACE PREP AND COATING.
- REPAIR AND GROUT CONCRETE FLOOR SURFACE AS NECESSARY PRIOR TO STARTING UP PRIMARY CLARIFIERS.
- REMOVE EXISTING DUAL CLARIFIER DRIVE UNITS AND SET AT A DESIGNATED LOCATION AS DIRECTED BY SAWS. DRIVE UNITS SHALL BE REHABBED BY SAWS. CONTRACTOR SHALL BE RESPONSIBLE FOR PRESSURE WASHING AND COATING DRIVE UNITS. UPON COMPLETION OF REPAIRS BY SAWS CONTRACTOR SHALL RE-INSTALL DUAL DRIVE UNITS. CONTRACTOR TO COORDINATE SCHEDULE WITH SAWS. PROPERLY COVER BULL GEAR DURING SAND BLASTING AND COATING WORK. COVER USED TO PROTECT BULL GEAR, MUST BE INSPECTED AND APPROVED BY CLARIFIER MANUFACTURER PRIOR TO INITIATING ANY WORK.
- ALL CLARIFIERS (No. 1 to 8) SHALL BE RETROFITTED WITH A SHEAR PIN. REFER TO SPECIFICATION SECTION 46 43 21.
- ONLY WATER MAY BE PUMPED INTO SPLITTER BOX. NO SLUDGE/GRIT AND/OR TRASH/DEBRIS MAY BE PUMPED INTO SPLITTER BOX.



BRIDGE, FEEDWELL, RAKE ARM, AND SKIMMING ARM
SCALE: N.T.S.

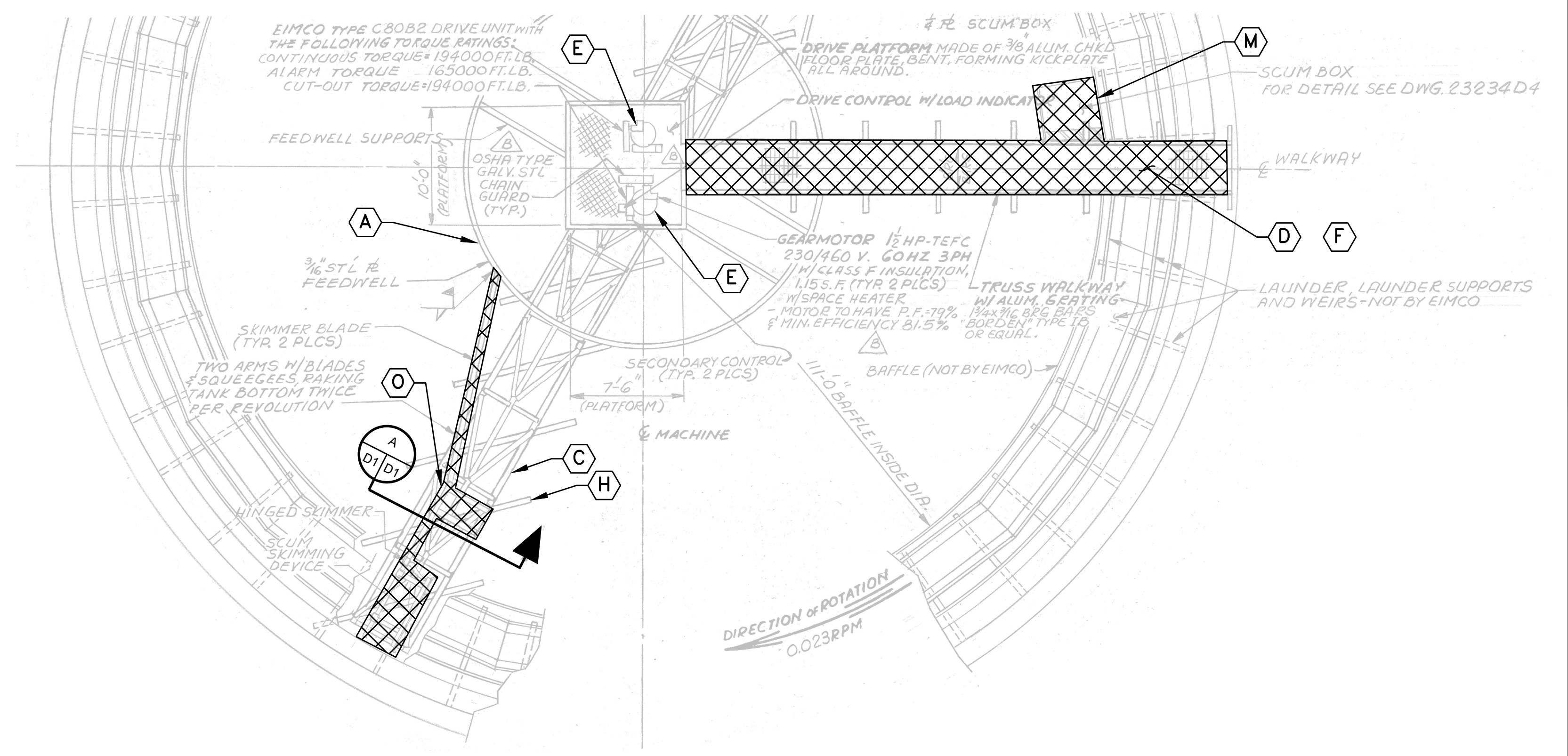
KEY NOTES:

- (A) SANDBLAST AND COAT FEEDWELL AND SUPPORTS COMPONENTS.
- (B) SANDBLAST AND COAT INFLUENT COLUMN.
- (C) SANDBLAST AND COAT RAKE ARM.
- (D) TESTING INDICATES THAT WALKWAY PAINT IS LEAD BASED.
- (E) PRESSURE WASH AND COAT DUAL CLARIFIER DRIVE UNITS. (REFER TO NOTE 16)
- (F) REPLACE WALKWAY/BRIDGE WITH A NEW WALKWAY/BRIDGE. CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF EXISTING CLARIFIER WALKWAY/BRIDGE.
- (G) SANDBLAST AND COAT SQUARE CENTER TORQUE CAGE.
- (H) REMOVE AND REPLACE STAINLESS STEEL SQUEEGEE, TYP.
- (I) REMOVE STEEL SCUM BAFFLE PLATE AND REPLACE WITH FRP SCUM BAFFLE PLATE AND SUPPORT.
- (J) PRESSURE WASH AND CLEAN ALL WALLS AND FLOOR.
- (K) STEEL PLATE BLADES TO REMAIN.
- (L) REMOVE AND REPLACE WEIRS WITH FRP V-NOTCH WEIRS. THIS WORK REQUIRED ON CLARIFIERS No. 1-8.
- (M) REMOVE AND REPLACE SCUM BOX.
- (N) REMOVE AND REPLACE 6" SCUM BOX PIPE.
- (O) REMOVE AND REPLACE SKIMMING ARM AND SUPPORT.
- (P) REMOVE AND REPLACE ALL GUSSET PLATES UNDER CENTER PLATFORM
- (Q) REMOVE AND REPLACE ALL C CHANNEL ANGLE BRACKETS AT CENTER FEEDWELL. EXISTING C CHANNELS SHALL BE SAND BLASTED, COATED, AND REUSED.
- (R) SKIMMING ARM CONNECTIONS SHALL BE BOLTED FOR LEVELING, THEN WELDED. SEE SHEET M-02

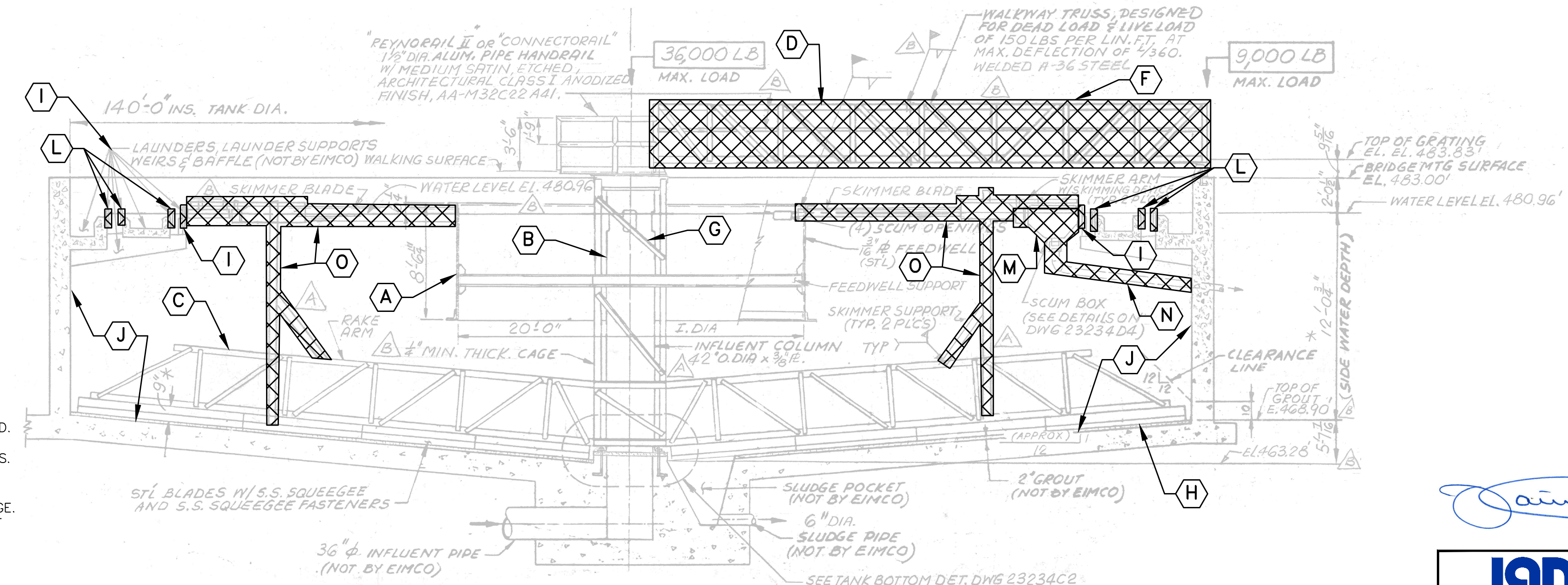
ACCESS TO PAINT ALL REQUIRED COMPONENTS AND AREAS IS LEFT TO CONTRACTOR'S MEANS AND METHODS

