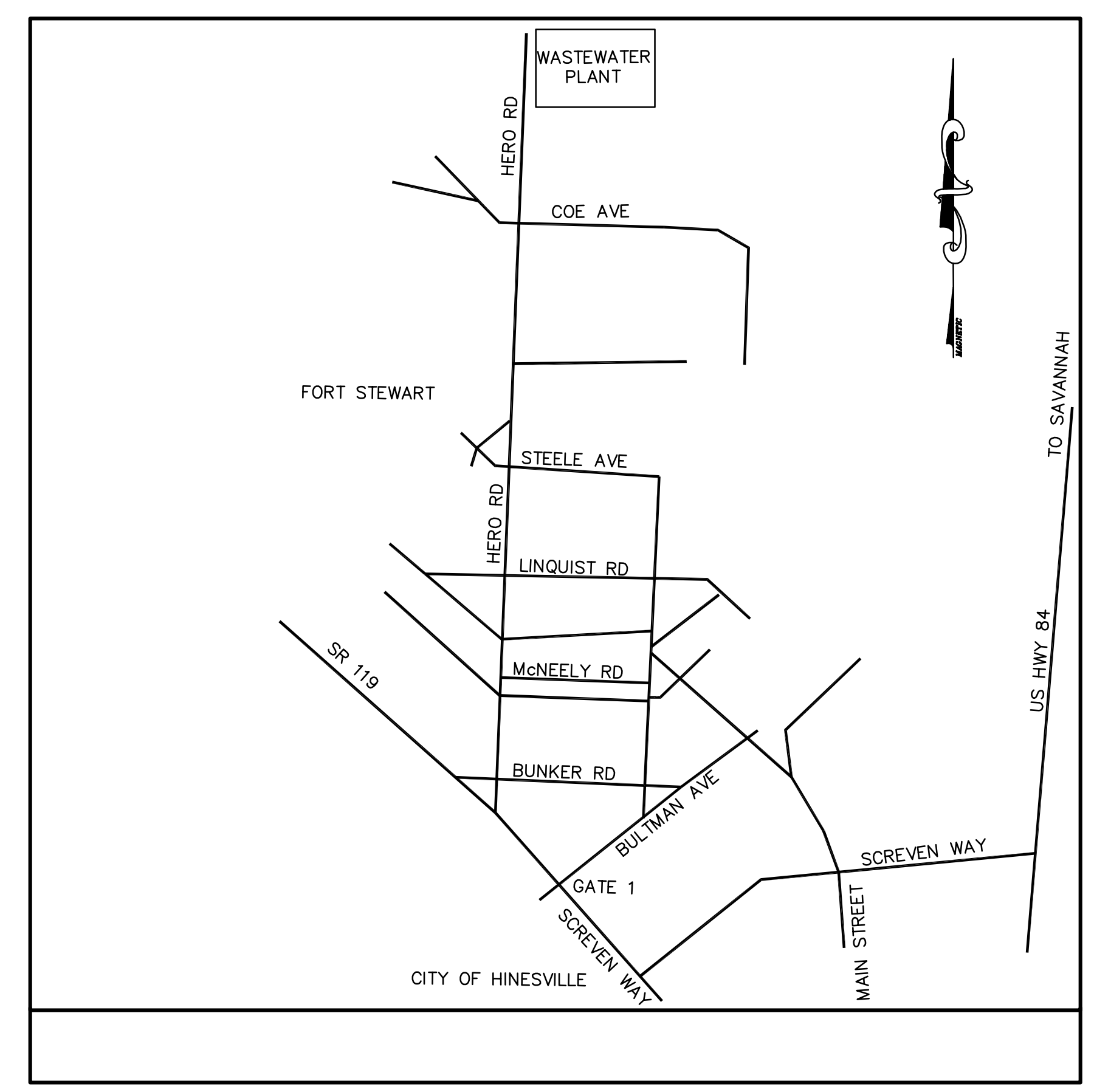


# Hinesville/Ft Stewart WWTP Modification for The City of Hinesville at Fort Stewart

Liberty County, Georgia  
Date: November 29, 2012  
Revised October 14, 2014

**PROJECT DESCRIPTION**

THE PROJECT IS LOCATED ON FT. STEWART ARMY BASE AND INVOLVES MODIFICATION OF THE EXISTING WASTEWATER TREATMENT FACILITY. THE PROJECT WILL INCLUDE DEMOLITION OF SOME EXISTING FACILITIES AND CONSTRUCTION OF NEW FACILITIES. THE OVERALL SITE IS 13.10 ACRES. THE DISTURBED AREA IS 11.10 ACRES. THE SITE IS LOCATED IN THE COASTAL WATER CONSERVATION DISTRICT IN THE 17TH GMD.

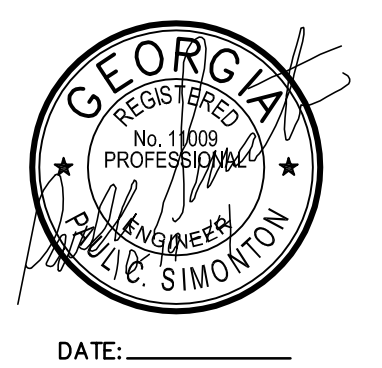


**GENERAL NOTES**

1. ALL EXISTING UTILITIES SHOWN ARE LOCATED FROM BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACTUAL FIELD LOCATION AND PROTECTION OF EXISTING UTILITIES. OVERHEAD LINES ARE NOT SHOWN FOR CLARITY.
2. ALL DISTURBED AREAS TO BE REVEGETATED IMMEDIATELY AFTER CONSTRUCTION, IN ACCORDANCE WITH THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.
3. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO OR CONCURRENT WITH START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY PROPERTY CORNERS, RIGHT OF WAY MONUMENTS, SIGNS OR OTHER STRUCTURES DISTURBED DURING CONSTRUCTION.
5. ALL TRAFFIC AND SIGNAGE CONTROL SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL MANUAL GUCC, CURRENT EDITION.

**OWNER/AGENT**

CITY OF HINESVILLE  
CONTACT: BILLY EDWARDS, CITY MANAGER  
115 EAST M.L. KING JR DRIVE  
HINESVILLE, GA 31313  
TEL: (912) 876-3564  
FAX: (912) 369-2658



DATE: \_\_\_\_\_



**JOB NO. 2009-63PRJ**

REVISION NO.	DATE	DESCRIPTION

# INDEX OF DRAWINGS

DESIGNATION	PAGE	SHEET	DESCRIPTION	DESIGNATION	PAGE	SHEET	DESCRIPTION	DESIGNATION	PAGE	SHEET	DESCRIPTION
GENERAL	1	G-1	EXISTING SITE	MECHANICAL	42	M-20	SBR AIR PIPING EAST ELEVATION	STRUCTURAL	82	5S-2	UV CHANNEL SECTIONS
	2	G-2	OVERALL SITE		43	M-21	SBR AIR PIPING NORTH ELEVATION		83	5S-3	UV CHANNEL DETAILS
	3	G-3	HYDRAULIC PROFILE		44	M-22	SBR AIR PIPING WEST ELEVATION		84	6S-1	BLOWER BUILDING NOTES AND PLANS
									85	6S-2	BLOWER BUILDING ELEVATIONS AND BUILDING SECTIONS
CIVIL	4	C-1	SITE LAYOUT PLAN SOUTH SECTION		45	R-1	OPERATIONS BUILDING PLAN		86	6S-3	BLOWER BUILDING WALL SECTIONS, DETAILS, & SCHEDULES
	5	C-2	SITE LAYOUT PLAN NORTH SECTION	REHABILITATION	46	R-2	OPERATIONS BUILDING ELEVATIONS		87	6S-4	BLOWER BUILDING ENLARGED TRANSVERSE BUILDING SECTION
	6	C-3	SITE DRAINAGE & GRADING PLAN SOUTH SECTION		47	R-3	OPERATIONS BUILDING ROOFING PLAN		88	6S-5	BLOWER BUILDING STRUCTURAL DETAILS
	7	C-4	SITE DRAINAGE & GRADING PLAN NORTH SECTION		48	R-4	OPERATIONS BUILDING ELEVATIONS		89	6S-6	BLOWER BUILDING STRUCTURAL DETAILS
	8	C-5	YARD PIPING MAIN SOUTH SECTION		49	R-5	RETURN SLUDGE PS		90	6S-7	BLOWER BUILDING UNDERLAYMENT & ROOF DETAILS
	9	C-6	YARD PIPING MAIN NORTH SECTION		50	R-6	RECIRCULATION BUILDING/ELECTRICAL BUILDING		91	7S-1	ELECTRICAL BUILDING NOTES AND PLANS
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	11	C-8	INFLUENT PLAN & PROFILE		52	R-8	ROOF & WINDOW DETAILS		93	7S-3	ELECTRICAL BUILDING WALL SECTIONS, DETAILS, & SCHEDULES
	12	C-9	SEWER PLAN & PROFILE						94	7S-4	ELECTRICAL BUILDING ENLARGED TRANSVERSE BUILDING SECTION
	13	C-10	WATER QUALITY		53	D-1	OVERALL SITE DEMO		95	7S-5	ELECTRICAL BUILDING STRUCTURAL DETAILS
	14	C-11	INITIAL PHASE EROSION & SEDIMENT CONTROL PLAN SOUTH	DEMO	54	D-2	DEMO PLAN SOUTH		96	7S-6	ELECTRICAL BUILDING SCHEDULES
	15	C-12	INITIAL PHASE EROSION & SEDIMENT CONTROL PLAN NORTH		55	D-3	DEMO PLAN NORTH		97	7S-7	ELECTRICAL BUILDING UNDERLAYMENT & ROOF DETAILS
	16	C-13	INTERMEDIATE PHASE EROSION & SEDIMENT CONTROL PLAN SOUTH						98	8S-1	CHEMICAL METERING PUMP BUILDING NOTES, PLANS, & ELEVATIONS
	17	C-14	INTERMEDIATE PHASE EROSION & SEDIMENT CONTROL PLAN NORTH	STRUCTURAL	56	1S-1	OVERALL HEADWORKS PLAN & ENLARGED UPSTREAM HEADWORKS PLAN		99	8S-2	CHEMICAL METERING PUMP BUILDING SECTIONS & SCHEDULES
	18	C-15	FINAL PHASE EROSION & SEDIMENT CONTROL PLAN SOUTH		57	1S-2	HEADWORKS ENLARGED PLANS		100	8S-3	CHEMICAL METERING PUMP BUILDING SECTIONS & SCHEDULES
	19	C-16	FINAL PHASE EROSION & SEDIMENT CONTROL PLAN NORTH		58	1S-3	HEADWORKS SECTIONS		101	8S-4	CHEMICAL METERING PUMP BUILDING STRUCTURAL DETAILS
	20	C-17	EROSION & SEDIMENT CONTROL DETAILS		59	1S-4	HEADWORKS SECTIONS		102	8S-5	CHEMICAL METERING PUMP BUILDING SCHEDULES
	21	C-18	GENERAL DETAILS		60	1S-5	HEADWORKS SECTIONS		103	8S-6	CHEMICAL METERING PUMP BUILDING UNDERLAYMENT & ROOF DETAILS
	22	C-19	EROSION & SEDIMENT CONTROL NOTES		61	1S-6	HEADWORKS SECTIONS				
					62	1S-7	HEADWORKS SECTIONS	ELECTRICAL	104	E0.1	LEGEND, ABBREVIATIONS & GENERAL NOTES
MECHANICAL	23	M-1	HEADWORKS PLAN VIEW & DETAILS		63	1S-8	HEADWORKS SECTIONS		105	E0.2	ELECTRICAL DETAILS
	24	M-2	PUMP STATION DETAIL		64	1S-9	HEADWORKS SECTIONS		106	E0.3	ELECTRICAL DETAILS
	25	M-3	SBR PLAN VIEW		65	1S-10	HEADWORKS DETAILS		107	E1.0	OVERALL SITE PLAN- ELECTRICAL
	26	M-4	SBR SECTIONS		66	2S-1	IN-PLANT PUMP STATION PLAN & GENERAL NOTES		108	E2.0	INFLUENT SYSTEMS ELECTRICAL PLAN
	27	M-5	DISK FILTER PLAN & DETAILS		67	2S-2	IN-PLANT PUMP STATION SECTIONS		109	E2.2	SBR TANKS 1&2-ELECTRICAL PPLAN
	28	M-6	UV PLAN & DETAILS		68	2S-3	IN-PLANT PUMP STATION DETAILS		110	E2.3	SBR TANKS 3&4-ELECTRICAL PLAN
	29	M-7	PLANT DISCHARGE PARSHAL FLUME		69	2S-4	IN-PLANT PUMP STATION DETAILS		111	E2.4	POST EQUALIZATION-ELECTRICAL PLAN
	30	M-8	DIGESTER EXISTING CONDITIONS		70	3S-1	SBR TANKS PILE LAYOUT PLAN		112	E2.5	AEROBIC DIGESTER-ELECTRICAL PLAN
	31	M-9	DIGESTER PLAN VIEW		71	3S-2	SBR TANKS PLAN & GENERAL NOTES		113	E2.6	BLOWER & SLUDGE BLDG.-ELECTRICAL PLAN
	32	M-10	DIGESTER SECTION VIEW		72	3S-3	SBR TANKS SECTION		114	E2.7	EXIST. RECIRC., CONTROL & CHEM. BLDGS.-ELECTRICAL PLANS
	33	M-11	EXISTING DIGESTER MECHANICAL ROOM ISOMETRIC DETAIL		73	3S-4	SBR TANKS PARTIAL SECTIONS		115	E3.0	BLOWER BUILDING-LIGHTING, POWER & HVAC PLANS
	34	M-12	PROPOSED DIGESTER MECHANICAL ROOM ISOMETRIC DETAIL		74	3S-5	SBR TANKS PARTIAL SECTIONS		116	E5.0	MAIN DISTRIBUTION ONE-LINE DIAGRAM
	35	M-13	EXISTING DIGESTER MECHANICAL ROOM DETAIL		75	3S-6	SBR TANKS DETAIL		117	E5.1	SUB-SYSTEMS RISER DIAGRAMS
	36	M-14	PROPOSED DIGESTER MECHANICAL ROOM DETAIL		76	4S-1	FILTER BASIN PLAN AND GENERAL NOTES		118	E5.2	POST EQUALIZATION RISER DIAGRAMS
	37	M-15	CHEMICAL FEED SYSTEM DETAIL		77	4S-2	FILTER BASIN SECTIONS		119	E5.3	PANELS HB, HC, MCC-ECA, MCC-ECB, & MCC-GR ONE LINE DIAGRAMS
	38	M-16	PUMP STATION DETAILS (REUSE & REJECT/REUSE TARK DRAIN		78	4S-3	FILTER BASIN SECTIONS		120	E5.4	SCADA SYSTEM RISER DIAGRAM & START UP SEQUENCE SCHEDULE
	39	M-17	BLOWER BUILDING AIR PIPING DETAILS		79	4S-4	FILTER BASIN SECTIONS		121	E6.1	MOTOR CONTROL CENTER ELEVATIONS & SCHEDULES
	40	M-18	SBR AIR PIPING PLAN VIEW		80	4S-5	FILTER BASIN DETAILS		122	E6.1	PANEL SCHEDULE
	41	M-18	SBR AIR PIPING SOUTH ELEVATION		81	5S-1	UV CHANNEL PLAN, NOTES, & SPECIFICATIONS				

DRAWING COMPLETED BY: \_\_\_\_\_

REVISED: \_\_\_\_\_



DATE: \_\_\_\_\_

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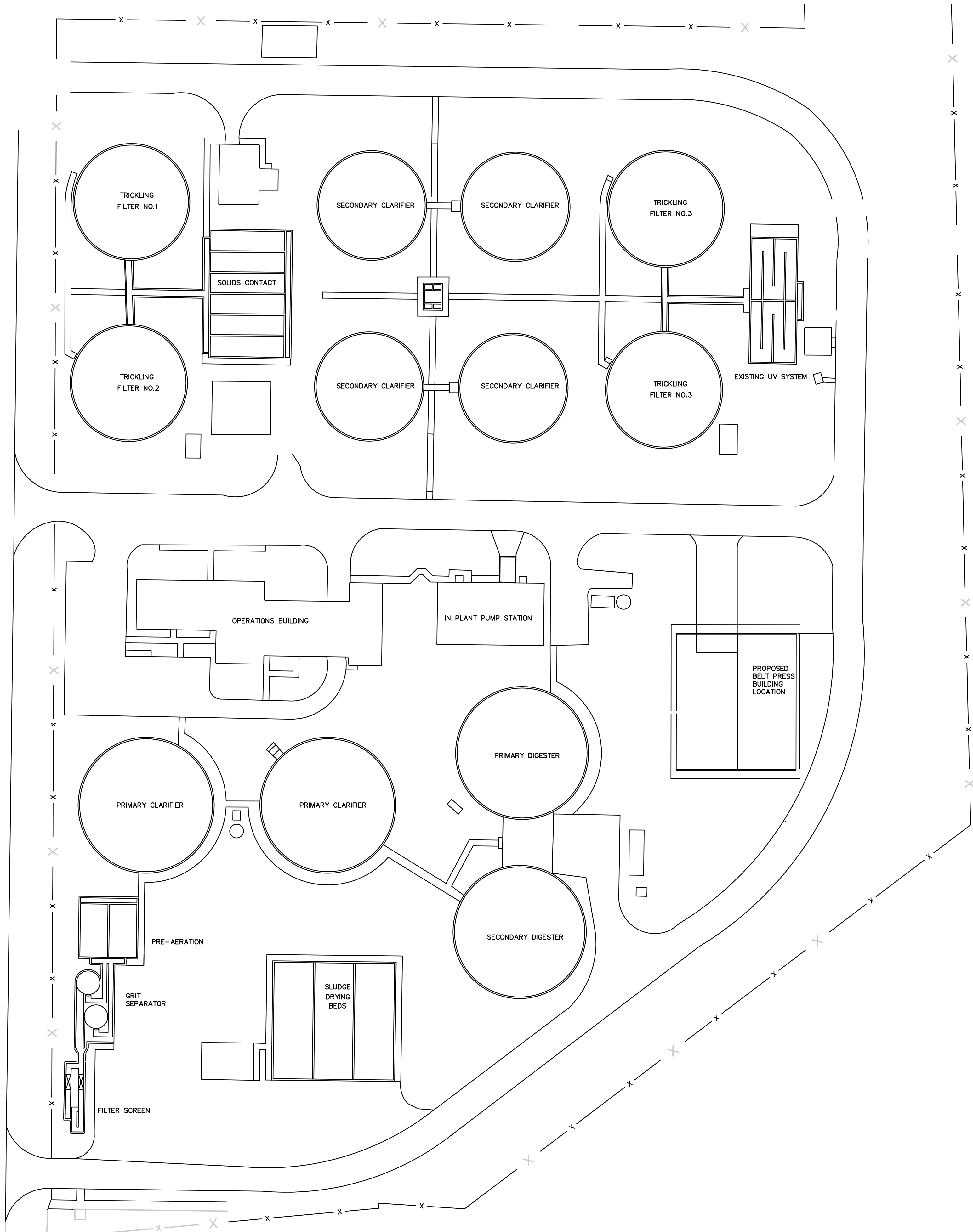
**Hinesville/Ft Stewart**  
**WWTP Upgrade**  
 for  
**The City of Hinesville**  
 Ft Stewart  
 Liberty County, Georgia

Index of Drawings  
 DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
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**NOTES**

1. ALL CONSTRUCTION EQUIPMENT ENTERING FORT STEWART WILL BE REQUIRED TO ACCESS THROUGH THE 15TH STREET GATE (ACP 7). ONCE THE EQUIPMENT IS STAGED ON FORT STEWART THE CONTRACTOR WILL NOT BE REQUIRED TO ACCESS ACP 7 DAILY FOR CHECKS AND INSPECTIONS, HOWEVER IF THE EQUIPMENT LEAVES FORT STEWART ANY ACCESS BACK ONTO FORT STEWART WILL REQUIRE CHECKING AND INSPECTION AT ACP 7. ANY ACCESS THROUGH THE VETERANS PARKWAY GATE (ACP 8) SHALL REQUIRE SPECIAL COORDINATION WITH DES SECURITY DIVISION.
2. THE CONTRACTOR MUST OBTAIN VEHICLE PASSES FOR COMPANY/OFFICIAL VEHICLES. NO PERSONAL VEHICLES BELONGING TO CONSTRUCTION WORKERS WILL BE ALLOWED ON FORT STEWART FOR THIS PROJECT. ALL VEHICLES ENTERING WITH WORKERS WILL BE PERMITTED CONTRACTOR VEHICLES REGISTERED WITH THE FEDERAL GOVERNMENT. ALL WORKERS ENTERING FORT STEWART MUST HAVE A VALID PICTURE IDENTIFICATION.
3. DES SECURITY WILL REQUIRE AT LEAST THREE WEEKS NOTICE PRIOR TO UTILITY OR ROADWAY CONSTRUCTION OUTSIDE OF THE SITE BEGINNING TO ALLOW FORT STEWART RESIDENTS AND PERSONNEL TO BE NOTIFIED OF THE ANTICIPATED TRAFFIC CONGESTION. NO ROADWAY FULL OR PARTIAL CLOSURES FOR PAVEMENT CUTS WILL BE ALLOWED BETWEEN 05:00 TO 09:00, 11:00 TO 13:30 AND 16:00 TO 18:30, WEEKDAYS.
4. LIGHTING MUST BE MAINTAINED AT THE SITE DURING CONSTRUCTION. IF DAMAGED BY THE CONTRACTOR, THE CONTRACTOR MUST INSTALL TEMPORARY LIGHTING THAT PROVIDES THE SAME LUMINA VALUES AS THE EXISTING LIGHTS UNTIL SUCH TIME AS THE LIGHTING IS RESTORED.
5. KEYS AND LOCKS FOR ALL GATES WILL BE MAINTAINED BY OMI OPERATIONS.
6. ANY UTILITY AND ROADWAY WORK ON FORT STEWART WILL BE COORDINATED WITH DES SECURITY DIVISION.
7. THE CONTRACTOR SHALL REPLACE ALL MONUMENTS ALTERED OR DESTROYED BY THE CONSTRUCTION. THE REPLACED MONUMENT SHALL BE BY A GARLS AND CERTIFIED TO FORT STEWART TO MEET FEDERAL STANDARDS
8. ALL TIMBER REMOVAL AND CLEARING ON FORT STEWART WILL BE REQUIRED TO COMPLY WITH THE FOLLOWING. ALL ABOVE GROUND TIMBER WILL BE TRANSPORTED AND STOCKPILED AT THE FORT STEWART CHIPPING SITE WITHIN THE SECURE AREA. ALL BELOW GROUND TIMBER (STUMPS AND ROOTS) SHALL BE DISPOSED OF AT A PERMITTED SITE. THE CONTRACTOR SHOULD ANTICIPATE THE DISPOSAL SITE WILL BE OFF FORT STEWART AND ACCESS BACK IN WILL BE THROUGH ACP 7.
9. NO BORROW MATERIAL IS AVAILABLE ON FORT STEWART. ALL BORROW MATERIAL TRANSPORTED ONTO FORT STEWART WILL BE THROUGH ACP 7.
10. ALL SIGNS LOCATED ON THE INSTALLATION WILL BE MANAGED BY FORT STEWART DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE REMOVAL AND ADJUSTMENT OF SIGNS BY PROVIDING FORT STEWART OFFICIALS AT LEAST ONE WEEKS NOTICE OF SIGNS REQUIRING RELOCATION.
11. PROJECT MEETINGS WILL BE HELD WEEKLY TO REVIEW CONSTRUCTION STATUS, SECURITY ISSUES AND COORDINATION WITH FT STEWART DPW AND SECURITY
13. THE CONTRACTOR WILL BE REQUIRED TO PREPARE AND SUBMIT A SAFETY PLAN TO FT STEWART.
14. ANY WORK OUTSIDE OF THE SCOPE OF THE PLANS SHOWN WILL REQUIRED SECURITY APPROVAL PRIOR TO BEGINNING.
15. ARCHEOLOGICAL OR CULTURAL DISCOVERIES DURING CONSTRUCTION WILL IMMEDIATELY BE REPORTED TO FORT STEWART.
16. NO RIGHT OF WAY EXIST ON FORT STEWART. THE CONTRACTORS LIMITS OF DISTURBANCE, UNLESS OTHERWISE SPECIFICALLY INDICATED, SHALL BE LIMITED TO 10' OUTSIDE THE UTILITY MAINS BEING INSTALLED.
17. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN PICTURE IDENTIFICATION CARDS FOR ALL PERSONNEL ENTERING FT STEWART
18. ALL EROSION AND SEDIMENT CONTROL ON THE PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL MANUAL FOR GEORGIA.
19. THE WASTEWATER TREATMENT PLANT MUST CONTINUE OPERATION FOR THE DURATION OF THE PROJECT. CLOSE COORDINATION WITH OPERATIONS PERSONNEL IS REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES OR EXPENSE OF OPERATIONS CAUSED BY INTERRUPTION, BY THE CONTRACTOR, OF ANY OPERATIONS TO MAINTAIN INTEGRITY OF THE TREATMENT PROCESS. INTERRUPTION OF THE PLANT OPERATIONS WILL NOT BE TOLERATED.
20. EXCEPT IN AN EMERGENCY, OPERATION OF ANY ISOLATION OR PROCESS VALVES OR EQUIPMENT CAN ONLY BE PERFORMED BY OPERATIONS PERSONNEL.
21. RELOCATION OF EQUIPMENT WILL REQUIRE COORDINATION WITH OPERATIONS PERSONNEL.
22. REHAB MATERIALS WILL MATCH NEW MATERIALS AS IT RELATES TO LOOKS AND PERFORMANCE (i.e. METAL ROOFS ON ALL BUILDINGS WILL MATCH)



DRAWING COMPLETED BY: \_\_\_\_\_

REVISED: \_\_\_\_\_

DATE: \_\_\_\_\_



309 NORTH MAIN STREET  
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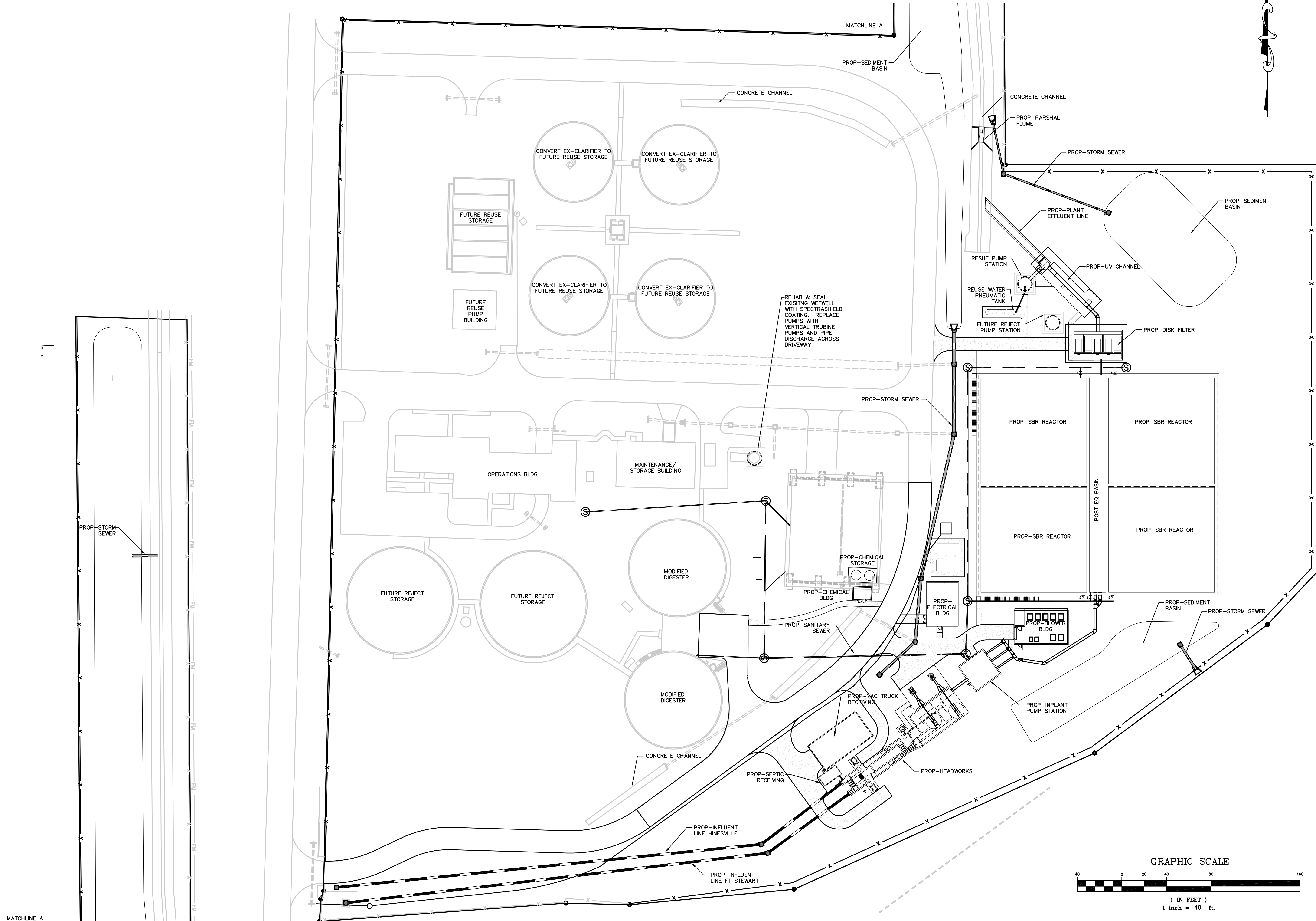
**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

**Wastewater Treatment Plant**  
for  
**The City of Hinesville**  
Hinesville, Georgia  
Liberty County, Georgia

Existing Overall Site Plan  
& Ft Stewart Notes

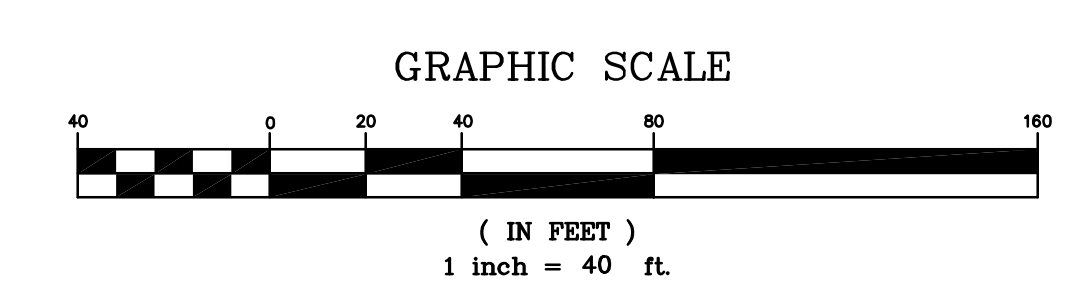
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MATCHLINE A

17



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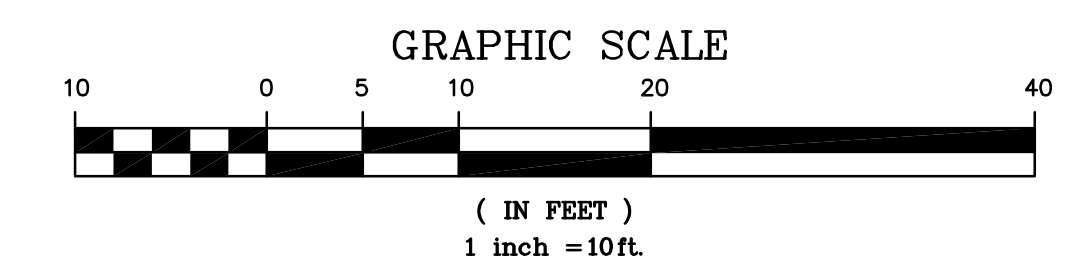
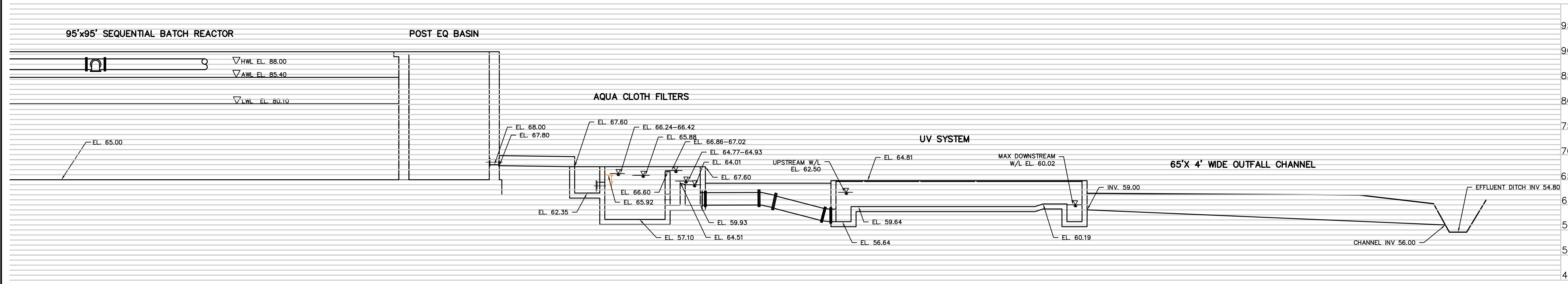
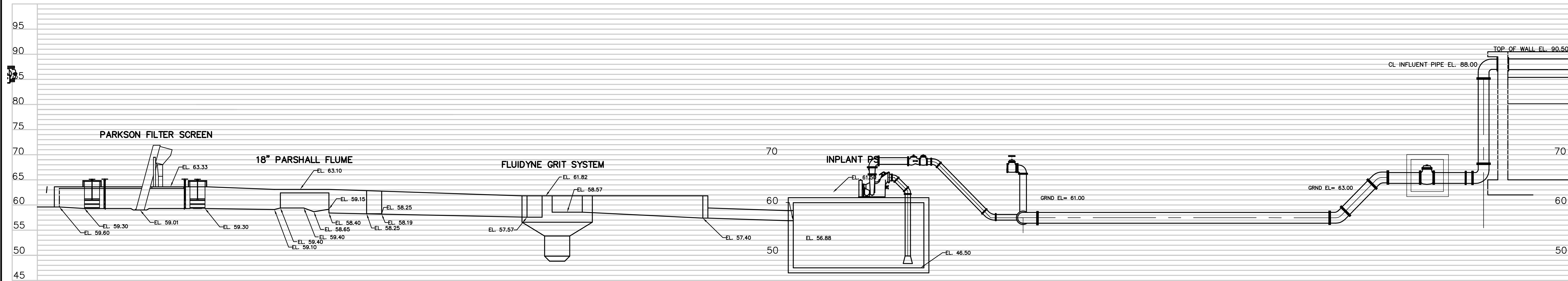
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**P.C. Simonton & Associates, Inc.**  
 Consulting Engineers

**Wastewater Treatment Plant**  
 for  
**The City of Hinesville**  
 Hinesville, Georgia  
 Liberty County, Georgia

Proposed Overall Site Plan  
 DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: G-2

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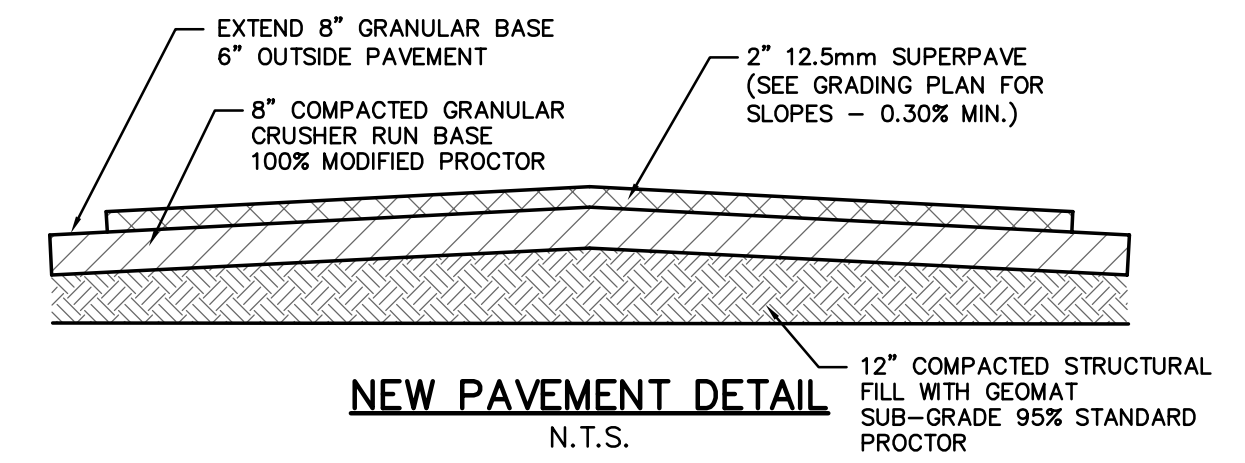
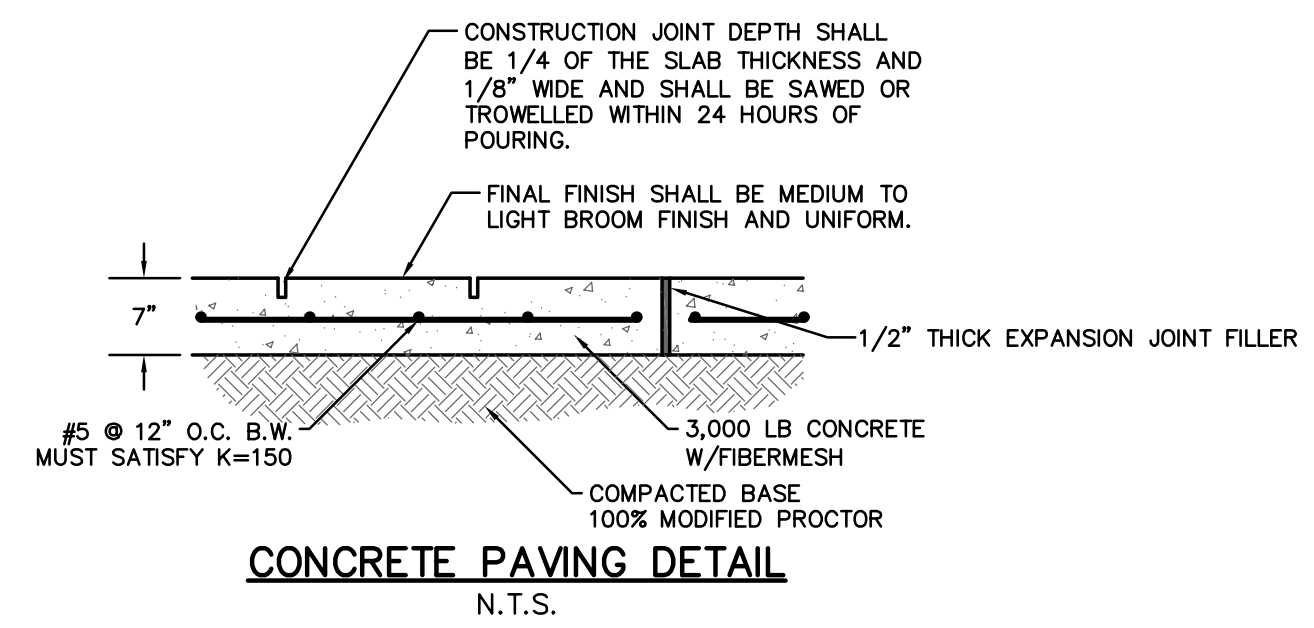
**Hinesville/Ft Stewart  
WWTP Upgrade  
for  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Hydraulic Profile

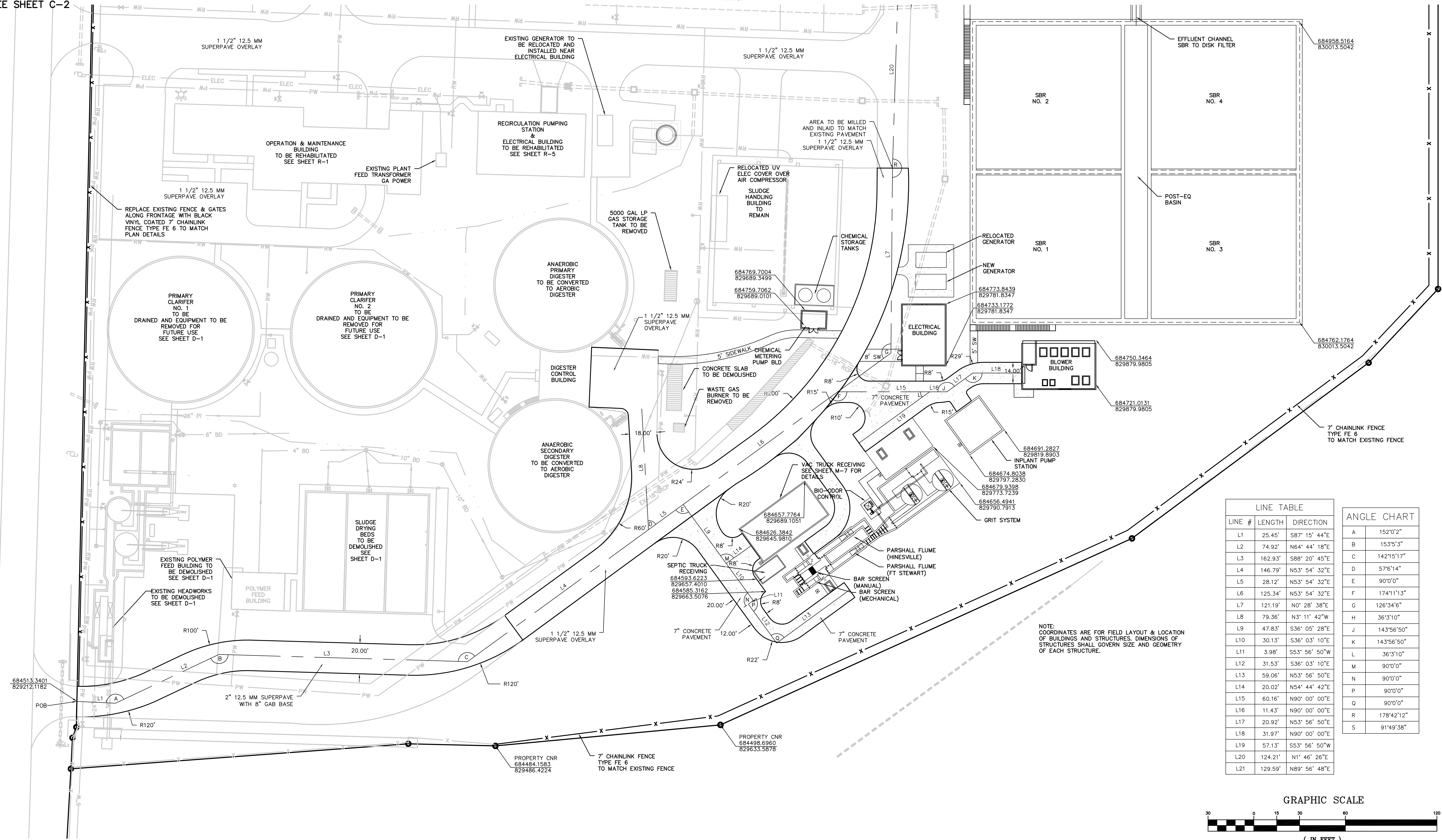
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**NOTES:**  
 CONSTRUCTION JOINTS: SEE PLAN VIEW (12'-0" O.C. MAX)  
 EXPANSION JOINTS: SEE PLAN VIEW (20'-0" O.C. MAX)



MATCHLINE  
SEE SHEET C-2



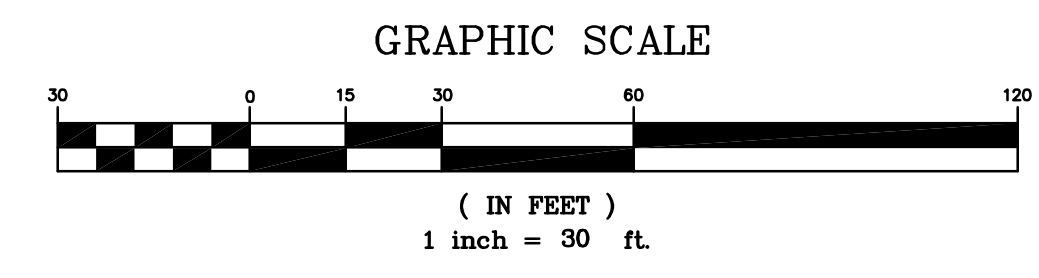
LINE TABLE

LINE #	LENGTH	DIRECTION
L1	25.45'	S87° 15' 44"E
L2	74.92'	N64° 44' 18"E
L3	162.93'	S88° 20' 45"E
L4	146.79'	N53° 54' 32"E
L5	28.12'	N53° 54' 32"E
L6	125.34'	N53° 54' 32"E
L7	121.19'	N0° 28' 38"E
L8	79.36'	N3° 11' 42"W
L9	47.83'	S36° 05' 28"E
L10	30.13'	S36° 03' 10"E
L11	3.98'	S53° 56' 50"W
L12	31.53'	S36° 03' 10"E
L13	59.06'	N53° 56' 50"E
L14	20.02'	N54° 44' 42"E
L15	60.16'	N90° 00' 00"E
L16	11.43'	N90° 00' 00"E
L17	20.92'	N53° 56' 50"E
L18	31.97'	N90° 00' 00"E
L19	57.13'	S53° 56' 50"W
L20	124.21'	N1° 46' 26"E
L21	129.59'	N89° 56' 48"E

ANGLE CHART

ANGLE	VALUE
A	152°0'2"
B	153°5'3"
C	142°15'17"
D	57°6'14"
E	90°0'0"
F	174°11'13"
G	126°34'6"
H	36°3'10"
J	143°56'50"
K	143°56'50"
L	36°3'10"
M	90°0'0"
N	90°0'0"
P	90°0'0"
Q	90°0'0"
R	178°42'12"
S	91°49'38"

NOTE: COORDINATES ARE FOR FIELD LAYOUT & LOCATION OF BUILDINGS AND STRUCTURES. DIMENSIONS OF STRUCTURES SHALL GOVERN SIZE AND GEOMETRY OF EACH STRUCTURE.



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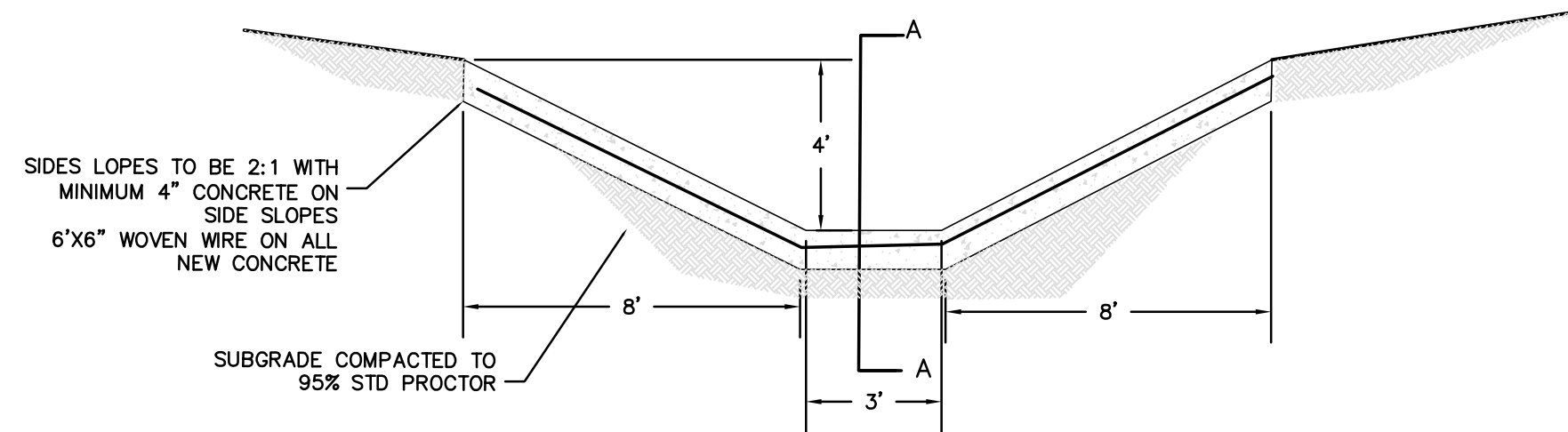
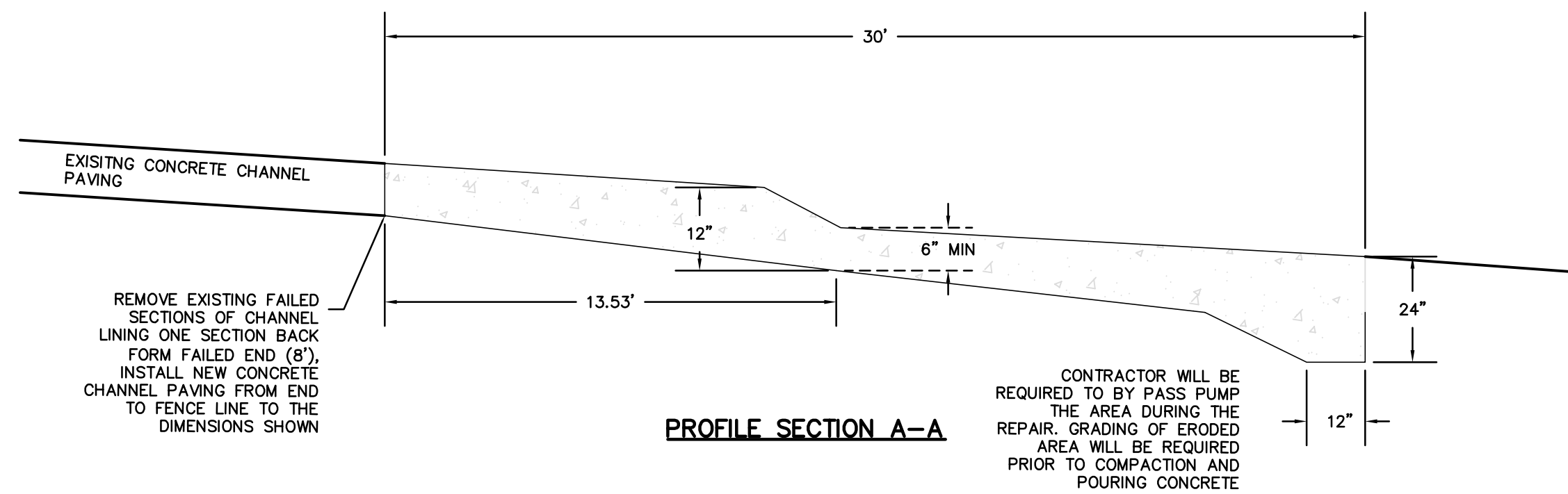
1050 PARKSIDE COMMONS  
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 TEL: (706) 454-4870

**P.C. Simonton & Associates, Inc.**  
 Consulting Engineers

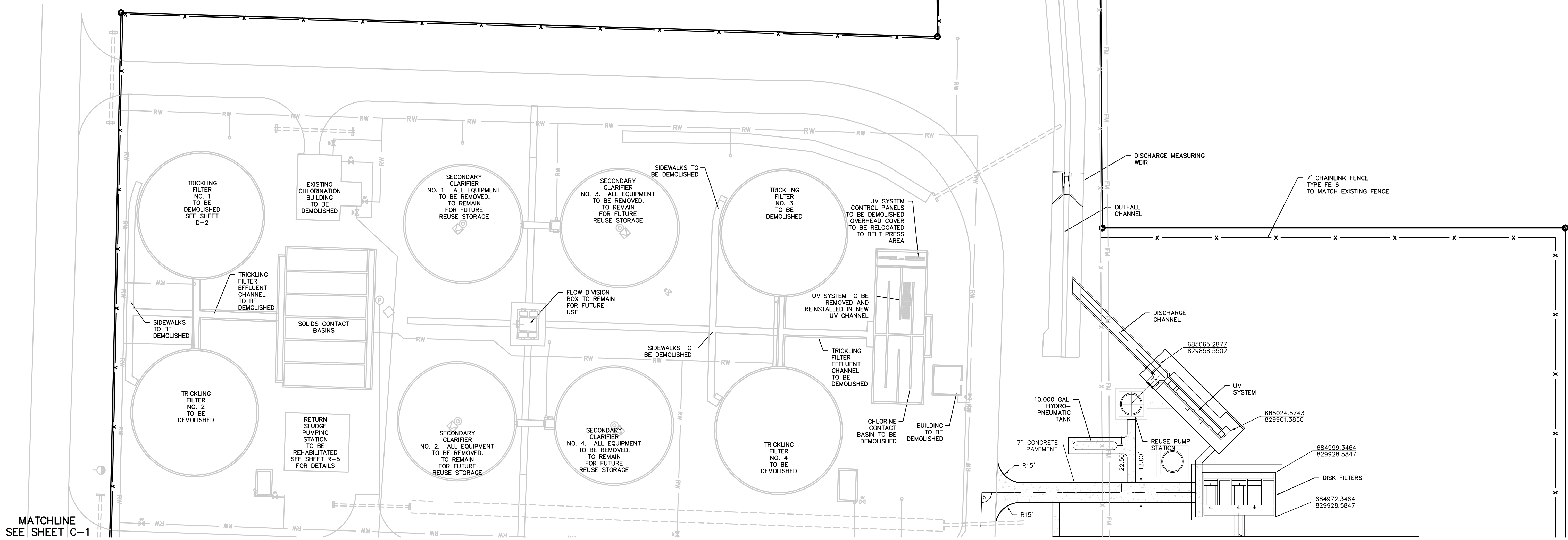
**Hinesville/Ft Stewart**  
 for  
**WWTP Upgrade**  
 The City of Hinesville  
 Ft Stewart  
 Liberty County, Georgia

Site Layout Plan  
 South Section

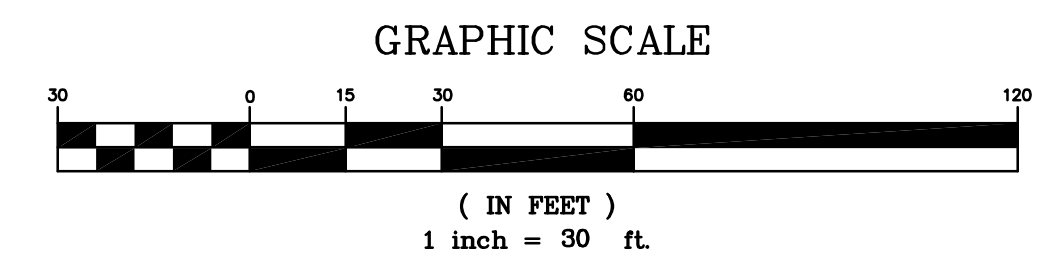
DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: C-1



EXISTING CONCRETE CHANNEL TO BE REPAIRED IN ACCORDANCE WITH THE SECTION SHOWN



MATCHLINE SEE SHEET C-1



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1050 PARKSIDE COMMONS  
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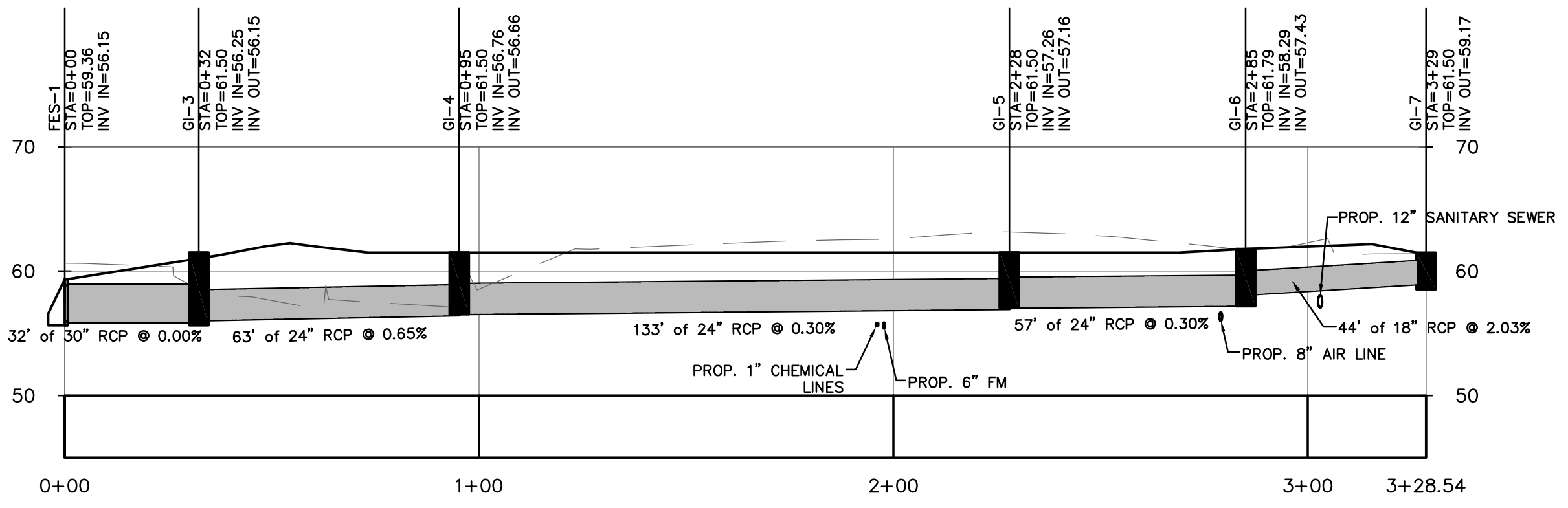
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Ft Stewart  
Liberty County, Georgia

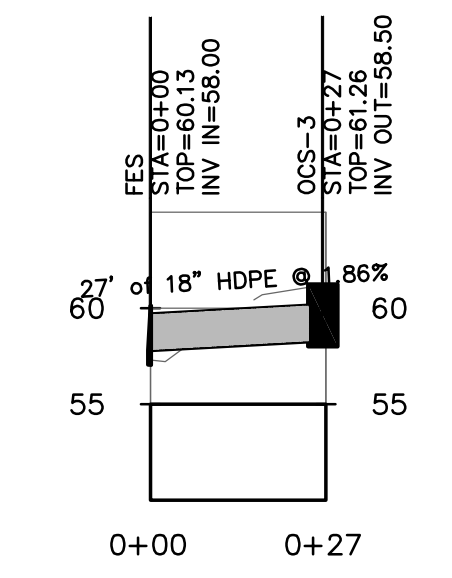
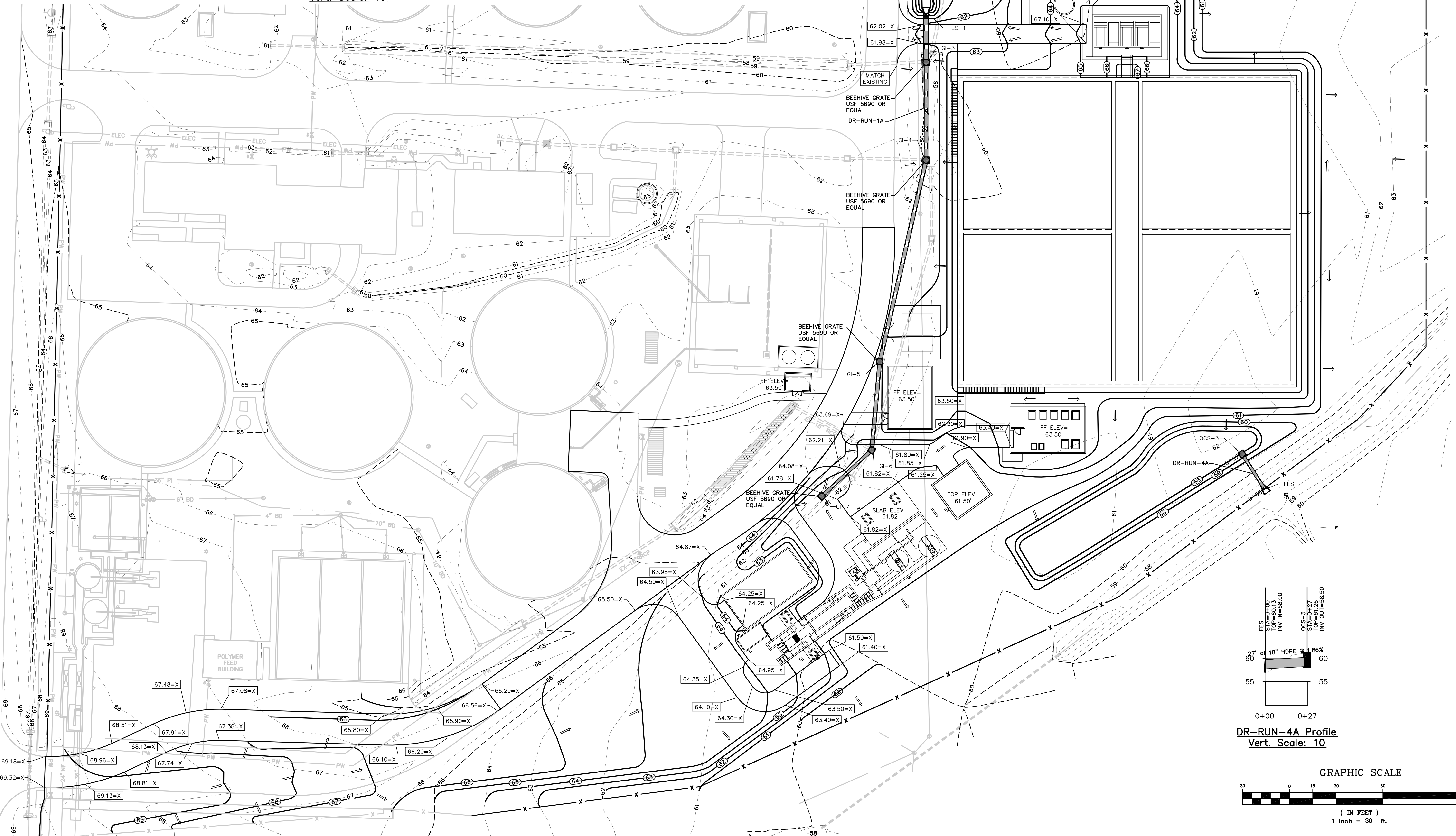
Site Layout Plan  
North Section

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-2

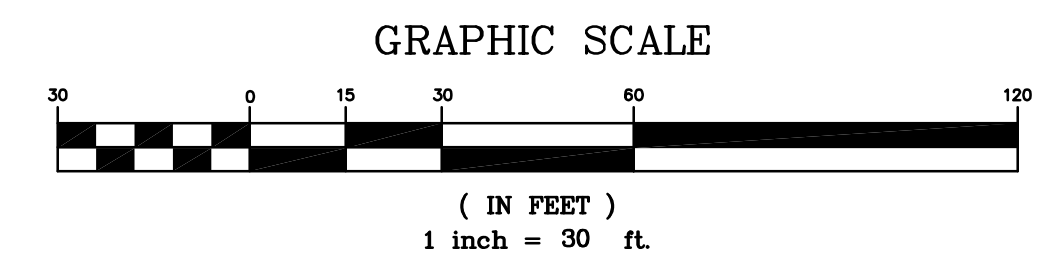
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**DR-RUN-1A Profile**  
Vert. Scale: 10



**DR-RUN-4A Profile**  
Vert. Scale: 10



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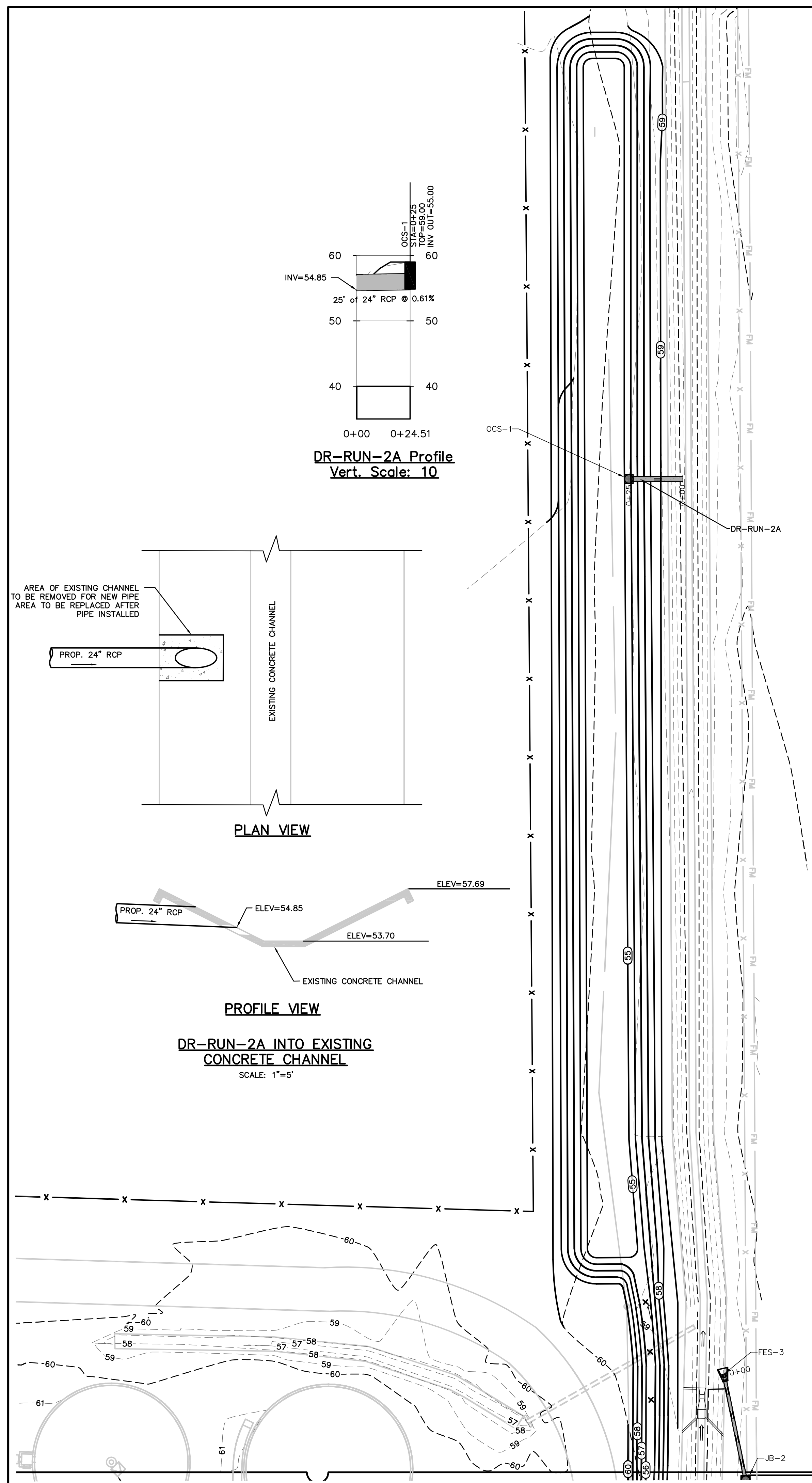
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The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

Site Drainage & Grading  
Plan  
South Section  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-3

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C-3  
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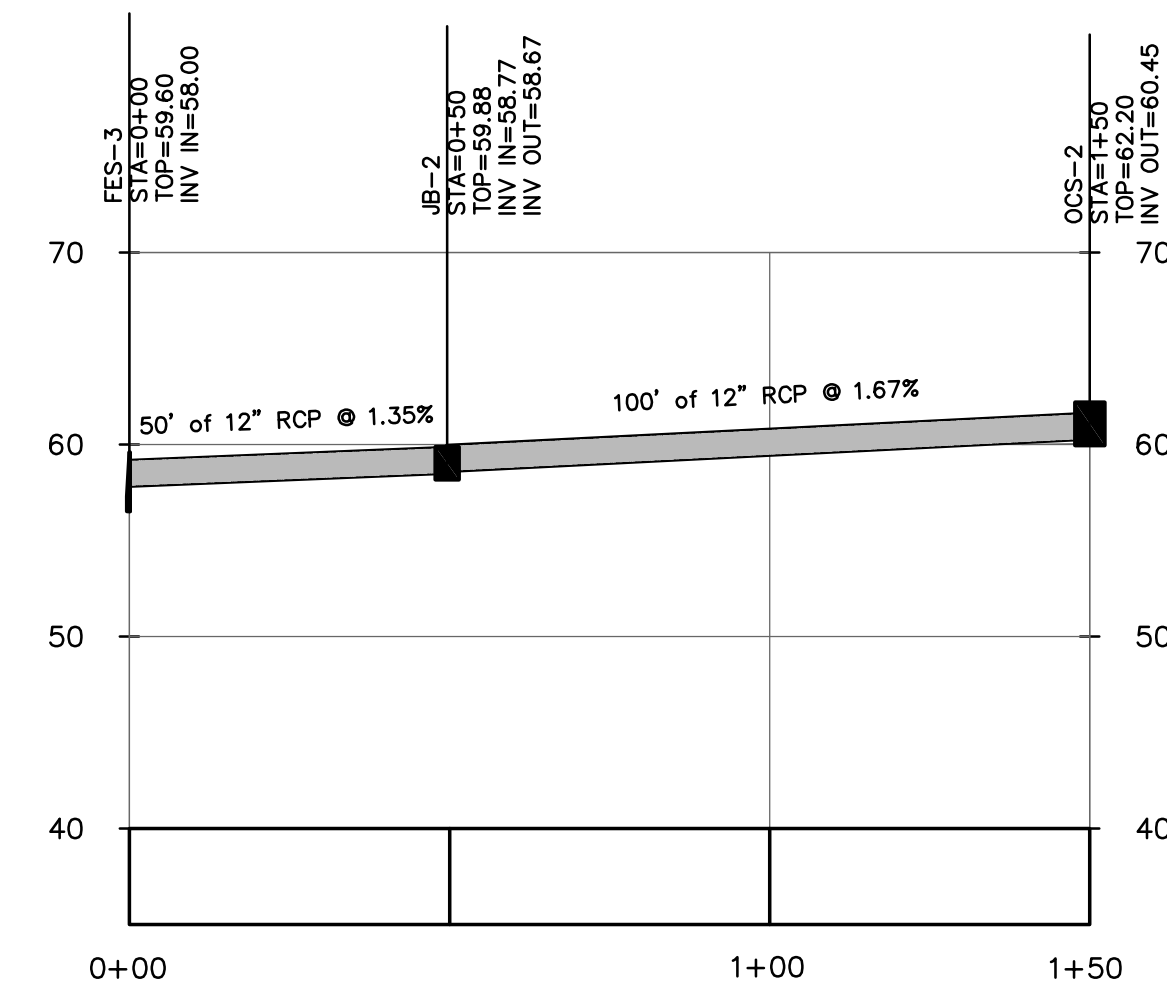


**DR-RUN-2A Profile**  
Vert. Scale: 10

**PLAN VIEW**

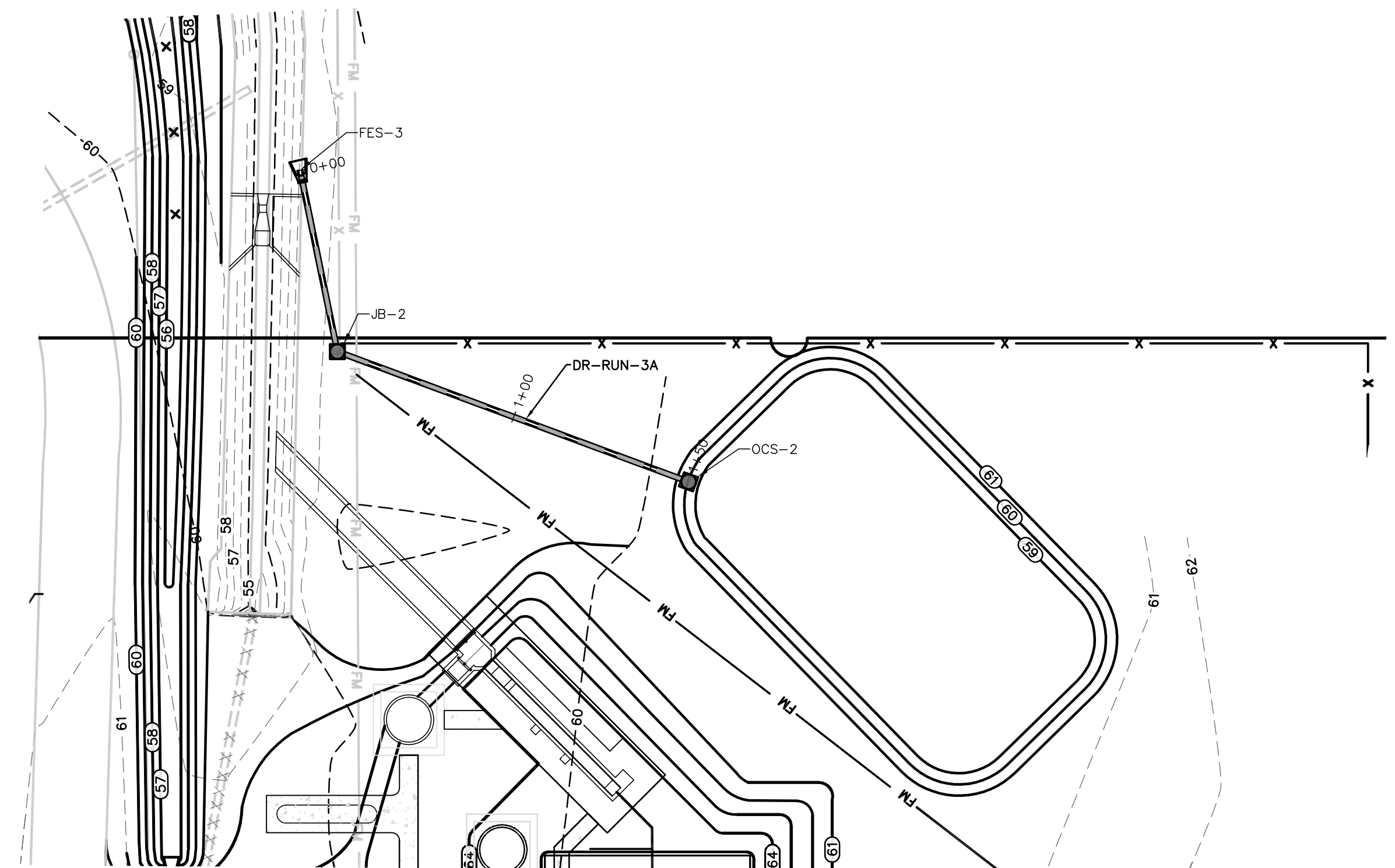
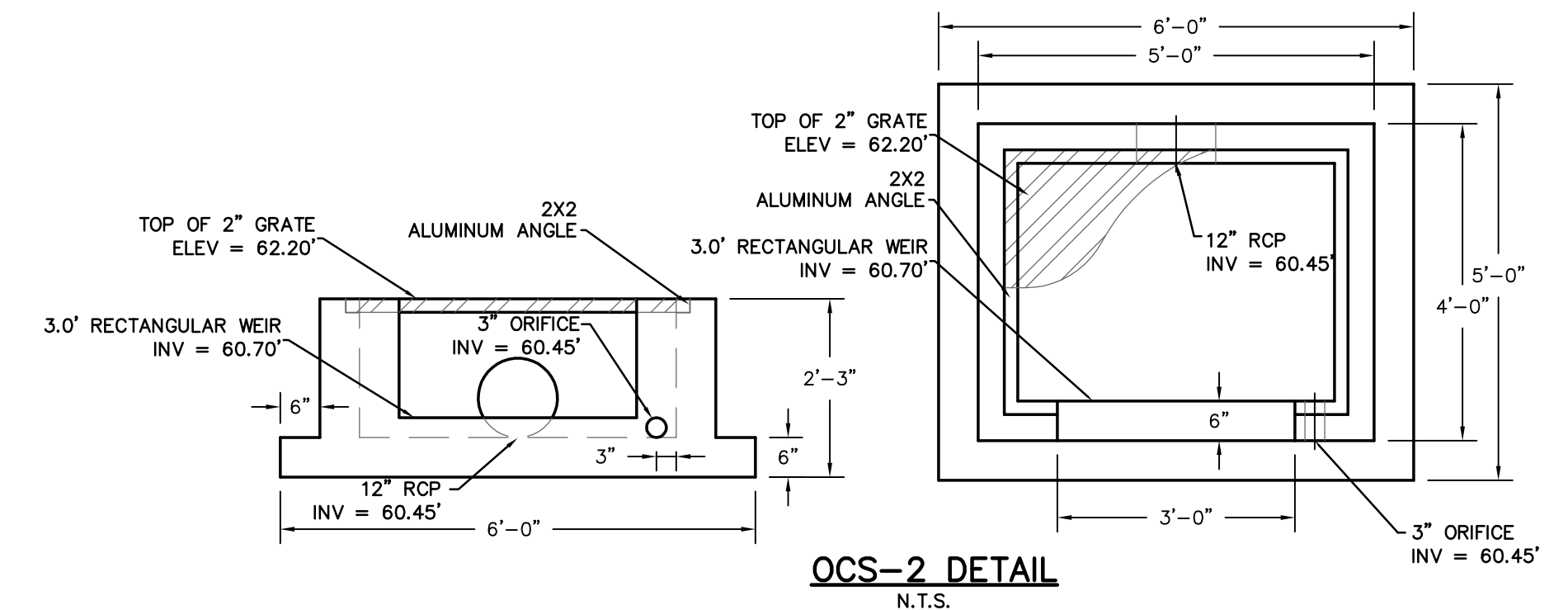
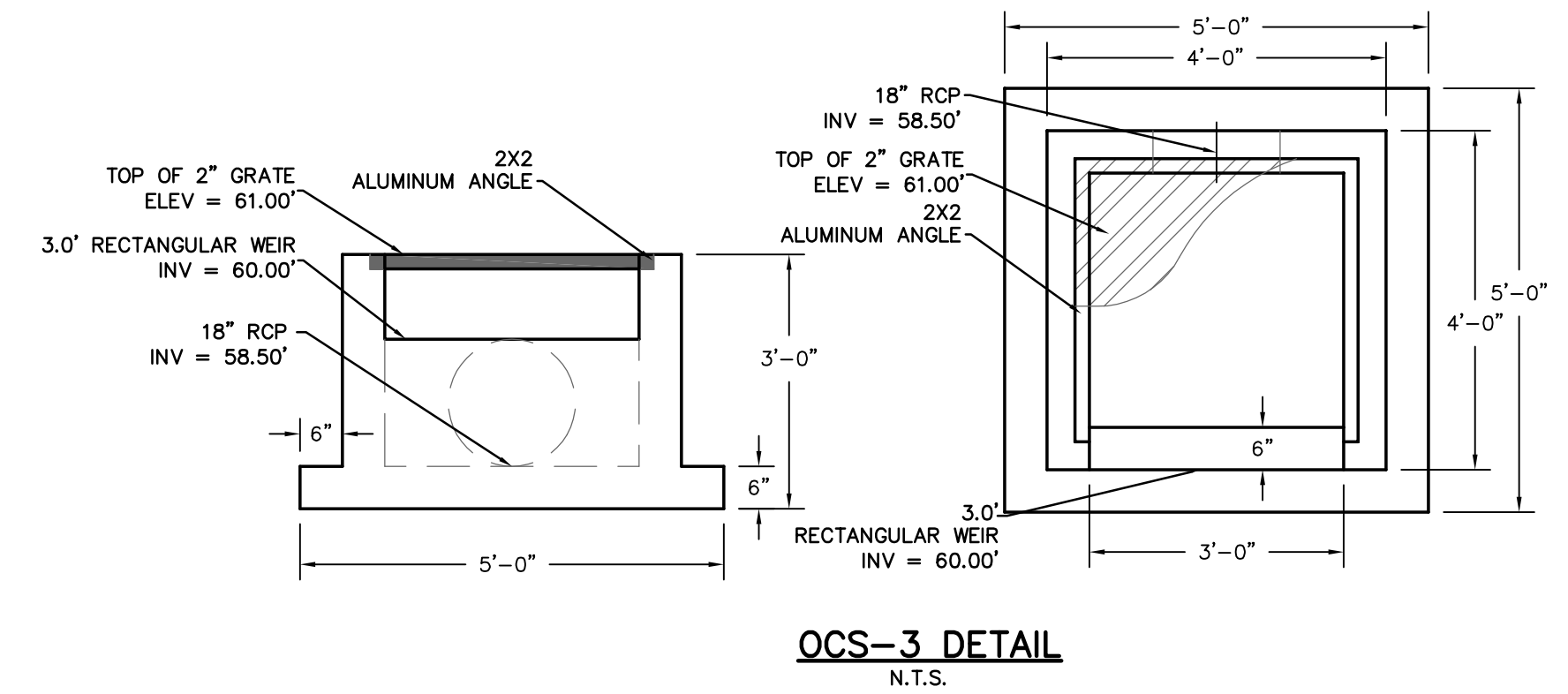
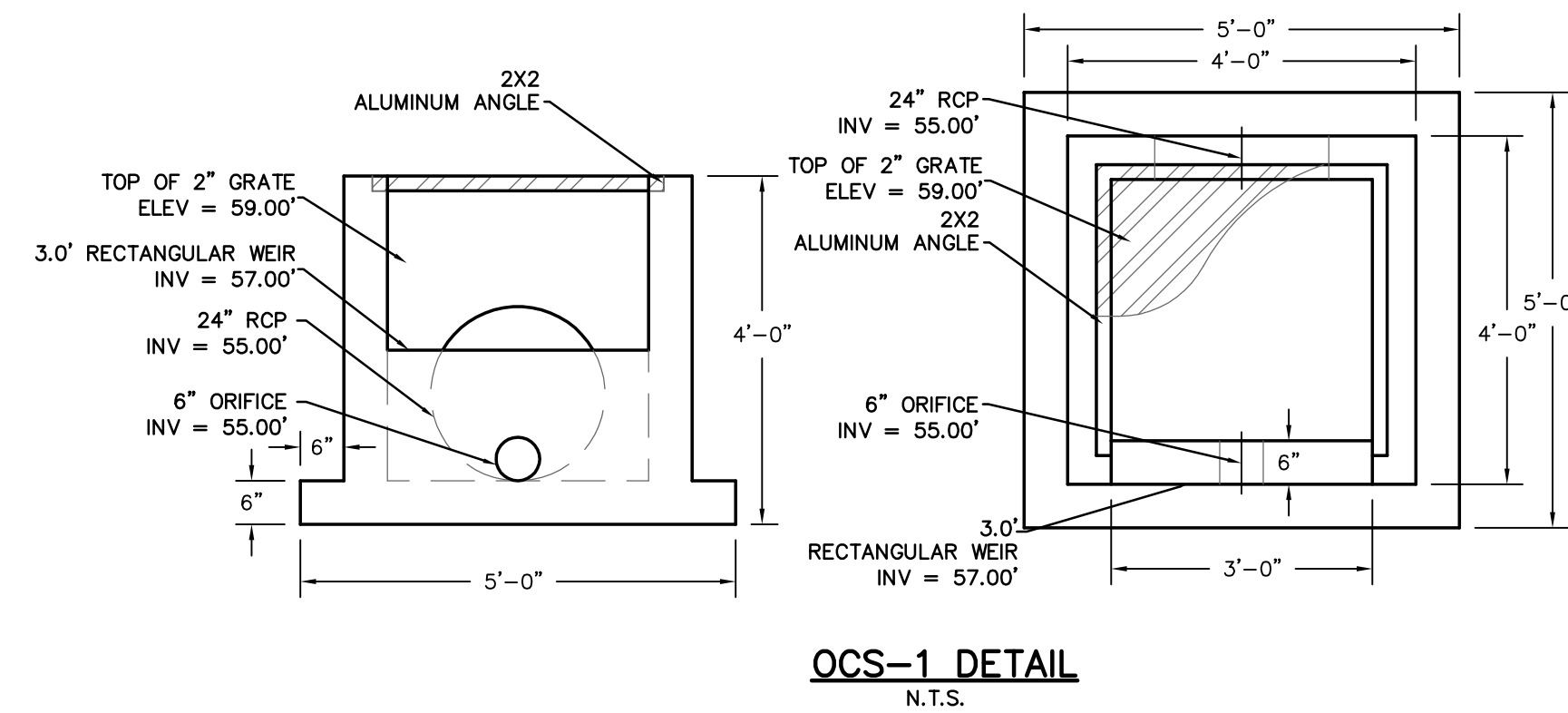
**PROFILE VIEW**

**DR-RUN-2A INTO EXISTING CONCRETE CHANNEL**  
SCALE: 1"=5'

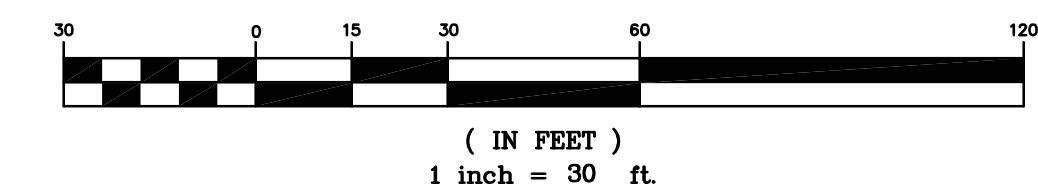


**DR-RUN-3A Profile**  
Vert. Scale: 10

MATCHLINE  
SEE SHEET C-3



**GRAPHIC SCALE**



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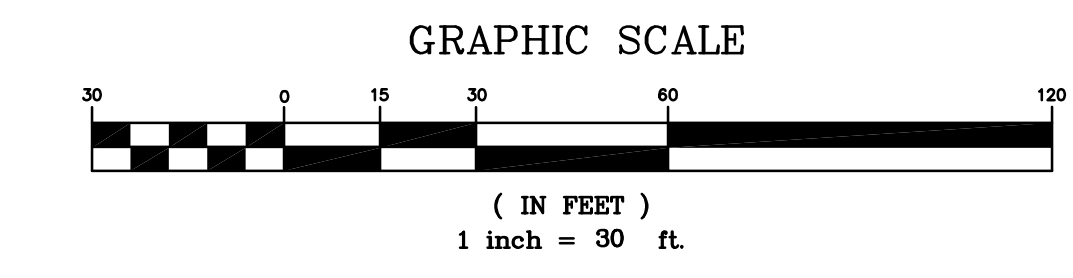
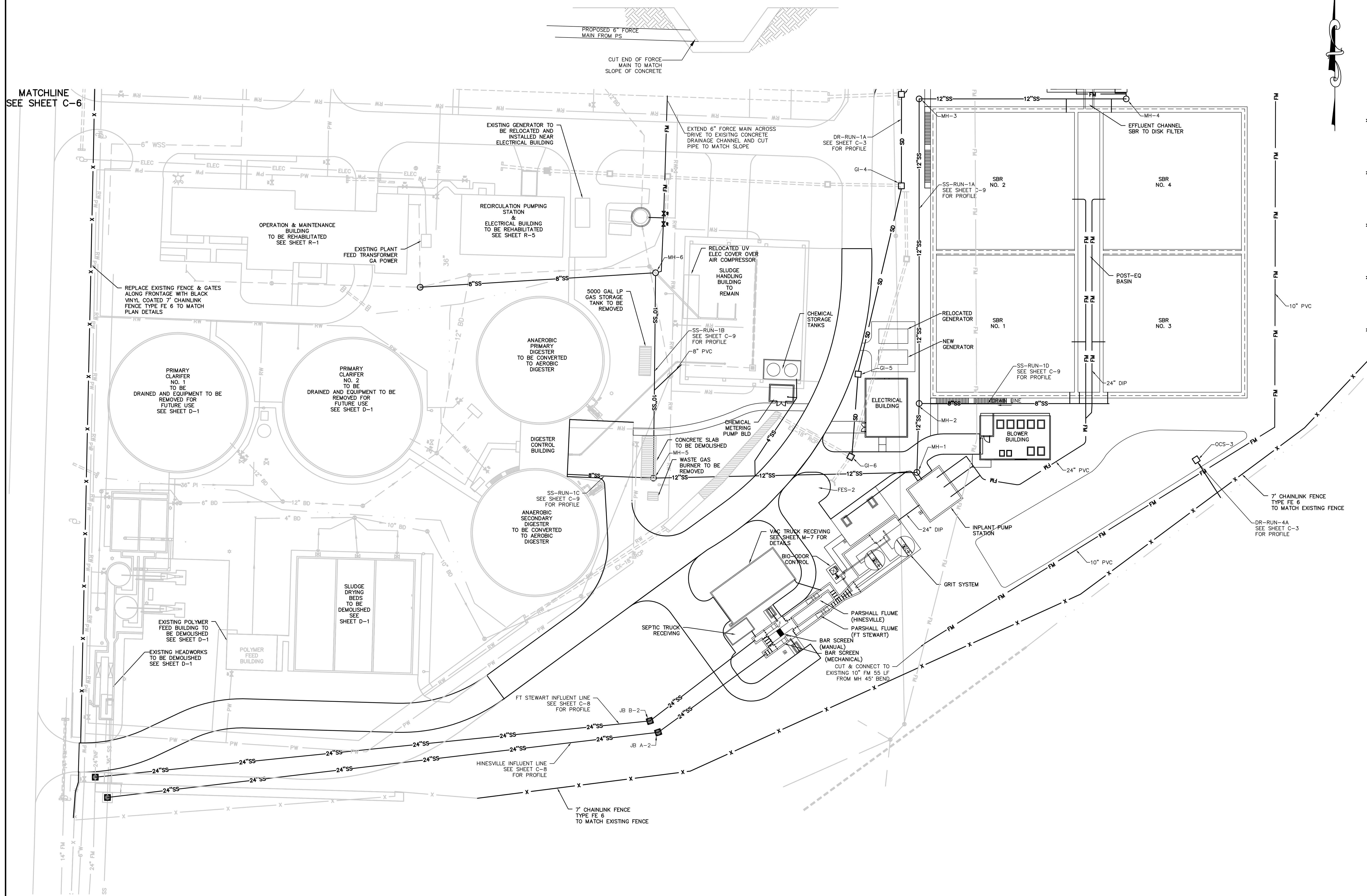
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The City of Hinesville  
Ft Stewart  
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Site Drainage & Grading  
Plan  
North Section  
DATE: November 29, 2012  
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MATCHLINE  
SEE SHEET C-6



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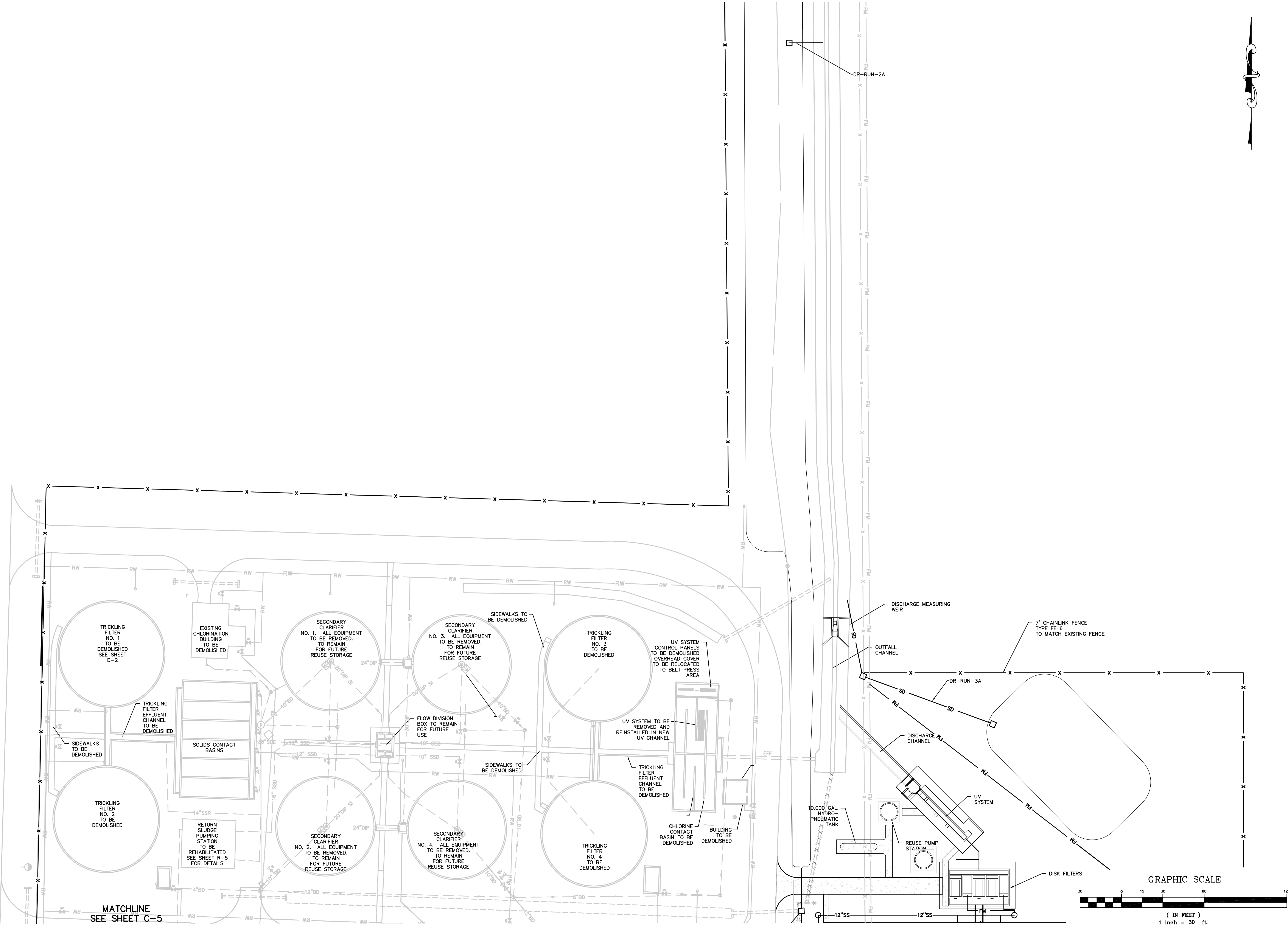


**Hinesville/Ft Stewart**  
for  
**WWTP Upgrade**  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Yard Piping Plan  
South Section

DATE: November 29, 2012  
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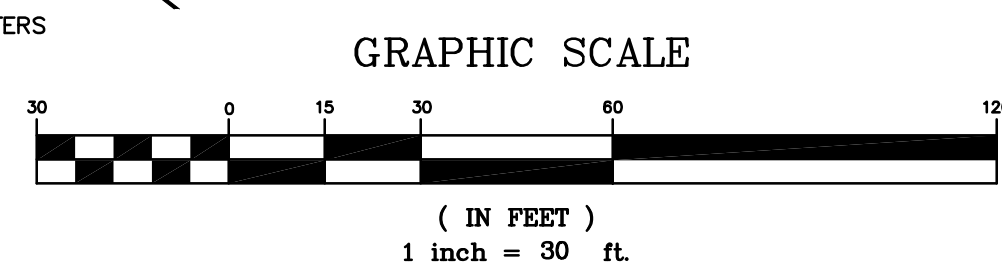
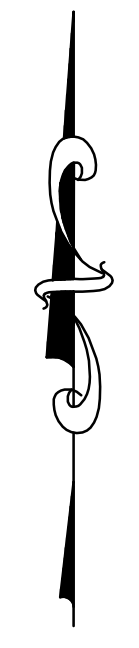


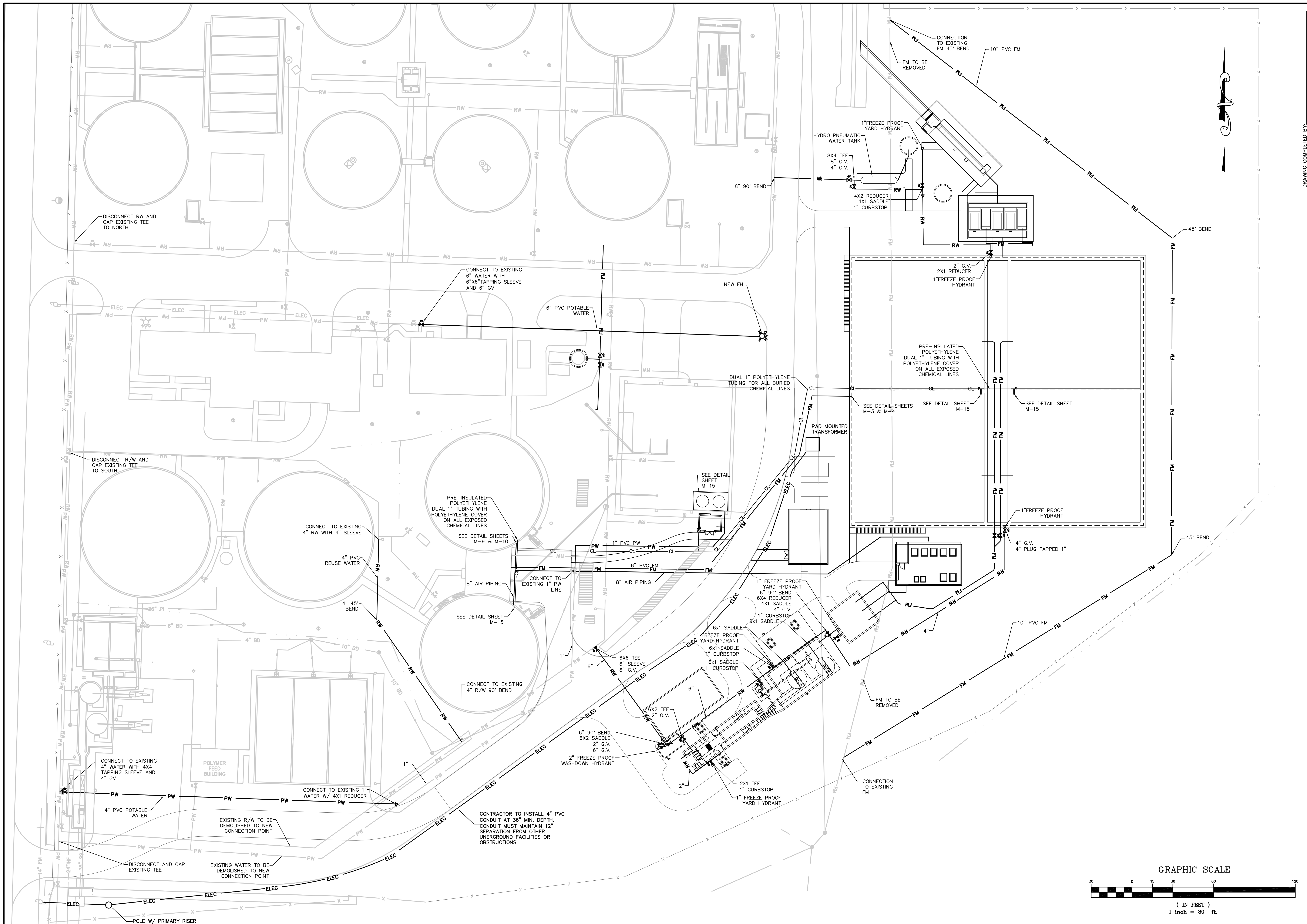
**Hinesville/Ft Stewart  
for  
WWTP Upgrade  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Main Yard Piping Plan  
North Section

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-6

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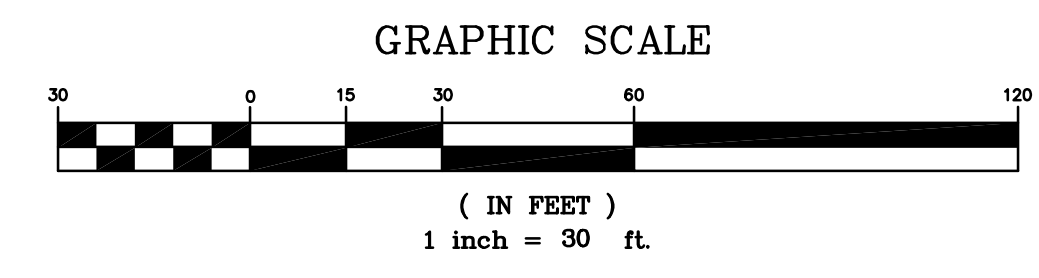
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for  
WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

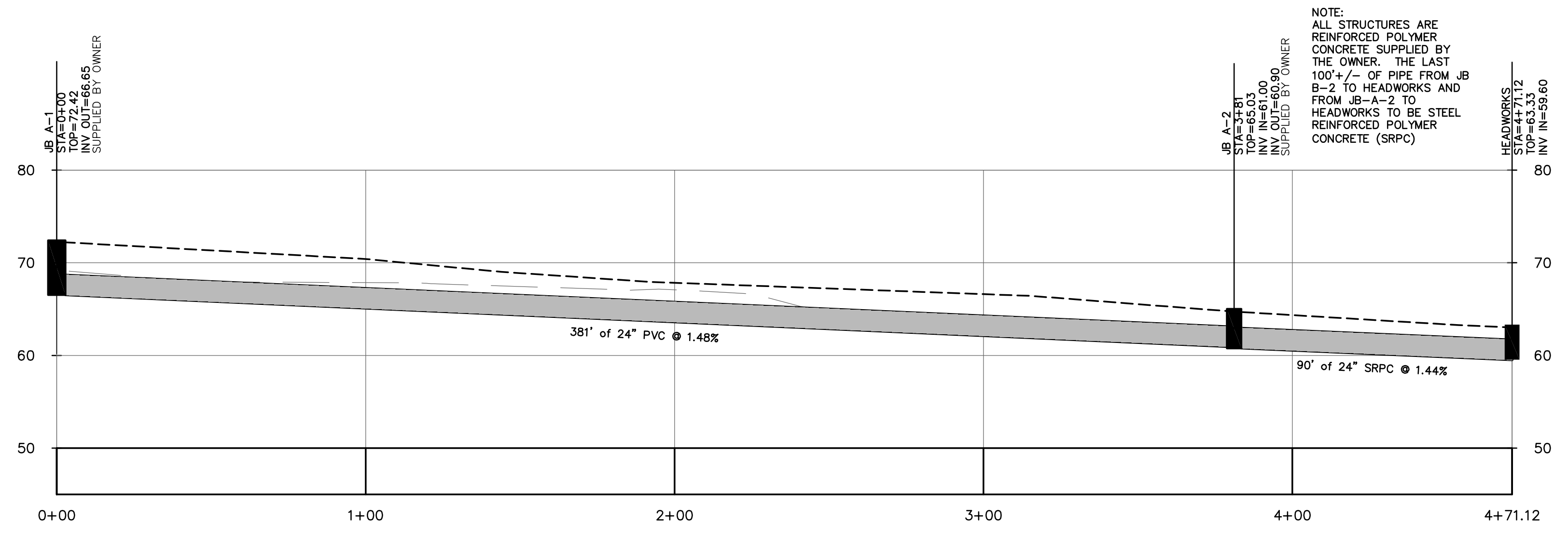
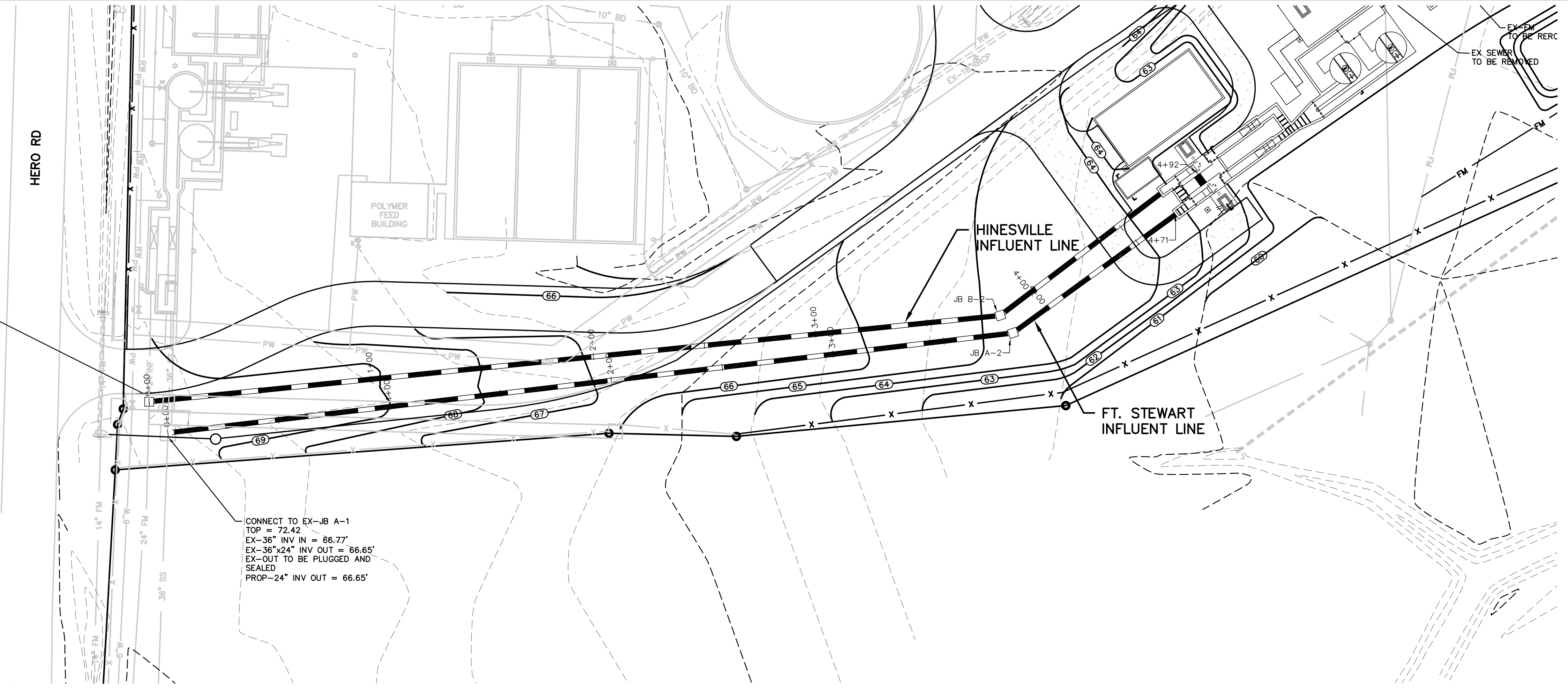
Misc Yard Piping Plan  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-7

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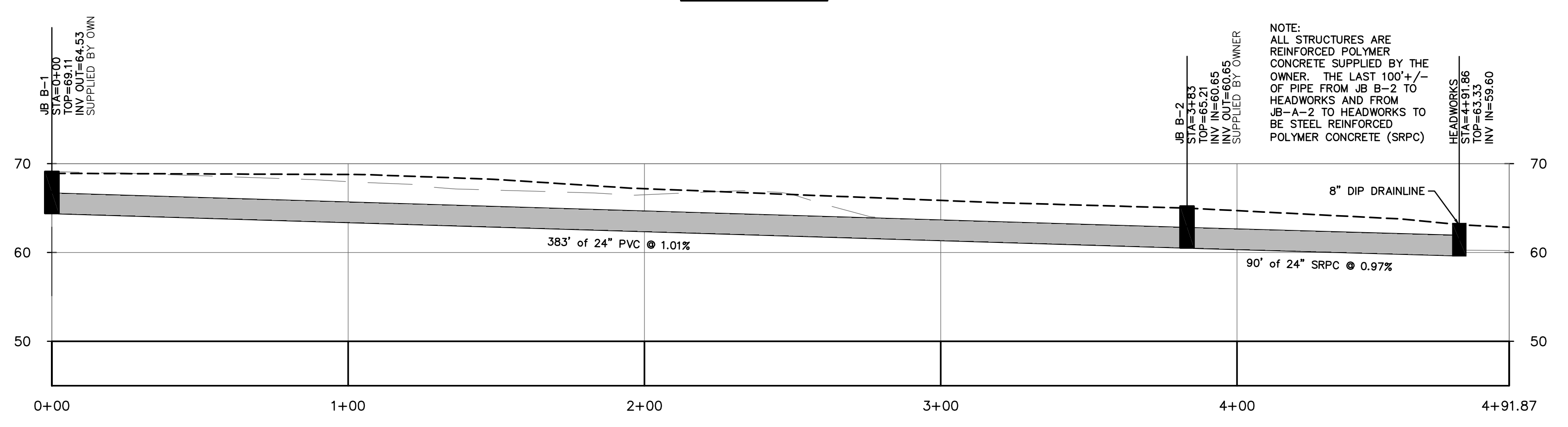


PROP-DOCHOUSE JB B-1  
 TOP = 69.11  
 EX-24" INV IN = 64.58'  
 EX-36"x24" INV OUT = 64.58'  
 EXISTING PIPE TO BE CUT,  
 PLUGGED AND SEALED  
 PROP-24" INV OUT = 64.53'

