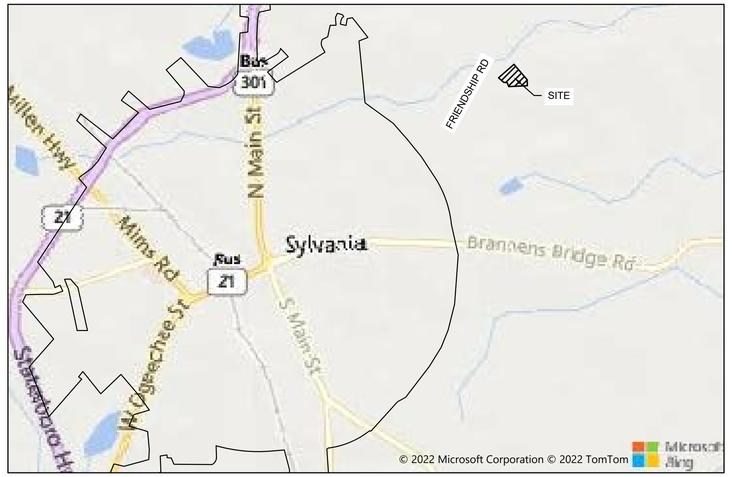
CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES

LOCATED IN
SCREVEN COUNTY, GEORGIA

LOCATION MAP

SCALE: 1"=1000'

VICINITY MAP



NTS

PREPARED FOR

THE CITY OF SYLVANIA

624 FRIENDSHIP ROAD, SYLVANIA, GA 30467

APRIL 11, 2024

I CERTIFY THAT I HAVE BEEN IN RESPONSIBLE CHARGE OF THE DESIGN OF THIS PROJECT IN ACCORDANCE WITH THE RULES OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS. I FURTHER CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THESE PLANS AND SPECIFICATIONS WILL ACCURATELY REFLECT THE DESIGN DEVELOPMENT REPORT (DDR) PREVIOUSLY REVIEWED AND CONCURRED WITH BY EPD. I FURTHER CERTIFY THAT THE SYSTEM AS DESIGNED CAN REASONABLY BE EXPECTED TO CONSISTENTLY MEET ALL CURRENTLY APPLICABLE PERMIT LIMITS, CONDITIONS, AND REGULATORY REQUIREMENTS, PROVIDED THE FACILITY IS CONSTRUCTED AS DESIGNED AND PROPERLY OPERATED AND MAINTAINED.

811 Know what's **below.** **Call** before you dig.

SYLVANIA WPCP TREATMENT PLANT UPGRADES

DATE: 4/11/2024	PROJECT #: 1521.2201

Rev.	Description	Date	Apr.
7.			
6.			
5.			
4.			
3.			
2.			
1.	ISSUED FOR BID	4/12/24	DLO

INTEGRATED Science & Engineering
1039 Sullivan Road, Suite 200, Newnan, Georgia 30265
(p) 678.552.2106 | (f) 678.552.2107
COA No. PEF000625 | Exp. 06/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 34444 11-14-22 DAVIS OZIER

DRAWING NUMBER: G-100

SHEET #	DWG. #	DRAWING TITLE
GENERAL		
1	G100	COVER
2	G101	SHEET INDEX
3	G102	GENERAL NOTES
CIVIL		
4	C100	EXISTING CONDITIONS OVERALL
5	C101	EXISTING CONDITIONS SECTION 1
6	C102	EXISTING CONDITIONS SECTION 2
7	C103	EXISTING CONDITIONS SECTION 3
8	C110	DEMOLITION PLAN SECTION 1
9	C111	DEMOLITION PLAN SECTION 2
10	C112	DEMOLITION PLAN SECTION 3
11	C200	OVERALL PROPOSED SITE PLAN
12	C201	PROPOSED SITE PLAN SECTION 1
13	C202	PROPOSED SITE PLAN SECTION 2
14	C203	PROPOSED SITE PLAN SECTION 3
15	C300	OVERALL PROPOSED PIPING PLAN
16	C301	PROPOSED PIPING PLAN SECTION 1
17	C302	PROPOSED PIPING PLAN ECTION 2
18	C303	PROPOSED PIPING PLAN SECTION 3
19	C304	FORCE MAIN PROFILES
20	C305	GRAVITY SEWER PROFILES
21	C306	HYDRAULIC PROFILES
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24	C502	ESPC CHECKLIST
25	C503	DRAINAGE BASIN AND MAPS
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27	C600	ESPC DETAILS
28	C601	ESPC DETAILS
29	C700	WATER & SEWER DETAILS
30	C701	SEWER DETAILS
31	C702	MISCELLANEOUS CIVIL DETAILS
MECHANICAL		
32	M100	STAGED REACTOR MECHANICAL PLANS
33	M101	STAGED REACTOR MECHANICAL SECTIONS
34	M102	STAGE REACTOR MECHANICAL PLANS
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46	M114	DEWATERING PROCESS SKID PIPING LAYOUT
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48	M116	CHEMICAL FEED SECTIONS
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50	M201	HANDRAIL & LADDER DETAILS
51	M202	GRATING & HATCH DETAILS
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STRUCTURAL		
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55	S102	PARSHALL FLUME/CHLORINE CONTACT CAHMBER/CASCADE AERATION STRUCTURAL PLANS & SECTIONS
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ELECTRICAL		
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67	E107	RAS PUMP STATION ELECTRICAL PLAN
68	E108	CHLORINE CONTACT CHAMBER ELECTRICAL PLAN
69	E109	AEROBIC DIGESTOR ELECTRICAL PLAN
70	E110	DEWATERING BUILDING ELECTRICAL PLAN
71	E111	CHEMICAL FEED ELECTRICAL PLAN
72	E112	AQUAPASS SCHEMATIC
73	E113	ELECTRIC DETAILS 1
74	E114	ELECTRIC DETAILS 2

INTEGRATED Science & Engineering
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(p) 678.552.2106 | (f) 678.552.2107
COA No. PEF000685 | Exp. 06/30/2024

GEORGIA REGISTERED No. 34555 PROFESSIONAL ENGINEER DAVIS OZIER
11-14-24

Rev.	Description	Date	Apr.
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3	---	---	---
2	---	---	---
1	ISSUED FOR BID	4/12/24	---

Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

SHEET INDEX

DRAWING NO.
G101

GENERAL NOTES:

1. OWNER/ DEVELOPER: CITY OF SYLVANIA
   ADDRESS: 104 SOUTH MAIN STREET, SYLVANIA, GA 30467
   CONTACT: STACY MATHIS, CITY MANAGER, (912) 564-7411

2. ENGINEER/SURVEYOR: INTEGRATED SCIENCE & ENGINEERING
   1039 SULLIVAN ROAD, SUITE 200
   NEWNAN, GA 30265
   CONTACT: DAVIS OZIER, P.E.
   (678) 552-2106

3. SITE: TOTAL SITE AREA = 6.9 ACRES
   TOTAL DISTURBED AREA: 6.9 ACRES

4. THIS PROJECT IS NOT LOCATED WITHIN A FLOOD HAZARD AREA ACCORDING TO FEMA FLOOD INSURANCE RATE MAP FOR SCREVEN COUNTY, PANEL #13251C0215C DATED 07/22/2010.

5. THIS PROJECT IS NOT LOCATED IN A KNOWN WETLAND, AS VERIFIED THROUGH THE US FWS NATIONAL WETLANDS INVENTORY.

6. THIS PROJECT IS LOCATED WITHIN 200 FEET OF A KNOWN STATE WATERS, HOWEVER NO CONSTRUCTION ACTIVITY WILL TAKE PLACE WITHIN THE STATE WATERS BUFFER.

7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL OFF-SITE EASEMENTS NOT DELINEATED ON PLANS OR KNOWN OF AT TIME OF PLAN ISSUANCE; HOWEVER, EASEMENTS WITHIN THE PROPOSED PROJECT BOUNDARY HAVE BEEN OBTAINED, OR WILL BE OBTAINED PRIOR TO NOTICE TO PROCEED, BY OWNER.

8. ANY DAMAGES THAT MAY OCCUR TO REAL PROPERTY OR EXISTING IMPROVEMENTS SHALL BE RESTORED BY THE CONTRACTOR TO AT LEAST THE SAME CONDITION THAT THE REAL PROPERTY OR EXISTING IMPROVEMENTS WERE IN PRIOR TO THE DAMAGES. THIS RESTORATION SHALL BE SUBJECT TO THE OWNER'S APPROVAL; MOREOVER, THIS RESTORATION SHALL NOT BE A BASIS FOR ADDITIONAL COMPENSATION TO THE CONTRACTOR. RESTORATION SHALL INCLUDE, BUT NOT BE LIMITED TO, REGRASSING, REVEGETATION, REPLACING FENCES, RESTORING STRUCTURES, ETC.

9. CONTRACTOR SHALL PROTECT EXISTING PROPERTY MONUMENTATION AND PRIMARY CONTROL. ANY SUCH POINTS WHICH THE CONTRACTOR BELIEVES WILL BE DESTROYED SHALL HAVE OFFSET POINTS ESTABLISHED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY MONUMENTATION DESTROYED BY THE CONTRACTOR SHALL BE REESTABLISHED AT HIS EXPENSE BY A LAND SURVEYOR REGISTERED IN THE STATE OF GEORGIA.

10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND PROCEDURES AND SHALL AT ALL TIMES TAKE ALL REASONABLE SAFETY PRECAUTIONS FOR THE SAFETY OF ITS EMPLOYEES ON THE PROJECT AND SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF FEDERAL, STATE, AND MUNICIPAL SAFETY LAWS AND BUILDING CONSTRUCTION CODES.

11. CONTRACTOR SHALL MAINTAIN DRAINAGE AT ALL TIMES DURING CONSTRUCTION. PONDING OF WATER IN STREETS, DRIVES, TRUCK COURTS, TRENCHES, ETC. WILL NOT BE ALLOWED.

12. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL STORM WATER POLLUTION PREVENTION LAWS AND ORDINANCES. THE CONTRACTOR IS FULLY RESPONSIBLE FOR MAINTAINING OPERATIONS THAT MEET OR EXCEED ANY LOCAL, STATE OR FEDERAL PERMIT REQUIREMENTS. ANY PERMIT VIOLATION OR VIOLATIONS OF STATE LAWS AND REQUIREMENTS ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

13. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OR OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL PROVIDE SUPPORT SYSTEMS, SLOPING, BENCHING AND OTHER MEANS OF PROTECTION. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.

14. THE UTILITY PROTECTION AGENCY IS TO BE NOTIFIED 72 HOURS PRIOR TO ANY LAND DISTURBANCE ACTIVITY.

15. CONTRACTOR IS TO COMPLY WITH ALL LOCAL BUILDING CODES AND REGULATIONS WHICH ARE PRESENTLY IN EFFECT.

DEMOLITION NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND COST OF THE RELOCATION OF ALL UTILITIES ON SITE ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT, SUCH AS, BUT NOT LIMITED TO DRAINAGE STRUCTURES, UTILITY POLES, GUY WIRES, WATER, AND SANITARY SEWER, ELECTRIC CABLES, ETC. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED UTILITY RELOCATIONS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF ALL DEBRIS AS ACCEPTABLE TO THE OWNER IN COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL LAWS.

3. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.

4. ALL AREAS NOTED ON SHEET C110-C112 SHALL BE DEMOLISHED AND REMOVED FROM THE SITE AFTER THE INSTALLATION OF EROSION CONTROL MEASURES AND PRIOR TO BEGINNING SITE WORK. CONTRACTOR SHALL COORDINATE DEMOLITION WITH OTHER SHEETS IN THIS PACKAGE. ITEMS REQUIRING DEMOLITION BASED ON NEW CONSTRUCTION AND NOT DETAILED ON THIS SHEET SHALL ALSO BE REMOVED BY CONTRACTOR IN ACCORDANCE WITH DEMOLITION REQUIREMENTS.

5. SAW CUT EDGES OF ASPHALT DEMOLITION, PATCH AND REPAIR AS NECESSARY.

GRADING/DRAINAGE NOTES

1. SITE PREPARATION: ALL TREES AND UNWANTED VEGETATION SHOULD BE REMOVED, STUMPS GRUBBED AND ORGANIC TOPSOIL STRIPPED.

2. ALL STRUCTURAL FILL SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM STANDARD D-698. THE UPPER FOOT OF FILL WHICH WILL SUPPORT PAVEMENTS OR SLABS SHOULD BE COMPACTED TO AT LEAST 98 PERCENT OF THE SOIL'S STANDARD PROCTOR MAXIMUM DRY DENSITY FOR IMPROVED SUPPORT. IN AREAS WHICH ARE AT OR ABOVE THE FINISHED GRADE, AND WHICH WILL SUPPORT PAVEMENTS OR SLABS, THE UPPER 8 INCHES IMMEDIATELY BELOW THESE SYSTEMS SHOULD BE SCARIFIED AND RE-COMPACTED TO THE 98 PERCENT CRITERIA. STRUCTURAL FILL SHOULD BE FREE OF ORGANIC MATERIAL, HAVE A PLASTICITY INDEX (PI) LESS THAN 20 AND CONTAIN ROCK SIZES NO LARGER THAN 4 INCHES.

3. DENSITY TESTING SHOULD BE PERFORMED BY A SOILS TECHNICIAN TO DETERMINE THE DEGREE OF COMPACTION AND VERIFY COMPLIANCE WITH THE PROJECT SPECIFICATIONS. AREAS WHICH DO NOT MEET THE COMPACTION SPECIFICATIONS SHOULD BE RE-COMPACTED TO ACHIEVE COMPLIANCE. IN CONFINED AREAS, SUCH AS UTILITY TRENCHES, THE USE OF PORTABLE COMPACTION EQUIPMENT AND THIN LIFTS OF 3 TO 4 INCHES MAY BE REQUIRED TO ACHIEVE COMPACTION.

4. PERMANENT AND TEMPORARY SLOPES SHALL BE CONSTRUCTED NO STEEPER THAN 1.5H: 1V FOR SLOPES LESS THAN 15 FEET HIGH. PERMANENT SLOPES SHOULD BE CONSTRUCTED NO STEEPER THAN 2H: 1V. ALL FINISHED SLOPES SHOULD BE SUITABLY PROTECTED FROM EROSION.

5. ALL CONTOURS ON PAVEMENT, OR ELSEWHERE, ARE TOP OF FINISHED PAVEMENT OR SURFACE.

6. SLOPES AND DISTURBED AREAS NOT COVERED BY PAVEMENT SHALL BE GRADED SMOOTH AND RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR TO PROVIDE TOPSOIL IF NOT AVAILABLE ON SITE. THE AREAS SHALL BE COVERED AS DESIGNATED ON EROSION CONTROL PLANS, FERTILIZED AND WATERED TO PROVIDE A HEARTY, MOWABLE STAND OF GRASS. SMALL ROCKS AND DEBRIS MUST BE REMOVED.

STRUCTURAL NOTES

1. THE CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH ALL OTHER DISCIPLINES INVOLVED IN THIS PROJECT. COORDINATION INCLUDES LOCATING THICKENED SLABS, DRAINS, SLOPES, ANCHOR BOLT SETTINGS, EMBEDDED STEEL PLATES, SLEEVES FOR PIPING, CONDUIT, AND ETC. BEFORE CONSTRUCTION BEGINS.

2. THE STRUCTURES HAVE BEEN DESIGNED FOR THE IN-SERVICE LOADS ONLY. THE METHODS, PROCEDURES AND SEQUENCES OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. SUPPORTING FORMWORK FOR CONCRETE CONSTRUCTION SHALL NOT BE REMOVED BEFORE THE CONCRETE HAS GAINED SUFFICIENT STRENGTH TO SAFELY SUPPORT DEAD LOADS AND SUPERIMPOSED LOADS WHICH WOULD SUBSEQUENTLY BE APPLIED. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND INSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.

3. FOUNDATION:

   3.1. SUBSURFACE INFORMATION AND FOUNDATION DESIGN ARE BASED ON A REPORT PREPARED BY WHITAKER LAB & ENGINEERING, REPORT DATED JUNE 25, 2021. THE CONTRACTOR SHALL PERFORM EXCAVATIONS, FOOTING CONSTRUCTION AND PREPARATION OF THE SUBGRADE UNDER THE SLAB-ON-GRADE IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT AND THE PROJECT SPECIFICATIONS.

   3.2. FOUNDATION DESIGN IS BASED ON THE BEARING CAPACITIES LISTED IN THE GEOTECHNICAL REPORT. ACTUAL SUBGRADE CONDITIONS AND BEARING CAPACITIES SHALL BE VERIFIED IN THE FIELD BY A REGISTERED GEOTECHNICAL ENGINEER. WRITTEN REPORTS OF FINDINGS SHALL BE SUBMITTED TO INTEGRATED SCIENCE AND ENGINEERING.

4. CONCRETE:

   4.1. CONCRETE IN THE FOLLOWING AREAS SHALL HAVE NATURAL SAND FINE AGGREGATE AND NORMAL WEIGHT COARSE AGGREGATE CONFORMING TO ASTM C33, TYPE I OR TYPE III PORTLAND CEMENT CONFORMING TO ASTM C 150, AND SHALL HAVE THE FOLLOWING COMPRESSIVE STRENGTH (F'C) AT 28 DAYS:
   CONTAINMENT STRUCTURES:
   BASE SLABS AND MAT FOUNDATIONS 4,000 PSI GROUP II CONCRETE
   CONCRETE WALLS 4,000 PSI GROUP I CONCRETE

   4.2. GROUP I CONCRETE SHALL BE USED FOR LIQUID CONTAINMENT STRUCTURES AND SHALL CONTAIN A HIGH-RANGE WATER REDUCING ADDMIXTURE. GROUP I CONCRETE SHALL HAVE A SLUMP OF NOT GREATER THAN 2-INCHES PRIOR TO THE ADDITION OF A HIGH-RANGE WATER REDUCING ADD MIXTURE. GROUP II CONCRETE SHALL BE USED FOR ALL OTHER CONCRETE AND MAY CONTAIN A HIGH-RANGE WATER REDUCING ADD MIXTURE, BUT IS NOT REQUIRED TO CONTAIN ONE.

   4.3. DETAILING OF CONCRETE REINFORCEMENT BARS AND ACCESSORIES SHALL CONFORM TO THE RECOMMENDATIONS OF THE A.C.I. DETAILING MANUAL (A.C.I. SP-66).

   4.4. MIXING, TRANSPORTING AND PLACING OF CONCRETE SHALL CONFORM TO A.C.I. 304R.

   4.5. CONCRETE REINFORCING BARS SHALL CONFORM TO ASTM A 615, GRADE 60. BARS NOTED AS CONTINUOUS SHALL LAP AS INDICATED; IF THE LAP LENGTH IS NOT INDICATED THE BARS SHALL LAP THE LENGTH INDICATED IN THE LAP LENGTH SCHEDULE. CORNER BARS SHALL BE PROVIDED AT ALL TURNS AND INTERSECTIONS.

   4.6. REINFORCING BARS AND WELDED WIRE FABRIC SHALL BE SUPPORTED WITH STANDARD BAR CHAIRS, BOLSTERS OR SPACERS AS REQUIRED TO MAINTAIN THE CONCRETE COVER INDICATED.

   4.7. CONTROL AND CONSTRUCTION JOINTS FOR SLABS-ON-GRADE AND BASE SLABS OR MATS AND CONCRETE WALLS ARE SHOWN AND LOCATED ON THE DRAWINGS. ADDITIONAL CONTROL OR CONSTRUCTION JOINTS DESIRED BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER.

   4.8. CONCRETE WALLS SHALL BE CAST MONOLITHIC WITH ADJOINING COLUMNS, COLUMN PIERS OR PILASTERS. NO MORE THAN 50 PERCENT OF HORIZONTAL WALL REINFORCING SHALL LAP IN A SINGLE VERTICAL PLANE. BULKHEADS AT CONSTRUCTION JOINTS IN FOOTINGS SHALL HAVE HORIZONTAL KEYWAYS WITH A WIDTH EQUAL TO ONE THIRD OF THE FOOTING THICKNESS; VERTICAL CONSTRUCTION JOINTS IN WALL SHALL HAVE VERTICAL KEYWAYS WITH A WIDTH EQUAL TO ONE THIRD OF THE WALL THICKNESS. KEYWAYS SHALL HAVE A DEPTH OF 1 1/2-INCHES.

   4.9. CONDUIT EMBEDDED IN CONCRETE SLABS: TO THE GREATEST EXTENT POSSIBLE, CONDUIT SHALL NOT BE EMBEDDED IN CONCRETE SLABS-ON-GRADE OR BASE SLABS AND MATS. IF CONDUIT MUST BE EMBEDDED WITHIN A SLAB IT SHALL BE EMT-TYPE CONDUIT AND SHALL BE PLACED WITHIN THE MIDDLE THIRD OF THE SLAB THICKNESS; PLASTIC OR PVC-TYPE CONDUIT SHALL BE PROHIBITED FROM EMBEDDING IN CONCRETE. THE OVERALL SIZE OF THE CONDUIT SHALL NOT EXCEED ONE FOURTH OF THE THICKNESS OF THE SLAB OR MAT. AVOID CROSSING OR STACKING OF EMBEDDED CONDUITS; THE OVERALL HEIGHT OF A CONDUIT CROSSING SHALL NOT EXCEED ONE FOURTH OF THE SLAB OR MAT THICKNESS.

5. ANCHORS:

   5.1. EXPANSION ANCHORS FOR FASTENING TO CONCRETE SHALL BE MADE OF STAINLESS STEEL AND BY ONE OF THE FOLLOWING MANUFACTURERS OR EQUAL:
   KWIK BOLT II; HILTI.
   TRUBOLT WEDGE; ITW RAMSET/REDHEAD.
   RAWL-BOLT; THE RAWLPLUG CO., INC.

   5.2. ADHESIVE/EPOXY ANCHORS FOR SETTING DOWELS AND STAINLESS STEEL THREADED RODS IN CONCRETE SHALL BE ONE OF THE FOLLOWING:
   HIT RE 500 INJECTION ADHESIVE; HILTI.
   EPCON CERAMIC 6 SYSTEM; ITW RAMSET/REDHEAD.
   SET HIGH STRENGTH EPOXY; SIMPSON STRONG-TIE
   * * THE USE OF THE SIMPSON SET-PAC SINGLE CARTRIDGE IS PROHIBITED.

   5.3. ADHESIVE/EPOXY SCREEN TUBE ANCHORS FOR FASTENING STAINLESS STEEL ANCHORS INTO MASONRY SHALL BE ONE OF THE FOLLOWING:
   HIT HY 20 SYSTEM; HILTI.
   EPCON SYSTEM SCREEN TUBE; ITW RAMSET/REDHEAD.

   5.4. DRILLED HOLES FOR ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE WRITTEN INSTRUCTIONS AND RECOMMENDATIONS OF THE ANCHOR MANUFACTURER.

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE CITY OF SYLVANIA STANDARDS AND SPECIFICATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROPER OFFICIALS FOR ANY REQUIRED INSPECTIONS.

2. EXISTING UTILITY LOCATIONS SHOWN ARE GENERALLY SCHEMATIC IN NATURE AND MAY NOT ACCURATELY REFLECT THE SIZE AND LOCATION OF EACH PARTICULAR UTILITY. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. ALL EXISTING UTILITIES MAY NOT BE SHOWN ON THESE DRAWINGS. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE HIS OPERATIONS WITH ALL UTILITIES WHICH MAY BE IN CONFLICT WITH HIS WORK. THE CONTRACTOR MUST MAINTAIN AND PROTECT ALL SUCH UTILITIES, OR RELOCATE UTILITIES AS NEEDED.

3. ALL WATER AND SEWER LINES OR PROCESS PIPING INSTALLED AS A PART OF THE PROJECT ARE TO BE LOCATABLE.

4. ALL PIPELINE CONTRACTORS MUST POSSESS AN UNDERGROUND CONTRACTORS LICENSE (UCL).

5. CITY INSPECTIONS: AUTHORIZED REPRESENTATIVES FROM THE CITY OF SYLVANIA WILL MAKE INSPECTIONS DURING CONSTRUCTION. THIS WILL NOT RELIEVE THE OWNER OF THE RESPONSIBILITY TO SCHEDULE AN INSPECTION BEFORE WORK IS HIDDEN FROM VIEW. FAILURE TO DO SO CAN STOP WORK AND HIDDEN WORK SHALL BE EXPOSED FOR INSPECTION.

6. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4' COVER OVER ALL SEWER AND WATER LINES DURING CONSTRUCTION ACTIVITIES TO PROTECT INTEGRITY OF MATERIAL AND INSTALLATION.

7. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF WATER AND SEWER LINE IS TEN FEET (10'). THE MINIMUM VERTICAL SEPARATION BETWEEN THE CLOSEST TWO POINTS OF THE WATER AND SEWER LINES IS EIGHTEEN INCHES (18").

8. CONTRACTOR SHALL COORDINATE ANY DISRUPTIONS TO EXISTING UTILITY SERVICES WITH ADJACENT PROPERTY OWNERS AND IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION.

9. ALL ELECTRIC, TELEPHONE AND GAS LINES, INCLUDING SERVICE LINES, SHALL BE CONNECTED AND INSTALLED BY THE CONTRACTOR. THIS INCLUDES ANY PERMITTING OR CONNECTION FEES THAT MAY BE REQUIRED, ALL UTILITIES TO BE CONSTRUCTED IN ACCORDANCE WITH THE APPROPRIATE UTILITY COMPANIES SPECIFICATIONS.

10. CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. ANY ACCIDENTAL BREAKS OR INTERRUPTIONS IN SERVICE TO EXISTING UTILITIES, WHETHER DETAILED ON THESE DRAWINGS OR NOT, SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR WORKING AROUND ALL UTILITIES, INCLUDING NOTIFYING ENGINEER OF ANY CONFLICTS BETWEEN NEW AND EXISTING UTILITIES PRIOR TO INSTALLATION.

LINE SYMBOLS AND ABBREVIATIONS

- FM — EXISTING FORCE MAIN
- FM — PROPOSED FORCE MAIN
- RAS — EXISTING RETURN ACTIVATED SLUDGE FORCE MAIN
- RAS — PROPOSED RETURN ACTIVATED SLUDGE FORCE MAIN
- WAS — EXISTING WASTE ACTIVATED SLUDGE FORCE MAIN
- WAS — PROPOSED WASTE ACTIVATED SLUDGE FORCE MAIN
- OE — EXISTING OVERHEAD ELECTRIC
- SS — EXISTING SANITARY SEWER
- SS — PROPOSED SANITARY SEWER
- W — EXISTING WATER MAIN
- W — PROPOSED WATER MAIN
- PROPOSED PROCESS PIPE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- STREAM
- FENCE
- SILT FENCE
- HIDDEN WALL/PIPE
- EXISTING COMMUNICATION
- EXISTING ELECTRICAL
- EXISTING NATURAL GAS MAIN
- PROPOSED MAJOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MINOR CONTOUR
- CENTER LINE
- PROPERTY LINE
- CONSTRUCTION LIMITS
- DEMOLITION/ABANDONMENT
- GROUT
- GRAVEL
- CONCRETE
- ASPHALT PAVEMENT

SITE FEATURE SYMBOLS

- FIRE HYDRANT
- WATER MANHOLE
- WATER VAULT
- WATER METER
- JUNCTION BOX
- COMMUNICATION VAULT
- UTILITY POLE
- ELECTRICAL JUNCTION BOX
- LIGHT POLE
- ELECTRICAL TRANSFORMER
- TREE
- TELECOMMUNICATION PEDESTAL
- SANITARY SEWER MANHOLE
- GAS METER
- THRUST BLOCK
- DROP INLET
- VALVE
- YARD HYDRANT
- HYDRAULIC GRADE
- GUY WIRE

PIPE/MATERIAL ABBREVIATIONS

CMP	CORRUGATED METAL PIPE
HDPE	HIGH DENSITY POLYETHYLENE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE
VCP	VITRIFIED CLAY PIPE

SUGGESTED CONSTRUCTION SEQUENCE

THE TABLE BELOW OUTLINES A SUGGESTED CONSTRUCTION SEQUENCE, WHICH IS GENERAL IN NATURE AND IS NOT CONSIDERATE OF MATERIAL AND EQUIPMENT LEAD TIMES. THE FINAL CONSTRUCTION SEQUENCE AND STARTUP SCHEDULE SHALL BE THE **CONTRACTOR'S RESPONSIBILITY.**

PHASE / ITEM	DESCRIPTION	SHEETS
1	**SECONDARY TREATMENT UPGRADES**	
1.a	CONSTRUCT STAGED REACTOR AND MAKE AERATION BASIN UPGRADES	C303, M100 - M102
1.b	INSTALL Mg(OH) CHEMICAL FEED SYSTEM	M115 - M116
1.c	STARTUP PHASED ACTIVATED SLUDGE SYSTEM WITH EX. RAS PUMPS AND PROPOSED WAS PUMPING SYSTEM TO EX. DIGESTOR	
1.d	MAKE ALL SLUDGE DEWATERING SYSTEM UPGRADES	M112 - M114
2	**TERTIARY TREATMENT UPGRADES**	
2.a	CONSTRUCT FILTER, PARSHALL FLUME, CHLORINE CONTACT CHAMBER, & CASCADE AERATION STRUCTURES	M106 - M108
2.b	CONSTRUCT RAS PUMP STATION WITH RAS FM TO EX. RAS FM	C303, M109
2.c	INSTALL GRAVITY SEWER FROM MH B.1 TO RAS PS AND TEMPORARY PIPING FROM CLARIFIER #3 TO MH B.1	C303
2.d	REHAB CLARIFIER #3 AND BRING ONLINE WITH TEMPORARY PIPING AND STARTUP OF NEW RAS PS	
2.e	INSTALL MECHANICAL EQUIPMENT STARTUP FILTER, PARSHALL FLUME, CHLORINE CONTACT CHAMBER, AND CASCADE AERATION	M106 - M108
2.f	TAKE CLARIFIERS #1 AND #2 OFFLINE AND DEMOLISH EX. RAS PUMP ROOM	M103
2.g	MAKE CLARIFIER PIPING MODIFICATIONS AND INSTALL SLUDGE COLLECTION BOX	M104 - M105
2.h	BRING ALL THREE CLARIFIERS BACK ONLINE WITH USE OF SLUDGE COLLECTION BOX AND NEW RAS PUMP STATION	
3	**RESIDUALS TREATMENT UPGRADES**	
3.a	CONSTRUCT NEW AEROBIC DIGESTOR, COMPLETE WITH MECHANICAL EQUIPMENT AND BRING ONLINE	M110 - M111
3.b	MAKE NECESSARY REPAIRS TO EX. AEROBIC DIGESTOR AND INSTALL NEW MECHANICAL EQUIPMENT	M111

GENERAL ABBREVIATIONS

ABND	ABANDON
AC	ACRES
ALUM	ALUMINUM
APPROX	APPROXIMATE
ARV	AIR RELEASE VALVE
BOB	BOTTOM OF BOX
BLDG	BUILDING
BFP	BACK FLOW PREVENTER
BV	BALL VALVE
CAV	COMBINATION AIR VALVE
CONC	CONCRETE
CV	CHECK VALVE
DEMO	DEMOLITION
EA	EACH
EFF	EFFLUENT
EL	ELEVATION
ELB	ELBOW
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EX	EXISTING
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLANGED
FM	FORCE MAIN
GAB	GRADED AGGREGATE BASE
GV	GATE VALVE
HW	HEADWALL
INF	INFLUENT
INV	INVERT
JB	JUNCTION BOX
LF	LINEAR FOOT
LOD	LIMITS OF DISTURBANCE
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MJ	MECHANICAL JOINT
MH	MANHOLE
NC	NORMALLY CLOSED
NTS	NOT TO SCALE
OC	ON CENTER
PASS	PHASED ACTIVATED SLUDGE SYSTEM
PE	PLAIN END
PRV	PRESSURE REDUCING VALVE
PS	PUMP STATION
PV	PLUG VALVE
RAS	RETURN ACTIVATED SLUDGE
RJ	RESTRAINED JOINT
R/W	RIGHT OF WAY
SS	STAINLESS STEEL
SG	SLIDE GATE
SSMH	SANITARY SEWER MAN HOLE
STD	STANDARD
STRC	STRUCTURE
SVC	SERVICE
TB	THRUST BLOCK
TC	THRUST COLLAR
TOS	TOP OF SLAB
TOW	TOP OF WALL
TV	TELESCOPING VALVE
TYP	TYPICAL
WAS	WASTE ACTIVATED SLUDGE
WG	WEIR GATE
WM	WATER MAIN
W/	WITH
WSEL	WATER SURFACE ELEVATION

STRUCTURAL ABBREVIATIONS

EE	EACH END
EF	EACH FACE
EW	EACH WAY
HORZ	HORIZONTAL
T&B	TOP AND BOTTOM
VERT	VERTICAL

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COA NO. PEFO000051 | Exp: 09/30/2024

GEORGIA REGISTERED No. PE036555 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

No.	Description	Date
1	ISSUED FOR BID	4/12/24

Drawn by: MGW | Check by: DLO | Review by: DLO | Design by: DLO
Date: 4/11/24 | Project #: 1521.2201

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

GENERAL NOTES

DRAWING NO.
G102

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COA No. PEF000625 | Exp. 06/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 40' (40' 20' 0' 40')

Rev.	Description	Date	Apr.
8	---	---	---
7	---	---	---
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1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

EXISTING CONDITIONS OVERALL

DRAWING NO.

C100

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER No. PE0 [seal] 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

20' 10' 0' 20'

SCALE: 1" = 20'

Rev.	Description	Date	Apr.
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1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

EXISTING CONDITIONS
SECTION 1

DRAWING NO.

C101

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
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7	---	---	---
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1	ISSUED FOR BID	4/12/24	---

Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #:	**Design by:**	**Review by:**
1521.2201	DLO	DLO

20' 10' 0' 20'

SCALE: 1" = 20'

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

EXISTING CONDITIONS SECTION 2

DRAWING NO.

C102


SS VAULT
12"Ø PVC INV 138.85
STORM PIPE
VALVE
FH
6" WATER
BRICK STORAGE SHED
ABANDON SLUDGE
SSMH TOP 139.80 (NO ACCESS)
ABANDON SLUDGE LINE TO DRYING BEDS
BURIED PIPE
SSMH TOP 144.07 INV IN 135.18 NE INV IN 136.11 SE INV OUT 134.82
DIGESTOR DECANT
FILTRATE COLLECTION BOX
FFE=137.97
DIGESTER
SSMH TOP 143.17 (NO ACCESS)
DE-WATERING BUILDING
BLOWER
6" WAS FM
FFE=137.74
FFE=151.01
4" FLOOR DRAIN
12" CLARIFIER EFF APPROX. 2' BURY DEPTH
SSMH TOP 157.20 INV IN 148.20 INV OUT 148.20
ABANDON REUSE PS
15" DIP
12" DIP
SSMH TOP 158.02 INV IN 151.04 INV OUT 149.42
JB TOP 159.91 INV IN 154.33 INV OUT 154.30
12" STORM DRAIN
CLARIFIER 1
CLARIFIER 2
CLARIFIER 3
8" SLUDGE DRAW
8" CLARIFIER DRAIN
8" SCUM DRAIN
JB TOP 161.22 INV IN 155.61 INV OUT 155.54
WAS VALVE VAULT
SSMH TOP 166.36 INV 160.74
DI TOP 161.43 INV OUT 157.23
1-1/2" WATER
AERATION TANK DRAIN
SSMH TOP 165.33 INV. 159.30
PIPE GATE (ROUGH) INV 160.81
12" DIP AERATION EFF.
SSMH TOP 168.79 INV IN 162.78 E INV IN 166.33 SE INV IN 166.33 SW INV IN 162.77 W INV OUT 161.53
CLARIFIER SPLITTER BOX
PIPE GATE (ROUGH) INV 160.86
SSMH TOP 166.66 INV IN 161.94 INV OUT 161.75
12" DIP AERATION EFF.
TOP OF STRC. 166.08 B.O.B. 163.12
TOP OF STRC. 166.09 B.O.B. 163.19
WSEL 165.66
12" DIP INV 163.00
TOP OF STRC. 166.02 B.O.B. 162.83
TRANSITION FROM DIP TO PVC AT BEND
SSMH TOP 168.50 INV IN 162.74 INV OUT 162.39
WSEL 165.64
12" DIP INV 166.35
ASPHALT DRIVE
12" DIP INF. FM
WSEL 165.66
12" DIP INV 162.61
12" DIP INV 163.05
12" DIP INV 166.34
12" PVC C900 DR18 INFLUENT FM
FLOATING AERATOR (TYP)
AERATION BASIN #3
FLOATING AERATOR MOORING POST (TYP)
8" PVC C900 DR18 RAS FM
AERATION BASIN #2
AERATION BASIN #1
12" DIP INV 170.58
8" DIP INV 169.55
12" DIP INV 169.31
8" DIP INV 169.53
12" DIP INV 169.39
8" DIP INV 169.59
STORAGE SHED
CHAIN LINK FENCE

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Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	
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Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.201	Design by: DLO	Review by: DLO

SCALE: 1" = 20'

CONSTRUCTION PLANS FOR

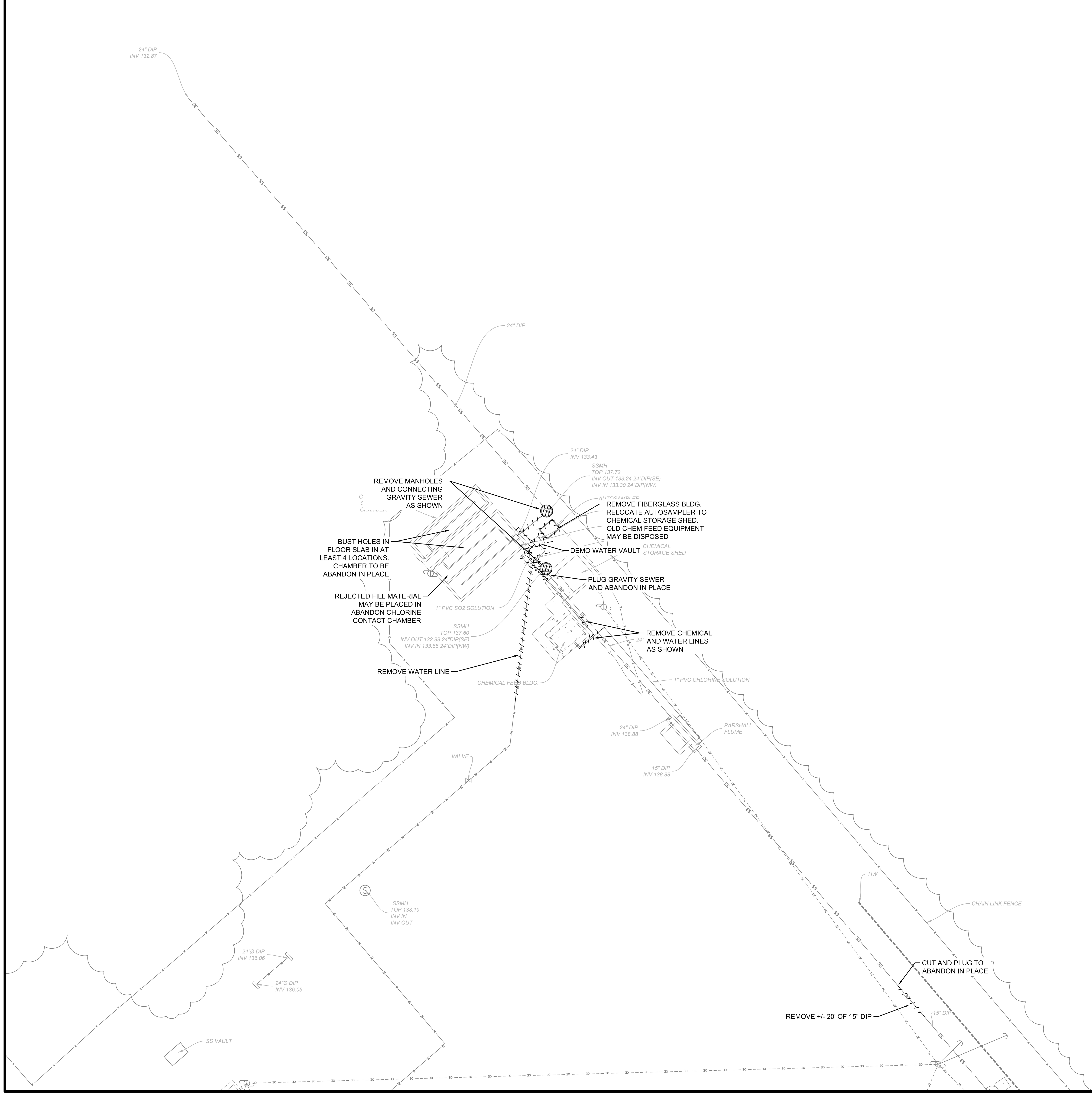
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

EXISTING CONDITIONS SECTION 3

DRAWING NO.

C103



NOTES:

1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE INSTALLATION OF NEW EQUIPMENT SO THAT THERE IS NO INTERRUPTION IN PLANT OPERATION.
2. CONTRACTOR SHALL COORDINATE ANY DISTURBANCE IN NORMAL PLANT OPERATION WITH OPERATIONS STAFF.
3. CONTRACTOR MAY USE BYPASS PUMPING OR INTERFERENCE MANHOLES WHERE NEEDED TO MAINTAIN PLANT FLOWS DURING CONSTRUCTION.

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Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 20'

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	

CONSTRUCTION PLANS FOR

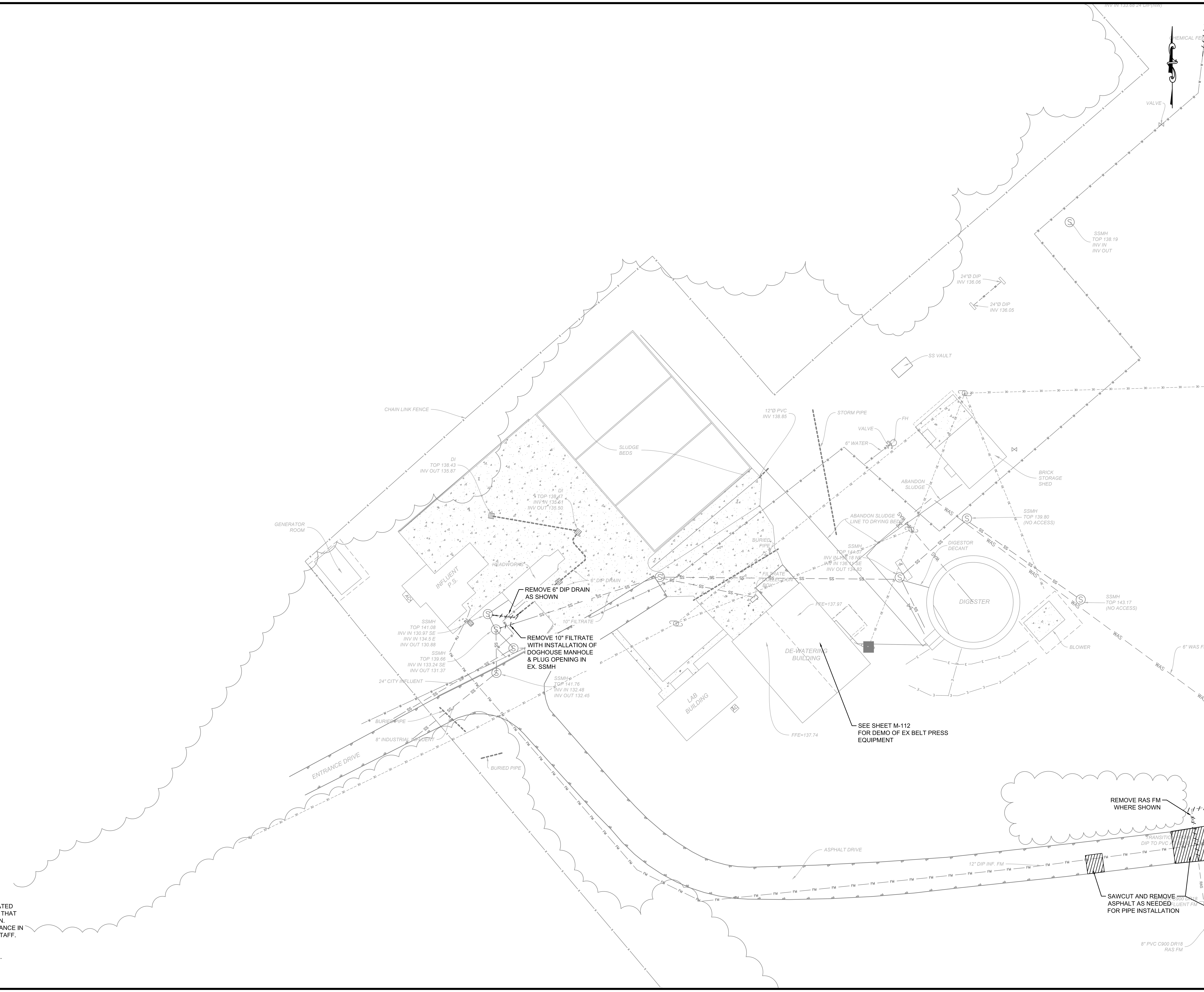
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

DEMOLITION PLAN

DRAWING NO.

C110



NOTES:

1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE INSTALLATION OF NEW EQUIPMENT SO THAT THERE IS NO INTERRUPTION IN PLANT OPERATION.
2. CONTRACTOR SHALL COORDINATE ANY DISTURBANCE IN NORMAL PLANT OPERATION WITH OPERATIONS STAFF.
3. CONTRACTOR MAY USE BYPASS PUMPING OR INTERFERENCE MANHOLES WHERE NEEDED TO MAINTAIN PLANT FLOWS DURING CONSTRUCTION.

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Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #:	Design by:	Review by:
1521.2201	DLO	DLO

SCALE: 1" = 20'

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	

CONSTRUCTION PLANS FOR

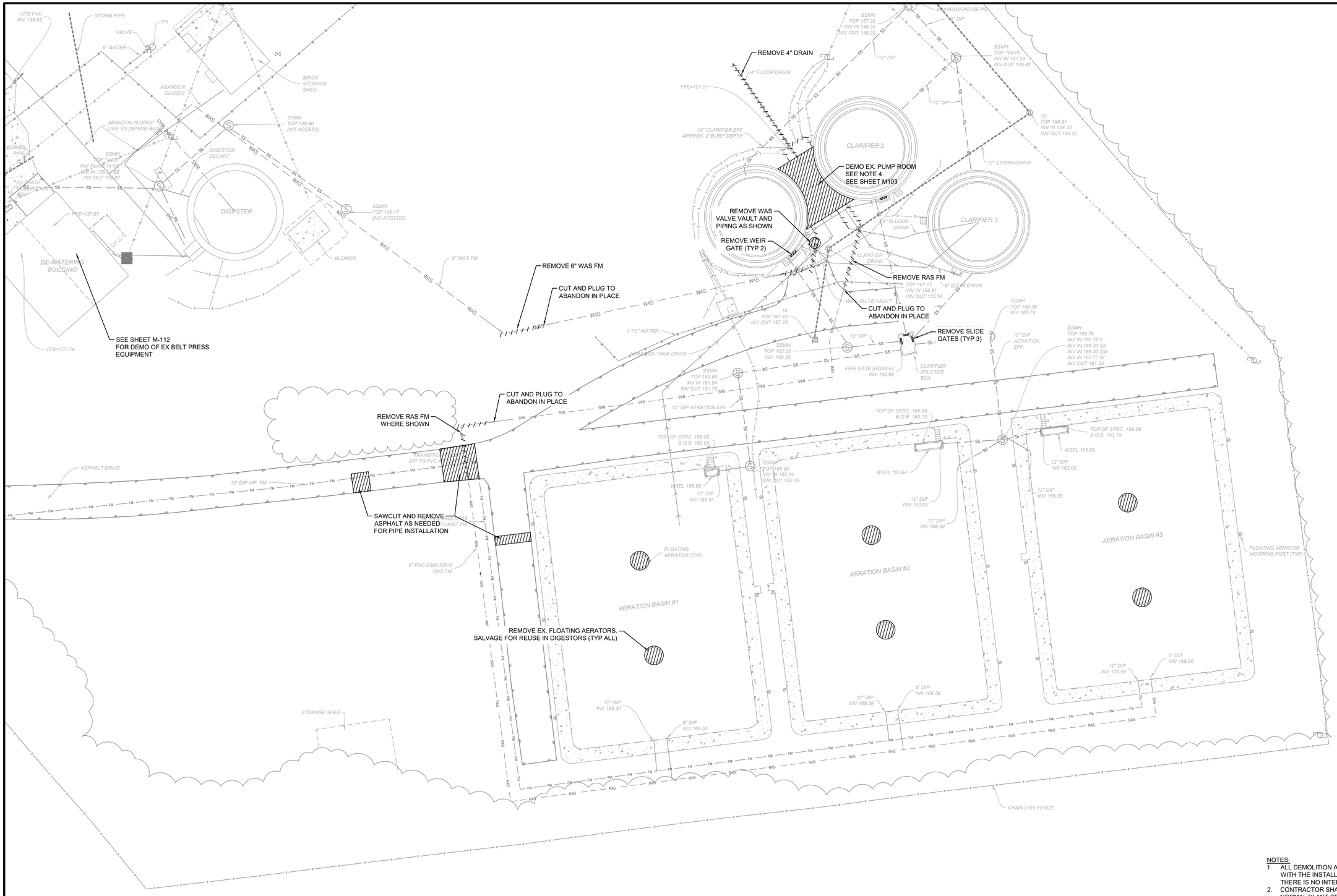
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

DEMOLITION PLAN

DRAWING NO.

C111



NOTES:

1. ALL DEMOLITION ACTIVITIES SHALL BE COORDINATED WITH THE INSTALLATION OF NEW EQUIPMENT SO THAT THERE IS NO INTERRUPTION IN PLANT OPERATION.
2. CONTRACTOR SHALL COORDINATE ANY DISTURBANCE IN NORMAL PLANT OPERATION WITH OPERATIONS STAFF.
3. CONTRACTOR MAY USE BYPASS PUMPING OR INTERFERENCE MANHOLES WHERE NEEDED TO MAINTAIN PLANT FLOWS DURING CONSTRUCTION.
4. USE CAUTION TO PREVENT DAMAGE TO EX. CLARIFIERS. SAWCUT ENTIRE DEPTH OF CONCRETE AT DEMO LIMITS. REMOVE EXPOSED REBAR TO A DEPTH OF AT LEAST 2" FROM CUT FACE, EITHER BY DRILLING OUT REBAR, OR CHIPPING OUT CONCRETE AND CUTTING REBAR AT DEPTH. PAINT EXPOSED SURFACE OF REBAR W/ A RUST INHIBITOR AND PATCH HOLE W/ NON-SHRINKING GROUT.

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COA No. PEF000635 | Exp: 06/30/2024

GEORGIA REGISTERED No. 34555 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date
1	ISSUED FOR BID	4/12/24
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Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Project #: 1521.2201
Date: 4/11/24
SCALE: 1" = 20'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

DEMOLITION PLAN

DRAWING NO.
C112

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COA No. PEF000065 | Exp. 08/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER
No. 31545
11-14-24

Rev.	Description	Date
8	---	---
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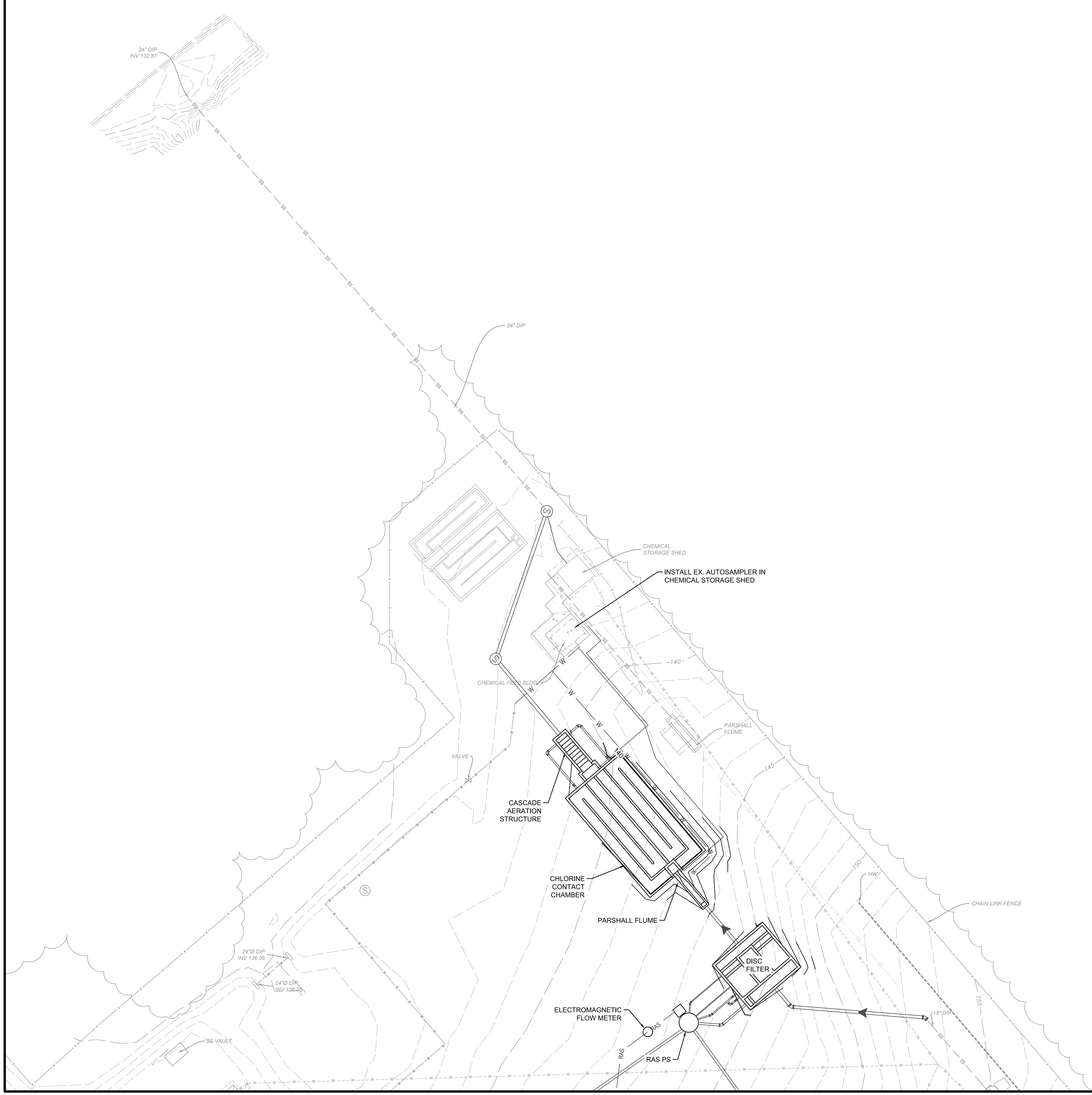
1	ISSUED FOR BID	4/12/24

Drawn by: MGW
Check by: DLO
Design by: DLO
Review by: DLO
Date: 4/11/24
Project #: 1521.2201
SCALE: 1" = 40'
40' 20' 0' 40'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

OVERALL PROPOSED SITE PLAN

DRAWING NO.
C200



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DAVIS OZIER — Georgia Registered Professional Engineer — 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 20'

Rev.	Description	Date	Apr.
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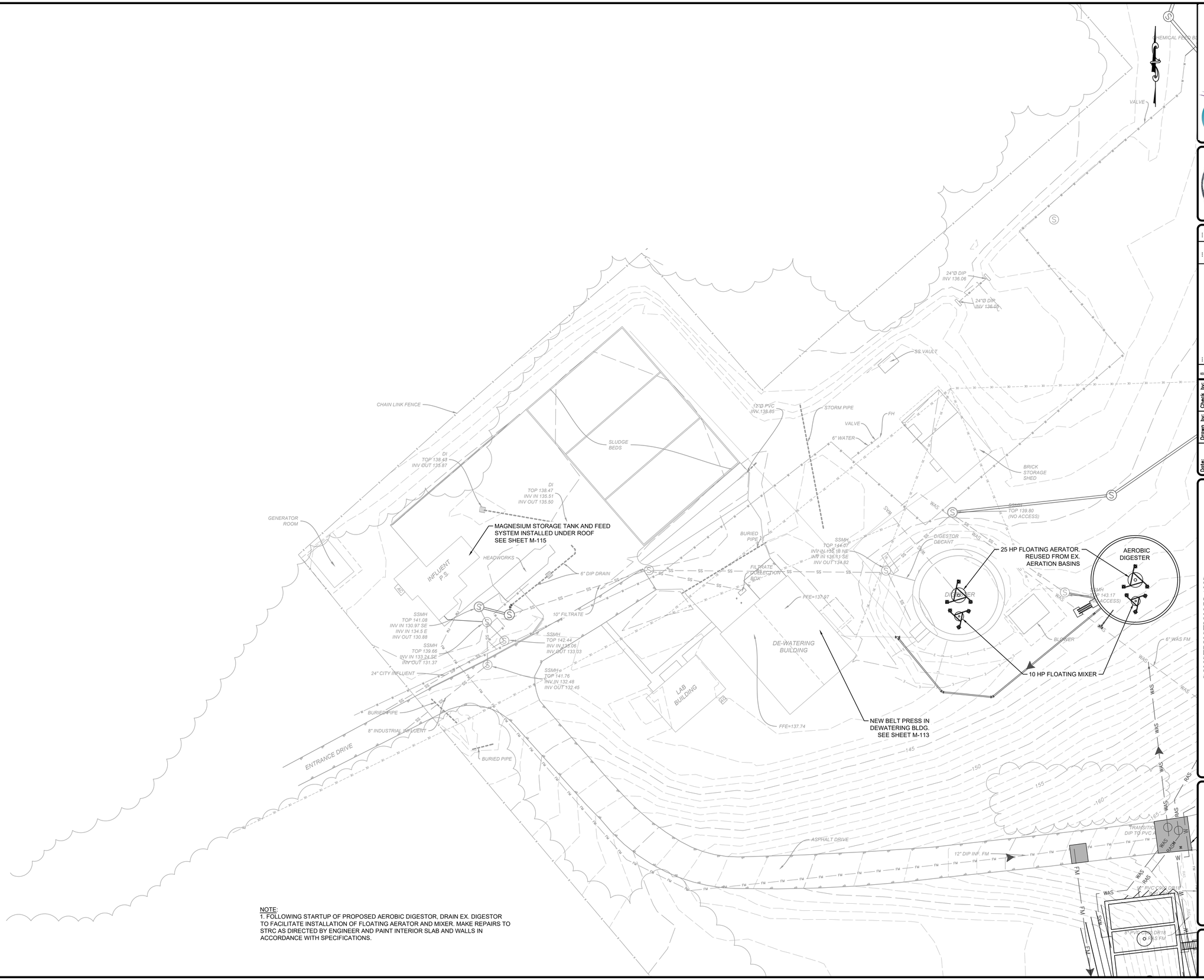
1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED SITE PLAN SECTION 1

DRAWING NO.
C201



NOTE:
1. FOLLOWING STARTUP OF PROPOSED AEROBIC DIGESTOR, DRAIN EX. DIGESTOR TO FACILITATE INSTALLATION OF FLOATING AERATOR AND MIXER. MAKE REPAIRS TO STRC AS DIRECTED BY ENGINEER AND PAINT INTERIOR SLAB AND WALLS IN ACCORDANCE WITH SPECIFICATIONS.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 31648
11-14-24
DAVIS OZIER

Rev.	Description	Date	Apr.
8	---	---	---
7	---	---	---
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1	ISSUED FOR BID	4/12/24	---

Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO
SCALE: 1" = 20'
20' 10' 0' 20'

CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED SITE PLAN
SECTION 2

DRAWING NO.
C202

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	

Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #:	Design by:	Review by:
1521.2201	DLO	DLO

SCALE: 1" = 20'

CONSTRUCTION PLANS FOR

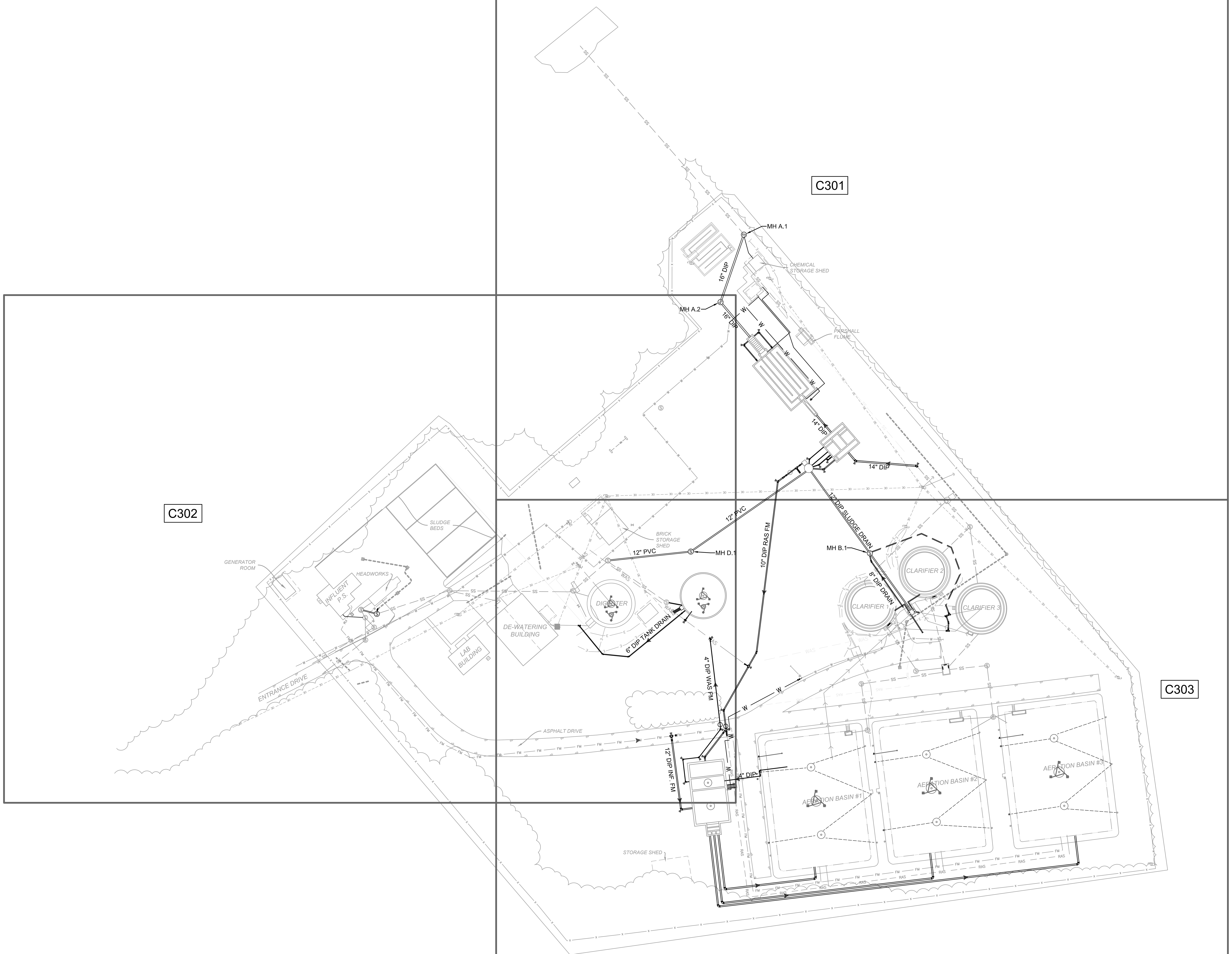
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED SITE PLAN SECTION 3

DRAWING NO.

C203



NOTE:
1. ALL ABOVE GROUND PIPING SHALL BE PC 350 DIP. BURIED PIPING MAY BE SUBSTITUTED WITH C900 DR 25 PVC OR DR 11 HDPE UNLESS SPECIFIED OTHERWISE.

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COA NO. PEF000625 | EXP. 06/30/2024

GEORGIA REGISTERED No. PE0... PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 40' (40' 20' 0' 40')

Rev.	Description	Date	Apr.
8	---	---	---
7	---	---	---
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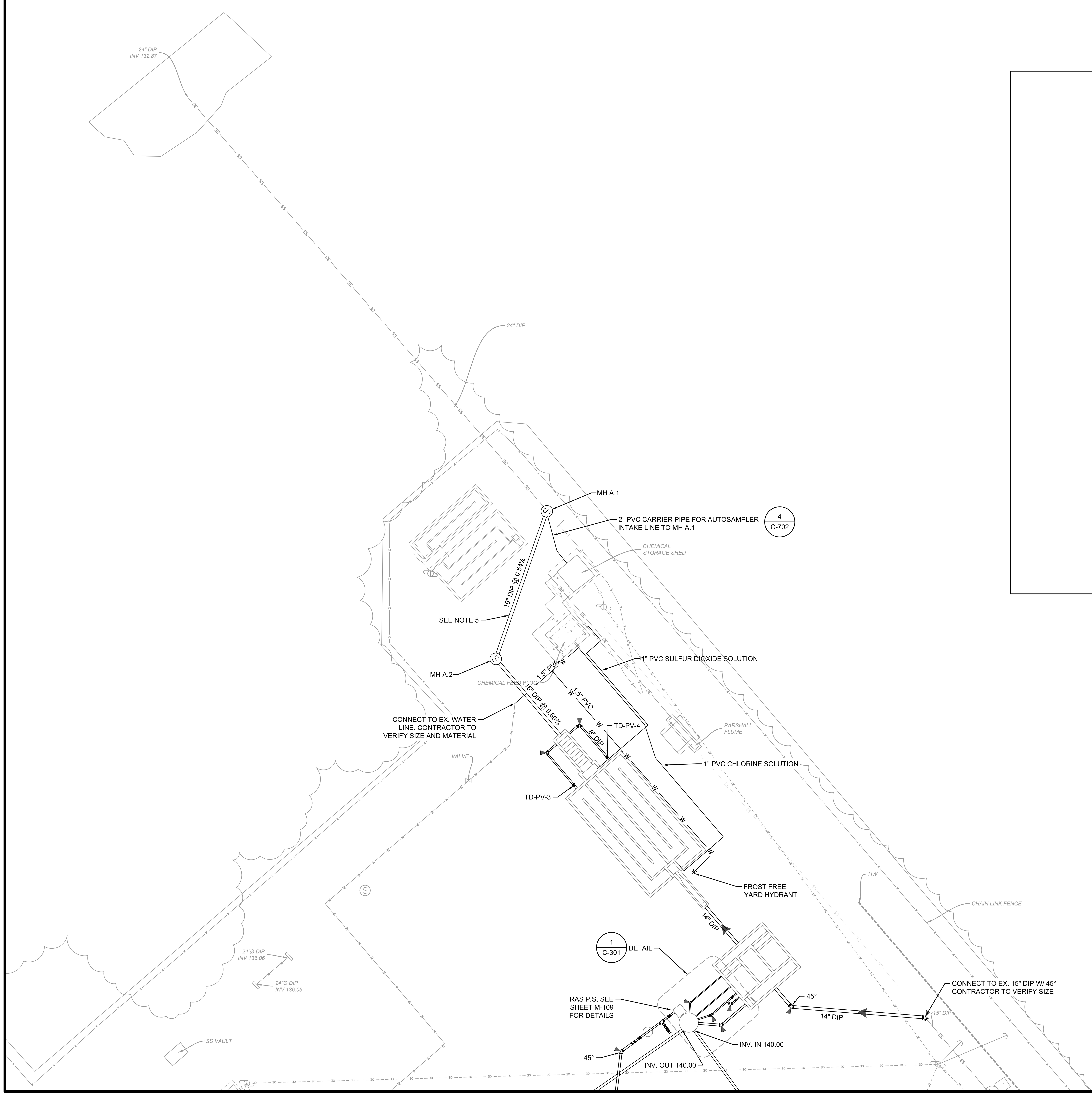
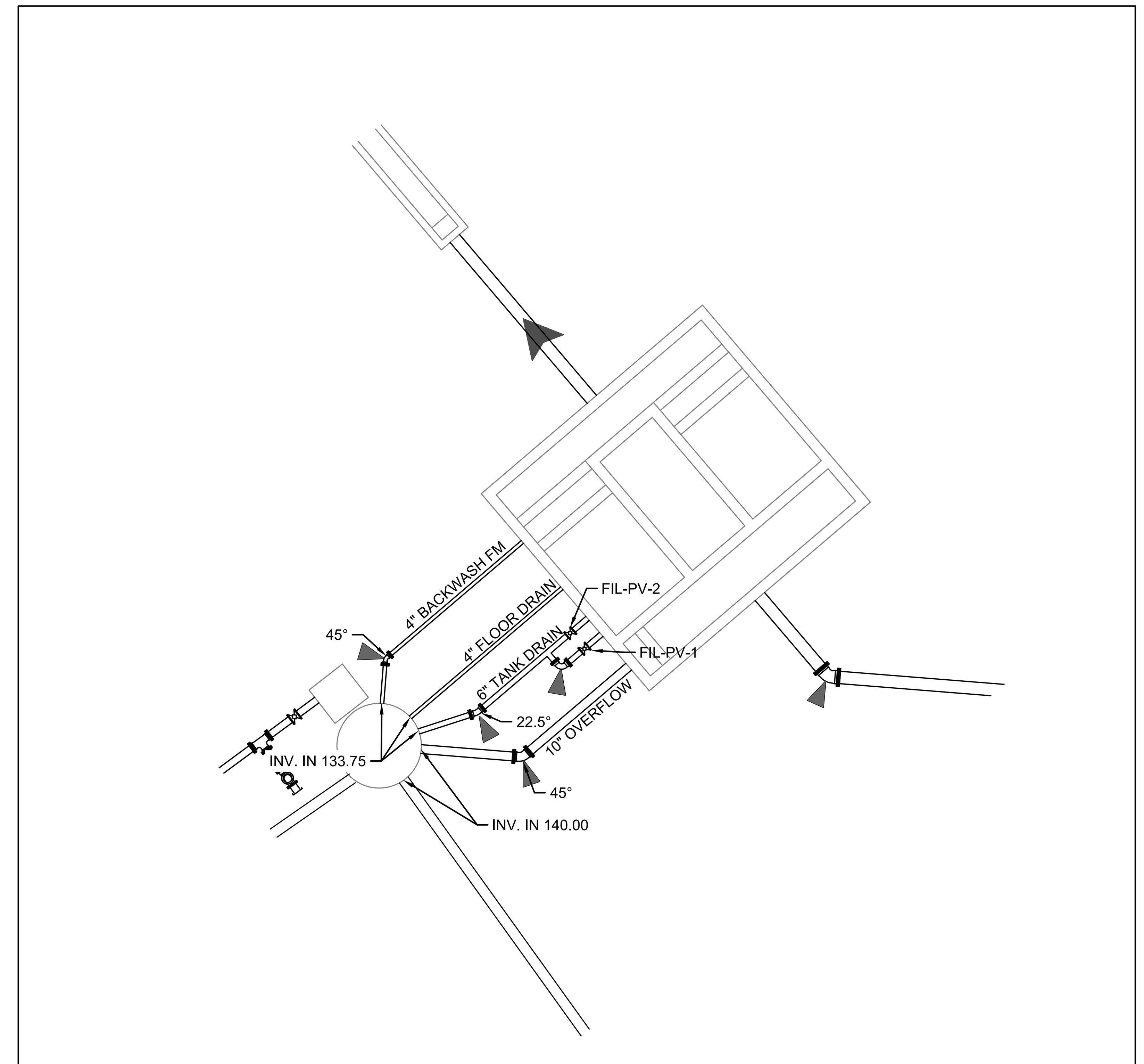
1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

OVERALL PROPOSED PIPING PLAN

DRAWING NO.
C300





1
C-301
DETAIL
SCALE: 1" = 10'

NOTE:
1. ALL BURIED VALVES SHALL BE EQUIPPED W/ VALVE BOX & STEM EXTENSION TO BRING OPERATION NUT WITHIN 6" OF FINISHED GRADE. VALVE BOX SHALL BE INSTALLED FLUSH W/ FINISHED GRADE.
2. ALL BURIED PIPE JOINTS SHALL BE MJ.
3. PROVIDE THRUST RESTRAINT AT ALL ELB AND FITTINGS BY USE OF RESTRAINING GLANDS. ALSO PROVIDE A MIN OF 1 FULL JOINT OF RJ ON ALL SIDES OF FITTINGS BY USE OF RESTRAINING GASKETS.
4. ALL ABOVE GROUND PIPING AND PIPING BURIED BENEATH A STRUCTURE SHALL BE PC 350 DIP. BURIED PIPING MAY BE SUBSTITUTED WITH C900 DR 25 PVC OR DR 11 HDPE UNLESS SPECIFIED OTHERWISE.
5. 16" DIP EFFLUENT MAY BE SUBSTITUTED WITH 18" SDR 26 PVC.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER — DAVIS OZIER — 11-14-22

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	
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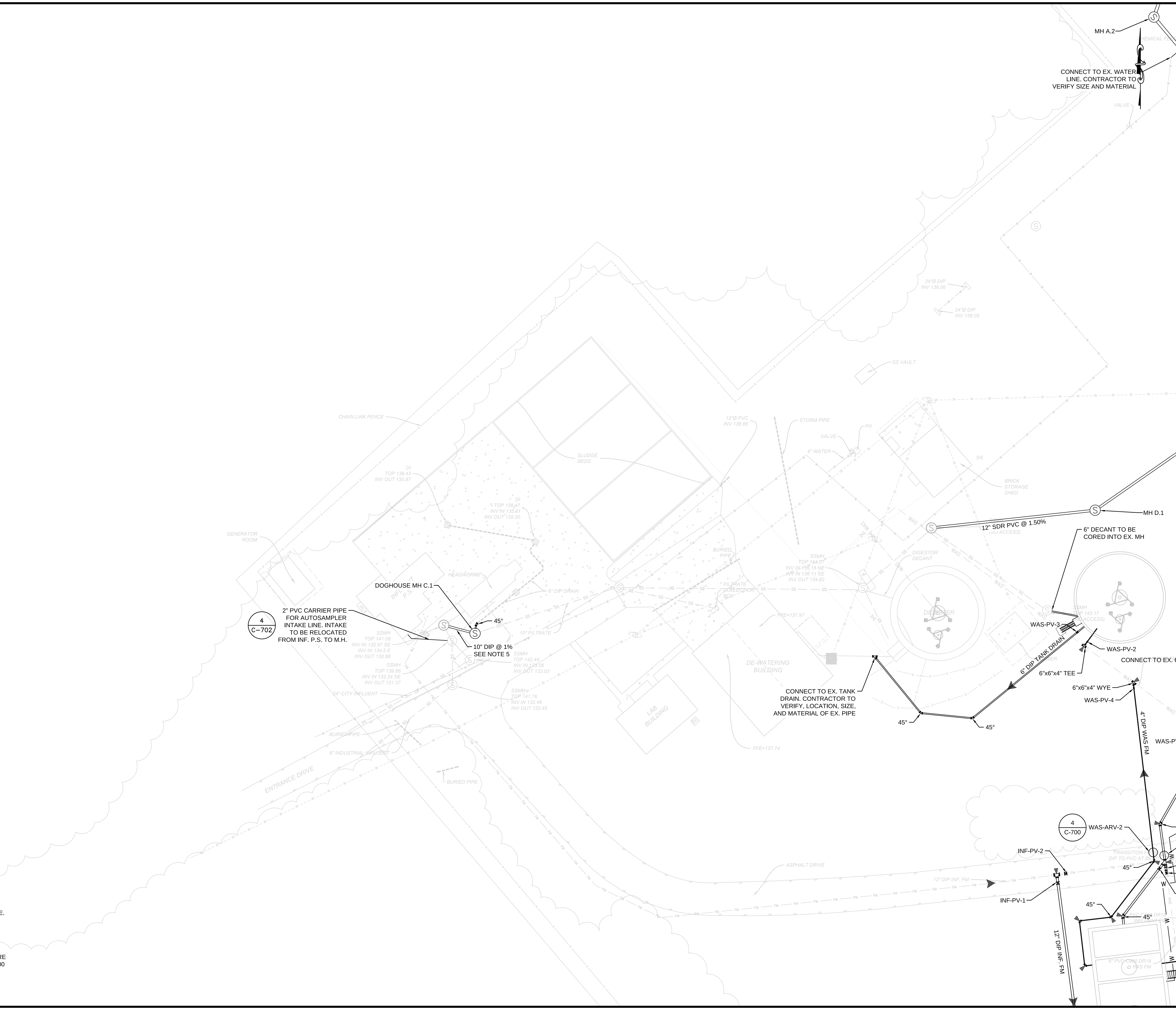
Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 20'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED PIPING PLAN SECTION 1

DRAWING NO.
C301



NOTE:

1. ALL BURIED VALVES SHALL BE EQUIPPED W/ VALVE BOX & STEM EXTENSION TO BRING OPERATION NUT WITHIN 6" OF FINISHED GRADE. VALVE BOX SHALL BE INSTALLED FLUSH W/ FINISHED GRADE.
2. ALL BURIED PIPE JOINTS SHALL BE MJ.
3. PROVIDE THRUST RESTRAINT AT ALL ELB AND FITTINGS BY USE OF RESTRAINING GLANDS. ALSO PROVIDE A MIN OF 1 FULL JOINT OF RJ ON ALL SIDES OF FITTINGS BY USE OF RESTRAINING GASKETS.
4. ALL ABOVE GROUND PIPING AND PIPE BURIED BENEATH A STRUCTURE SHALL BE PC 350 DIP. BURIED PIPING MAY BE SUBSTITUTED WITH C900 DR 25 PVC OR DR 11 HDPE UNLESS SPECIFIED OTHERWISE.
5. 10" DIP GRAVITY SEWER MAY BE SUBSTITUTED WITH 10" SDR 26 PVC.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 1" = 20' (0' 10' 20')

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	---
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CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED PIPING PLAN SECTION 2

DRAWING NO.

C302

VALVE SCHEDULE			
IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
INF-PV-1	12" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.O.	40 05 51 2.04
INF-PV-2	12" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.C.	40 05 51 2.04
SL-PV-5	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
SL-PV-6	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
SL-PV-7	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
RAS-PV-7	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
RAS-PV-8	10" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.O.	40 05 51 2.04
WAS-PV-1	6" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
WAS-PV-2	4" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.O.	40 05 51 2.04
WAS-PV-3	6" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
WAS-PV-4	4" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.O.	40 05 51 2.04
RAS-ARV-1	2" AIR RELEASE VALVE	AUTOMATIC	40 05 51 2.07
WAS-ARV-2	2" AIR RELEASE VALVE	AUTOMATIC	40 05 51 2.07

NOTE:
1. ALL BURIED VALVES SHALL BE EQUIPPED W/ VALVE BOX & STEM EXTENSION TO BRING OPERATION NUT WITHIN 6" OF FINISHED GRADE. VALVE BOX SHALL BE INSTALLED FLUSH W/ FINISHED GRADE.
2. ALL BURIED PIPE JOINTS SHALL BE MJ.
3. PROVIDE THRUST RESTRAINT AT ALL ELB AND FITTINGS BY USE OF RESTRAINING GLANDS. ALSO PROVIDE A MIN OF 1 FULL JOINT OF RJ ON ALL SIDES OF FITTINGS BY USE OF RESTRAINING GASKETS.
4. PROPOSED 14" PIPE PENETRATION INTO THE EXISTING AERATION BASIN SHALL BE MADE BY SAW CUTTING EXISTING CONC STRUCTURE AS NEEDED TO COMPLETE INSTALLATION, INSTALLING PIPE TO PROPER ELEVATION W BEDDING AS DETAILED, AND FILL ANNULAR SPACE W NON SHRINK GROUT.
5. ALL ABOVE GROUND PIPING AND PIPE BURIED BENEATH A STRUCTURE SHALL BE PC 350 DIP. BURIED PIPING MAY BE SUBSTITUTED WITH C900 DR 25 PVC OR DR 11 HDPE UNLESS SPECIFIED OTHERWISE.
6. 12" GRAVITY SEWER MAY BE SUBSTITUTED WITH 12" SDR 26 PVC.