BULL GEAR PROTECTION

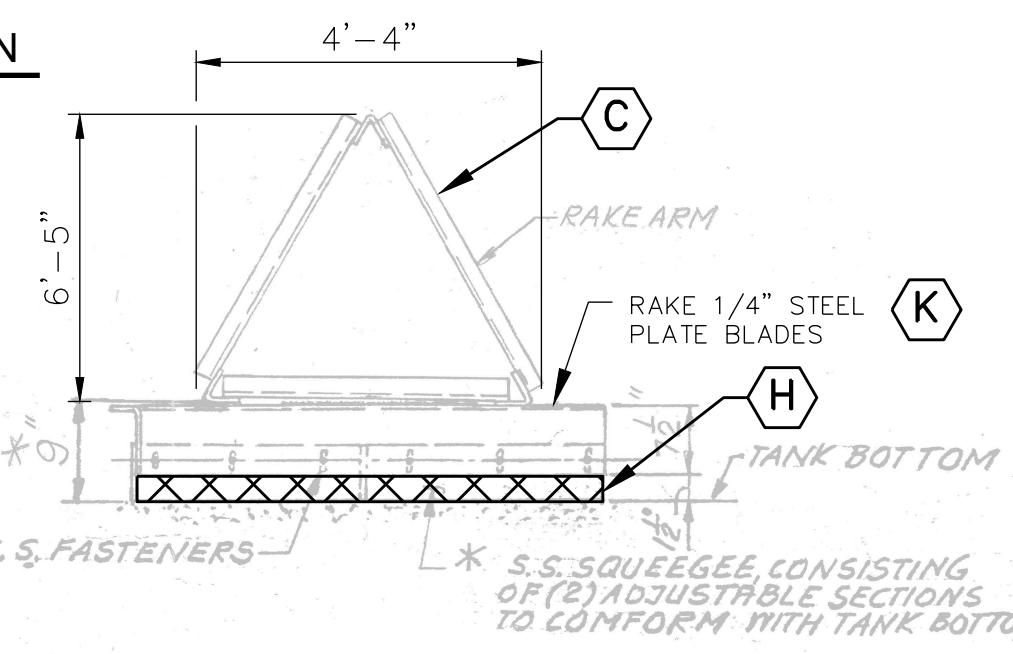
COVER/PROTECT BULL GEAR AND ALL EQUIPMENT/GEARS ON AND WITHIN TURNABLE/INFLUENT COLUMN AREA BEFORE ANY SANDBLASTING. SAWS AND THE ENGINEER SHALL INSPECT THE AREA BEFORE ANY SANDBLASTING CAN BEGIN. IF SAND ENTERS THE BULL GEAR/GEARS, CONTRACTOR IS REQUIRED TO CLEAN AND REPLACE OIL. THE CONTRACTOR WILL REPLACE ANYTHING DAMAGED BY SAND AT NO COST TO SAWS.



PLAN VIEW
SCALE: N.T.S.



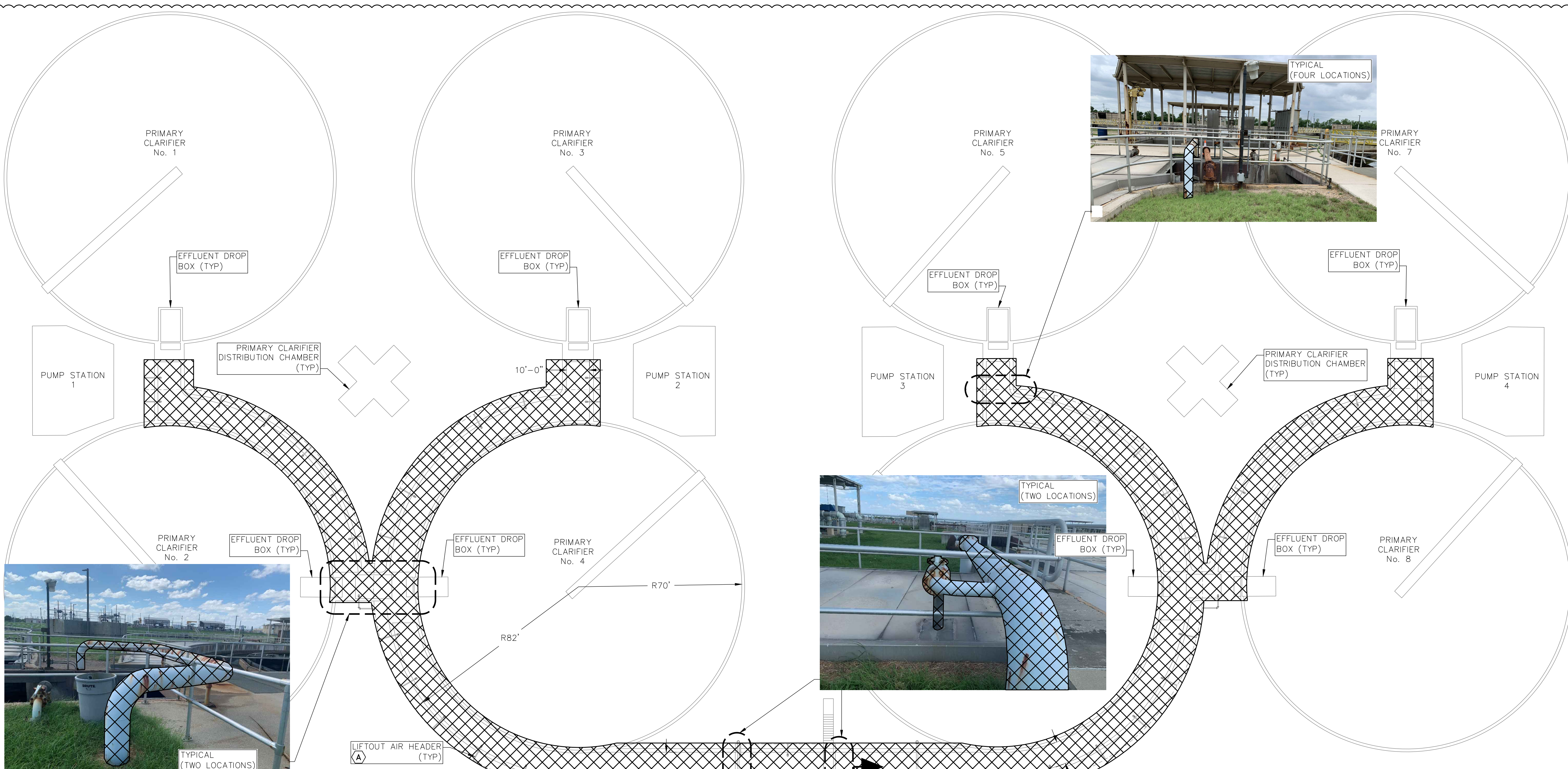
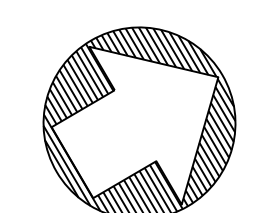
ILLUSTRATIVE SECTION
SCALE: N.T.S.



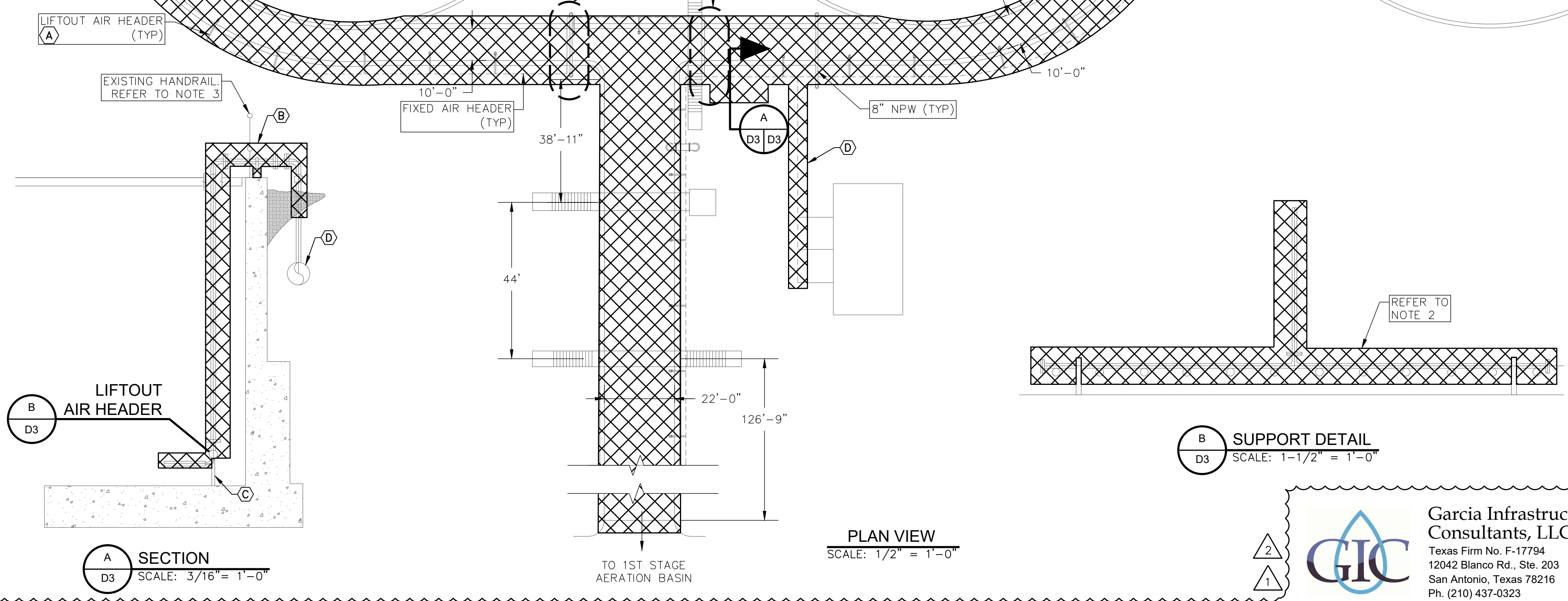
SECTION
SCALE: N.T.S.