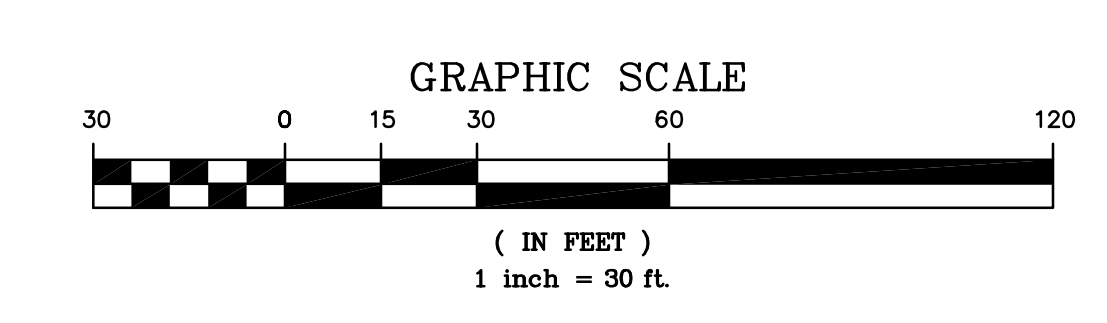
CONNECT TO EX-JB A-1  
 TOP = 72.42  
 EX-36" INV IN = 66.77'  
 EX-36"x24" INV OUT = 66.65'  
 EX-OUT TO BE PLUGGED AND  
 SEALED  
 PROP-24" INV OUT = 66.65'



**Ft. Stewart Inflow Line Profile**  
 Vert. Scale: 10



**Hinesville Inflow Line Profile**  
 Vert. Scale: 10



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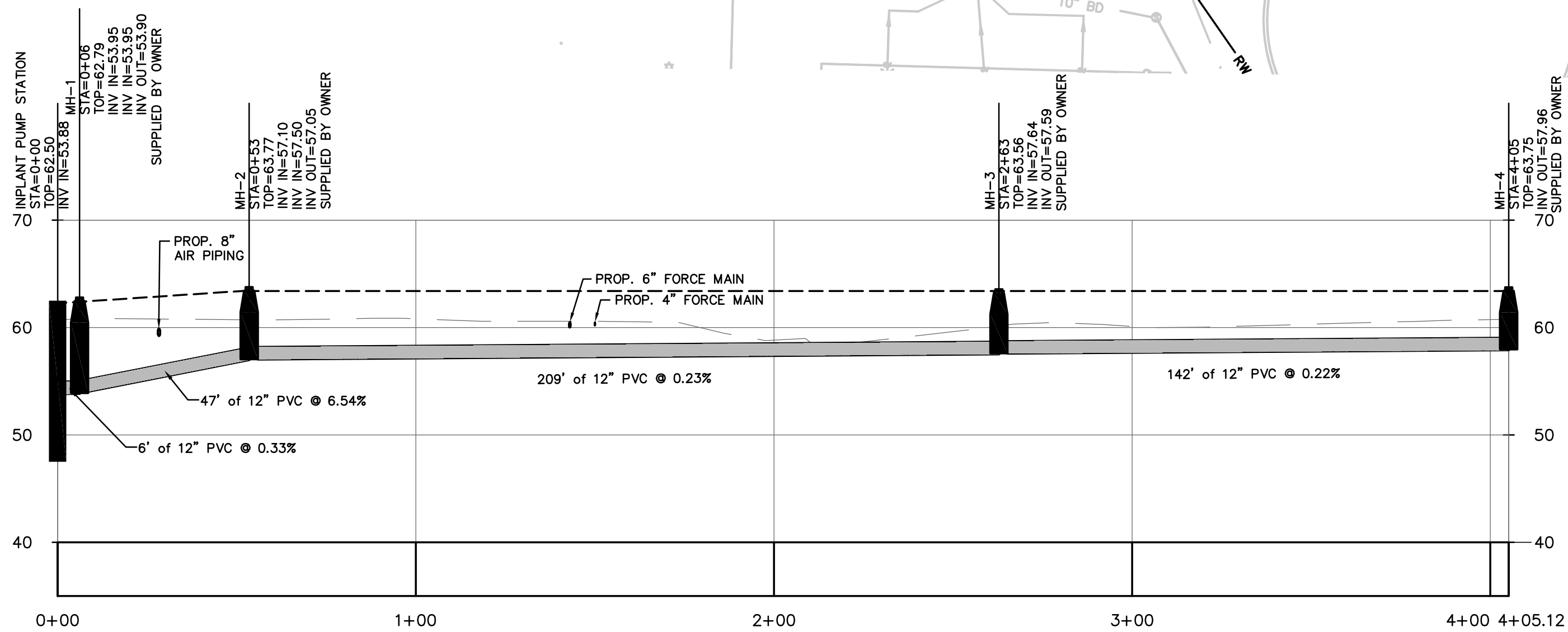
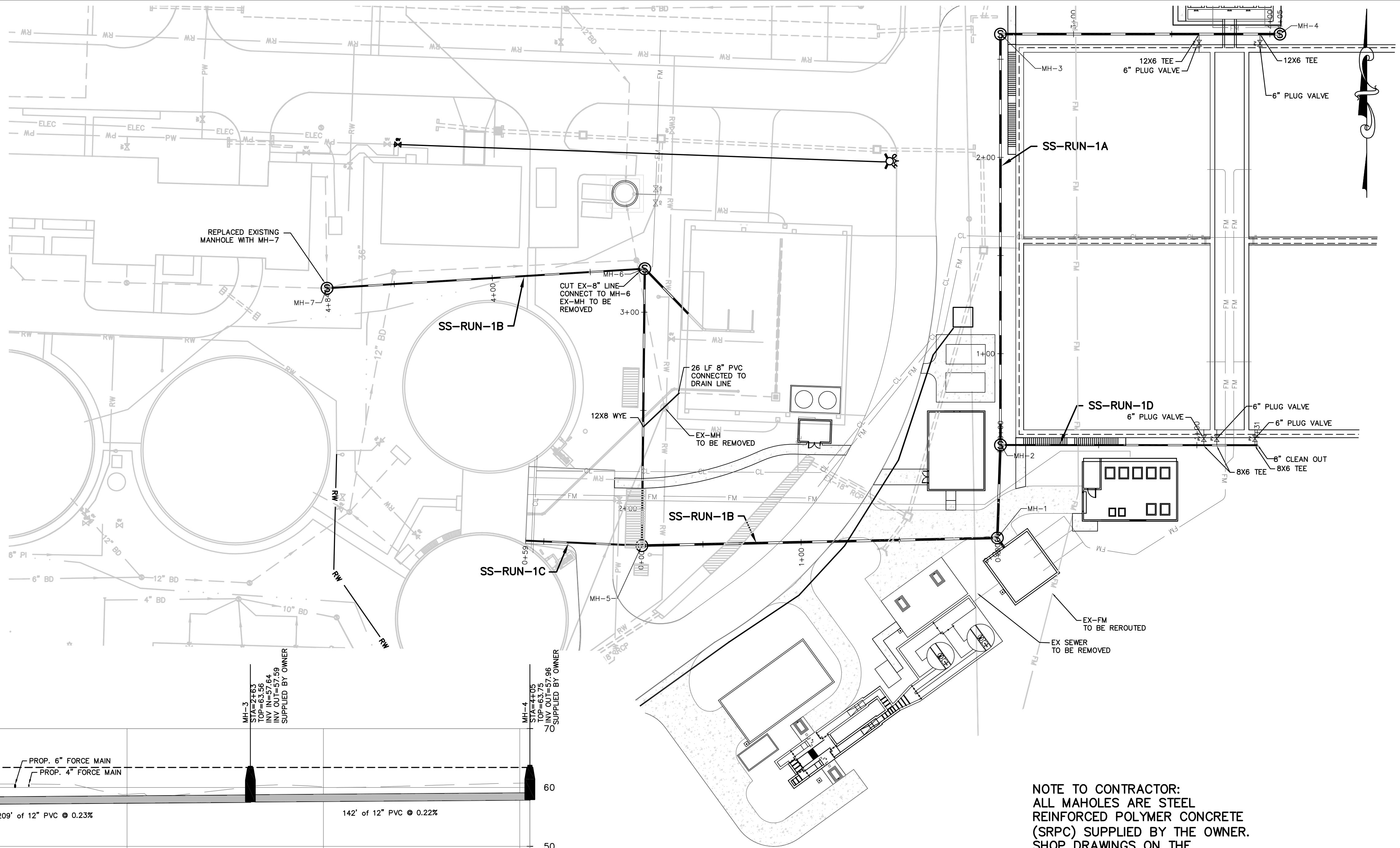
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 WWTP Upgrade**  
 for  
**The City of Hinesville**  
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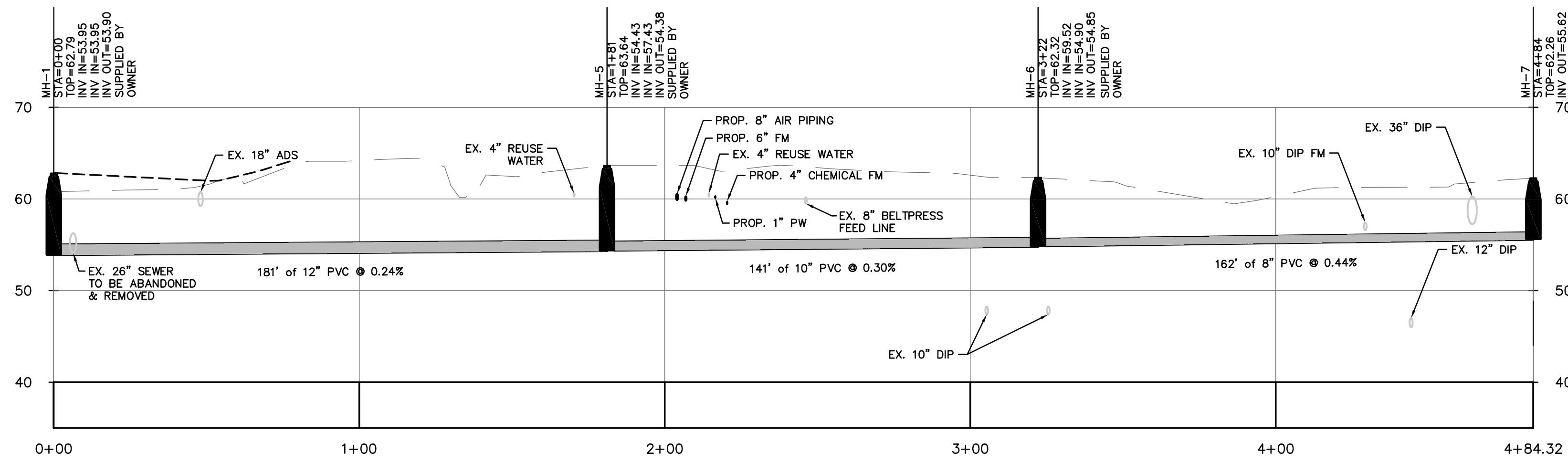
**Influent  
 Plan & Profile**

DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: C-8

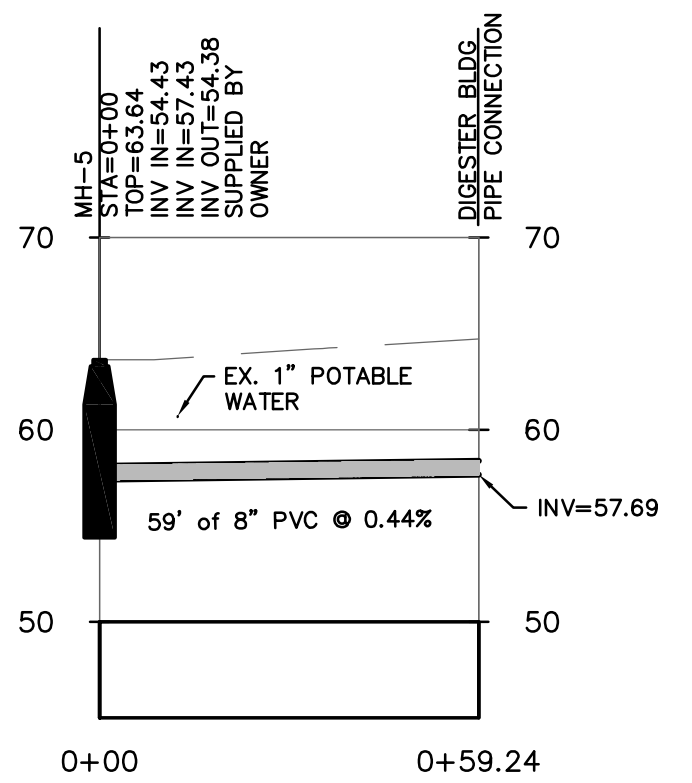
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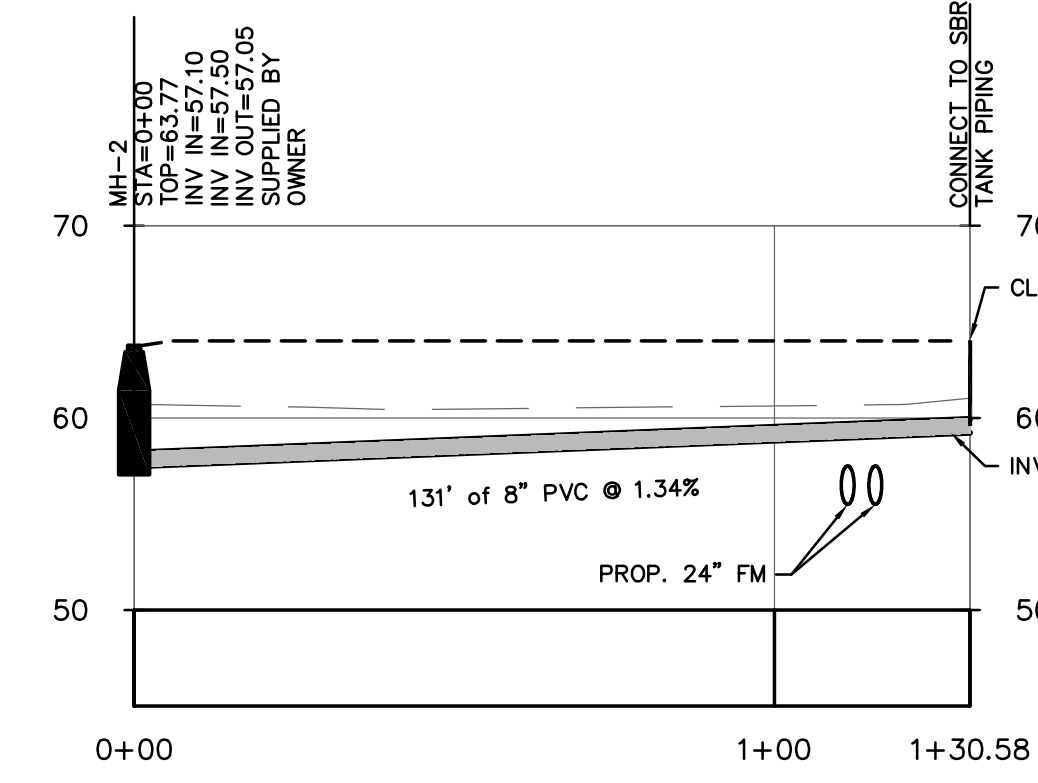
SS-RUN-1A Profile  
Vert. Scale: 10



SS-RUN-1B Profile  
Vert. Scale: 10

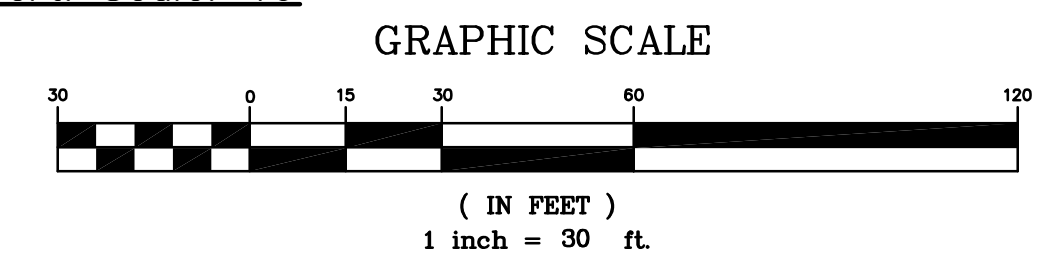


SS-RUN-1C Profile  
Vert. Scale: 10



SS-RUN-1D Profile  
Vert. Scale: 10

NOTE TO CONTRACTOR:  
ALL MAHOLES ARE STEEL REINFORCED POLYMER CONCRETE (SRPC) SUPPLIED BY THE OWNER. SHOP DRAWINGS ON THE STRUCTURES ARE INCLUDED IN THE INFORMATION FOR BIDDERS



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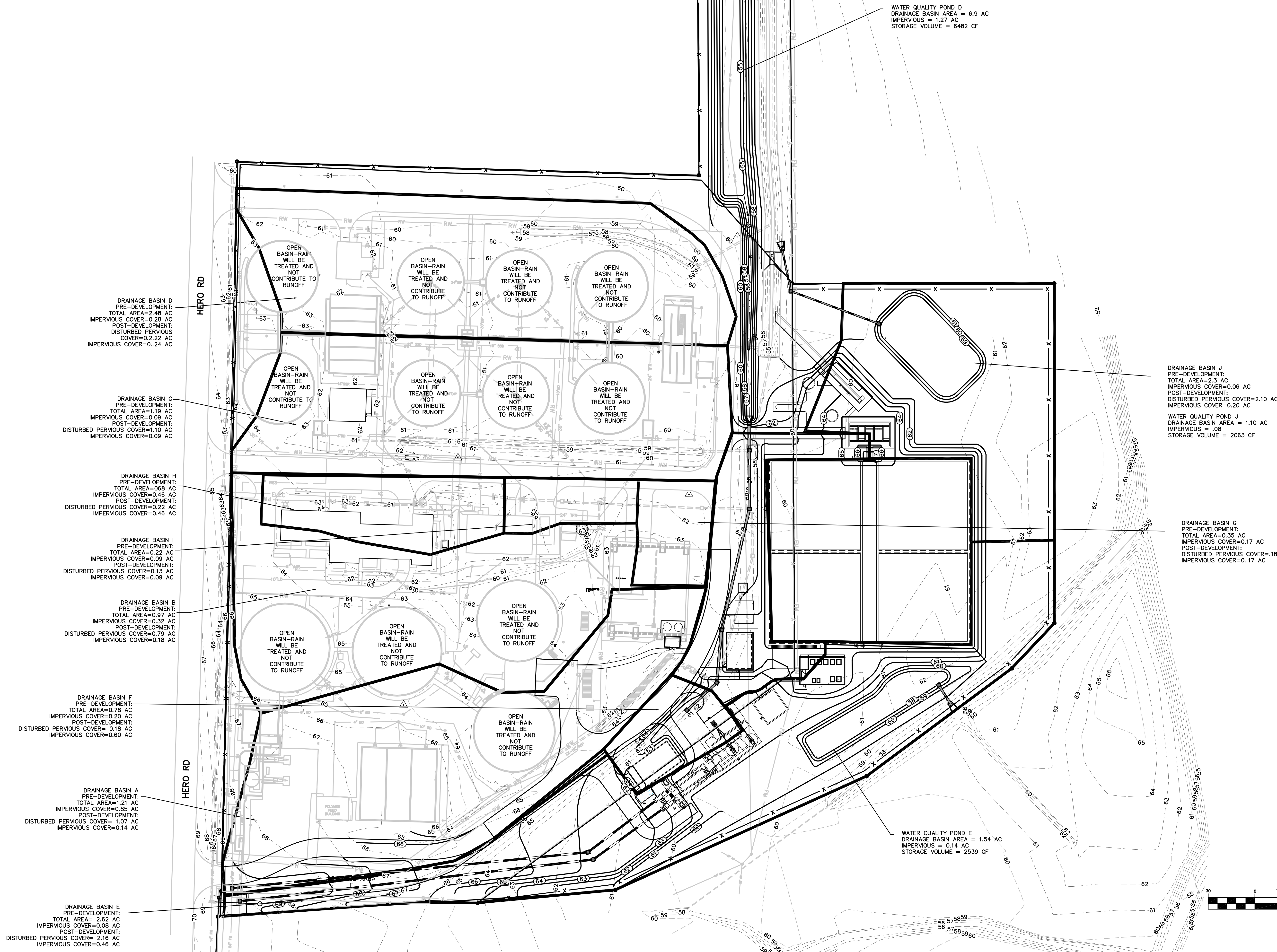
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The City of Hinesville  
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Liberty County, Georgia

Sewer  
Plan & Profile

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-9



WATER QUALITY POND D  
DRAINAGE BASIN AREA = 6.9 AC  
IMPERVIOUS = 1.27 AC  
STORAGE VOLUME = 6482 CF

DRAINAGE BASIN J  
PRE-DEVELOPMENT:  
TOTAL AREA=2.3 AC  
IMPERVIOUS COVER=0.06 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=2.10 AC  
IMPERVIOUS COVER=0.20 AC  
WATER QUALITY POND J  
DRAINAGE BASIN AREA = 1.10 AC  
IMPERVIOUS = .08  
STORAGE VOLUME = 2063 CF

DRAINAGE BASIN G  
PRE-DEVELOPMENT:  
TOTAL AREA=0.35 AC  
IMPERVIOUS COVER=0.17 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=18 AC  
IMPERVIOUS COVER=0.17 AC

WATER QUALITY POND E  
DRAINAGE BASIN AREA = 1.54 AC  
IMPERVIOUS = 0.14 AC  
STORAGE VOLUME = 2539 CF

DRAINAGE BASIN D  
PRE-DEVELOPMENT:  
TOTAL AREA=2.48 AC  
IMPERVIOUS COVER=0.28 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=0.22 AC  
IMPERVIOUS COVER=0.24 AC

DRAINAGE BASIN C  
PRE-DEVELOPMENT:  
TOTAL AREA=1.19 AC  
IMPERVIOUS COVER=0.09 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=1.10 AC  
IMPERVIOUS COVER=0.09 AC

DRAINAGE BASIN H  
PRE-DEVELOPMENT:  
TOTAL AREA=0.68 AC  
IMPERVIOUS COVER=0.46 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=0.22 AC  
IMPERVIOUS COVER=0.46 AC

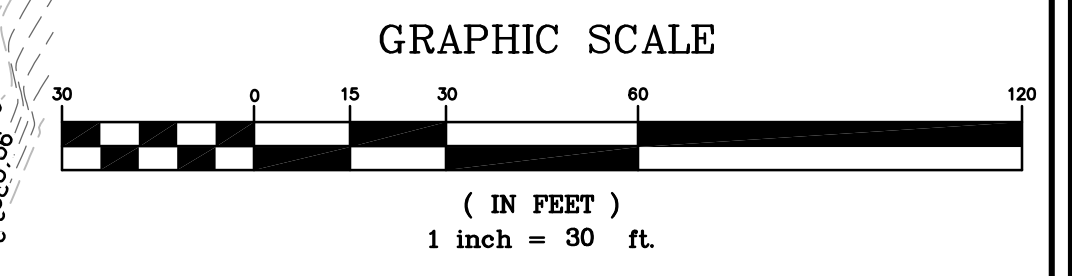
DRAINAGE BASIN I  
PRE-DEVELOPMENT:  
TOTAL AREA=0.77 AC  
IMPERVIOUS COVER=0.09 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=0.13 AC  
IMPERVIOUS COVER=0.09 AC

DRAINAGE BASIN B  
PRE-DEVELOPMENT:  
TOTAL AREA=0.57 AC  
IMPERVIOUS COVER=0.32 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER=0.79 AC  
IMPERVIOUS COVER=0.18 AC

DRAINAGE BASIN F  
PRE-DEVELOPMENT:  
TOTAL AREA=0.78 AC  
IMPERVIOUS COVER=0.20 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER= 0.18 AC  
IMPERVIOUS COVER=0.60 AC

DRAINAGE BASIN A  
PRE-DEVELOPMENT:  
TOTAL AREA=1.21 AC  
IMPERVIOUS COVER=0.85 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER= 1.07 AC  
IMPERVIOUS COVER=0.14 AC

DRAINAGE BASIN E  
PRE-DEVELOPMENT:  
TOTAL AREA= 2.62 AC  
IMPERVIOUS COVER=0.08 AC  
POST-DEVELOPMENT:  
DISTURBED PERVIOUS COVER= 2.18 AC  
IMPERVIOUS COVER=0.46 AC



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TEL: (760) 454-4870



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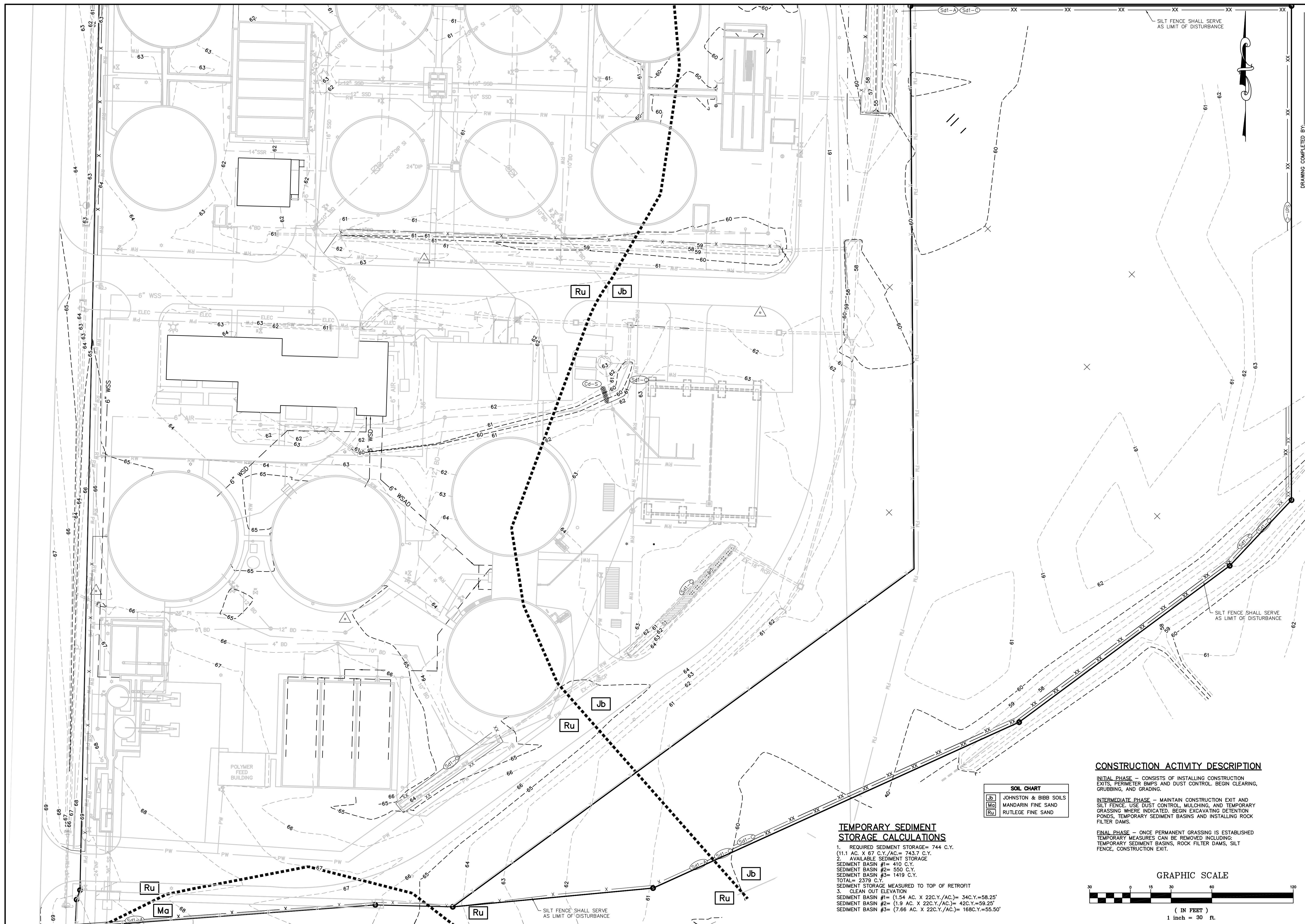
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Consulting Engineers

**Hinesville/Ft Stewart**  
for  
**WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

Water Quality Basins and  
Information Plan  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-10



**CONSTRUCTION ACTIVITY DESCRIPTION**

**INITIAL PHASE** - CONSISTS OF INSTALLING CONSTRUCTION EXITS, PERIMETER BMPs AND DUST CONTROL, BEGIN CLEARING, GRUBBING, AND GRADING.

**INTERMEDIATE PHASE** - MAINTAIN CONSTRUCTION EXIT AND SILT FENCE. USE DUST CONTROL, MULCHING, AND TEMPORARY GRASSING WHERE INDICATED. BEGIN EXCAVATING DETENTION POND, TEMPORARY SEDIMENT BASINS AND INSTALLING ROCK FILTER DAMS.

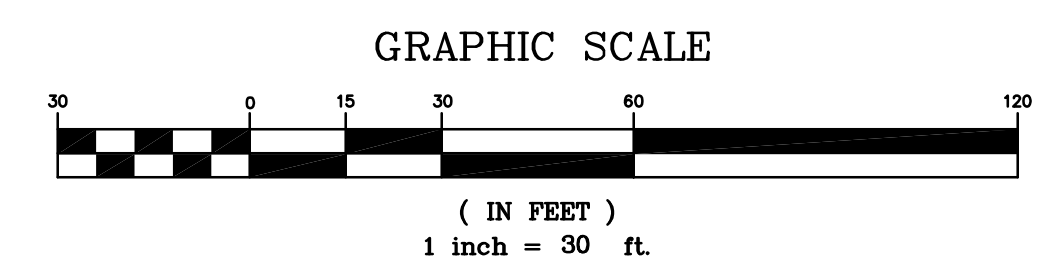
**FINAL PHASE** - ONCE PERMANENT GRASSING IS ESTABLISHED TEMPORARY MEASURES CAN BE REMOVED INCLUDING TEMPORARY SEDIMENT BASINS, ROCK FILTER DAMS, SILT FENCE, CONSTRUCTION EXIT.

**SOIL CHART**

Jb	JOHNSTON & BIBB SOILS
Ma	MANDARIN FINE SAND
Ru	RUTLEGE FINE SAND

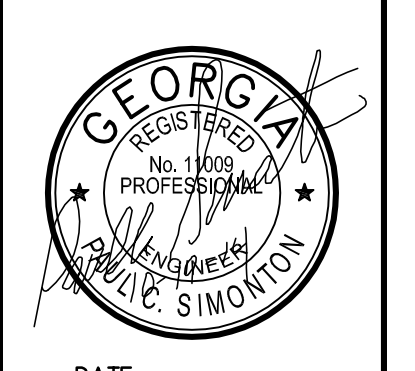
**TEMPORARY SEDIMENT STORAGE CALCULATIONS**

- REQUIRED SEDIMENT STORAGE= 744 C.Y.  
(11.1 AC. X 67 C.Y./AC.= 743.7 C.Y.)
- AVAILABLE SEDIMENT STORAGE  
SEDIMENT BASIN #1= 410 C.Y.  
SEDIMENT BASIN #2= 550 C.Y.  
SEDIMENT BASIN #3= 1419 C.Y.  
TOTAL= 2379 C.Y.  
SEDIMENT STORAGE MEASURED TO TOP OF RETROFIT  
3. CLEAN QUIT ELEVATION  
SEDIMENT BASIN #1= (1.54 AC. X 22C.Y./AC.)= 34C.Y.=58.25'  
SEDIMENT BASIN #2= (1.9 AC. X 22C.Y./AC.)= 42C.Y.=59.25'  
SEDIMENT BASIN #3= (7.66 AC. X 22C.Y./AC.)= 168C.Y.=55.50'



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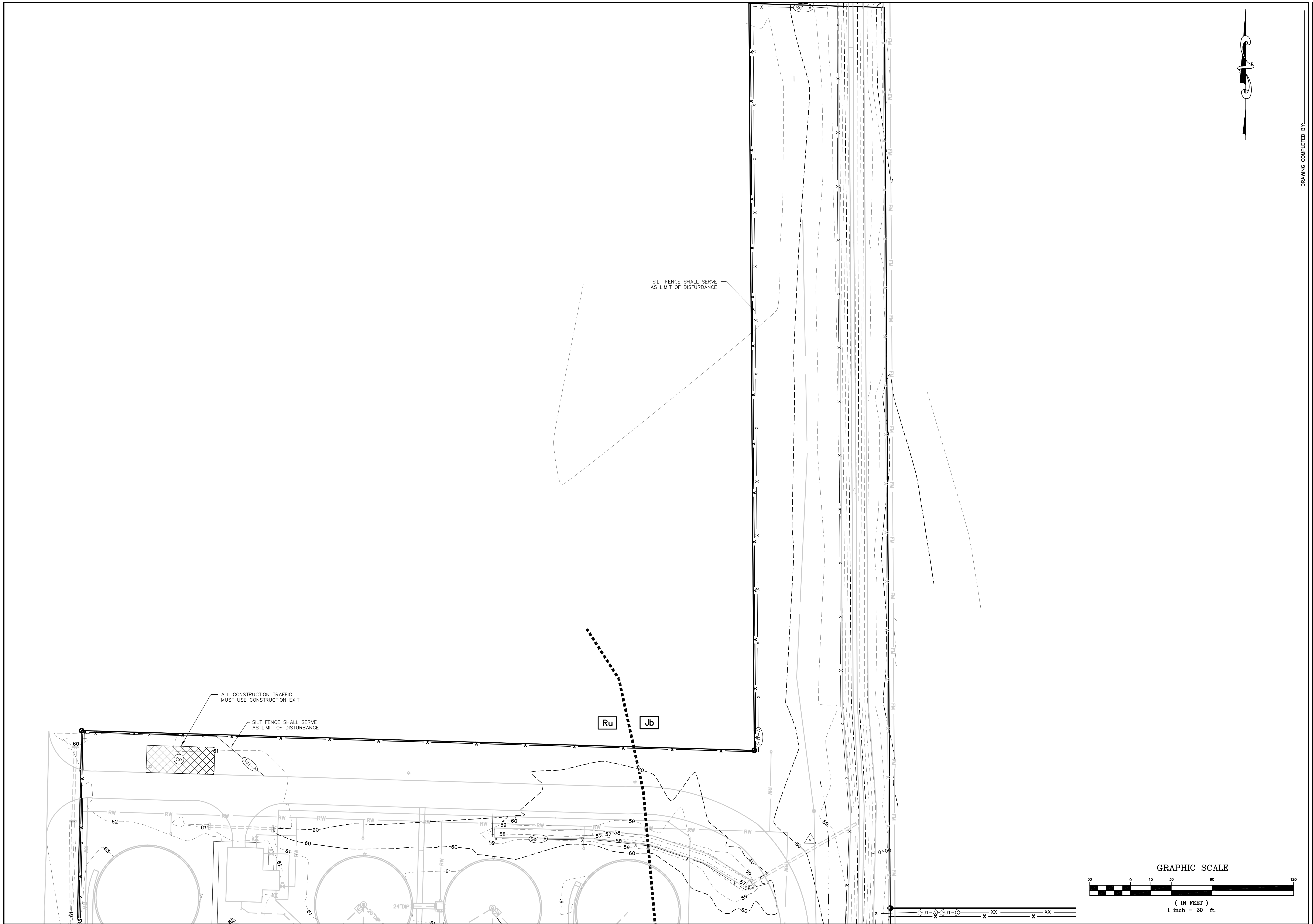
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for  
WWTP Upgrade  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

**Initial Phase  
Erosion & Sediment  
Control Plan  
South**

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-11

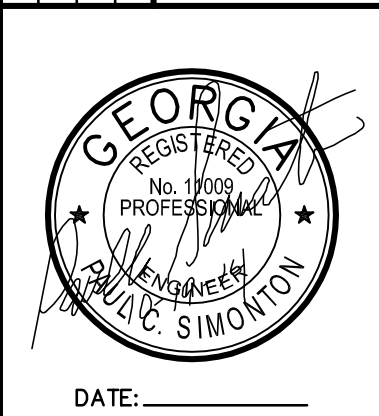




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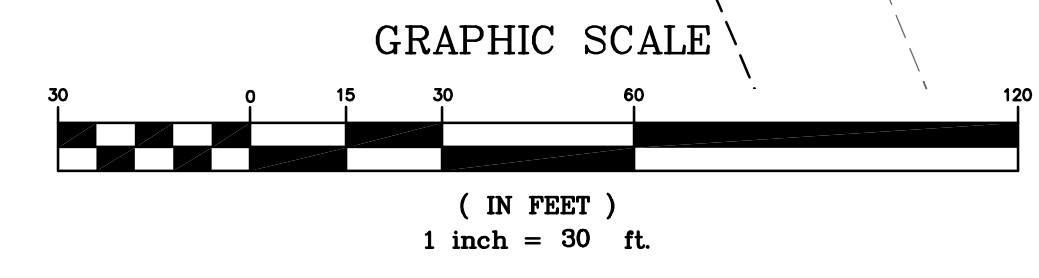
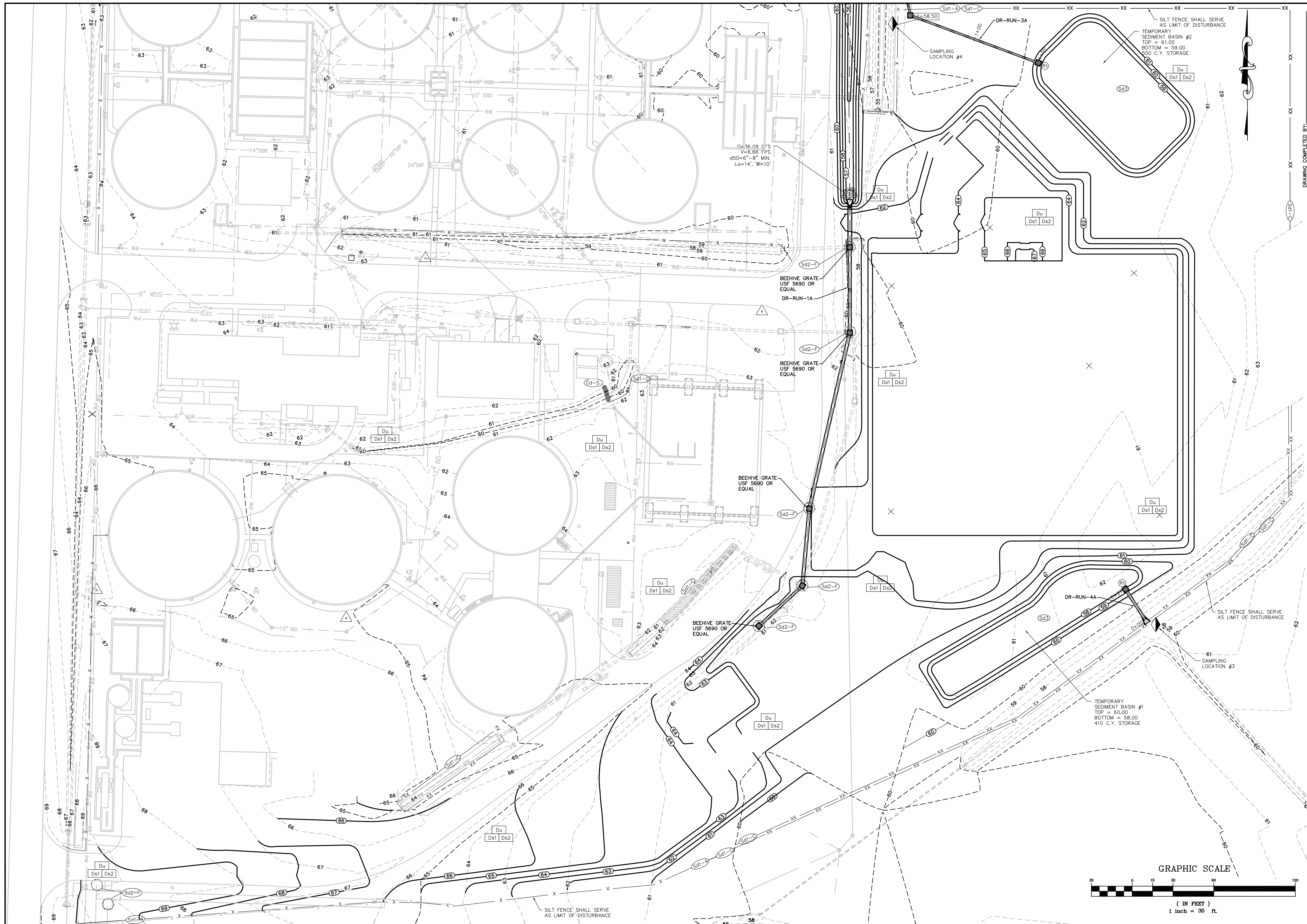
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**Hinesville/Ft Stewart  
WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Initial Phase  
Erosion & Sediment  
Control Plan  
North

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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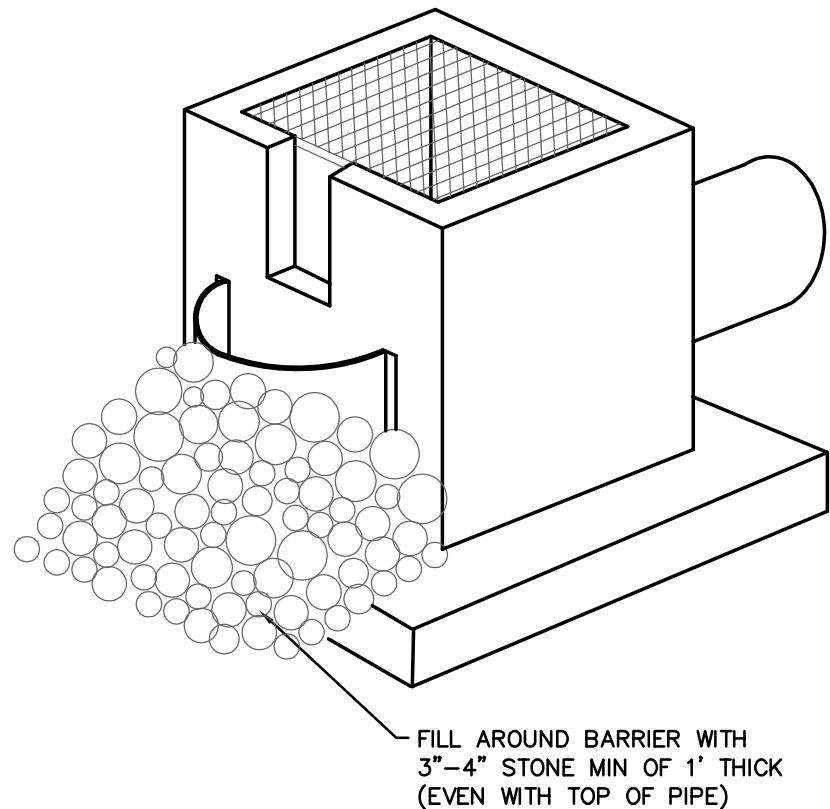
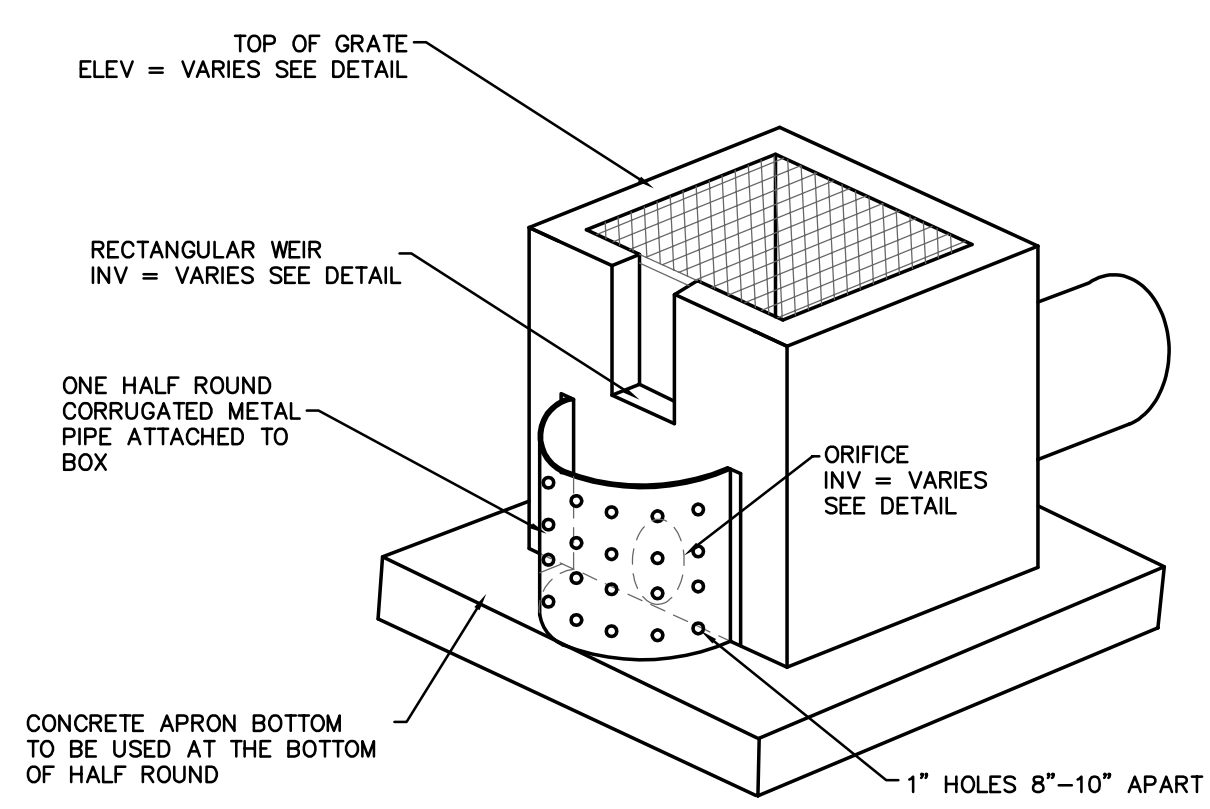
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for  
**WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

Intermediate Phase  
Erosion & Sediment  
Control Plan  
South

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-13

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**OUTLET STRUCTURE  
TEMPORARY RETOFIT DETAIL**  
N.T.S.

OCS-1

SILT FENCE SHALL SERVE  
AS LIMIT OF DISTURBANCE

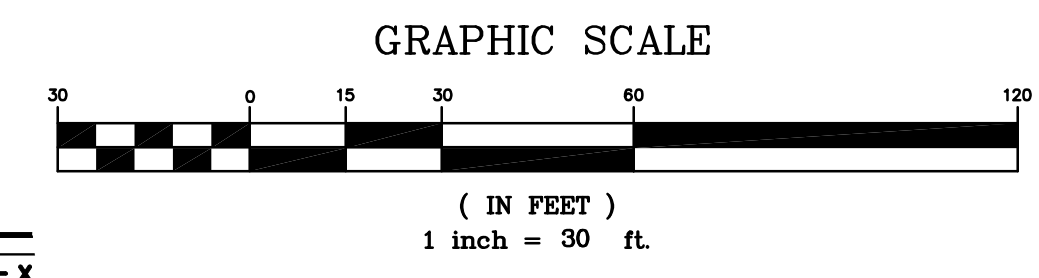
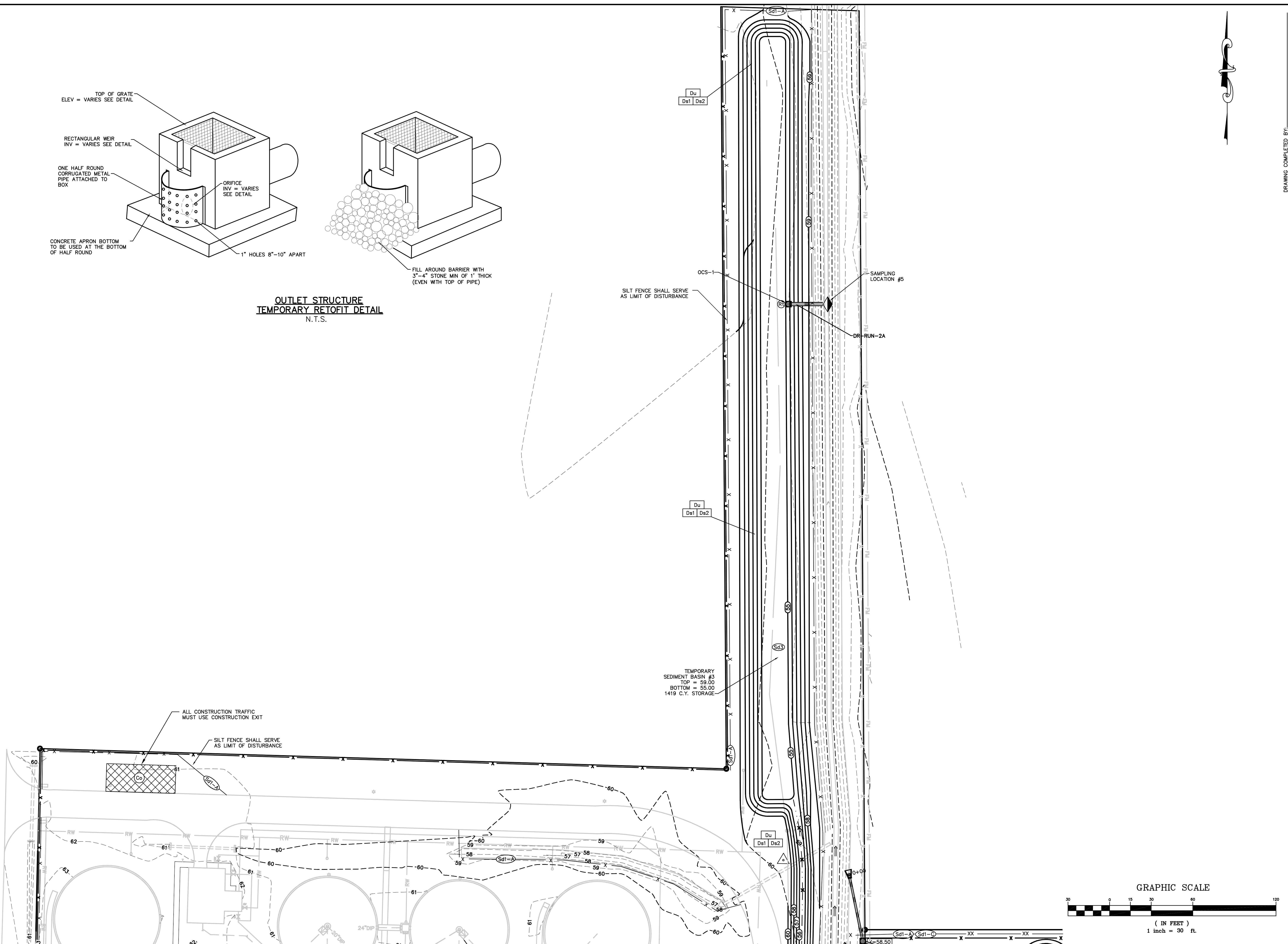
SAMPLING  
LOCATION #5

DR-RUN-2A

TEMPORARY  
SEDIMENT BASIN #3  
TOP = 59.00  
BOTTOM = 55.00  
1419 C.Y. STORAGE

ALL CONSTRUCTION TRAFFIC  
MUST USE CONSTRUCTION EXIT

SILT FENCE SHALL SERVE  
AS LIMIT OF DISTURBANCE



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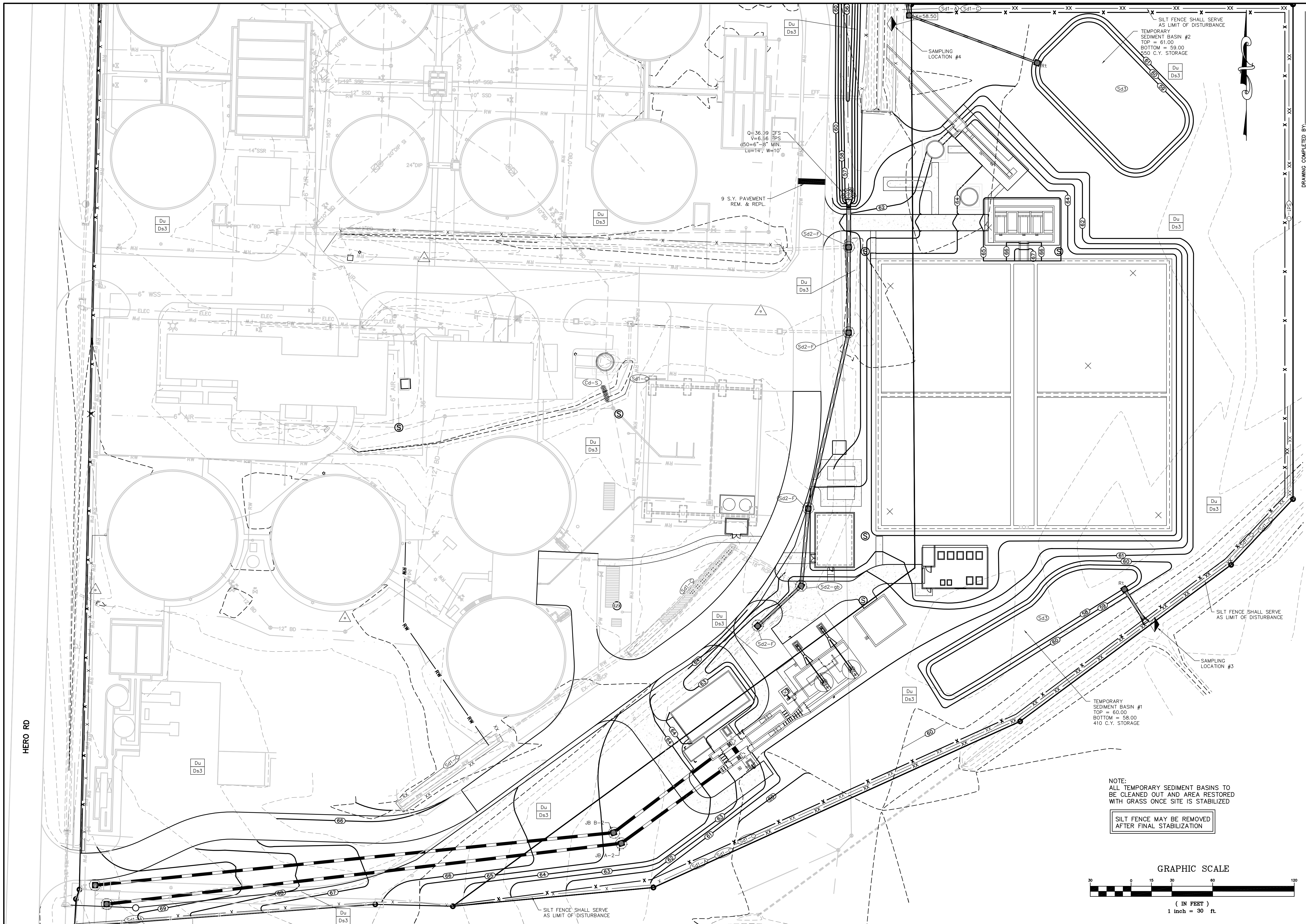
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The City of Hinesville  
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Intermediate Phase  
Erosion & Sediment  
Control Plan  
North

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The City of Hinesville**  
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Liberty County, Georgia

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Final Phase  
Erosion & Sediment  
Control Plan  
South

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-15

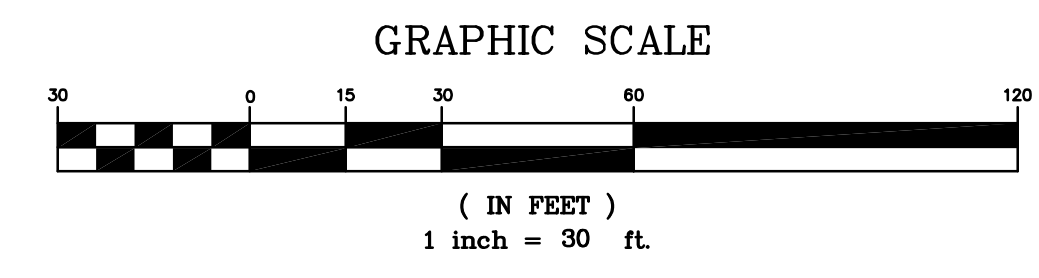
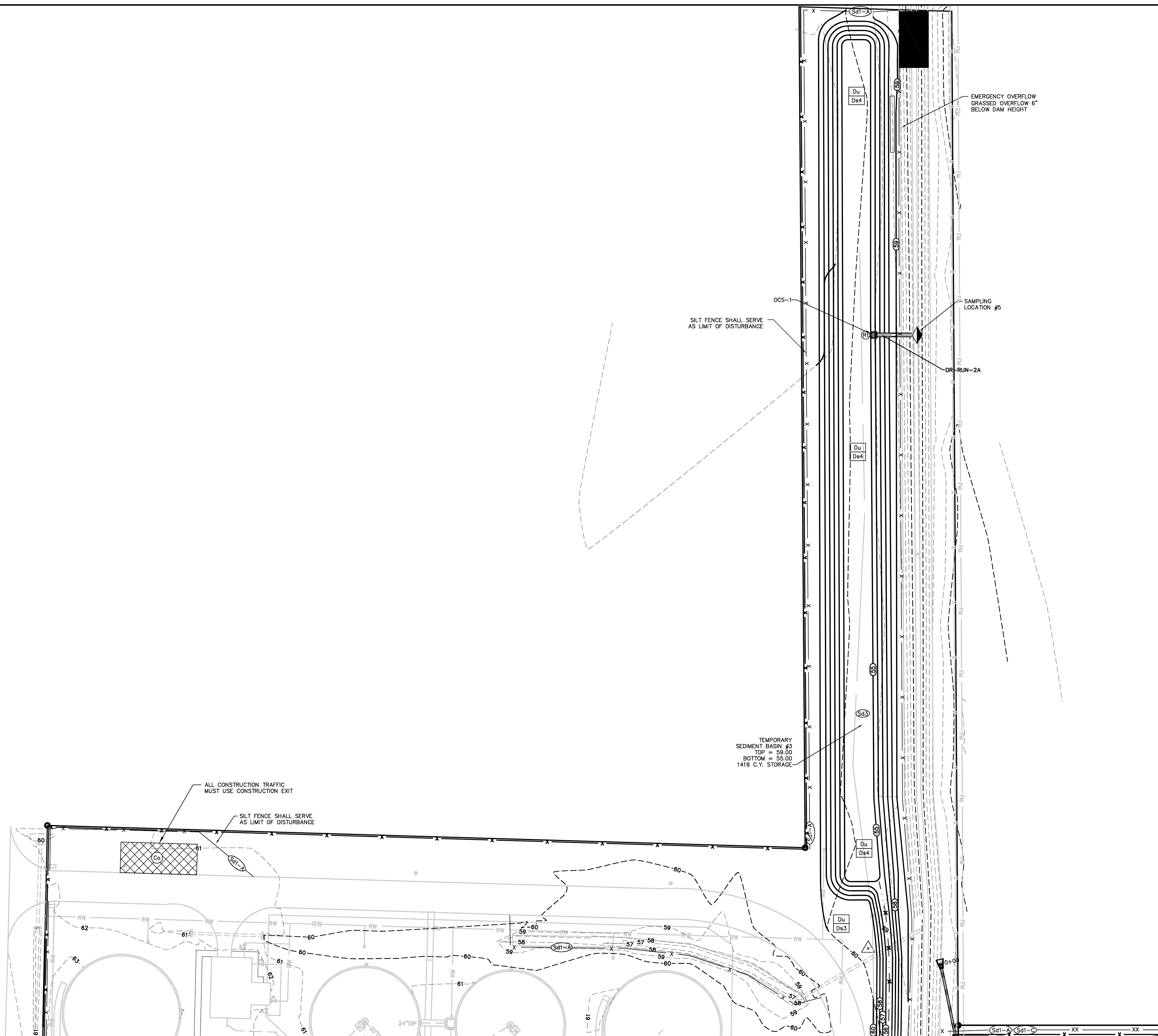
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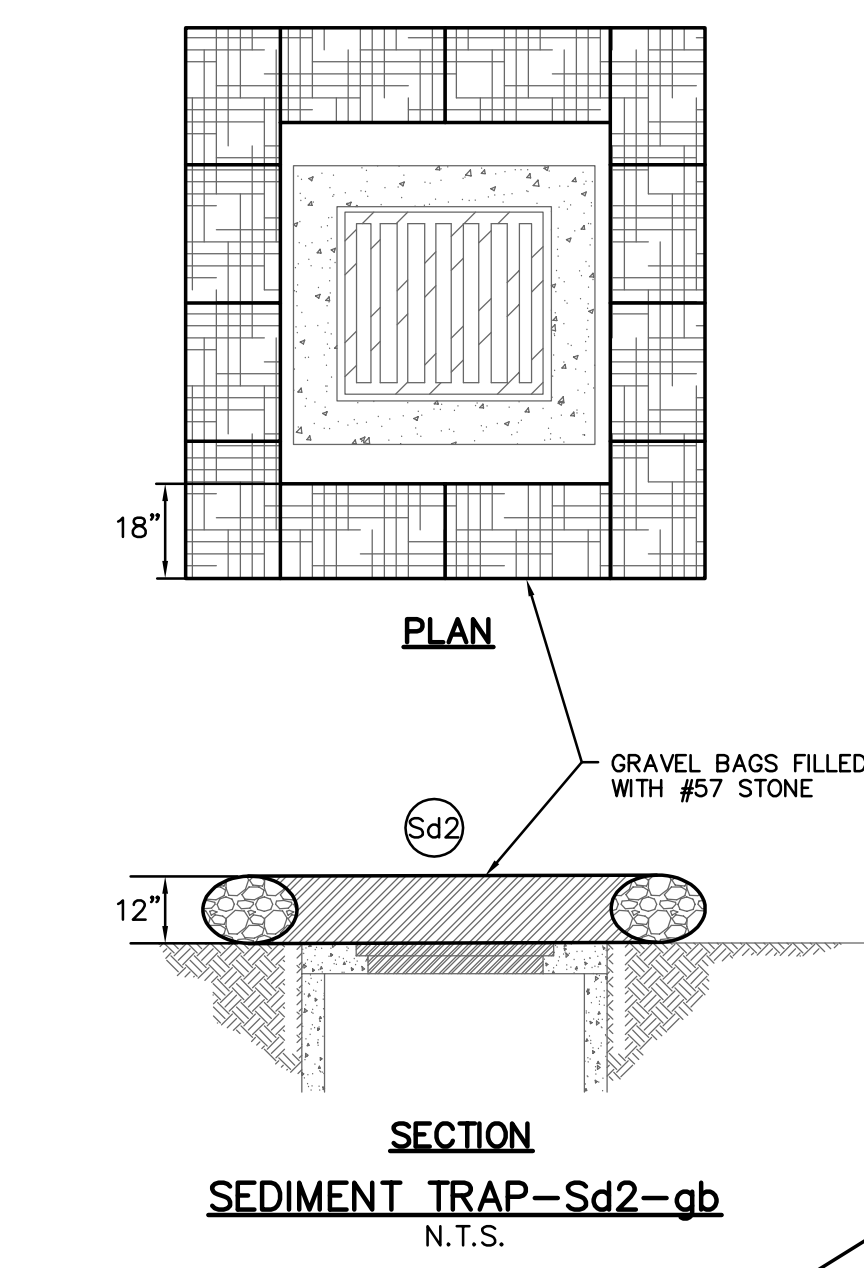
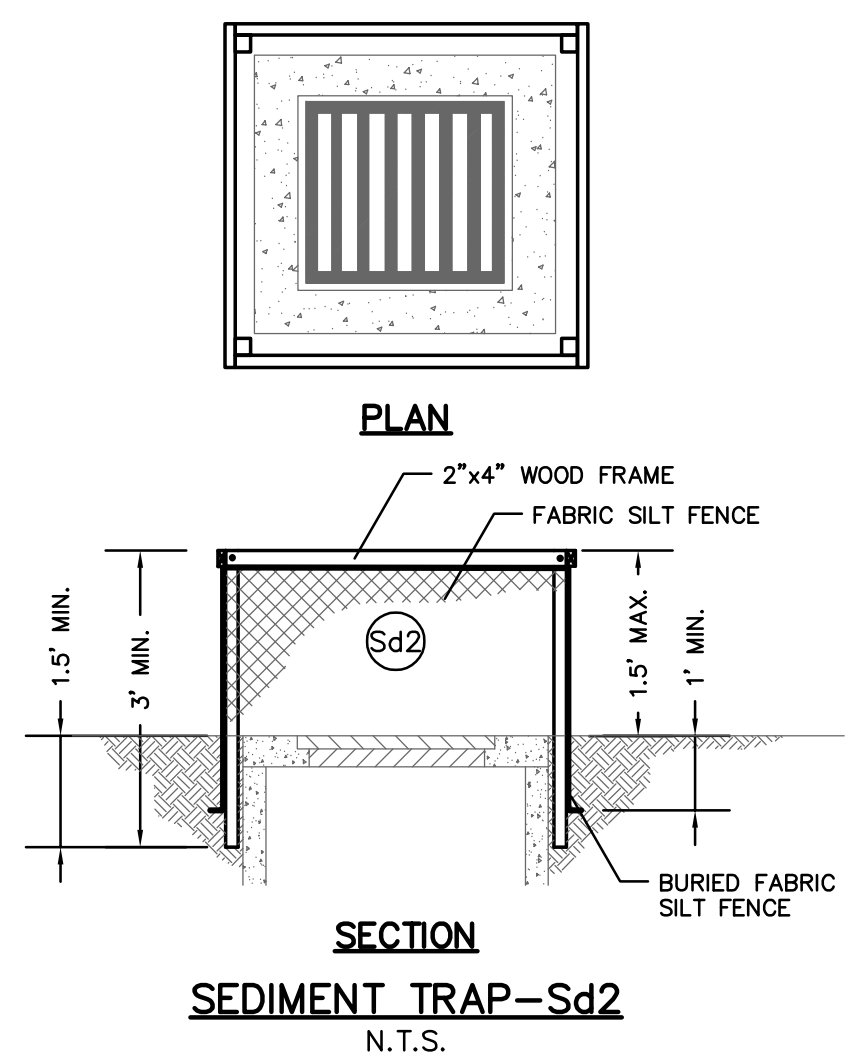
Final Phase  
Erosion & Sediment  
Control Plan  
North

DATE: November 29, 2012  
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LEGEND FOR EROSION AND SEDIMENT CONTROL PRACTICES		
CODE	PRACTICE	DESCRIPTION
Co	CONSTRUCTION EXIT	A STONE PAD LOCATED AT THE JOB SITE EXIT TO REMOVE MUD AND DEBRIS FROM TIRES AND PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC ROADS.
Cr	CONSTRUCTION ROAD STABILIZATION	A TEMPORARY TRAVELWAY CONSTRUCTED AS PART OF A CONSTRUCTION PLAN TO PROVIDE A FIXED ROUTE FOR CONSTRUCTION TRAFFIC AND REDUCE EROSION AND SUBSEQUENT REGRADING OPERATIONS BETWEEN INITIAL AND FINAL STABILIZATION.
Ch	CHANNEL STABILIZATION	LOOSE ROCK OR SIMILAR DURABLE MATERIAL INSTALL ON SLOPES FOR PROTECTION FROM EROSION CAUSED BY WATER TURBULENCE OR HIGH VELOCITIES.
Sd1-A	SILT FENCE 36" WIDE	A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. 6 MO. OR LONGER PROJECT LIFE.
Sd1-C	SILT FENCE 36" WIRE BACKED	SD1-C HAS 6 MO. OR LONGER PROJECT LIFE. WIRE BACKING IS NECESSARY BECAUSE FABRIC ALLOWS 3 TIMES THE FLOW RATE OF TYPE A SILT FENCE.
Sd2	INLET SEDIMENT TRAP	TEMPORARY DEVICE TO PREVENT SILT FROM ENTERING STORM DRAINAGE SYSTEMS, PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.
Sd2b	"PIGS IN BLANKET"	CURB INLET PROTECTION "PIGS IN BLANKET" SHOULD BE USED ONCE PAVEMENT IS ALREADY IN PLACE.
Sd2c	"SILT SAVER"	SILT SAVER IS A MANUFACTURED INLET SEDIMENT TRAP THAT INSTALLED OVER THE GRATE INLET TO PREVENT SILT FROM ENTERING THE SYSTEM WHILE THE SITE IS UNDER CONSTRUCTION.
Sd2f	FILTER FABRIC AND FRAME	FILTER FABRIC WRAPPED AROUND A FRAME FOR USE IN AN AREA WHERE SITE IS RELATIVELY FLAT (<5%)
Sd2g	BAFFEL BOX	FOR INLETS RECEIVING HIGH VOLUME OR VELOCITY. SLATS OR PLYWOOD WITH HOLES DRILLED INTO AND GRAVEL PLACED AROUND THE BOX.
St	STORM DRAIN OUTLET PROTECTION	PAVED OR ROCK SECTION BELOW A STORM DRAIN OUTLET FOR PROTECTION FROM EROSION CAUSED BY WATER TURBULENCE OR HIGH VELOCITIES.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	APPLYING PLANT RESIDUES OR OTHER SUITABLE MATERIALS NOT PRODUCED ON THE SITE TO THE SOIL SURFACE SUCH AS GRAIN STRAW, HAY, PINE NEEDLES WOOD WASTE AND SHREDDED RESIDUES.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDINGS)	ESTABLISHING TEMPORARY VEGETATIVE COVER SUCH AS RYE, SUDANGRASS, WHEAT, OR RYEGRASS ON DISTURBED AREAS.
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)	ESTABLISHING PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, SOD, OR LEGUMES ON DISTURBED AREAS.
CD-HB	CHECK DAM - HAYBALE TYPE	SMALL TEMPORARY BARRIER, GRADE CONTROL STRUCTURE, OR DAM CONSTRUCTED ACROSS A SWALE, DRAINAGE DITCH, OR AREA OF CONCENTRATED FLOW.
CD-S	CHECK DAM - STONE TYPE	STACKED EMBEDDED HAYBALES MAY BE USED AS TEMPORARY CHECK DAMS. IN DRAINAGE AREAS LESS THAN 1 ACRE. STONE CHECK DAM CONSTRUCTED OF GRADED SIZE 2-10 INCH STONE. CENTER IS LOWER THAN SIDES.
Rd	ROCK FILTER DAM	A PERMANENT OR TEMPORARY STONE FILTER DAM INSTALLED ACROSS SMALL STREAMS OR DRAINAGEWAYS.
D	DIVERSION	A RIDGE OF COMPACTED SOIL, CONSTRUCTED ABOVE, ACROSS OR BELOW A SLOPE.
Ge	GEOTEXTILES	PERMEABLE TEXTILES USED TO COVER SOIL OR ROCK TO PROVIDE REINFORCEMENT, FILTRATION, OR DRAINAGE AND PREVENT EROSION ON STEEP SLOPES.
Mb	MATTING AND BLANKETS	A PROTECTIVE COVERING (BLANKET) OR SOIL STABILIZATION MAT USED TO ESTABLISH PERMANENT VEGETATION ON STEEP SLOPES, CHANNELS, OR SHORELINES.
Tm	TURBIDITY MONITORING POINT	LOCATION FOR MONITORING TURBIDITY IN STORM WATER RUNOFF.



**Ds1 DISTURBED AREA STABILIZATION (W/MULCHING ONLY)**

**SPECIFICATIONS**

A. For temporary protection of critical areas without seeding. This standard applies to grades or cleared areas which may be subjected to erosion for 6 months or less, where seeding may not have a suitable growing season to produce an erosion retardant cover, but which can be stabilized with a mulch cover.

**Site Preparation**

- Grade, as needed and feasible, to permit the use of equipment for applying and anchoring mulch.
- Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
- As needed and feasible, loosen compact soil to a minimum depth of 3 inches.

**Mulching Materials**

- Dry straw or hay - spread at a rate of 2 1/2 tons per acre.
- Wood waste, chips, sawdust or bark - spread 2 to 3 inches deep (about 6 to 9 tons per acre).
- Erosion control matting or netting - applied in accordance with manufacturers recommendations.
- Cutback asphalt, slow curing - applied at 1200 gallons per acre (or 1/4 gallon per sq. yd.)
- Polyethylene film - secured over banks or stockpiled soil material for temporary protection.

**Applying and Anchoring Mulch**

- Apply straw or hay mulch uniformly by hand or mechanically. Anchor as appropriate and feasible. It may be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." The disk 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 press it into the soil leaving much of it in an erect position.
- Straw hay mulch spread with special blower-type equipment may be anchored with emulsified asphalt (Grade AE-5 or SS-1). The asphalt emulsion must be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of water per acre.
- Spread wood waste uniformly on slopes that are 3:1 and flatter. No anchoring is needed.
- Commercial matting and netting. Follow manufacturer's specification included with the material.
- Apply asphalt so area has uniform appearance. (Note: Use in areas of pedestrian traffic could cause problems or "tracking in" or damage to shoes, clothing, etc.)

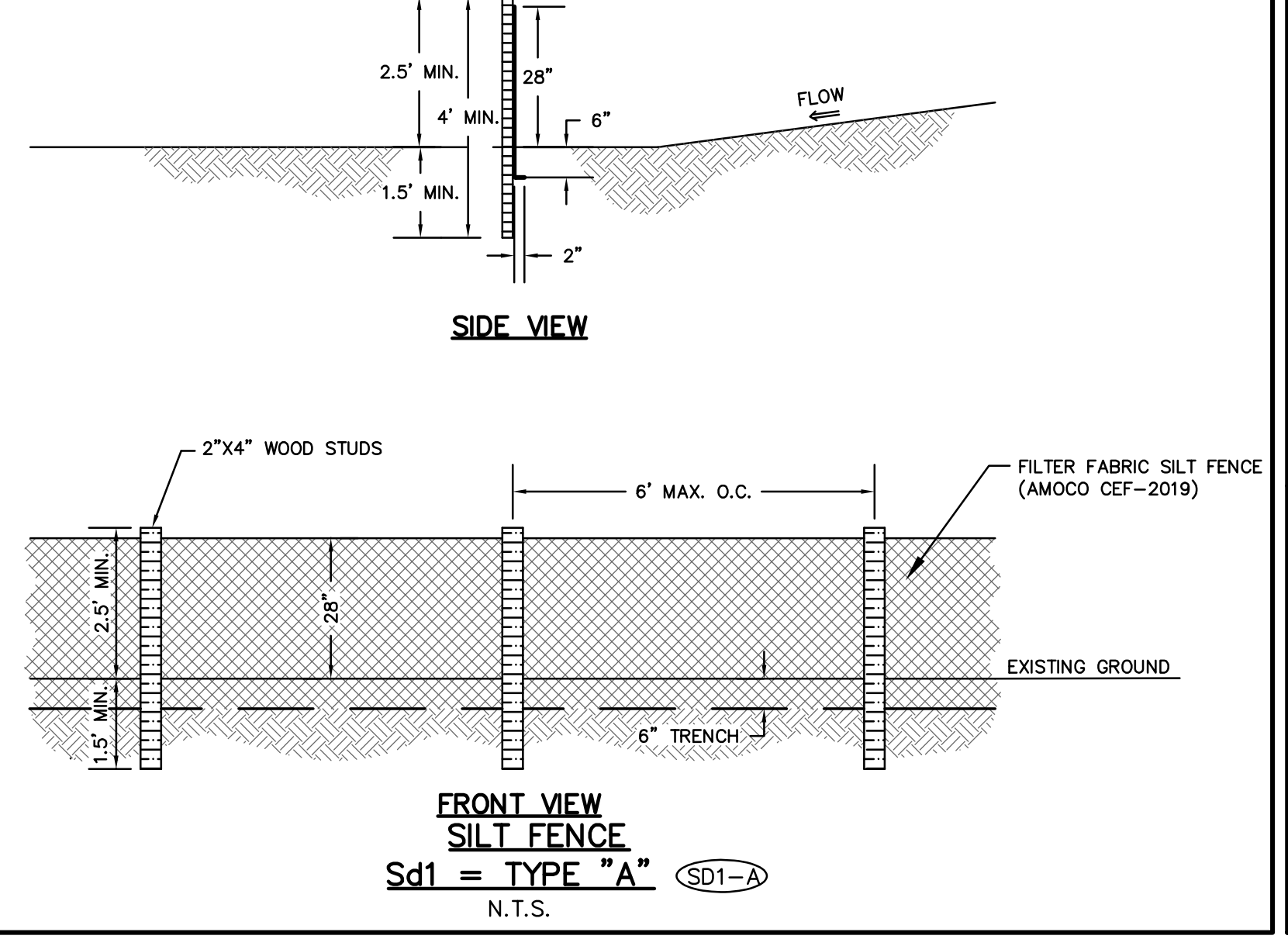
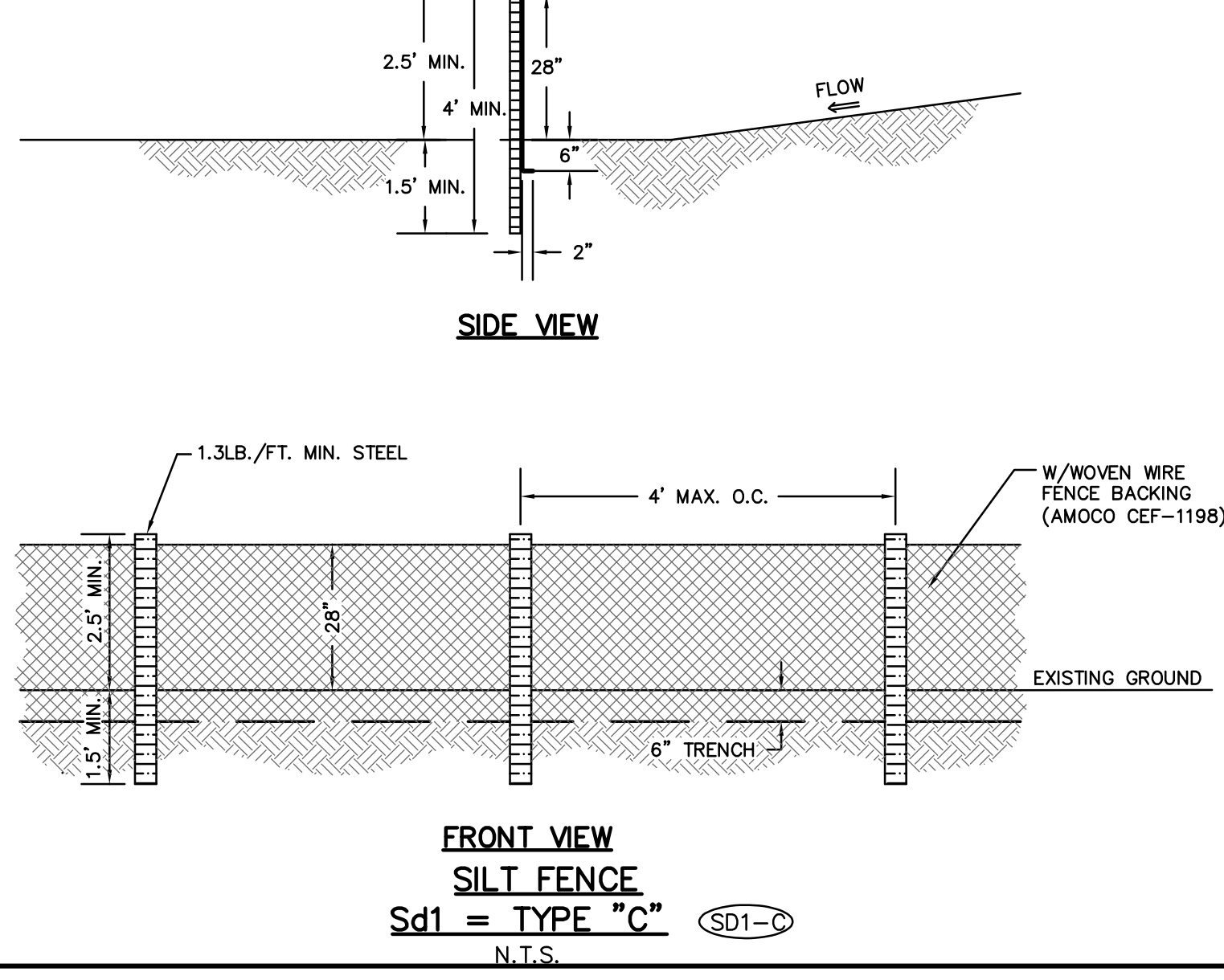
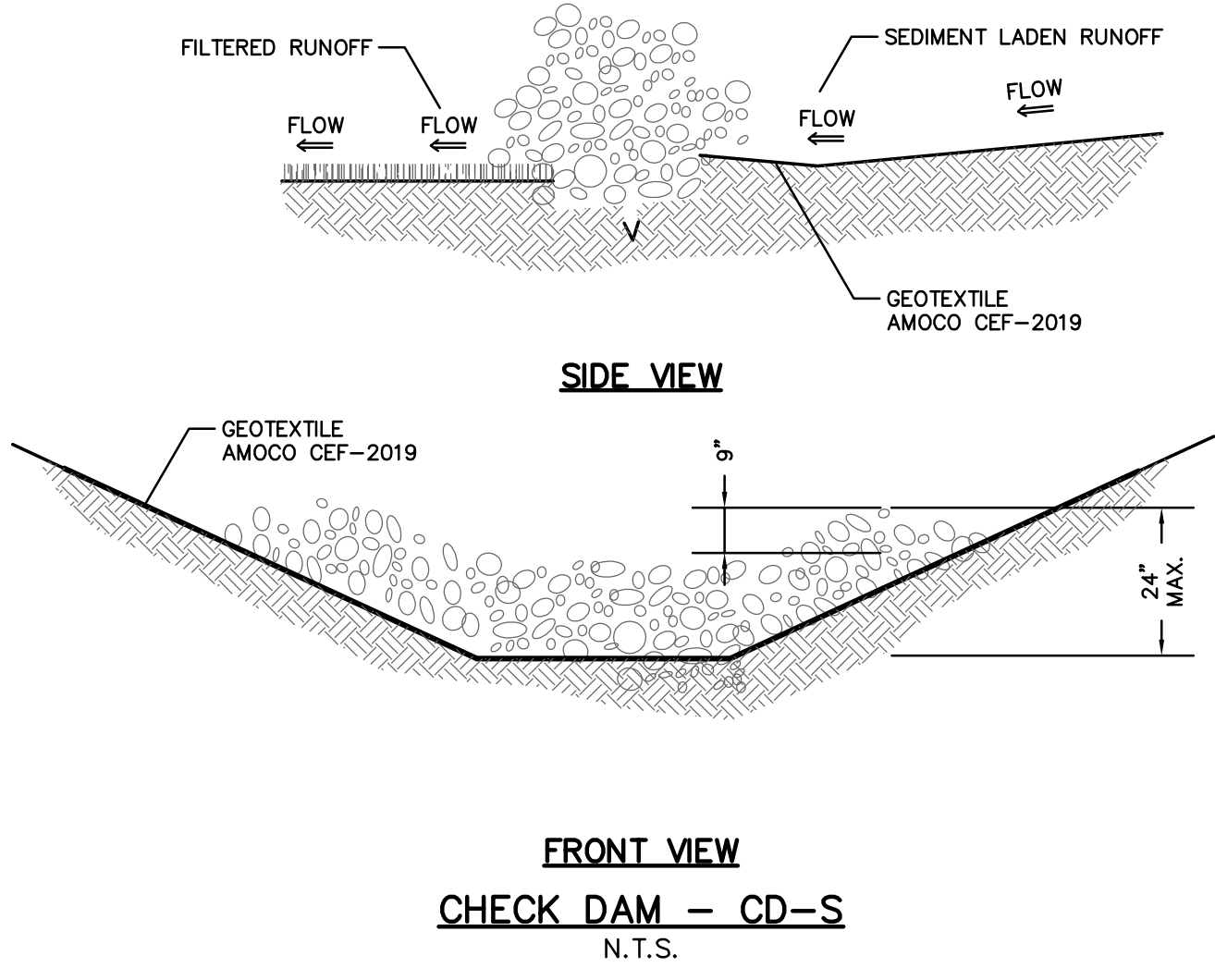
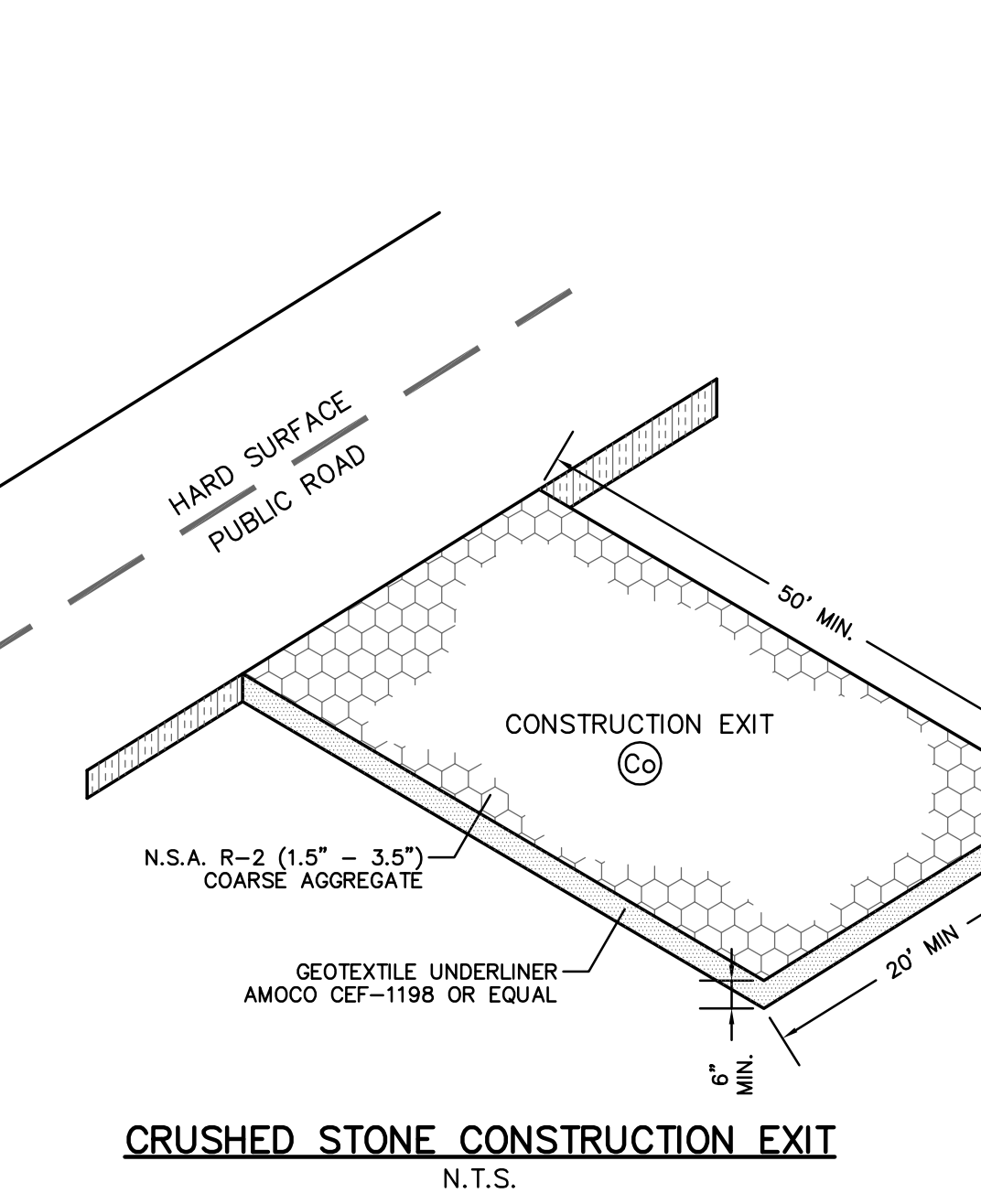
B. To conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, or on bar areas on lawns.

**Mulching Materials**

Use one of the materials given below and apply at thickness indicated.

Material	Depth
1. Grain straw or grass hay	6" to 10"
2. Pine needle	4" to 6"
3. Wood waste (sawdust, bark, chips)	4" to 8"
4. Shredded residues (crops, leaves, etc.)	4" to 8"

5. Completely cover area with black polyethylene film and hold in place by placing soil on the outer edge. When using organic mulches, apply 20-30 pounds of nitrogen in addition to the normal amount needed for plant growth to offset the tie up of N by decomposition of mulch



**Ds2 SPECIES AND PLANTING SCHEDULE**

SPECIES	BROADCAST RATES 1/ - PLS 2/ PER ACRE		PLANTING DATES BY RESOURCE		REMARKS
	1/	2/	RESOURCE AREA 3/	AREAS *	
RYEGRASS, ANNUAL ALONE	40 lbs.	0.9 lb.	M-L P C	J F M A M J J A S O N D	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES.

\* (DARK LINES REPRESENT OPTIMUM DATES, GRAY LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.)

**Ds3 SPECIES AND PLANTING SCHEDULE**

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

\* (DARK LINES REPRESENT OPTIMUM DATES, GRAY LINES INDICATE PERMISSIBLE BUT MARGINAL DATES.)

**MULCHING RATES FOR PERMANENT COVER**

TYPE OF MULCH	RATE PER ACRE	NOTES
Dry straw	2 Tons	Free of weed seeds.
Dry hay	2.5 Tons	Free of weed seeds.
Wood Cellulose	500 lbs. 1000 lbs.	Slope less than 3/4:1 Slope greater than 3/4:1
Wood Pulp Fiber	500 lbs. 1000 lbs.	Slope less than 3/4:1 Slope greater than 3/4:1
Sericea Lespedeza Hay	3 Tons	Containing mature seeds.
Pine Straw or Bark	3 inches thick	For bedding. Not for seeding.
Bituminous treated roadways.	See DOT specs.	Use on slopes, in ditches, or dry roadways.

- Mulching is not required for temporary grassing.
- Mulch shall be applied to cover 75% of the soil surface.
- Sod does not require mulch.

**Du DUST CONTROL ON DISTURBED AREAS**

**PURPOSE**

A. To prevent surface and air movement of dust from exposed surfaces.

B. To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

**Temporary Methods**

- Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet.
- Mulching - See Ds1 - Disturbed Area Stabilization (with Mulching only)
- Vegetative Cover - See Ds2 - Disturbed Area Stabilization (with Temporary Seeding)

**Permanent Methods**

- Permanent Vegetation - See Ds3 - Disturbed Area Stabilization (with Permanent Vegetation)

**FERTILIZER REQUIREMENTS**

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT	RATE	N TOP DRESSING RATE
Cool season grasses	First	6-12-12	1500 lbs./ac.	50-100 lbs./ac. 1/ 2/
	Second Maintenance	6-12-12 10-10-10	1000 lbs./ac. 400 lbs./ac.	30
Cool season legumes	First	6-12-12	1500 lbs./ac.	0-50 lbs./ac. 1/
	Second Maintenance	0-10-10 10-10-10	1000 lbs./ac. 400 lbs./ac.	-
Ground covers	First	10-10-10	1500 lbs./ac.	-
	Second Maintenance	10-10-10	1000 lbs./ac. 400 lbs./ac.	-
Pine seedlings	First	20-10-5	one 21-gram pallet per seeding placed in the closing hole	-
Shrub lespedeza	First	0-10-10	700 lbs./ac.	-
	Maintenance	0-10-10	700 lbs./ac. 4/	-
Temporary cover crops seeded alone	First	10-10-10	500 lbs./ac.	30 lbs./ac. 5/
Warm season grasses	First	6-12-12	1500 lbs./ac.	50-100 lbs./ac. 2/ 6/
	Second Maintenance	6-12-12 10-10-10	800 lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/ 30 lbs./ac
Warm season grasses and legumes	First	6-12-12	1500 lbs./ac.	50 lbs./ac. 6/
	Second Maintenance	0-10-10	1000 lbs./ac. 400 lbs./ac.	-

- Apply in spring following seeding.
- Apply in split applications when high rates are used.
- Apply in 3 split applications.
- Apply when plants are pruned.
- Apply to grass species only.
- Apply when plants grow to height of 2 to 4 inches.

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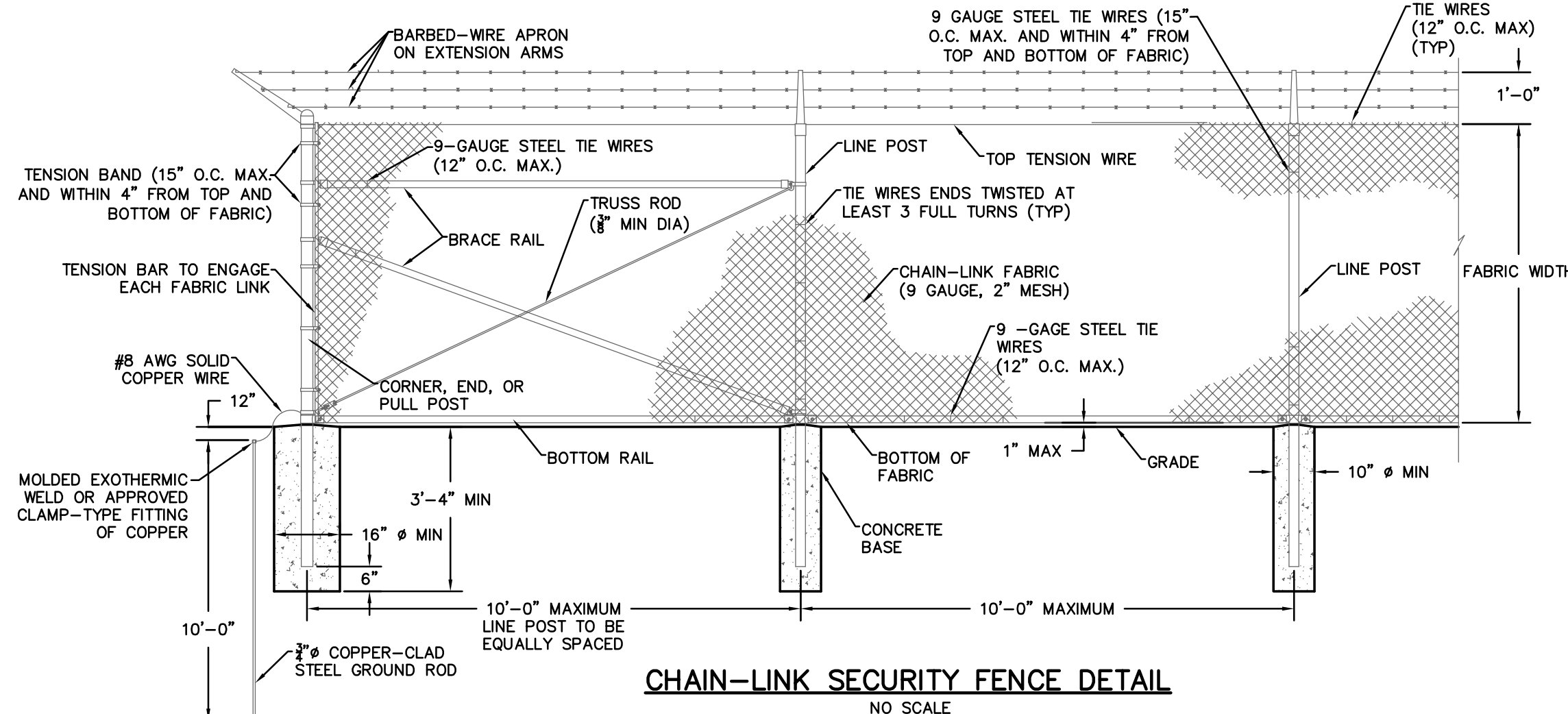
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for  
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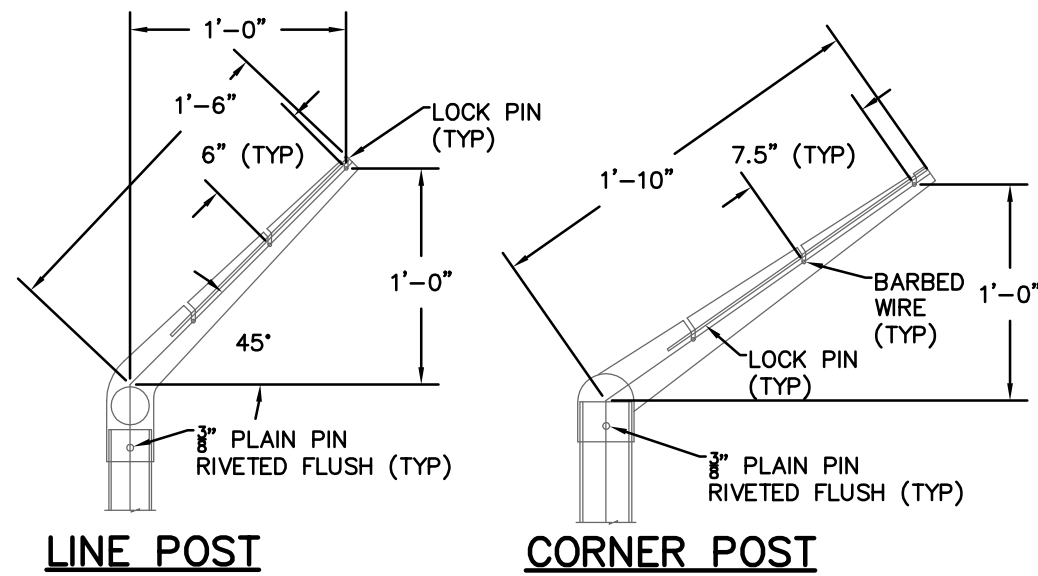
**Erosion & Sediment Control Details**

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-17



**NOTES:**  
 1. WIRE TIES, RAILS, POSTS, AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN-LINK FABRIC SHALL BE PLACED ON THE SIDE OPPOSITE THE SECURE AREA.  
 2. ONLY 9-GAUGE GALVANIZED STEEL TIE WIRES SHALL BE USED FOR FASTENING THE FENCE FABRIC TO FENCE POSTS AND RAILS. 16-GAUGE, STAINLESS STEEL TIE WIRES SHALL BE USED FOR FASTENING FENCE FABRIC TO TENSION WIRES. HOG RINGS SHALL NOT BE ALLOWED ON SENSORED FENCES.  
 3. BOTTOM RAIL SHALL BE ATTACHED TO DOUBLE RAIL ENDS USING 3/8\"/>

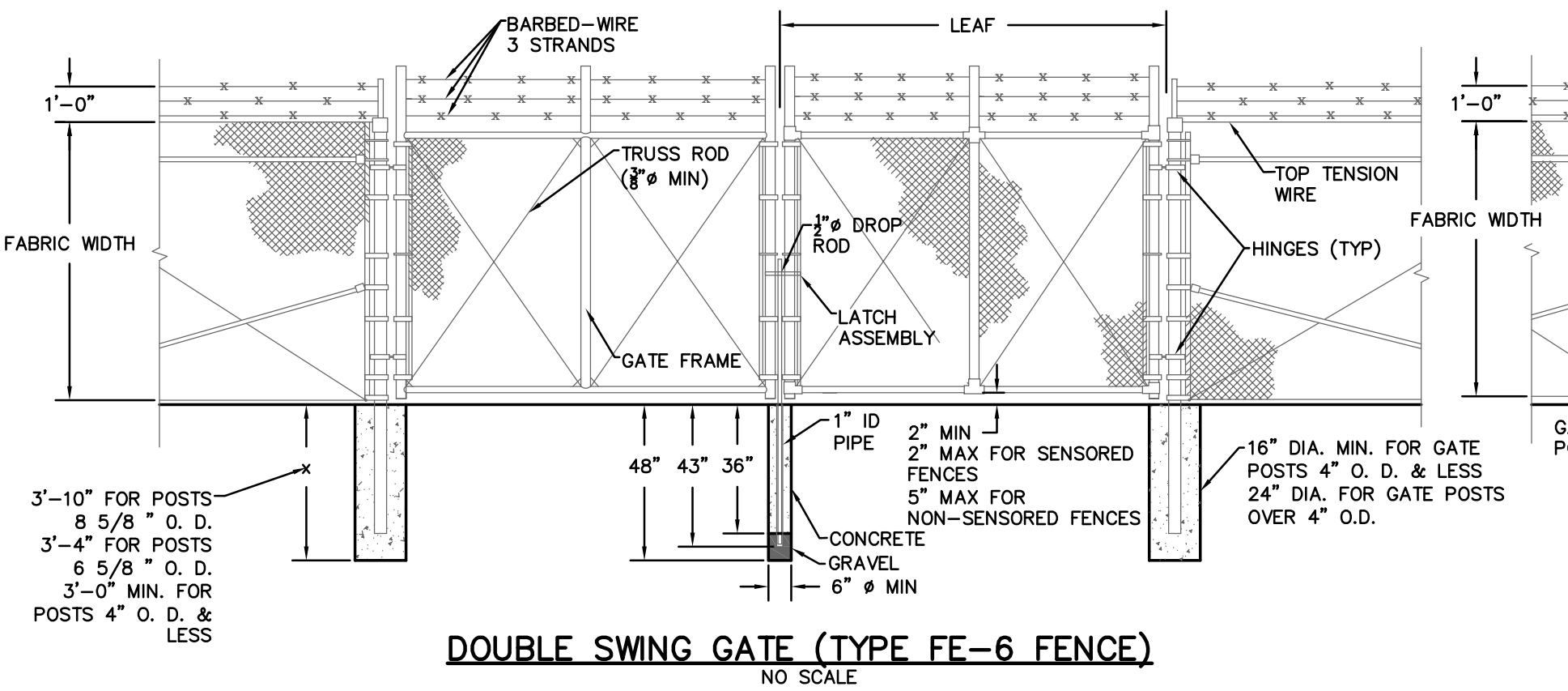
USE AND SECTION	STEEL POST SCHEDULE		
	MINIMUM OUTSIDE DIMENSIONS (NOMINAL)		
CORNER, END & PULL POSTS TUBULAR - ROUND	FABRIC WIDTH 72\"/>		
LINE POSTS TUBULAR - ROUND	1.90\"/>		
BOTTOM & BRACE RAILS TUBULAR - ROUND TUBULAR - SQUARE H-SECTION (ROLL-FORMED)	1.66\"/>		



**EXTENSION ARM DETAILS**  
NO SCALE

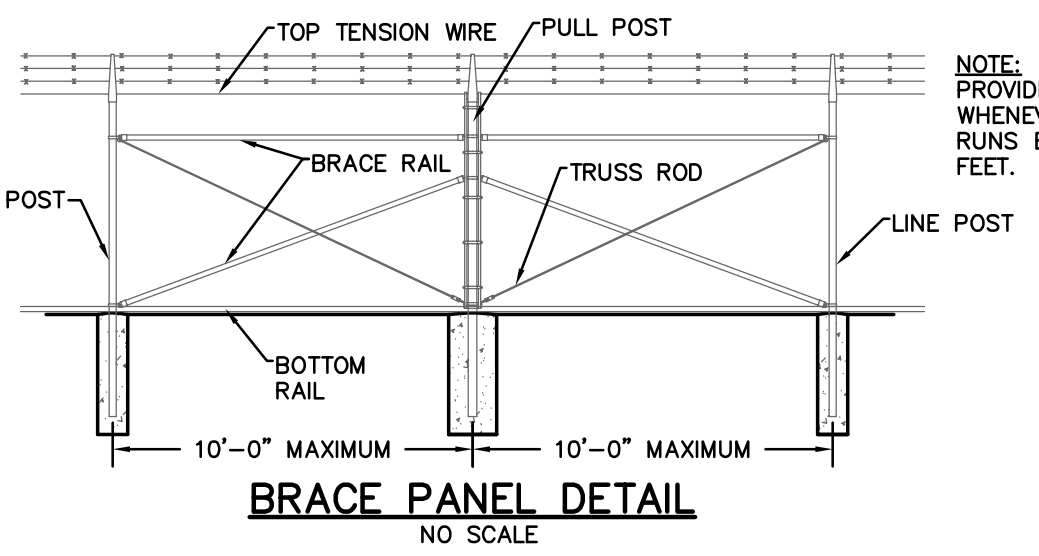
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6\"/>	
GREATER THAN 6\"/>	
GREATER THAN 12\"/>	
MORE THAN 18\"/>	

**NOTES:**  
 1. FOR NON-SENSORED FENCES, DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION WHICH COMPLY WITH THE SPECIFICATIONS.  
 2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.  
 3. ALL GATE FRAMES SHALL MEET THE MINIMUM REQUIREMENTS OF ASTM F900 1.90\"/>

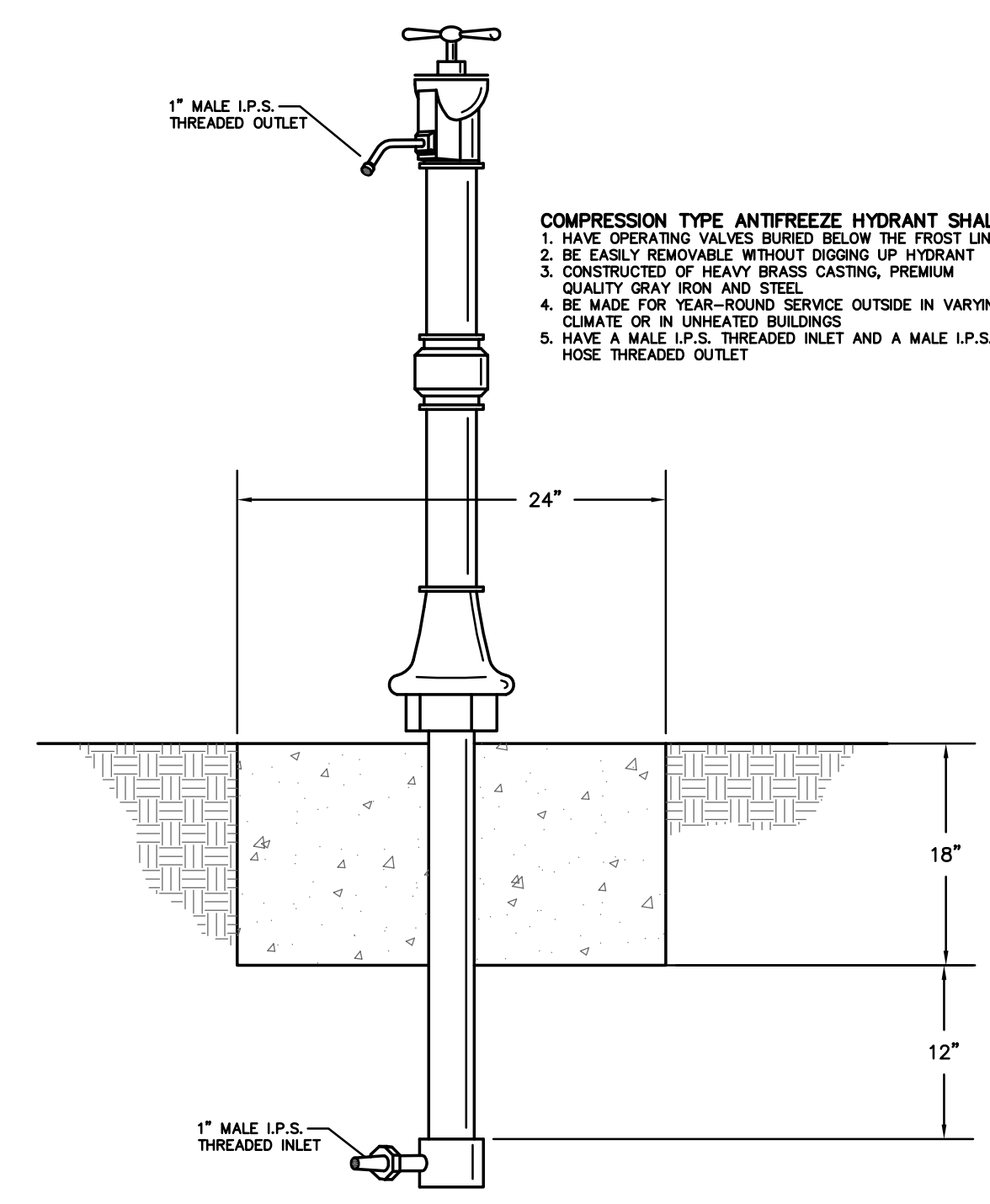


**DOUBLE SWING GATE (TYPE FF-6 FENCE)**  
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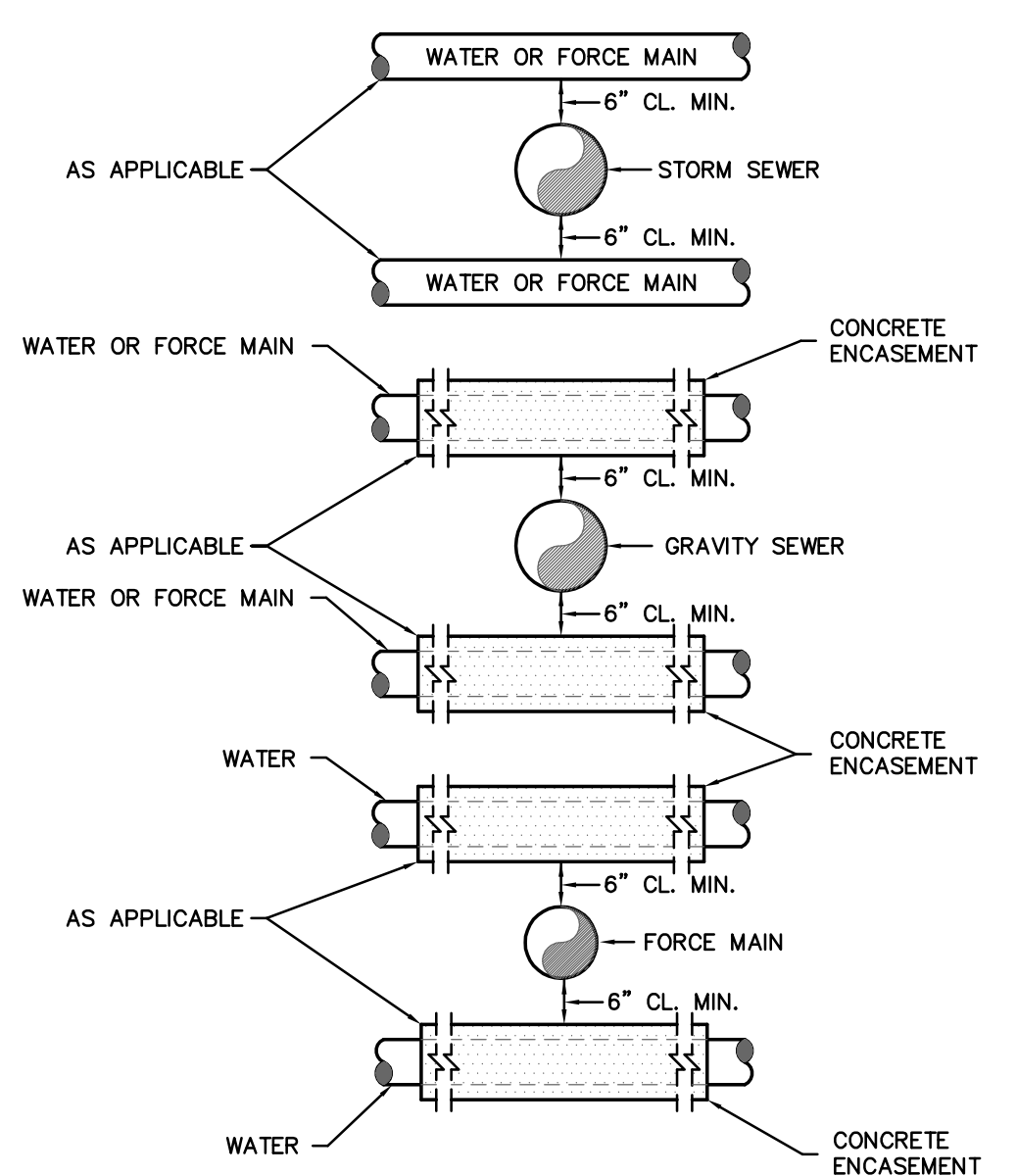
**PERSONNEL GATE**  
NO SCALE



**BRACE PANEL DETAIL**  
NO SCALE

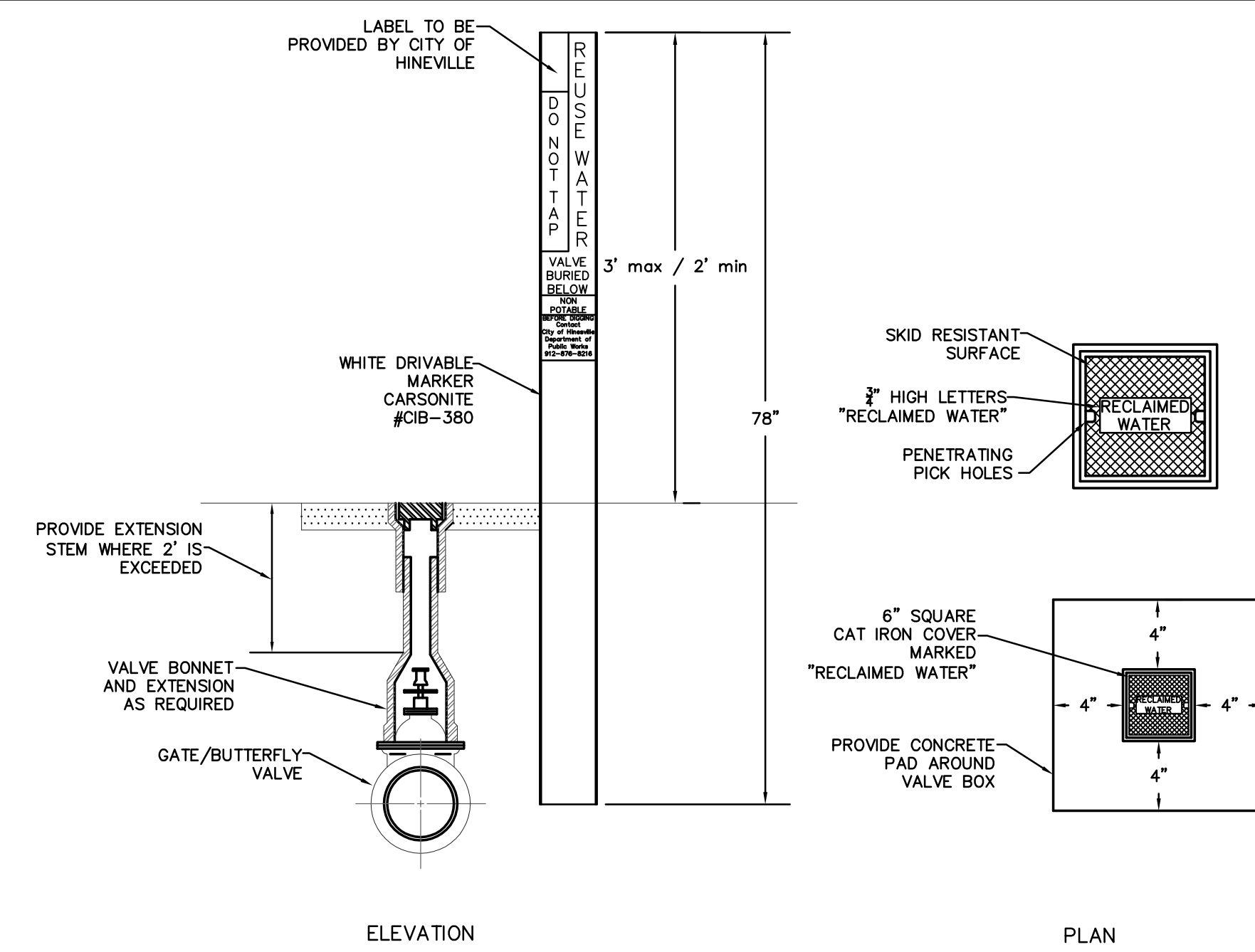


**COMPRESSION TYPE ANTIFREEZE HYDRANT DETAIL**  
N.T.S.

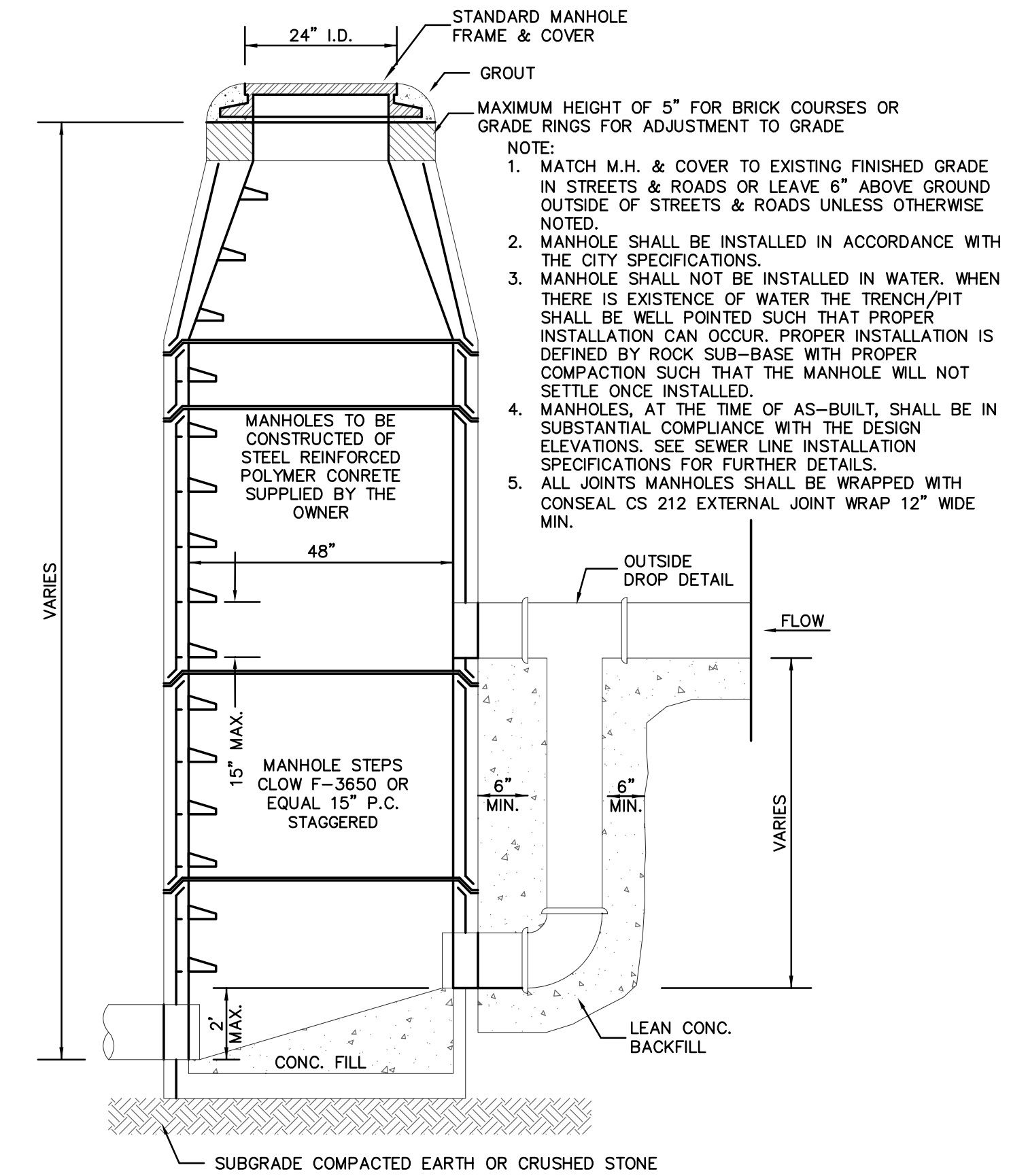


**NOTES:**  
 1. CONCRETE ENCASEMENT TO EXTEND A MINIMUM OF 10\"/>

**SEPERATION DETAIL**  
N.T.S.



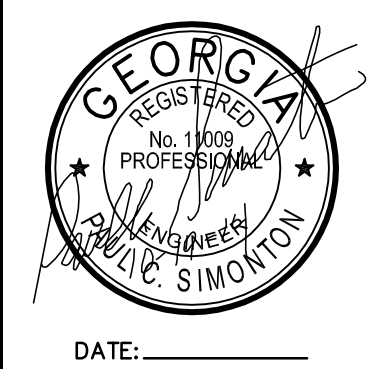
**RECLAIMED VALVE BOX & MARKER DETAIL**  
N.T.S.



