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ME Sack Engineering
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ADDENDUM No. FOUR

Date: December 4, 2023

Project: LAS Expansion & Sewer System Improvements, ARPA Grant No. GA-0010529, MES No. 2020-48

Engineer: M.E. Sack Engineering
Hinesville, Georgia

The original plans, specifications, and/or Bid Documents are amended to include the following:

Bid Document:

- Replace the original Bid Form (p.5 & 6) with the attached of the same. Note Traffic Control was removed from Section A. LAS Expansion.

Specifications:

- Replace the previous Section 01150 Measurement and Payment with the enclosed of the same. Note a control upgrade was added.
- Replace the previous Section 15215 Vertical Turbine Pumps with the enclosed of the same. Note control specifications were added and a new pump model has been identified.

Plan Set:

- Replace the previous Sheets 301 and 401 with the enclosed of the same. Note the notes have been expanded to include a control upgrade and a new pump model.

-END-

B. BID FORM

Bid Item	Quantity	Units	Description	Unit Price	Cost
A. LAS Expansion					
1	11,900	LF	Spray Fields Piping	\$	\$
2	88	EA	Half Circle Sprinkler Head	\$	\$
3	162	EA	Full Circle Sprinkler Head	\$	\$
4	250	EA	Sprinkler Head Support	\$	\$
5	1,250	LF	Silt Fence Type NS	\$	\$
6	1,300	LF	Silt Fence Type S	\$	\$
7	1	LS	Grassing	-	\$
8	1	LS	Pump Station Pump Modification	-	\$
9	1	LS	Pump Inspection and Maintenance Contingency	-	\$ 25,000.00
10	1	LS	Mobilization (5% Max)	-	\$
SUBTOTAL					\$
B. Pump Station Improvements and Force Main Addition					
11	1	LS	Pump Station Complete	-	\$
12	1	LS	Screen Complete	-	\$
13	1	LS	Electrical Complete	-	\$
14	1	LS	Standby Power Generator	-	\$
15	1	LS	Propane Tank and Accessories	-	\$
16	10,300	LF	8" PVC Force Main	\$	\$
17	1	EA	Force Main Connection to Existing Manhole	\$	\$
18	6	EA	Air Release Valve	\$	\$
19	18	EA	Plug Valve	\$	\$
20	1	LS	Structure Relocation	-	\$
21	165	SY	Pavement Removal & Replacement	\$	\$
22	45	SY	Concrete Driveway Removal & Replacement	\$	\$

B. BID FORM continued

Bid Item	Quantity	Units	Description	Unit Price	Cost
B. Pump Station Improvements and Force Main Addition (continued)					
23	211	LF	16" Steel Cased Jack and Bore with 8" Carrier Pipe	\$	\$
24	280	LF	Open-Cut with 8" PVC Pipe	\$	\$
25	1,725	LF	Type A Silt Fence	\$	\$
26	1	LS	Temporary Grassing	-	\$
27	1	LS	Permanent Grassing	-	\$
28	1	EA	Haybale Check Dam	\$	\$
29	1	LS	Traffic Control	-	\$
30	1	LS	Mobilization (5% Max)	-	\$
				SUBTOTAL	\$
				TOTAL BID	\$

**SECTION 01150
MEASUREMENT AND PAYMENT**

PART 1- GENERAL

1.01 QUANTITIES

- A. Quantities: Quantities listed in the Proposal are approximate only and are intended to serve as a guide in comparing bids and may be increased or decreased without invalidating the unit price bid.
- B. Payment: The contractor shall be paid for actual in-place quantities as determined by the Engineer's field measurements.
- C. Discrepancies: In case of discrepancies between the figures shown in the unit prices and totals, the unit prices shall apply, and the totals shall be corrected to agree with the unit price.

PART 2 - MEASUREMENT AND PAYMENT

2.01 SPRAY FIELD PIPING

- A. Measurement: Measurement shall be made along the centerline of the pipe trench through fittings and specials with no deduction for such fittings and specials.
- B. Payment: Payment will be made for each linear foot of polyethylene tubing installed at the unit price stated in the bid. The unit price bid shall include all labor, materials, and equipment necessary to complete the installation including, but not limited to, trenching, excavation, shoring and sheeting, dewatering, bedding, pipe, backfill, compaction, testing, and complete surface restoration.

2.02 LAND APPLICATION SYSTEM SPRAY FIELD SPRINKLERS AND SPRINKLER HEAD SUPPORTS

- A. Measurement: Measurement shall be made on the basis of each sprinkler installed and each sprinkler head support. Each sprinkler shall be categorized as a half-circle or full-circle spray head in the design drawings.
- B. Payment: Payment will be made for each spray head unit installed and for each support installed for the sprinkler heads at the unit prices stated in the bid. The unit price bid shall include labor, materials, and equipment necessary, including, but not limited to, locating existing connection points, installation of sprinkler heads, length of polyethylene tubing installed, each unit of distribution lateral tees installed, and testing at 45 psi.

2.03 SILT FENCE

- A. Measurement: Measurement shall be made on the basis of each linear foot of silt fence installed in accordance with the Plans, Specifications and "The Manual for Erosion and Sediment Control in Georgia."
- B. Payment: Payment will be made in accordance with the price stated in the bid. The unit price shall include, but is not limited to, furnishing all labor, materials, and equipment necessary to prevent erosion from the site. Work shall include, but not be limited to, excavation, trenching, post and fabric installation, backfill, daily inspection, maintenance, re-installation of failed sections, sediment removal once its one-half original height of fence. Once final stabilization has occurred, removal and disposal of fence and surface restoration of remaining disturbed area. All silt fence locations shall be approved by the Engineer prior to installation. No payment will be made for silt fence installed without approval of Engineer or silt fence not properly maintained.

2.04 GRASSING

- A. Measurement: Measurement shall be made on the basis of the completed item in accordance with the construction plans and bid items.
- B. Payment: Payment will be made in accordance with the price stated in the bid. The unit price shall include, but is not limited to, furnishing all labor, materials, and equipment necessary for the satisfactory growth of grass on all disturbed areas in accordance with plans and specifications. Work shall include, but not be limited to, furnishing all materials, fertilizer, soil samples, grass seed, raking, leveling, watering, maintenance, and final surface restoration. Final payment will not occur until permanent grass is established.

2.05 LAS PUMP STATION PUMP MODIFICATION

- A. Measurement: Measurement shall be made on the basis of the percent complete of the task in accordance with approved plans and specifications.
- B. Payment: Payment will be made on the basis of the percent complete of the lump sum price stated in the bid. The price bid shall include all labor, materials, and equipment necessary to complete the task. The task shall include, but is not limited to, removal of the existing the pumps, receiving and installing the new pumps, piping, fitting, bolts, and accessories, existing pipe adjustment, upgrading control panel with new VFDs and any other component needed for the operation of the

new pumps, electrical works, testing, operational setup, general cleanup, and surface restoration.

2.06 LAS PUMP INSPECTION AND MAINTENANCE CONTINGENCY

- A. Measurement: Measurement shall be made on the basis of the percent complete of the visual inspection of the pump as required in accordance with approved plans and specifications.
- B. Payment: Payment will be made on the basis of the percent complete of the lump sum price stated in the bid. The price bid shall include all labor, materials, and equipment necessary to complete the task. The task shall include, but is not limited to, visual inspection of existing conditions of mechanical seals, bearings, coupling, shaft alignment, lubrication, bolts, wiring, electrical components, and piping. This item is to cover unforeseen items that may be found during the removal and reinstallation process to ensure proper operation of the pumping station.