INTEGRATED Science & Engineering
1039 SULLIVAN ROAD, SUITE 200, NEWNAN, GEORGIA 30265
(P) 678.552.2106 | (F) 678.552.2107
COA NO. PEF000625 | EXP. 06/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
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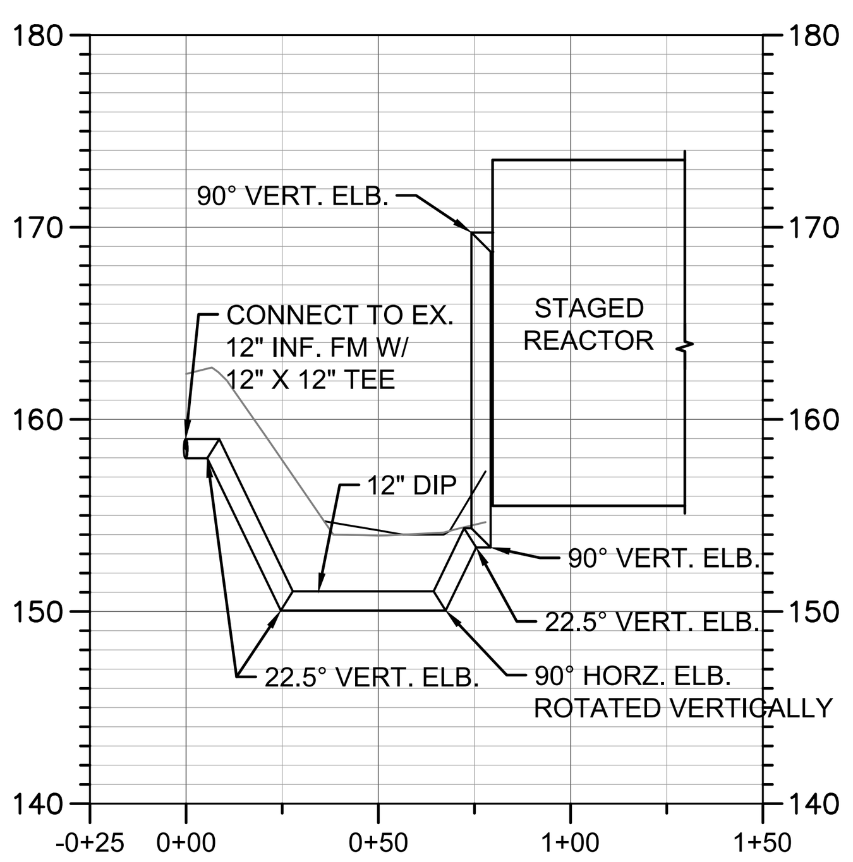
1	ISSUED FOR BID	4/12/24	---

Date: 4/11/24 | Drawn by: MGW | Check by: DLO
Project #: 1521.2201 | Design by: DLO | Review by: DLO
SCALE: 1" = 20'

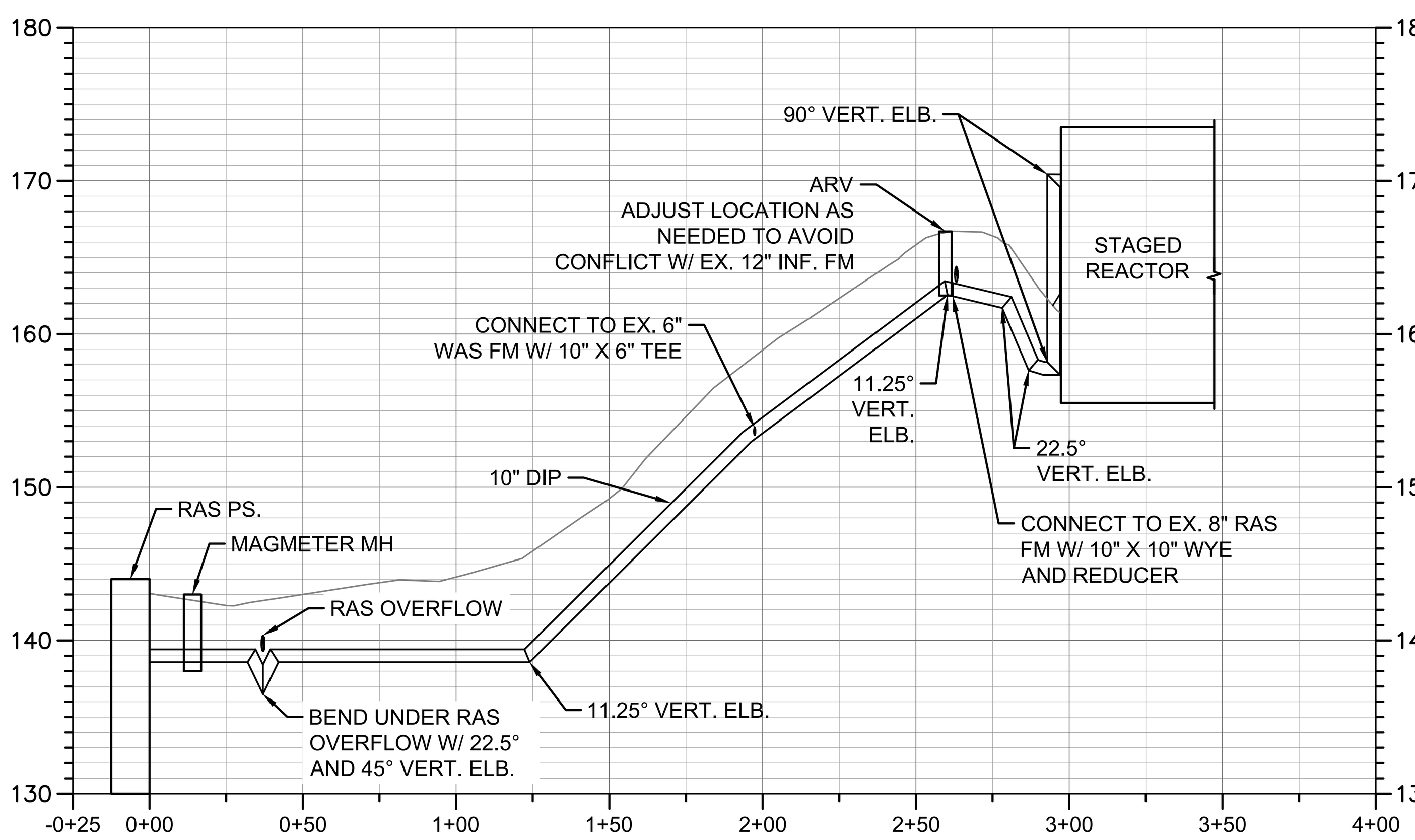
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED PIPING PLAN SECTION 3

DRAWING NO. C303



INFLUENT FM
SCALE:V=10 H=50



RAS FM
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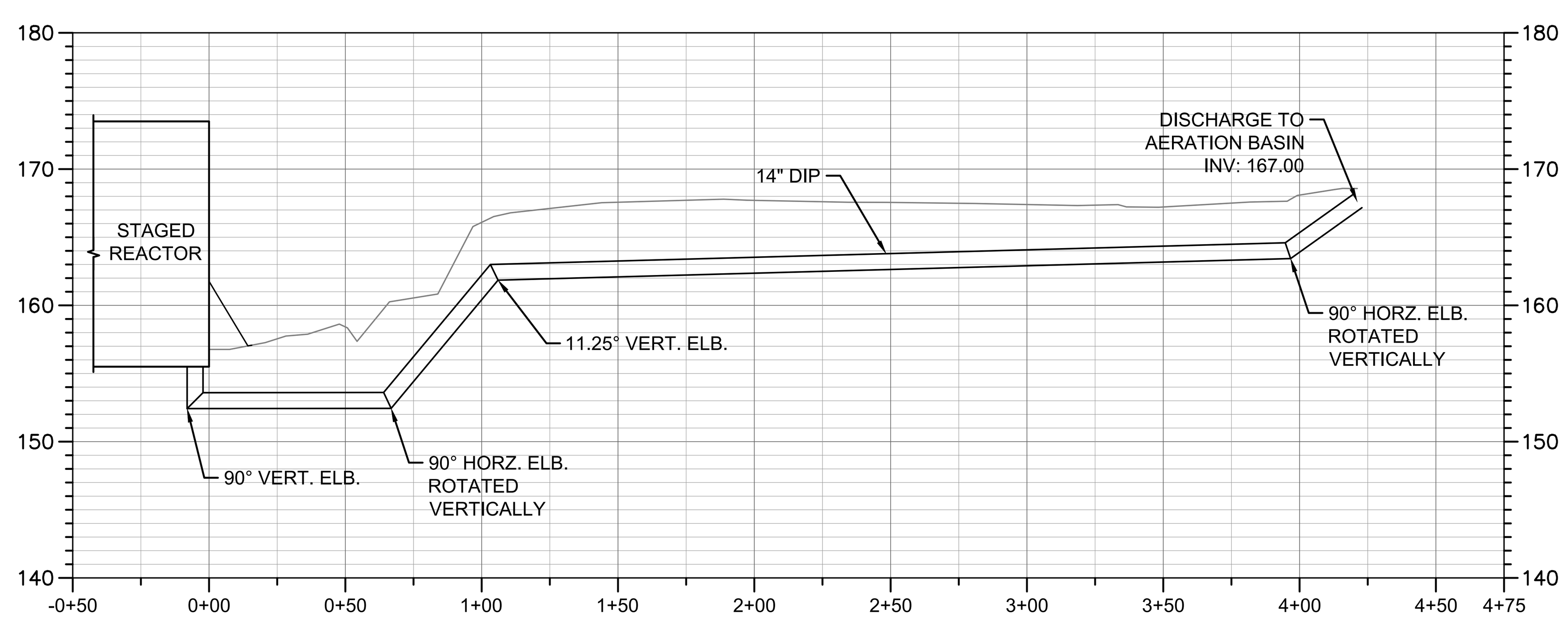

INF. SPLITTER BOX TO AERATION BASIN
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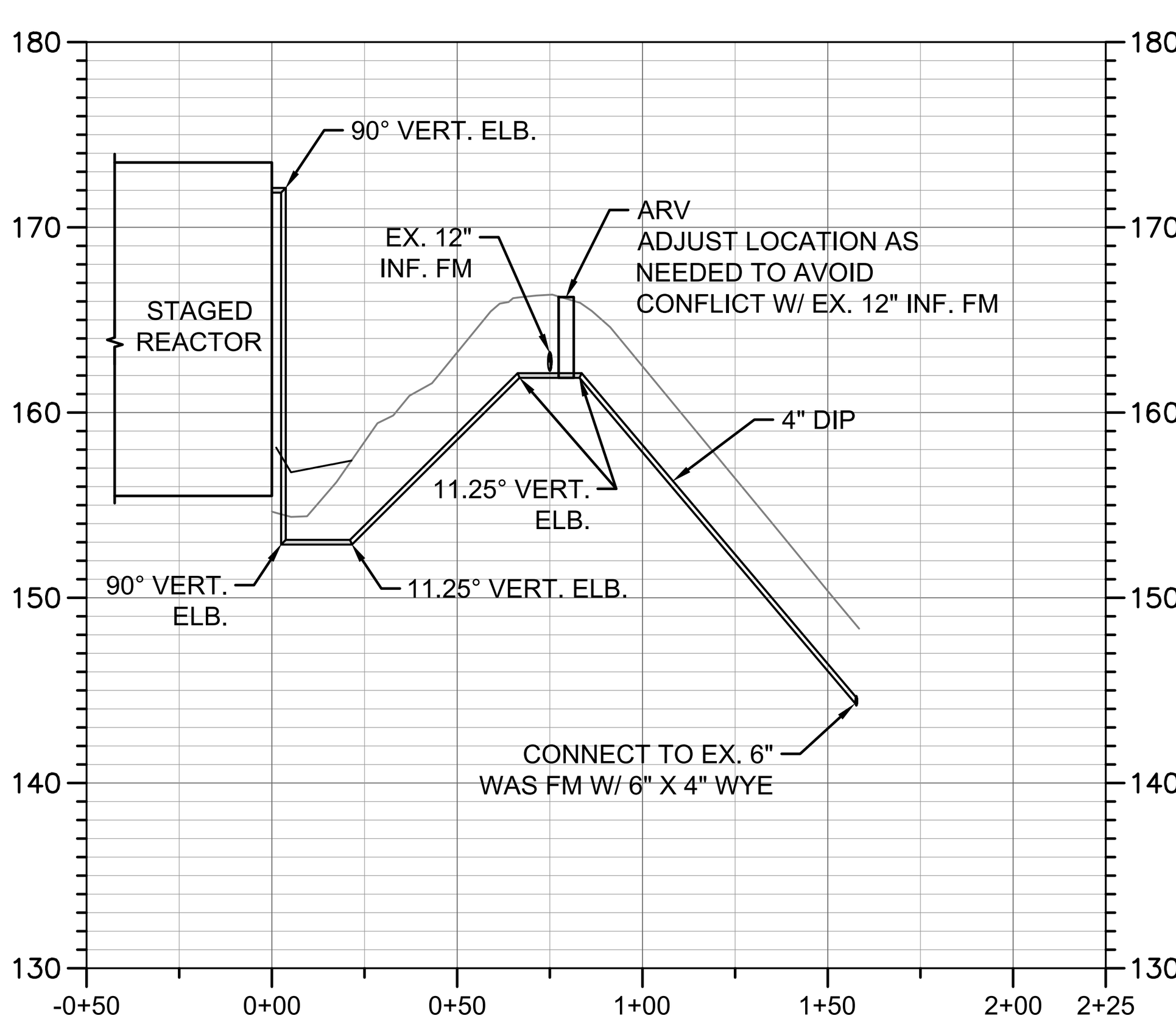
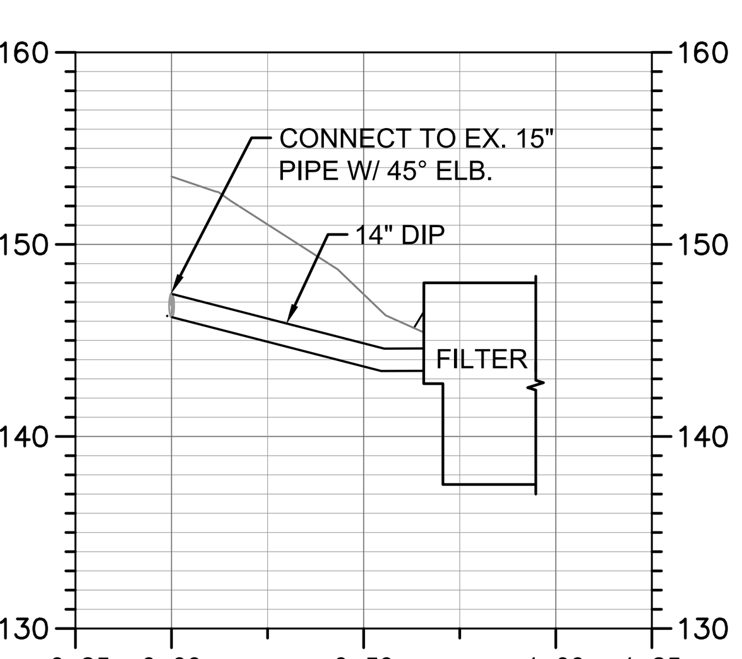


WAS FM
SCALE:V=10 H=50



FILTER INF
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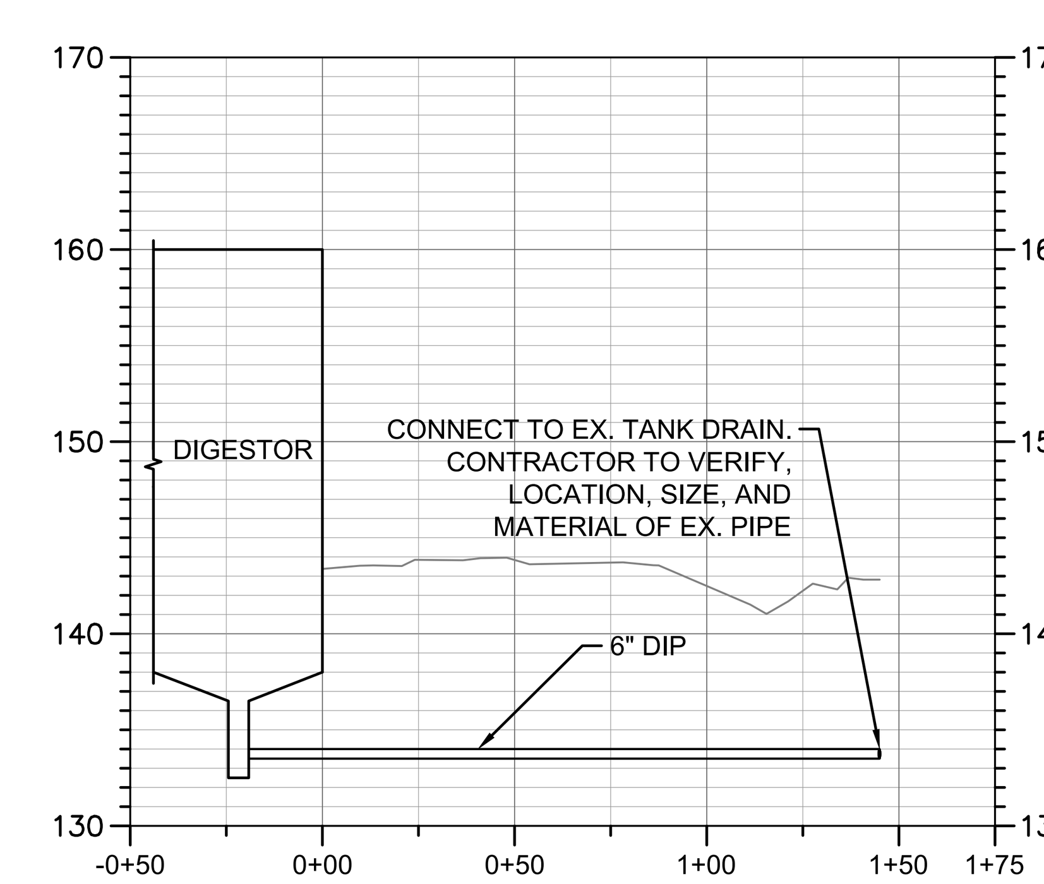

DIGESTOR TANK DRAIN
SCALE:V=10 H=50

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GEORGIA REGISTERED No. PE0[illegible] PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

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Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

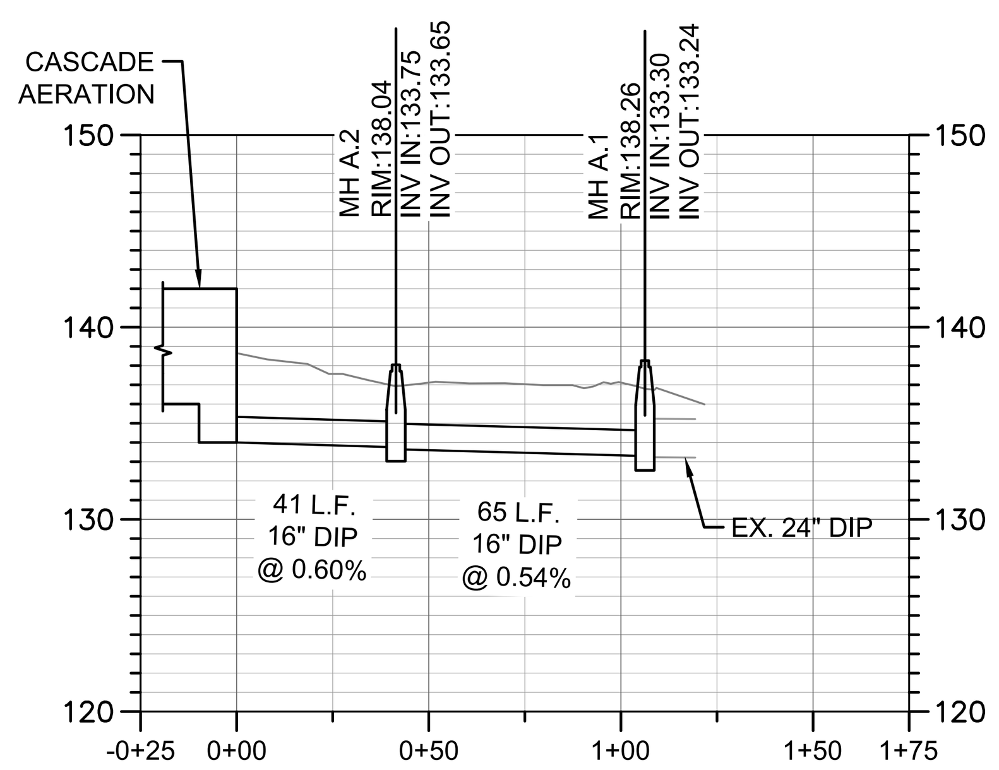
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

FORCE MAIN PROFILES

DRAWING NO.

C304



OUTFALL
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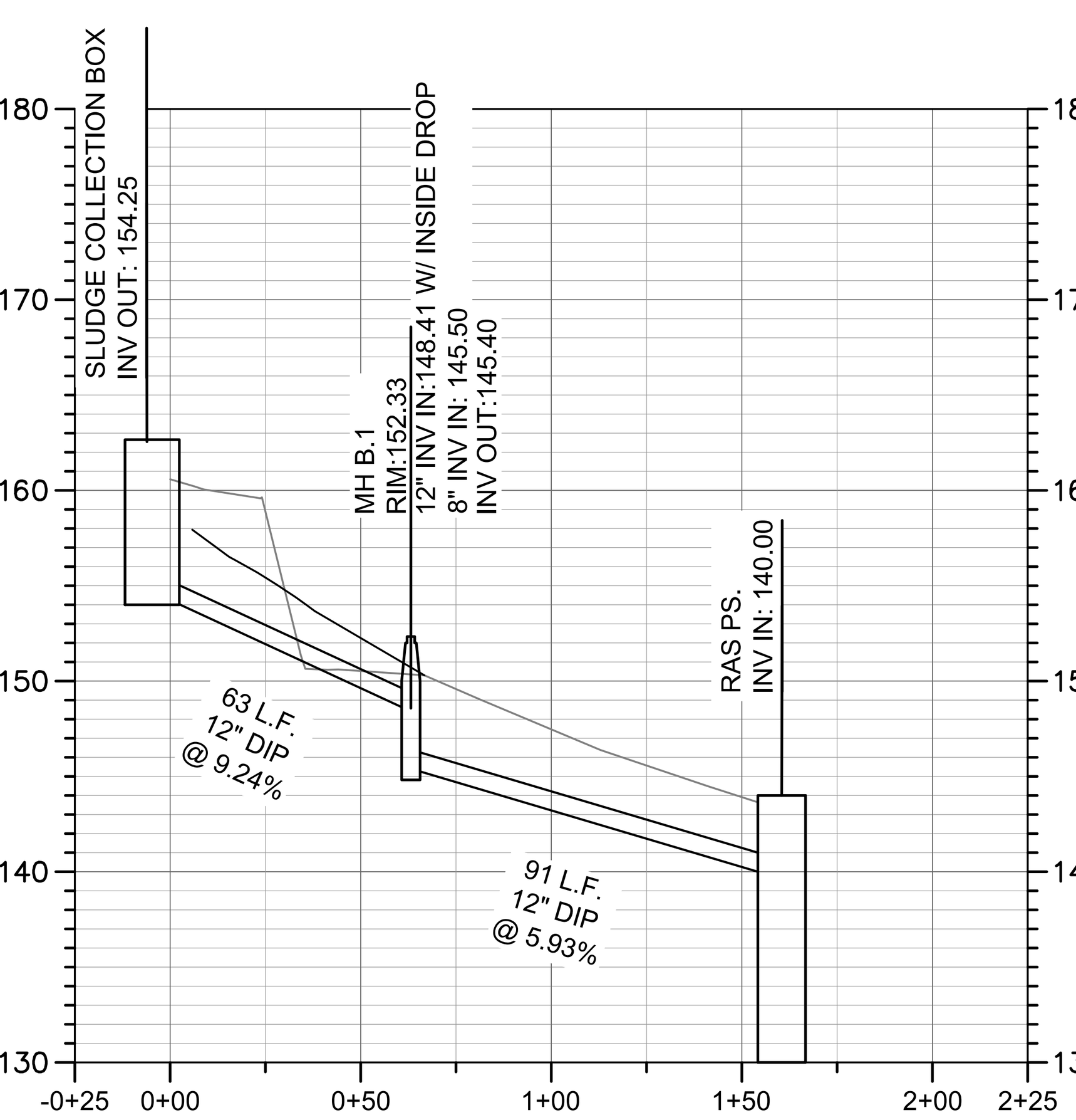
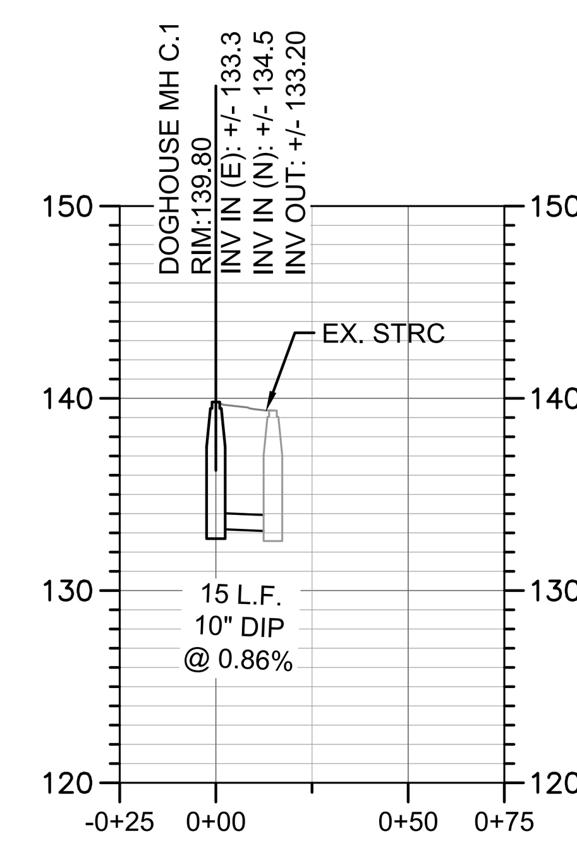


SLUDGE COLLECTION BOX TO RAS PS
SCALE:V=10 H=50



FILTRATE DRAIN
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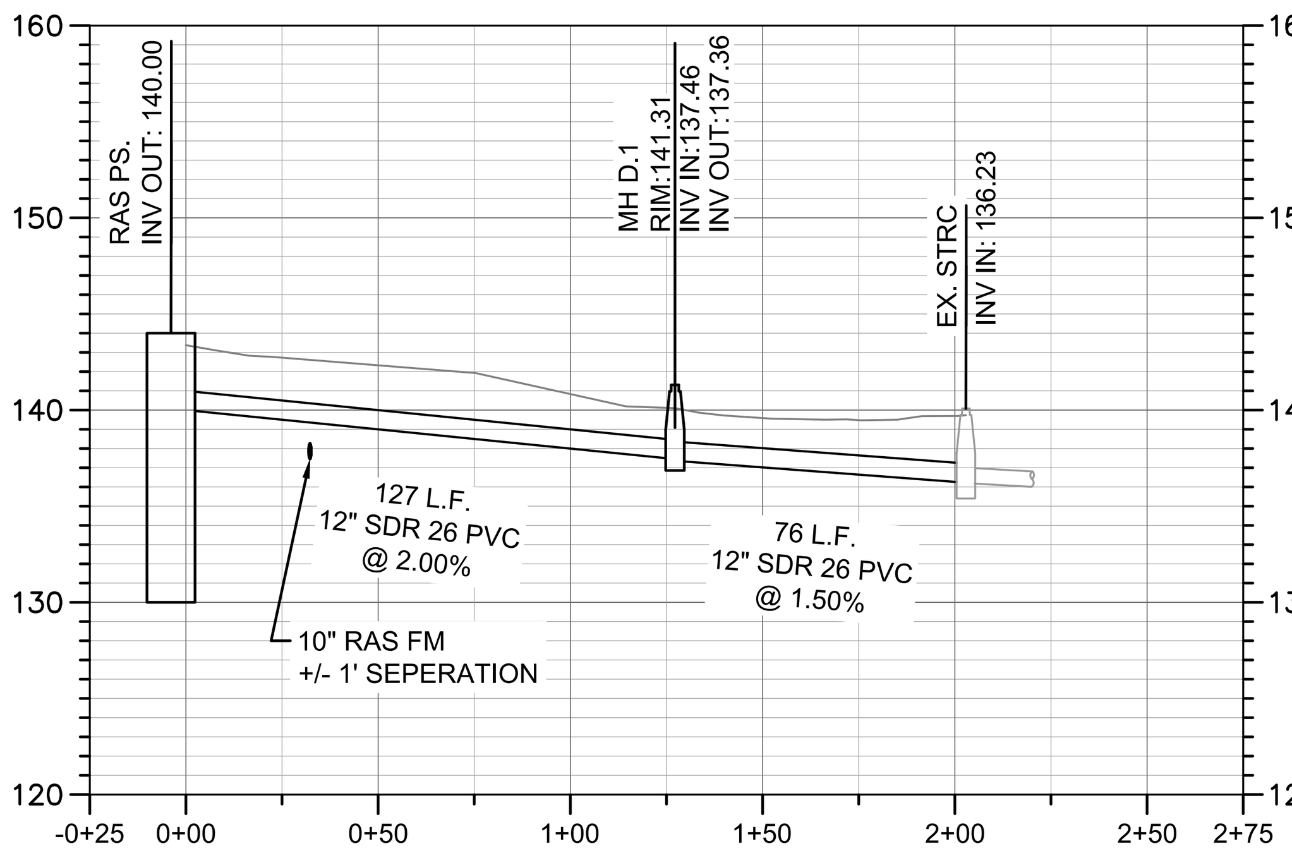

RAS OVERFLOW
SCALE:V=10 H=50

NOTE:
1. SEE DETAIL 3 ON SHEET C701 FOR INSIDE DROP DETAIL FOR MH B.1.
2. VERIFY INV ELEVATIONS ON EX. STRUCTURES AND CONFIRM SIZES OF DOWNSTREAM PIPES W/ ENGINEER PRIOR TO MAKING CONNECTIONS SHOWN.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
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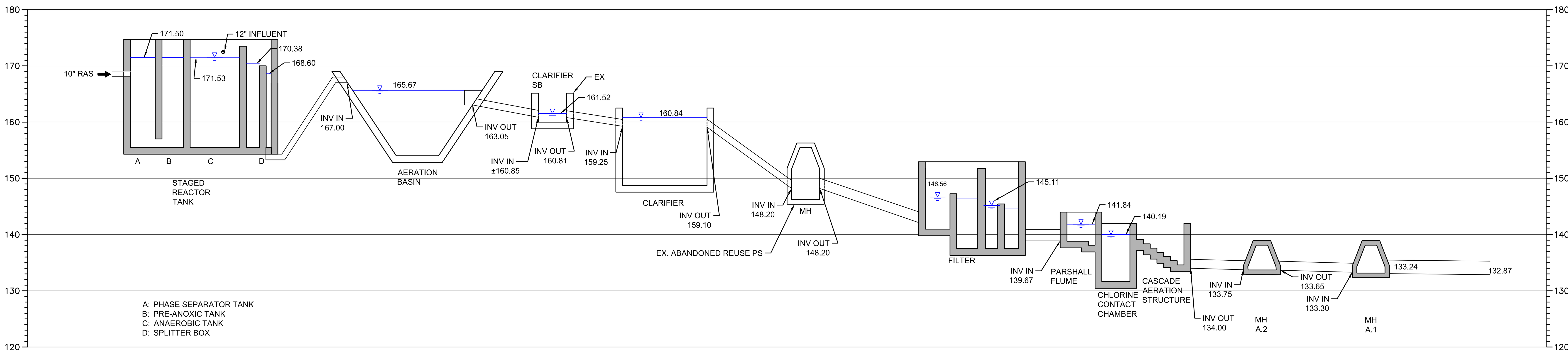
Date: 4/11/24 | Drawn by: MGW | Check by: DLO
Project #: 1521.1201 | Design by: DLO | Review by: DLO

SCALE: AS SHOWN

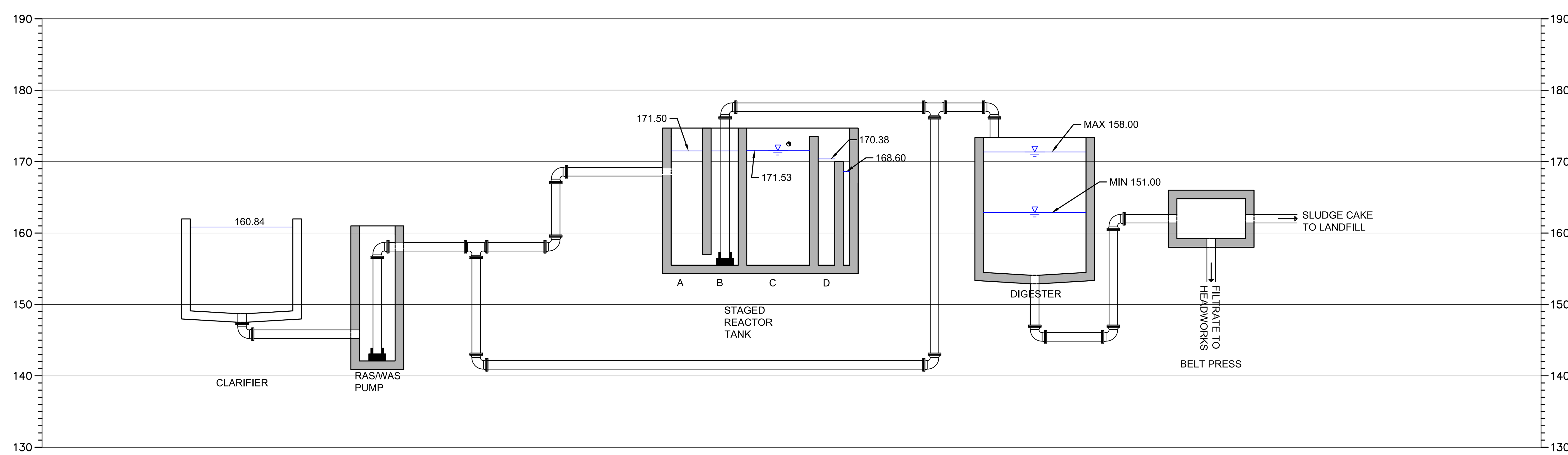
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

GRAVITY SEWER PROFILES

DRAWING NO.
C305



HYDRAULIC GRADE PROFILE
SCALE:V=10 H=100



RETURN FLOW HYDRAULIC GRADE PROFILE (1)
SCALE:V=10 H=100

A: PHASE SEPARATOR TANK
B: PRE-ANOXIC TANK
C: ANAEROBIC TANK
D: SPLITTER BOX

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GEORGIA REGISTERED No. PE0 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

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SCALE: AS SHOWN

CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

HYDRAULIC PROFILES

DRAWING NO.
C306

EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS

FOR

SYLVANIA WPCP UPGRADES

GENERAL NOTES:

1. OWNER:

   CITY OF SYLVANIA
   104 SOUTH MAIN ST,
   SYLVANIA, GEORGIA 30467
   CONTACT: STACY MATHIS
   (912) 564-7411

2. ENGINEER/SURVEYOR:

   INTEGRATED SCIENCE & ENGINEERING, INC.
   1039 SULLIVAN ROAD, STE. 200
   NEWNAN, GA 30265
   CONTACT: DAVIS L OZIER, P.E
   (678) 552 - 2106

EROSION, SEDIMENTATION AND POLLUTION CONTROL NOTES:

1. 24-HOUR CONTACT: WESLEY PARKER, 912-764-7722 (#3)
2. DISTURBED AREA: 6.90 AC.; TOTAL SITE AREA: 6.90 AC. (#5)
3. **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.** (#19)
4. **EROSION CONTROL MEASURES MUST BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.** (#20)
5. ALL EROSION CONTROL MEASURES ARE TO CONFORM TO THE STANDARDS SET FORTH IN THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" LATEST EDITION.
6. EROSION CONTROL DEVICES SHALL BE INSTALLED BEFORE GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM SHOWN ON THE APPROVED PLANS. IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE OWNER IMMEDIATELY!
7. **ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.** (#21)
8. SEDIMENT CONTROL MEASURES MUST BE INSTALLED BEFORE CLEARING AND GRADING BEGINS.
9. INSPECTIONS BY QUALIFIED PERSONNEL PROVIDED BY PRIMARY PERMITEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON SITE IN COMPLIANCE WITH NPDES PERMIT NUMBER GAR 100002.
10. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMP's, AND SEDIMENT BASINS WITHIN 7 DAYS AFTER INSTALLATION. (#14)
11. NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS. (#15)
12. AMENDMENTS / REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL. (#17)
13. THE PRIMARY PERMITTEE IS REQUIRED KEEP THE ES&PC PLAN UP-TO-DATE.
14. STATE WATERS ARE IDENTIFIED WITHIN 200 FEET OF THE PROJECT BOUNDARIES, AS IDENTIFIED HEREIN, HOWEVER, NO STATE WATERS ARE LOCATED WITHIN THE DISTURBED AREA OF THE PROJECT. (#40)
15. WASTE MATERIALS SHALL NOT BE DISCHARGED TO STATE WATERS EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT. (#18)
16. THE ES&PC PLAN IS IN COMPLIANCE WITH ALL CURRENT WASTE DISPOSAL, SANITARY SEWER, AND/OR SEPTIC TANK REGULATIONS.
17. EROSION CONTROL MATTING, Mb, IS REQUIRED ON ALL SLOPES 3:1 OR STEEPER.
18. NO ALTERNATIVE BMP'S WERE USED IN THE DESIGN OF THE ES&PC PLAN.
19. NO CONSTRUCTION ACTIVITY WILL DISCHARGE STORM WATER INTO A BIOTA IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF A BIOTA IMPAIRED STREAM SEGMENT. RECEIVING ARE LISTED AS IMPAIRED FOR D.O. ACCORDING TO 2022 303(d) LIST. (#22)
20. CONSTRUCTION BEGINS: LONG: -81.615153 LAT: 32.764444
    ENDS: LONG: -81.563822 LAT: 32.765661 (#6)
21. NO KNOWN WETLANDS EXIST WITHIN THE PROJECT BOUNDARIES, AS VERIFIED THROUGH THE US FWS NATIONAL WETLANDS INVENTORY ON 6/20/2022.
22. NO PORTION OF THIS PROPERTY'S PROJECT BOUNDARIES ARE LOCATED WITHIN A FLOOD HAZARD AREA ACCORDING TO F.E.M.A. FLOOD INSURANCE RATE MAP FOR SCREVEN COUNTY PANEL #13251C0215C DATED 07/22/2010.

(#4)

Primary Permittee	Qualified Personnel
OWNER/DEVELOPER:	CIVIL ENGINEER:
CITY OF SYLVANIA 104 SOUTH MAIN ST, SYLVANIA, GEORGIA 30467	INTEGRATED SCIENCE & ENGINEERING 1039 SULLIVAN ROAD, SUITE 200 NEWNAN, GA 30265
Contact: STACY MATHIS PHONE: (912) 564-7411	Contact: DAVIS L OZIER, P.E. PHONE: (678) 552-2106 EXT 6001

Engineer Certification (#11)(#12)(#13)

"I certify under penalty of law that this plan was prepared after a site visit to the location described herein by myself or my authorized agent, under my supervision.

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia," (published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 100002."

Design professional of record shall inspect the site within 7 days of the construction start. The primary permittee shall notify the design professional of the construction start date prior to that start date.

DAVIS OZIER, P.E. 11-14-22
P.E. #: 048259 GSWCC#: 0000077764

Permittee Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

PERMITTEE

(#29)

SITEWORK ACTIVITY SCHEDULE
ANTICIPATED START DATE - MARCH 2023

ITEM	MONTH																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PHASE 1 E&S																		
DEMO																		
SITE WORK																		
STABILIZATION																		
CLEAN UP																		

SHEET INDEX

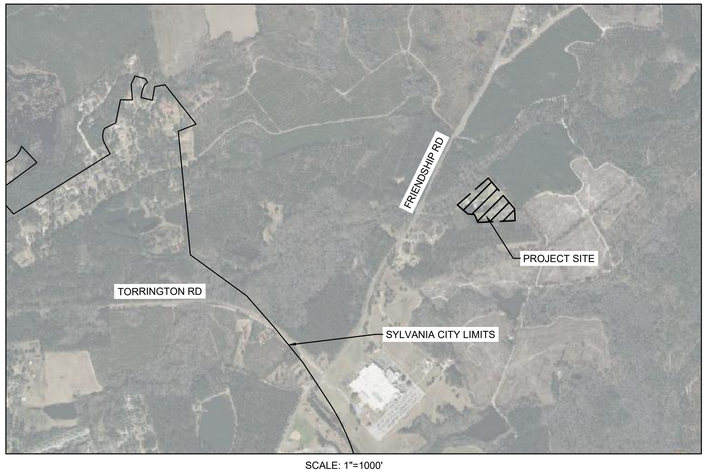
SHEET	TITLE
C500	ES&PC COVER
C501	COMPREHENSIVE MONITORING PLAN
C502	NPDES CHECKLIST
C503	DRAINAGE BASIN MAPS
C510	ES&PC PLAN - ALL PHASES
C600	EROSION CONTROL DETAILS
C601	EROSION CONTROL DETAILS

INTEGRATED Science & Engineering
1039 Sullivan Road, Suite 200, Newnan, Georgia 30265
(p)770.461.4292 (f)770.461.4801
Atlanta/Savannah

811 Know what's below. Call before you dig.

SITE LOCATION MAP (#9)

SITE ADDRESS: 624 FRIENDSHIP RD. SYLVANIA, GA 30467



SCALE: 1"=1000'

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COA NO. PEF000065 | EXP: 06/30/2024

GEORGIA REGISTERED No. 048259 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

(#7)

Rev.	Description	Date	Apr.
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Drawn by: MGW | Design by: DLO | Check by: DLO | Review by: DLO
Date: 4/11/24
Project #: 1521.2201

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

ESPC COVER

DRAWING NO.
C500

(#2) DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

GENERAL PROJECT INFORMATION

Primary Permittee

OWNER/DEVELOPER:

CITY OF SYLVANIA
104 SOUTH MAIN ST,
SYLVANIA, GEORGIA 30467

Contact:

NAME: STACY MATHIS
PHONE: (912) 564-7411

Qualified Personnel

CIVIL ENGINEER:

INTEGRATED SCIENCE & ENGINEERING
1039 SULLIVAN ROAD, SUITE 200
NEWNAN, GA 30265

Contact:

NAME: DAVIS L OZIER, P.E.
PHONE: (678) 552-2106, EXT 6001

Site Description and Location:

THE PROJECT SITE IS LOCATED ON THE EAST SIDE OF FRIENDSHIP ROAD, JUST NORTH OF SYLVANIA, IN SCREVEN COUNTY, GEORGIA. THE PROJECT SITE CONSISTS OF AN EXISTING WATER POLLUTION CONTROL PLANT WITH APPROXIMATLY 6.0 ACRES OF OPEN GRASSED AREA AND NUMEROUS CONCRETE STRUCTURES CONTAINING WASTEWATER.

Construction Site Area:

SITE AREA: 6.90 AC TOTAL AREA OF DISTURBANCE: 6.90 AC

Soil Types:

BeB, FuA, KBA, NcC2

Wetlands:

NO WETLANDS ARE LOCATED WITHIN THE PROJECT BOUNDARY.

State Waters:

NO STATE WATERS ARE LOCATED WITHIN THE PROJECT BOUNDARY.

State Waters Buffer: (#16)

CONSTRUCTION ACTIVITY WILL NOT TAKE PLACE WITHIN THE 50' UNDISTURBED BUFFER.

Drainage Description: (#10)

THE PROPERTY CURRENTLY CONSISTS OF THE EXISTING WATER POLLUTION CONTROL PLANT. THE MAJORITY OF THE SITE IS GRASSED OPEN SPACE. THE POST CONSTRUCTION DRAINAGE IS DESIGNED TO REPLICATE PRE CONSTRUCTION DRAINAGE PATTERNS; THEREFORE, THE RUNOFF COEFFICIENT REMAINS THE SAME FOR BOTH PRE AND POST CONDITIONS. THE RECEIVING WATER FOR THE PROJECT IS BUCK CREEK, A TRIBUTARY OF THE SAVANNAH RIVER.

Slopes After Grading:

MAXIMUM CUT AND FILL SLOPES SHALL NOT EXCEED 2H:1V UNLESS OTHERWISE INDICATED.

Erosion Control Measures:

EROSION CONTROL MEASURES STRUCTURAL AND NONSTRUCTURAL CONTROLS WILL BE USED ONSITE TO PREVENT EROSION DURING CONSTRUCTION INCLUDING TEMPORARY GRASSING, SILT FENCING, AND OTHER MEASURES AS NECESSARY TO LIMIT SEDIMENT DISCHARGE FROM THE SITE. PLEASE REFER TO THE EROSION CONTROL PLANS FOR SPECIFIC INFORMATION.

THE PRIMARY PERMITTEE SHALL MAKE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS AVAILABLE UPON REQUEST TO DESIGNATED OFFICIALS OF THE LOCAL GOVERNMENT. INSPECTIONS SHALL BE DONE BY CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE AND THE ASSOCIATED RECORDS SHALL BE KEPT ON-SITE IN COMPLIANCE WITH GAR 100001."

1. SITE DESCRIPTION (#8) (#45)

A. EXISTING SITE CONDITIONS
THE SITE CURRENTLY CONSISTS OF MODERATELY SLOPED GRASSED LAND WITH TREE GROWTH.

B. PROPOSED CONSTRUCTION ACTIVITIES
THE PROPOSED CONSTRUCTION ACTIVITIES INCLUDE INSTALLATION OF SEVERAL CONCRETE TANK STRUCTURES AND ASSOCIATED PIPING TO IMPROVE THE PERFORMANCE OF THE WPCP. PRIMARY ACTIVITIES INCLUDE THE FOLLOWING:

I. DEMO
II. EXCAVATION AND SITE WORK
III. STABILIZATION

C. CONSTRUCTION SEQUENCE
THE PROPOSED CONSTRUCTION IS ESTIMATED TO TAKE APPROXIMATELY 18 MONTHS. SEDIMENT AND EROSION CONTROL WILL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION. PERIMETER SILT FENCE AND CONSTRUCTION EXITS WILL BE INSTALLED PRIOR TO DEMO. ACCESS TO EXPOSED SOIL WILL BE LIMITED TO OFF-ROAD CONSTRUCTION EQUIPMENT AND CONSTRUCTION MATERIAL.

AFTER THE INITIAL DEMO WORK, TEMPORARY VEGETATION WILL BE PROVIDED. SITE WORK (EXCAVATION AND TRENCHING FOR PIPE LINES, ETC.) WILL BEGIN AFTER DEMO. PERMANENT VEGETATION WILL BE INSTALLED WITHIN TWO WEEKS OF COMPLETION OF ALL SITE WORK ACTIVITIES.

PLEASE REFER TO THE EROSION AND SEDIMENT CONTROL PLAN, SHEET C500, FOR THE ACTIVITY SCHEDULE.

D. HYDROLOGY
PRE AND POST DEVELOPED CURVE NUMBERS ARE EQUAL.
PRE: CN = 67

2. Controls (#24) (#25) (#26) (#27) (#28) (#36) (#49)

The following controls will be implemented at the construction site:

1) Initial perimeter BMP controls will include silt fencing and stone pads to be used at the construction exit.
2) Intermediate BMPs will include silt fencing, mulching, and stone pads to be used at the construction exit.
3) Final BMPs will include temporary grassing.

A. Erosion and Sediment Controls

(1) Stabilization measures. Stabilization measures will be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover or other adverse weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity will resume on a portion of the site within 21 days from when activities ceased, (i.e., the total time period that construction activity is temporarily ceased is less than 21 days) then stabilization measures do not have to be initiated on that portion of the site by the 14th day after construction activity temporarily ceased.

(2) Structural Practices. Structural practices will be implemented to divert flows from exposed soils or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. The practices, identified on Sheet 510, include but may not be limited to silt fences, inlet sediment traps, rock filter dams, storm drain outlet protection, and other measures designed and implemented in accordance with the Manual for Erosion and Sediment Control in Georgia, latest edition. The installation of these devices may be subject to Section 404 of the CWA.

B. Storm Water Management
Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA. This permit only addresses the installation of storm water management measures, and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. Operators are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site.

C. Sediment Storage
A sediment basin will not be provided on the site. The disturbed area of the site is long and slender, and there is no space for a temporary sediment basin. Without a temporary sediment basin, all sediment storage will be provided by silt fence, providing the full 67 cubic yards of sediment storage per acre drained. All storm water flow is a combination of sheet and shallow concentrated with the slopes on the site being gentle. The site will experience minimal disturbance and will be covered with debris and mulch throughout all operations.

C. OTHER CONTROLS

(1) Waste disposal. solid materials, including building materials, will not be discharged to waters of the state, except as authorized by a section 404 permit.
(2) Off-site vehicle tracking of dirt, solids, and sediments and the generation of dust will be minimized or eliminated to the maximum extent practical.
(3) The permittee is in compliance with the state and local waste disposal, sanitary sewer, and septic tank regulations.
(4) Petroleum Spills and Leaks
a. Best management practices for prevention of petroleum spills: All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any petroleum to be stored in tanks will have be surrounded by an earthen berm as a secondary protective measure. Any Asphalt substances used onsite will be applied according to the manufacture's recommendations. All petroleum products shall be stored and used in area that provides a secondary containment feature, and shall be located in an area with the least foreseeable impact if a catastrophic event should occur. Emergency contact numbers and procedures for spills shall be available on-site.
b. Best management practices for remediation of petroleum spills:
Spill Cleanup and Control Practices
- Local, State and manufacturer's recommended methods for spill cleanup will be clearly posted and procedures will be made available to site personnel.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas. Typical materials and equipment includes, but is not limited to, brooms, dustpans, mops, rags, gloves, goggles, cat litter, sand, sawdust and properly labeled plastic and metal waste containers.
- Spill prevention practices and procedures will be reviewed after a spill and adjusted as necessary to prevent future spills.
- All spills will be cleaned up immediately upon discovery. All spills will be reported as required by local, State, and Federal regulations.
- FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT **1 _ 800 - 424 - 8802 or 1 - 202 - 426 - 2675**
- FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT **1 - 800 - 424 - 8802 or 1 - 202 - 426 - 2675.**
- FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE GEORGIA E.P.D. WILL BE CONTACTED WITHIN 24 HOURS
- FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

The contractor shall notify the licensed professional who prepared this Plan if more than 1320 gallons of petroleum is stored onsite (this includes capacities of equipment) or if any one piece of equipment has a capacity greater than 660 gallons. The contractor will need a Spill Prevention Containment and Countermeasures Plan prepared by that licensed professional.
(NOTE: CONTACT NUMBERS HAVE CHANGED. HIGHLIGHTED BOLD CONTACT NUMBERS ARE CORRECT)
(5) Product Specific Practices
a. Petroleum Based Products - Containers for products such as fuels, lubricants, and tars will be inspected daily for leaks and spills. This includes onsite vehicles and machinery daily inspections and regular preventative maintenance of such equipment. Equipment maintenance areas will be located away from State Waters, natural drains, and storm water drainage inlets. In addition, temporary fueling tanks shall have a secondary containment liner to prevent/minimize site contamination. Discharge of oils, fuels, and lubricants is prohibited. Proper disposal methods will include collection in a suitable container and disposal as required by local and State regulations.
b. Petroleum storage shall be done in accordance with one of the two following methods to prevent storm water discharges on the site.
a. All petroleum storage containers shall be covered in plastic sheeting or be located under a temporary roof.
b. All petroleum storage containers shall be located in a secondary containment area.
c. Paints/Finishes/Solvents - All products will be stored in tightly sealed original containers when not in use. Excess product will not be discharged to the storm water collection system. Excess product, materials used with these products, and product containers will be disposed of according to manufacturer's specifications and recommendations.
d. Concrete Truck Washing - NO concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water onsite.
e. Fertilizer/Herbicides - These products will be applied at rates that do not exceed the manufacturer's specificcitions or above the guidelines set forth in the crop establishment or in the GSWCC Manual for Erosion and Sediment Control in Georgia. Any storage of these materials will be under roof in sealed containers.
f. Building Materials - No building or construction materials will be buried or disposed of onsite. All such material will be disposed of in proper waste disposal procedures.
g. Cover - Building materials will be stored in a staging area and covered with appropriate tarps or lean-to, to ensure no pollution of storm water can occur. All materials to be stored on stone base. All liquids, solvents, fuels, or similar to be kept in appropriate water tight containers to ensure no leakage or commingling with storm water will occur.

3. Inspections (#30)

A. **Primary Permittee**

(1). Each day when any type of construction activity has taken place at a primary permittee's site, certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking .. These inspections must be conducted until a Notice of Termination is submitted.

(2). Measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday and non-working Federal holiday until a Notice of Termination is submitted. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

(3). Certified personnel (provided by the primary permittee) shall inspect the following at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm ends after 5:00 PM on any Friday or on any non-working Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first): (a) disturbed areas of the primary permittee's construction site ; (b) areas used by the primary permittee for storage of materials that are exposed to precipitation; and (c) structural control measures. Erosion and sediment control measures identified in the Plan applicable to the primary permittee's site shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s). For areas of a site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region, the permittee must comply with Part IV.D.4.a.(4). These inspections must be conducted until a Notice of Termination is submitted.

4). Certified personnel (provided by the primary permittee) shall inspect at least once per month during the term of this permit (i.e., until a Notice of Termination is received by EPD) the areas of the site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving water(s). Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s).

(5). Based on the results of each inspection, the site description and the pollution prevention and control measures identified in the Erosion, Sedimentation and Pollution Control Plan, the Plan shall be revised as appropriate not later than seven (7) calendar days following each inspection. Implementation of such changes shall be made as soon as practical but in no case later than seven (7) calendar days following each inspection.

(6). A report of each inspection that includes the name(s) of certified personnel making each inspection, the date(s) of each inspection, construction phase (i.e., initial, intermediate or final), major observations relating to the implementation of the Erosion, Sedimentation and Pollution Control Plan, and actions taken in accordance with Part IV.D.4.a.(5). of the permit shall be made and retained at the site or be readily available at a designated alternate location until the entire site or that portion of a construction project that has been phased has undergone final stabilization and a Notice of Termination is submitted to EPD. Such reports shall be readily available by end of the second business day and/or working day and shall identify all incidents of not been properly installed and/or maintained as described have best management practices that in the Plan. Where the report does not identify any incidents, the inspection report shall contain a certification that the best management practices are in compliance with the Erosion, Sedimentation and Pollution Control Plan. The report shall be signed in accordance with Part V.G.2. of this permit.

4. Maintenance

A. Inspections by a qualified personnel provided by the primary permittee and the associated records shall be kept on-site in compliance with GAR. 100002.
B. Inspections of erosion control measures will be performed and corrective action taken when needed as required by the plan.
C. The permittee shall maintain all erosion control measures until permanent vegetation has been established.
D. The permittee shall clean out all sediment storage areas when required by the "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".
E. Accumulated silt shall be removed when the silt is within 12" of the top of the silt fence utilized for erosion control.

5. Sampling Requirements (#31) (#33) (#34)

A. Sampling Requirements
Sampling will not be required on storm water flowing from the site since all runoff is sheet flow and no grading will take place as a part of this project.

B. Sample Type
All sampling will be collected by "grab samples" and the analysis of these samples will be conducted in accordance with methodology and test procedures established by 40 CFR Part 136 (unless other test procedures have been approved; the guidance document titled "NPDES Storm Water Sampling Guidance Document, EPA 833-B-92-001" and guidance documents that may be prepared by the EPD.

The following sampling practices will be followed in accordance with the requirements of GAR100002:

(1) Sample containers should be labeled prior to collecting the samples.

(2) Samples should be well mixed before transferring to a secondary container.

(3) Large mouth, clean and rinsed glass or plastic jars should be used for collecting samples. The jars should be cleaned thoroughly to avoid contamination.

(4) Manual, automatic or rising stage sampling may be utilized. Samples required by this permit should be analyzed immediately, but in no case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analysis is utilized. If automatic sampling is utilized and the automatic sampler is not activated during the qualifying event, the permittee must utilize manual sampling or rising stage sampling during the next qualifying event. Dilution of samples is not required. Samples may be analyzed directly with a properly calibrated turbidimeter. Samples are not required to be cooled.
(5) Sampling and analysis of the receiving water(s) or outfalls beyond the minimum frequency stated in this permit must be reported to EPD as specified in Part IV.B.

C. Sampling Points
Sampling Points will be representative of the monitored activity and representative of the water quality of the receiving water(s) and/or the storm water outfalls using the following minimum guidelines:

(1) The upstream sample for each receiving water(s) will be taken immediately upstream of the confluence of the first storm water discharge from the permitted activity (i.e., the discharge farther upstream at the site) but downstream of any other storm water discharges not associated with the permitted activity. Where appropriate, several upstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the upstream turbidity value.

(2) The downstream sample for each receiving water(s) will be taken downstream of the confluence of the last storm water discharge from the permitted activity (i.e., the discharge farthest downstream at the site) but upstream of any other storm water discharge not associated with the permitted activity. Where appropriate, several downstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the downstream turbidity value.

(3) Ideally the samples should be taken from the horizontal and vertical center of the receiving water(s) or the storm water outfall channel(s).

(4) Care should be taken to avoid stirring the bottom sediments in the receiving water(s) or in the outfall storm water channel(s).

(5) The sampling container should be held so that the opening faces upstream.

(6) The samples should be kept free from floating debris.

(7) Permittee's do not have to sample sheetflow that flows onto undisturbed natural areas or areas stabilized by the project. For purposes of this section, stabilized shall mean, for unpaved areas and areas not covered by permanent structures, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or equivalent permanent stabilization measures (such as the use of rip rap, gabions, permanent mulches or geotextiles) have been used. Permanent vegetation shall consist of: planted trees, shrubs, perennial vines; a crop of perennial; vegetation appropriate for the time of year and region; or a crop of annual vegetation and a seeding of target crop perennials appropriate for the region. Final stabilization applies to each phase of construction.

(8) All sampling pursuant to this permit must be done in such a way (including generally accepted sampling methods, locations, timing, and frequency) so as to accurately reflect whether storm water runoff from the facility/site is in compliance with the standard set forth in Parts III.D.4. or III.D.5., whichever is applicable.

D. Sampling Frequency

(1). The primary permittee must sample in accordance with the Plan at least once for each rainfall event described below. For a qualifying event, the permittee shall sample at the beginning of any storm water discharge to a monitored receiving water and/or from a monitored outfall location within in forty-five (45) minutes or as soon as possible.
(2) . However, where manual and automatic sampling are impossible (as defined in this permit), or are beyond the permittee's control, the permittee shall take samples as soon as possible, but in no case more than twelve (12) hours after the beginning of the storm water discharge.
(3). Sampling by the permittee shall occur for the following qualifying events:

(a). For each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit after all clearing and grubbing operations have been completed, but prior to completion of mass grading operations, in the drainage area of the location selected as the sampling location;
(b). In addition to (a) above, for each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit either 90 days after the first sampling event or after all mass grading operations have been completed, but prior to submittal of a NOT, in the drainage area of the location selected as the sampling location, whichever comes first;
(c). At the time of sampling performed pursuant to (a) and (b) above, if BMPs in any area of the site that discharges to a receiving water or from an outfall are not properly designed, installed and maintained, corrective action shall be defined and implemented within two (2) business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch during normal business hours* until the selected turbidity standard is attained, or until post-storm event inspections determine that BMPs are properly designed, installed and maintained;
(d). Where sampling pursuant to (a), (b) or (c) above is required but not possible (or not required because there was no discharge), the permittee, in accordance with Part IV.D.4.a.(6), must include a written justification in the inspection report of why sampling was not performed. Providing this justification does not relieve the permittee of any subsequent sampling obligations under (a), (b) or (c) above; and
(e). Existing construction activities, i.e., those that are occurring on or before the effective date of this permit, that have met the sampling required by (a) above shall sample in accordance with (b) . Those existing construction activities that have met the sampling required by (b) above shall not be required to conduct additional sampling other than as required by (c) above.

*Note that the permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samples from any rain event that reaches or exceeds 0.5 inch and allows for sampling at any time of the day or week.

E. Turbidity Limitations

1. In-stream discharge is not to increase turbidity in the receiving stream by more than twenty-five (25) nephelometric units (NTU) for waters supporting warm water fisheries, as stated in GAR 100002 Part III.D.4.
2. The outfall discharge from the NPDES Sample Location Point(s) is not to exceed the maximum allowable NTU value shown below as stated in GAR 100002 Part III.D.5 and from Appendix B.

Turbidity Requirements for Outfall From Sediment Basin Appendix B:

SURFACE WATER DRAINAGE AREA: < 4.99 SQUARE MILES
SITE SIZE: 1.00 - 10 ACRES

MAXIMUM ALLOWABLE NTU = 75

7. Reporting

1. The applicable permittees are required to submit the sampling results to the EPD at the address shown in Part II.C. by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. Sampling and analysis of any storm water discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported in a similar manner to the EPD. The sampling reports must be signed in accordance with Part V.G.2. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.
2. All sampling reports shall include the following information:
a. The rainfall amount, date, exact place and time of sampling or measurements;
b. The name(s) of the certified personnel who performed the sampling and measurements;
c. The date(s) analyses were performed;
d. The time(s) analyses were initiated;
e. The name(s) of the certified personnel who performed the analyses;
f. References and written procedures, when available, for the analytical techniques or methods used;
g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results;
h. Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU;" and
i. Certification statement that sampling was conducted as per the Plan.
3. All written correspondence required by this permit shall be submitted by return receipt certified mail (or similar service) to the appropriate District Office of the EPD according to the schedule in Appendix A of this permit. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI. If an electronic submittal is provided by EPD then the written correspondence may be submitted electronically; if required, a paper copy must also be submitted by return receipt certified mail or similar service.

8. Retention of Records (#32)

1. The primary permittee shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance with Part VI:
a. A copy of all Notices of Intent submitted to EPD;
b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit;
c. The design professional's report of the results of the inspection conducted in accordance with Part IVA5. of this permit;
d. A copy of all sampling information, results, and reports required by this permit;
e. A copy of all inspection reports generated in accordance with Part IV.D.4.a. of this permit;
f. A copy of all violation summaries and violation summary reports generated in accordance with Part III.D.2. of this permit; and
g. Daily rainfall information collected in accordance with Part IV.D.4.a.(2). of this permit.
2. Copies of all Notices of Intent, Notices of Termination , inspection reports, sampling reports (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) or other reports requested by the EPD, Erosion, Sedimentation and Pollution Control Plans, records of all data used to complete the Notice of Intent to be covered by this permit and all other records required by this permit shall be retained by the permittee who either produced or used it for a period of at least three years from the date that the NOT is submitted in accordance with Part VI. of this permit. These records must be maintained at the permittee's primary place of business or at a designated alternative location once the construction activity has ceased at the permitted site. This period may be extended by request of the EPD at any time upon written notification to the permittee.

9. Report Submittal

All written correspondence required by this permit shall be submitted by ***return receipt certified mail*** (or similar service) to the appropriate District Office of the EPD. See address below:

EAST CENTRAL DISTRICT
3525 WALTON WAY EXT.
AUGUSTA, GA. 30909
PHONE (706) 667-4343

INTEGRATED Science & Engineering
1039 SULLIVAN ROAD, SUITE 200, NEWNAN, GEORGIA, 30265
(P) 678.552.2106 | (F) 678.552.2107
COA No. PEFC000651 | Exp. 06/30/2024

GEORGIA REGISTERED No. 033259 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date
1	ISSUED FOR BID	4/12/24
2	---	---
3	---	---
4	---	---
5	---	---
6	---	---
7	---	---
8	---	---

Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Date: 4/11/24
Project #: 1521.2201

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

ESPC NOTES

(#2) DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

DRAWING NO.
C501

(#1)

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
INFRASTRUCTURE CONSTRUCTION PROJECTS

SWCD:_____ OGEECHEE RIVER - REGION 3

Project Name:__ SYLVANIA WPCP UPGRADES **Address:_ 624 FRIENDSHIP RD**

City/County:___ SYLVANIA / SCREVEN **Date on Plans:_____ 11/14/2022**

Name & email of person filling out checklist:_____ DAVIS OZIER, dozier@intse.com

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N		
C502	Y	1	The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
C500	Y	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)
C500	Y	3	The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
C500	Y	4	Provide the name, address, email address, and phone number of primary permittee.
C500	Y	5	Note total and disturbed acreages of the project or phase under construction.
C500	Y	6	Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in decimal degrees.
C500	Y	7	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
C501	Y	8	Descriptions of the nature of construction activity and existing site conditions.
C500	Y	9	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
C501	Y	10	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
C500	Y	11	Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 21** of the permit.
C500	Y	12	Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 20** of the permit. *
C500	Y	13	Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on **Part IV.D.6.c.(3) page 37** of the permit as applicable. *
C500	Y	14	Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs, and sediment basins within 7 days after installation." in accordance with **Part IV.A.5 page 26** of the permit. *
C500	Y	15	Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
C501	Y	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
C500	Y	17	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
C500	Y	18	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
C500	Y	19	Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
C500	Y	20	Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
C500	Y	21	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
	N/A	22	Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
	N/A	23	If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
C501	Y	24	BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
C501	Y	25	Provide BMPs for the remediation of all petroleum spills and leaks.
C501	Y	26	Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
C501	Y	27	Description of practices to provide cover for building materials and building products on site. *
C501	Y	28	Description of the practices that will be used to reduce the pollutants in storm water discharges. *
C500	Y	29	Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
C501	Y	30	Provide complete requirements of Inspections and record keeping by the primary permittee. *
C501	Y	31	Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
C501	Y	32	Provide complete details for Retention of Records as per Part IV.F. of the permit. *
C501	Y	33	Description of analytical methods to be used to collect and analyze the samples from each location. *
C501	Y	34	Appendix B rationale for NTU values at all outfall sampling points where applicable. *
C503	Y	35	Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged also provide a summary chart of the justification and analysis for the representative sampling as applicable. *
C501	Y	36	A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *
C510	Y	37	Graphic scale and North arrow.
C510	Y	38	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:
	N/A	39	Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.
	N/A	40	Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
C510	Y	41	Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to State waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
C503	Y	42	Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site.
C503	Y	43	Delineation and acreage of contributing drainage basins on the project site.
C503	Y	44	Delineate on-site drainage and off-site watersheds using USGS 1" :2000' topographical sheets.
C501	Y	45	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
	N/A	46	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
C510	Y	47	Soil series for the project site and their delineation.
C510	Y	48	The limits of disturbance for each phase of construction.
C510	Y	49	Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
C510	Y	50	Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
C601	Y	51	Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
C600	Y	52	Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of year that seeding will take place and for the appropriate geographic region of Georgia.

Existing Contours	USGS 1": 2000' Topographical Sheets
Proposed Contours	1" : 400' Centerline Profile

* If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream, the * checklist items would be N/A.

Effective January 1, 2022

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COA No. PEF000635 | Exp. 06/30/2024

GEORGIA REGISTERED No. 048259 PROFESSIONAL 11-14-22 ENGINEER DAVIS OZIER

Rev.	Description	Date
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1	ISSUED FOR BID	4/12/24
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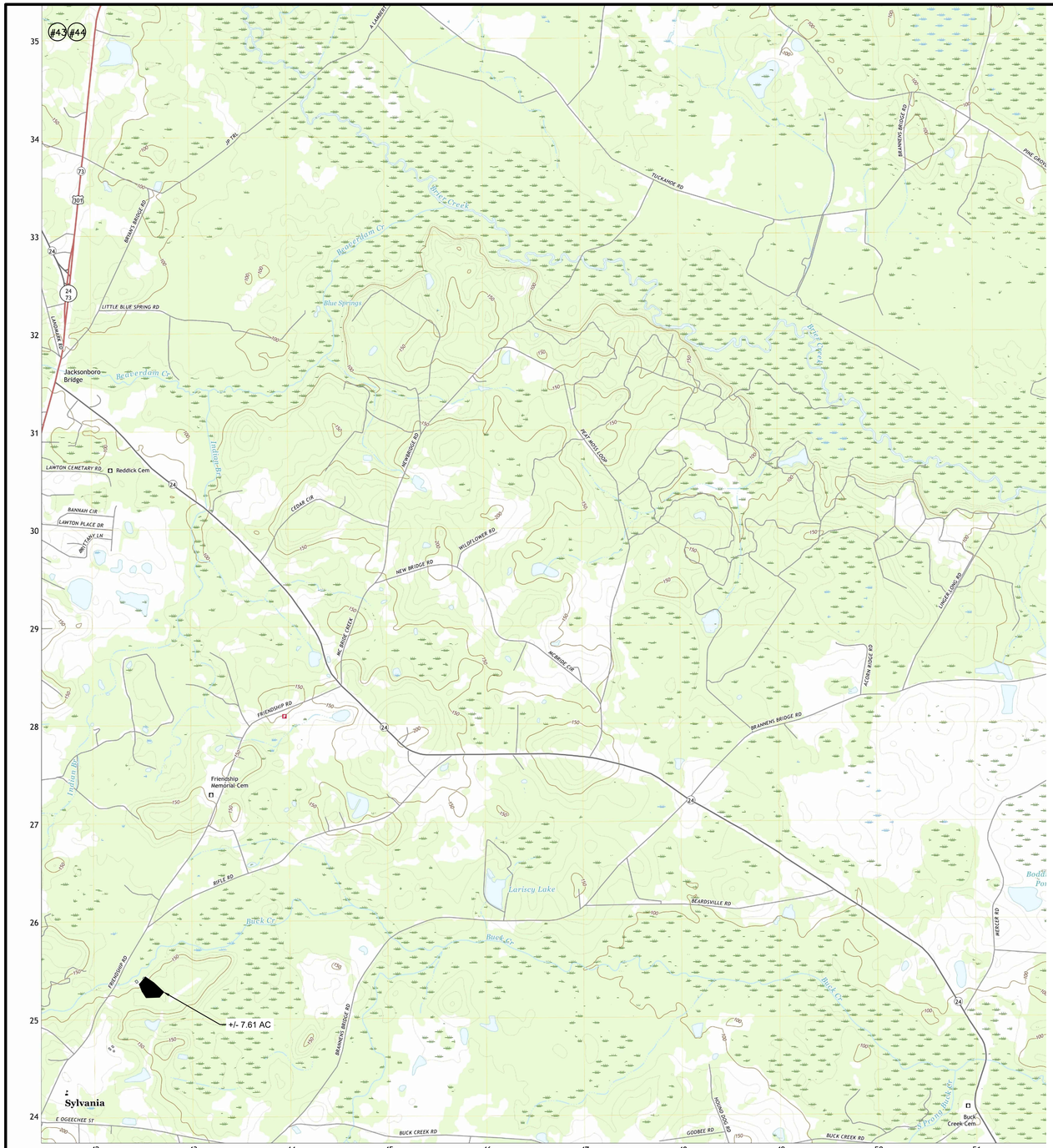
Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Project #: 1521.2201
Date: 4/11/24

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

CHECKLIST

(#2) DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

DRAWING NO.
C502



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 17S

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP,	October 2017 - December 2017
Roads	U.S. Census Bureau,	2017
Names	GNIS,	1979 - 2020
Hydrography	National Hydrography Dataset,	2002 - 2018
Contours	National Elevation Dataset,	2012
Boundaries	Multiple sources; see metadata file	2018 - 2019
Wetlands	FWS National Wetlands Inventory	Not Available

MN
GN
7°1'
125 MILS
6°18'
5 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
MS
Grid Zone Designation
17S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

GEORGIA
QUADRANGLE LOCATION

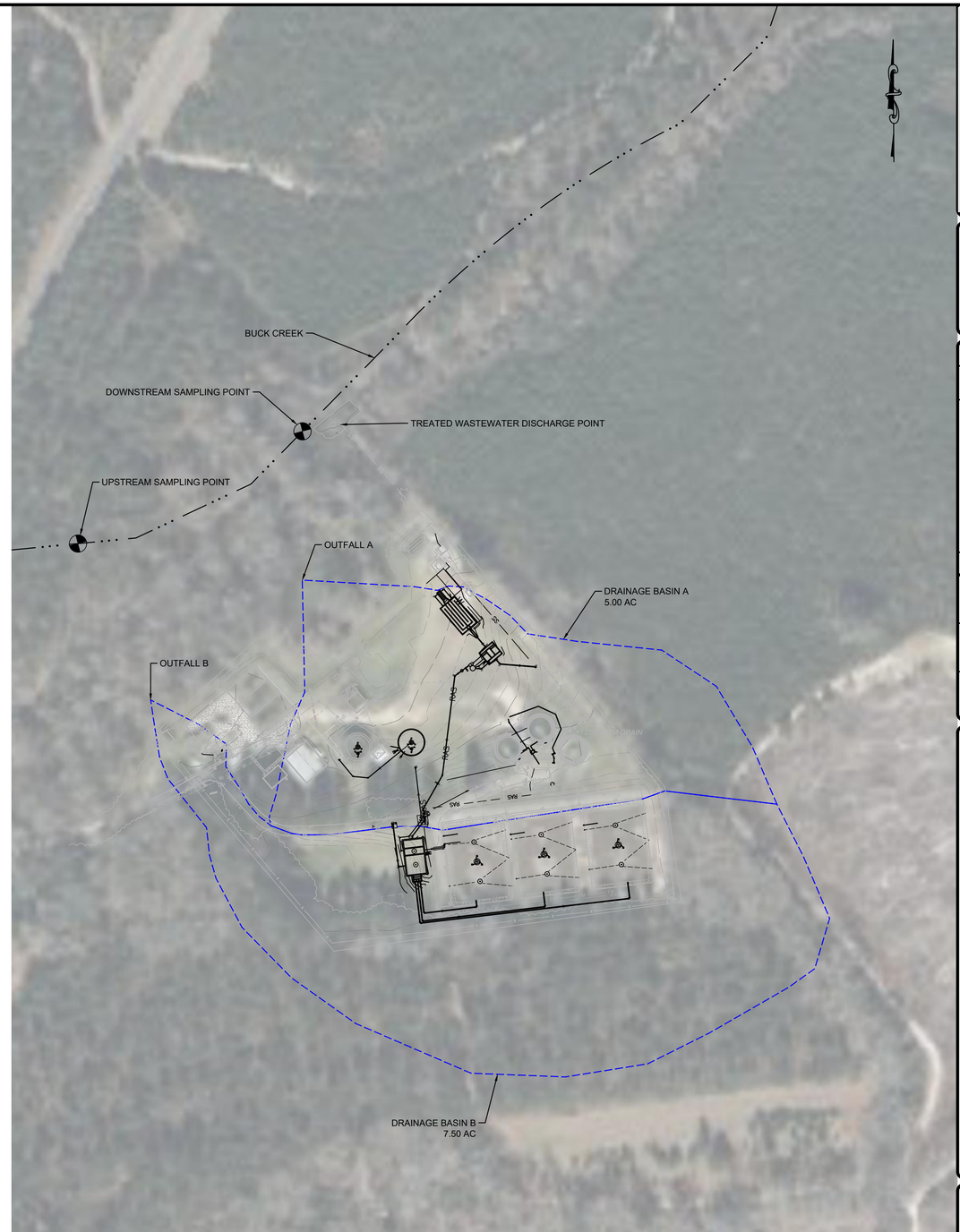
1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES

1 Hillitonia
2 Burtons Ferry Landing
3 Bull Pond
4 Sylvania North
5 Brier Creek Landing
6 Sylvania South
7 Hunters
8 Blue Springs Landing

ROAD C
Expressway
Secondary Hwy
Ramp
Interstate Route

JACKSONBO



100' 50' 0' 100'
SCALE: 1" = 100'

INTEGRATED Science & Engineering
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GEORGIA REGISTERED No. 048259 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date
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1	ISSUED FOR BID	4/12/24
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Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

DRAINAGE BASIN MAPS

DRAWING NO.
C503

#2
DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

SEDIMENT STORAGE SUMMARY

PROJECT SITE SEDIMENT STORAGE BASIN A			
SUB-DRAINAGE AREA (AC)	DISTURBED AREA (AC)	REQUIRED SEDIMENT STORAGE (CY)	SEDIMENT STORAGE PROVIDED (CY) SILT FENCE (.3CY/FT)
5.0	4.42	119.34	125

PROJECT SITE SEDIMENT STORAGE BASIN B			
SUB-DRAINAGE AREA (AC)	DISTURBED AREA (AC)	REQUIRED SEDIMENT STORAGE (CY)	SEDIMENT STORAGE PROVIDED (CY) SILT FENCE (.3CY/FT)
7.50	2.56	69.12	80

#49

PHASES I&II

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Co	CONSTRUCTION EXIT		Co	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.

#50

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.

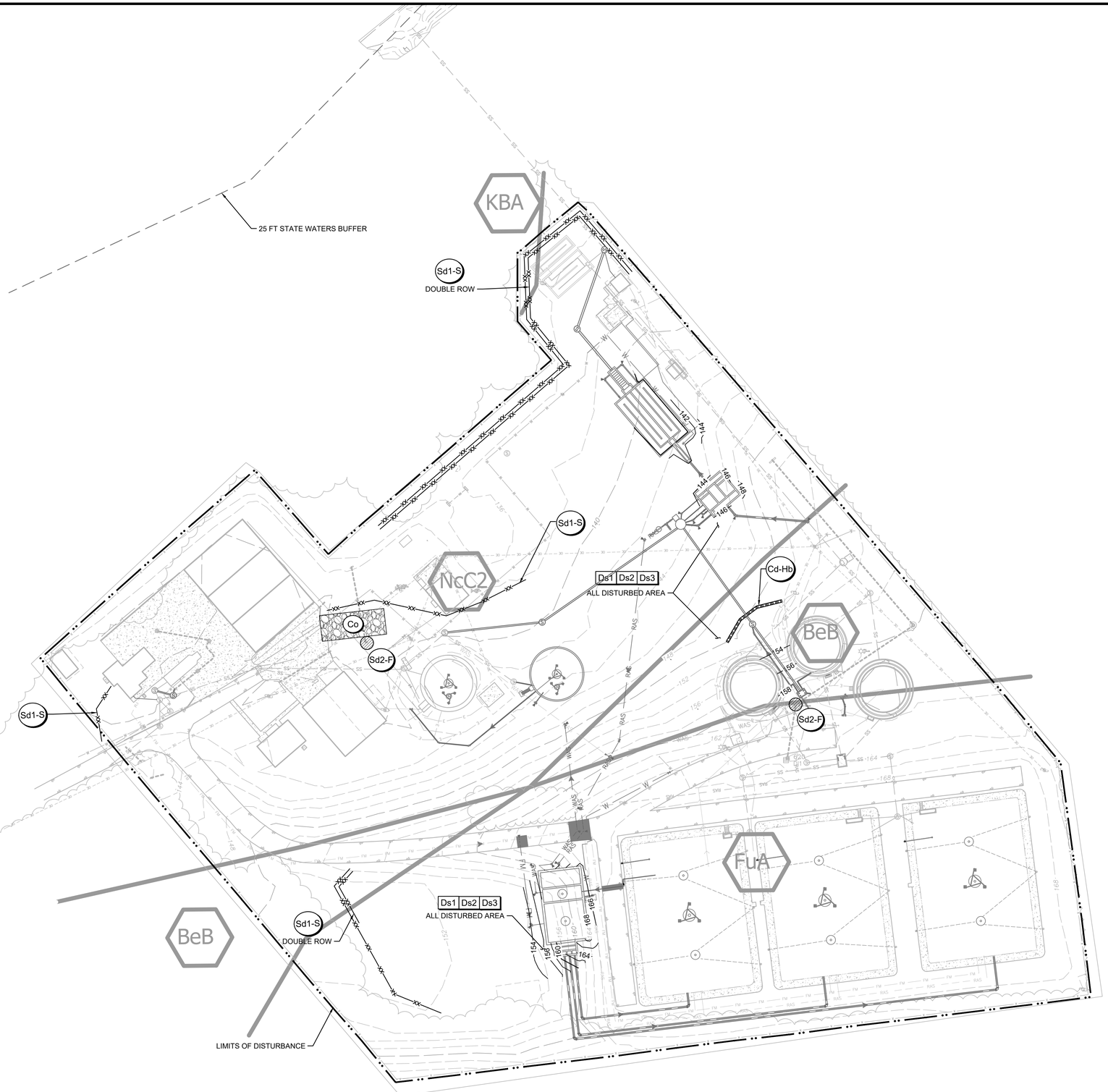
PHASE III

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.

#47

SOIL SERIES	
BeB	BLANTON SAND: 0%–5% SLOPES
FuA	FUQUAY LOAMY SAND: 0%–2% SLOPES, FREQUENTLY FLOODED
KBA	KINSTON AND BIBB SOILS, 0%–2% SLOPES, FREQUENTLY FLOODED
NcC2	NANKIN–COWARTS COMPLEX, 5%–8% SLOPES, ERODED



#2

DAVIS L. OZIER, P.E.
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GEORGIA REGISTERED No. 048259 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

No.	Description	Date
1	ISSUED FOR RFD	4/12/24
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Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Review by: DLO
Check by: DLO
SCALE: 1" = 40'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

EROSION CONTROL PLAN - ALL PHASES

DRAWING NO.
C510

Ds1 MULCHING SPECIFICATIONS:

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH , DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATION TECHNIQUES SHALL BE EMPLOYED.

SITE PREPARATION
1. GRADE TO PERMIT THE USE OF EQUIPMENT FOR APPLYING AND ANCHORING MULCH.
2. INSTALL NEEDED EROSION CONTROL MEASURES AS REQUIRED SUCH AS DIKES, DIVERSIONS, BERMS, TERRACES, AND SEDIMENT BARRIERS.
3. LOOSEN COMPACT SOIL TO A MINIMUM DEPTH OF 3 INCHES.

APPLYING MULCH
WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.
1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20–30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET THE UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
3. CUTBACK ASPHALT SHALL BE APPLIED UNIFORMLY . CARE SHOULD BE TAKEN IN AREAS OF PEDESTRIAN TRAFFIC DUE TO PROBLEMS OF "TRACKING IN" OF DAMAGE TO SHOES, CLOTHING, ETC.
4. APPLY POLYETHYLENE FILM ON EXPOSED AREAS.

ANCHORING MULCH
1. STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK". DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERECT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION. STRAW OR HAY MULCH SPREAD WITH SPECIAL BLOWER–TYPE EQUIPMENT MAY BE ANCHORED WITH EMULSIFIED ASPHALT (GRADE AE–5 OR SS–1). THE ASPHALT EMULSION SHALL BE SPRAYED ONTO THE MULCH AS IT IS EJECTED FROM THE MACHINE. USE 100 GALLONS OF EMULSIFIED ASPHALT AND 100 GALLONS OR WATER PER TON OF MULCH. TACKIFIERS AND BINDERS CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION Tb–TACKIFIERS AND BINDERS. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
3. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

Ds2 TEMPORARY SEEDING SPECIFICATIONS:

A. GRADING AND SHAPING
1. EXCESSIVE WATER RUNOFF MUST BE CONTROLLED BY PLANNED AND INSTALLED EROSION CONTROL PRACTICES SUCH AS CLOSED DRAINS, DITCHES, DIKES, DIVERSIONS, SEDIMENT BASINS, AND OTHERS.

B. SEEDBED PREPARATION
1. WHEN A HYDRAULIC SEEDER IS USED, SEEDBED PREPARATION IS NOT REQUIRED.
2. WHEN USING CONVENTIONAL OR HAND–SEEDING, SEEDBED PREPARATION IS NOT REQUIRED IF THE SOIL MATERIAL IS LOOSE AND NOT SEALED BY RAINFALL.
3. WHEN SOIL HAS BEEN SEALED BY RAINFALL OR CONSISTS OF SMOOTH UNDISTURBED CUT SLOPES, THE SOIL SHALL BE PITTED, TRENCHED, OR OTHERWISE SCARIFIED TO PROVIDE A PLACE FOR SEED TO LODGE AND GERMINATE.

C. LIME AND FERTILIZER
1. AGRICULTURAL LIME IS NOT REQUIRED.
2. ON REASONABLY FERTILE SOILS OR SOIL MATERIAL, FERTILIZER IS NOT REQUIRED.
3. ON SOILS OF VERY LOW FERTILITY, USE 500 TO 700 POUNDS 10–10–10 FERTILIZER OR THE EQUIVALENT PER ACRE (12–16 lbs./1000 sq. ft.). IF THE SITE WILL PERMIT, APPLY BEFORE LAND PREPARATION AND DISK, RIP, OR CHISEL TO INCORPORATE.

D. SEEDING
1. SELECT A GRASS OR GRASS–LEGUME MIXTURE SUITABLE TO THE AREA AND SEASON OF THE YEAR.
2. APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER–SEEDER, OR HYDRAULIC SEEDER (SLURRY INCLUDING SEED AND FERTILIZER). DRILL OR CULTIPACKER–SEEDERS SHOULD NORMALLY PLACE SEED ONE–HALF TO ONE INCH DEEP.

E. MULCHING
TEMPORARY VEGETATION CAN, IN MOST CASES, BE ESTABLISHED WITHOUT THE USE OF MULCH. MULCH WITHOUT SEEDING SHOULD BE CONSIDERED FOR SHORT TERM PROTECTION. SEE Ds1 – DISTURBED AREA STABILIZATION (WITH MULCHING ONLY).

F. IRRIGATION
IF WATER IS APPLIED, IT MUST BE AT A RATE NOT CAUSING RUNOFF AND EROSION. THOROUGHLY WET THE SOIL TO A DEPTH THAT WILL INSURE GERMINATION OF THE SEED. SUBSEQUENT APPLICATIONS SHOULD BE MADE WHEN NEEDED.

* REVISED 7/01 PER 5TH EDITION OF MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.

Ds3 PERMANENT SEEDING SPECIFICATIONS:

A. GRADING AND SHAPING
1. GRADING AND SHAPING IS NOT NORMALLY REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED. VERTICAL BANKS SHALL BE SLOPED TO ENABLE PLANT ESTABLISHMENTS.