[Signature]
9/7/21
STATE OF TEXAS
JAVIER GARCIA
83920
LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc. A LEO A DALY COMPANY TBP REGISTRATION NO. F-2614			
NO.	REVISION	DRAWN	APPROVED
1	ADDENDUM NO. 6	H3	JG
			11/5/21
REVISIONS			
STEVEN M. CLOUSE WRC PRIMARY CLARIFIER REHABILITATION PRIMARY CLARIFIER DEMOLITION/REHAB PLAN AND SECTIONS (1 OF 2)			
DEVELOPER:		BUDGET PROJ.	
CONT.		APPROVED	
MAP NO.	SECT. NO.	DR. EG	CK. JG
		JOB NO. 21-0111	
Garcia Infrastructure Consultants, LLC Texas Firm No. F-17794 12042 Blanco Rd., Ste. 203 San Antonio, Texas 78216 Ph. (210) 437-0323			SHEET D-01 7 OF 28



- LEGEND**
 [Cross-hatched symbol] EQUIPMENT TO BE REMOVED/DEMOLISHED AND REPLACED
- NOTES:**
- REFER TO GENERAL NOTES 1 THROUGH 18 ON SHEET D-01.
 - REMOVE AND DISPOSE OF ALL DROPLEG AND DIFFUSER ASSEMBLIES BY LIFTING OUT ALL DROPLEG AND DIFFUSER ASSEMBLIES. REFER TO SHEET M-06 AND AIR HEADER TABLE WHICH SHOWS QUANTITY OF DROP LEGS AND AIR HEADER ASSEMBLIES.
 - REMOVE AND REINSTALL EXISTING ALUMINUM HANDRAIL AS NEEDED TO REMOVE AND REPLACE AIR PIPING AND DIFFUSER SYSTEM. PROTECT HANDRAIL FROM DAMAGE DURING REMOVAL, STORAGE, AND REINSTALLATION. HANDRAIL EXTENDS ALONG ENTIRE PERIMETER OF EFFLUENT CHANNEL.
- KEY NOTES:**
- (A) REMOVE AND REPLACE DIFFUSER PIPING AND VALVE (36 AIR DROPS)
 - (B) REMOVE AND DISPOSE OF ALL DROP PIPE SUPPORTS
 - (C) PROTECT AND REUSE DROP PIPE SUPPORT BRACKET. CONTRACTOR SHALL REPLACE DROP PIPE SUPPORT IF EXISTING SUBMERGED BRACKET IS DAMAGED
 - (D) REMOVE AND REPLACE 16" AIRLINE HEADER. REFER TO SUPPLEMENTAL PLAN SET FOR ADDITIONAL DETAILS. CUT AND REMOVE 4" AIRLINE APPROXIMATELY 12" BELOW GRADE. BURIED 6", 8", 10", AND 12" AIRLINE HEADER MAY BE ABANDONED IN PLACE.

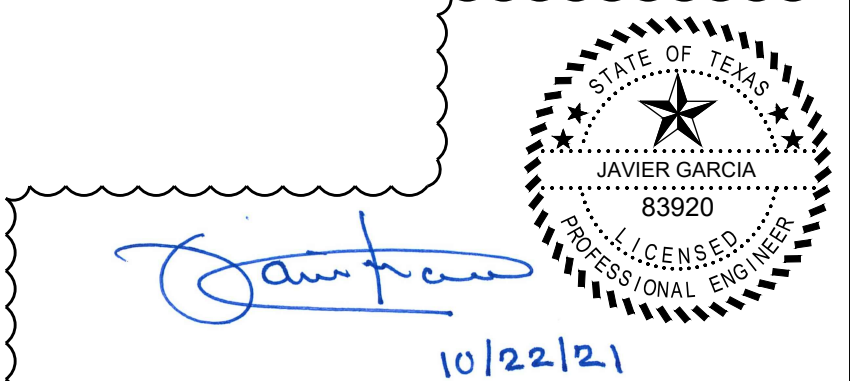


PLAN VIEW
SCALE: 1/2" = 1'-0"

SUPPORT DETAIL
SCALE: 1-1/2" = 1'-0"

SECTION A
SCALE: 3/16" = 1'-0"

FILE: D3.dwg PLOTTED: 11/6/2021 9:16 AM BY: GC-03



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NO.	REVISION	DRAWN	APPROVED	DATE
2	ADDENDUM NO. 6	H3	JG	11/05/21
1	ADDENDUM NO. 4	EG	JG	10/22/21

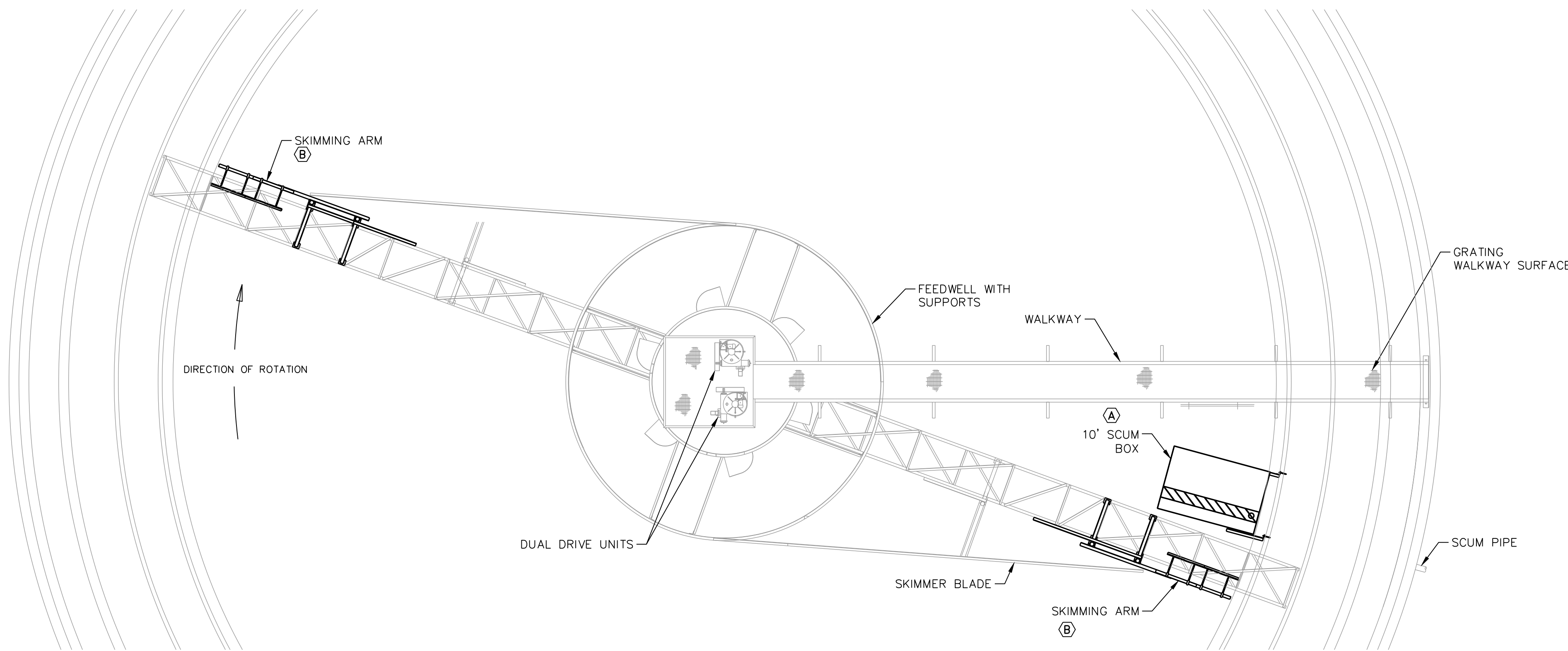
REVISIONS
 STEVEN M. CLOUSE WRC
 PRIMARY CLARIFIER
 REHABILITATION
 PRIMARY CLARIFIER
 EFFLUENT CHAMBER
 COVERS AND DIFFUSERS

DEVELOPER: _____
 CONT. _____ BUDGET PROJ. _____

SUBMITTED _____
 APPROVED _____

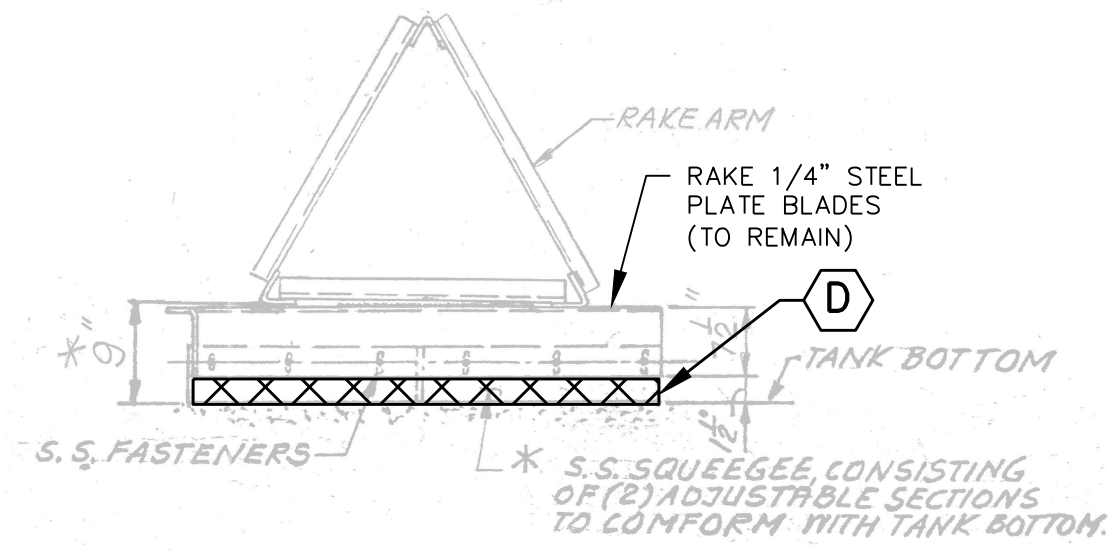
MAP NO.	SHEET
SECT. NO.	D-03
DR. EG	CK. JG
JOB NO. 21-0111	9 OF 28

Garcia Infrastructure Consultants, LLC
 Texas Firm No. F-17794
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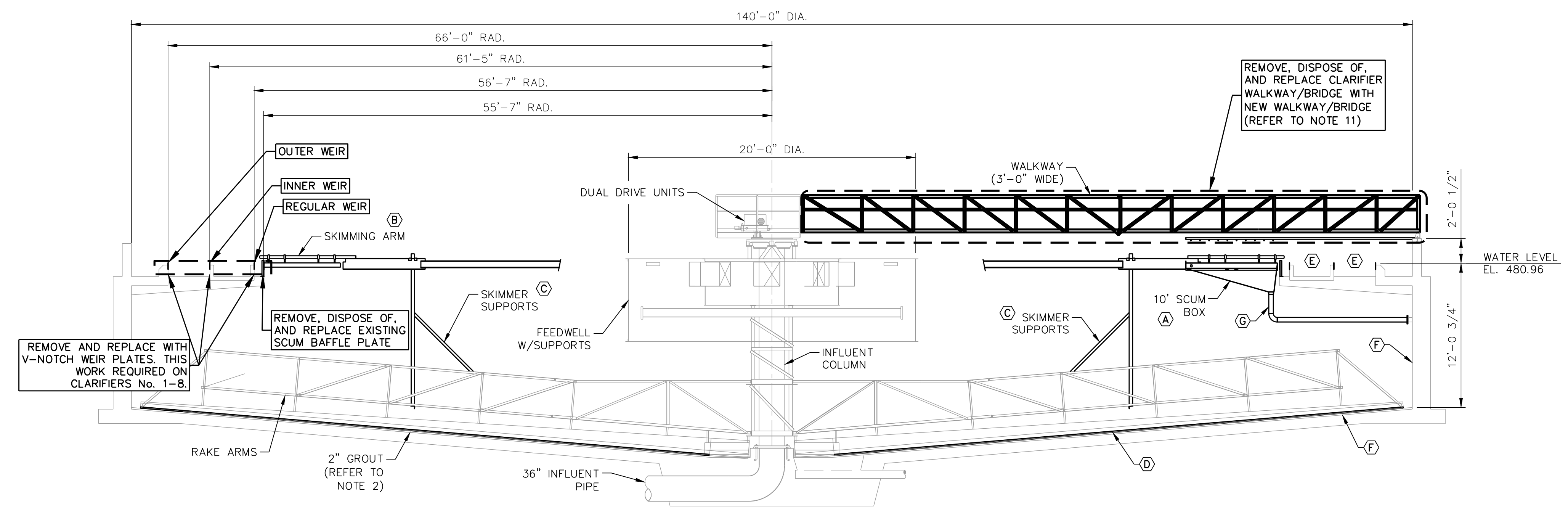