2.07 TRAFFIC CONTROL

- A. Measurement: Measurement shall be made on the basis of the percentage complete of the lump sum bid in accordance with the construction plans and bid items.
- B. Payment: Payment shall be made on the basis of the percentage complete of the lump sum price stated in the bid as determined by the project engineer. The lump sum shall include furnishing all labor, materials, and equipment necessary to complete the task. The task shall include, but is not limited to, the placing, moving, and maintenance of all signage, barricades, cones, barrels, flagging, flag men, and guide vehicles throughout the construction process to safely reroute traffic from existing traffic patterns. Traffic control shall be done in a manner to safely warn, reroute, and lead vehicles to their destination. Additional signage will be required if the engineer deems that the traffic control in place does not fully meet the required intent of the task. Changing of existing traffic patterns shall be communicated with the engineer no less than 48 hours prior to.

2.08 MOBILIZATION

- A. Payment: Payment will be made for the price as stated in the Contract once the Contractor has established his construction yard, and met the requirements established in the Contract Documents. Mobilization will be recognized as complete once the Contractor has provided a construction schedule and moved his equipment and a substantial amount of material to the job site. Construction must

be underway and progressing. Payment for mobilization will be limited to a maximum amount not to exceed 5.0% of the bid price.

2.09 PUMP STATION COMPLETE

- A. Measurement: Measurement shall be made on the basis of the percentage completed item in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made on the basis of the percent completion of the lump sum price stated in the bid. The price bid shall include all labor, materials, and equipment necessary to complete this item of work. The work shall include, but is not limited to, removal of piping, fittings and other existing infrastructure that will impede the installation of the proposed system, cleaning and removal of solids from the wet well, by-pass pumping, receiving and installing the pump station equipment (pumps, pump bases, pipe, pipe supports, control panel, level control, covers, miscellaneous hardware, connection hardware, electrical, telemetering), testing, operational setup, general cleanup, and surface restoration. Also includes, coating of the dry well (where the screen will be installed) and lining of the last manhole.

2.10 SCREEN COMPLETE

- A. Measurement: Measurement shall be made on the completed item of work in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the lump sum stated in the bid. The price bid shall include furnishing all labor, materials, and equipment necessary to complete this item. Work shall include, but is not limited to, locating the manhole and wet well, excavation, connection to the existing manhole and wet well including any fittings required, manhole and wet well cored with boot (required), existing wet well modifications with necessary excavation, shoring and sheeting, dewatering, gravel bedding, castings, foundation, backfill, compaction, complete surface finish, and clean up, for the correct installation of the screen system, installing screen, bypass valve, water service, grouting, control panel, covers, miscellaneous hardware, connection hardware, electrical, testing, cleanup and surface restoration.

2.11 ELECTRICAL COMPLETE

- A. Measurement: Measurement shall be made on the completed item of work in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the lump sum stated in the bid. The price bid shall include furnishing all labor, materials and equipment necessary to complete

the task. The task shall include, but is not limited to, trenching, excavation, backfill compaction, conduit, fittings, joints, connections, pull boxes, wiring and electrical hardware, testing and start up, cleanup and surface restoration.

2.12 STANDBY POWER GENERATOR

- A. Measurement: Measurement shall be made on the completed item in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the lump sum price stated in the bid. The lump sum price shall include furnishing and installing the new standby power generator including all labor, materials, and equipment to complete the installation. Price shall include, but is not limited to, forming, concrete, loading and unloading, controls, start-up and training, clean-up and restoration.

2.13 PROPANE TANK AND ACCESSORIES

- A. Measurement: Measurement shall be made on the completed item in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the lump sum price stated in the bid. The lump price shall include furnishing all labor, materials, and equipment to complete the installation. Price shall include, but is not limited to, the installation of a propane tank and required accessories including connectors, fittings, valves, hoses, and pressure indicators.

2.14 FORCE MAIN

- A. Measurement: Measurement shall be made along the centerline of the pipe trench through fittings and specials with no deduction for such fittings and specials in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made for each linear foot of PVC or DIP force main installed at the unit price stated in the bid. The unit price bid shall include all labor, materials, and equipment necessary to complete the installation, including, but not limited to, trenching, excavation, shoring and sheeting, dewatering, bedding, PVC or DIP pipe, connection to existing force main, backfill, compaction, testing at 150 psi and complete surface restoration.

2.15 FORCE MAIN CONNECTION TO EXISTING MANHOLE

- A. Measurement: Measurement shall be made on the basis of the complete connection in accordance with the plans, specifications and bid documents.

- B. Payment: Payment will be made at the lump sum stated in the bid. Work shall include furnishing all labor, materials and equipment necessary to complete the task. The price shall include but is not limited to, locating the receiving manhole, excavation, connection to the receiving manhole including any fittings required, blocking, excavation, trenching, backfill, compaction, shoring, sheeting, fittings, grouting, dewatering, bedding and preparation of the surface for stabilization.

2.16 AIR RELEASE VALVES

- A. Measurement: Measurement will be made on the basis of each unit installed in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the unit price bid for each complete valve installation. Work shall include trenching, excavation, necessary shoring and sheeting, dewatering, installation of valve vault, furnishing and installing air release valves, backfill, compaction, complete surface restoration, cleanup, and testing.

2.17 PLUG VALVES

- A. Measurement: Measurement will be made on the basis of each unit installed in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made at the unit price bid for each complete valve installation. Work shall include trenching, excavation, necessary shoring and sheeting, dewatering, furnishing and installing valves, backfill, compaction, complete surface restoration, cleanup, and testing.

2.18 STRUCTURE RELOCATION

- A. Measurement: Measurement shall be made on the basis of the lump sum of the items to be removed or relocated in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made on the basis of the lump sum bid and the completion of the project. Partial payments will not be made. The project's completion will be determined by the engineer. Work shall include, but is not limited to, relocating existing structures to include mailboxes, signage, posts, and other structures that may impede construction, and includes the provision of temporary mailboxes throughout the construction process, and the replacement of damaged mailboxes or signs and posts, cleanup, and surface restoration.

2.19 CONCRETE DRIVEWAY AND PAVEMENT REMOVAL & REPLACEMENT

- A. Measurement: Measurement shall be made on the basis of each square yard of concrete driveway and pavement removed in accordance with the plans, specifications and bid documents.
- B. Payment: Payment will be made on the basis of the unit price stated in the bid. the work shall include, but is not limited to marking, cutting, and removal of pavement, concrete, or other material that exist and will not be used as part of this project, excavation, disposal at an approved site, backfill, compaction and surface restoration.

2.20 ENCASED FORCE MAIN

- A. Measurement: Measurement will be made based on the number of linear feet of steel cased bore installed to the lines and grade shown on the plans.
- B. Payment: Payment will be made for each linear foot of PVC force main with casing pipe installed at the unit price stated in the bid. The unit price bid shall include all labor, materials, and equipment necessary to complete the installation, including, but not limited to, excavation of the bore pit, trenching, shoring and sheeting, dewatering, bedding, PVC pipe, backfill, compaction, testing at 150 psi and complete surface restoration.

2.21 CHECK DAM

- A. Measurement: Measurement shall be made on the basis of each hay bale check dam placed at the locations shown on the plans and in accordance with "The Manual for Erosion and Sediment Control in Georgia".
- B. Payment: Payment will be made at the unit price bid. The unit price bid shall include all material, labor and equipment necessary to accomplish the task. Work shall include, but not be limited to, excavation, grading, furnishing and placing stone, gravel filler, hay, and geotextile filter blanket as shown on the plans. All check dam locations shall be approved by the Engineer prior to installation. No payment will be made for check dam installed without approval of Engineer.

END OF SECTION

**SECTION 15215
VERTICAL TURBINE PUMPS**

PART 1 - GENERAL

1.01 APPLICABLE STANDARDS

A. American Water Works Association (AWWA):

E-101 Well Pumps

1.02 SCOPE

The work of this section involves furnishing and installing submersible sewage pumps complete with controls, access covers, and accessories necessary for a complete installation. Controls shall be as specified in paragraph 2.03, below.