**PRECAST CONCRETE MANHOLE**  
N.T.S.

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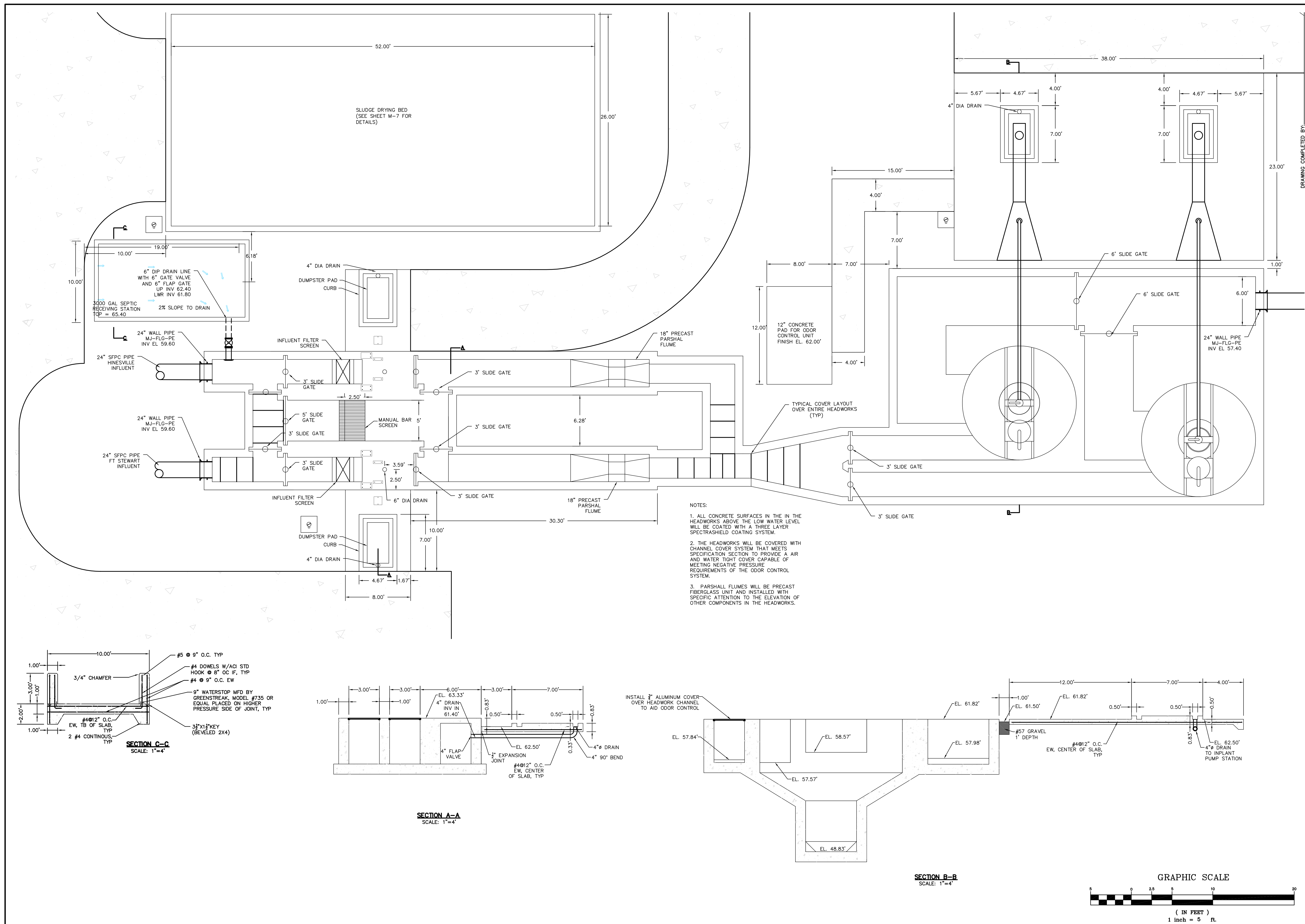
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General Details  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: C-18

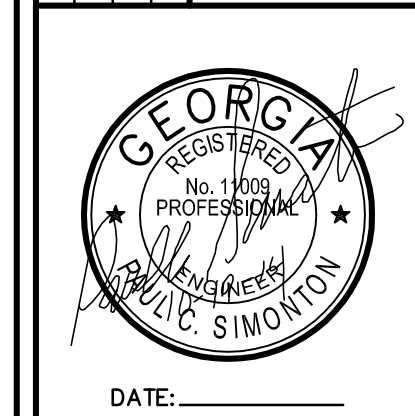






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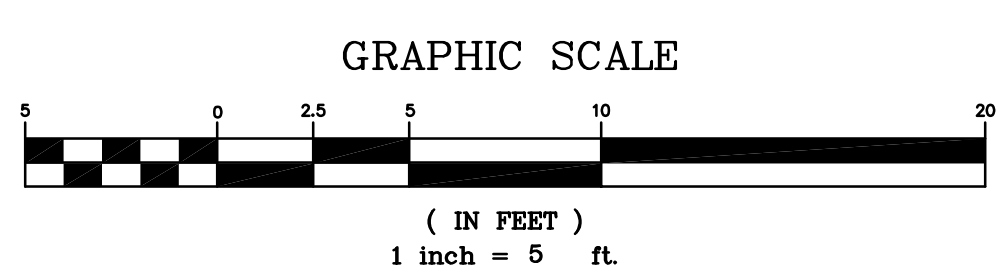
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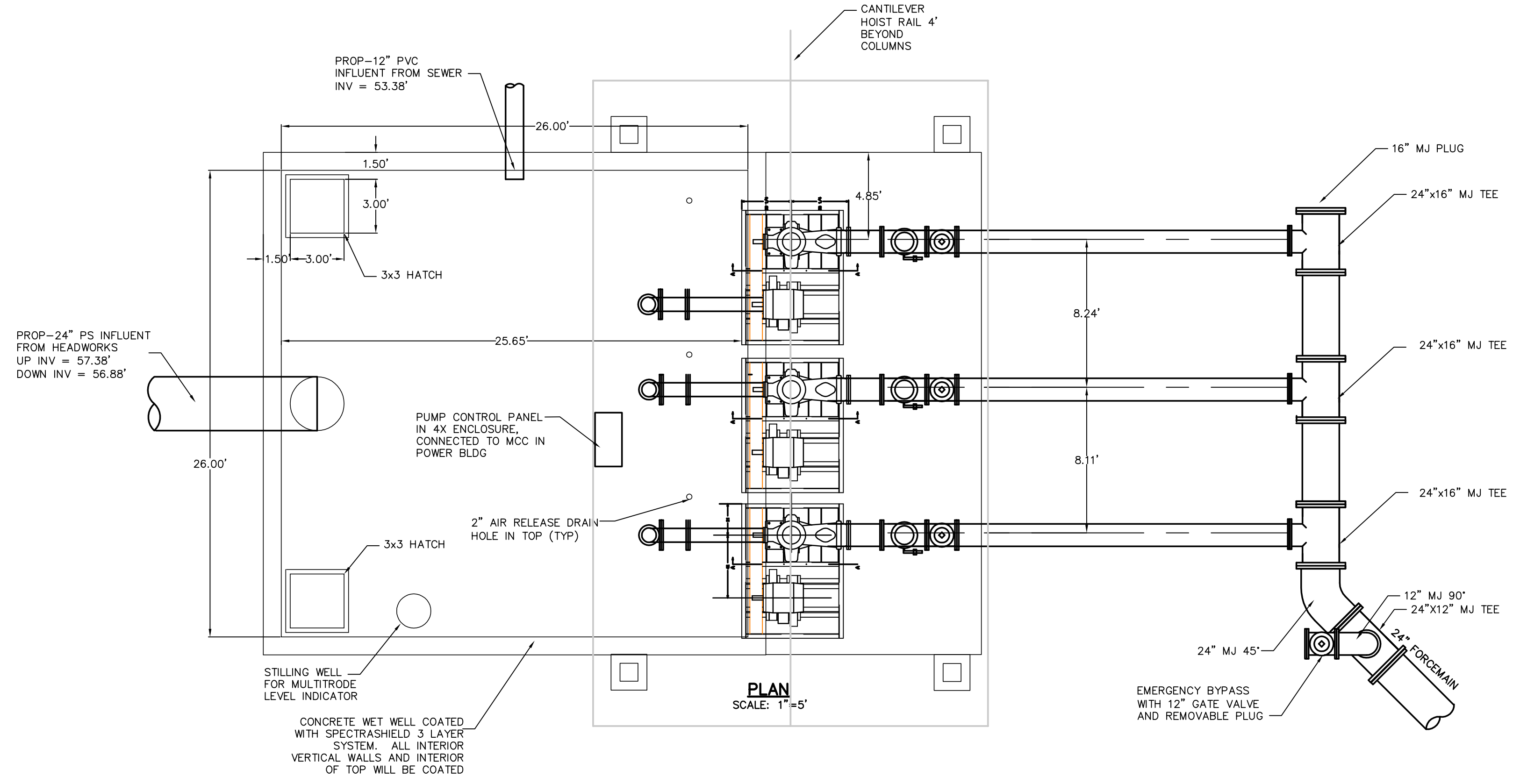
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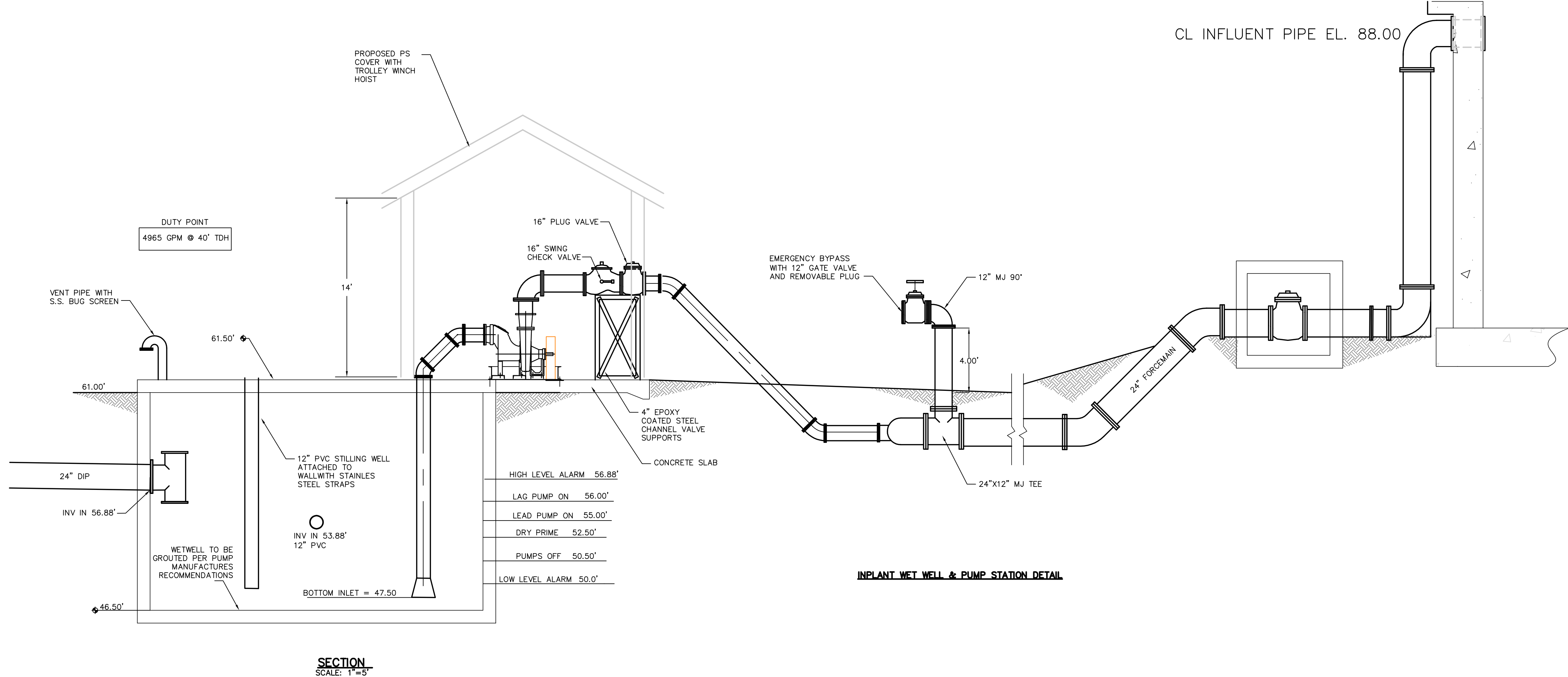
Headworks Detail  
Plan View

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-1





- GENERAL NOTES:
- PUMPS SHALL BE GORMAN RUPP PUMPS SUPPLIED BY THE OWNER
  - WET WELL SHALL BE COATED INSIDE WITH SPECTRASHIELD PROTECTIVE COATING OR APPROVED EQUAL BY THE ENGINEER
  - WET WELL BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
  - ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
  - PUMP LIFTING STRUCTURE SHALL BE CAPABLE OF LIFTING PUMPS AND MOTORS FOR MAINTENANCE
  - ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF ELECTRICAL CABLES.
  - CABLE HANGERS AND HARDWARE IN THE WETWELL SHALL BE STAINLESS STEEL.
  - BOTTOM OF WETWELL TO BE GROUTED PER PUMP MANUFACTURERS RECOMMENDATION
  - PUMP STATION COVER TO BE EQUIPPED WITH ELECTRIC TROLLEY HOIST CAPABLE OF LIFTING 2 TONS UTILIZING 460 VOLT MOTORS. TROLLEY AND LIFT SPEED SHALL BE AT LEAST 14 FPM.



HIGH LEVEL ALARM	56.88'
LAG PUMP ON	56.00'
LEAD PUMP ON	55.00'
DRY PRIME	52.50'
PUMPS OFF	50.50'
LOW LEVEL ALARM	50.0'

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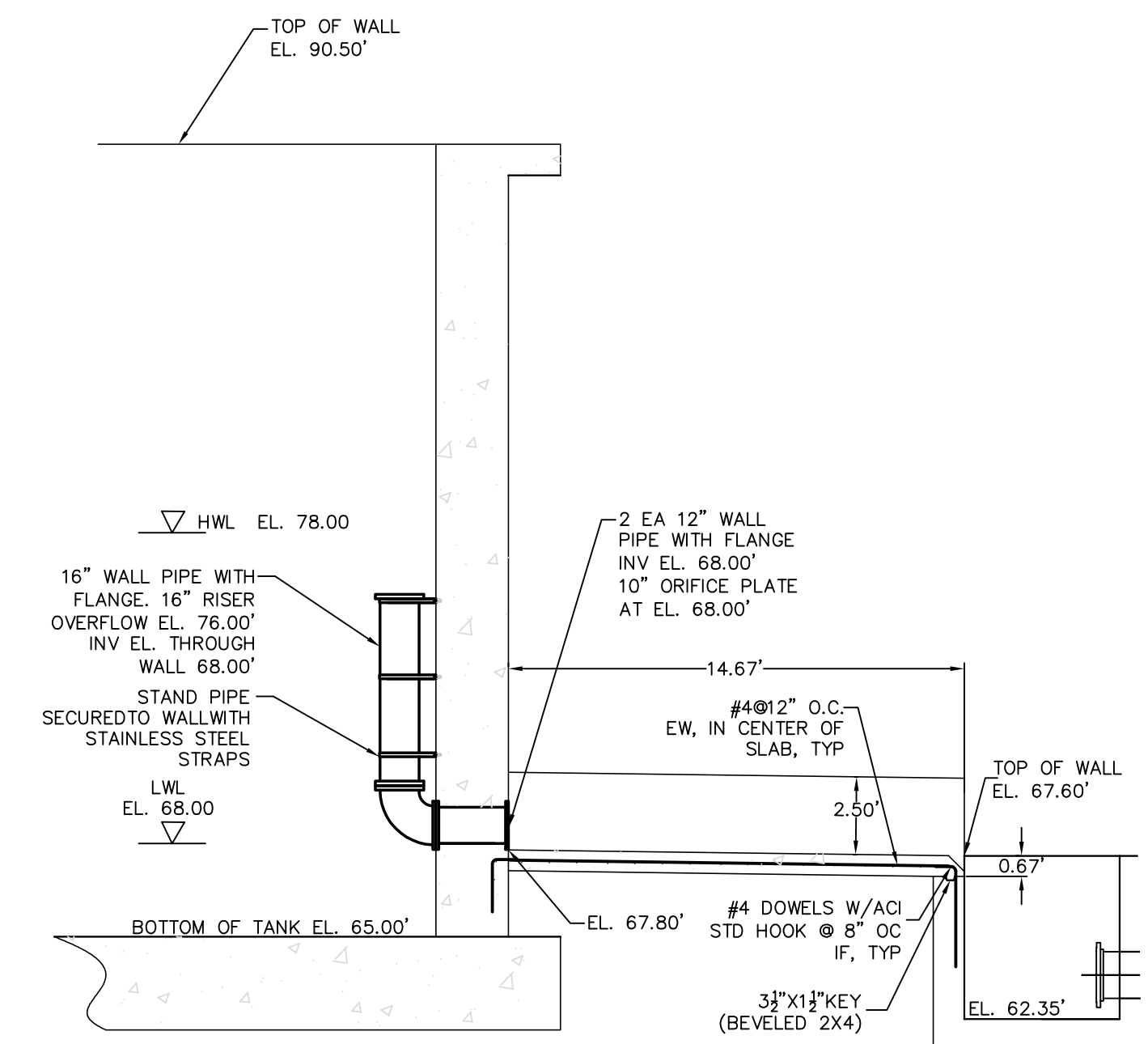
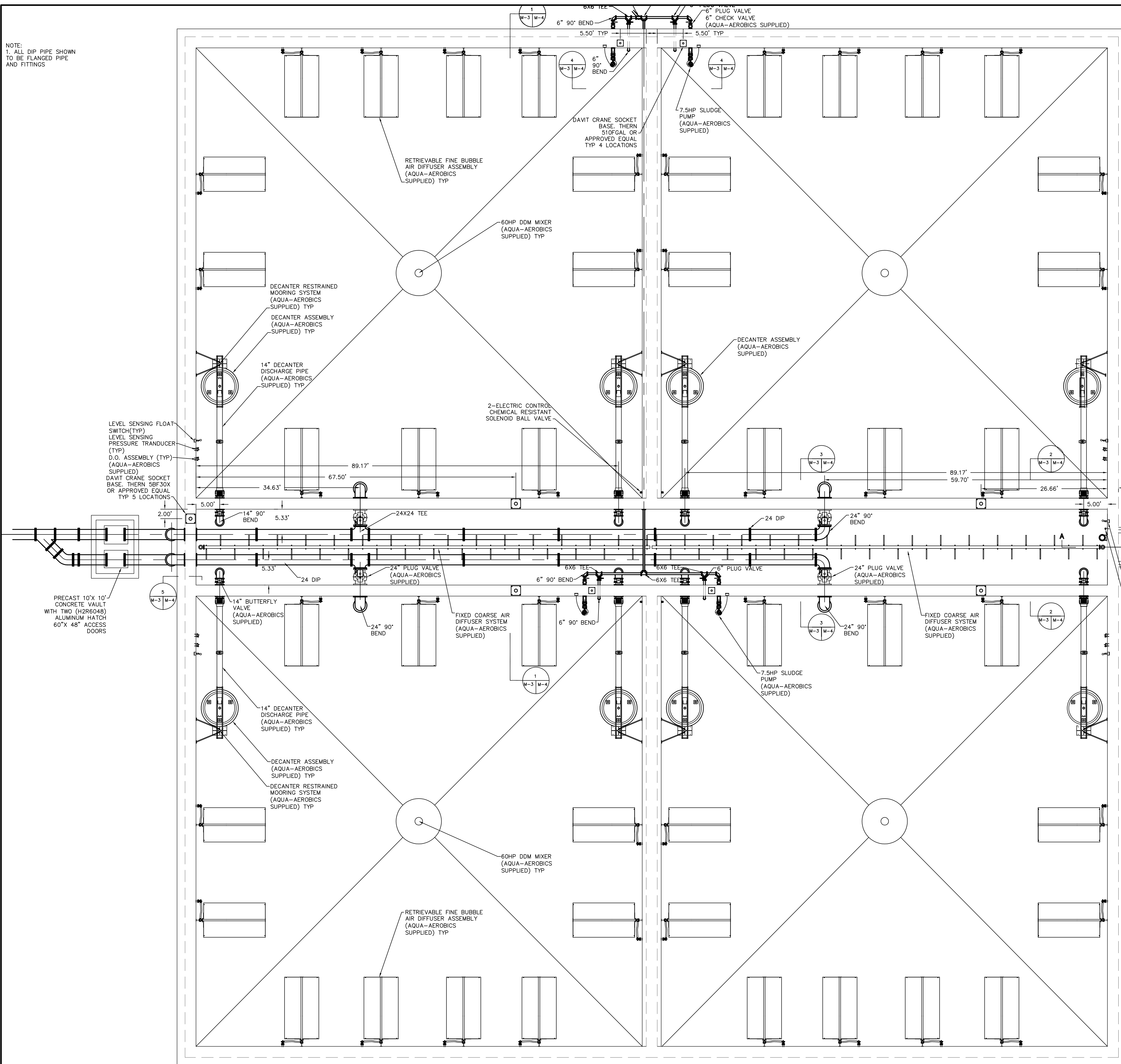
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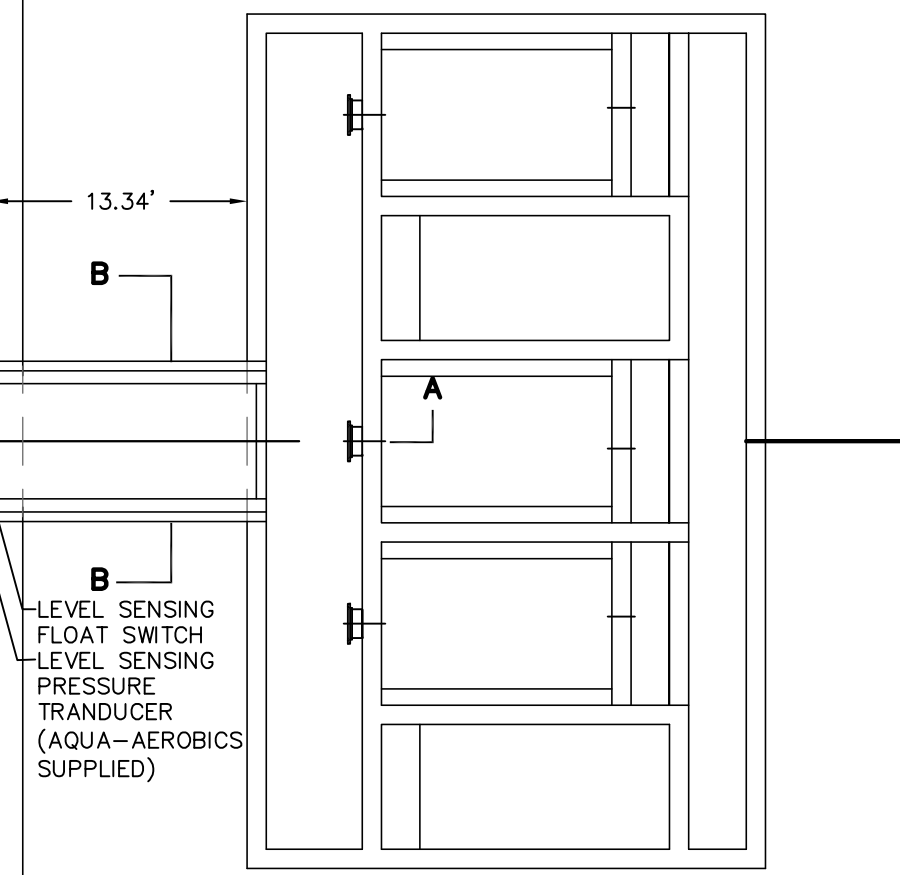
*Pump Station Details*

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-2

NOTE:  
1. ALL DIP PIPE SHOWN  
TO BE FLANGED PIPE  
AND FITTINGS

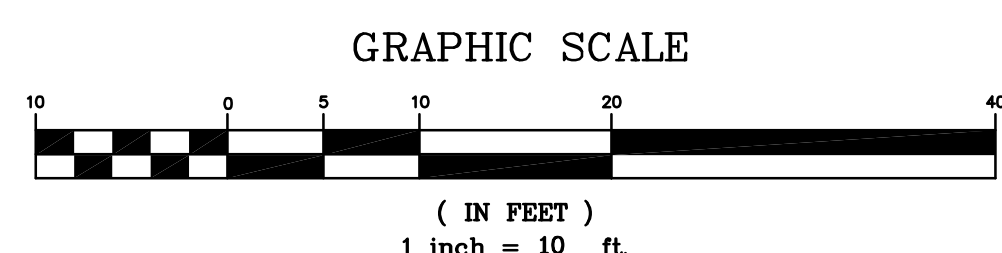


SECTION A-A  
SCALE: 1" = 5'



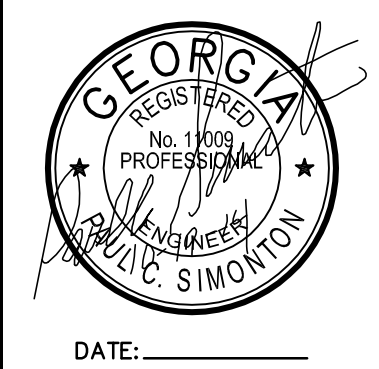
SECTION B-B  
SCALE: 1" = 2'

NOTES:  
1. CONTRACTOR TO PROVIDE 2 DAVIT CRANES TERN SPT30J-X-ESX1 WITH WS38-60DS WIRE ROPE OR APPROVED EQUAL.  
2. CONTRACTOR TO PROVIDE AND INSTALL 5 DAVIT CRANE SOCKET BASES, TERN 5BF30X AT LOCATIONS SHOWN ON PLAN.  
3. CONTRACTOR TO PROVIDE 1 DAVIT CRANE TERN 5110-M3-GAL WITH WS25-60NE WIRE ROPE AND 510R WHEEL BASE OR APPROVED EQUAL.  
4. CONTRACTOR TO PROVIDE AND INSTALL 4 DAVIT CRANE SOCKET BASES, TERN 510FGAL AT LOCATIONS SHOWN ON PLANS.



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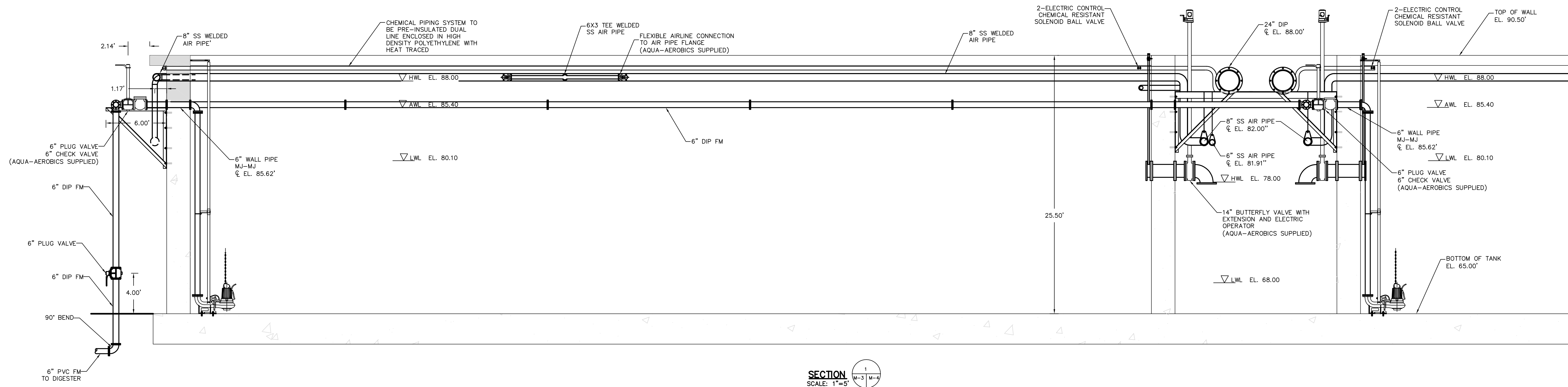


DATE: \_\_\_\_\_  
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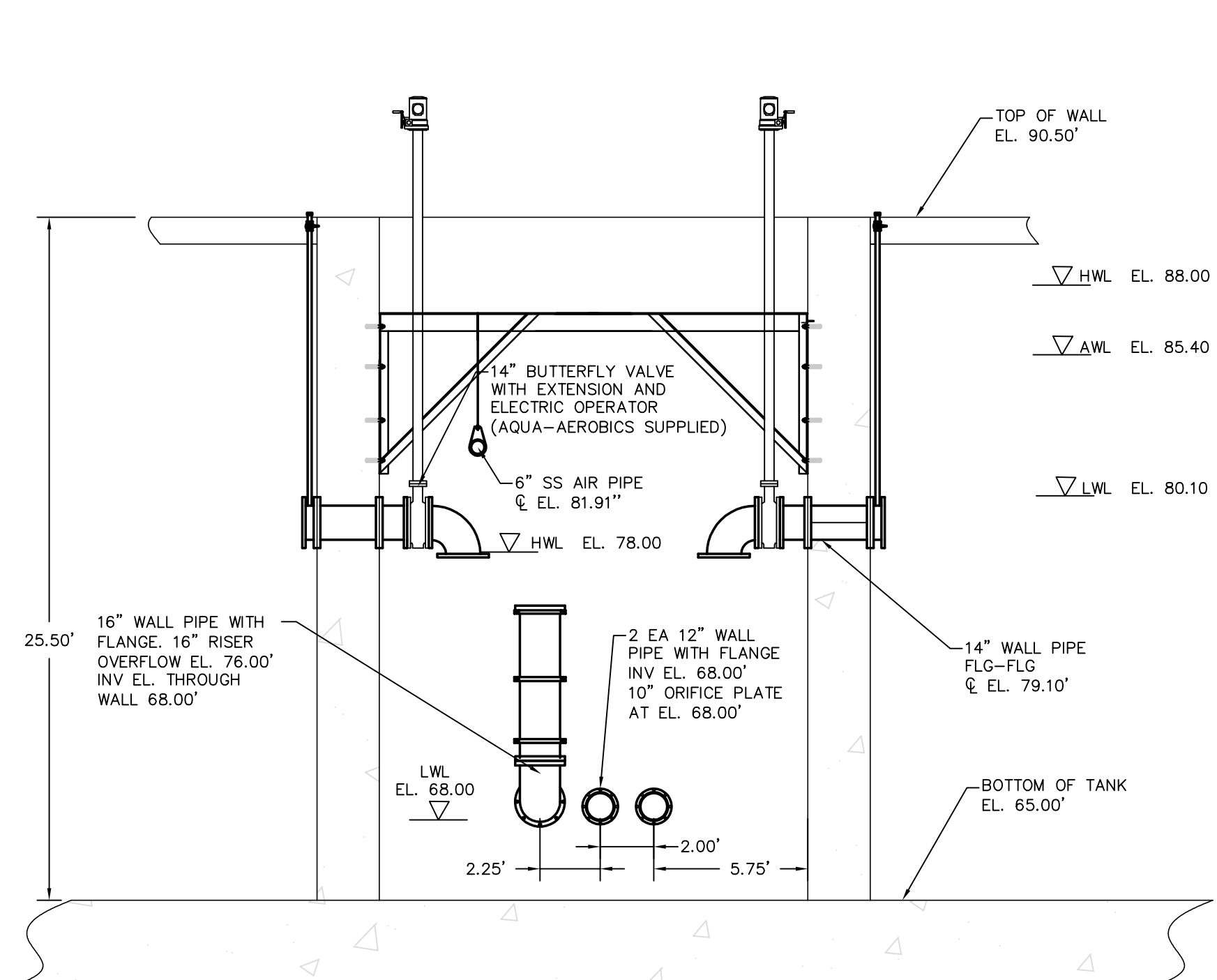
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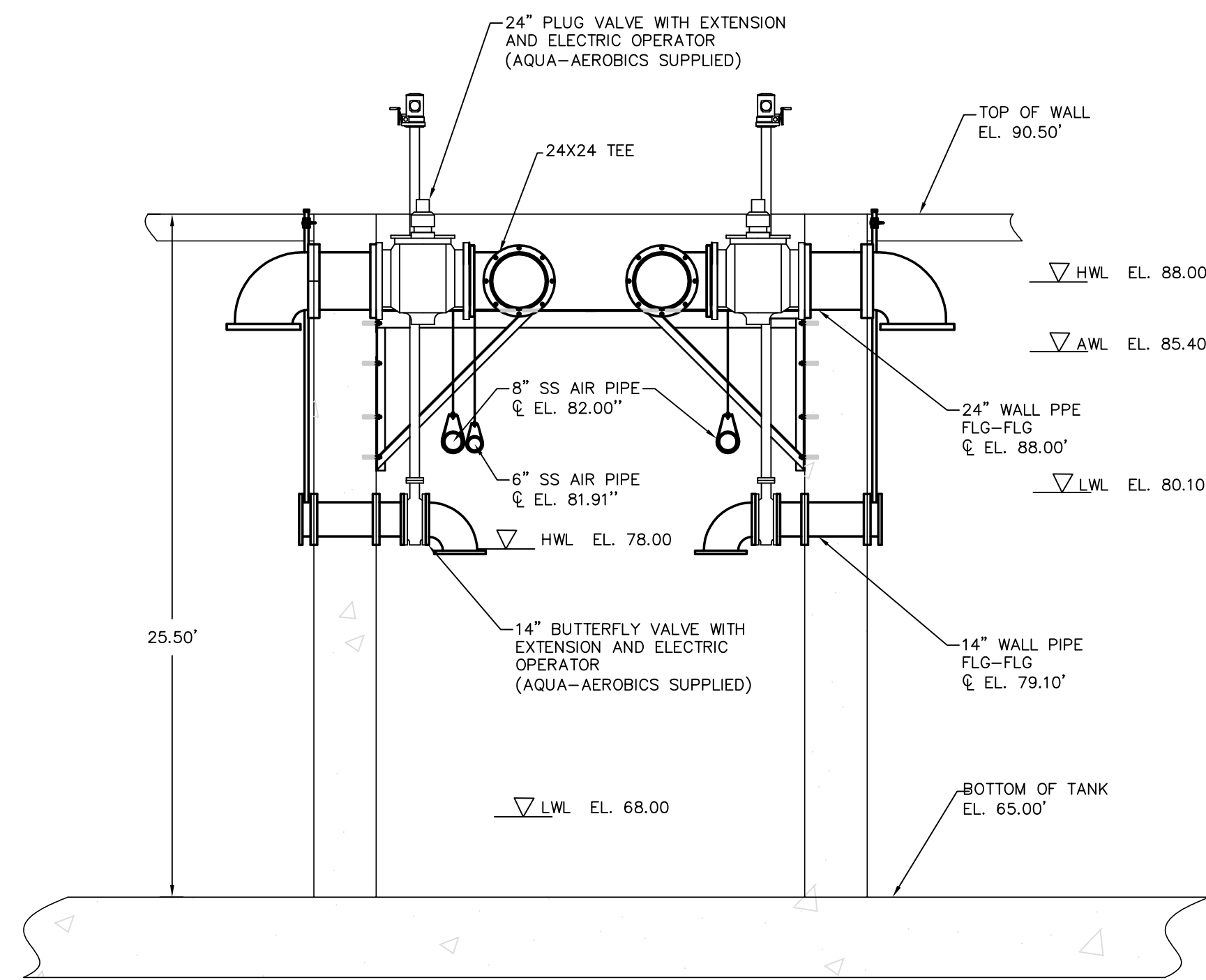
SBR  
Plan View  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-3



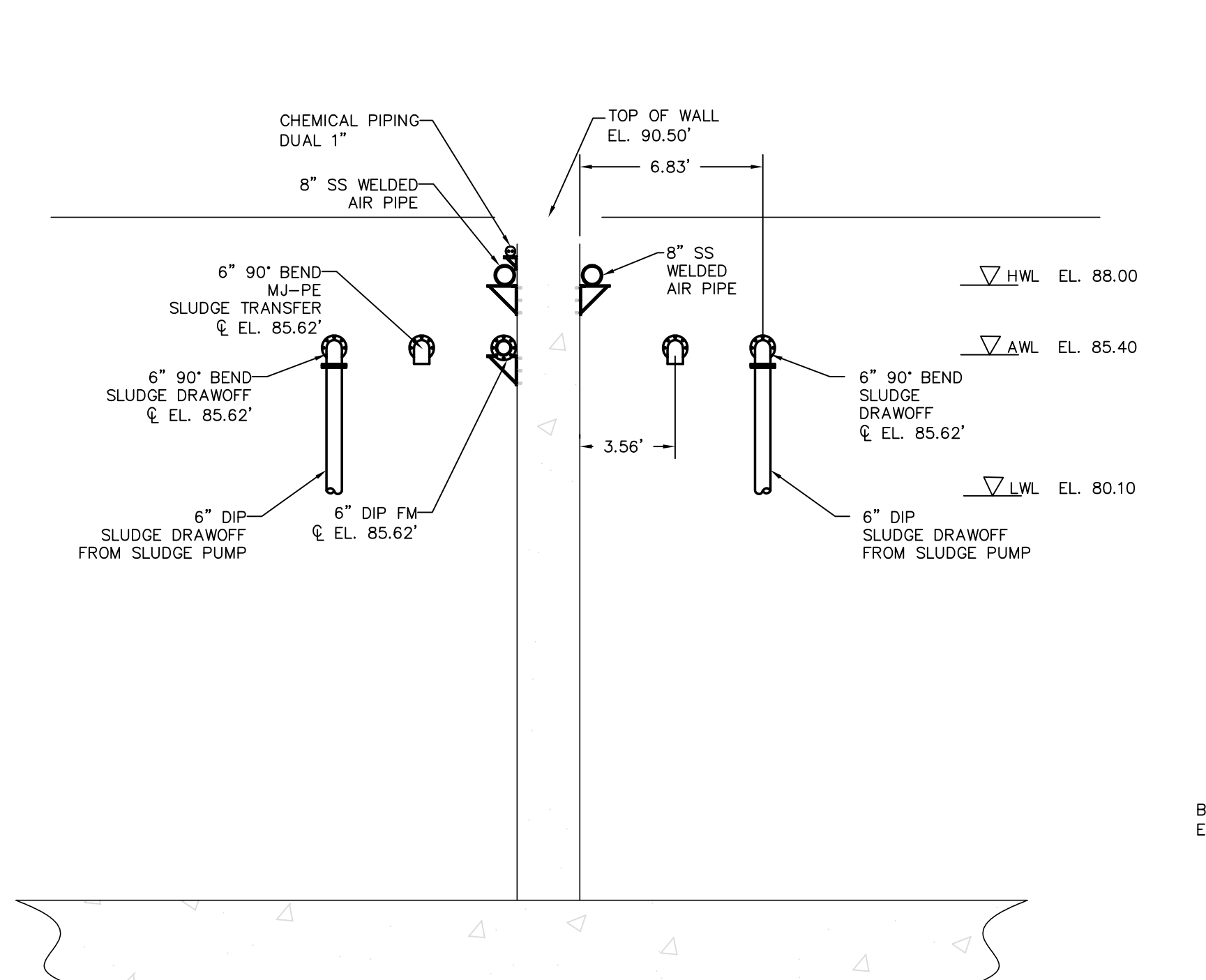
SECTION 1  
SCALE: 1"=5'



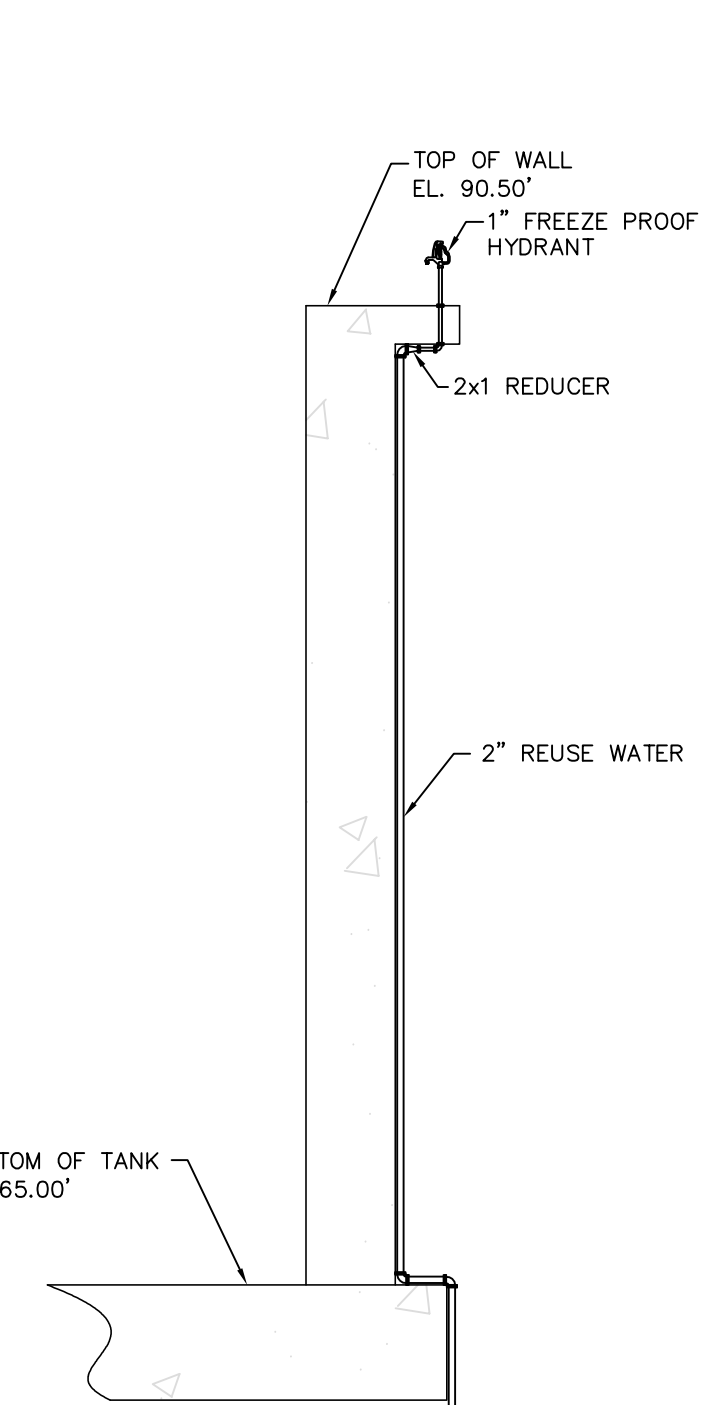
SECTION 2  
SCALE: 1"=5'



SECTION 3  
SCALE: 1"=5'



SECTION 4  
SCALE: 1"=5'



SECTION 5  
SCALE: 1"=5'

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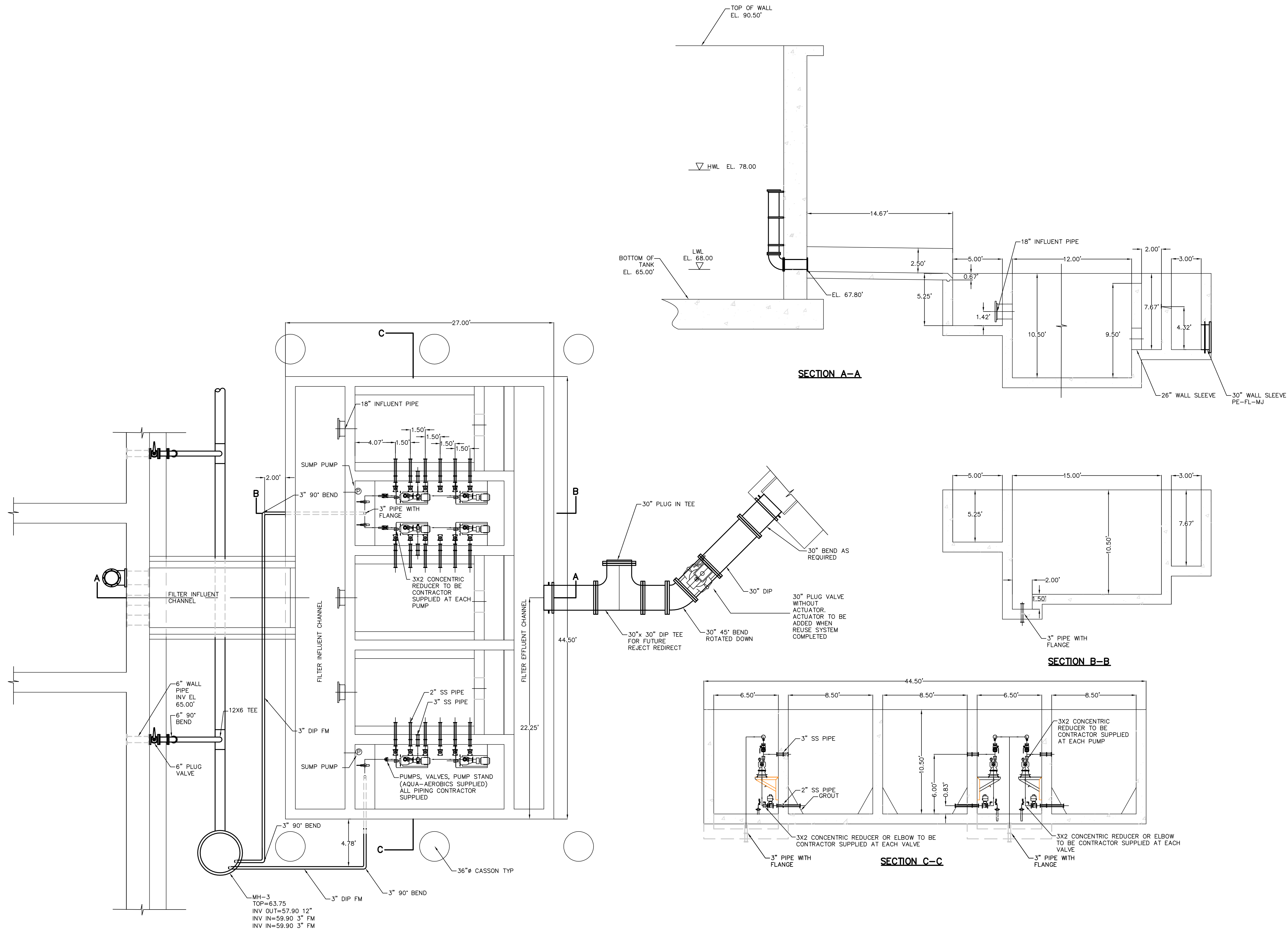
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SBR  
Sections

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MH-3  
TOP=63.75  
INV OUT=57.90 12"  
INV IN=59.90 3" FM  
INV IN=59.90 3" FM

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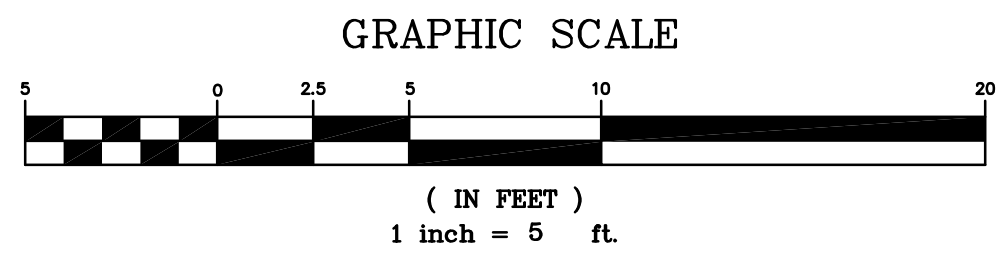
DATE: \_\_\_\_\_

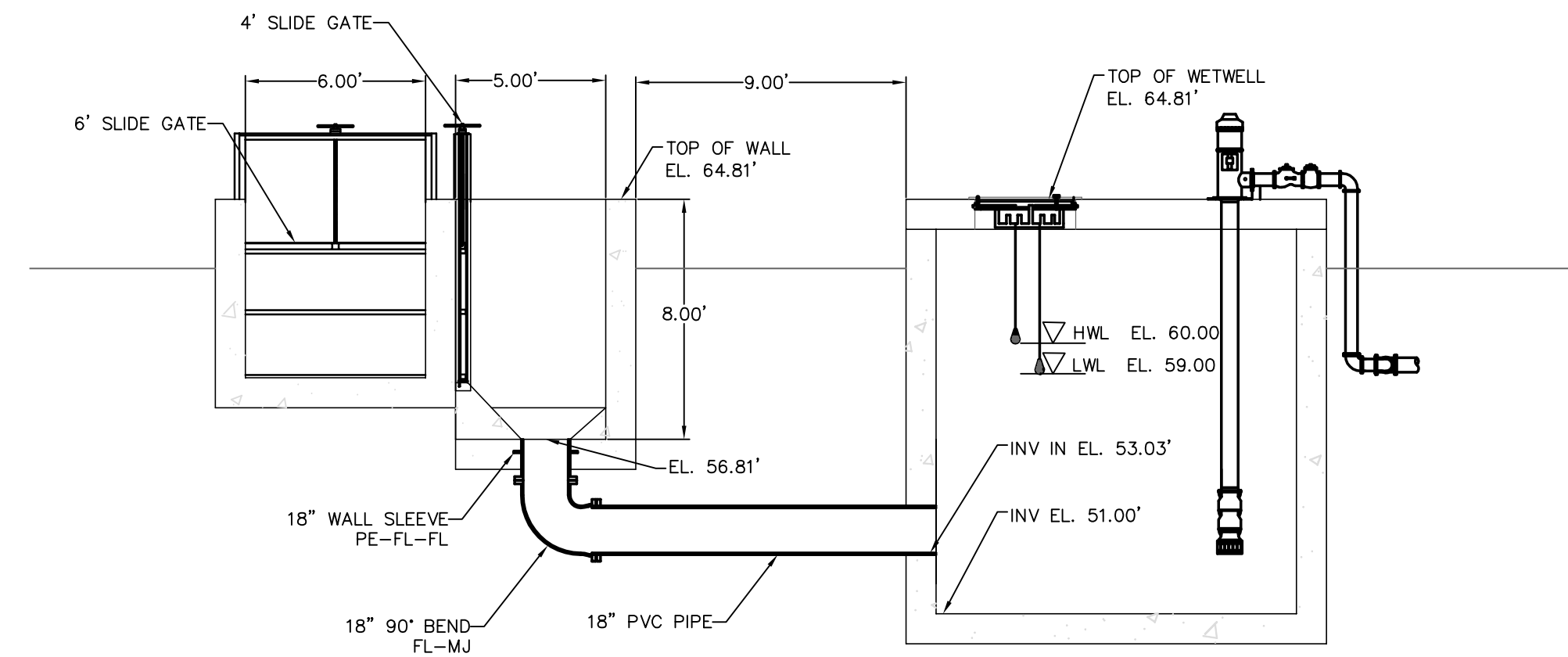
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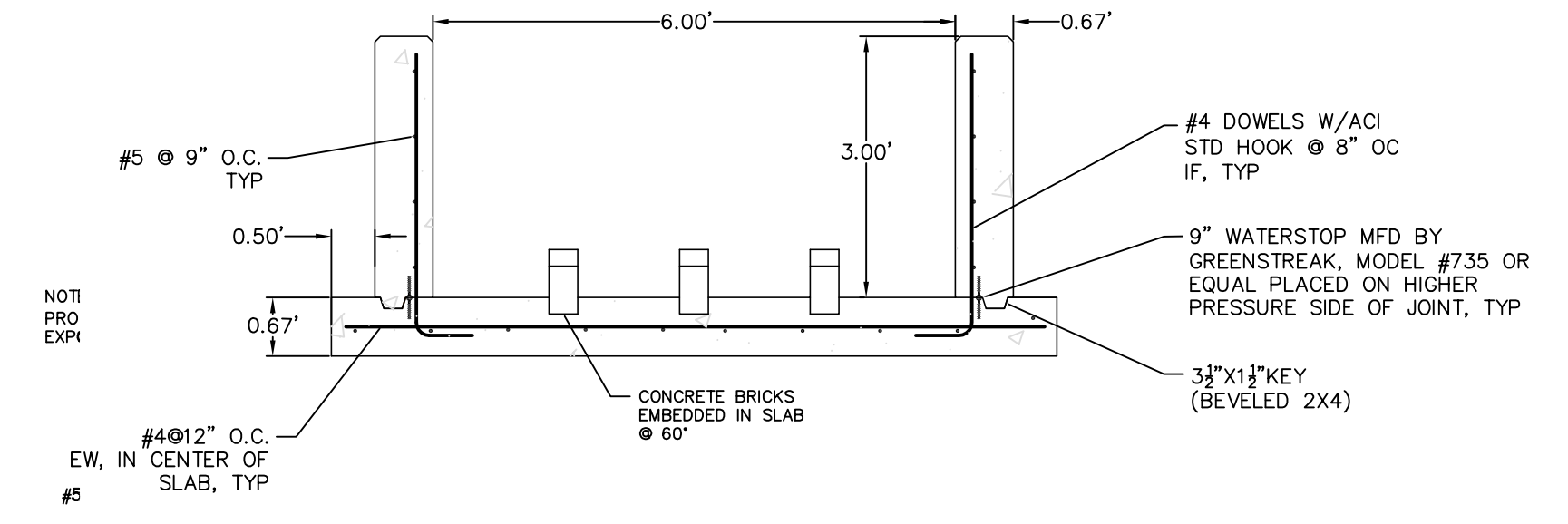
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Plan & Details  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-5



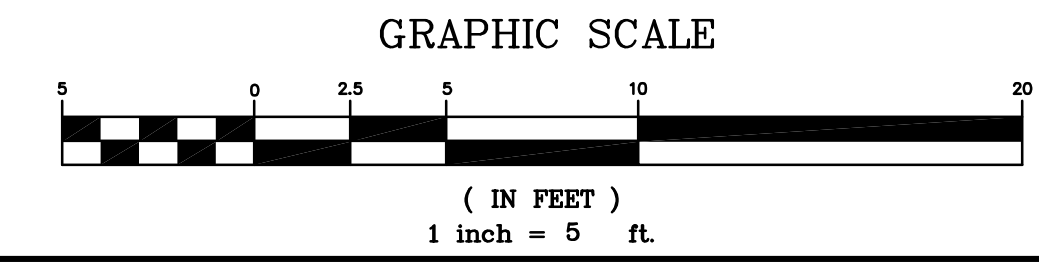
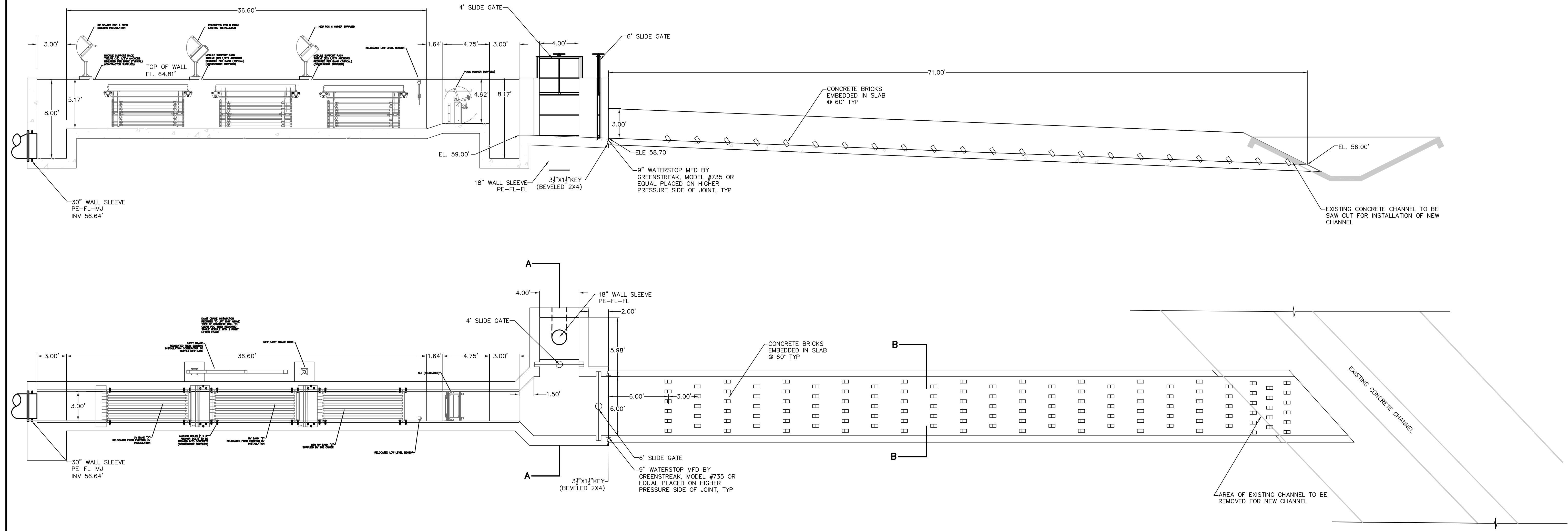


**SECTION A-A**  
SCALE: 1" = 5'

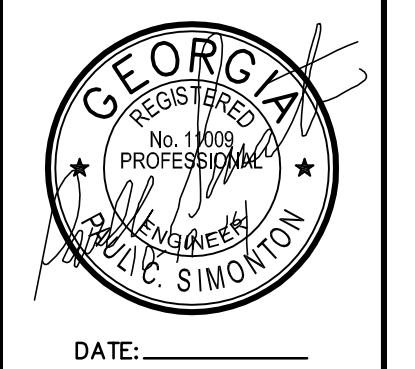
NOTE:  
PROVIDE 1/8" CHAMFER AT ALL  
EXPOSED EDGES OF CONCRETE



**SECTION B-B**  
SCALE: 1" = 2'



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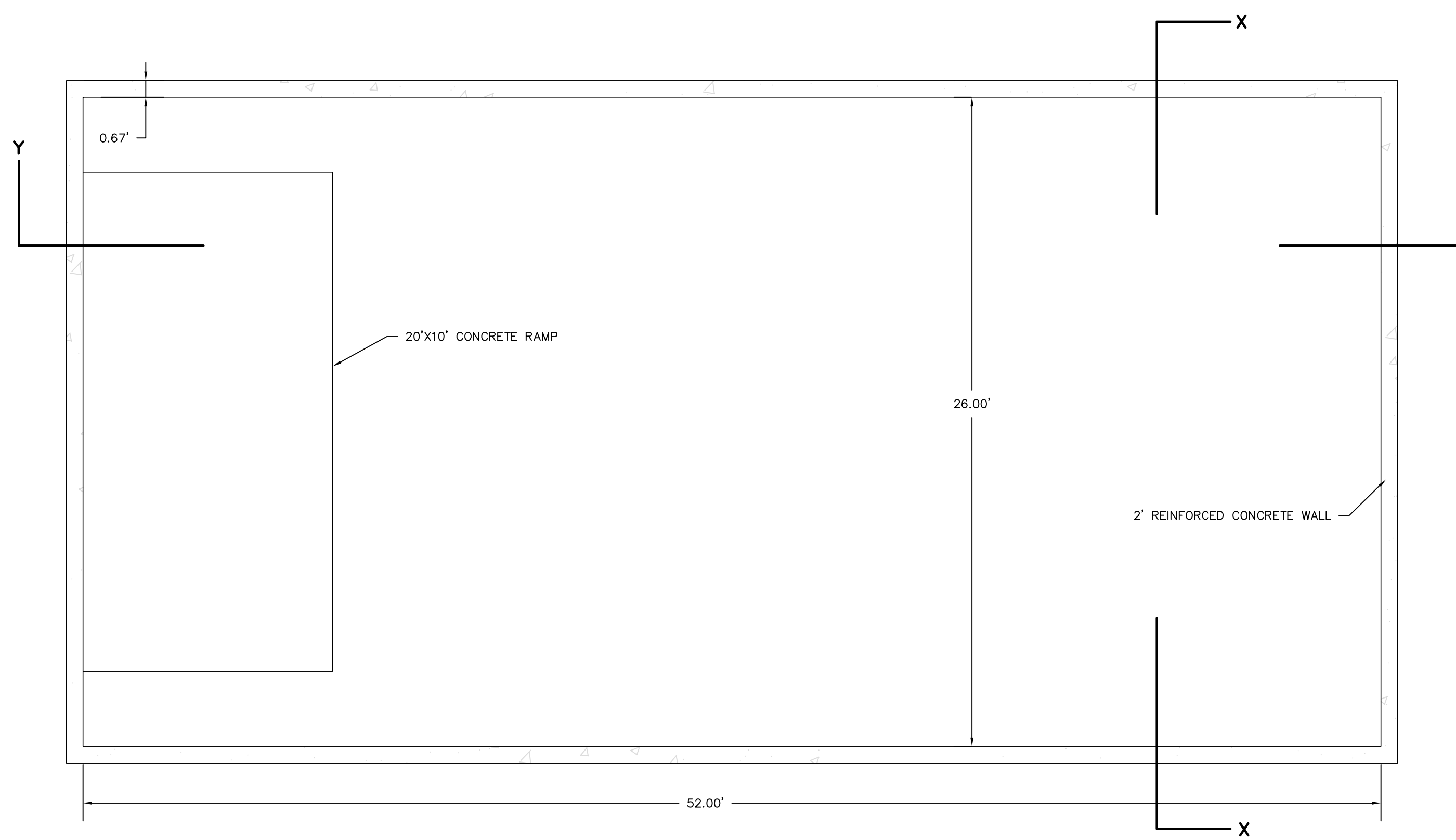
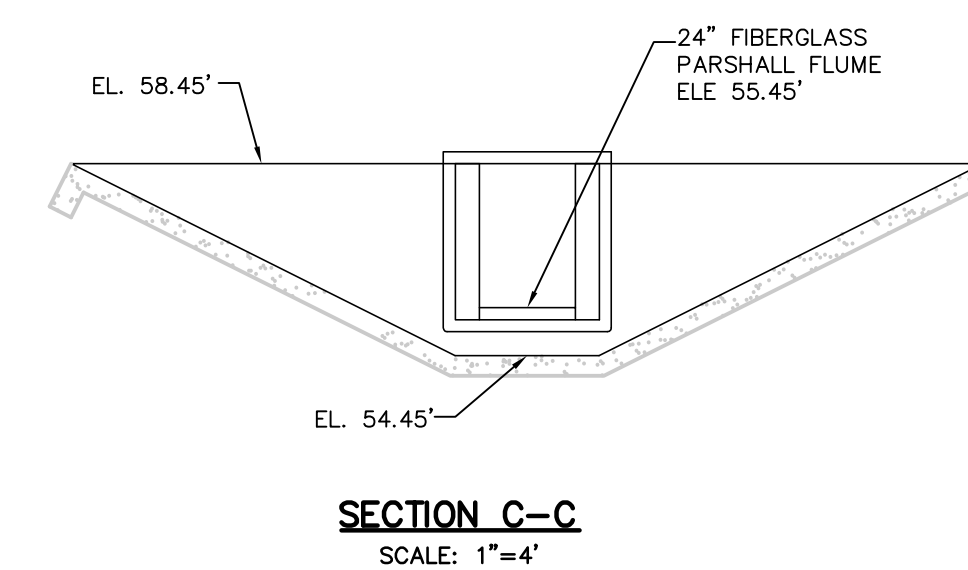
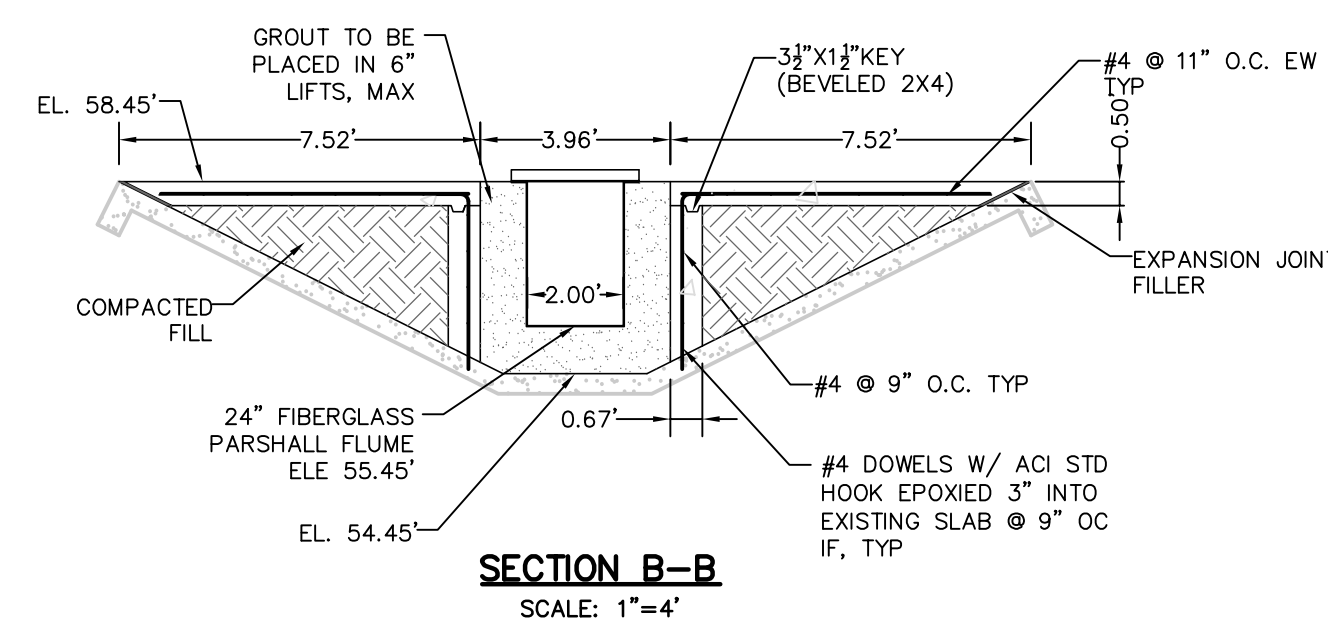
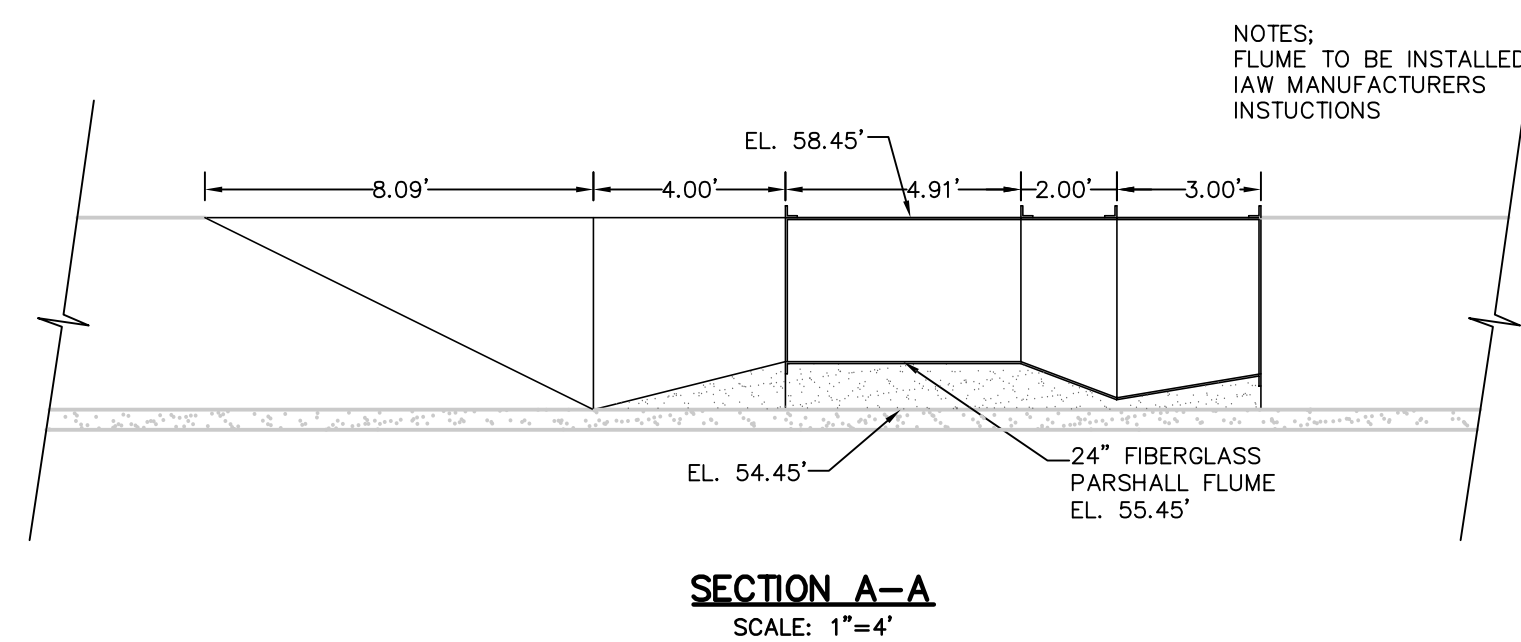
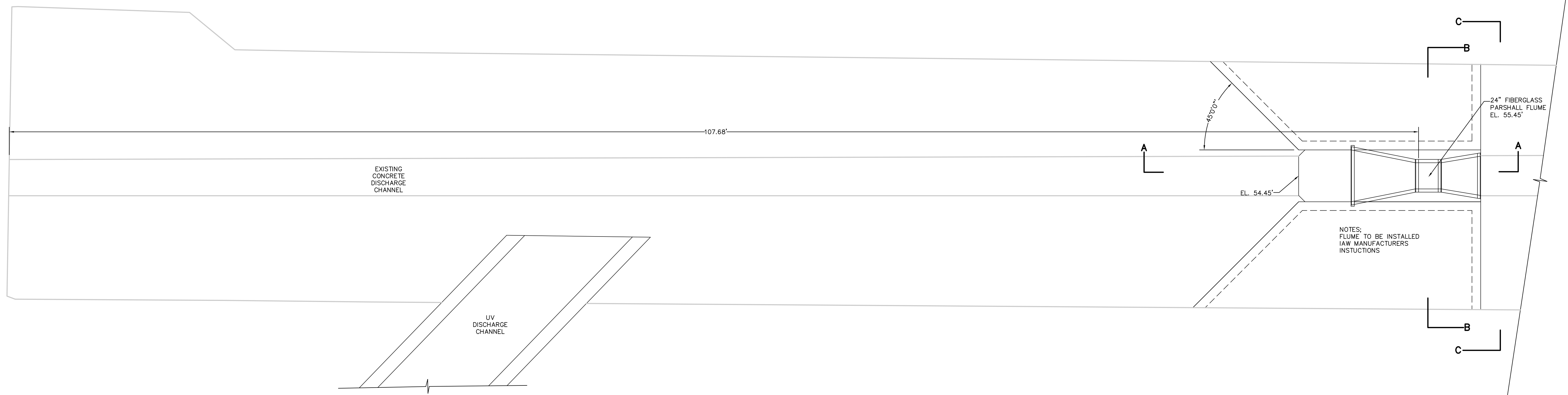


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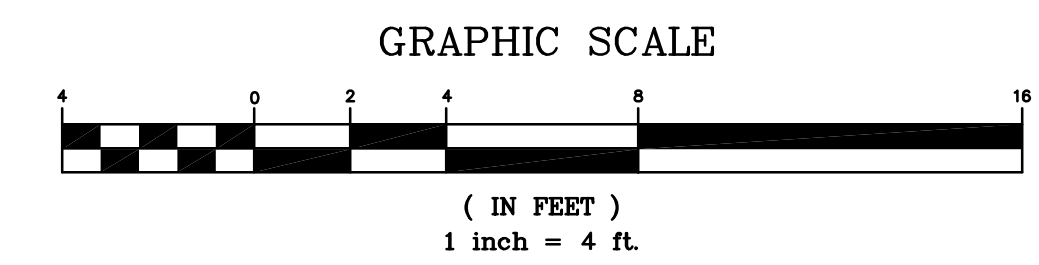
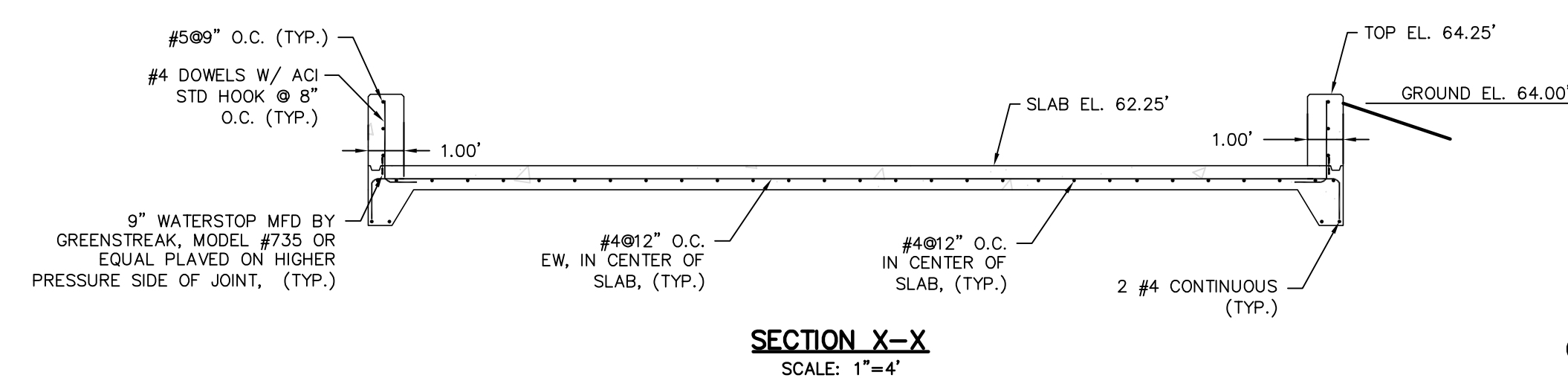
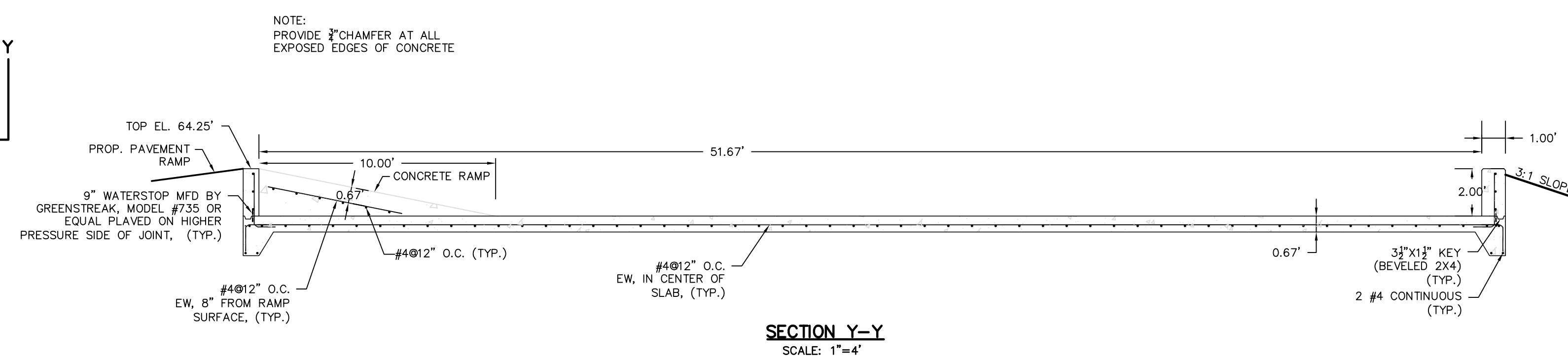
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**Hinesville/Ft Stewart  
 WWTP Upgrade**  
 for  
**The City of Hinesville**  
 Ft Stewart  
 Liberty County, Georgia

UV Plan & Details  
 DATE: MARCH 30, 2011  
 FILE NO: 2009-63PRJ  
 SHEET: M-6



**SLUDGE DRYING BED**  
SCALE: 1"=4'



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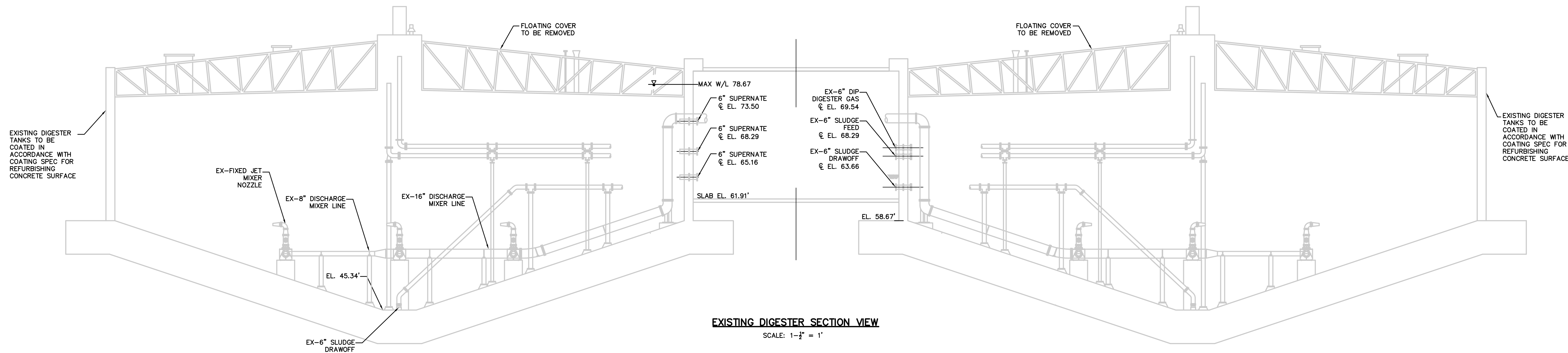
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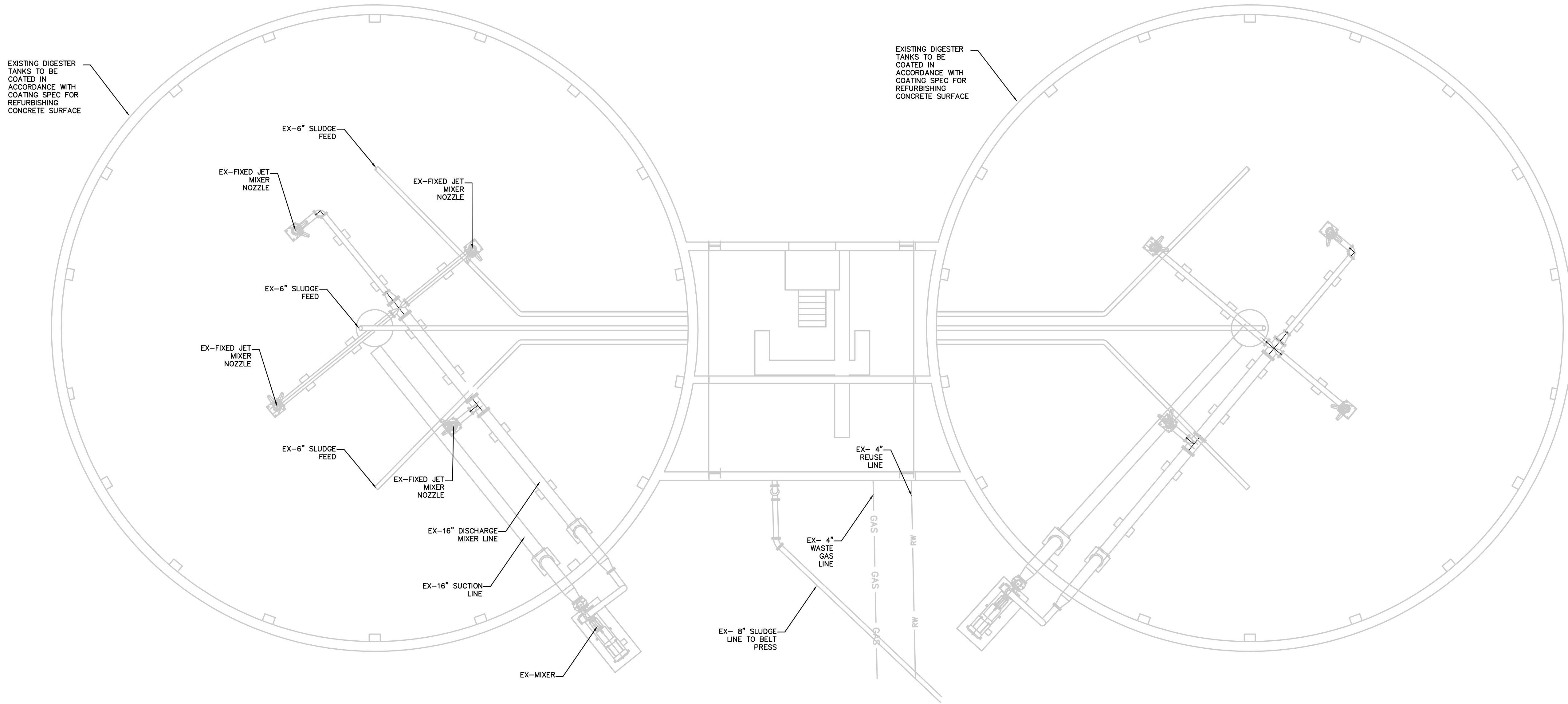
**Hinesville/Ft Stewart  
WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Plant Discharge  
Parshall Flume

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-7



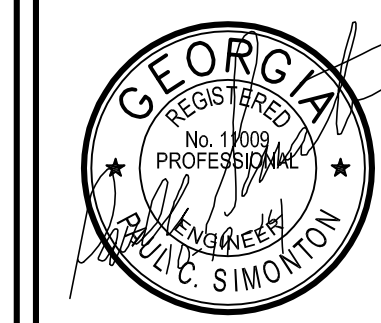
**EXISTING DIGESTER SECTION VIEW**  
SCALE: 1-1/2" = 1'



**EXISTING DIGESTER PLAN VIEW**  
SCALE: 1-1/2" = 1'

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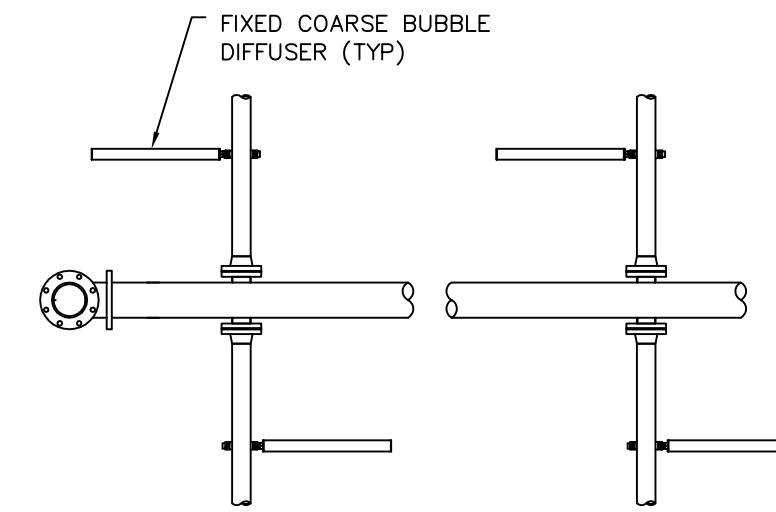
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WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Digester  
Existing  
Condition

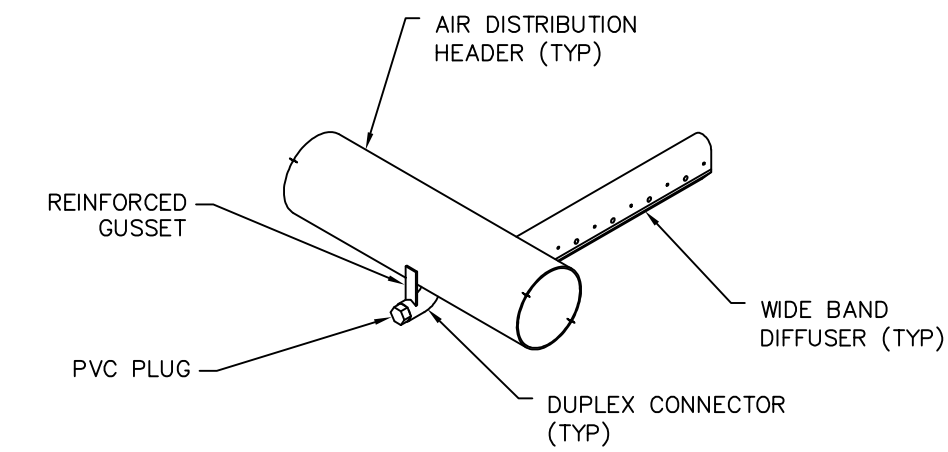
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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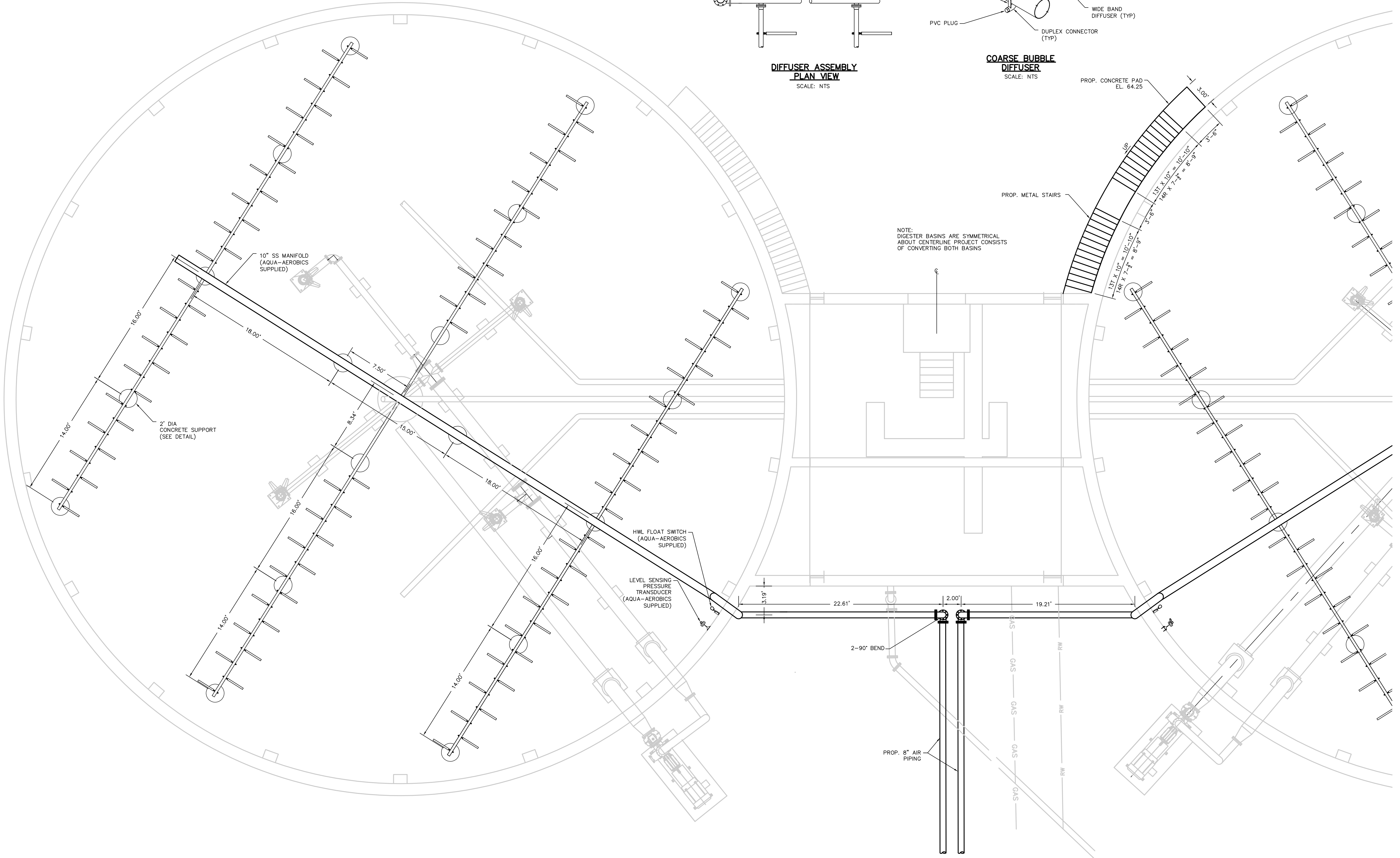




**DIFFUSER ASSEMBLY  
PLAN VIEW**  
SCALE: NTS



**COARSE BUBBLE  
DIFFUSER**  
SCALE: NTS



**DIGESTER PLAN VIEW**  
SCALE: 1" = 5'

NOTE:  
DIGESTER BASINS ARE SYMMETRICAL  
ABOUT CENTERLINE PROJECT CONSISTS  
OF CONVERTING BOTH BASINS

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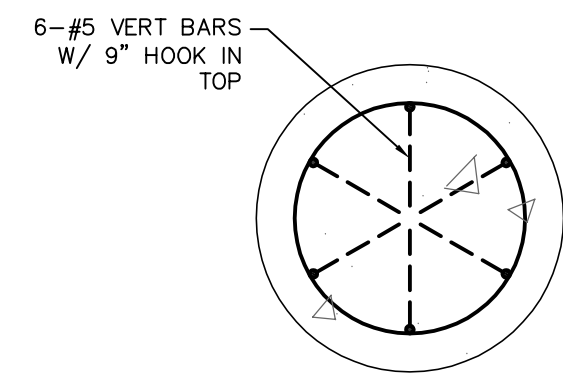
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The City of Hinesville  
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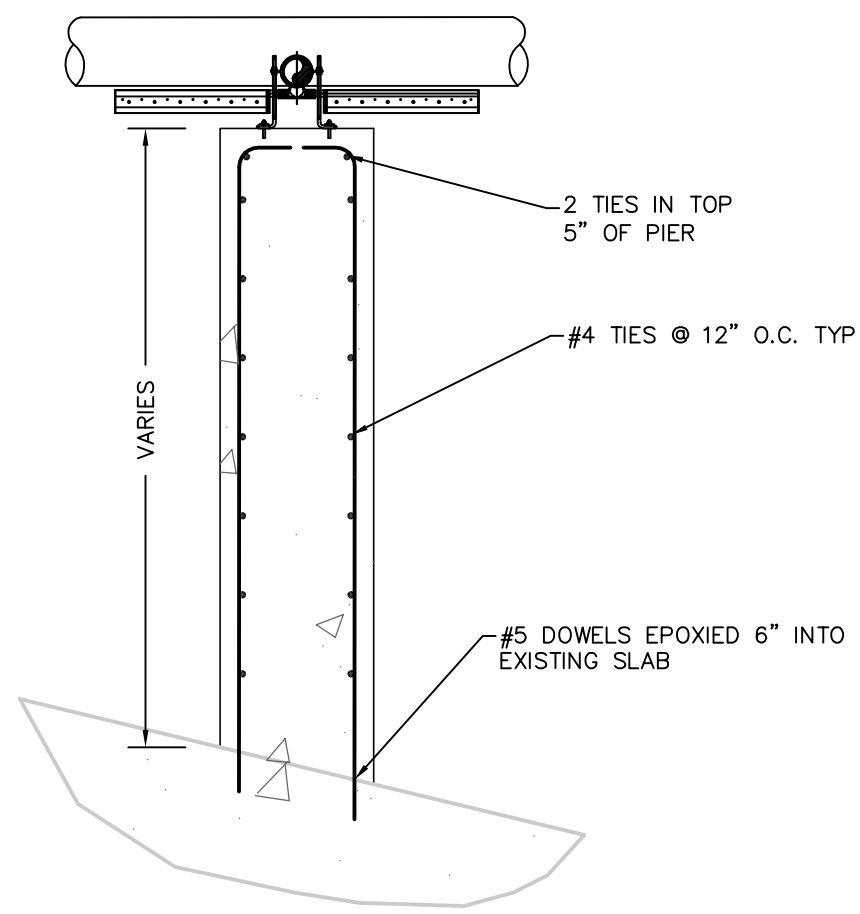
Digester  
Plan View

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-9

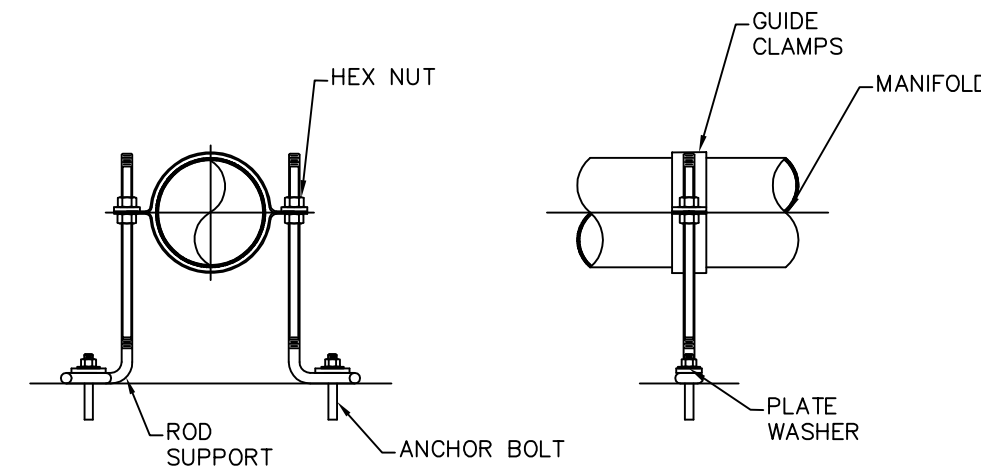
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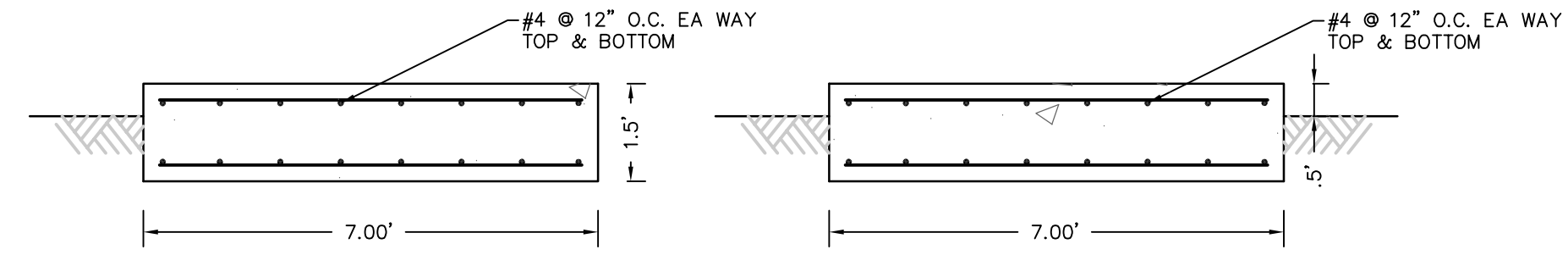
- NOTES:
1. MIN 3" CLR ON REBAR FROM EDGE OF CONCRETE
  2. LOCATION OF CONCRETE SUPPORTS TO BE VERIFIED IN FIELD



**2' DIA CONCRETE SUPPORT  
DETAIL**  
SCALE: 1" = 5'

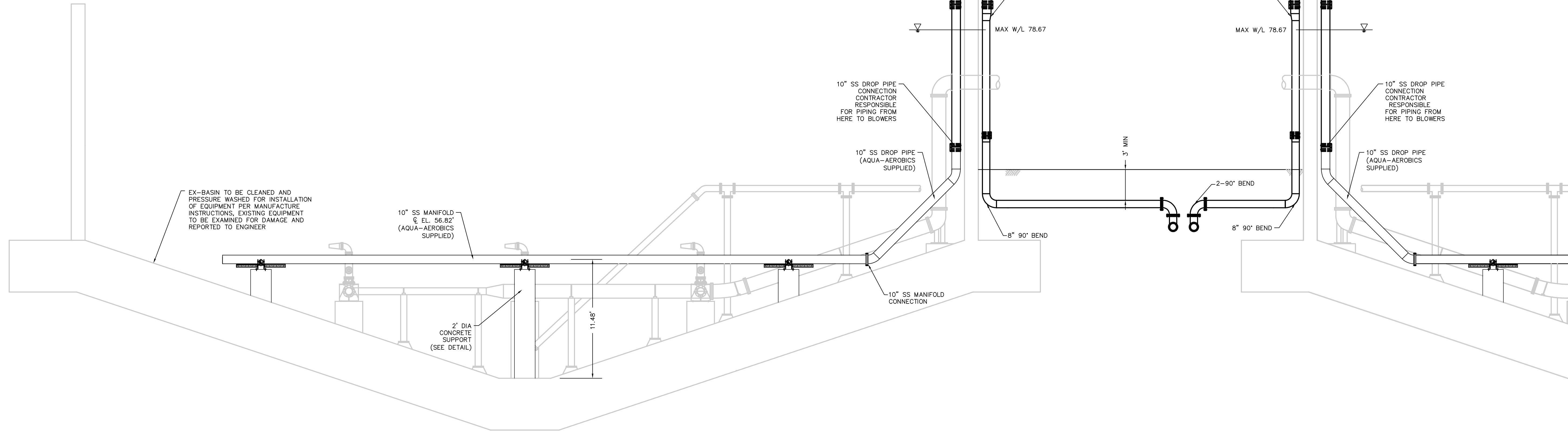


**SIMPLE SUPPORT**  
SCALE: 1" = 5'



**BLOWER PAD DETAIL**  
SCALE: 1" = 5'

- NOTES:
1. AIR PIPING - SCHEDULE 10S STAINLESS STEEL
  2. FLANGES - 304 STAINLESS STEEL, 150# CLASS WITH NEOPRENE GASKET
  3. ALL AIR PIPING BELOW 8' MEASURED FROM FINISHED GRADE WILL BE INSULATED WITH 1" INSULATION AND WRAPPED FOR WEATHER
  4. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED
  5. AIR PIPING TO BE TESTED TO ZERO LEAKAGE AT 50 PSI, PNEUMATIC
  6. PLACE EXPANSION JOINTS IN EXTENDED POSITION WHEN PIPING IS INSTALLED
  7. EXPANSION JOINT EVERY 40 FEET ALONG PIPE LENGTH, FROM BLOWER TO MANIFOLD ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO MANUFACTURING OF AIR PIPING
  8. ALL AIR PIPING SUPPORTS TO BE STAINLESS STEEL AND SECURED WITH STAINLESS STEEL HARDWARE
  9. EXPANSION JOINTS SHOWN IN APPROXIMATE LOCATIONS AND ARE ADJUSTABLE FOR FIELD CONDITIONS AND MANUFACTURING