B. SEEDBED PREPARATION
1. SEEDBED PREPARATION MAY NOT BE REQUIRED WHERE HYDRAULIC SEEDING AND FERTILIZING EQUIPMENT IS TO BE USED.
2. WHEN CONVENTIONAL SEEDING IS TO BE USED, SEEDBED PREPARATION WILL BE DONE AS FOLLOWS:
   A. BROADCAST PLANTING
      1. TILLAGE AT A MINIMUM, SHALL ADEQUATELY LOOSEN THE SOIL TO A DEPTH OF 4 TO 6 INCHES; ALLEVIATE COMPATION;INCORPORATE LIME AND FERTILIZER; SMOOTH AND FIRM THE SOIL; ALLOW FOR THE PROPER PLACEMENT OF SEED SPRIGS, OR PLANTS; AND ALLOW FOR THE ANCHORING OF STRAW OR HAY MULCH IF A DISK IS TO BE USED.

C. LIME AND FERTILIZER – RATES AND ANALYSIS
1. WHERE PERMANENT VEGETATION IS TO BE ESTABLISHED, AGRICULTURAL LIME SHALL BE APPLIED AS INDICATED BY SOIL TEST OR AT THE RATE OF 1 TO 2 TONS PER ACRE. AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.
2. LIME SPREAD BY CONVENTIONAL EQUIPMENT WILL BE "GROUND LIMESTONE". GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THT 90 PERCENT OF THE MATERIAL WILL PASS THROUGH A 10–MESH SIEVE AND NOT LESS THAN 25 PERCENT WILL PASS THROUGH A 100–MESH SIEVE.
3. AGRICULTURAL LIME SPREAD BY HYDRAULIC SEEDING EQUIPMENT WILL BE "FINELY GROUND LIMESTONE." FINELY GROUND LIMESTONE IS CALCITIC OR DOLOMITIC LIMESTONE GROUND SO THAT 98 PERCENT OF THE MATERIAL WILL PASS THROUGH A 20–MESH SIEVE AND NOT LESS THAN 70 PERCENT WILL PASS THROUGH A 100–MESH SIEVE.

D. LIME AND FERTILIZER – APPLICATION
1. WHEN HYDRAULIC SEEDING EQUIPMENT IS USED:
   A. THE INITIAL FERTILIZER WILL BE MIXED WITH SEED, INOCULANT (IF NEEDED) AND WOOD CELLULOSE OR WOOD PULP FIBER MULCH AND APPLIED IN A SLURRY. THE SLURRY WILL BE AGITATED DURING APPLICATION TO KEEP THE INGREDIENTS THOROUGHLY MIXED. THE MIXTURE WILL BE SPREAD UNIFORMLY OVER THE AREA WITHIN ONE HOUR AFTER BEING PLACED IN THE HYDROSEEDER.
   B. FINELY GROUND LIMESTONE WILL BE MIXED WITH WATER AND APPLIED IMMEDIATELY AFTER MULCHING IS COMPLETED OR IN COMBINATION WITH THE TOP DRESSING.

2. WHEN CONVENTIONAL PLANTING IS TO BE DONE, LIME AND FERTILIZER WILL BE APPLIED UNIFORMLY IN ONE OF THE FOLLOWING WAYS:
   A. APPLY BEFORE LAND PREPARATION SO THAT IT WILL BE MIXED WITH THE SOIL DURING SEEDBED PREPARATION; OR,
   B. MIX WITH THE SOIL USED TO FILL THE HOLES, DISTRIBUTE IN FURROWS; OR,
   C. BROADCAST AFTER STEEP SURFACES AND SCARIFIED, PITTED OR TRENCHED.
   D. A FERTILZER PELLET WILL BE PLACED AT ROOT DEPTH.

* REVISED 7/01 PER 5TH EDITION OF MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA.

Ds2 DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDINGS)

SPECIES	BROADCAST RATES 2/ – PLS 3/ PER ACRE	PER 1000 SQ. FT.	RESOURCE AREA	PLANTING RATES BY RESOURCE AREA PLANTING DATES (J F M A M J J A S O N D; ▬ OPTIMUM, — PERMISSIBLE BUT MARGINAL)	REMARKS
MILLET, PEARL (PENNESETUM GLAUCUM) ALONE	50 LBS	1.1 LB	M–L P C		88,000 SEED PER POUND. QUICK DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
RYEGRESS, ANNUAL (LOLIUM TEMULENTUM) ALONE	40 LBS	0.9 LB	M–L P C		227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES
SUDANGRASS (SORGHUM SUDANESE) ALONE	60 LBS	1.4 LB	M–L P C		55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMENDED FOR MIXTURES.
MILLET, BROWNTOP (PANICUM FASCICULATUM) ALONE IN MIXTURES	40 LBS 10 LBS	0.9 LB 0.2 LB	M–L P C		137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.

Ds3 DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDINGS)

SPECIES	BROADCAST RATES 2/ – PLS 3/ PER ACRE	PER 1000 SQ. FT.	RESOURCE AREA	PLANTING RATES BY RESOURCE AREA PLANTING DATES (J F M A M J J A S O N D; ▬ OPTIMUM, — PERMISSIBLE BUT MARGINAL)	REMARKS
BERMUDA, COMMON (CYNODON DACTYLON) HULLED SEED ALONE WITH OTHER PERENNIALS	10 LBS 6 LBS	0.2 LB 0.1 LB	P C		1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON (CYNODON DACTYLON) UNHULLED SEED WITH TEMPORARY COVER WITH OTHER PERENNIALS	10 LBS 6 LBS	0.2 LB 0.1 LB	P C		PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
CENTIPEDE (EREMOCHLOA OPHIUROIDES)	BLOCK SOD ONLY		P C		DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENTTO CONCRETE AND IN CONCENTRATED FLOW AREAS. IRRIGATION AS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTERHARDY AS FAR NORTH AS ATHENS AND ATLANTA.
FESCUE, TALL (FESTUCA ARUNDINACEA) ALONE WITH OTHER PERENNIALS	50 LBS 30 LBS	1.1 LB 0.7 LB	M–L P		227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOPDRESSING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
LESPEDEZA, SERICEA (LESPEDEZA CUNEATA) SCARIFIED	60 LBS	1.4 LB	M–L P C		350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROAD BANKS. INOCULATE SEED WITH EL INOCULANT.
UNSCARIFIED	75 LBS	1.7 LB	M–L P C		MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED–BEARING HAY	3 TONS	138 LB	M–L P C		CUT WHEN SEED IS MATURE. BUT BEFORE IT SHATTERS. TALL FESCUE OR WINTER ANNUALS.
LOVEGRASS, WEEPING (ERAGROSTIS CURVULA) ALONE WITH OTHER PERENNIALS	4 LBS 2 LBS	0.1 LB 0.05 LB	M–L P C		1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROADBANKS.

#52

Ds1 | Ds2 | Ds3

DISTURBED AREA STABILIZATION WITH MULCHING, TEMPORARY SEEDINGS AND PERMANENT SEEDINGS

SCALE: NTS   DATE:1/24/04

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COA No. PEF000625 | EXP. 06/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. PE0[illegible] DAVIS OZIER 11-14-22

Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #:	Design by:	Review by:
1521.2201	DLO	DLO

Rev.	Description	Date	Apr.
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1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS FOR SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

ESPC DETAILS

#2

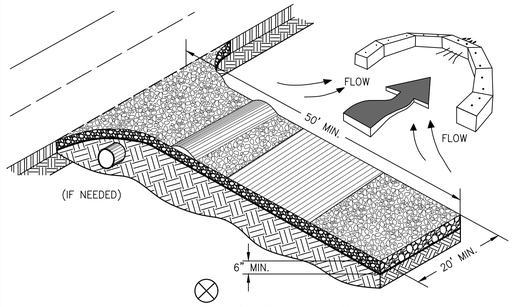
DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

DRAWING NO.

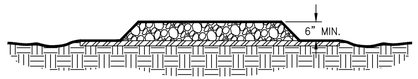
C600

Co CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



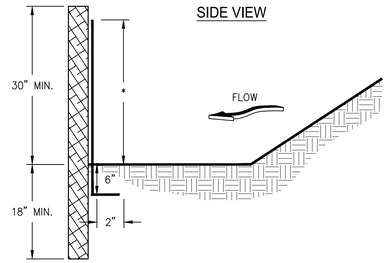
ENTRANCE ELEVATION



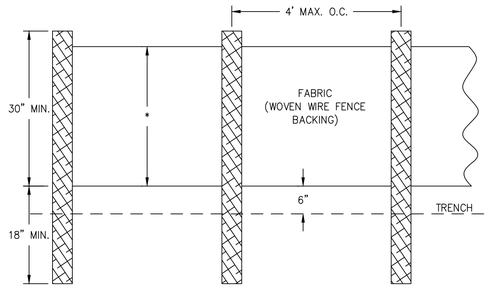
NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

Sd1-S SILT FENCE - TYPE SENSITIVE

SIDE VIEW



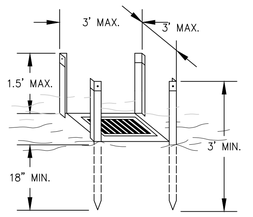
FRONT VIEW



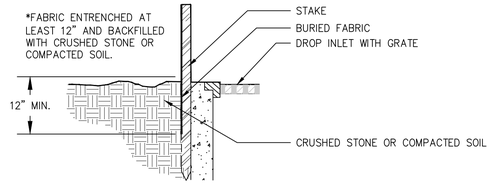
NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

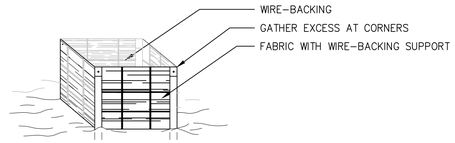
Sd2-F FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

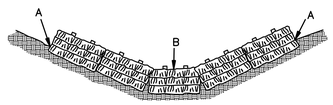
STEEL FRAME AND SILT FENCE INSTALLATION



NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

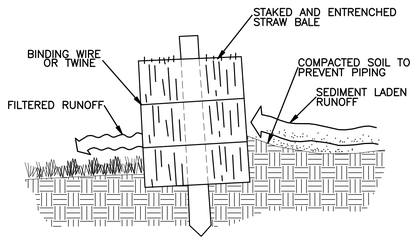






POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY



NOTE: EMBED HAY BALES A MINIMUM OF 4 INCHES

CROSS SECTION OF A PROPERLY INSTALLED STRAW BALE

MAINTENANCE
PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED. SEDIMENT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF ONE-HALF THE ORIGINAL DAM HEIGHT OR BEFORE. IF THE AREA IS TO BE MOWED, CHECK DAMS SHALL BE REMOVED ONCE FINAL STABILIZATION HAS OCCURRED. OTHERWISE, CHECK DAMS MAY REMAIN IN PLACE PERMA NENTLY. AFTER REMOVAL, THE AREA BENEATH THE DAM SHALL BE SEEDED AND MULCHED IMMEDIATELY.

Sd1-Hb HAYBALE SILT BARRIER

SCALE: NTS DATE: 1/29/04

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GEORGIA REGISTERED No. 048259 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

No.	Description	Date
1	ISSUED FOR BID	4/12/24
2		
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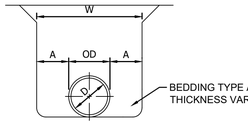
Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Date: 4/11/24
Project #: 1521.2201

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

ESPC DETAILS

DRAWING NO.
C601

(#2) DAVIS L. OZIER, P.E.
GA PE #: 048259
GSWCC LEVEL II#: 77764

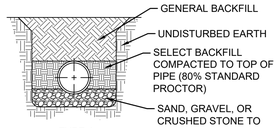


BEDDING TYPE AND THICKNESS VARIES

PIPE DIAMETER "D"	MAXIMUM "A"
6" TO 15"	8"
16" TO 21"	10"
24" TO 30"	12"
33" TO 42"	15"
48" & LARGER	18"

MAXIMUM TRENCH WIDTH "W" TAKEN AT TOP OF PIPE

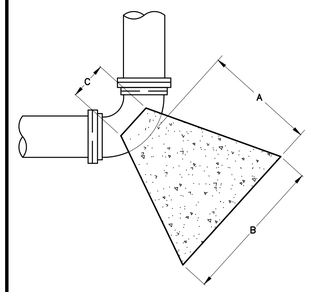
TRENCH WIDTH REQUIREMENTS

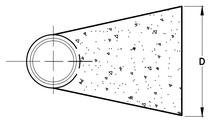


TYPE 4

NOTES:
1. ALL PROPOSED PIPE TO BE INSTALLED WITH TYPE 4 BEDDING.
2. GENERAL BACKFILL DEFINED AS SOIL FREE OF LARGE ROCKS AND FOREIGN MATERIAL.
3. SELECT BACKFILL DEFINED AS NATIVE SOIL EXCAVATED FROM THE TRENCH AND FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH.
4. ALL FORCE MAIN AND GRAVITY PRESSURE PIPING SHALL BE INSTALLED IN TYPE 4 BEDDING.

1 C700 — PIPE BEDDING DETAIL
SCALE: N.T.S.





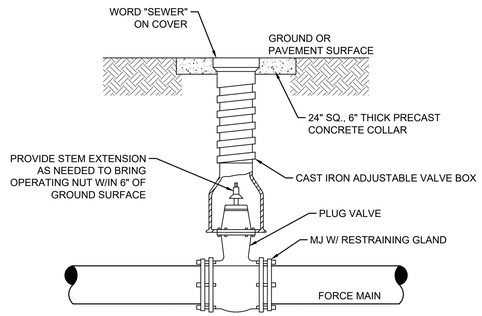
SECTION

MINIMUM DIMENSIONS FOR CONCRETE BLOCKING

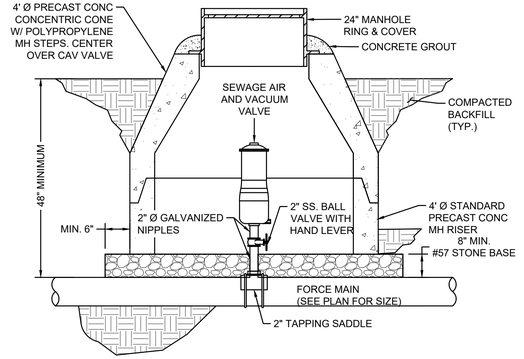
BEND	PIPE SIZE	A	B	C	D
11 1/4°	6"	1.0'	1.0'	7"	1.0'
	8"	1.0'	1.25'	7"	1.0'
	12"	1.0'	2.0'	11"	2.0'
	16"	2.0'	3.0'	15"	2.0'
	20"	2.0'	3.0'	19"	3.0'
	24"	3.0'	4.0'	22"	3.0'
22 1/2°	6"	1.0'	1.5'	7"	1.0'
	8"	1.0'	2.0'	7"	2.0'
	12"	2.0'	3.0'	11"	2.0'
	16"	2.0'	4.0'	15"	3.0'
	20"	3.0'	5.0'	19"	3.0'
	24"	4.0'	6.0'	22"	4.0'
45°	6"	1.5'	2.0'	7"	1.5'
	8"	2.0'	3.0'	7"	2.0'
	12"	2.0'	4.0'	11"	3.0'
	16"	3.0'	5.0'	15"	4.0'
	20"	4.0'	6.0'	19"	5.0'
	24"	5.0'	8.0'	22"	6.0'
90°	6"	1.5'	2.5'	7"	2.0'
	8"	2.0'	3.0'	7"	3.0'
	12"	4.0'	6.0'	11"	4.0'
	16"	4.0'	7.0'	15"	5.0'
	20"	8.0'	8.0'	19"	7.0'
	24"	6.0'	10.0'	22"	8.0'
TEES AND PLUGS	6"	1.5'	2.0'	7"	2.0'
	8"	2.0'	3.0'	7"	2.0'
	12"	2.0'	4.0'	11"	4.0'
	16"	3.0'	5.0'	15"	5.0'
	20"	4.0'	7.0'	19"	6.0'
	24"	5.0'	8.0'	22"	7.0'

NOTES:
1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS
2. THRUST BLOCK SHALL BE POURED AGAINST UNDISTURBED SOIL.
3. BOLTS/NUTS SHALL BE PROTECTED FROM CONCRETE COVERAGE.

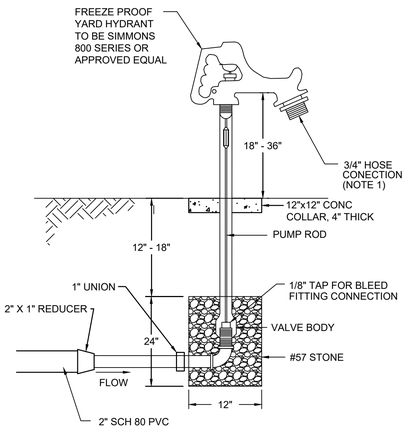
2 C700 — THRUST BLOCK DETAIL
SCALE: N.T.S.



3 C700 — TYPICAL VALVE
SCALE: N.T.S.



4 C700 — COMBINATION AIR & VACUUM VALVE
SCALE: N.T.S.



NOTES:
1. PROVIDE 100' OF 3/4" HEAVY DUTY HOSE AND ONE SPRAY NOZZLE, ELEY MODEL SP-1181 FOR EA YARD HYDRANT.

5 C700 — FROST FREE YARD HYDRANT
SCALE: N.T.S.

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GEORGIA REGISTERED No. 34555 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

No.	Description	Date
1	ISSUED FOR BID	4/12/24
2	---	---
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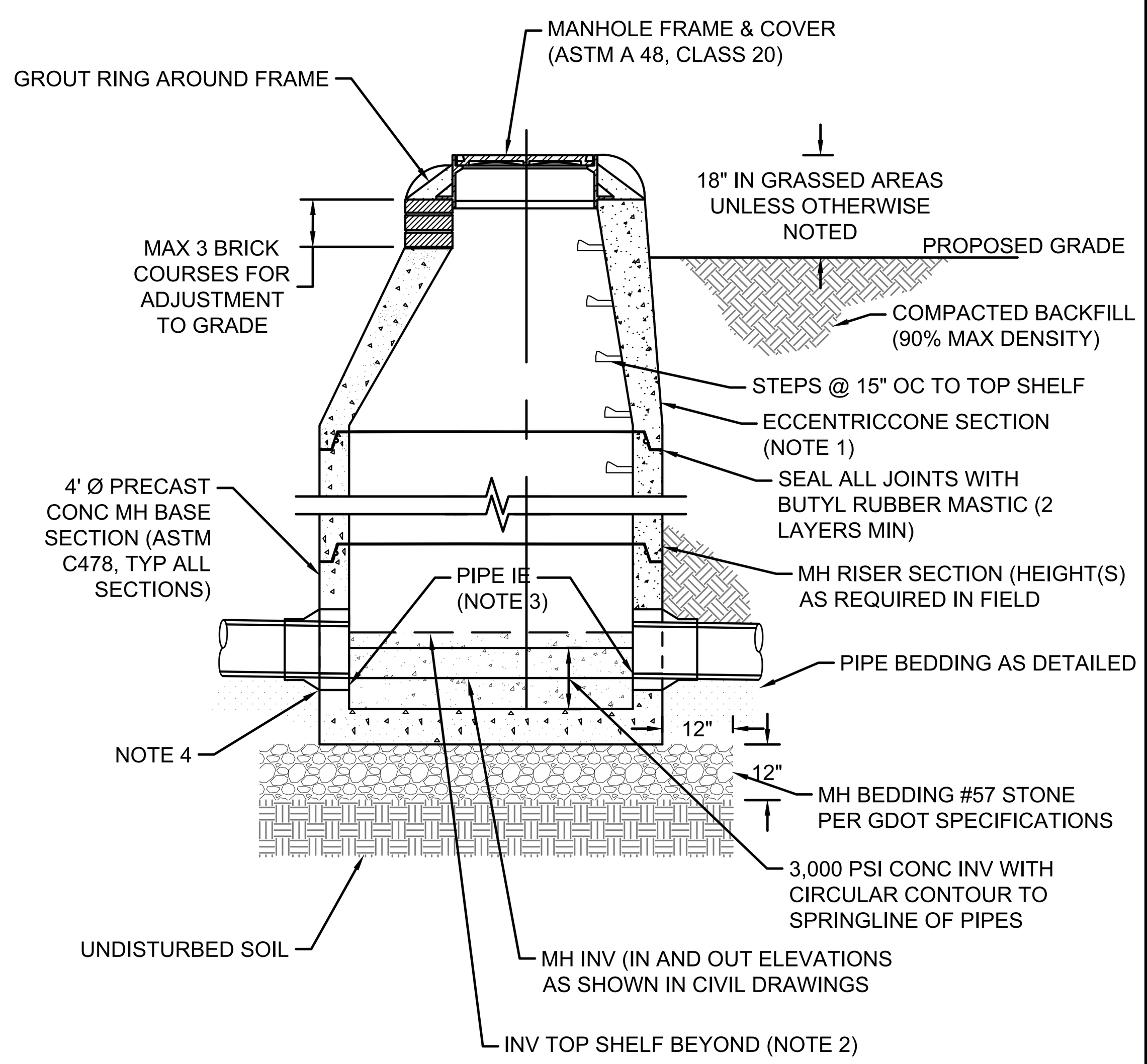
8	---	---

Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

WATER & SEWER DETAILS

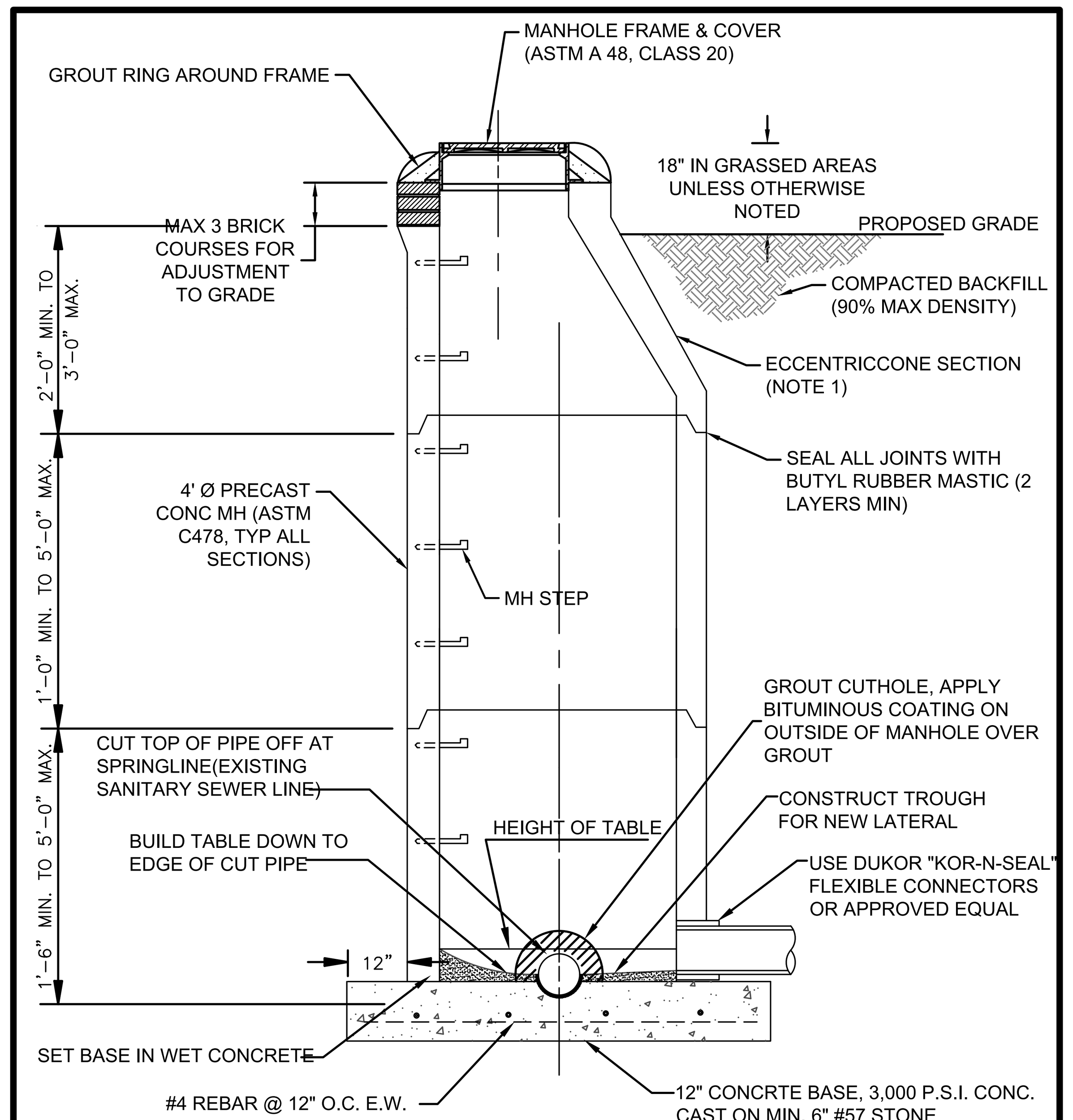
DRAWING NO.
C700



NOTE:

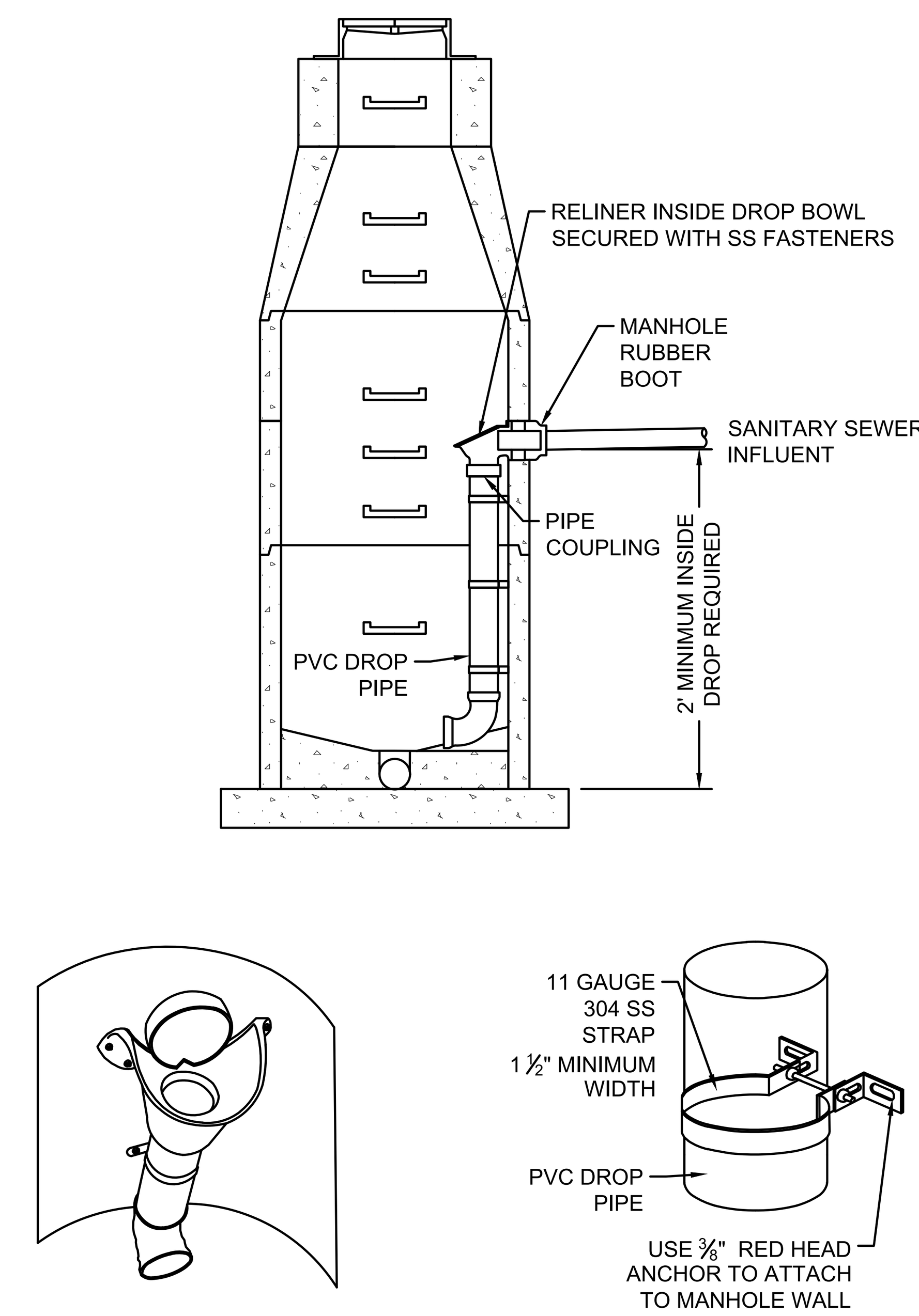
1. CONC SECTION SHOWN ROTATED OUT OF SECTION CUT. INSTALL CONE SO THAT STEPS DESCEND TO TOP SHELF AREA OF INV.
2. CONTOUR MH INV FROM SPRINGLINE TO TOP SHELF, ELEVATED AT 80% OF LARGEST PIPE DIAMETER.
3. SEE CIVIL DRAWINGS FOR SPECIFIC INV ELEVATIONS, AND PROVIDE FIELD-CUT CORED HOLES AFTER VERIFYING UPSTREAM AND DOWNSTREAM STR TIE-IN ELEVATIONS.
4. COAT CORED HOLES WITH COAL TAR EPOXY AND SEAL CONNECTION WITH KOR-N-SEAL BOOT.

1 / C701 — 4' DIA. PRECAST MANHOLE DETAIL
SCALE: N.T.S.

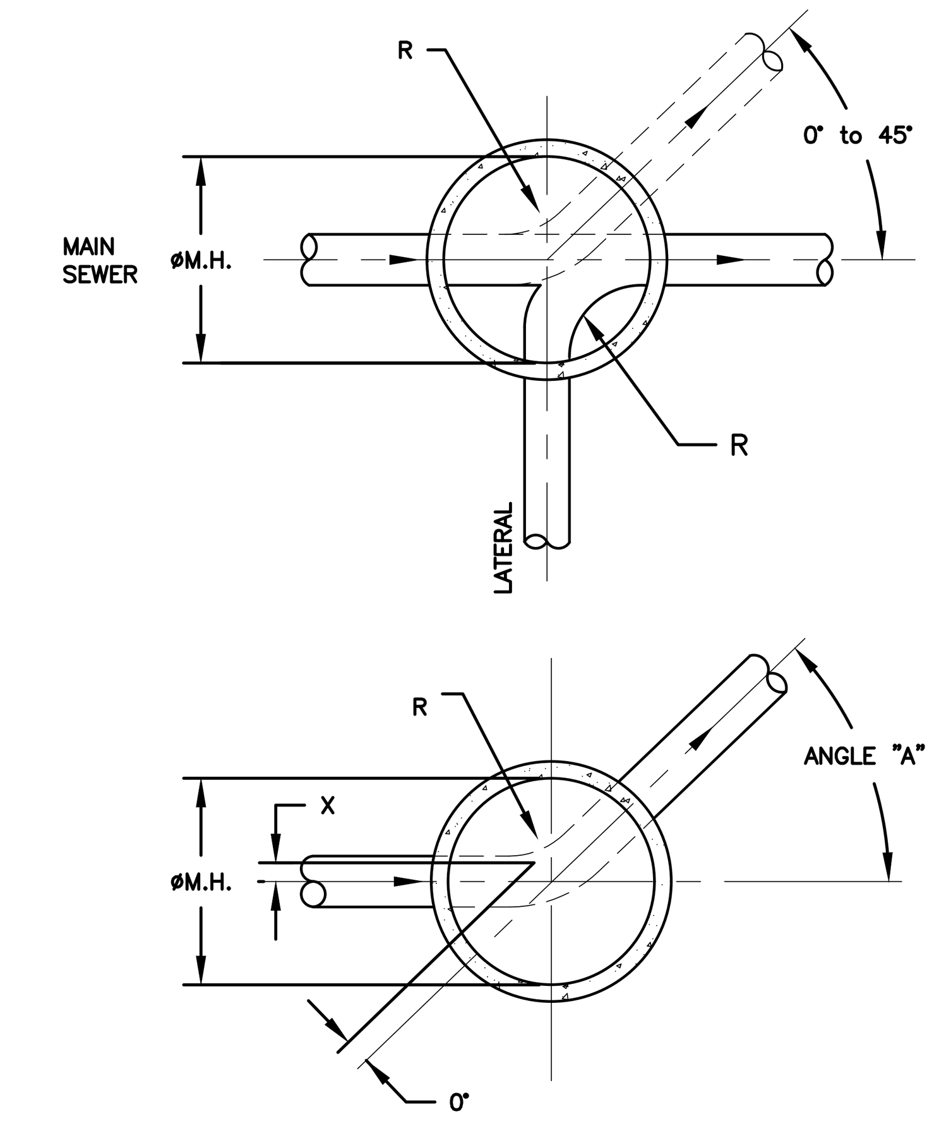


NOTE:
ALL CONCRETE MANHOLES SHALL BE EPOXY COATED WITH QUADEX STRUCTURE GUARD OR APPROVED EQUAL TO A MINIMUM THICKNESS OF 123 MILS.

2 / C701 — DOGHOUSE MANHOLE DETAIL
SCALE: N.T.S.

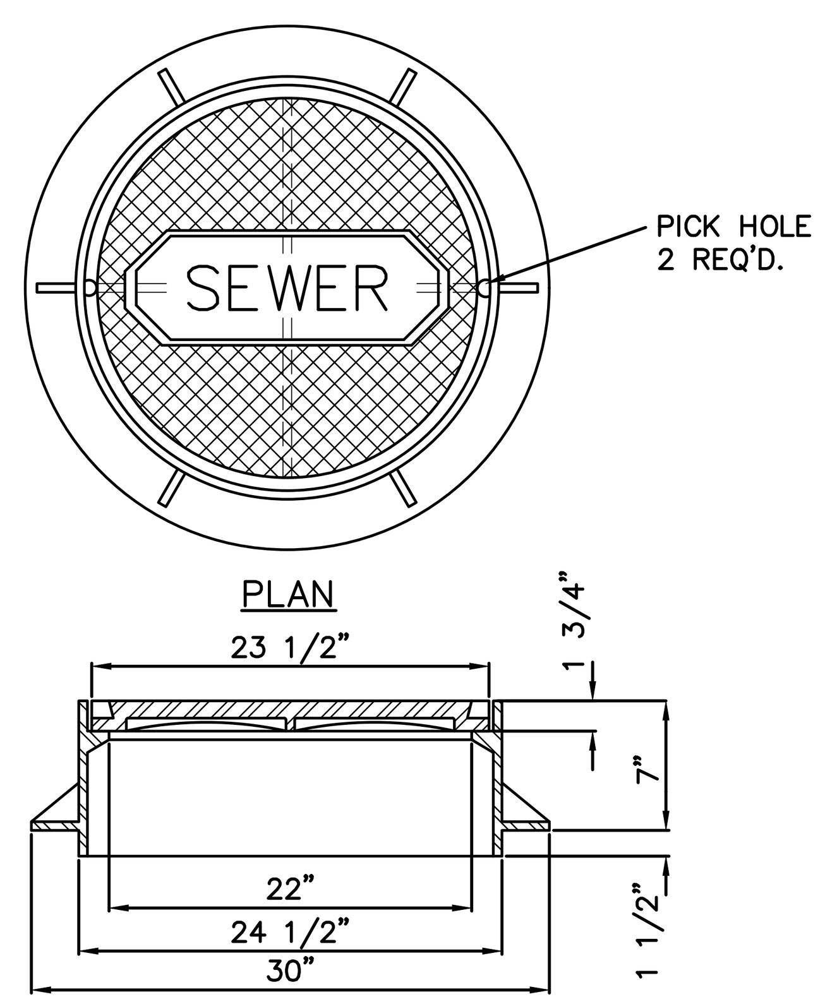


3 / C701 — INSIDE DROP MANHOLE
SCALE: N.T.S.



STANDARD MANHOLE SCHEDULE OF GOVERNING DIMENSIONS				
PIPE SIZE	ANGLE "A"	ØM.H.		"X"
8" TO 15"	0° TO 90°	4'–0"		0"
18" TO 24"	0° TO 60°	4'–0"		0"
18" TO 24"	60° TO 90°	5'–0"		6"
27" TO 30"	0° TO 30°	5'–0"		0"
27" TO 30"	30° TO 60°	5'–0"		6"
27" TO 30"	60° TO 90°	6'–0"		8"
36"	0° TO 90°	6'–0"		0"
42"	0° TO 60°	6'–0"		0"
48"	0° TO 30°	6'–0"		6"

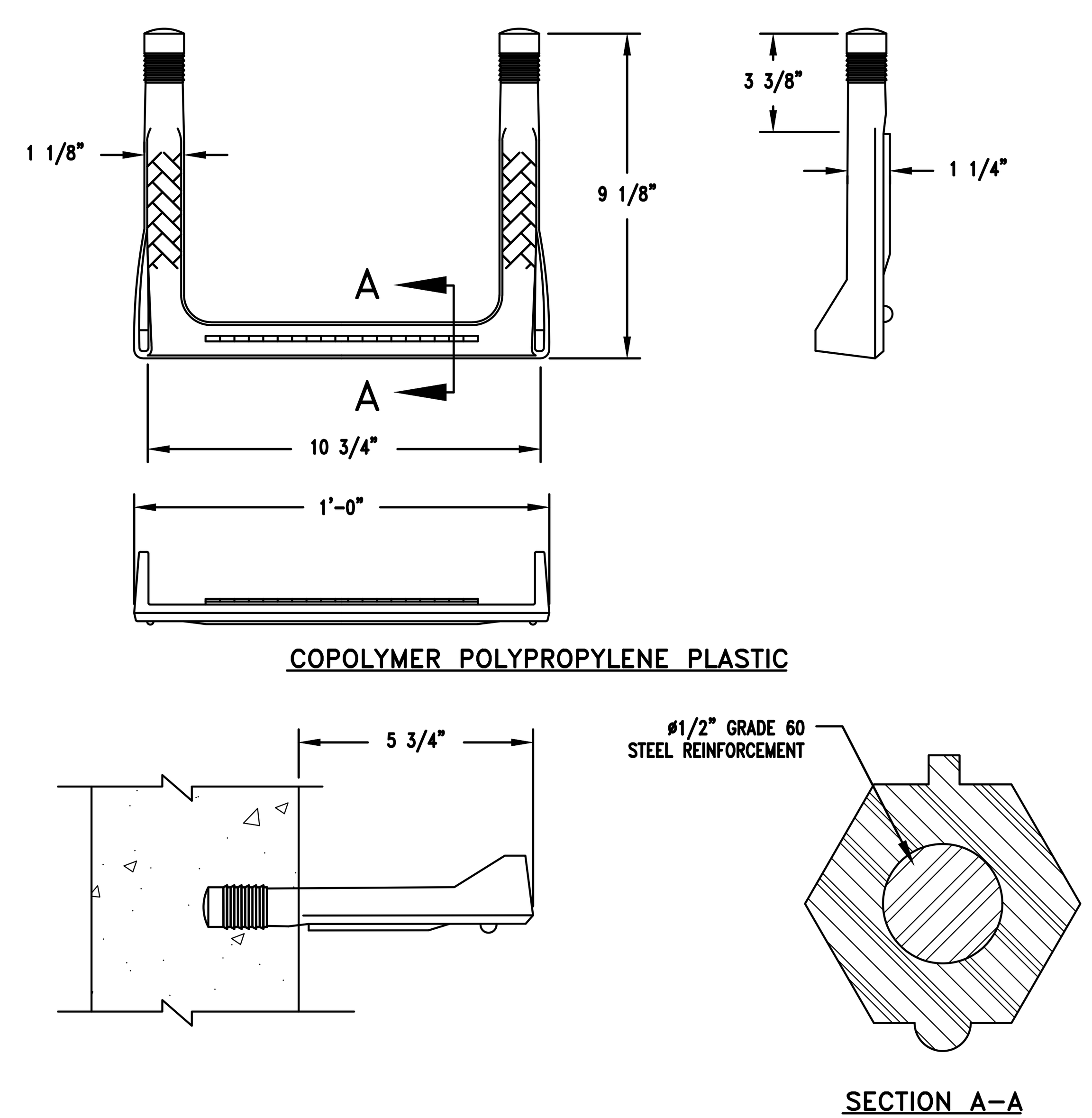
4 / C701 — MANHOLE INVERT PLAN
SCALE: N.T.S.



NOTES:

1. FRAME & COVER MACHINED FOR NON-ROCKING FIT.
2. APPROX. WT. OF FRAME = 180#.
3. APPROX. WT. OF COVER = 135#.
4. PROVIDE WATERTIGHT BOLT DOWN TYPE COVER SECURED WITH 4 STD. HEX HEAD BRONZE OR ST. STL. CAP SCREWS AND GASKET, WHERE MANHOLES OCCUR OUTSIDE ROAD RIGHTS-OF-WAY OR OTHERWISE INDICATED.
5. METAL CASTING REQUIREMENTS:
   PROVIDE CASTINGS OF UNIFORM QUALITY, FREE FROM BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE, DISTORTION OR OTHER SIGNIFICANT DEFECTS, AND HAVING SMOOTH SURFACES FREE OF CASTING SAND, FINS AND BURRS. USE COMPONENT PARTS WHICH FIT TOGETHER UNIFORMLY, IN A SECURE FASHION. USE GRAY IRON CASTING MATERIAL COMPLYING WITH ASTM A 48, CLASS 30.

5 / C701 — MANHOLE FRAME AND COVER
SCALE: N.T.S.



6 / C701 — POLYPROPYLENE MANHOLE STEP
SCALE: N.T.S.

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DAVIS OZIER — REGISTERED PROFESSIONAL ENGINEER — 11-14-22

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	
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Date: 4/11/24 | Drawn by: MGW | Check by: DLO
Project #: 1521.2201 | Design by: DLO | Review by: DLO
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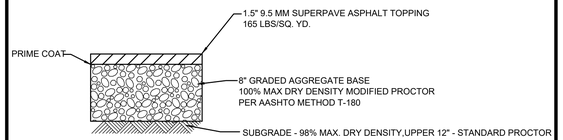
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

SEWER DETAILS

DRAWING NO.
C701



1 / C702 ASPHALT PAVEMENT SECTION
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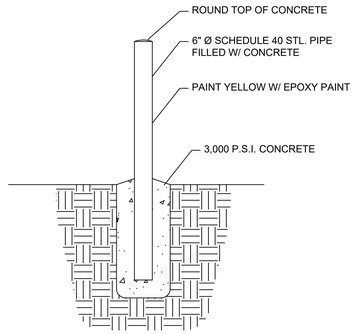
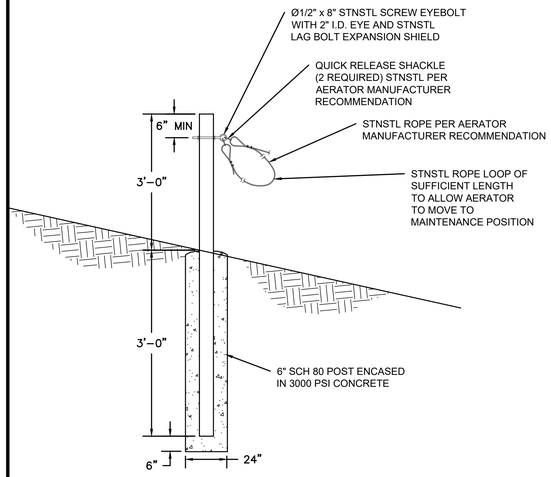
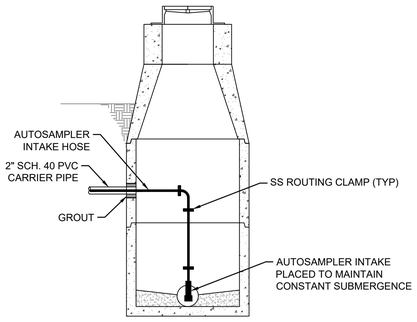


2 / C702 TYPICAL PIPE BOLLARD
SCALE: N.T.S.



3 / C702 MOORING POST
SCALE: N.T.S.



4 / C702 AUTOSAMPLER INTAKE
SCALE: N.T.S.

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GEORGIA REGISTERED No. PE036550 11-14-22 ENGINEER DAVIS OZIER

Rev.	Description	Date
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7	---	---
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1	ISSUED FOR BID	4/12/24

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Design by: DLO | Review by: DLO
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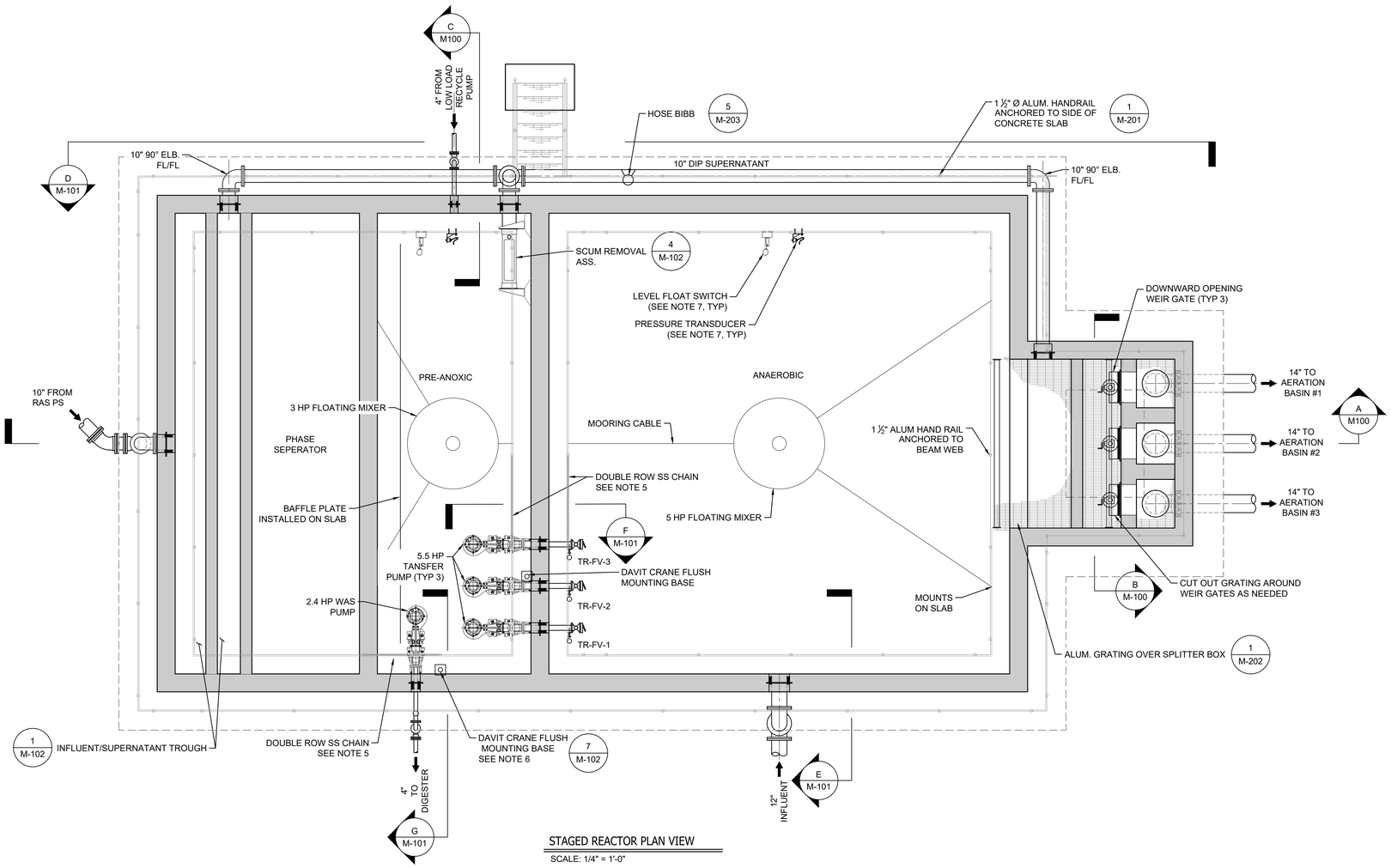
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

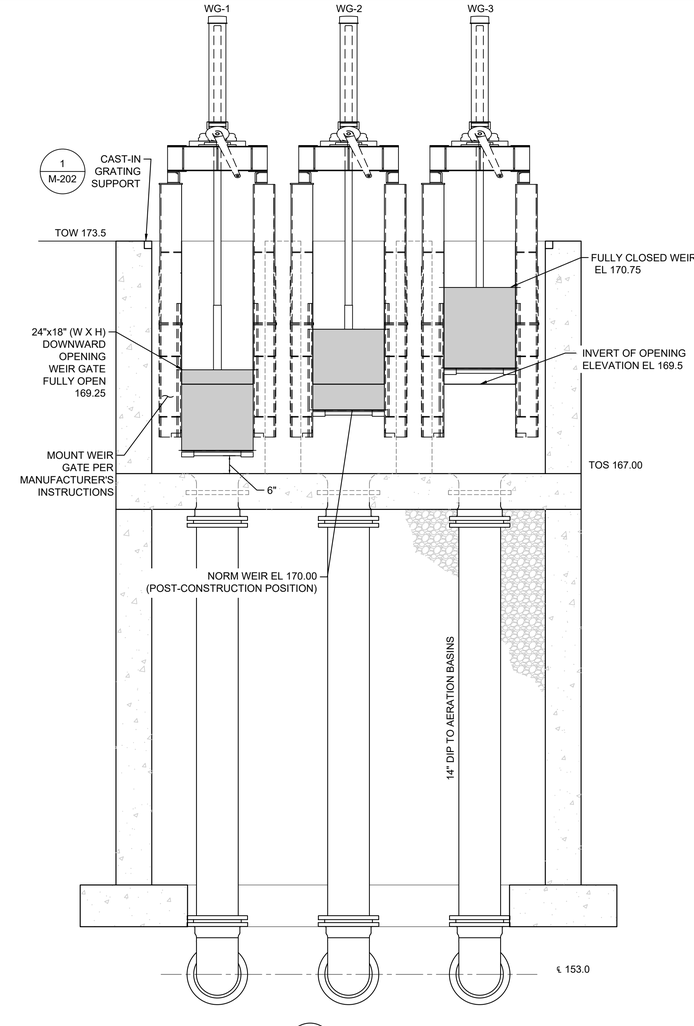
MISCELLANEOUS CIVIL DETAILS

DRAWING NO.
C702



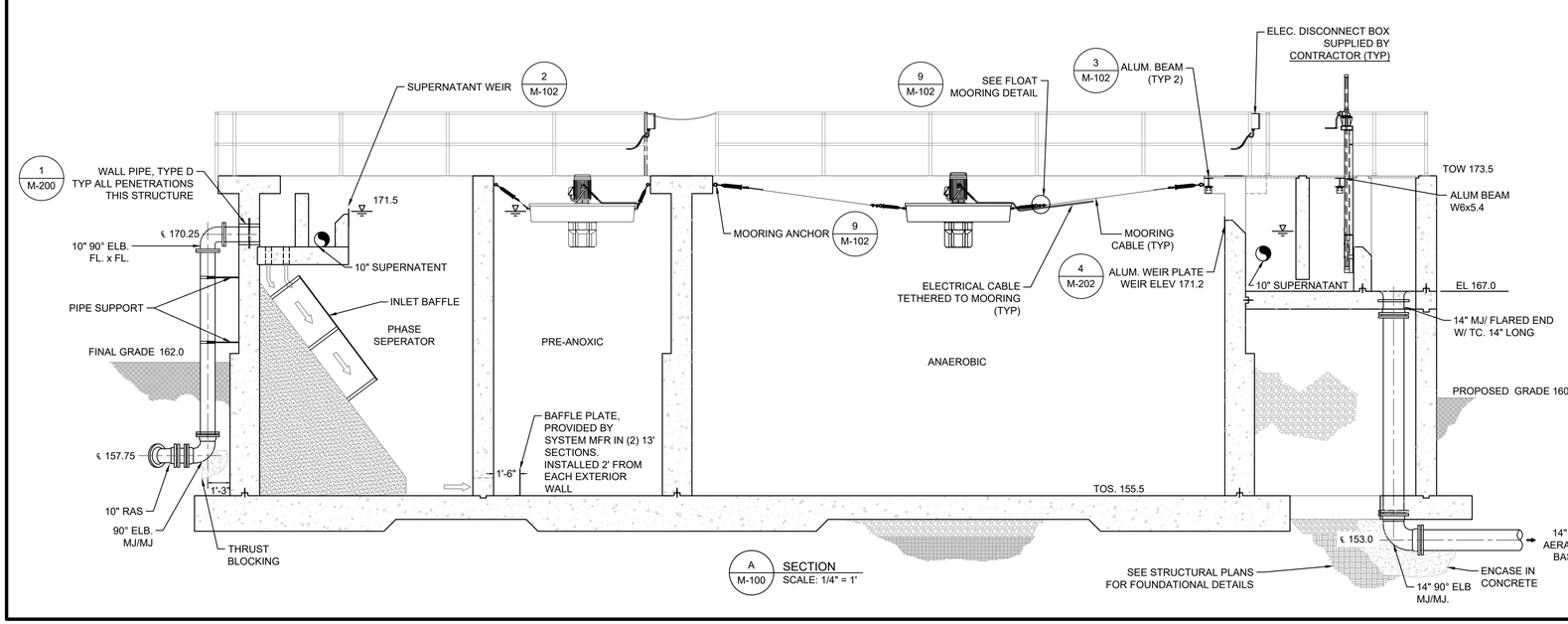
STAGED REACTOR PLAN VIEW

SCALE: 1/4" = 1'-0"



B M-100 SECTION

SCALE: 1/2" = 1'

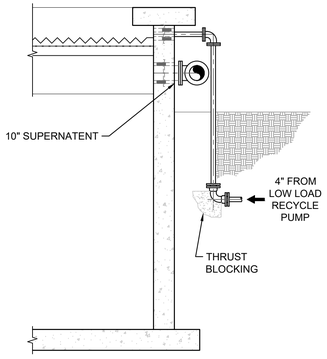


A M-100 SECTION

SCALE: 1/4" = 1'

NOTES:

1. ALL PIPING SHOWN TO BE PC350 DIP
2. PUMPS, MIXERS, & CONTROL EQ. TO BE SUPPLIED BY PASS SYSTEM MFR. SEESPECIFICATIONS FOR EQUIPMENT DETAILS.
3. ALL MJ FITTINGS SHALL BE RESTRAINED W/ RESTRAINING GLAND.
4. ALL WALL PENETRATIONS ARE TO BE TYPE D, W/ WALL SLEEVE AND LINK SEAL.
5. AT LOCATIONS FOR DAVIT CRANE MOUNTING, PROVIDE BREAK IN AULM. HANDRAILS, W/ DOUBLE ROW OF SS CHAIN & HARDWARE SPANNING OPENING TO PERMIT REMOVAL OF EQUIPMENT VIA CRANE.
6. PROVIDE A SINGLE DAVIT CRANE, THERN COMMANDER 500, OR APPROVED EQUAL, FOR THE STAGED REACTOR PROVIDE W/ TWO FLUSH MOUNT BASES.
7. A SET OF A FLOAT SWITCH AND PRESSURE TRANSDUCER (PROVIDED BY SYSTEM MFR) SHALL BE INSTALLED IN THE PRE-ANOXIC AND ANAEROBIC BASINS. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE W/ MFR INSTRUCTIONS.



C M-100 SECTION

SCALE: 1/4" = 1'

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GEORGIA REGISTERED No. 34555 ENGINEER 11-14-24 DAVIS OZIER

Rev.	Description	Date	Apr.
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1	ISSUED FOR BID	4/12/24	---

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Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

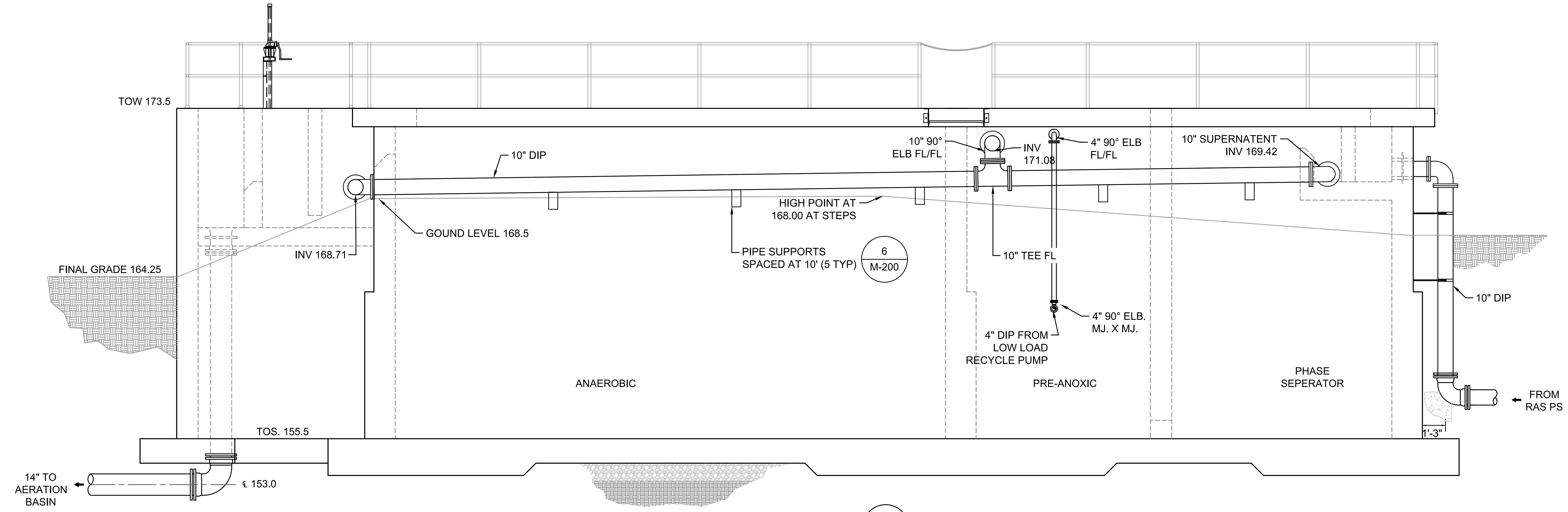
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

STAGED REACTOR MECHANICAL PLAN

DRAWING NO.

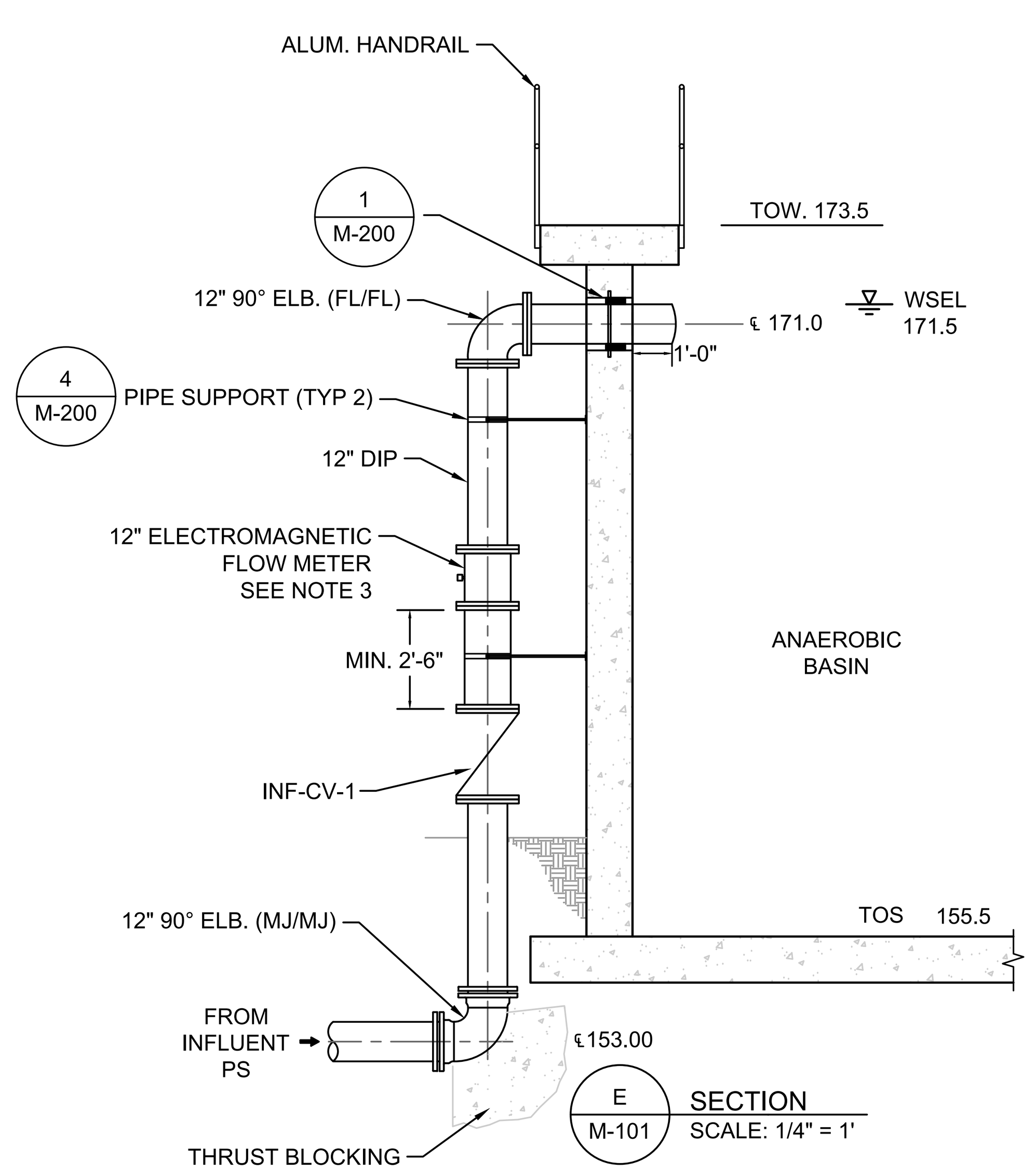
M100



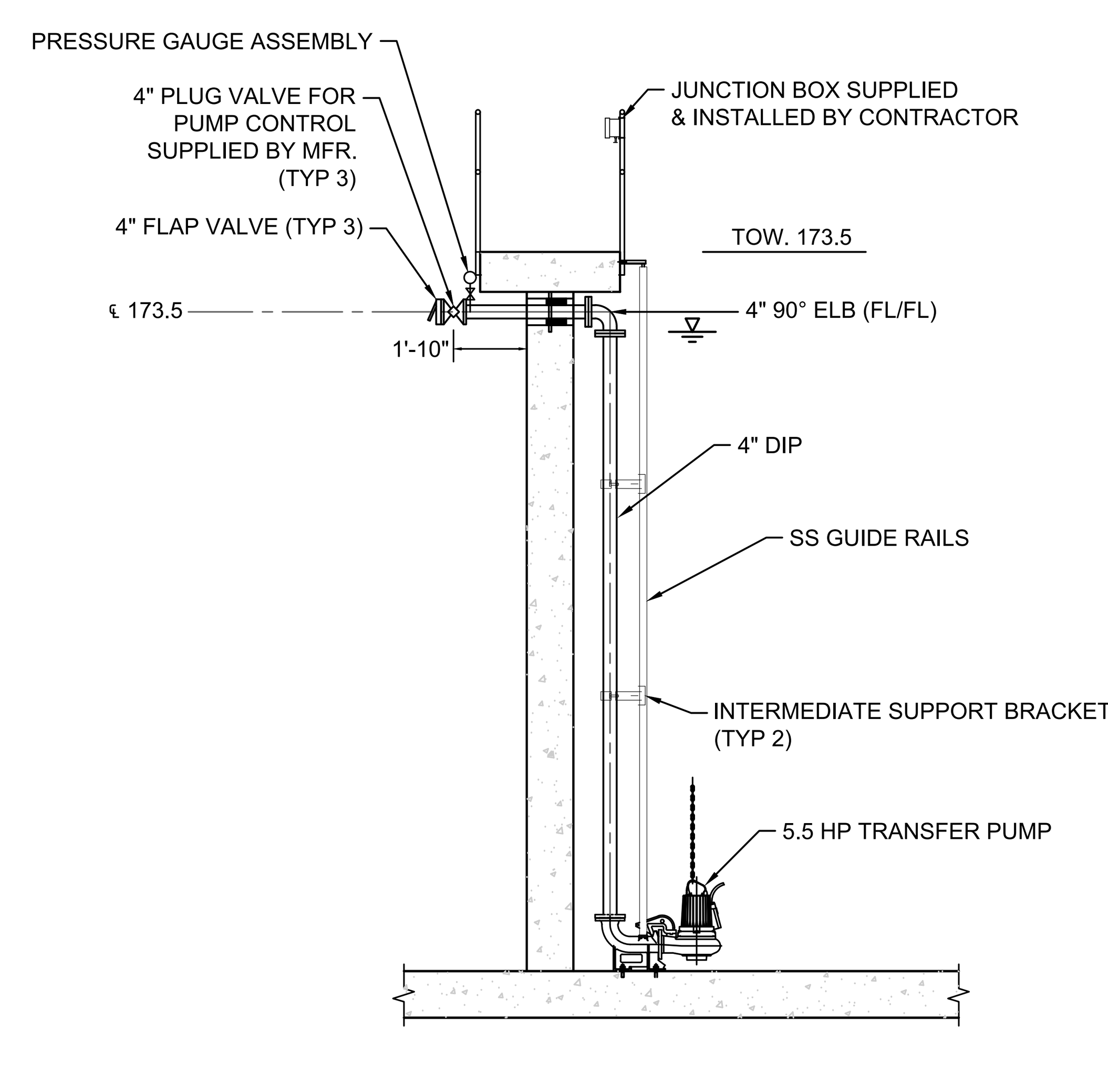
D
M-101
SECTION
SCALE: 1/4" = 1'

VALVE SCHEDULE

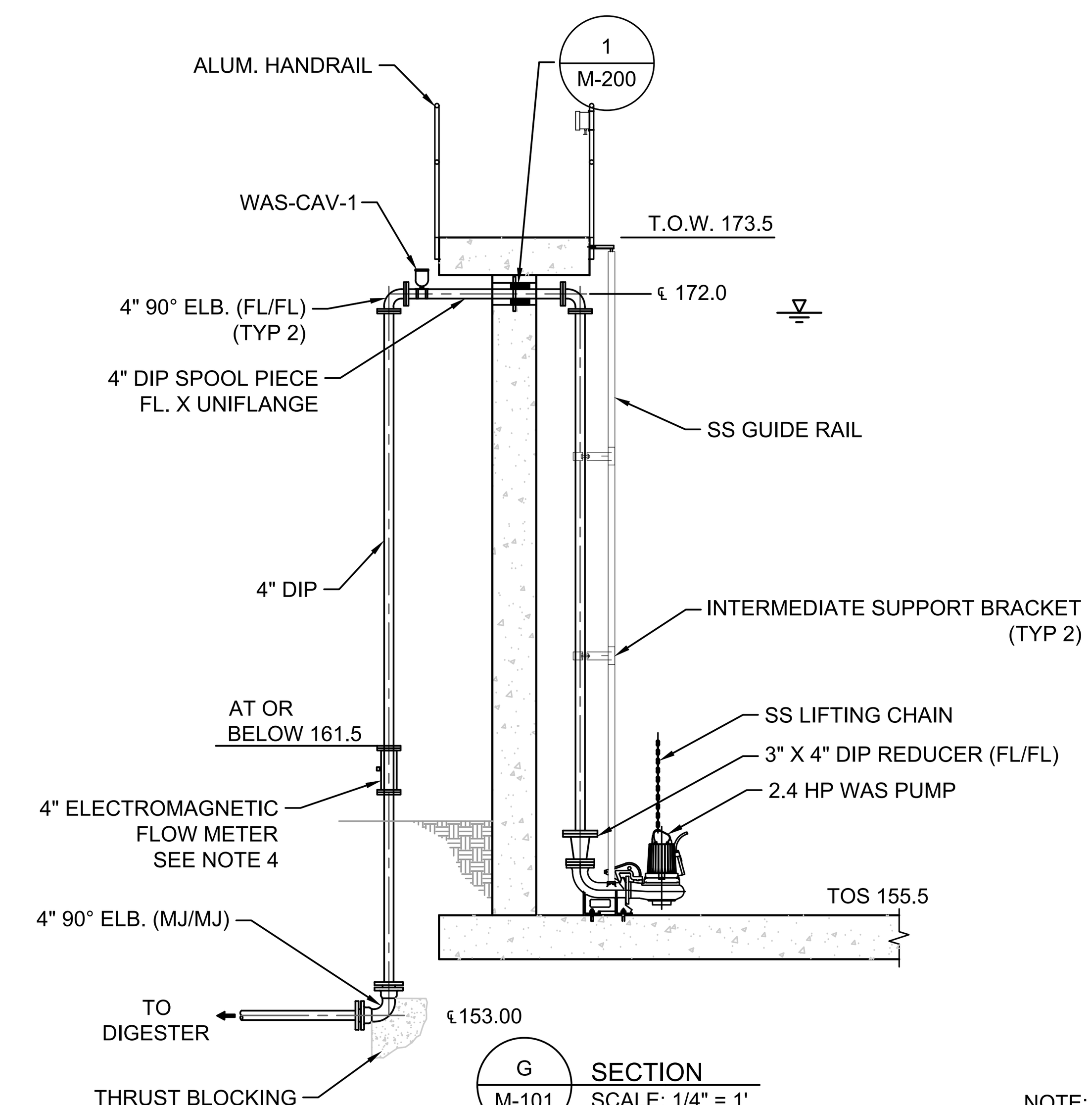
IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
INF-CV-1	12" CHECK VALVE (FL/FL)	AUTOMATIC W/ VISUSAL POSITION INDICATOR	40 05 51 2.02
TR-FV-1	4" FLAP VALVE (FL)	AUTOMATIC	40 05 51 2.03
TR-FV-2	4" FLAP VALVE (FL)	AUTOMATIC	40 05 51 2.03
TR-FV-3	4" FLAP VALVE (FL)	AUTOMATIC	40 05 51 2.03
WAS-CAV-1	2" COMBINATION AIR VALVE (SADDLE)	AUTOMATIC	40 05 51 2.07



E
M-101
SECTION
SCALE: 1/4" = 1'



F
M-101
SECTION
SCALE: 1/4" = 1'



G
M-101
SECTION
SCALE: 1/4" = 1'

NOTE:
1. PUMPS, MOUNTING HARDWARE, GUIDE RILS & SUPPORT BRACKET TO BE PROVIDED BY PASS SYSTEM MANUFACTURER.
2. ALL PIPE & FITTINGS TO BE PROVIDED BY CONTRACTOR.
3. 12" ELECTROMAGNETIC FLOW METER SHALL BE McCOMETER UM12-1SR100A1 W/ PROCOMM CONVERTER, KRHONE OPTIFLUX 2100 W/ IFC 100 CONVERTOR, OR APPROVED EQUAL.
4. 4" ELECTROMAGNETIC FLOW METER SHALL BE McCROMETER UM04-1SR100A1 W/ PROCOMM CONVERTOR, KROHNE OPTIELUX 2100 W/ IFC 100 CONVERTOR, OR APPROVED EQUAL

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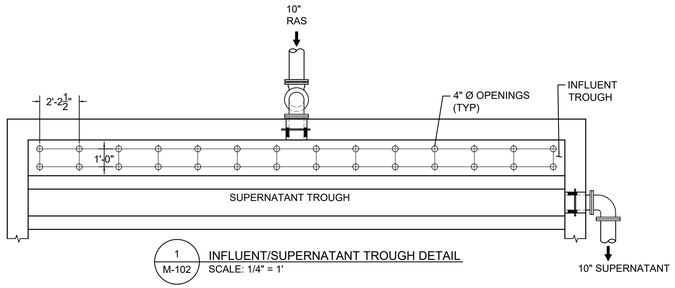
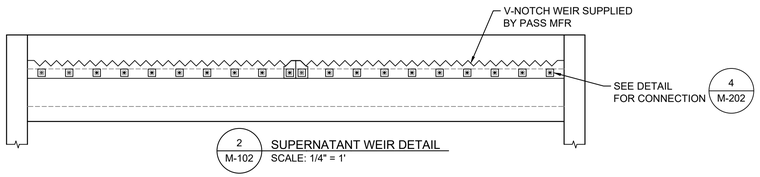
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

STAGED REACTOR MECHANICAL SECTIONS

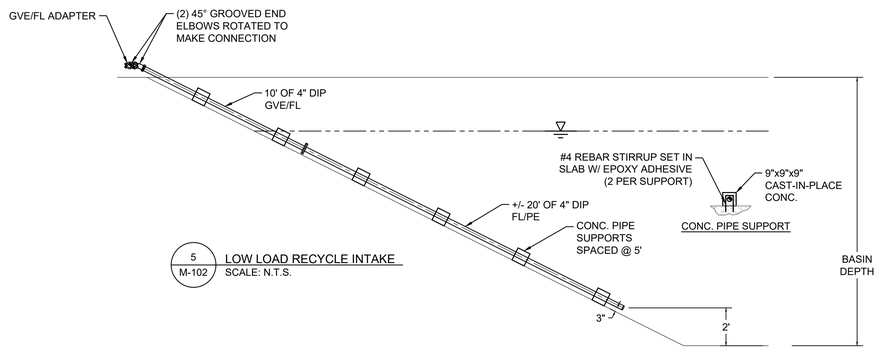
DRAWING NO.
M101



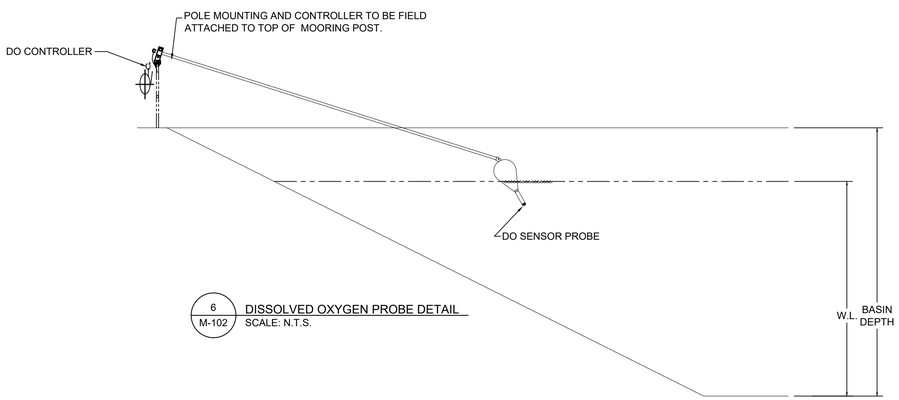
1 / M-102 INFLUENT/SUPERNATANT TROUGH DETAIL
SCALE: 1/4" = 1'



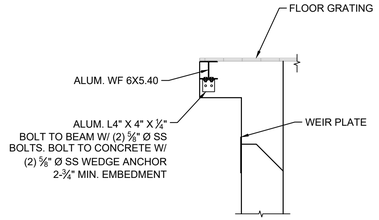
2 / M-102 SUPERNATANT WEIR DETAIL
SCALE: 1/4" = 1'



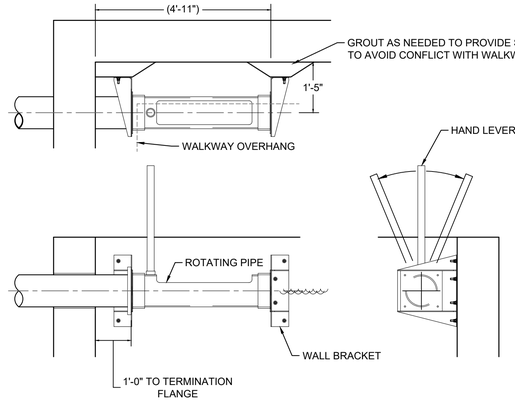
5 / M-102 LOW LOAD RECYCLE INTAKE
SCALE: N.T.S.



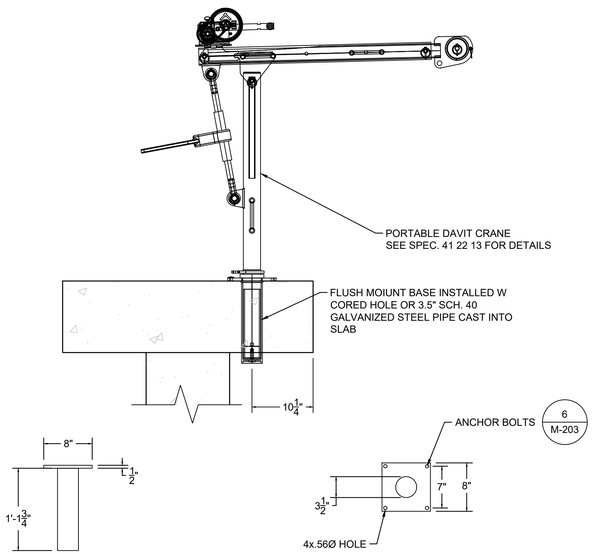
6 / M-102 DISSOLVED OXYGEN PROBE DETAIL
SCALE: N.T.S.



3 / M-102 CONNECTION DETAIL
SCALE: 1/2" = 1'



4 / M-102 SCUM REMOVAL ASS. DETAIL
SCALE: 1/2" = 1'



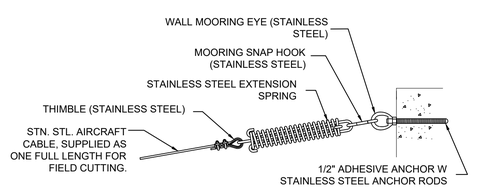
NOTE:
1. CRANE TO BE PROVIDED WITH 2 FLUSH MOUNT BASES. SEE PLANS FOR MOUNTING LOCATIONS

7 / M-102 FLUSH MOUNT BASE
SCALE 1"=1'

FLOAT MOORING DETAIL

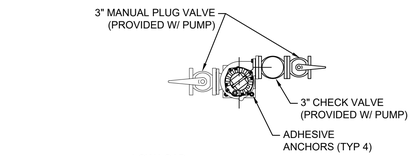
FROM
AERATION
BASIN

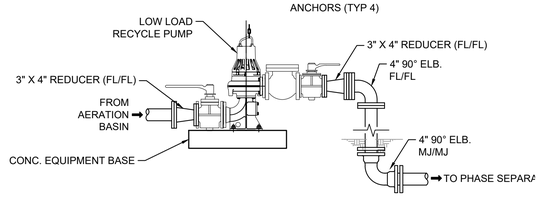
9 / M-102 MIXER CONNECTION DETAIL
SCALE: N.T.S.



MOORING CABLE DETAIL

NOTE: POLYPROPYLENE MAINTENANCE LOOP PROVIDED TO ALLOW UNIT TO REST ON BASIN FLOOR IN DEWATERED POSITION OR TO ALLOW UNIT TO BE ACCESSED FROM THE SIDE OF BASIN FOR MAINTENANCE.





NOTE:
1. PUMP AND VALVES TO BE SUPPLIED BY PASS SYSTEM MFR.

8 / M-102 LOW LOAD RECYCLE PUMP DETAIL
SCALE: 1/2" = 1'

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GEORGIA REGISTERED No. 34555 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

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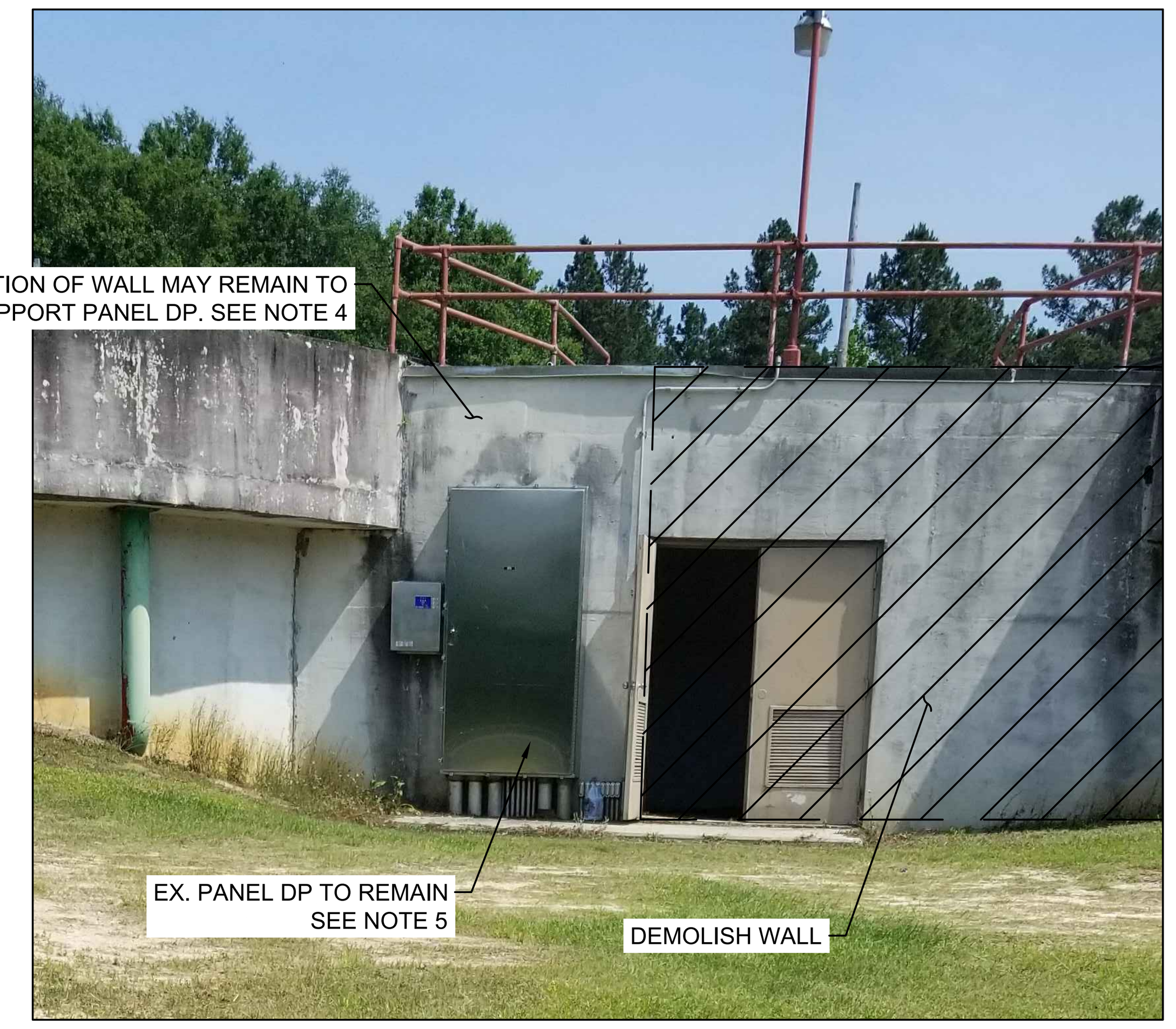
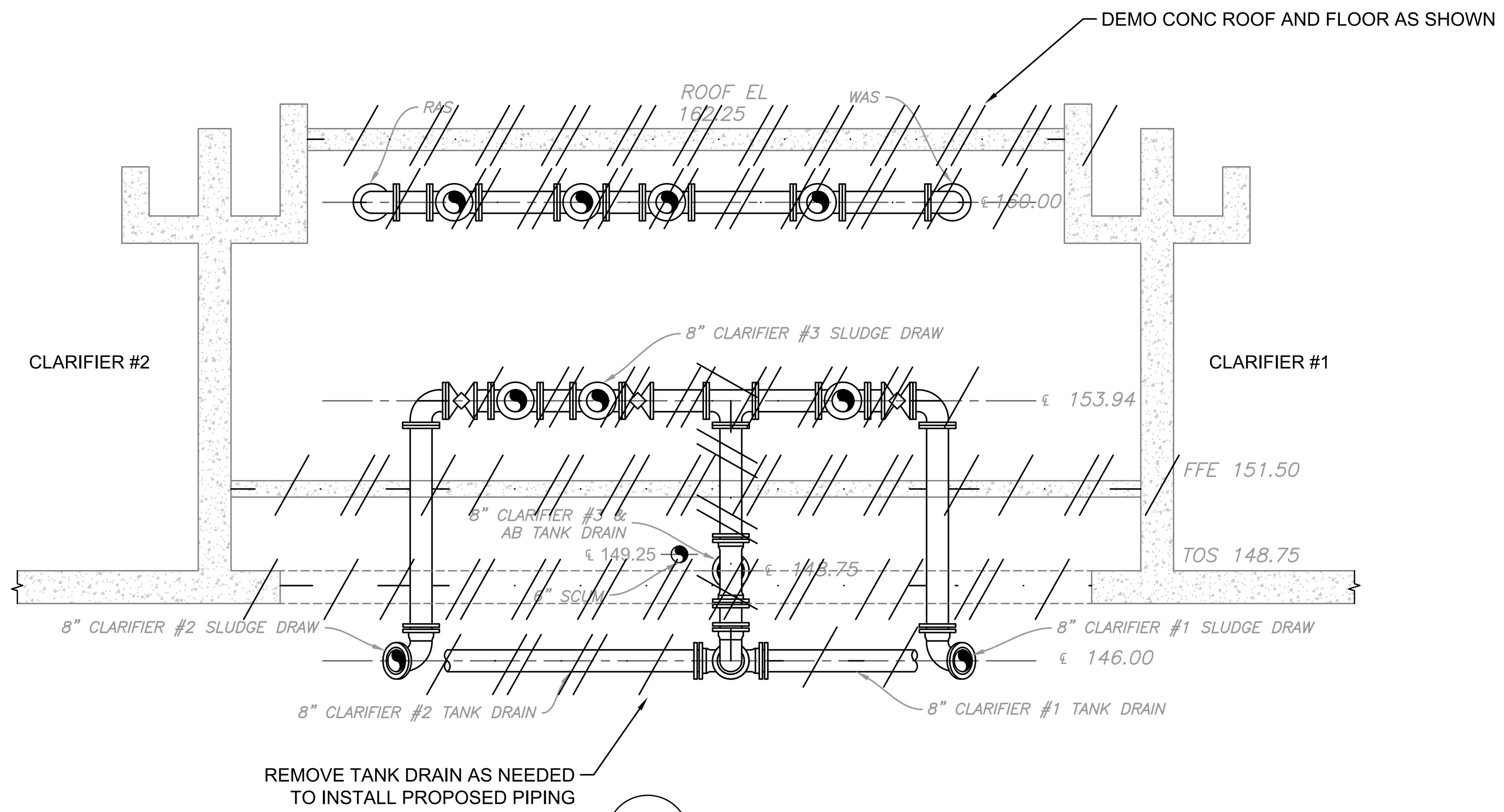
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

STAGED REACTOR MECHANICAL PLAN

DRAWING NO.
M102



C M-103 SECTION
SCALE: N.T.S.