PLAN VIEW
SCALE: 1/8"=1'-0"

PRIMARY CLARIFIER LEVELING
LEVEL SKIMMING BLADE AND RAKE ARM SQUEEGEES. CONTRACTOR IS RESPONSIBLE FOR RE-LEVELING AND ADJUSTING CLARIFIER COMPONENTS. THIS INCLUDES ADJUSTMENT TO BOTH NEW AND EXISTING CLARIFIER COMPONENTS. ADJUSTMENTS TO NEW AND EXISTING CLARIFIER COMPONENTS MUST BE ACCOMPLISHED IN STRICT CONFORMANCE TO CLARIFIER MANUFACTURER'S RECOMMENDATIONS. REQUIRED ON CLARIFIER No. 1-6 AND 8.



SQUEEGEE DETAIL
SCALE: N.T.S.



ILLUSTRATIVE ELEVATION
SCALE: 1/8"=1'-0"

- NOTES:**
- REFER TO GENERAL NOTES ON SHEET D-01.
 - GROUT TO REMAIN IN PLACE OR REPAIR (REFER TO NOTE 3 ON SHEET M-02).
 - ALL CONNECTIONS SHALL BE DESIGNED BY THE CLARIFIER MANUFACTURER. CONNECTION BETWEEN SKIMMING SUPPORTS AND CLARIFIER RAKE SHALL BE BOLTED TO FACILITATE LEVELING OF RAKE ARM SQUEEGEES AND SKIMMING ARMS. ONCE CLARIFIER IS LEVELED, WELD ALL BOLTED CONNECTIONS.
 - LEVEL CLARIFIER NO. 6 UTILIZING EXISTING BOLTED CONNECTIONS AND AS RECOMMENDED BY THE CLARIFIER MANUFACTURER. ONCE CLARIFIER IS LEVELED, WELD ALL EXISTING BOLTED CONNECTIONS.
 - DESIGN AND FABRICATION OF BRIDGE/WALKWAY IS PART OF THE CLARIFIER MANUFACTURER'S RESPONSIBILITY.

- KEY NOTES:**
- (A) REMOVE AND REPLACE SCUM BOX.
 - (B) REMOVE AND REPLACE SKIMMING ARMS (TWO (2) TOTAL).
 - (C) REMOVE AND REPLACE SKIMMER SUPPORTS.
 - (D) REMOVE AND REPLACE WITH 316 STAINLESS STEEL SQUEEGEE.
 - (E) REFER TO SHEET M-04 FOR WEIR ELEVATIONS.
 - (F) PRESSURE WASH AND CLEAN ALL FLOOR AND WALLS.
 - (G) REMOVE AND REPLACE 6" SCUM PIPING

Professional Engineer Seal for Javier Garcia, State of Texas, License No. 83920, dated 9/7/21.

Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY
TBP REGISTRATION NO: F-2614

NO.	REVISION	H3	JG	DATE
1	ADDENDUM NO. 6			11/5/21

REVISIONS
STEVEN M. CLOUSE WRC
PRIMARY CLARIFIER
REHABILITATION
PRIMARY CLARIFIER
PLAN AND SECTION

DEVELOPER: _____
CONT. _____ BUDGET PROJ. _____

SUBMITTED _____
APPROVED _____

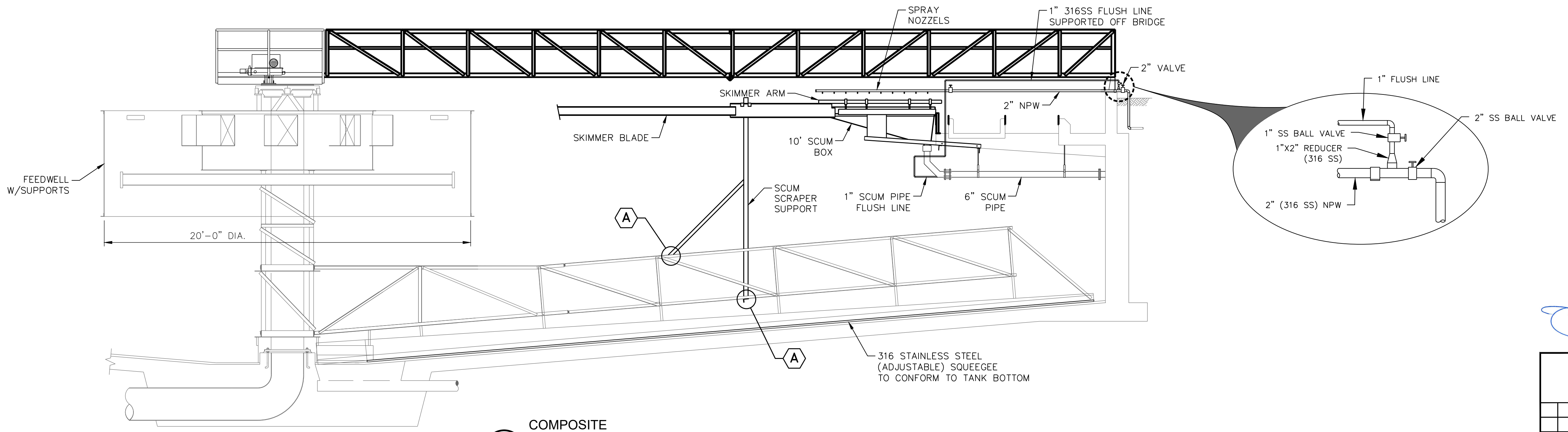
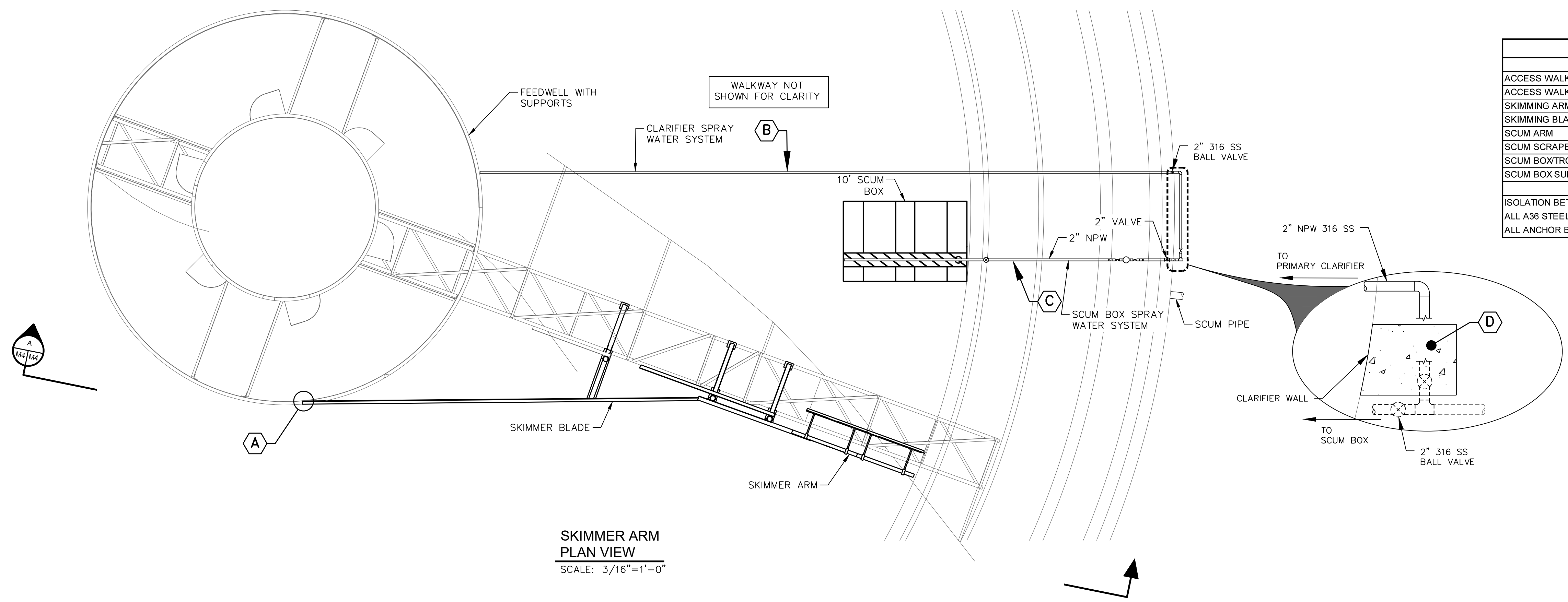
MAP NO. _____ SHEET M-01
SECT. NO. _____
DR. EG CK. JG JOB NO. 21-0111 16 OF 28

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Ph. (210) 437-0323

FILE: M1.dwg PLOTTED: 11/6/2021 9:03 AM BY: GC-03

ITEM	MATERIAL OF CONSTRUCTION
ACCESS WALKWAY (BRIDGE SUPPORT SYSTEM)	A36 STEEL, PAINTED, CARBON STEEL
ACCESS WALKWAY (HANDRAIL, KICKPLATE, & GRATING)	A36 STEEL, PAINTED, CARBON STEEL
SKIMMING ARM	A36 STEEL, PAINTED, CARBON STEEL
SKIMMING BLADE	A36 STEEL, PAINTED, CARBON STEEL
SCUM ARM	A36 STEEL, PAINTED, CARBON STEEL
SCUM SCRAPER SUPPORT	A36 STEEL, PAINTED, CARBON STEEL
SCUM BOX/TROUGH	316 STAINLESS STEEL
SCUM BOX SUPPORTS	316 STAINLESS STEEL

ISOLATION BETWEEN DISSIMILAR MATERIALS IS REQUIRED
 ALL A36 STEEL, CARBON STEEL SHALL BE MINIMUM 1/4-INCH THICKNESS AND PAINTED
 ALL ANCHOR BOLTS AND HARDWARE SHALL BE TYPE 316 SST



- NOTES:**
- MATCH EXISTING 6" SCUM LINE INLET PORT TO NEW SCUM BOX.
 - TIE-IN TO EXISTING 2" NPW AND EXTEND NEW 2" STAINLESS STEEL NPW LINE ALONG SCUM BOX ACCESS WALKWAY TO CLARIFIER SCUM BOX. ENSURE THAT SPRAY NOZZLE EXTENDS TO SCUM BOX.
 - RECORD DRAWINGS INDICATE 2-INCH GROUT AT CLARIFIER BOTTOM. CONTRACTOR AND CLARIFIER EQUIPMENT SUPPLIER SHALL BE RESPONSIBLE FOR INSPECTING GROUT AND RECOMMENDING THE FOLLOWING:
 - A. GROUT TO REMAIN IN PLACE AS IS.
 - B. REPAIR GROUT
 A LINE ITEM IS INCLUDED IN THE BID FORM TO COVER EXPENSES FOR GROUT REPAIRS.