**DIGESTER SECTION VIEW**  
SCALE: 1" = 5'

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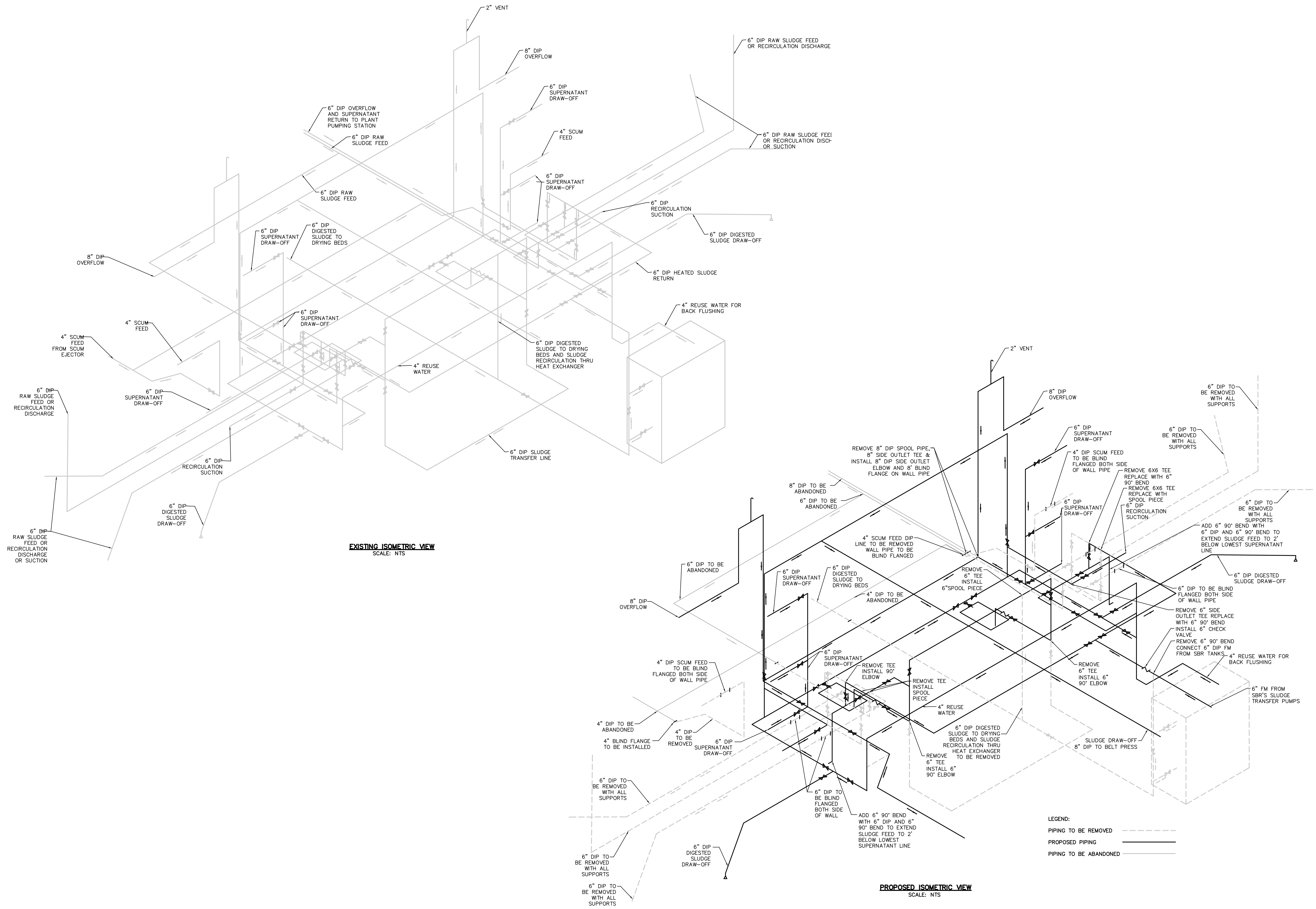
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The City of Hinesville  
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Liberty County, Georgia

Digester  
Section View

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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**EXISTING ISOMETRIC VIEW**  
SCALE: NTS

**PROPOSED ISOMETRIC VIEW**  
SCALE: NTS

**LEGEND:**  
 PIPING TO BE REMOVED   
 PROPOSED PIPING   
 PIPING TO BE ABANDONED

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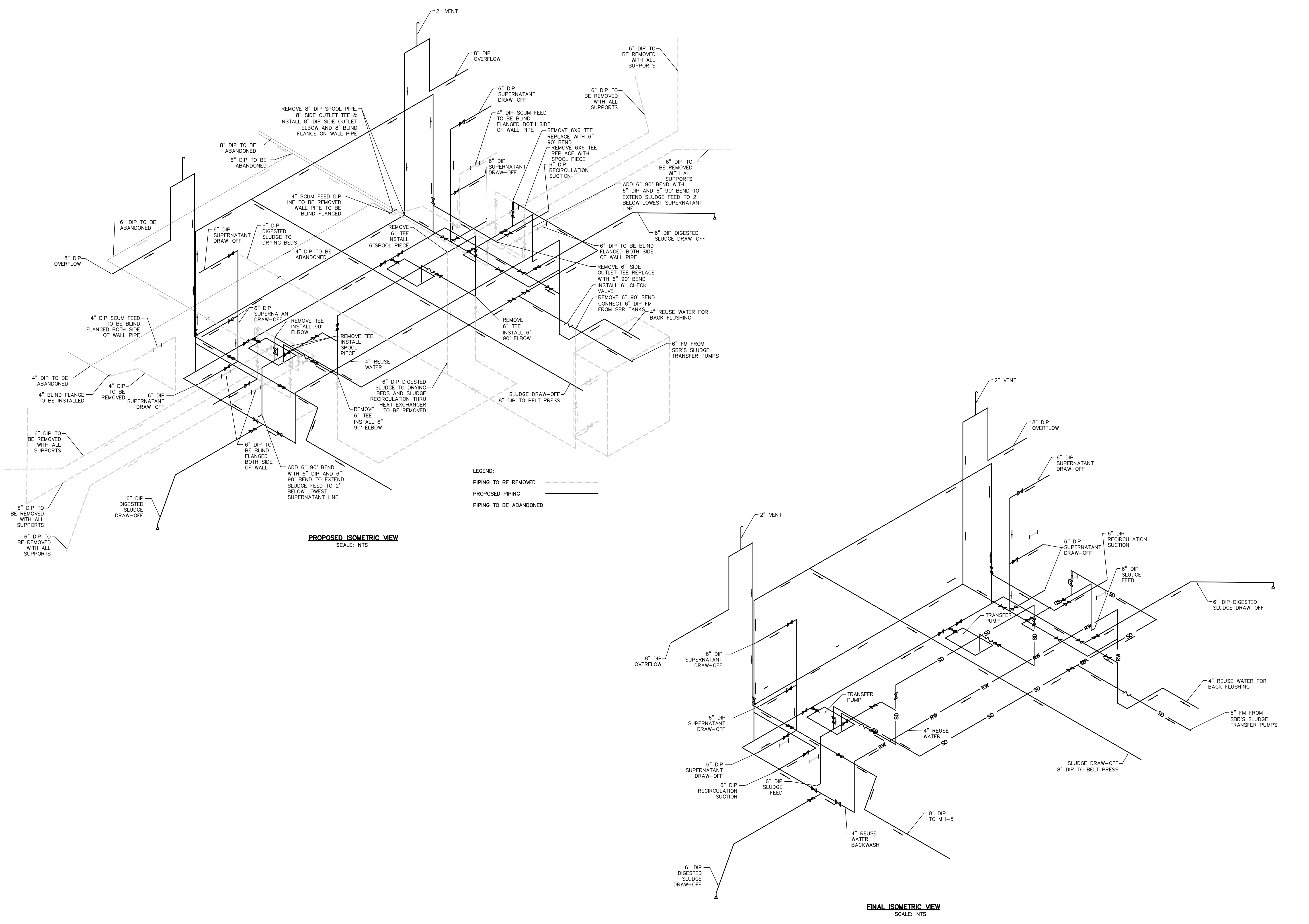
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**WWTP Upgrade**  
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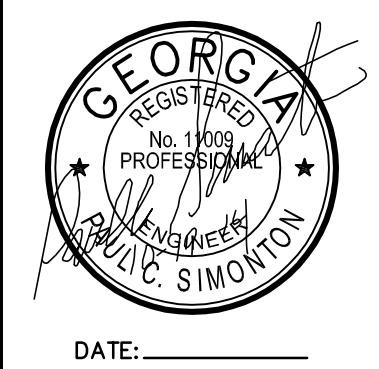
Existing Digester  
Mechanical Room  
Isometric Detail

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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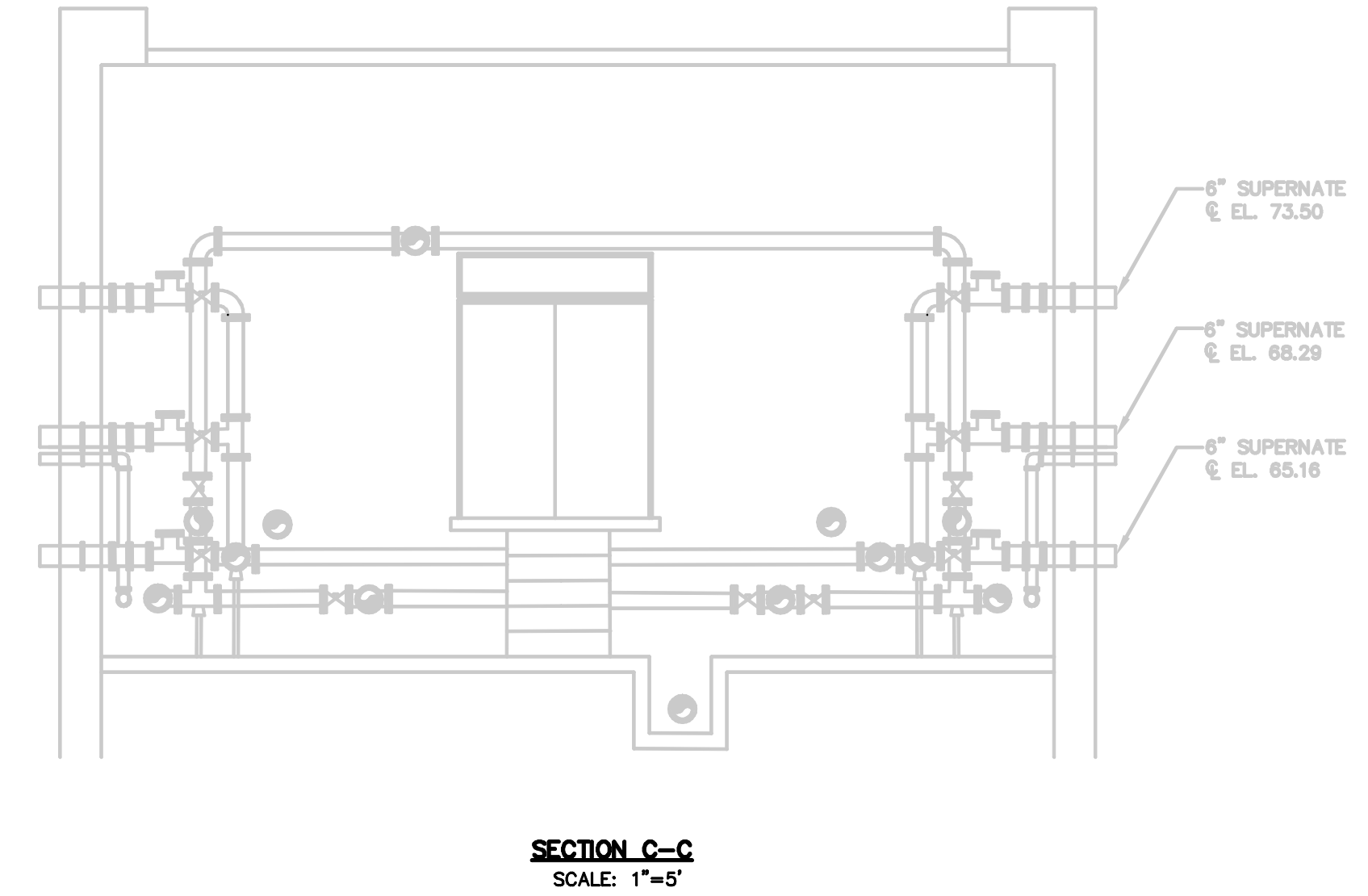
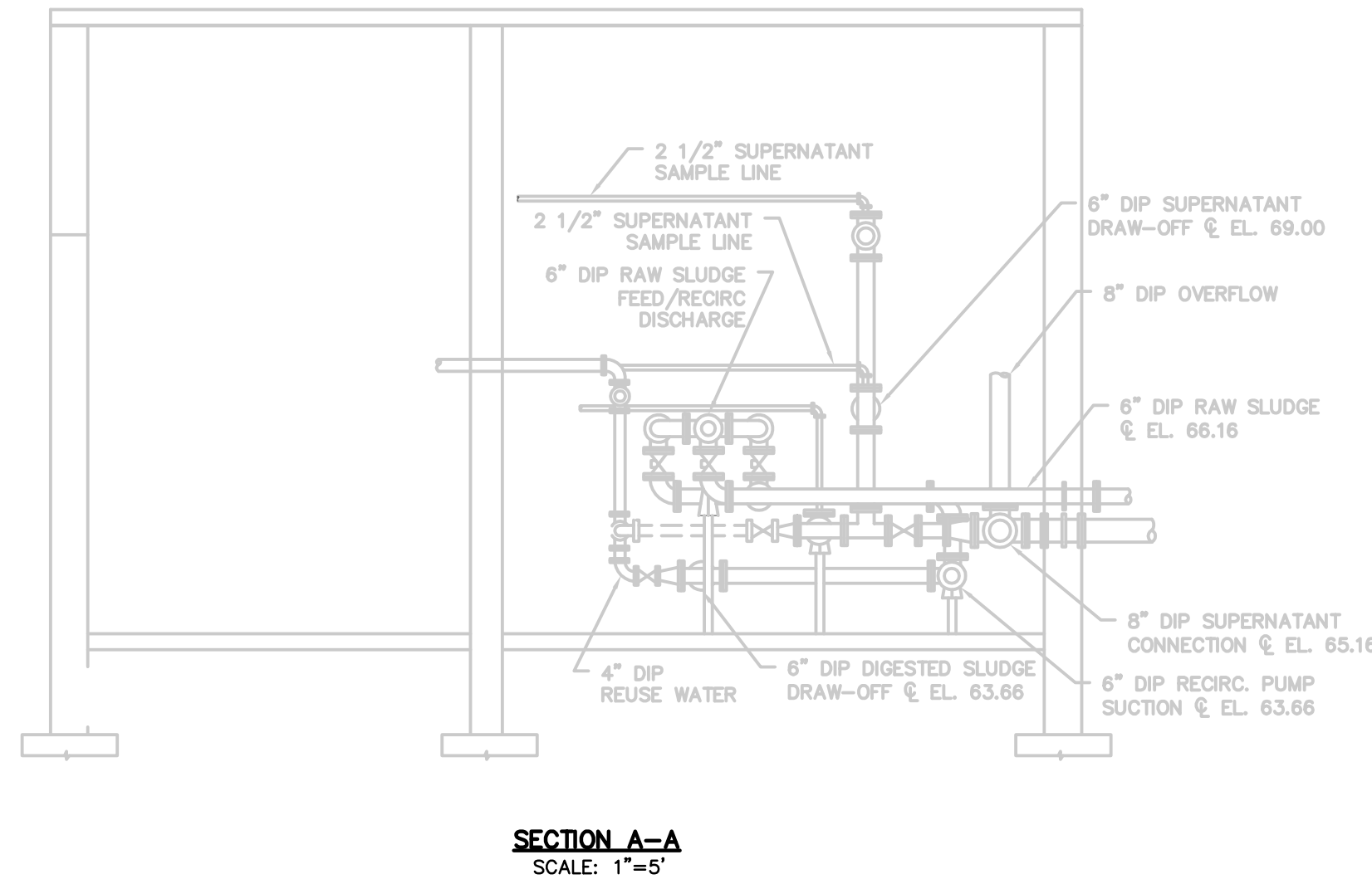
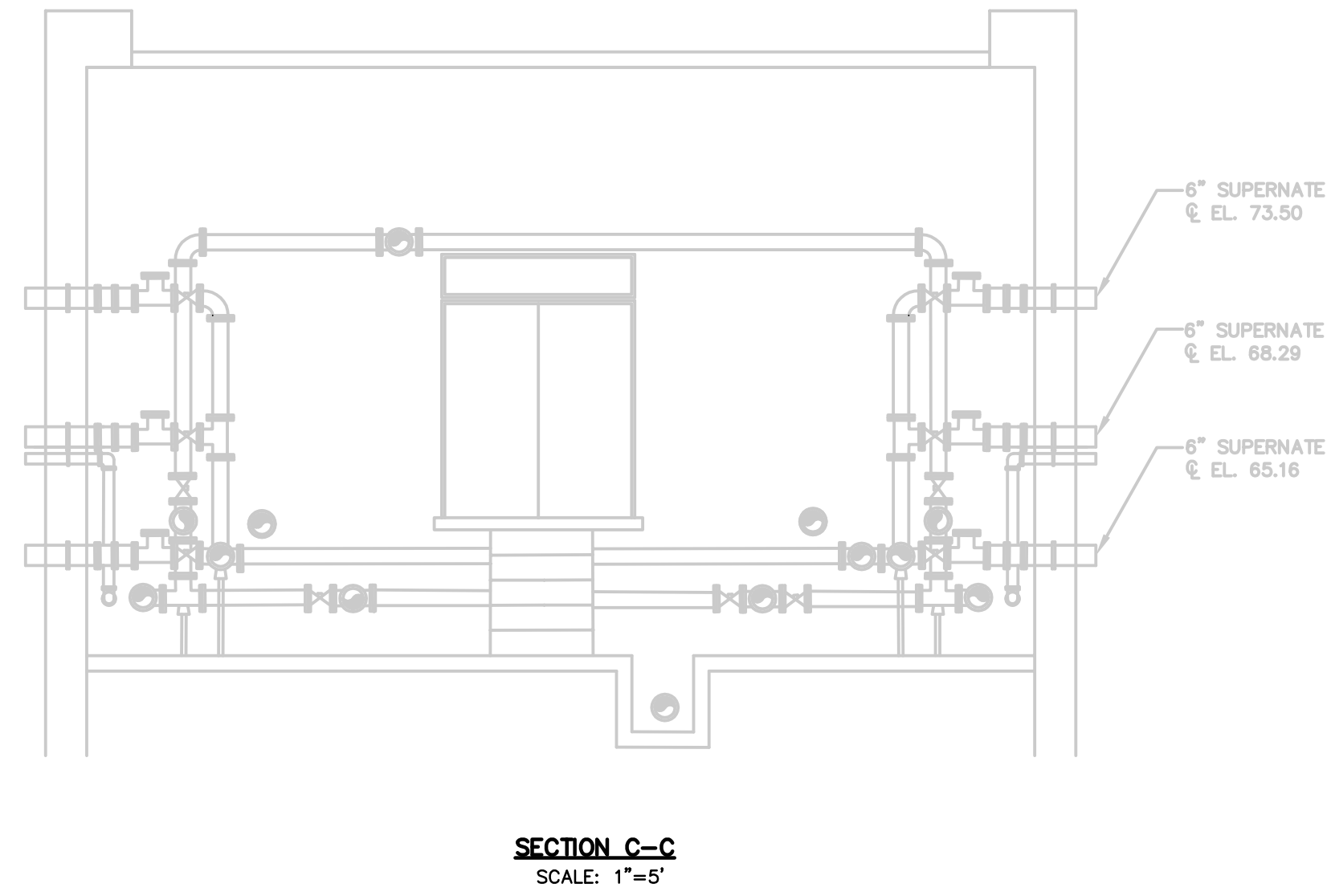
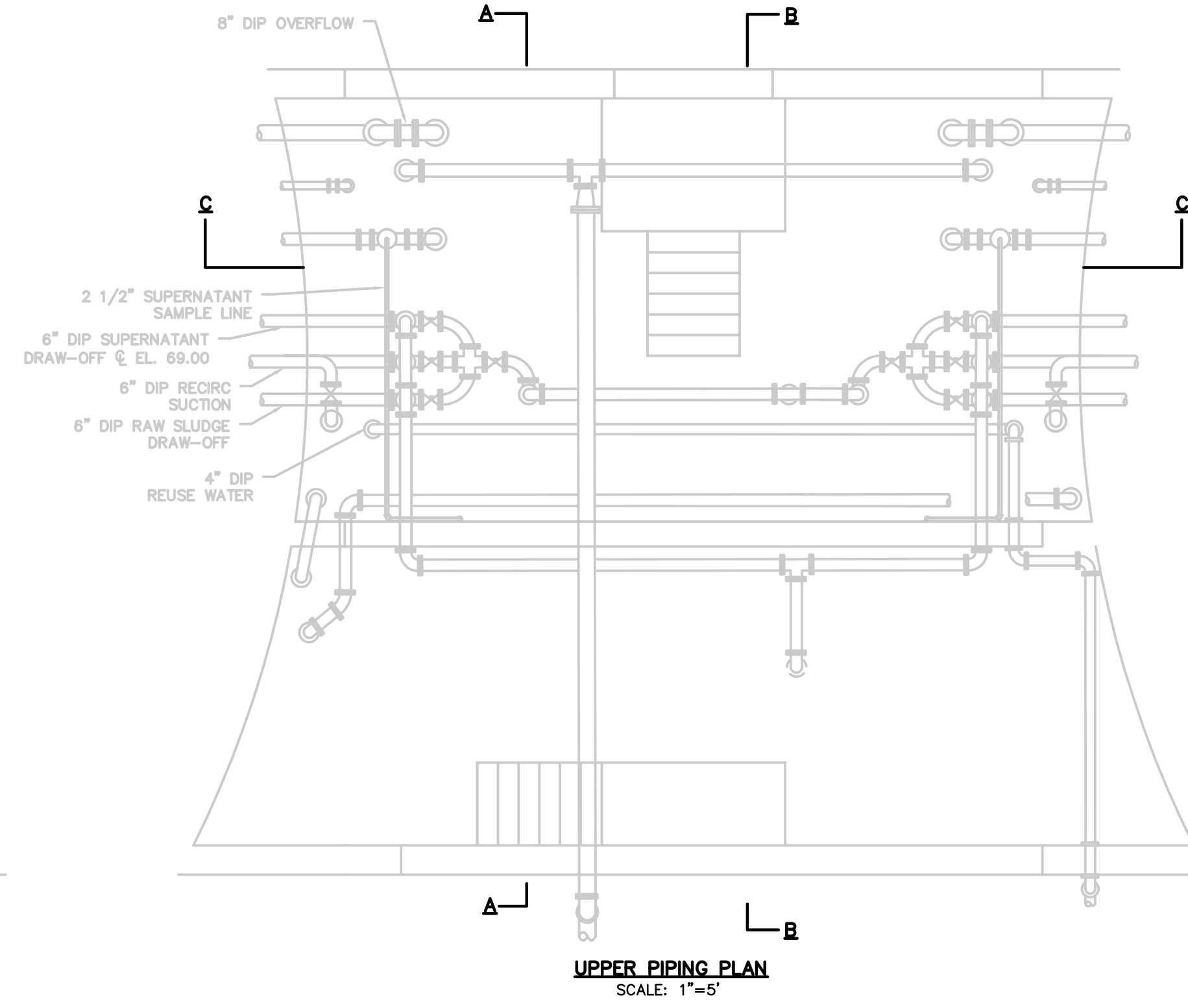
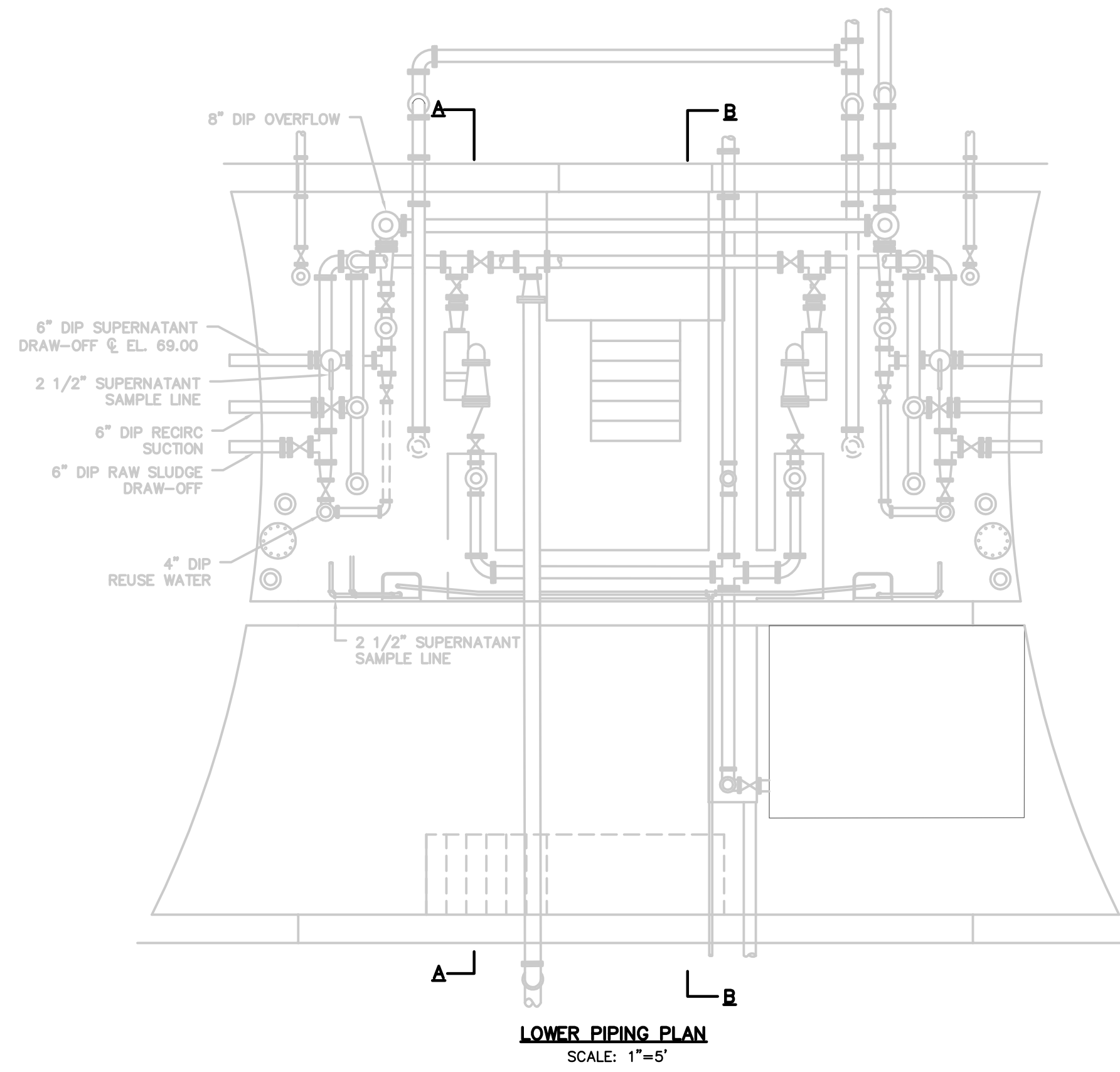
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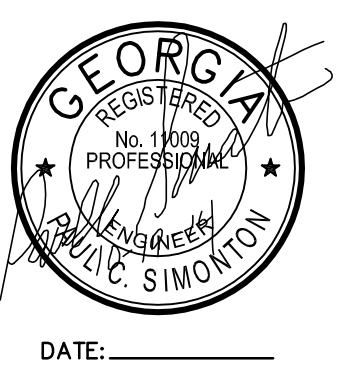
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 WWTP Upgrade**  
 for  
**The City of Hinesville**  
 Ft Stewart  
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Proposed Digester  
 Mechanical Room  
 Isometric Detail  
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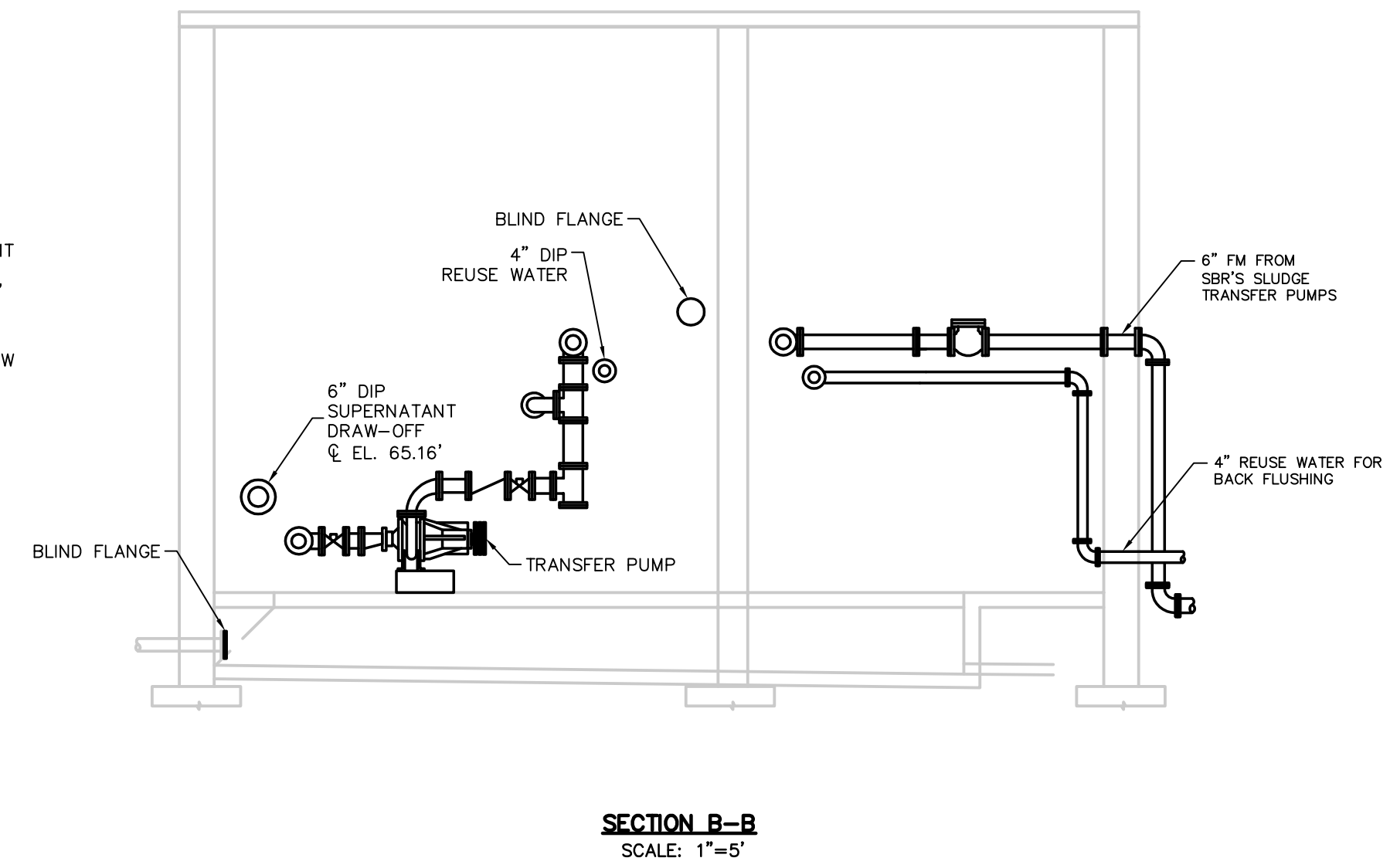
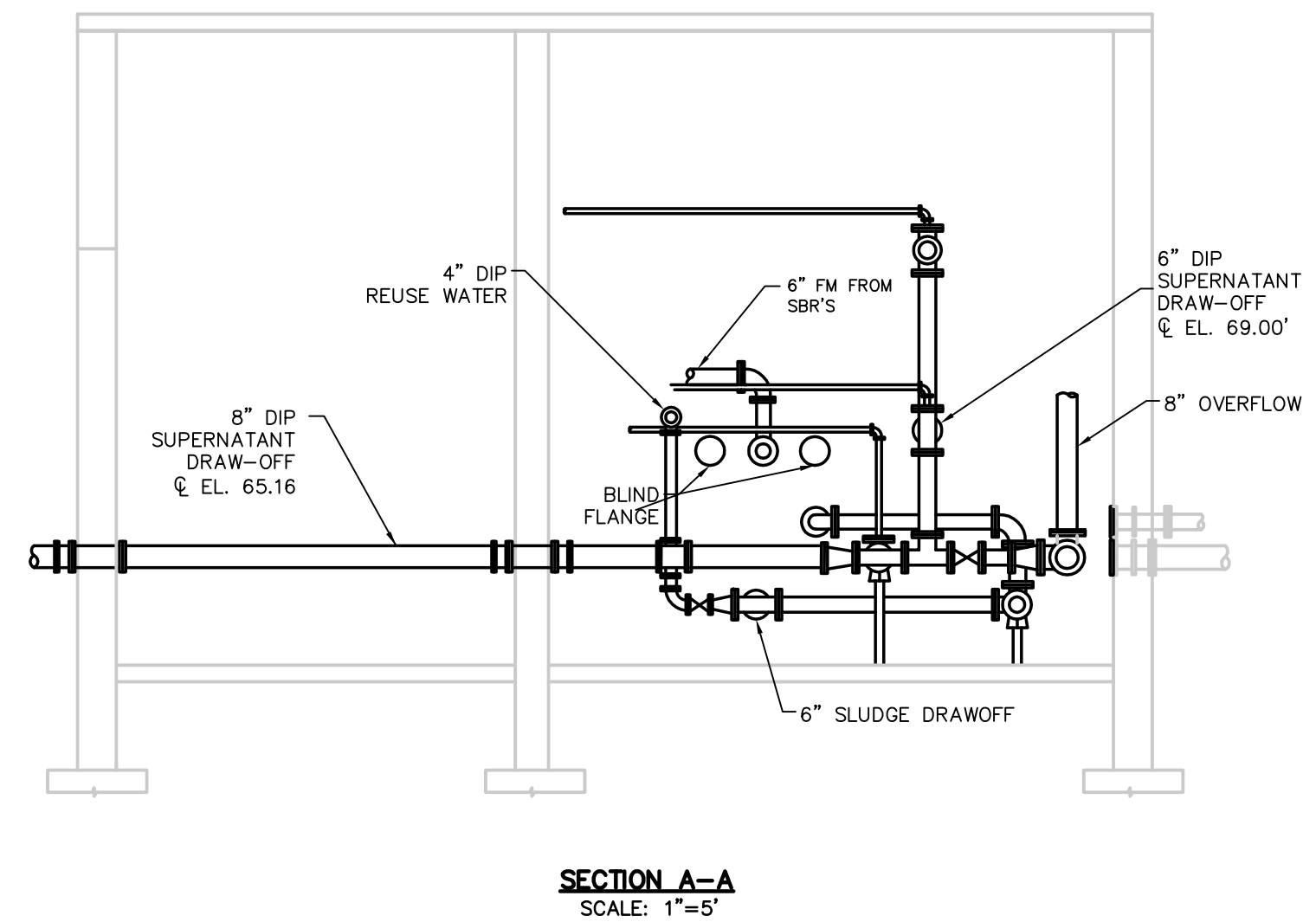
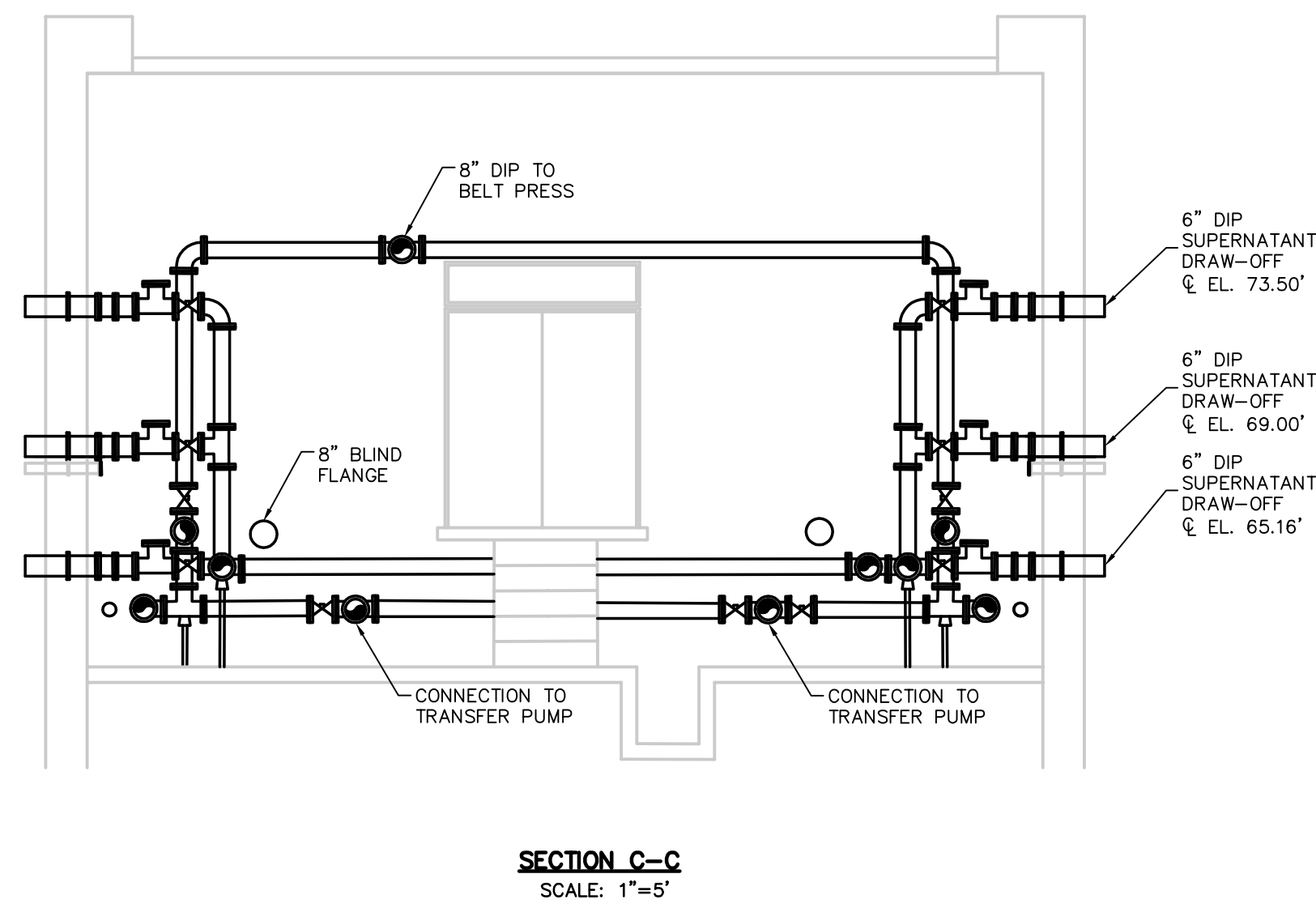
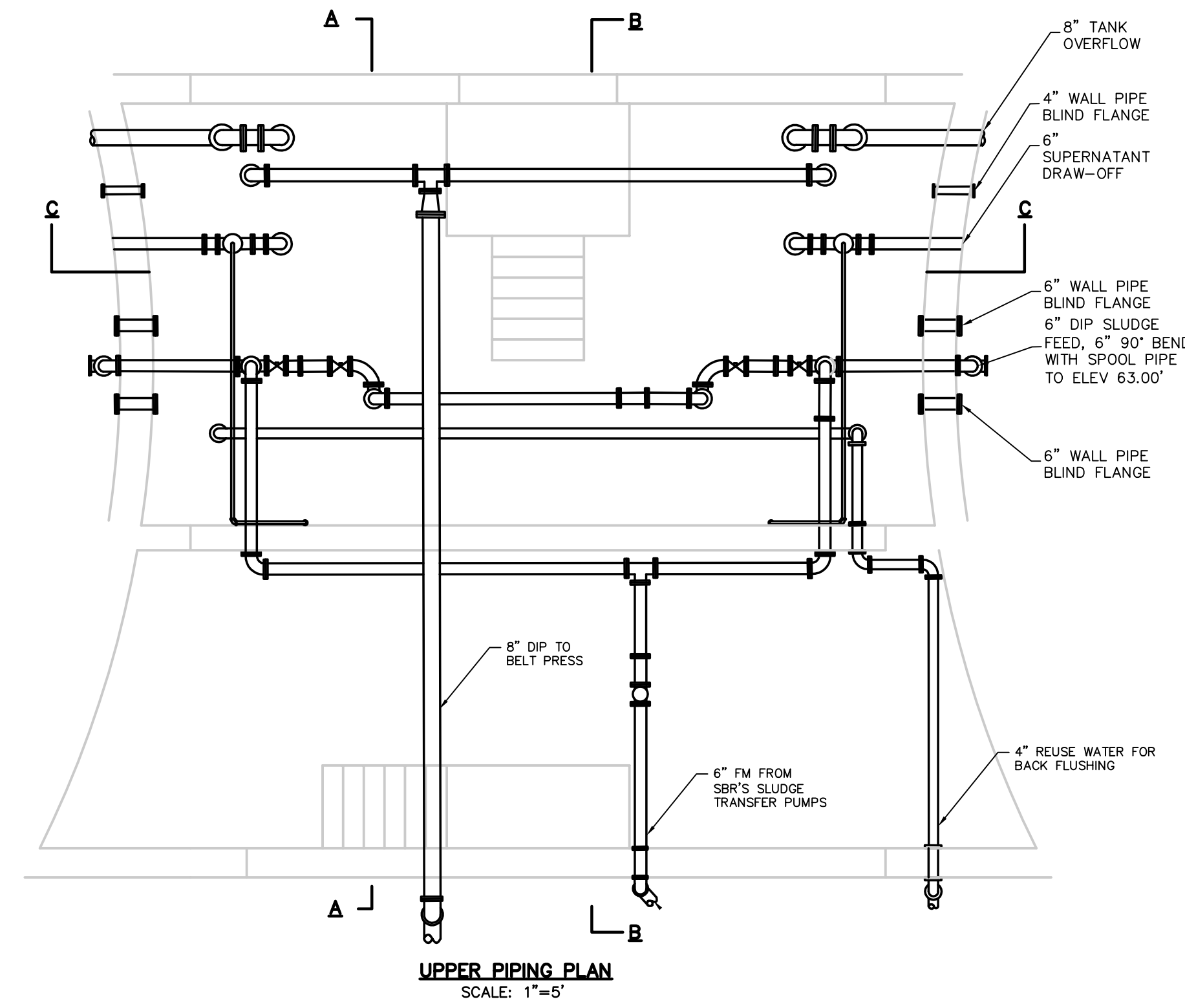
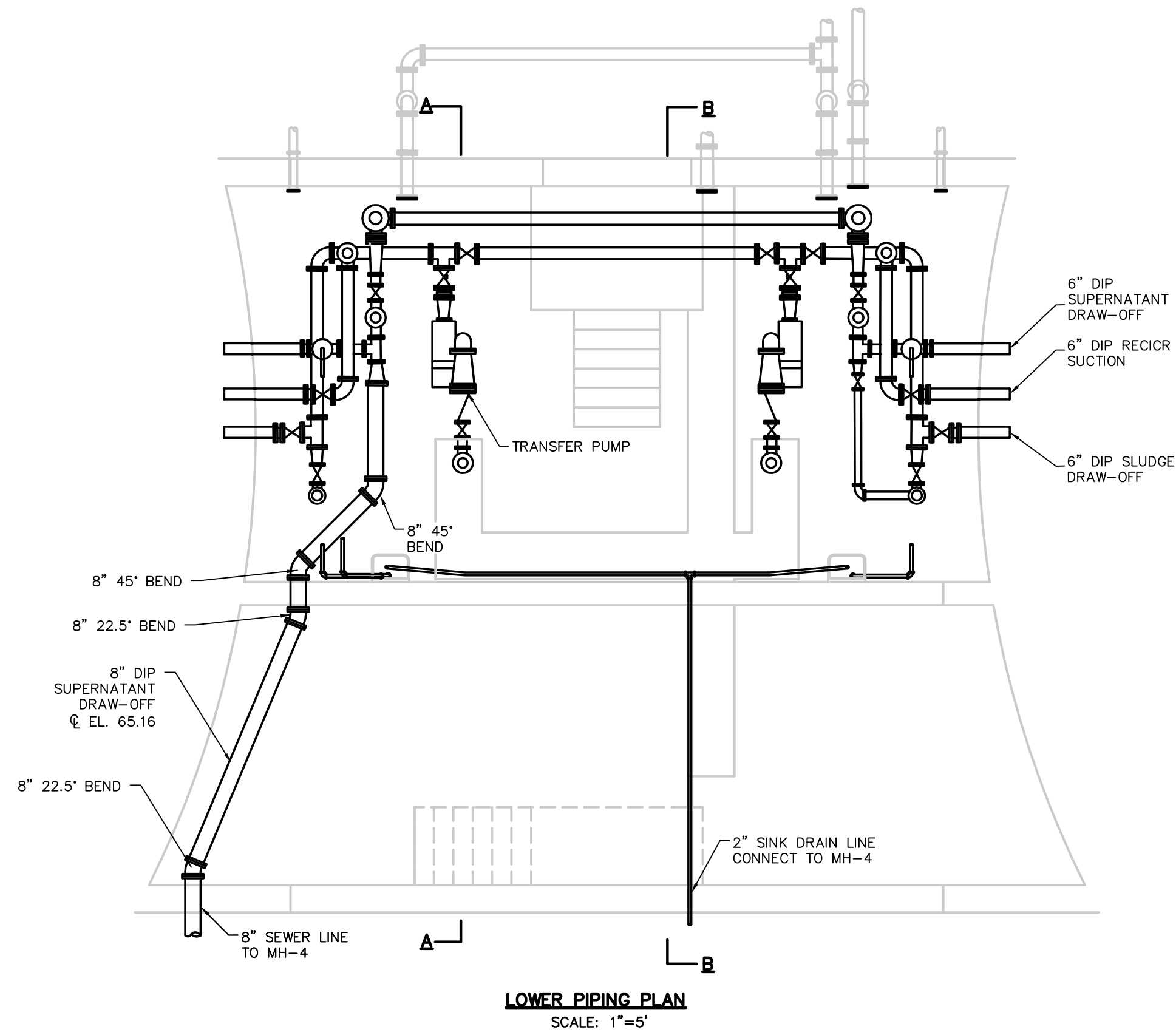
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 for  
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Existing Digester  
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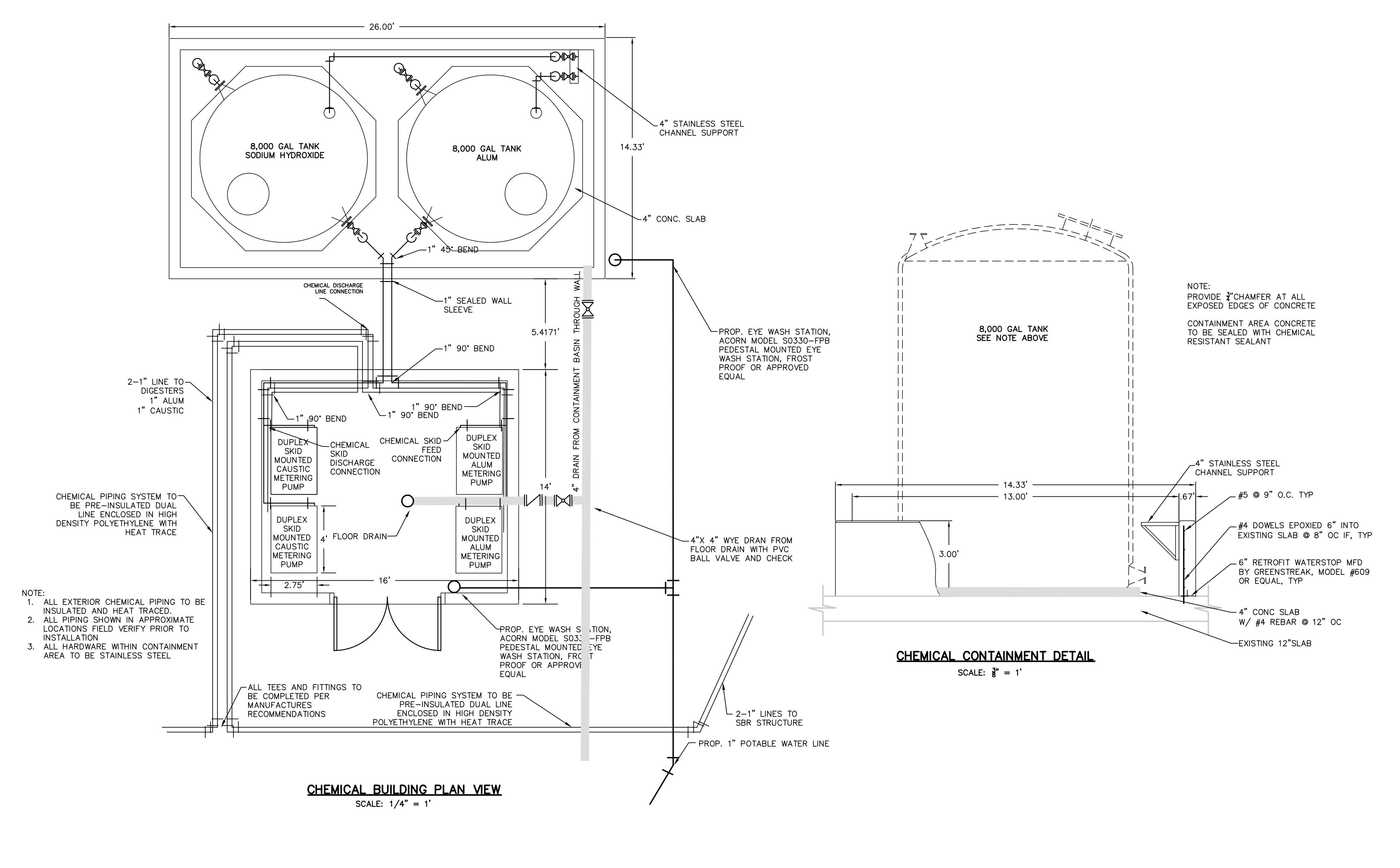
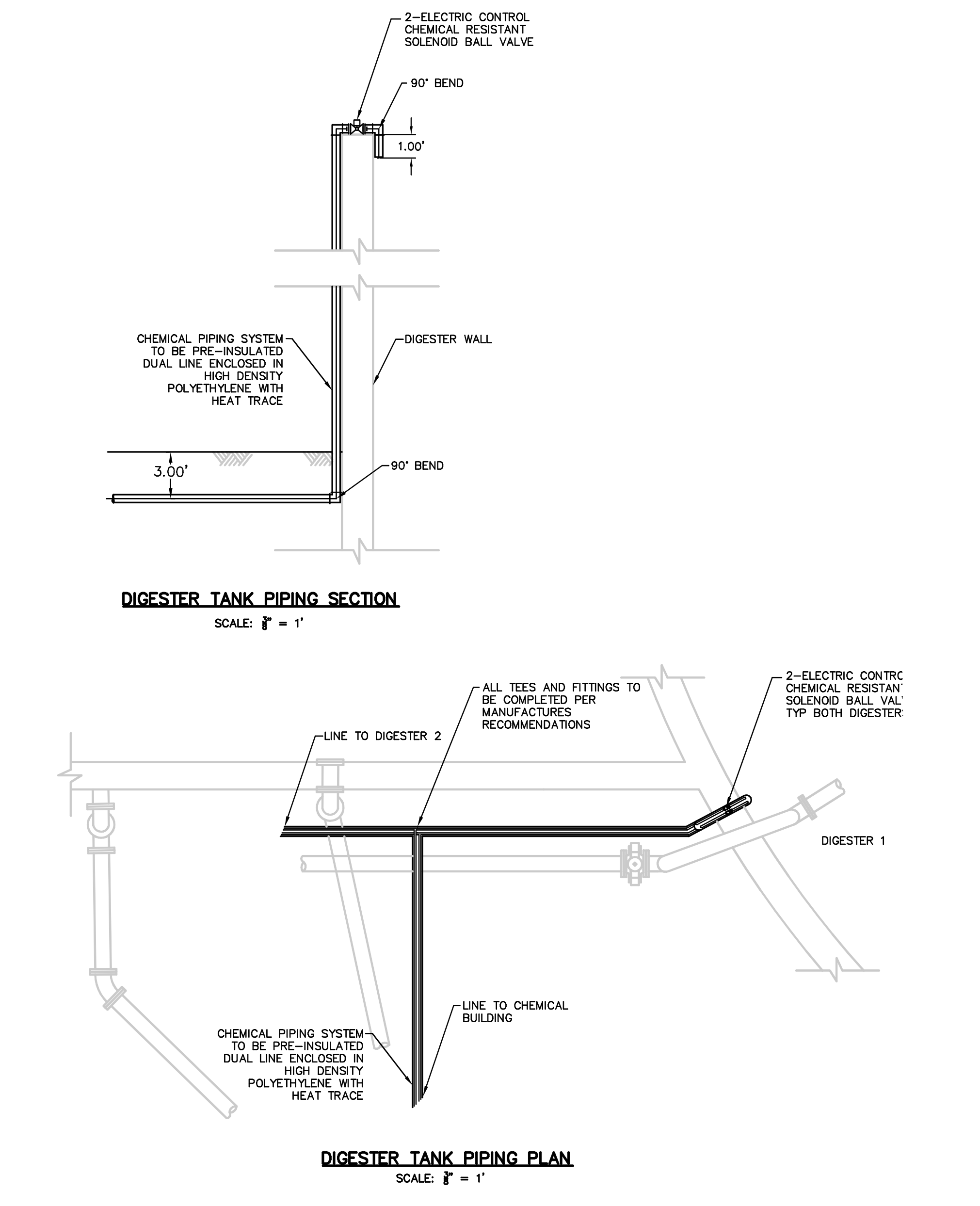
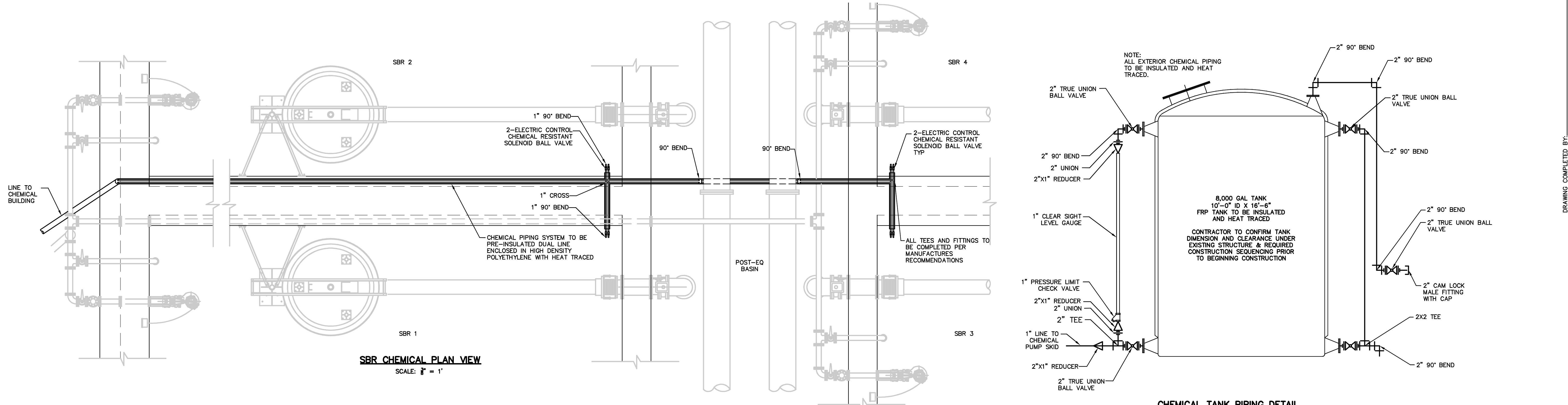
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WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Proposed Digester  
Mechanical Room Detail

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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**GEORGIA REGISTERED PROFESSIONAL ENGINEER**  
P.C. SIMONTON

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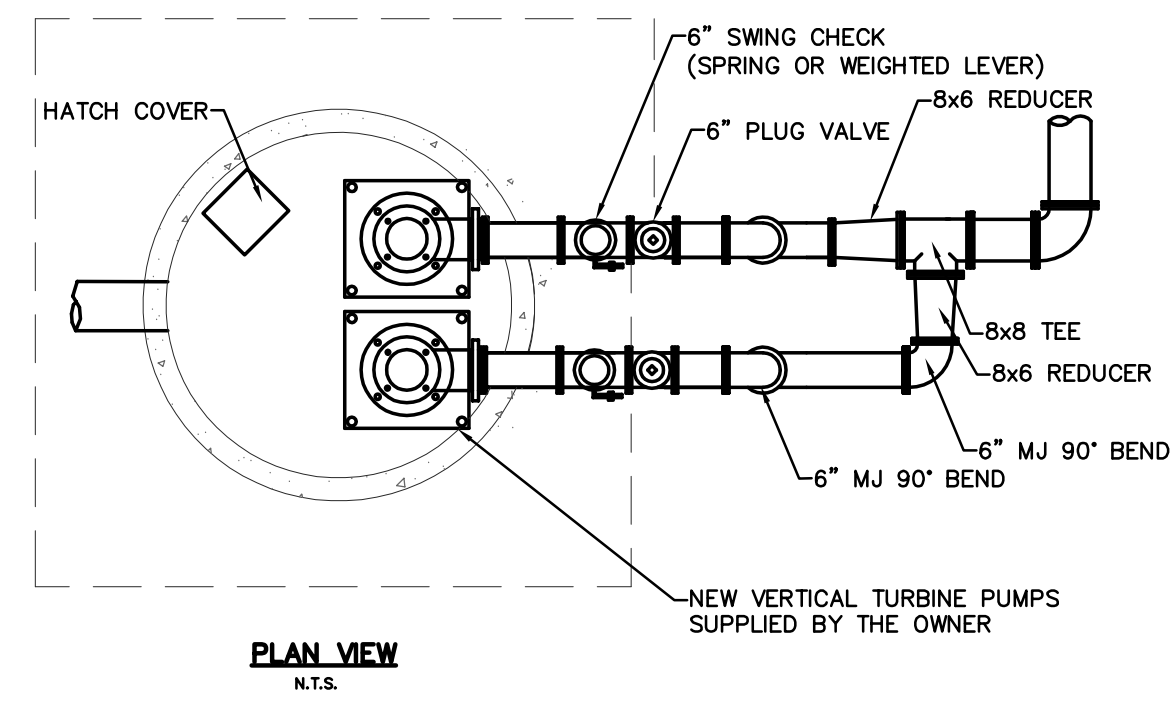
**Hinesville/Ft Stewart for WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

**Chemical Feed System Details**

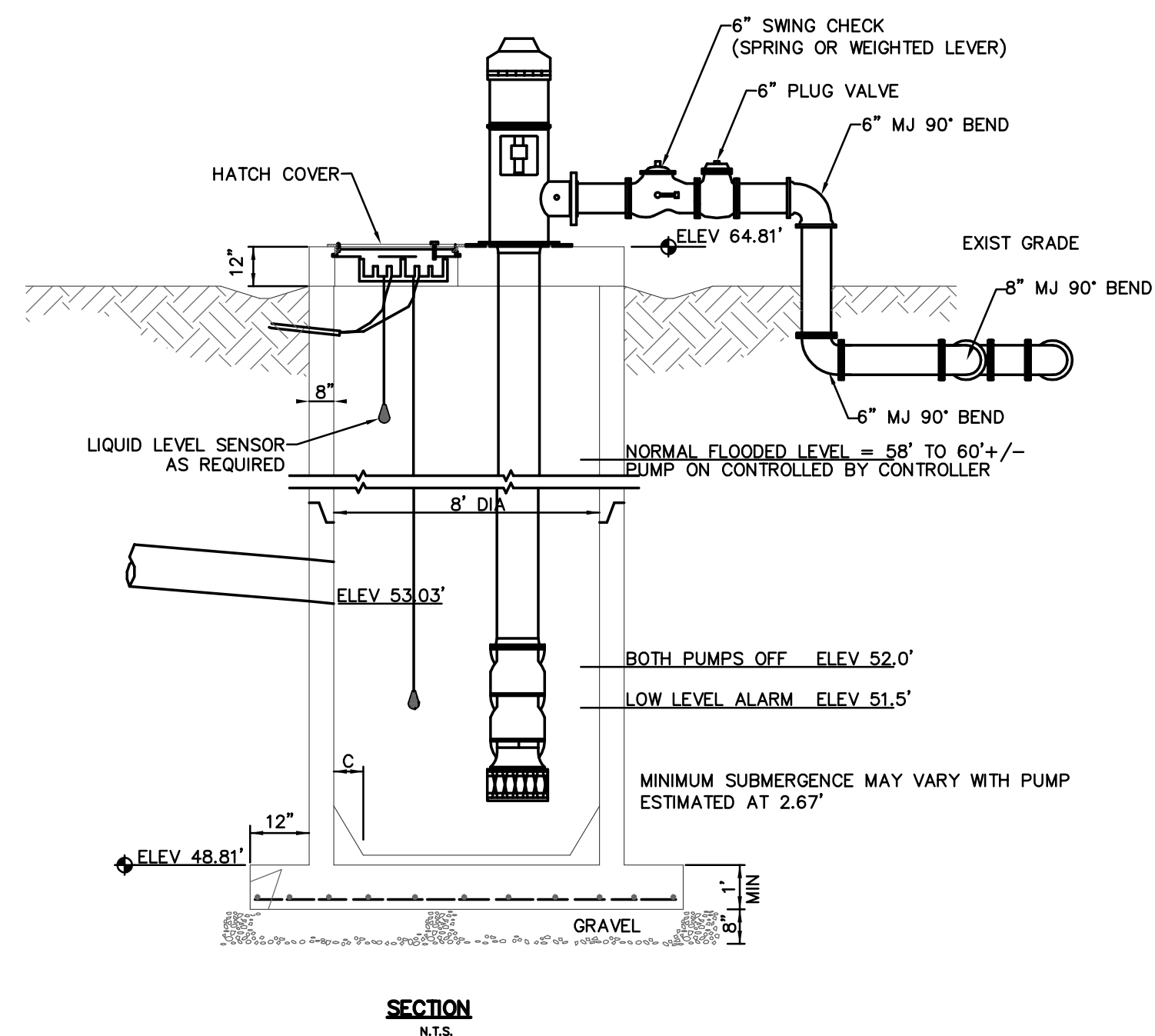
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
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- GENERAL NOTES REUSE SYSTEM PUMPS:
- PUMPS SHALL BE VERT. TURBINE- PEERLESS PUMP PEERLESS VERTICAL 10MA 1770 RPM 30 HP, 3 PHASE, 460 VOLTS, SUPPLIED BY THE CITY.
  - WET WELL SHALL BE COATED INSIDE WITH PROTECTIVE COATING APPROVED BY THE ENGINEER.
  - BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
  - ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
  - WET WELL COVER SHALL BE HEAVY DUTY ALUMINUM WITH TORSION BAR ASSIST AND POSITIVE LOCK AT 90°, COVER SHALL ALSO HAVE PADLOCKING CAPABILITIES. (LOADING 300 PSF)
  - ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF ELECTRICAL CABLES.
  - CABLE HANGERS SHALL BE STAINLESS STEEL.

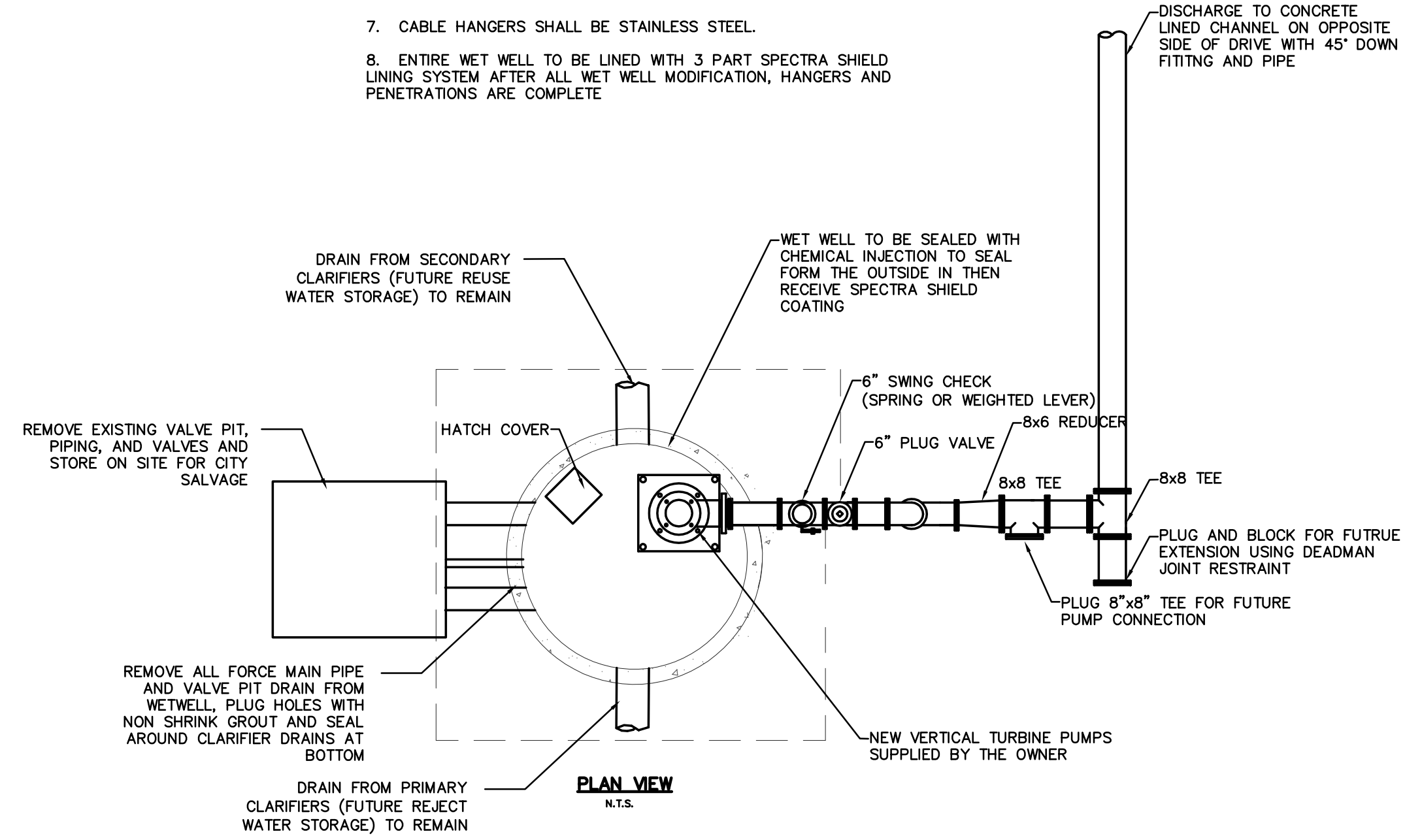
- GENERAL NOTES PUMPS TO REUSE AND REJECT TANK DRAIN:
- PUMP SHALL BE VERT. TURBINE- PEERLESS PUMP PEERLESS VERTICAL 10MA 1770 RPM 30 HP, 3 PHASE, 460 VOLTS SUPPLIED BY THE CITY.
  - WET WELL SHALL BE COATED INSIDE WITH PROTECTIVE COATING APPROVED BY THE ENGINEER.
  - BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
  - ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
  - WET WELL COVER SHALL BE HEAVY DUTY ALUMINUM WITH TORSION BAR ASSIST AND POSITIVE LOCK AT 90°, COVER SHALL ALSO HAVE PADLOCKING CAPABILITIES. (LOADING 300 PSF)
  - ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF ELECTRICAL CABLES.
  - CABLE HANGERS SHALL BE STAINLESS STEEL.
  - ENTIRE WET WELL TO BE LINED WITH 3 PART SPECTRA SHIELD LINING SYSTEM AFTER ALL WET WELL MODIFICATION, HANGERS AND PENETRATIONS ARE COMPLETE.



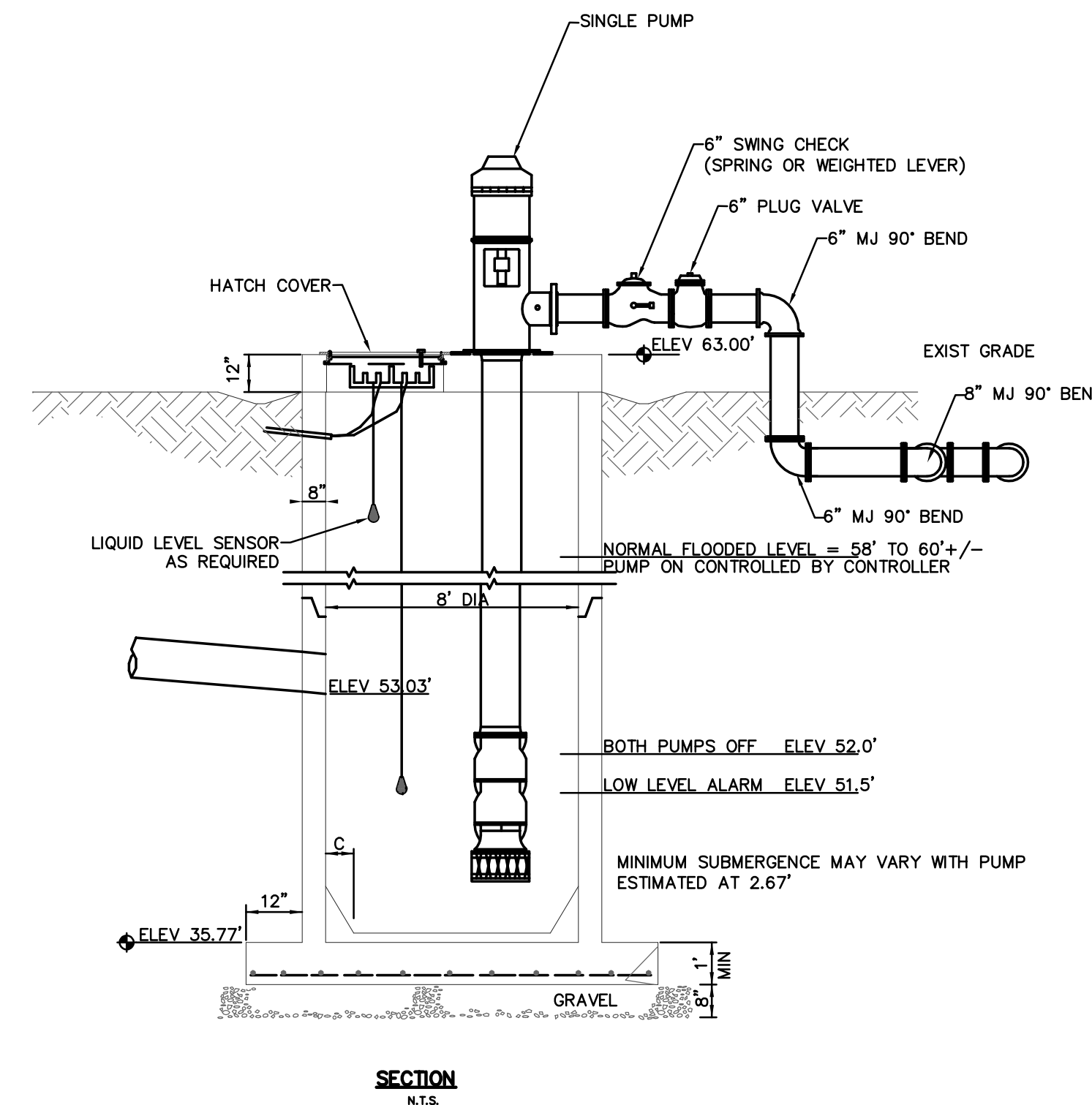
DUTY POINT  
500 GPM @ 152' TDH



ON-SITE REUSE WET WELL DETAIL



DUTY POINT  
500 GPM @ 152' TDH



REJECT/REUSE WATER TANK DRAIN WET WELL DETAIL

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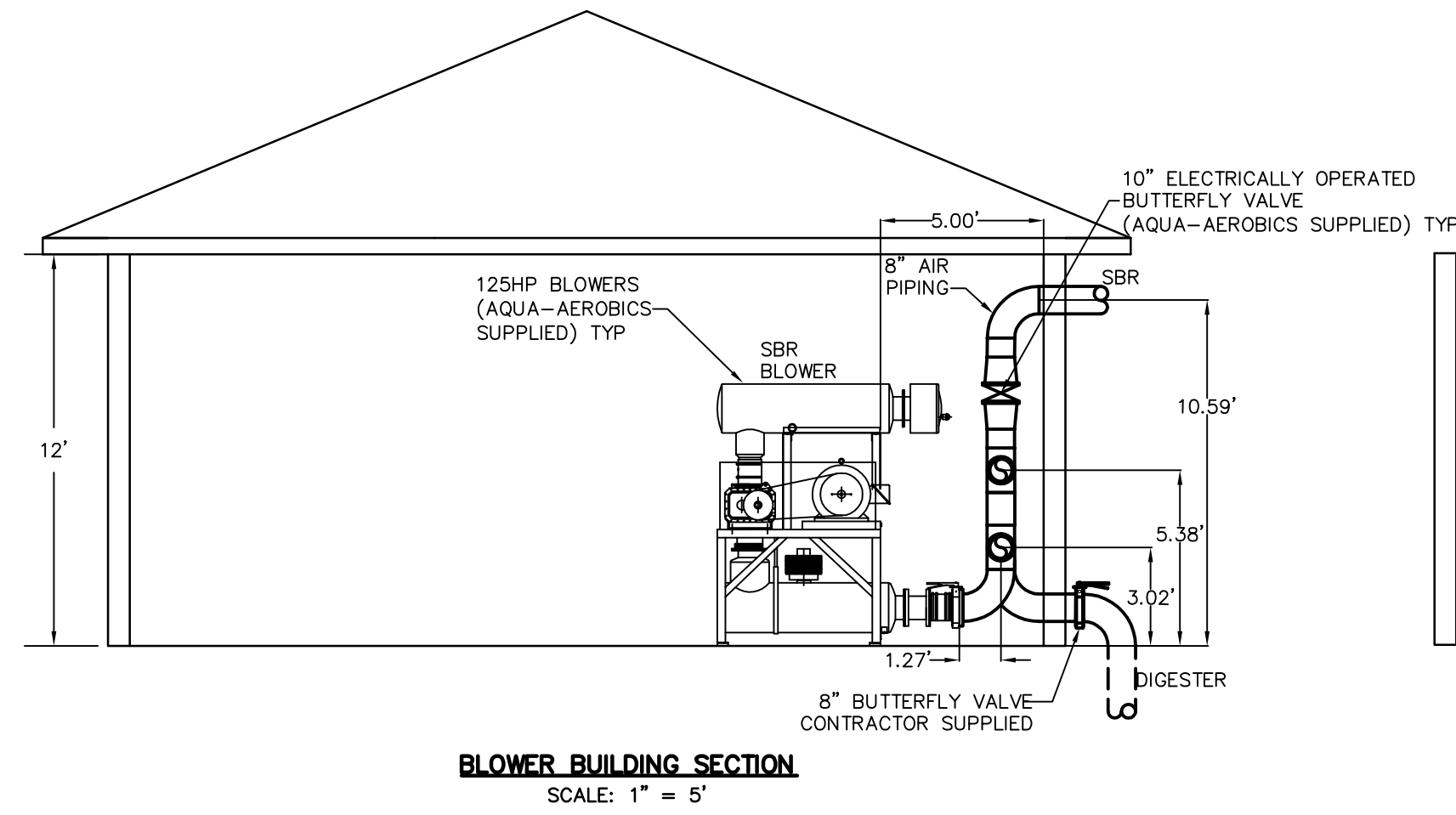
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Pump Station Details

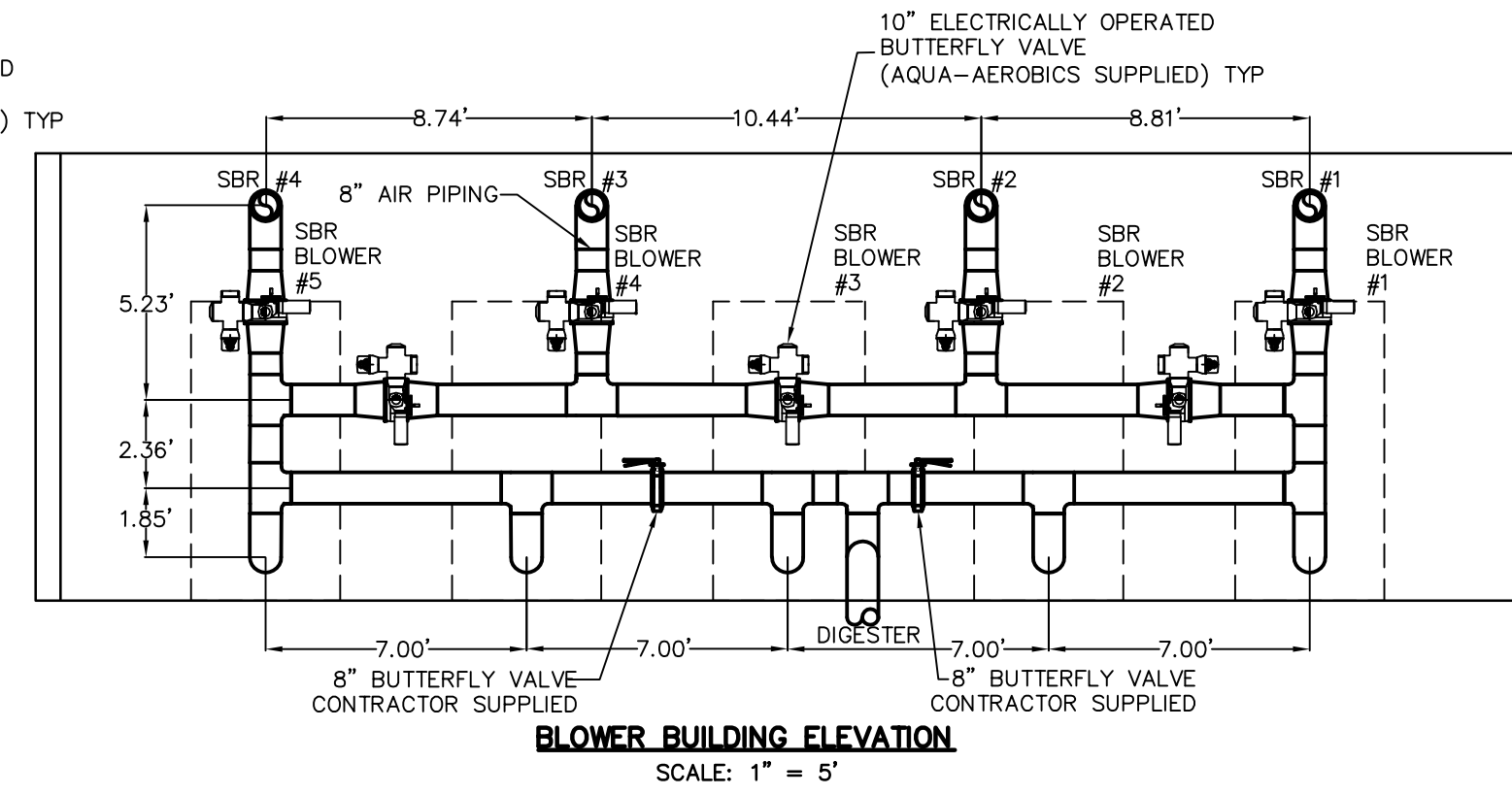
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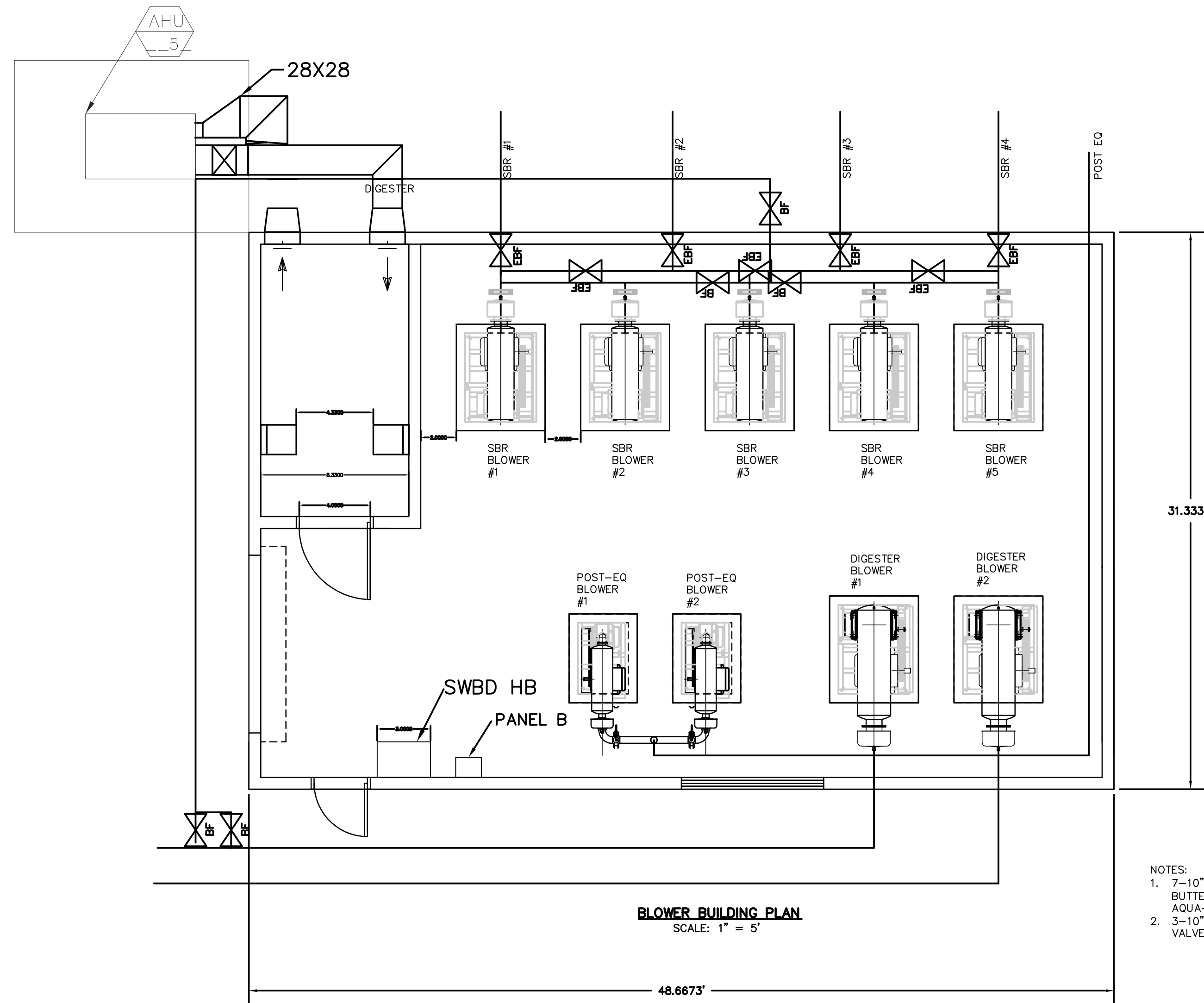
- NOTES:
1. AIR PIPING - SCHEDULE 10S STAINLESS STEEL
  2. FLANGES - 304 STAINLESS STEEL, 150# CLASS WITH NEOPRENE GASKET
  3. ALL AIR PIPING BELOW 8' MEASURED FROM FIN FLOOR WILL BE INSULATED WITH 1" INSULATION
  4. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED
  5. AIR PIPING TO BE TESTED TO ZERO LEAKAGE AT 50 PSI, PNEUMATIC
  6. PLACE EXPANSION JOINTS IN EXTENDED POSITION WHEN PIPING IS INSTALLED
  7. EXPANSION JOINT EVERY 40 FEET ALONG PIPE LENGTH, FROM BLOWER BUILDING TO TANK ENTRY
  8. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO MANUFACTURING OF AIR PIPING



**BLOWER BUILDING SECTION**  
SCALE: 1" = 5'

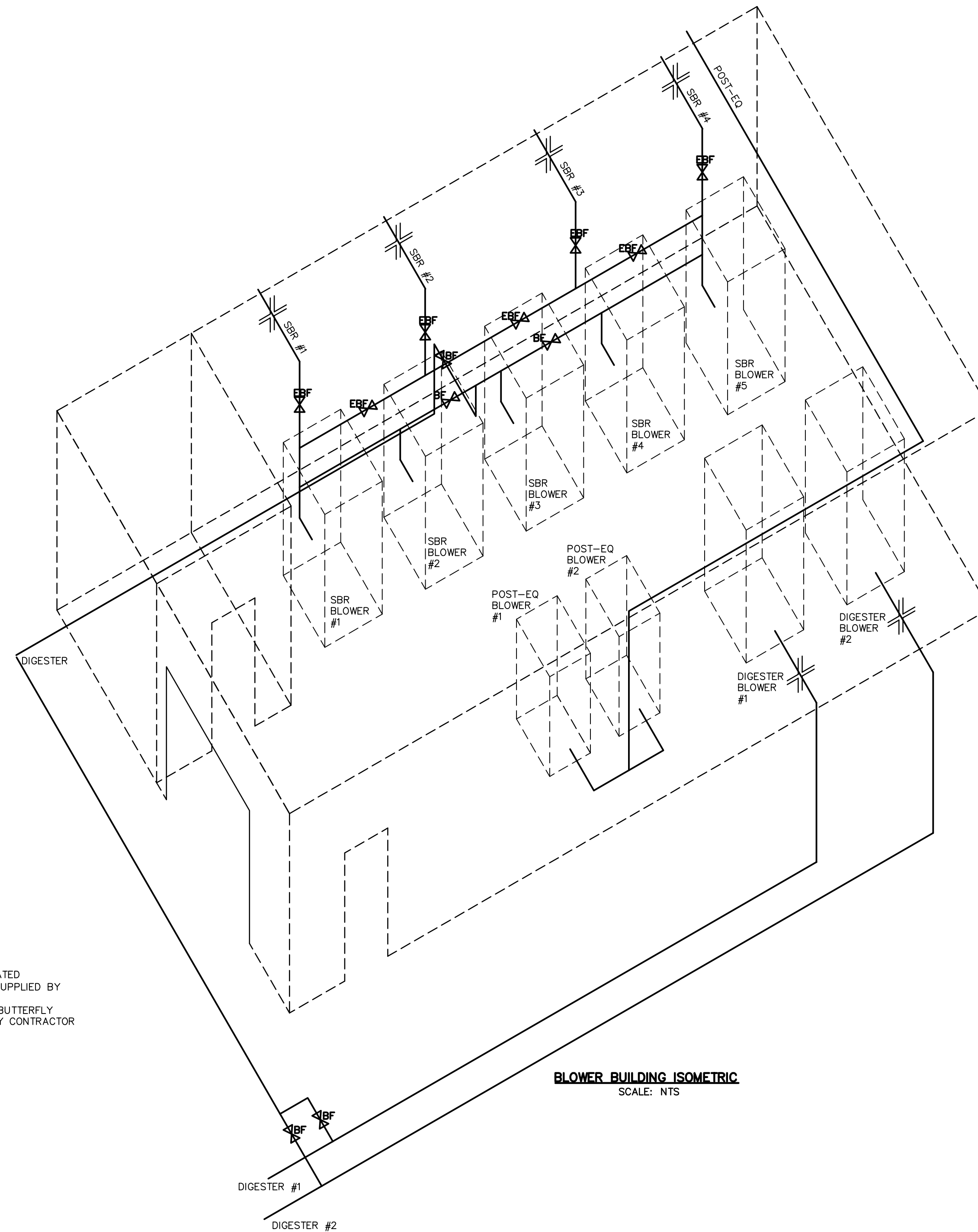


**BLOWER BUILDING ELEVATION**  
SCALE: 1" = 5'



**BLOWER BUILDING PLAN**  
SCALE: 1" = 5'

- NOTES:
1. 7-10" ELECTRICALLY OPERATED BUTTERFLY VALVES (EBF) SUPPLIED BY AQUA-AEROBICS
  2. 3-10" MANUAL OPERATED BUTTERFLY VALVES TO BE SUPPLIED BY CONTRACTOR



**BLOWER BUILDING ISOMETRIC**  
SCALE: NTS

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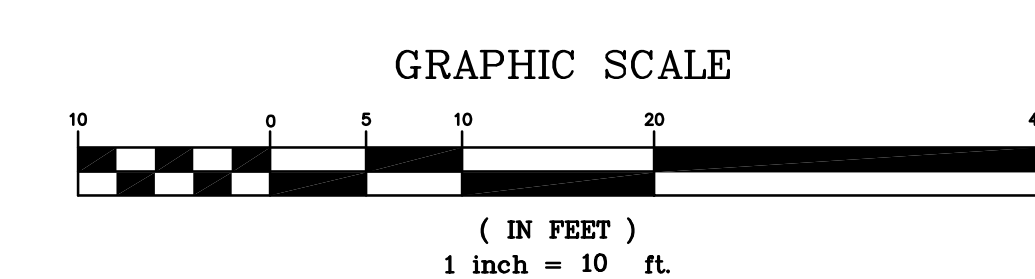
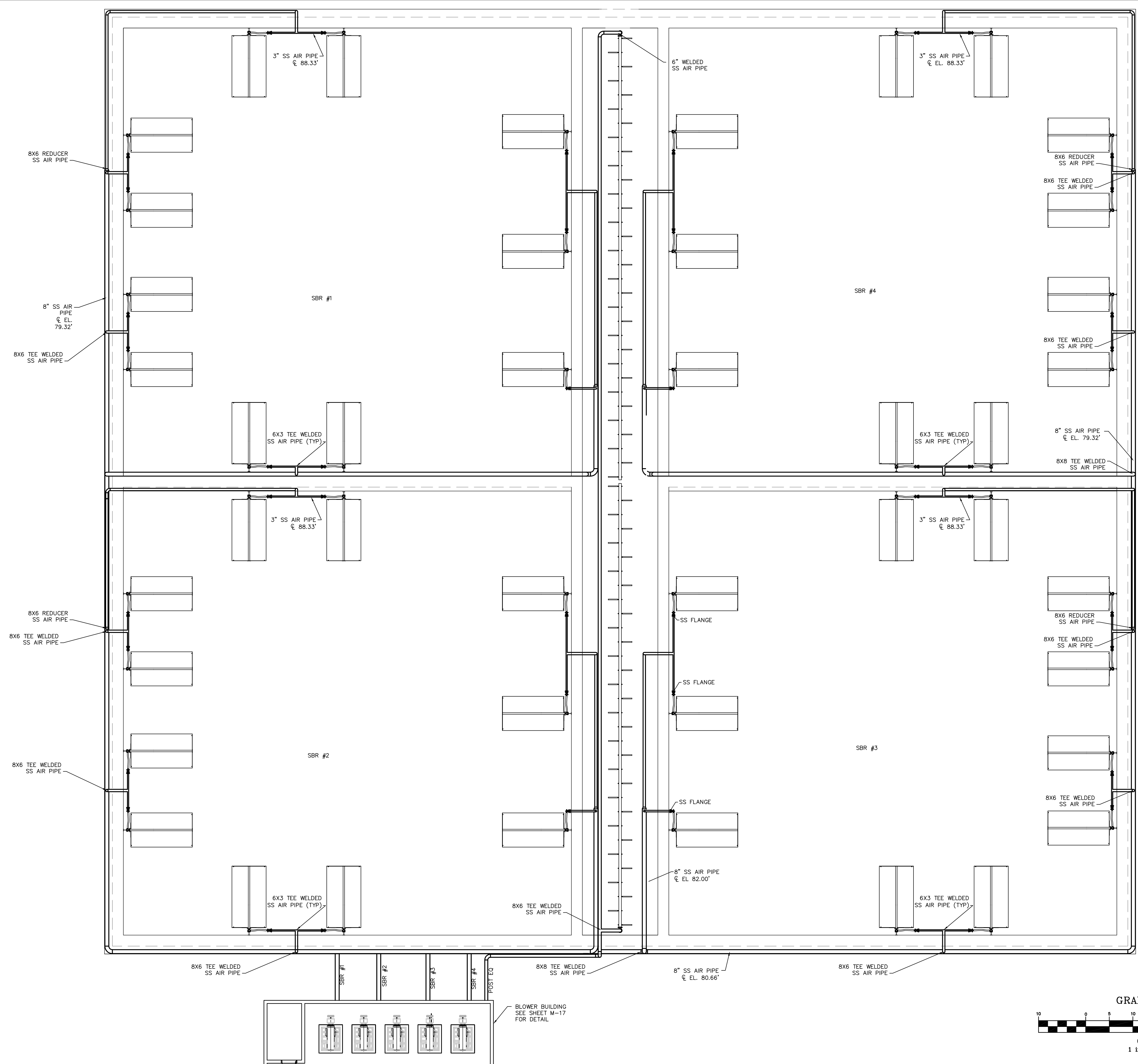
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for  
WWTP Upgrade  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Blower Building  
Air Piping  
Details

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FILE NO: 2009-63PRJ  
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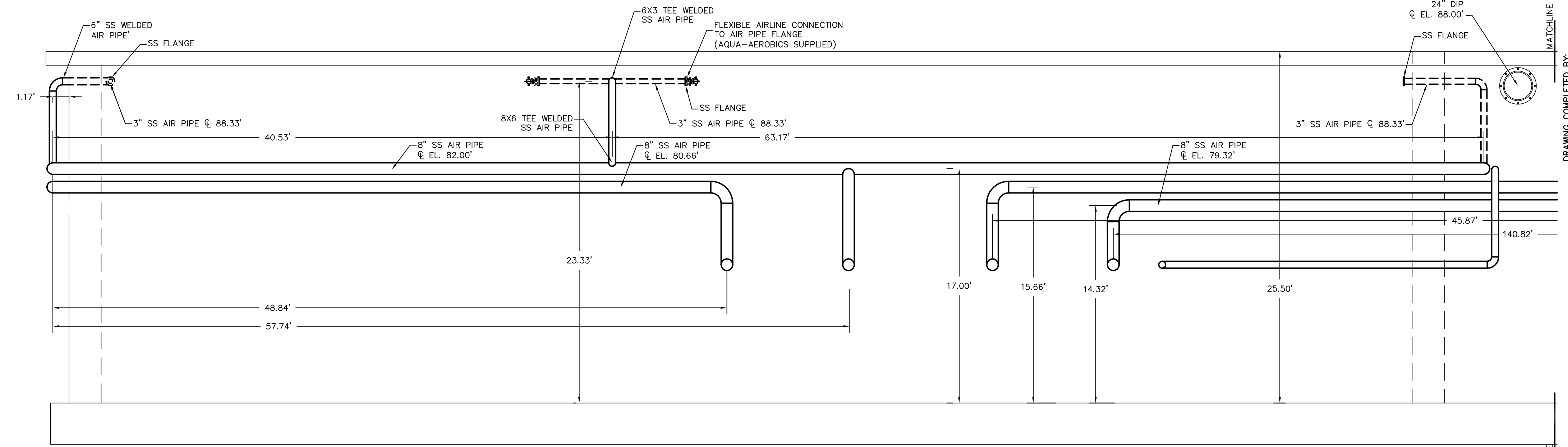
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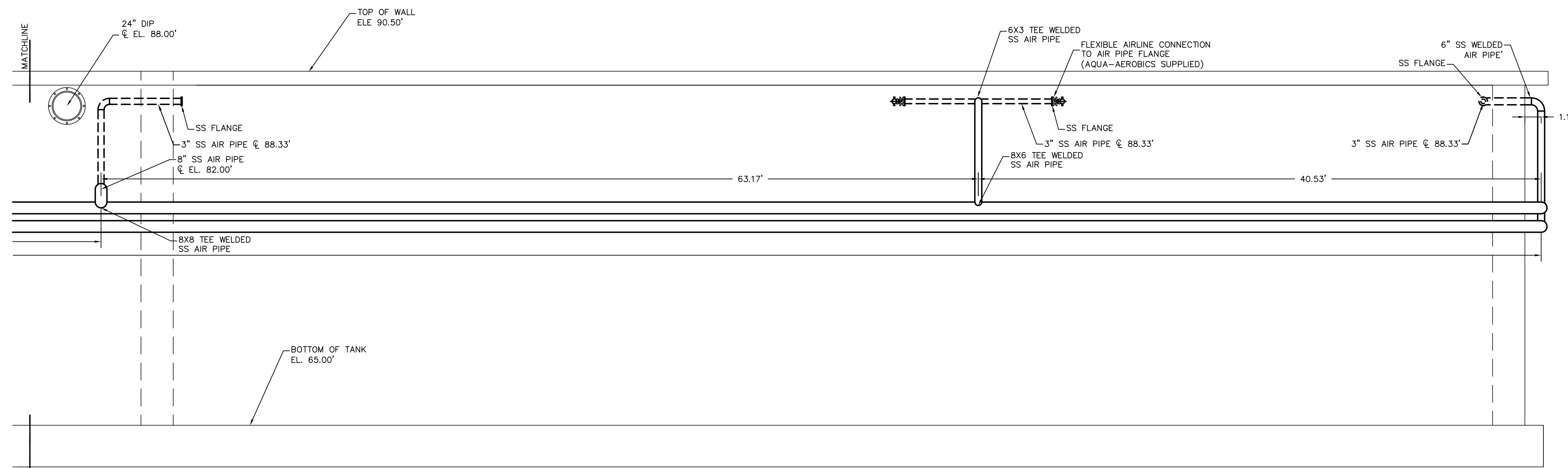
SBR  
 Air Piping  
 Plan View  
 DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: M-18

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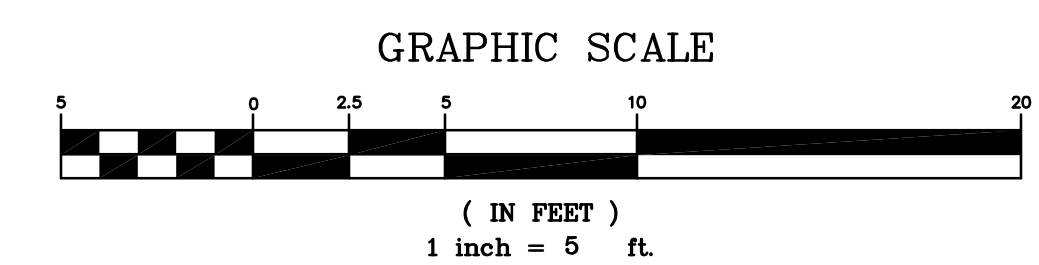
- NOTES:
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  6. PLACE EXPANSION JOINTS IN EXTENDED POSITION WHEN PIPING IS INSTALLED
  7. EXPANSION JOINT EVERY 40 FEET ALONG PIPE LENGTH
  8. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO MANUFACTURING OF AIR PIPING
  9. AIR PIPING TO BE SUPPORTED WITH SS SUPPORTS EVERY 10'



SOUTH ELEVATION



SOUTH ELEVATION



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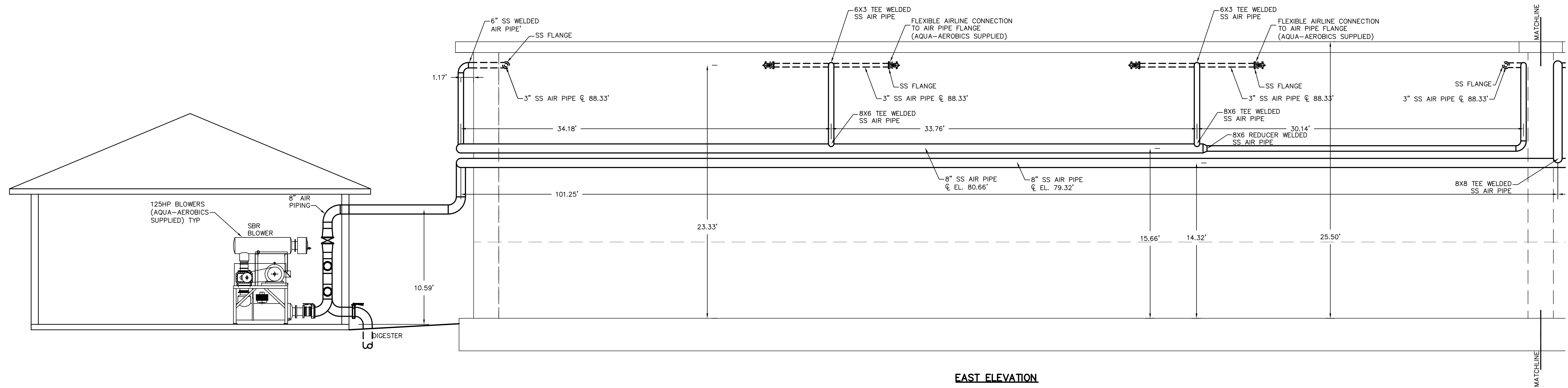
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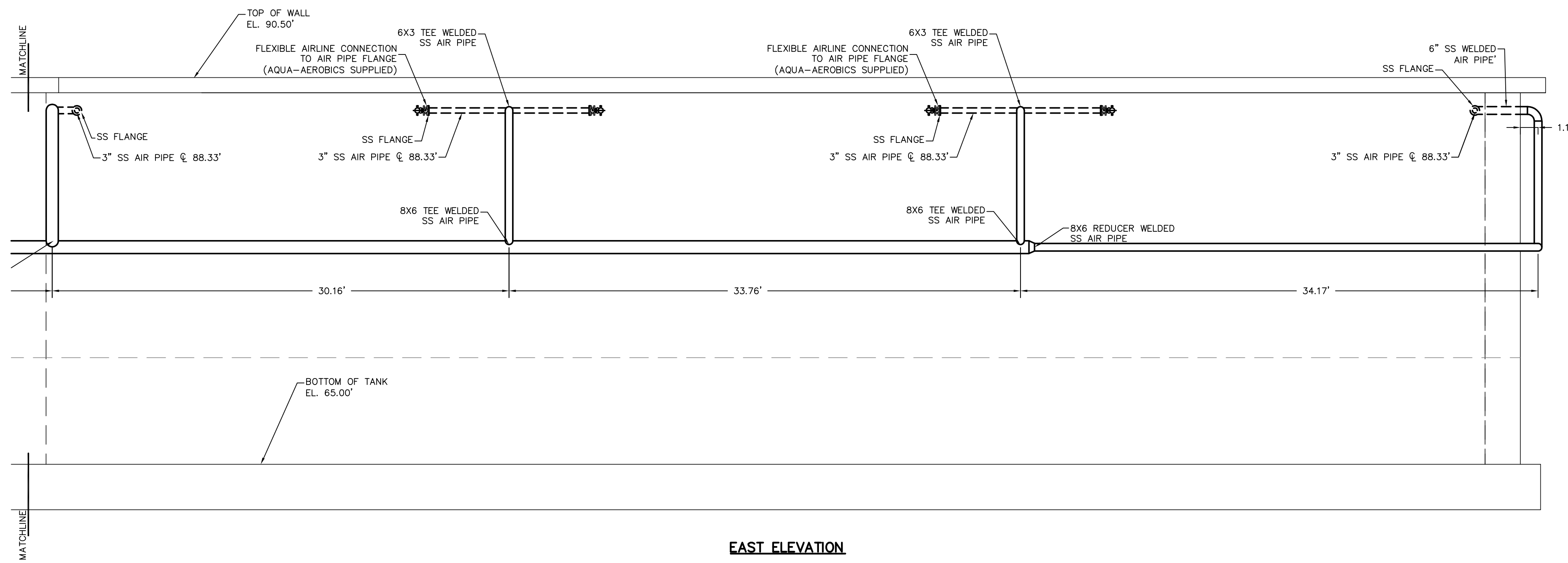
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Ft Stewart  
Liberty County, Georgia

SBR  
Air Piping  
South Elevation

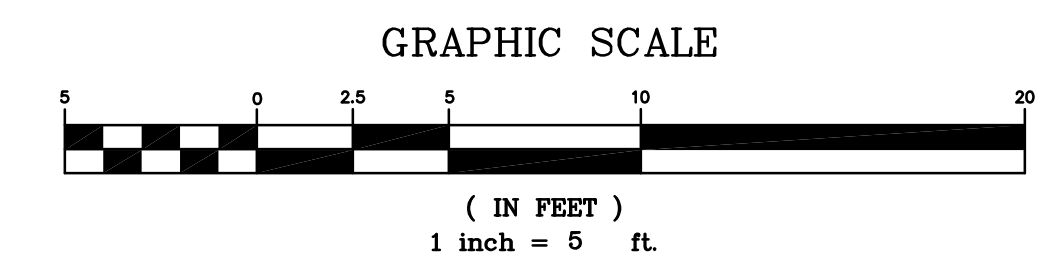
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EAST ELEVATION



EAST ELEVATION



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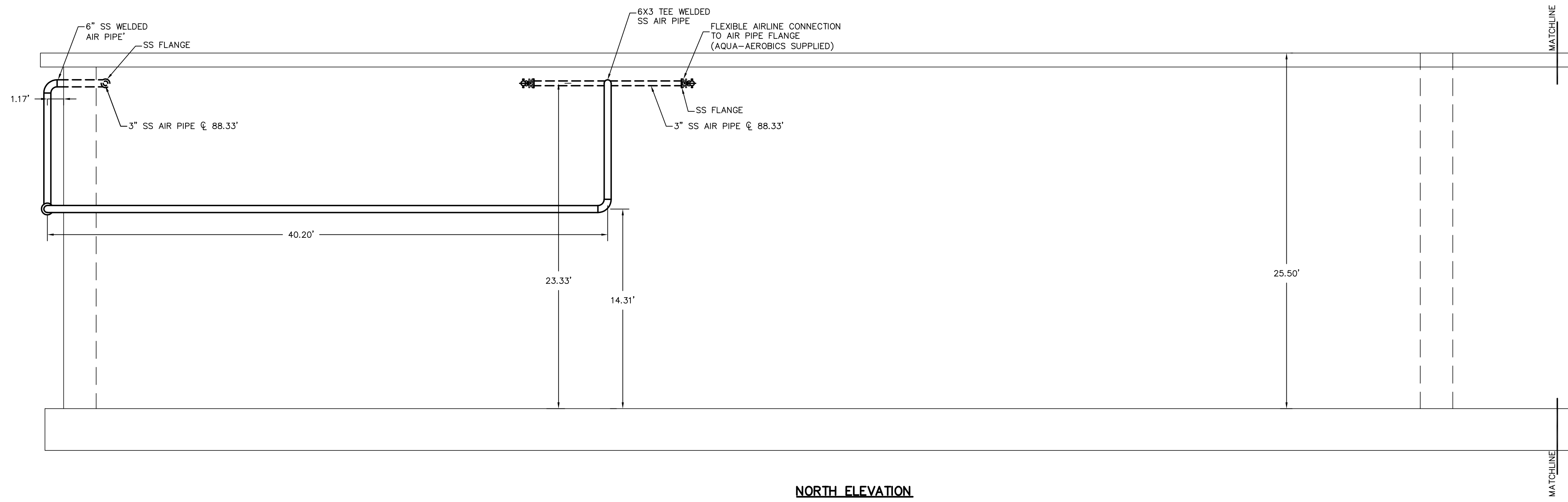
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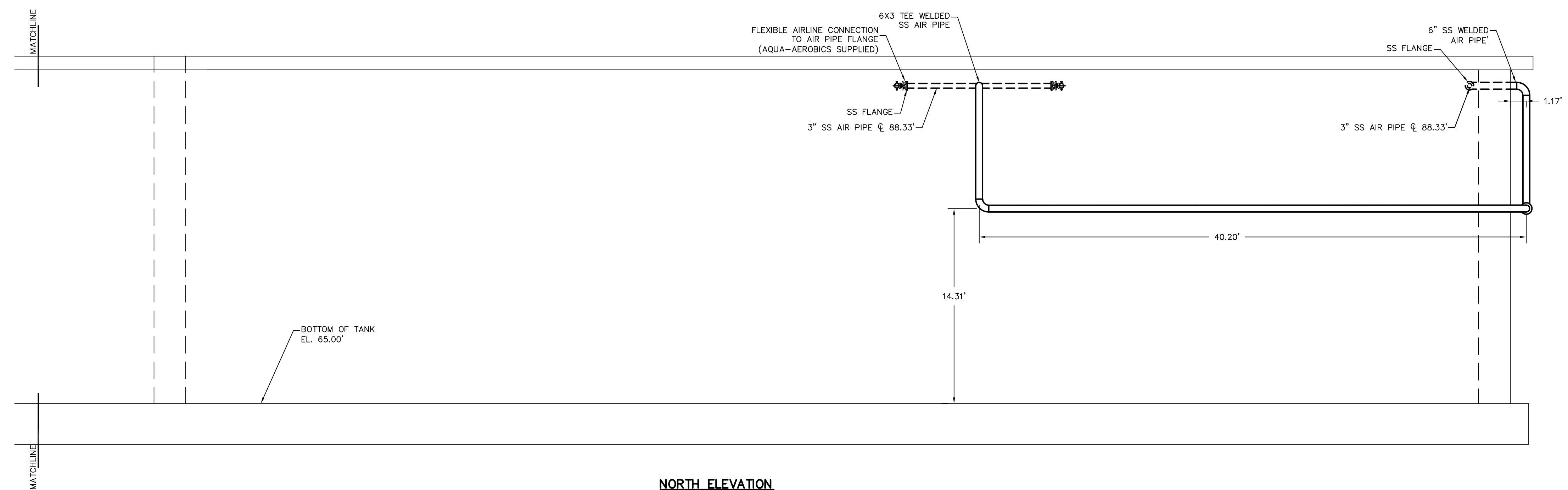
SBR  
Air Piping  
East Elevation