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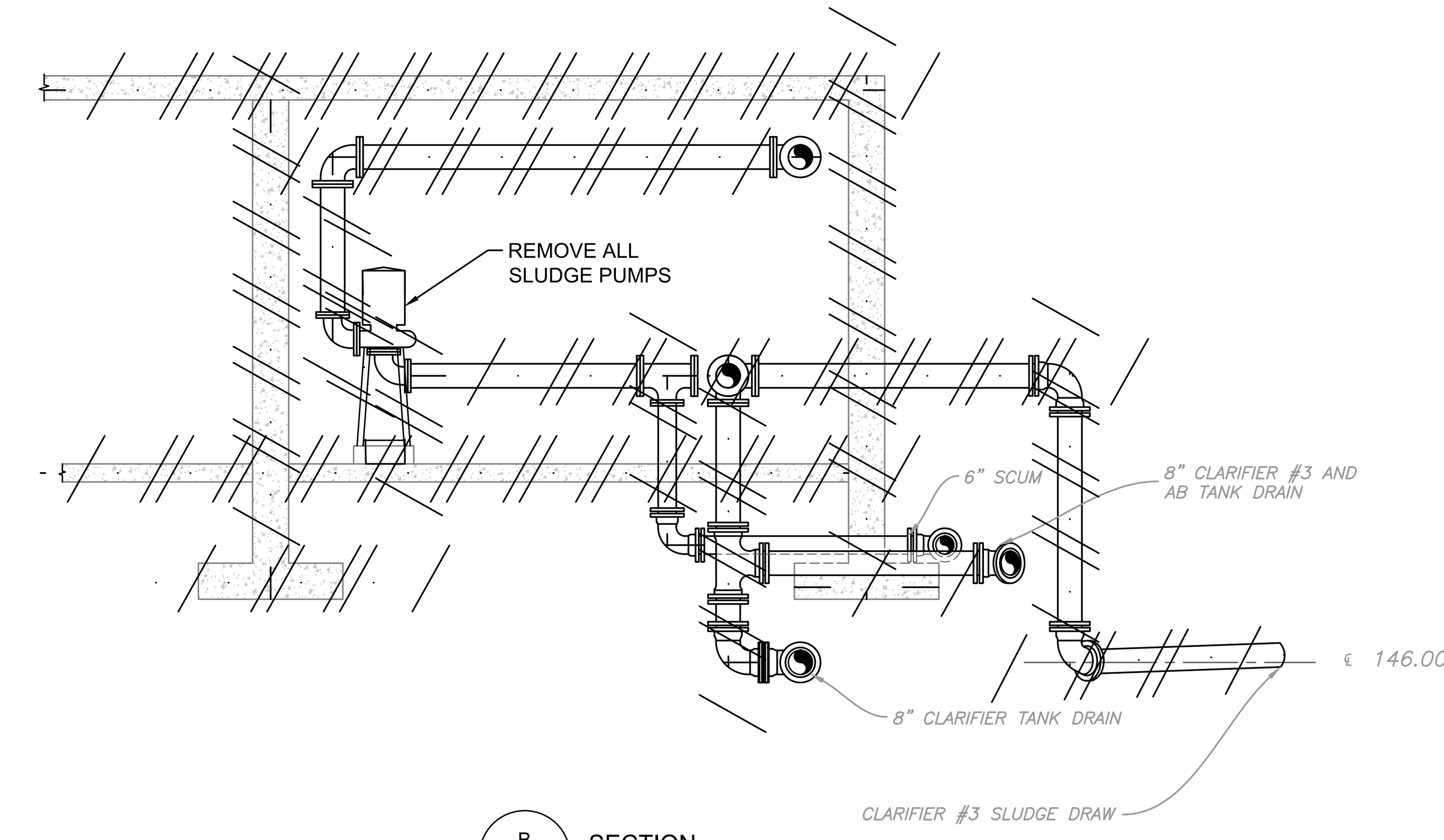
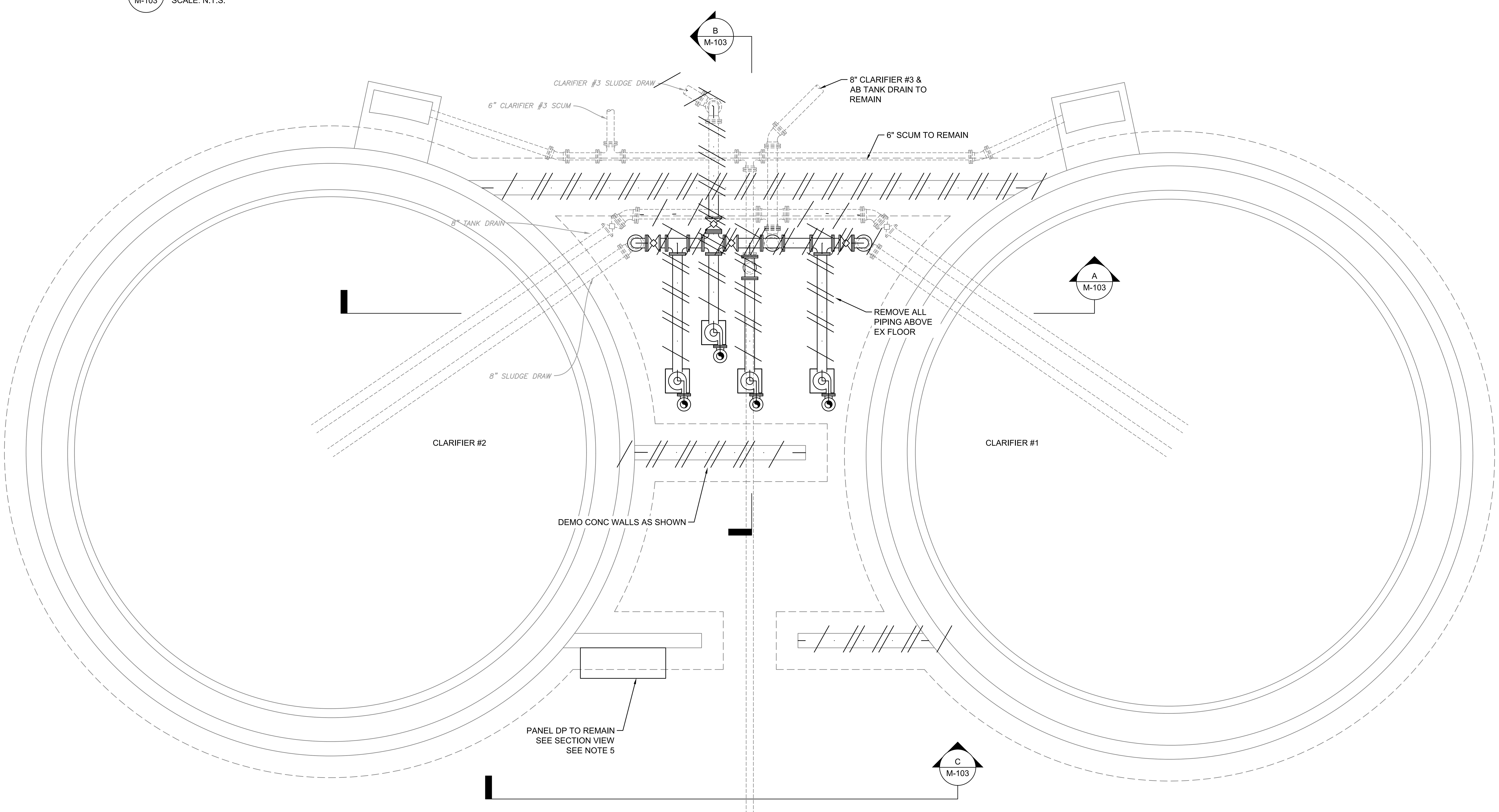


B M-103 SECTION
SCALE: 1/4" = 1'



EX. CLARIFIER PIPING PLAN VIEW
SCALE: 1/4" = 1'-0"

NOTES:
1. COORDINATE ALL DEMOLITION WITH PROPOSED WORK TO MINIMIZE THE DOWN-TIME OF THE TWO EX. CLARIFIERS.
2. PROPOSED RAS PS SHOULD BE COMPLETED AND OPERATIONAL ALONG WITH CLARIFIER #3 PRIOR TO COMMENCING DEMOLITION SHOWN ON THIS SHEET. TEMPORARY PIPING FROM CLARIFIER #3 TO MH B.1 AS SHOWN ON SHEET C-303 WILL BE REQUIRED TO BRING CLARIFIER #3 ONLINE.
3. SAW CUT CONC ROOF, SLAB, FOOTINGS, AND WALLS AT ALL DEMOLITION BOUNDARIES SO AS NOT TO DAMAGE THE EX. CLARIFIER STRUCTURES TO REMAIN. REMOVE EXPOSED REBAR TO A DEPTH OF AT LEAST 2" FROM CUT FACE, EITHER BY DRILLING OUT REBAR, OR CHIPPING OUT CONCRETE AND CUTTING REBAR AT DEPTH. PAINT EXPOSED SURFACE OF REBAR W/ A RUST INHIBITOR AND PATCH HOLE W/ NON-SHRINKING GROUT.
4. PROTECTIVE MEASURES SHALL BE TAKEN TO PREVENT DAMAGE TO PANEL DP DURING DEMOLITION WORK. IN LIEU OF LEAVING A SECTION OF WALL TO SUPPORT PANEL DP, TEMPORARY RACK SUPPORTS MAY BE INSTALLED TO ALLOW FOR COMPLETE DEMOLITION OF THE WALL. FOLLOWING DEMOLITION, A NEW SUPPORTING RACK SHOULD BE INSTALLED FOR THE PANEL.
5. NO ELECTRIC CIRCUITS WILL REMAIN IN SERVICE IN THE EXISTING RAS PUMP ROOM FOLLOWING DEMOLITION. FOLLOW THE CONSTRUCTION SEQUENCE SHOWN ON SHEET G102 IN ORDER TO MINIMIZE DOWNTIME OF THE CLARIFIERS. IF PANEL DP MUST BE RELOCATED, PLEASE CONSIDER THE CONSTRUCTION SEQUENCE DETAILED BELOW:
   - 5.1. COMPLETE PHASE 1 UPGRADES FROM SHEET G102, WITH AERATION BASINS POWERED BY AQUAPASS PANEL.
   - 5.2. CONSTRUCT AND STARTUP NEW RAS PUMP STATION WITH TEMPORARY POWER FEED FROM PANEL DP AND FLOW FROM CLARIFIER #3 VIA TEMPORARY PIPING. COORDINATE WITH STARTUP OF CLARIFIER #3.
   - 5.3. INSTALL ALL CONDUIT TO AND FROM PROPOSED LOCATION FOR PANEL DP WITH NEW RACK INSTALLED.
   - 5.4. MOVE PANEL DP AND PRIORITIZE CONNECTIONS WITH NEW RAS PUMP STATION AND CLARIFIER #3 TO REDUCE DOWNTIME. CLARIFIERS #1 AND #2 WILL REMAIN OFFLINE TO COMPLETE DEMO WORK AND PIPING MODIFICATIONS.

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Project #:	Design by:	Review by:
1521.2201	DLO	DLO

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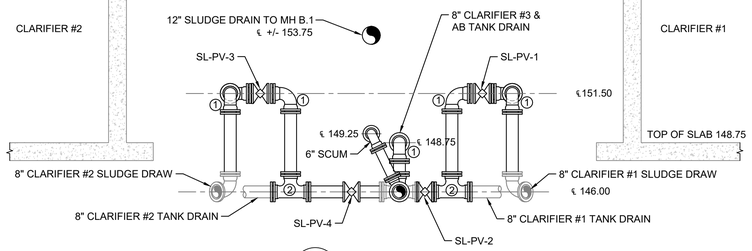
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

EX. CLARIFIER PIPING LAYOUT & DEMO PLAN

DRAWING NO.
M103

FITTING SCHEDULE	
NO.	DESCRIPTION
1.	8" 90° ELBOW
2.	8" x 8" x 8" TEE
3.	8" 45° ELBOW
4.	8" x 6" x 8" TEE
5.	6" COUPLING
6.	6" 90° ELBOW



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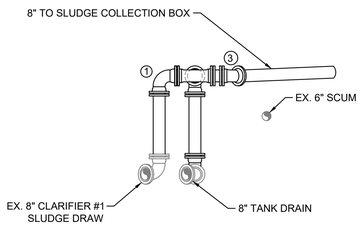

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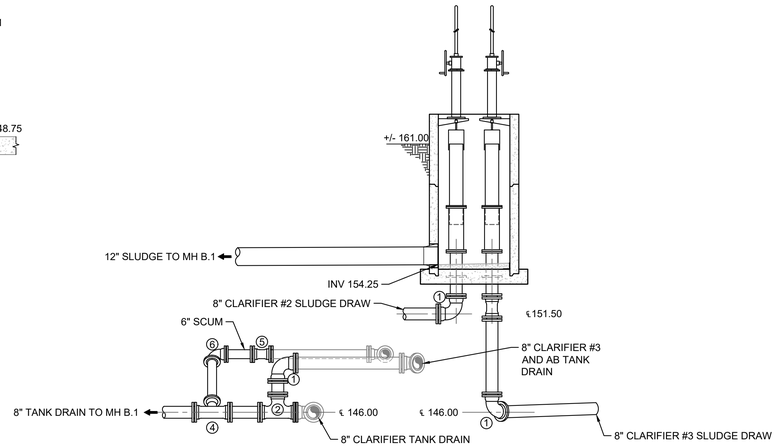
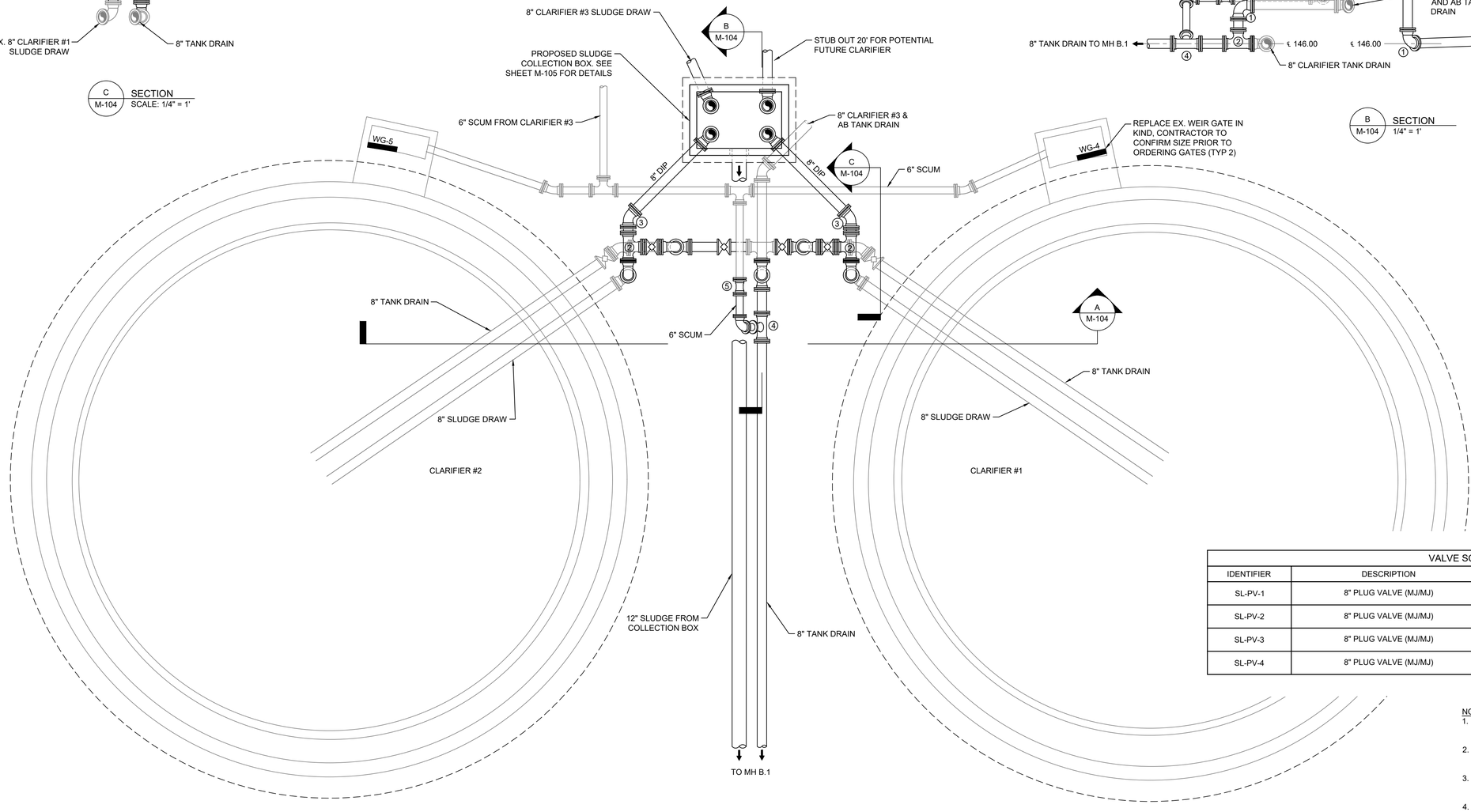


B M-104 SECTION
1/4" = 1'



PROPOSED CLARIFIER PIPING PLAN VIEW
SCALE: 1/4" = 1'-0"

VALVE SCHEDULE			
IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
SL-PV-1	8" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.O.	40 05 51 2.04
SL-PV-2	8" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.C.	40 05 51 2.04
SL-PV-3	8" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.O.	40 05 51 2.04
SL-PV-4	8" PLUG VALVE (MJ/MJ)	WORM GEAR W/ OPERATING NUT & POSITION INDICATOR, N.C.	40 05 51 2.04

NOTES:
1. ALL FITTINGS SHALL BE MECHANICAL JOINTS RESTRAINED WITH EITHER RETAINER GLANDS OR ALL THREAD ROD BETWEEN FITTINGS.
2. ALL PIPE SHALL BE DUCTILE IRON PC 350. C900 PVC MAY BE SUBSTITUTED FOR DIP SLUDGE & TANK DRAIN LINES FROM SLUDGE COLLECTION BOX TO MHB.1 SEE CONTRACT DOCUMENTS
3. CONTRACTOR TO VERIFY ALL EX PIPE ELEVATIONS AND COORDINATE WITH ENGINEER FOR ANY NECESSARY CHANGES PRIOR TO INSTALL.
4. CONTRACTOR SHALL PRIORITIZE INSTALLATION OF TANK DRAINS FROM EX. STUB-OUTS TO MH B.1 IN ORDER TO FACILITATE OPERATION OF CLARIFIERS #1 & #2 WHILE THE SLUDGE COLLECTION BOX AND REMAINING PIPING IS COMPLETED.
5. ALL BURIED VALVES SHALL BE EQUIPPED W/ VALVE BOX & STEM EXTENSION TO BRING OPERATION NUT WITHIN 6" OF FINISHED GRADE. VALVE BOX SHALL BE INSTALLED FLUSH W/ FINISHED GRADE.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER No. 31564 11-14-22

Rev.	Description	Date	Apr.
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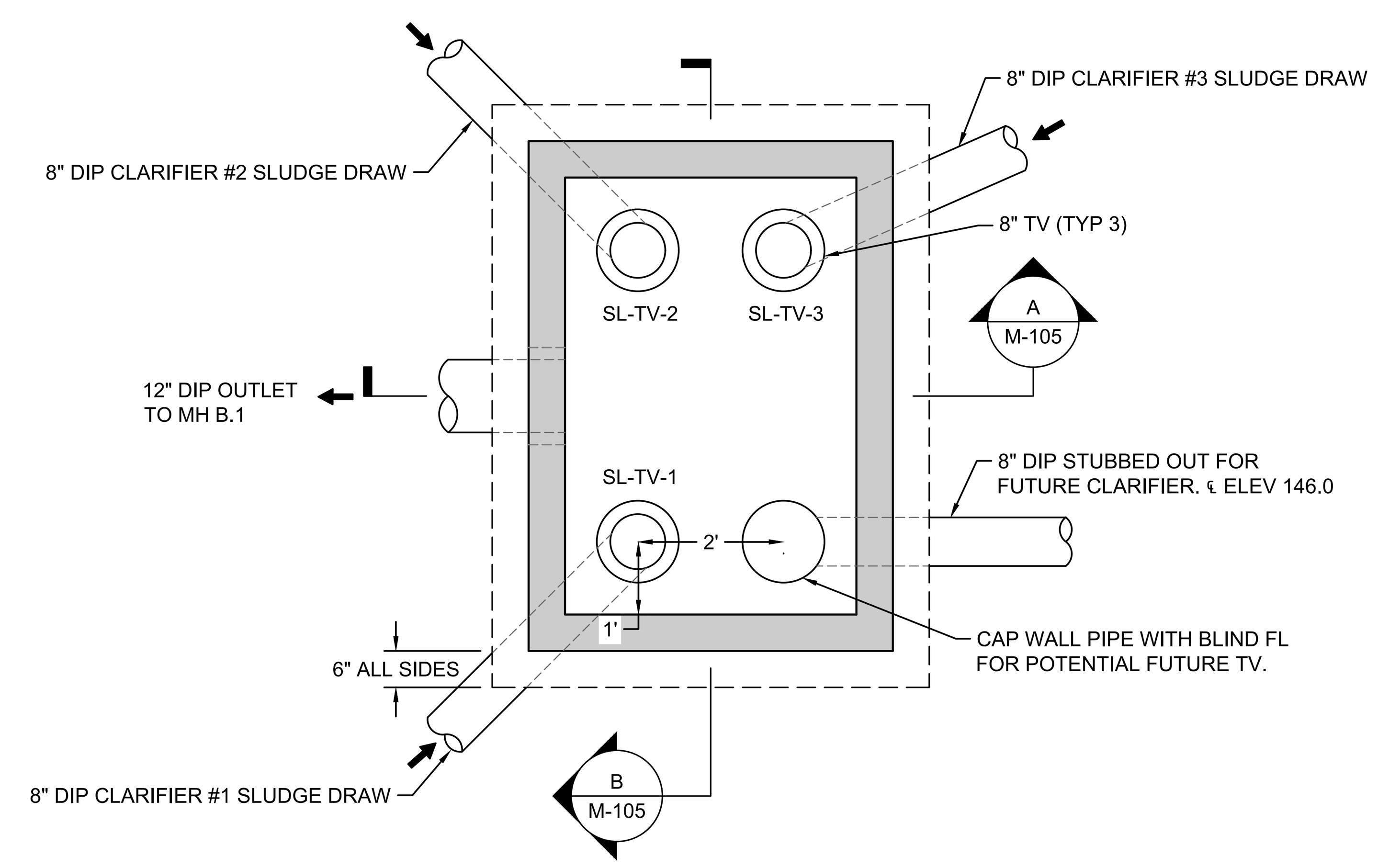
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROPOSED CLARIFIER PIPING MODIFICATIONS

DRAWING NO.
M104

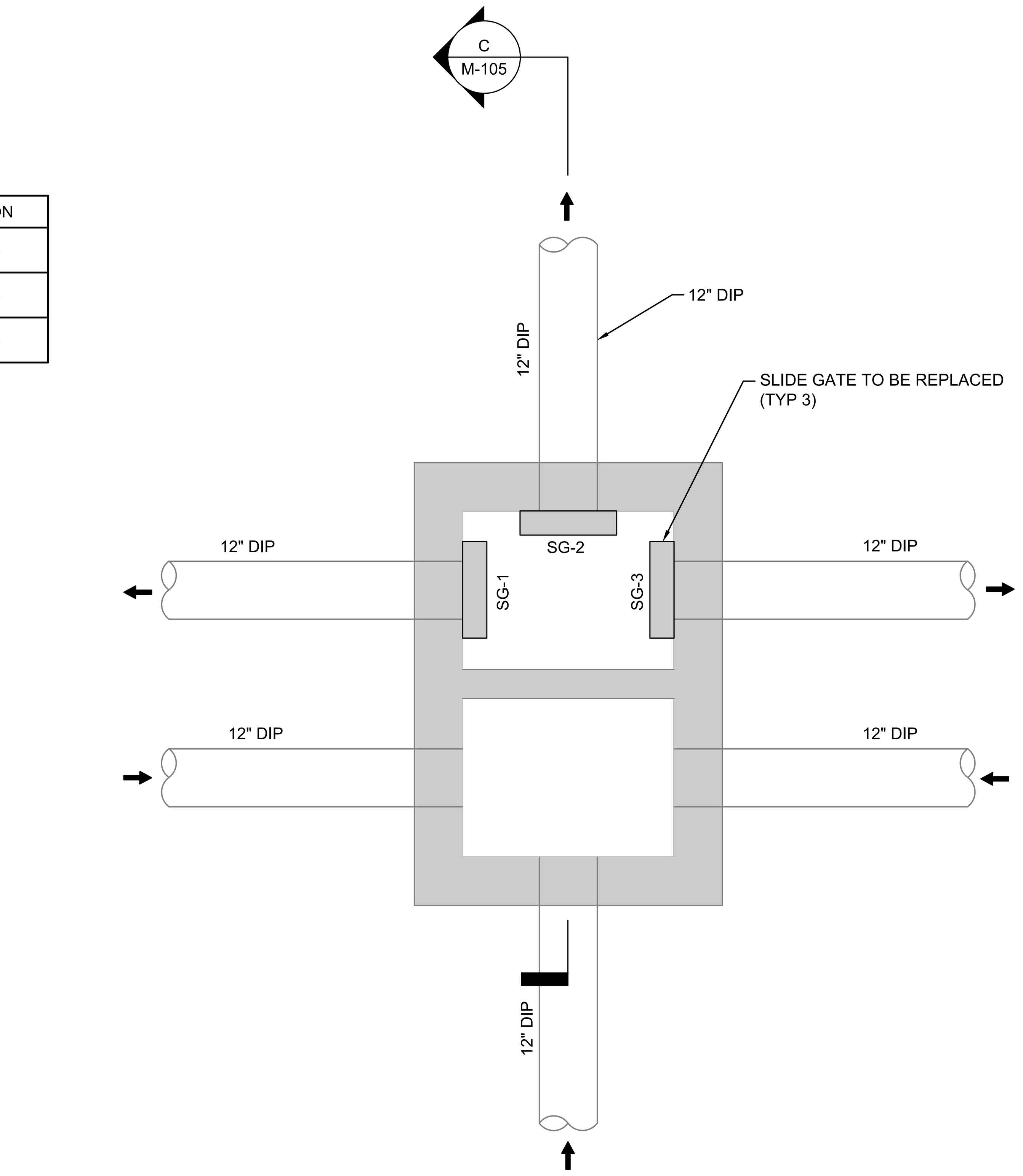


SLUDGE COLLECTION BOX PLAN VIEW

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

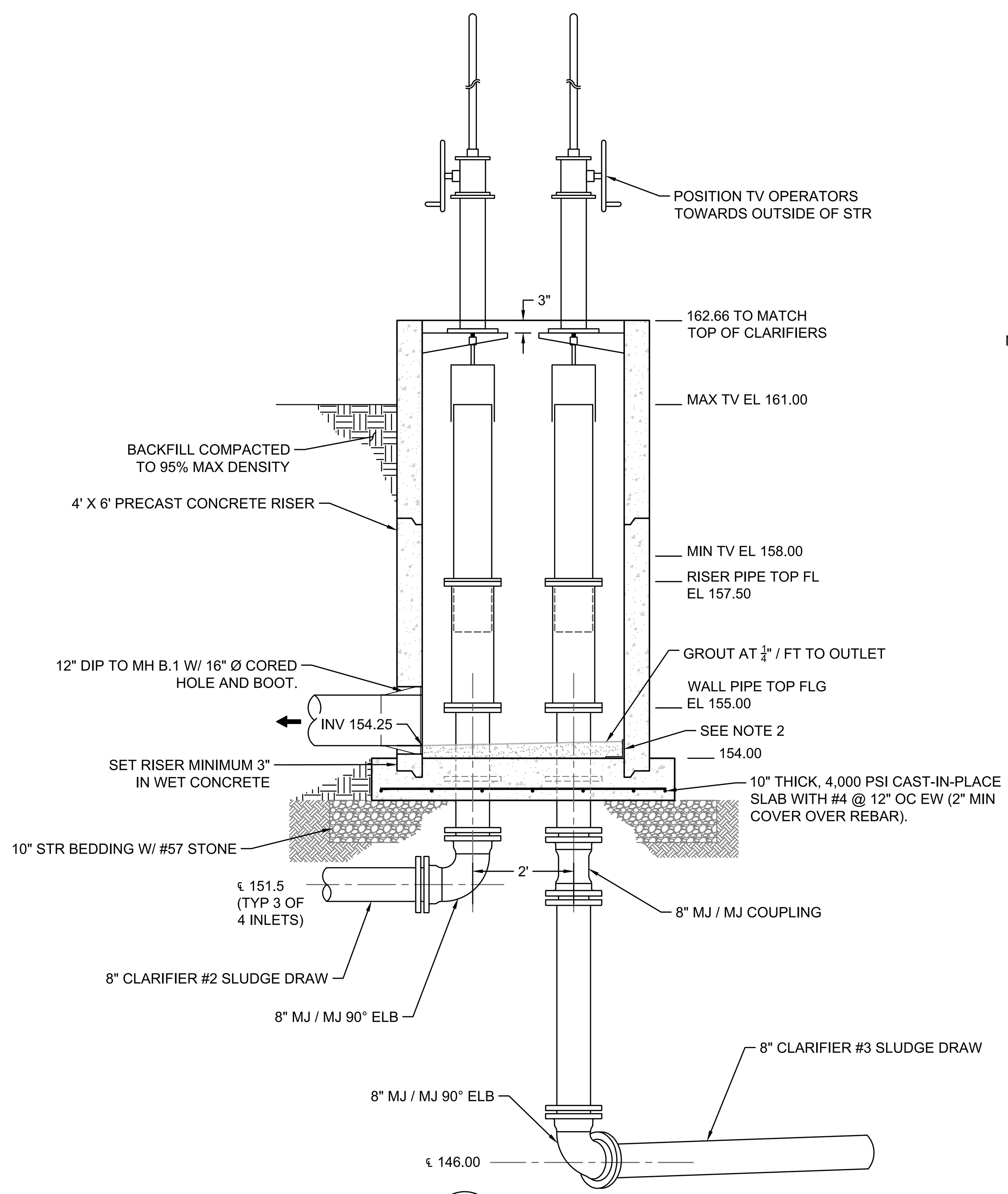
VALVE SCHEDULE

IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
SL-TV-1	8" TELESCOPING VALVE (FL)	RACK & PINION W/ HAND WHEEL	40 05 51 2.06
SL-TV-2	8" TELESCOPING VALVE (FL)	RACK & PINION W/ HAND WHEEL	40 05 51 2.06
SL-TV-3	8" TELESCOPING VALVE (FL)	RACK & PINION W/ HAND WHEEL	40 05 51 2.06

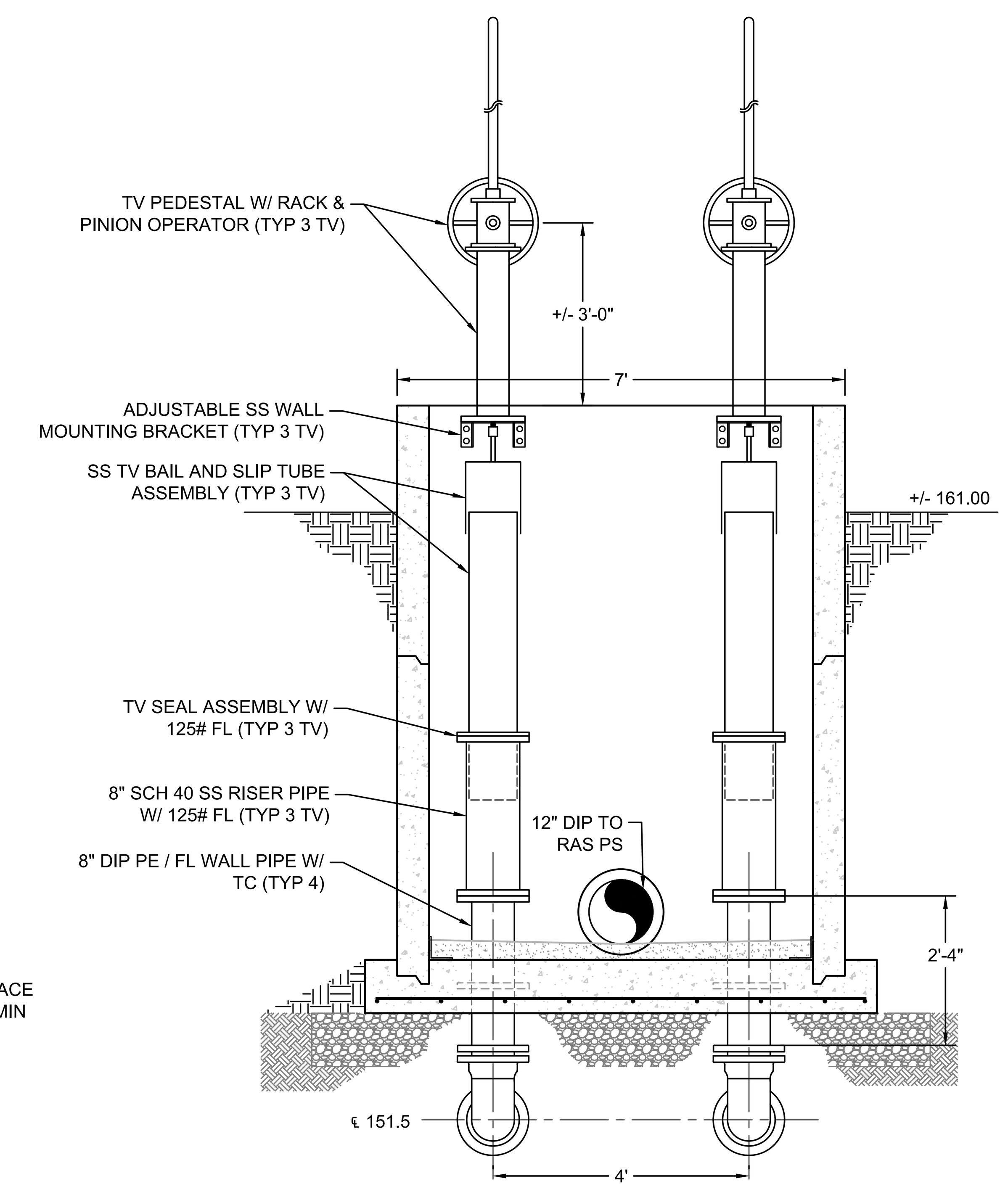


EX CLARIFIER SPLITTER BOX SLIDE GATE REPLACEMENT

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

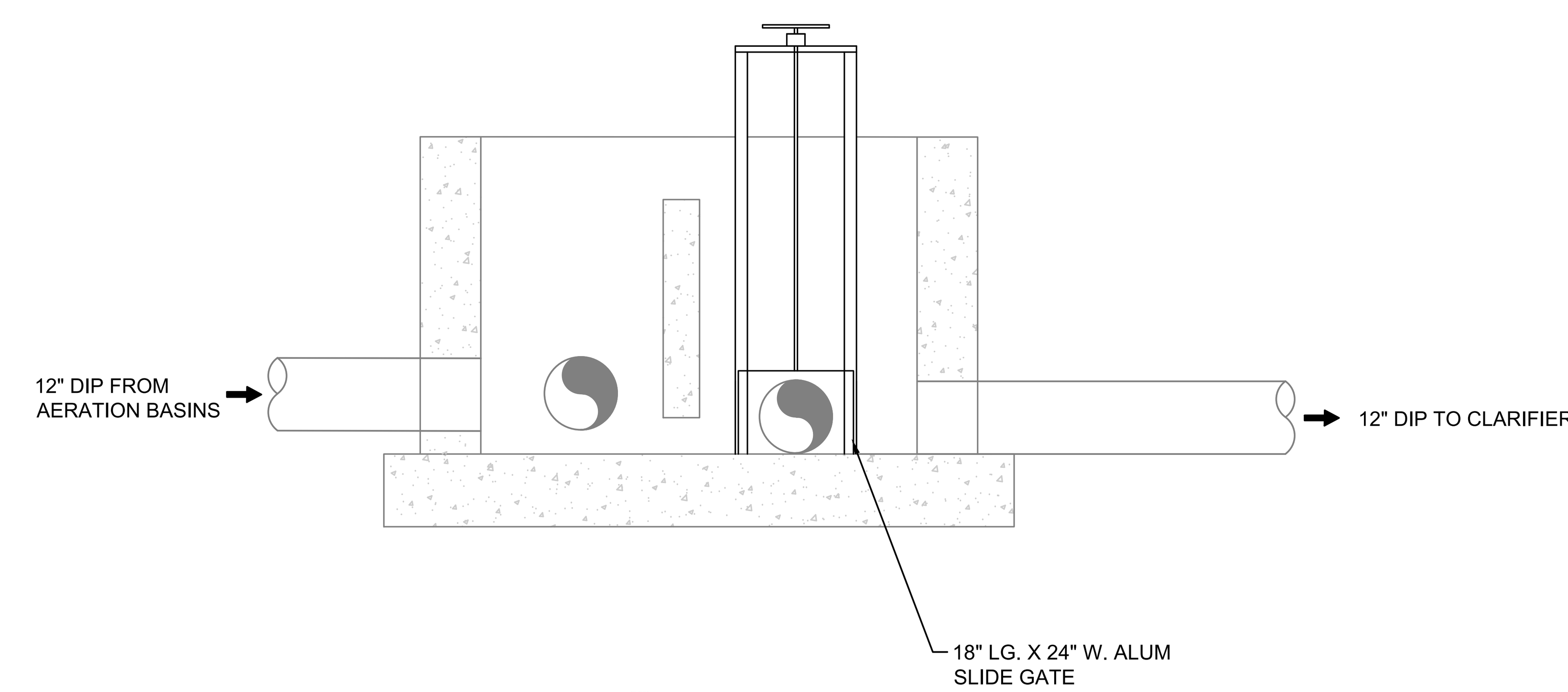


A
M-105
SECTION
SCALE: 1/2" = 1'



B
M-105
SECTION
SCALE: 1/2" = 1'

NOTES:
1. PROVIDE THRUST RESTRAINT AT ALL DIP ELB AND FITTINGS BY USE OF RESTRAINING GLANDS. ALSO PROVIDE A MIN OF 1 FULL JOINT OF RJ DIP ON ALL SIDES OF FITTINGS BY USE OF RESTRAINING GASKETS.
2. PROVIDE 4" X 4" X 3/8" SS ANGLE WITH 4" LENGTH FOR CONNECTING PRECAST RISER TO BOTTOM SLAB. ATTACH ANGLE THROUGH ONE 5/8" Ø HOLE IN EACH LEG USING SS 4" X 7/16" WEDGE ANCHOR, WASHER, LOCK WASHER, AND NUT (TYP 2 PER WALL WITH ES).
3. FIELD VERIFY ELEVATIONS AND PROVIDE CORED HOLES FOR CONNECTING PIPES INTO STRC. PROVIDE APPROPRIATELY SIZED KOR-N-SEAL BOOT FOR PIPE CONNECTION.
4. USE ONLY TYPE 316 SS HARDWARE AND FASTENERS WITHIN STRC.



C
M-105
SECTION
SCALE: 1/2" = 1'

NOTES:
1. INSTALL NEW SLIDE GATE IN ACCORDANCE W/ MFR INSTRUCTIONS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY BYPASS PUMPING NECESSARY TO FACILITATE GATE REPLACEMENT.
3. COORDINATE W/ OPERATIONS STAFF PRIOR TO COMMENCING WORK ON SPLITTER BOX.

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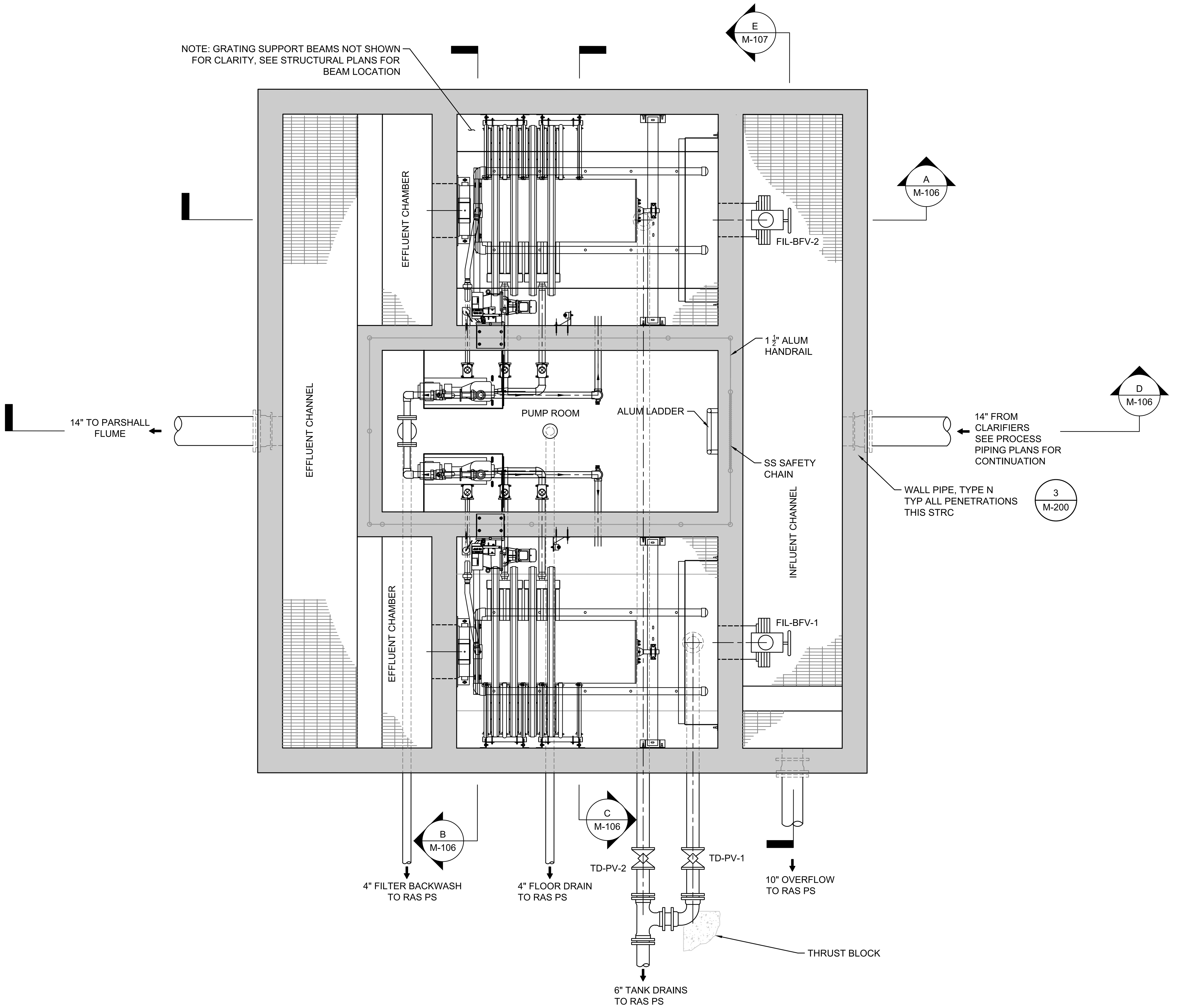
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

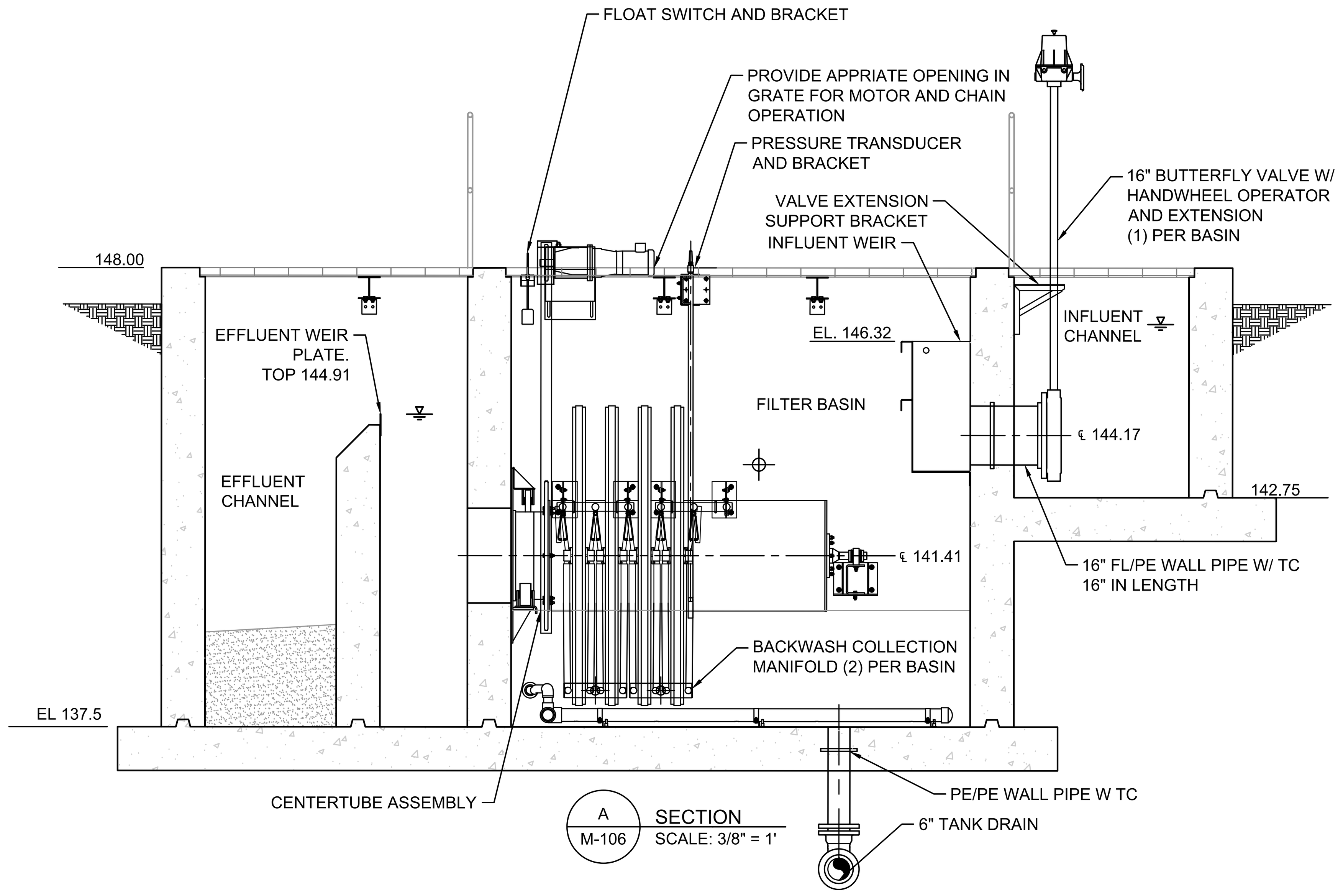
SLUDGE COLLECTION BOX SECTIONS & DETAILS

DRAWING NO.
M105



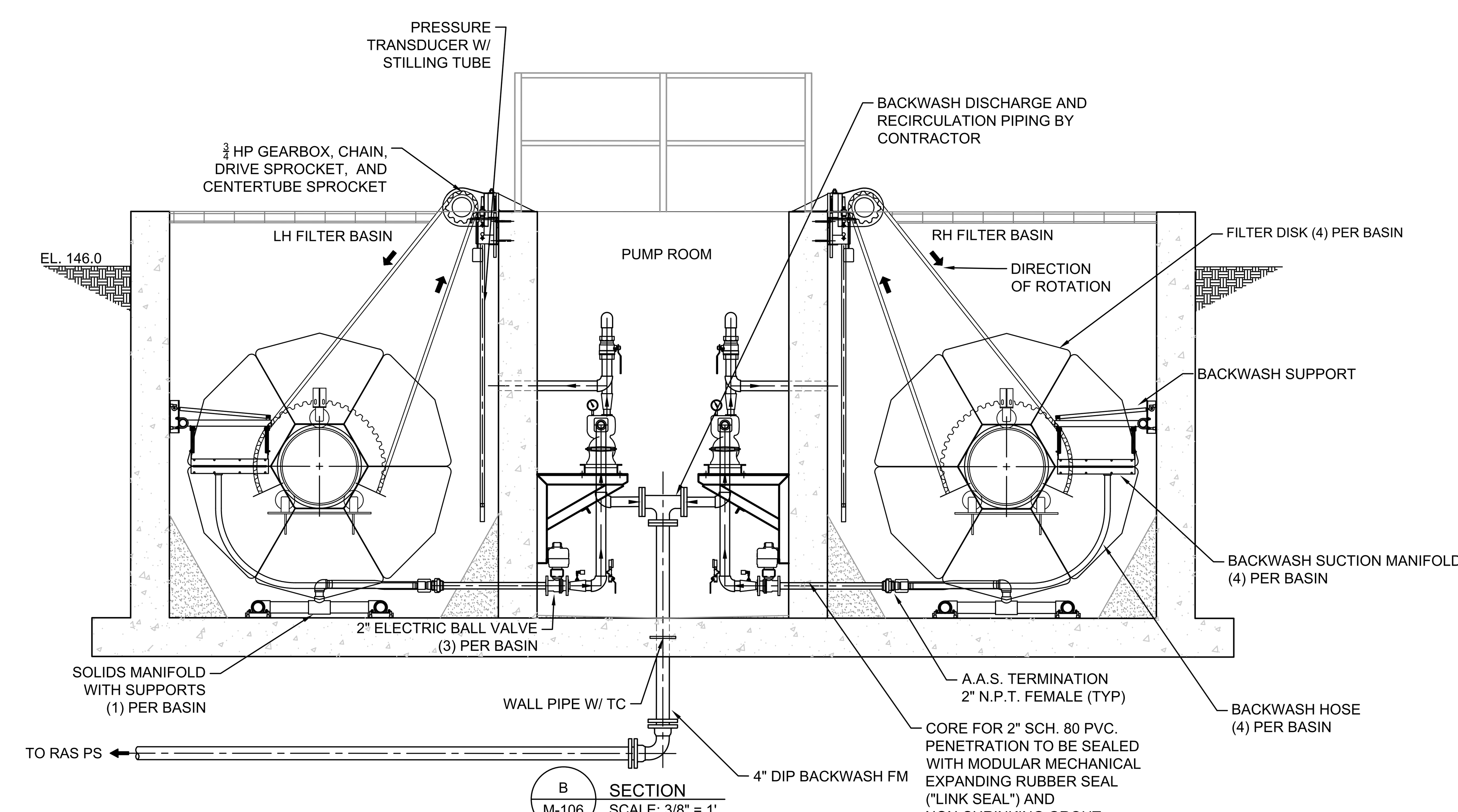
DISC FILTER PLAN VIEW

SCALE: 3/8" = 1'



SECTION

SCALE: 3/8" = 1'



SECTION

SCALE: 3/8" = 1'

VALVE SCHEDULE

IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
FIL-BFV-1	16" BUTTERFLY VALVE (FL)	WORM GEAR W/ HAND WHEEL AND EXTENSION ASSEMBLY, N.O.	40 05 51 2.05
FIL-BFV-2	16" BUTTERFLY VALVE (FL)	WORM GEAR W/ HAND WHEEL AND EXTENSION ASSEMBLY, N.O.	40 05 51 2.05
TD-PV-1	6" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
TD-PV-2	6" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04

NOTES:
1) UNLESS OTHERWISE NOTED, ALL WALL PENETRATIONS TO BE MADE WITH P.E. BY M.J. WALL PIPE WITH THRUST COLLAR OF APPROPRIATE LENGTH AND DIAMETER TO MATCH CONNECTING PIPE. CONNECTING PIPES TO BE RESTRAINED WITH RESTRAINING GLAND (IE MEGALUG OR EQUIVALENT). ALL WALL PIPES SHOULD BE TAPPED FOR STUDS.
2) ALL PIPES PLACED BENEATH STR. SHALL BE ENCASED IN CONCRETE W/ MIN. 2,500 PSI COMPRESSIVE STRENGTH.
3) REFER TO MFR. DRAWINGS FOR SCOPE OF SUPPLY AND INSTALLATION INSTRUCTIONS.
4) ALL PIPE SHALL BE PC 350 DIP UNLESS OTHERWISE NOTED. C900 PVC MAY BE SUBSTITUTED FOR THE 10" DIP OVERFLOW TO THE RAS PS AND FOR INFLUENT AND EFFLUENT PIPING. SEE CONTRACT DOCUMENTS

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

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1	ISSUED FOR BID	4/12/24	

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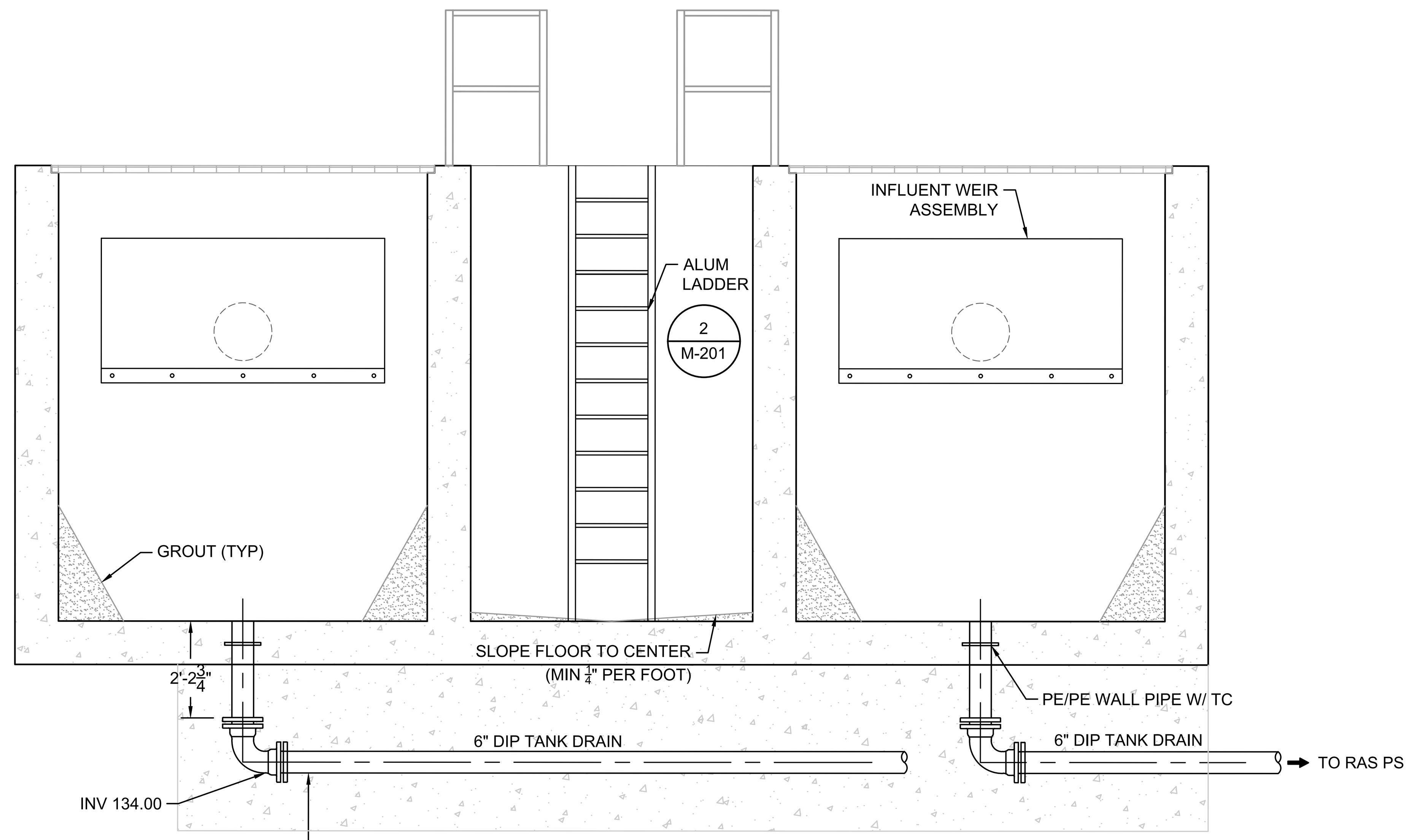
SCALE: 3/8" = 1'

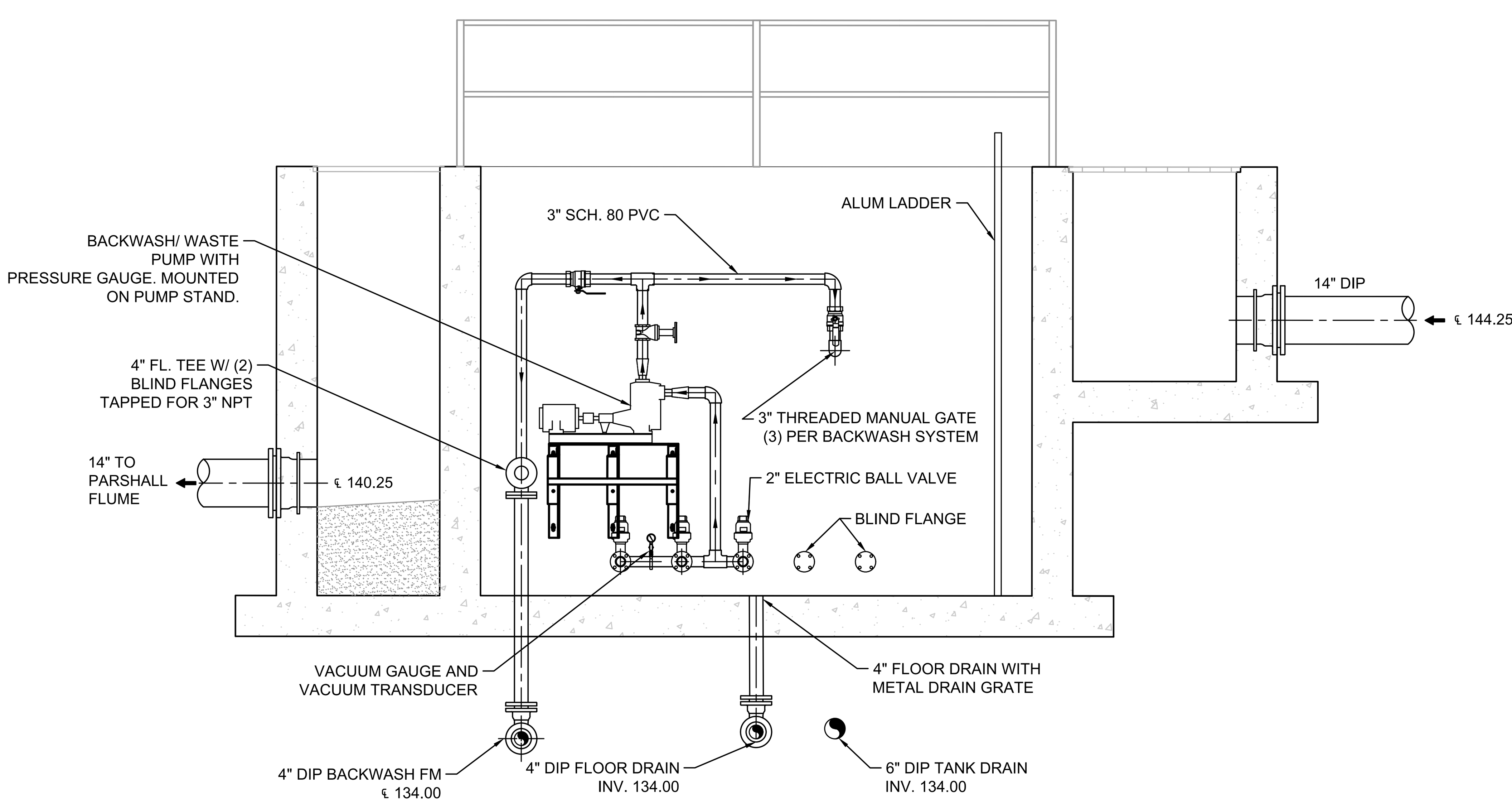
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

DISC FILTER MECHANICAL PLAN

DRAWING NO.
M106



C
M-106
SECTION
SCALE: 3/8" = 1'



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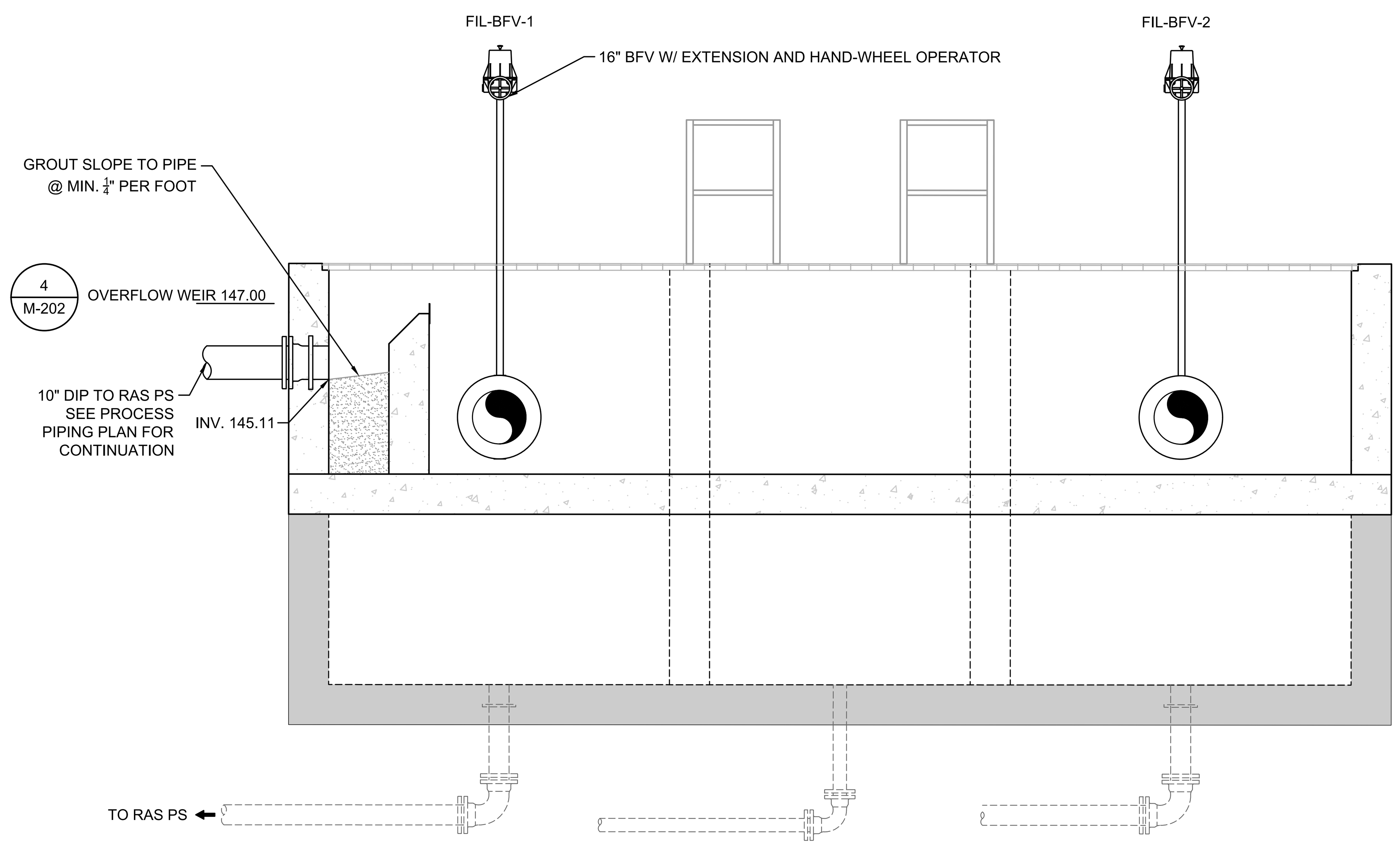
M-106
SECTION
SCALE: 3/8" = 1'



E
M-107
SECTION
SCALE: 3/8" = 1'

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GEORGIA REGISTERED No. PE038395 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Date: 4/11/24	Drawn by: MGW	Check by: DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

2' 1' 0' 2.25'

SCALE: 3/8" = 1'

Rev.	Description	Date	Apr.
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1	ISSUED FOR BID	4/12/24	---

CONSTRUCTION PLANS FOR

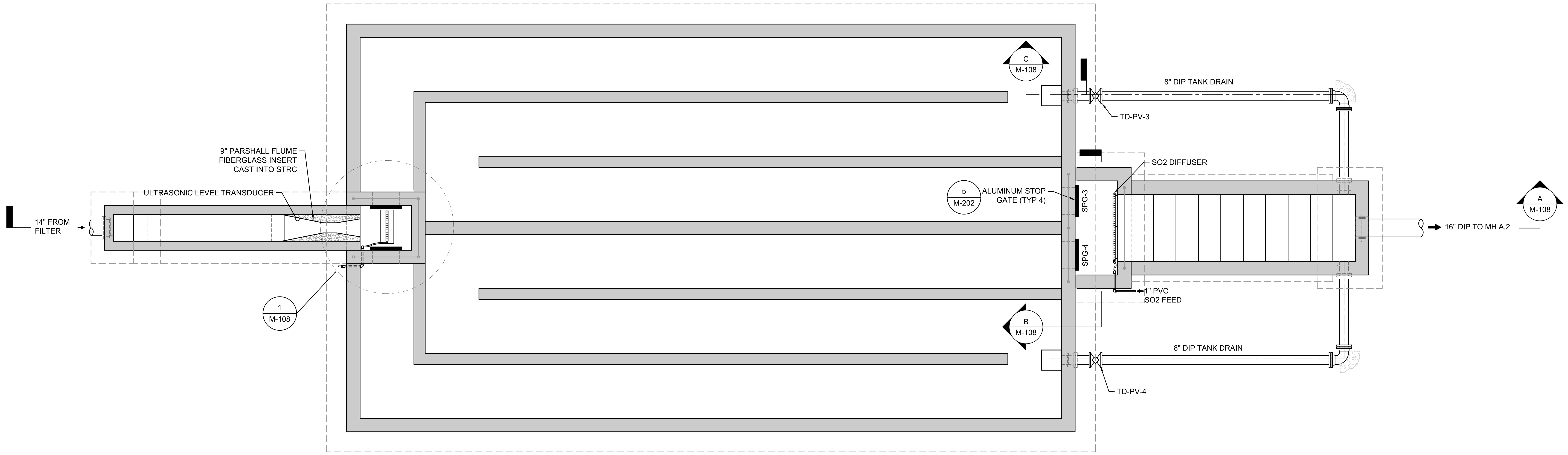
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

DISC FILTER MECHANICAL PLAN

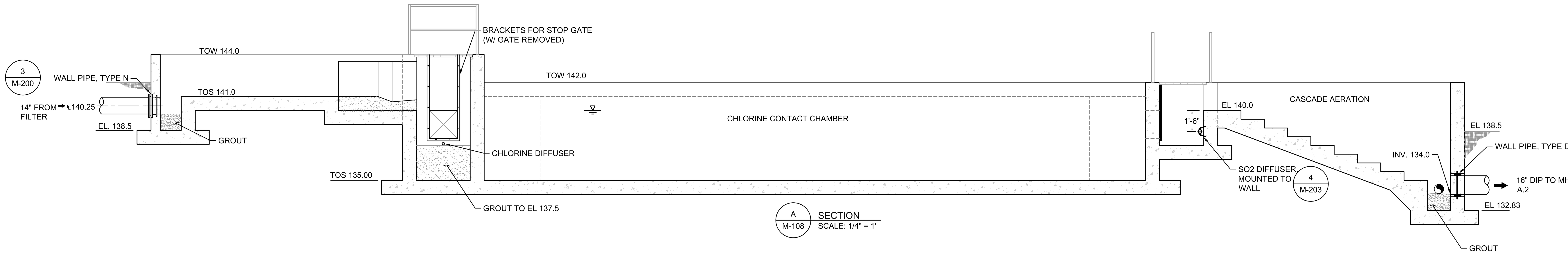
DRAWING NO.

M107



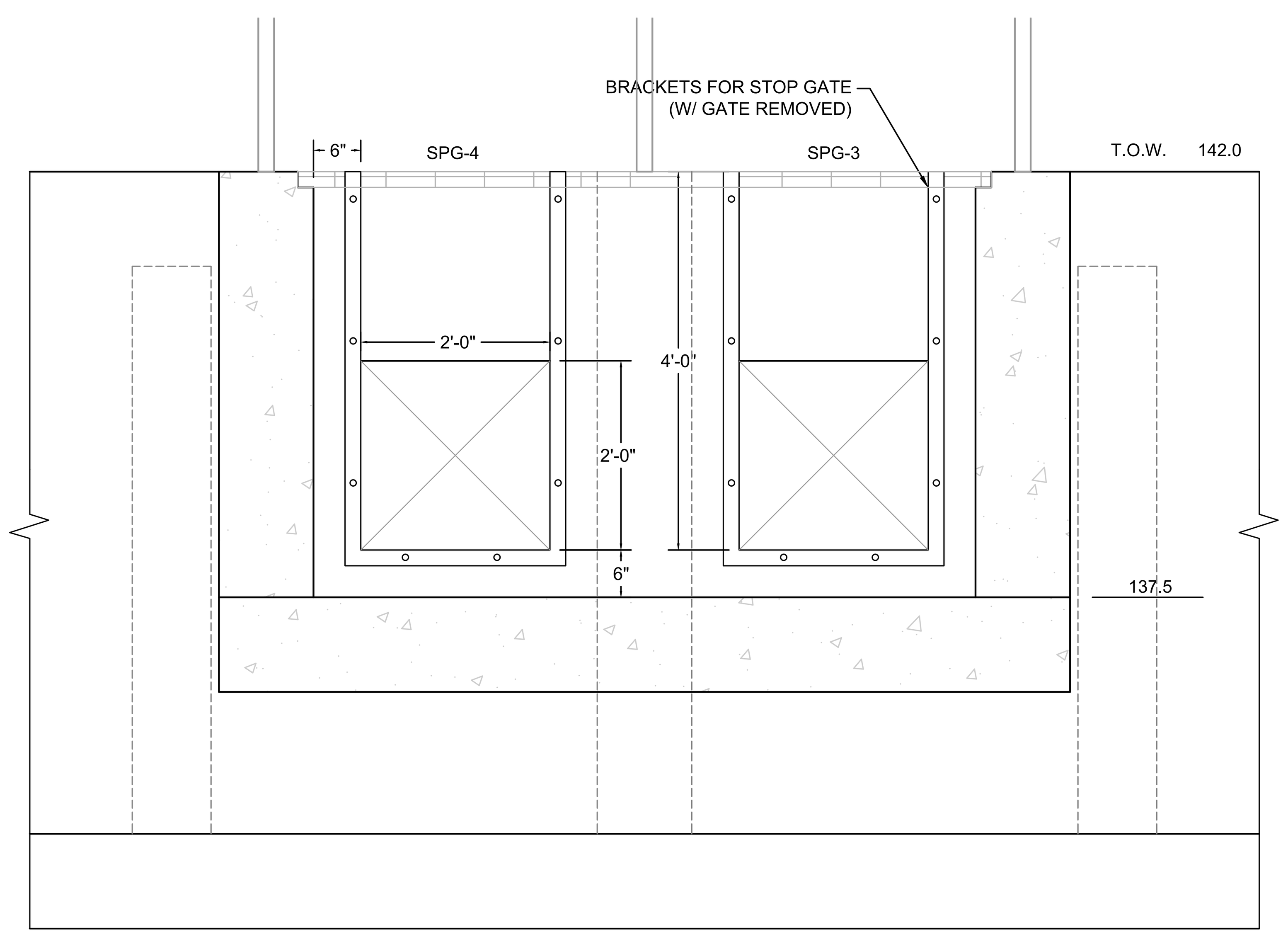
CHLORINE CONTACT CHAMBER PLAN VIEW

SCALE: 1/4" = 1'-0"



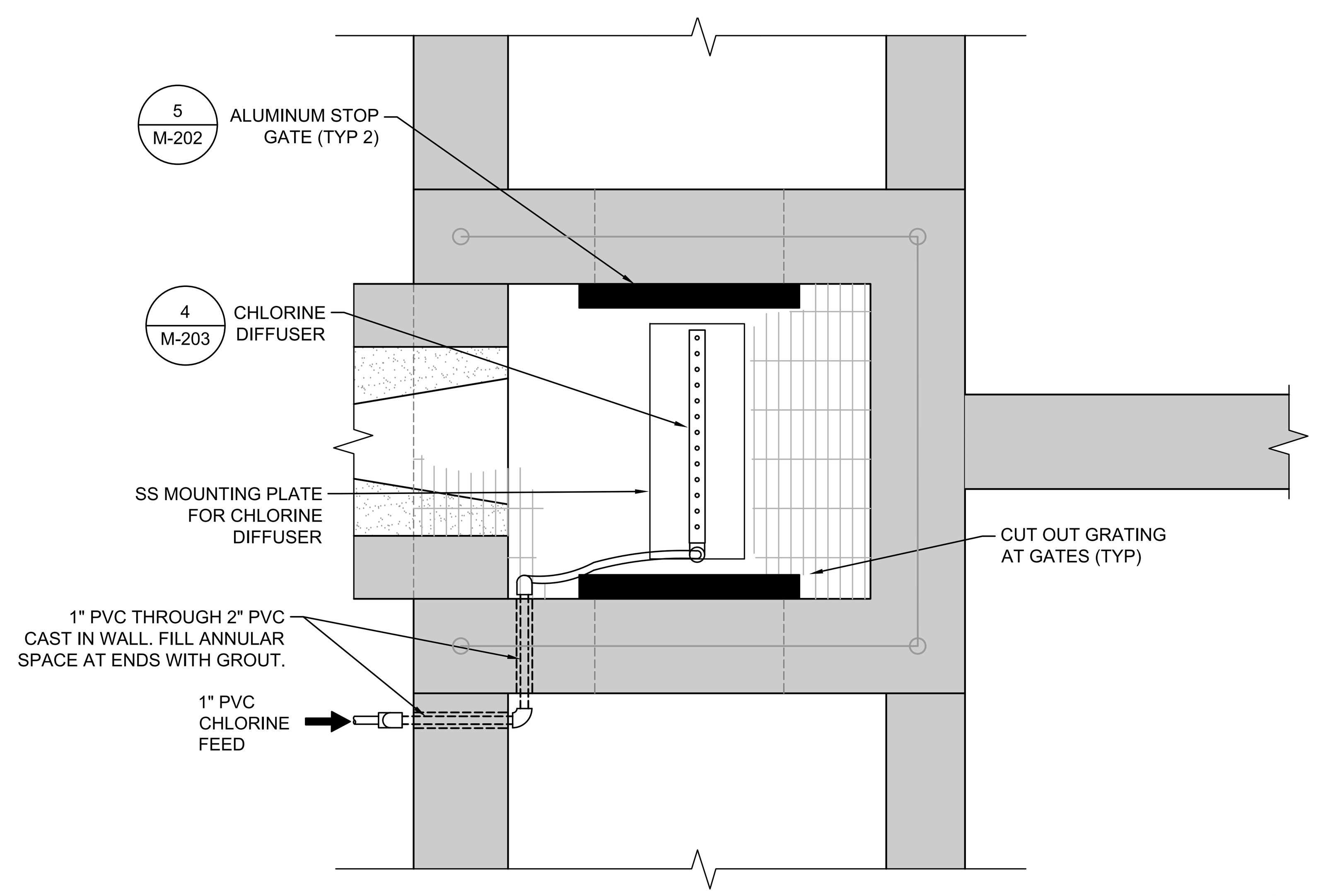
A M-108 SECTION

SCALE: 1/4" = 1'



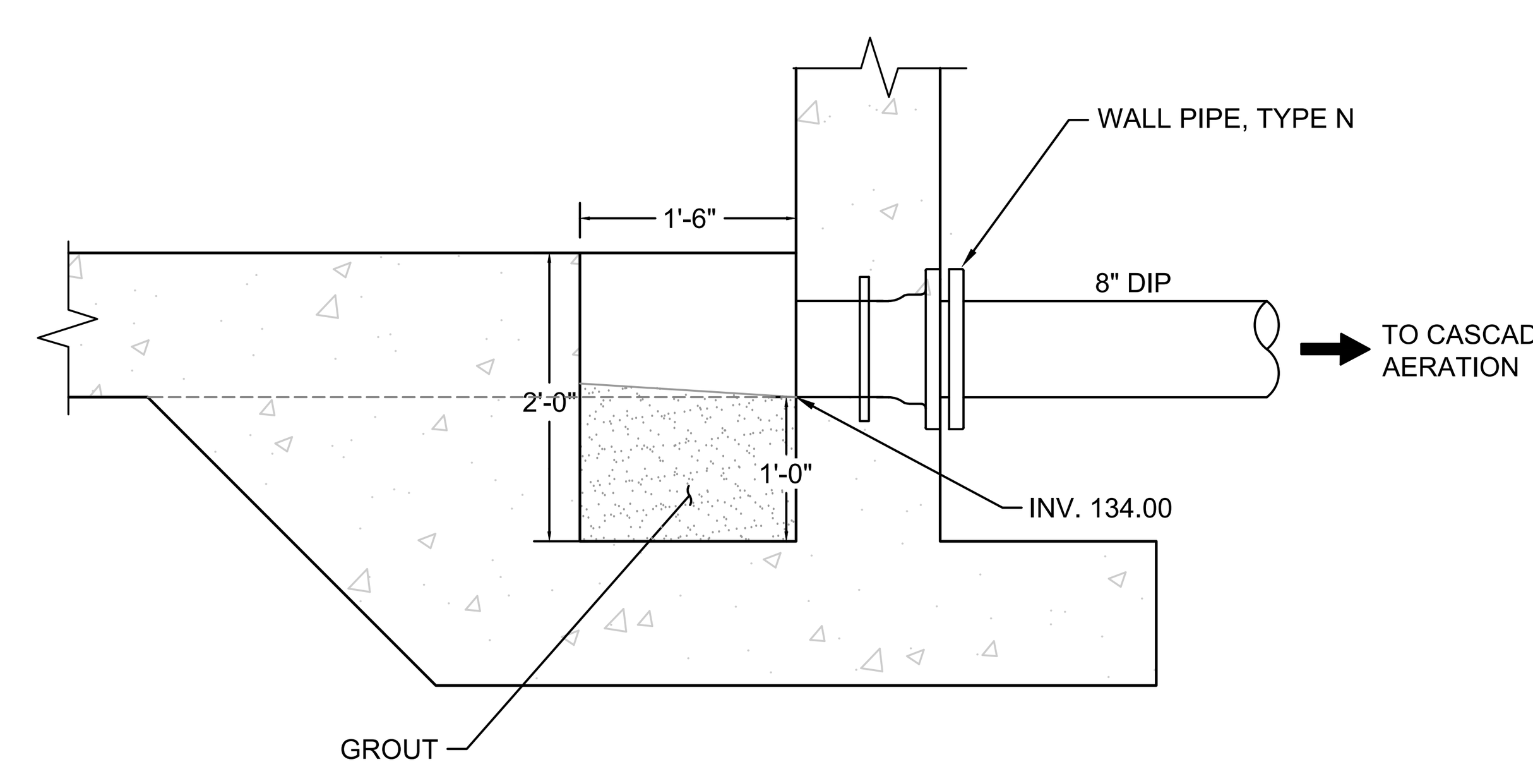
B M-108 SECTION

SCALE: 3/4" = 1'



1 M-108 DETAIL

SCALE: 3/4" = 1'



C M-108 SECTION

SCALE: 3/4" = 1'

VALVE SCHEDULE

IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
TD-PV-3	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
TD-PV-4	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04

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Rev.	Description	Date	Apr.
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Design by: DLO
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SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

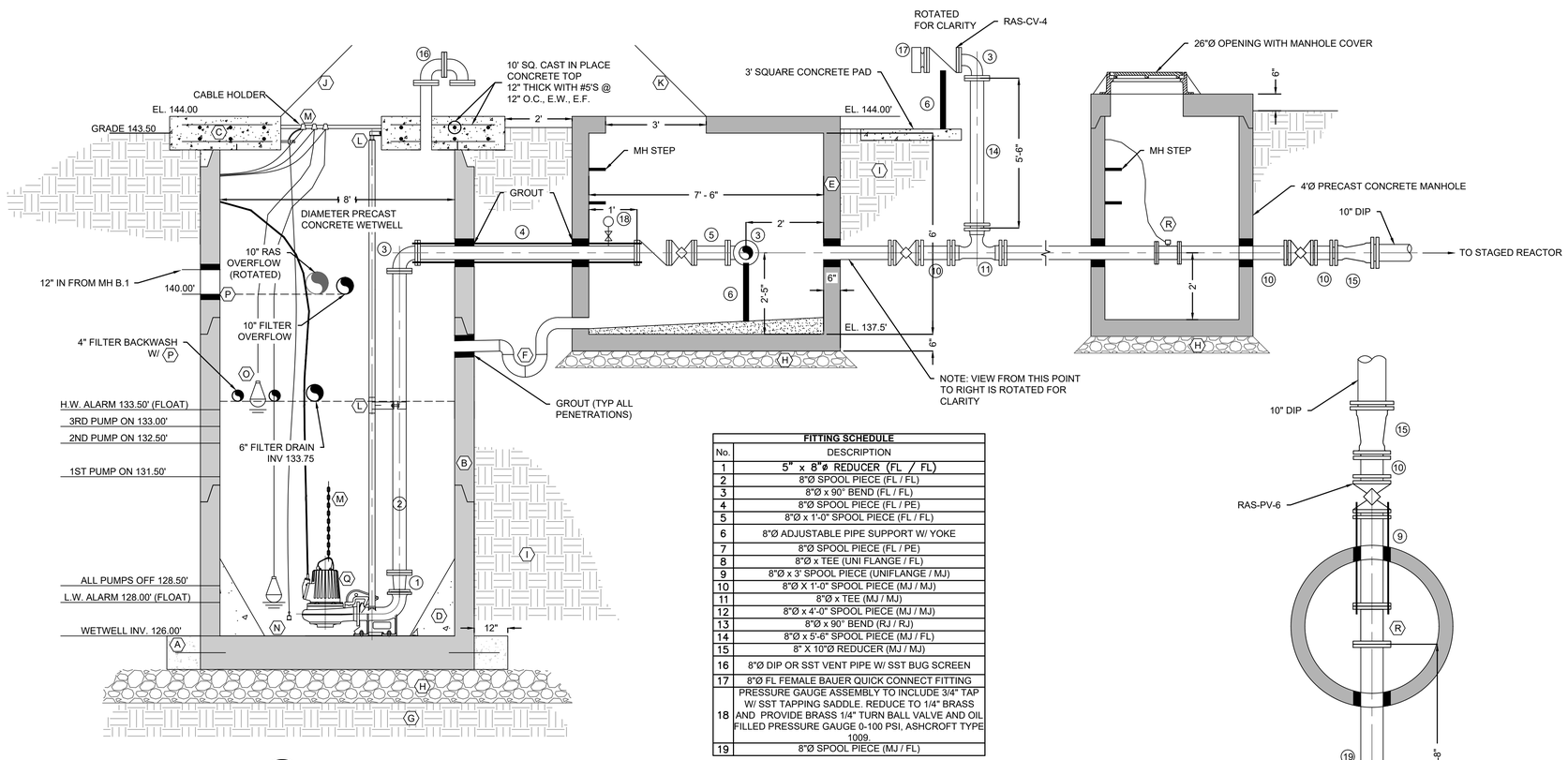
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

PARSHALL FLUME/ CHLORINE CONTACT CHAMBER/ CASCADE AERATION BASIN

DRAWING NO.