1.03 SUBMITTAL OF INFORMATION

A. Six (6) copies of the manufacturer's standard drawings and catalog cuts of the following items shall be submitted for approval by the Engineer:

1. Name, type, and model number of pump & motor.
2. Size and materials of bowls, discharge column, pump shaft, screens and screen openings, guide bars and brackets, cable holders, control panels, float, all other accessories, and any other size necessary for the complete evaluation of the units.
3. Shop drawing of the complete unit, including equipment installation, layout, and dimensions.
4. Characteristic curves certified by the manufacturer including capacity, total head, required horsepower, and set pump hydraulic efficiency.
5. Electric motor information.
6. Six (6) Operation and Maintenance manuals which include specific instructions for receiving and handling, disassembly, wiring, installation repair, and service troubleshooting pumps and controls, and a full parts list.

B. Failure to submit the above information will be grounds for rejection of the installation.

PART 2 - PRODUCTS

2.01 PUMPS

A. The pumps shall be designed and constructed to meet all those applicable portions of AWWA E101 77.

B.

<u>Parameters</u>	<u>EFFLUENT P.S.</u>
Quantity:	2
Manufacturer:	Sulzer Johnston or equal

Operating Conditions

1. Capacity (GPM):	1250 GPM
2. Total Dynamic Head (ft):	135 ft
3. Minimum Motor HP:	60 HP
4. Max. Speed:	1800 rpm
5. Column Diameter	8 in
6. Model:	JTS-13CLC 3 Stage or equal
7. Liquid:	Stormwater

Materials of Construction

1. Casing:	Cast Iron
2. Impeller:	Stainless Steel
3. Shaft:	Stainless Steel, integral pump, and motor supported by upper and lower ball bearings.
4. Exposed Fasteners:	Stainless Steel

Adjustment: Provided at top of the head shaft by an adjusting nut which shall be locked in place.
Dynamically balanced to ISO 1940 G63 or better.

C. The pump outer housing shall be suitable for containing the pump diffusers and impellers and shall serve to support the entire weight of the complete pumping assembly. It shall be constructed of high-quality seamless steel tubing capable of bearing the maximum head shut-off pressures of the pump and also include an adequate safety factor.

D. The pump diffusers shall be accurately machined from a single piece of a suitable metal, cast iron, or equal. The bushing surface of the diffusers shall be designed to provide maximum alignment for the impeller.

- E. With electric power the pump motor shall be of the full voltage starting, vertical hollow-shaft squirrel-cage induction type, and shall comply with ANSI C50.2. The connection to the top shaft shall be through coupling or clutch in the motor head. The motor shall be of the proper size to drive the pump continuously over the specified operating range without the load exceeding the nameplate rating on the motor. The motor shall be rated as dip-proof with class B insulation and with a 1.15 service factor. Motor thrust bearing shall be precisely aligned and shall be sized to carry all residual pump thrust and still provide an adequate safety factor. The motors shall not "drag" during the startup but shall reach full operating speed within 21 cycles after being energized.

2.02 DISCHARGE PIPE

- A. The discharge pipe for each pump shall be the size and material shown on the drawings.
- B. The pipes shall be 8 inches in diameter for the best connection to the existing system. The pipes shall tie into swing check valves and plug valves, which shall also be replaced as indicated by the manufacturer.

2.03 ELECTRICAL CONTROLS

- A. The Contractor shall furnish electrical controls compatible with the pump motor furnished.
- B. All electrical controls shall meet the requirements of the National Electrical Code.
- C. The pump shall be equipped with a combination circuit breaker magnetic starter with quick trip relays and a hand-off automatic switch in NEMA 1 enclosure suitable for manual or automatic operation.
- D. For the three-phase motor, provide three-line protection.
- E. Overload relays shall be equipped with properly sized heaters and shall be ambient compensated.
- F. A phase failure relay which operates on phase current unbalance shall be provided in the starter enclosure for protection against single phasing conditions.
- G. The relay shall have an adjustable pickup value and an adjustable time delay of 0.30 seconds in order to prevent nuisance tripping on transient disturbances.

- H. VFD Danfoss VLT Aqua Drive FC-202, 60 HP, 380-480 VAC 3-Phase or equal on IP66/NEMA 4X enclosure. With RFI Filter, no coated PCB, and main disconnect with fuse.

PART 3 - EXECUTION

3.01 PUMP

- A. The pump shall be installed by the Contractor to the manufacturer's instructions.
- B. The pump bowl shall be set at the specified elevation. See construction plans.

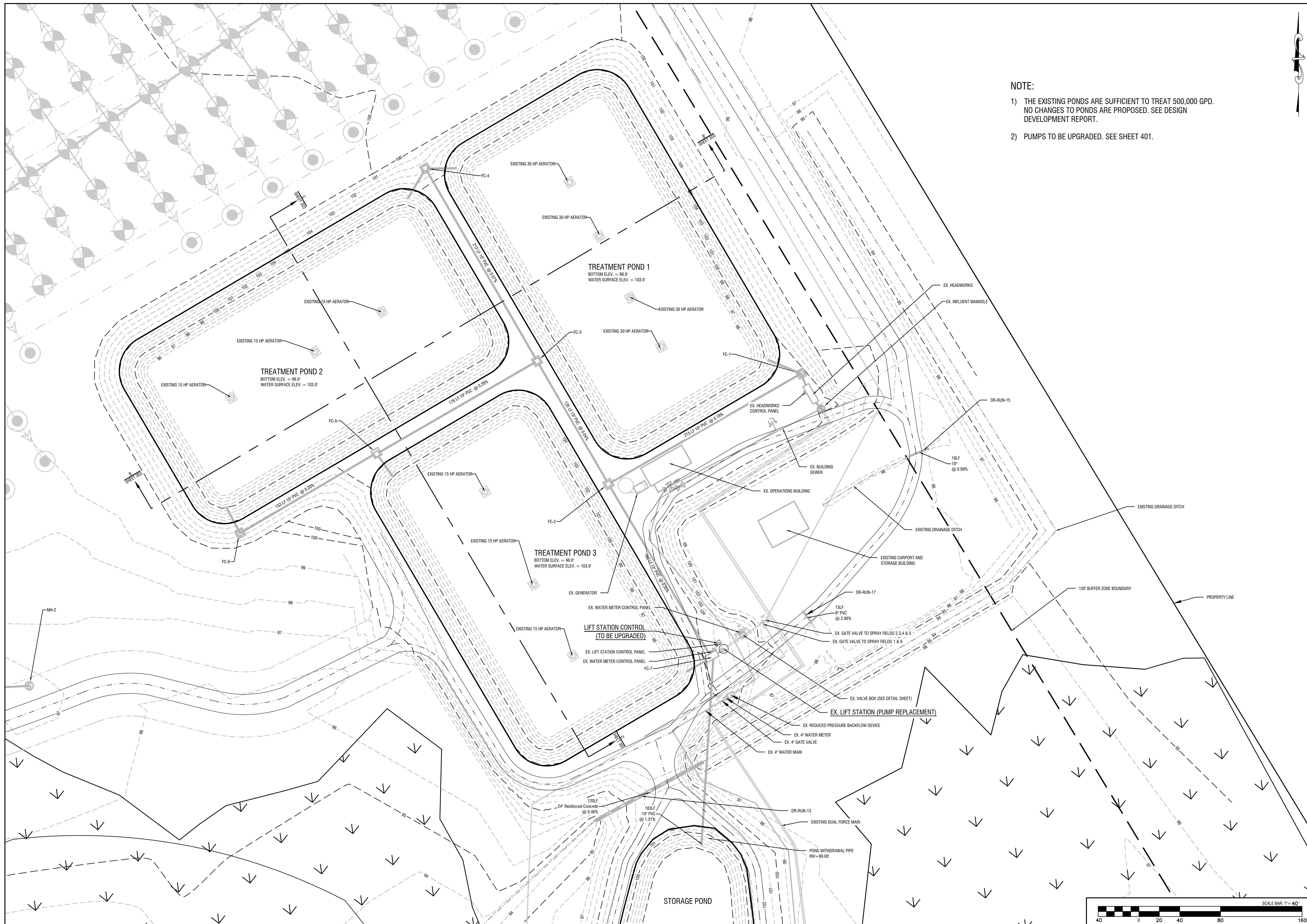
3.02 DISCHARGE PIPING

- A. The piping shall be handled and installed in such a manner that the pipe will not be damaged and shall be installed in accordance with the manufacturer's recommendations.
- B. All piping shall be installed as shown on the plans.