- KEY NOTES:**
- (A)** ALL CONNECTIONS SHALL BE BOLTED AND ONCE CLARIFIER IS LEVELED, WELD ALL CONNECTIONS. THE USE OF BOLTED CONNECTIONS IS TO FACILITATE LEVELING OF THE RAKE AND SKIMMING ARM. CLARIFIER No. 1-5 AND 8. PRIMARY CLARIFIER No. 6 WAS RECENTLY REHABILITATED. ALL EXISTING BOLTED CONNECTIONS SHALL BE WELDED AFTER PRIMARY CLARIFIER No. 6 IS LEVELED.
 - (B)** SCUM BOX SPRAY WATER SYSTEM: BEGIN SPRAY NOZZLES 6" FROM SCUM BOX AND TERMINATE 6" FROM FEED WELL. SUPPORT 2" NPW FROM CLARIFIER WALKWAY. NOZZLE SIZING AND SPACING TO BE PROVIDED BY MANUFACTURER. CLARIFIER No. 1-8.

- (C)** CLARIFIER SPRAY WATER SYSTEM: EXTEND 2" NPW PRAY WATER SYSTEM LINE OVER SCUM BOX. SPRAY NOZZLES SHALL EXTEND OVER SCUM BOX. CLARIFIER No. 1-5, AND 8.
- (D)** REPAIR CONCRETE PAVING AS NECESSARY AT TIE-IN.

Javier Garcia
 9/7/21



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NO.	REVISION	DRAWN	APPROVED	DATE
1	ADDENDUM NO. 6	H3	JG	11/5/21

REVISIONS

STEVEN M. CLOUSE WRC
PRIMARY CLARIFIER
REHABILITATION

SKIMMING ARM
PLAN AND SECTION

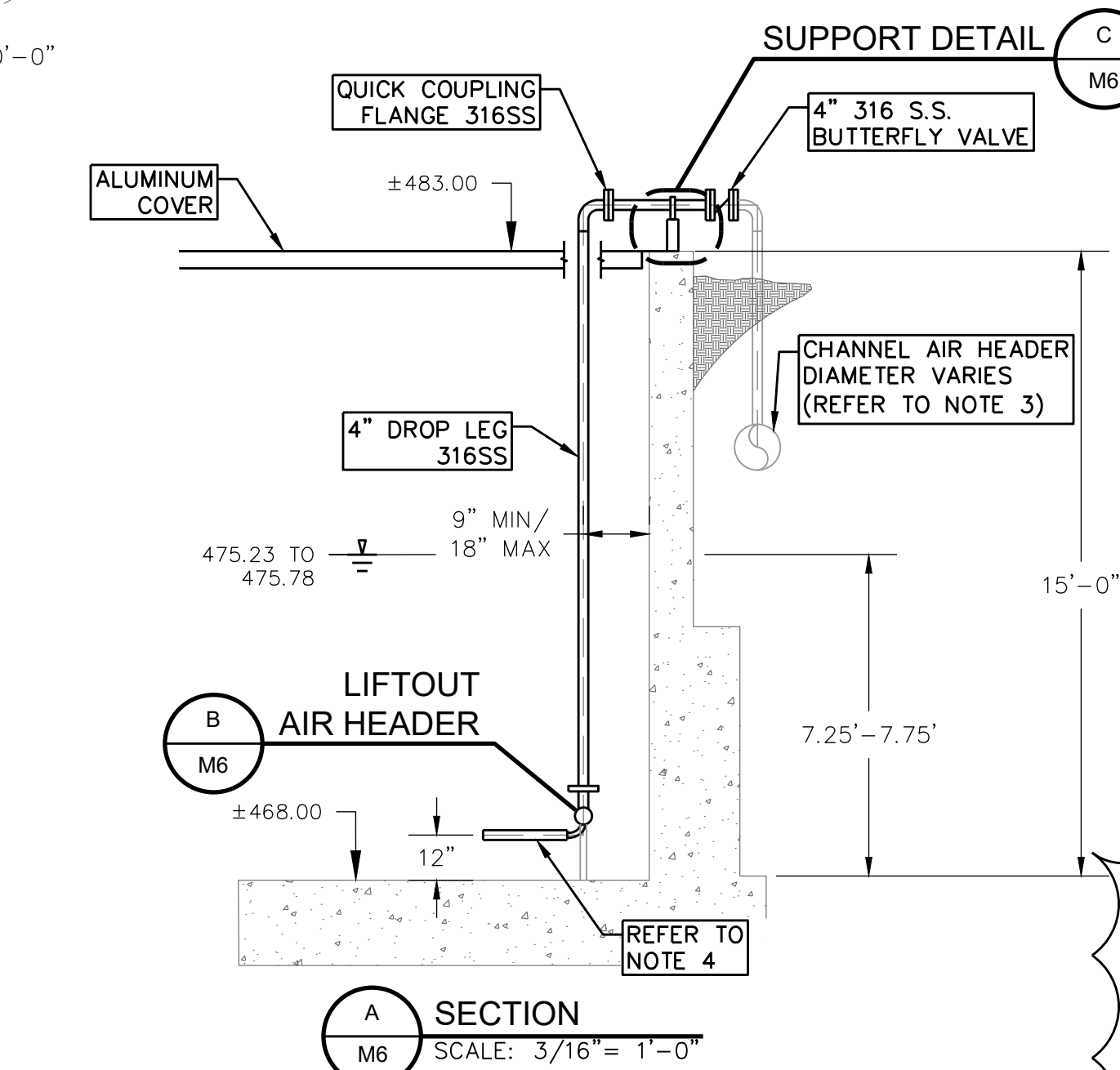
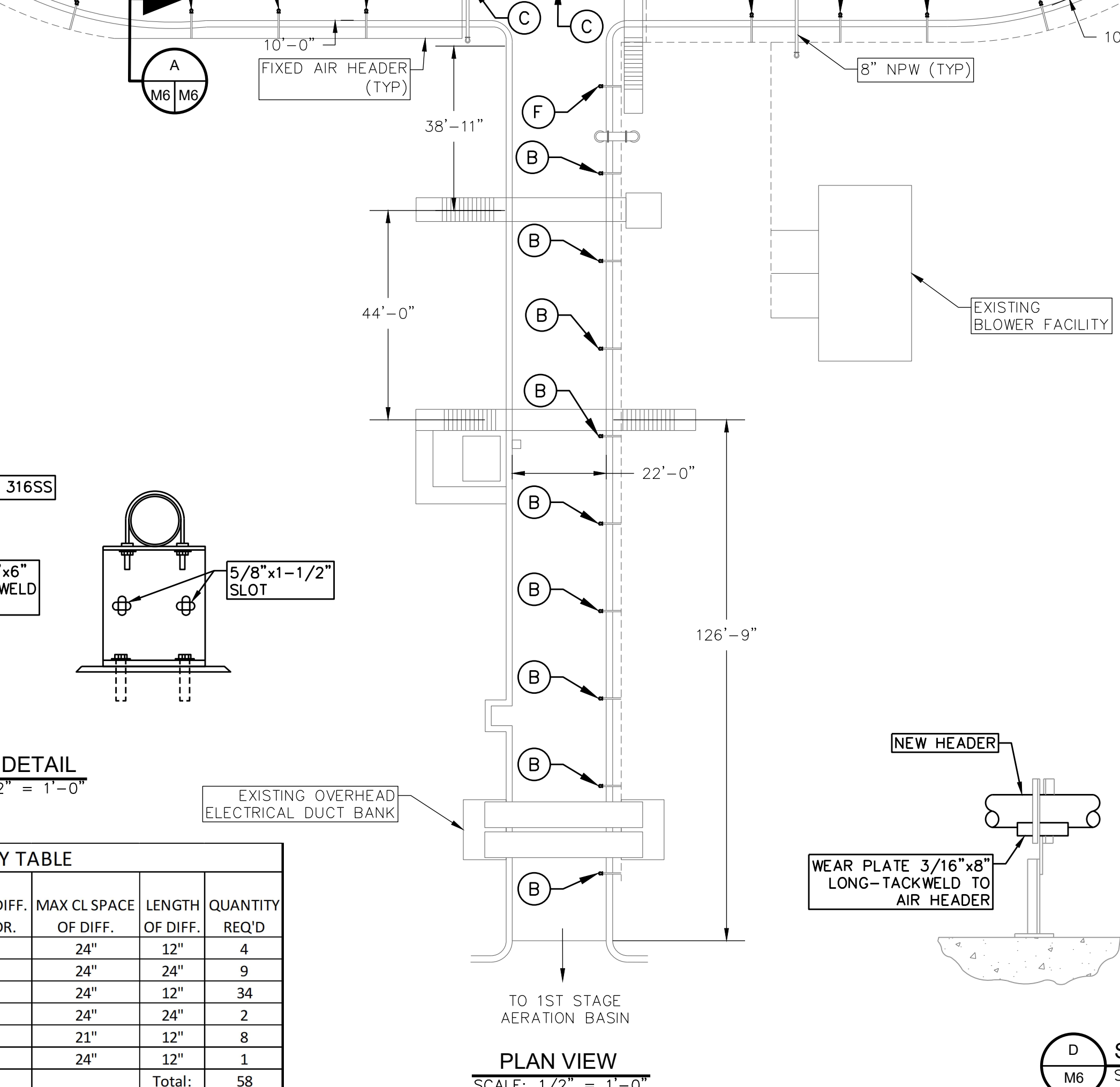
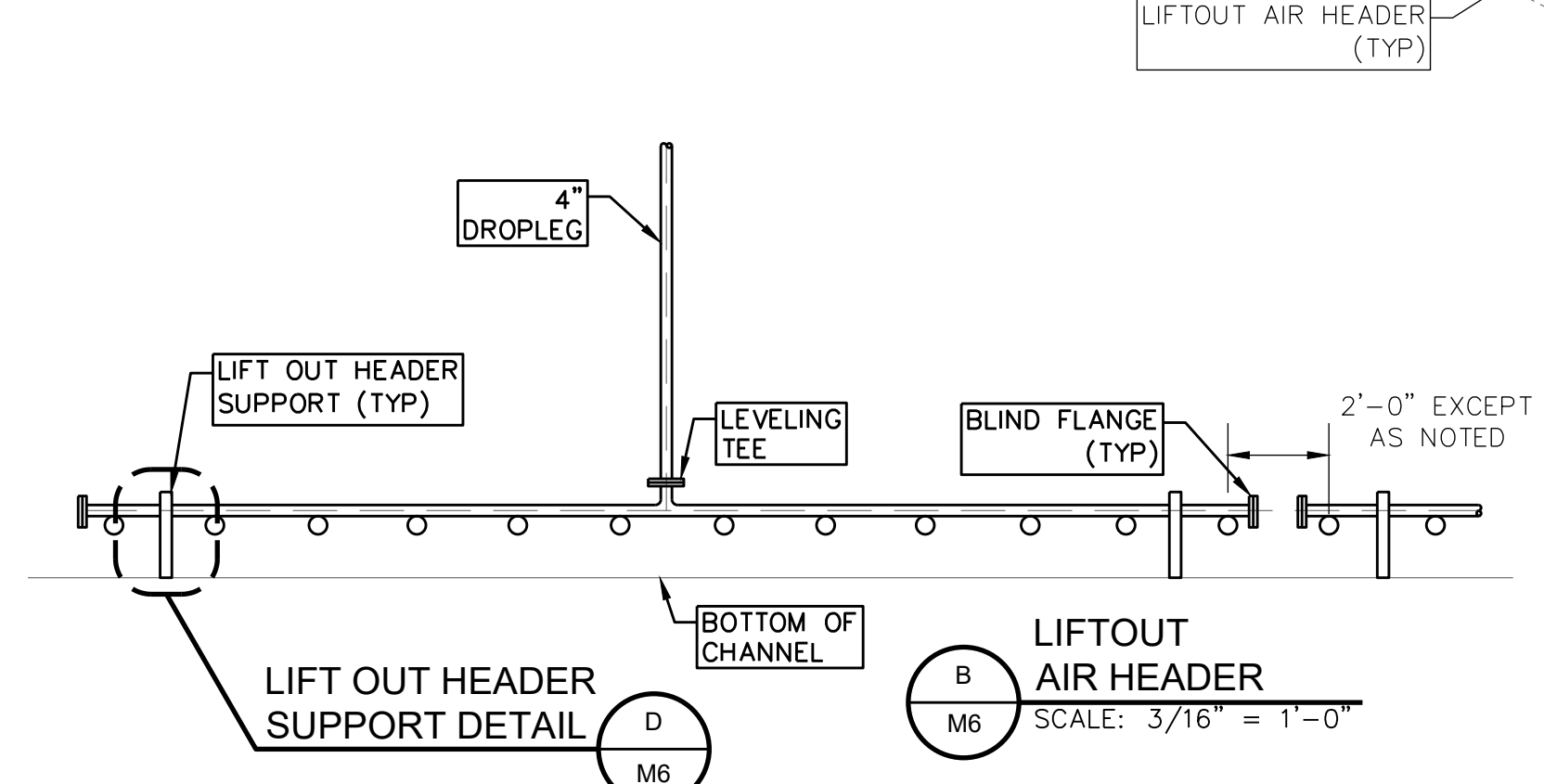
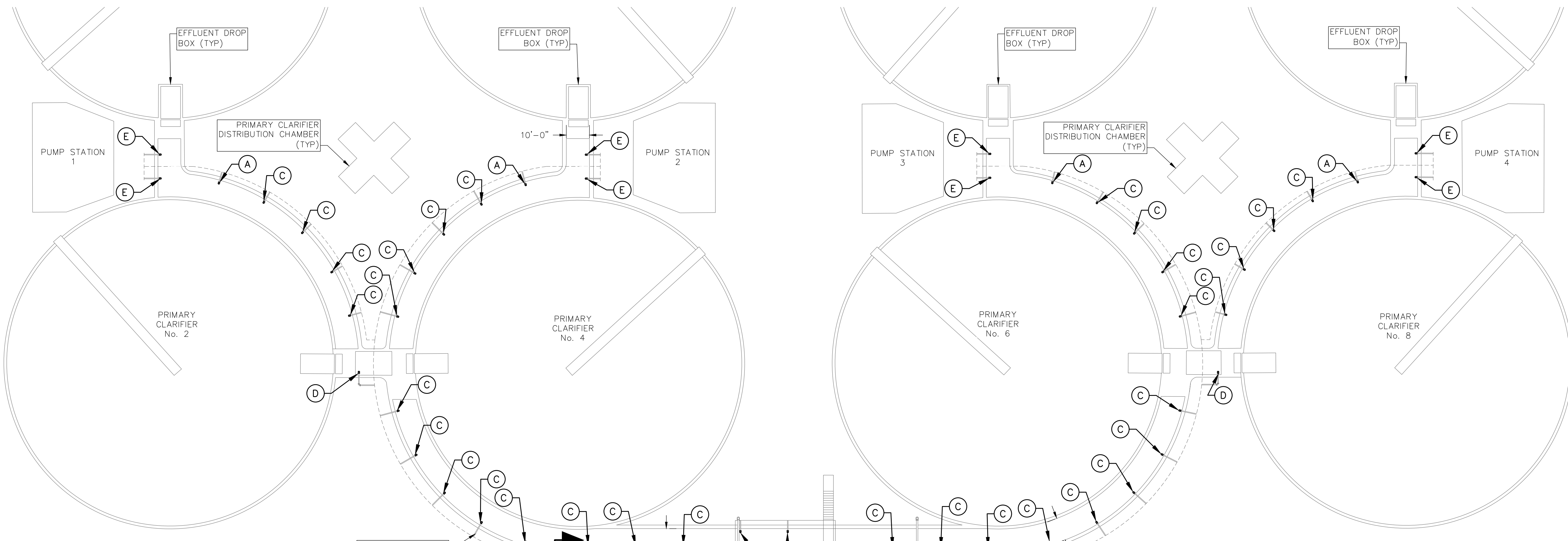
DEVELOPER: _____
 CONT. _____ BUDGET PROJ. _____