M108



A / M-109 — PUMP STATION SECTION
SCALE: N.T.S.

FITTING SCHEDULE	
No.	DESCRIPTION
1	5" x 8"ø REDUCER (FL / FL)
2	8"Ø SPOOL PIECE (FL / FL)
3	8"Ø x 90° BEND (FL / FL)
4	8"Ø SPOOL PIECE (FL / PE)
5	8"Ø x 1'-0" SPOOL PIECE (FL / FL)
6	8"Ø ADJUSTABLE PIPE SUPPORT W/ YOKE
7	8"Ø SPOOL PIECE (FL / PE)
8	8"Ø x TEE (UNI FLANGE / FL)
9	8"Ø x 3' SPOOL PIECE (UNIFLANGE / MJ)
10	8"Ø X 1'-0" SPOOL PIECE (MJ / MJ)
11	8"Ø x TEE (MJ / MJ)
12	8"Ø x 4'-0" SPOOL PIECE (MJ / MJ)
13	8"Ø x 90° BEND (RJ / RJ)
14	8"Ø x 5'-6" SPOOL PIECE (MJ / FL)
15	8" X 10"Ø REDUCER (MJ / MJ)
16	8"Ø DIP OR SST VENT PIPE W/ SST BUG SCREEN
17	8"Ø FL FEMALE BAUER QUICK CONNECT FITTING
18	PRESSURE GAUGE ASSEMBLY TO INCLUDE 3/4" TAP W/ SST TAPPING SADDLE. REDUCE TO 1/4" BRASS AND PROVIDE BRASS 1/4" TURN BALL VALVE AND OIL FILLED PRESSURE GAUGE 0-100 PSI, ASHCROFT TYPE 1009.
19	8"Ø SPOOL PIECE (MJ / FL)

NOTE:
1. THE ABOVE SCHEDULE OF PIPING AND FITTINGS IS THE BASIS OF THE DESIGN OF THIS LIFT STATION. ANY DEVIATIONS FROM THIS SCHEDULE MUST BE FIRST BE APPROVED BY THE OWNER/ENGINEER. ALL PIPES AND FITTINGS TO BE DIP UNLESS OTHERWISE NOTED. SOME ITEMS ABOVE ARE TYP FOR THREE.
2. AT THE DISCRETION OF THE CONTRACTOR, THE CIRCULAR WETWELL STRUCTURE MAY BE REPLACED WITH A SQUARE OR RECTANGULAR UNIT OF GREATER THAN OR EQUAL VOLUME AND HEIGHT, WITH APPROVAL FROM ENGINEER.

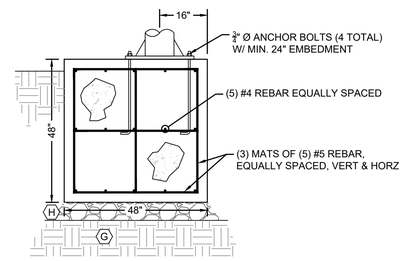
STRUCTURE AND EQUIPMENT SCHEDULE:	
A.	WETWELL BASE. DESIGN IS A SIMPLE PRECAST BASE SECTION WITH BASE SLAB. FLOATATION TO BE PREVENTED VIA A CAST IN PLACE ANTI-FLOATATION RING. RING SHALL BE 12" THICK. WIDTH SHALL BE AS SHOWN ON DRAWING. RING SHALL BE CONNECTED TO THE BASE WITH 18" LONG #5 REBAR. CONTRACTOR TO DRILL AND PLACE REBAR INTO PRECAST BASE WITH EPOXY @ THE FOLLOWING LOCATIONS; 0°, 30°, 60°, 90°, 120°, 150°, 180°, 210°, 240°, 270°, 300°, 330°, AND 360° FOR A TOTAL OF 12 LOCATIONS. 9" OF THE REBAR TO BE EMBEDDED INTO BASE WITH REMAINING 9" CAST INTO THE CONCRETE COLLAR. PRE-CAST ANTI-FLOATATION COLLAR MAY BE USED WITH APPROVAL BY ENGINEER
B.	8' DIAMETER WETWELL RISER. COAT ALL INTERIOR WETWELL SURFACES WITH 20 MIL OF COAL TAR EPOXY. BUTYL SEALANT @ ALL JOINTS. PIPE BOOTS FOR ALL PIPE PENETRATIONS.
C.	PRECAST TOP W/ HATCH AND VENT SIZE SHOWN OR 12" THICK CAST IN PLACE TOP W/ #5'S @12" O.C.; E.W.; E.F.
D.	60" CAST IN PLACE CONCRETE BENCH
E.	7'-6" x 8'-0" PRECAST CONCRETE VAULT. VAULT TO HAVE BOTTOM W/ GROUT TOWARDS DRAIN
F.	4" PVC VAULT DRAIN W/ P-TRAP. GROUT ALL PENETRATIONS. FILL P-TRAP WITH WATER
G.	CONTRACTOR SHALL HAVE GEOTECHNICAL ENGINEER EVALUATE SOILS TO VERIFY A MINIMUM BEARING CAPACITY OF 2000 LB/SQFT. IF NOT, CONTRACTOR SHALL INCORPORATE RECOMMENDATIONS OF GEOTECHNICAL ENGINEER AT NO COST TO OWNER.
H.	6" #57 STONE
I.	BACKFILL WETWELL AND VALVE VAULT IN 24" LIFTS TO 95% STANDARD PROCTOR
J.	ALUMINUM HATCH W/ SAFETY GRATE. HATCH SHALL BE SIZED TO ALLOW A 36" x 78" CLEAR OPENING AND SHALL BE CENTERED OVER THE PUMPS. SEE DETAIL
K.	ALUMINUM HATCH W/ SAFETY GRATE. HATCH SHALL BE SIZED TO ALLOW A 36" x 78" CLEAR OPENING AND SHALL BE CENTERED OVER VALVES. SEE DETAIL
L.	UPPER AND INTERMEDIATE GUIDE RAIL BRACKETS. TWO INTERMEDIATE BRACKETS REQUIRED PER PUMP. CONTRACTOR TO ALSO SUPPLY GUIDE RAILS. ALL TO BE STAINLESS STEEL.
M.	CABLE ASSEMBLY WITH GRIP EYE PUMP REMOVAL SYSTEM. ALL STAINLESS STEEL.
N.	PRESSURE TRANSDUCER TO BE KPSI SERIES 750 NON-FOULING SUBMERSIBLE LEVEL TRANSMITTER. TO INCLUDE SUSPENSION CABLE, CABLE HANGER, LIFTING EYE, AND CYLINDRICAL NOSE WEIGHT.
O.	LEVEL FLOATS
P.	INSIDE DROP. SEE DETAIL
Q.	TWO PUMP SELECTIONS FOR PUMP DUTY POINT OF 1048 GPM @ 39.0' TDH OF WHICH 32.5' IS STATIC HEAD: 1. HAYWARD GORDON CHOPX5B-S W/ 9.125" IMPELLER 460 V, 3 PH, 60 HZ, 25 HP 2. VAUGHAN SE6U W/ 10.9" IMPELLER 460 V, 3 PH, 60 HZ, 20 HP
R.	ELECTROMAGNETIC FLOW METER. SIGNAL CONVERTOR TO BE LOCATED WITH PUMP CONTROL PANEL. 1. McCROMETER UM08-1SR025A1 WITH PROCOMM CONVERTOR 2. KROHNE OPTIFLUX 2100 WITH IFC 100 CONVERTOR
S.	DAVIT CRANE: THERN 5FT25-M2 OR APPROVED EQUAL WITH 2,800 LB LIFTING CAPACITY, WORM GEAR HAND WINCH, AND 36' OF STAINLESS STEEL WIRE ROPE. ANCHORED TO 4'x5'x4' (LxWxH) CONCRETE BLOCK.

PUMP STATION NOTES:

1. THE DESIGN AND LAYOUT OF THIS SUBMERSIBLE LIFT STATION IS BASED ON SUBMERSIBLE PUMPS MANUFACTURED BY HAYWARD GORDON OR VAUGHAN. IF AN ALTERNATE SUBMERSIBLE PUMP IS PROPOSED, THE CONTRACTOR SHALL BEAR THE COST OF REDESIGN AND RESUBMITTAL REQUIRED BY AN ALTERNATE PUMP SELECTION.
2. THE CONTRACTOR SHALL SUPPLY THE FOLLOWING SPARE PARTS TO THE OWNER:
   1 - SET UPPER & LOWER SEALS — 1 - SET WEAR RINGS
   1 - SET UPPER & LOWER BEARINGS — 1 - IMPELLER
   3 - SPARE FUSES FOR EACH FUSE SIZE — 1 - SET OF SPARE FLOAT SWITCHES
3. UPON INSTALLATION, ALL PUMPS SHALL BE CHECKED BY A MANUFACTURER'S REPRESENTATIVE FOR PROPER ROTATION, PUMPING CAPACITY, AMPERAGE DRAW, LACK OF VIBRATION, AND OTHER CHECKS AS MAY BE DEEMED NECESSARY TO ASSURE PROPER OPERATION. ALL SUBMERSIBLE PUMPS SHALL BE PULLED OUT OF AND REINSTALLED IN THE WET WELL IN THE PRESENCE OF A REPRESENTATIVE OWNER TO ASSURE PROPER CLEARANCES FOR EASY REMOVAL OF THE PUMPS FOR MAINTENANCE.
4. THE AREA SURROUNDING THE LIFT STATION SHALL BE GRADED TO PROVIDE A MINIMUM OF 0.5% SLOPE AWAY FROM THE STATION IN ALL DIRECTIONS.
5. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PIPING, VALVES, FITTINGS, EQUIPMENT, AND ELECTRICAL FOR A COMPLETELY OPERABLE LIFT STATION AS REQUIRED BY THESE PLANS AND REFERENCED SPECIFICATIONS.
6. ALL UNIFLANGE JOINTS ARE TO BE SECURED WITH THREADED ROD TO THE NEAREST FLANGED OR MECHANICAL JOINT FITTINGS.

VALVE SCHEDULE			
IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
RAS-PV-1	8" PLUG VALVE (FL/FL)	WORM GEAR AND HAND WHEEL, N.O.	40 05 51 2.04
RAS-PV-2	8" PLUG VALVE (FL/FL)	WORM GEAR AND HAND WHEEL, N.O.	40 05 51 2.04
RAS-PV-3	8" PLUG VALVE (FL/FL)	WORM GEAR AND HAND WHEEL, N.O.	40 05 51 2.04
RAS-PV-4	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.O.	40 05 51 2.04
RAS-PV-5	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
RAS-PV-6	8" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.O.	40 05 51 2.04
RAS-CV-1	8" CHECK VALVE (FL/FL)	AUTOMATIC W/ VISUSAL POSITION INDICATOR	40 05 51 2.02
RAS-CV-2	8" CHECK VALVE (FL/FL)	AUTOMATIC W/ VISUSAL POSITION INDICATOR	40 05 51 2.02
RAS-CV-3	8" CHECK VALVE (FL/FL)	AUTOMATIC W/ VISUSAL POSITION INDICATOR	40 05 51 2.02
RAS-CV-4	8" CHECK VALVE (FL/FL)	AUTOMATIC W/ VISUSAL POSITION INDICATOR	40 05 51 2.02

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



B / M-109 — CRANE BASE DETAIL
SCALE: N.T.S.

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GEORGIA REGISTERED No. 33111 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

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CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

RAS PUMP STATION PLAN AND SECTION

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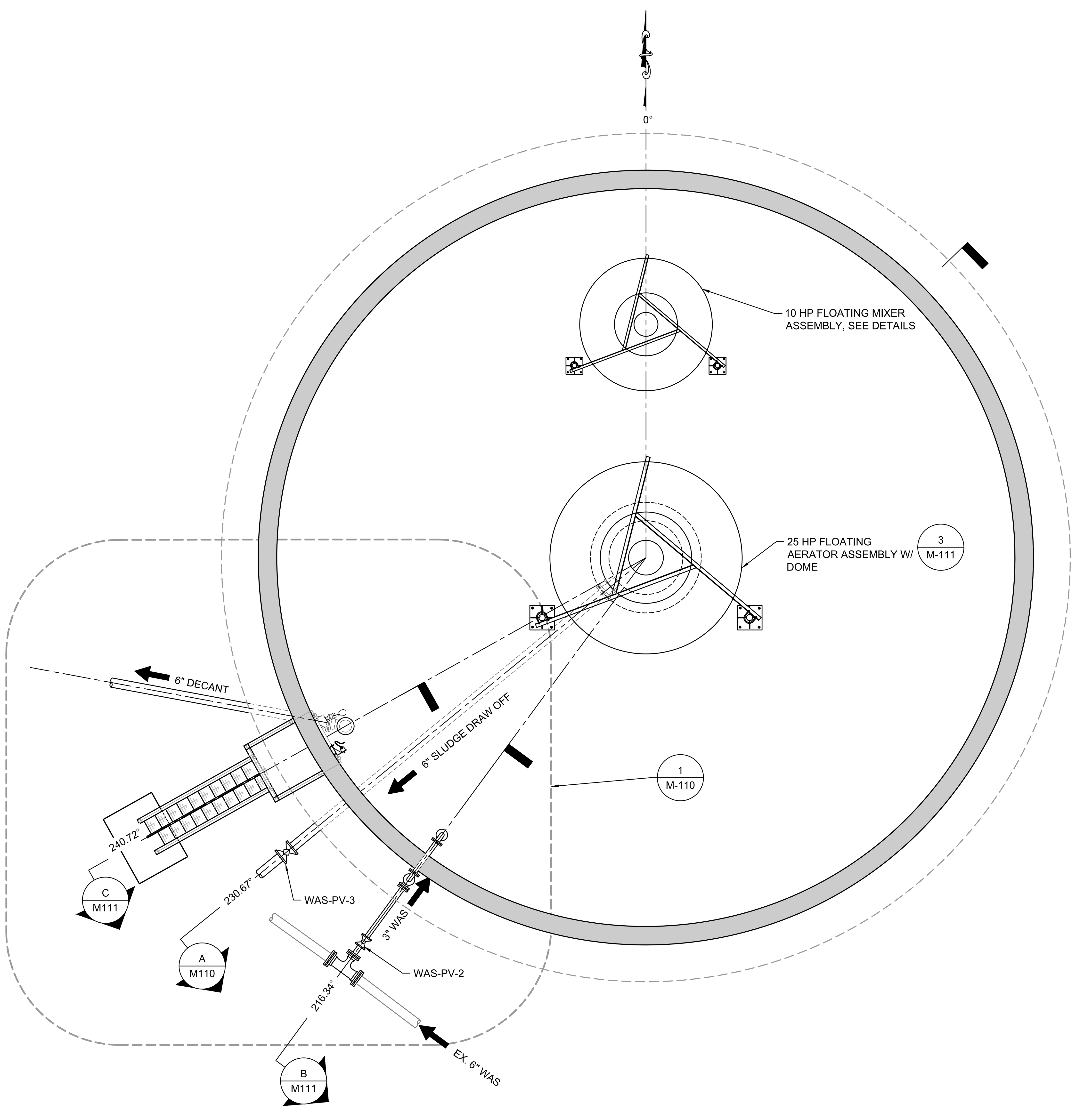
M109



40'-0" DIA. DIGESTER PLAN VIEW

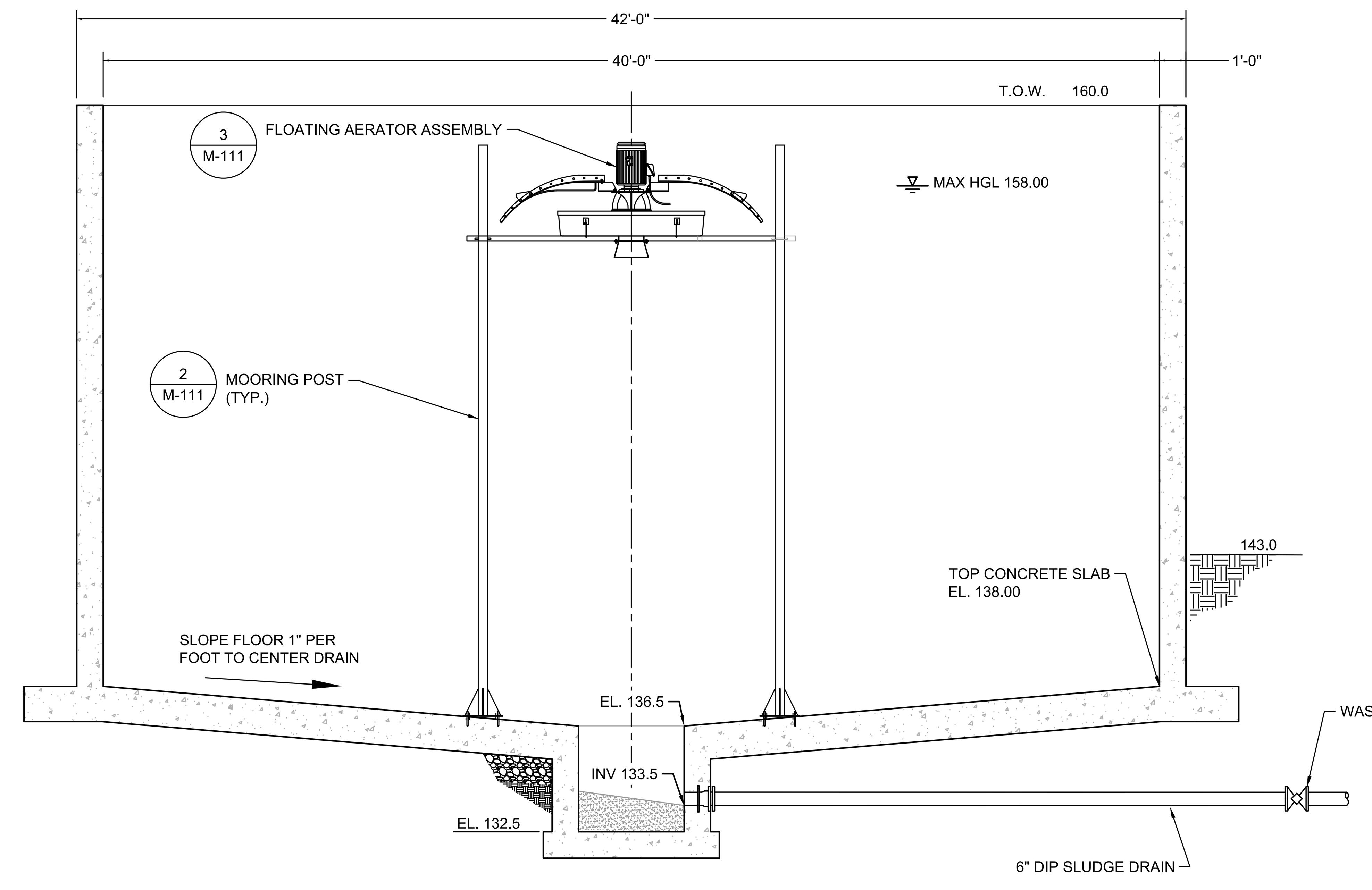
SCALE: 1/4" = 1'-0"

NOTE:

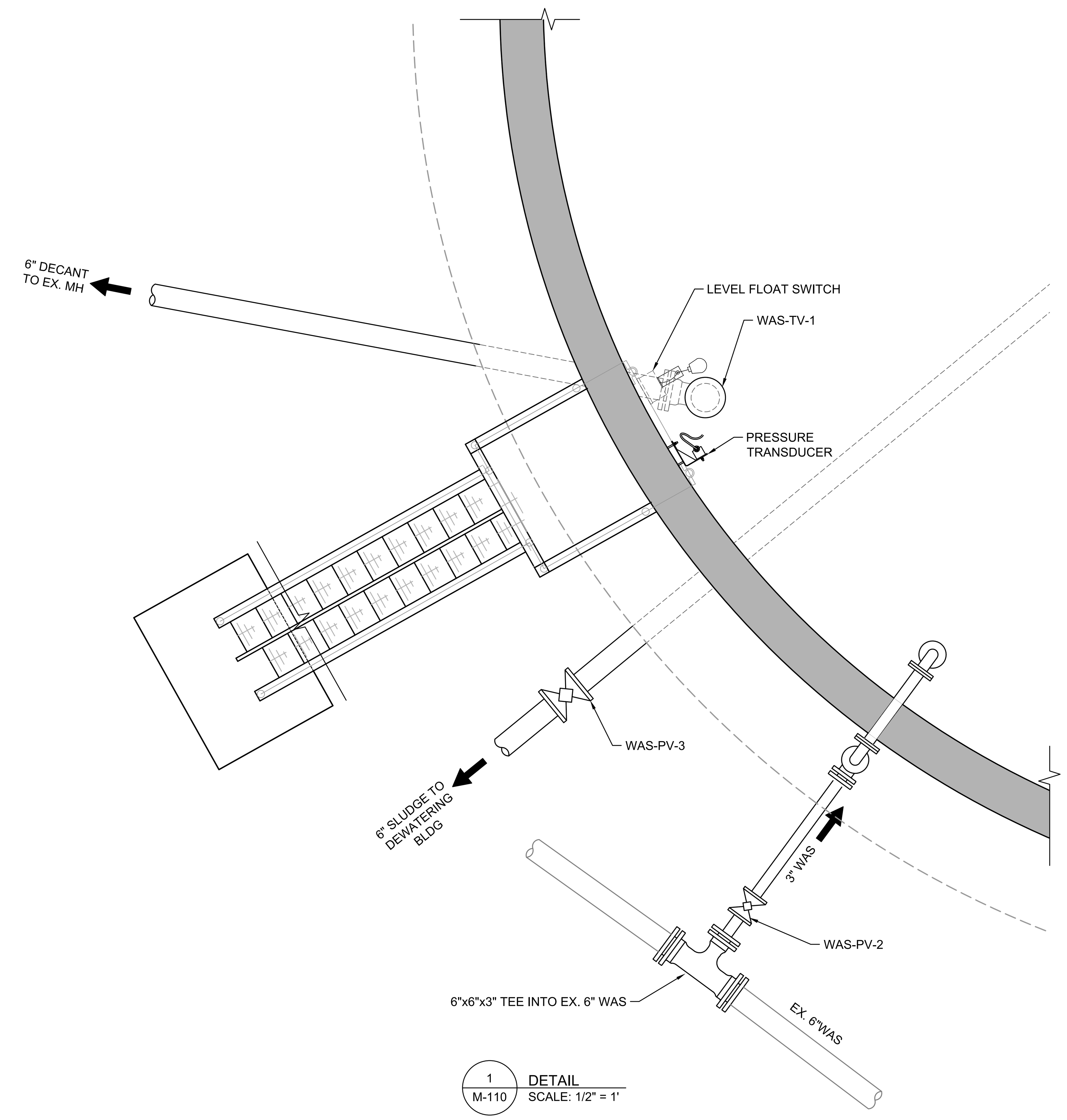
1. FLOATING AERATOR TO BE REPURPOSED FROM EX. AERATION BASINS. FLOATING MIXER ASSEMBLY TO BE SUPPLIED NEW. COORDINATE W/ AQUA AEROBICS FOR MOORING FRAME, POSTS, AND FIBERGLASS DOME FOR FLOATING AERATORS.
2. INSTALL EQUIPMENT IN THE PROPOSED (SHOWN ON THIS SHEET) AND EX. DIGESTOR IN ACCORDANCE W/ MFR INSTRUCTIONS.
3. WAS-TV-2 SHOWN IN THE VALVE SCHEDULE BELOW IS FOR INSTALLATION IN THE EX. DIGESTOR TO REPLACE THE EX. TELESCOPING VALVE.

VALVE SCHEDULE

IDENTIFIER	DESCRIPTION	OPERATOR	SPECIFICATION
WAS-PV-2	3" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.O.	40 05 51 2.04
WAS-PV-3	6" PLUG VALVE (MJ/MJ)	DIRECT NUT, N.C.	40 05 51 2.04
WAS-TV-1	6" TELESCOPING VALVE	RACK & PINION W/ HAND WHEEL	40 05 51 2.06
WAS-TV-2	6" TELESCOPING VALVE	RACK & PINION W/ HAND WHEEL	40 05 51 2.06



A M-110 **SECTION**
SCALE: 1/4" = 1'



1 M-110 **DETAIL**
SCALE: 1/2" = 1'

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SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

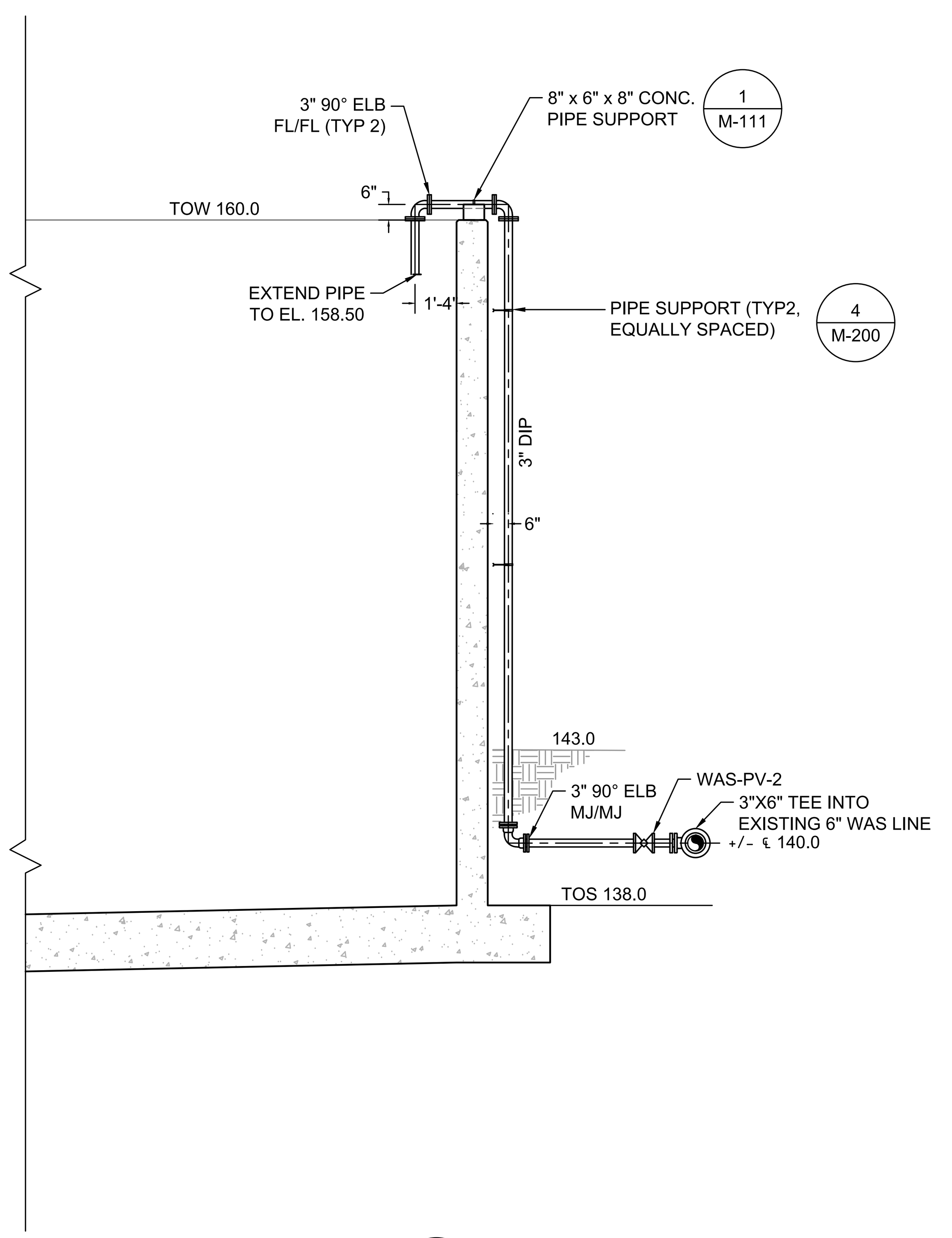
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

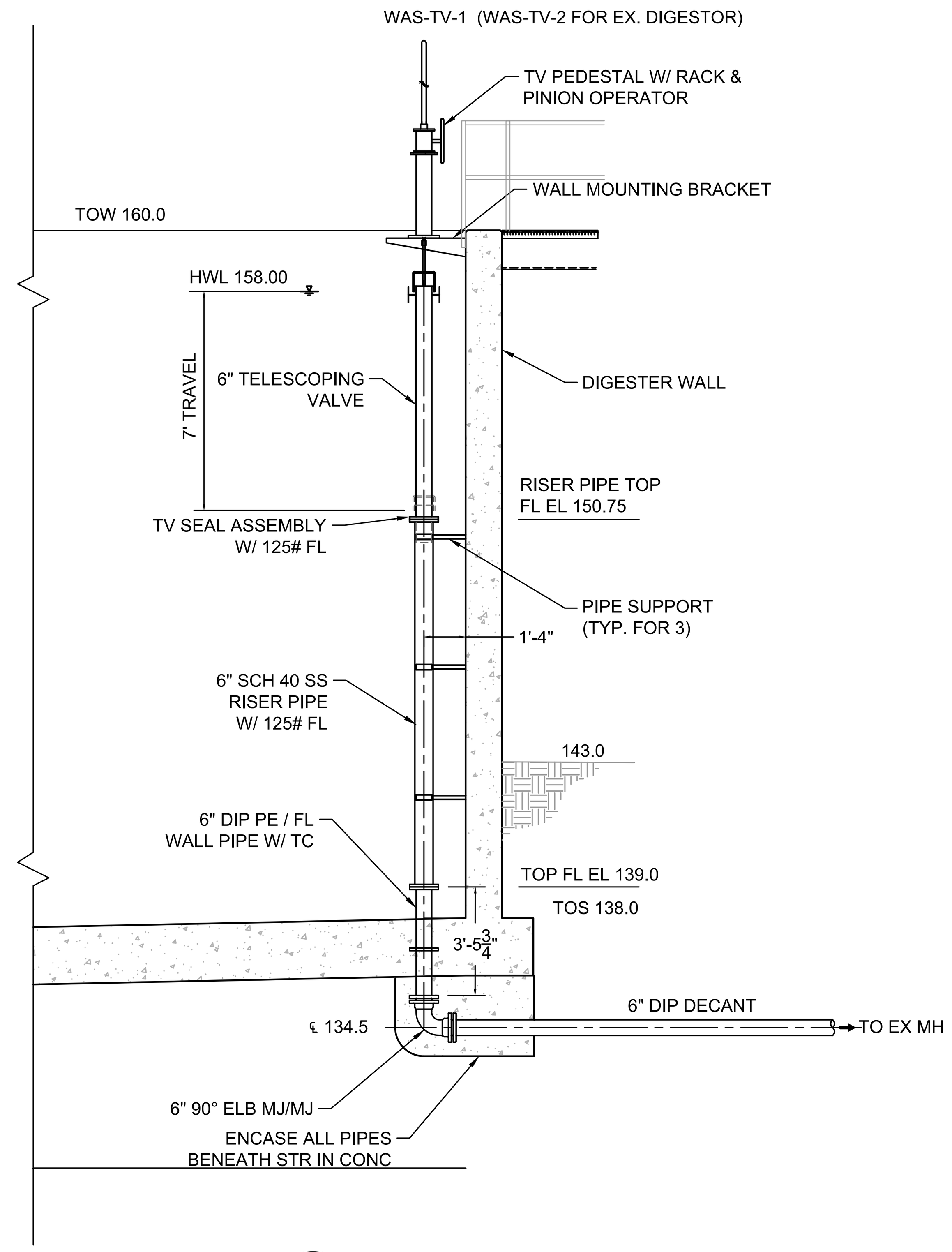
AEROBIC DIGESTER MECHANICAL PLAN & SECTIONS

DRAWING NO.

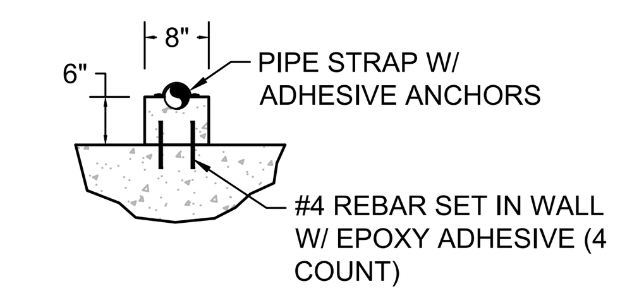
M110



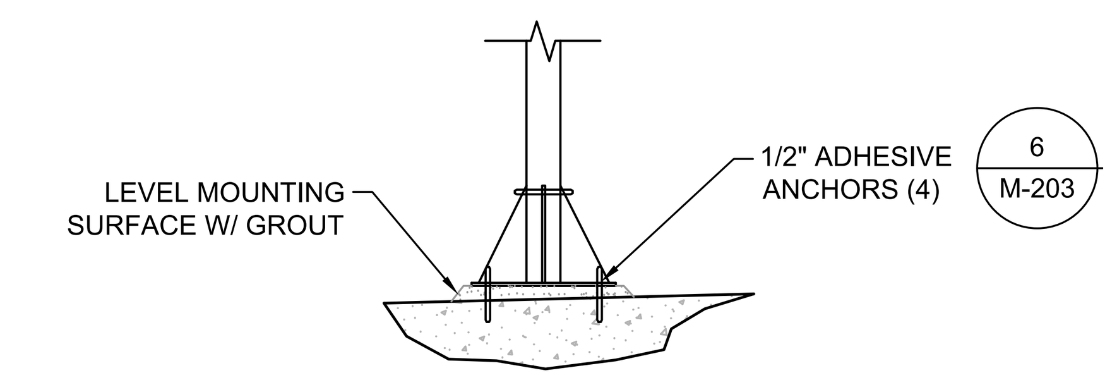
B M-111 **SECTION**
SCALE: 1/4" = 1'



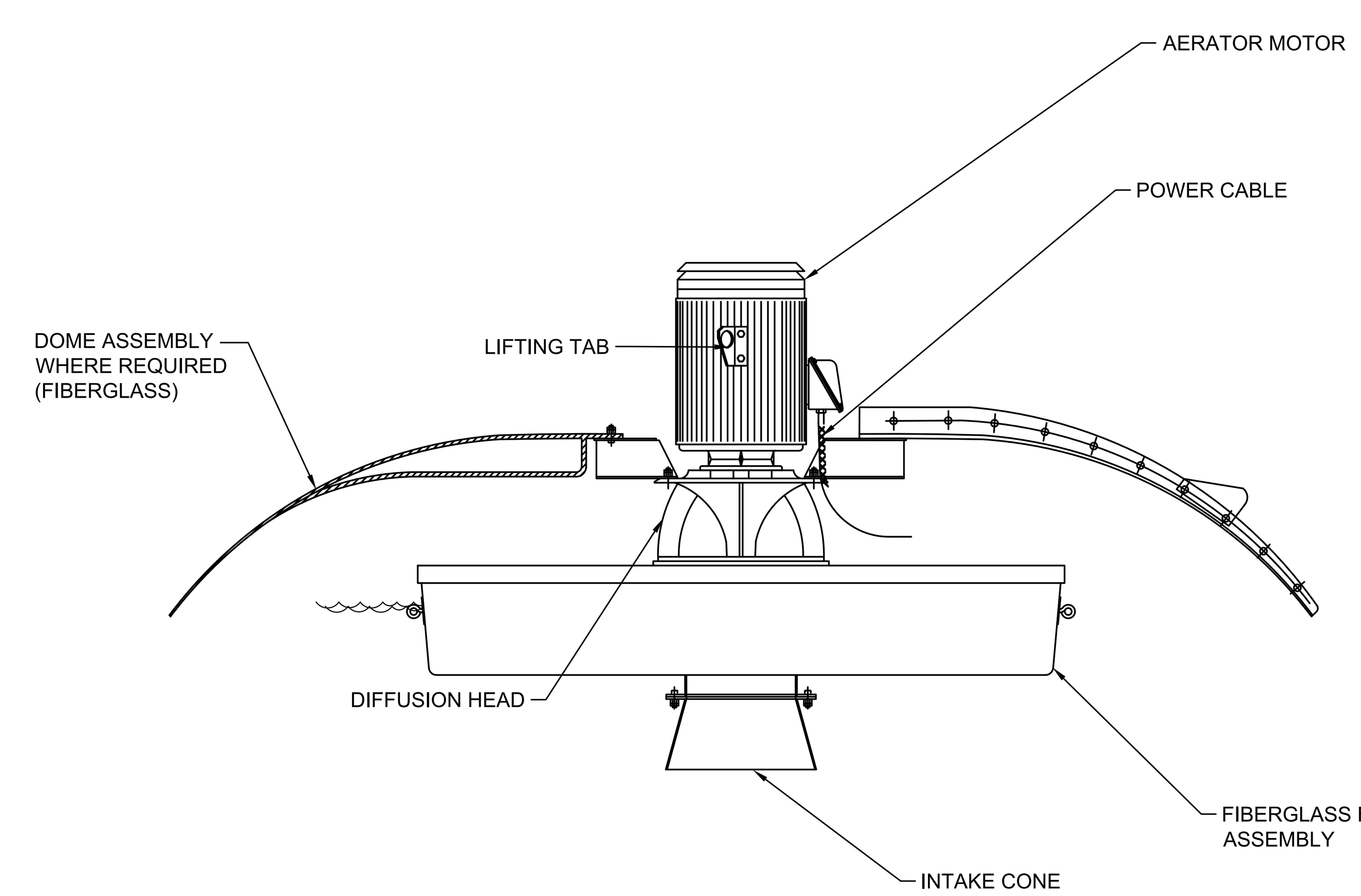
C M-111 **SECTION**
SCALE: 1/4" = 1'

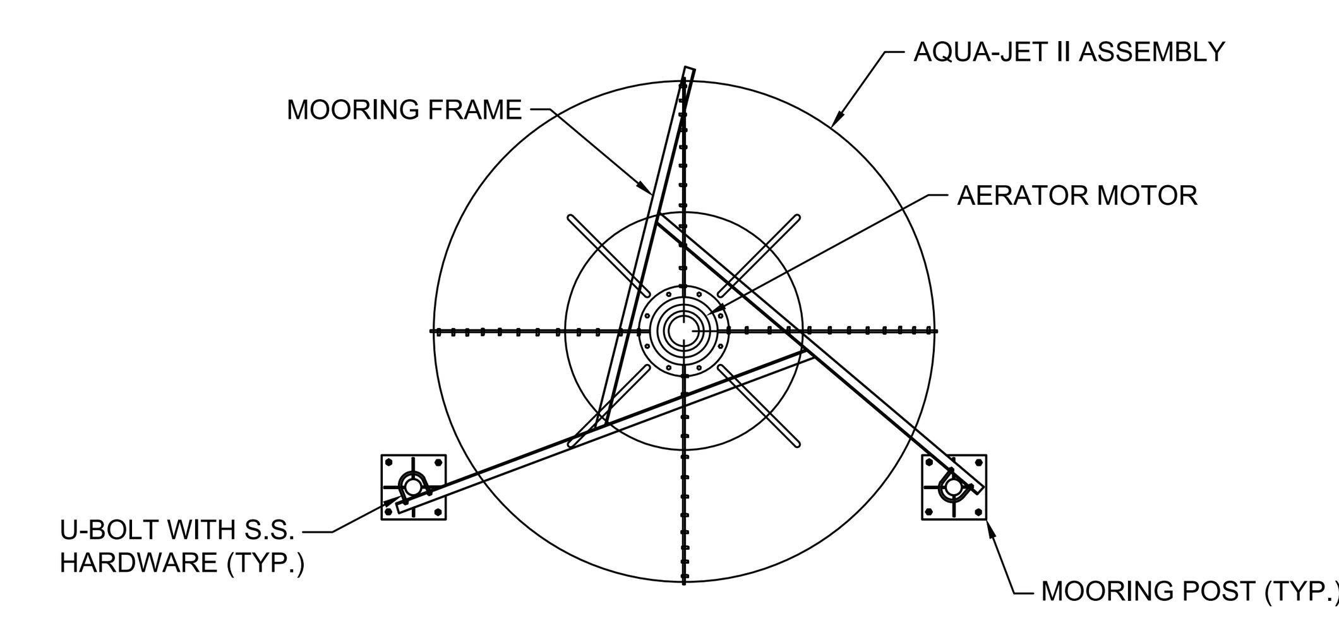


1 M-111 **PIPE SUPPORT DETAIL**
SCALE: 1/2" = 1'



2 M-111 **MOORING POST ANCHOR DETAIL**
SCALE: N.T.S.





NOTE:
1. FLOATING MIXER TO BE MOUNTED IN SAME MANNER. MIXER ASSEMBLY DOES NOT REQUIRE FIBERGLASS DOME.

3 M-111 **AERATOR ASSEMBLY DETAIL**
SCALE: N.T.S.

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER

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1	ISSUED FOR BID	4/12/24	...

Date: 4/11/24	Drawn by: MGW	Check by: DLO
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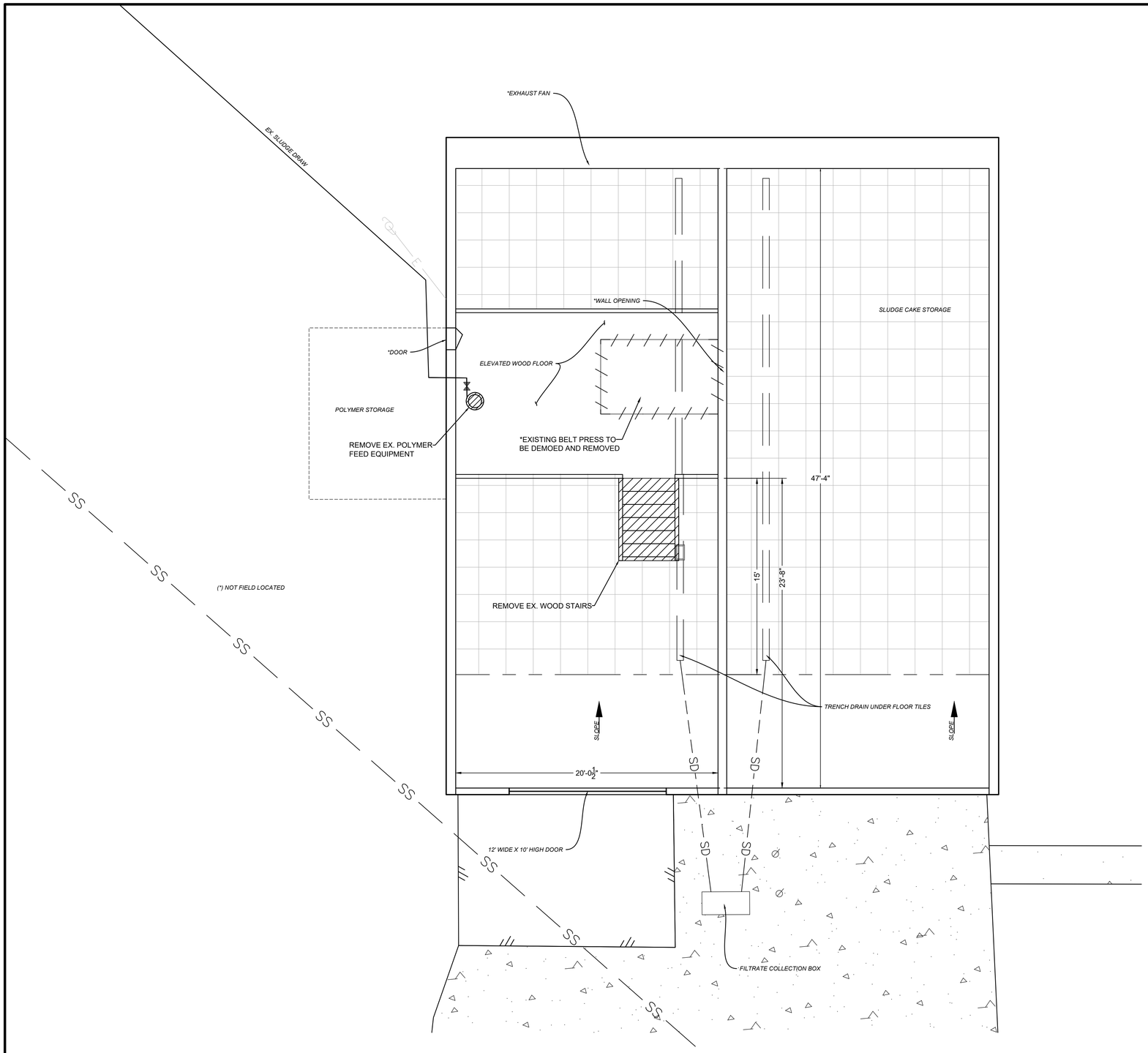
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

AEROBIC DIGESTER SECTIONS & DETAILS

DRAWING NO.
M111



DE-WATERING BUILDING EXISTING CONDITIONS

SCALE: 1/4" = 1'-0"

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER
11-14-24

Rev.	Description	Date	Apr.
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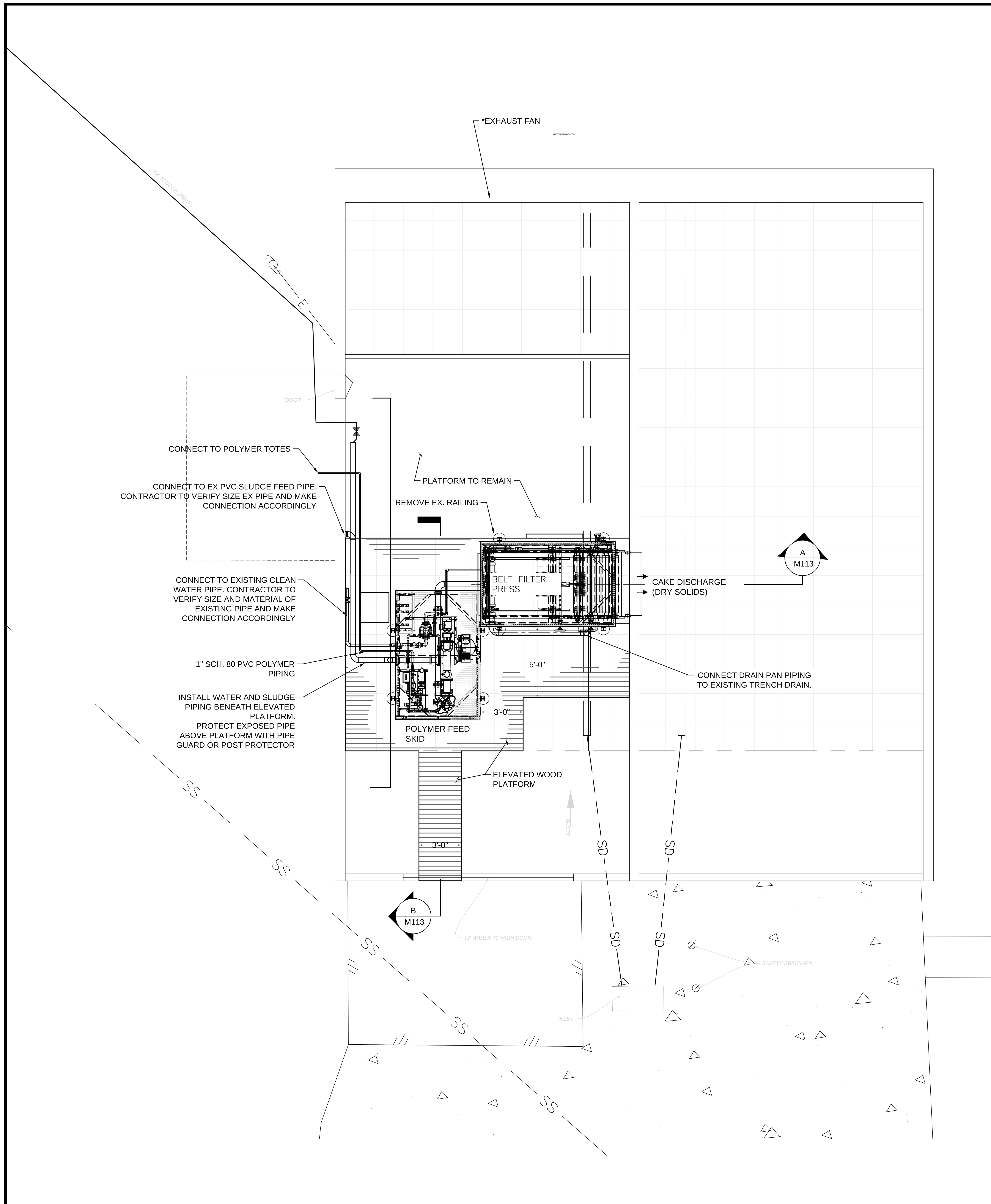
1	ISSUED FOR BID	4/12/24	---

Date: 4/11/24
Project #: 1521.2201
Drawn by: MGW
Design by: DLO
Check by: DLO
Review by: DLO
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

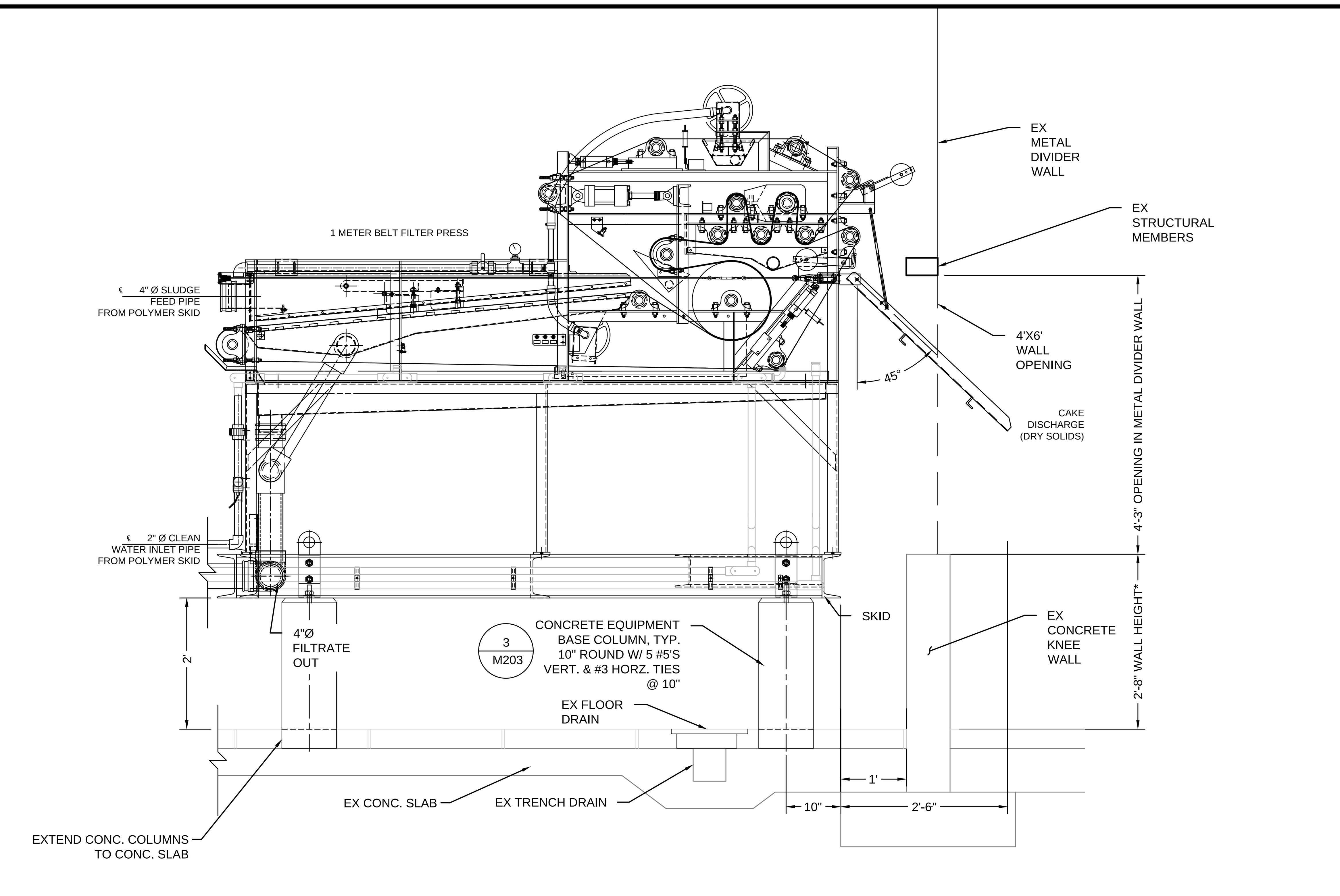
DEWATERING BUILDING EXISTING CONDITIONS AND DEMO PLAN

DRAWING NO.
M112



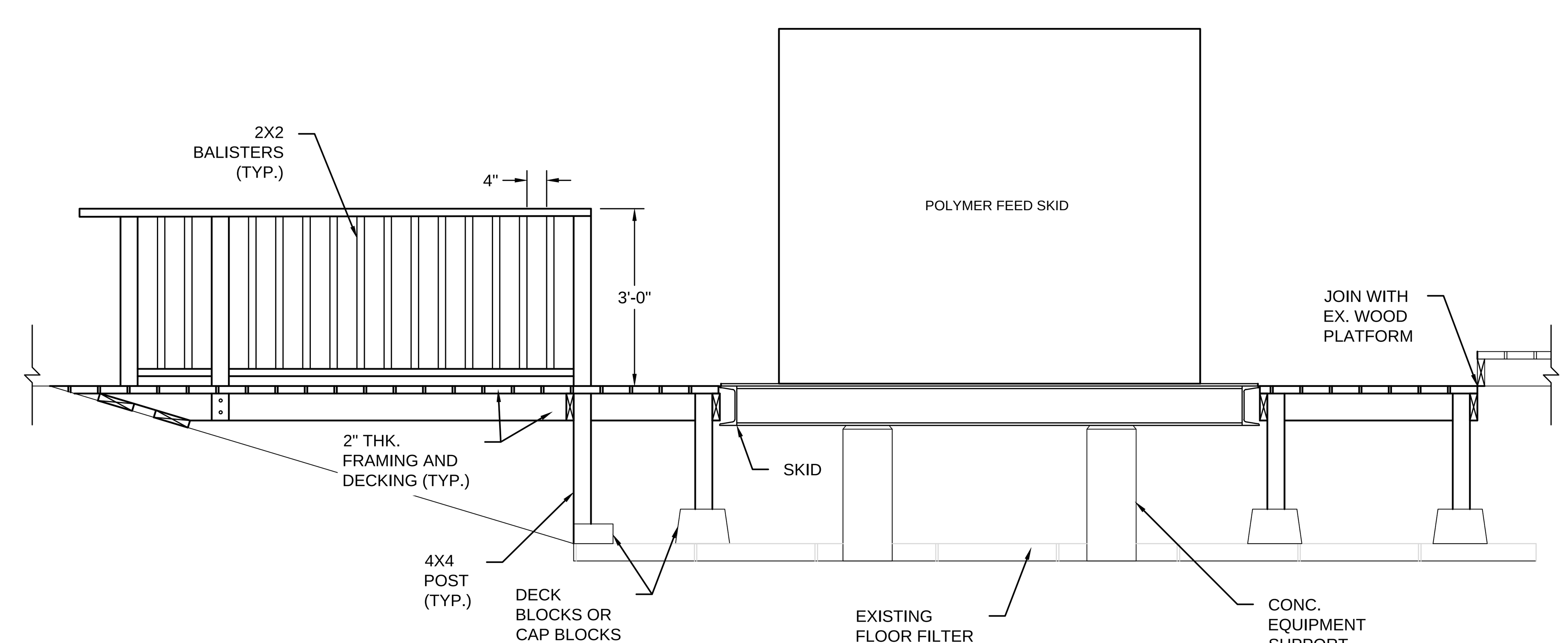
DE-WATERING BUILDING EQUIPMENT LAYOUT

SCALE: 1/4" = 1'-0"



A
M-113
SECTION
SCALE: 3/4" = 1'

CONTRACTOR TO VERIFY DIMENSIONS FROM DELIVERED BELT PRESS EQUIPMENT. MODIFY AS REQUIRED TO INSTALL TOP OF PRESS SKID AT ELEVATION EQUAL TO TOP OF CONCRETE KNEE WALL. ALSO COORDINATE EXACT LOCATION OF CAKE DISCHARGE WITH DEWATERING BUILDING STRUCTURAL MEMBERS.



B
M-113
SECTION
SCALE: 1/2" = 1'

ALL LUMBER USED FOR DECKING SHALL BE PRESSURE TREATED

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GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
1	ISSUED FOR BID	4/12/24	
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Project #: 1521.2201 | Design by: DLO | Review by: DLO

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CONSTRUCTION PLANS FOR

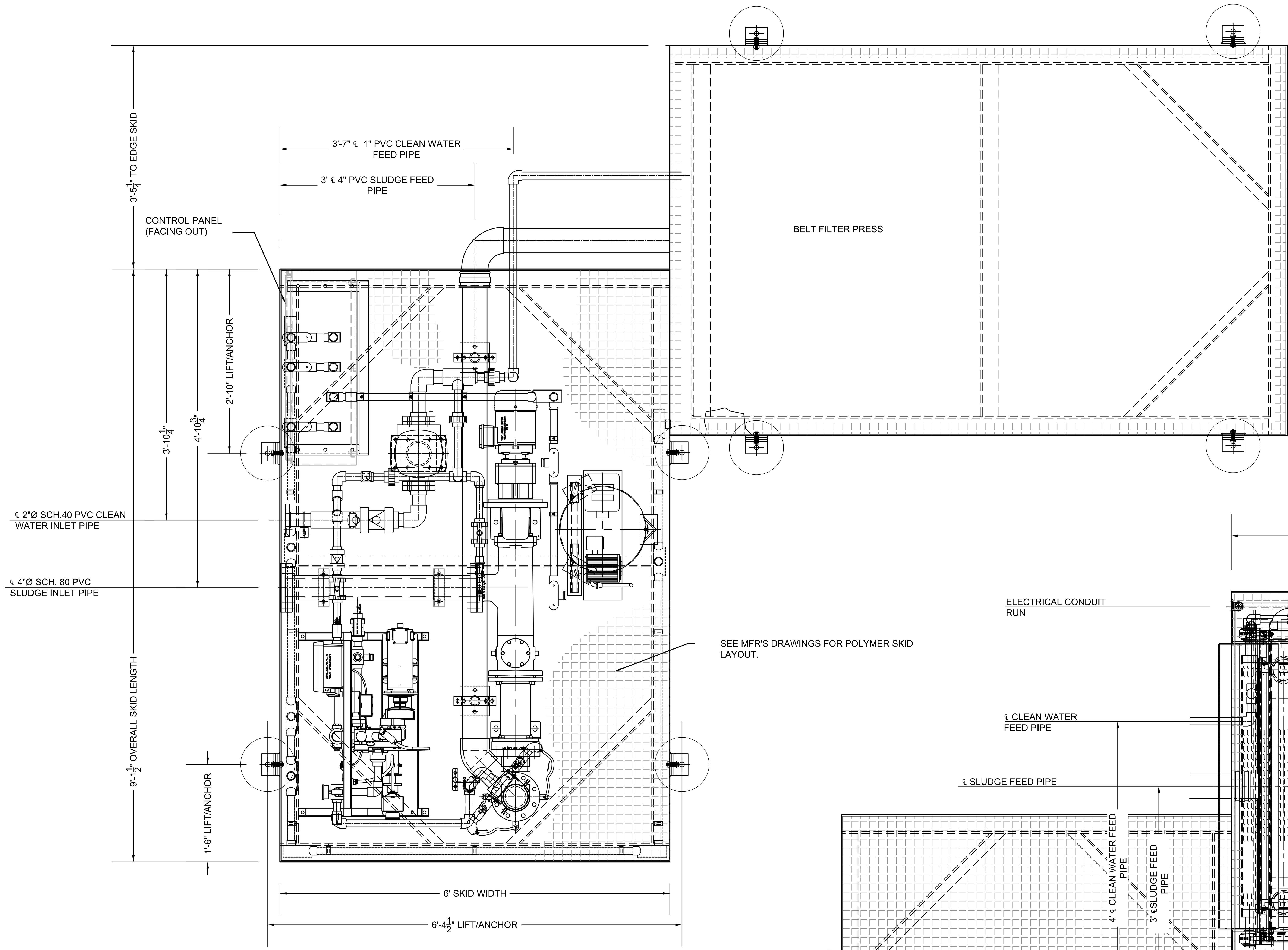
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

DE-WATERING BUILDING EQUIPMENT LAYOUT

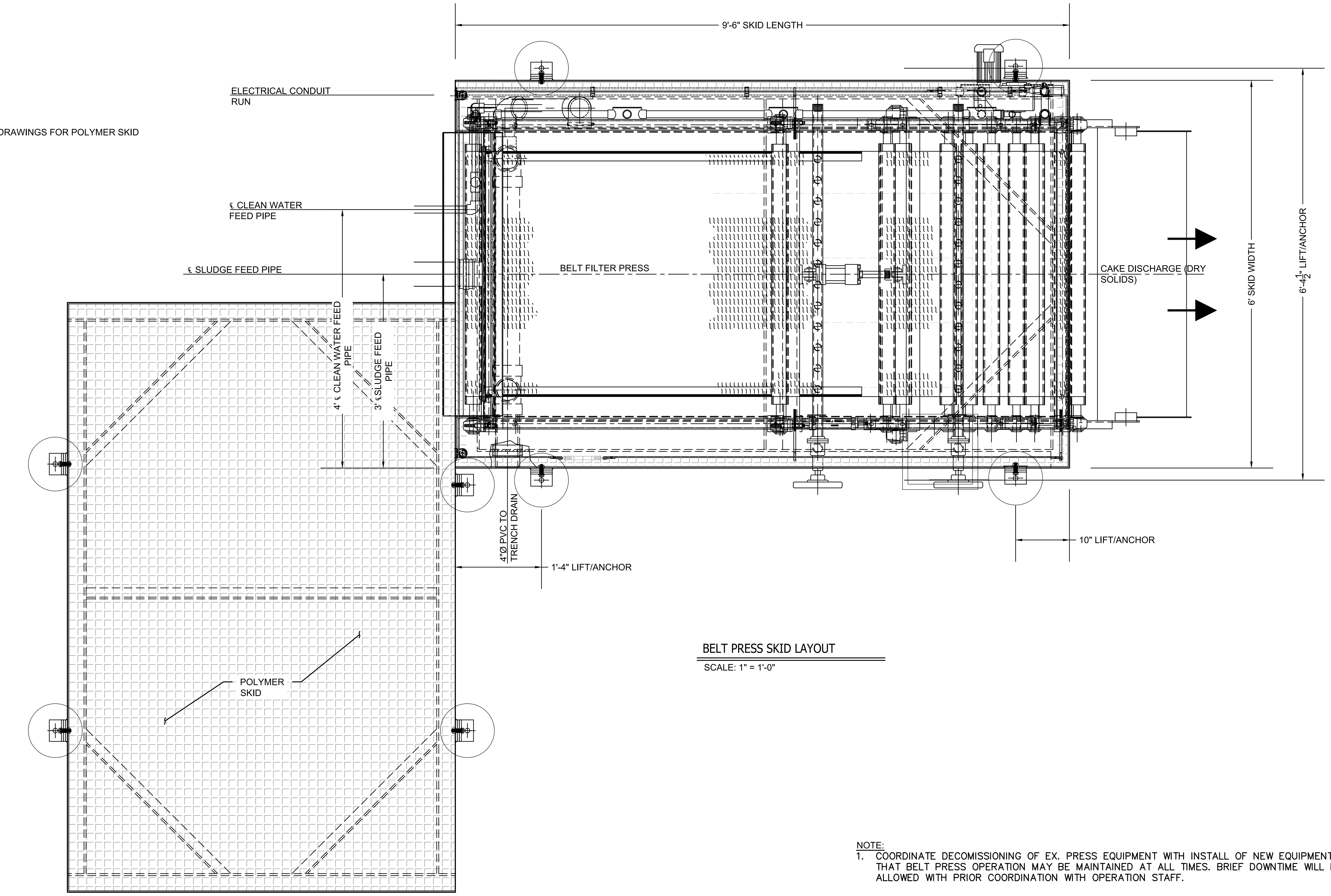
DRAWING NO.

M113



POLYMER FEED SKID LAYOUT

SCALE: 1" = 1'-0"



BELT PRESS SKID LAYOUT

SCALE: 1" = 1'-0"

NOTE:

1. COORDINATE DECOMISSIONING OF EX. PRESS EQUIPMENT WITH INSTALL OF NEW EQUIPMENT SO THAT BELT PRESS OPERATION MAY BE MAINTAINED AT ALL TIMES. BRIEF DOWNTIME WILL BE ALLOWED WITH PRIOR COORDINATION WITH OPERATION STAFF.

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CONSTRUCTION PLANS FOR

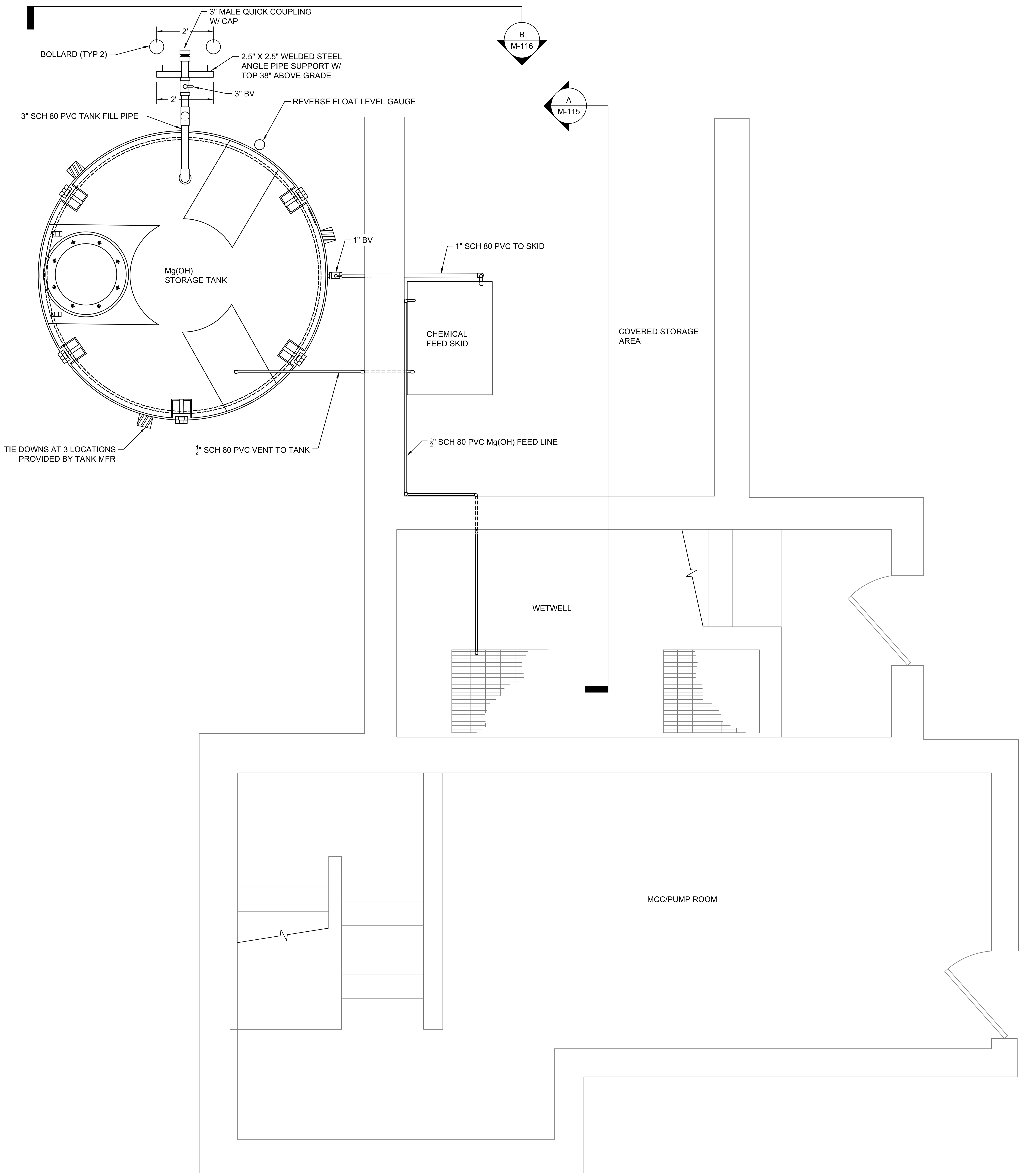
SYLVANIA WPCP UPGRADES

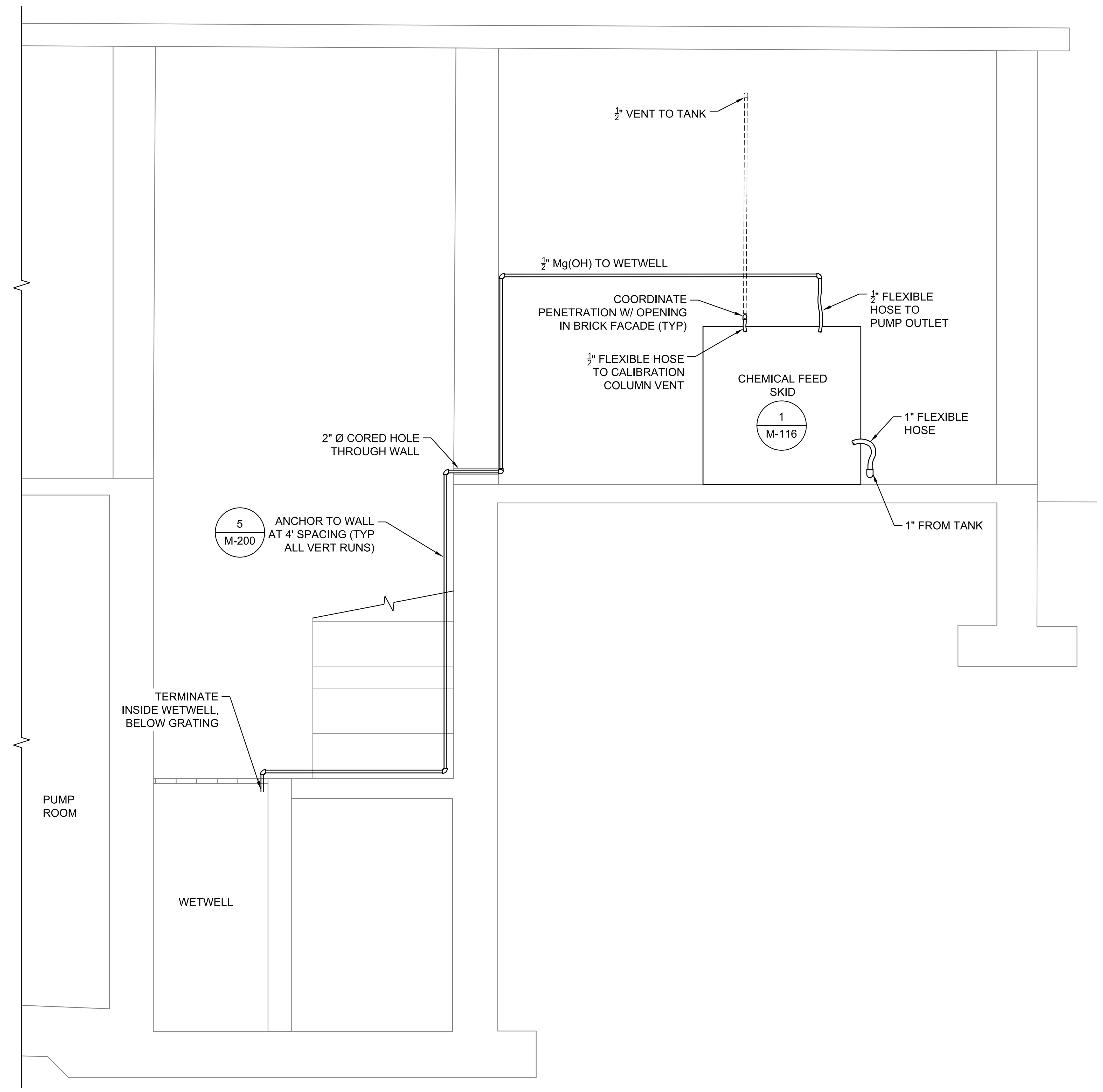
LOCATED IN SCREVEN COUNTY, GEORGIA

DE-WATERING PROCESS SKID PIPING LAYOUT

DRAWING NO.

M114





A
M-115
SECTION
SCALE: 1/2" = 1'

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GEORGIA REGISTERED No. PE0 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date	Apr.
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Date:	Drawn by:	Check by:
4/11/24	MGW	DLO
Project #: 1521.2201	**Design by:** DLO	**Review by:** DLO

SCALE: 1/2" = 1'

CONSTRUCTION PLANS FOR

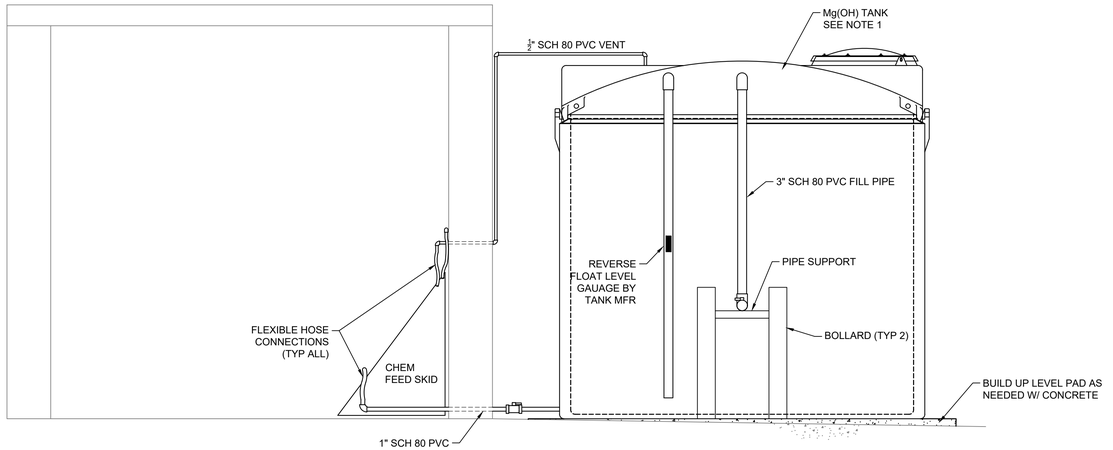
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

CHEMICAL FEED PLAN AND SECTIONS

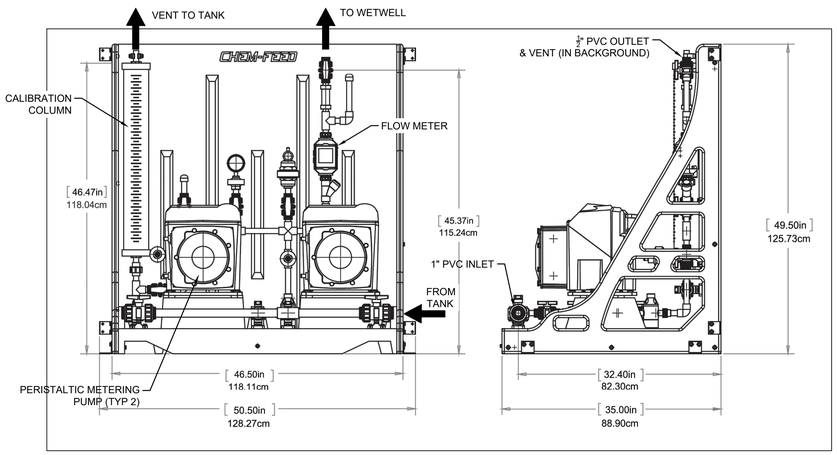
DRAWING NO.

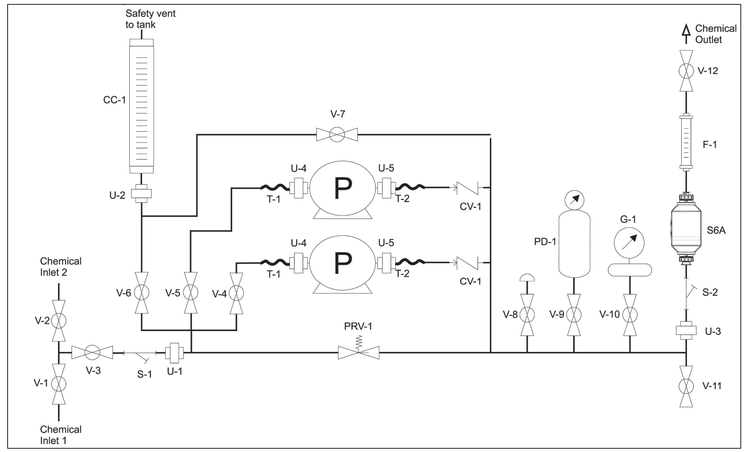
M115



B / M-116 SECTION
SCALE: 1/2" =1'

NOTE:
1. THE Mg(OH) STORAGE TANK SHALL HAVE A CAPACITY NO LESS THAN 3900 GALLONS WITH A DOUBLE WALL CONSTRUCTION FOR LEAK/SPILL PROTECTION.
2. ALL TANK CONNECTIONS SHALL BE MADE IN ACCORDANCE W/ MFR RECOMMENDATIONS.





1 / M-116 CHEMICAL FEED SKID
SCALE: N.T.S.