3.03 ELECTRICAL CONTROLS

- A. Installation of any electrical equipment will conform to the electrical section of this specification.

END



NOTE:

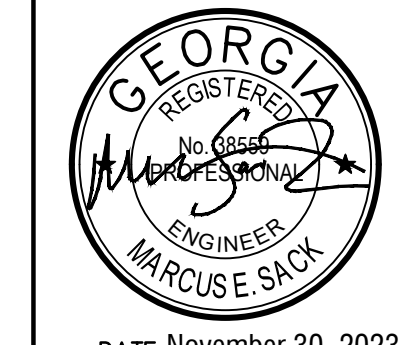
- 1) THE EXISTING PONDS ARE SUFFICIENT TO TREAT 500,000 GPD. NO CHANGES TO PONDS ARE PROPOSED. SEE DESIGN DEVELOPMENT REPORT.
- 2) PUMPS TO BE UPGRADED. SEE SHEET 401.

REVISIONS:	
1.	SF 6 ADJUSTMENT
2.	EPD COMMENTS
3.	SPRAY FIELDS ADJ.
4.	PUMP REPLACEMENT.

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DATE: November 30, 2023



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COUNTY:
BRYAN

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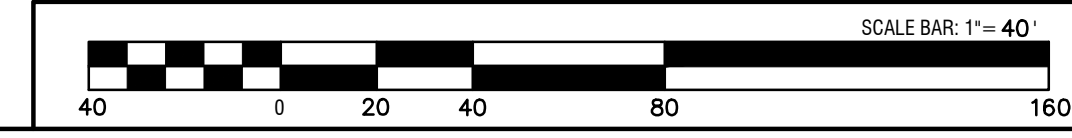
24 HOUR CONTACT:
Keith Cook
160 N Main St
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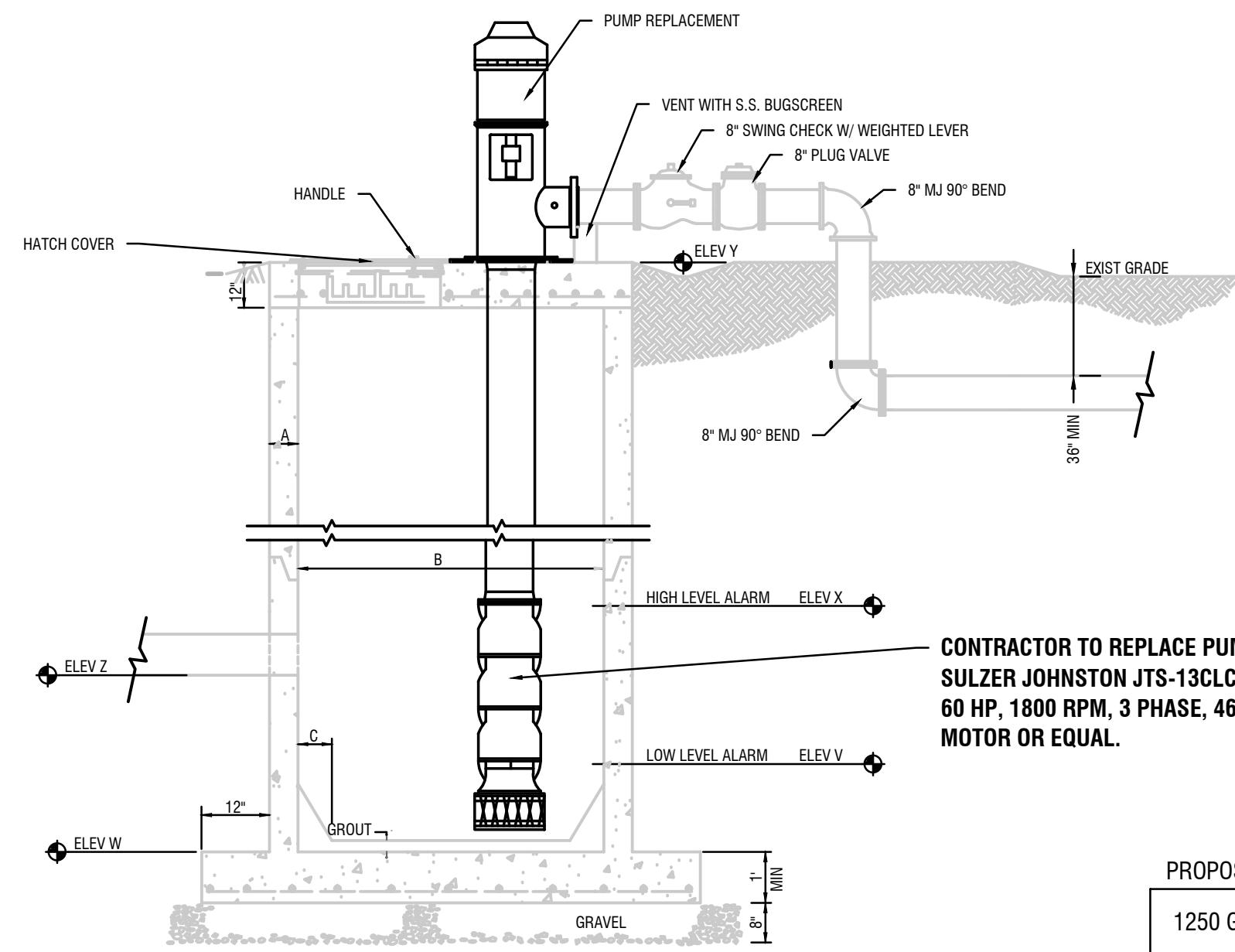
**LAND APPLICATION
SYSTEM EXPANSION**