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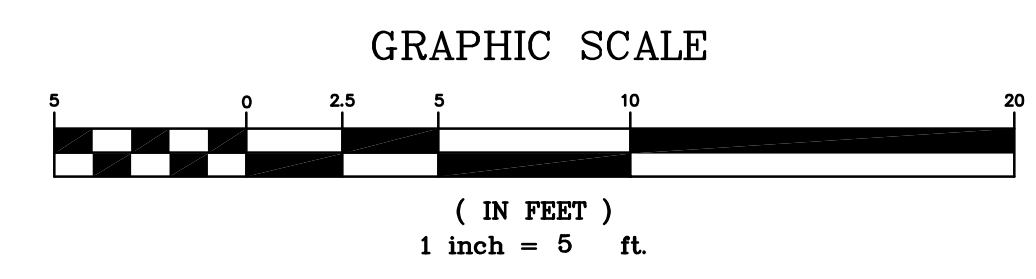
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NORTH ELEVATION



NORTH ELEVATION



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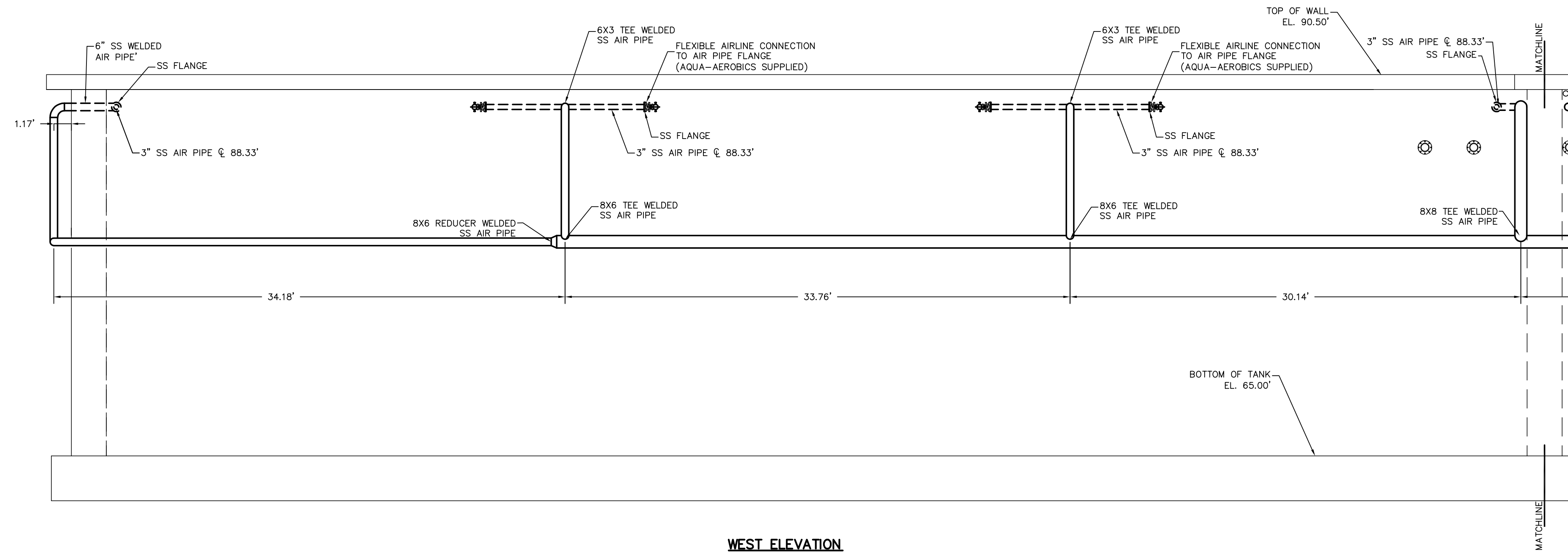


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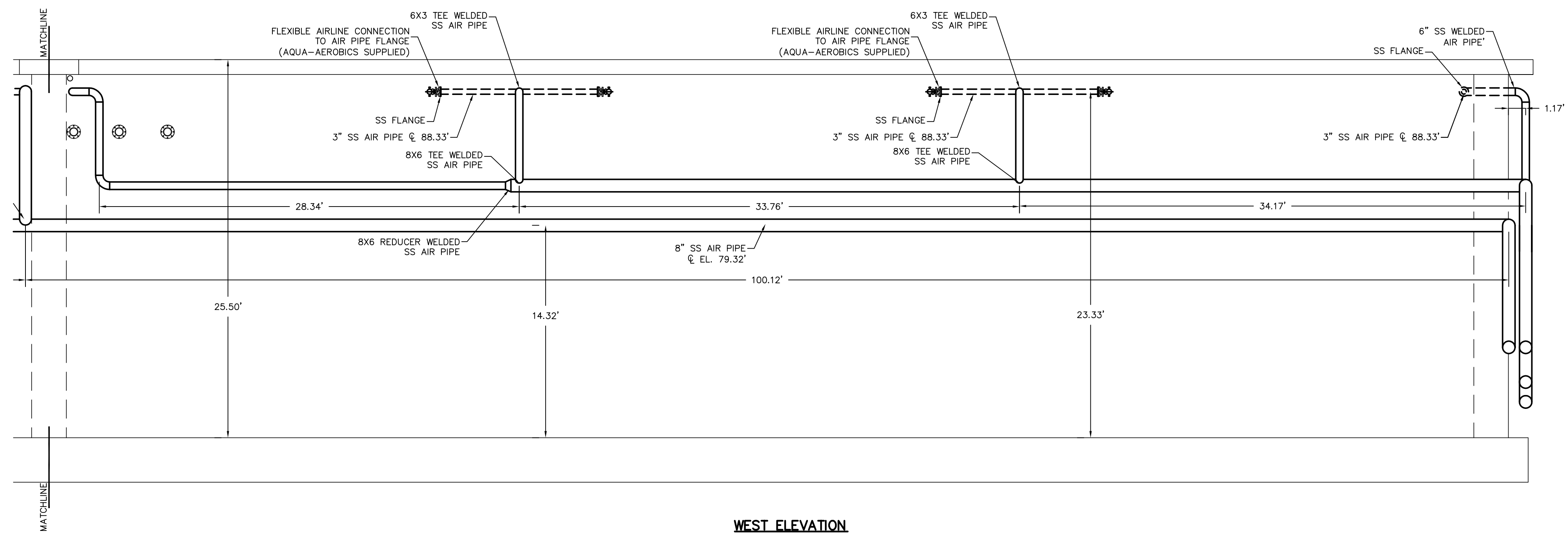
SBR  
Air Piping  
North Elevation

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: M-21

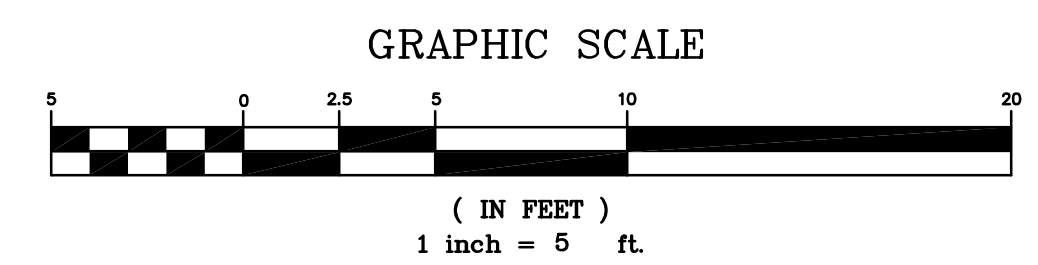
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WEST ELEVATION



WEST ELEVATION



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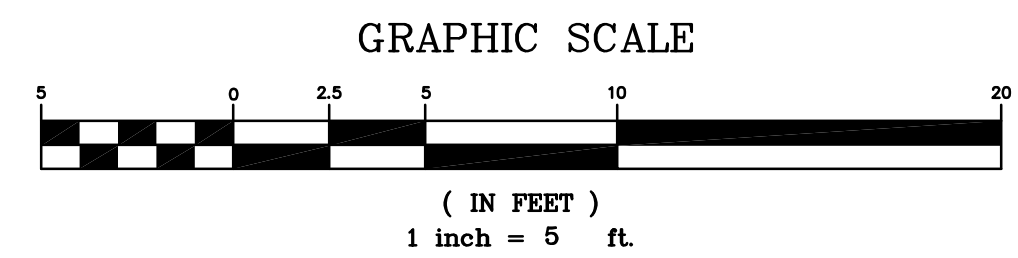
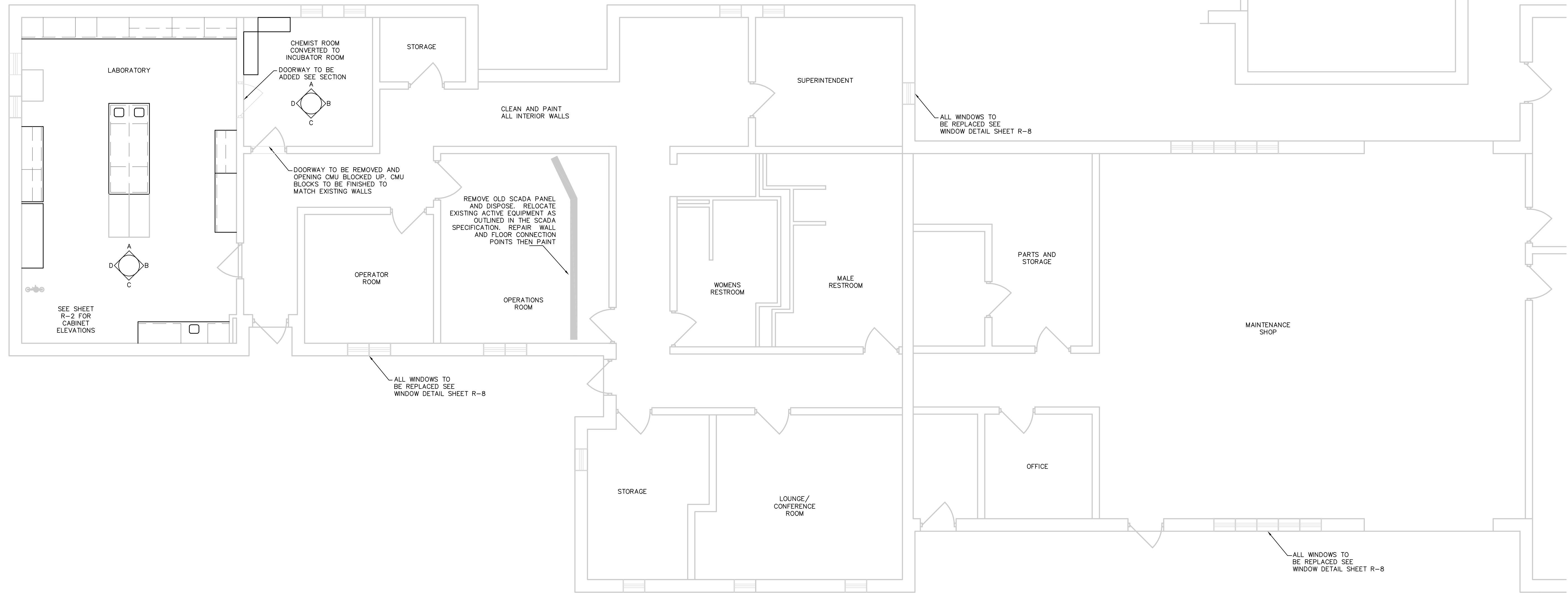
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for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

SBR  
Air Piping  
West Elevation

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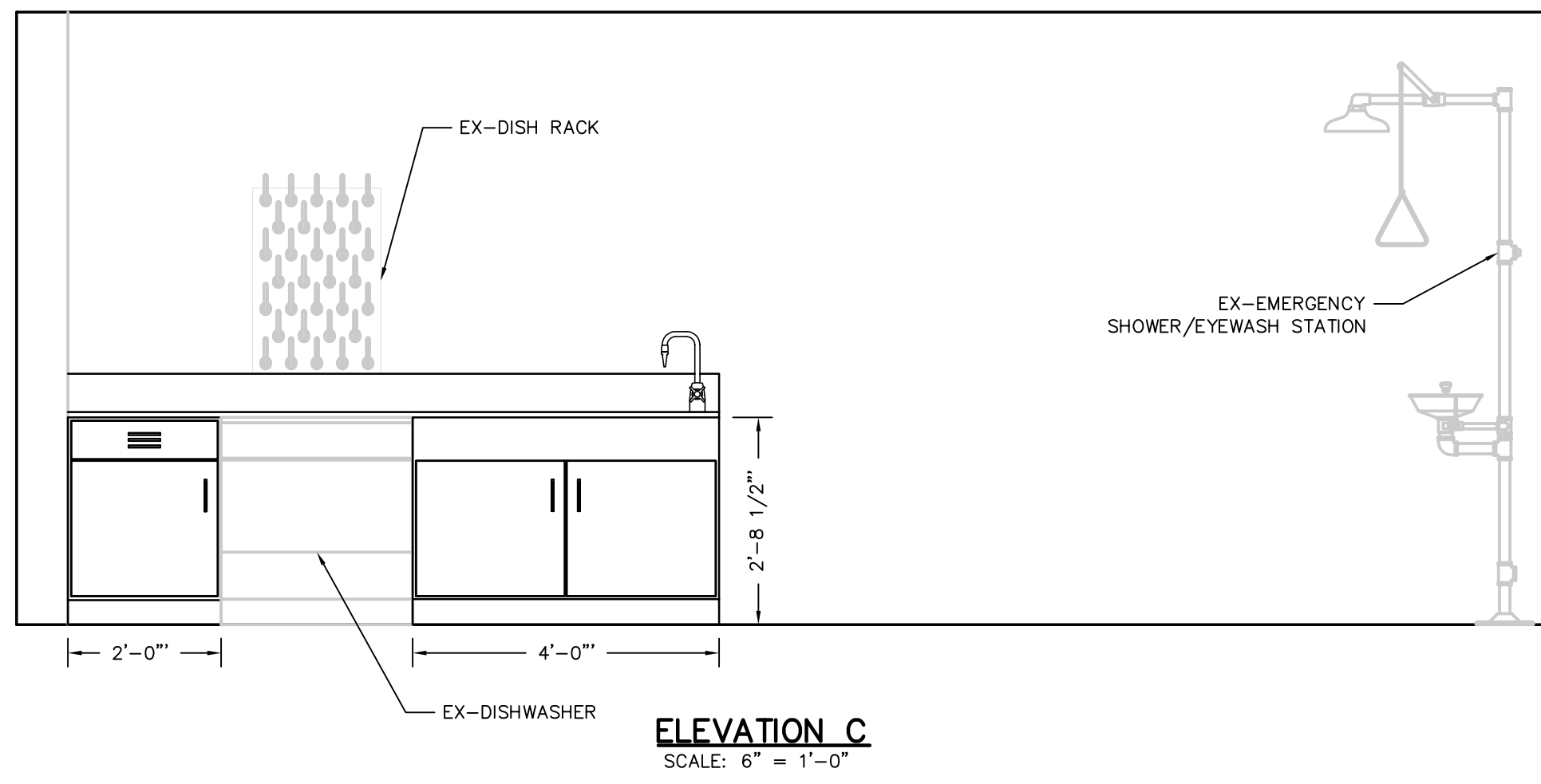
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for  
WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

Operations Building  
Plan

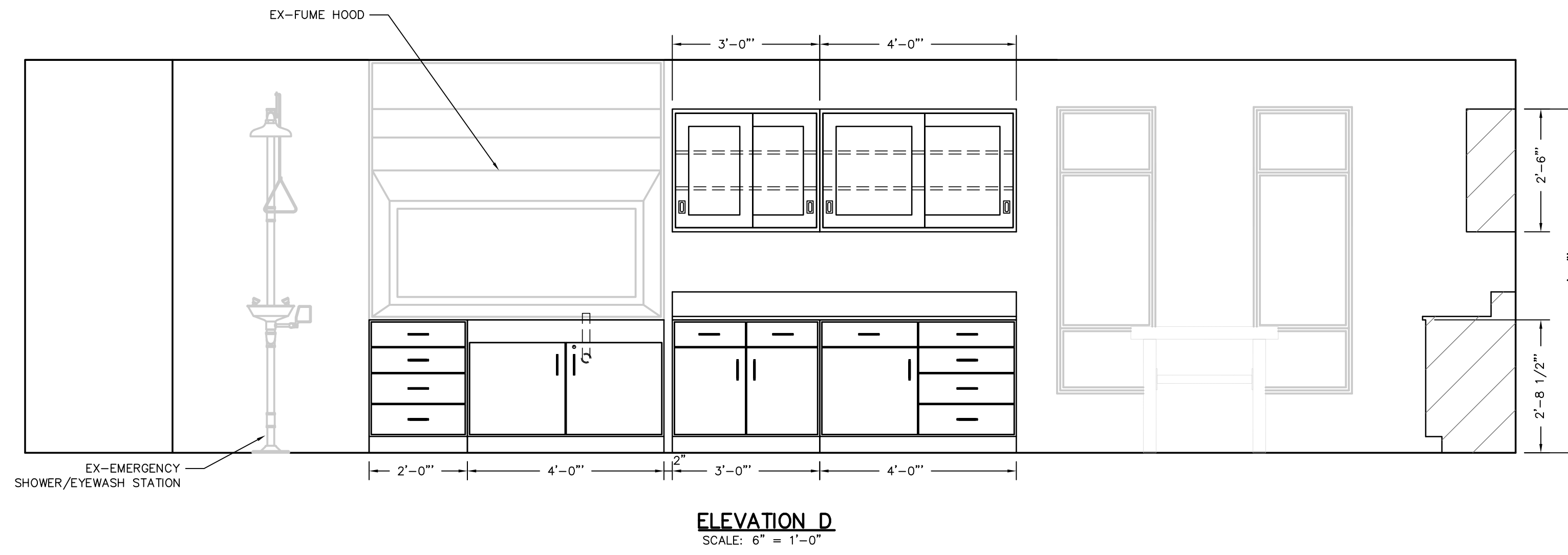
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-1



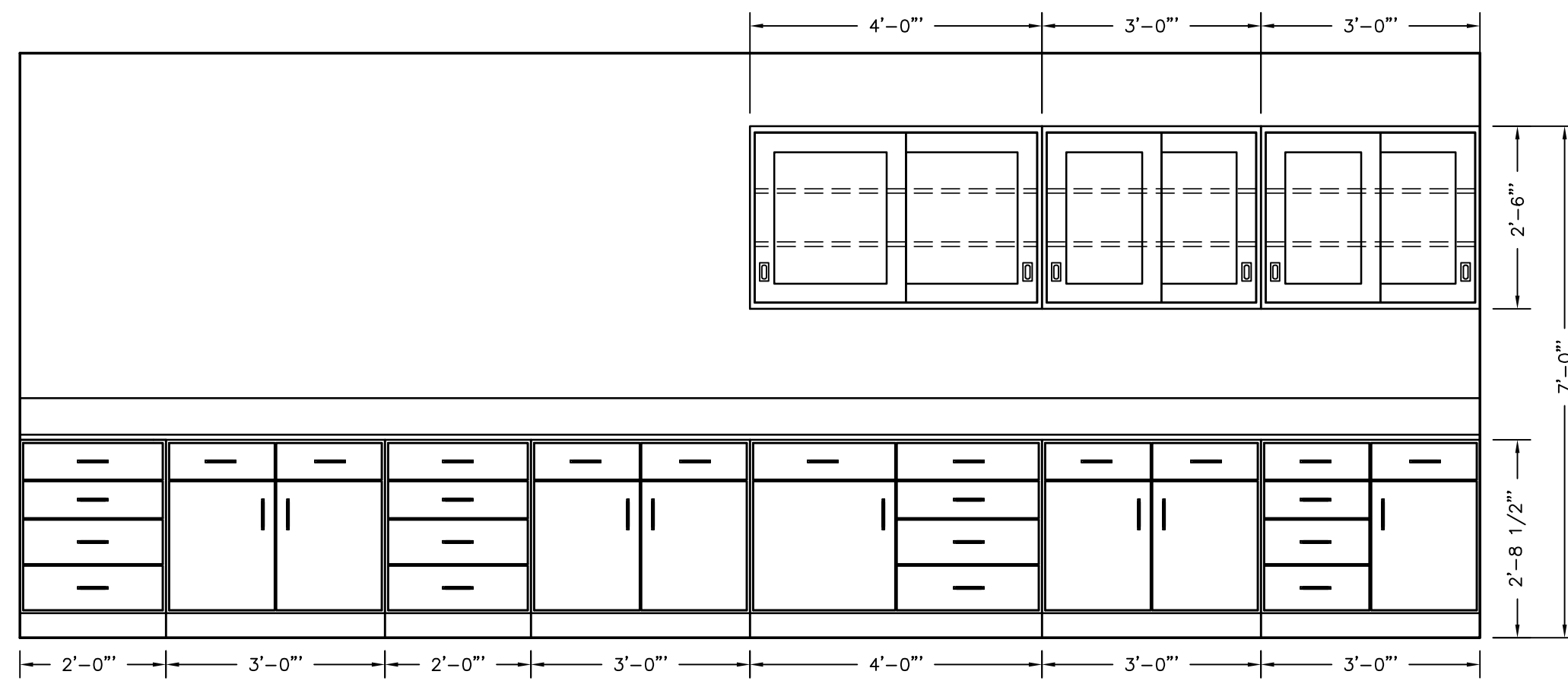
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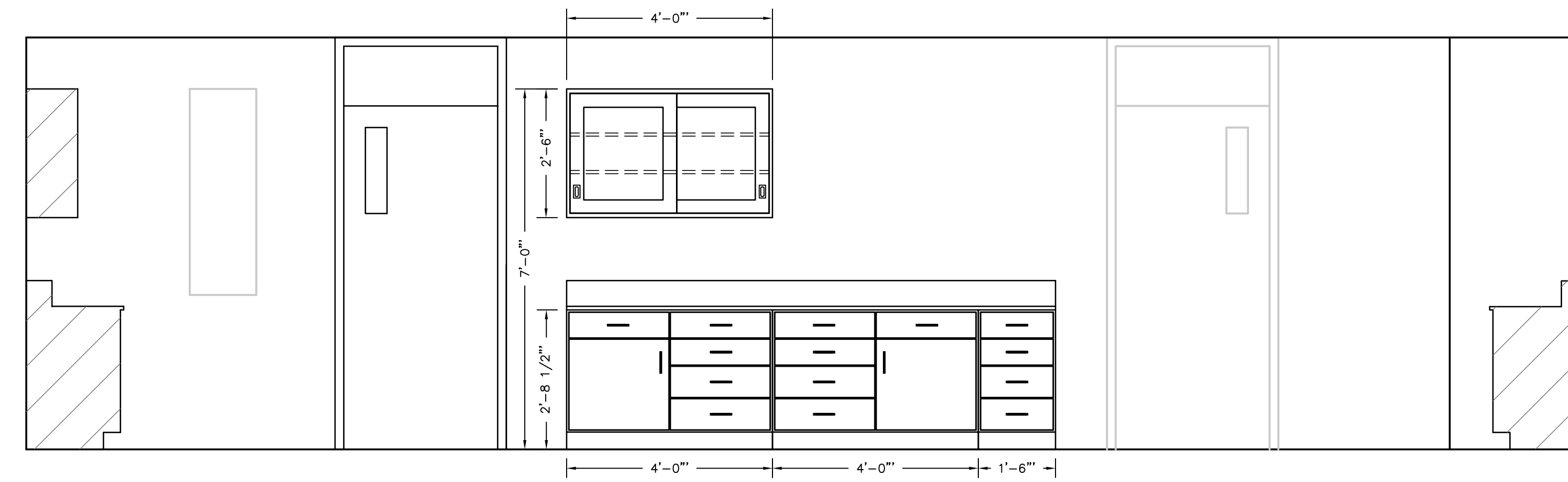
**ELEVATION C**  
SCALE: 6" = 1'-0"



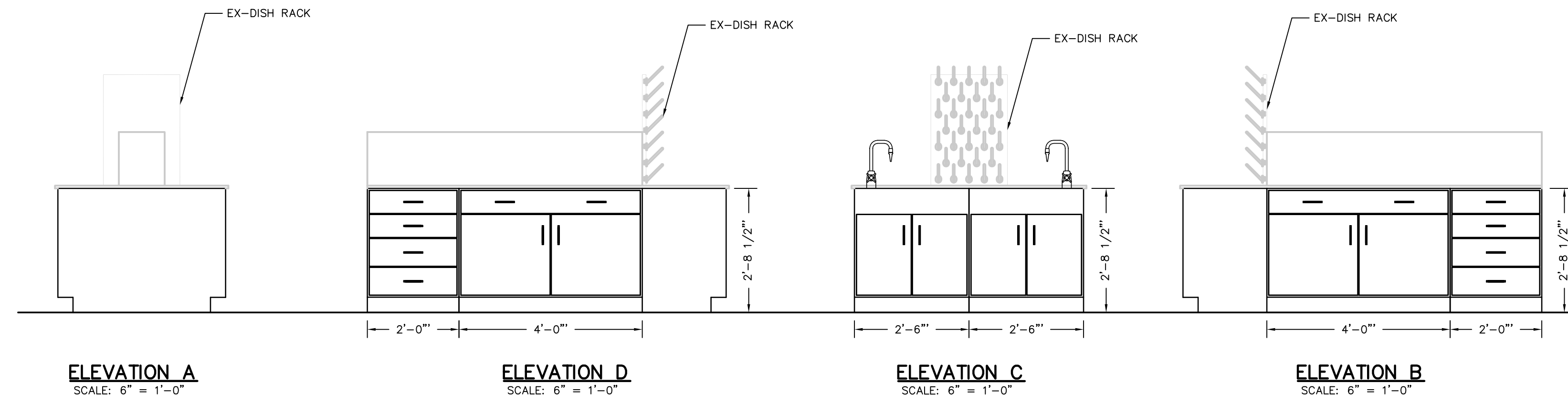
**ELEVATION D**  
SCALE: 6" = 1'-0"



**ELEVATION A**  
SCALE: 6" = 1'-0"



**ELEVATION B**  
SCALE: 6" = 1'-0"

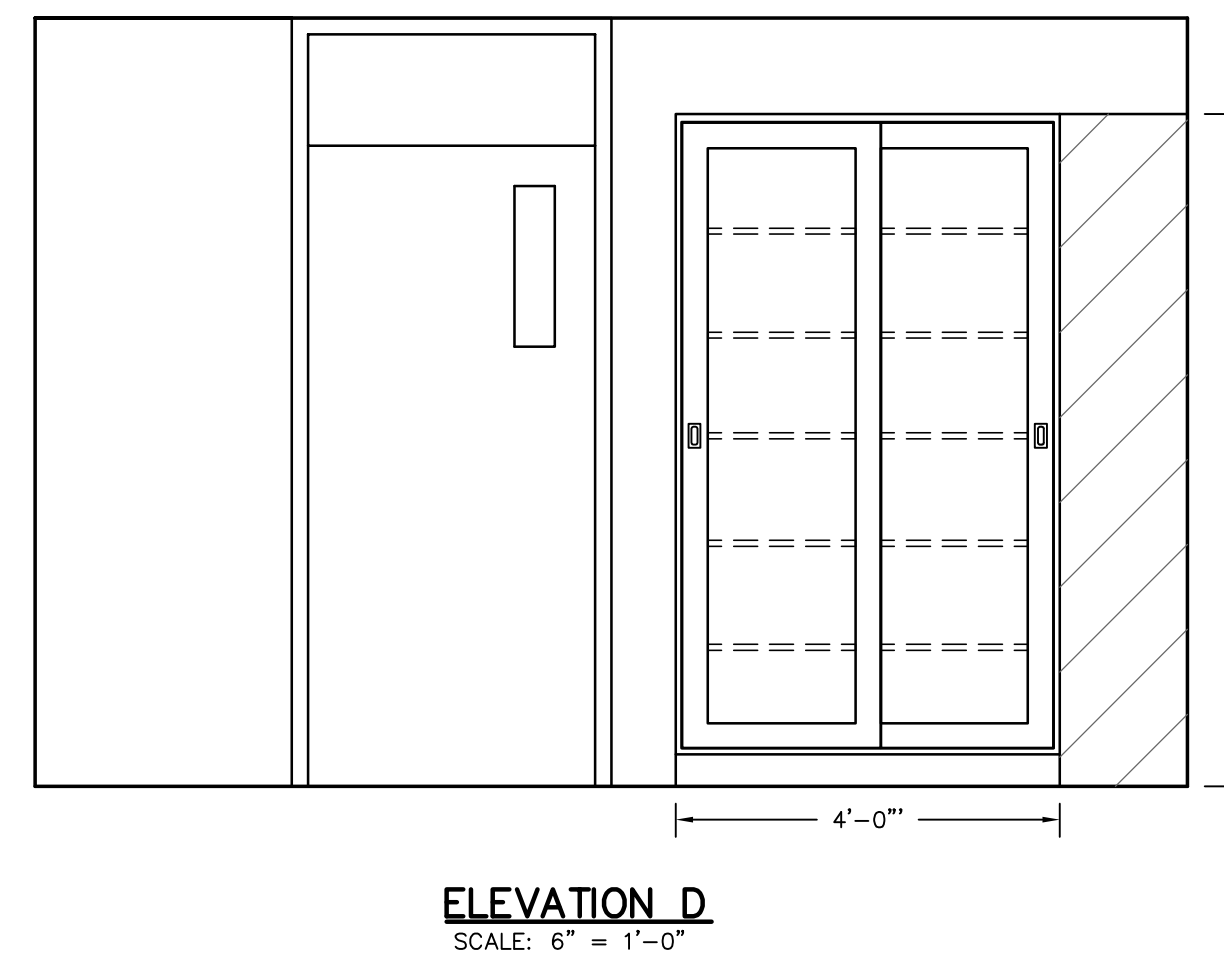


**ELEVATION A**  
SCALE: 6" = 1'-0"

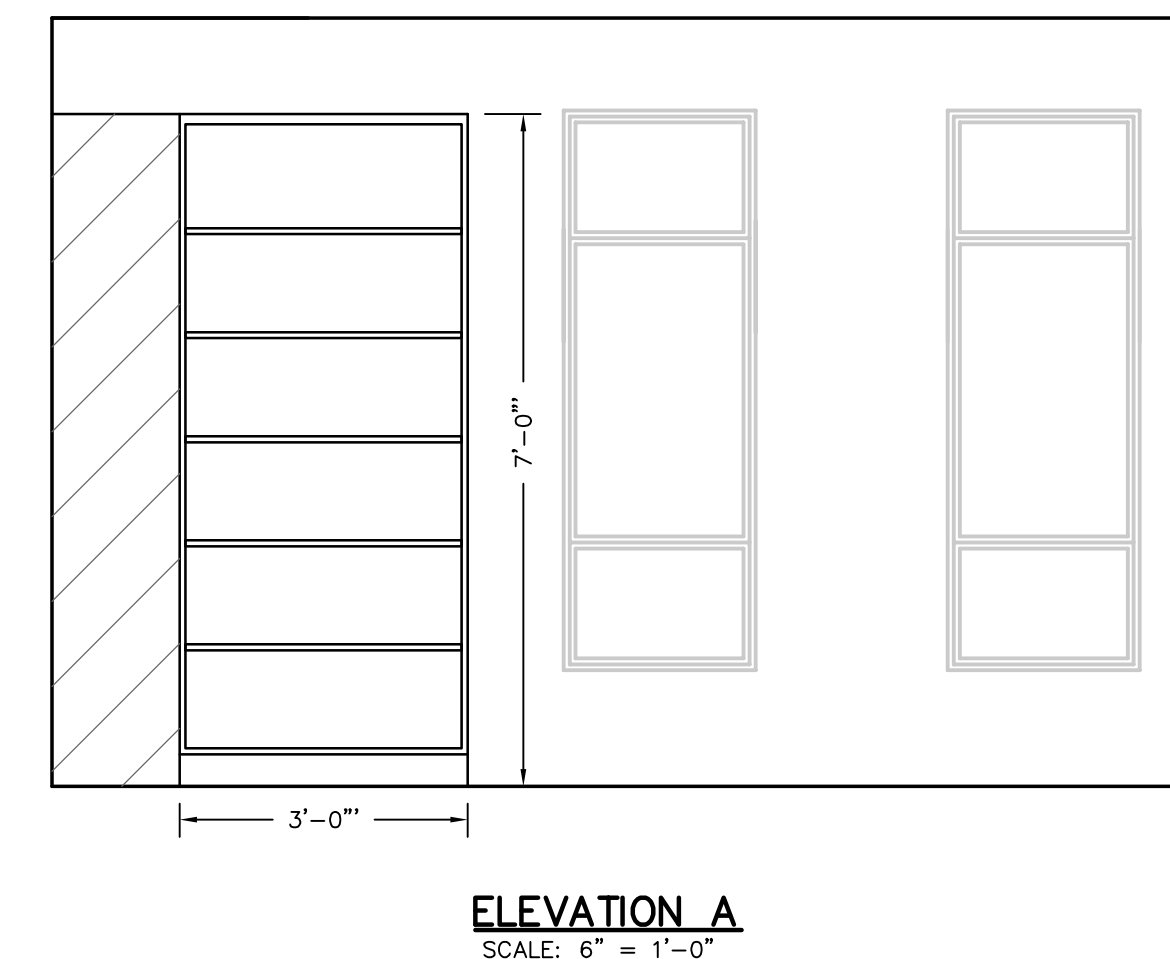
**ELEVATION D**  
SCALE: 6" = 1'-0"

**ELEVATION C**  
SCALE: 6" = 1'-0"

**ELEVATION B**  
SCALE: 6" = 1'-0"



**ELEVATION D**  
SCALE: 6" = 1'-0"



**ELEVATION A**  
SCALE: 6" = 1'-0"

- GENERAL NOTES:
1. FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION.
  2. PROVIDE FIXED PANELS AT ALL SINKS FOR CABINETS FOR APPROVAL PRIOR TO CABINETS MANUFACTURE AND INSTALLATION.
  3. FIELD VERIFY DIMENSIONS OF ALL OWNER FURNISHED EQUIPMENT THAT IS BUILT IN.
  4. ALL EXPOSED AND SEMI-EXPOSED SURFACES OF PLYWOOD TO BE COVERED WITH PLASTIC LAMINATE. REFER TO PLASTIC LAMINATE SCHEDULE.
  5. CABINETS TO BE MANUFACTURED IAW AWI QUALITY STANDARDS SECTION 400.
  6. ALL DRAWER AND DOOR PULLS TO BE 4" BRUSHED ALUMINUM WIRE PULLS. CONTRACTOR TO SUBMIT PROPOSED HARDWARE SCHEDULE AND SAMPLES TO ENGINEER PRIOR TO MANUFACTURE AND INSTALLATION FOR APPROVAL.
  7. NO PARTICLE BOARD TO BE USED.
  8. TYPICAL BASE CABINET-HEIGHT AS SHOWN X 22" DEEP WITH ONE ADJUSTABLE SHELF WITHIN.
  9. TYPICAL WALL CABINET-HEIGHT AS SHOWN X 13" DEEP WITH TWO ADJUSTABLE SHELF WITHIN.
  10. ELECTRICAL OUTLETS TO BE WALL MOUNTED EVERY 4' ALONG CABINET COUNTER TOPS.
  11. COUNTER TOP TO BE ACID RESISTANT EPOXY RESIN FOR LAVATORY USE.
  12. SINKS UNDER COUNTER MOUNTED TO BE OF SAME MATERIAL AS COUNTER TOPS 19X21X7
  13. FAUCETS TO BE MOEN #8948 DECK MOUNTED.
  14. GAS CONNECTIONS TO BE REINSTALLED IN LOCATIONS OF EXISTING COMPONENTS REPLACE HARDWARE AS REQUIRED.



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TEL: (706) 454-4870

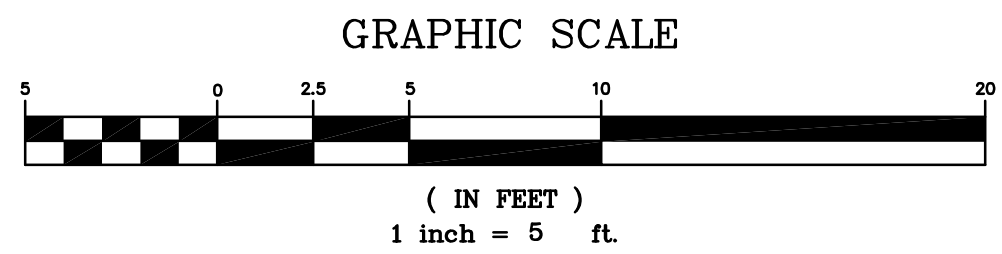
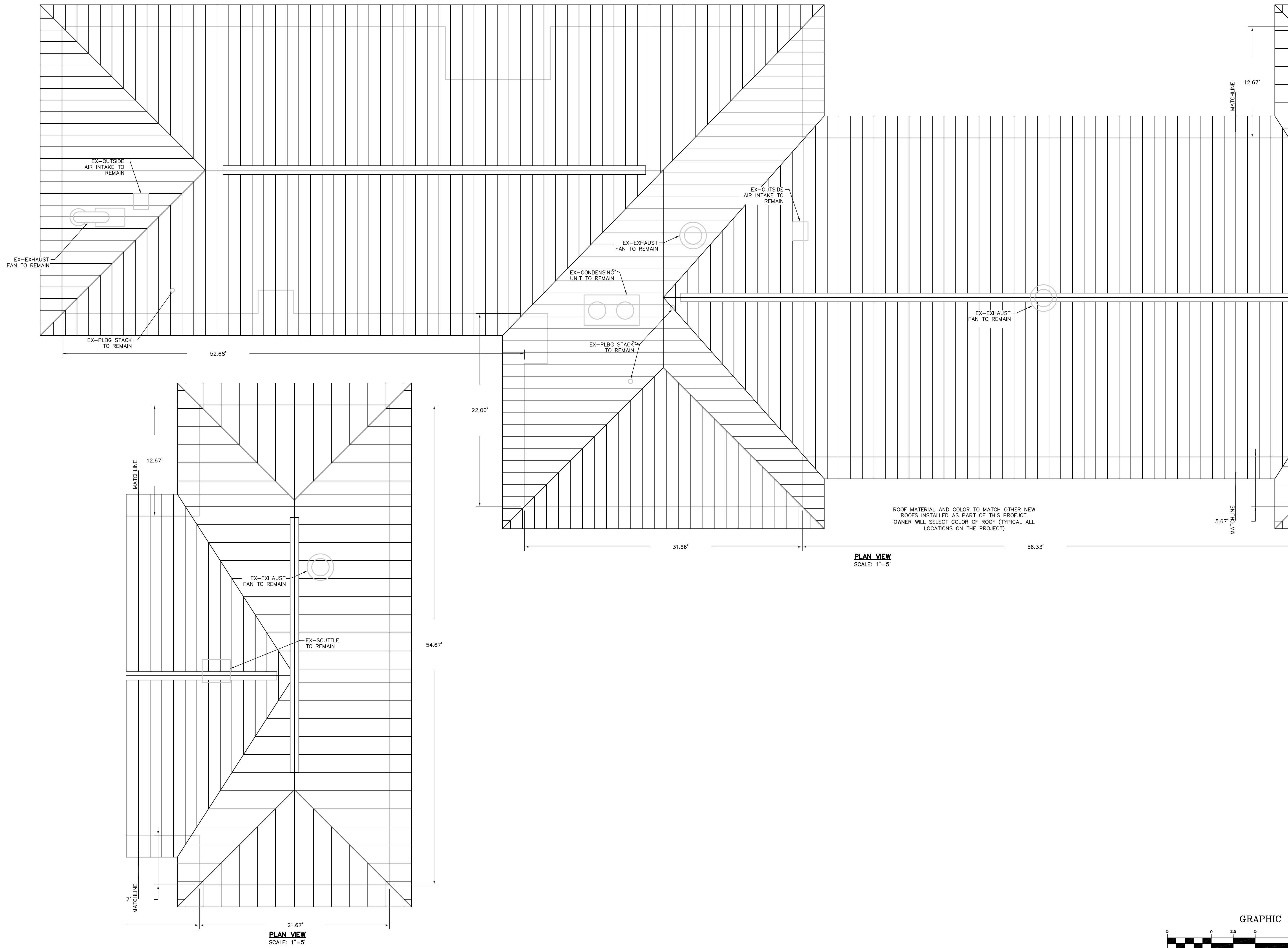
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for  
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Ft Stewart  
Liberty County, Georgia

Operations Building  
Elevations

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FILE NO: 2009-63PRJ  
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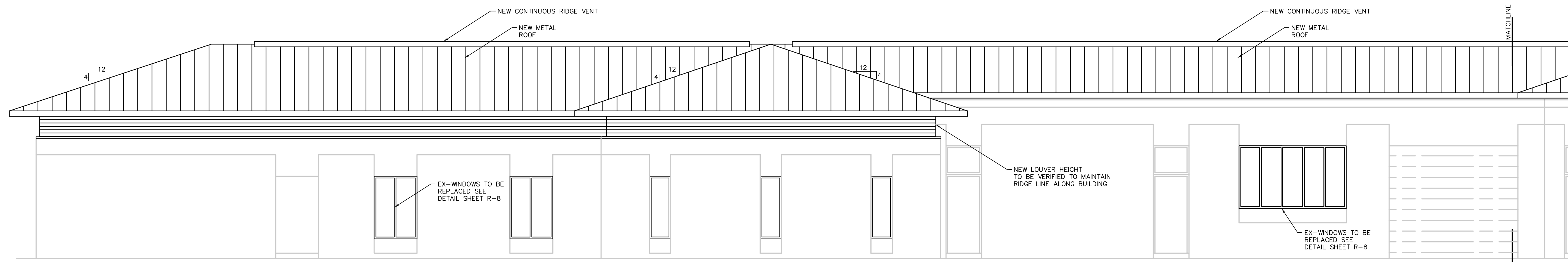
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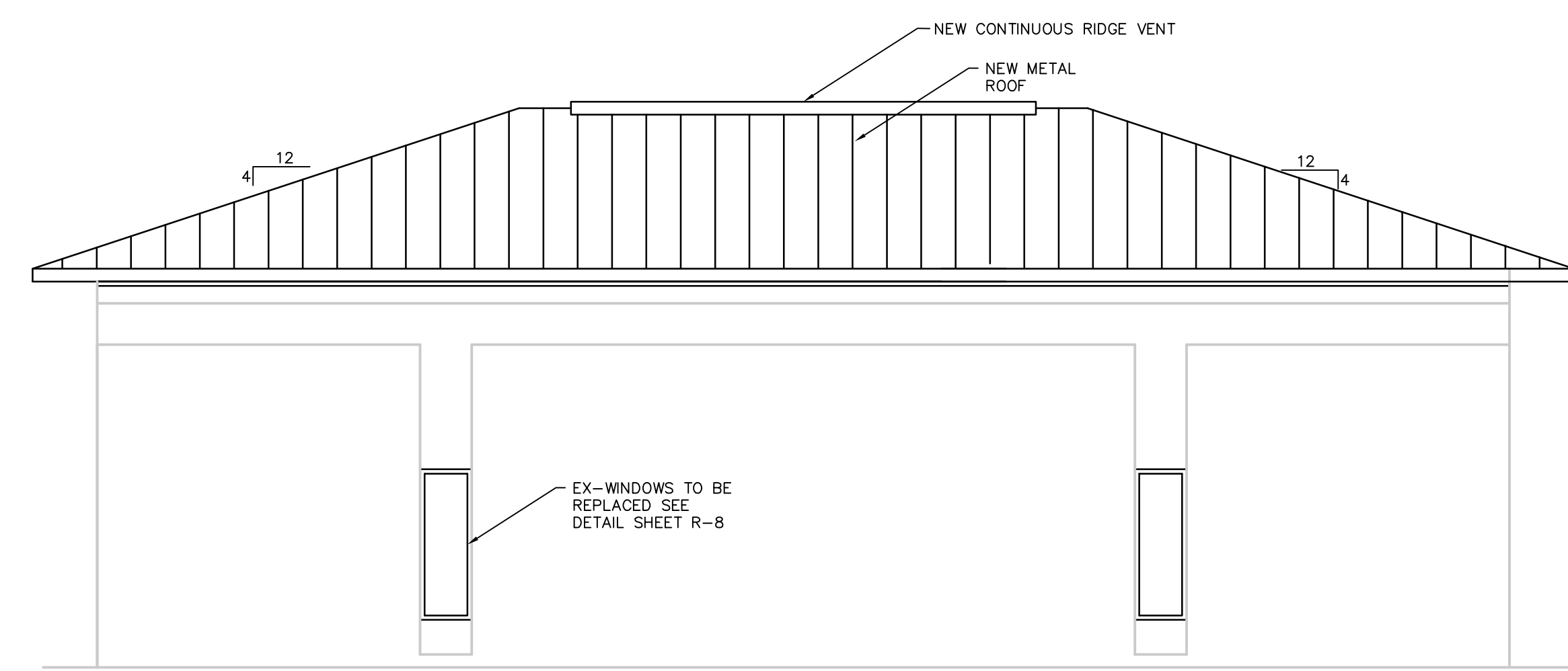
Operations Building  
Roofing Plan

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FILE NO: 2009-63PRJ  
SHEET: R-3

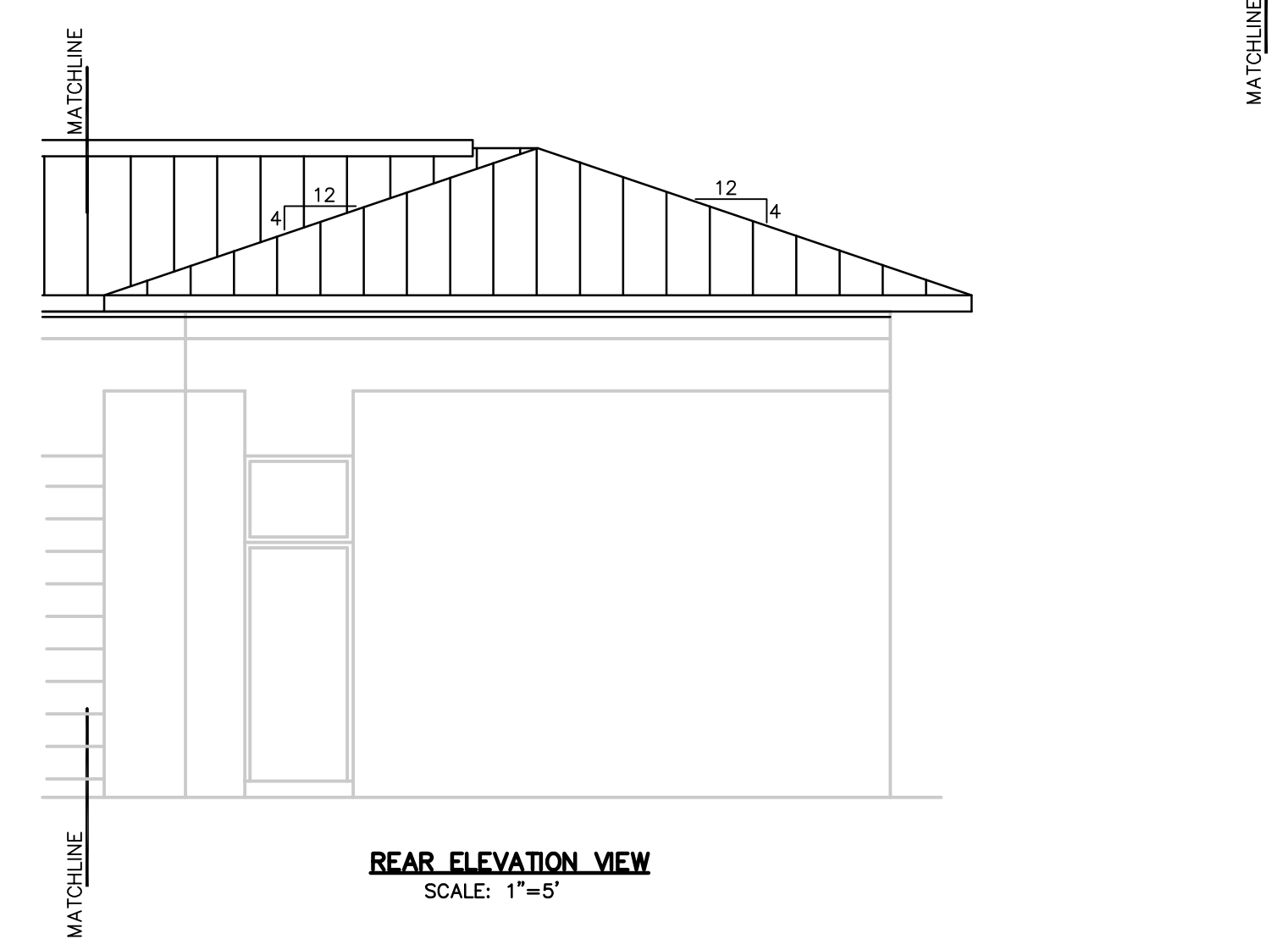
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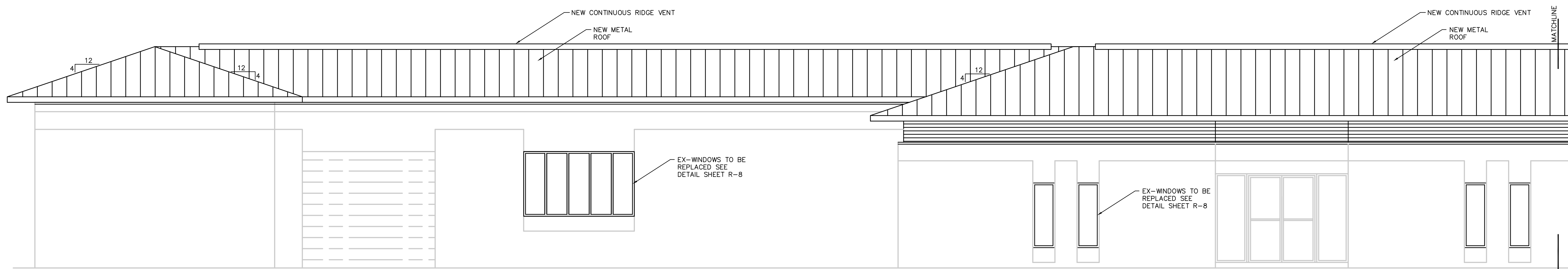
**REAR ELEVATION VIEW**  
SCALE: 1"=5'



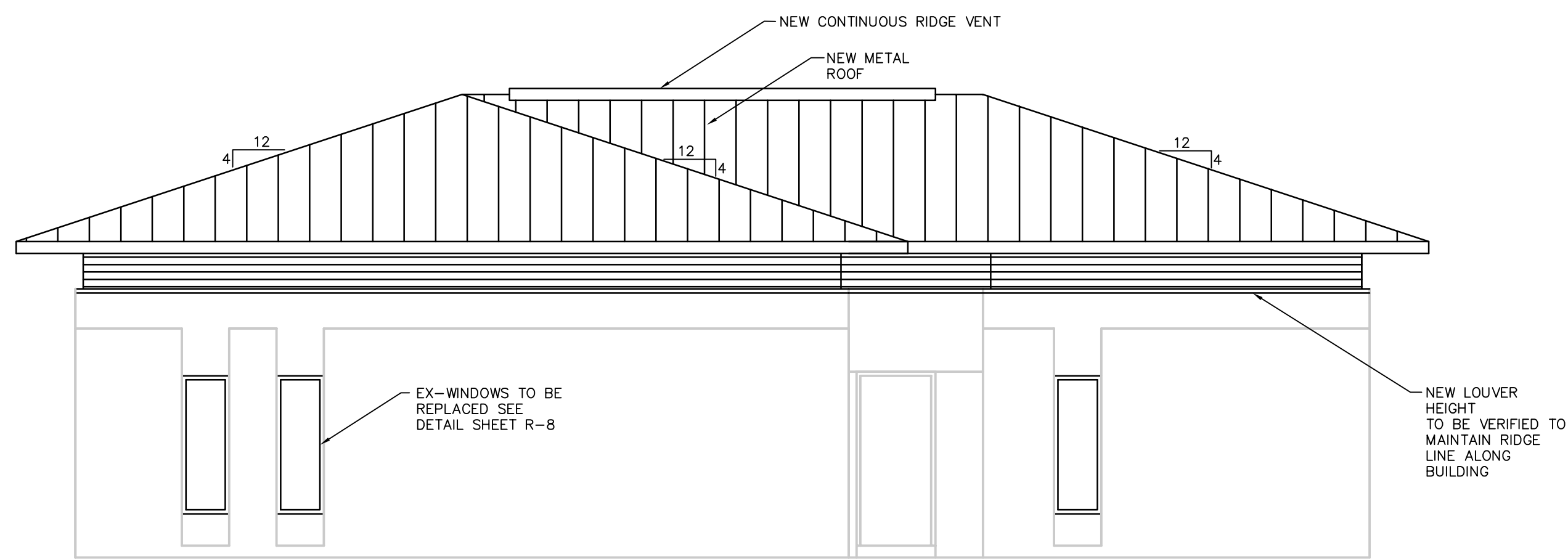
**LEFT ELEVATION VIEW**  
SCALE: 1"=5'



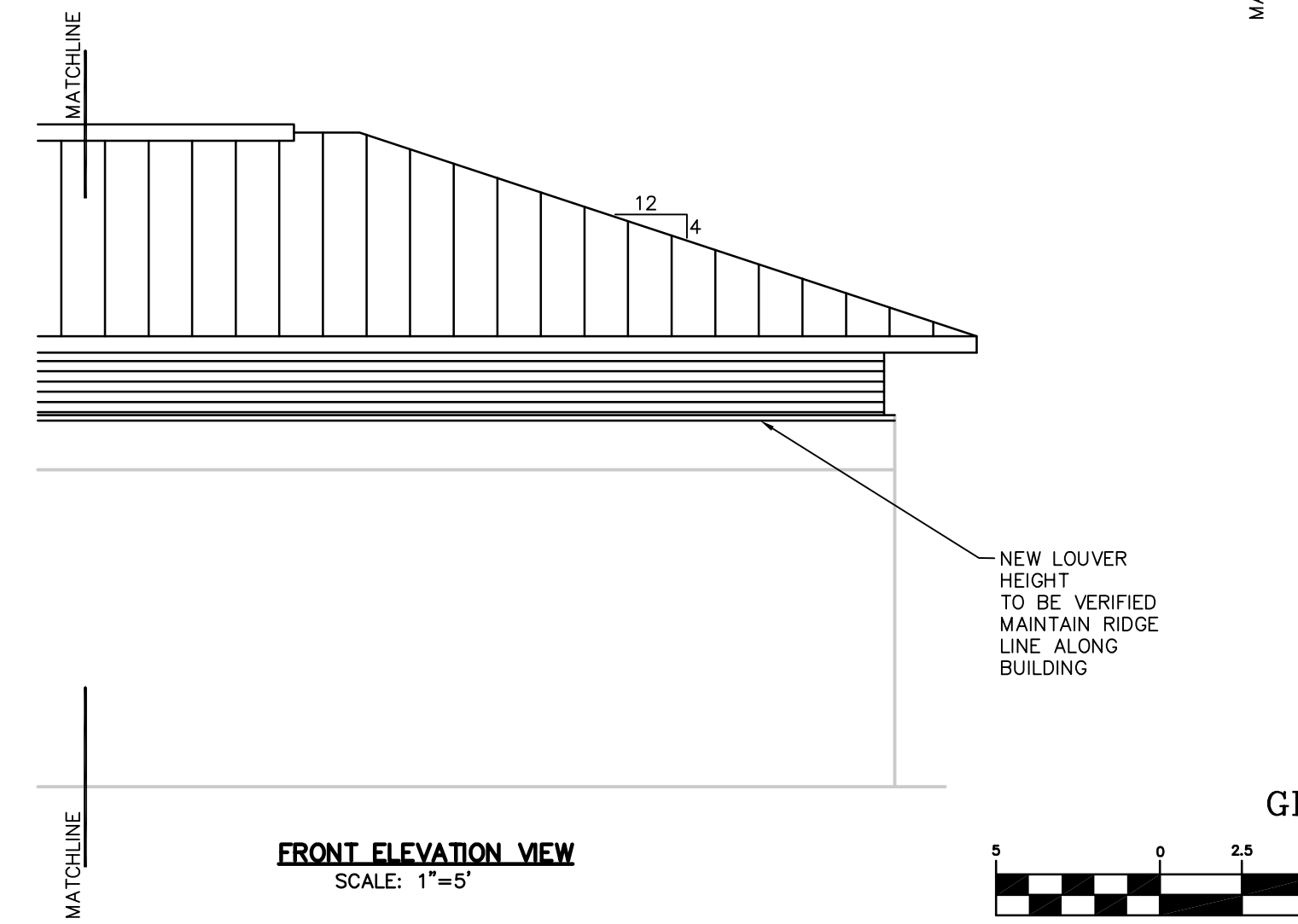
**REAR ELEVATION VIEW**  
SCALE: 1"=5'



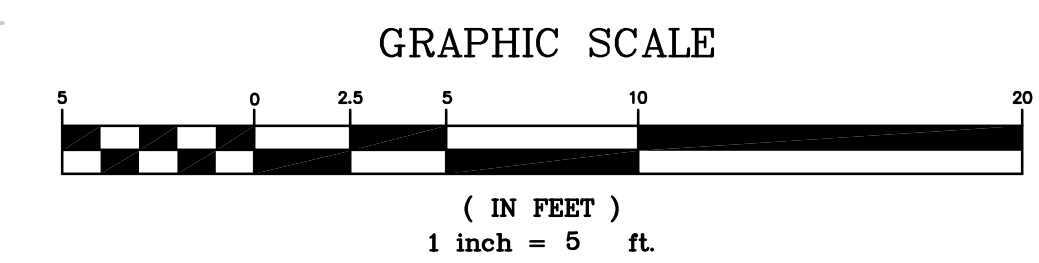
**FRONT ELEVATION VIEW**  
SCALE: 1"=5'



**RIGHT ELEVATION VIEW**  
SCALE: 1"=5'



**FRONT ELEVATION VIEW**  
SCALE: 1"=5'



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REVISED: \_\_\_\_\_



DATE: \_\_\_\_\_

309 NORTH MAIN STREET  
P.O. BOX 649  
HINESVILLE, GA 31133  
TEL: (912) 368-5212

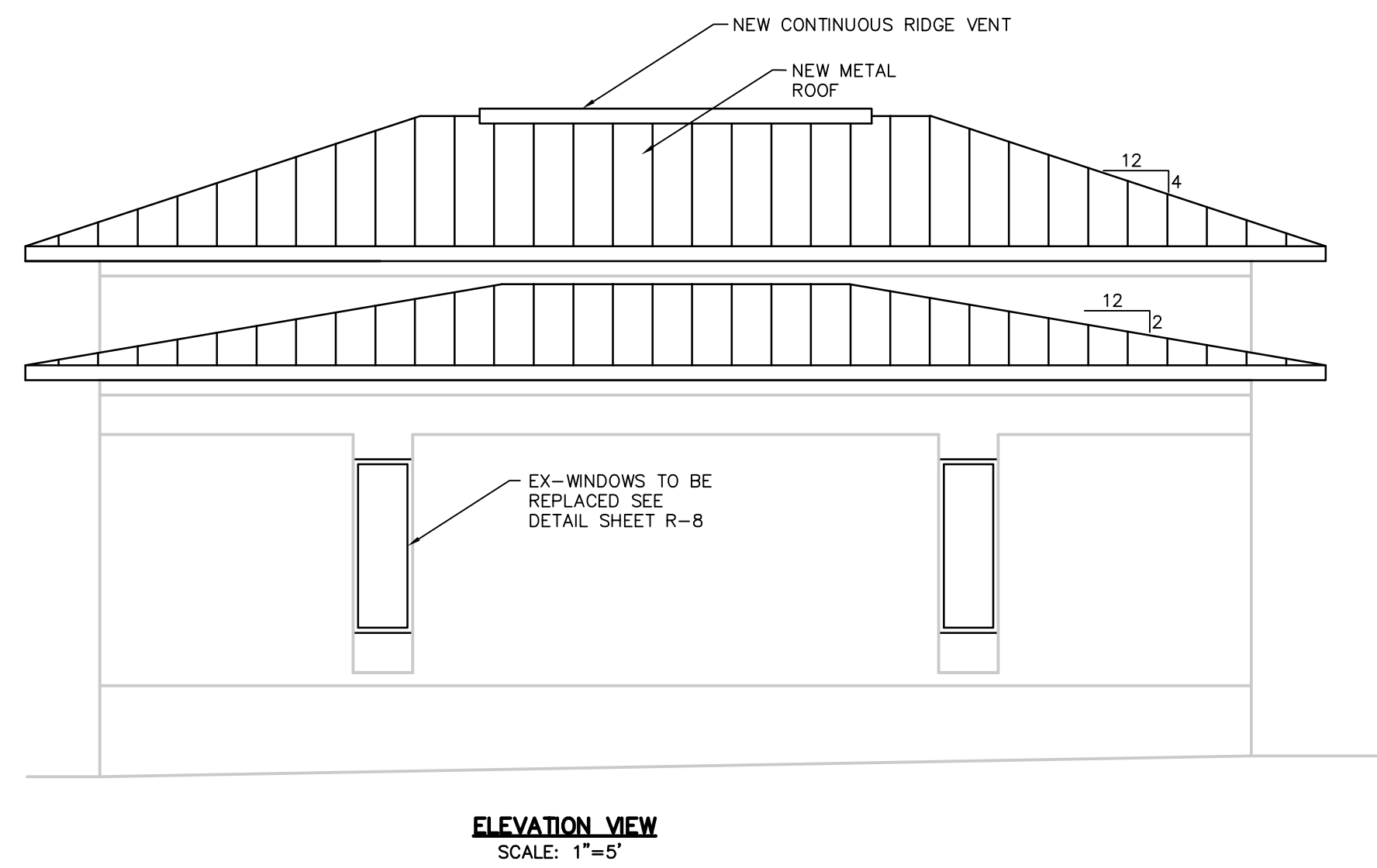
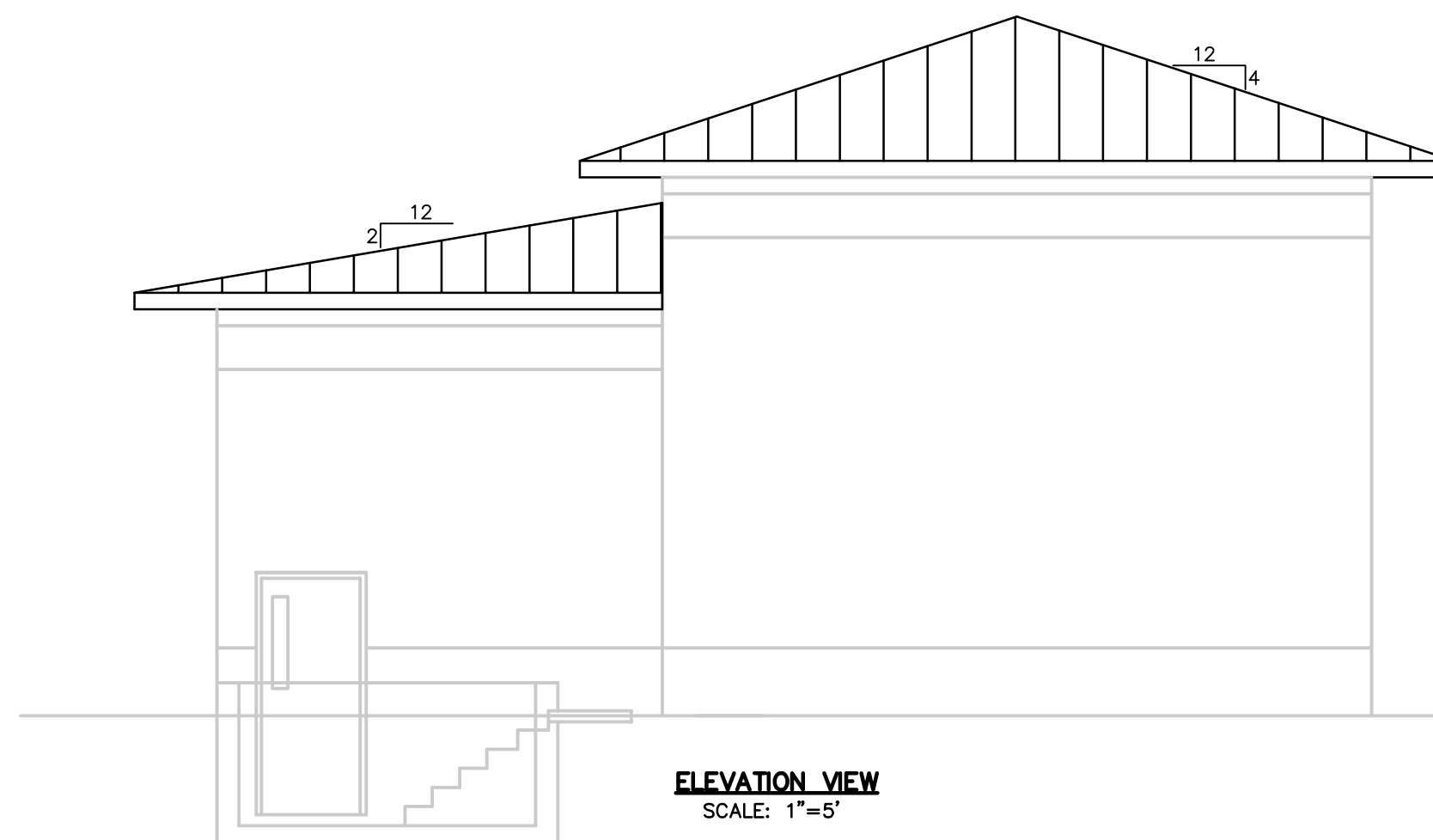
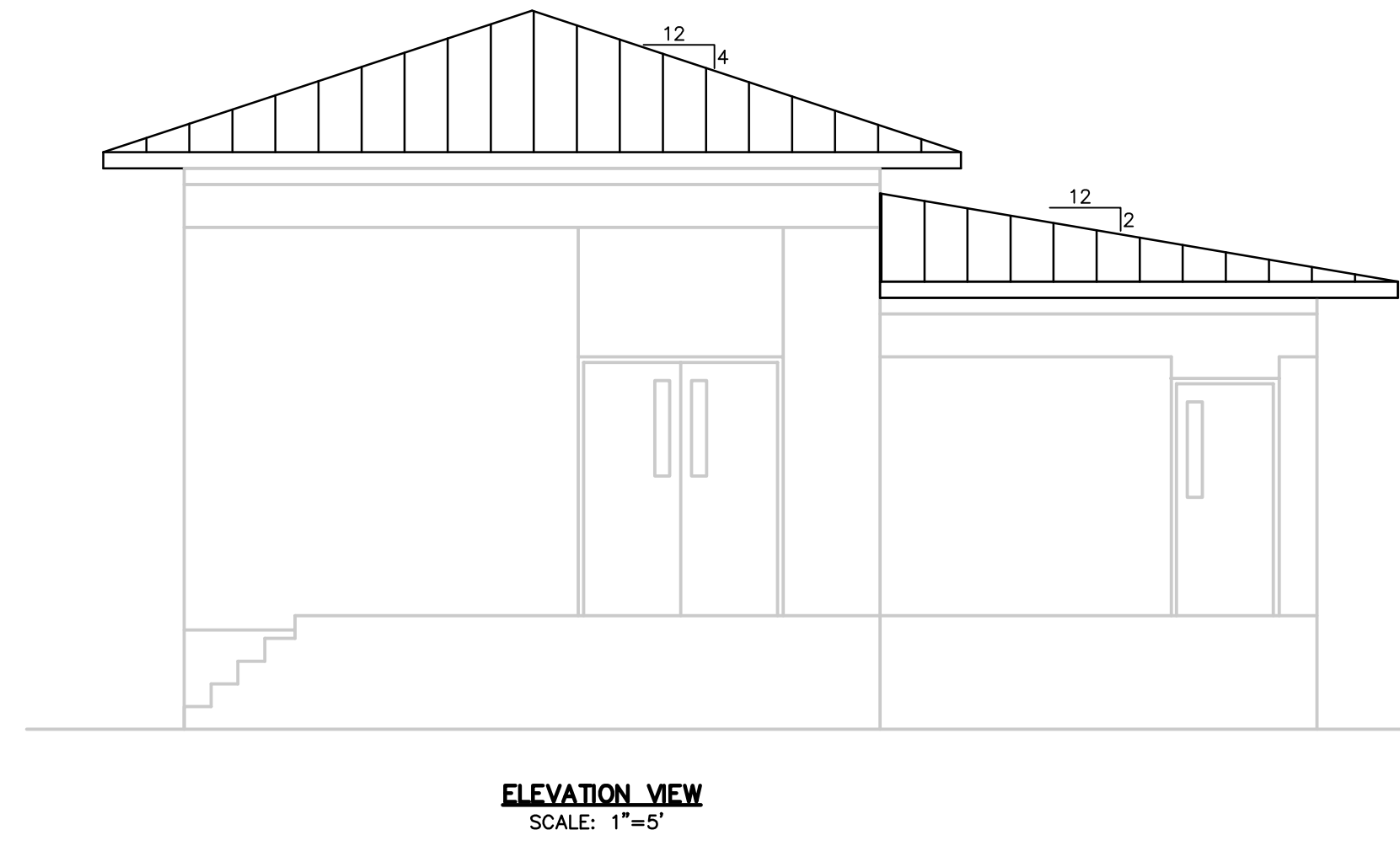
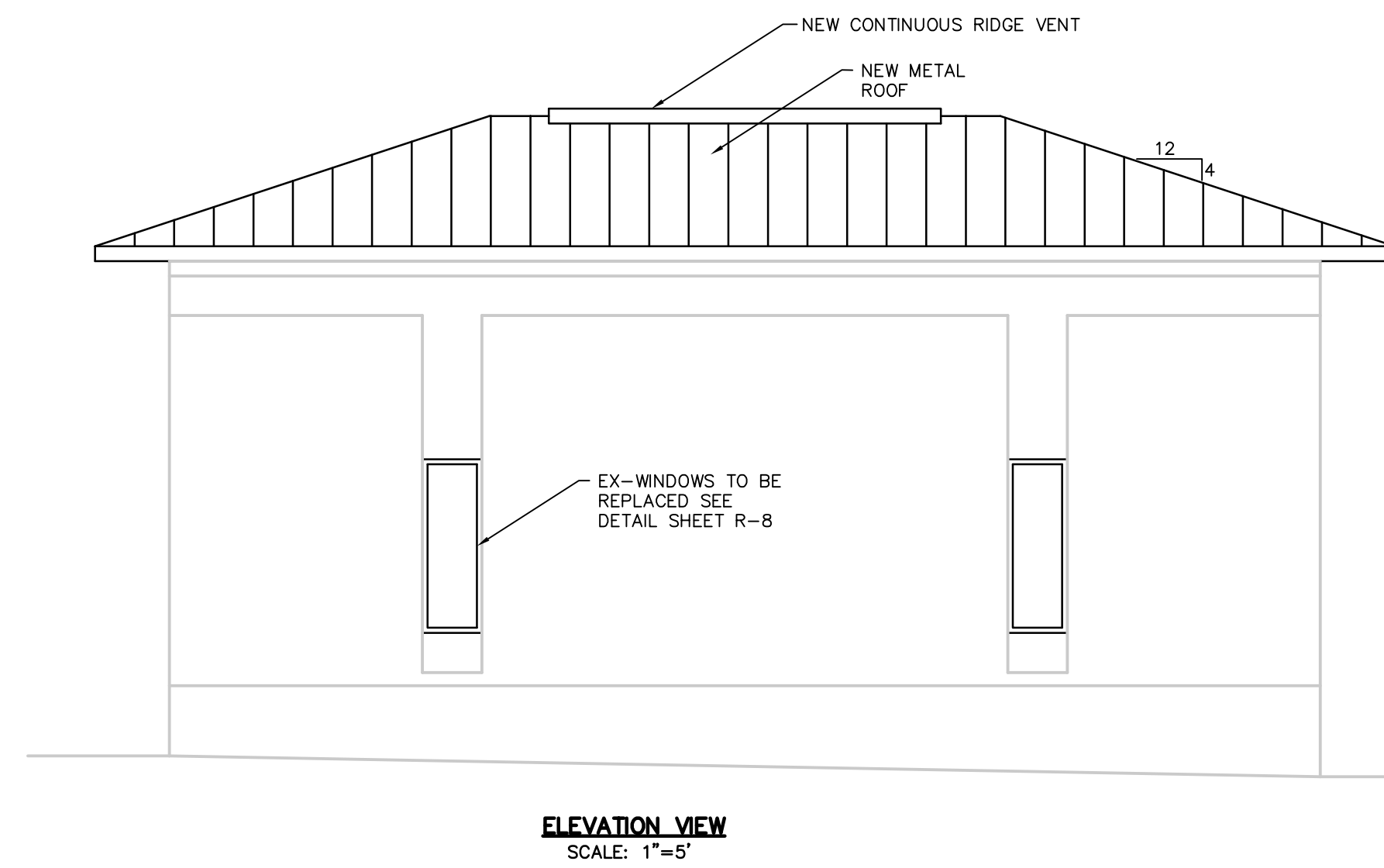
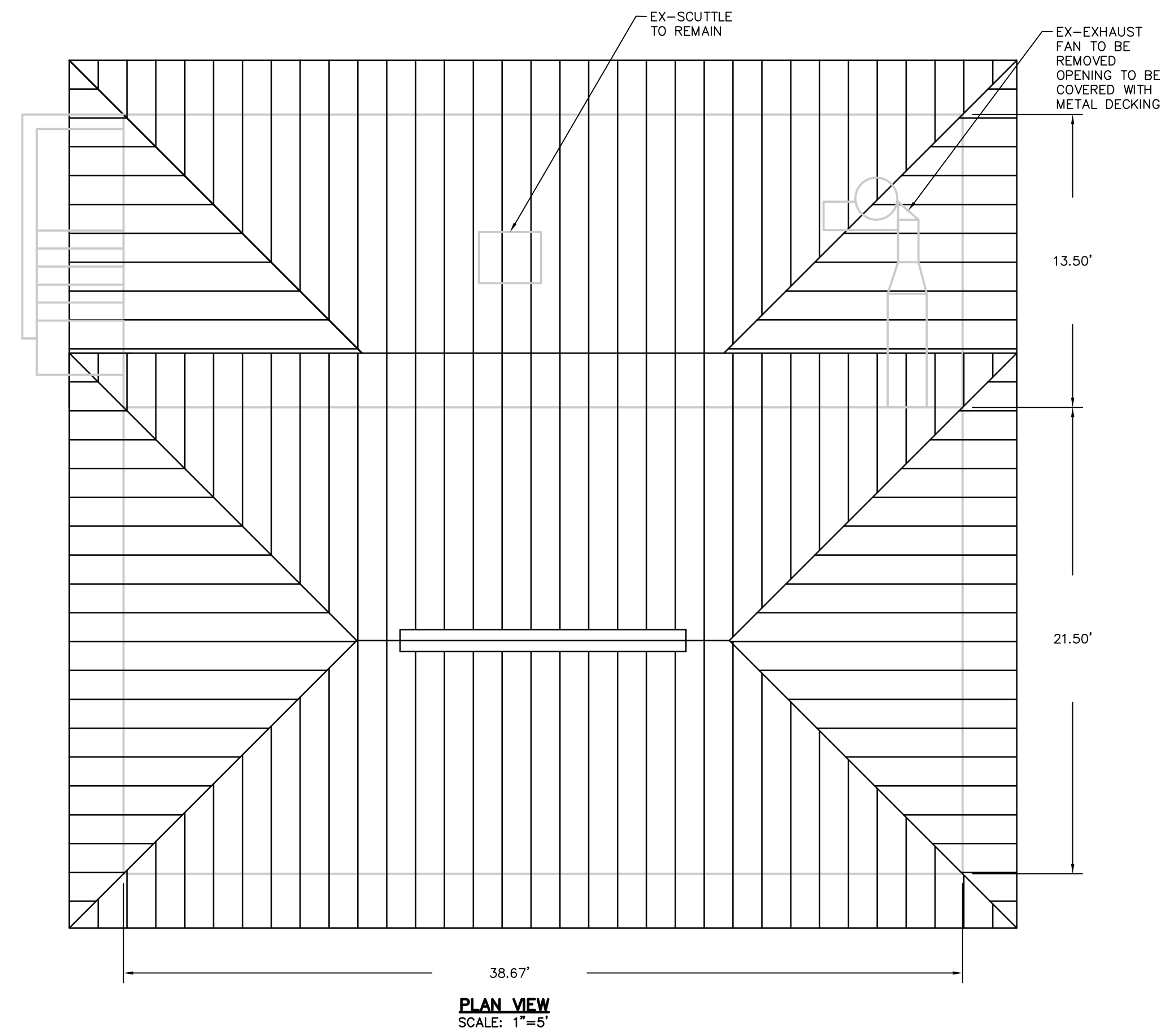
1050 PARKSIDE COMMONS  
SUITE 101  
GREENSBORO, NC 27409  
TEL: (706) 454-0870

**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

**Hinesville/Ft Stewart  
for  
WWTP Upgrade  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Operations Building  
Elevations

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-4



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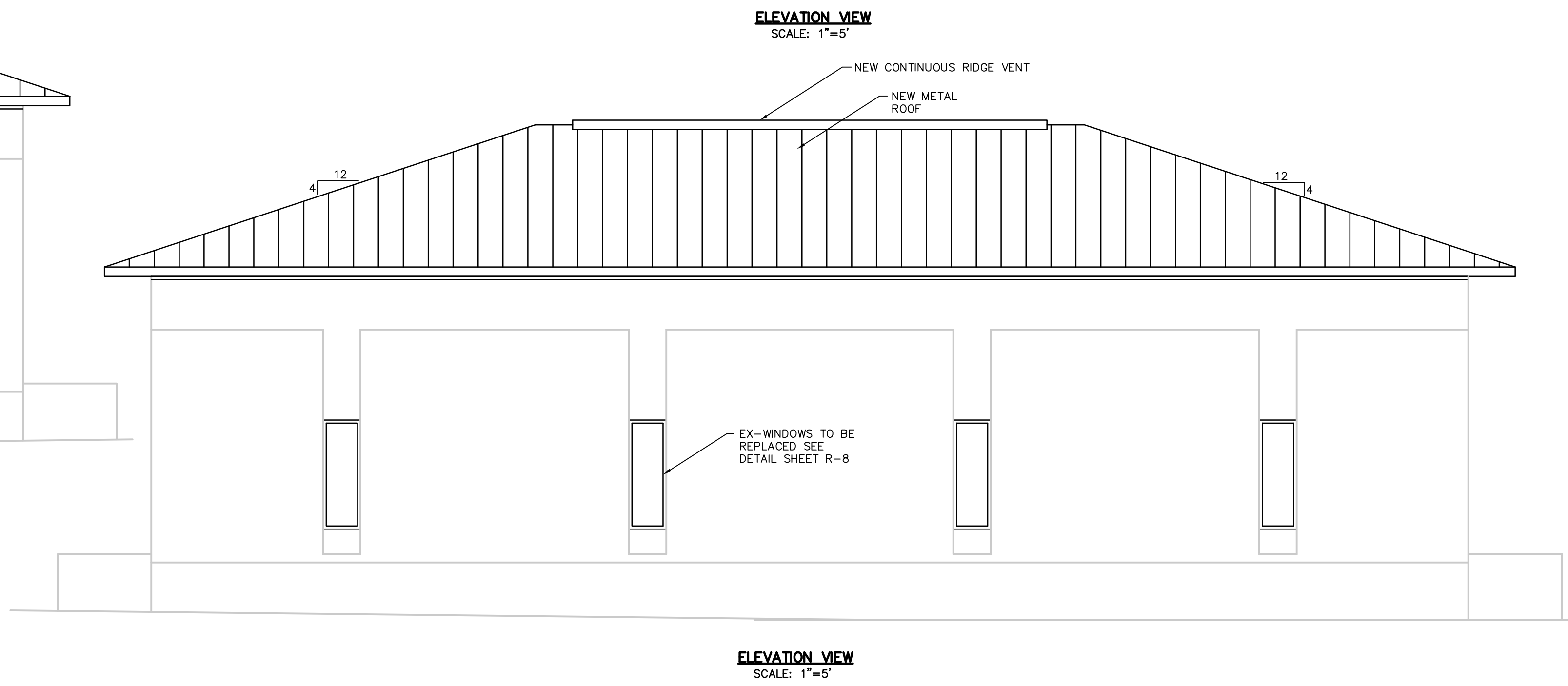
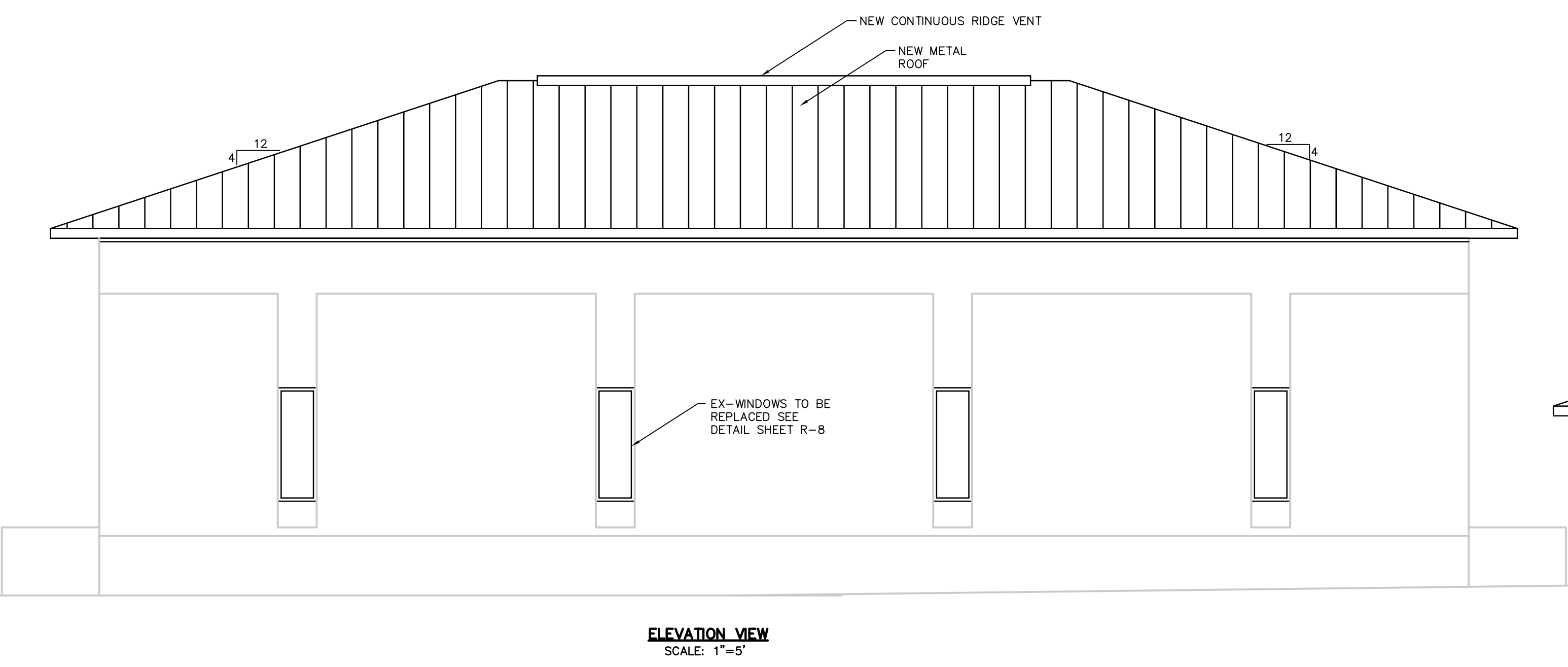
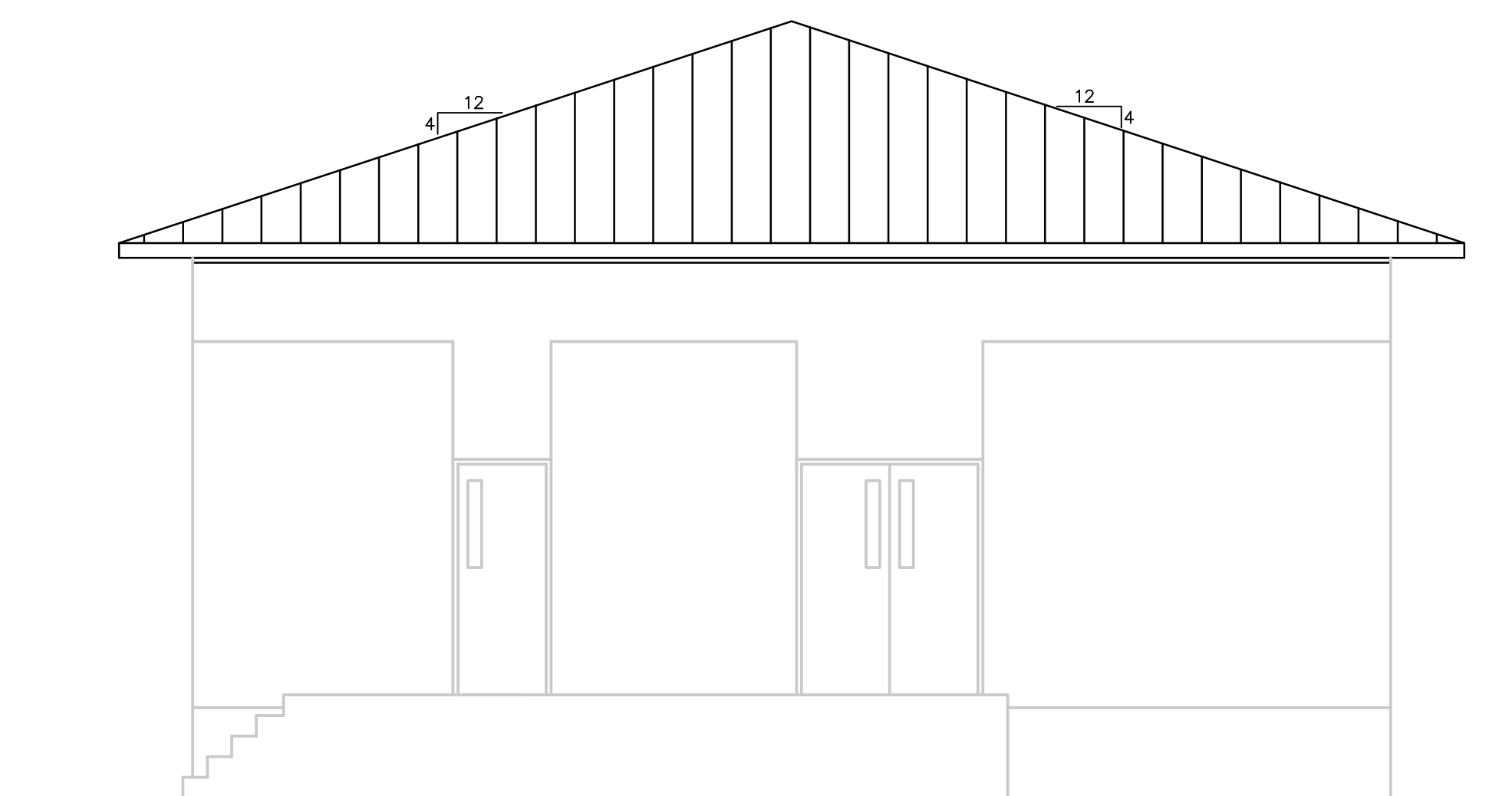
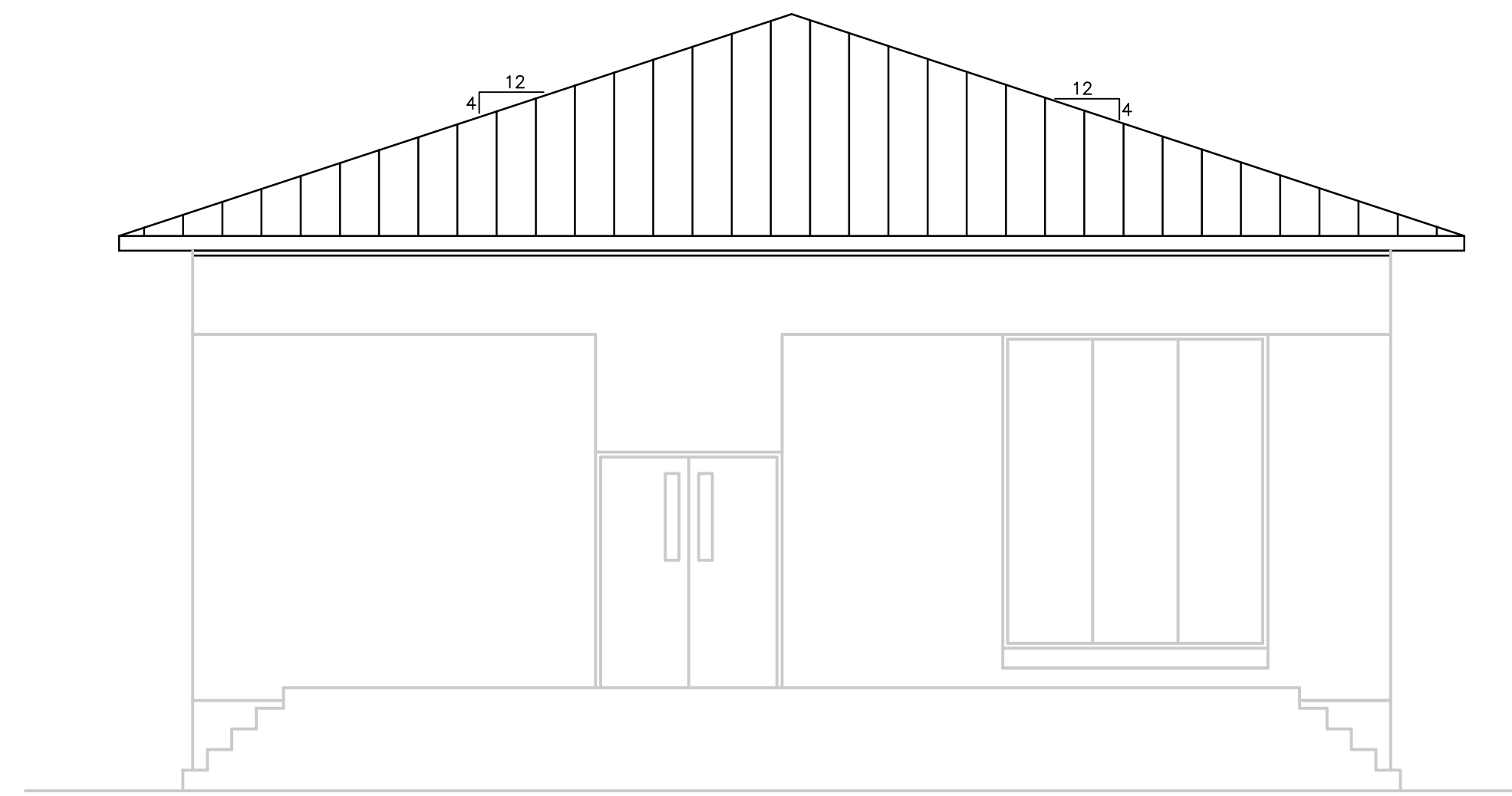
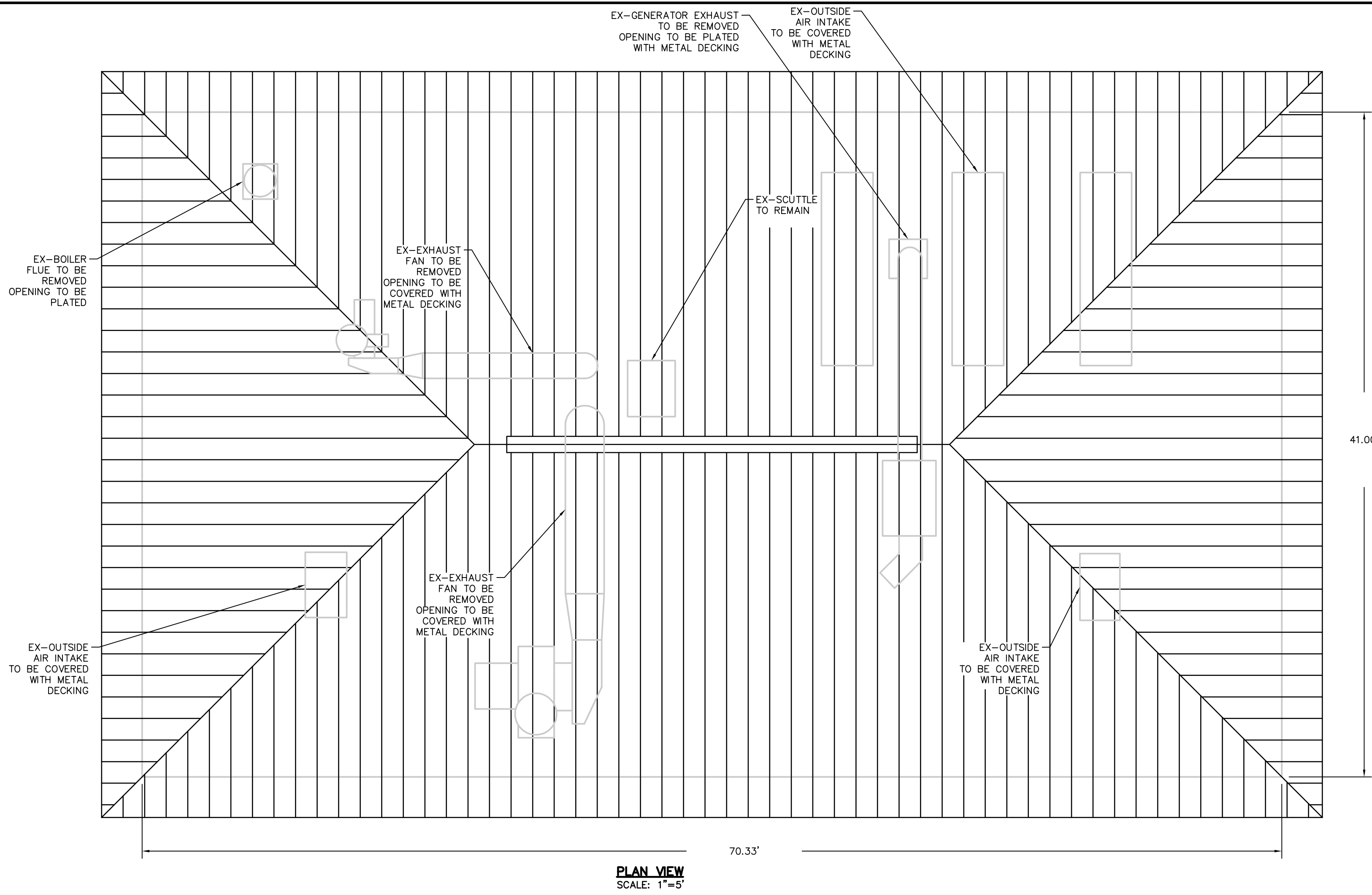
**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

**Hinesville/Ft Stewart  
WWTP Upgrade  
for  
The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Return Sludge PS

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-5

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Consulting Engineers

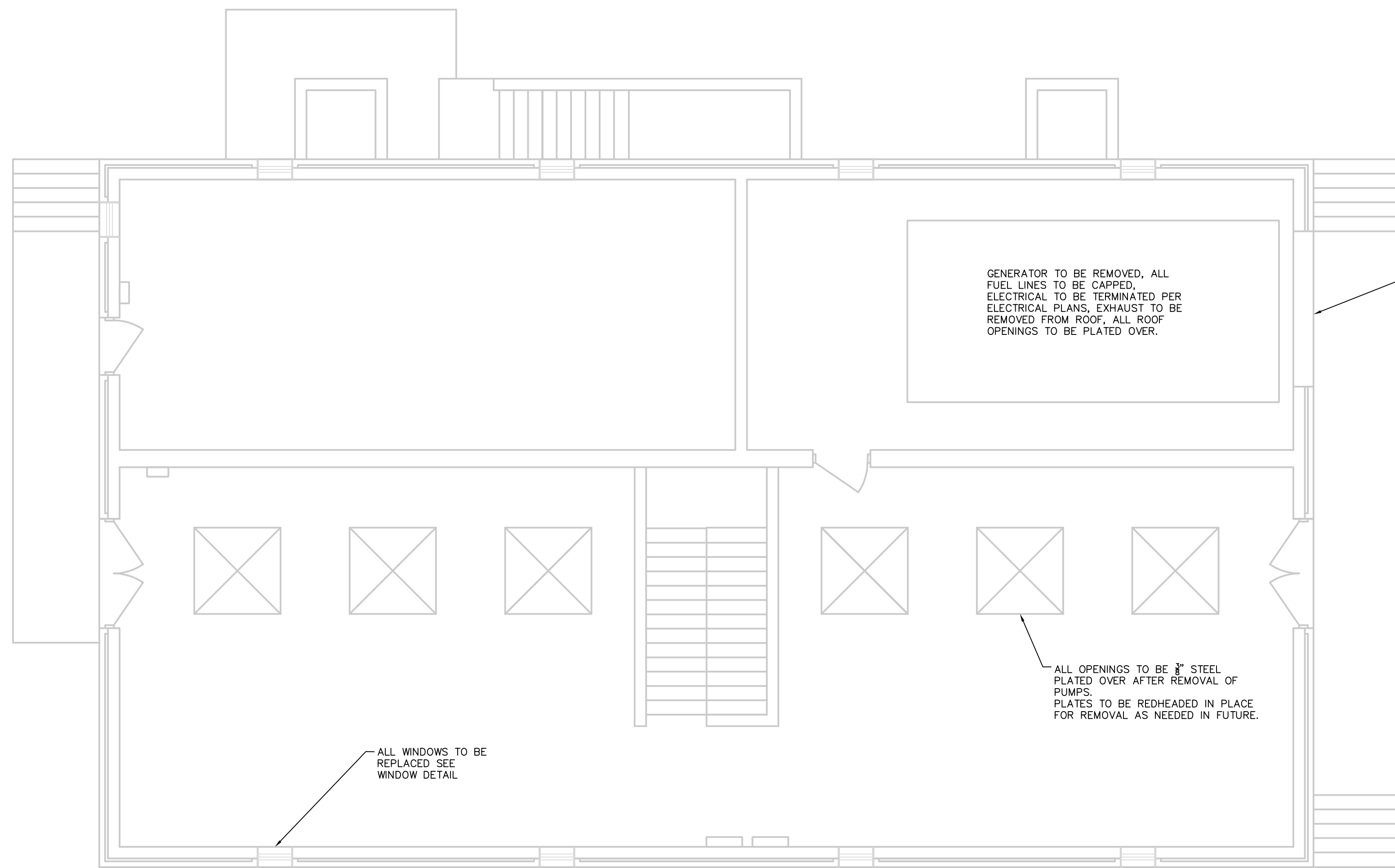
1050 PARKSIDE COMMONS  
SUITE 101  
GREENSBORO, NC 27409  
TEL: (706) 454-4870

**Hinesville/Ft Stewart  
WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

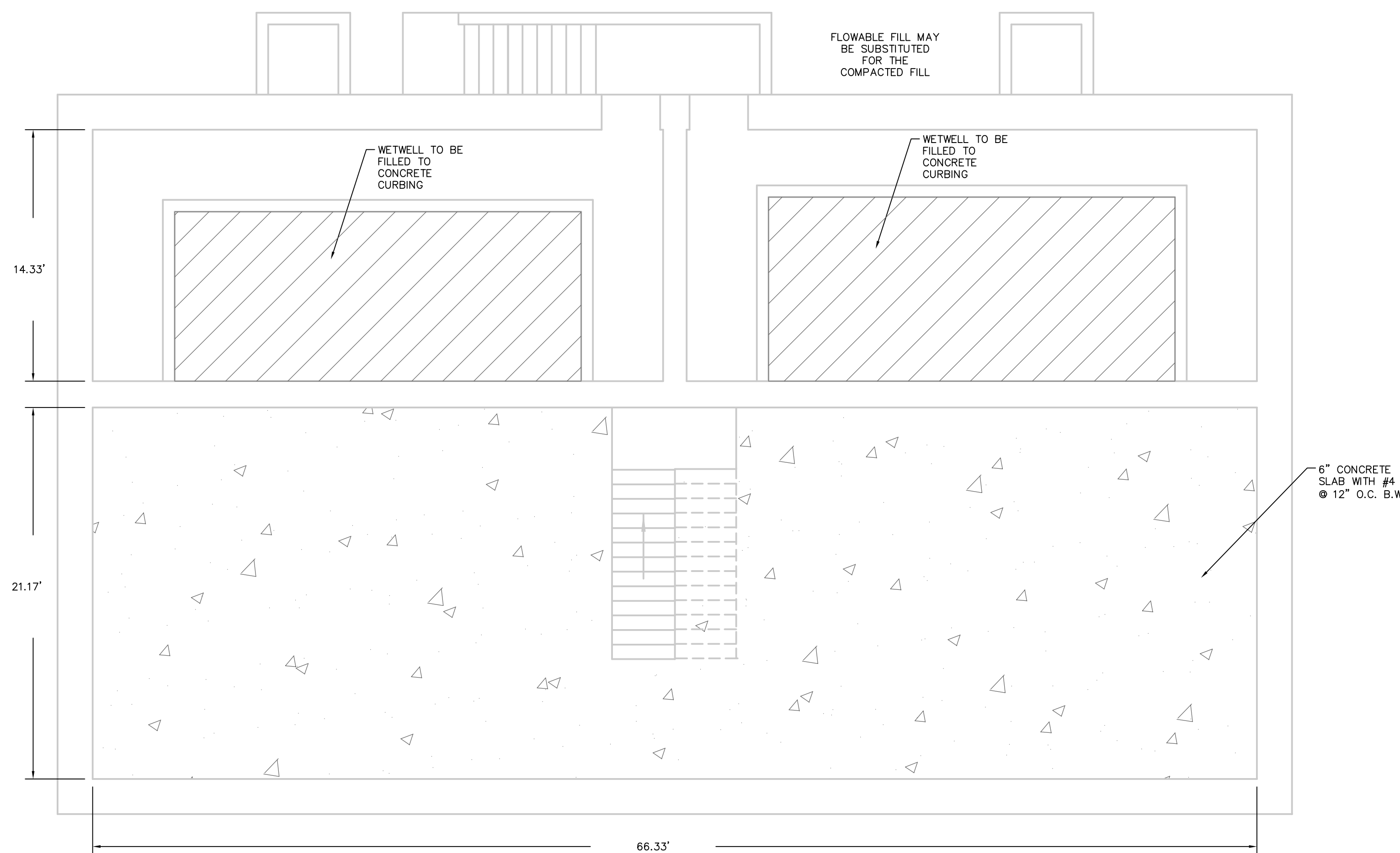
Recirculation Building /  
Electrical Building

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-6

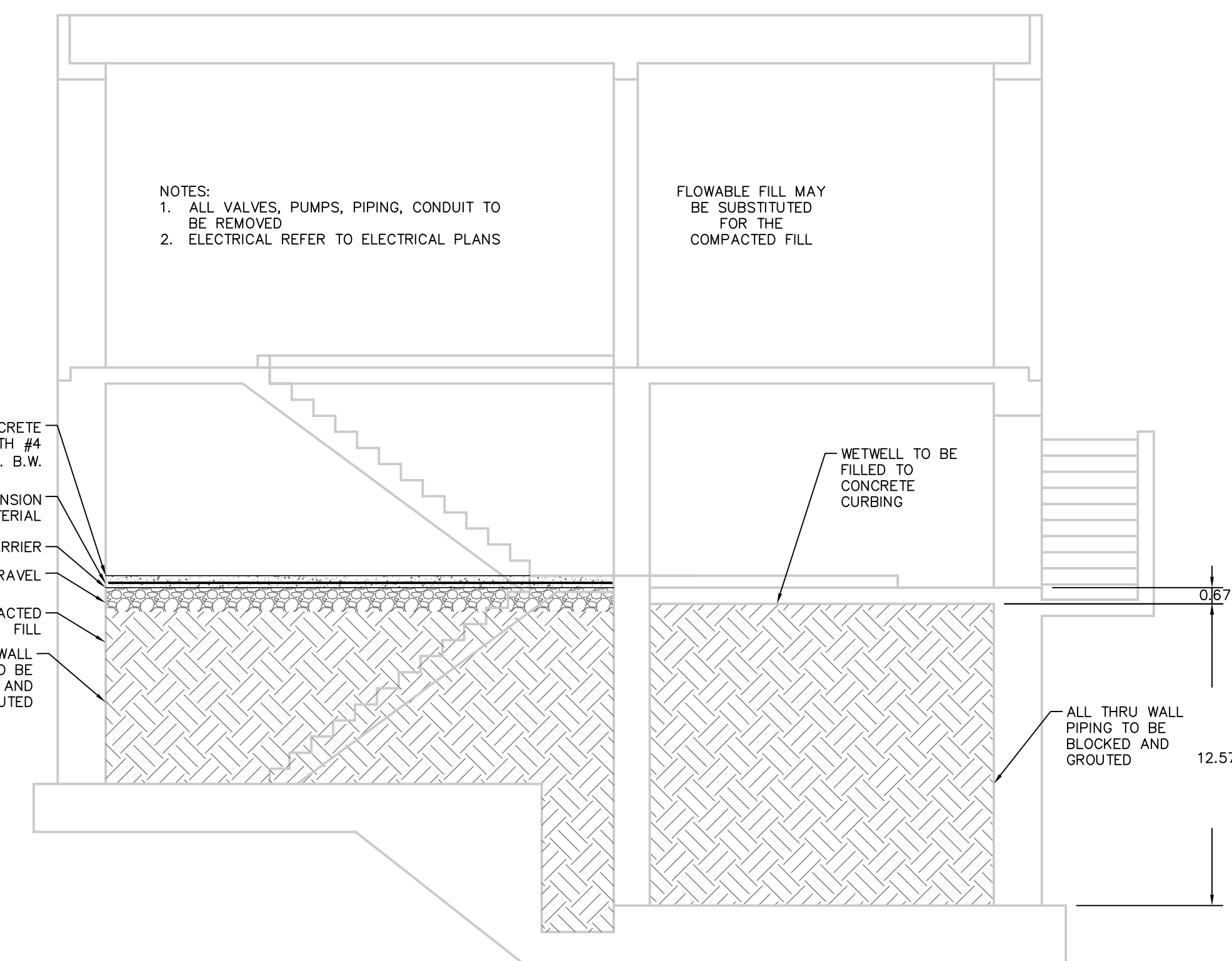
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**UPPER LEVEL PLAN**  
SCALE: 1"=5'