VALVE SCHEDULE	
VALVE #	POSITION
V-1	OPEN
V-2	CLOSED
V-3	OPEN
V-4	CYCLED W/ PUMP
V-5	CYCLED W/ PUMP
V-6	CLOSED
V-7	CLOSED
V-8	OPEN
V-9	OPEN
V-10	OPEN
V-11	CLOSED
V-12	OPEN

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GEORGIA REGISTERED No. 34611 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date	Apr.
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1	ISSUED FOR BID	4/12/24	---

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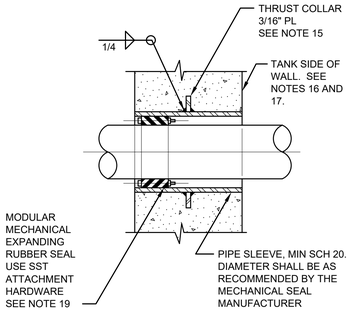
CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

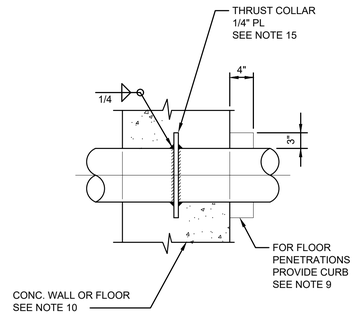
CHEMICAL FEED SECTIONS

DRAWING NO.
M116



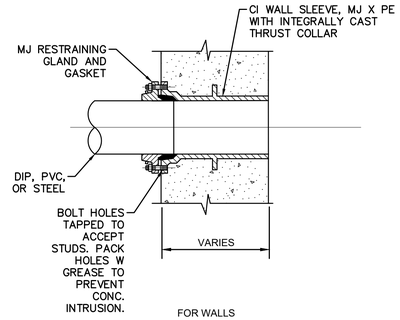
FOR WALLS

1 M200 PIPE PENETRATION TYPE D
SCALE: N.T.S.



FOR WALLS, FLOORS, AND CEILINGS

2 M200 PIPE PENETRATION TYPE K
SCALE: N.T.S.

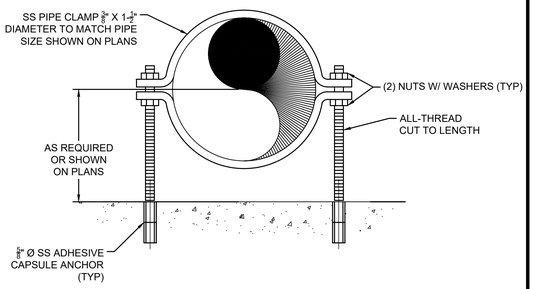


FOR WALLS

3 M200 PIPE PENETRATION TYPE N
SCALE: N.T.S.

PIPE PENETRATION NOTES:

1. WHERE PIPES PASS THROUGH WALLS, FLOORS, OR CEILINGS, PENETRATIONS SHALL CONFORM TO TABLE AT LEFT, EXCEPT AS OTHERWISE SPECIFIED.
2. IN TABLE AT LEFT, "TANK" SHALL MEAN ANY PART OF A STRUCTURE CONTAINING LIQUID, OR IN CONTACT WITH THE EARTH.
3. IN TABLE AT LEFT, "PASSAGE" SHALL MEAN ANY ROOM, GALLERY, TUNNEL, OR SIMILAR ENCLOSURE.
4. IN TABLE AT LEFT, WATER SURFACE "WS" SHALL MEAN AN ELEVATION 9-INCHES ABOVE MAXIMUM WATER SURFACE SHOWN.
5. ALL STEEL SLEEVES SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
6. IN CONDITION 5, TYPE E,H,J, OR K SHALL BE USED WHERE ONE SIDE CONTAINS EXPLOSION PROOF EQUIPMENT, WHERE FLOODING IS POSSIBLE, OR WHERE SPECIFIED (TYPE E ONLY FOR COPPER).
7. SEAL FLANGES SHALL BE FACED AND DRILLED TO 150 POUND STANDARD, EACH JOINT SHALL BE FULL FACE GASKETED.
8. MAINTAIN MANUFACTURER RECOMMENDED DISTANCE FROM WALL IN ACCORDANCE WITH PIPE SIZE.
9. PROVIDE CURB WHERE PENETRATING FLOOR, EXCEPT FOR PENETRATION TYPES A, C, AND H. CURB SHALL BE 4" HIGH BY 3" WIDE.
10. PROVIDE A MINIMUM OF 3" CLEARANCE BETWEEN REINFORCING STEEL AND FERROUS METAL PENETRATIONS.
11. WHEN MSS TYPE 8 PIPE CLAMP IS USED FOR COPPER PIPE, CLAMP SHALL BE PLASTIC COATED BY MFR.
12. TYPE X2 PENETRATION FOR EXISTING STRUCTURES SHOWS SLEEVE INSTALLATION DETAIL ONLY. USE TYPE A,B,C,D,E,H OR K DETAILS FOR ACTUAL PENETRATION.
13. INSULATION SHALL NOT EXTEND THROUGH SLEEVES, UNLESS OTHERWISE SPECIFIED.
14. WHERE CAST IRON PIPE IS EMBEDDED IN CONCRETE AT AN EXPANSION JOINT, USE TYPE L PENETRATION DETAIL.
15. THRUST COLLAR SHALL HAVE A MINIMUM DIAMETER 3 INCHES GREATER THAN THE OUTSIDE PIPE DIAMETER.
16. "TANK SIDE OF WALL" SHALL MEAN SIDE OF WALL NORMALLY EXPOSED TO LIQUID, EARTH, OR OUTSIDE ATMOSPHERE.
17. SEAL WITH MASTIC SEALANT WHERE WALL IS EXPOSED TO LIQUID, EARTH OR AN EXPLOSION HAZARD AREA.
18. FOR COPPER PIPE IN A "PASSAGE" TO "PASSAGE" CONDITION (SEE TABLE AT LEFT), PROVIDE A FULL 360 DEGREE WRAP OF 1/16 INCH THICK NEOPRENE. BOND NEOPRENE TO PIPE WITH A COMPATIBLE WATERPROOF ADHESIVE. EXTEND NEOPRENE 1 INCH MINIMUM BEYOND LIMITS OF PENETRATION SLEEVE.
19. WHEN MODULAR MECHANICAL EXPANDING RUBBER SEAL IS USED ON COPPER PIPE, PROVIDE GLASS REINFORCED NYLON PRESSURE PLATES IN PLACE OF STANDARD STEEL UNITS.
20. FLANGE BOLT HOLES SHALL EQUALLY STRADDLE THE VERTICAL CENTER-LINE OF THE FLANGE TO ASSURE PROPER CONNECTION TO ADJOINING PIPE, VALVES AND FITTINGS.
21. CORROSION PROTECTION MEASURES ARE REQUIRED FOR DIP, STEEL AND STAINLESS STEEL PIPES THAT TRANSITION FROM A BURIED CONDITION INTO A TUNNEL OR STRUCTURE.

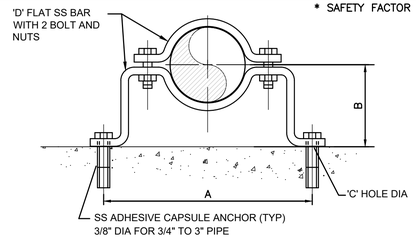


NOTES:
1. PIPE CLAMP, WASHER, SHIELD, AND ANCHOR BOLTS SHALL BE TYPE 316 STAINLESS STEEL.
2. PROVIDE STAINLESS STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT.

4 M200 PIPE CALMP FOR LARGE PIPES
SCALE: N.T.S.

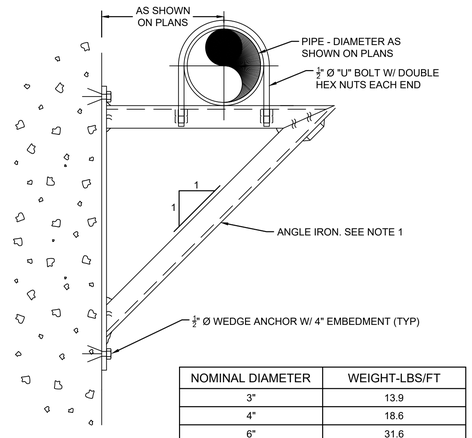
DIMENSIONS IN INCHES					
PIPE DIA.	'A'	'B' SEE NOTE 3 BELOW	'C' HOLE DIA.	'D' FLAT BAR SIZE	LOAD RATING LBS.*
3/4	5-15/16	2-1/2	7/16	3/16 X 1-1/4	300
1	6-1/4	2-5/8	7/16	3/16 X 1-1/4	300
1-1/4	6-11/16	2-3/4	7/16	3/16 X 1-1/4	300
1-1/2	6-15/16	3	7/16	3/16 X 1-1/4	300
2	8-5/16	3-3/16	7/16	1/4 X 1-1/4	500
2-1/2	8-7/8	3-7/16	7/16	1/4 X 1-1/4	500
3	9-1/8	3-3/4	7/16	1/4 X 1-1/4	500
3-1/2	10-1/16	4	7/16	1/4 X 1-1/4	500
4	10-9/16	4-1/4	9/16	1/4 X 1-1/2	600
5	11-3/4	4-3/4	9/16	1/4 X 1-1/2	600
6	14-3/8	5-5/16	9/16	3/8 X 1-1/2	850
8	16-5/8	6-5/16	9/16	3/8 X 1-1/2	850

* SAFETY FACTOR OF 5



NOTES:
1. PIPE CLAMP, WASHER AND SHIELD SHALL BE TYPE 316 STAINLESS STEEL WHEN USED WITH PVC OR FIBERGLASS PIPE
2. PROVIDE STAINLESS STEEL SHIELD AROUND PIPE AT CLAMP, WITH LOOSE FIT. WRAP COPPER TUBES WITH 2" STRIP OF RUBBER FABRIC
3. FOR FLANGED PIPING INCREASE 'B' DIMENSION AS REQUIRED
4. ALL ANCHOR BOLTS SHALL BE TYPE 316 SS.

5 M200 PIPE CLAMP FOR INDIVIDUAL PIPES
SCALE: N.T.S.



NOMINAL DIAMETER	WEIGHT-LBS/FT
3"	13.9
4"	18.6
6"	31.6
8"	49.7
10"	70.6
12"	95.9
14"	126.2
16"	157.7

*WEIGHTS SHOWN ASSUME DUCTILE IRON PIPE FILLED WITH WATER

NOTES:
1. SIZE BRACKET TO PROPERLY SUPPORT LOAD SHOWN IN TABLE ABOVE
2. MAXIMUM SPAN BETWEEN SUPPORT BRACKETS SHALL BE 10' UNLESS SPECIFICALLY DESIGNED TO SUPPORT LARGER LOADS THAN THOSE SHOWN IN THE TABLE.

6 M200 TYPICAL PIPE SUPPORTS
SCALE: N.T.S.

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GEORGIA REGISTERED No. 34021 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

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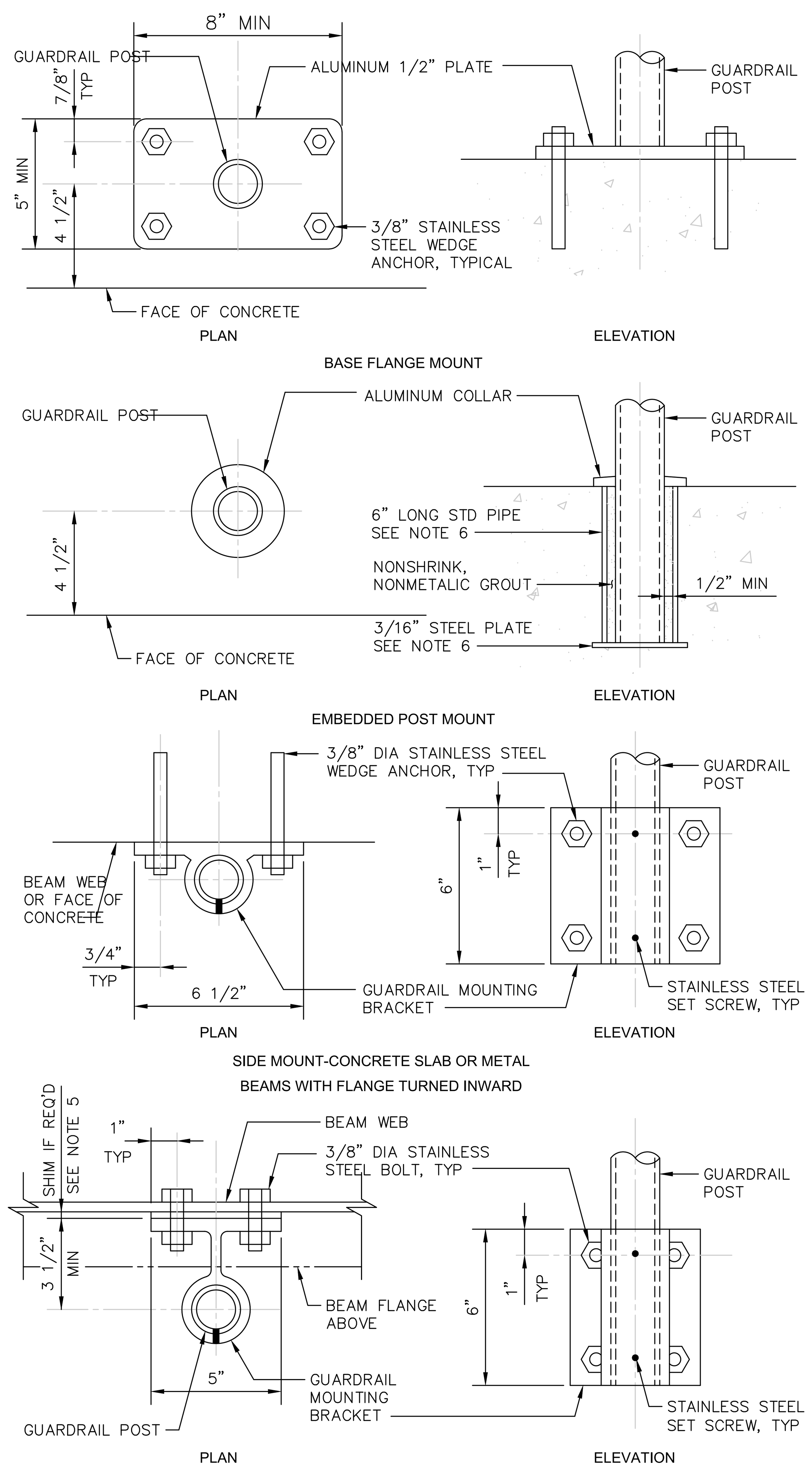
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PROCESS PIPING DETAILS

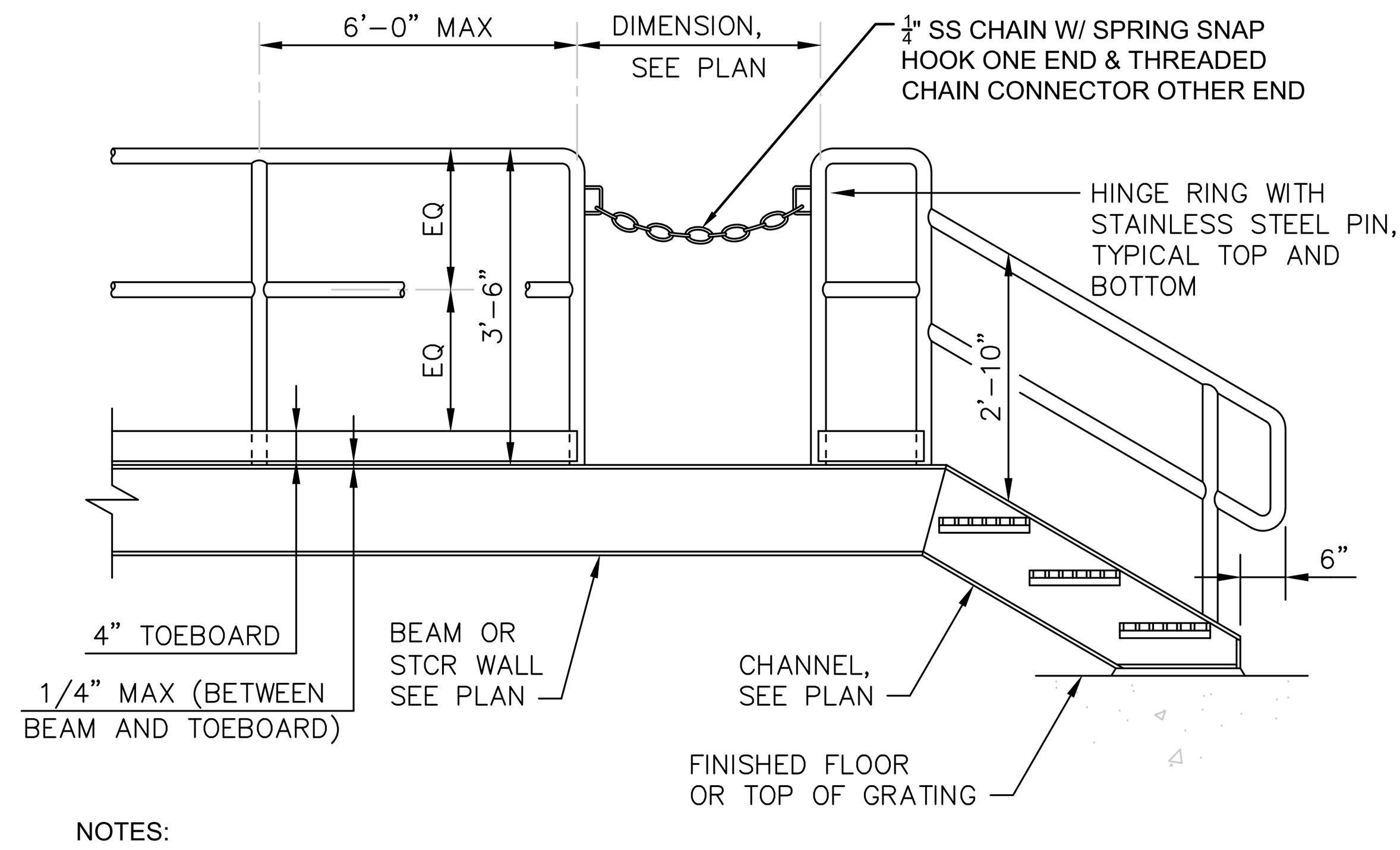
DRAWING NO.
M200



NOTES:

1. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS TO HAVE CONTACT SURFACE COATED PER SPECIFICATION 09 90 00, COATING SYSTEMS. (AT EMBEDDED POST ANCHORAGE, DIP POST BOTTOM INTO BITUMINOUS PAINT SUCH THAT BOTH INSIDE AND OUTSIDE OF POST IS COATED.)
2. ANCHOR BOLT SIZE SHOWN IS MINIMUM, PROVIDE LARGER SIZE IF NECESSARY TO MEET LOAD REQUIREMENTS.
3. FOUR ANCHOR BOLTS REQUIRED AT BASE FLANGE MOUNT. TWO ANCHOR BOLTS/BOLTS MAY BE USED AT SIDE MOUNTS IF ANCHOR BOLT/BOLT SIZE IS 1/2" MINIMUM AND BOLT IS CENTERED IN BRACKET.
4. UNLESS SPECIFICALLY INDICATED OTHERWISE, GUARDRAIL MOUNTING TO CONCRETE MAY BE BY ANY SHOWN METHOD AS APPLICABLE
5. SHIM MATERIAL SHALL MATCH BEAM MATERIAL AND SHALL BE FULL SIZE OF GUARDRAIL MOUNTING BRACKET.
6. HOLE MAY BE CORE DRILLED AT CONTRACTOR OPTION.

HANDRAIL POST ANCHORAGE

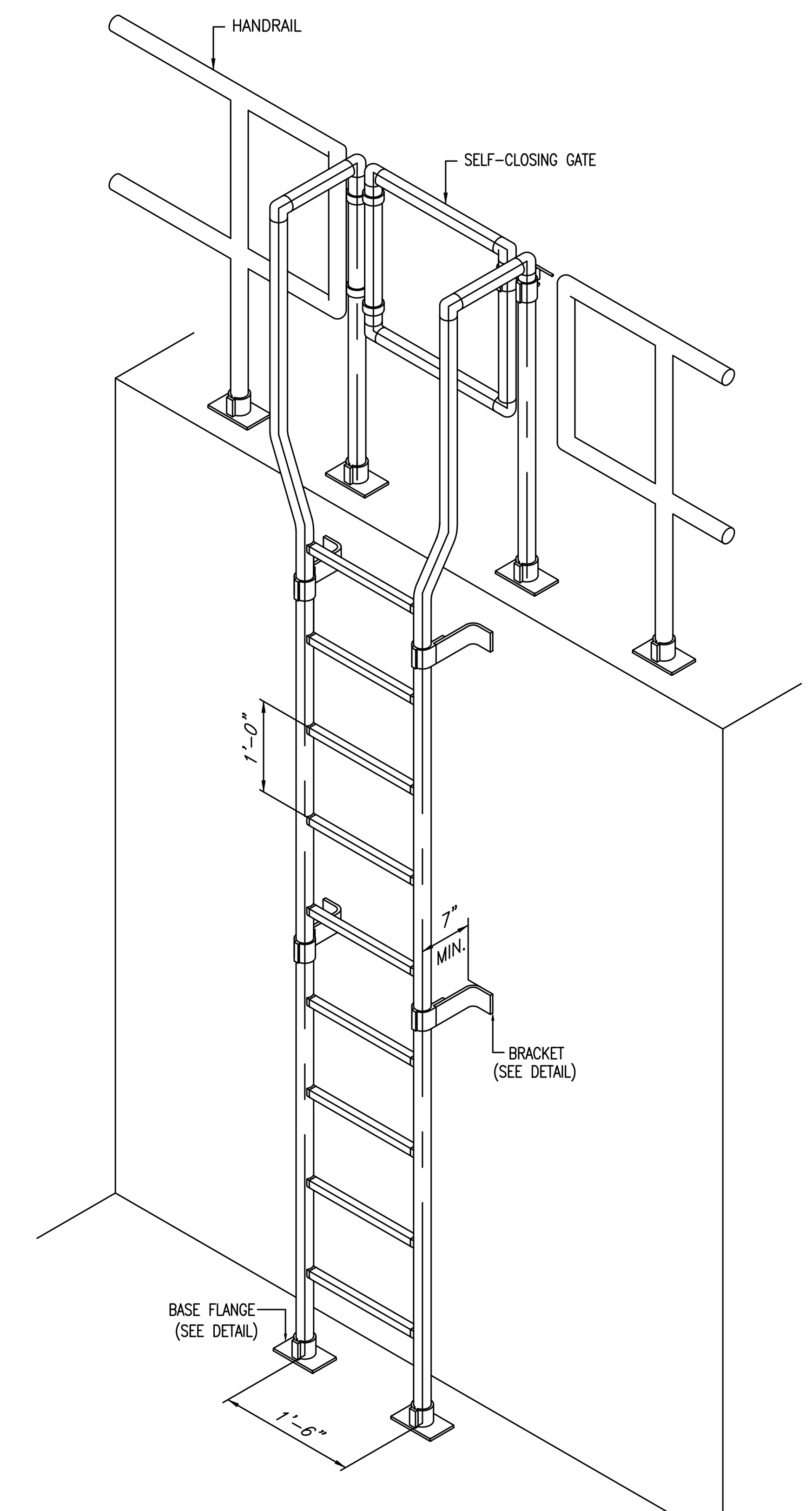


NOTES:

1. ADJUST GUARDRAIL AS REQUIRED FOR PIPING AND GATES.
2. AT METAL STAIRS, USE SIDE MOUNT. AT CONCRETE STAIRS, USE BASE FLANGE, EMBEDDED POST OR SIDE MOUNT, EXCEPT WHERE STAIR WIDTH IS LESS THAN 4'-0". USE SIDE MOUNT ONLY. SEE GUARDRAIL POST ANCHORAGE DETAIL.
3. PROVIDE EXPANSION JOINTS AT:
   A. STRUCTURE EXPANSION JOINTS
   B. 60'-0" OC MAXIMUM
   EXPANSION JOINT TO BE EITHER OF THE FOLLOWING:
   A. SLIP SLEEVE (ALUMINUM ONLY)
   B. DOUBLE POSTS WITH 6" SPACE BETWEEN POSTS.

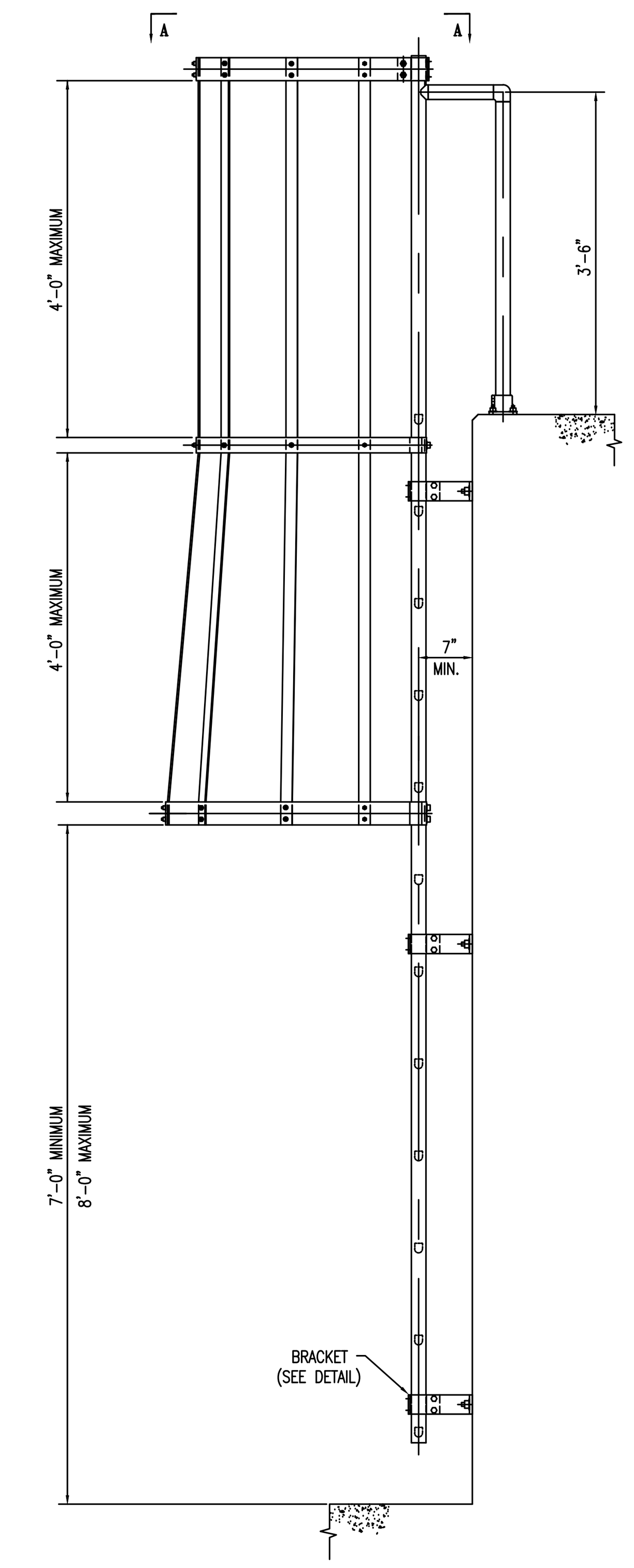
HANDRAIL

1 M201 ALUMINUM HANDRAIL
SCALE: N.T.S.



TYPICAL LADDER ELEVATION

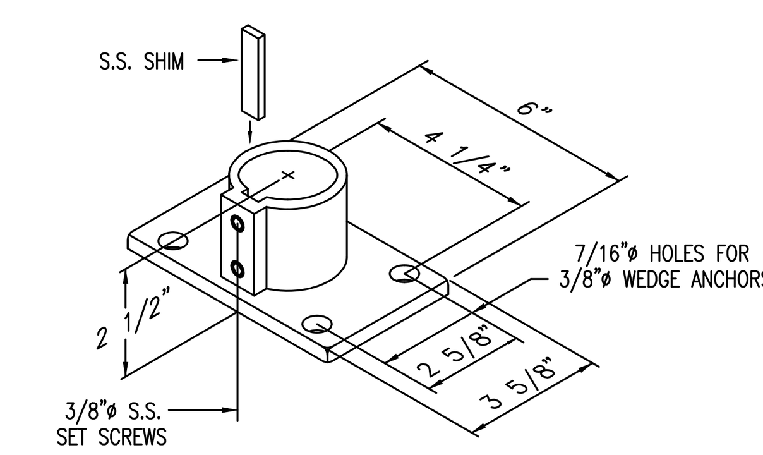
TYPE A



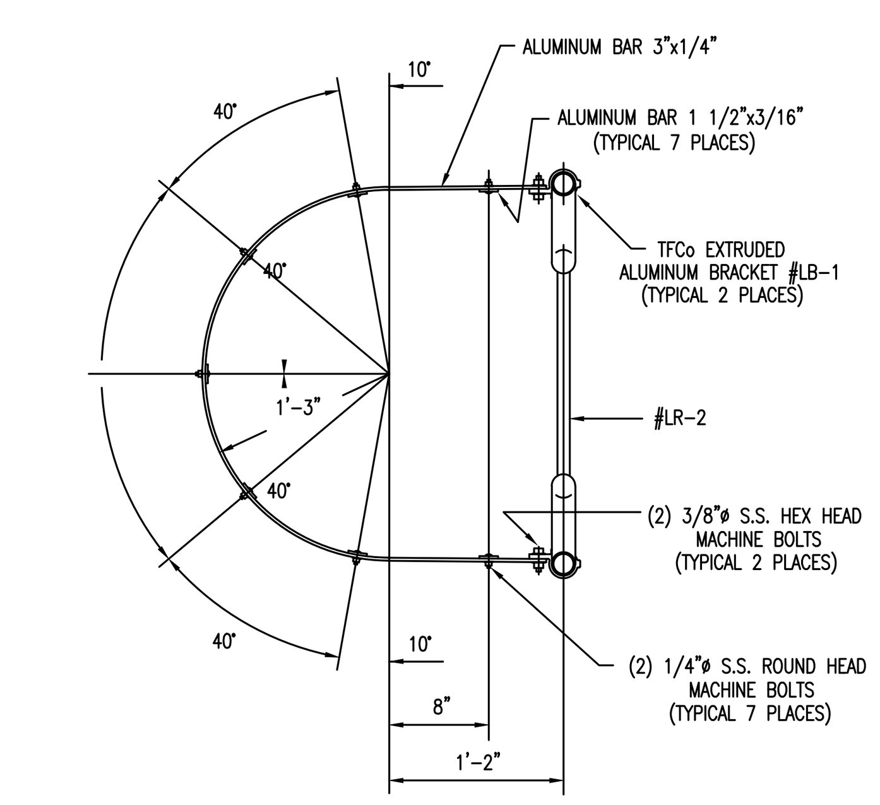
CAGED LADDER ELEVATION

TYPE C

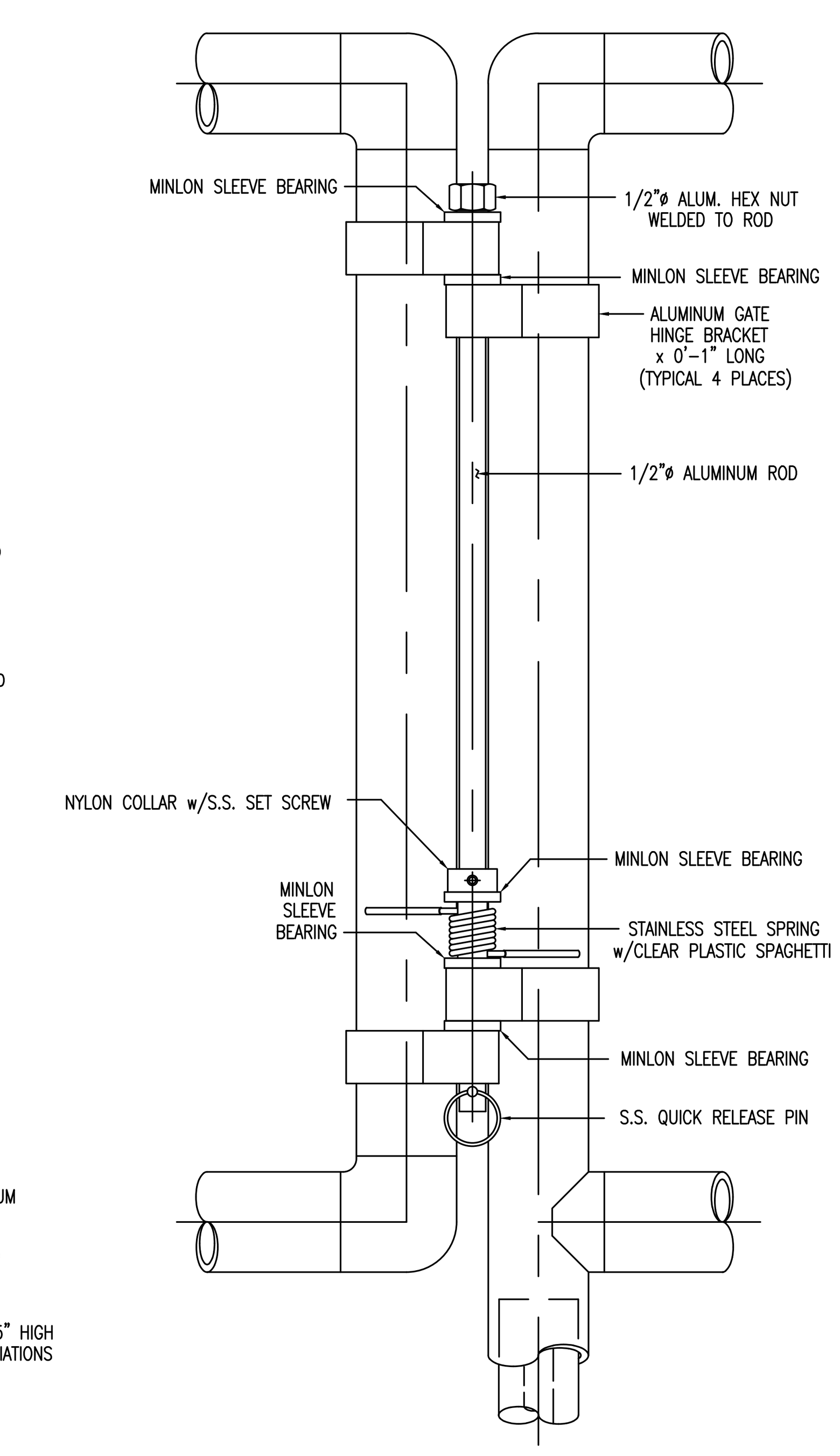
ONLY WHERE SPECIFIED IN THE PLANS



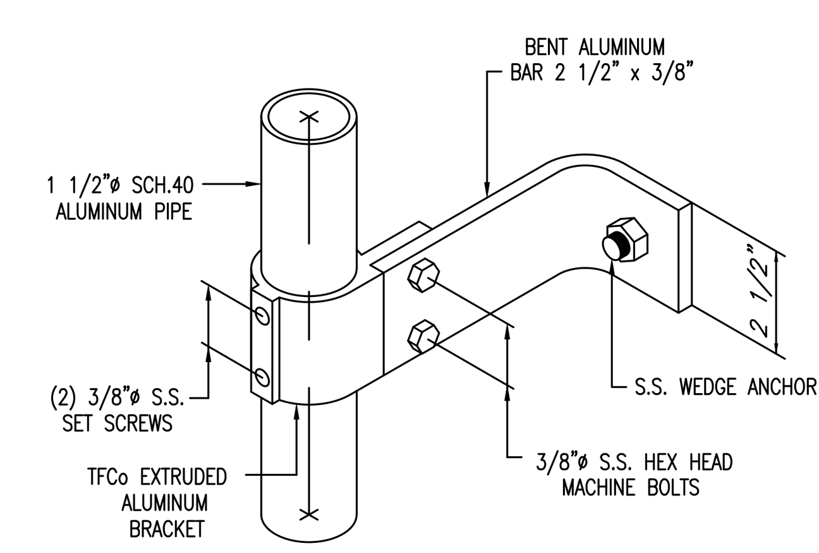
DETAIL OF BASE FLANGE



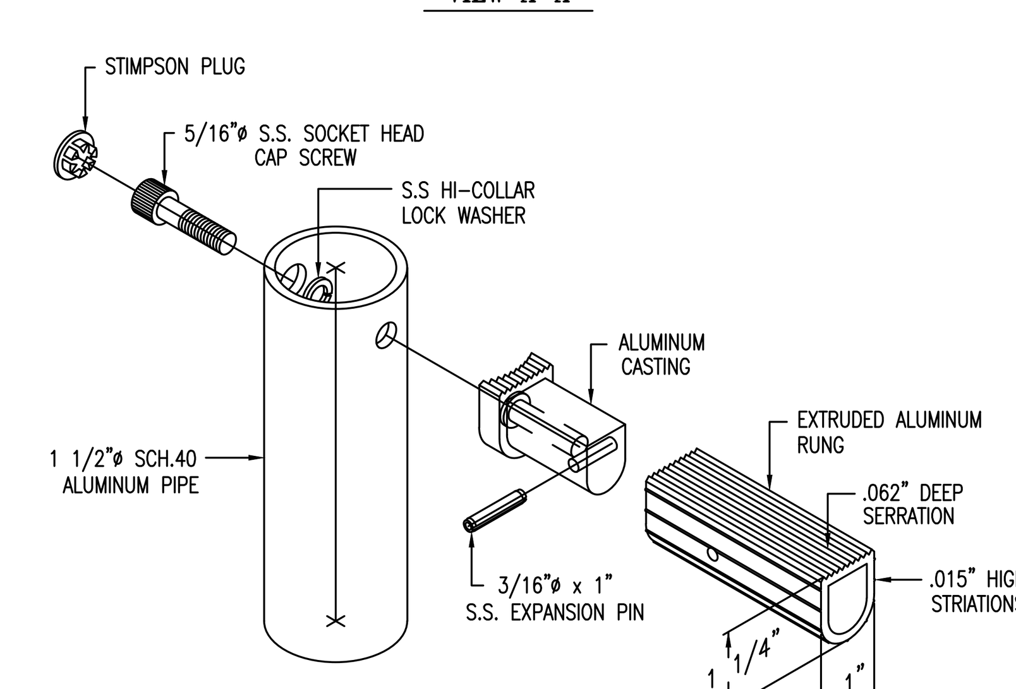
VIEW A-A



SELF CLOSING GATE HINGE



DETAIL OF LADDER BRACKET



DETAIL OF LADDER RUNG

2 M201 ALUMINUM LADDER
SCALE: N.T.S.

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Rev.	Description	Date	Apr.
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CONSTRUCTION PLANS FOR

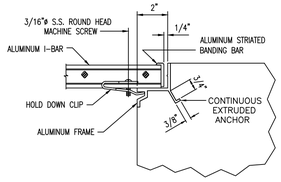
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

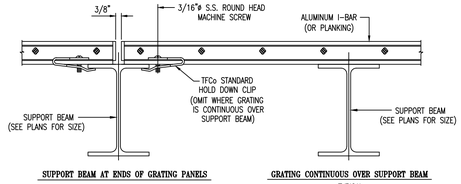
HANDRAIL & LADDER DETAILS

DRAWING NO.

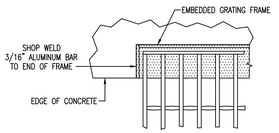
M201



CAST-IN GRATING CHANNEL

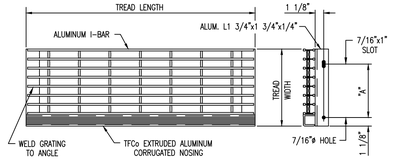


GRATING AT SUPPORT BEAMS



OPEN ENDED GRATING FRAME

LOAD CHART FOR ALUMINUM I-BAR GRATING	
MAXIMUM SPAN	GRATING DEPTH
3'-8"	1 1/4"
4'-2"	1 1/2"
4'-8"	1 3/4"
5'-2"	2"
5'-8"	2 1/4"
6'-2"	2 1/2"
–	AS SPECIFIED ELSEWHERE



STAIR TREAD

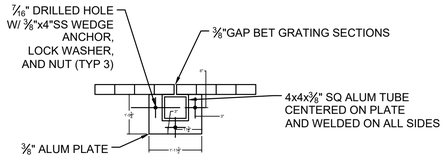
ALUMINUM I-BAR TREADS		
TREAD WIDTH	NUMBER OF BEARING BARS	DIM. A
6 5/8"	5	2 1/2"
7 13/16"	6	4 1/2"
9"	7	4 1/2"
10 3/16"	8	7"
11 3/8"	9	7"
12 9/16"	10	7"

ALUMINUM I-BAR TREADS	
BEARING BAR SIZE	MAXIMUM TREAD LENGTH *
1 1/4"	2'-8"
1 1/2"	3'-6"
1 3/4"	4'-7"
2"	5'-8"

* BASED ON 400 LB. CONCENTRATED LOAD APPLIED ON THE CENTERLINE OF THE SPAN AND DISTRIBUTED OVER THE NOSING & 4 BEARING BARS

SAME TABLE FOR PLANKING TREADS WHEN SPECIFIED ON DRAWINGS

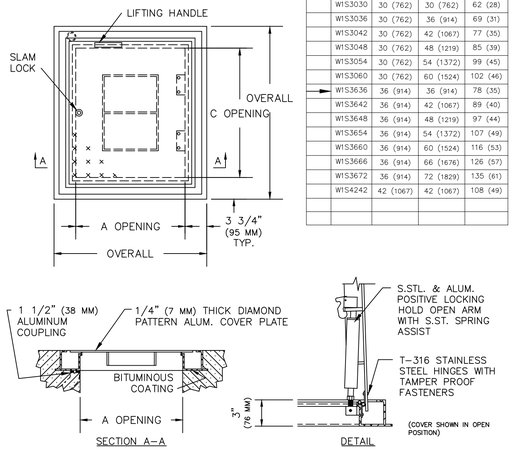
NOTES:
1. MANUFACTURER SHALL DESIGN GRATING FOR UNSUPPORTED SPANS SHOWN IN PLANS.
2. GRATING SHALL SUPPORT A MINIMUM UNIFORM LOAD OF 200 POUNDS PER SQUARE FOOT WITH A DEFLECTION OF NOT MORE THAN $\frac{3}{4}$".
3. MINIMUM GRATING DEPTH SHALL BE 1-1/4" AND SHALL NOT BE LESS THAN THAT INDICATED IN LOAD CHART ABOVE.
4. INSTALL ALUMINUM CLAMPS OR CLIPS TO ANCHOR GRATING TO SUPPORTS. A MINIMUM OF FOUR FASTENERS IS REQUIRED PER PANEL UNLESS OTHERWISE NOTED ON DRAWINGS. CLIPS SHALL NOT PROTRUDE ABOVE THE TOP OF THE GRATING.CUTOUTS FOR CIRCULAR OBSTRUCTION TO BE AT LEAST 2" LARGER IN DIAMETER THAN OBSTRUCTION.CUTOUTS FOR ALL PIPING 4" AND LESS IN DIAMETER TO BE MADE IN FIELD.
5. ALL OPENINGS WHERE MORE THAN FOUR BEARING BARS ARE CUT SHALL BE BANDED WITH BAR THE SAME DEPTH AS THE BEARING BARS. THE ENDS OF ALL GRATING PANELS SHALL BE BANDED.
6. ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR DISSIMILAR METALS SHALL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT.
7. ALUMINUM STAIR TREADS SHALL HAVE ALUMINUM CARRIER ANGLES WELDED TO EACH END.



1 M202 ALUMINUM GRATING
SCALE: N.T.S.

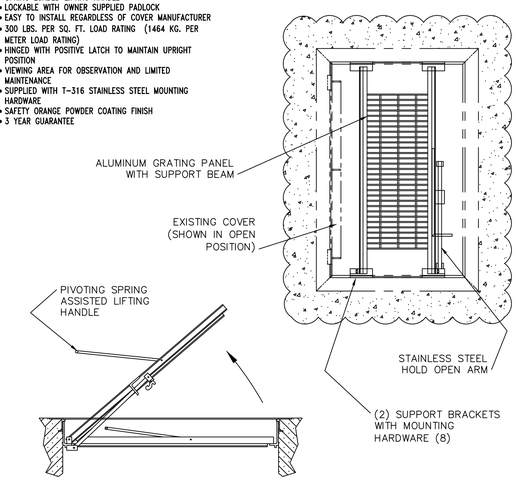
STANDARD FEATURES:
- AUTO-LOCK T-316 STAINLESS STEEL WITH RELEASE HANDLE
- HOLD OPEN ARM
- T-316 STAINLESS STEEL HINGES AND ATTACHING HARDWARE
- T-316 STAINLESS STEEL SLAM LOCK WITH REMOVABLE KEY
- STAINLESS STEEL COMPRESSION SPRING ASSIST
- BUILT-IN NEOPRENE GASKET TO LIMIT THE TRANSMISSION OF ODORS
- NON-OZONE DEPLETING BITUMINOUS COATING
- SINGLE LEAF CONSTRUCTION
- 300 LBS. PER SQ. FT. LOAD RATING (1464 KG. PER SQ. METER LOAD RATING)
- EXTRUDED ALUMINUM CHANNEL FRAME
- RECESSED LIFTING HANDLE
- LIFETIME GUARANTEE

STANDARD SIZES				
QTY.	MODEL NO.	A DIM. INCHES (MM)	C DIM. INCHES (MM)	UNIT WT. LBS. (KG.)
	W1S2424	24 (610)	24 (610)	46 (20)
	W1S2430	24 (610)	30 (762)	51 (23)
	W1S2436	24 (610)	36 (914)	61 (28)
	W1S2442	24 (610)	42 (1067)	77 (35)
	W1S2448	24 (610)	48 (1219)	85 (39)
	W1S3030	30 (762)	30 (762)	62 (28)
	W1S3036	30 (762)	36 (914)	69 (31)
	W1S3042	30 (762)	42 (1067)	77 (35)
	W1S3048	30 (762)	48 (1219)	85 (39)
	W1S3054	30 (762)	54 (1372)	99 (45)
	W1S3060	30 (762)	60 (1524)	102 (46)
	W1S3636	36 (914)	36 (914)	78 (35)
	W1S3642	36 (914)	42 (1067)	89 (40)
	W1S3648	36 (914)	48 (1219)	97 (44)
	W1S3654	36 (914)	54 (1372)	107 (49)
	W1S3660	36 (914)	60 (1524)	116 (53)
	W1S3666	36 (914)	66 (1676)	126 (57)
	W1S3672	36 (914)	72 (1829)	135 (61)
	W1S4242	42 (1067)	42 (1067)	108 (49)



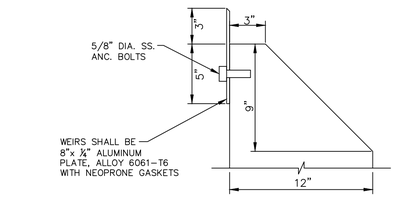
2 M202 VAULT ACCESS COVER
SCALE: N.T.S.

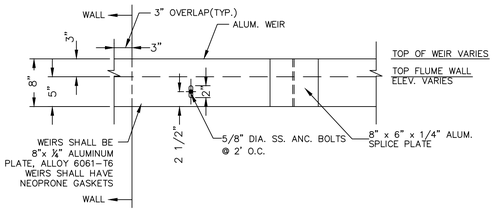
STANDARD FEATURES:
- ALUMINUM "I" BAR CONSTRUCTION
- T-316 STAINLESS STEEL HARDWARE
- SPRING LOADED LIFTING HANDLE
- LOCKABLE WITH OWNER SUPPLIED PADLOCK
- EASY TO INSTALL REGARDLESS OF COVER MANUFACTURER
- 300 LBS. PER SQ. FT. LOAD RATING (1464 KG. PER METER LOAD RATING)
- HINGED WITH POSITIVE LATCH TO MAINTAIN UPRIGHT POSITION
- VIEWING AREA FOR OBSERVATION AND LIMITED MAINTENANCE
- SUPPLIED WITH T-316 STAINLESS STEEL MOUNTING HARDWARE
- SAFETY ORANGE POWDER COATING FINISH
- 3 YEAR GUARANTEE



APPLICATIONS:
THE SERIES X RETRO-GRATE IS A HINGED ALUMINUM GRATING PANEL THAT IS EASILY INSTALLED BENEATH EXISTING ACCESS COVERS REGARDLESS OF THE ORIGINAL COVER MANUFACTURER. THE RETRO-GRATE PROVIDES ADDITIONAL PROTECTION AGAINST FALL THROUGH ACCIDENTS WHEN THE COVER IS LEFT IN THE OPEN POSITION. THE UNIT IS LOCKABLE BY AN OWNER SUPPLIED PADLOCK AND INCORPORATES A SPRING ASSISTED LIFTING HANDLE THAT POSITIONS THE HANDLE NEAR THE SLAB LEVEL. THE UNIT IS SUPPLIED WITH T-316 STAINLESS STEEL MOUNTING HARDWARE AND AN AUTOMATIC HOLD OPEN ARM WITH ALUMINUM RELEASE LATCH. THE RETRO-GRATE IS DESIGNED TO BE INSTALLED BY MOUNTING THE SUPPORT BRACKETS TO EITHER THE EXISTING FRAMEWORK OR TO THE CONCRETE SLAB BELOW THE FRAMEWORK.

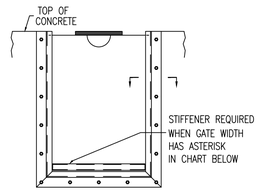
3 M202 SAFE HATCH - RETRO GRATE
SCALE: N.T.S.



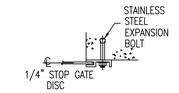


NOTES:
1. WEIRS SHALL BE WATERTIGHT.
2. GAPS IN PLATES SHALL NOT EXCEED $\frac{1}{16}$"
3. HIGH PERFORMANCE SEALANTS MAY BE USED FOR WATERTIGHT SEAL, AND WILL BE SUBJECT TO REVIEW OF ENGINEER.
4. THIS DETAIL DOES NOT APPLY TO THE CLARIFIERS

4 M202 STRAIGHT WEIR
SCALE: N.T.S.



FACE-MOUNTED STOP GATE



SECTION THRU STOP GATE TYPE 100

SELECTION GUIDE

Disc Thickness= 0.25 inch Disc Height= 36 inches

HEAD= 6 INCHES				
WIDTH (inches)	STRESS (lbs)	DEFLECTION (inches)	LIFT FORCE with U-BARS	LIFT FORCE w/out U-BARS
12	0.37	0.00	11.56	19.99
18	0.84	0.02	17.34	29.98
24	1.50	0.07	23.12	39.97
30 *	0.07	0.000	33.96	55.02
36 *	0.10	0.001	40.76	66.03
42 *	0.13	0.001	47.55	(77.03)
48 *	0.17	0.002	54.34	(88.04)

HEAD= 12 INCHES				
WIDTH (inches)	STRESS (lbs)	DEFLECTION (inches)	LIFT FORCE with U-BARS	LIFT FORCE w/out U-BARS
12	0.75	0.01	14.37	48.07
18	1.68	0.05	21.55	72.10
24 *	0.56	0.000	32.79	(96.13)
30 *	0.14	0.001	40.98	(120.16)
36 *	0.19	0.002	49.18	(144.19)
42 *	0.27	0.003	57.38	(168.22)
48 *	0.35	0.005	65.57	(192.26)

HEAD= 18 INCHES				
WIDTH (inches)	STRESS (lbs)	DEFLECTION (inches)	LIFT FORCE with U-BARS	LIFT FORCE w/out U-BARS
12	1.12	0.01	19.05	(144.19)
18	2.53	0.07	28.57	(216.29)
24 *	0.13	0.000	42.15	(288.38)
30 *	0.20	0.001	52.68	(360.48)
36 *	0.29	0.002	63.22	(432.58)
42 *	0.40	0.004	73.76	(504.67)
48 *	0.53	0.006	73.76	(576.77)

HEAD= 24 INCHES				
WIDTH (inches)	STRESS (lbs)	DEFLECTION (inches)	LIFT FORCE with U-BARS	LIFT FORCE w/out U-BARS
12	1.50	0.02	25.60	(256.32)
18	3.37	0.09	38.40	(384.50)
24 *	0.17	0.001	55.25	(512.64)
30 *	0.27	0.002	69.06	(640.80)
36 *	(NO)	(NO)	(NO)	(768.96)
42 *	(NO)	(NO)	(NO)	(897.12)
48 *	(NO)	(NO)	(NO)	(1025.28)

* Deflection at the bottom of the disc to be limited to 3/32". Stiffener required for deflection where noted with an asterisk (*).

* Lifting force to be limited to 75 pounds. Numbers in shaded areas exceed limits--do not use.

5 M202 STOP GATE DETAIL
SCALE: N.T.S.

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COA No. PEFO000615 | Exp. 06/30/2024

GEORGIA REGISTERED No. 34666 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date
8	---	---
7	---	---
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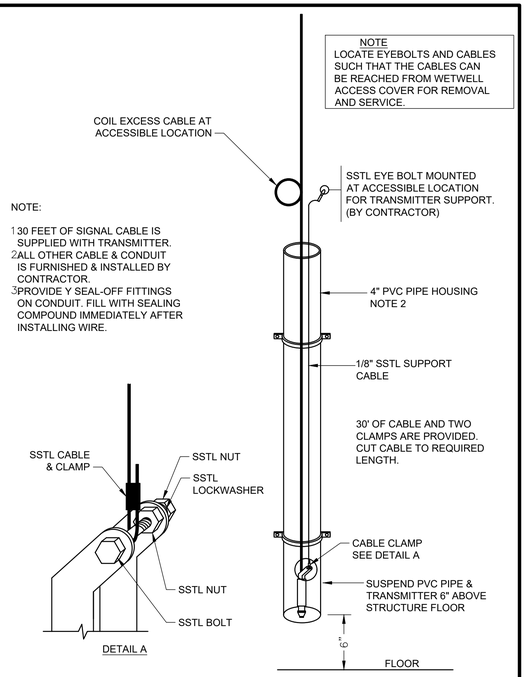
1	ISSUED FOR BID	4/12/24

Drawn by: MGW | Check by: DLO | Design by: DLO | Review by: DLO
Date: 4/11/24 | Project #: 1.521.2201
SCALE: AS SHOWN

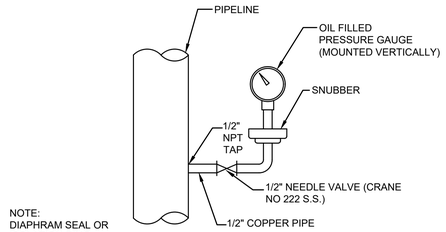
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

GRATING & HATCH DETAILS

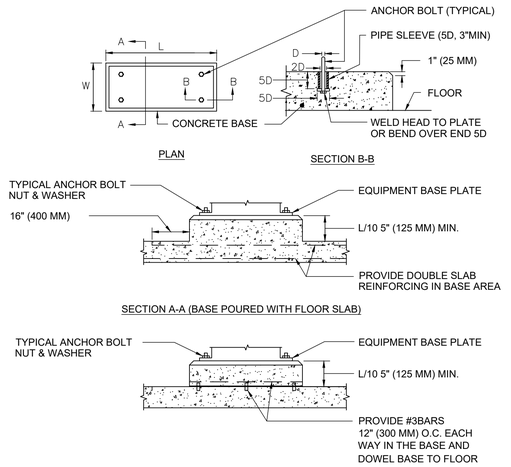
DRAWING NO.
M202



1 M203 PRESSURE TRANSMITTER
SCALE: N.T.S.



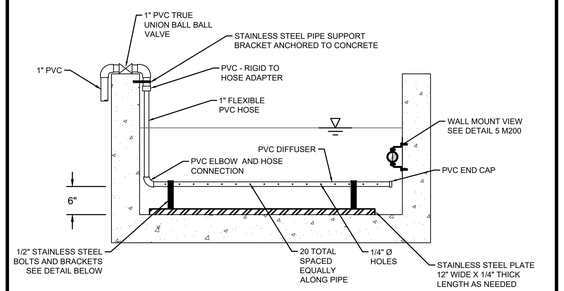
2 M203 TYPICAL PRESSURE GAUGE DETAIL
SCALE: N.T.S.



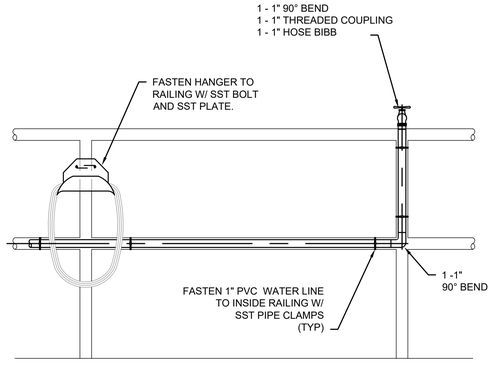
NOTES:

1. L AND W DIMENSIONS SHALL BE 6 IN. (150 MM) GREATER THAN THE EQUIPMENT BASE PLATE.

3 M203 CONCRETE EQUIPMENT BASES
SCALE: N.T.S.

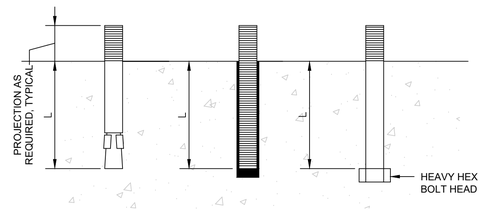


4 M203 CHEMICAL DIFFUSER DETAIL
SCALE: N.T.S.



NOTE:
HANGER TO BE SUPPLIED W/ 100' OF ¾" HEAVY DUTY HOSE AND ONE SPRAY NOZZLE, ELEY MODEL SP-1181.

5 M203 HOSE BIBB & HANGER DETAIL
SCALE: N.T.S.



MINIMUM EMBEDMENT LENGTH, L			
DIAMETER	WEDGE ANCHOR	ADHESIVE ANCHOR	CAST IN ANCHOR
3/8"	4 1/4"	4 1/2"	4 1/2"
1/2"	6"	6"	6"
5/8"	7"	7 1/2"	7 1/2"
3/4"	8"	9"	9"
7/8"	8"	10 1/2"	10 1/2"
1"	9"	12"	12"
1 1/8"	–	–	13 1/2"
1 1/4"	–	–	15"
1 1/2"	–	–	18"

NOTES:
1. MINIMUM EMBEDMENT LENGTH SHALL BE BY SCHEDULE UNLESS INDICATED OTHERWISE ON DRAWINGS.
2. DO NOT TIGHTEN CAST IN ANCHOR UNTIL CONCRETE HAS ACHIEVED SPECIFIED 28 DAY STRENGTH.
3. SEE "DRILLING IN CONCRETE/CONCRETE--CAST-IN-PLACE" FOR DRILLING REQUIREMENTS FOR WEDGE ANCHORS AND ADHESIVE ANCHORS.
4. DO NOT USE WEDGE ANCHORS AT CONCRETE MASONRY WALLS.
5. ALL ANCHORS SHALL BE STAINLESS STEEL UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

6 M203 CONCRETE ANCHORS
SCALE: N.T.S.

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GEORGIA REGISTERED No. PE036644 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-22

Rev.	Description	Date
8	---	---
7	---	---
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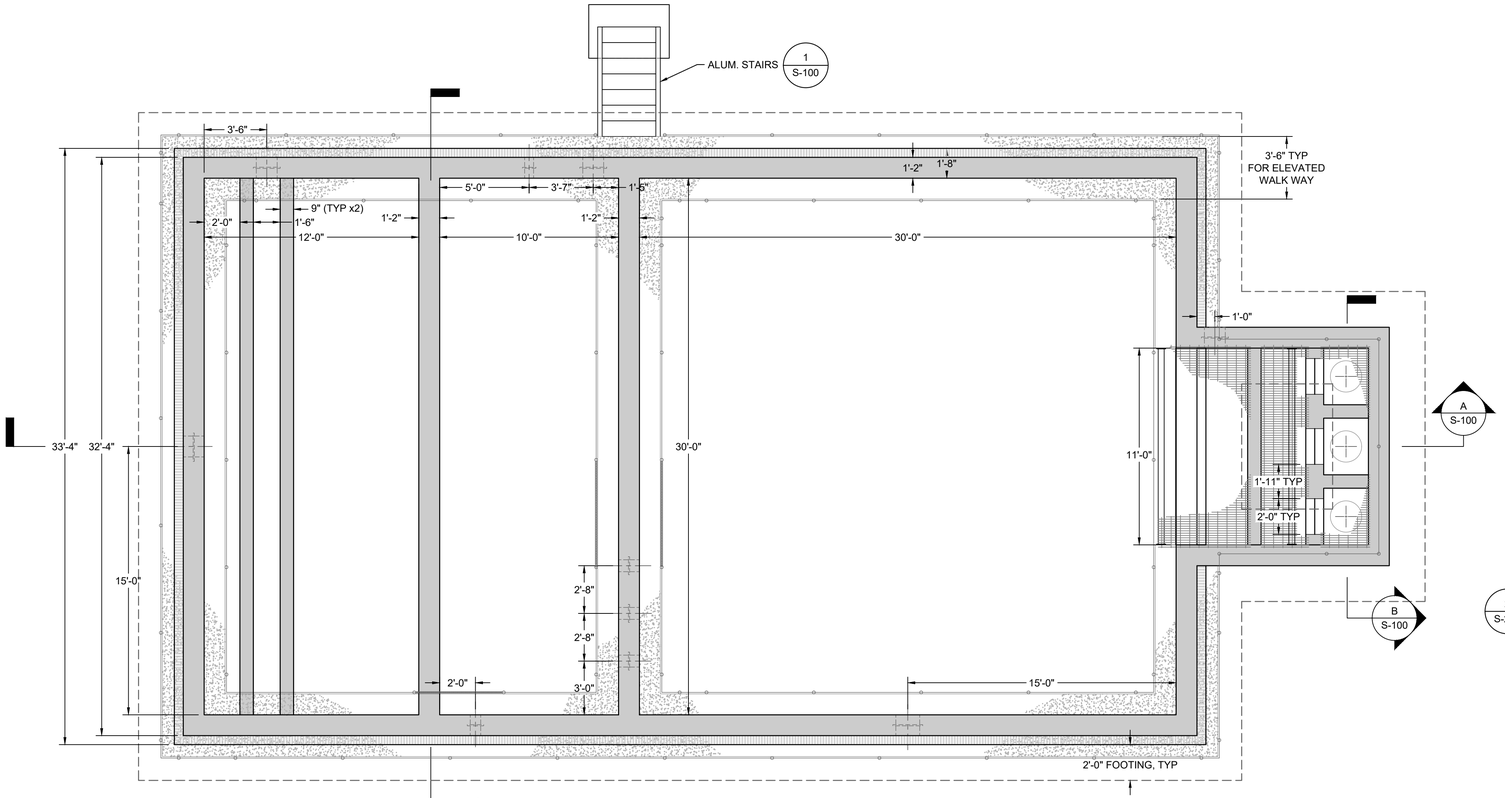
1	ISSUED FOR BID	4/12/24

Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Date: 4/11/24
Project #: 1521.2201
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

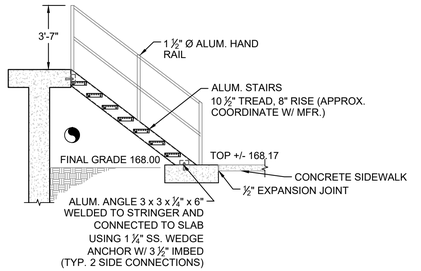
MISCELLANEOUS MECHANICAL DETAILS

DRAWING NO.
M203

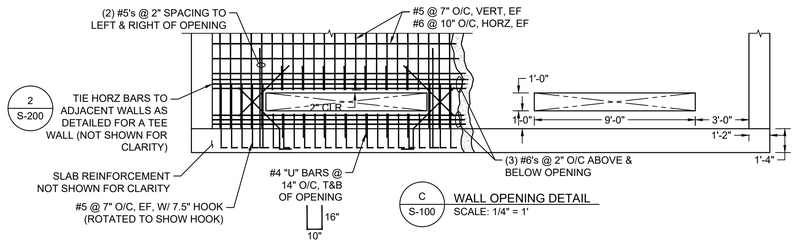


STAGED REACTOR PLAN VIEW

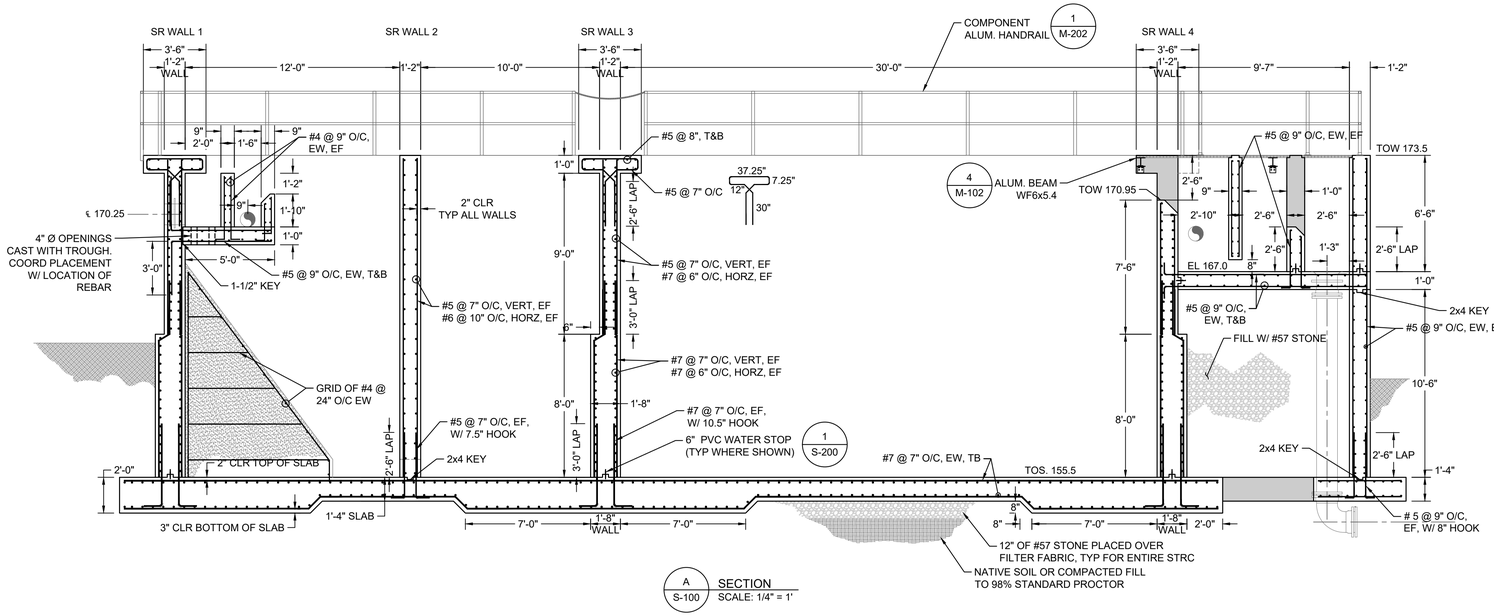
SCALE: 1/4" = 1'-0"



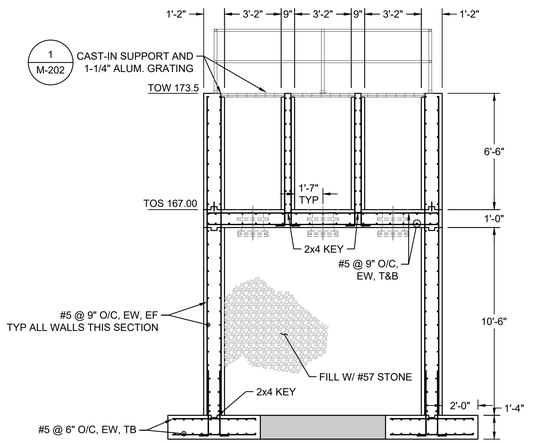
1 S-100 STAIRS DETAIL
SCALE: 1/4" = 1"



C S-100 WALL OPENING DETAIL
SCALE: 1/4" = 1'



A S-100 SECTION
SCALE: 1/4" = 1'



B S-100 SECTION
SCALE: 1/2" = 1'

NOTES:
1. REINFORCEMENT AND DIMENSIONS SHOWN FOR SR WALL 3 IS TYP FOR SR WALL 1, 3, AND 4.
2. IF NOT SPECIFIED ON THIS SHEET, LAP AND HOOK LENGTHS SHALL BE AS SHOWN IN DETAIL 6, SHEET S-200.
3. CORNER REINFORCEMENT SHALL BE PROVIDED IN ACCORDANCE W/ DETAIL 2, SHEET S-200.
4. SEE MECHANICAL PLANS FOR CONNECTING PIPE LOCATIONS AND DIAMETERS.
5. COORDINATE PLACEMENT OF ALUM. HANDRAILS WITH OTHER COMPONENTS SHOWN ON MECHANICAL SHEETS.

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COA No. PEOC005628 | Exp: 06/30/2024

GEORGIA REGISTERED PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

Rev.	Description	Date	Apv.
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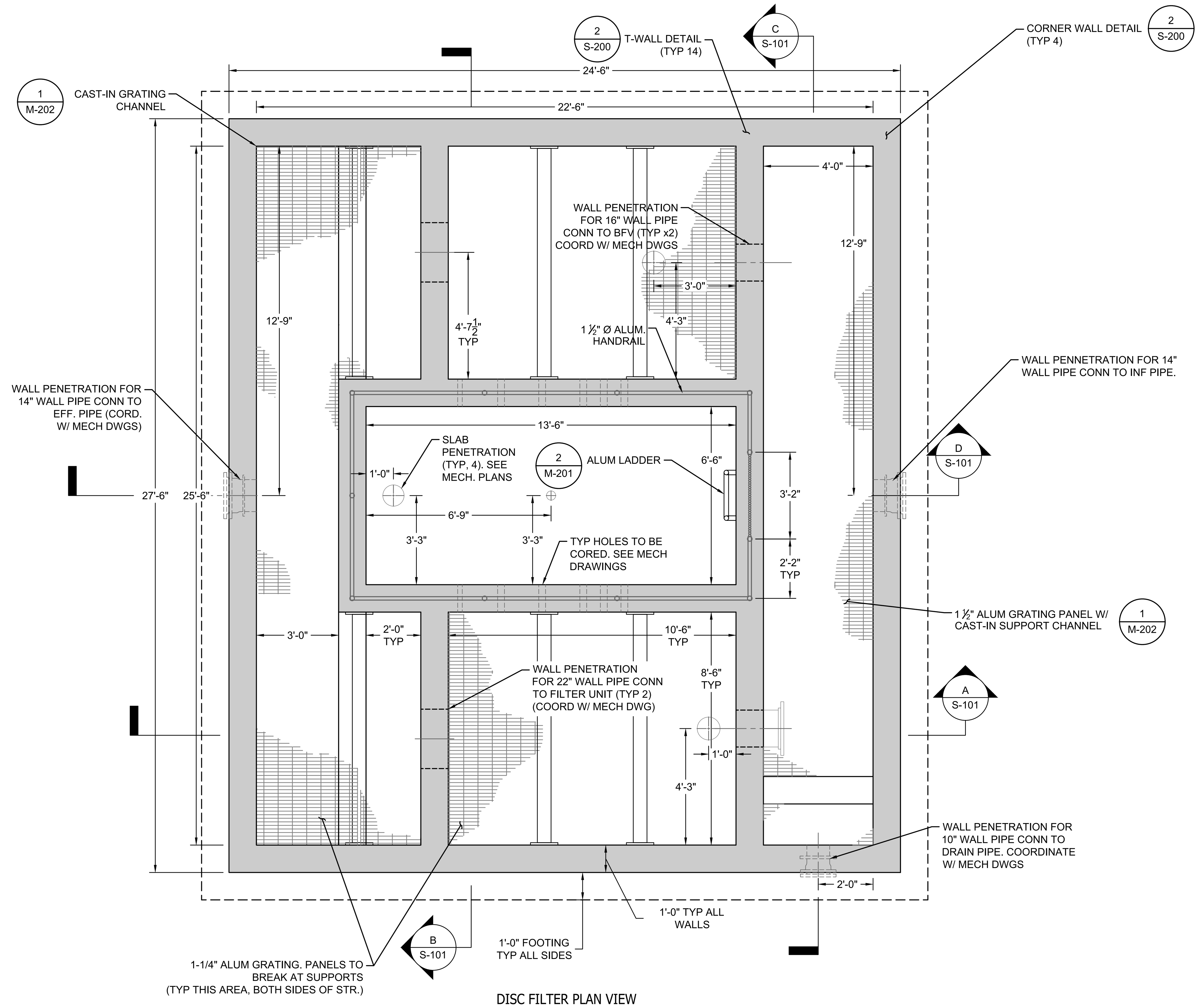
3	---	---	---
2	---	---	---
1	ISSUED FOR BID	4/12/24	---

Drawn by: MGW | Check by: DLO
Design by: DLO | Review by: DLO
Project #: 1521.2201
Date: 4/11/24
SCALE: AS SHOWN

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

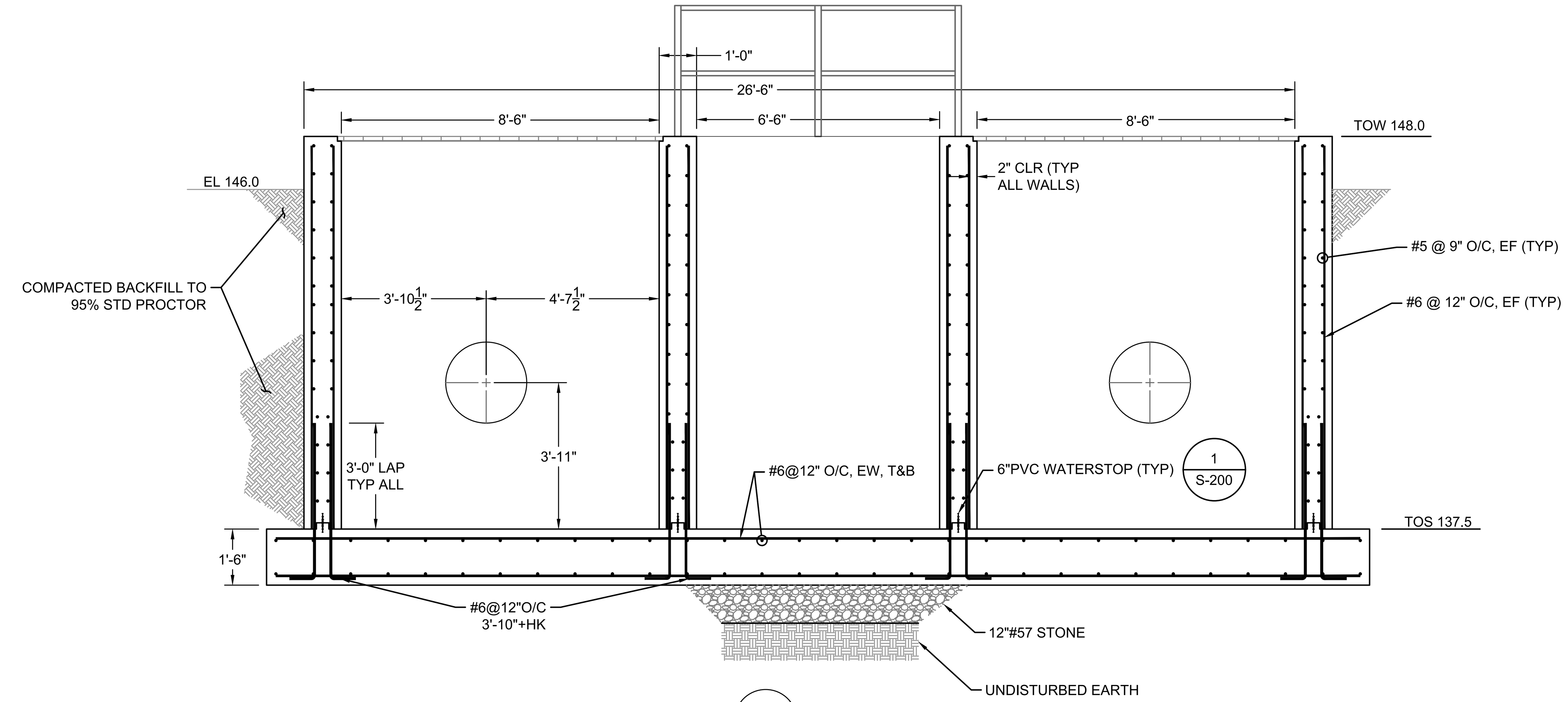
STAGED REACTOR STRUCTURAL PLAN

DRAWING NO.
S100



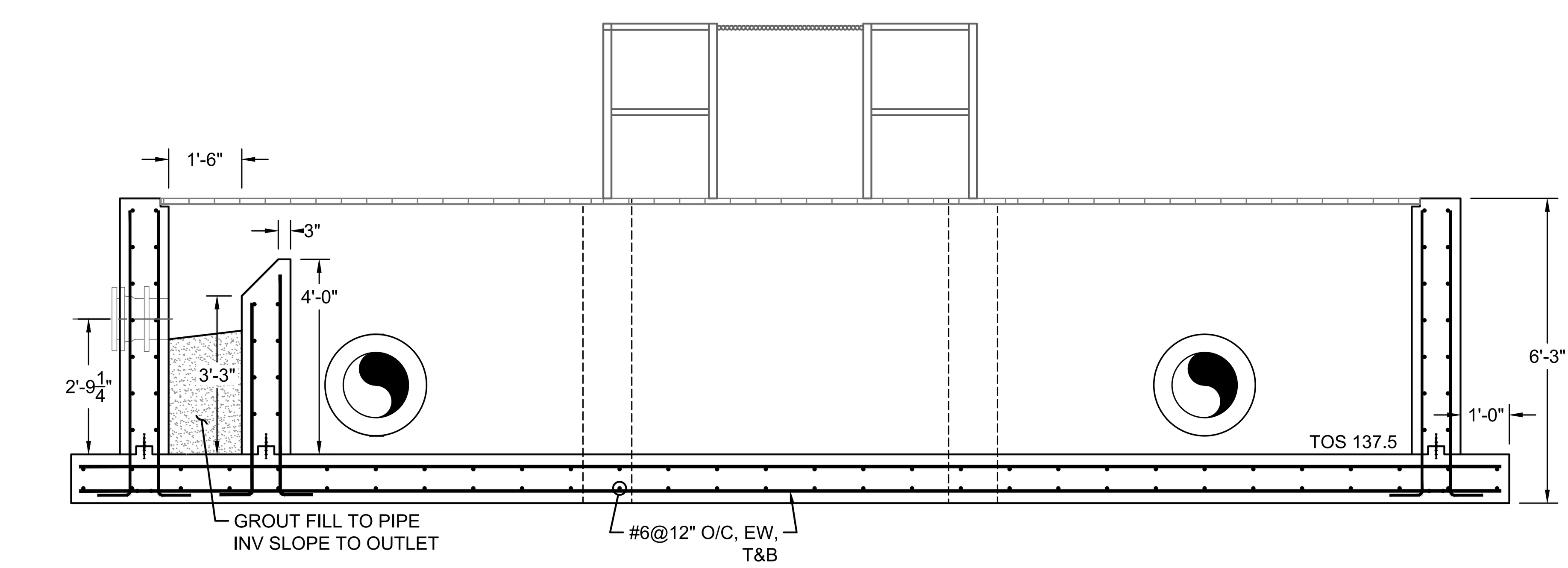
DISC FILTER PLAN VIEW

SCALE: 3/8" = 1'



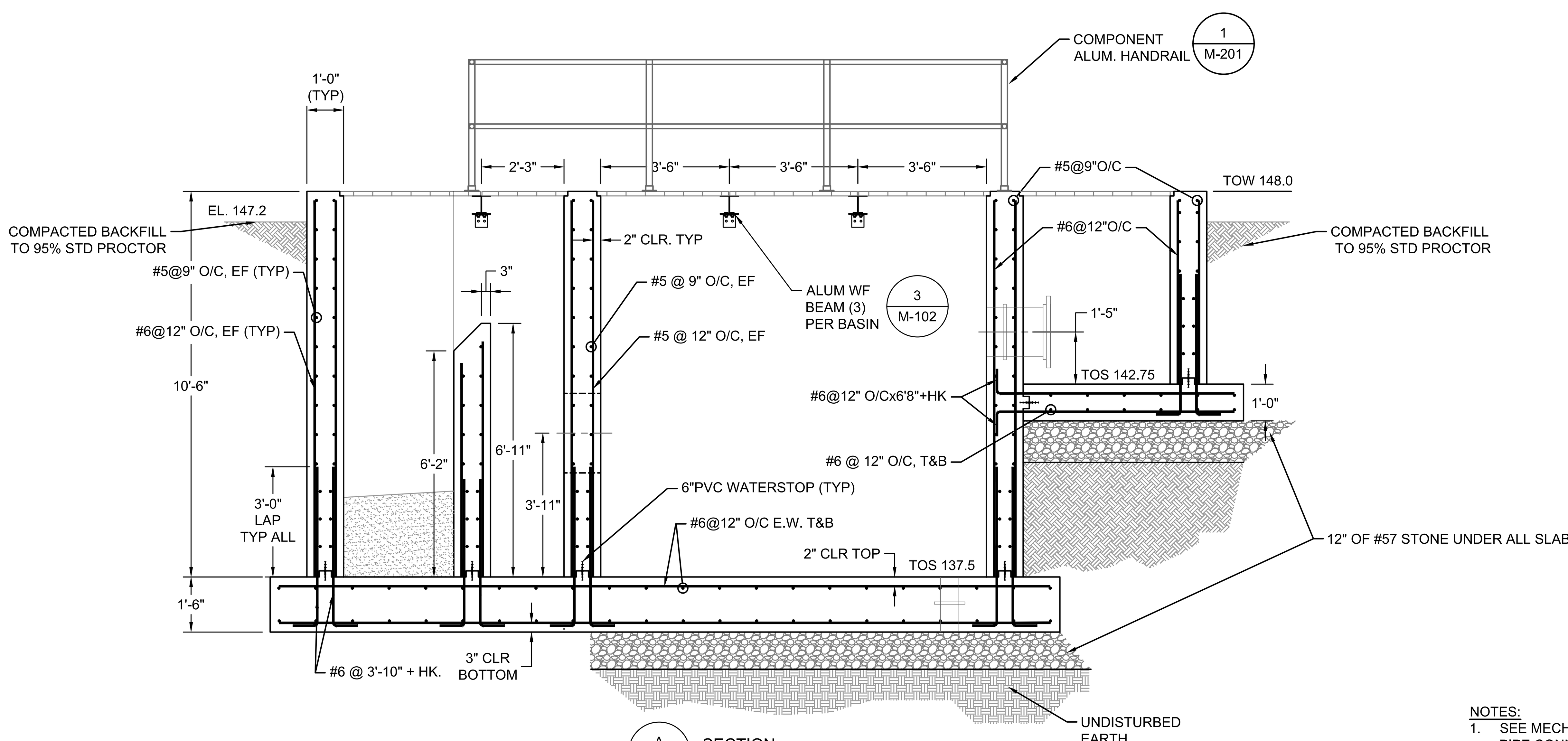
B S-101 SECTION

SCALE: 3/8" = 1'



C S-101 SECTION

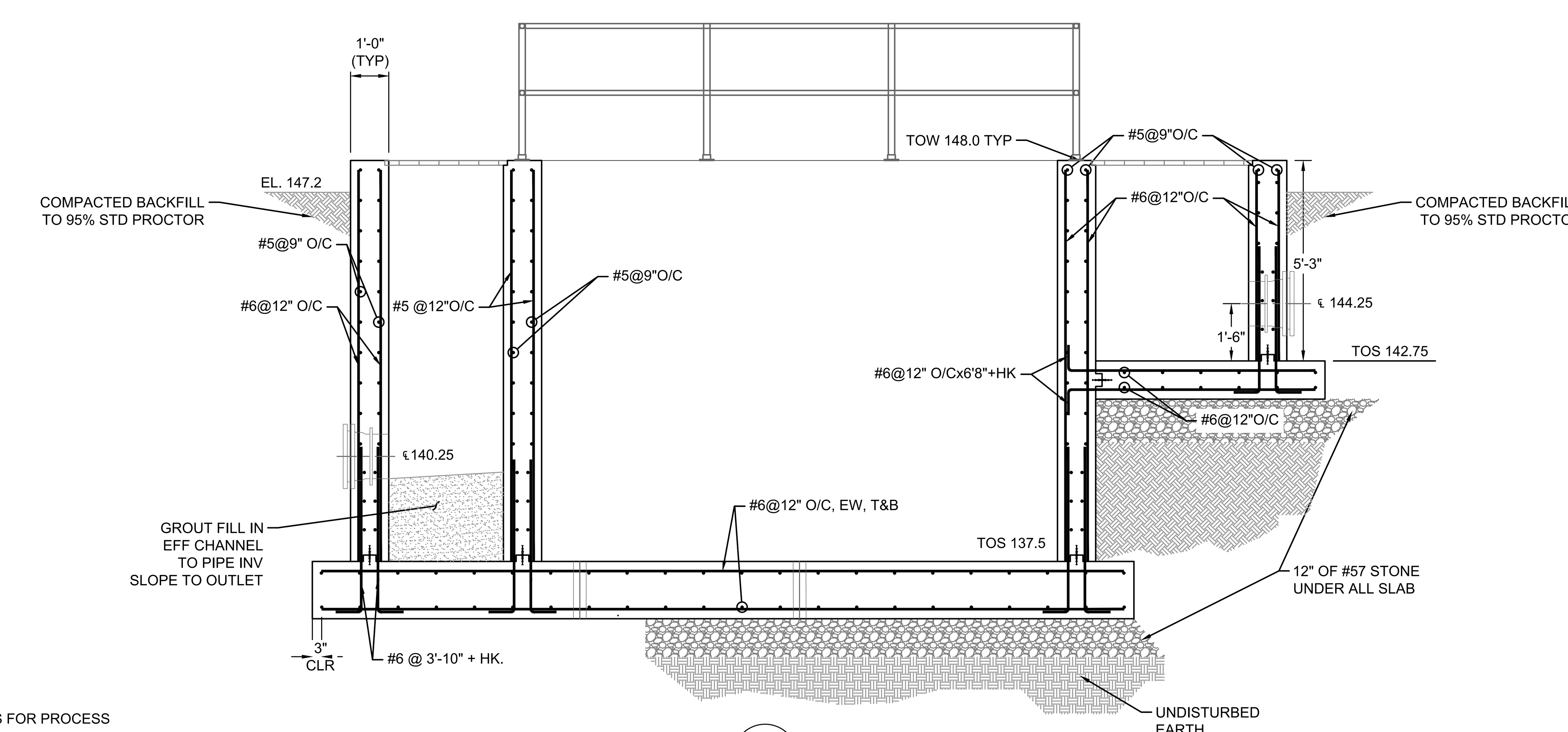
SCALE: 3/8" = 1'



A S-101 SECTION

SCALE: 3/8" = 1'

NOTES:
1. SEE MECHANICAL PLANS FOR PROCESS PIPE CONNECTIONS.
2. ALL WALLS TO RECIEVE CHAMFER ON TOP EDGE, SEE DETAIL 5 ON S-200.