TREATMENT
PONDS

301

FILE NO: 2020-48
 PLOT DATE: November 30, 2023



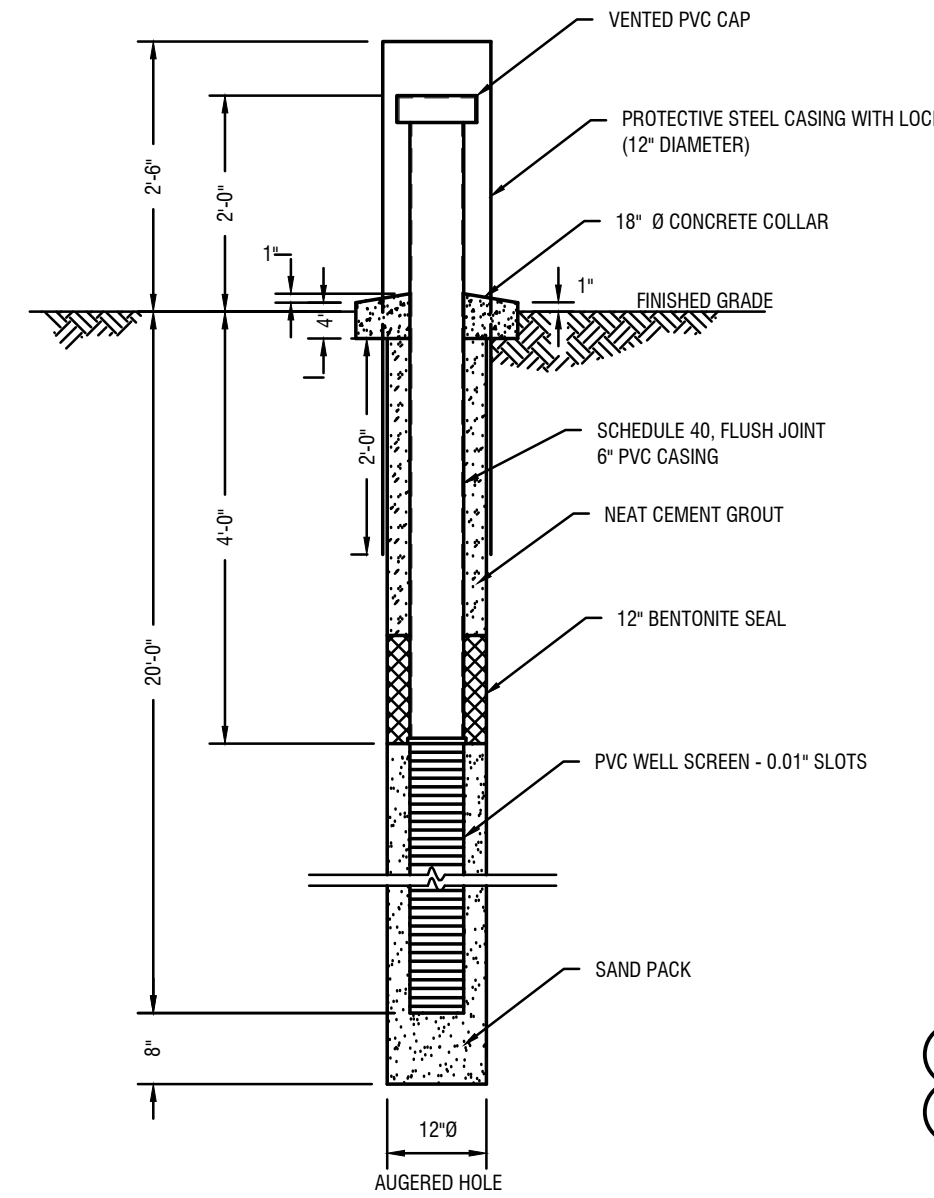


LIFT STATION SECTION A-A
N.T.S.

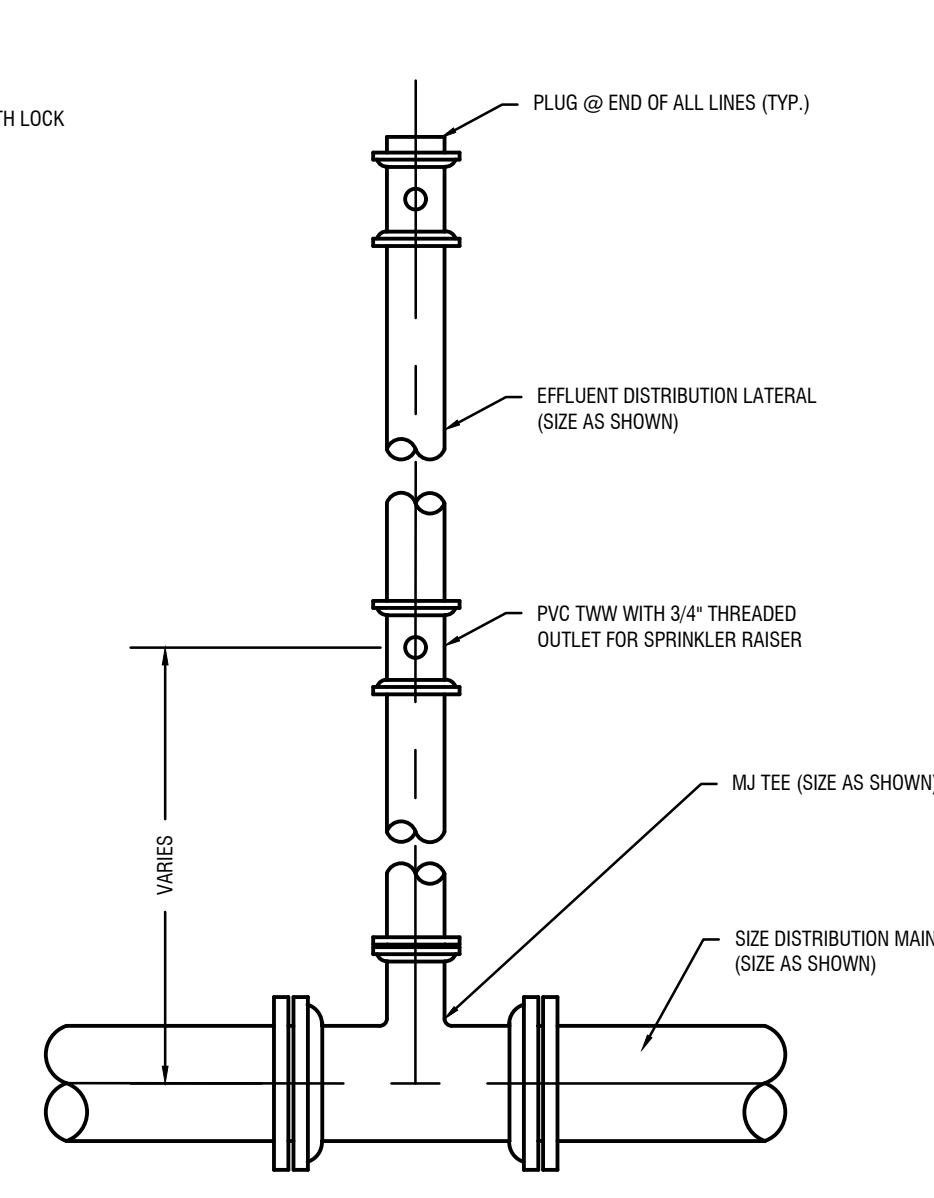
CONTRACTOR TO REPLACE PUMP WITH
SULZER JOHNSTON JTS-13CLC 3 STAGE,
60 HP, 1800 RPM, 3 PHASE, 460 VOLTS
MOTOR OR EQUAL.