SUBMITTED _____
 APPROVED _____

MAP NO. _____ SHEET M-02
 SECT. NO. _____ 17 OF 28
 DR. EG CK. JG JOB NO. 21-0111

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 Texas Firm No. F-17794
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 San Antonio, Texas 78216
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- NOTES:**
- FOR GENERAL NOTES AND TYPICAL DETAILS, REFER TO SHEET G2.
 - PRIMARY CLARIFIER COVERS NOT SHOWN FOR CLARITY.
 - REMOVE AND REPLACE 16" AIRLINE HEADER. REFER TO SUPPLEMENTAL PLAN SET FOR ADDITIONAL DETAILS. CUT AND REMOVE 4" AIRLINE APPROXIMATELY 12" BELOW GRADE. BURIED 6", 8", 10", AND 12" AIRLINE HEADER MAY BE ABANDONED IN PLACE.
 - ALL SUPPORTS AND CONNECTIONS SHALL BE PER THE SELECTED DIFFUSER MANUFACTURER.
 - ALL FASTENERS SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.
 - REMOVE AND REINSTALL EXISTING ALUMINUM HANDRAIL AS NEEDED TO REMOVE AND REPLACE AIR PIPING AND DIFFUSER SYSTEM. PROTECT HANDRAIL FROM DAMAGE DURING REMOVAL, STORAGE, AND REINSTALLATION. HANDRAIL EXTENDS ALONG ENTIRE PERIMETER OF EFFLUENT CHANNEL.
 - CONDITION OF EXISTING HEADER SUPPORTS IS UNKNOWN. CONTRACTOR SHALL INSPECT ALL SUBMERGED HEADER SUPPORTS. REMOVE AND REPLACE ANY DAMAGED SUBMERGED HEADER SUPPORTS. PRIMARY EFFLUENT CHANNEL CAN NOT BE DRAINED/ISOLATED.

AIR HEADER ASSEMBLY TABLE							
TYPE	MAX AIR HEADER LENGTH	DROPLEG DIAMETER	AIR HEADER DIAMETER	No. OF DIFF. PER HDR.	MAX CL SPACE OF DIFF.	LENGTH OF DIFF.	QUANTITY REQ'D
A	23'-0"	4"	4"	12	24"	12"	4
B	21'-0"	4"	4"	11	24"	24"	9
C	21'-0"	4"	4"	11	24"	12"	34
D	15'-0"	4"	4"	8	24"	24"	2
E	13'-6"	4"	4"	8	21"	12"	8
F	19'-0"	4"	4"	10	24"	12"	1
							Total: 58

*EXISTING HANDRAIL NOT SHOWN FOR CLARITY.