**NEW LOWER LEVEL PLAN**  
SCALE: 1"=5'



**BUILDING SECTION**  
SCALE: 1"=5'

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REVISED: \_\_\_\_\_



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TEL: (912) 368-5212

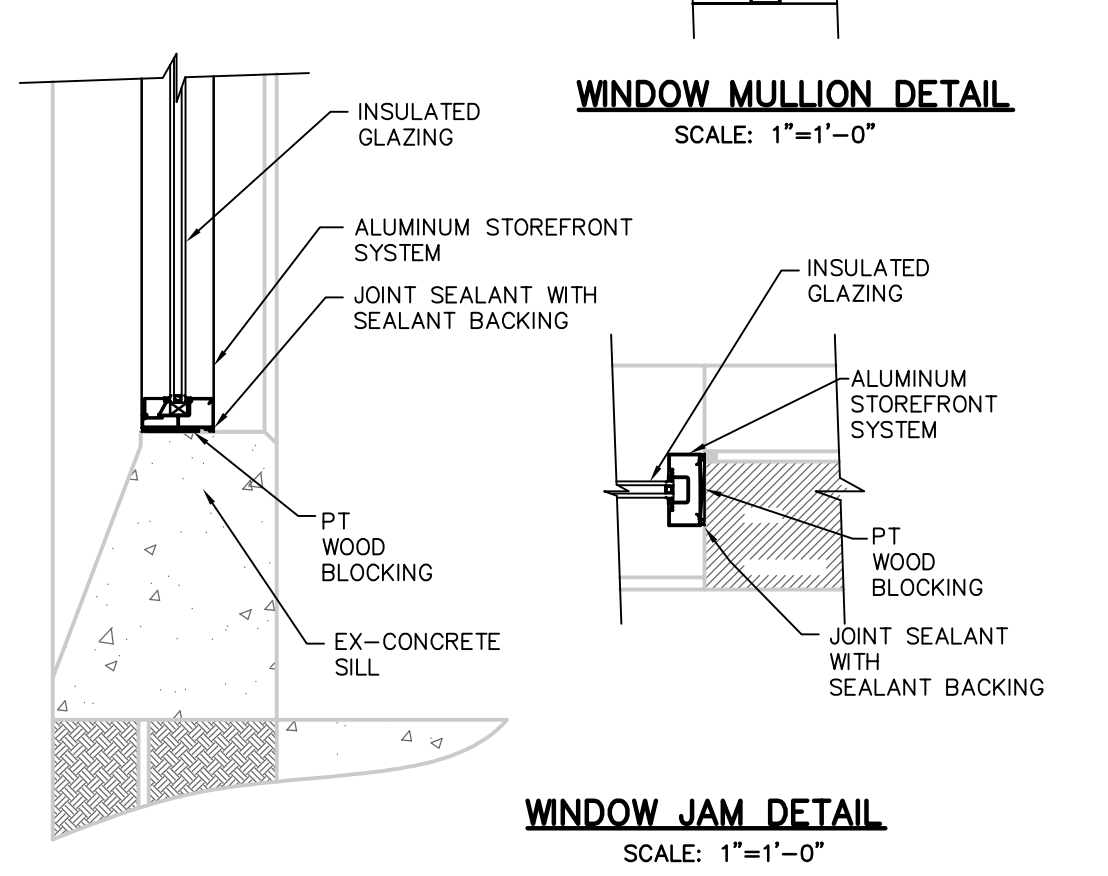
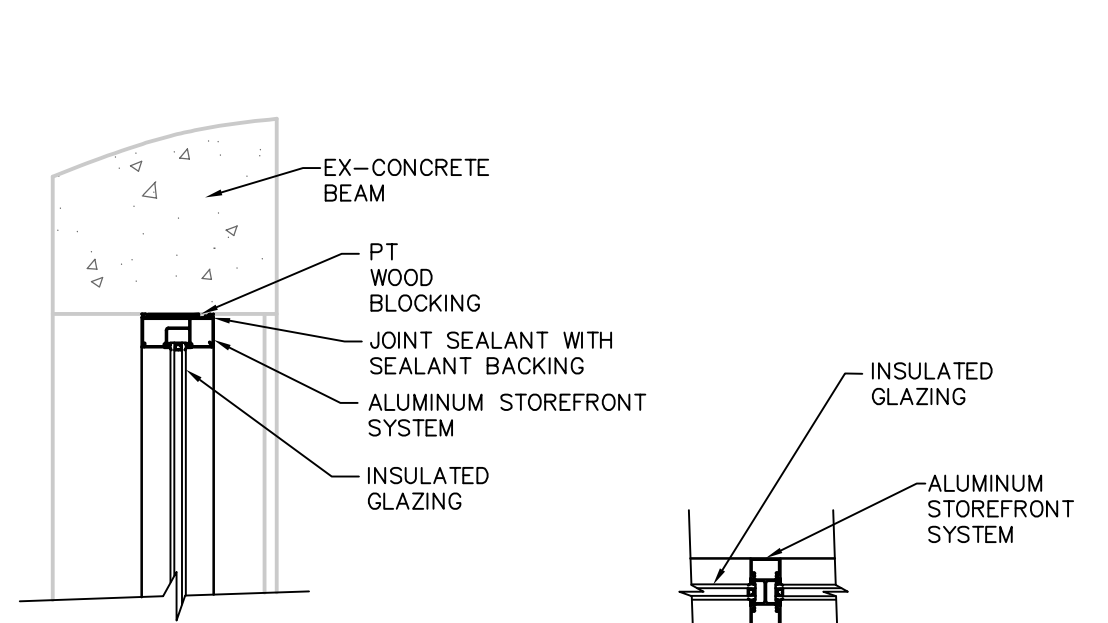
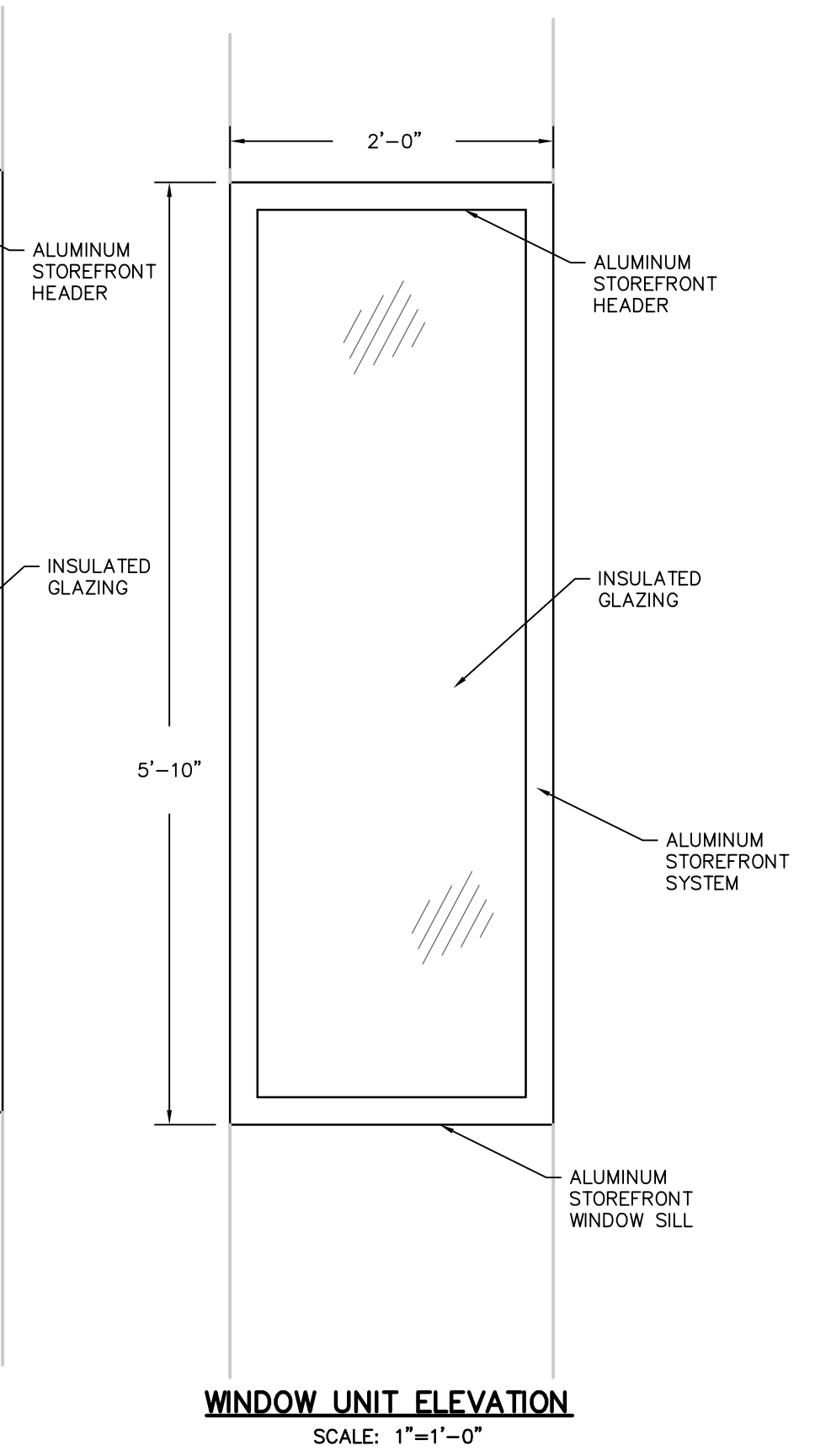
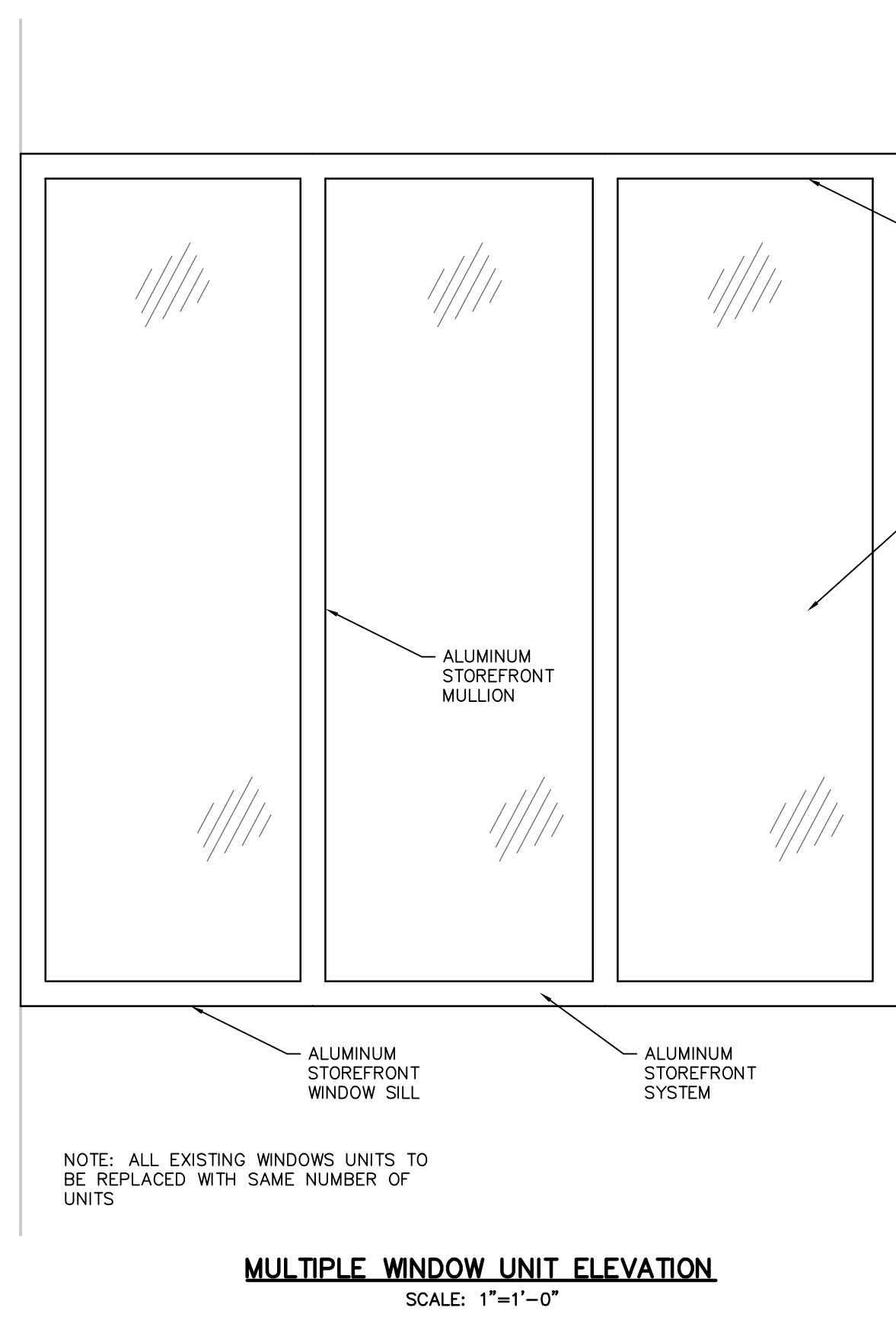
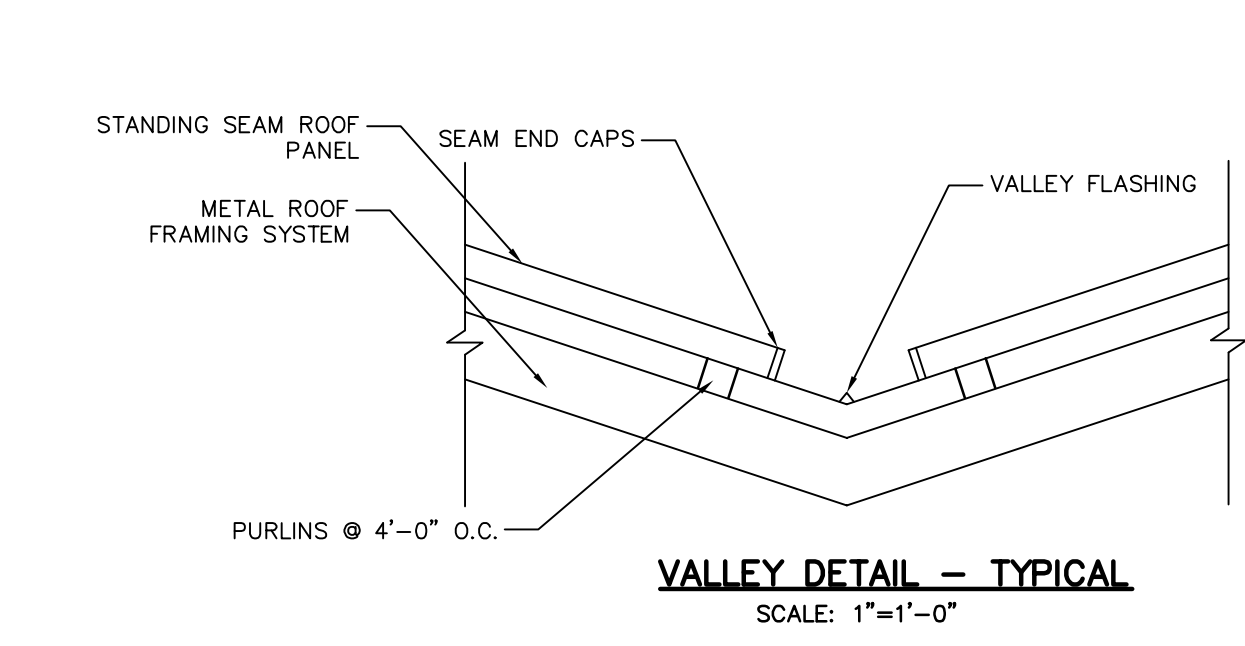
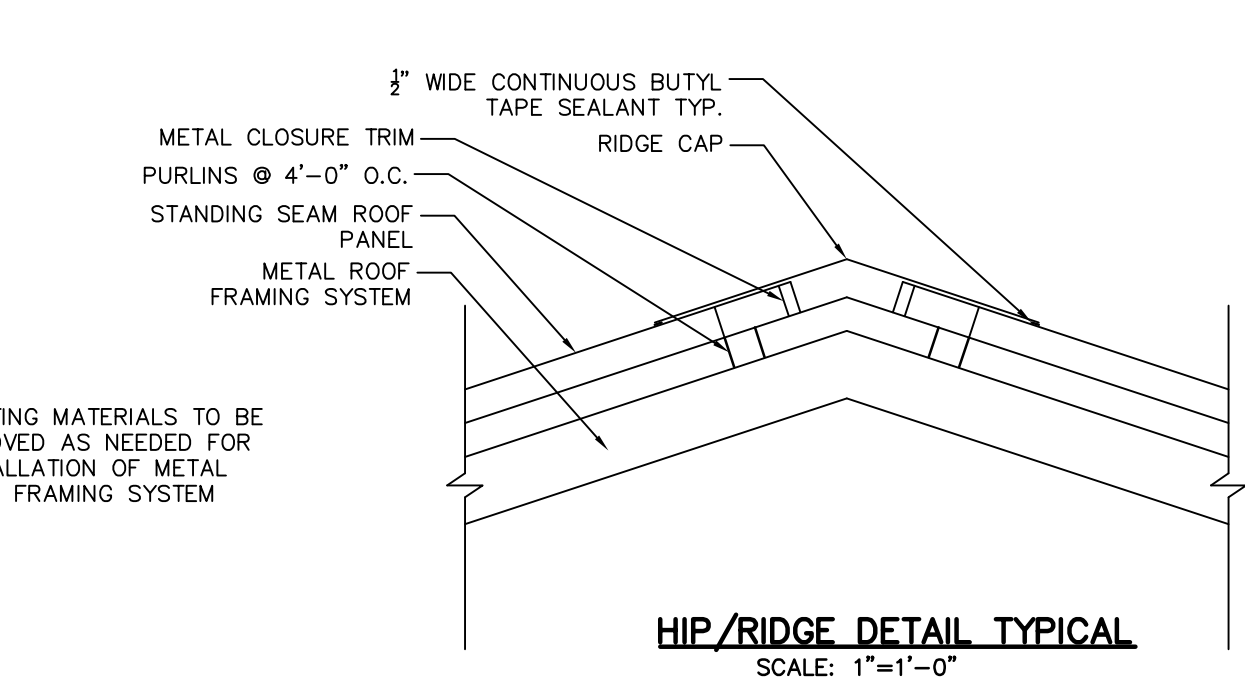
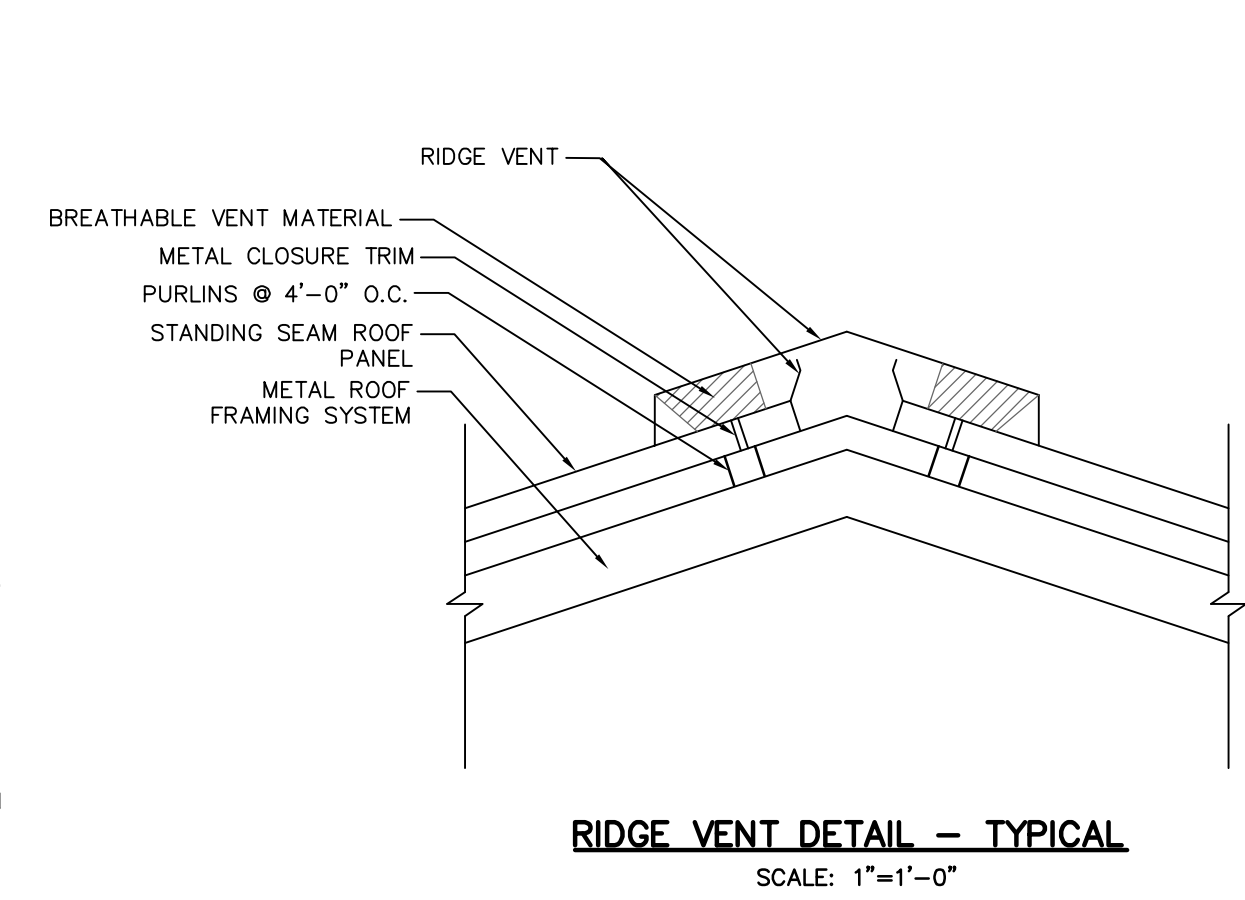
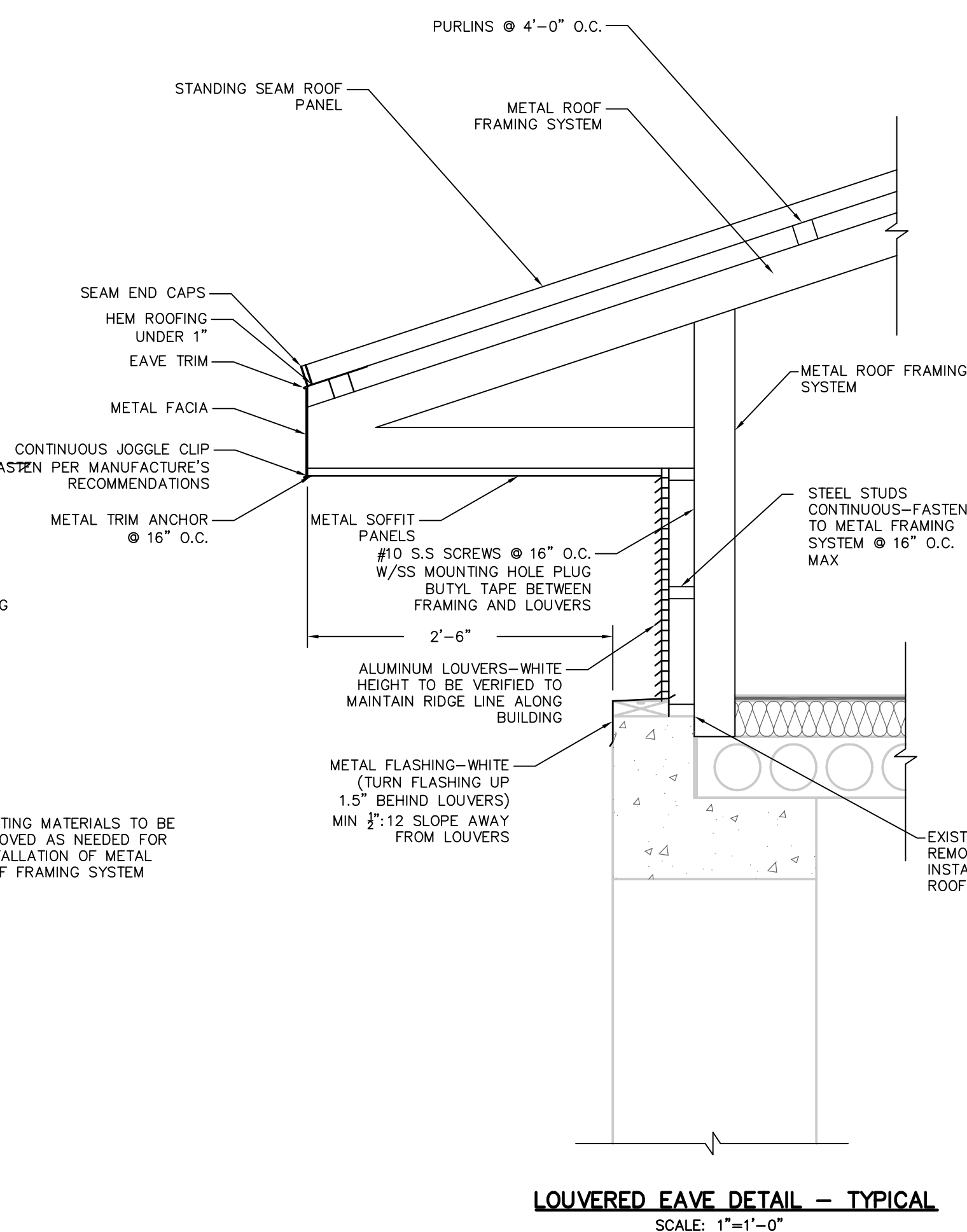
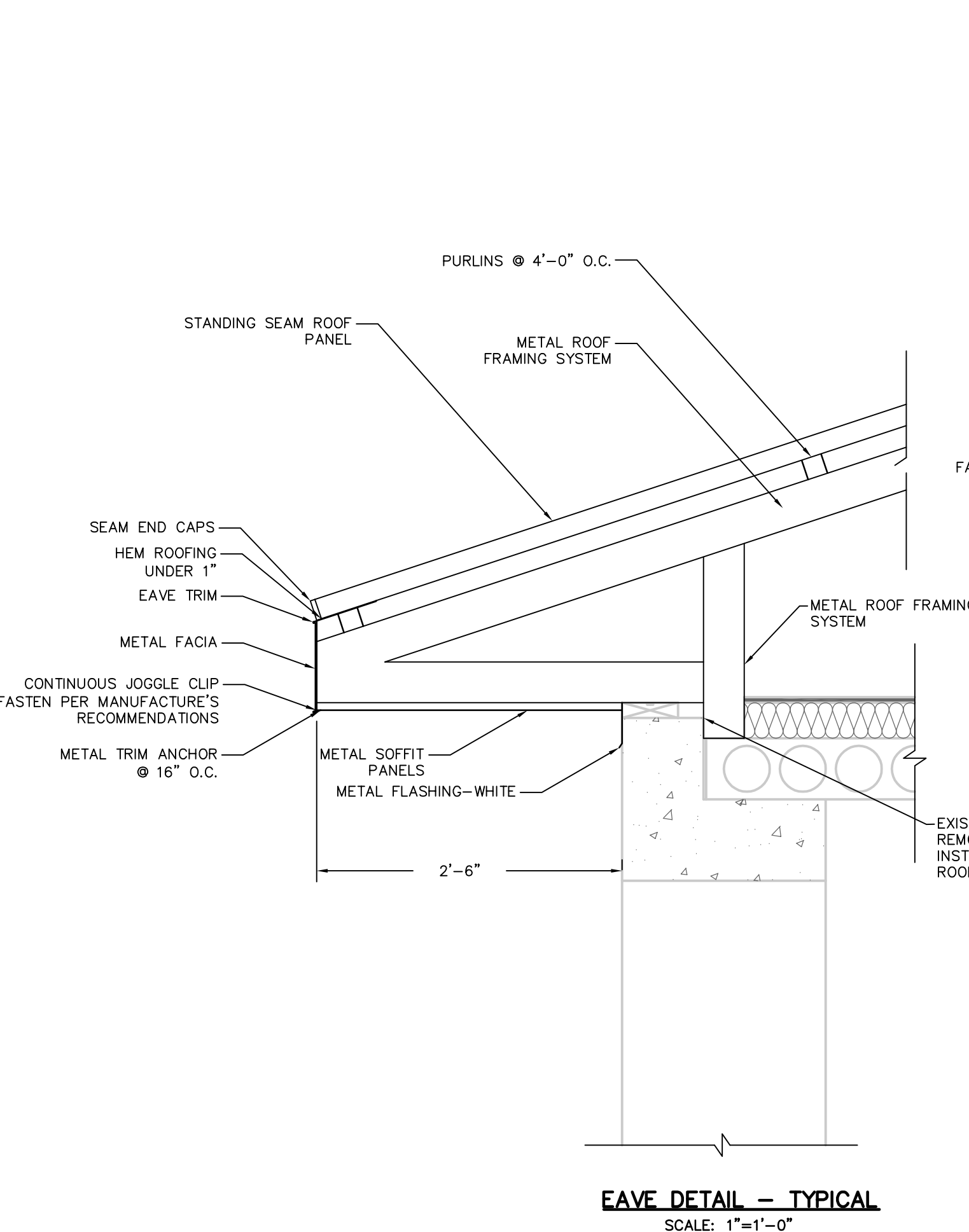
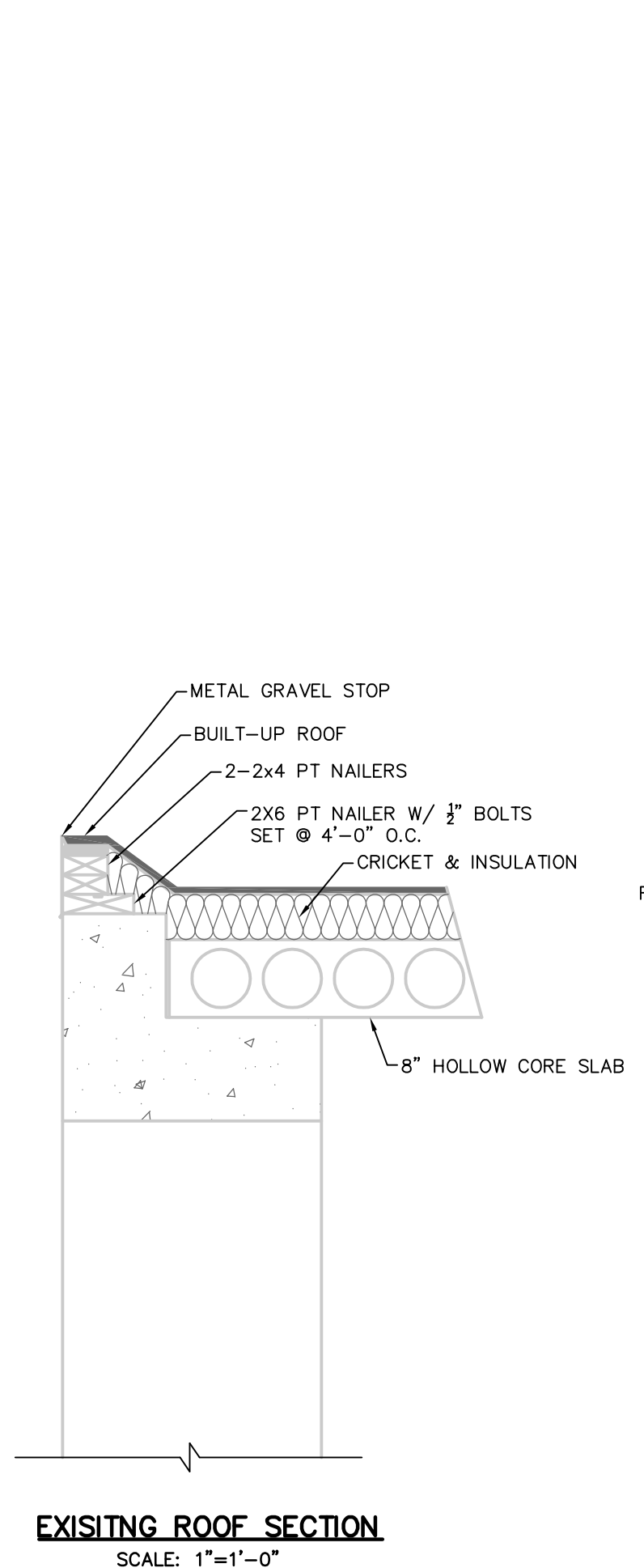
**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

**Hinesville/Ft Stewart  
WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Recirculation Building /  
Electrical Building  
Details

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-7

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NOTE: ALL EXISTING WINDOWS UNITS TO BE REPLACED WITH SAME NUMBER OF UNITS

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REVISED: \_\_\_\_\_



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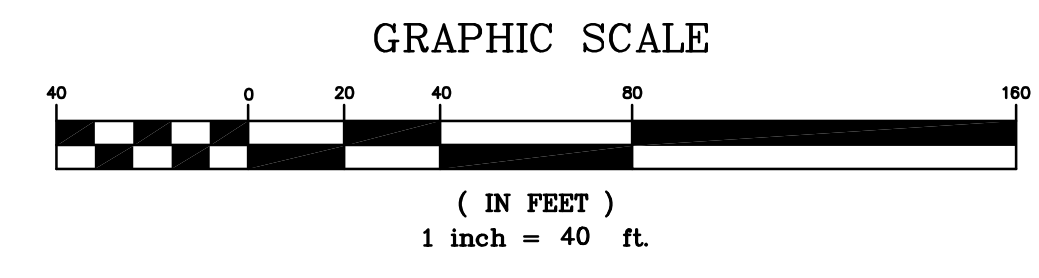
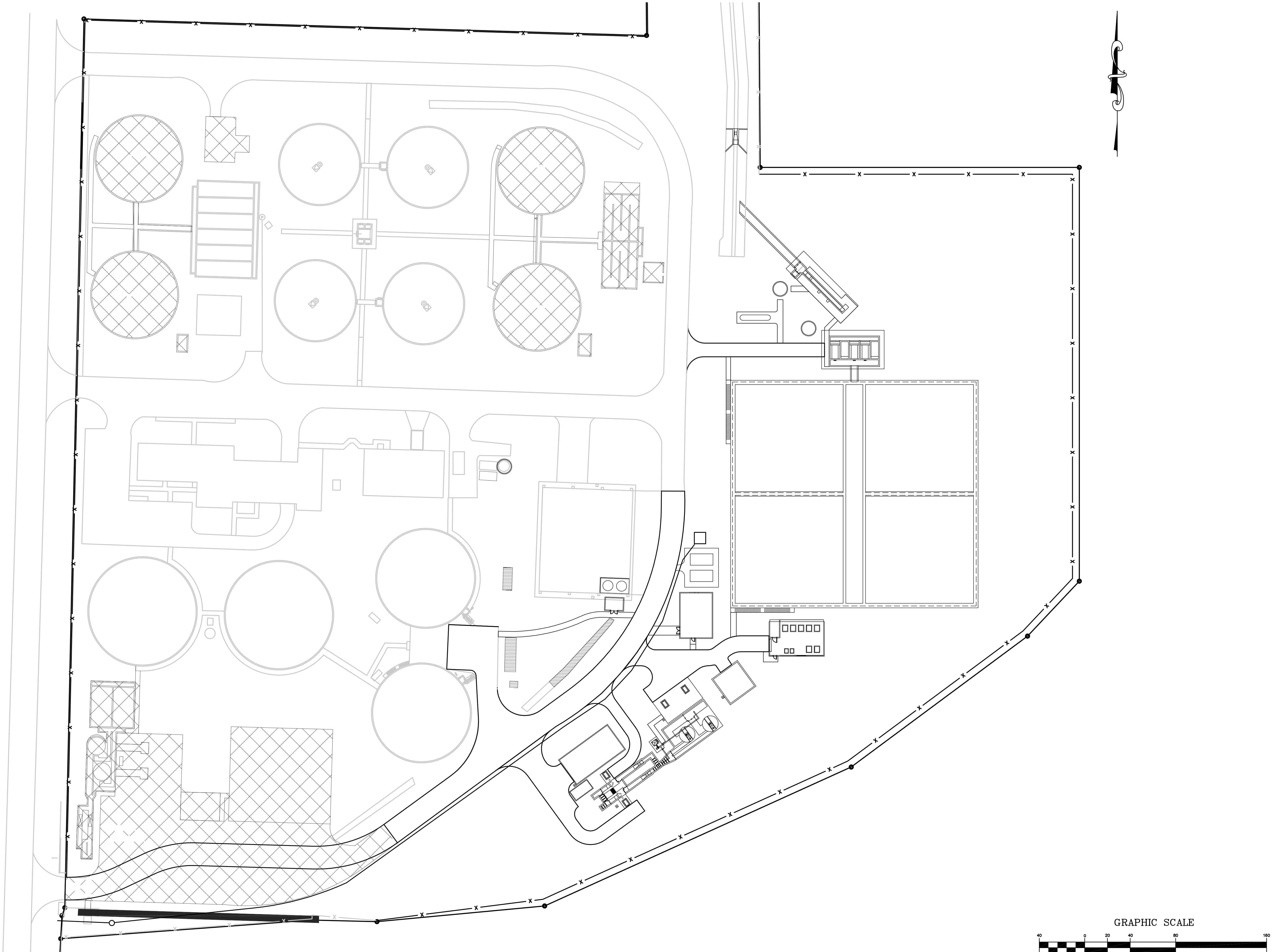
1050 PARKSIDE COMMONS  
SUITE 101  
GREENSBORO, NC 27402  
TEL: (706) 454-4870

**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

**Hinesville/Ft Stewart  
WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

Roof & Window Details  
DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: R-8

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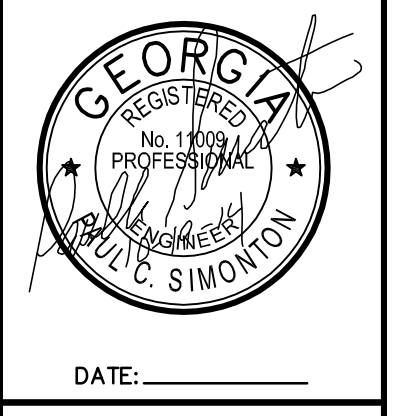
Overall Site Plan  
 DATE: April 8, 2014  
 FILE NO: 2009-63PRJ  
 SHEET: D-1

Wastewater Treatment Plant  
 for  
**The City of Hinesville**  
 Hinesville, Georgia  
 Liberty County, Georgia

**P.C. Simonton & Associates, Inc.**  
 Consulting Engineers

309 NORTH MAIN STREET  
 P.O. BOX 649  
 HINESVILLE, GA 31313  
 TEL: (912) 368-5212

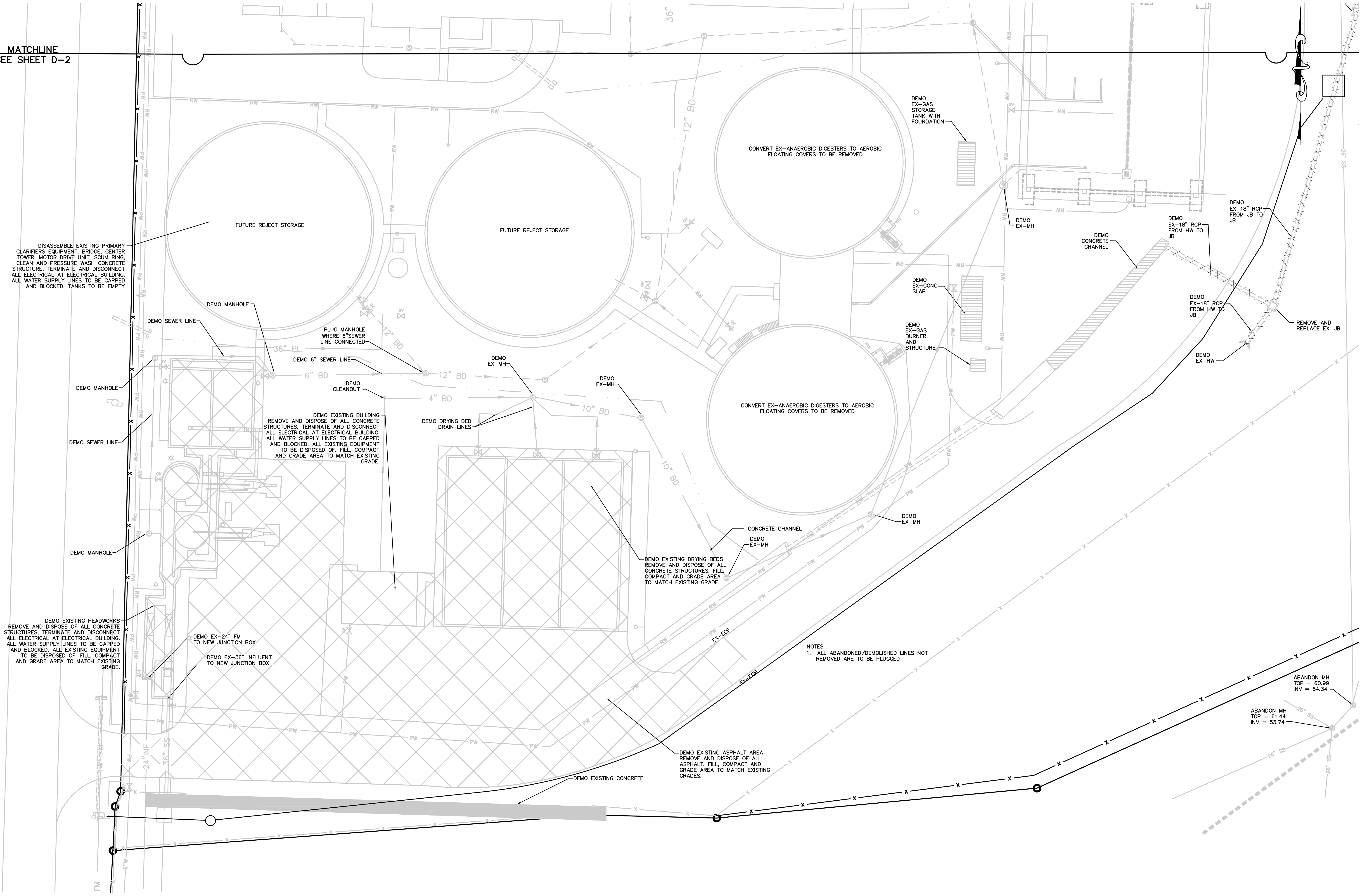
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MATCHLINE  
SEE SHEET D-2



DISASSEMBLE EXISTING PRIMARY CLARIFIERS EQUIPMENT, BRIDGE, CENTER TOWER, MOTOR DRIVE UNIT, SCUM RING, CLEAN AND PRESSURE WASH CONCRETE STRUCTURE, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. TANKS TO BE EMPTY

REMOVE AND DISPOSE OF ALL CONCRETE STRUCTURES, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. ALL EXISTING EQUIPMENT TO BE DISPOSED OF, FILL, COMPACT AND GRADE AREA TO MATCH EXISTING GRADE.

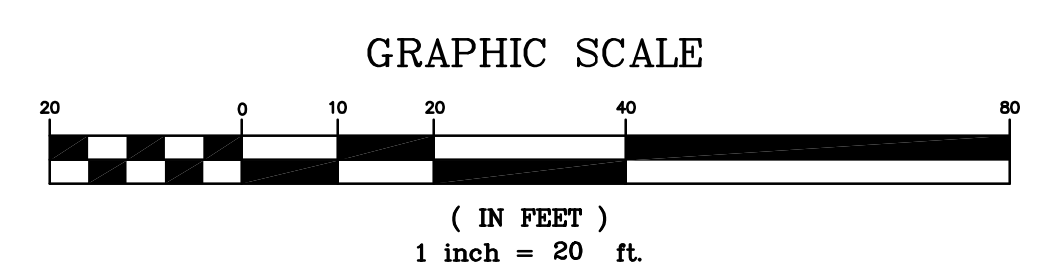
REMOVE AND DISPOSE OF ALL CONCRETE STRUCTURES, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. ALL EXISTING EQUIPMENT TO BE DISPOSED OF, FILL, COMPACT AND GRADE AREA TO MATCH EXISTING GRADE.

REMOVE AND DISPOSE OF ALL ASPHALT, FILL, COMPACT AND GRADE AREA TO MATCH EXISTING GRADES.

NOTES:  
1. ALL ABANDONED/DEMOLISHED LINES NOT REMOVED ARE TO BE PLUGGED

ABANDON MH  
TOP = 60.99  
INV = 54.34

ABANDON MH  
TOP = 61.44  
INV = 53.74



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REVISED: \_\_\_\_\_



DATE: \_\_\_\_\_

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HINESVILLE, GA 31113  
TEL: (912) 368-5212

**P.C. Simonton & Associates, Inc.**  
Consulting Engineers

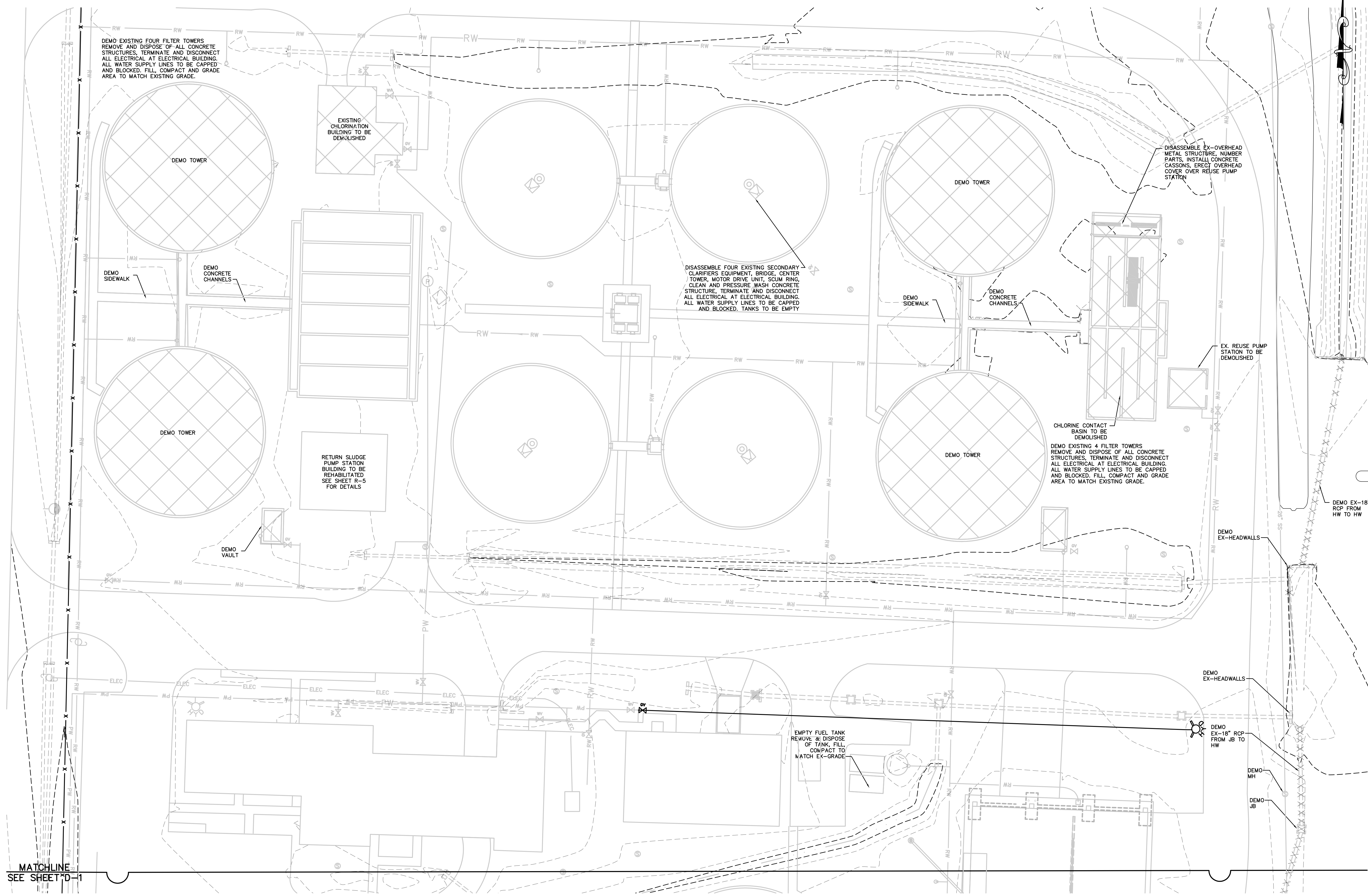
**Hinesville/Ft Stewart**  
for  
**WWTP Upgrade**  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

Demo Plan  
South Section

DATE: November 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: D-2

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DEMO EXISTING FOUR FILTER TOWERS REMOVE AND DISPOSE OF ALL CONCRETE STRUCTURES, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. FILL, COMPACT AND GRADE AREA TO MATCH EXISTING GRADE.

EXISTING CHLORINATION BUILDING TO BE DEMOLISHED

DISASSEMBLE FOUR EXISTING SECONDARY CLARIFIERS EQUIPMENT, BRIDGE, CENTER TOWER, MOTOR DRIVE UNIT, SCUM RING, CLEAN AND PRESSURE WASH CONCRETE STRUCTURE, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. TANKS TO BE EMPTY

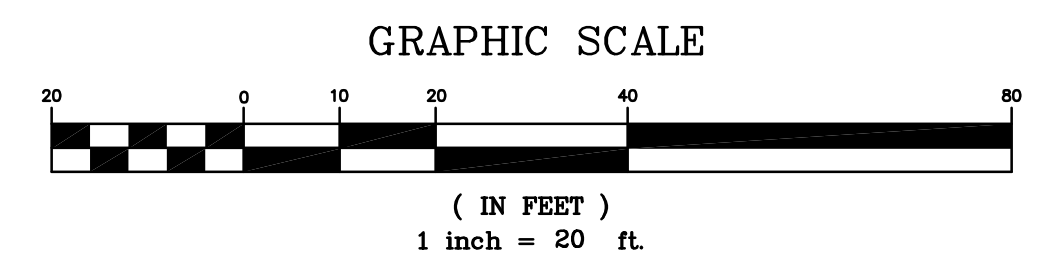
RETURN SLUDGE PUMP STATION BUILDING TO BE REHABILITATED SEE SHEET R-5 FOR DETAILS

DISASSEMBLE EX-OVERHEAD METAL STRUCTURE, NUMBER PARTS, INSTALL CONCRETE CASSONS, ERECT OVERHEAD COVER OVER REUSE PUMP STATION

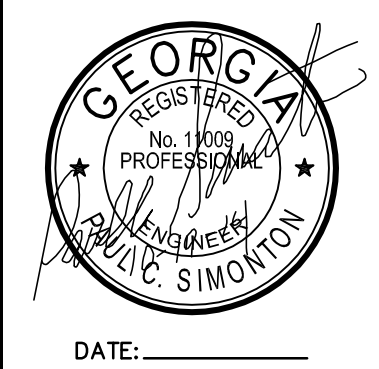
CHLORINE CONTACT BASIN TO BE DEMOLISHED  
DEMO EXISTING 4 FILTER TOWERS REMOVE AND DISPOSE OF ALL CONCRETE STRUCTURES, TERMINATE AND DISCONNECT ALL ELECTRICAL AT ELECTRICAL BUILDING. ALL WATER SUPPLY LINES TO BE CAPPED AND BLOCKED. FILL, COMPACT AND GRADE AREA TO MATCH EXISTING GRADE.

EMPTY FUEL TANK REMOVE & DISPOSE OF TANK, FILL, COMPACT TO MATCH EX-GRADE

MATCHLINE SEE SHEET D-1



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 P.O. BOX 649  
 HINESVILLE, GA 31313  
 TEL: (912) 368-5212

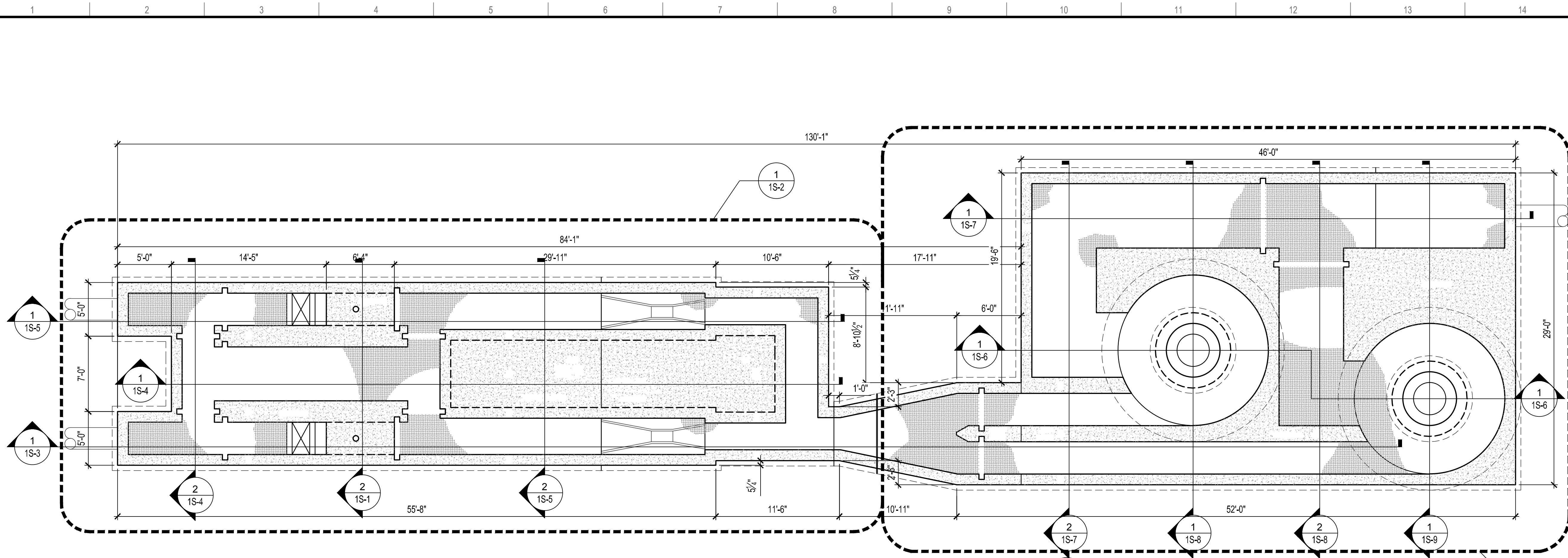


DATE: \_\_\_\_\_  
 309 NORTH MAIN STREET  
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 1050 PARKSIDE COMMONS  
 SUITE 101  
 GREENSBORO, NC 27402  
 TEL: (706) 454-4870

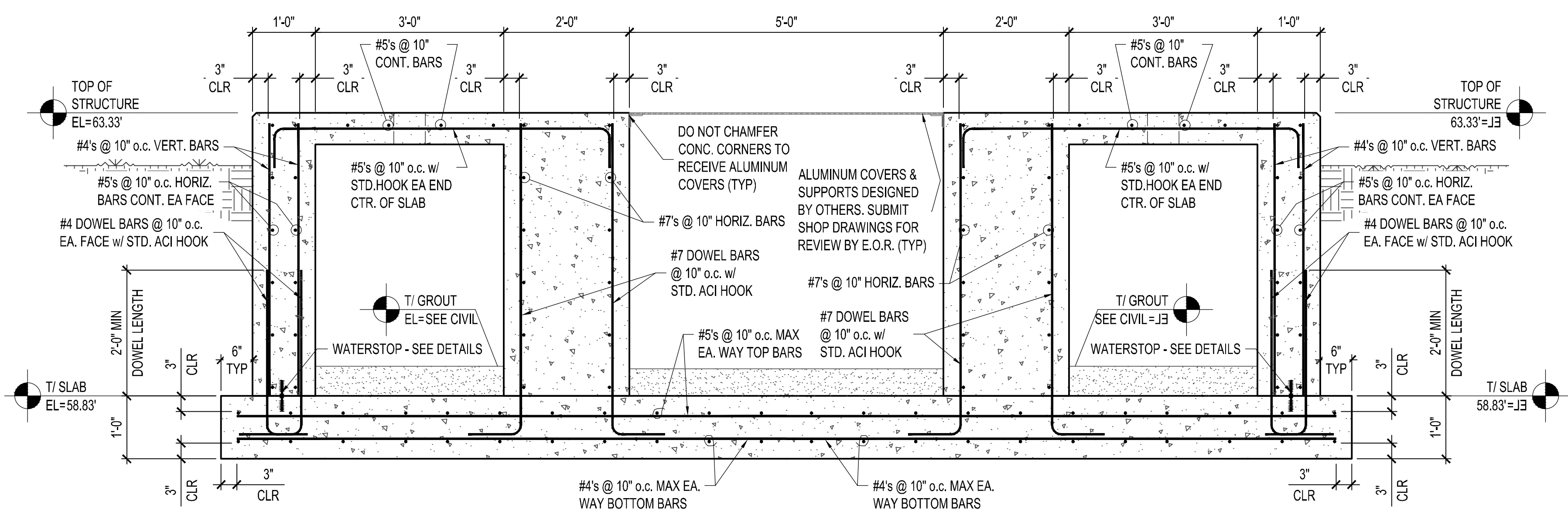
**P.C. Simonton & Associates, Inc.**  
 Consulting Engineers

**Hinesville/Ft Stewart  
 WWTP Upgrade**  
 for  
**The City of Hinesville**  
 Ft Stewart  
 Liberty County, Georgia

Demo Plan  
 North Section  
 DATE: November 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: D-3



1 OVERALL HEADWORKS PLAN  
3/16"=1'-0"



2 HEADWORKS SECTION  
3/4"=1'-0"

FOUNDATION NOTES

- DESIGN SOIL BEARING PRESSURE = 1500 PSF. SOIL BEARING PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

CONCRETE NOTES

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318-05.
- PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-05. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.

STRUCTURE NOTES

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ CIVIL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- SEISMIC DESIGN CRITERIA:  
OCCUPANCY CATEGORY = IV  
SEISMIC IMPORTANCE FACTOR ( $I_e$ ) = 1.50  
 $S_D = 0.300$   $S_1 = 0.101$   
SITE CLASS = E  
 $S_{DS} = 0.463$   $S_{D1} = 0.233$   
BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 15.4-1 OR 15.4-2):  
FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:  
RESPONSE MODIFICATION FACTOR ( $R$ ) = 2.0  
SEISMIC RESPONSE COEFF. ( $C_s$ ) = 0.2926  
SEISMIC DESIGN CATEGORY = D  
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

CONC REINF LAP LENGTH  
4500 PSI (ACI 350-06)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	18"	
#4	24"	
#5	30"	
#6	35"	
#7	51"	
#8	59"	
#9	66"	
#10	73"	

REINFORCING STEEL NOTES

- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:
  - REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.
  - WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
  - REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.
- CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:
  - CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"
  - FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"  
SLABS & JOISTS W/ #6 BARS & LARGER = 2"  
BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"
  - FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS = 3/4"  
BEAMS, PIERS, & COLUMNS = 1 1/2"  
WALLS = 3/4"  
FOOTINGS & BASE SLABS = 2"

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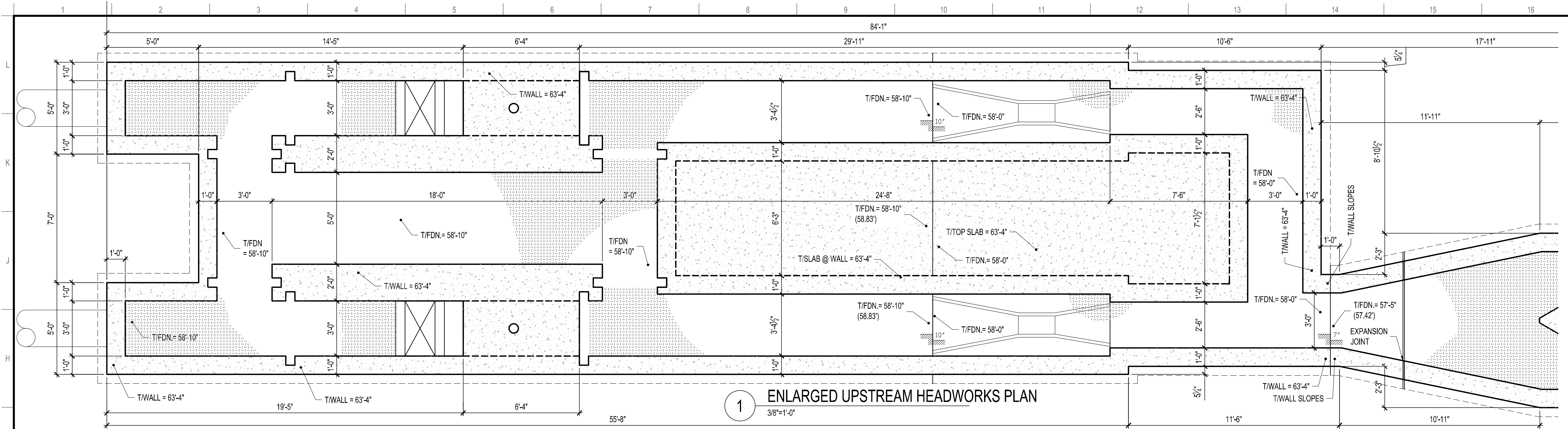


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FOR:  
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FORT STEWART  
LIBERTY COUNTY GA

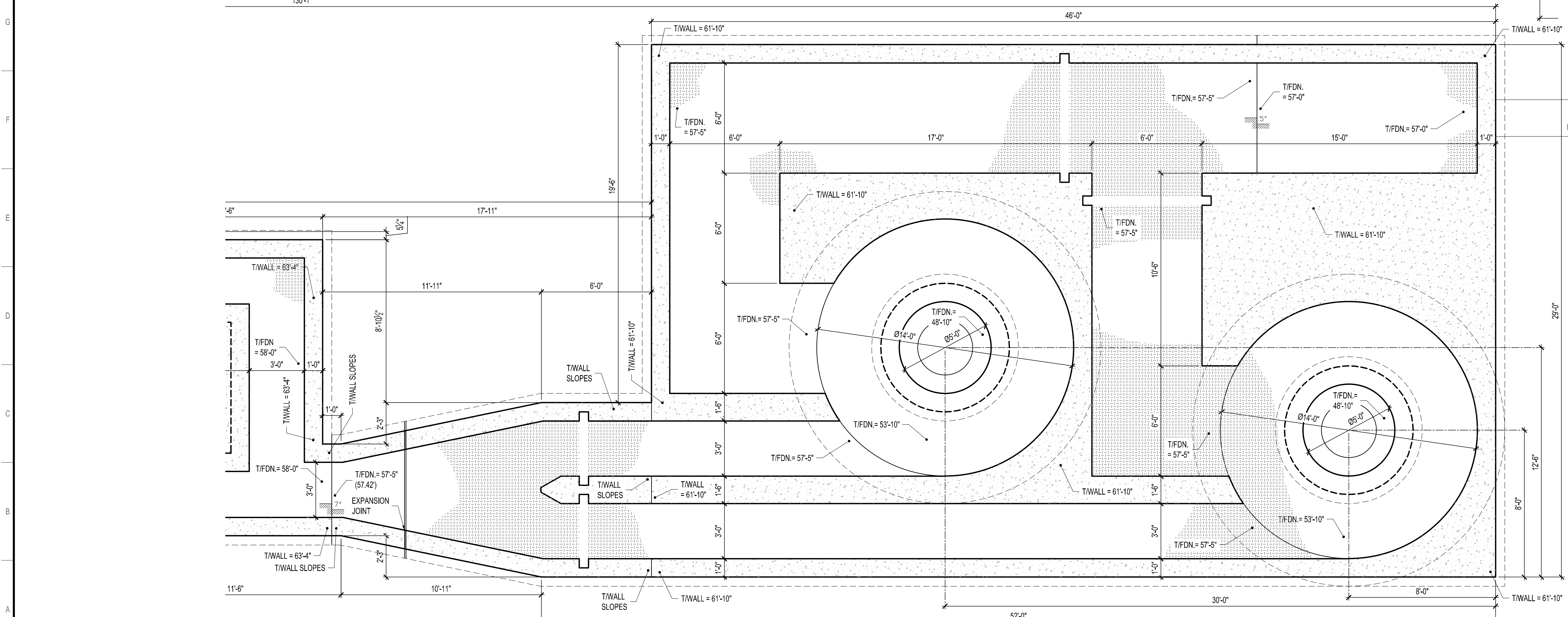
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APPROVED: [ ]  
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OVERALL HEADWORKS PLAN & ENLARGED UPSTREAM HEADWORKS PLAN



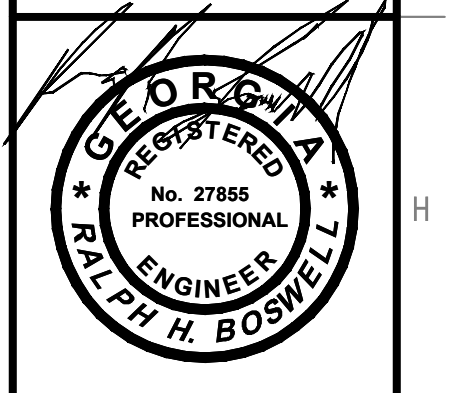
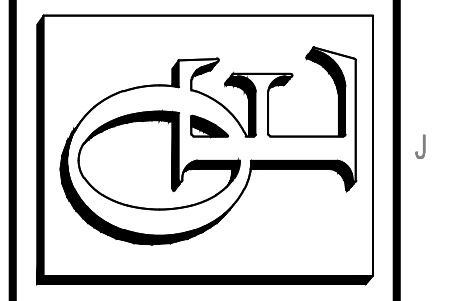
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2 ENLARGED DOWNSTREAM HEADWORKS PLAN  
3/8"=1'-0"

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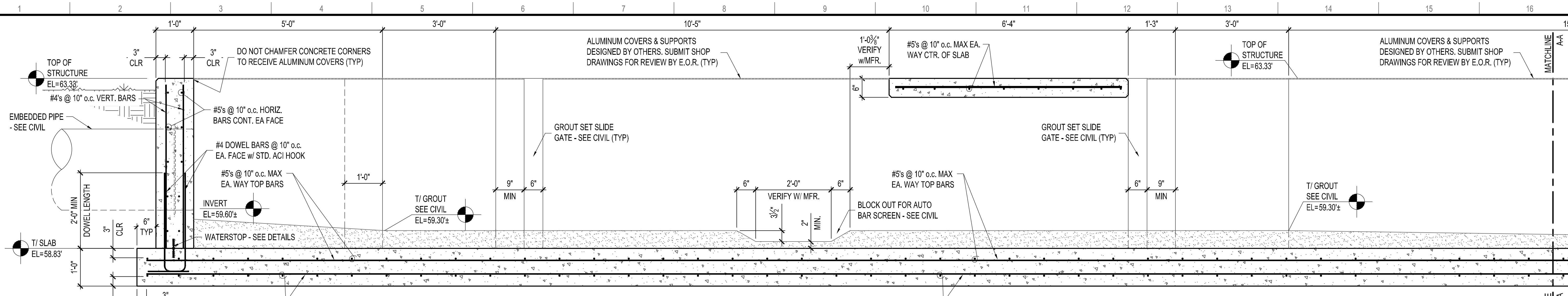


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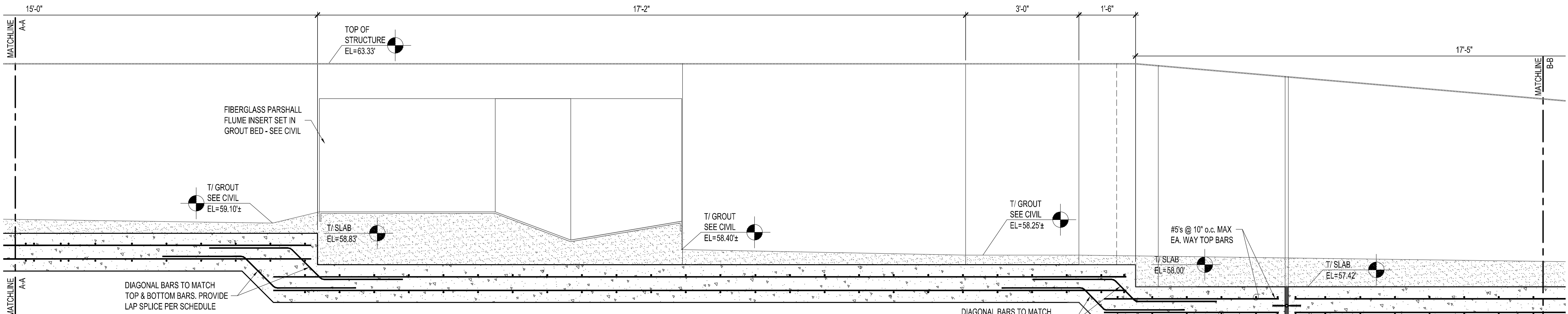
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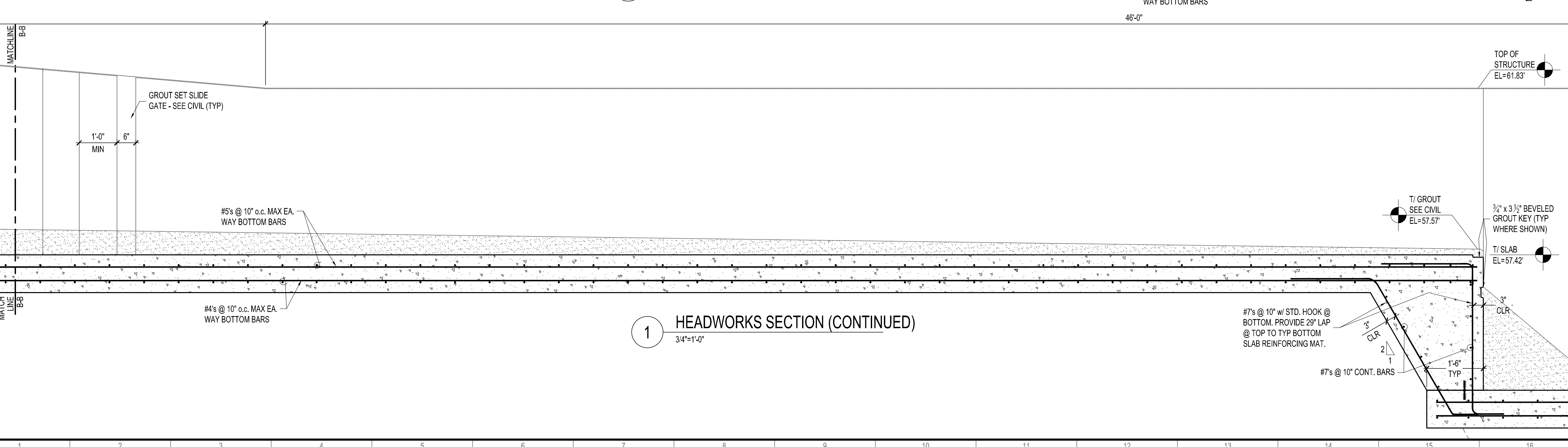
HEADWORKS ENLARGED PLANS



1 HEADWORKS SECTION  
3/4"=1'-0"



1 HEADWORKS SECTION (CONTINUED)  
3/4"=1'-0"



1 HEADWORKS SECTION (CONTINUED)  
3/4"=1'-0"

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**GEORGE H. BOSWELL**  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 27855  
 STATE OF GEORGIA

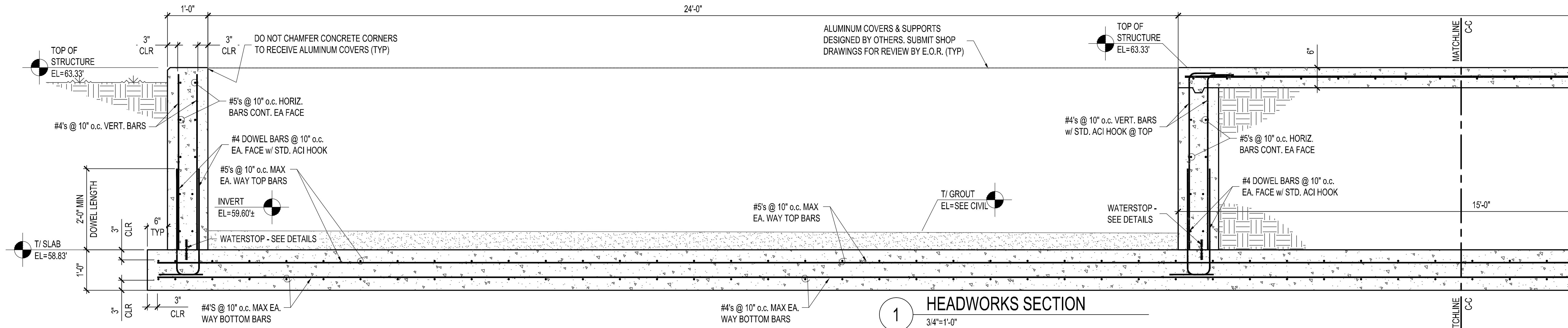
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 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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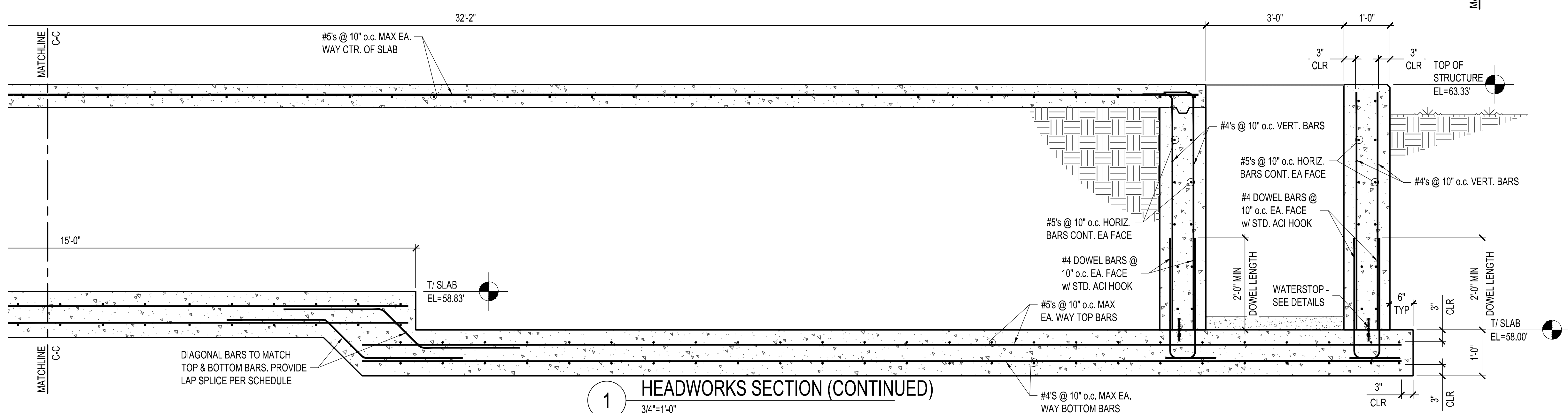
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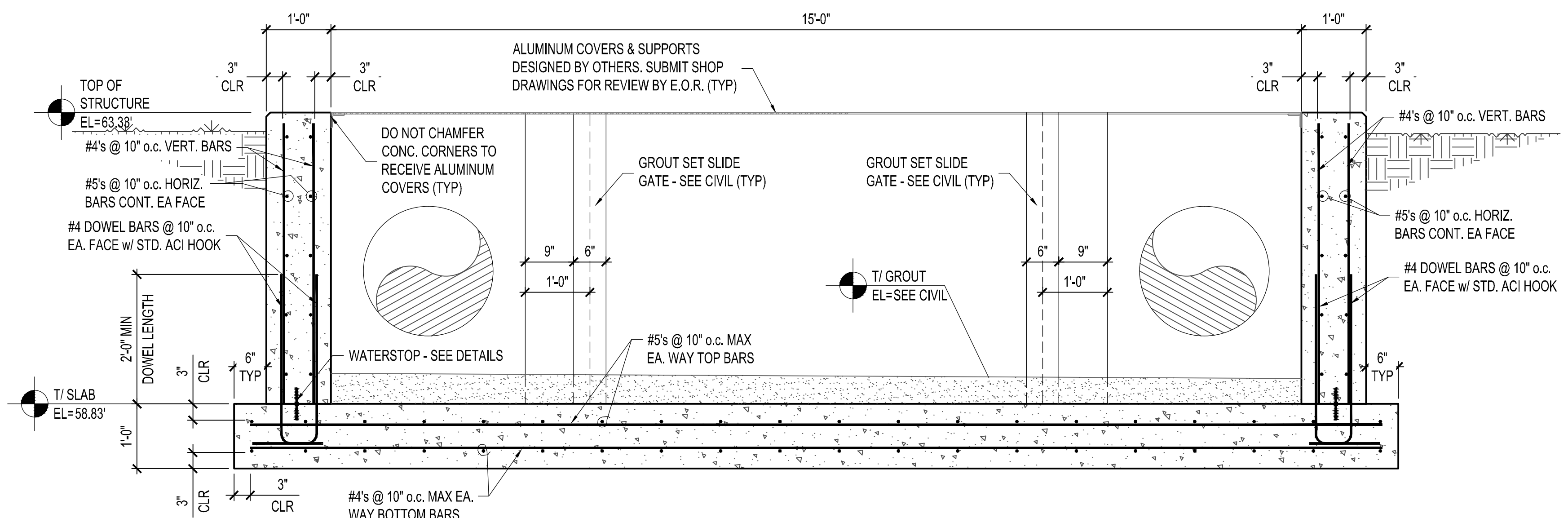
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1 HEADWORKS SECTION (CONTINUED)  
3/4"=1'-0"



2 HEADWORKS SECTION  
3/4"=1'-0"

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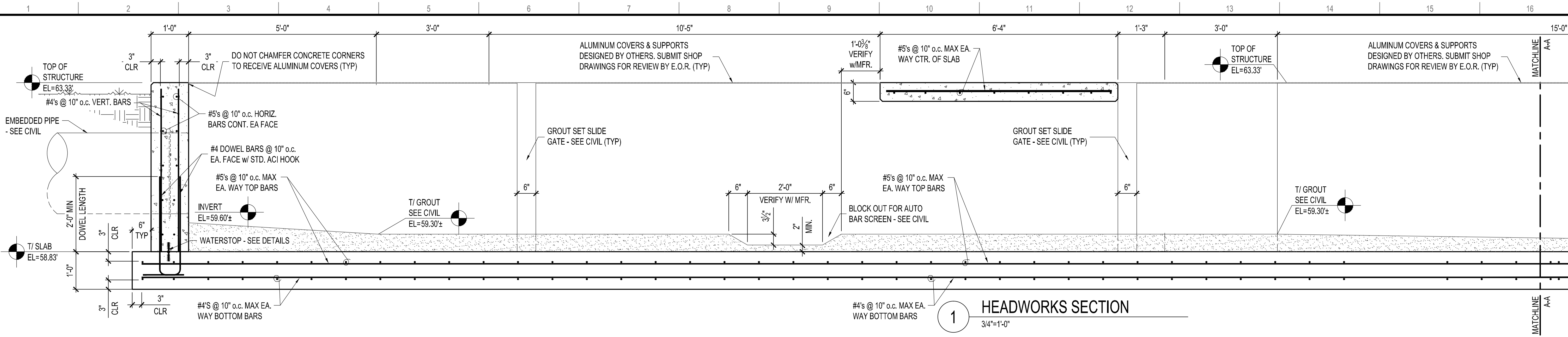
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 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/20/14			ISSUED FOR BID
11/20/12			ISSUED FOR EPO APPROVAL

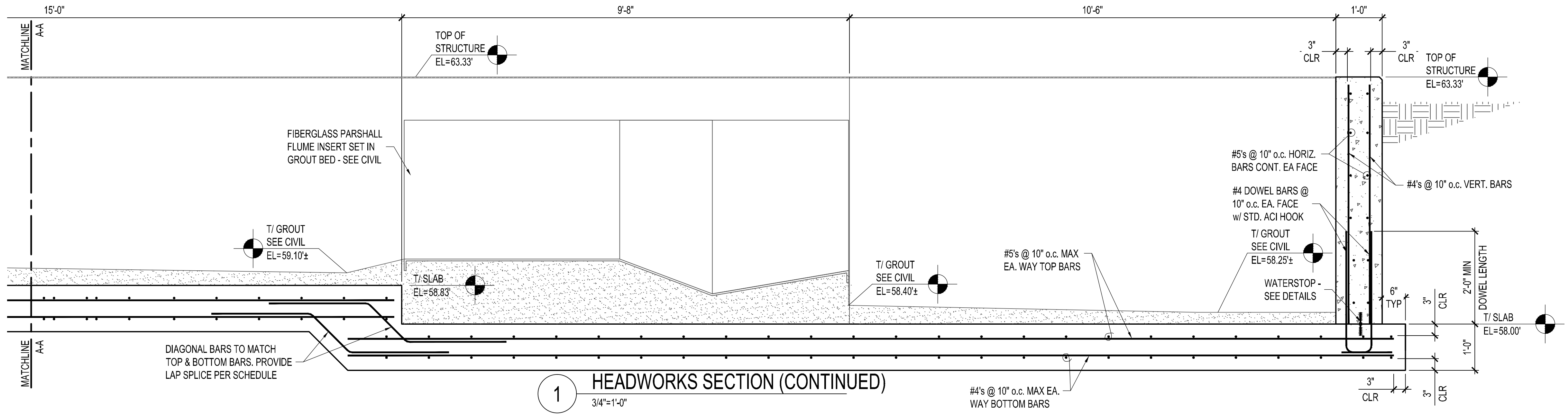
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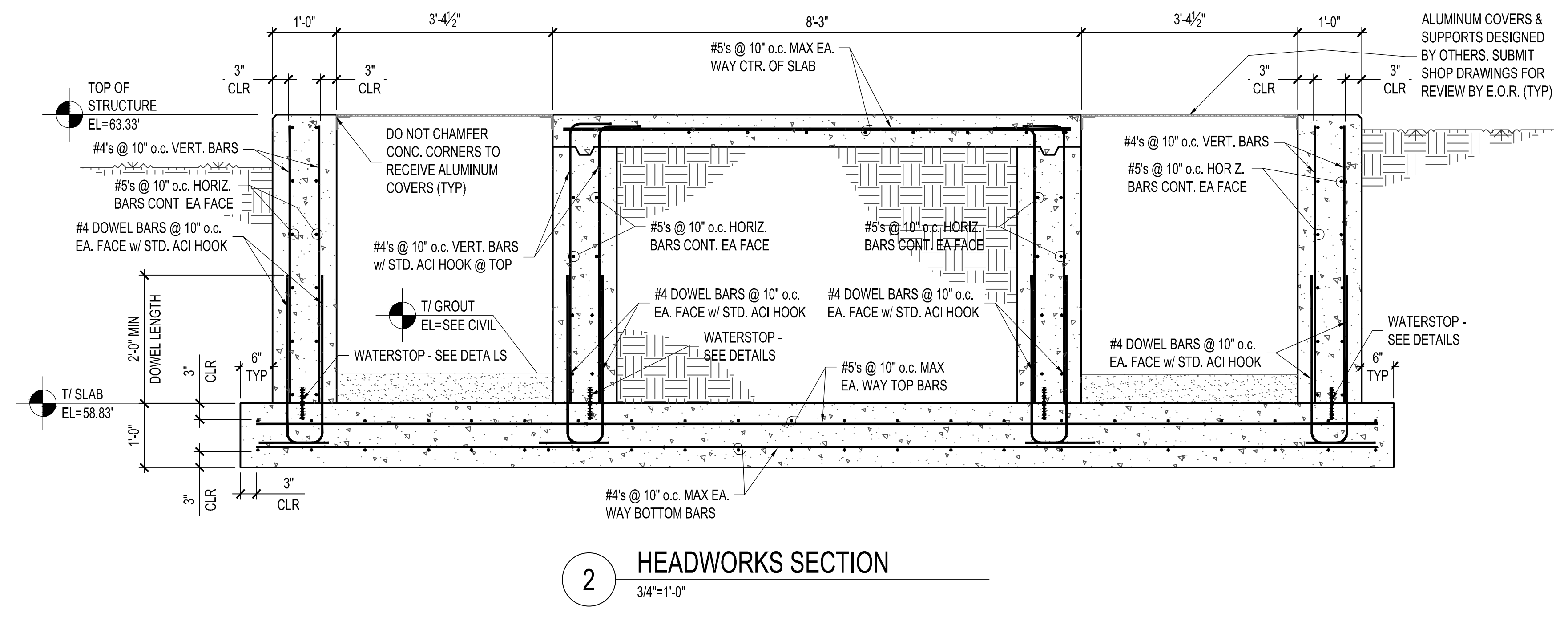
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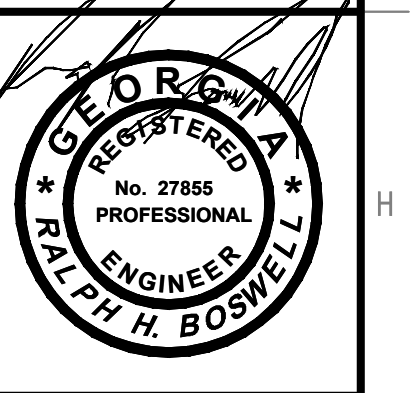


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**2 HEADWORKS SECTION**  
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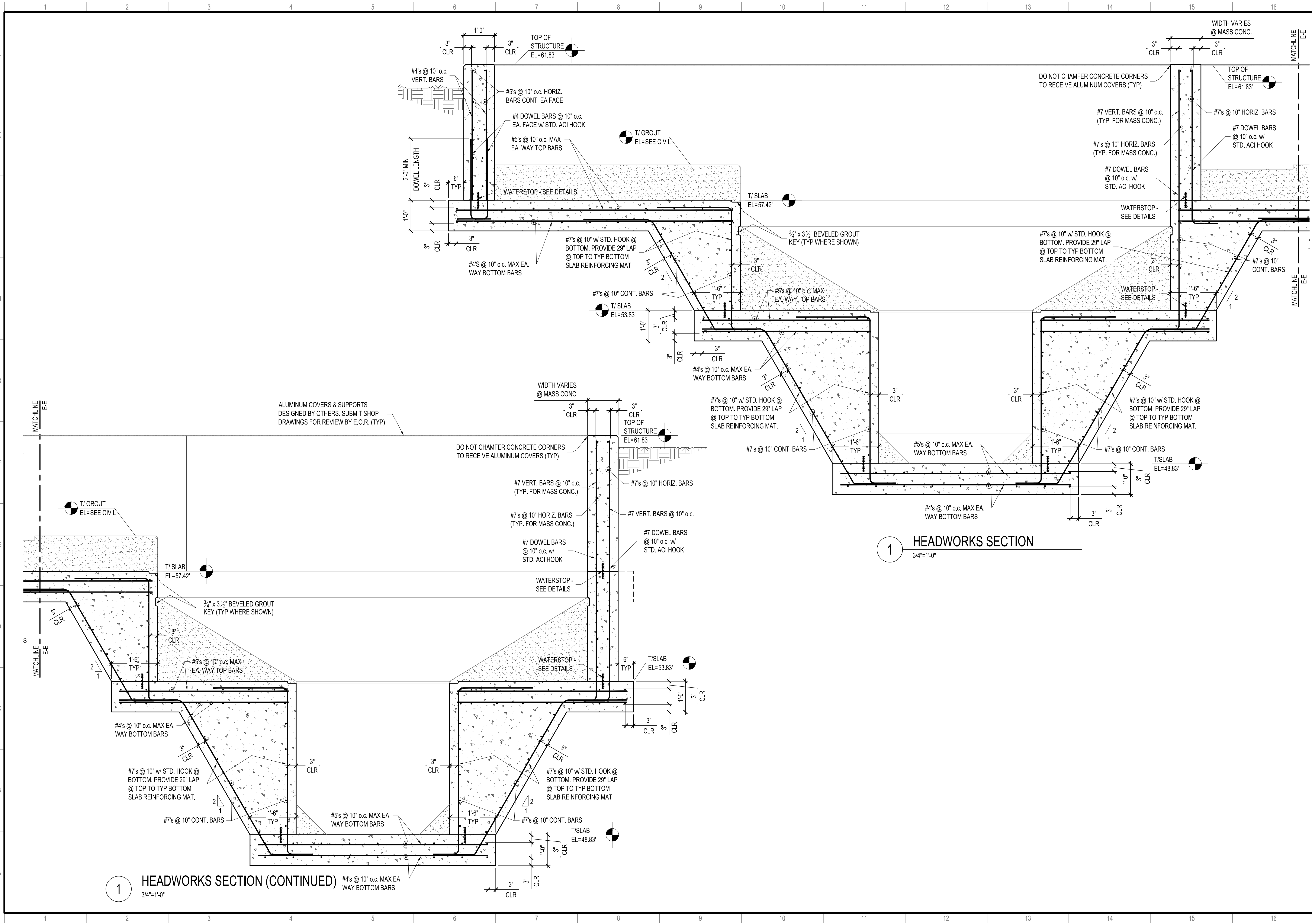
HINESVILLE / FORT STEWART  
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FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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2	11/29/2012		ISSUED FOR E.O. APPROVAL

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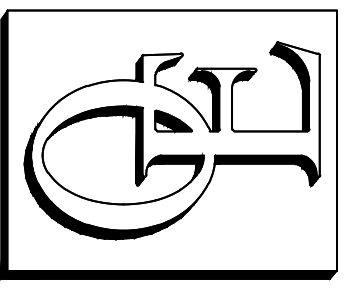
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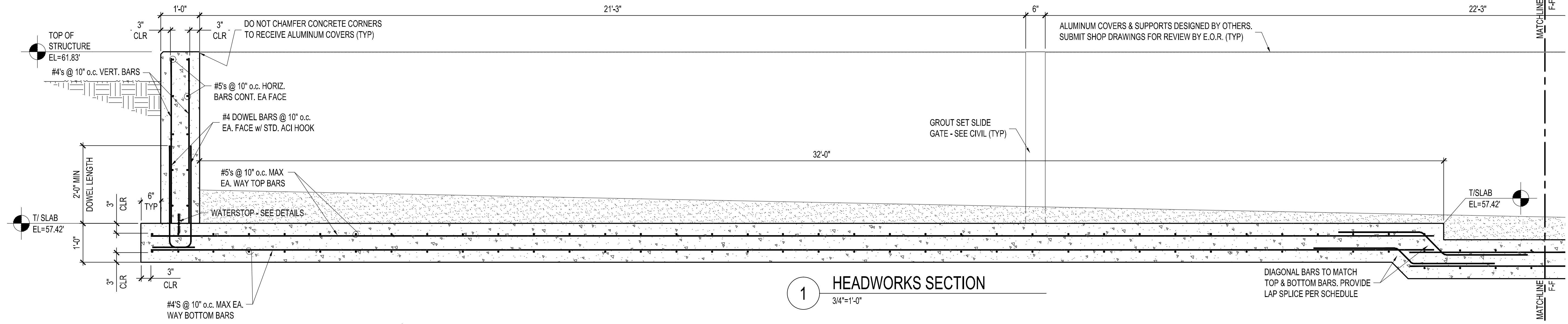
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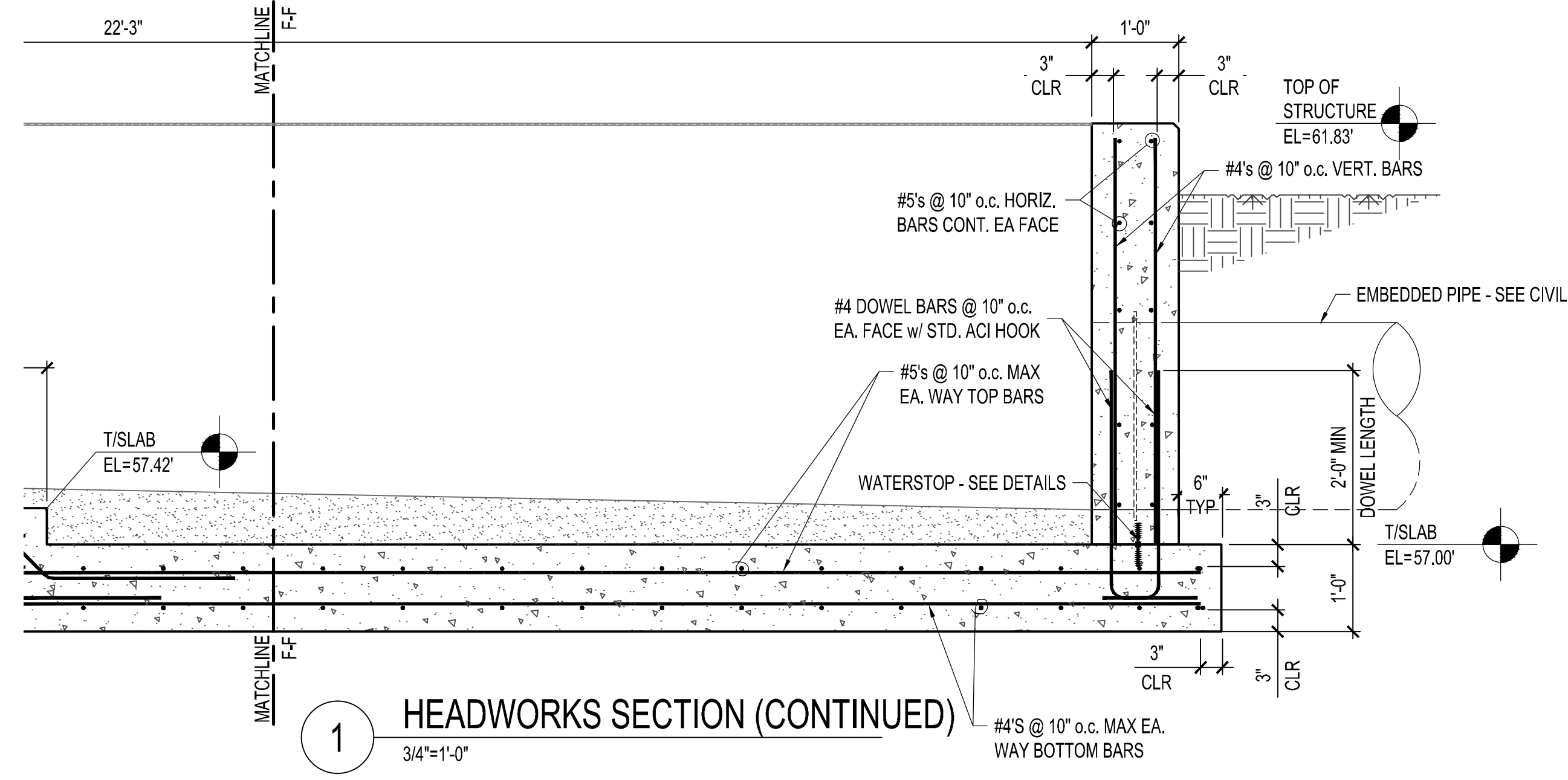
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 FORT STEWART  
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MARK	DATE	BY	DESCRIPTION
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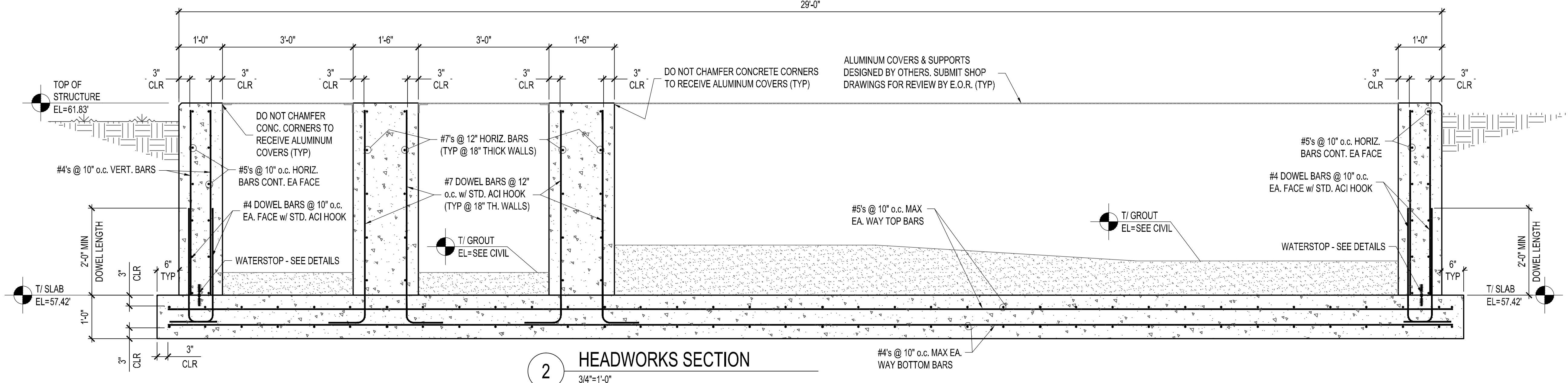
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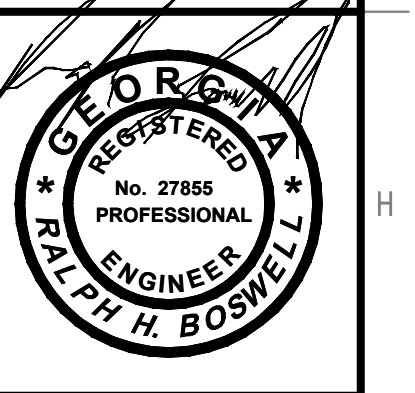


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2 HEADWORKS SECTION  
3/4"=1'-0"

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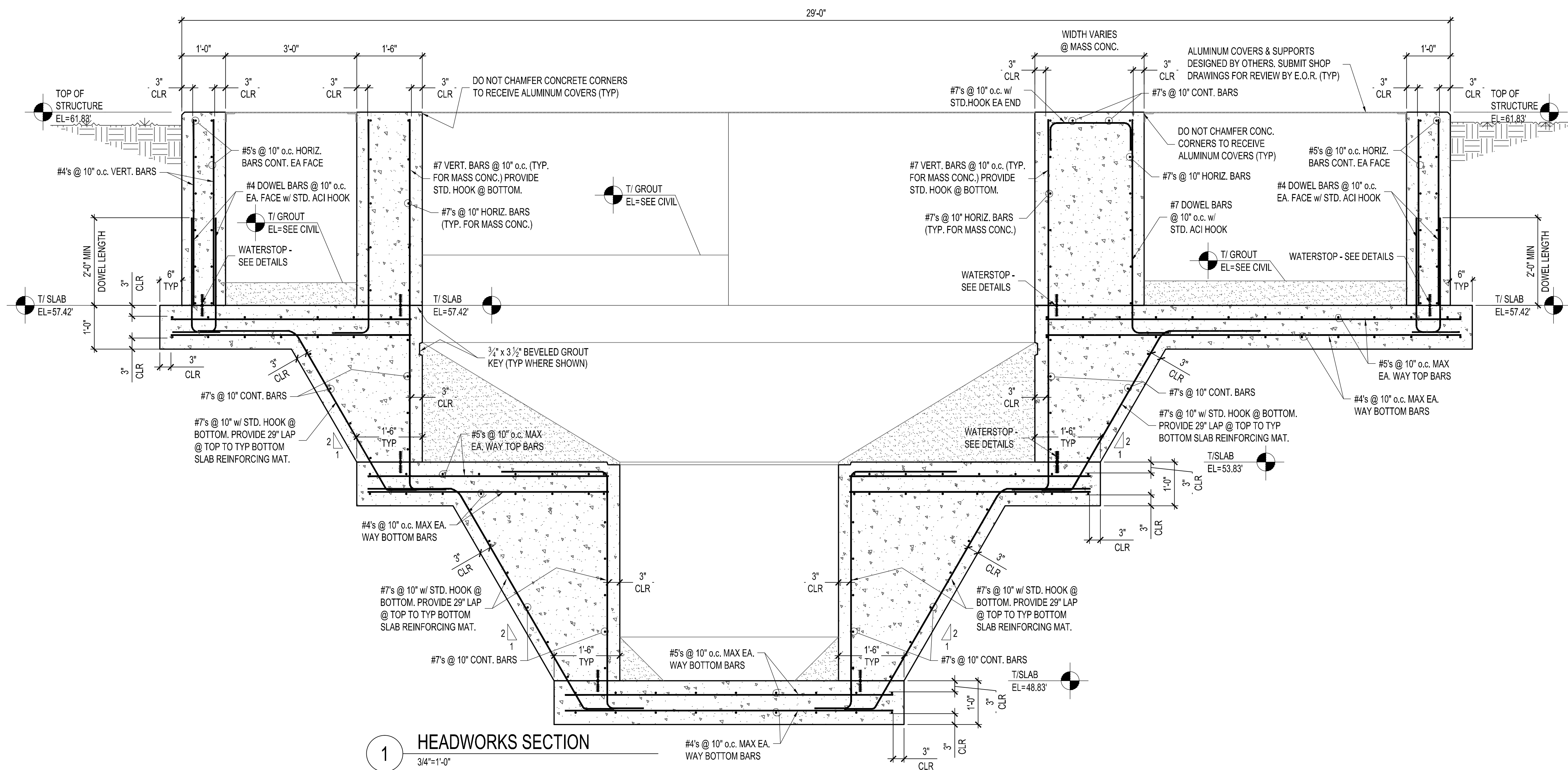
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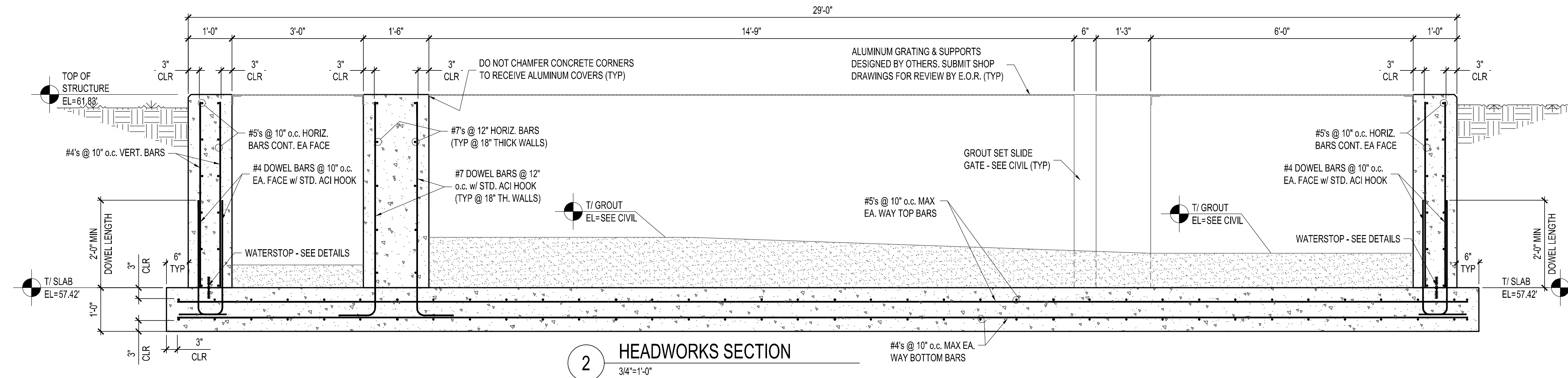
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1 HEADWORKS SECTION  
3/4"=1'-0"



2 HEADWORKS SECTION  
3/4"=1'-0"

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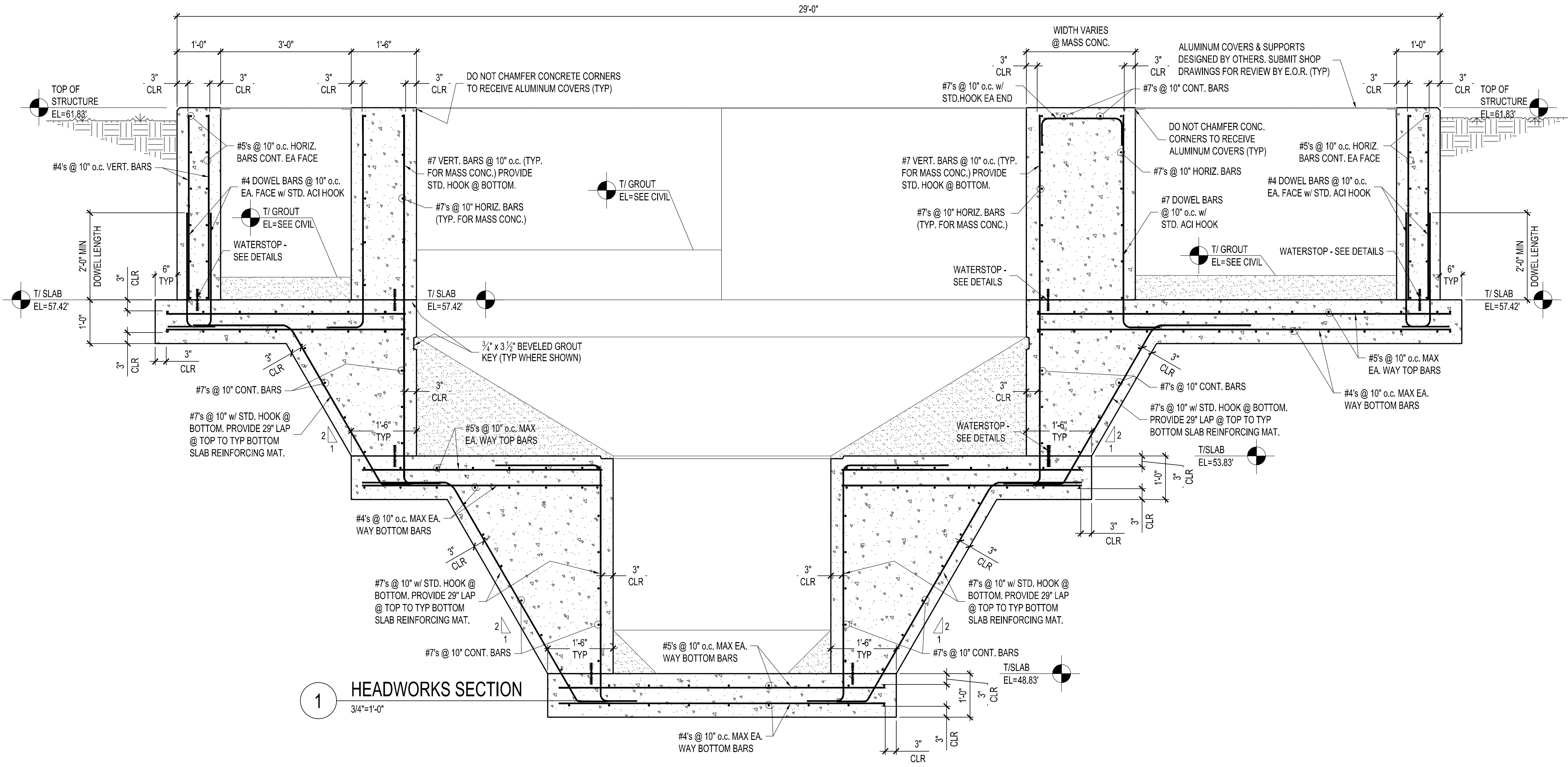
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MARK	DATE	BY	DESCRIPTION
15/03/14	11/28/2012		ISSUED FOR BID
15/03/14	11/28/2012		ISSUED FOR EPO APPROVAL

DESIGNED: CE PROJECT NO. 0E1020  
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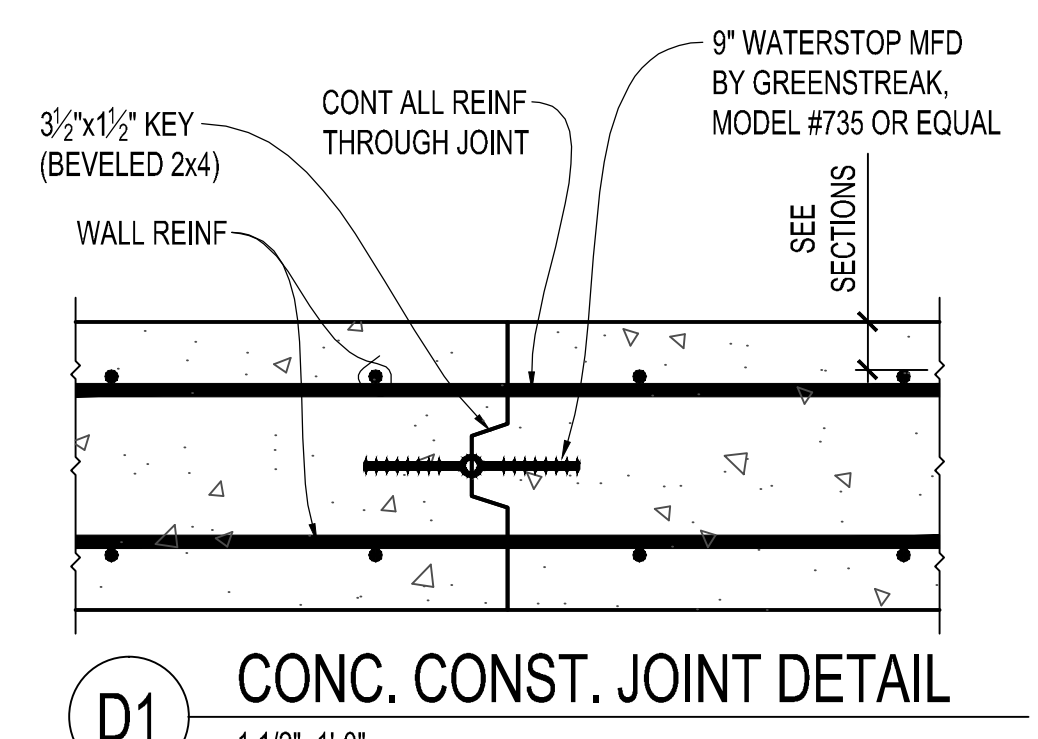