PROPOSED DUTY POINT
1250 GPM @ 135' TDH

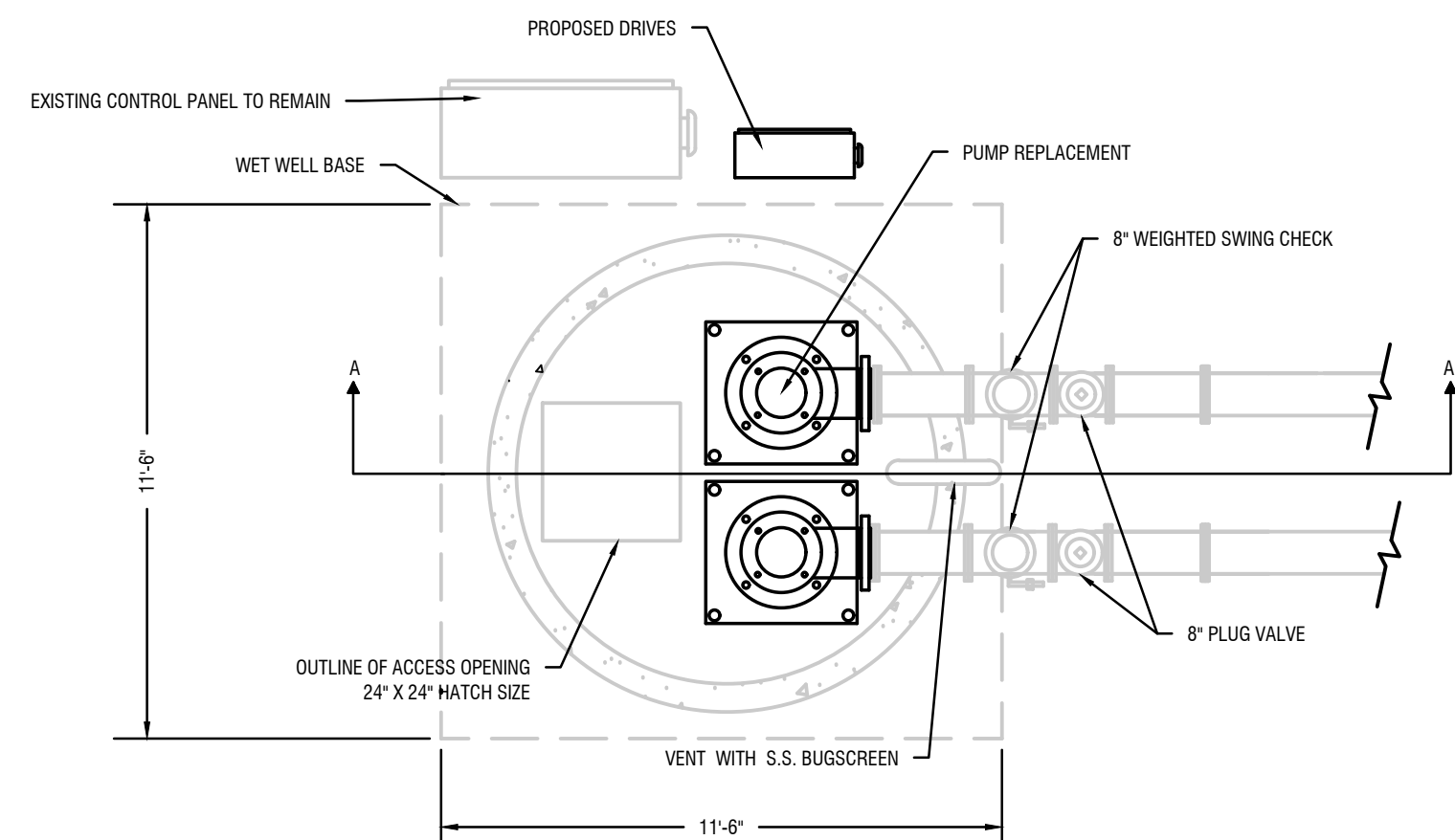
PUMPING STATIONS	DIMENSIONS	ELEV AT CONST
DIM A	9"	
DIM B	8"	
DIM C	10"	
DIM D	16 1/2"	
DIM E	48" CLEAR	
DIM F	14 1/4"	
DIM G	50" MIN.	
DIM H	39" MIN.	
DIM J	35" MIN.	
ELEV V		88.0
ELEV W		86.5
ELEV X		99.0
ELEV Y		105.5
ELEV Z		93.23



EX GROUND WATER MONITORING WELL DETAIL
N.T.S.



LATERAL CONNECTION TO DISTRIBUTION MAIN
N.T.S.

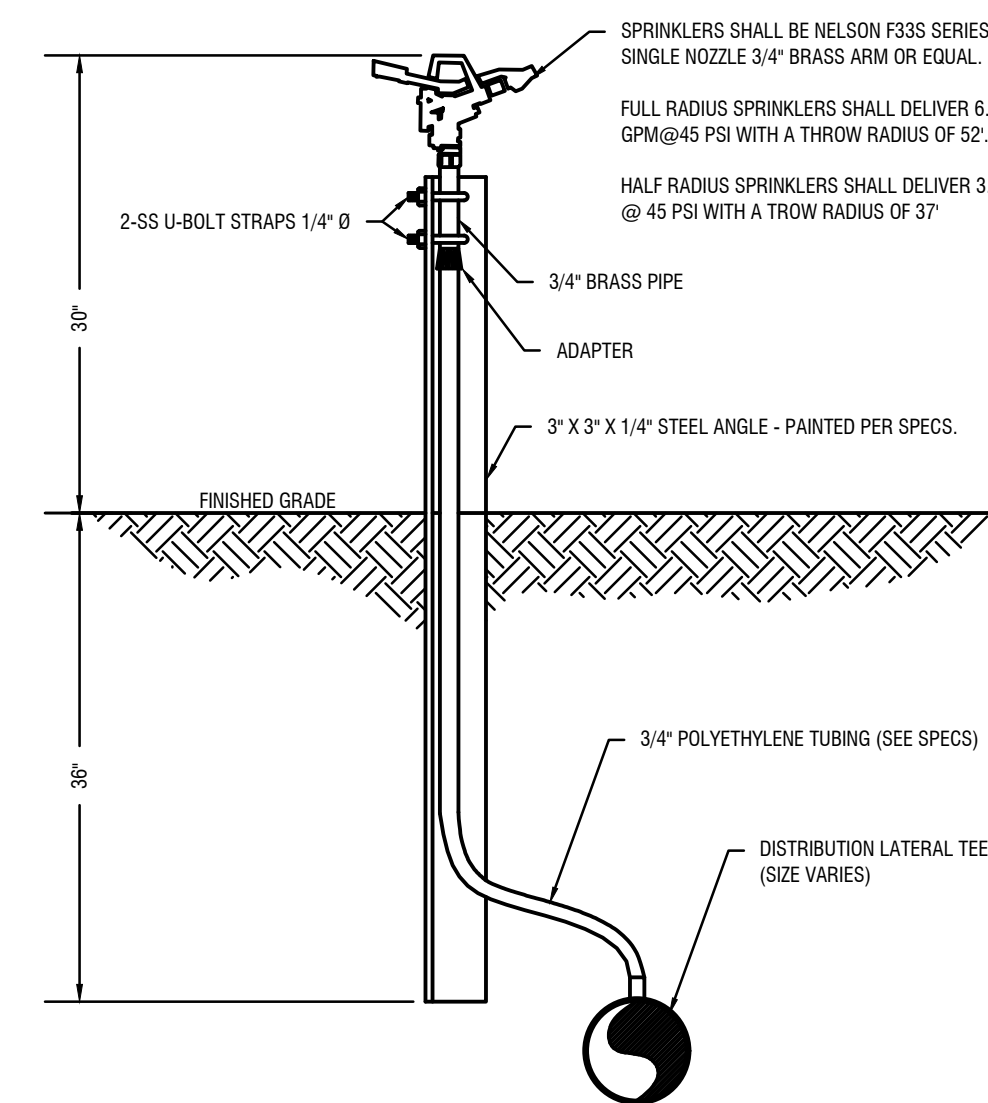


LIFT STATION PLAN VIEW
N.T.S.

LIFT STATION
N.T.S.