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TBP REGISTRATION NO: F-2614

NO.	REVISION	DATE
1	ADDENDUM NO. 6	11/05/21

REVISIONS:
STEVEN M. CLOUSE WRC
PRIMARY CLARIFIER
REHABILITATION
PRIMARY CLARIFIER
AERATION SYSTEM PLAN

DEVELOPER: **Lockwood, Andrews & Newnam, Inc.**
CONT. **BUDGET PROJ.**

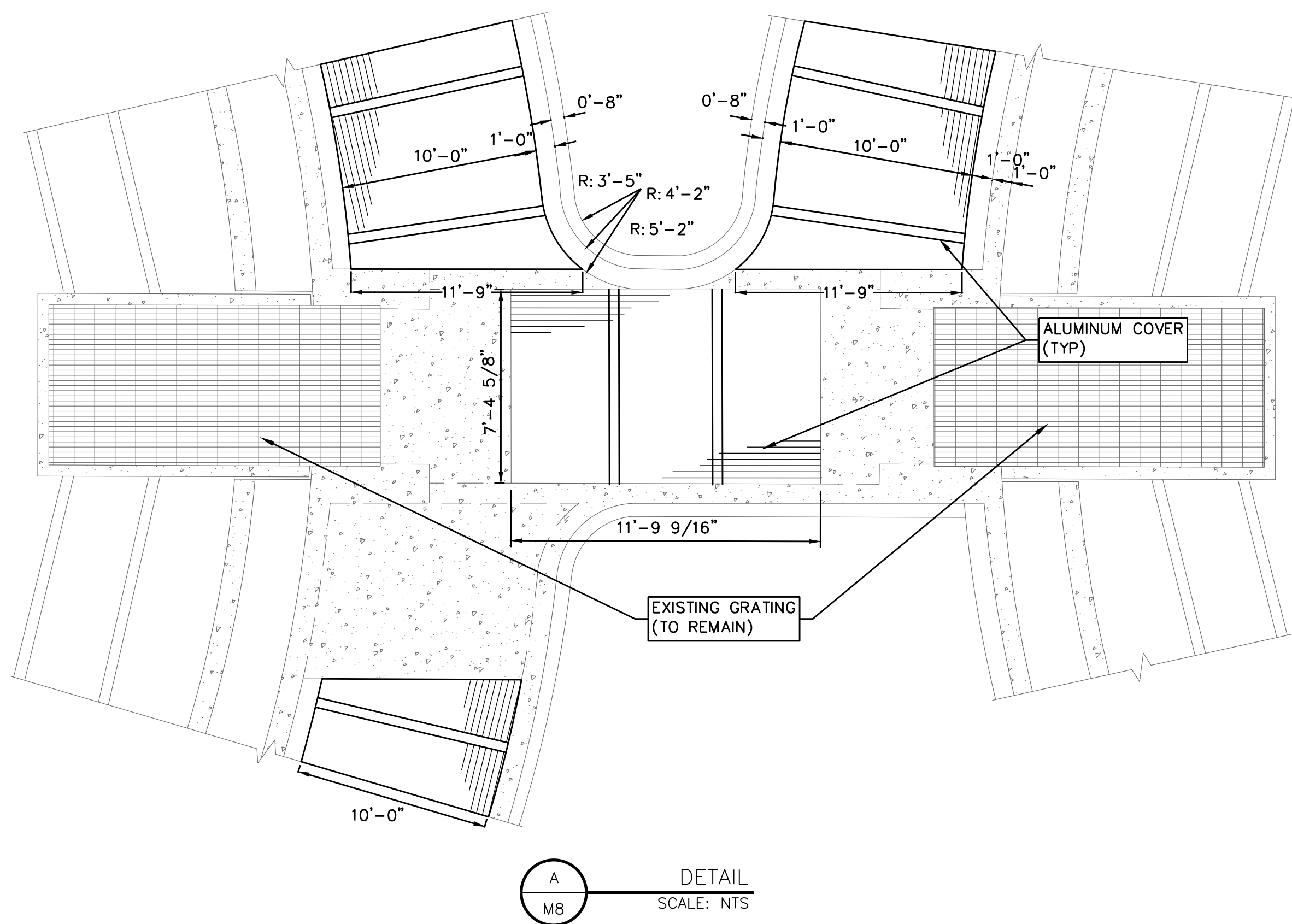
SUBMITTED: _____
APPROVED: _____

MAP NO. _____
SECT. NO. _____
DR. EG CK. JG

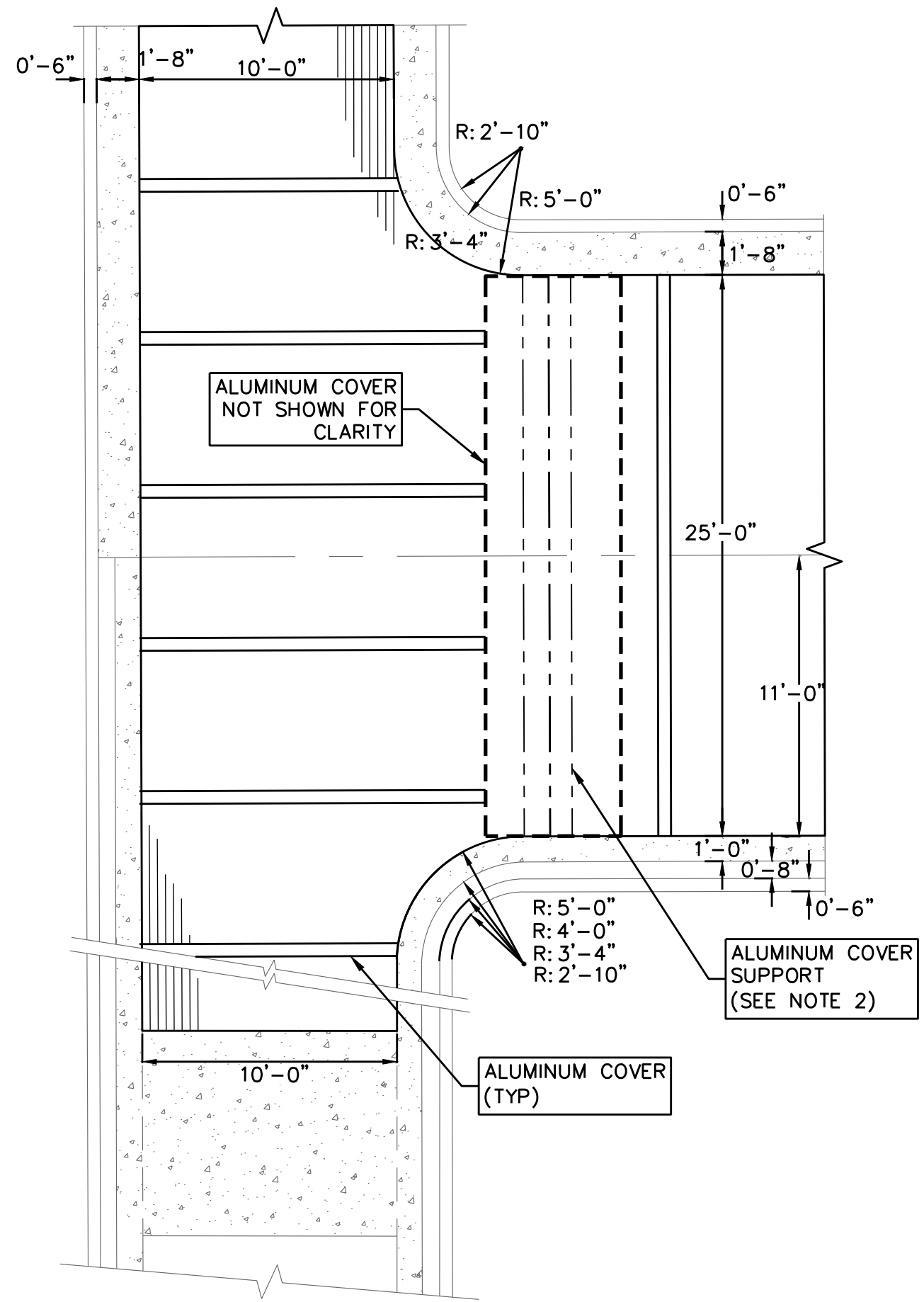
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Texas Firm No. F-17794
12042 Blanco Rd., Ste. 203
San Antonio, Texas 78216
Ph. (210) 437-9323