D S-101 SECTION

SCALE: 3/8" = 1'

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1	ISSUED FOR BID	4/12/24	...

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Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 3/8" = 1'

CONSTRUCTION PLANS FOR

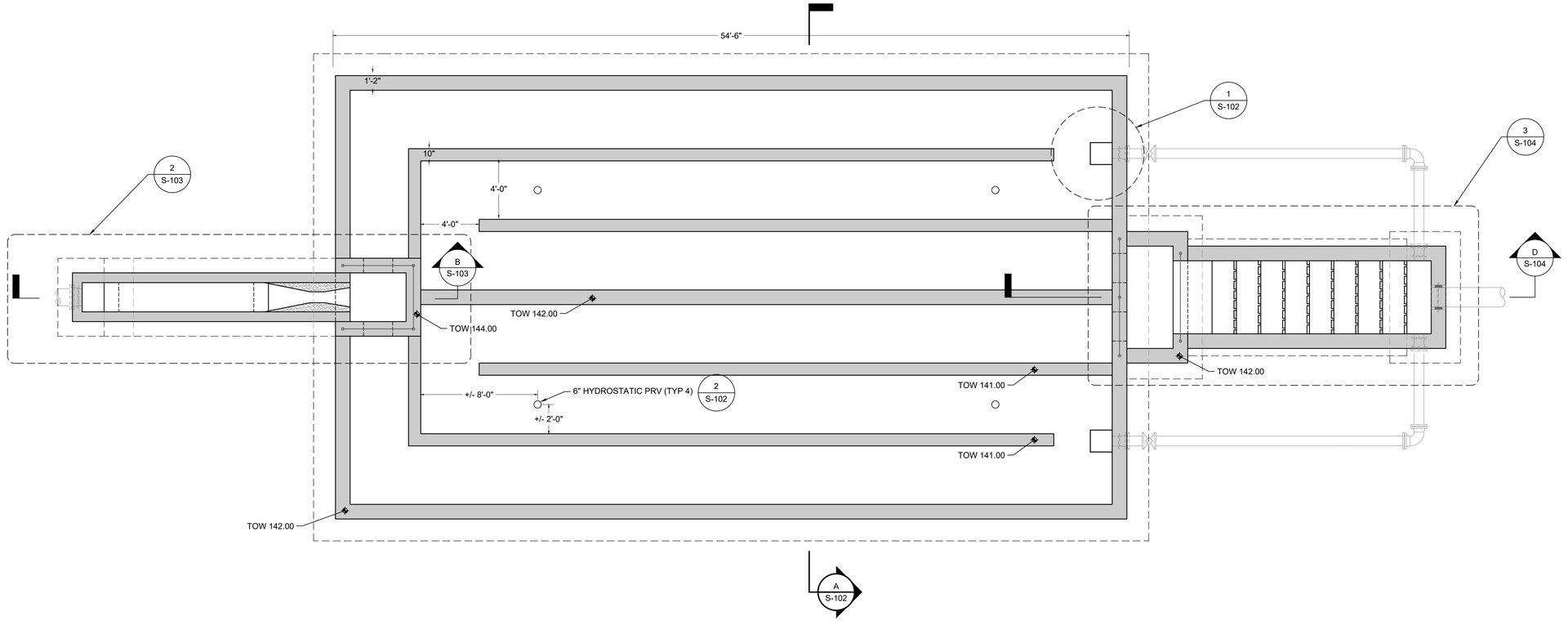
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

DISC FILTER STRUCTURAL PLANS

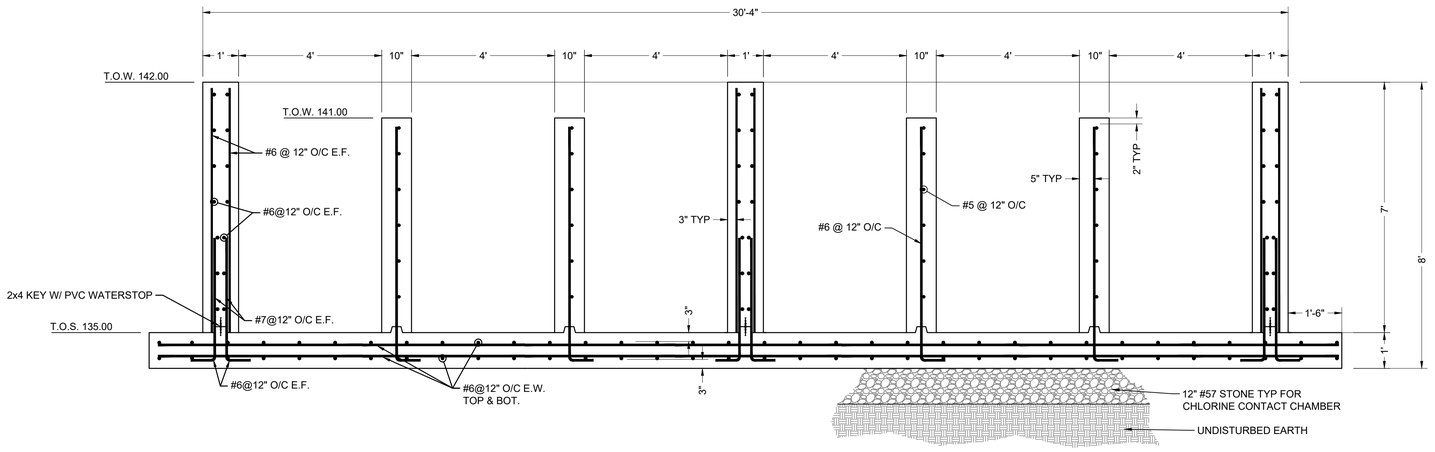
DRAWING NO.

S101



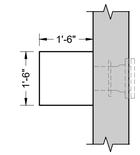
CHLORINE CONTACT CHAMBER PLAN VIEW

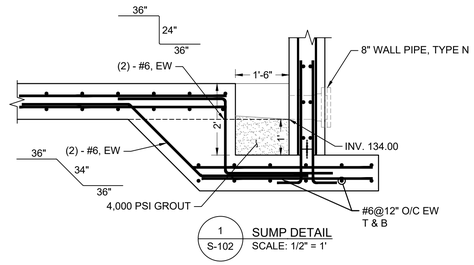
SCALE: 1/4" = 1'



A S-102 CHLORINE CONTACT CHAMBER SECTION

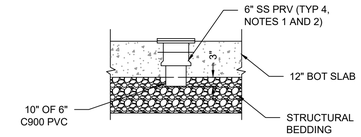
SCALE: 1/2" = 1'





1 S-102 SUMP DETAIL

SCALE: 1/2" = 1'



NOTES:

1. PROVIDE TRUMBULL MANUFACTURING MODEL NUMBER 1367-1544.
2. COORDINATE EXACT PRV LOCATION FOR UN-INTERRUPTED REBAR PLACEMENT

2 S-102 PRV DETAIL

SCALE: 1/2" = 1'

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GEORGIA REGISTERED No. 34111 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

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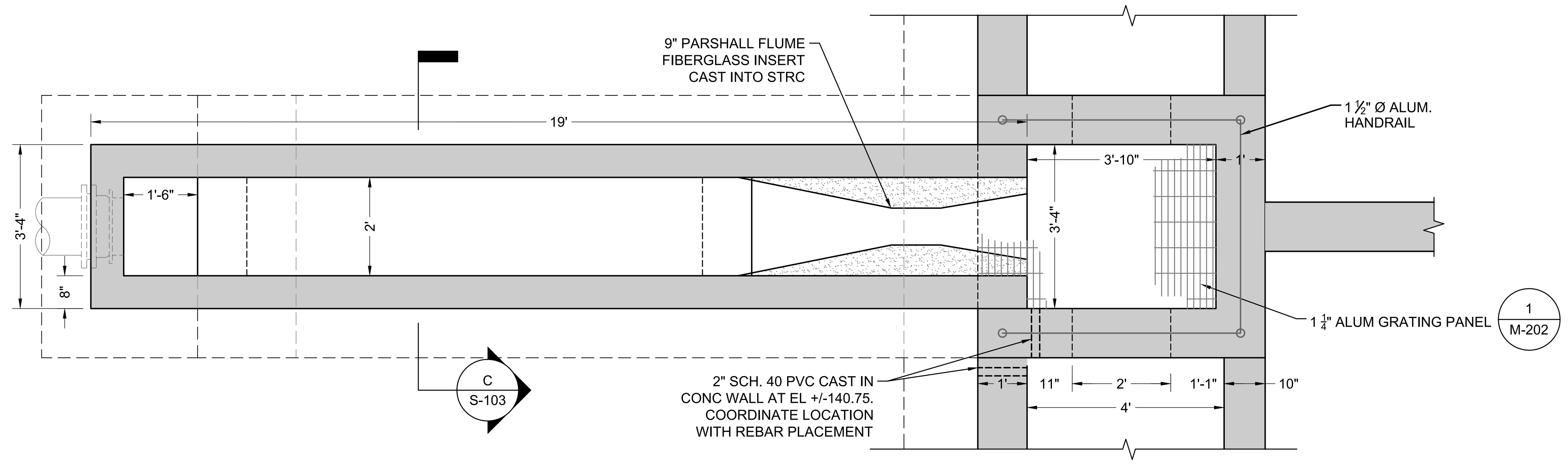
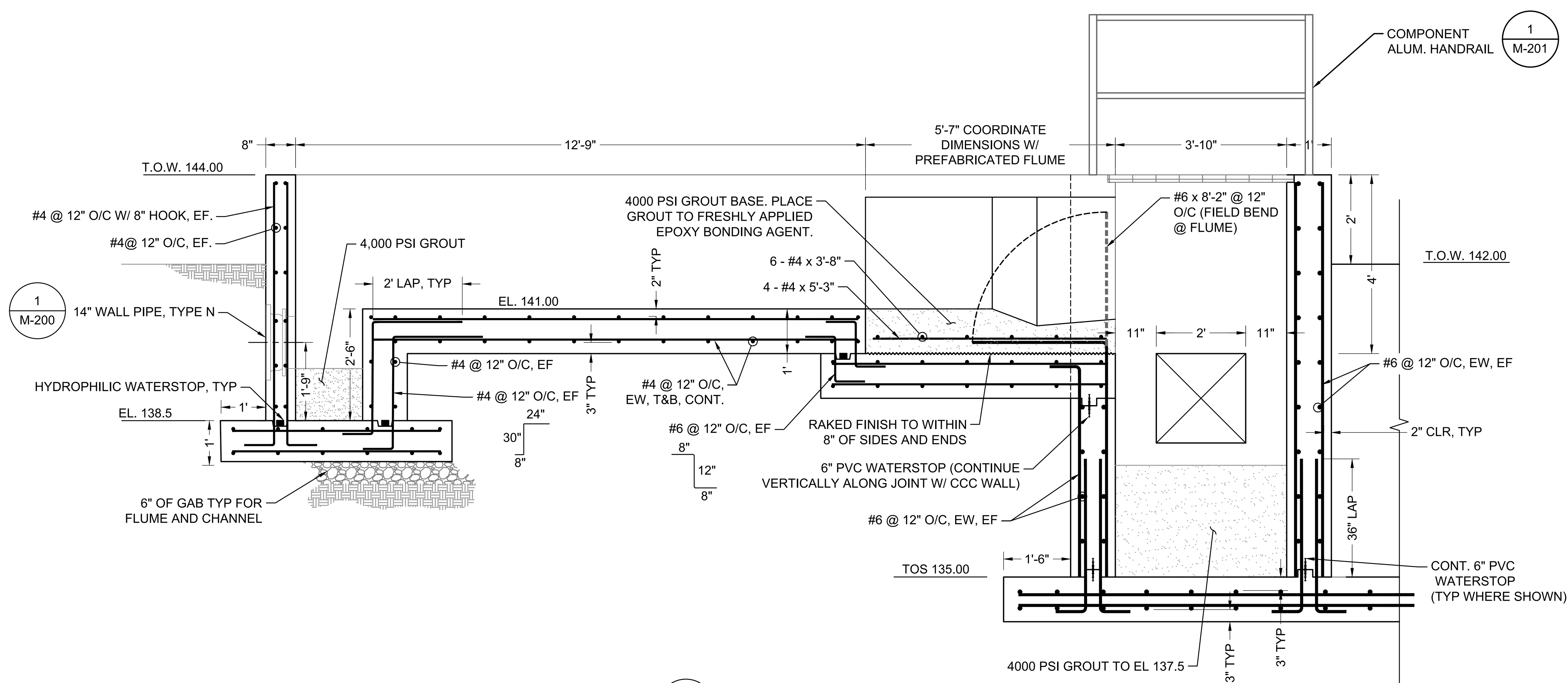
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PARSHALL FLUME, CHLORINE CONTACT CHAMBER, & CASCADE AERATION STRUCTURAL PLANS AND SECTIONS

DRAWING NO.
S102

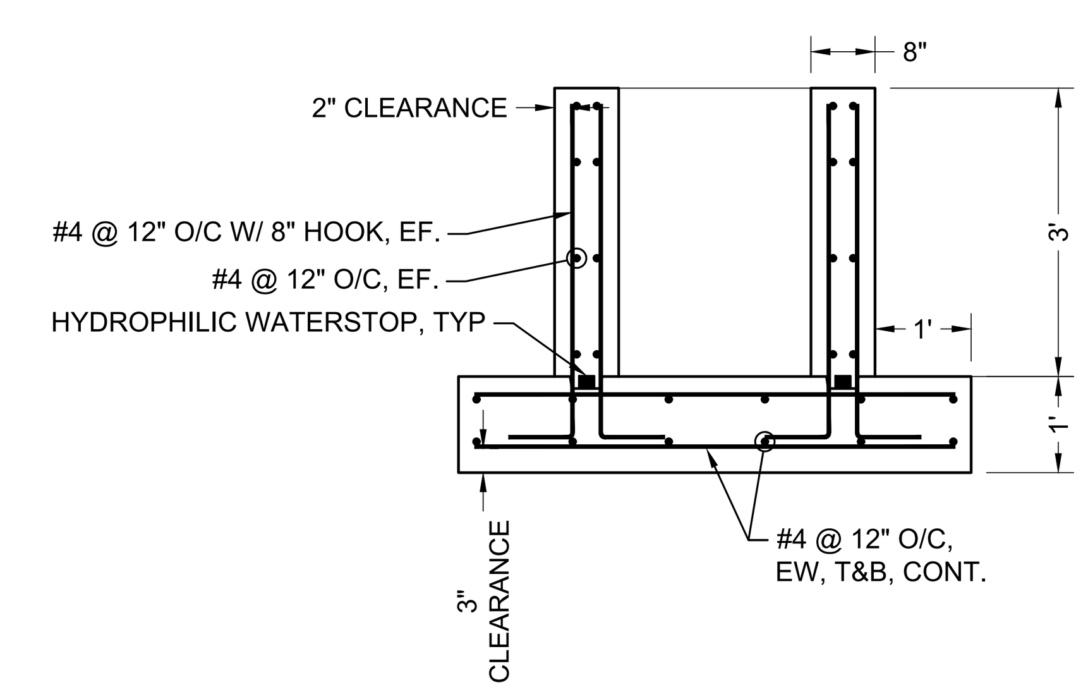


2 S-103 PARSHALL FLUME DETAIL
SCALE: 1/2" = 1'



B S-103 PARSHALL FLUME SECTION
SCALE: 1/2" = 1'

NOTE:
1. FOLLOW MFR INSTALLATION INSTRUCTIONS FOR PARSHALL FLUME INSERT.



C S-103 CHANNEL SECTION
SCALE: 1/2" = 1'

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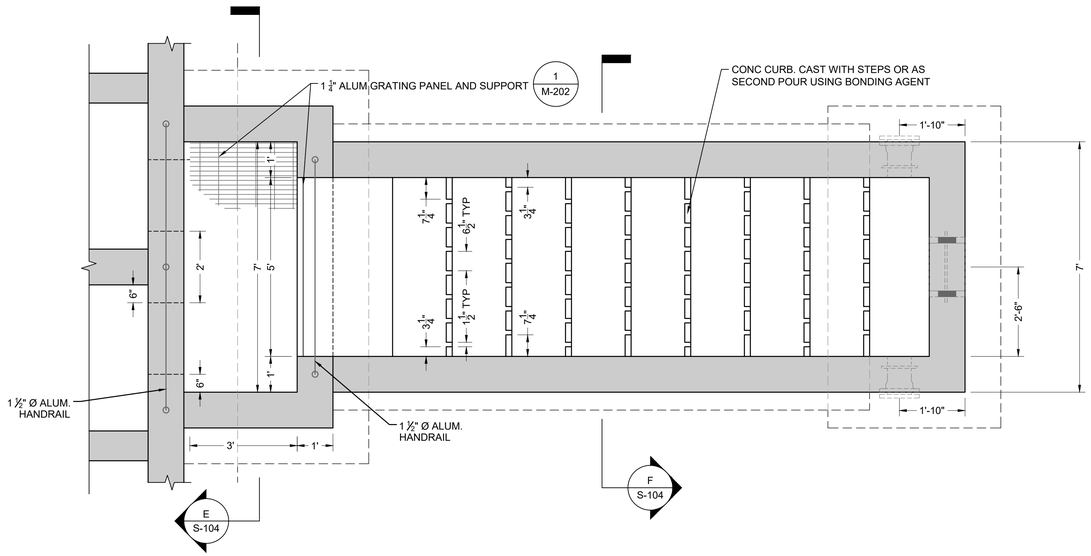
Project #: 1521.2201 | Design by: DLO | Review by: DLO
SCALE: 1/2" = 1'

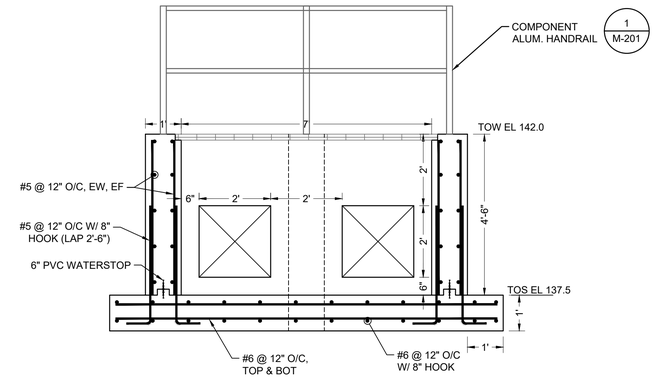
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

PARSHALL FLUME STRUCTURAL PLANS AND SECTIONS

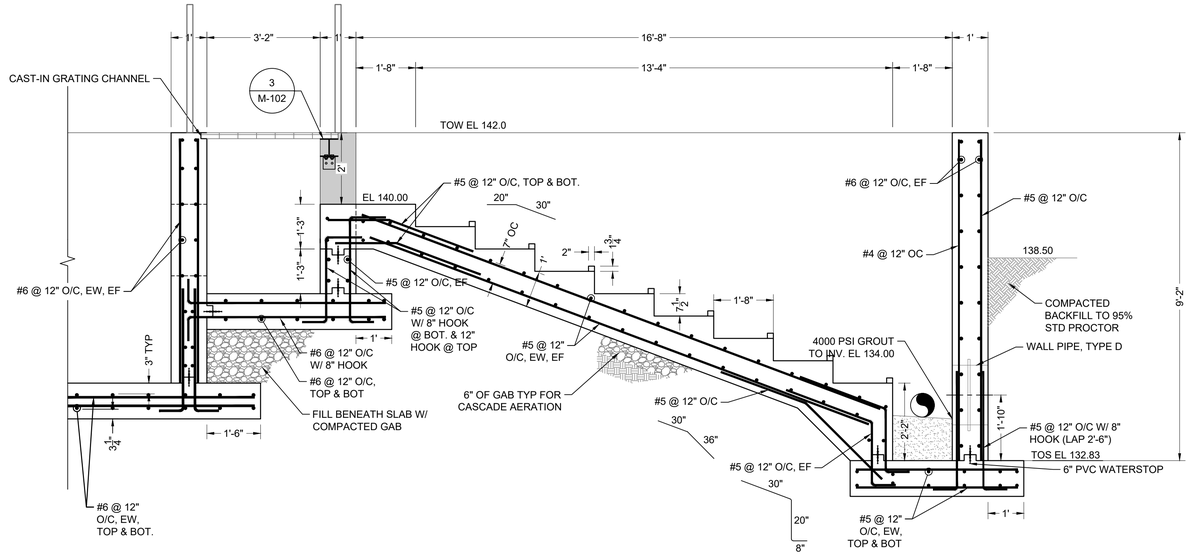
DRAWING NO.
S103



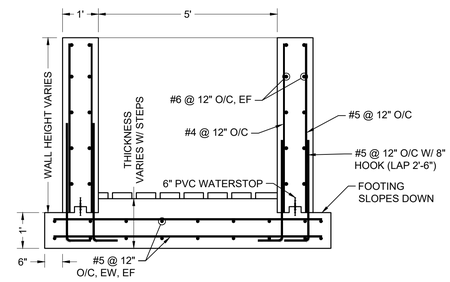
3 S-104 CASCADE AERATION DETAIL
SCALE: 1/2" = 1'



E S-104 SECTION
SCALE: 1/2" = 1'



D S-104 CASCADE AERATION SECTION
SCALE: 1/2" = 1'



F S-104 SECTION
SCALE: 1/2" = 1'

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GEORGIA REGISTERED No. 31161 PROFESSIONAL ENGINEER DAVIS OZIER 11-14-24

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Date: 4/11/24
Project #: 1521.2201
SCALE: 1/2" = 1'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

CASCADE AERATION STRUCTURAL PLANS AND SECTIONS

DRAWING NO.
S104

40'-0" DIA. DIGESTER PLAN VIEW

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

NOTES:

1. WALL POUR #2 SEGMENTS SHALL BE CAST NO SOONER THAN 7 DAYS AFTER WALL POUR #1 SEGMENTS HAVE BEEN PLACED.
2. ALL WALLS TO RECIEVE CHAMFER ON TOP EDGE, SEE DETAIL 5 ON S-200.

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4/11/24	MGW	DLO
Project #: 1521.2201	Design by: DLO	Review by: DLO

SCALE: 3/8" = 1'

CONSTRUCTION PLANS FOR

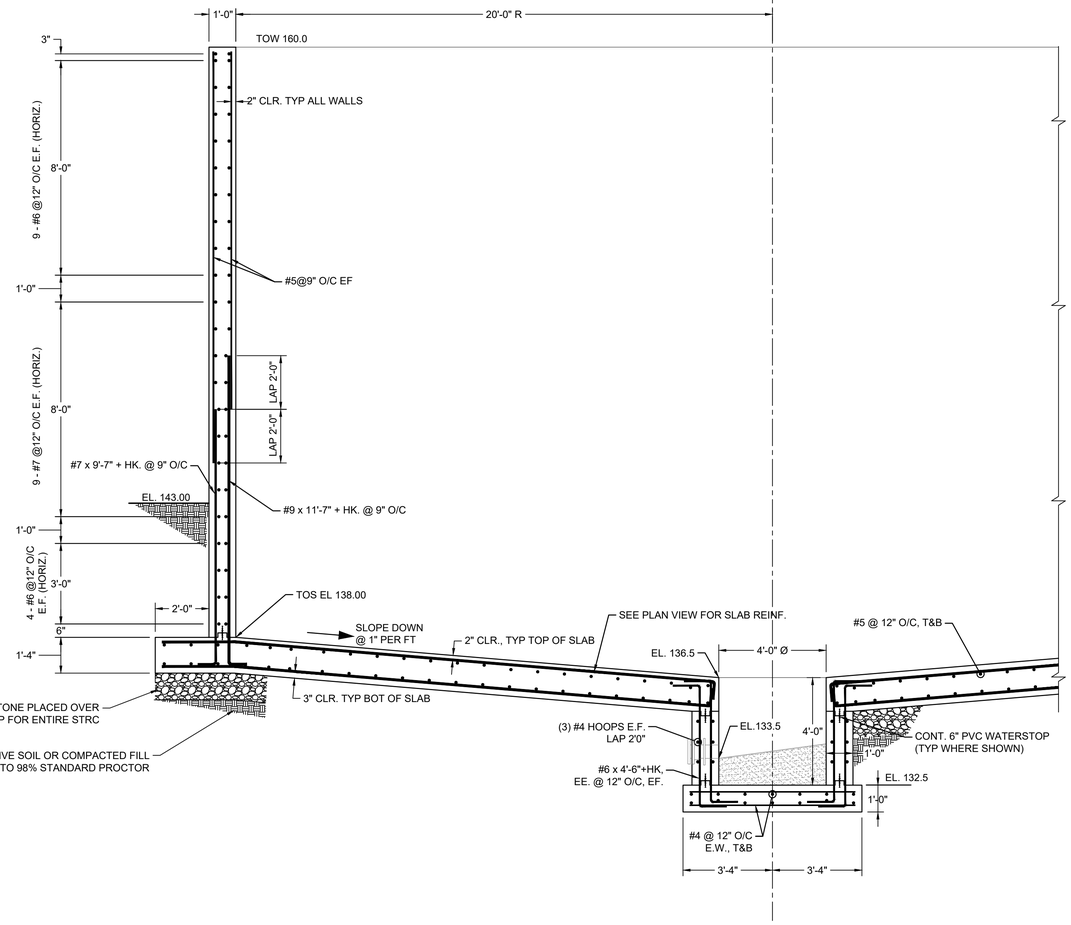
SYLVANIA WPCP UPGRADES

LOCATED IN SCREVEN COUNTY, GEORGIA

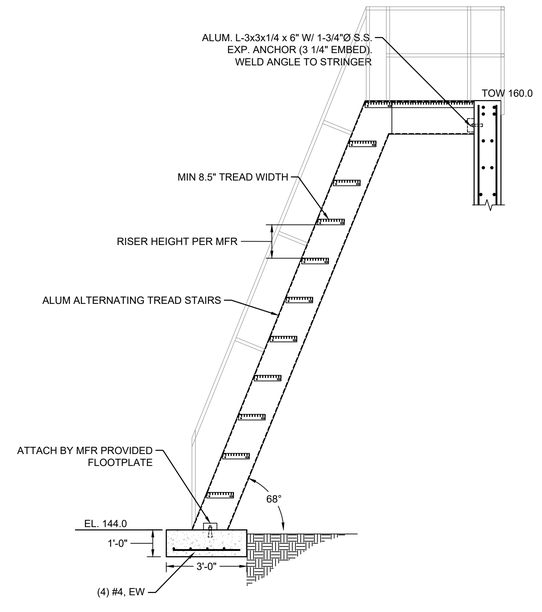
AEROBIC DIGESTER STRUCTURAL PLANS

DRAWING NO.

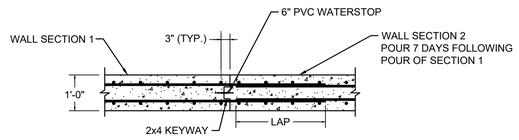
S105



A S-106 SECTION
SCALE: 3/8" = 1'



B S-106 SECTION
SCALE: 3/8" = 1'



1 S-106 DETAIL
SCALE: N.T.S.

NOTES:
1. PROVIDE LAP IN ACCORDANCE W/ DETAIL 6, SHEET S-200.
2. SEE DETAIL 1 ON SHEET S-200 FOR KEYWAY AND WATERSTOP DETAILS.

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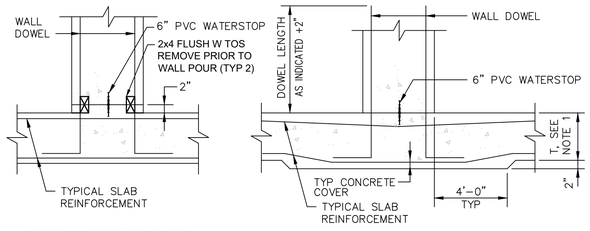
CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

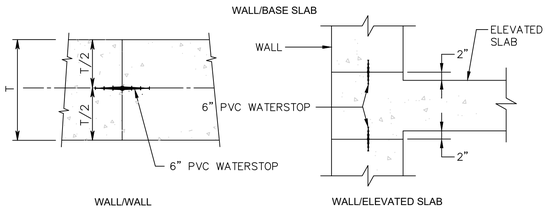
AEROBIC DIGESTER STRUCTURAL PLANS

DRAWING NO.
S106



OPTION 1 - UPTURNED KEYWAY

OPTION 2 - THICKENED SLAB

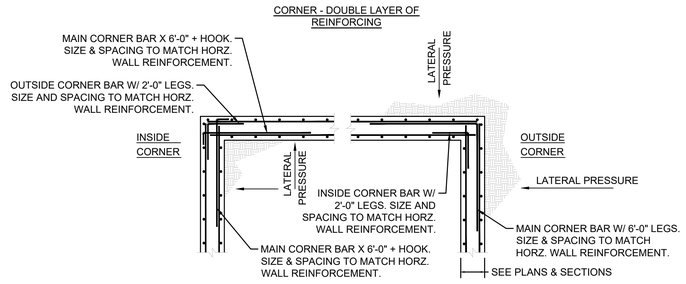


WALL/WALL

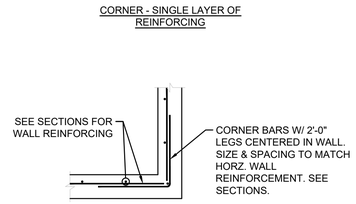
WALL/ELEVATED SLAB

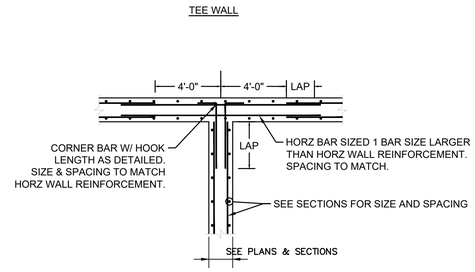
NOTES:
1. CONTRACTOR MAY USE EITHER OPTION 1 OR OPTION 2 FOR WALL/BASE SLAB JOINTS.
2. IF T $\geq$ 18" THICKENED SLAB NOT REQUIRED.
3. ALL REINFORCING TO CONTINUE THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE ON DRAWINGS
4. PROVIDE A MIN OF 1" OF CLEARANCE BETWEEN WATERSTOP AND NEAREST REBAR, WATERSTOP SHALL NOT BE CUT OR FOLDED TO AVOID CONFLICT WITH REBAR.
5. WATERSTOP SHALL BE PROPERLY SECURED TO REBAR PRIOR TO CONCRETE POUR USING TIE WIRE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

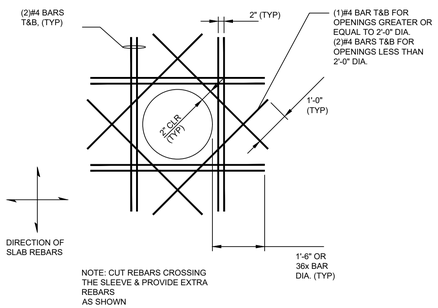
1 / S200 WATERSTOP CONSTRUCTION JOINTS DETAIL
SCALE: N.T.S.



2 / S200 TYPICAL CORNER DETAIL
SCALE: N.T.S.

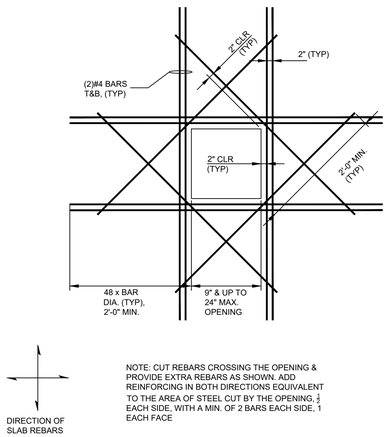






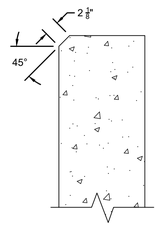
NOTE: CUT REBARS CROSSING THE SLEEVE & PROVIDE EXTRA REBARS AS SHOWN

3 / S200 PIPE PENETRATION REINFORCEMENT DETAIL
SCALE: N.T.S.



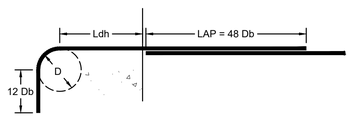
NOTE: CUT REBARS CROSSING THE OPENING & PROVIDE EXTRA REBARS AS SHOWN. ADD REINFORCING IN BOTH DIRECTIONS EQUIVALENT TO THE AREA OF STEEL CUT BY THE OPENING, $\frac{1}{2}$ EACH SIDE, WITH A MIN. OF 2 BARS EACH SIDE, 1 EACH FACE

4 / S200 WALL OPENING REINFORCEMENT DETAIL
SCALE: N.T.S.



NOTE:
1. CHAMFER TO BE ACHIEVED WITH 2 X 4 OR 2 X 2 RIPPED LENGTHWISE AT A 45° ANGLE.

5 / S200 CONCRETE WALL CHAMFER DETAIL
SCALE: N.T.S.



REBAR LAP SCHEDULE	
SIZE	LAP
#3	18"
#4	24"
#5	30"
#6	36"
#7	42"
#8	48"

HOOK SCHEDULE			
SIZE	HOOK LENGTH	Ldh	D
#3	4.5"	7.1"	2.25"
#4	6"	9.5"	3"
#5	7.5"	11.9"	3.75"
#6	9"	14.2	4.5"
#7	10.5"	16.6"	5.25"
#8	12"	19"	6"

NOTES:
1. REBAR LAP AND HOOK LENGTHS SHALL MEET THE MINIMUM LENGTHS SHOWN IN THE TABLES ABOVE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
2. Db IS THE REBAR DIAMETER IN INCHES.

6 / S200 REBAR LAP & HOOK DETAIL
SCALE: N.T.S.

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CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN SCREVEN COUNTY, GEORGIA

STRUCTURAL DETAILS

DRAWING NO.
S200

CONTROL AND ONE LINE DIAGRAMS

Symbol label	Description
	CONDUCTORS CONNECTED
	CONDUCTORS NOT CONNECTED
	CONNECTION POINT
XX	TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED.
MCP/3	MAGNETIC–ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING
100/30	CIRCUIT BREAKER, THERMAL–MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING
FU# SIZE	FUSE WITH SIZE AND OPTIONAL IDENTIFICATION.
FU#	FUSE WITH BLOWN FUSE INDICATOR.
30 AMP	DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP 600V MINIMUM UNLESS OTHERWISE NOTED.
M	MOTOR (PHASES AS REQUIRED)
250W	SPACE HEATER, WATTAGE AS INDICATED.
480V 250VA 120V	CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.
50/5	CURRENT TRANSFORMER. PRIMARY/SECONDARY TURNS RATIO SHOWN.
	HORN
125OHM	RESISTOR: OPTIONAL VALUE SHOWN
	RECTIFIER
	TRIAD
	SURGE SUPPRESSOR
10mF	CAPACITOR: OPTION VALUE SHOWN
INDICATORS X STATUS	X = LENS COLOR DIRECT CONNECTION A = AMBER B = BLUE G = GREEN R = RED W = WHITE
X STATUS	PUSH TO TEST TEST VOLTAGE TERMINAL SHOWN
TEST C DESCPTN	REMOTE TEST TEST BUS TERMINAL SHOWN
COILS: SHUNT: C LTG CKT#1	a) CONTACTOR COILS WITH OPTIONAL DESCRIPTION OR REF. EXAMPLE: CONTACTOR COIL FOR LTG CKT #1 C = CONTACTOR, LIGHTING OR GENERAL USE F = FAST OR FORWARD M = MAIN OR LINE MO = MOTOR OPERATOR 1M = FIRST MAIN OR WYE 2M = SECOND MAIN OR DELTA R = RUN OR REVERSE S = SLOW OR START KIC = TIME CONTROLLER
10 CR AUTO ENABLE	b) RELAY COILS WITH NUMERIC PREFIX AND OPTIONAL DESCRIPTION OR REF. EXAMPLE: CONTROL RELAY 10 USED AS AUTO ENABLE. CR = CONTROL RELAY U = UNLATCH L = LATCH
9 TR ON or OFF DELAY RANGE x TO xx SEC/MIN SET AT x SEC/MIN	c) TIME DELAY COIL WITH NUMERIC PREFIX, DELAY ACTION, AND OPTIONAL TIMING RANGE AND SETTING. EXAMPLE: TIME DELAY RELAY 9TR. TR = TIMING RELAY
THERMAL OL	RELAY COIL WITH OPTIONAL PREFIX. OL = THERMAL OVERLOAD RELAY
METER ETM	METER WITH ALPHA IDENTIFIERS: ETM = ELAPSED TIME METER

Symbol label	Description
INTERLOCK CONTACTS 12 CR / 9 CR	CONTROL RELAY CONTACTS WITH NUMERIC PREFIX.
	ON DELAY (DELAY ON COIL ENERGIZATION) RELAY CONTACTS WITH NUMERIC PREFIX AND OPTIONAL REF. OR DESCRIPTION. NOTC = NORMALLY OPEN TIME CLOSE. NCTO = NORMALLY CLOSE TIME OPEN
	OFF DELAY (DELAY ON COIL DE–ENERGIZATION) RELAY CONTACTS WITH NUMERIC PREFIX AND OPTIONAL REF. OR DESCRIPTION. NOTO = NORMALLY OPEN TIME OPEN. NCTC = NORMALLY CLOSED TIMED CLOSED
5 TR INST / 6 TR INST	TIME DELAY RELAY INSTANTANEOUS CONTACTS WITH NUMERIC PREFIX.
800AF 600AT	LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAWOUT TYPE, FRAME TRIP SHOWN
50AF 40AT	MOULDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN
	LIGHTNING ARRESTOR AND GROUND
300A	DISCONNECT OR ISOLATING SWITCH: CONTINUOUS RATING SHOWN
MCP 7A	MAGNETIC–ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING
100E 200A	FUSED SWITCH: FUSE AND SWITCH CONTINUOUS RATINGS SHOWN
100KVA 5.75% 13.2KV TO 480/227V	POWER TRANSFORMER: PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN
1.5KVA 2.5% 120V TO 240/120V	ISOLATION TRANSFORMER PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN
(3) 4.16KV WYE 120V WYE	POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS
250/5 3	CURRENT TRANSFORMER: RATIO SHOWN (3 INDICATES NO. OF CT'S)
xS	METER SWITCH, xS: AS – AMMETER SWITCH VS – VOLTMERE SWITCH FS – FREQUENCY SWITCH
A 0–1000 AMPS	METER: A – AMMETER W – WATTMETER KWH – WATT–HOUR METER F – FREQUENCY METER VAR – VAR METER V – VOLTMETER
64 N (3)	ANSI C37.2 DEVICE
	WINDING CONFIGURATION: PER ANSI DELTA
	WYE (GROUNDED)
50AMP/10SEC	NEUTRAL GROUNDING RESISTOR: AMPS/TIME RATING SHOWN
	I/A OR PLC ANALOG INPUT OR OUTPUT
1 FVNR	FULL VOLTAGE, NON–REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED

GENERAL ABBREVIATIONS

AR	ALARM RELAY
AS	AMMETER SELECTOR SWITCH
A, AMP	AMP(S), AMPERE(S)
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AHAP	AS HIGH AS POSSIBLE
AIC	AMPS INTERRUPTING CAPACITY, SYMM.
AL	ALUMINUM
AT	AMPERE TRIP
AF	AMPERE FRAME
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BC	BARE COPPER CONDUCTOR
BKR	BREAKER
C	CONDUCTOR/CONTACTOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CR	CONTROL RELAY
CND	CONDUIT
CONC	CONCRETE
CS	CONTROL SWITCH
CONT	CONTROL
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
D	DIAMETER
DB	DUCT BANK
DC	DIRECT CURRENT
DET	DETAIL
DIAG	DIAGRAM
DPSH	DIFFERENTIAL PRESSURE SWITCH
DS	DISCONNECT SWITCH
DWG	DRAWING
EA	EACH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EL	ELEVATION
ELEC	ELECTRIC(AL)
EMER	EMERGENCY
ENCL	ENCLOSURE/ENCLOSED
EP	EXPLOSION PROOF
EQUIP	EQUIPMENT
EX	EXISTING
FCP	FURNISHED WITH EQUIPMENT PANEL
FDR	FEEDER
FLA	FULL LOAD AMPS
FPP	FIBER OPTIC DISTRIBUTION PANEL
FS	FLOW SWITCH
FU	FUSE
FUT	FUTURE
FVNR	FULL VOLTAGE NON–REVERSING
FVR	FULL VOLTAGE REVERSING
GALV	GALVANIZED
GEN	GENERATOR
GFR	GROUND FAULT RELAY
GRD	GROUND
GRS	GALVANIZED RIGID STEEL
H	HIGH
HD	HEAT DETECTOR
HGT	HEIGHT
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HS	HAND STATION (SWITCH)
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
HZ	HERTZ (CYCLES PER SECOND)
HOA	HAND/OFF/AUTO
HMH	HIGH VOLTAGE MANHOLE
ID	INSIDE DIAMETER
IMC	INDIVIDUAL MOTOR CONTROLLER
INTLK	INTERLOCK
INST	INSTANTANEOUS
INSTR	INSTRUMENT
I/O	INPUT–OUTPUT
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT–AMPERE
KVAR	KILOVOLT–AMPERE REACTIVE
KW	KILOWATT
KWH	KILOWATT–HOUR
KAIC	KILO AMPERE INTERRUPTING CURRENT
L–O–R	LOCAL–OFF–REMOTE
L	LONG
LC	LIGHTING CONTACTOR
LCS	LOCAL CONTROL STATION
LP	LIGHTING PANEL
LOS	LOCK–OUT STOP
LSL	LEVEL SWITCH LOW
LSO	LIMIT SWITCH OPEN
LSC	LIMIT SWITCH CLOSED
LTG	LIGHTING
LV	LOW VOLTAGE
LSH	LEVEL SWITCH HIGH
M	MOTOR CONTACTOR
mA	MILLIAMPERE
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CONTROL PANEL/ MOTOR CIRCUIT PROTECTOR
MECH	MECHANICAL
MFR	MANUFACTURE(R)
MH	MANHOLE
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
mM	MILLIMETER
mV	MILLIVOLT
MCM	MILLI CIRCULAR MILLS
MOP	MOTOR OPERATOR PANEL
MPR	MOTOR PROTECTION RELAY
MCB	MAIN CIRCUIT BREAKER
MTR	MOTOR
MVS	MEDIUM VOLTAGE STARTER
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEUT,N	NEUTRAL
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NOM	NOMINAL
NP	NAMEPLATE
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OL'S	OVERLOADS
OS	OCCUPANCY SENSOR
OT	OIL TIGHT
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON, PULLBOX
PE	PHOTO ELECTRIC CELL
PF	POWER FACTOR
PH	PHASE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PM	PHASE MONITOR
PNL	PANEL
PP	POWER PANEL
PR	PAIR
PRI	PRIMARY
PS	PRESSURE SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QSH	SHEAR PIN LIMIT SWITCH
RCPT	RECEPTACLE
RCT	REACTOR
REF	REFERENCE
REQD	REQUIRED
RMS	ROOT MEAN SQUARE
RTD	RESISTANCE TEMPERATURE DETECTOR
SCH	SCHEDULE
SD	SMOKE DETECTOR
SEC	SECONDARY
SEL	SELECTOR
SPDT	SINGLE POLE DOUBLE THROW
SPEC	SPECIFICATION
SPHTR	MOTOR SPACE HEATER
SPKR	SPEAKER
SS	SPEED SWITCH
SUB	SUBSTATION
SW	SWITCH
SYMM	SYMMETRICAL
SYS	SYSTEM
SV	SOLENOID OPERATED VALVE
SPB	SIGNAL PULL BOX
TCB	TERMINAL CABINET
TB	TERMINAL BOX
TEL	TELEPHONE
TEMP	TEMPERATURE
TFR	TRANSFORMER
TH	THERMOSTAT
TJB	TERMINAL JUNCTION BOX
TSH	TEMPERATURE SWITCH HIGH
TV	TELEVISION
TYP	TYPICAL
TR	TIMING RELAY
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TSP	TWISTED SHIELDED PAIR
UG	UNDERGROUND
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERE
VAR	VOLT AMPERE REACTIVE
VFD	VARIABLE FREQUENCY DRIVE
VSH	VIBRATION SWITCH
W	WATT, WIRE, WIDE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WSH	OVERLOAD TORQUE SWITCH
ZS	POSITION (LIMIT) SWITCH
ZSH	POSITION (LIMIT) SWITCH OPEN
ZSL	POSITION (LIMIT) SWITCH CLOSED

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	MOUNTING	VOLT/PHASE	LAMP
A		10 FT. STANCHION MOUNT, 10,935 LUMENS LED FIXTURE RATED FOR WET LOCATIONS, POLYCARBONATE LENS	CROUSE HINDS CAT#PVM-11L-J-R1-UNV1-S890-S903-D2S20 (NO PHOTOCELL). DARK BRONZE.	RAIL, SEE DETAIL	120V/1PH	LED
B		LED AREA LIGHT MOUNTED ON 25 FT. SQUARE STRAIGHT ALUMINUM POLE	FIXTURE: CAT#CREE ARE-EDG-4MP-XX-06-E-UL-XX-700-40K-XXX (BXALx806E-UD7) WITH INTEGRAL PHOTOCELL POLE:CAT#LYTE POLE 105-6025-25 W/ 12X12 SQUARE BASE PLATE	POLE SEE DETAIL	120V/1PH	60 WHITE LEDs, VERTICAL BASE-UP

GENERAL NOTES

1. ALL OUTSIDE DEVICES SHALL BE NEMA 4X STAINLESS STEEL INCLUDING BOXES, PANELS, ETC. UNLESS OTHERWISE NOTED.

2. CONTRACTOR SHALL COORDINATE ALL CONDUIT ROUTING WITH UNDERGROUND PIPING, CONDUITS, AND UTILITIES. ALL COSTS NECESSARY FOR CONDUIT ROUTING SHALL BE INCLUDED IN BID PRICE AS WELL AS COSTS FOR RE–ROUTING DUE TO ANY FIELD OBSTRUCTIONS.

3. ALL UNDERGROUND CONDUITS SHALL BE PVC–40 WITH RIGID ELBOWS. IF CONDUIT LENGTHS EXCEED ANY OF THE FOLLOWING CONDITIONS, A MANHOLE SHALL BE INSTALLED.
   A) 400' WITH (0) 90° BENDS C) 200' WITH (2) 90° BENDS
   B) 300' WITH (1) 90° BEND D) 100' WITH (3) 90° BENDS

4. ALL WORK SHALL CONFORM TO THE 2020 NATIONAL ELECTRIC CODE.

5. ALL EXPOSED CONDUIT SHALL BE ALUMINUM RIGID. ALL UNDERGROUND CONDUIT SHALL BE PVC OR RGS PER SCHEDULE.

6. IN CASE OF DISCREPANCY BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE CONTRACTOR SHALL PRICE THE MOST EXPENSIVE ITEM AND REQUEST APPROPRIATE DIRECTION FROM THE OWNER AND ENGINEER. UNDER NO CIRCUMSTANCES SHALL SUCH DISCREPANCIES RESULT IN ADDITIONAL COSTS TO THE OWNER OR RESULT IN ANY CHANGE ORDERS.

7. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH ALL OTHER TRADES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACTUAL LOCATION OF EQUIPMENT, DUCTWORK, PIPING, ETC. AND COORDINATE THE INSTALLATION ACCORDINGLY.

8. ALL LIGHTING AND RECEPTACLE CONDUCTORS SHALL BE COPPER #12 AWG MINIMUM CONDUCTOR SIZE FOR POWER AND LIGHTING WIRING UNLESS OTHERWISE NOTED ON THE DRAWINGS. USE #14 AWG MINIMUM CONDUCTOR FOR SIGNAL WIRING. THE INSULATION FOR ALL CONDUCTORS SHALL BE THWN–2.

9. POWER WIRES SIZES #12 AWG AND #10 AWG SHALL BE SOLID TYPE. ALL OTHER SIZES SHALL BE STRANDED.

10. ALL EXTERIOR CONNECTIONS SHALL USE WATER TIGHT, MYERS TYPE HUBS.

11. UNLESS NOTED OTHERWISE, CONTRACTOR SHALL ROUTE 2 #12 AND 1 #12 GND IN 3/4" CONDUIT TO ALL LIGHT FIXTURES AND RECEPTACLES.

12. UNLESS NOTED OTHERWISE, ALL DUCTBANKS SHALL BE CONCRETE ENCASED AND REINFORCED UNDER ROADWAYS.

13. LOCATE HAND HOLES AT LOW POINT SUCH THAT WATER GRAVITY FLOWS BACK TO HAND HOLE.

MOTOR AND EQUIPMENT SYMBOLS

Symbol	Description
M	MOTOR CONNECTION
	DISCONNECT, NON–FUSED. PROVISION FOR CLASS R FUSES.
	FIELD INSTRUMENT CONNECTION
	NEMA 4X START/STOP HAND STATION MOUNTED TO HANDRAIL
$	120V, 20A, 1P TOGGLE SWITCH
	DUPLEX 120V RECEPTACLE
	WEATHERPROOF GFCI PROTECTED 120V RECEPTACLE
	TELEPHONE OUTLET BOX, 16" A.F.F. WITH 3/4" HOMERUN TO TELEPHONE BACKBOARD OR FIBER MODEM
J	JUNCTION BOX
	COMPUTER OUTLET BOX WITH 3/4" HOMERUN TO TELEPHONE BACKBOARD

CIRCUIT AND RACEWAY SYMBOLS

Symbol	Description
	RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED UON.
PBD A–1,3,5	HOME RUN – SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5

GROUNDING SYMBOLS

Symbol	Description
	GROUND ROD, 3/4" x 10'–0", COPPERCLAD (UNLESS OTHERWISE NOTED)
	GROUND ROD AND WELL
	COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT
— G —	BARE COPPER GROUNDING CONDUCTOR – #8 UNLESS OTHERWISE NOTED.
●	CADWELD CONNECTION TO GROUND RING

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GEORGIA REGISTERED No.38080 PROFESSIONAL ENGINEER DAVID M. ZIMMER

Rev.	Description	Date	Apr.
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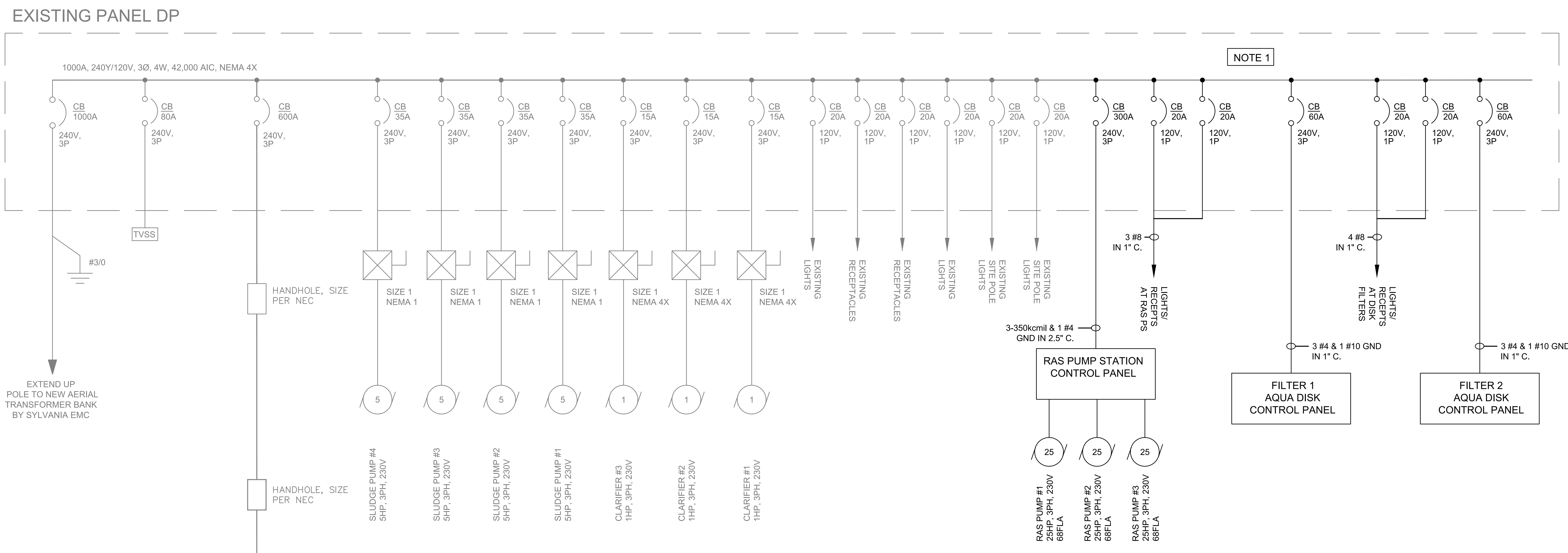
Date: TBD	Drawn by: AP	Check by: DMZ
Project #: 1521.2201	Design by: DMZ	Review by: DLO

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

ELECTRICAL NOTES AND LEGEND

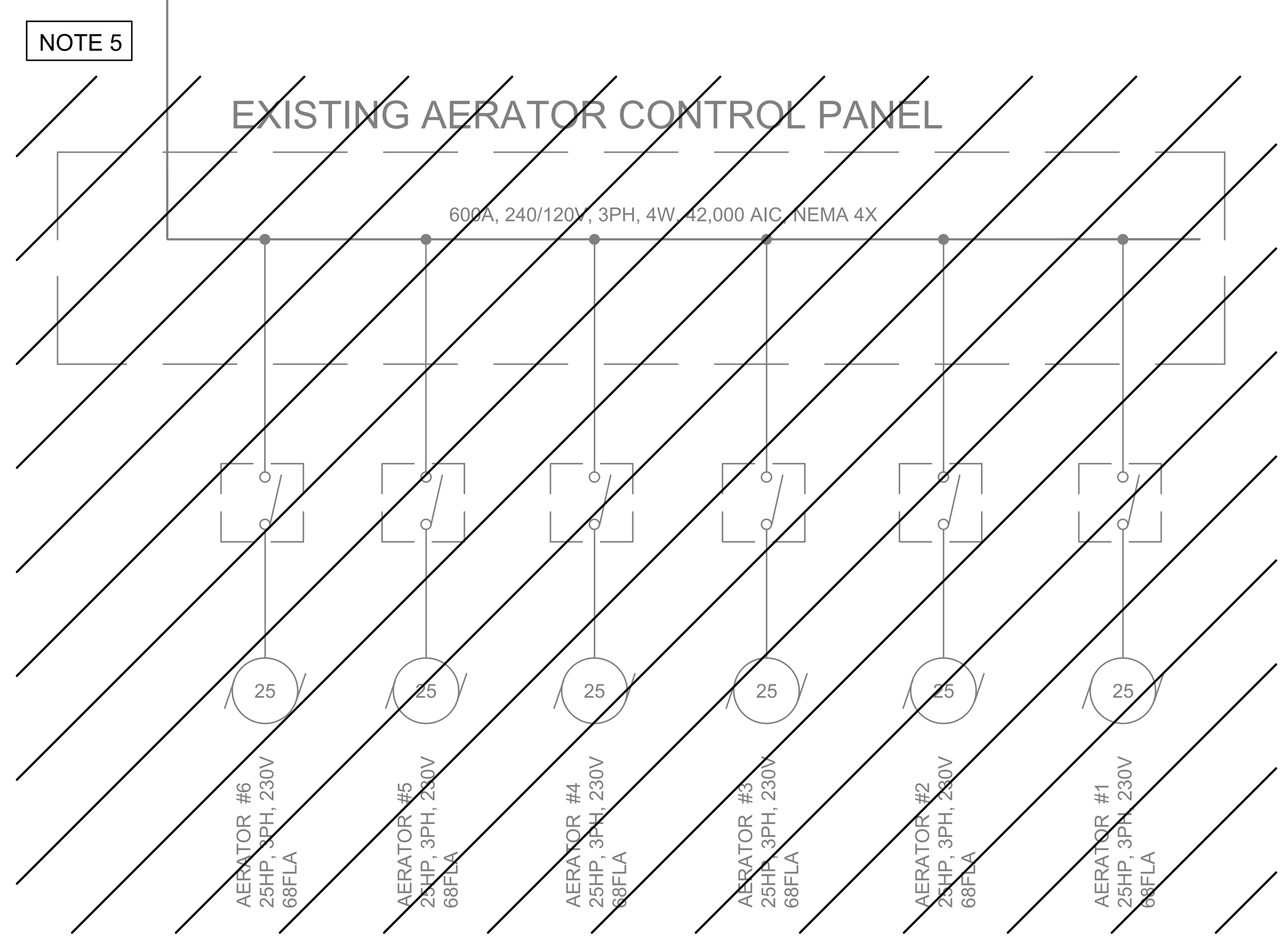
ESAD PROJECT #22026
ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196

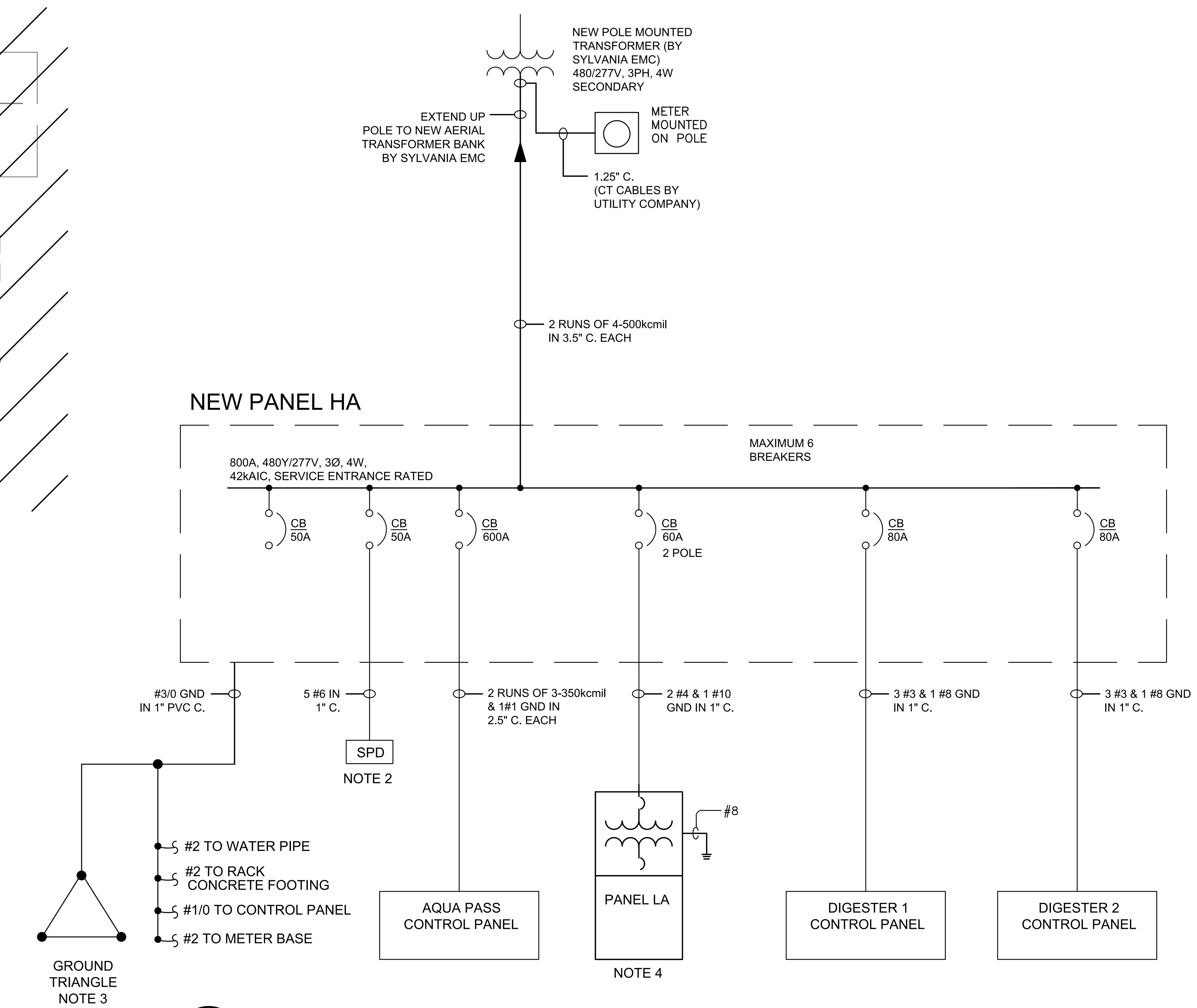
DRAWING NO.
E101



1 / E102 ELECTRICAL ONE–LINE DIAGRAM – CLARIFIERS

SCALE: 1" = 20'–0"





2 / E102 ELECTRICAL ONE–LINE DIAGRAM – AERATION BASIN

SCALE: 1" = 20'–0"

	SINGLE PHASE 15VA MIN-POWER ZONE SCHEDULE "PANEL-LA"								
PRIMARY-60A SECONDARY-80A			120/240V., 1PH. 3W.				AIC, MAINS & CB'S-10,000		
LOCATION - AER. BASINS			10KVA				NEMA 4X ENCLOSURE		
CKT NO.	TRIP POLES	DESCRIPTION OF LOADS	CONNECTED KVA PHASE A		PHASE C		DESCRIPTION OF LOADS	TRIP POLES	CKT NO.
1	20/1	LIGHTS	0.5	-			DIG. 1 LGT/RECEPT	20/1	2
3	20/1	RECEPTS			1.5	-	DIG. 2 LGT/RECEPT	20/1	4
5	20/1	RECEPTS	0.2	-			SPARE	20/1	6
7	20/1	RECEPTS			0.5	-	SPARE	20/1	8
9	20/1	RECEPTS	0.3	-			SPARE	20/1	10
11	20/1	SPARE			1.1	-	SPARE	20/1	12
13	20/1	SAPRE	0.1	-			SPARE	20/1	14
15	20/1	SPARE			0.1	-	SPARE	20/1	16
17	20/1	SPARE	0.5	-			SPARE	20/1	18
19	20/1	SPARE				-	SPARE	20/1	20
21	20/1	SPARE	-	-			SPARE	20/1	22
			1.0	0.0	2.0	0.0			
		TOTAL LOAD	1.0		2.0		3.0	KVA	
							16.7	AMPS	

NOTES:

1. INSTALL THE FOLLOWING NEW CIRCUIT BREAKERS IN EXISTING 120/240V PANEL DP:
   A) 300A, 240V, 3P = RAS PUMP STATION CONTROL PANEL
   B) 60A, 240V, 3P = FILTER 1 AQUA DISK CONTROL PANEL
   C) 60A, 240V, 3P = FILTER 2 AQUA DISK CONTROL PANEL
   D) 4 - 20A, 120V, 1P = LIGHTS AND RECEPTACLES

   NEW BREAKERS SHALL BE OF THE SAME MANUFACTURER AND HAVE THE SAME AIC RATING AS THE EXISTING BREAKERS. PROVIDE NEW UPDATED TYPE WRITTEN LEGEND.

2. THE SURGE PROTECTION DEVICE (SPD) SHALL BE IN A NEMA 4X STAINLESS STEEL ENCLOSURE. THE SPD SHALL BE UL LISTED AND LABELED UNDER UL1449 AND UL1283, HAVE AN INTEGRAL DISCONNECT, AND HAVE A SURGE RATING OF 160KA PER PHASE. PROVIDE EATON PTE160-3Y201-SD-SS-D OR APPROVED EQUAL.

3. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE GROUND SYSTEM CONSISTING OF A GROUND TRIANGLE WITH #2/0 BARE COPPER GROUND CONDUCTOR, 3 - 3/4" DIAMETER 10' GROUND RODS, AND CADWELD CONNECTIONS TO GROUND RODS.

4. PANEL LA SHALL BE A COMBINATION MINI-POWER ZONE / PANELBOARD RATED 480-120/240V, 1 PHASE, 15kVA WITH BOLT ON BREAKERS AND A STAINLESS STEEL ENCLOSURE. SEE SCHEDULE, THIS SHEET, FOR BRANCH BREAKERS.

5. CONTRACTOR SHALL REMOVE EXISTING AERATOR CONTROL PANEL AND DELIVER TO OWNER'S STORAGE FACILITY. CONTRACTOR SHALL DEMOLISH ALL ASSOCIATED CONDUIT AND CABLE AND REMOVE ALL EXISTING CONDUCTORS.

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GEORGIA REGISTERED No.38080 PROFESSIONAL ENGINEER DAVID M. ZIMMER

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Project #: 1521.2201 | Design by: DMZ | Review by: DLO

CONSTRUCTION PLANS FOR

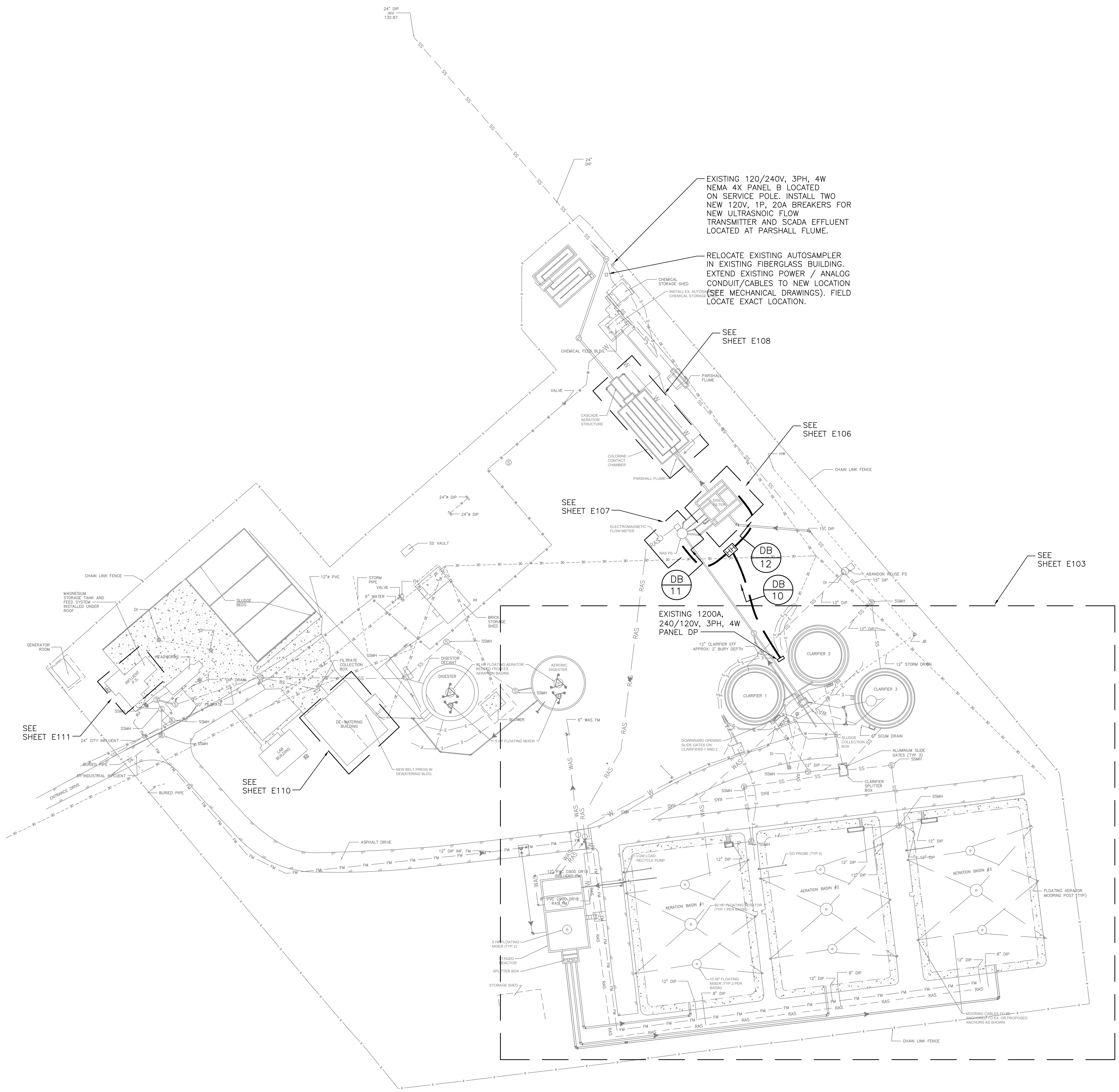
SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

ELECTRICAL ONE-LINE DIAGRAM

ESAD PROJECT #22026
ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196

DRAWING NO. E102



DB-10

1-1" PVC (240V TO DISK 1 C.P.)
2-1" PVC (240V TO DISK 2 C.P.)
3-1" PVC (120V)
4-2.5" PVC (240V RAS PUMP C.P.)
5-1" PVC (120V)
6-1" PVC (SPARE)

DB-11

1-2.5" PVC (240V TO RAS PUMP C.P.)
2-1" PVC (120V)
2-1" PVC (SPARE)

DB-12

1-1" PVC (240V TO DISK 1 C.P.)
2-1" PVC (240V TO DISK 2 C.P.)
3-1" PVC (120V)

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Date: TBD	Drawn by: AP	Check by: DMZ
Project #: 1521.2201	Design by: DMZ	Review by: DLO

SCALE: 1" = 40'

CONSTRUCTION PLANS FOR SYLVANIA WPCP UPGRADES

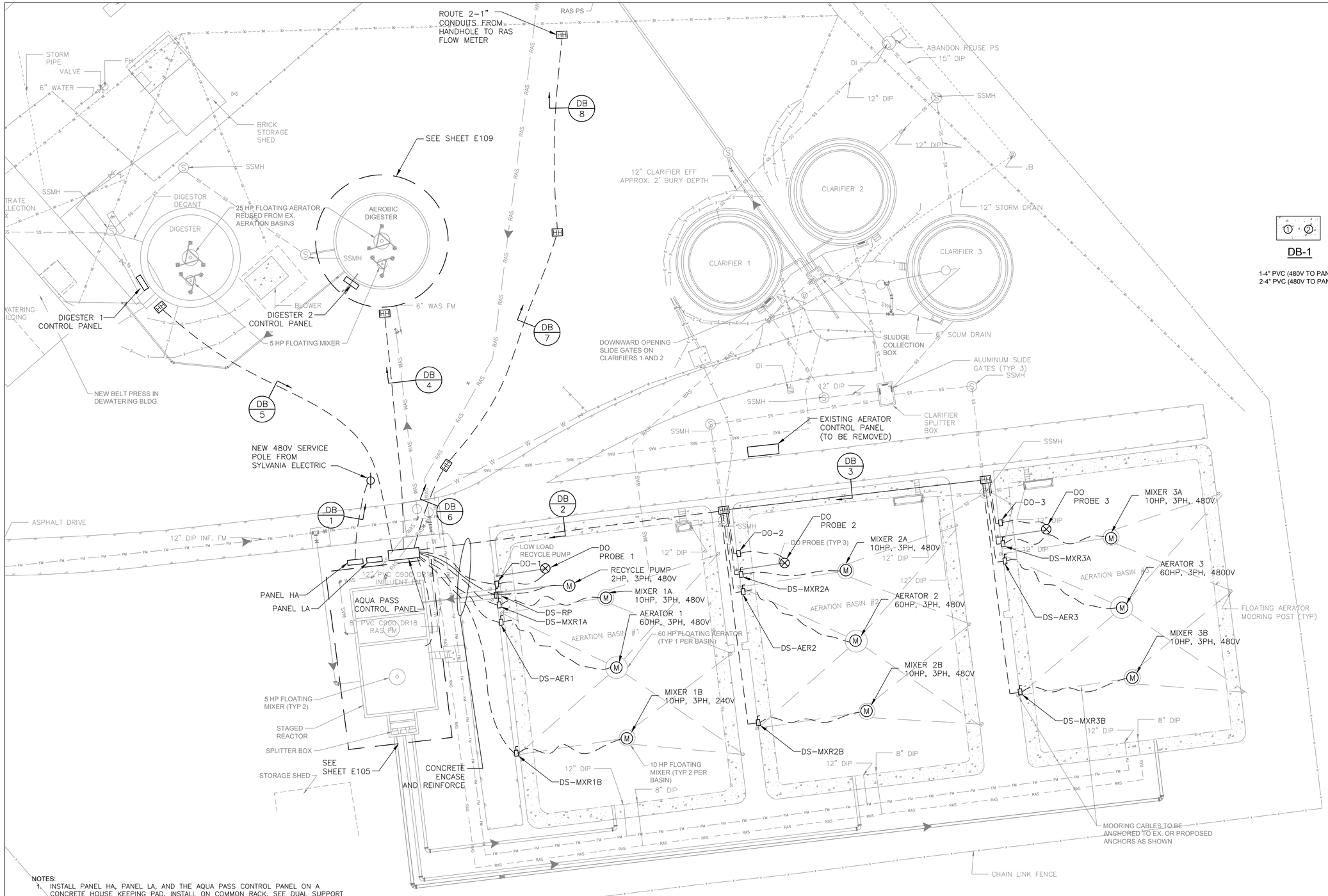
LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

OVERALL ELECTRICAL SITE PLAN

ESAD PROJECT #22026

ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196

DRAWING NO.
E103

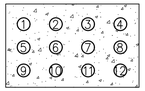


NOTES:

1. INSTALL PANEL HA, PANEL LA, AND THE AQUA PASS CONTROL PANEL ON A CONCRETE HOUSE KEEPING PAD. INSTALL ON COMMON RACK. SEE DUAL SUPPORT STAND DETAIL A / E114.
2. DIGESTER 1 AND 2 CONTROL PANELS SHALL BE INSTALLED ON A UTILITY RACK (6" ALUMINUM C-CHANNEL). FIELD COORDINATE EXACT LOCATION WITH OWNER.
3. HAND HOLES "HH" SHALL BE QUAZITE TYPE HAND HOLES 24" DEEP, TIER 22 LOAD ASSEMBLY, UL LISTED, WITH OPEN BOTTOM. PROVIDE TIER 22 COVER WITH 2 BOLTS. IF REQUIRED, PROVIDE 3" TOP EXTENSION. SIZE HANDHOLE PER NEC. INSTALL ON 9" BED OF #57 CRUSHED STONE. LOCATE AT LOW POINT IN DUCTBANK RUN.
4. DUCTBANKS SHALL BE CONCRETE ENCASED, REINFORCE UNDER ROAD WAYS.
5. INSTALL DISCONNECTS AND DO CONTROLLERS ON COMMON UTILITY RACK. SEE DUAL SUPPORT STAND. TYPICAL FOR ALL THREE AERATION BASINS. INSTALL STAINLESS STEEL KELLUM GRIPS WHERE PUMP / MIXER / AERATOR CORDS ENTER BOTTOM OF DISCONNECTS. TYPICAL FOR ALL.

DB-1

1-4" PVC (480V TO PANEL HA)
2-4" PVC (480V TO PANEL HA)



DB-2

1-1" PVC (480V MIXER 2A)
2-1" PVC (480V MIXER 2B)
3-1.5" PVC (480V TO AERATOR #2)
4-1" PVC (480V MIXER 3A)
5-1" PVC (480V MIXER 3B)
6-1.5" PVC (480V TO AERATOR #3)
7-1" PVC (SPARE)
8-1" PVC (SPARE)
9-1" PVC (120V POWER DO-2)
10-1" PVC (120V POWER DO-3)
11-1" RGS (DO-2)
12-1" RGS (DO-3)

DB-3

1-1" PVC (480V MIXER 3A)
2-1" PVC (480V MIXER 3B)
3-1.5" PVC (480V TO AERATOR #3)
4-1" PVC (SPARE)
5-1" PVC (120V POWER DO-3)
6-1" RGS (DO-3)
7-1" PVC (SPARE)
8-1" PVC (SPARE)

DB-4

1-1" PVC (480V DIGESTER 2 CONTROL PANEL)
2-1" PVC (SPARE)

DB-5

1-1" PVC (480V DIGESTER 1 CONTROL PANEL)
2-1" PVC (SPARE)

DB-6

1-1" RGS (RAS FLOW)
2-1" PVC (120V POWER)

DB-7

1-1" RGS (RAS FLOW)
2-1" PVC (120V POWER)

DB-8

1-1" RGS (RAS FLOW)
2-1" PVC (120V POWER)

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SCALE: 1" = 20'
20' 10' 0' 20'

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

ENLARGED SITE PLAN

ESAD PROJECT #22026

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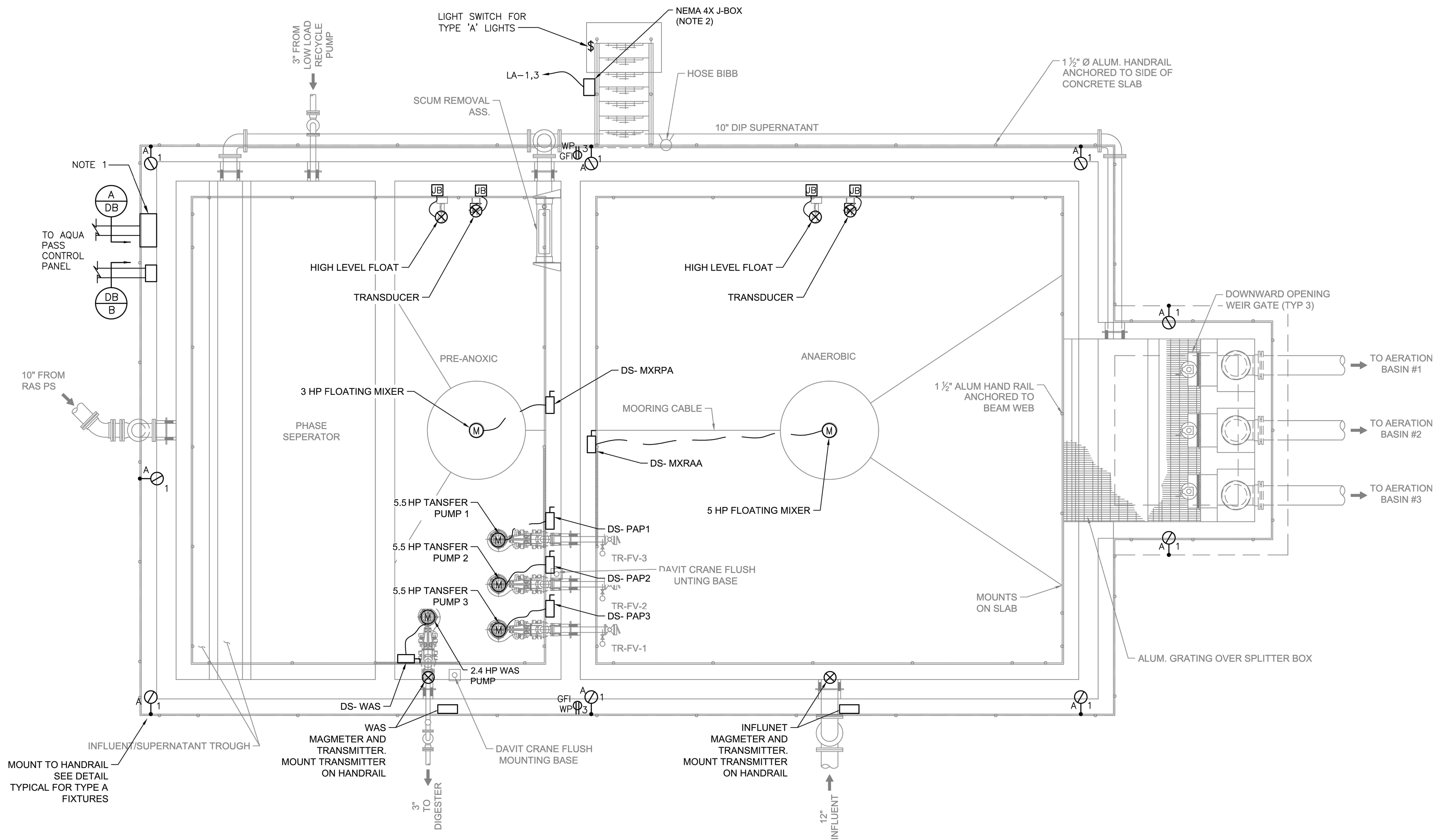
DRAWING NO.
E104

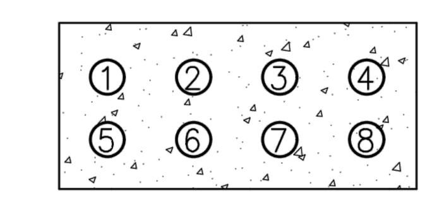


STAGED REACTOR PLAN VIEW

SCALE: 1/4" = 1'-0"

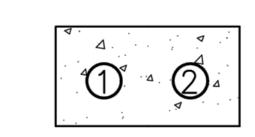
NOTES:

1. FURNISH AND INSTALL TWO STAINLESS STEEL, NEMA 4X PULL BOXES. ONE BOX SHALL BE FOR POWER AND CONTROLS. THE SECOND BOX SHALL BE FOR #16 TSP CABLES. SIZE PER NEC. INSTALL SO BOX IS MINIMUM OF 12" ABOVE GRADE.
2. ROUTE 3 #8 IN ¾" CONDUIT BETWEEN LIGHT FIXTURES, SWITCH, AND RECEPTACLES. HOMERUN FROM BOX TO PANEL LA WITH 4 #8 IN 1"C.