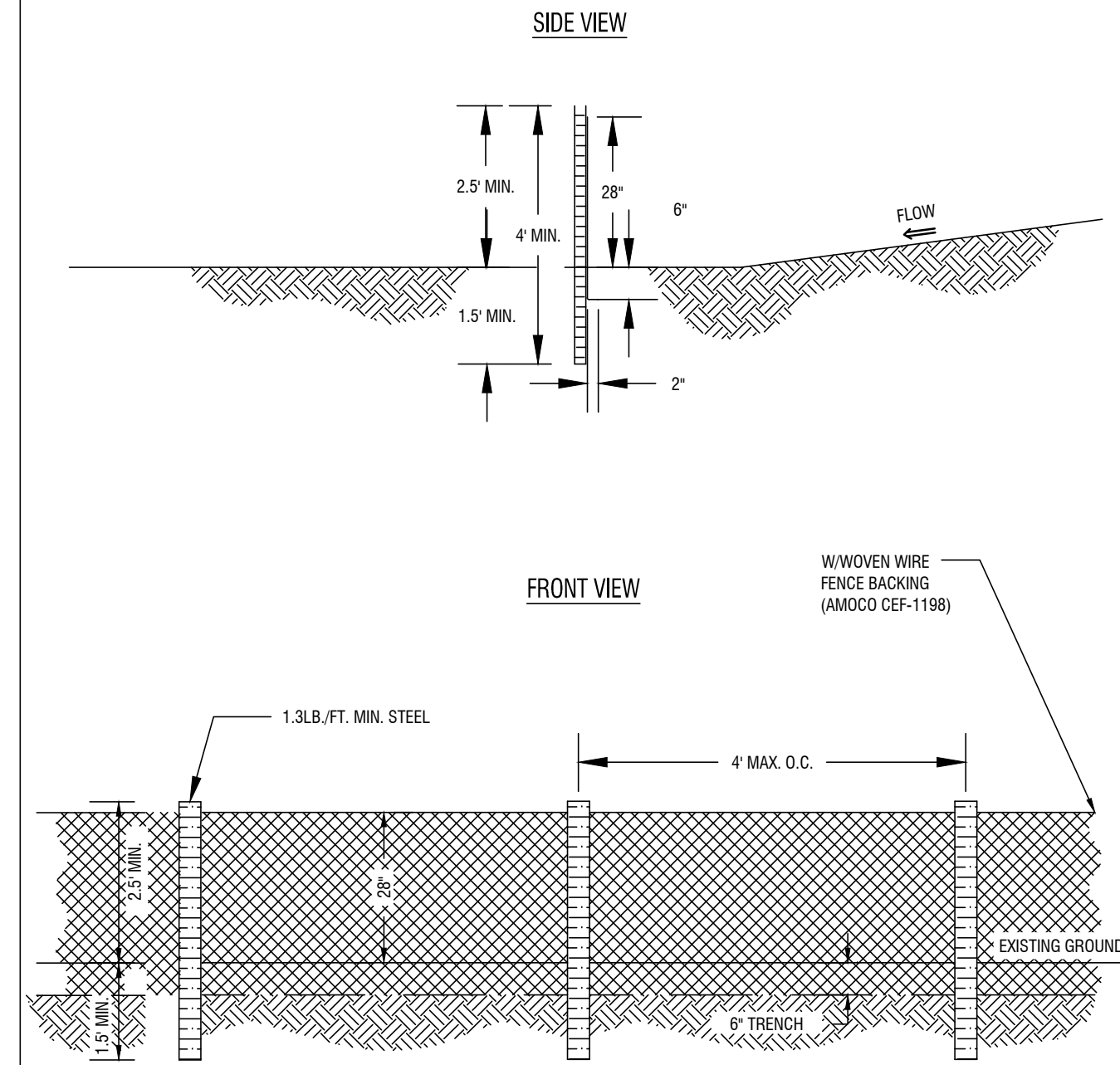
GENERAL NOTES:

- THE NEW PUMPS TO INSTALL ARE VERTICAL TURBINE SULZER JOHNSTON JTS-13CLC W/3 STAGE, 1800 RPM, 60 HP, 3 PHASE, 460 VOLTS OR EQUAL.
- VFDs WITH DANFOSS VLT AQUA DRIVE 60 HP OR EQUAL.

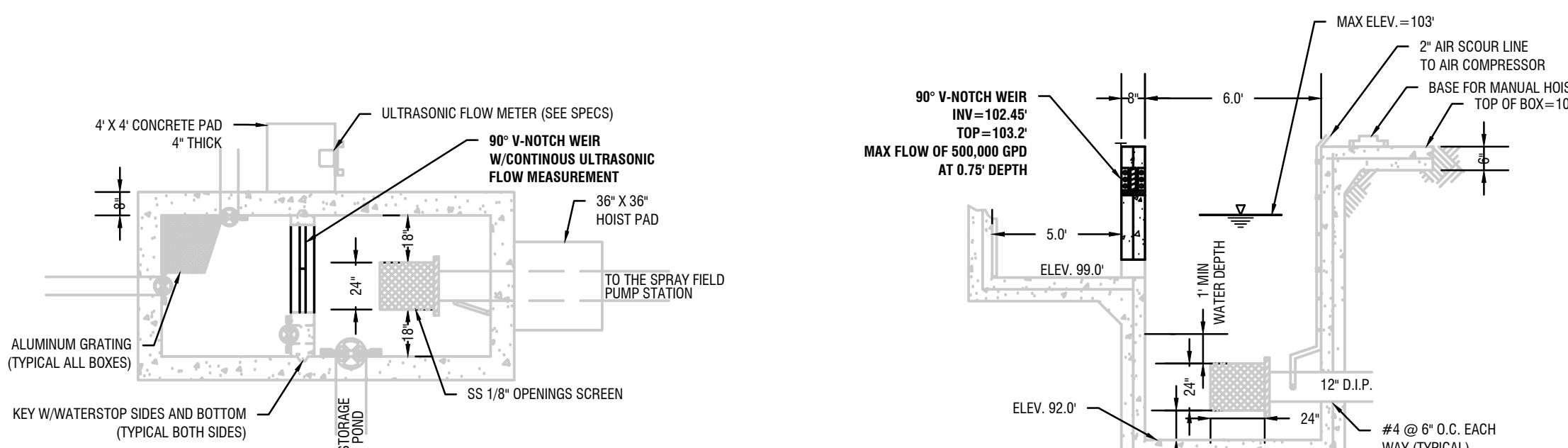
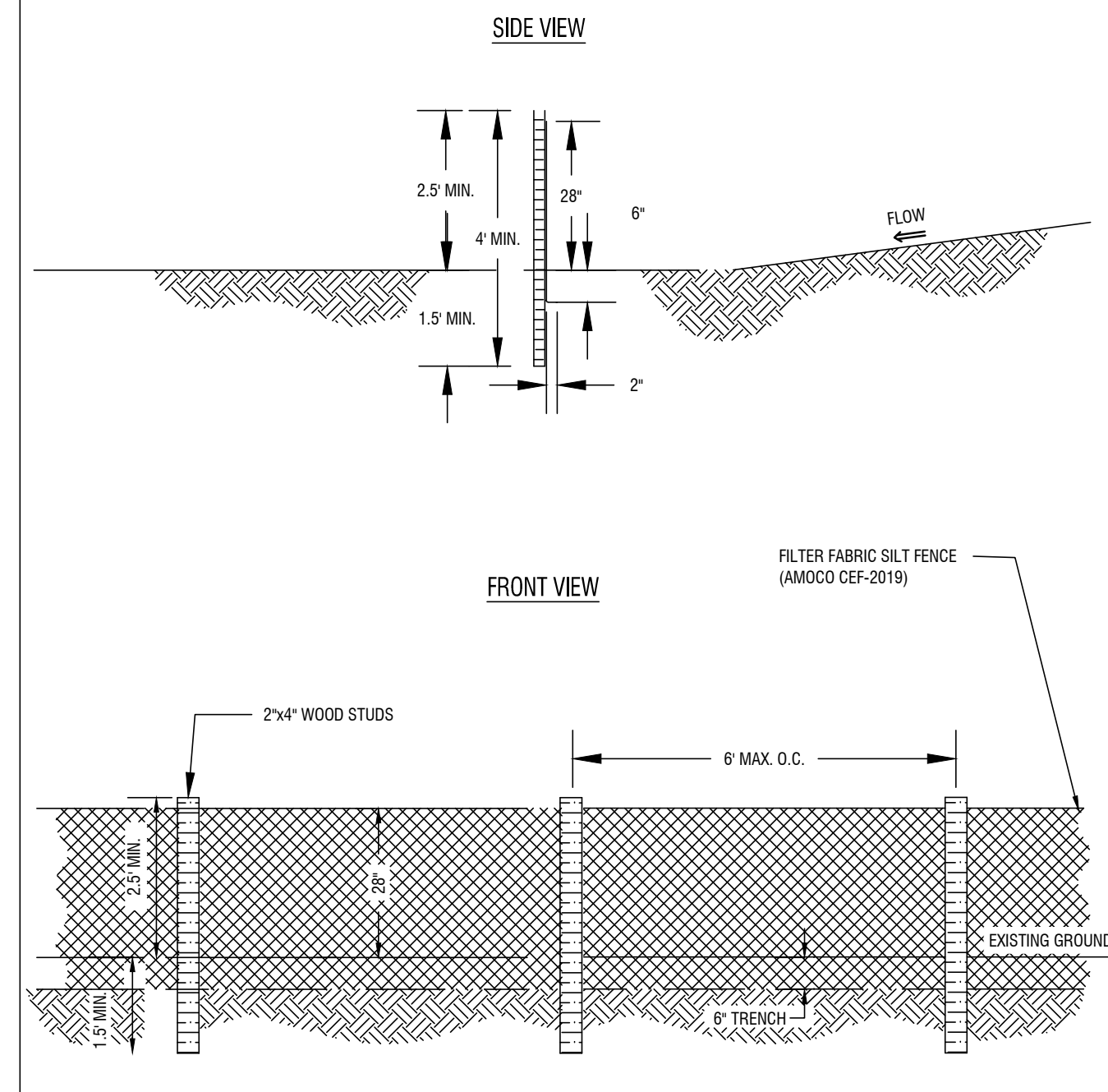