SHEET M-06 21 OF 28

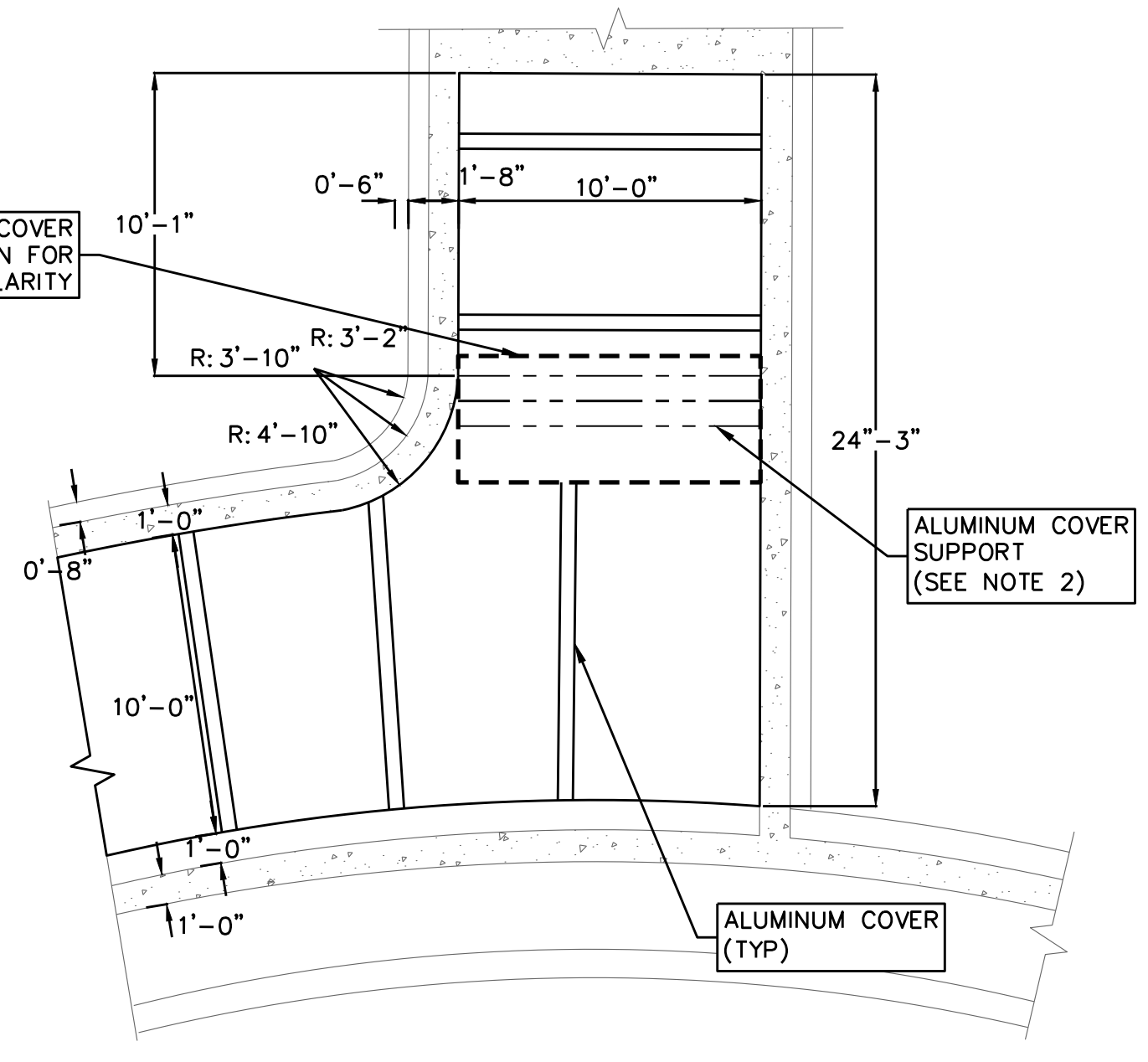
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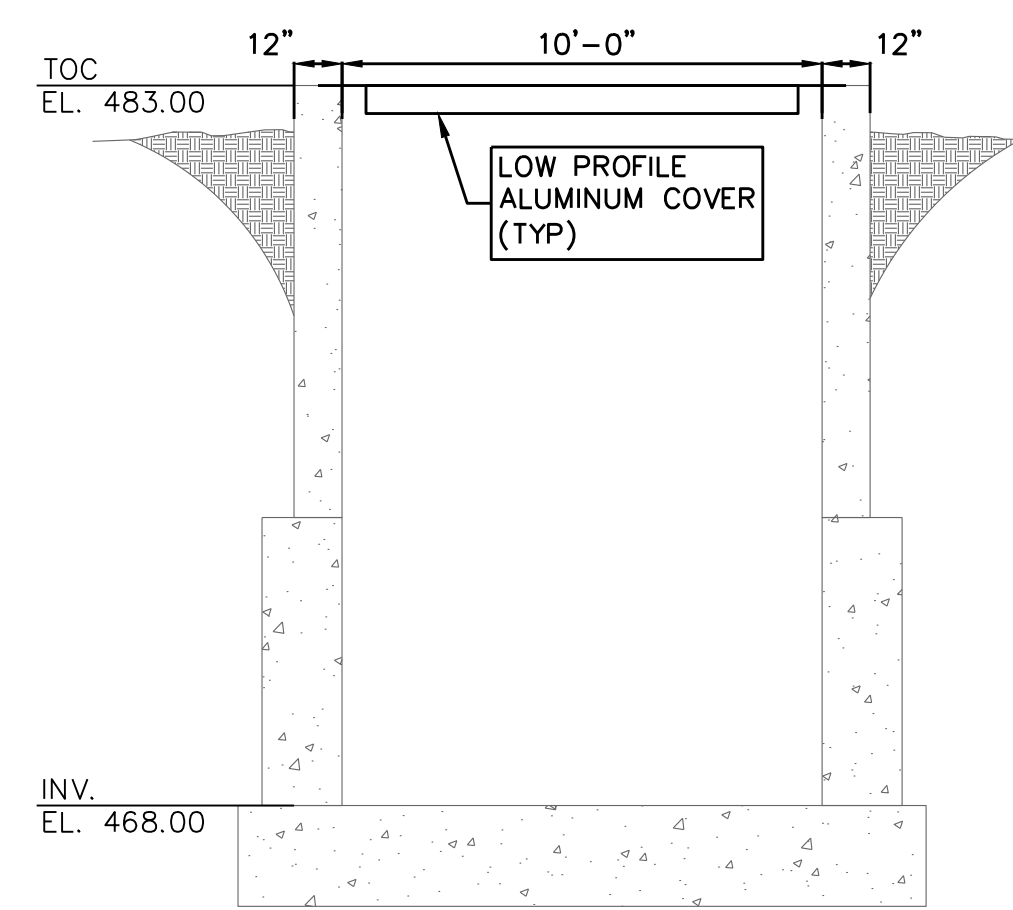
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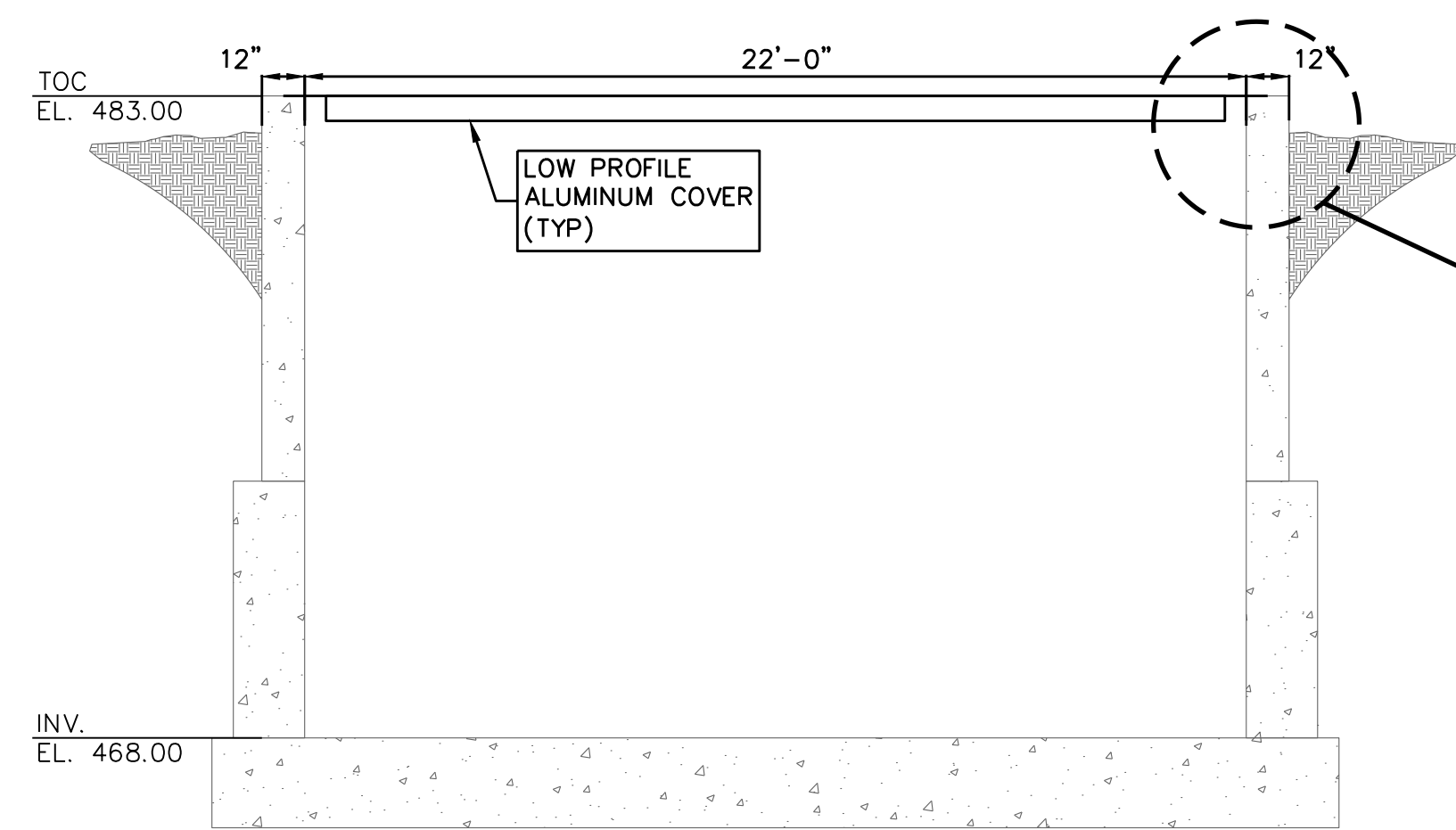
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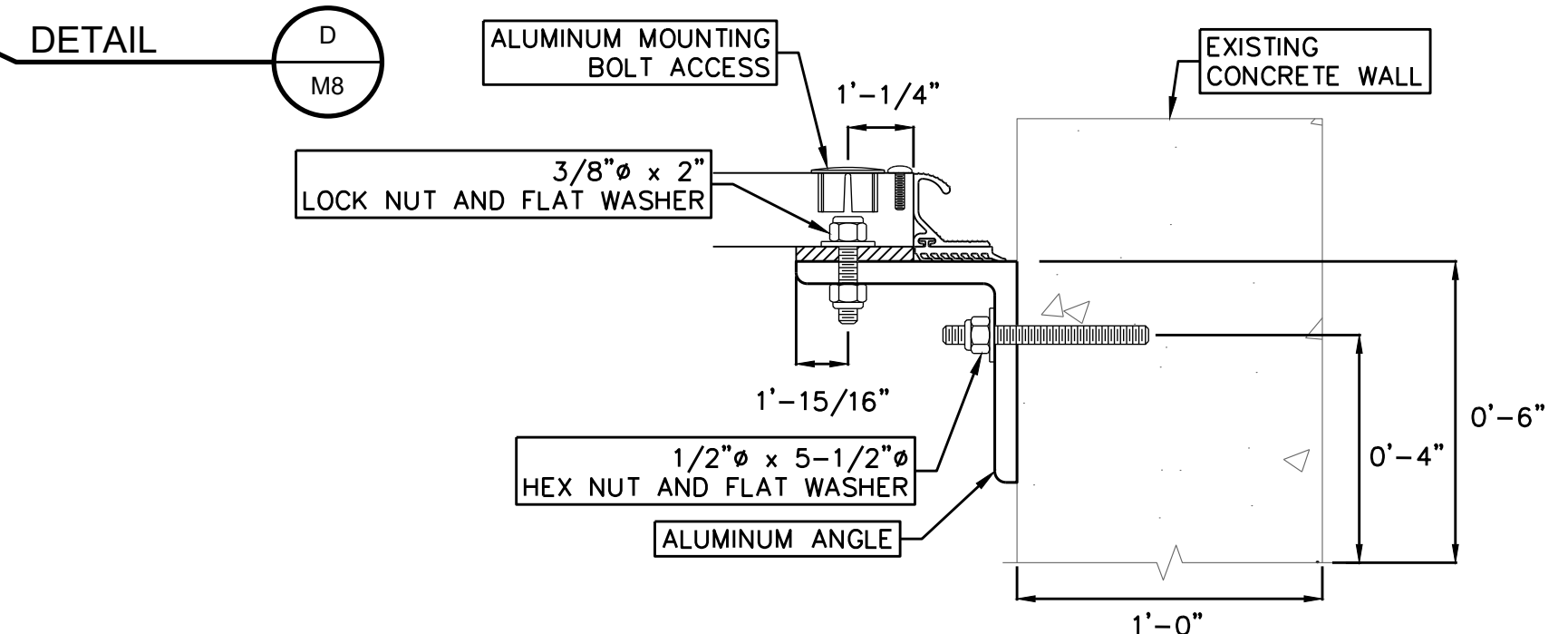
C
DETAIL
SCALE: NTS



1
SECTION
SCALE: N.T.S.



2
SECTION
SCALE: N.T.S.



D
DETAIL
SCALE: NTS

- NOTES:
- REFER TO NOTES ON SHEET M-06.
 - APPROPRIATE LOCATION, ANCHORING, AND SIZING OF ALUMINUM COVER SUPPORTS WILL BE PROVIDED BY ALUMINUM COVER MANUFACTURER.
 - ALL FASTENERS SHALL BE 316 STAINLESS STEEL UNLESS OTHERWISE NOTED.

JAVIER GARCIA
 83920
 LICENSED PROFESSIONAL ENGINEER

Lockwood, Andrews & Newnam, Inc.
 A LEO A DALY COMPANY
 TBPE REGISTRATION NO: F-2614

NO.	REVISION	H3	JG	DATE
1	ADDENDUM NO. 6			11/5/21

REVISIONS
 STEVEN M. GLOUSE WRC
 PRIMARY CLARIFIER
 REHABILITATION
 PRIMARY CLARIFIER
 EFFLUENT CHAMBER COVER
 DETAILS

DEVELOPER:
 CONT. BUDGET PROJ.

SUBMITTED
 APPROVED

MAP NO.
 SECT. NO.
 DR. EG CK. JG JOB NO. 21-0111 SHEET M-08 230F28

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 Consultants, LLC
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