DB-3

1-1" PVC (480V MXRAA)
2-1" PVC (480V MXRPA)
3-1" PVC (480V PAP1)
4-1" PVC (480V PAP2)
5-1" PVC (480V PAP3)
6-1" PVC (480V WAS)
7-1" PVC (CONTROLS)
8-1" PVC (SPARE)



DB-6

1-1" RGS (#16 TSP)
2-1" PVC (SPARE)

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GEORGIA REGISTERED PROFESSIONAL ENGINEER No.38080 DAVID M. ZIMMER

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SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

STAGE REACTOR ELECTRICAL PLAN

ESAD PROJECT #22026

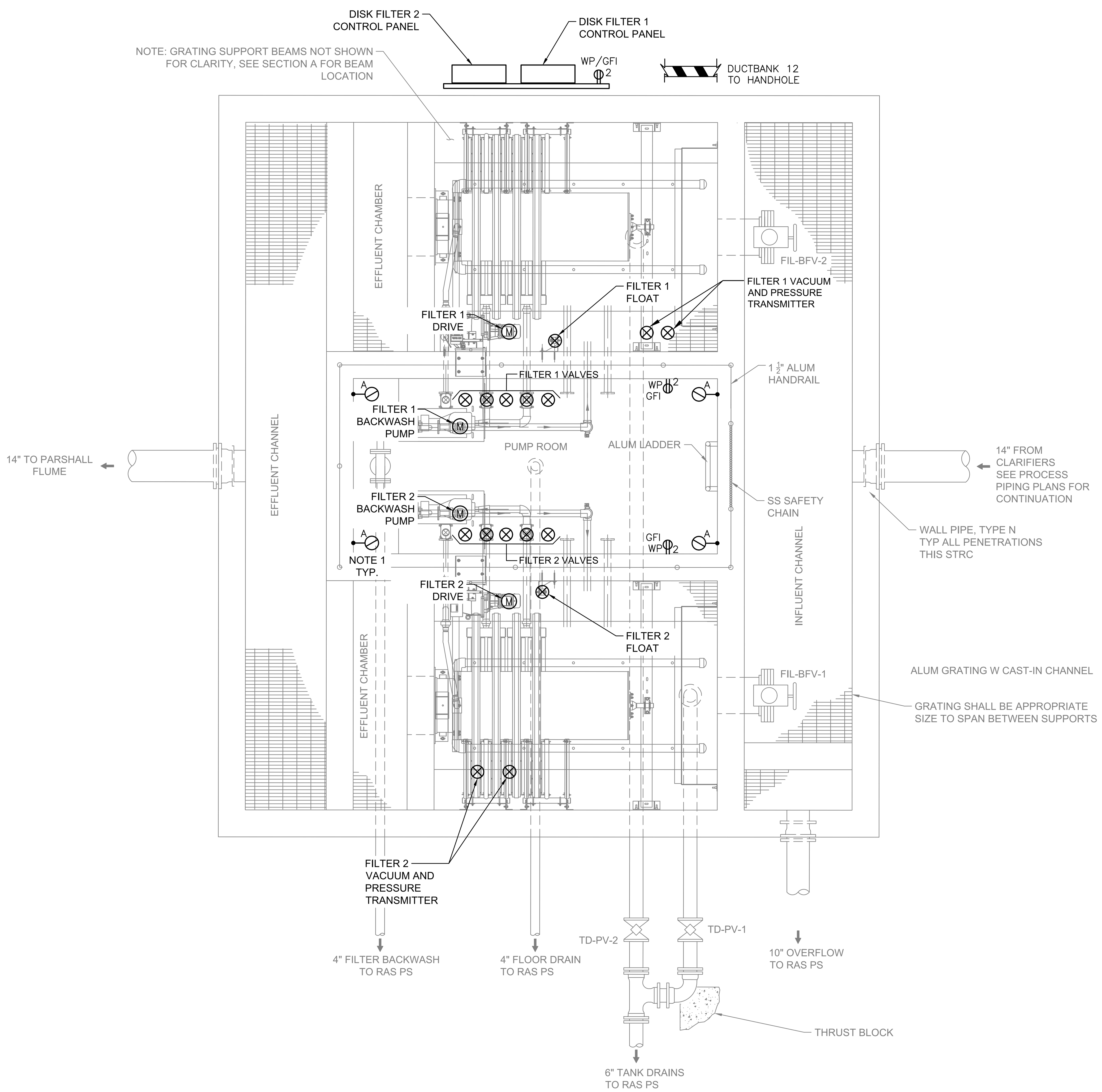
ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196

DRAWING NO.

E105

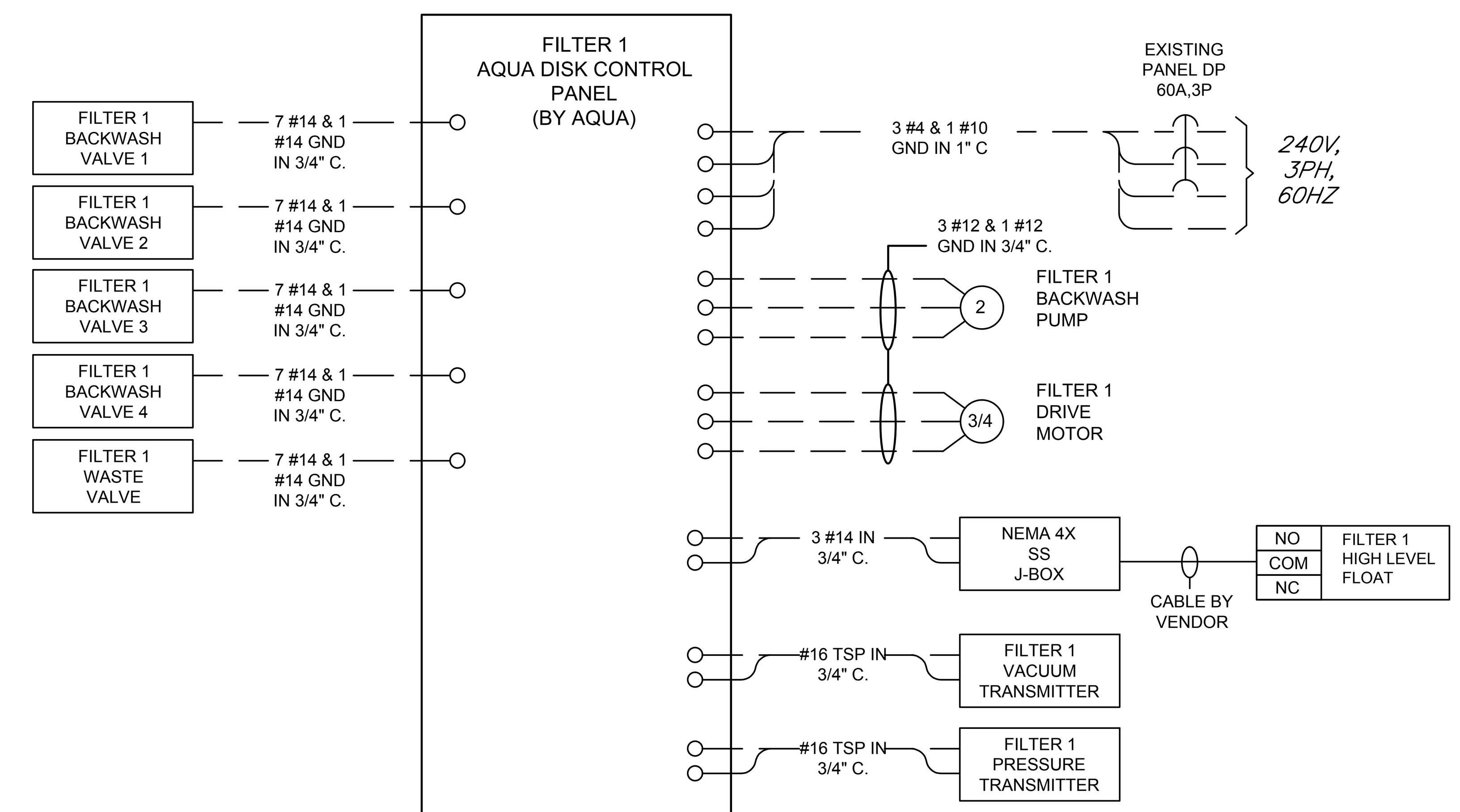
NOTES:

1. ROUTE 4 #8G IN 3/4" CONDUIT TO EACH LIGHT FIXTURE AND RECEPTACLE. HOME RUN 4 #8G IN 1"C TO PANEL DP.
2. INSTALL THE FILTER 1 AND FILTER 2 CONTROL PANELS ON A CONCRETE HOUSE KEEPING PAD. INSTALL ON COMMON RACK. SEE DUAL SUPPORT STAND DETAIL A / E114.



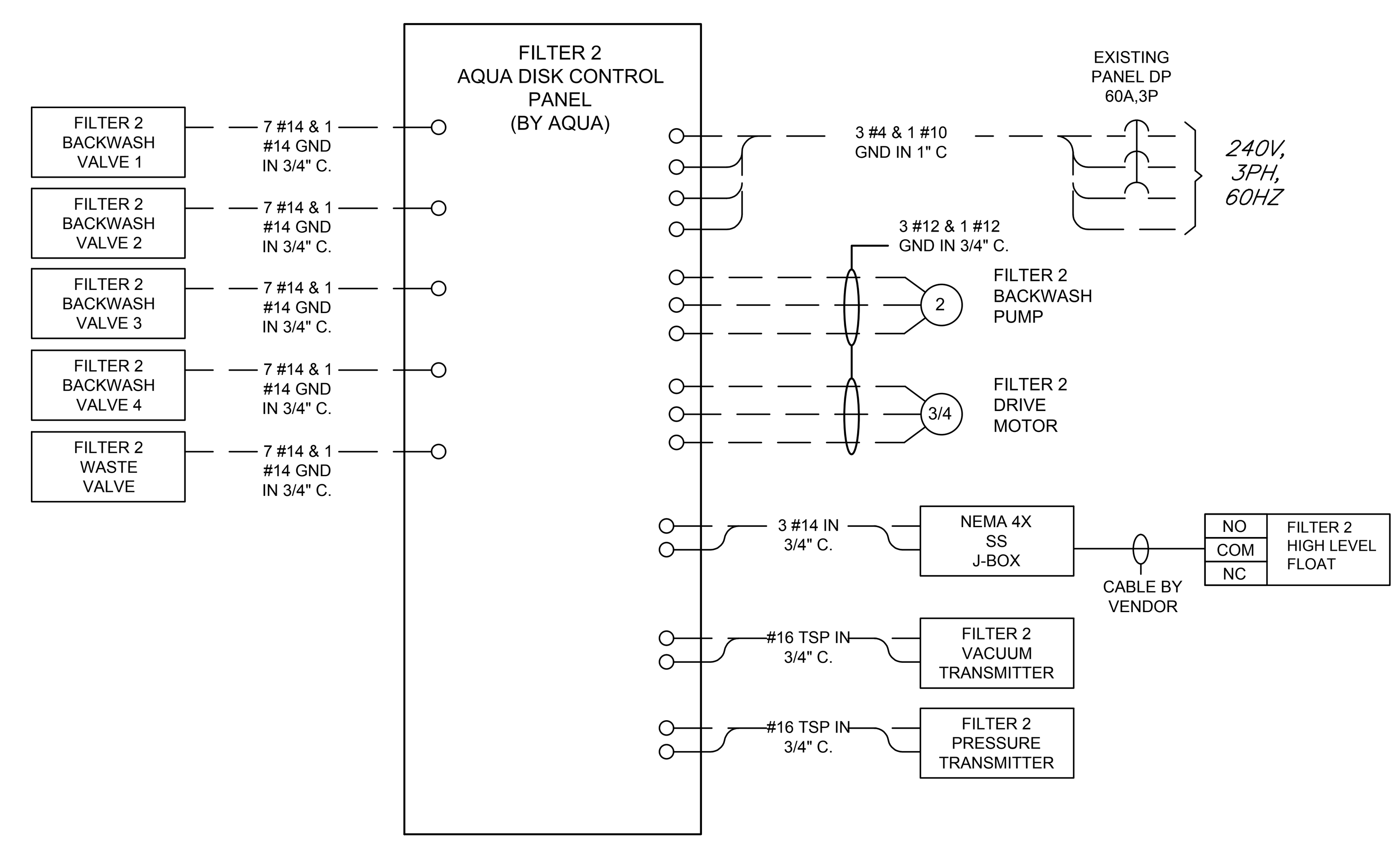
DISC FILTER PLAN VIEW

SCALE: 3/8" = 1'



DISC FILTER #1

SCHEMATICS



DISC FILTER #2

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SCALE: AS SHOWN		

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CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

DISC FILTER ELECTRICAL PLAN

ESAD PROJECT #22026

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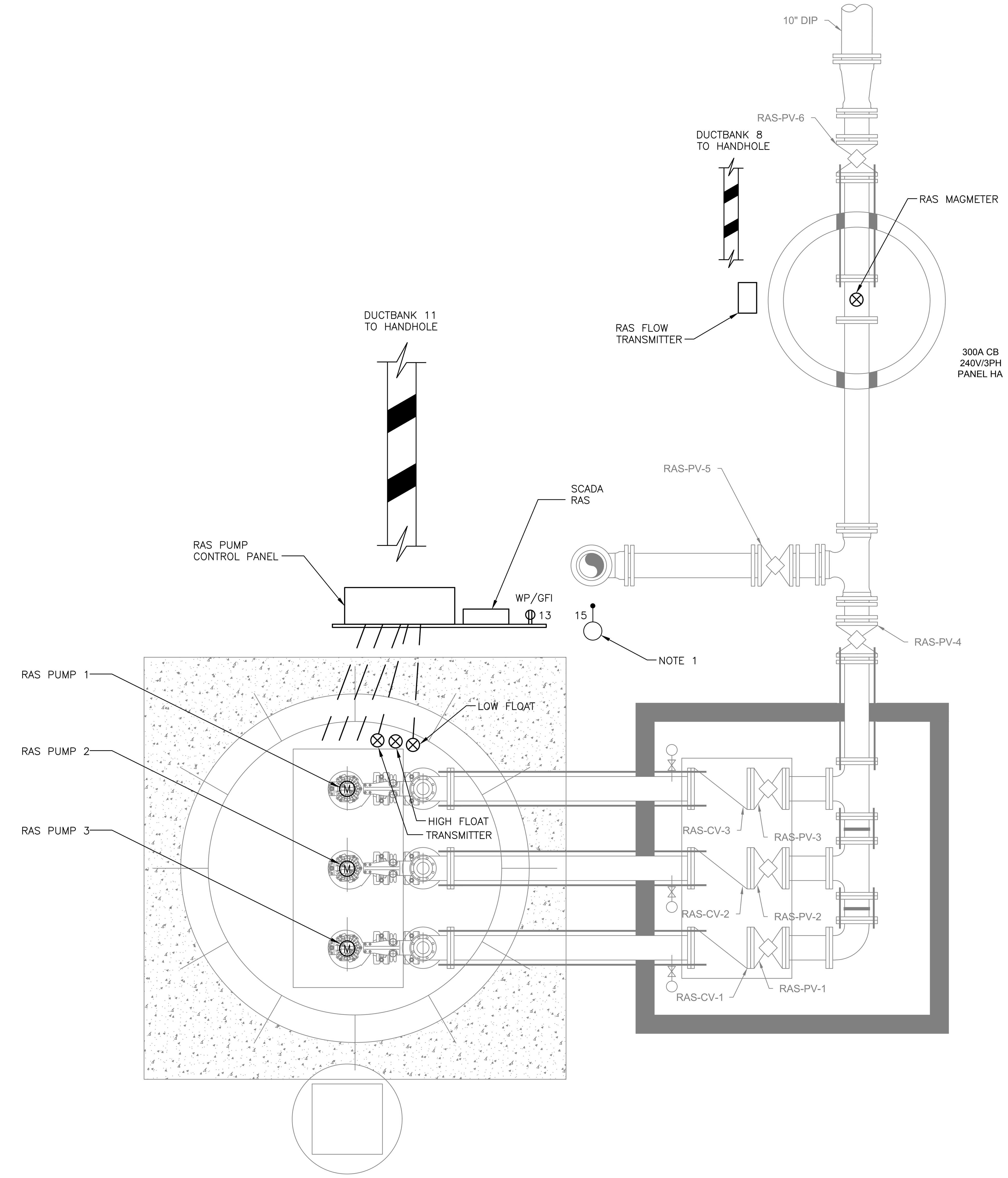
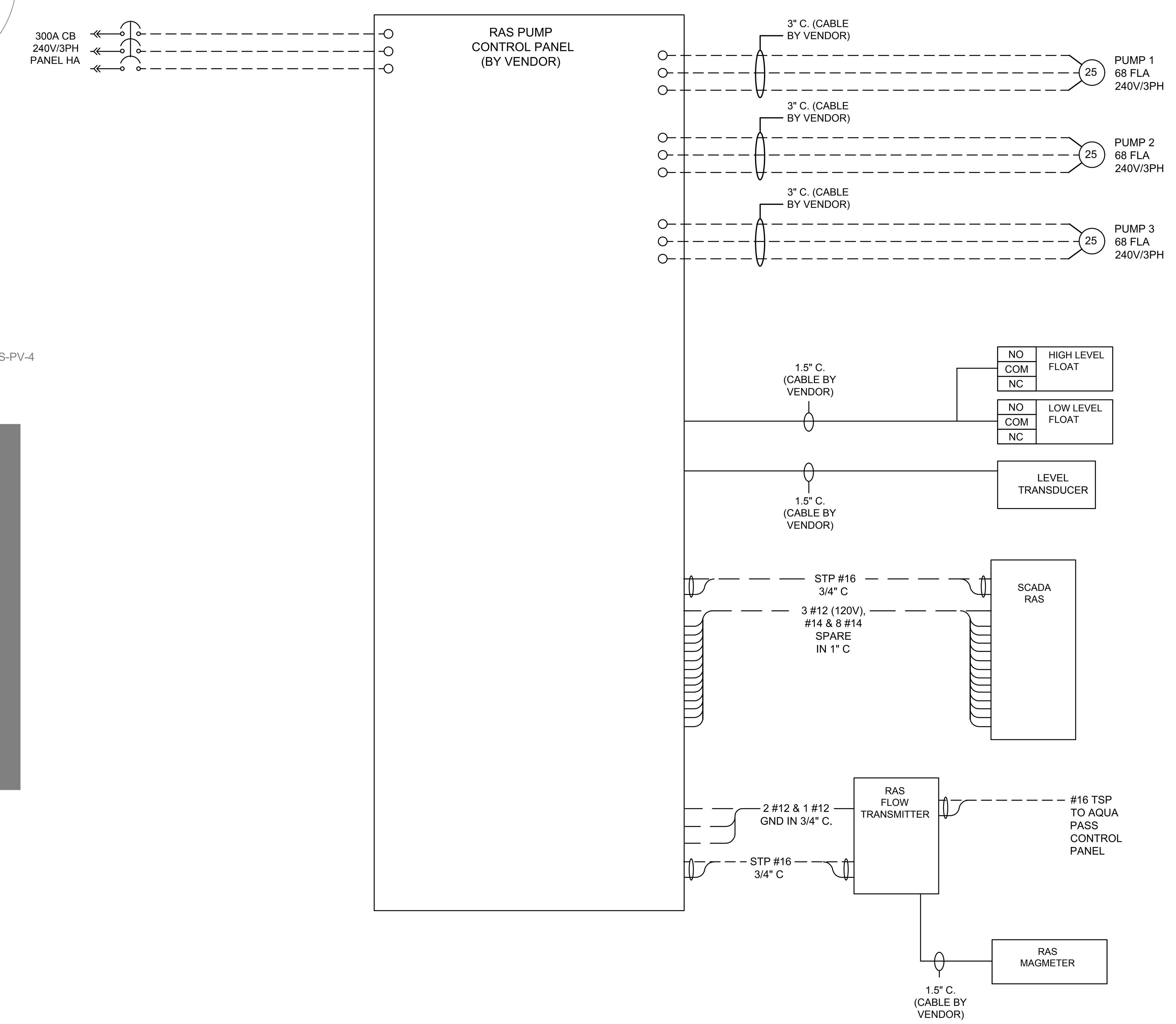
DRAWING NO.

E106

NOTES:

1. INSTALL TYPE B LIGHT AREA LIGHT FIXTURE. FIELD LOCATE EXACT LOCATION.
2. ROUTE 4 #8G IN 3/4" CONDUIT TO EACH LIGHT FIXTURE AND RECEPTACLE. HOME RUN 4 #8G IN 1"C TO PANEL DP.
3. INSTALL THE RAS PUMP CONTROL PANEL ON A CONCRETE HOUSE KEEPING PAD. SEE DUAL SUPPORT STAND DETAIL A / E114.





RAS PUMP STATION ELECTRICAL PLAN

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

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CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

RAS PUMP STATION ELECTRICAL PLAN

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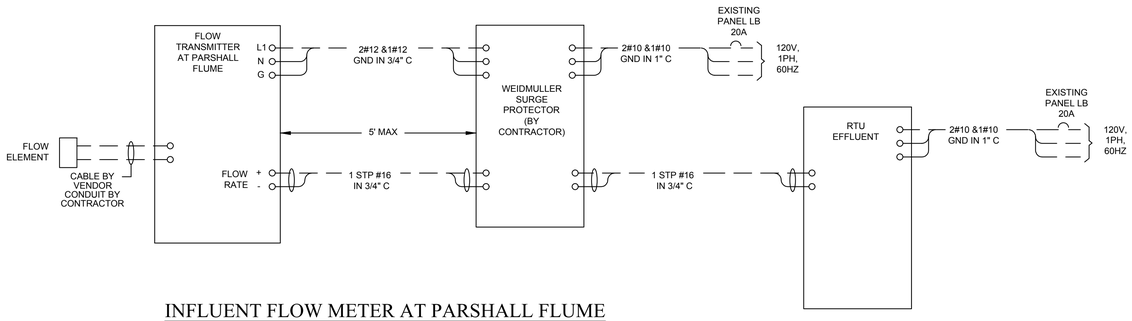
PH: 678-469-5196

DRAWING NO.

E107

CHLORINE CONTACT CHAMBER - ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"



INFLUENT FLOW METER AT PARSHALL FLUME

SCHEMATIC

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GEORGIA
No. 38080
PROFESSIONAL
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DAVID M. ZIMMER

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SCALE: AS SHOWN

CONSTRUCTION PLANS
FOR
SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ???? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

CHLORINE
CONTACT CHAMBER
ELECTRICAL PLAN

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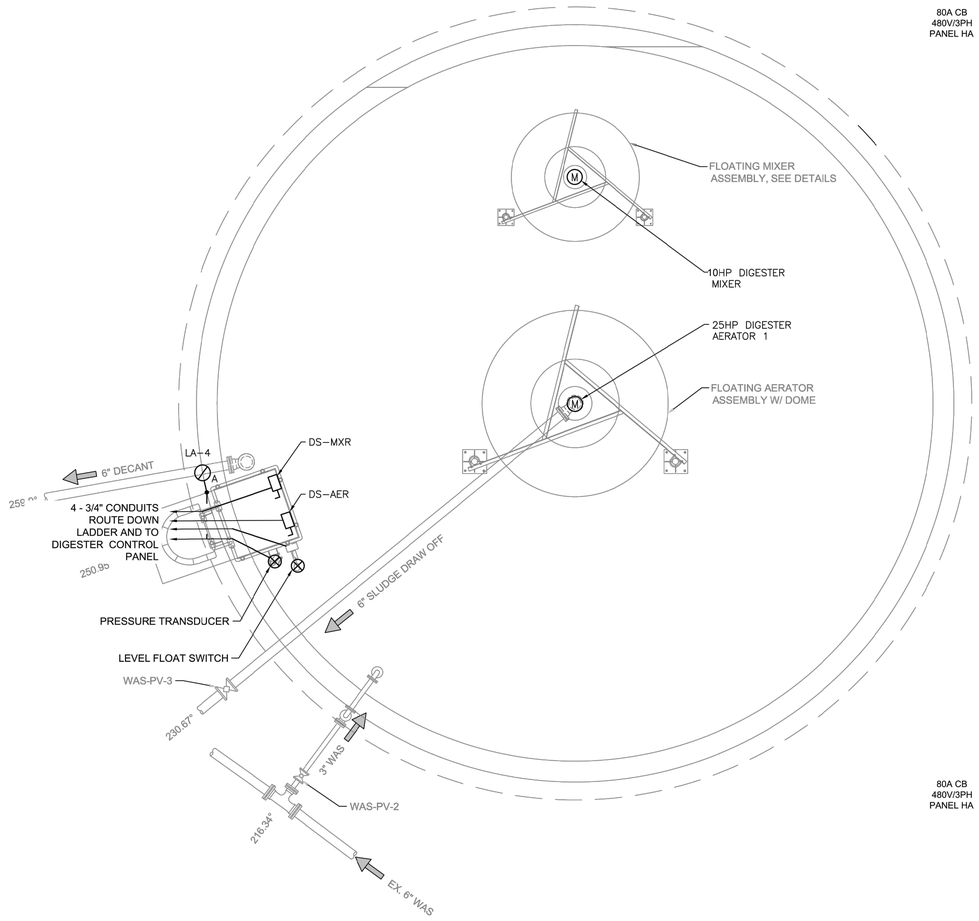
DRAWING NO.
E108

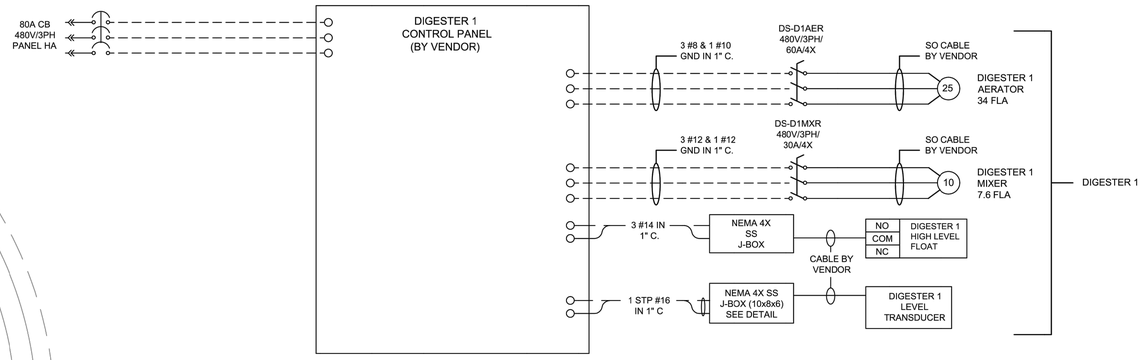


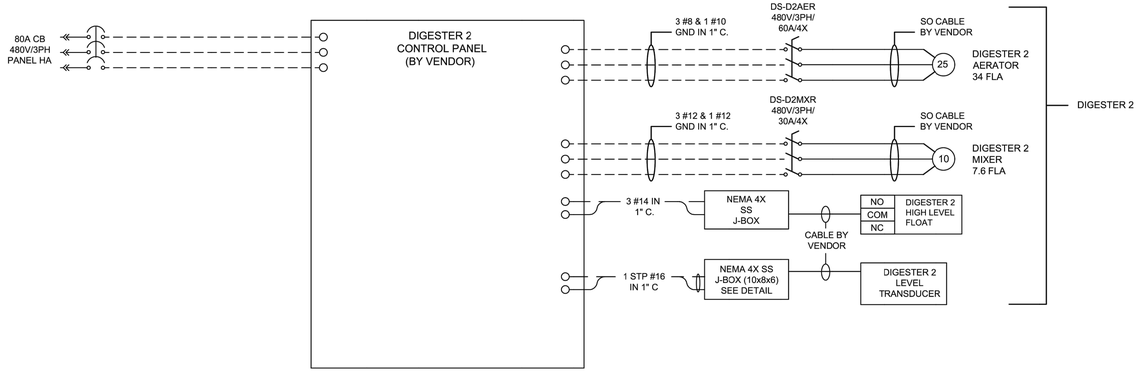
DE-WATERING BUILDING - ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

NOTES:

1. ROUTE 3 #8 IN 3/4" C. TO LIGHT FIXTURE AND HOMERUN TO PANEL LA.
2. DIGESTER 1 PLAN IS IDENTICAL TO DIGESTER 2. CONTRACTOR SHALL INSTALL ALL EQUIPMENT FOR DIGESTER 1 INCLUDING CONTROL PANEL AND ASSOCIATED EQUIPMENT.
3. INSTALL STAINLESS STEEL KELLUM GRIPS FOR AERATORS AND MIXERS WHERE CORD ENTERS BOTTOM OF DISCONNECT SWITCH.
4. CONTRACTOR SHALL RE-WIRE EXISTING DIGESTER 1 AERATOR FROM 480V TO 240V.
5. INSTALL DIGESTER CONTROL PANEL ON UTILITY RACK. INSTALL A 120V,20A/1P WP, GFI RECEPTACLE ADJACENT TO CIRCUIT TO LIGHT FIXTURE AND PANEL LA.





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SCALE: 1" = 20'

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

AEROBIC DIGESTER 2 ELECTRICAL PLAN

ESAD PROJECT #22026

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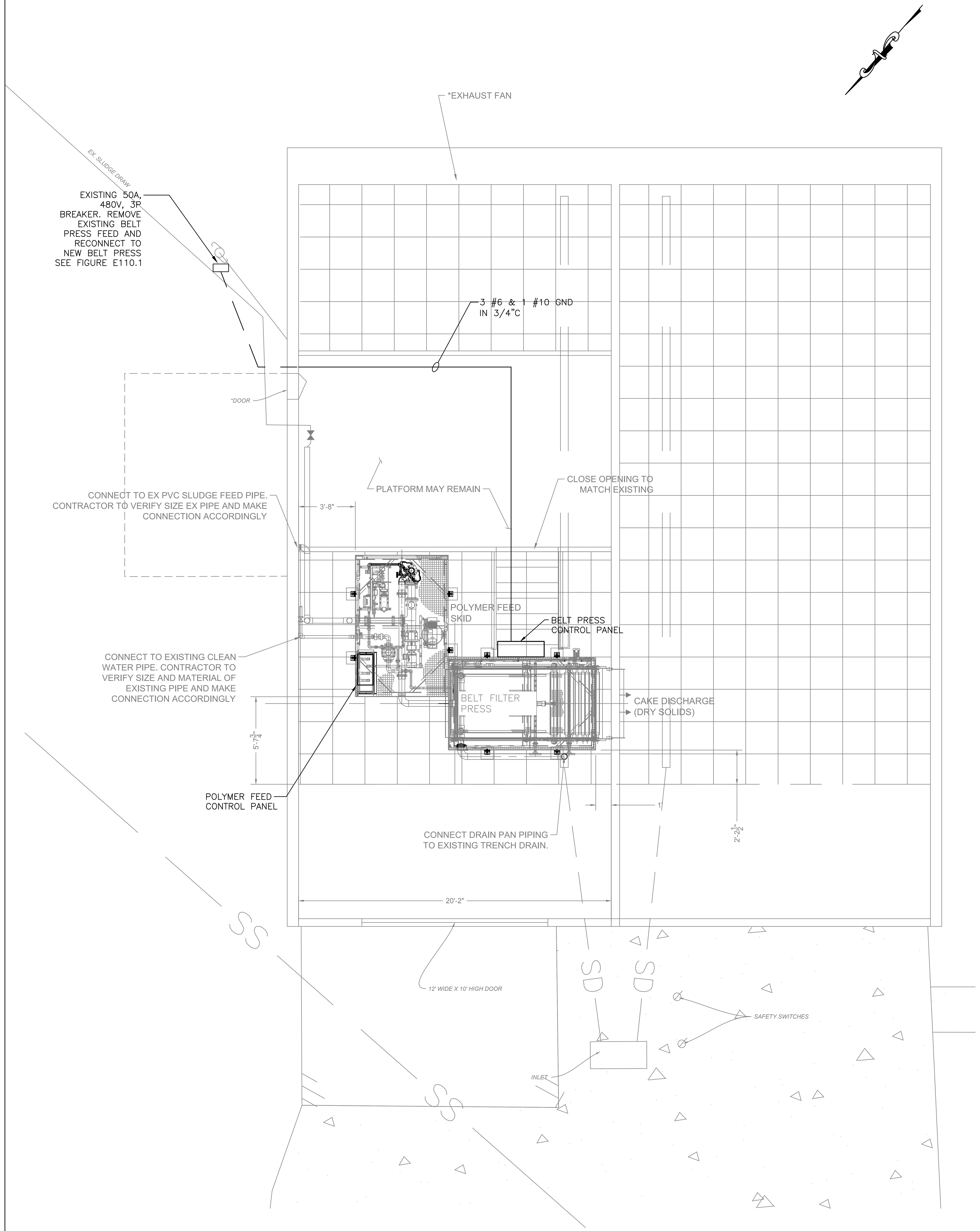
PH: 678-469-5196

DRAWING NO.

E109

NOTES:

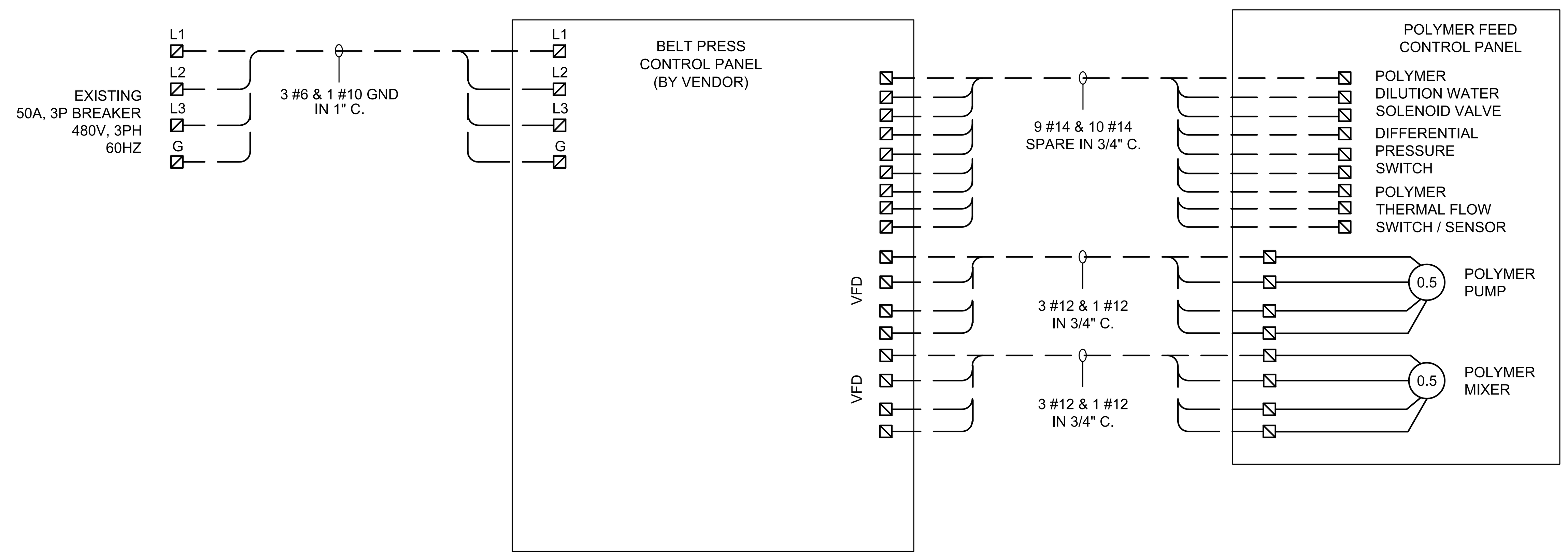
1. CONTRACTOR SHALL PROVIDE ALL INTERCONNECTING WIRING AND CONDUIT PER BELT PRESS SHOP DRAWINGS.



DE-WATERING BUILDING - ELECTRICAL PLAN

SCALE: 1/4" = 1'-0"

FIGURE E110.1



BELT PRESS

SCHEMATICS

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SCALE: AS SHOWN

CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

DE-WATERING BUILDING ELECTRICAL PLAN

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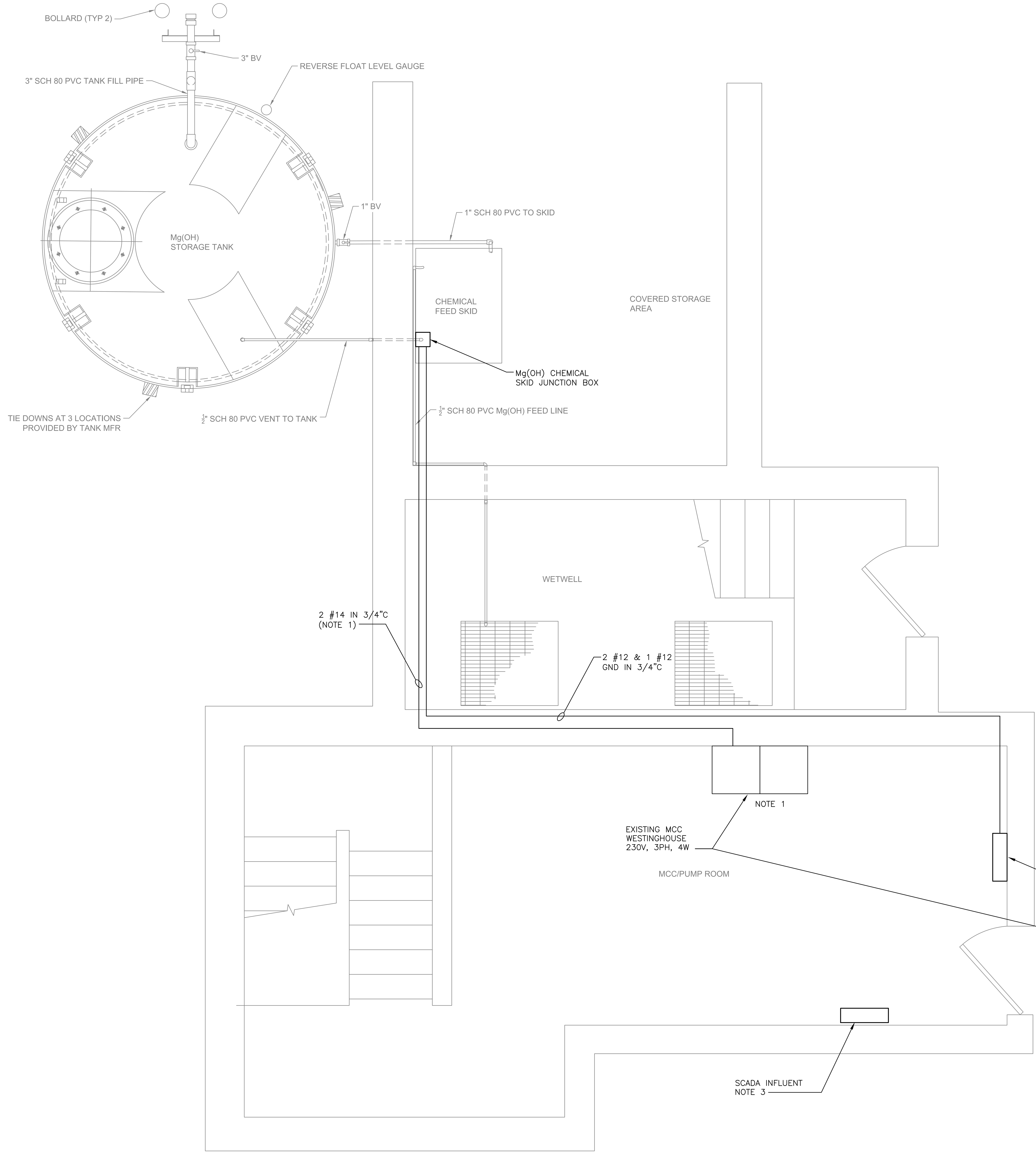
E110



A E-111 **CHEMICAL FEED - ELECTRICAL PLAN**
SCALE: 1/2" = 1'

NOTES:

1. CONTRACTOR SHALL INTERLOCK EXISTING SEWAGE PUMPS 1, 2, AND 3 WITH NEW MAGNESIUM METERING PUMPS SUCH THAT ONE METERING PUMP STARTS AND STOPS WITH ANY OF THE THREE EXISTING SEWAGE PUMPS.
2. CONTRACTOR SHALL MODIFY EXISTING MCC SUCH THAT THE FOLLOWING SIGNALS ARE MADE AVAILABLE TO SCADA INFLUENT:
   A) RAW SEWAGE PUMP 1, 2, 3 RUN
   B) RAW SEWAGE PUMP 1, 2, 3 FAULT
3. INSTALL SCADA INFLUENT ON WALL AND ROUTE 3 #12 IN 3/4" C. TO EXISTING 120V PANEL 120V POWER, ROUTE 12 #14 IN 3/4" C. TO MCC, ROUTE #16 TSP IN 3/4" C. TO LEVEL CONTROL PANEL AND SPLIT EXISTING LEVEL SIGNAL.

FIGURE E111.1

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SCALE: 1/2" = 1'

CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

CHEMICAL FEED ELECTRICAL PLAN

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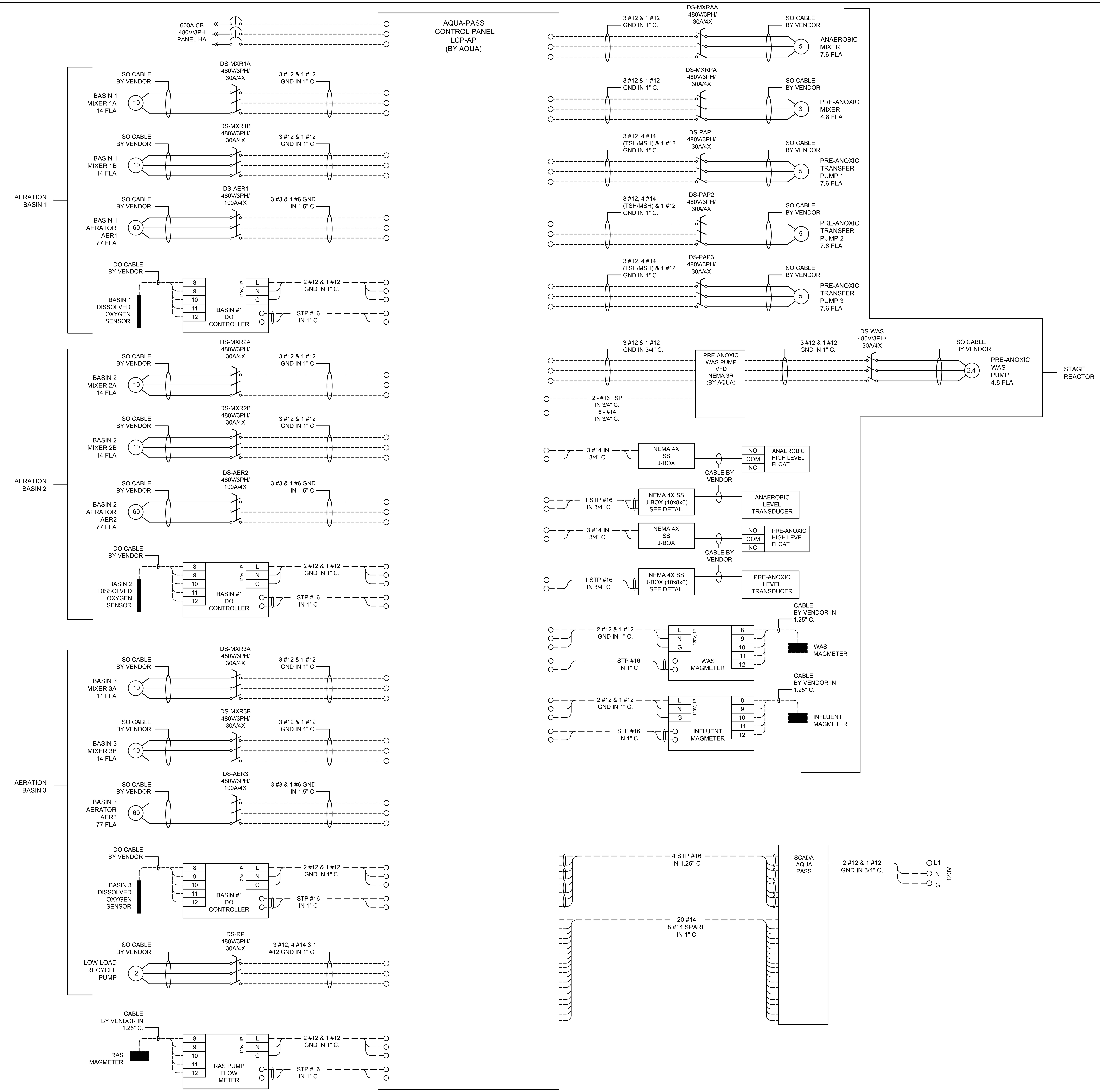
DRAWING NO.
E111



NOTES:
1. CONTRACTOR SHALL LABEL ALL CONDUCTORS PER THE AQUA SHOP DRAWINGS.

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CONSTRUCTION PLANS FOR
SYLVANIA WPCP UPGRADES
LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

AQUA PASS SCHEMATIC

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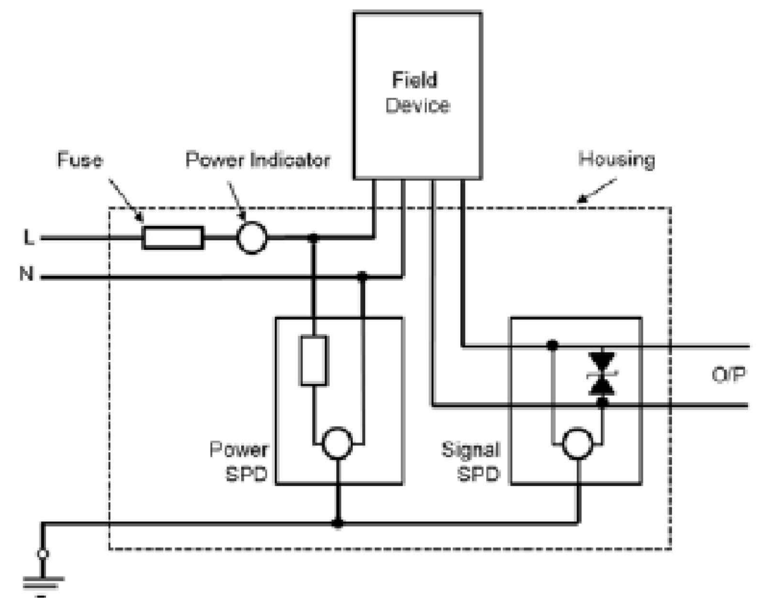
DRAWING NO.
E112

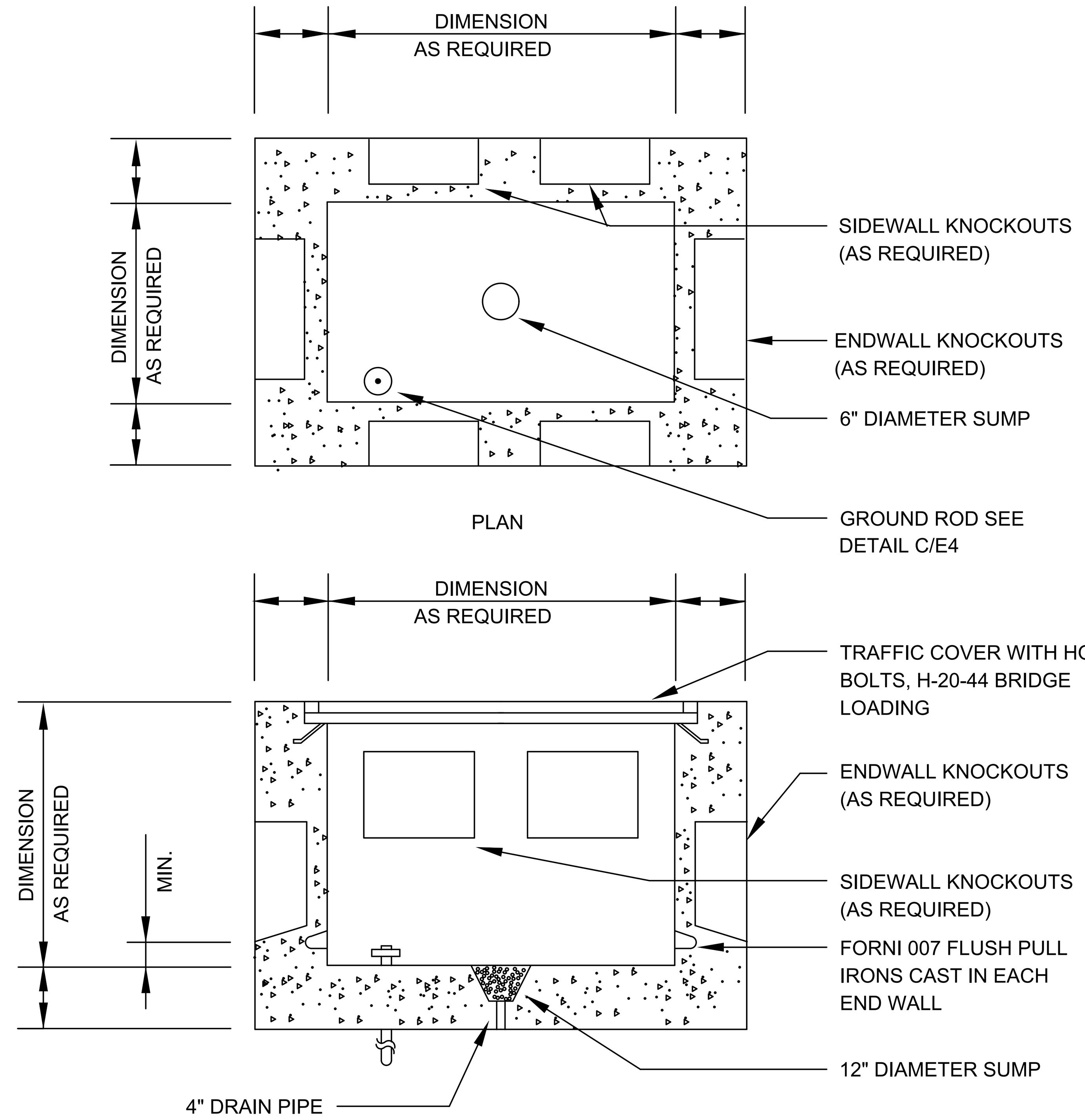


NOTES:
1. CONTRACTOR SHALL FURNISH A LOCAL SURGE SUPPRESS FOR ALL 4-WIRE FIELD MOUNTED TRANSMITTERS INCLUDING THE EFFLUENT PARSHALL FLUME, AERATION BASIN 1, 2, 3 DO PROBES, AND THE RAS FLOW METER.
2. SURGE SUPPRESSOR SHALL BE WEIDMULLER FISA FIELD INSTRUMENT IN A NEMA 4X POLYCARBONATE ENCLOSURE OR APPROVED EQUAL.
3. MOUNT SUPPRESSOR ON RACK ADJACENT TO TRANSMITTER.

LOCAL SURGE SUPPRESSOR

SCHEMATIC

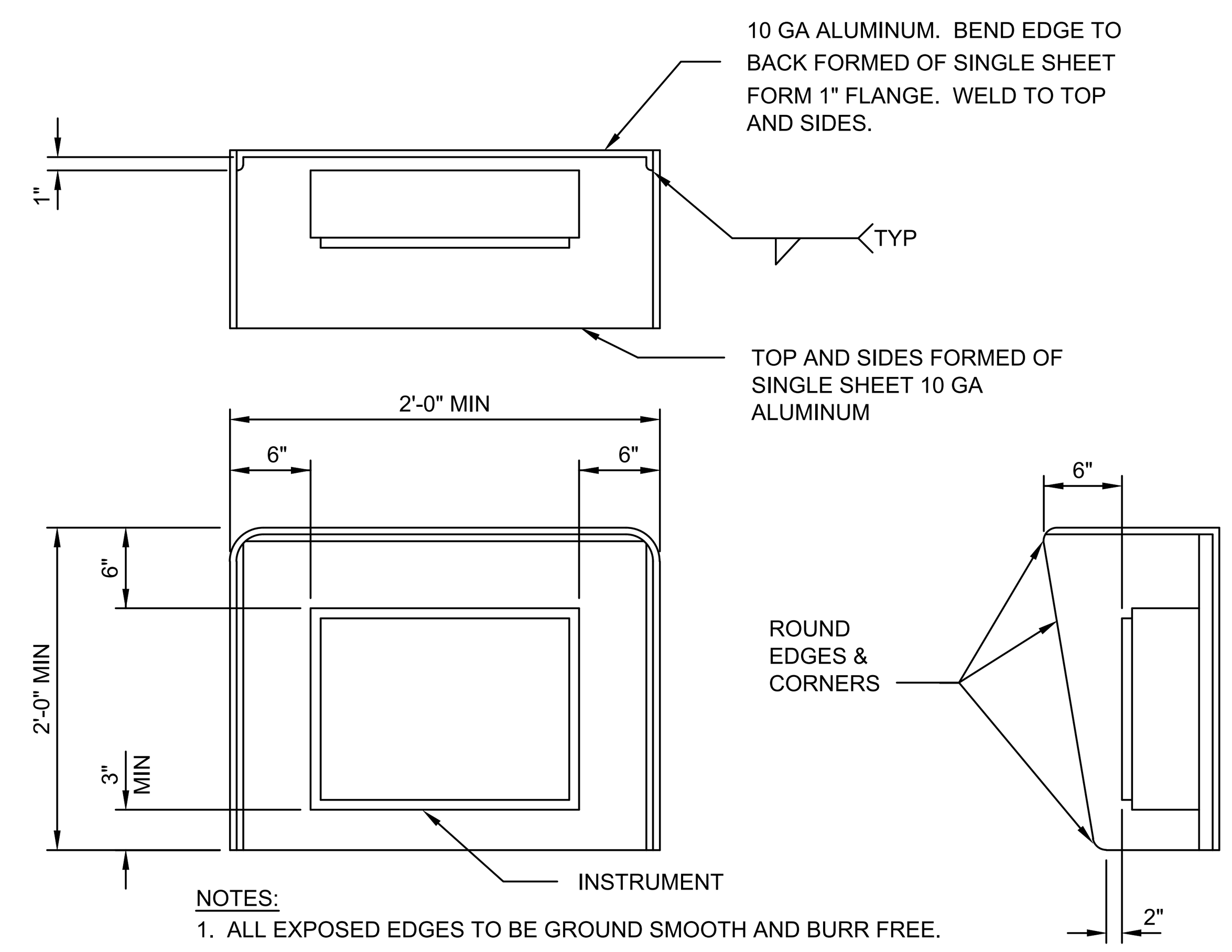
DETAIL A / E113



TYPICAL HAND-HOLE DETAIL

SCHEMATIC

DETAIL B / E113

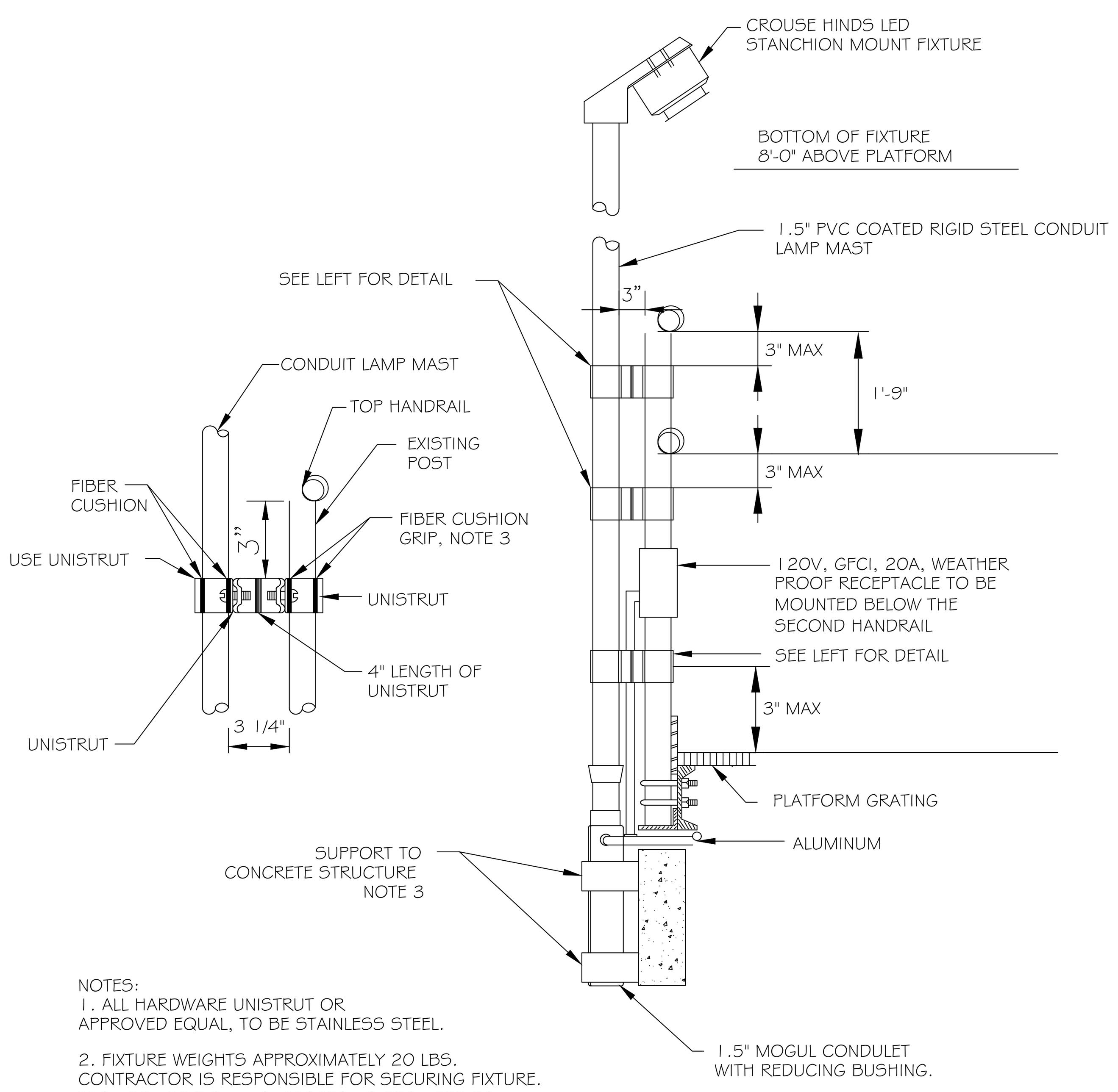


NOTES:
1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
2. MOUNT RAIN HOOD BETWEEN INSTRUMENT AND STANCHION. USE STAINLESS STEEL BOLTS AND INSULATING WASHERS AND SLEEVES.
3. PROVIDE SUNSHIELD FOR THE PARSHALL FLUME TRANSMITTER, THE RAS FLOW TRANSMITTER, AERATION BASINS 1, 2, 3 DO CONTROLLERS.

SUN SHIELD

SCHEMATIC

DETAIL C / E113

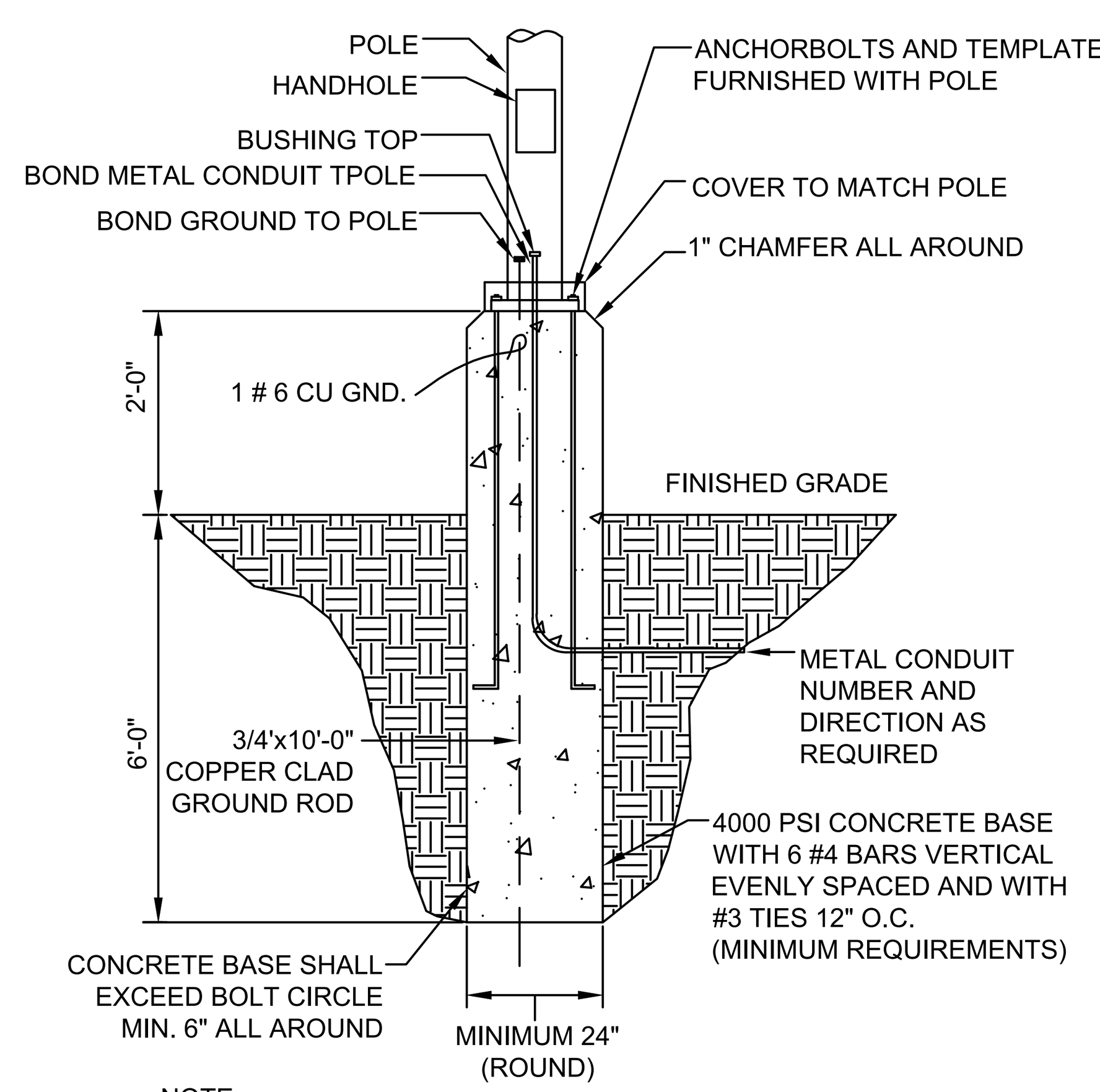


NOTES:
1. ALL HARDWARE UNISTRUT OR APPROVED EQUAL, TO BE STAINLESS STEEL.
2. FIXTURE WEIGHTS APPROXIMATELY 20 LBS. CONTRACTOR IS RESPONSIBLE FOR SECURING FIXTURE. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO SECURE FIXTURE AND PREVENT FROM MOVING.
3. CONTRACTOR SHALL FASTEN/SECURTE FIXTURE TO CONCRETE BELOW AND / OR HANDRAIL. CONTRACTOR IS RESPONSIBLE FOR FULLY SECURING FIXTURE SUCH THAT IT DOESN'T SWAY.

TYPE A LIGHT FIXTURE MOUNTED TO HANDRAIL DETAIL

SCHEMATIC

DETAIL D / E113

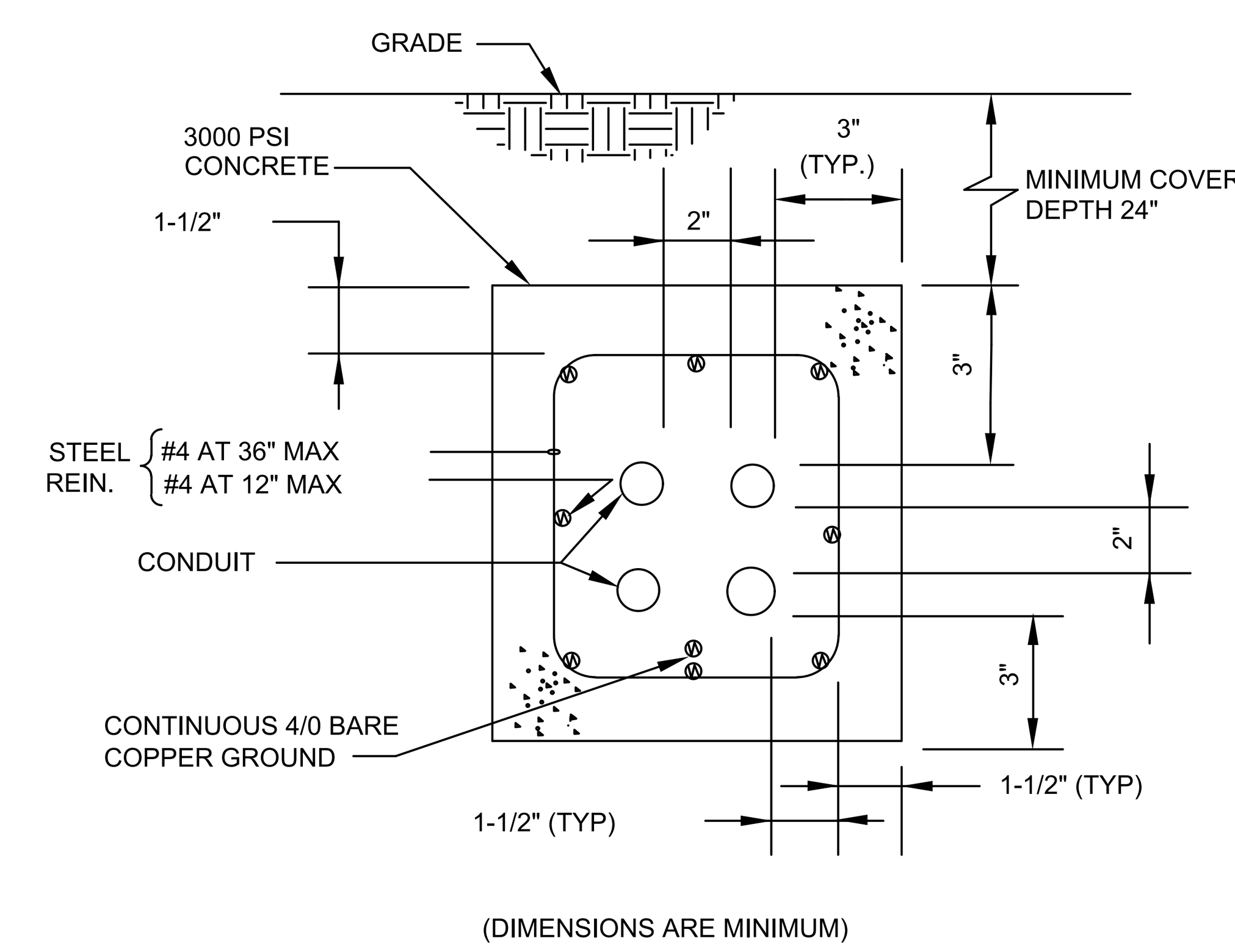


NOTE:
1. POLE AND BASE WITH LUMINARES SHALL BE RATED FOR 80 MPH WIND LOADING WITH 1.3 GUST FACTOR.

POLE BASE DETAIL

SCHEMATIC

DETAIL E / E113

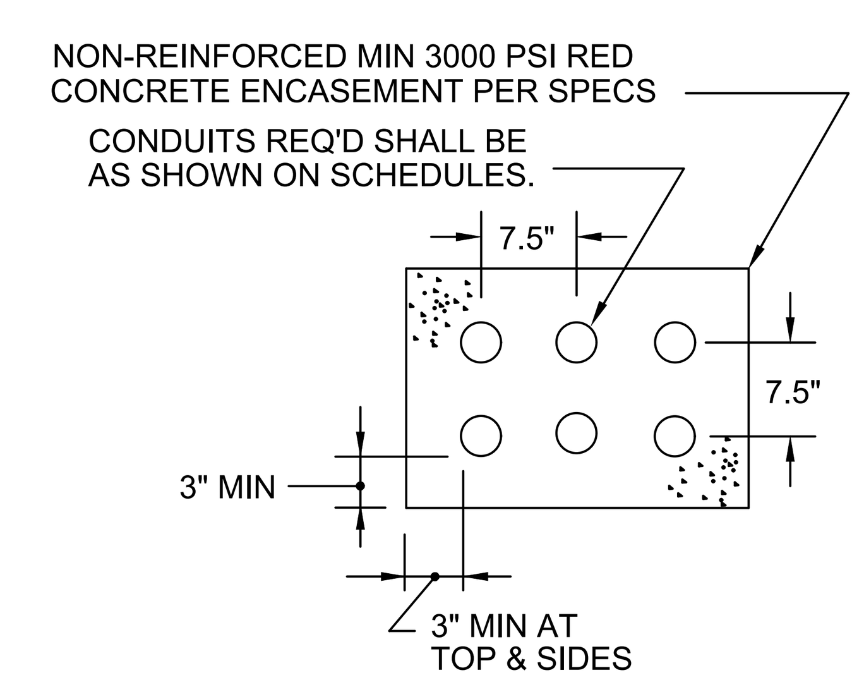


(DIMENSIONS ARE MINIMUM)

REINFORCED DUCT BANK SECTION

SCHEMATIC

DETAIL F / E113



NON-REINFORCED DUCT BANK SECTION

SCHEMATIC

DETAIL G / E113

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CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

ELECTRIC DETAILS 1

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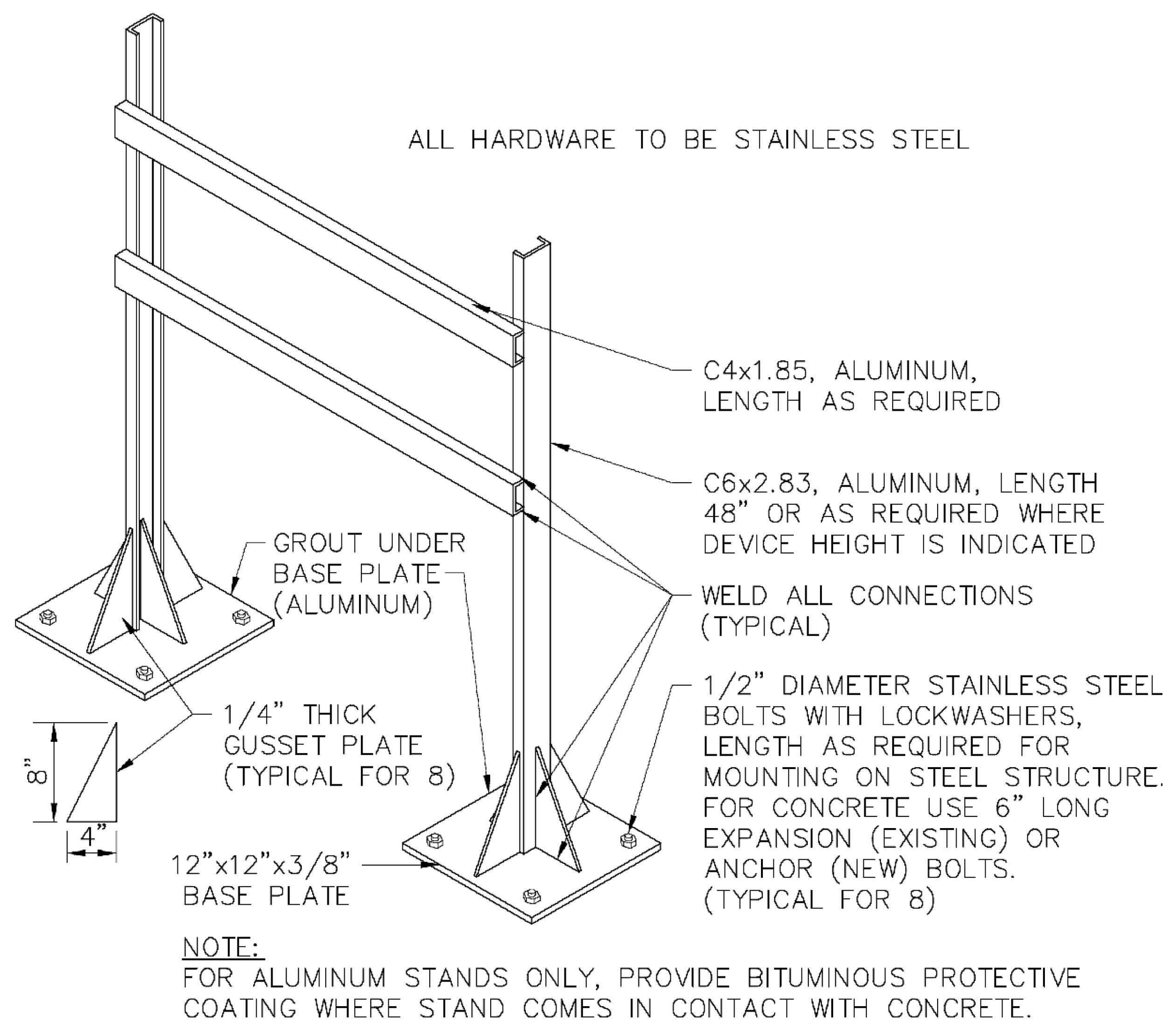
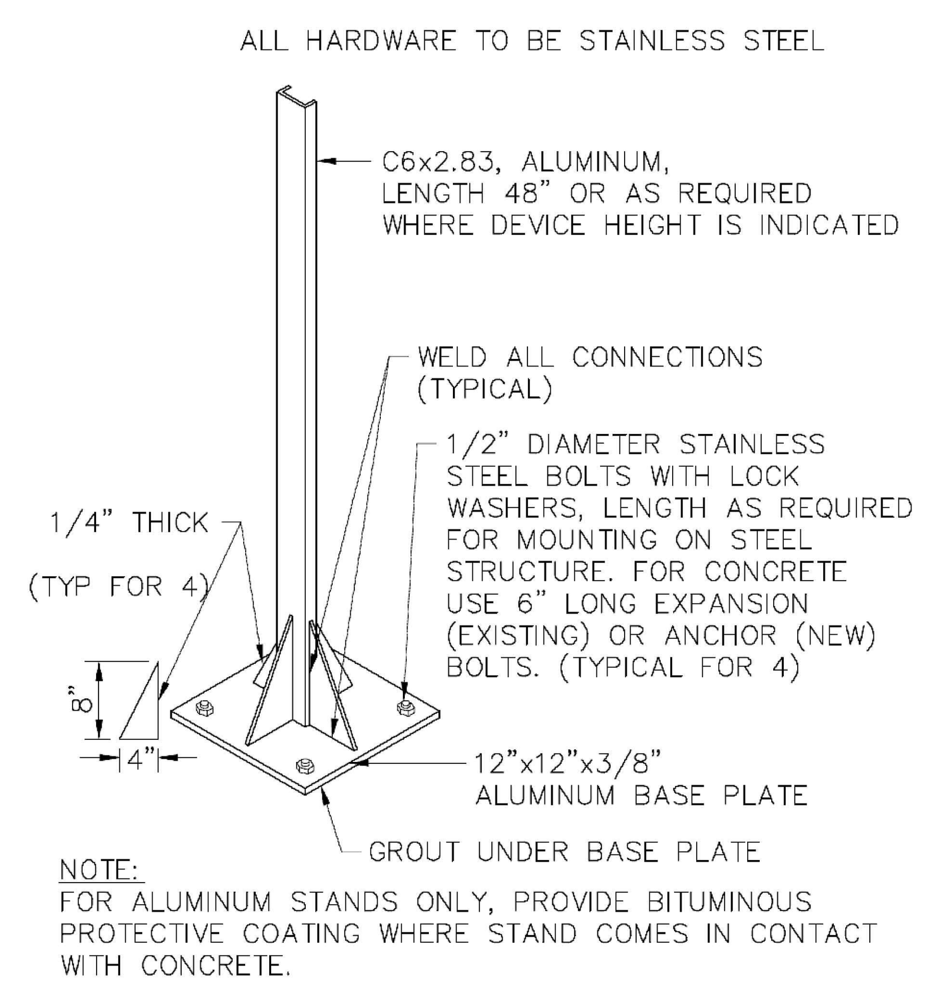


DUAL SUPPORT STAND / UTILITY RACK

DETAIL A / E114

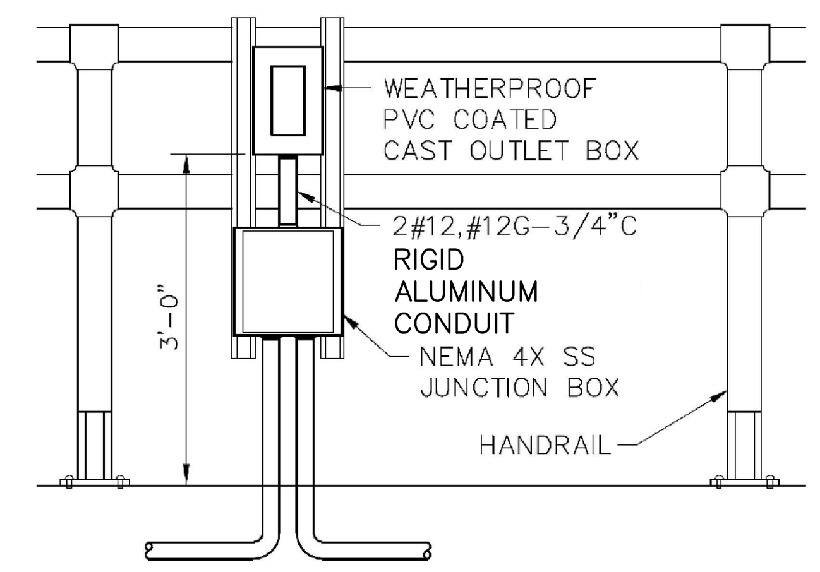
SCALE: NONE



SINGLE SUPPORT STAND / UTILITY RACK

DETAIL B / E114

SCALE: NONE



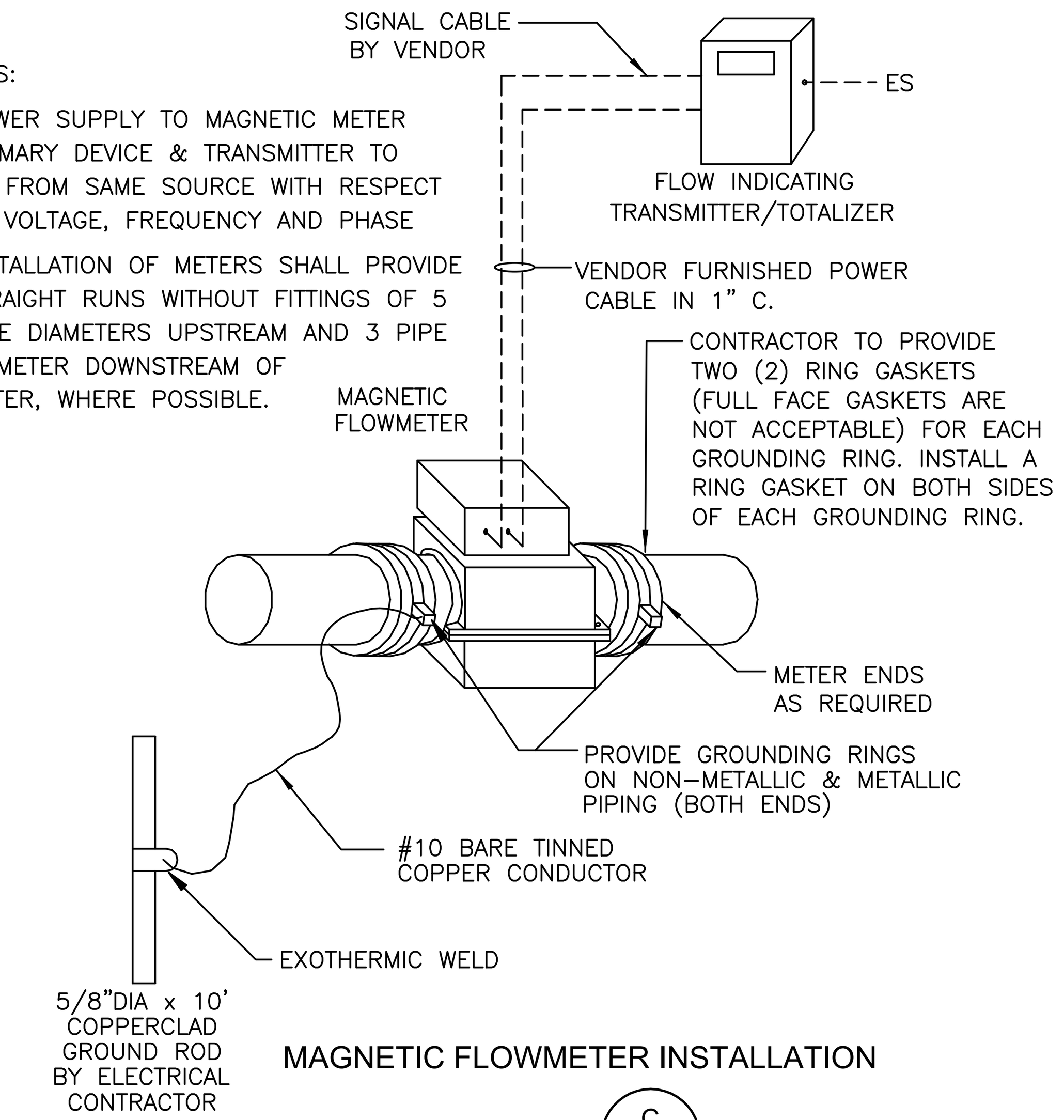
HANDRAIL MOUNTED RECEPTACLE

DETAIL C / E114

SCALE: NONE

NOTES:

1. POWER SUPPLY TO MAGNETIC METER PRIMARY DEVICE & TRANSMITTER TO BE FROM SAME SOURCE WITH RESPECT TO VOLTAGE, FREQUENCY AND PHASE
2. INSTALLATION OF METERS SHALL PROVIDE STRAIGHT RUNS WITHOUT FITTINGS OF 5 PIPE DIAMETERS UPSTREAM AND 3 PIPE DIAMETER DOWNSTREAM OF METER, WHERE POSSIBLE.



MAGNETIC FLOWMETER INSTALLATION

DETAIL C / E114

SCALE: NONE

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CONSTRUCTION PLANS FOR

SYLVANIA WPCP UPGRADES

LOCATED IN LAND LOT ??? OF THE 1ST DISTRICT, SCREVEN COUNTY, GEORGIA

ELECTRIC DETAILS 2

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DRAWING NO.
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