SPRINKLER HEAD AND RISER DETAIL (TYP)
N.T.S.

SEDIMENT BARRIER- SENSITIVE (Sd1-S)

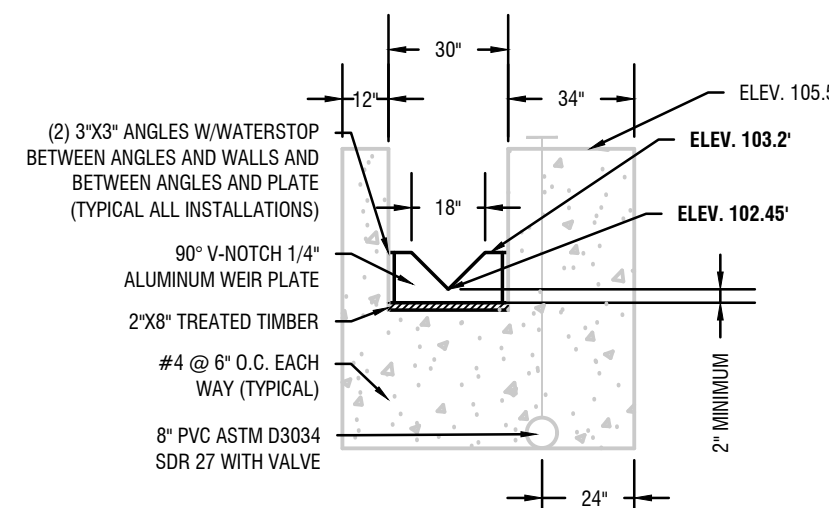


SEDIMENT BARRIER- NON-SENSITIVE (Sd1-NS)



FC-7 PLAN VIEW

FC-7 SECTION VIEW



FC-7 WEIR VIEW

FLOW CONTROL STRUCTURES
N.T.S.

FERTILIZER REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT	RATE	N TOP DRESSING RATE	LIME APPLICATION
Cool Season Grasses	First	6-12-12	1500 lbs/ac	50-100 lbs/ac 1*2*	2000 lbs/ac
	Second	6-12-12	1000 lbs/ac	30	
	Maintenance	10-12-12	400 lbs/ac		
Cool Season Grasses and Legumes	First	6-12-12	1500 lbs/ac	0-50 lbs/ac 1*	2000 lbs/ac
	Second	6-12-12	1000 lbs/ac		
	Maintenance	10-12-12	400 lbs/ac		
Ground Covers	First	10-10-10	1500 lbs/ac		
	Second	10-10-10	1000 lbs/ac		
	Maintenance	10-10-10	400 lbs/ac		
Pine Seedlings	First	20-10-5	one 21-gram pallet per seedling placed in the closing hole		
Shrub Leavedea	First	0-10-10	700 lbs/ac		
	Maintenance	0-10-10	700 lbs/ac 4*		
Temporary Cover Crops Seeded Clone	First	10-10-10	500 lbs/ac	30 lbs/ac 5*	
Warm Season Grasses	First	6-12-12	1500 lbs/ac	50-100 lbs/ac 2*6*	2000 lbs/ac
	Second	6-12-12	800 lbs/ac	50-100 lbs/ac 2*6*	
	Maintenance	10-12-12	400 lbs/ac		
Warm Season Grasses and Legumes	First	6-12-12	1500 lbs/ac	50 lbs/ac 6*	2000 lbs/ac
	Second	6-12-12	1000 lbs/ac		
	Maintenance	0-10-12	400 lbs/ac		

Ds2 SPECIES AND PLANTING SCHEDULE

SPECIES	BROADCAST RATES 1* PLS 2* PER ACRE	RESOURCE PER 1000 SF	PLANTING DATES BY RESOURCE AREAS*												REMARKS		
			J	F	M	A	M	J	J	A	S	O	N	D			
RYEGRASS, ANNUAL ALONE	40 lbs	0.9 lbs	M-L														227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT BE USED IN MIXTURES.

Ds3 SPECIES AND PLANTING SCHEDULE

SPECIES	BROADCAST RATES 1* PLS 2* PER ACRE	RESOURCE PER 1000 SF	PLANTING DATES BY RESOURCE AREAS*												REMARKS		
			J	F	M	A	M	J	J	A	S	O	N	D			
BERMUDA, COMMON HULLED SEED ALONE	10 lbs	0.2 lbs	P														1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOO FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON UNHULLED SEED ALONE	6 lbs	0.1 lbs	P														PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA, SPRIGS COASTAL, COMMON, MIDLAND, OR TIFT 44	40 CU FT	0.9 CU FT	M-L														A CUBIC FT. CONTAINS APPROXIMATELY 650 SPRIGS. A BUSHEL CONTAINS 1.25 C.F. OR APPROXIMATELY 800 SPRIGS. SAME AS ABOVE.
COASTAL, COMMON, TIFT 44	300	3 X 3	P														SOUTHERN COASTAL PLAIN ONLY

REVISIONS:

1.	SF 6 ADJUSTMENT
2.	EPD COMMENTS
3.	SPRAY FIELDS ADJ.
4.	PUMP REPLACEMENT.

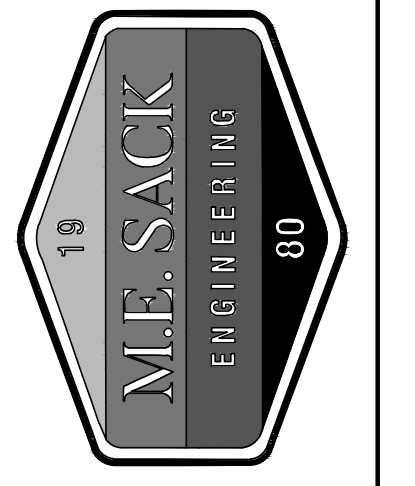
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DATE: November 30, 2023



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LAND APPLICATION
SYSTEM EXPANSION

GENERAL
DETAILS

401

FILE NO: 2020-48
PLOT DATE: November 30, 2023