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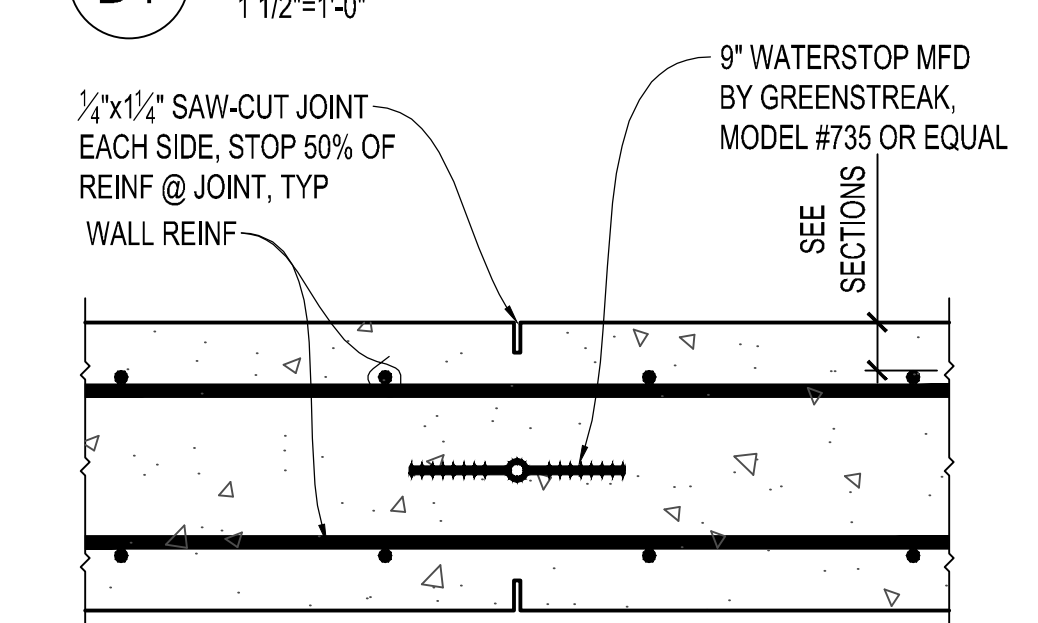
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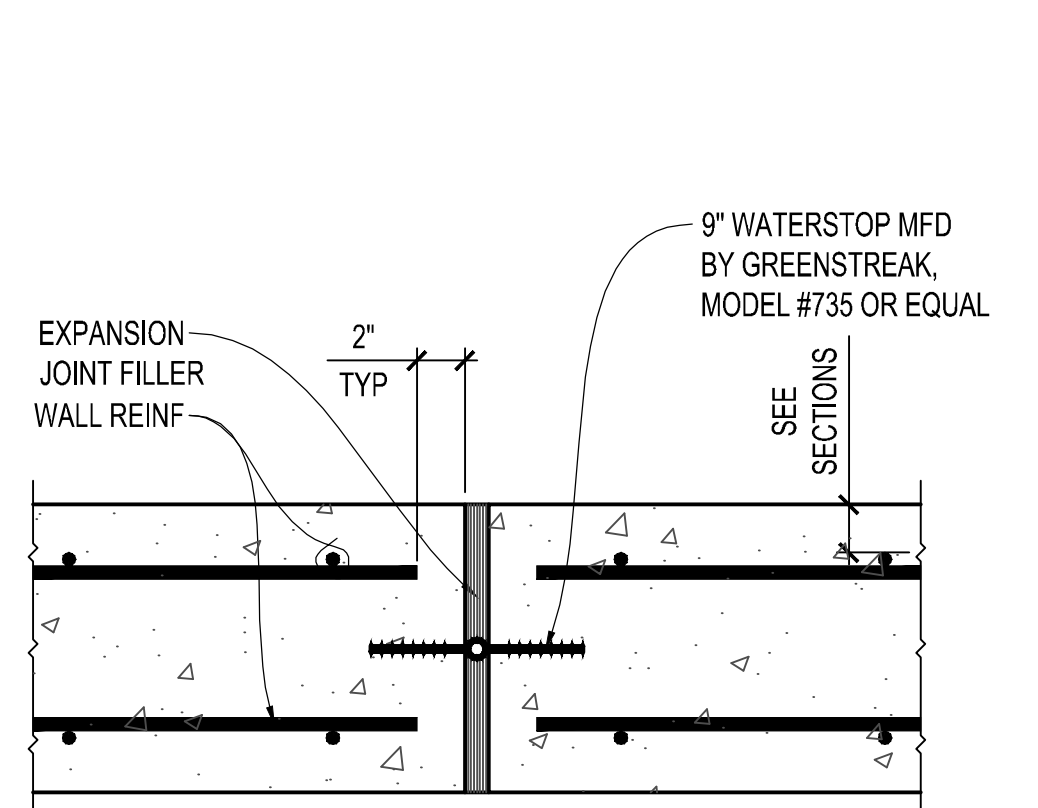
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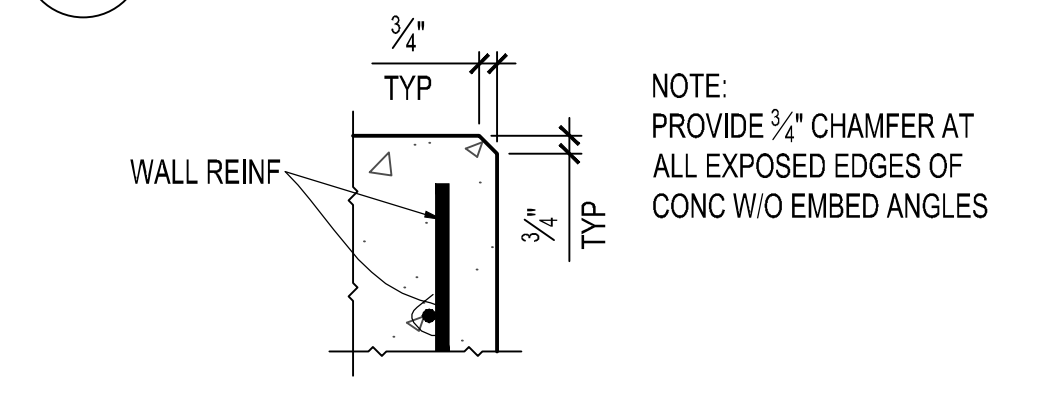
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1 1/2'-1'-0"



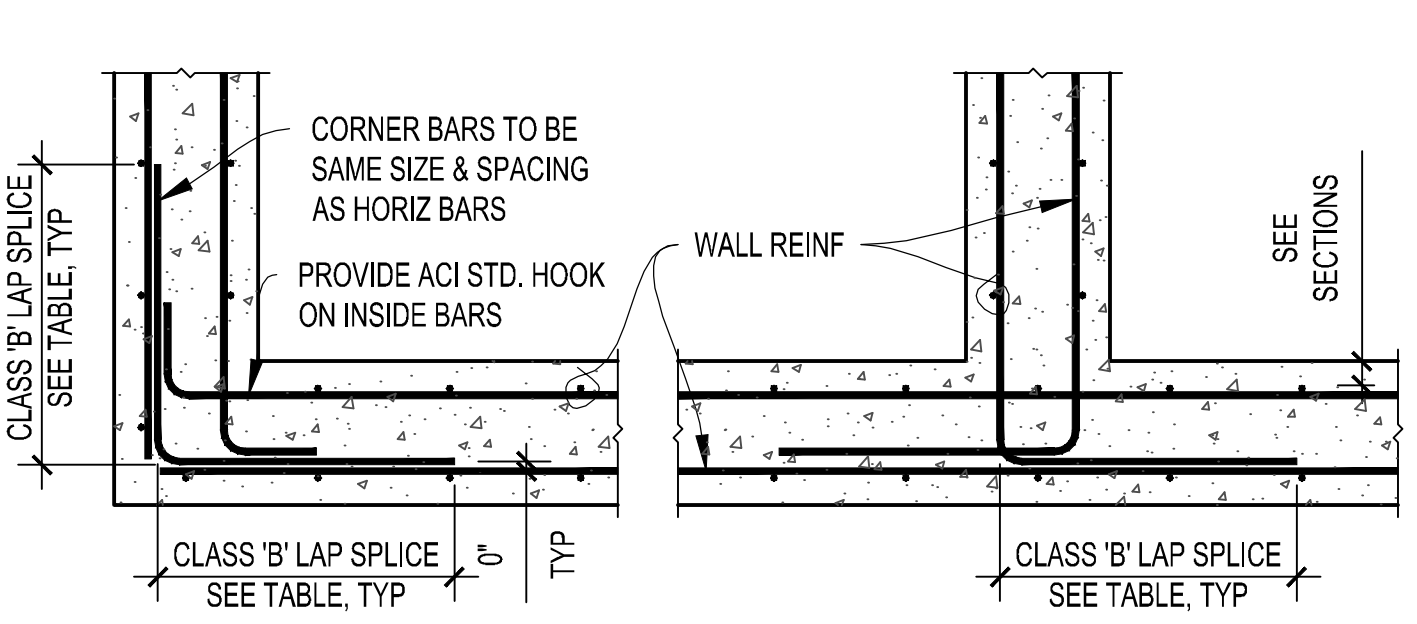
**D2** CONC. CONTROL JOINT DETAIL  
1 1/2'-1'-0"



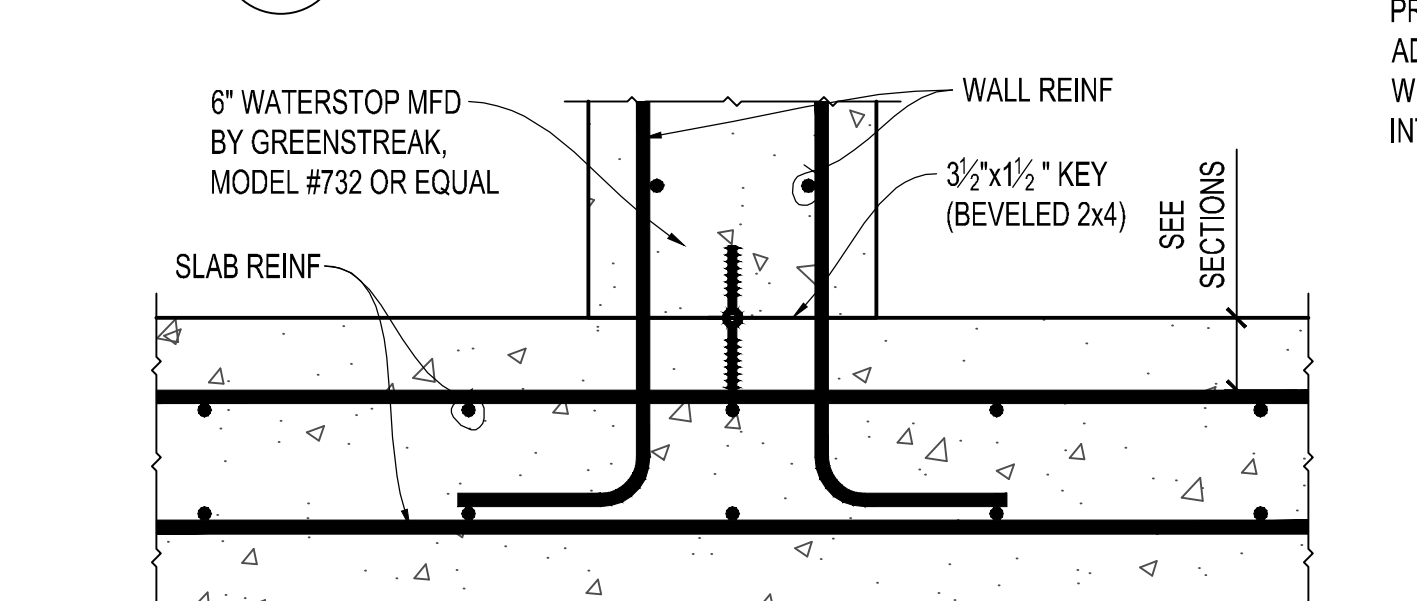
**D3** CONC. EXP JOINT DETAIL  
1 1/2'-1'-0"



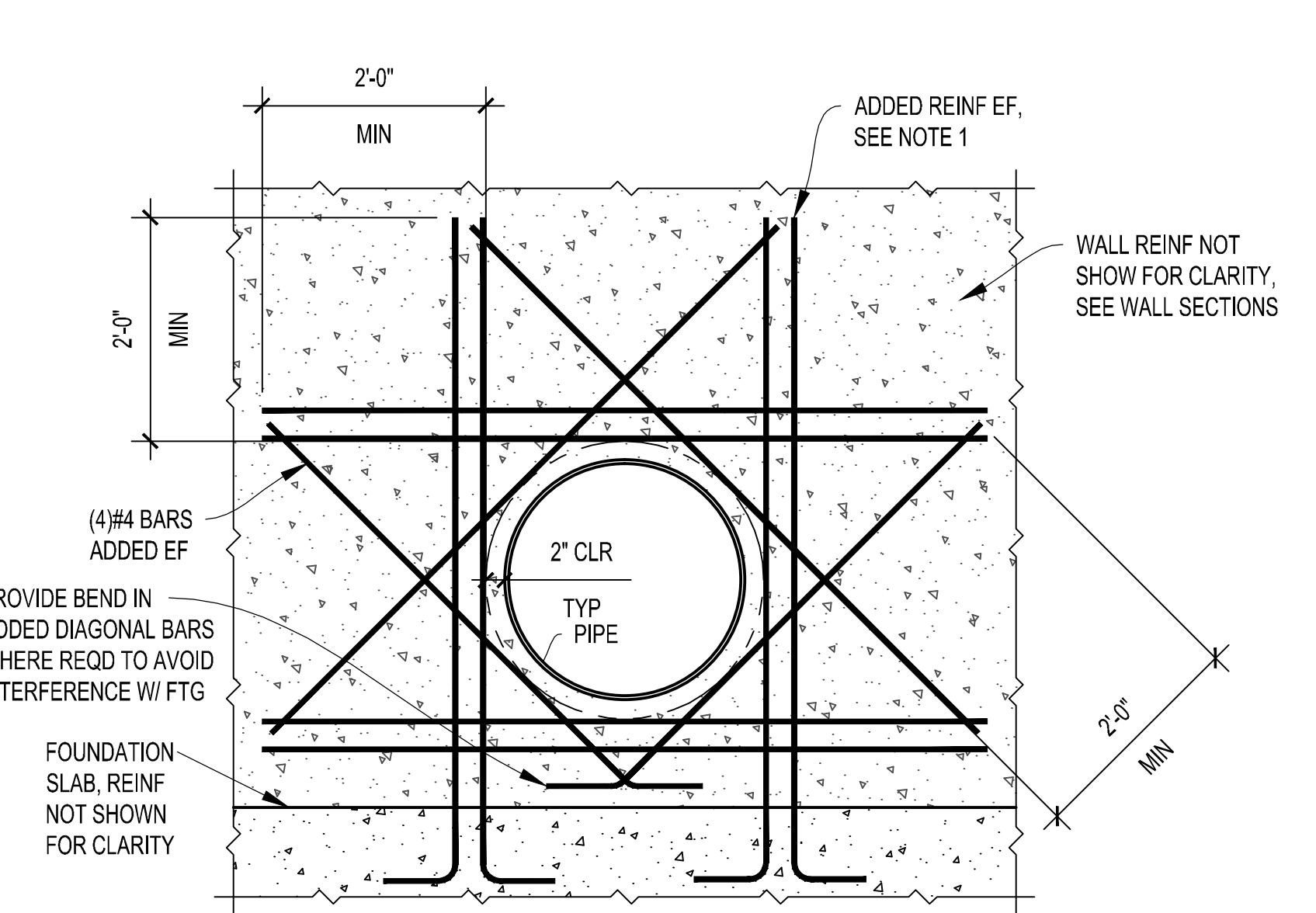
**D4** CONC. CHAMFER DETAIL  
1 1/2'-1'-0"



**D5** TYP REINF @ WALL INTERSECTIONS  
N.T.S.



**D6** WALL / FOUNDATION JOINT  
1 1/2'-1'-0"



**D7** TYP WALL REINF @ PIPE OPENING  
N.T.S.

NOTES:  
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @3'OC.  
2. MAINTAIN NOT LESS THAN 1/4\"/>

HINESVILLE / FORT STEWART WWTP UPGRADE  
 SHEET 10 OF 10  
 DATE: 11-29-2012  
 FILE NAME: 0E11020-10-1S-10  
 ORIGINAL DRAWING SIZE: 36"x24"  
 DATE: 11-29-2012

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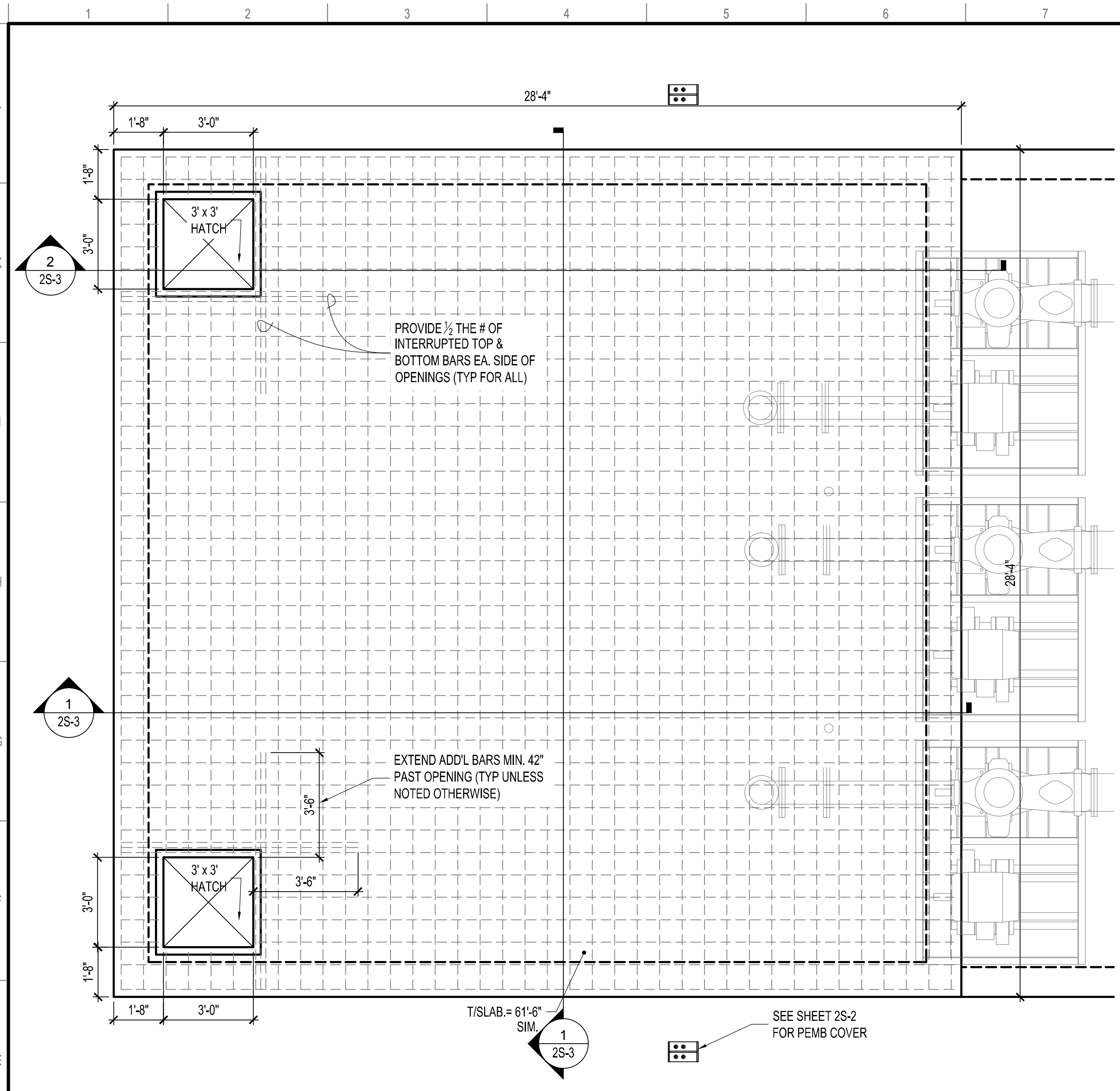
HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11-29-2012		ISSUED FOR RFD
	11-29-2012		ISSUED FOR EFD APPROVAL

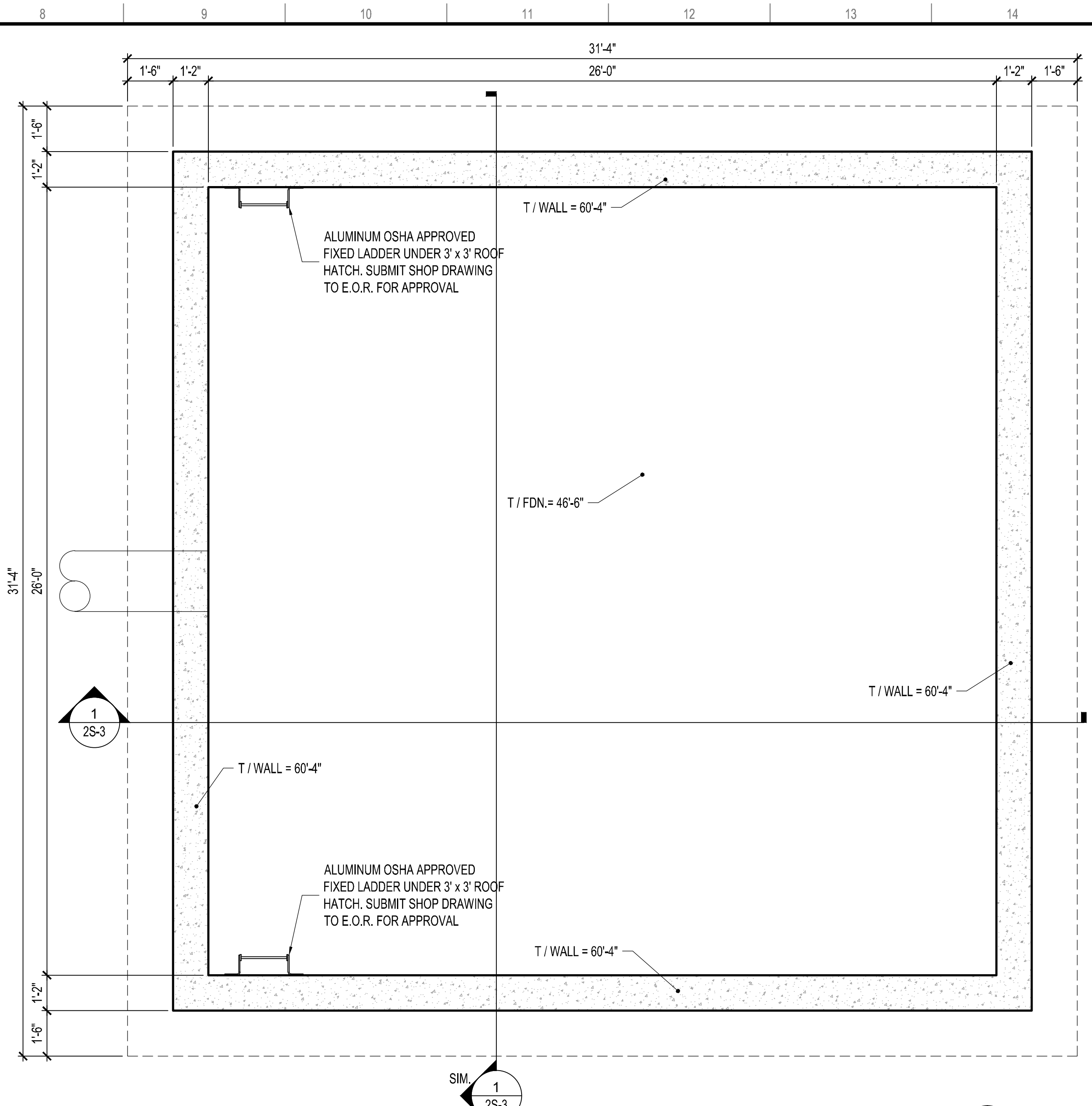
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HEADWORKS DETAILS



**2 IN-PLANT PUMP STATION TOP SLAB REINFORCING PLAN**  
3/8"=1'-0"



**1 IN-PLANT PUMP STATION FOUNDATION PLAN**  
3/8"=1'-0"

**FOUNDATION NOTES**

- DESIGN SOIL BEARING PRESSURE = 1500 PSF. SOIL BEARING PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

**CONCRETE NOTES**

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 3000 PSI FOR CAISSONS AND SLABS-ON-GRADE.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318-05.
- PROVIDE 1/2" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-05. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.

**REINFORCING STEEL NOTES**

- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:
  - REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.
  - WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
  - REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.
- CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:
  - CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"
  - FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
    - SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"
    - SLABS & JOISTS W/ #6 BARS & LARGER = 2"
    - BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"
  - FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
    - SLABS & JOISTS = 3/4"
    - BEAMS, PIERS, & COLUMNS = 1 1/2"
    - WALLS = 3/4"
    - FOOTINGS & BASE SLABS = 2"

**STRUCTURE NOTES**

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ MECHANICAL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- DESIGN LIVE LOAD FOR TOP SLAB = 250 PSF
- SEISMIC DESIGN CRITERIA:
  - OCCUPANCY CATEGORY = IV
  - SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50
  - S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101
  - SITE CLASS = E
  - S<sub>0.2</sub> = 0.463 S<sub>0.7</sub> = 0.233
  - BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 15.4-1 OR 15.4-2):
    - FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:
  - RESPONSE MODIFICATION FACTOR (R) = 2.0
  - SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.2926
  - SEISMIC DESIGN CATEGORY = D
  - ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

CONC REINF LAP LENGTH	
4500 PSI (ACI 350-06)	
BAR SIZE	TENSION SPLICE
	CLASS 'B'
#3	18"
#4	24"
#5	30"
#6	35"
#7	51"
#8	59"
#9	66"
#10	73"

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HINESVILLE / FORT STEWART  
WWTP UPGRADE

FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	10/20/14		ISSUED FOR BID
	11/20/12		ISSUED FOR EDO APPROVAL

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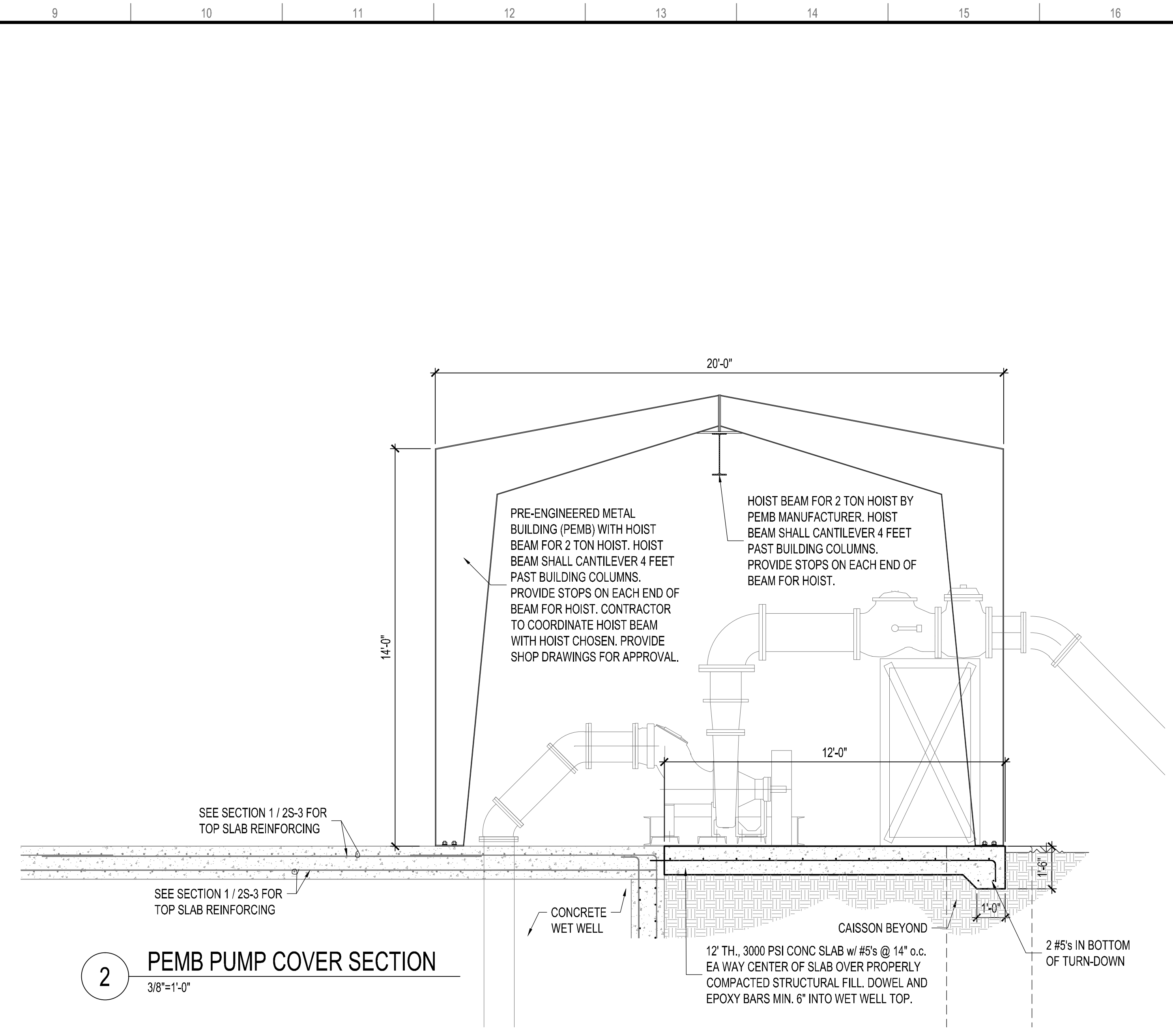
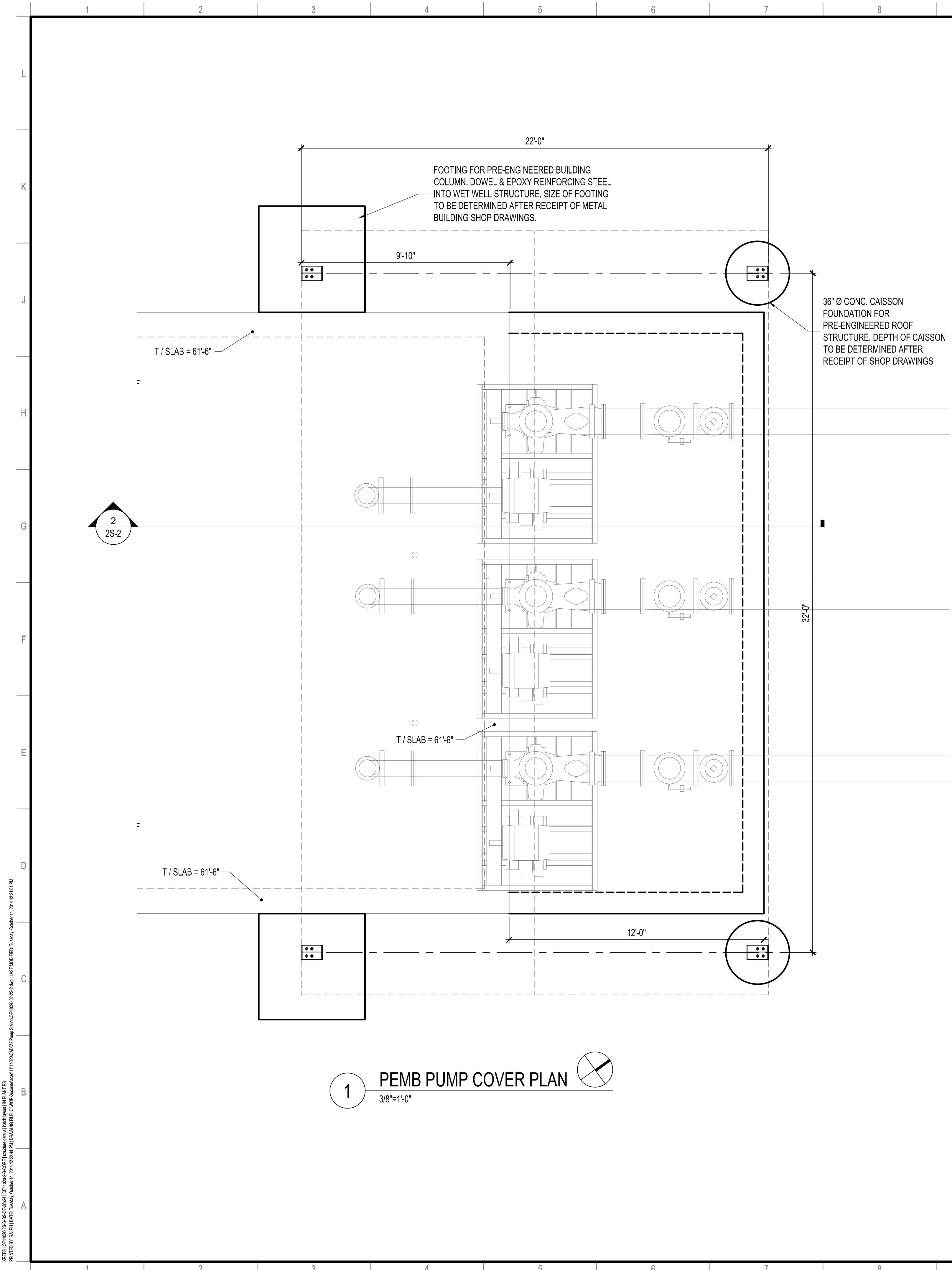
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IN-PLANT PUMP STATION  
FOUNDATION PLAN,  
TOP SLAB PLAN, &  
GENERAL NOTES

**2S-1**  
SHEET 1 OF 04

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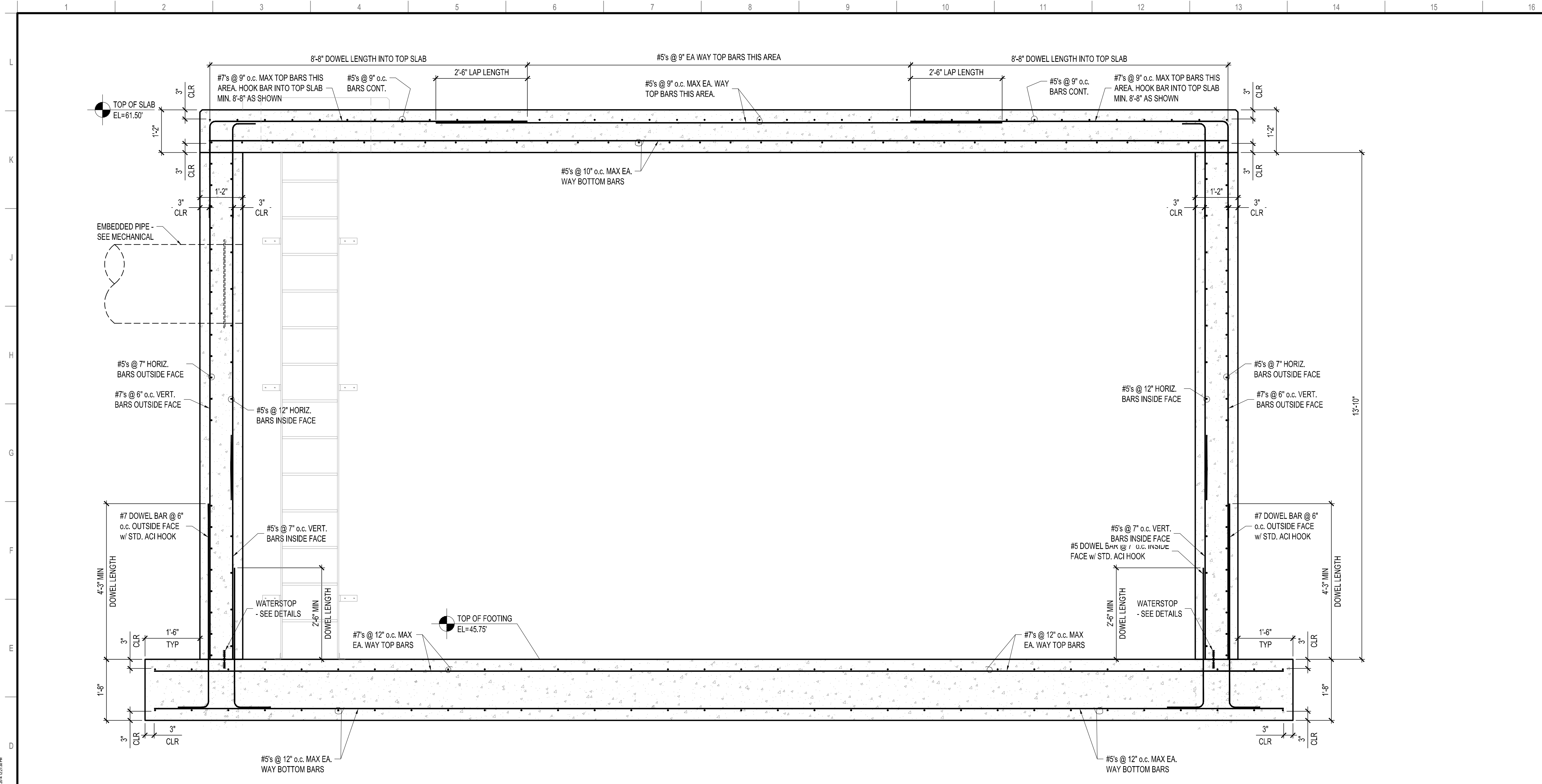
**HINESVILLE / FORT STEWART  
 WWTP UPGRADE**  
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**THE CITY OF HINESVILLE  
 FORT STEWART**  
 LIBERTY COUNTY GA

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2	10/13/2014		ISSUED FOR EFD APPROVAL

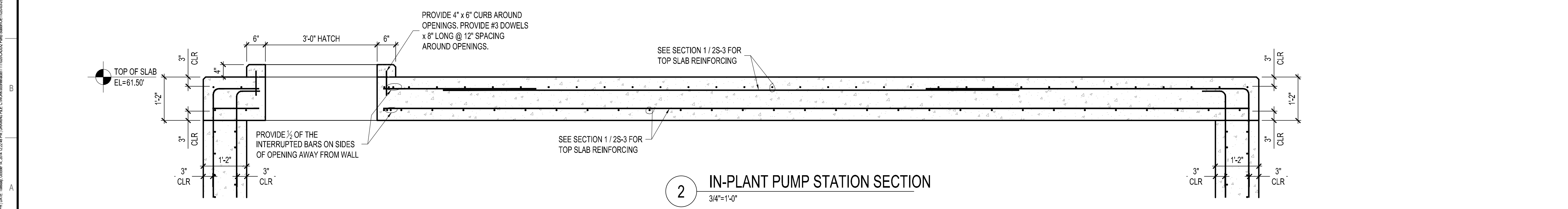
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**IN-PLANT PUMP STATION  
 PRE-ENGINEERED METAL  
 BUILDING COVER  
 PLAN & SECTION**

**2S-2**  
 SHEET 2 OF 04

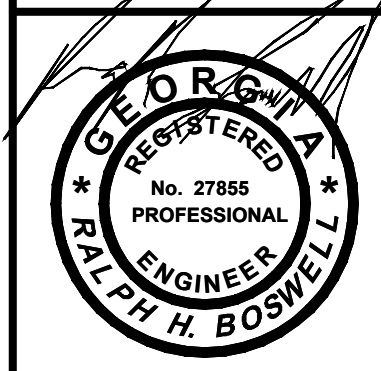
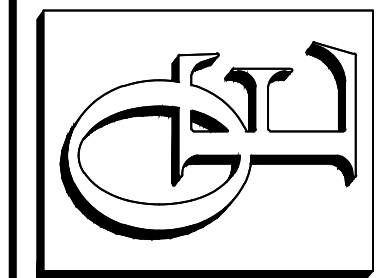


**1** IN-PLANT PUMP STATION SECTION  
3/4"=1'-0"



**2** IN-PLANT PUMP STATION SECTION  
3/4"=1'-0"

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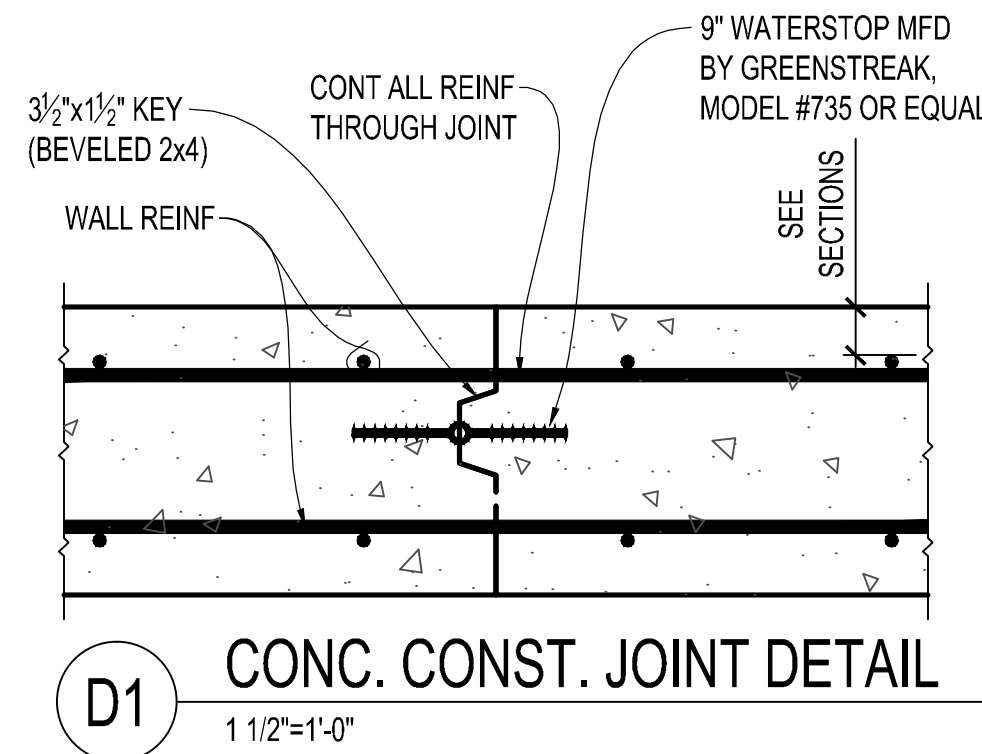
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CHECKED: DATE: 11-29-2012  
ORIGINAL DRAWING SIZE: 36"x24"  
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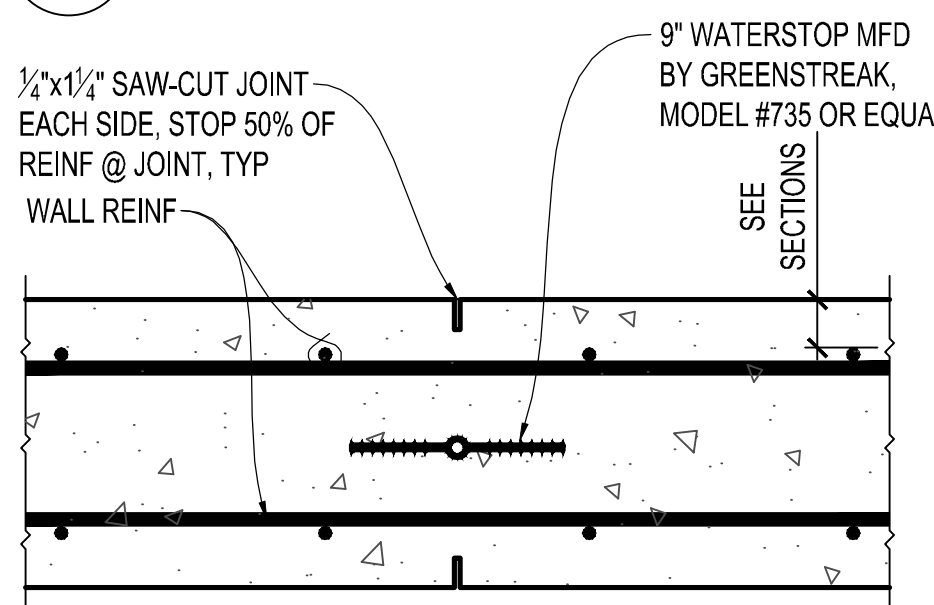
IN-PLANT PUMP STATION  
SECTIONS

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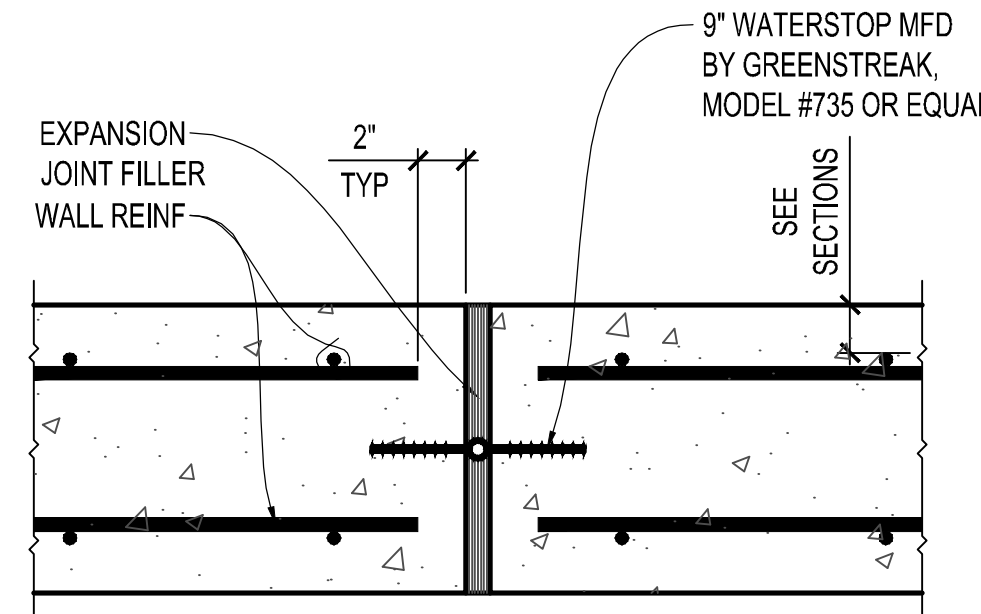
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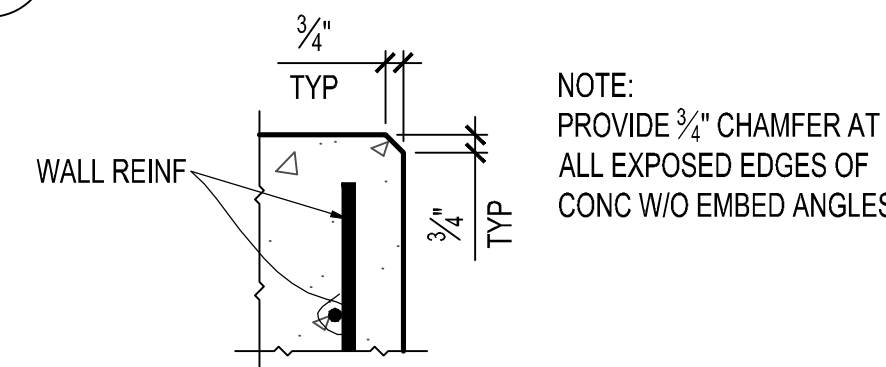
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1 1/2"=1'-0"



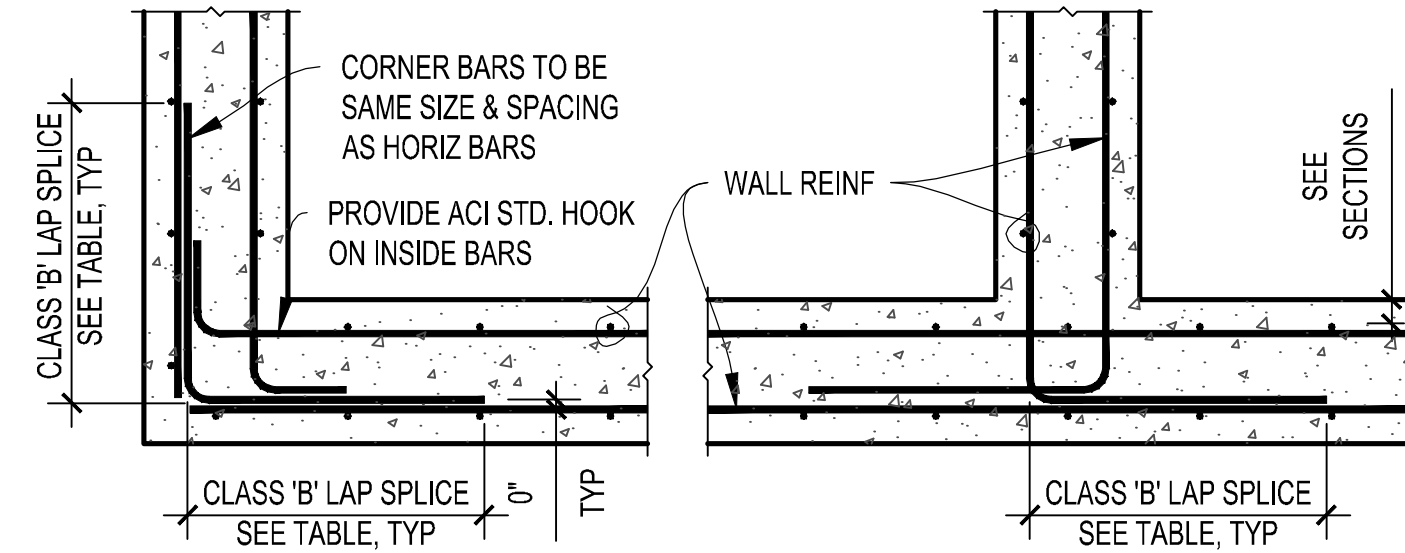
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1 1/2"=1'-0"



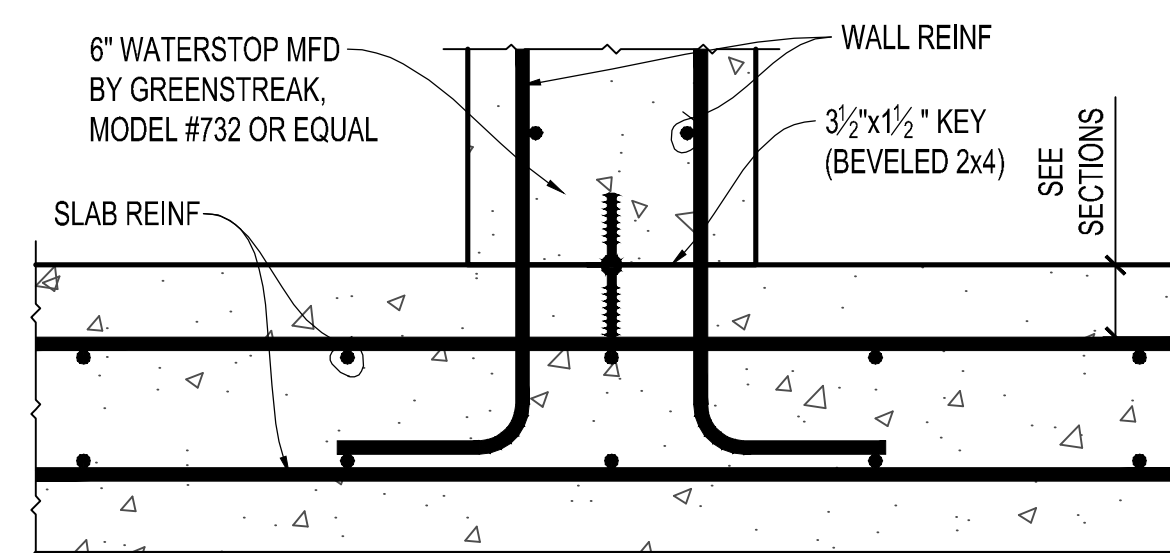
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1 1/2"=1'-0"



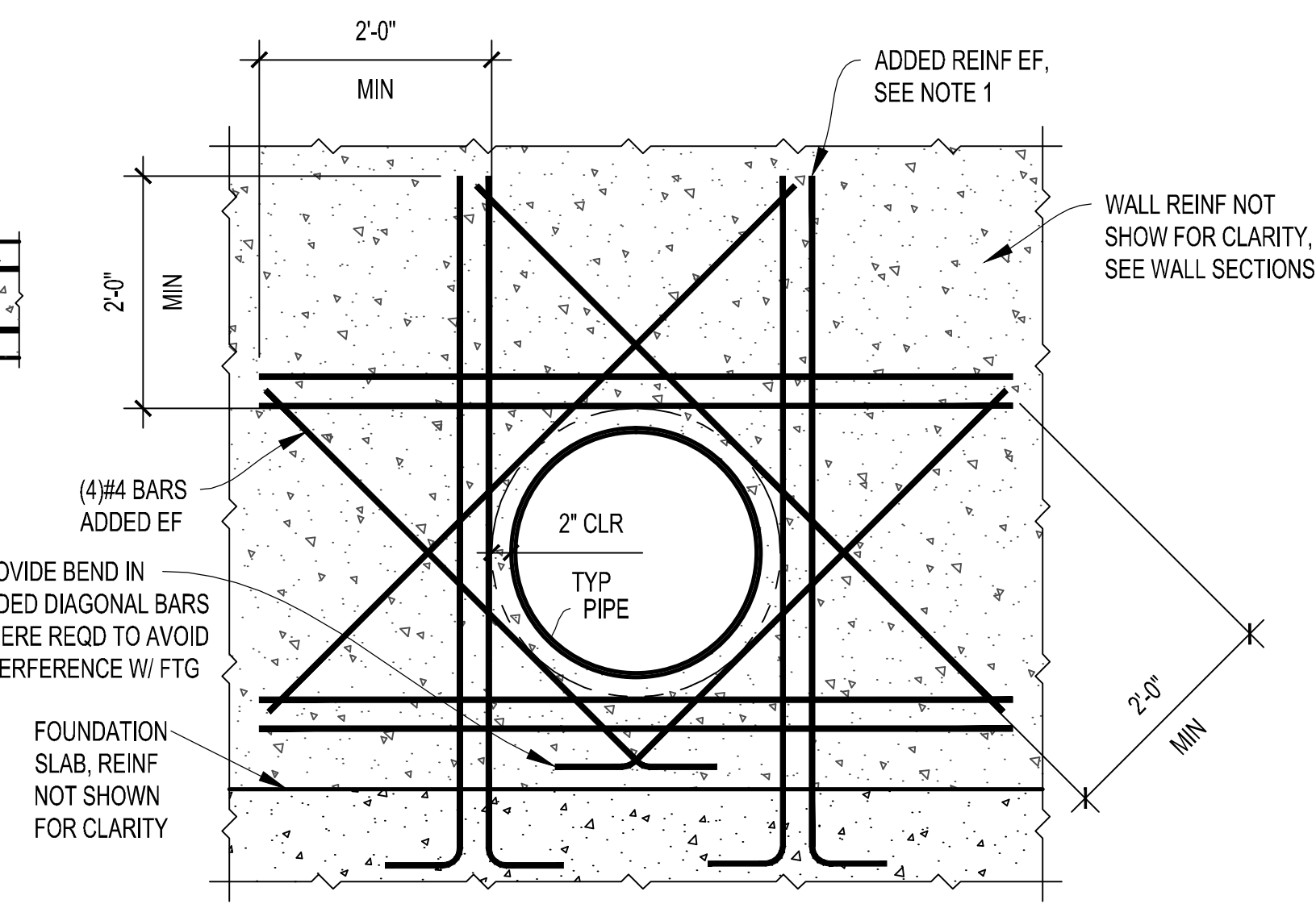
**D4** CONC. CHAMFER DETAIL  
1 1/2"=1'-0"



**D5** TYP REINF @ WALL INTERSECTIONS  
N.T.S.



**D6** WALL / FOUNDATION JOINT  
1 1/2"=1'-0"



- NOTES:
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @ 3"OC.
  2. MAINTAIN NOT LESS THAN 1/4" CLEAR BETWEEN ADJACENT PARALLEL BARS.

**D7** TYP WALL REINF @ PIPE OPENING  
N.T.S.

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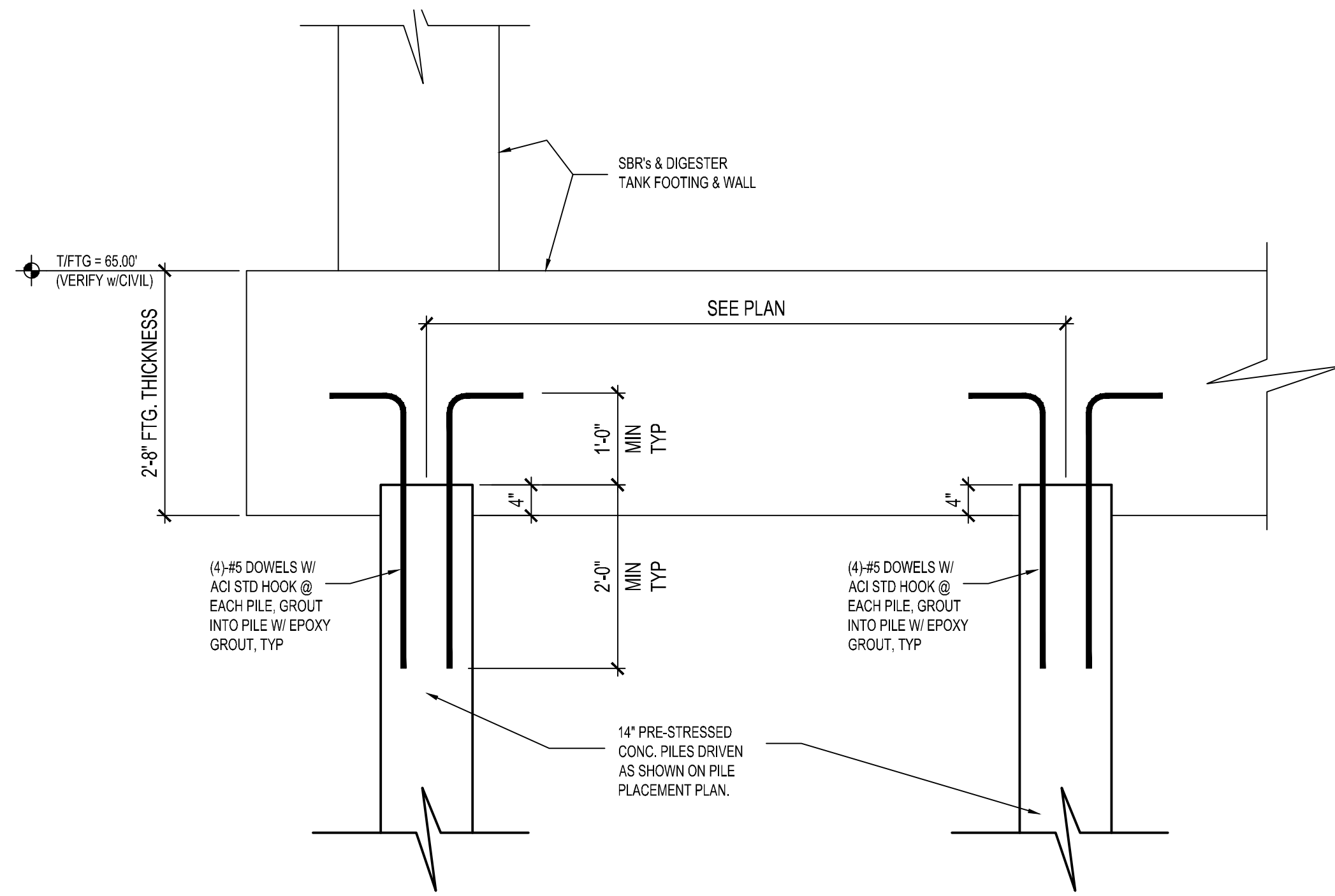
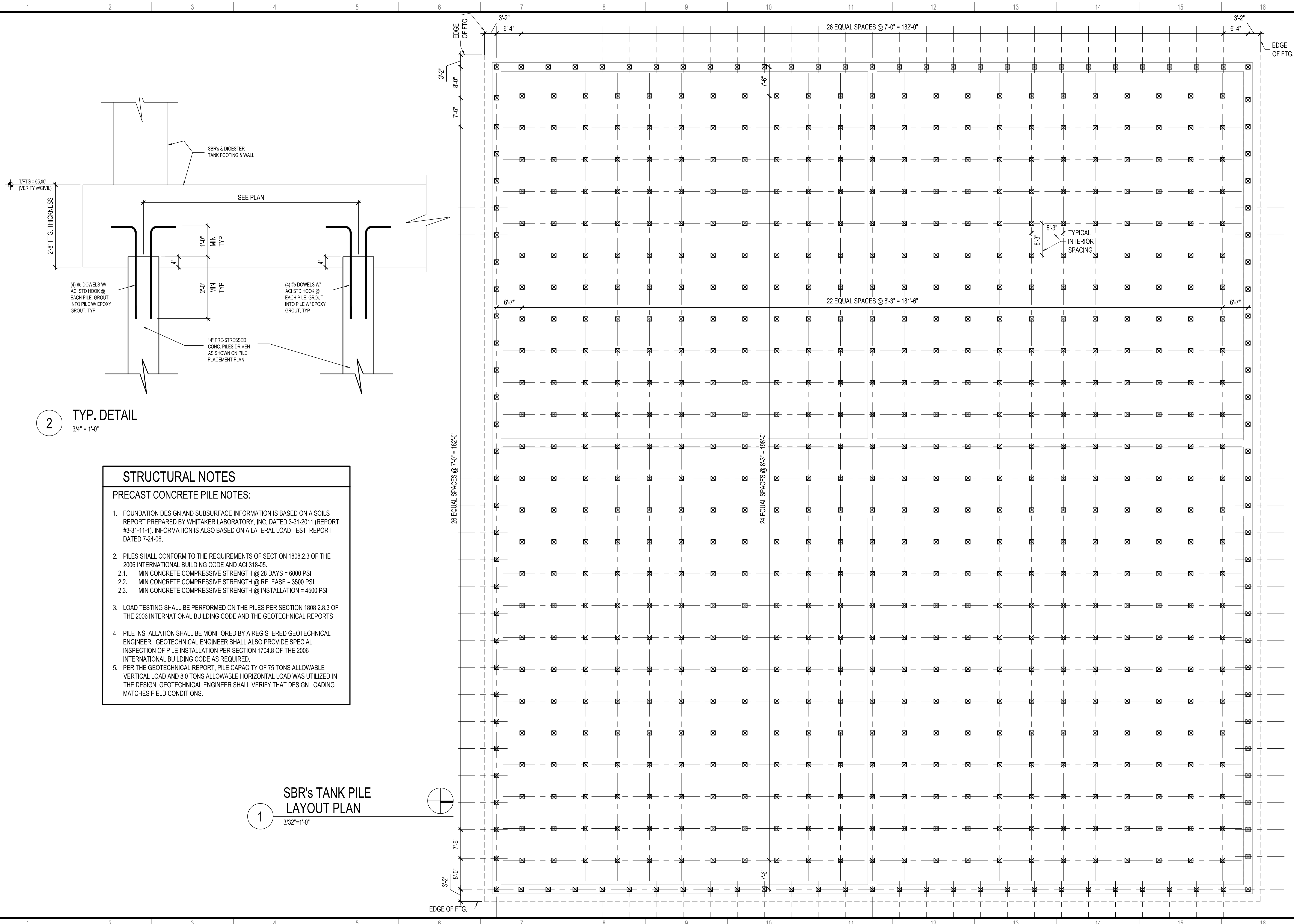


HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

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IN-PLANT PUMP STATION  
 DETAILS



2 TYP. DETAIL  
3/4" = 1'-0"

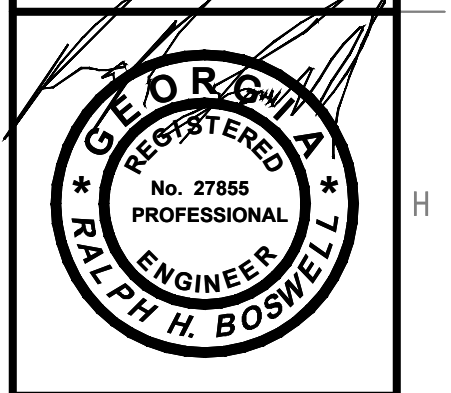
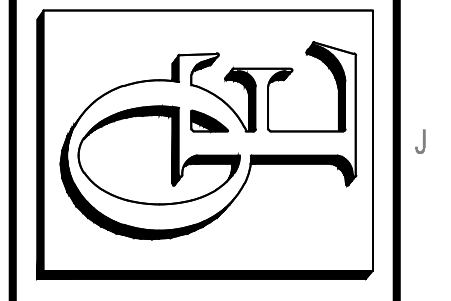
**STRUCTURAL NOTES**

**PRECAST CONCRETE PILE NOTES:**

- FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. DATED 3-31-2011 (REPORT #3-31-11-1). INFORMATION IS ALSO BASED ON A LATERAL LOAD TEST REPORT DATED 7-24-06.
- PILES SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1808.2.3 OF THE 2006 INTERNATIONAL BUILDING CODE AND ACI 318-05.
  - MIN CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS = 6000 PSI
  - MIN CONCRETE COMPRESSIVE STRENGTH @ RELEASE = 3500 PSI
  - MIN CONCRETE COMPRESSIVE STRENGTH @ INSTALLATION = 4500 PSI
- LOAD TESTING SHALL BE PERFORMED ON THE PILES PER SECTION 1808.2.8.3 OF THE 2006 INTERNATIONAL BUILDING CODE AND THE GEOTECHNICAL REPORTS.
- PILE INSTALLATION SHALL BE MONITORED BY A REGISTERED GEOTECHNICAL ENGINEER. GEOTECHNICAL ENGINEER SHALL ALSO PROVIDE SPECIAL INSPECTION OF PILE INSTALLATION PER SECTION 1704.8 OF THE 2006 INTERNATIONAL BUILDING CODE AS REQUIRED.
- PER THE GEOTECHNICAL REPORT, PILE CAPACITY OF 75 TONS ALLOWABLE VERTICAL LOAD AND 8.0 TONS ALLOWABLE HORIZONTAL LOAD WAS UTILIZED IN THE DESIGN. GEOTECHNICAL ENGINEER SHALL VERIFY THAT DESIGN LOADING MATCHES FIELD CONDITIONS.

1 SBR's TANK PILE LAYOUT PLAN  
3/32" = 1'-0"

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HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11-29-2012		ISSUED FOR RFD
	04-10-2014		ISSUED FOR RFD APPROVAL

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SBR's TANK  
PILE LAYOUT PLAN

PLOTTED BY: RALPH DATE: Tuesday, October 14, 2014 9:42:41 AM DRAWING FILE: C:\WORK\occonee\111020\01-SS-1.dwg PLOTTED: Wednesday, October 15, 2014 8:58:53 AM



### FOUNDATION NOTES

- FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. (REPORT # 3-31-11-1). ALLOWABLE PILE CAPACITY SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE.
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

### CONCRETE NOTES

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318-05.
- PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-05. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.

### REINFORCING STEEL NOTES

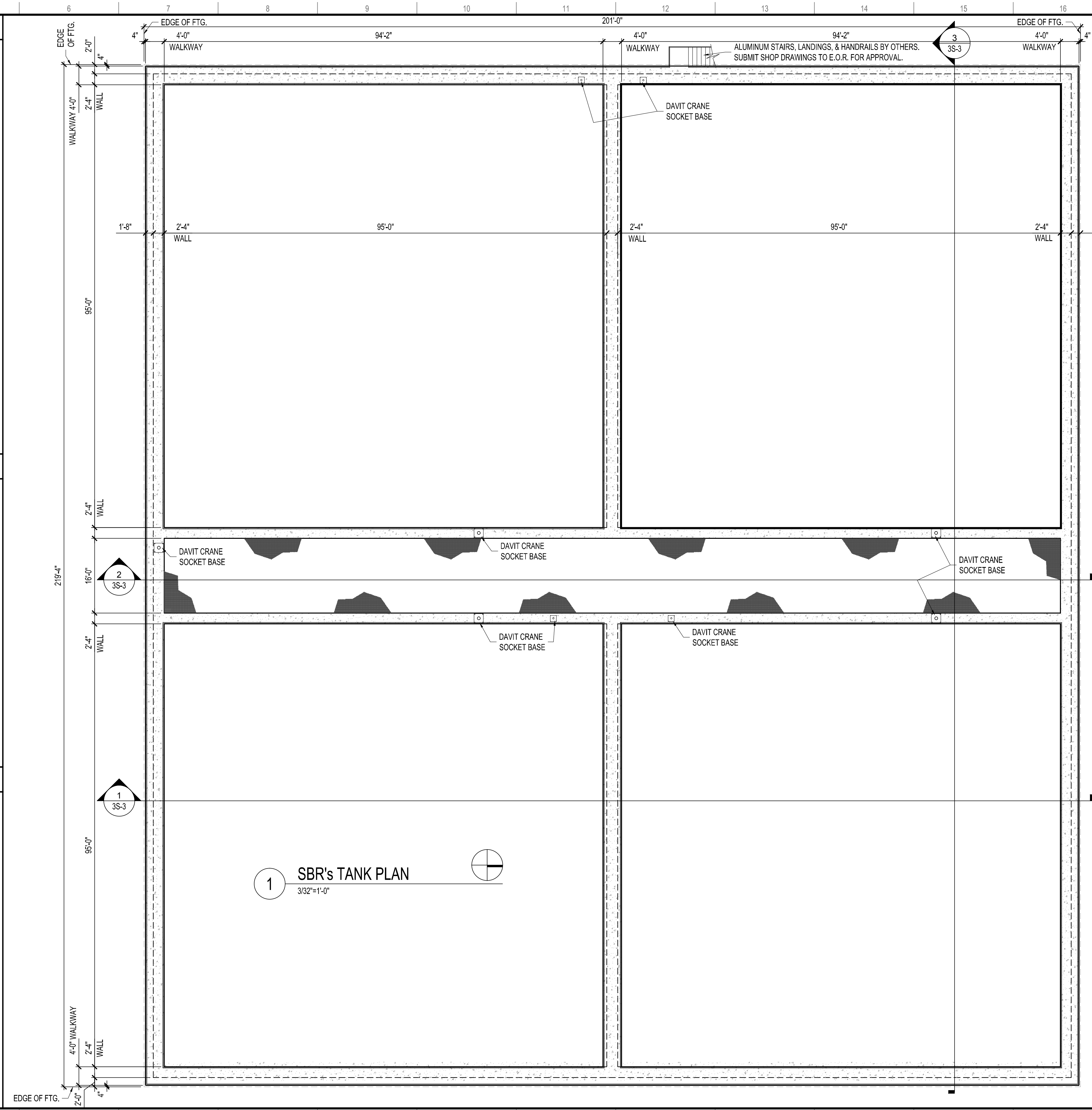
- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:
  - REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.
  - WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
  - REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.
- CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:
  - CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"
  - FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
    - SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"
    - SLABS & JOISTS W/ #6 BARS & LARGER = 2"
    - BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"
  - FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:
    - SLABS & JOISTS = 3/4"
    - BEAMS, PIERS, & COLUMNS = 1 1/2"
    - WALLS = 3/4"
    - FOOTINGS & BASE SLABS = 2"

### STRUCTURE NOTES

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ MECHANICAL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- CONTRACTOR SHALL SUBMIT PROPOSED LOCATIONS OF CONSTRUCTION JOINTS FOR APPROVAL BY ENGINEER OF RECORD PRIOR TO BEGINNING WORK.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- SEISMIC DESIGN CRITERIA:
  - OCCUPANCY CATEGORY = IV
  - SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50
  - S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101
  - SITE CLASS = E
  - S<sub>05</sub> = 0.463 S<sub>D1</sub> = 0.233
  - BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 15.4-1 OR 15.4-2):
    - FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:
    - RESPONSE MODIFICATION FACTOR (R) = 2.0
    - SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.2926
    - SEISMIC DESIGN CATEGORY = D
    - ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

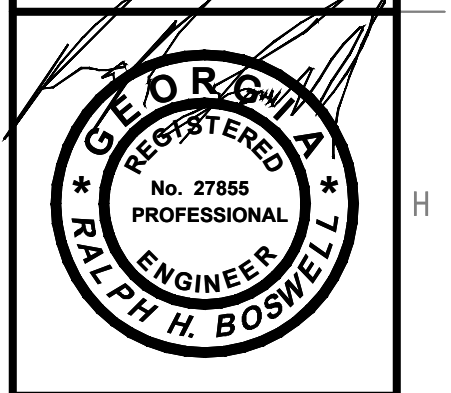
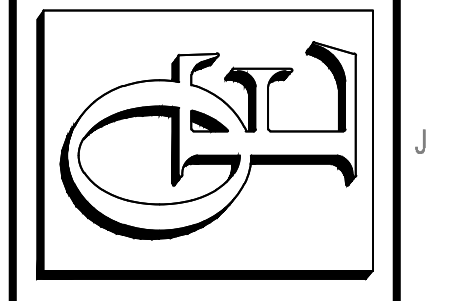
### CONC REINF LAP LENGTH 4500 PSI (ACI 350-06)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	18"	
#4	24"	
#5	30"	
#6	35"	
#7	51"	
#8	59"	
#9	66"	
#10	73"	



1 SBR's TANK PLAN  
3/32"=1'-0"

**OCONEE ENGINEERING L.L.C.**  
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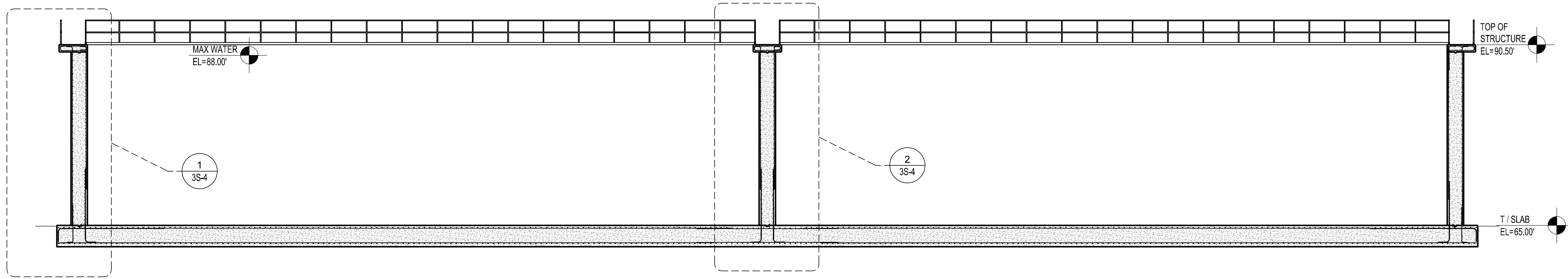
HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11-29-2012		ISSUED FOR RFD
	04-10-2014		ISSUED FOR EFD APPROVAL

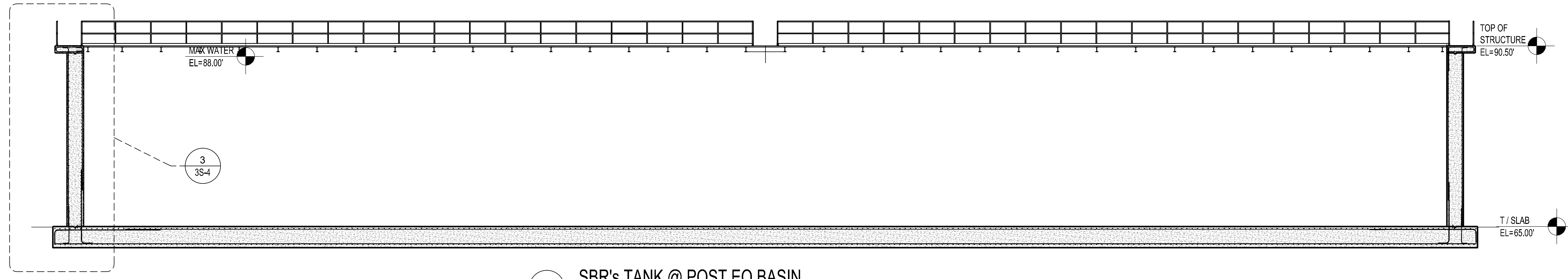
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SBR'S TANK  
PLAN & GENERAL NOTES

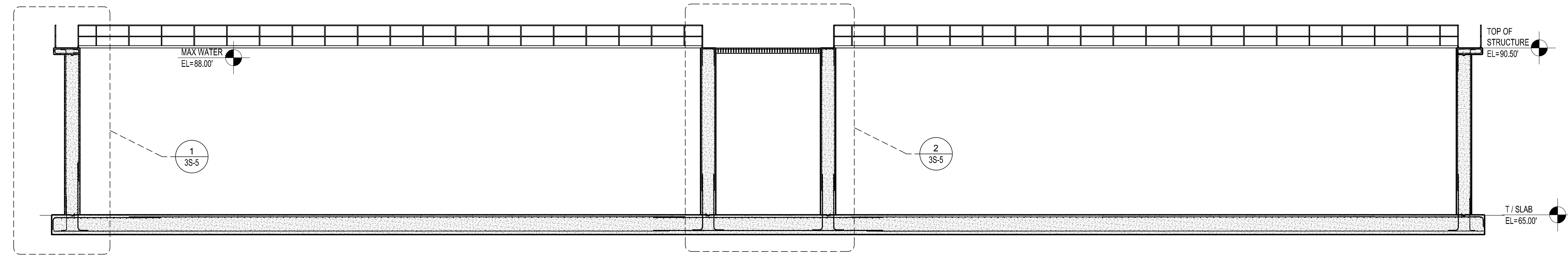
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1 SBR's TANK SECTION  
1/8"=1'-0"



2 SBR's TANK @ POST EQ BASIN  
1/8"=1'-0"



3 SBR's TANK SECTION @ SBR & POST EQ BASIN  
1/8"=1'-0"

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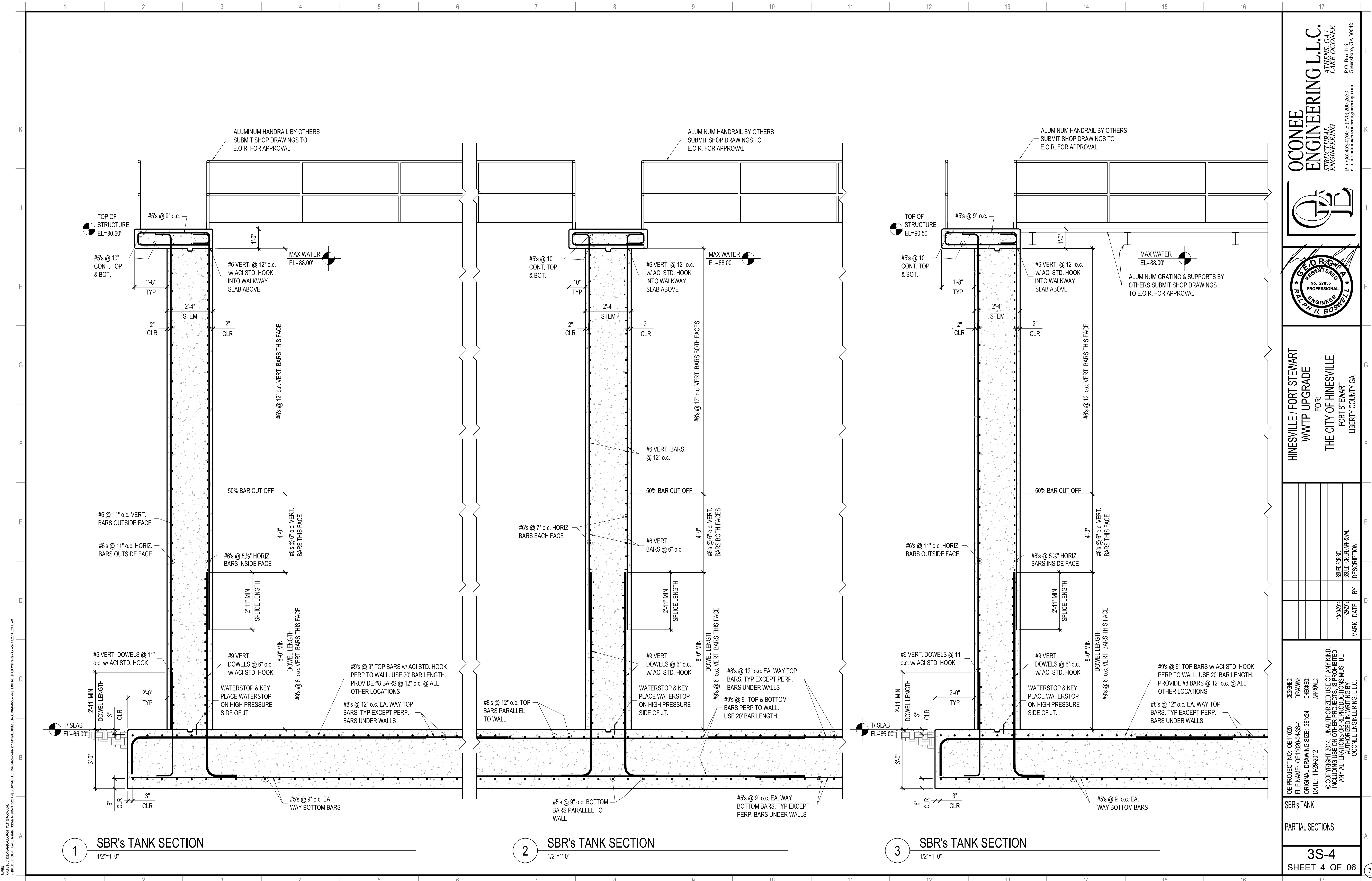
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WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
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LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11/29/2012		ISSUED FOR RFD
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SBR's TANK SECTIONS

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**1** SBR's TANK SECTION  
1/2"=1'-0"

**2** SBR's TANK SECTION  
1/2"=1'-0"

**3** SBR's TANK SECTION  
1/2"=1'-0"

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**G. L. BOSWELL**  
REGISTERED PROFESSIONAL ENGINEER  
No. 27855  
STATE OF GEORGIA

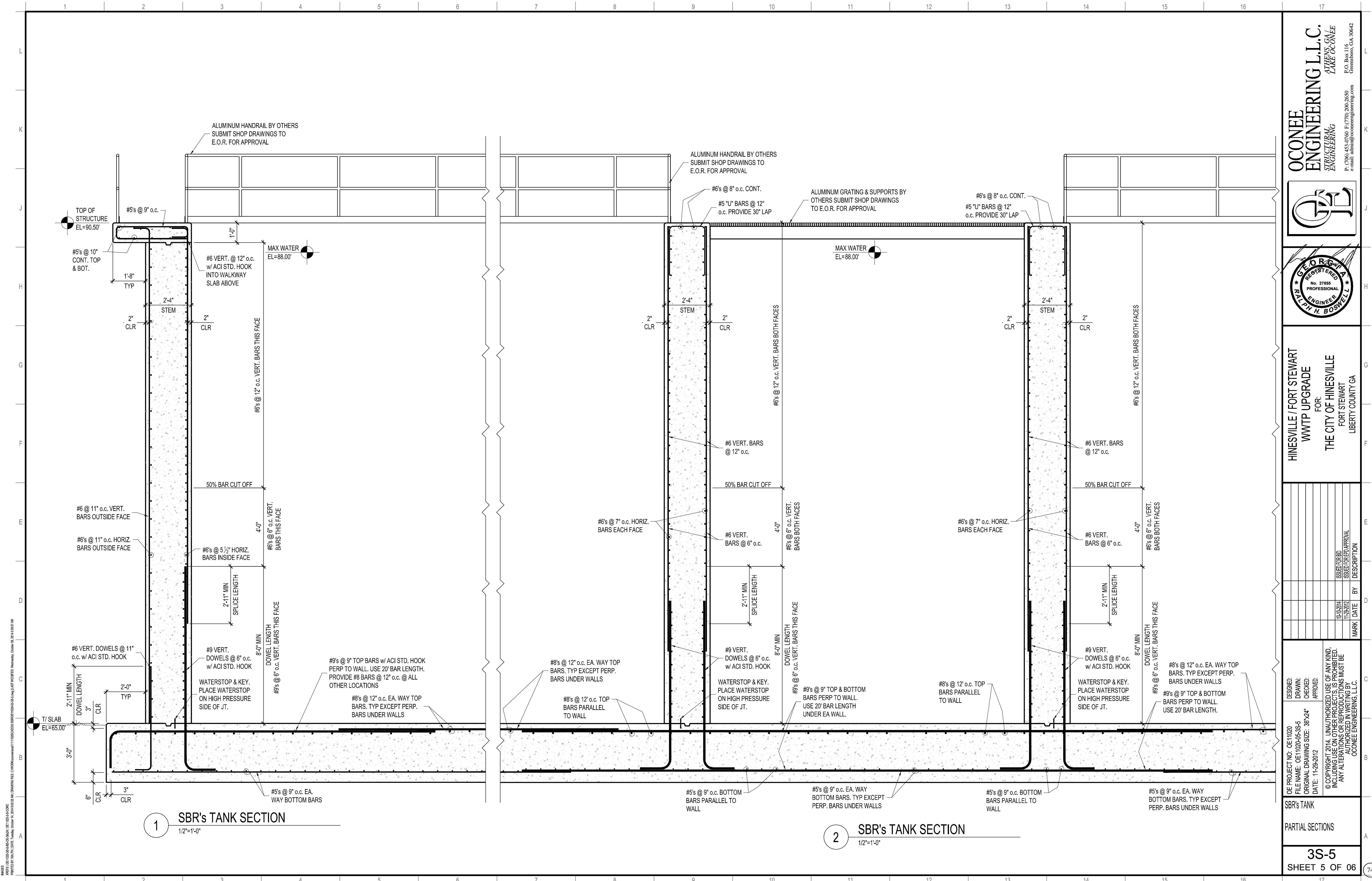
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WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/10/14			ISSUED FOR RFD
11/28/12			ISSUED FOR EFD APPROVAL

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SBR's TANK  
PARTIAL SECTIONS

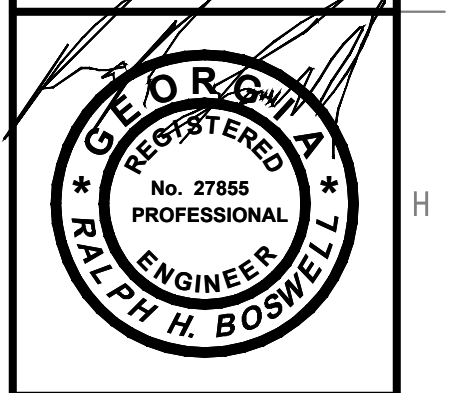
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1 SBR's TANK SECTION  
1/2"=1'-0"

2 SBR's TANK SECTION  
1/2"=1'-0"

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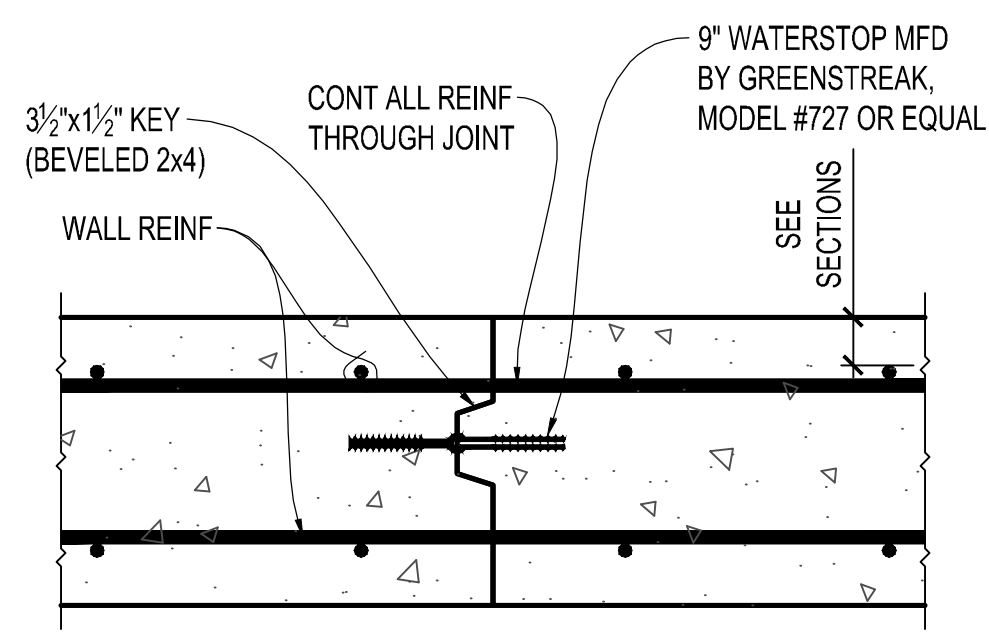
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WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
15	10/20/14		ISSUED FOR BID
16	11/20/12		ISSUED FOR EFD APPROVAL

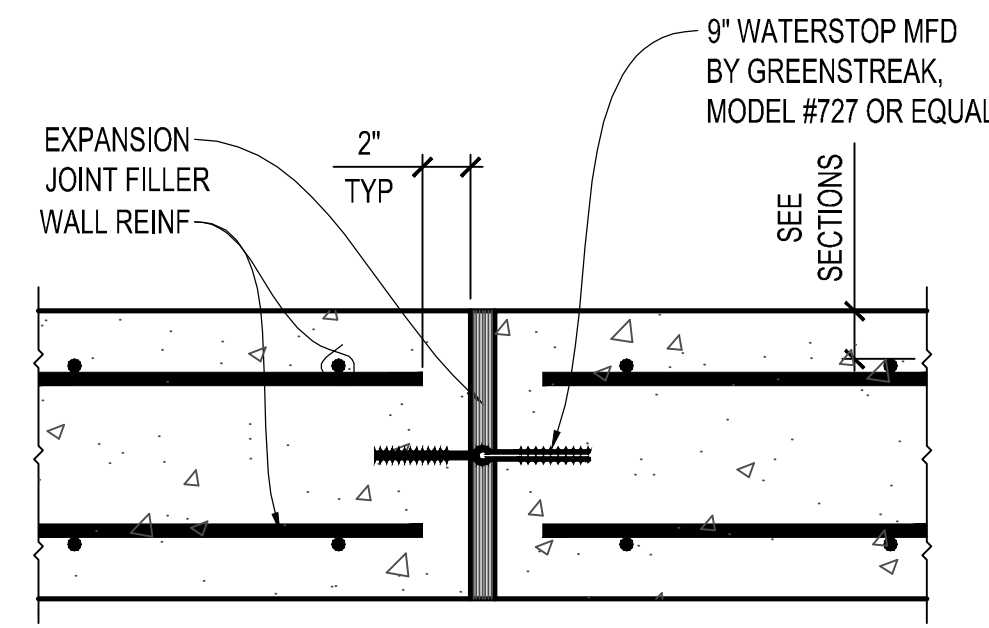
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SBR's TANK  
PARTIAL SECTIONS

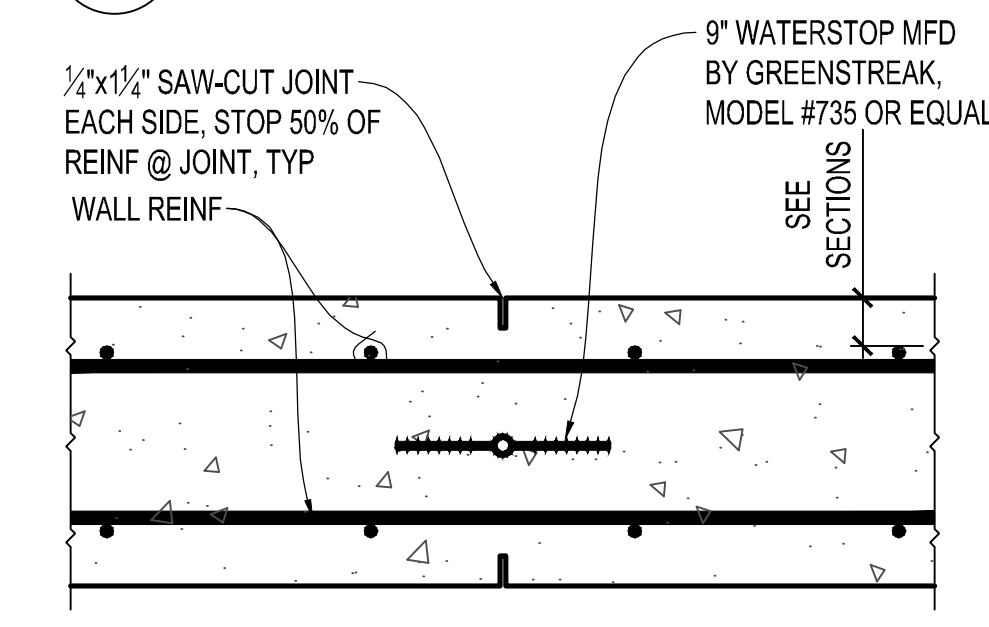
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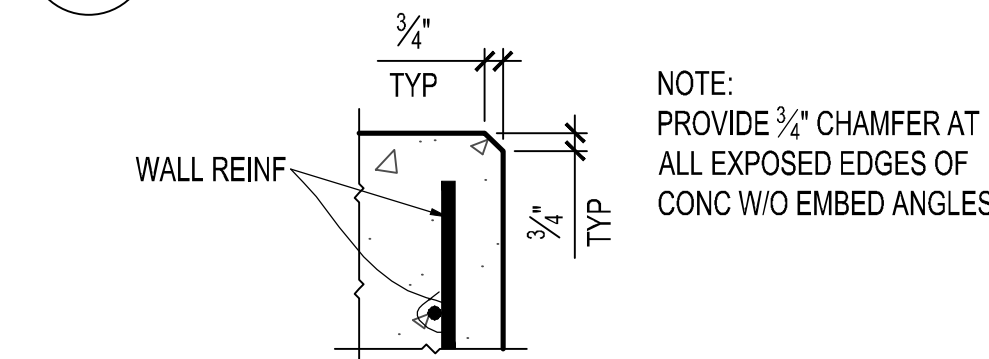
**D1** CONC. CONST. JOINT DETAIL  
1 1/2"=1'-0"



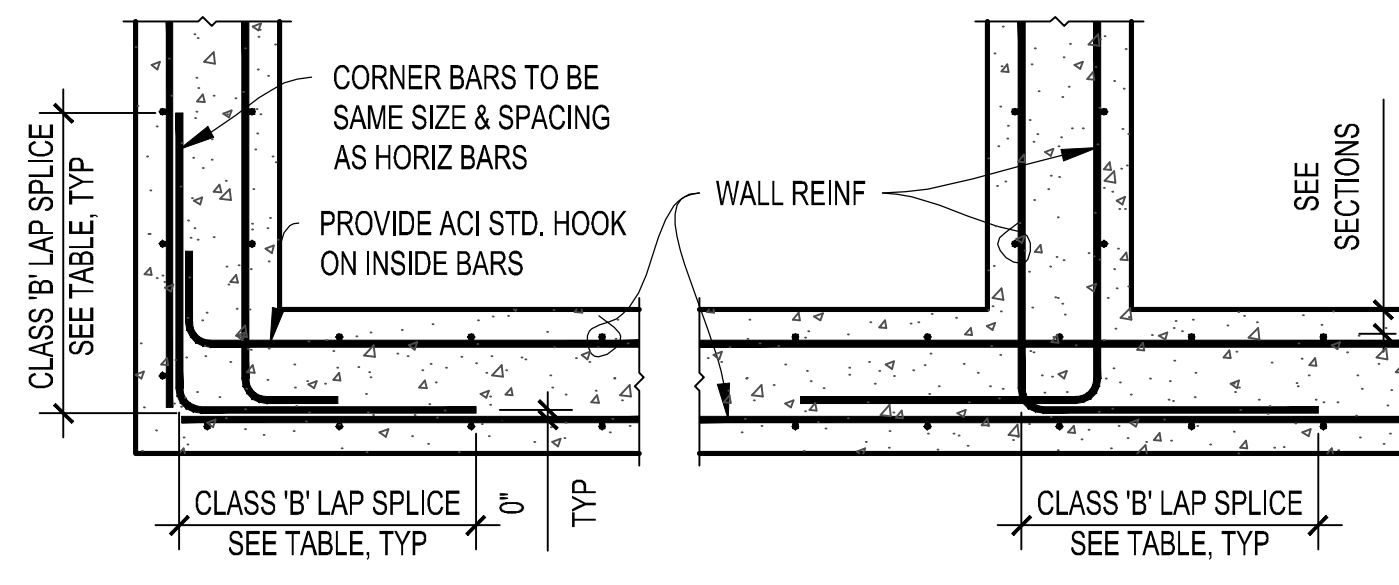
**D3** CONC. EXP JOINT DETAIL  
1 1/2"=1'-0"



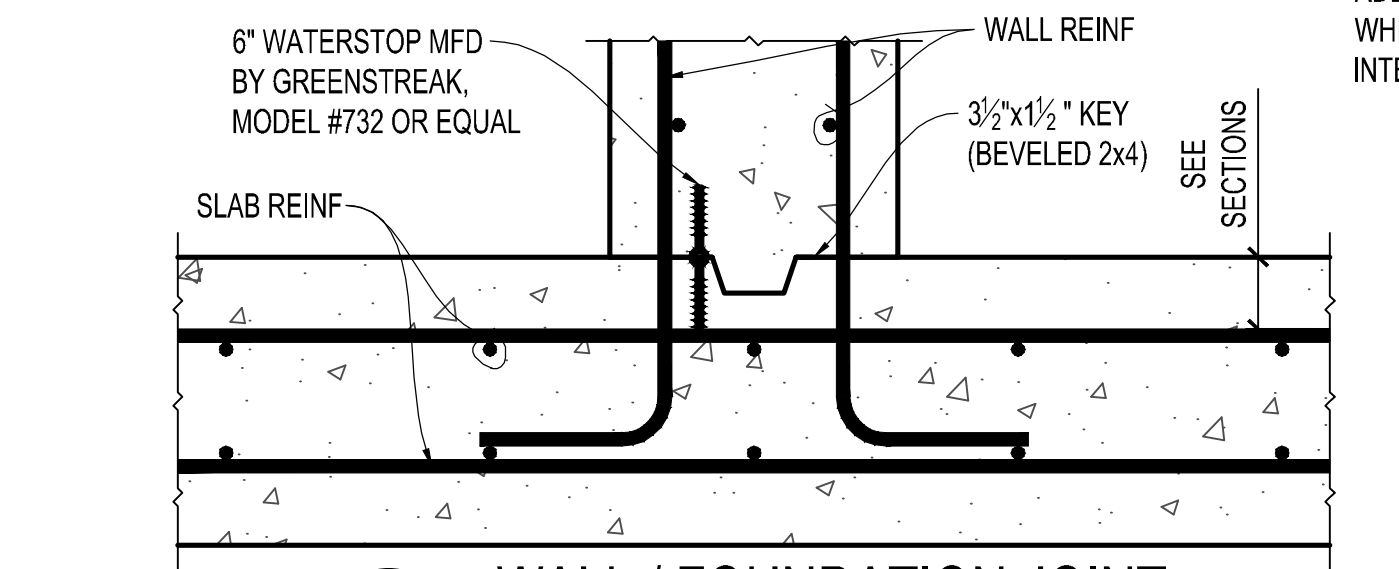
**D2** CONC. CONTROL JOINT DETAIL  
1 1/2"=1'-0"



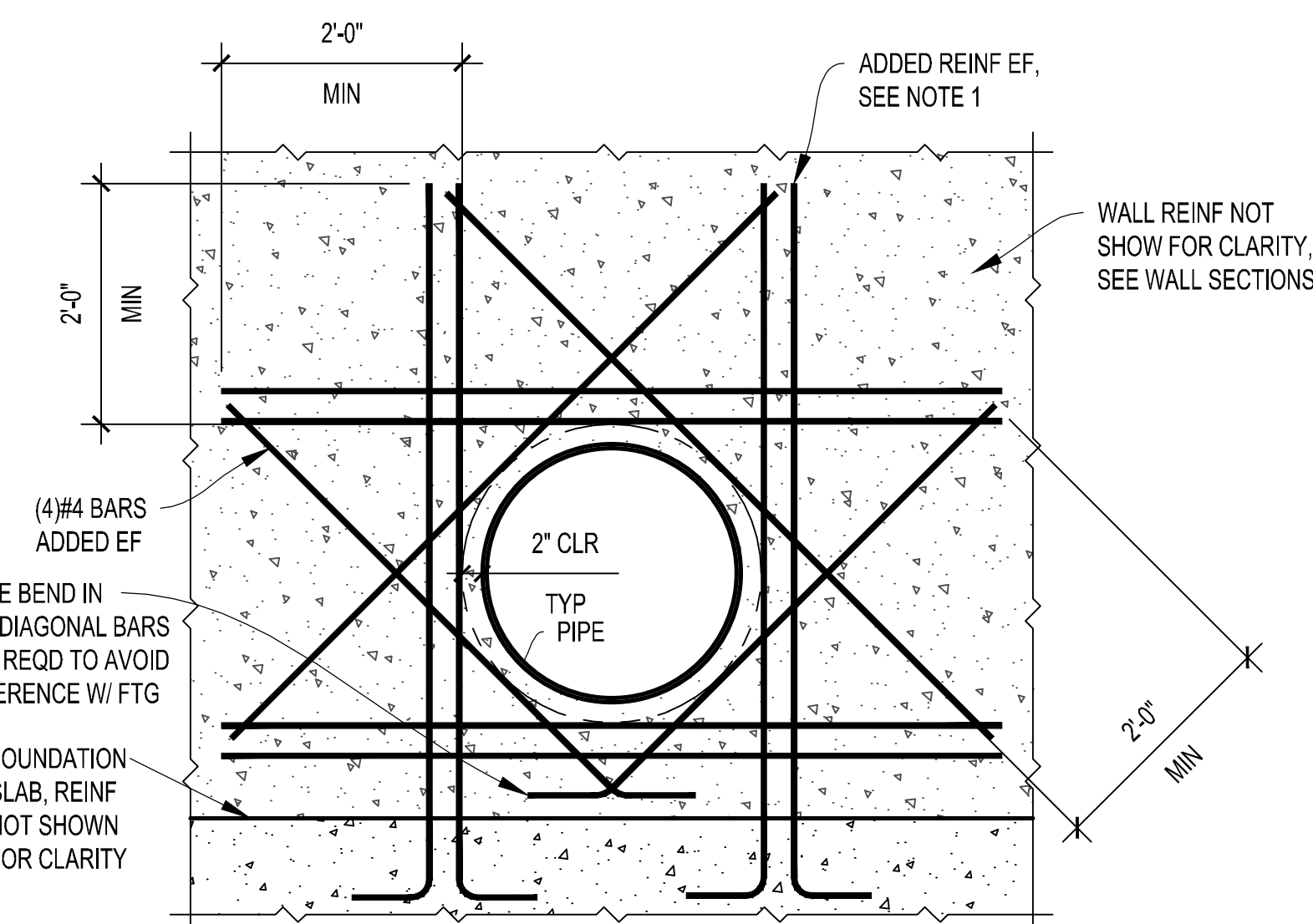
**D4** CONC. CHAMFER DETAIL  
1 1/2"=1'-0"



**D5** TYP REINF @ WALL INTERSECTIONS  
N.T.S.

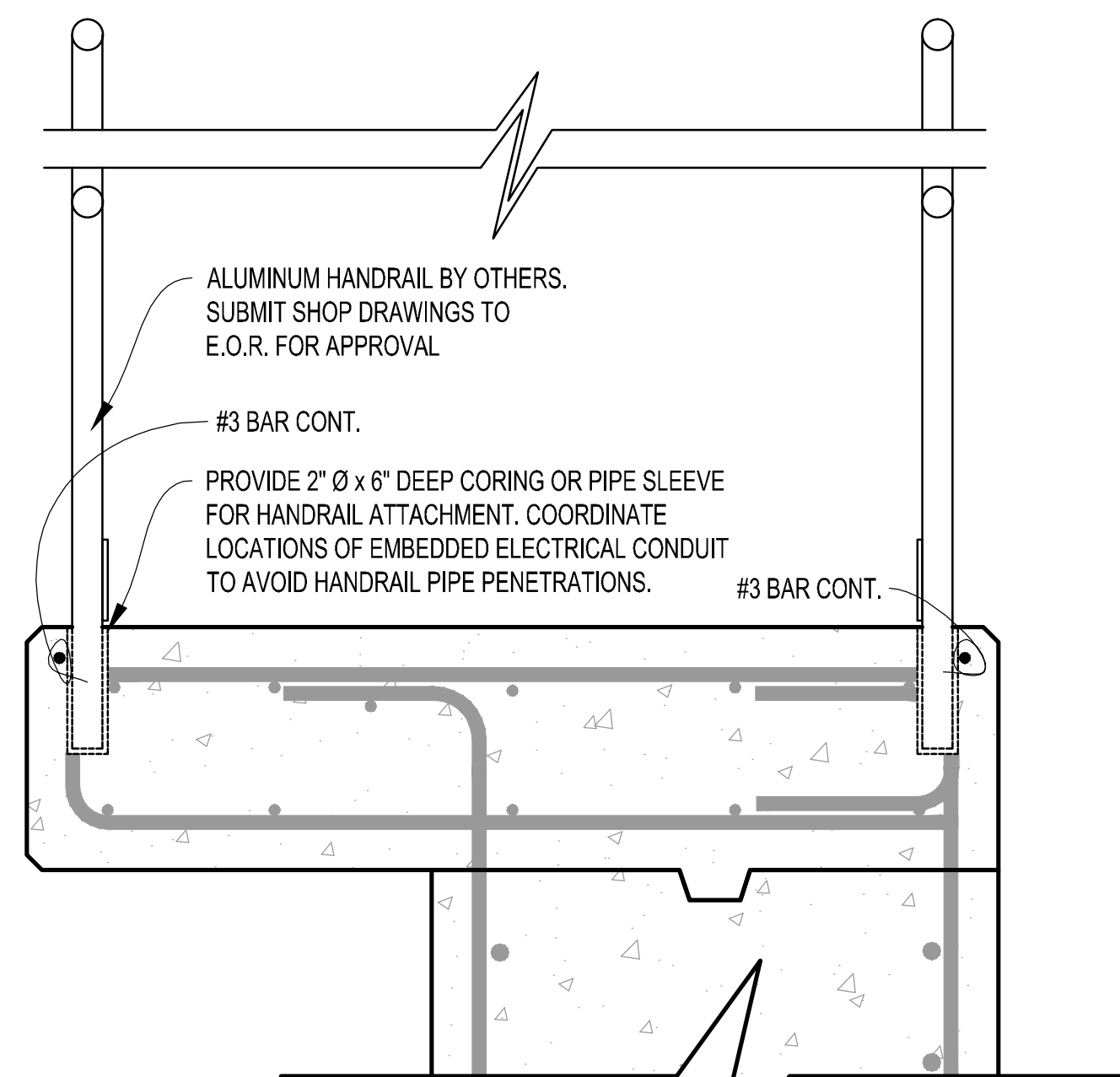


**D6** WALL / FOUNDATION JOINT  
1 1/2"=1'-0"

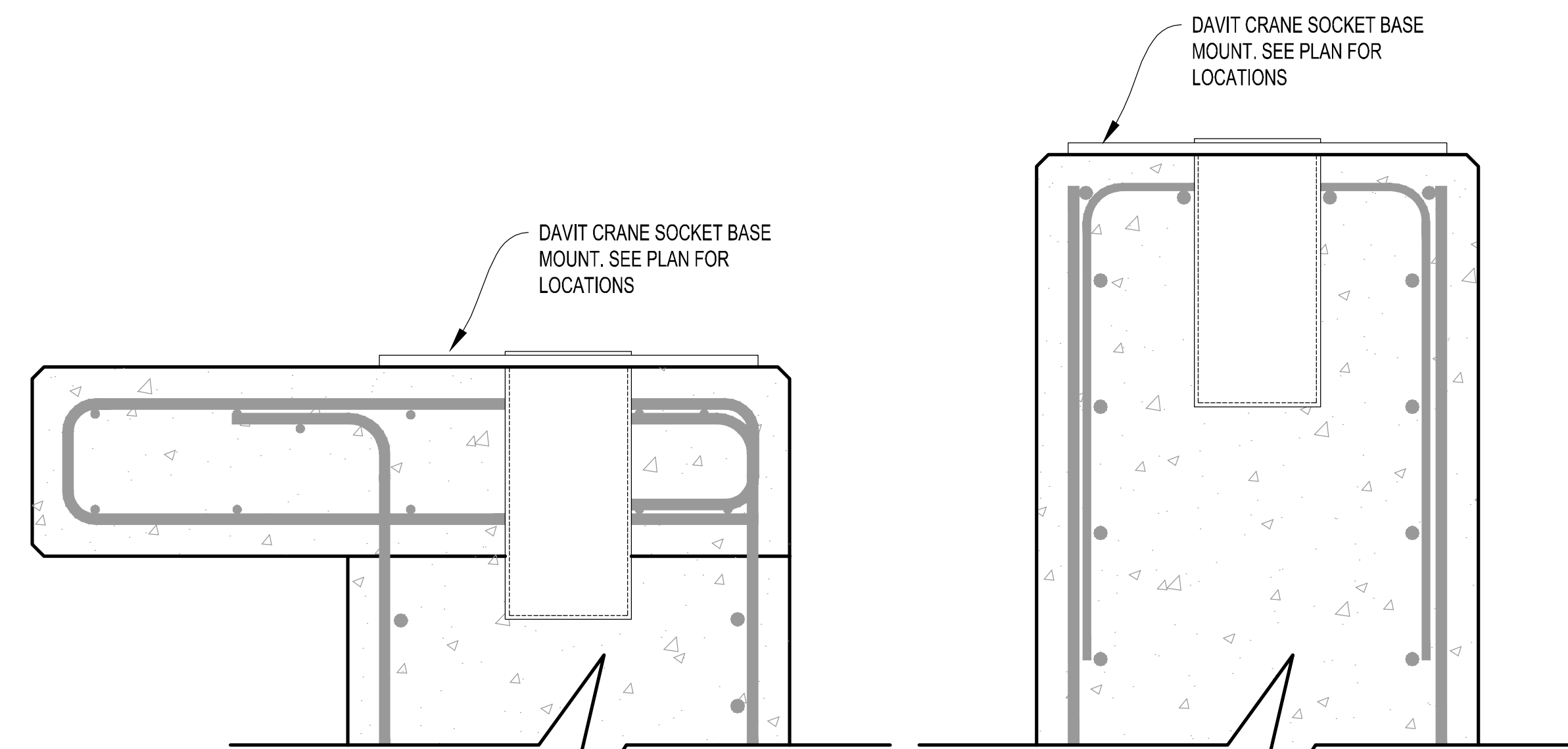


**D7** TYP WALL REINF @ PIPE OPENING  
N.T.S.

- NOTES:
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @3"OC.
  2. MAINTAIN NOT LESS THAN 1/2" CLEAR BETWEEN ADJACENT PARALLEL BARS.

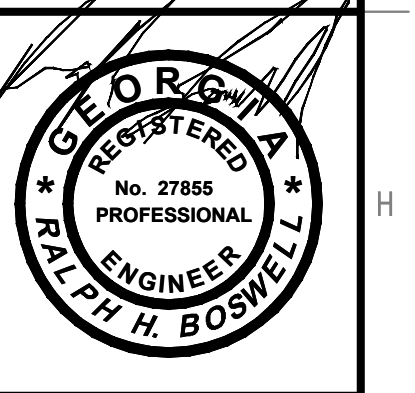


**D9** HANDRAIL CONNECTION  
N.T.S.



**D10** DAVIT CRANE CONNECTION  
N.T.S.

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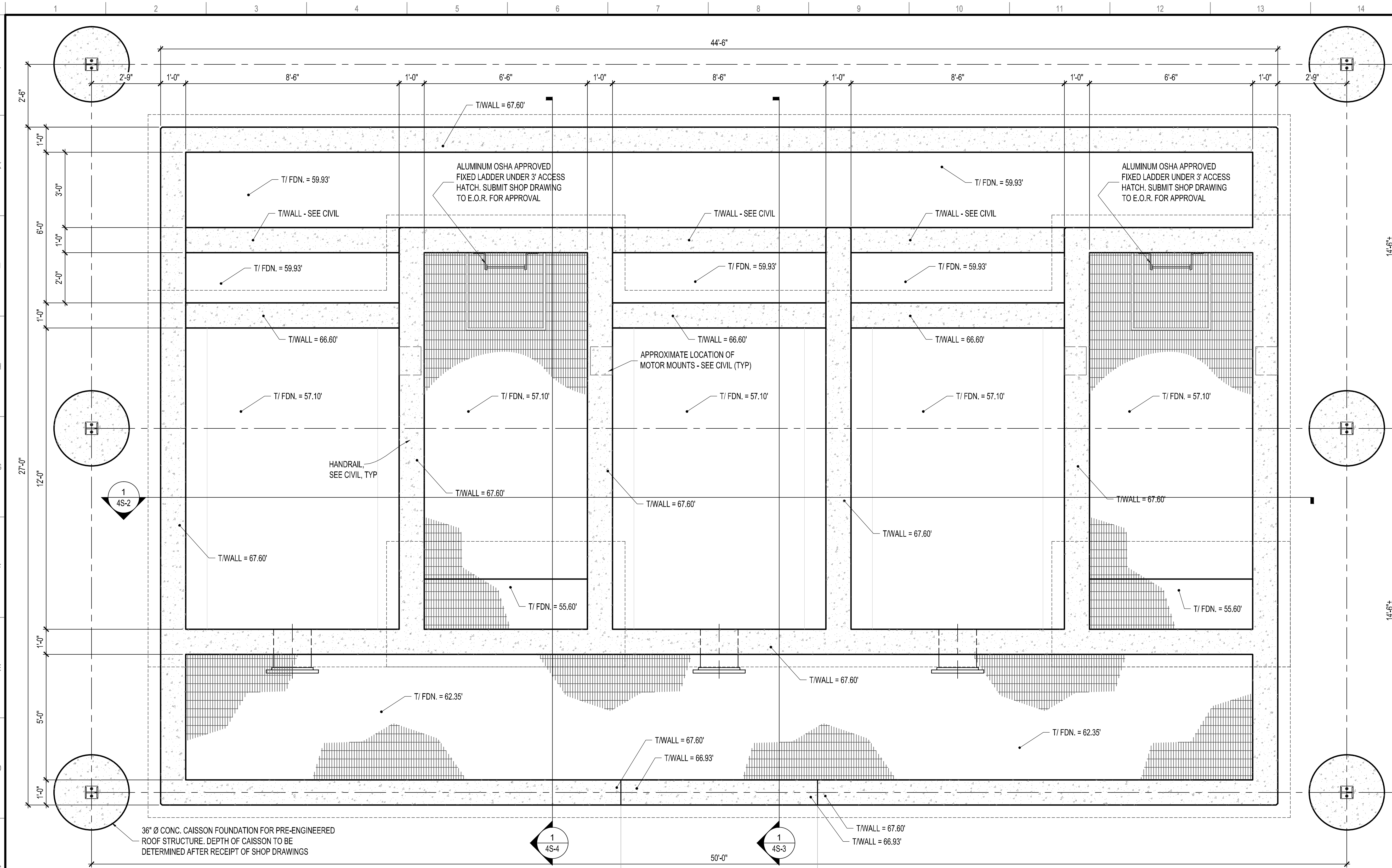
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WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11/29/2012		ISSUED FOR RFD
	04/03/14		ISSUED FOR RFD APPROVAL

DESIGNED: CE PROJECT NO. 0E11020  
DRAWN: FILE NAME: 0E11020-06-3S-6  
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SBR'S TANK  
DETAILS

PLOTTED BY: P. H. BOSWELL DATE: Tuesday, October 14, 2014 9:58:42 AM DRAWING FILE: C:\WORK\occonee\111020\2012\11020-06-3S-6.dwg USER: P. BOSWELL PLOTTER: HP DesignJet 2400, October 14, 2014 10:03:39 AM



**1** FILTER BASIN PLAN  
1/2"=1'-0"

CONC REINF LAP LENGTH 4500 PSI (ACI 350-06)	
BAR SIZE	TENSION SPLICE
	CLASS 'B'
#3	18"
#4	24"
#5	30"
#6	35"
#7	51"
#8	59"
#9	66"
#10	73"

**STRUCTURE NOTES**

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ CIVIL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- SEISMIC DESIGN CRITERIA:  
OCCUPANCY CATEGORY = IV  
SEISMIC IMPORTANCE FACTOR ( $I_e$ ) = 1.50  
 $S_D = 0.300$   $S_1 = 0.101$   
SITE CLASS = E  
 $S_{DS} = 0.463$   $S_{D1} = 0.233$   
BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 15.4-1 OR 15.4-2):  
FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:  
RESPONSE MODIFICATION FACTOR (R) = 2.0  
SEISMIC RESPONSE COEFF. ( $C_s$ ) = 0.2926  
SEISMIC DESIGN CATEGORY = D  
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

**FOUNDATION NOTES**

- DESIGN SOIL BEARING PRESSURE = 1500 PSF. SOIL BEARING PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

**CONCRETE NOTES**

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 3000 PSI FOR CAISSONS AND SLABS-ON-GRADE.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318-05.
- PROVIDE 1/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-05. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.

**REINFORCING STEEL NOTES**

- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:  
2.1. REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.  
2.2. WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.  
2.3. REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.  
2.4. CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:  
3.1. CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"  
3.2. FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"  
SLABS & JOISTS W/ #6 BARS & LARGER = 2"  
BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"  
3.3. FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS = 3/4"  
BEAMS, PIERS, & COLUMNS = 1 1/2"  
WALLS = 3/4"  
FOOTINGS & BASE SLABS = 2"

**OCONEE ENGINEERING L.L.C.**  
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**Professional Engineer**  
No. 27855  
Professional Engineer  
P.L.P. H. BOSWELL

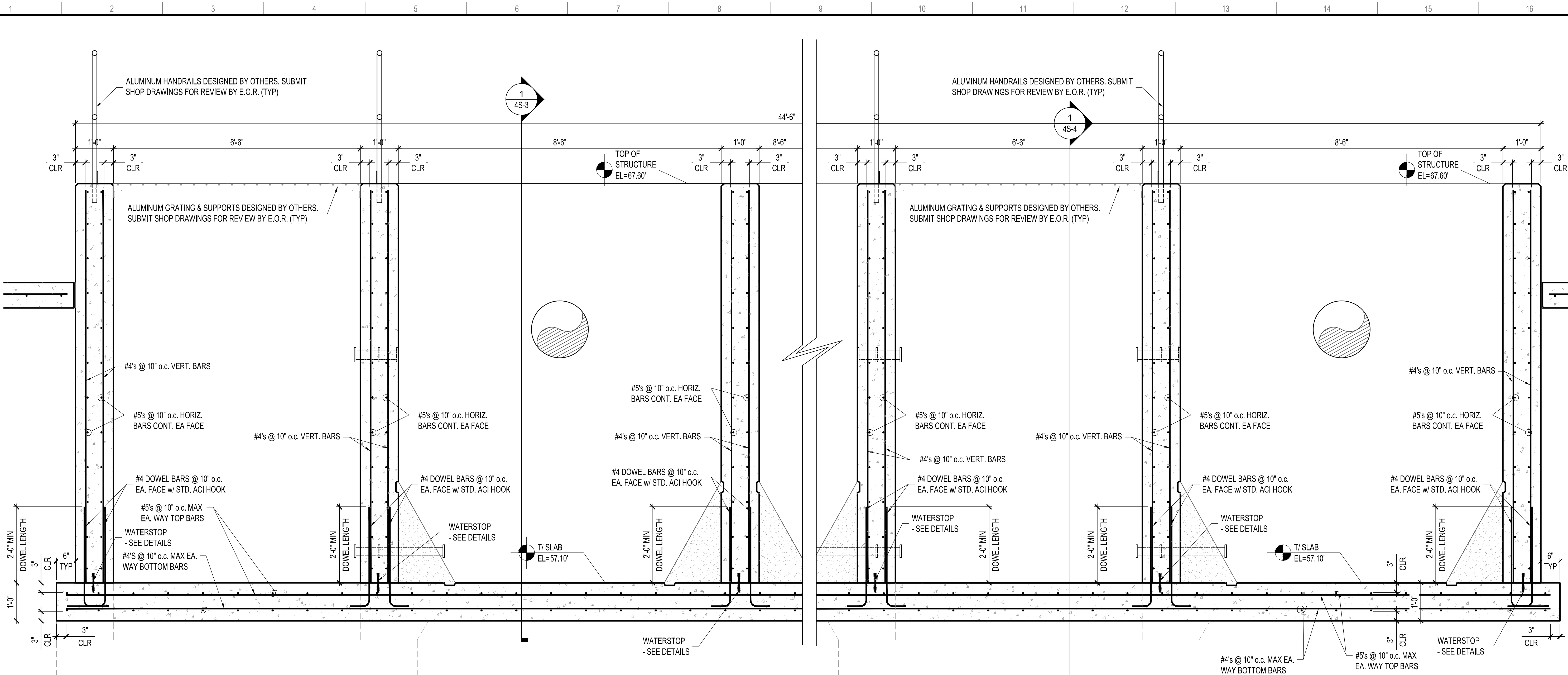
HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
1	11/29/2012		ISSUED FOR RFD
2	11/29/2012		ISSUED FOR RFD APPROVAL

DESIGNED: CE PROJECT NO. 061020  
DRAWN: FILE NAME: 061020-01-4S-1  
CHECKED: ORIGINAL DRAWING SIZE: 36"x24"  
APPROVED: DATE: 11-29-2012  
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1/2"=1'-0"  
FILTER BASIN  
PLAN AND GENERAL NOTES  
**4S-1**  
SHEET 1 OF 05

NOTES:  
1. SEE ALL OTHER DRAWINGS FOR DIMENSIONS AND DETAILS.  
2. PRINTED ON: 11/29/2012 11:29:11 AM (DRAWING FILE: C:\WORK\061020\061020-01-4S-1.dwg) (PLOT: 11/29/2012 11:29:11 AM)  
3. PLOT SCALE: 1/2"=1'-0"



1 FILTER BASIN SECTION  
3/4"=1'-0"

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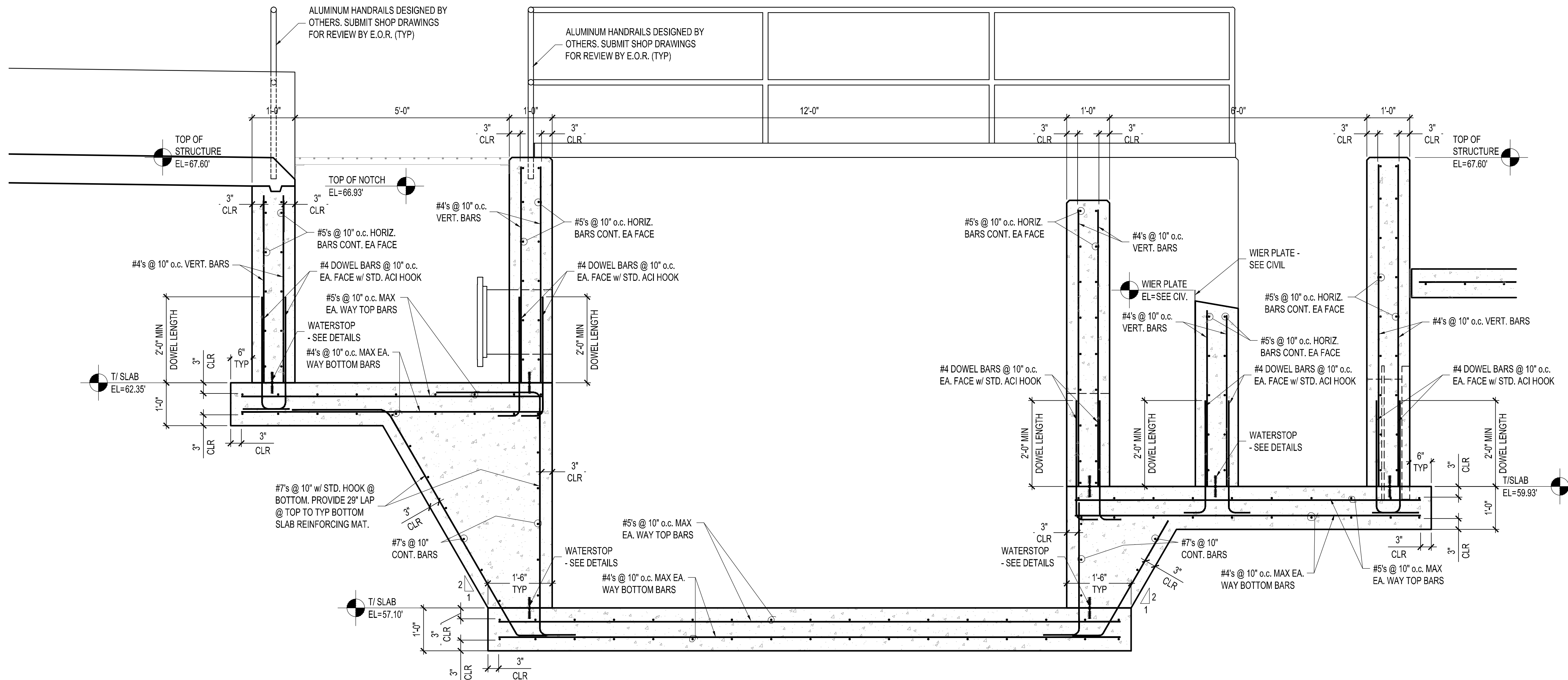


HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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	10/10/2014		ISSUED FOR BID

PROJECT NO. 0E11020  
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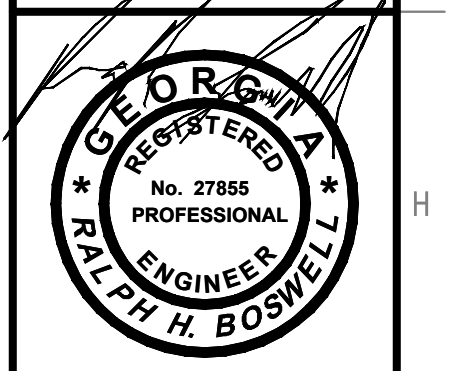
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3/4"=1'-0"

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HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

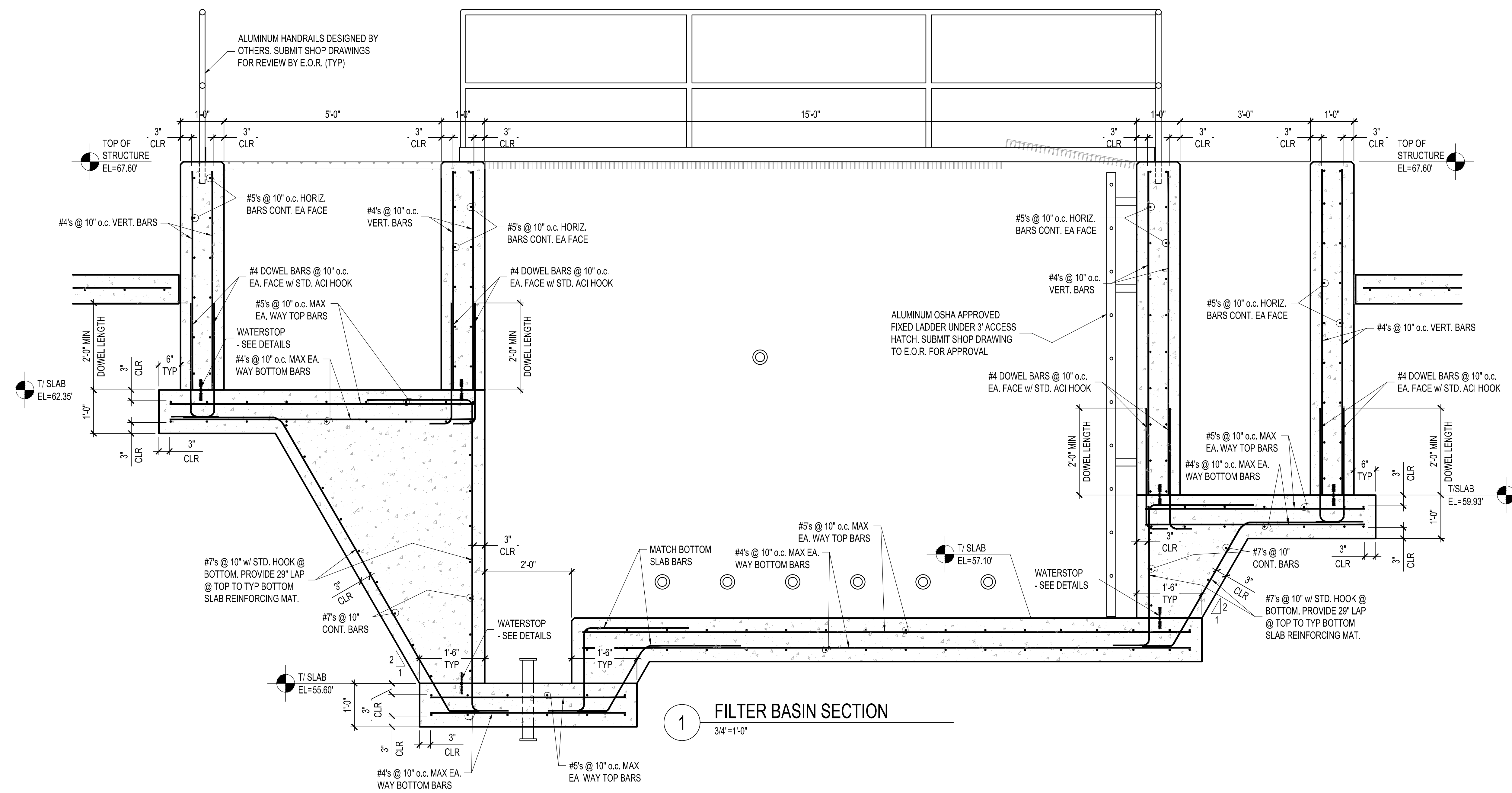
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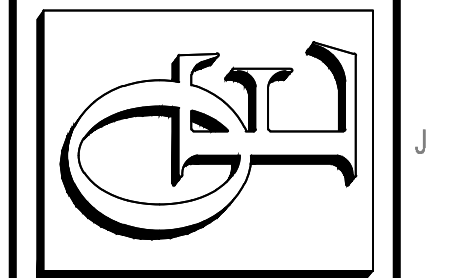
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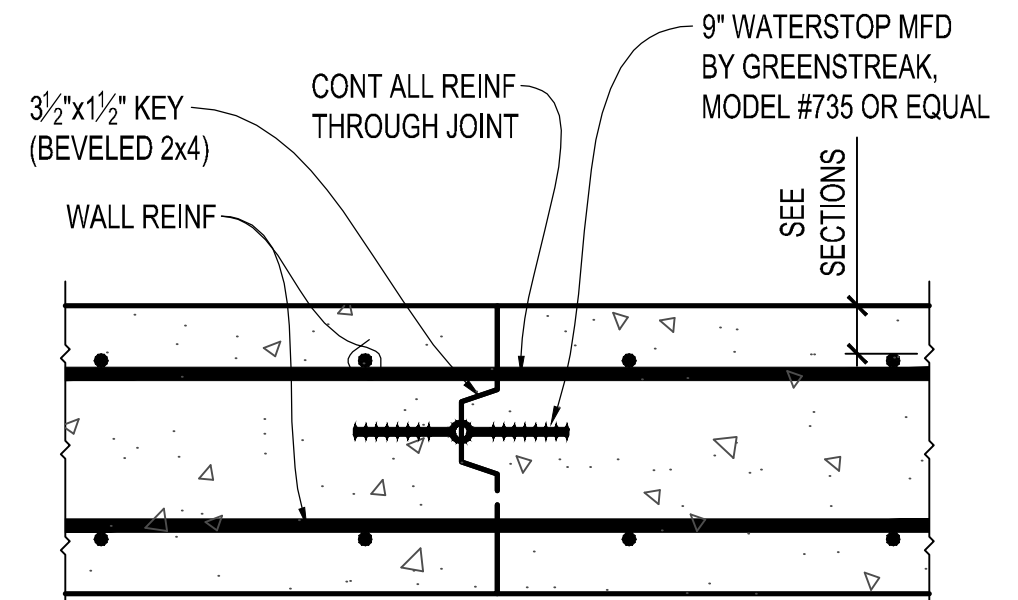
HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/13/2014			ISSUED FOR RFD APPROVAL
11/28/2012			ISSUED FOR RFD APPROVAL

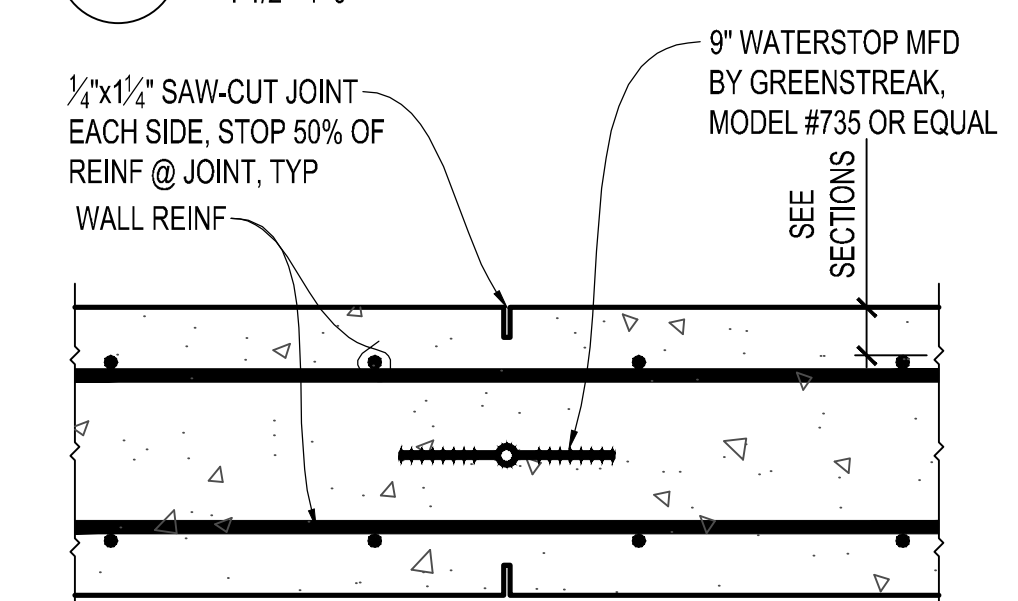
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FILTER BASIN  
 SECTIONS

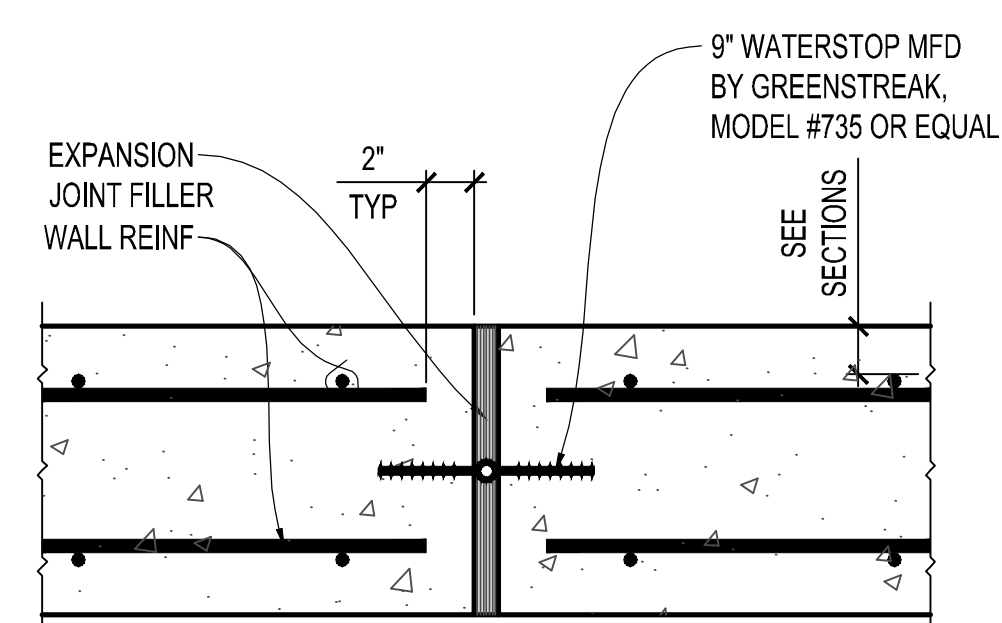
**4S-4**  
 SHEET 4 OF 05



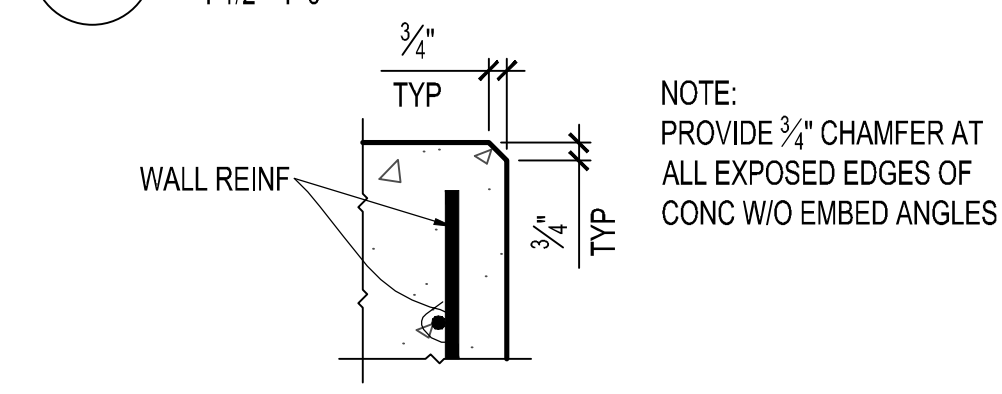
**D1** CONC. CONST. JOINT DETAIL  
1 1/2"=1'-0"



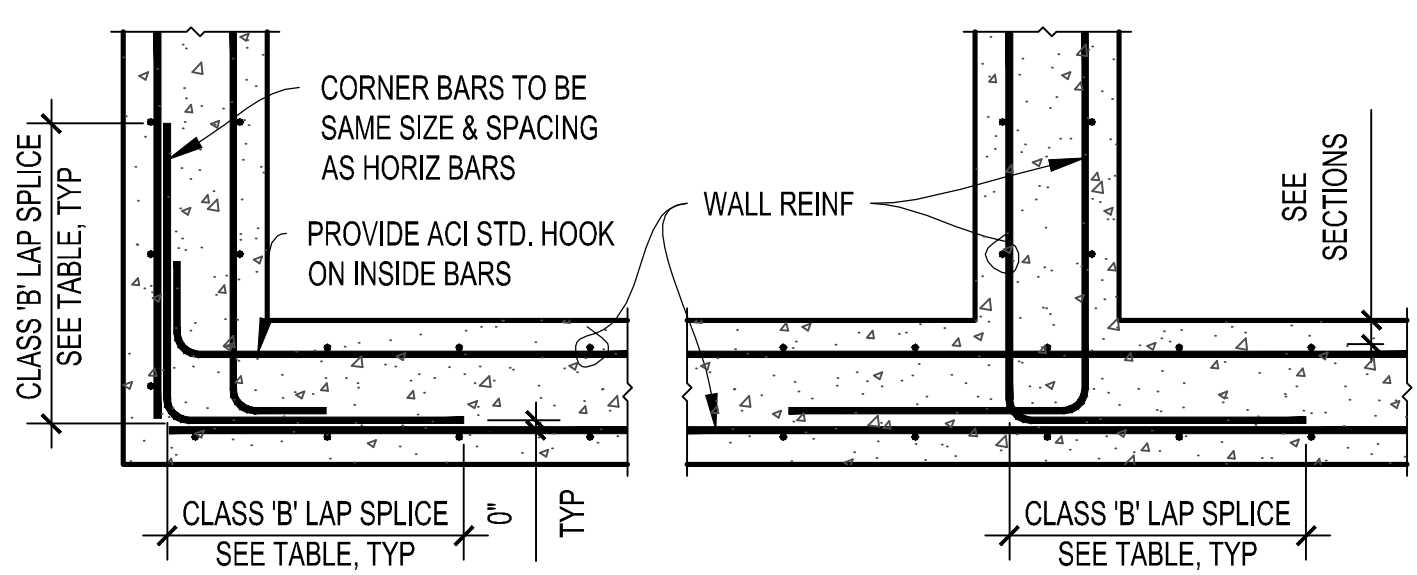
**D2** CONC. CONTROL JOINT DETAIL  
1 1/2"=1'-0"



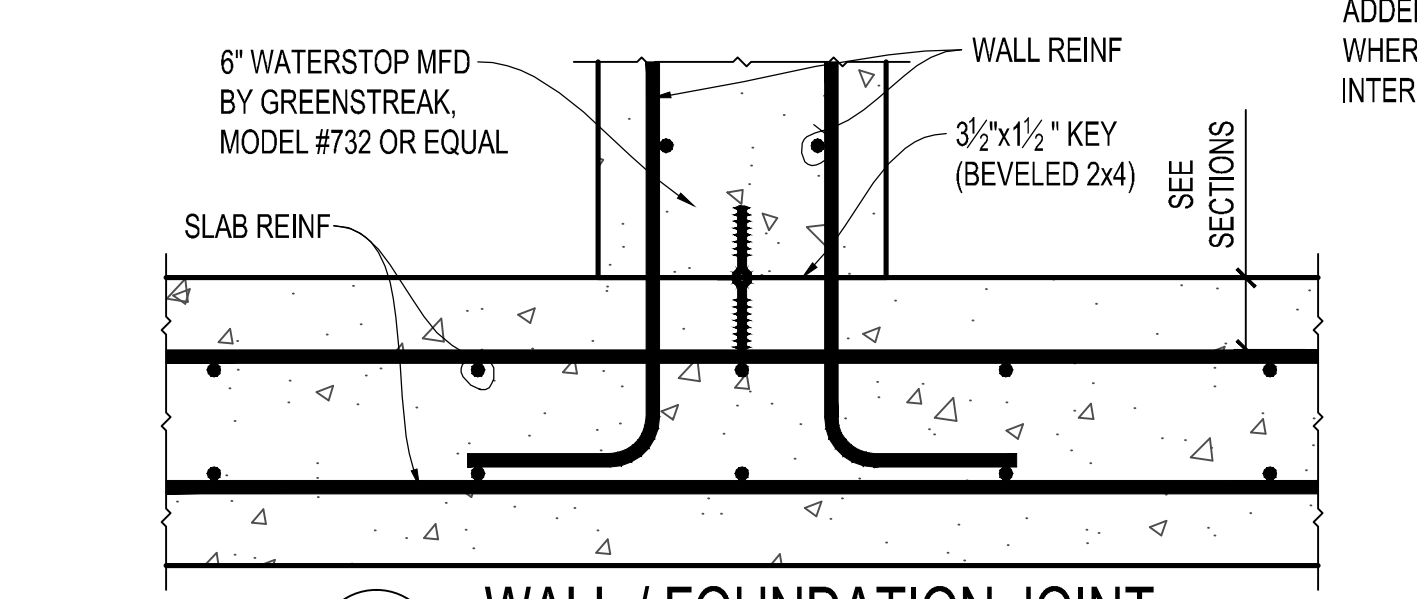
**D3** CONC. EXP JOINT DETAIL  
1 1/2"=1'-0"



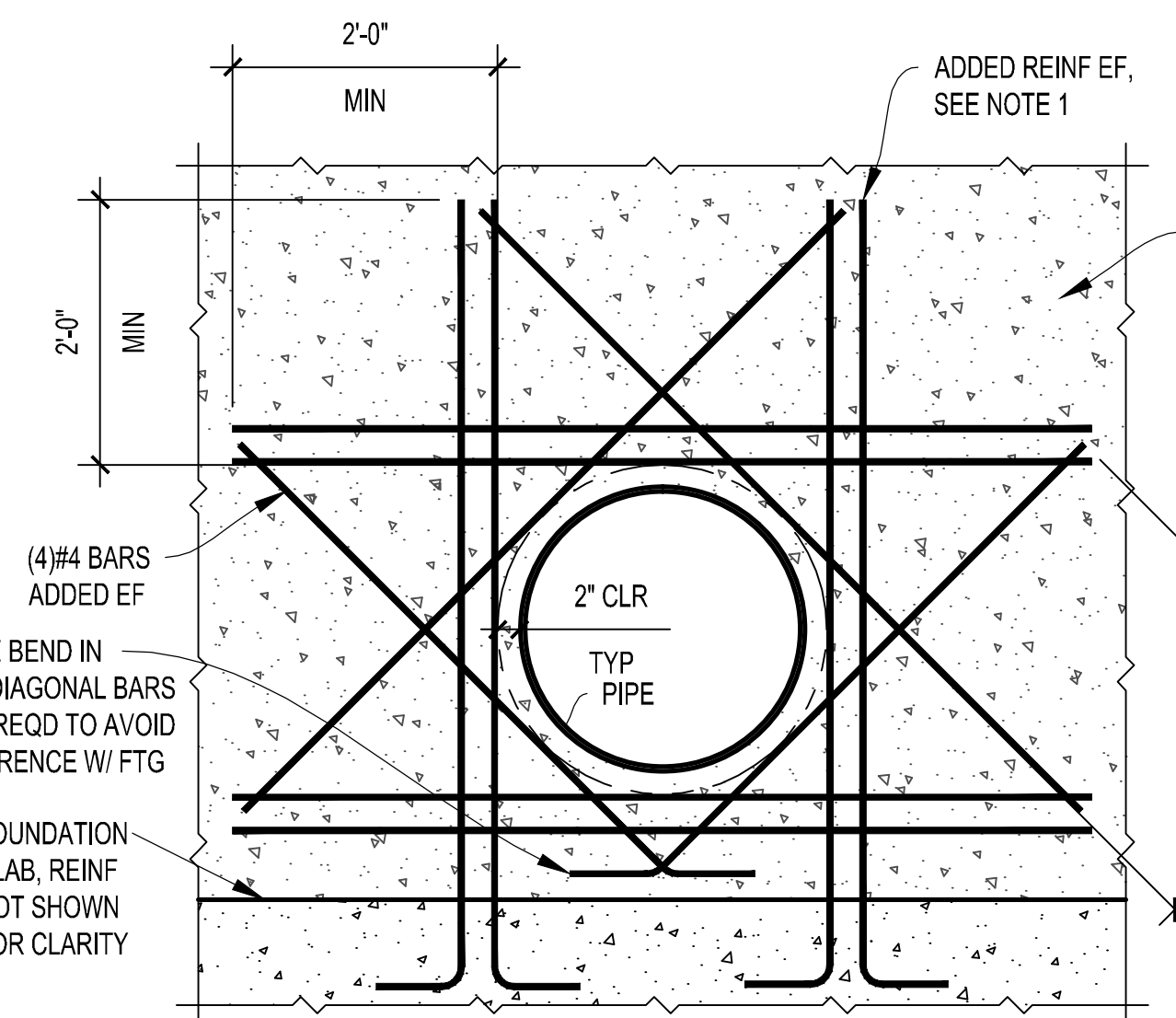
**D4** CONC. CHAMFER DETAIL  
1 1/2"=1'-0"



**D5** TYP REINF @ WALL INTERSECTIONS  
N.T.S.

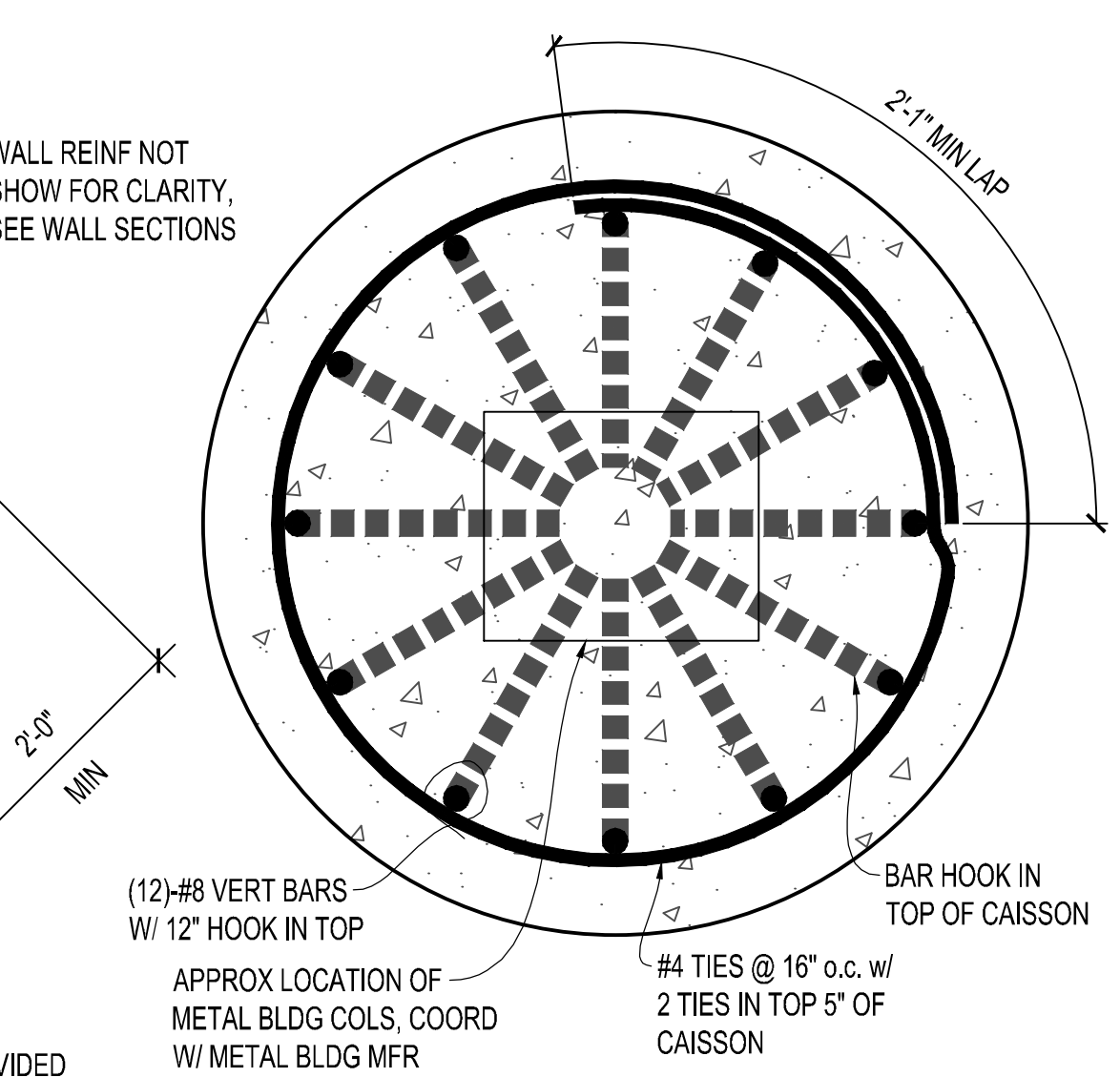


**D6** WALL / FOUNDATION JOINT  
1 1/2"=1'-0"



- NOTES:
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @3"OC.
  2. MAINTAIN NOT LESS THAN 1/4" CLEAR BETWEEN ADJACENT PARALLEL BARS.

**D7** TYP WALL REINF @ PIPE OPENING  
N.T.S.



**D8** CAISSON REINFORCING  
N.T.S.

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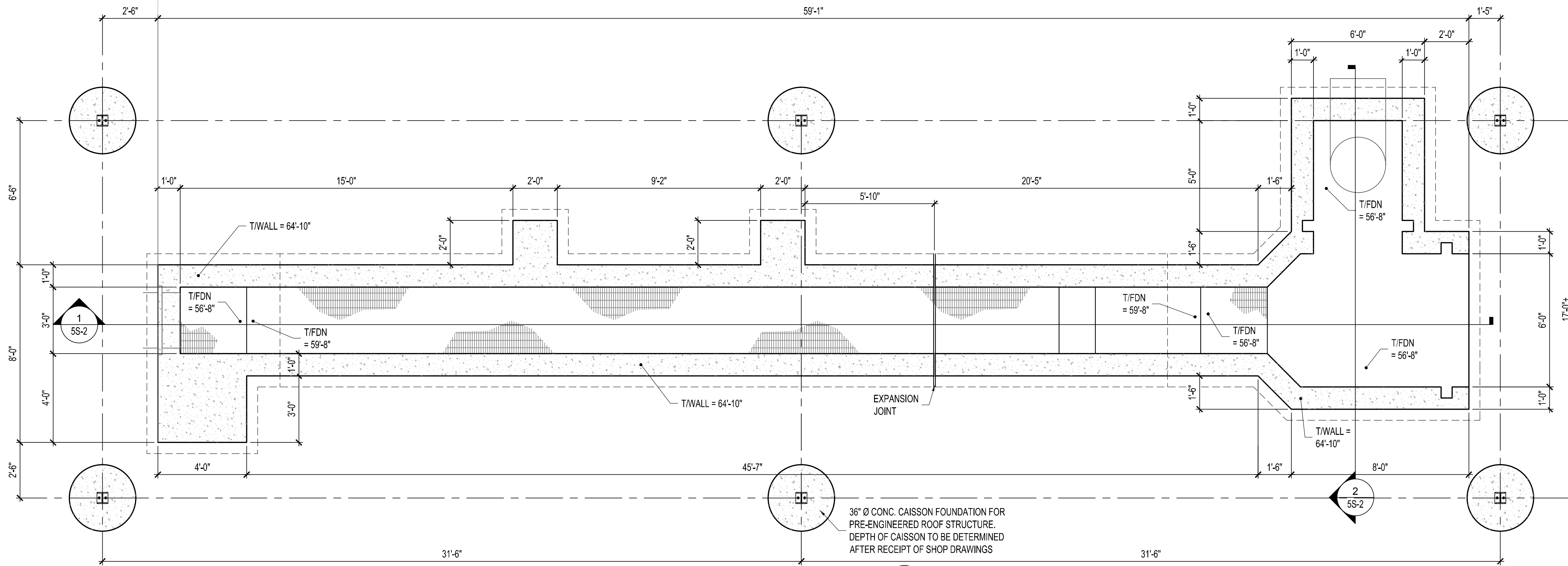
HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	11-29-2012		ISSUED FOR RFD
	11-29-2012		ISSUED FOR EFD APPROVAL

DESIGNED: CE11020  
DRAWN: CE11020-05-4S-5  
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APPROVED:  
DATE: 11-29-2012  
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FILTER BASIN  
DETAILS

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**1 UV CHANNEL PLAN**  
3/8"=1'-0"

**FOUNDATION NOTES**

- DESIGN SOIL BEARING PRESSURE = 1500 PSF. SOIL BEARING PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND STRUCTURAL ENGINEER SHALL BE NOTIFIED IF THE ACTUAL SOIL BEARING PRESSURE IS LOWER THAN THE DESIGN SOIL PRESSURE. FOUNDATION DESIGN AND SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- DEWATER, UNDERCUT, & REPLACE MATERIAL BELOW FOOTING ELEVATIONS PER GEOTECH REPORT. GRANULAR BASE BELOW FOOTING SHALL BE #57 STONE.
- PRIOR TO POURING CONCRETE, ALL DEBRIS, WATER, AND LOOSE EARTH SHALL BE REMOVED FROM THE FOUNDATION BED.
- GEOTECHNICAL ENGINEER SHALL VERIFY CONDITION AND/OR ADEQUACY OF ALL SUBGRADES, FILLS, AND BACKFILLS PRIOR TO PLACEMENT OF FOUNDATIONS, FOOTINGS, SLABS, WALLS, FILLS, BACKFILLS, ETC.
- BACKFILL AGAINST WALLS SHALL BE DEPOSITED EVENLY AGAINST BOTH SIDES OF WALLS UNTIL THE LOWER FINAL GRADE IS REACHED. COMPACTION OF BACKFILL WITHIN 10 FEET OF WALLS SHOULD BE PERFORMED WITH HAND OPERATED EQUIPMENT. THE BACKFILLING OF UNDERGROUND STRUCTURES SHALL BE DONE W/ A MAX OF 4'-0" INCREMENTS ALL AROUND THE STRUCTURES.
- PLACEMENT AND COMPACTION OF STRUCTURAL FILL SHALL BE MONITORED BY THE GEOTECHNICAL ENGINEER. COMPACTION SHALL BE 95% OF STANDARD PROCTOR.
- WHERE ANY UTILITY LINES PASS UNDER A FOOTING, PROVIDE A PRE-CAST CONCRETE RELIEVING ARCH, A MINIMUM OF THREE TIMES THE DIAMETER OF THE UTILITY PIPE FOR PROTECTION.

**CONCRETE NOTES**

- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 4500 PSI FOR WALLS AND SLABS IN LIQUID CONTAINING VESSELS.
- MINIMUM CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS SHALL BE 3000 PSI FOR CAISSONS AND SLABS-ON-GRADE.
- STRUCTURAL MEMBERS OF REINFORCED CONCRETE SHALL BE CONSTRUCTED IN ACCORDANCE WITH ACI 318-05.
- PROVIDE 3/4" CHAMFER AT ALL EXPOSED CORNERS OF CONCRETE W/O EMBED ANGLES.
- PLACE ALL REBAR FOR WALLS & SLABS IN DIRECTIONS & LOCATIONS AS SHOWN IN TANK SECTIONS. DO NOT REVERSE LOCATIONS OF INSIDE/OUTSIDE BARS AT EACH FACE.
- CONCRETE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318-05. SAMPLES FOR STRENGTH TESTS OF EACH CLASS OF CONCRETE PLACED EACH DAY SHALL BE TAKEN NOT LESS THAN ONCE A DAY, NOR LESS THAN ONCE FOR EACH 75 CY OF CONCRETE USED FOR FOOTINGS, NOR LESS THAN ONCE FOR EACH 5000 SQUARE FEET OF SURFACE AREA FOR SLABS. TEST REPORTS INDICATING (NON)COMPLIANCE SHALL BE PROVIDED TO THE OWNER, ENGINEER & CONTRACTOR. A COPY OF THE TEST REPORTS SHALL BE AVAILABLE AT THE JOBSITE. 4 INCH DIAMETER X 8 INCH TEST CYLINDERS ARE ACCEPTABLE.

**STRUCTURE NOTES**

- COORD ALL STRUCTURE & PIPING ELEVATIONS & DIMENSIONS W/ CIVIL DRAWINGS.
- ALL CONDUIT SHALL BE MOUNTED EXTERNALLY ON STRUCTURE USING HANGERS. FOR ANY CONDUIT PROPOSED TO BE PLACED IN THE CONCRETE POUR, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS DETAILING PLACEMENT OF ANY CONDUIT IN CONCRETE STRUCTURE.
- COORDINATE ALL EXCAVATIONS W/ EXISTING STRUCTURES SO AS TO NOT UNDERMINE THEM. APPROPRIATE MEASURES SHALL BE TAKEN TO INSURE THAT EXISTING STRUCTURES ARE NOT UNDERMINED OR OTHERWISE DAMAGED DURING THE EXCAVATION OR CONSTRUCTION OF NEW STRUCTURES.
- SEISMIC DESIGN CRITERIA:  
OCCUPANCY CATEGORY = IV  
SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50  
SITE CLASS = E  
S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101  
S<sub>0.5</sub> = 0.463 S<sub>0.1</sub> = 0.233  
BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 15.4-1 OR 15.4-2):  
FLAT-BOTTOM GROUND SUPPORTED TANKS - REINFORCED NON-SLIDING BASE:  
RESPONSE MODIFICATION FACTOR (R) = 2.0  
SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.2926  
SEISMIC DESIGN CATEGORY = D  
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

**CONC REINF LAP LENGTH**  
4500 PSI (ACI 350-06)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	18"	
#4	24"	
#5	30"	
#6	35"	
#7	51"	
#8	59"	
#9	66"	
#10	73"	

**REINFORCING STEEL NOTES**

- SHALL BE DETAILED, FABRICATED AND PLACED ACCORDING TO THE LATEST STANDARDS OF THE AMERICAN CONCRETE INSTITUTE (ACI) AND THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI).
- MATERIALS:
  - REINFORCING BARS SHALL COMPLY WITH ASTM A615 GRADE 60.
  - WELDED WIRE FABRIC SHALL COMPLY WITH ASTM A82 AND A185.
  - REINFORCING BARS FOR WELDING SHALL COMPLY WITH ASTM A-706.
- CLEAR MINIMUM COVER OF CONCRETE OVER REINFORCING BARS SHALL BE AS INDICATED ON THE DRAWINGS BUT SHALL NOT BE LESS THAN THE FOLLOWING:
  - CONCRETE PLACED AGAINST EXPOSED EARTH (NOT FORMED) = 3"
  - FORMED SURFACES EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS W/ #5 BARS & SMALLER = 1 1/2"  
SLABS & JOISTS W/ #6 BARS & LARGER = 2"  
BEAMS, PIERS, COLUMNS, WALLS, FOOTINGS, & BASE SLABS = 2"
  - FORMED SURFACES NOT EXPOSED TO EARTH, LIQUIDS, OR WEATHER:  
SLABS & JOISTS = 3/4"  
BEAMS, PIERS, & COLUMNS = 1 1/2"  
WALLS = 3/2"  
FOOTINGS & BASE SLABS = 2"

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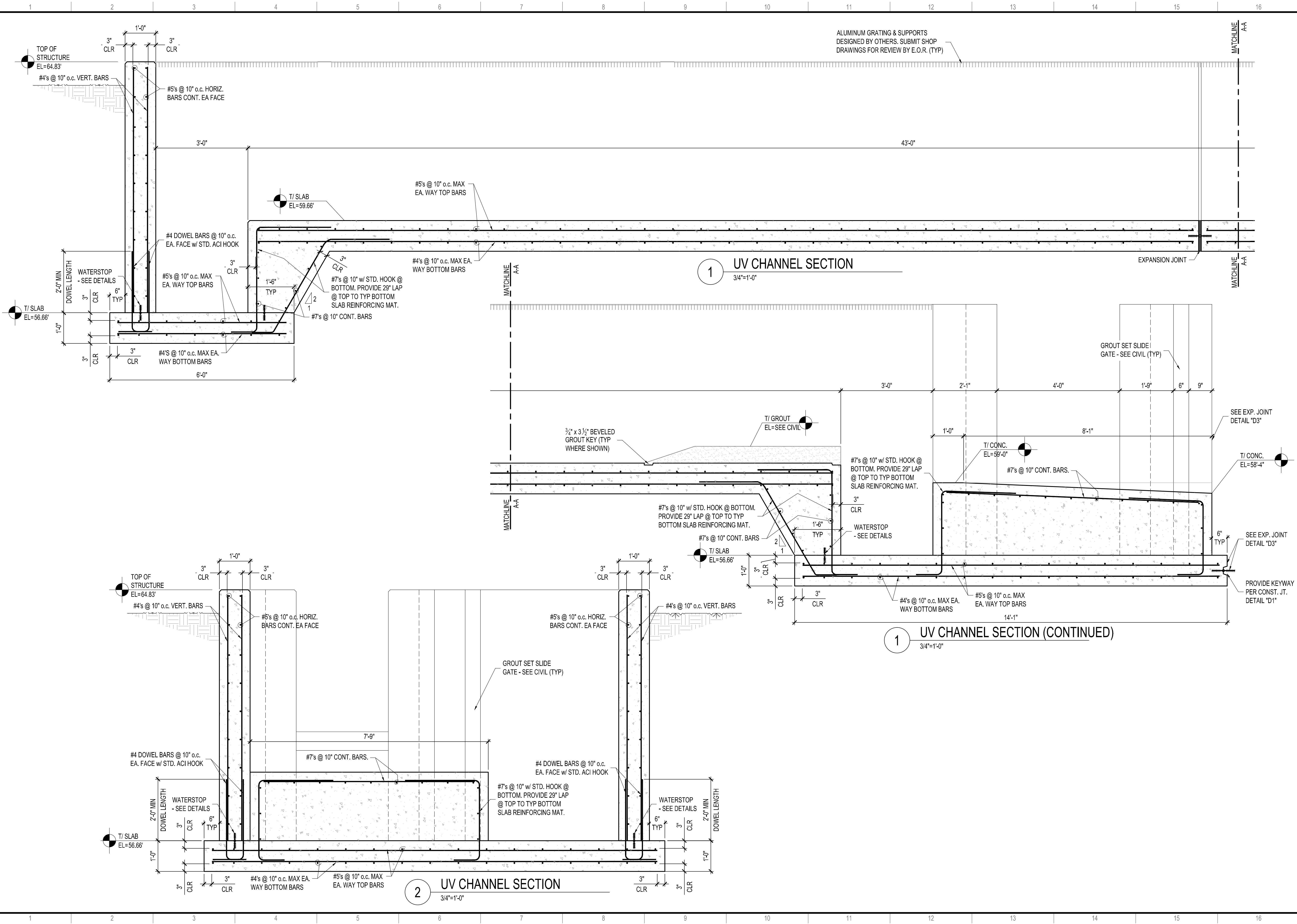
**U.S. GEOLOGICAL SURVEY**  
REGISTERED PROFESSIONAL ENGINEER  
RALPH H. BOSWELL

HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
	10/10/2014		ISSUED FOR BID
	11/29/2012		ISSUED FOR ETD APPROVAL

DESIGNED: [ ]  
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CHECKED: [ ]  
APPROVED: [ ]  
ORIGINAL DRAWING SIZE: 36"x24"  
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 FILE NAME: O:\11020400-01-5S-1  
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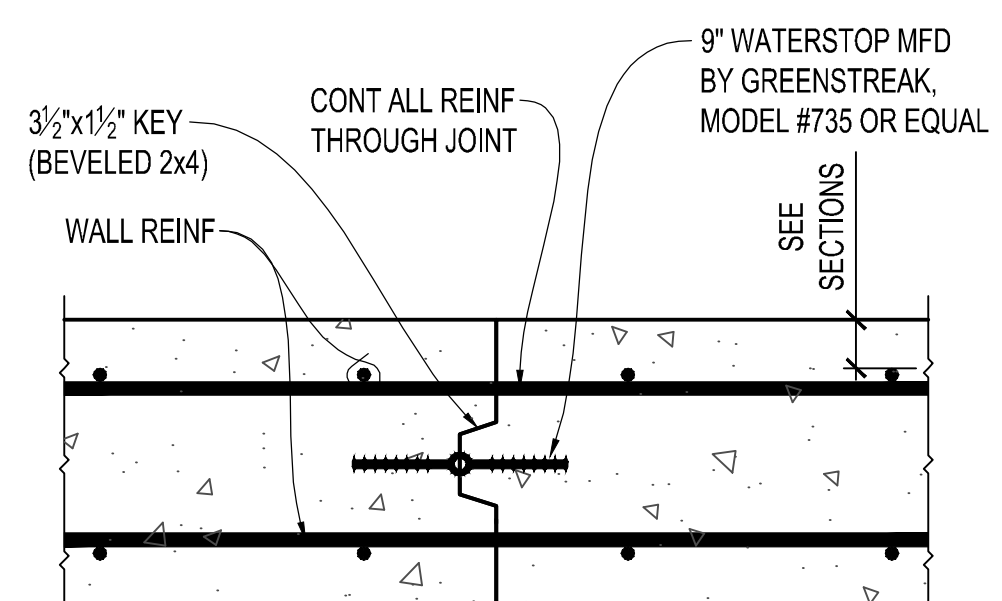
**HINESVILLE / FORT STEWART WWTP UPGRADE FOR: THE CITY OF HINESVILLE FORT STEWART LIBERTY COUNTY GA**

MARK	DATE	BY	DESCRIPTION
04/20/14	11/28/2012	ISSUED FOR RFD APPROVAL	

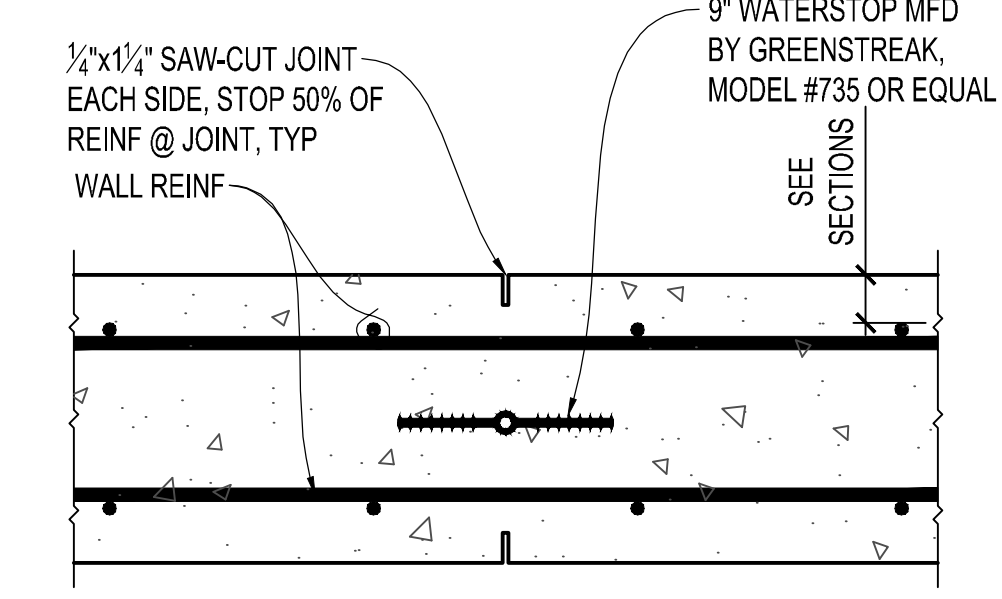
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UV CHANNEL SECTIONS  
**5S-2**  
 SHEET 2 OF 03

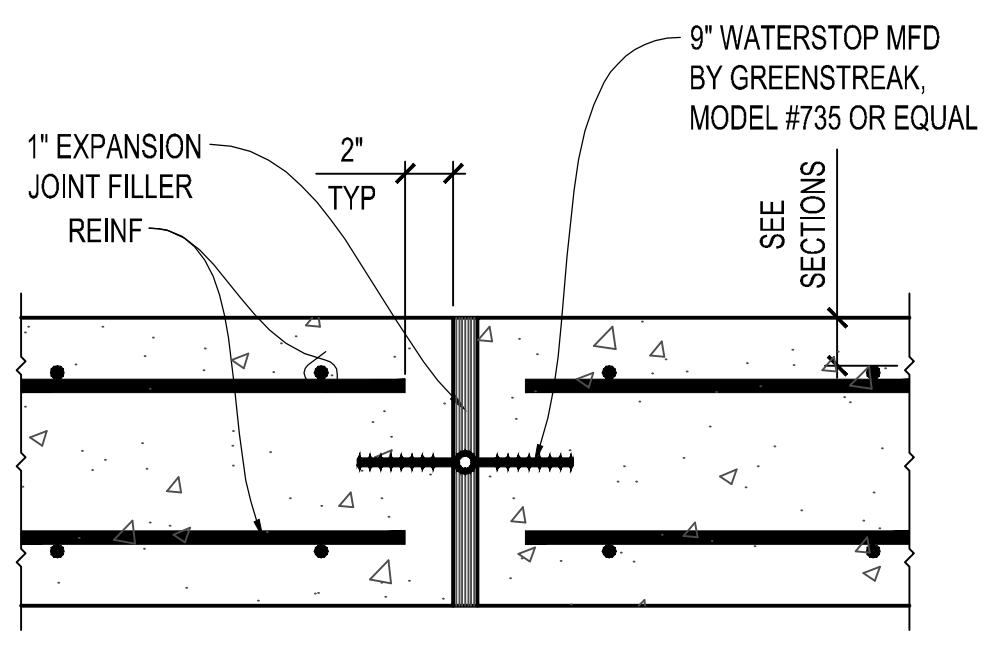
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 PLOT DEVICE: HP DesignJet 3600PS  
 PLOTTED BY: RALPH.H.BOSWELL, DATE: OCTOBER 13, 2014 12:51:11 PM



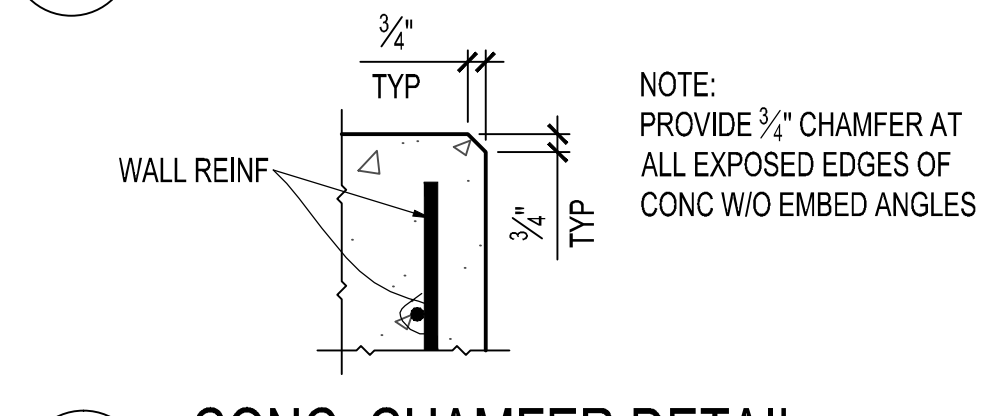
**D1** CONC. CONST. JOINT DETAIL  
1 1/2"=1'-0"



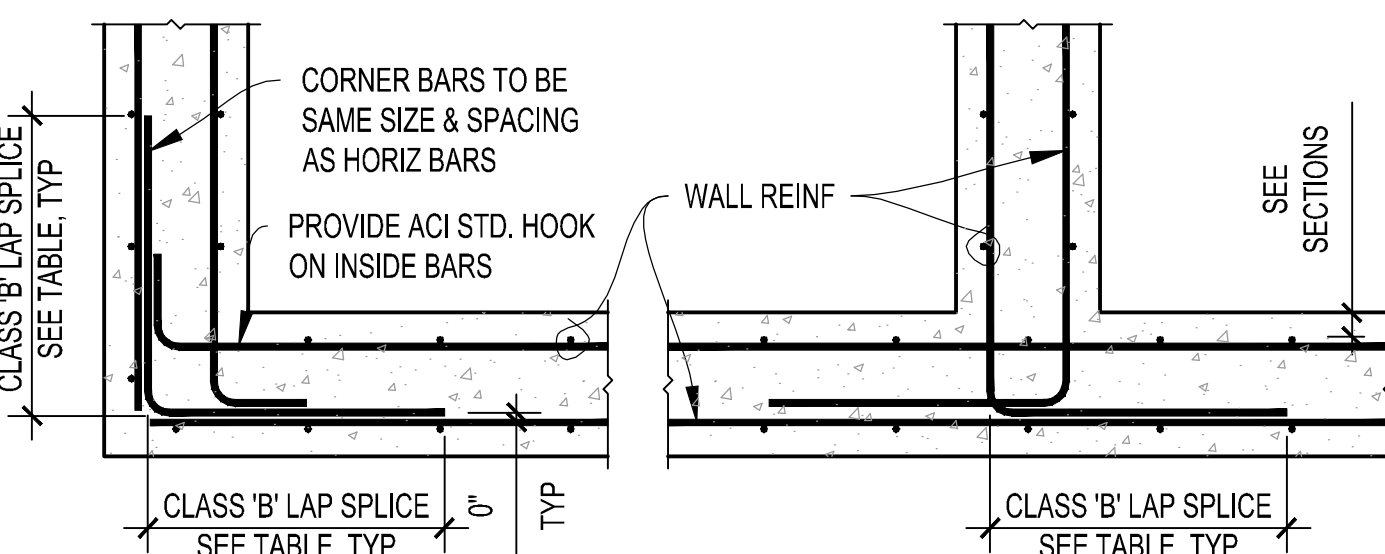
**D2** CONC. CONTROL JOINT DETAIL  
1 1/2"=1'-0"



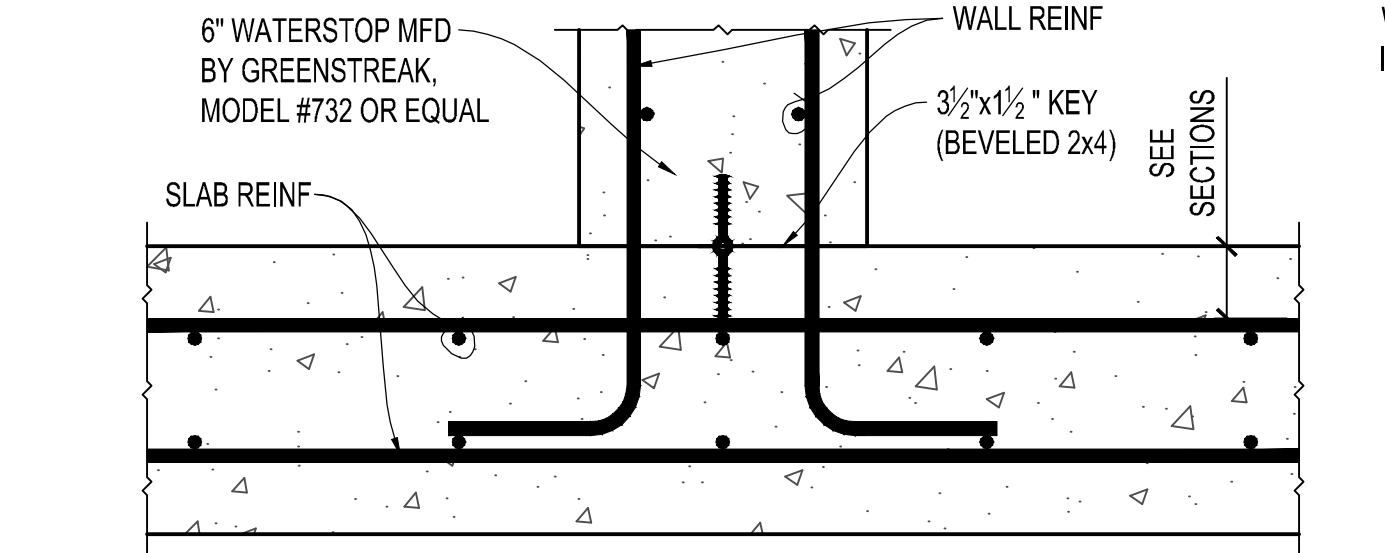
**D3** CONC. EXP JOINT DETAIL  
1 1/2"=1'-0"



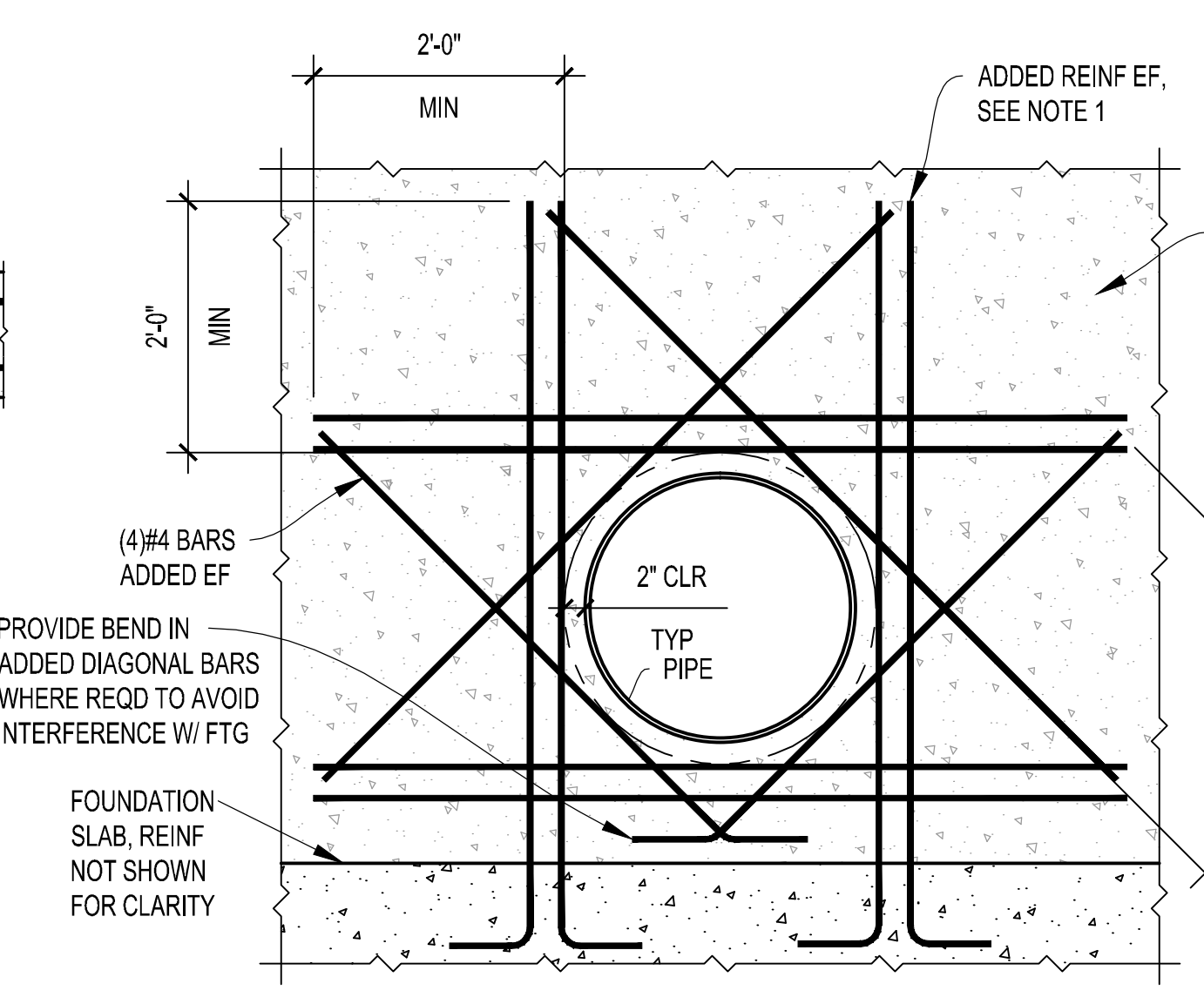
**D4** CONC. CHAMFER DETAIL  
1 1/2"=1'-0"



**D5** TYP REINF @ WALL INTERSECTIONS  
N.T.S.

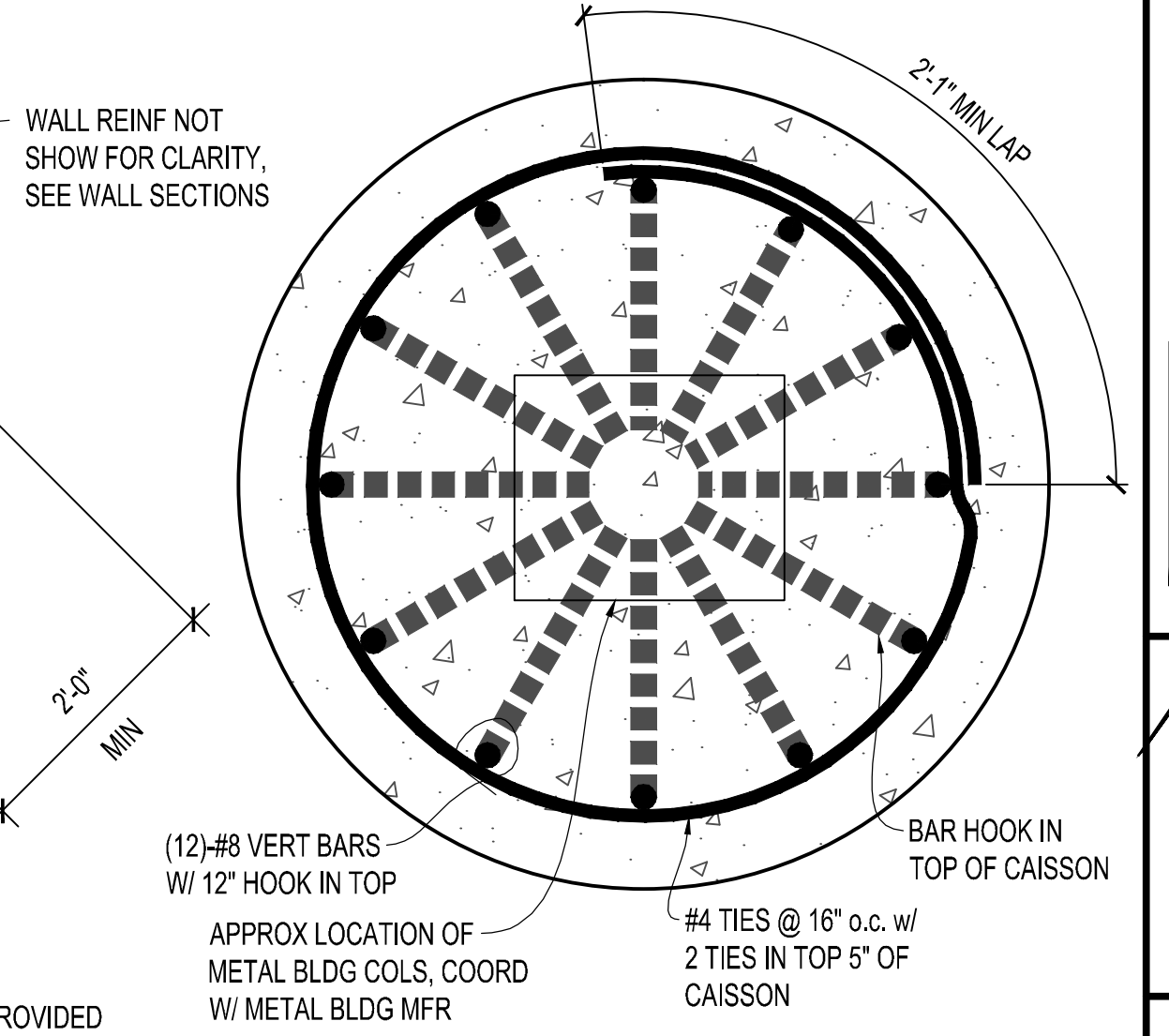


**D6** WALL / FOUNDATION JOINT  
1 1/2"=1'-0"



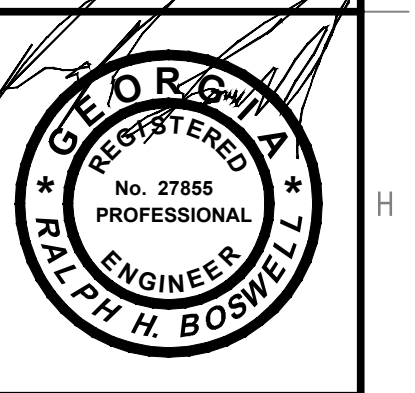
- NOTES:
1. THE EQUIVALENT NUMBER OF VERT & HORIZ BARS INTERRUPTED BY OPENINGS SHALL BE PROVIDED BY PLACING 1/2 OF BARS ON EACH SIDE OF THE OPENING @ 3" O.C.
  2. MAINTAIN NOT LESS THAN 1/4" CLEAR BETWEEN ADJACENT PARALLEL BARS.

**D7** TYP WALL REINF @ PIPE OPENING  
N.T.S.



**D8** CAISSON REINFORCING  
N.T.S.

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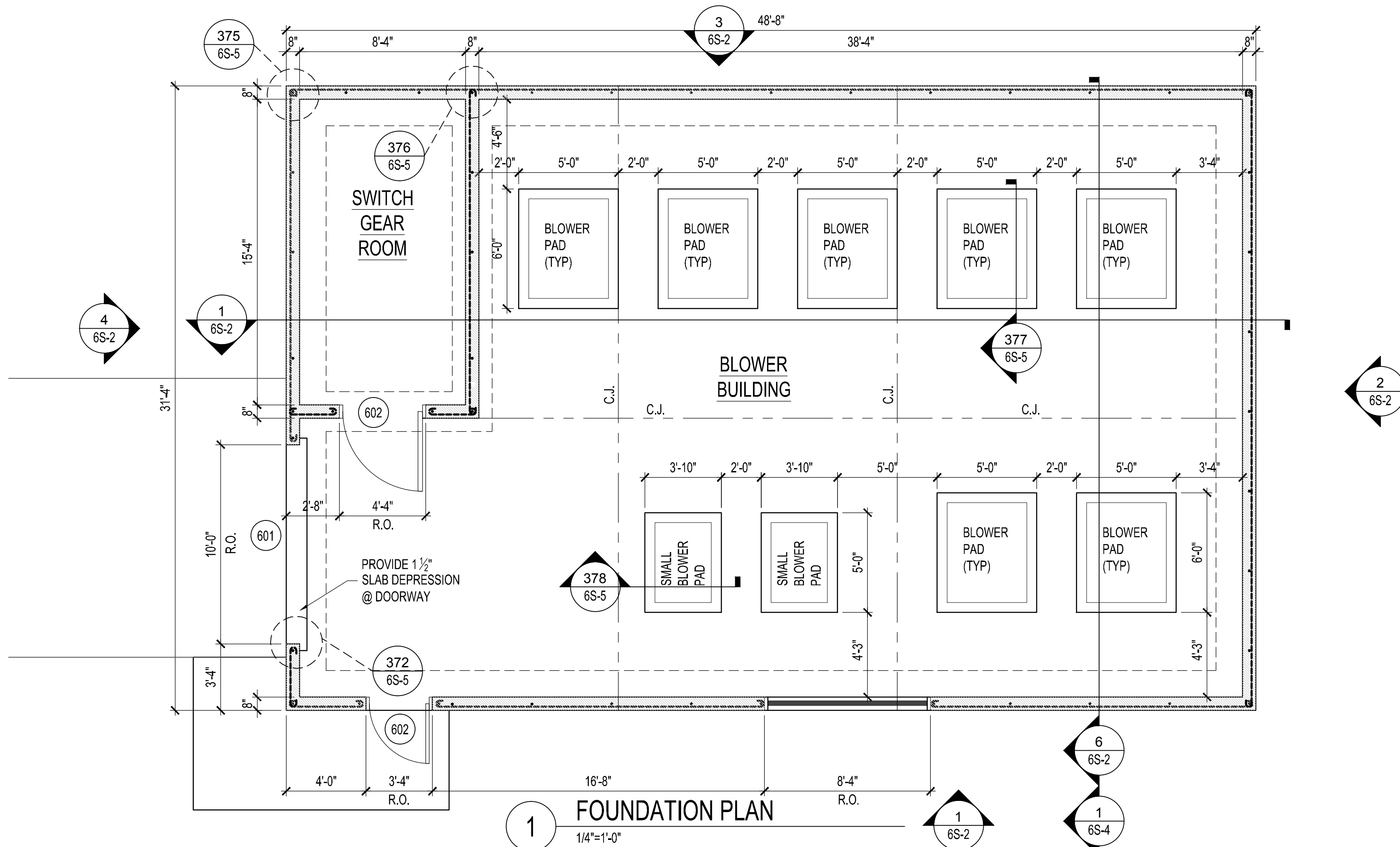
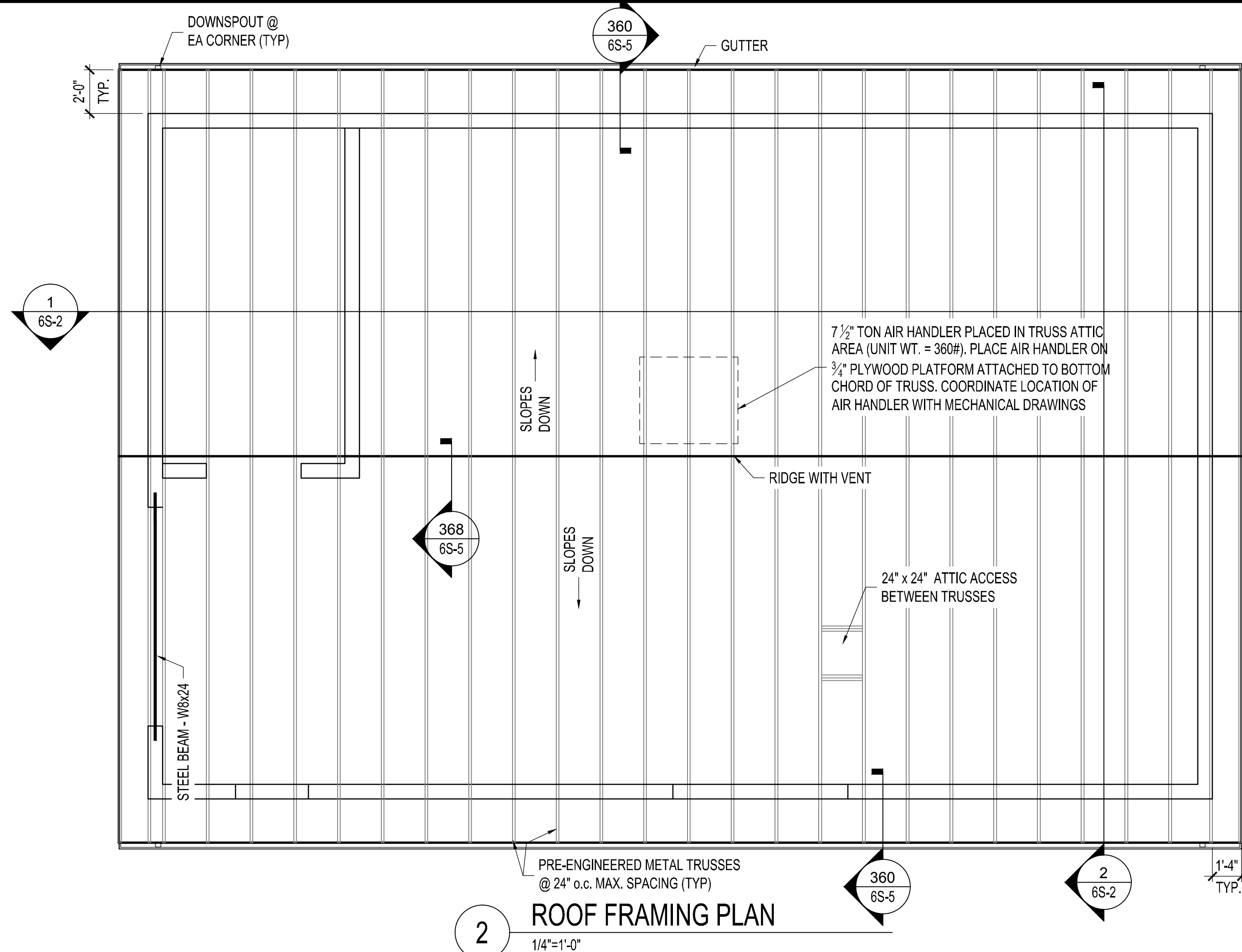
HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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DRAWN: FILE NAME: 0E11020-03-SS-3  
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UV CHANNEL  
DETAILS

PLotted by: RAU/PJL DATE: Monday, October 13, 2014 11:26:18 AM DRAWING FILE: C:\Users\rauraj\Documents\111020\03\03-SS-3.dwg LAYOUT: MOVED Name: October 13, 2014 11:26:18 AM



**CMU WALL NOTES**

- REINFC CMU WALLS W/ #4@48"OC UNO.
- ADDITIONAL #4 VERT REINF AT:
  - EACH SIDE OF OPENINGS
  - WALL INTERSECTIONS
  - ENDS OF WALLS
  - AS NOTED & DETAILED ON DRAWINGS
- PROVIDE BOND BEAMS REINF W/ (2)#4 CONT AT:
  - T&B OF OPENINGS
  - TRUSS BEARING (CONT)
  - TOP COURSE OF MASONRY WALLS
  - AS NOTED & DETAILED ON DRAWINGS
- PROVIDE MATCHING DOWELS FOR VERT REINF INTO FOUNDATION AND BOND BEAM @ TOP.
- FILL ALL CMU CELLS BELOW FINISHED FLOOR & BELOW GRADE. FILL MATERIAL SHALL BE 3000 PSI GROUT, MIN.

**WOOD FRAMING NOTES**

- SEE PRE-ENGINEERED METAL TRUSS NOTES FOR ROOF TRUSSES.
- ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING W/ #10 TEKS WOOD TO METAL FASTNERS AT 6" o.c. @ PANEL EDGES & @12" o.c. @ INTERMEDIATE SUPPORTS.

**CONC REINF LAP LENGTH**  
3000 PSI (ACI 318-05)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	22"	
#4	29"	
#5	36"	
#6	43"	
#7	63"	
#8	72"	
#9	81"	

**CMU REINF LAP LENGTH**  
Fy=60 KSI, fm=1500 PSI

BAR SIZE	SPLICE LENGTH
#3	19"
#4	25"
#5	31"
#6	57"
#7	70"
#8	98"

**MASONRY LINTEL SCHEDULE**

OPENING WIDTH	MINIMUM		MAXIMUM	
	8" CMU	16" CMU	8" CMU	16" CMU
3'-4"	2 - #4	2 - #4	2 - #4	2 - #4
3'-4"	2 - #5	2 - #5	2 - #5	2 - #5
5'-4"	2 - #6	2 - #6	2 - #6	2 - #6
7'-4"	2 - #6	2 - #6	2 - #6	2 - #6

- EXTEND BOND BEAM REINFORCING 24" OR 40 BAR DIAMETERS (WHICHEVER IS GREATER) BEYOND THE EXTENTS OF THE OPENING. VERTICAL REINFORCING AT THE SIDES OF THE OPENING SHALL BE CONTINUOUS THROUGH THE BOND BEAM. PROVIDE KNOCK OUTS IN THE BOTTOM OF THE BOND BEAM BLOCK AS REQUIRED TO ALLOW REINFORCING TO PASS THROUGH.
- SEE DETAILS 373 & 374 FOR ADDITIONAL REINFORCING AT OPENINGS.

**STRUCTURE NOTES**

- DESIGN SOIL BEARING PRESSURE = 2000 PSF. SOIL BRNG PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND ENGINEER SHALL BE NOTIFIED IF ACTUAL SOIL BEARING PRESSURE IS LOWER THAN DESIGN VALUE. FOUNDATION DESIGN & SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITTAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- FLOOR LIVE LOAD = 100 PSF
- PRE-ENGINEERED TRUSS DESIGN LOADS:
  - TOP CHORD:
    - DEAD LOAD = 10 PSF + TRUSS WEIGHT
    - LIVE LOAD = 20 PSF
  - BOT CHORD:
    - DEAD LOAD = 5 PSF + TRUSS WEIGHT
    - LIVE LOAD = 10 PSF (60 PSF @ ACCESS LOCATIONS)
    - MECH LOAD = 200# CONCENTRATED LOAD @ ANY LOCATION ALONG BOT CHORD
- WIND LOADS:
  - BASIC WIND SPEED (V, 3 SEC GUST) = 110 MPH
  - OCCUPANCY CATEGORY = IV
  - WIND IMPORTANCE FACTOR (I<sub>w</sub>) = 1.15
  - UPWIND EXPOSURE CATEGORY = B
  - INTERNAL PRESSURE COEFF. (GC<sub>pi</sub>) = ±0.18
  - COMPONENTS & CLADDING NET DESIGN PRESSURES (P<sub>NET</sub>) PER ASCE 7-05, METHOD 1)
  - ROOF COMPONENTS & CLADDING DESIGN PRESSURES:
    - MAIN ROOF = -55.1 PSF, +13.1 PSF (BASED ON 20 SF AREA)
    - OVERHANG = -70.8 PSF
  - WALL COMPONENTS & CLADDING DESIGN PRESSURES = -33.5 PSF, +25.0 PSF (BASED ON 10 SF AREA)
- SEISMIC DESIGN CRITERIA:
  - OCCUPANCY CATEGORY = IV
  - SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50
  - S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101
  - SITE CLASS = E
  - S<sub>DS</sub> = 0.463 S<sub>01</sub> = 0.233
  - BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 12.2-1 OR 12.14-1):
    - BEARING WALL SYSTEM - SPECIAL REINFORCED MASONRY SHEAR WALLS
  - RESPONSE MODIFICATION FACTOR (R) = 5.0
  - SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.1405
  - SEISMIC DESIGN CATEGORY = D
  - DESIGN BASE SHEAR = 23.6 K
  - ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

**FOUNDATION NOTES**

- STEP FOOTINGS DOWN BELOW MECHANICAL, ELECTRICAL, OR PLUMBING LINES AS REQUIRED TO AVOID INTERFERENCE. SEE TYP FOOTING STEP DETAIL. COORDINATE W/ OTHER TRADES. PROVIDE PIPE SLEEVE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL.
- WHERE UTILITY LINES PASS UNDER A FOOTING, PROVIDE RELIEVING ARCH FOR PROTECTION.

**CONC SLAB NOTES**

- SIDEWALK SLABS SHALL BE 3000 PSI, 4" THICK CONC REINF W/ 6x6-W1.4xW1.4 WWF @ CENTER OF SLAB. FLOOR SLAB SHALL BE 3000 PSI, 8" THICK CONC REINFORCED W/ #4'S @ 12" o.c. EA WAY CTR. OF SLAB. SEE PLAN FOR FINISHED FLOOR ELEVATIONS. (REFER TO CIVIL DRAWINGS FOR SIDEWALK LOCATIONS & DETAILS.
  - SHALL NOT BE LARGER IN OUTSIDE DIM THAN 1/2 THE OVERALL THICKNESS OF SLAB.
  - SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
  - MIN SLAB THICKNESS OF 2 1/2" MUST BE MAINTAINED OVER THE EMBEDDED ITEMS.
- PROVIDE 4" THICK NO. 57 STONE GRANULAR BASE & VAPOR BARRIER UNDER INTERIOR FLOOR SLAB.
- CONDUITS & PIPES EMBEDDED IN SLABS:
  - SHALL NOT BE LARGER IN OUTSIDE DIM THAN 1/2 THE OVERALL THICKNESS OF SLAB.
  - SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
  - MIN SLAB THICKNESS OF 2 1/2" MUST BE MAINTAINED OVER THE EMBEDDED ITEMS.

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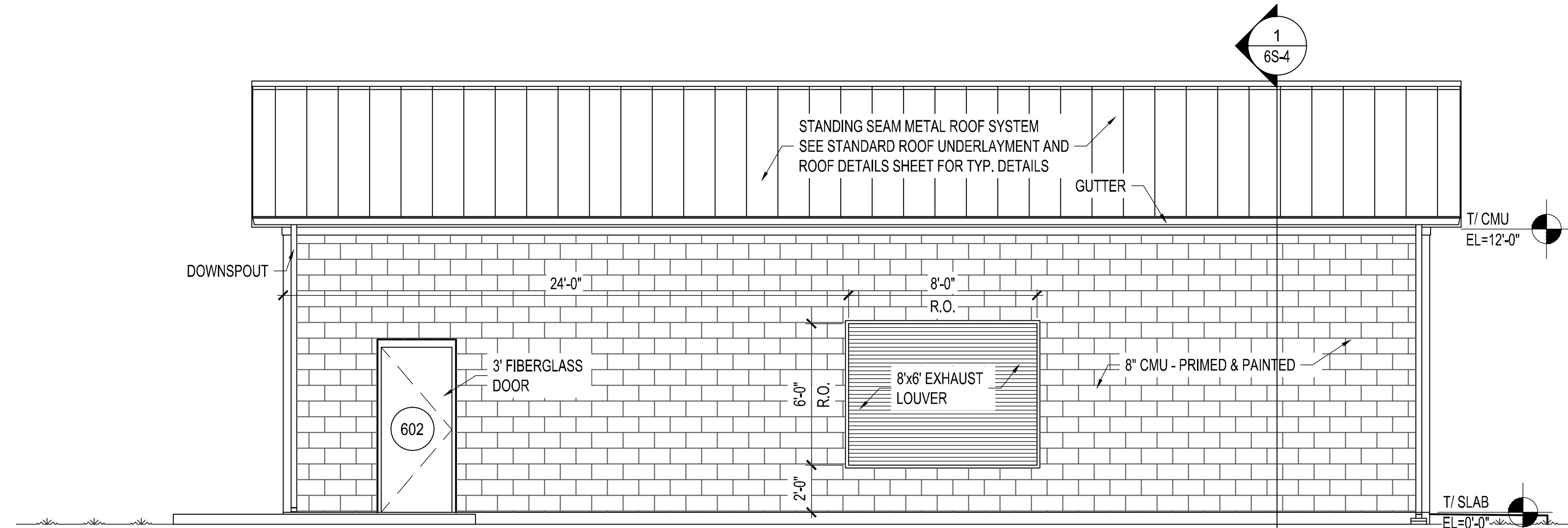
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FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
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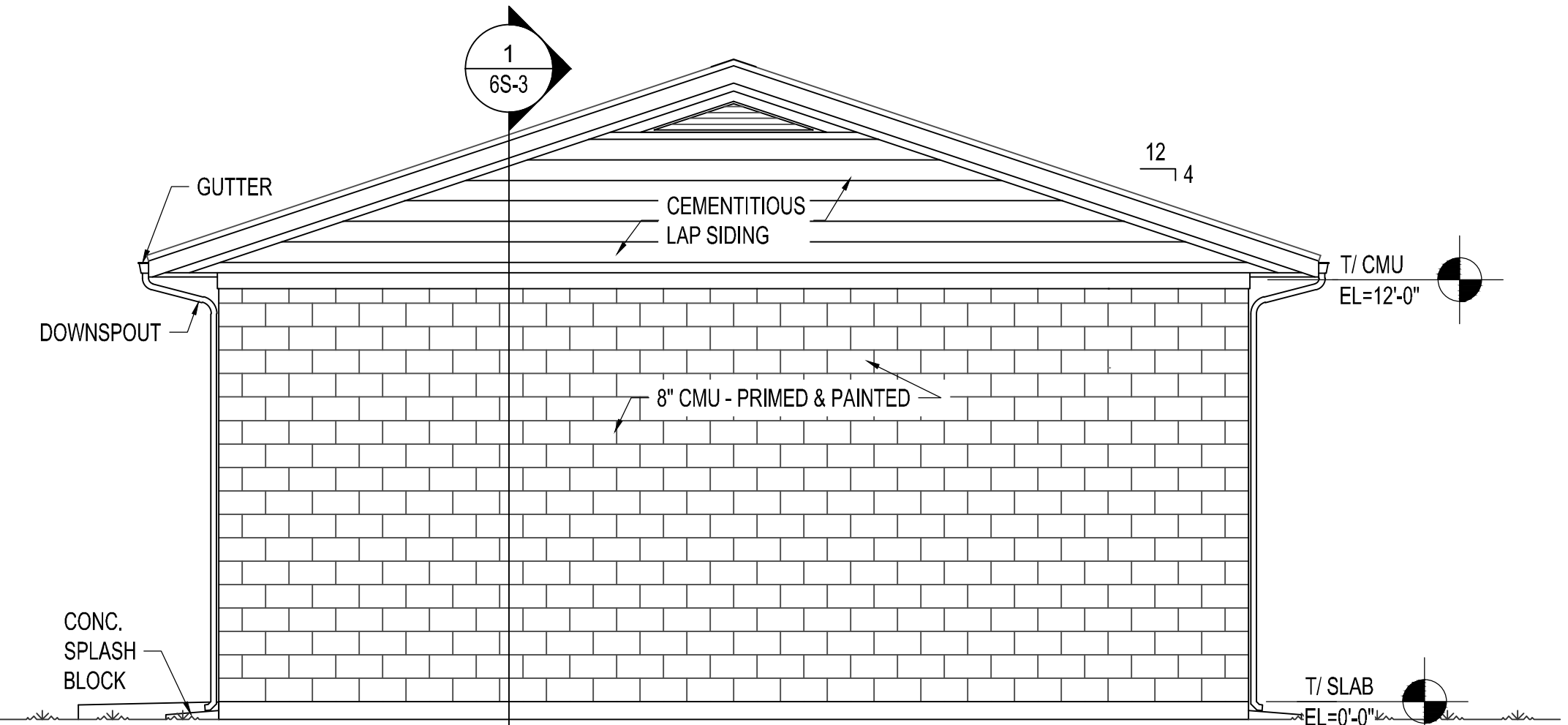
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BLOWER BUILDING  
NOTES AND PLANS  
**6S-1**  
SHEET 1 OF 07

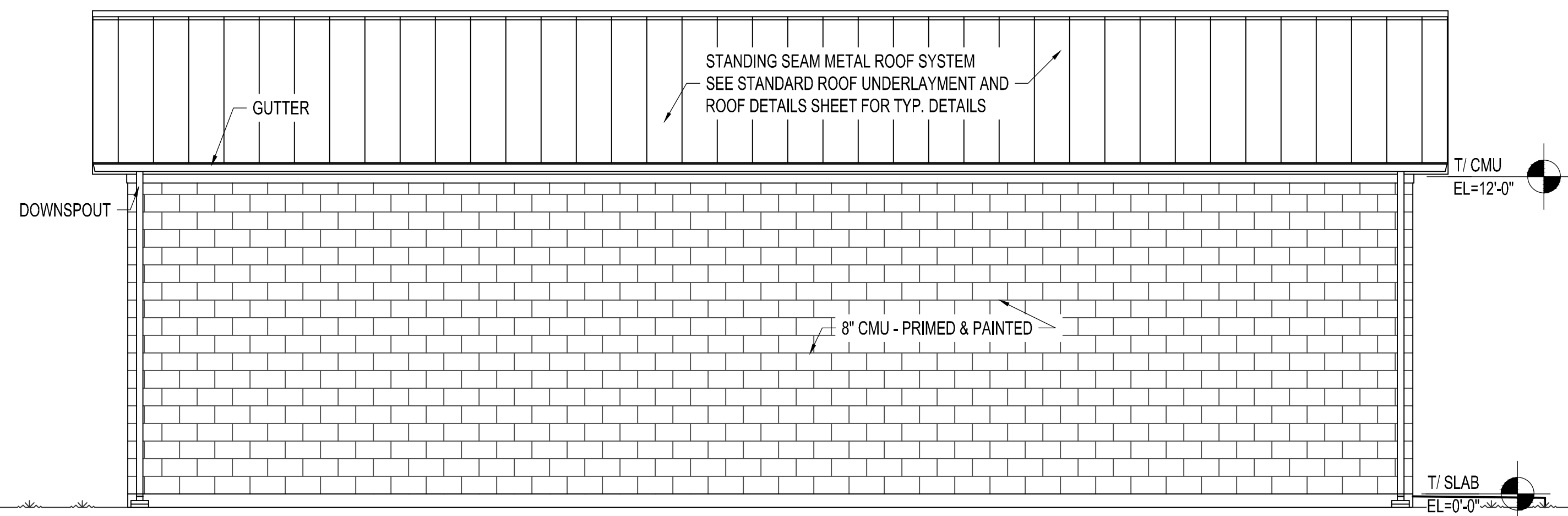
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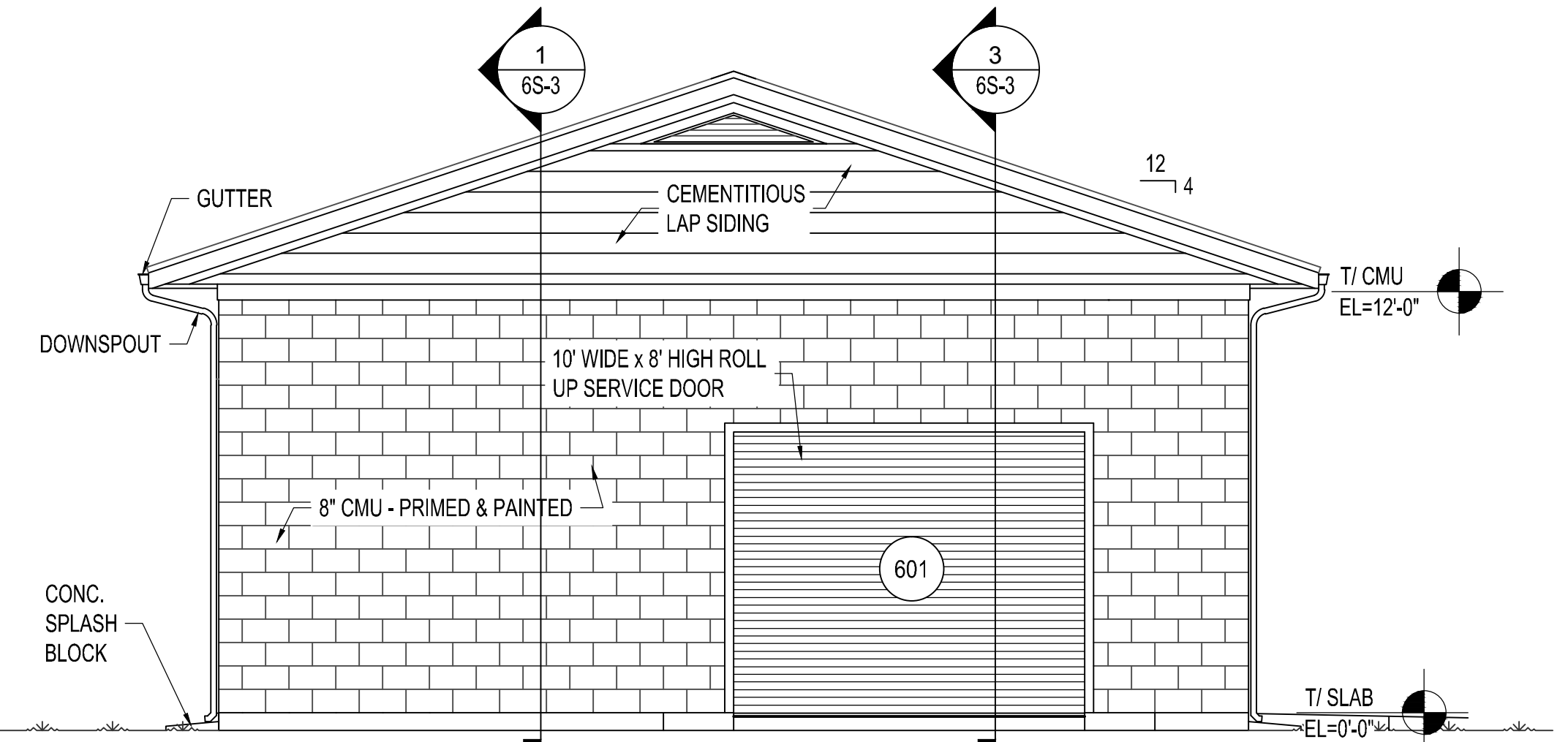
1 FRONT ELEVATION  
1/4"=1'-0"



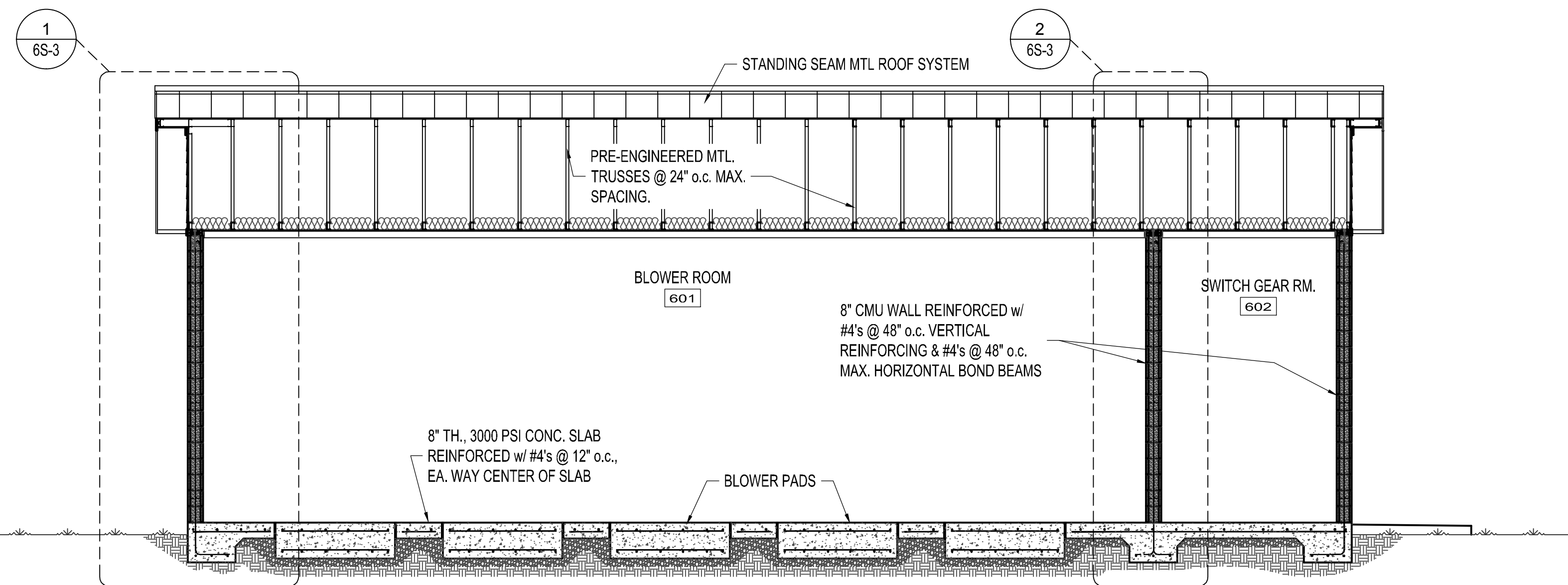
2 RIGHT SIDE ELEVATION  
1/4"=1'-0"



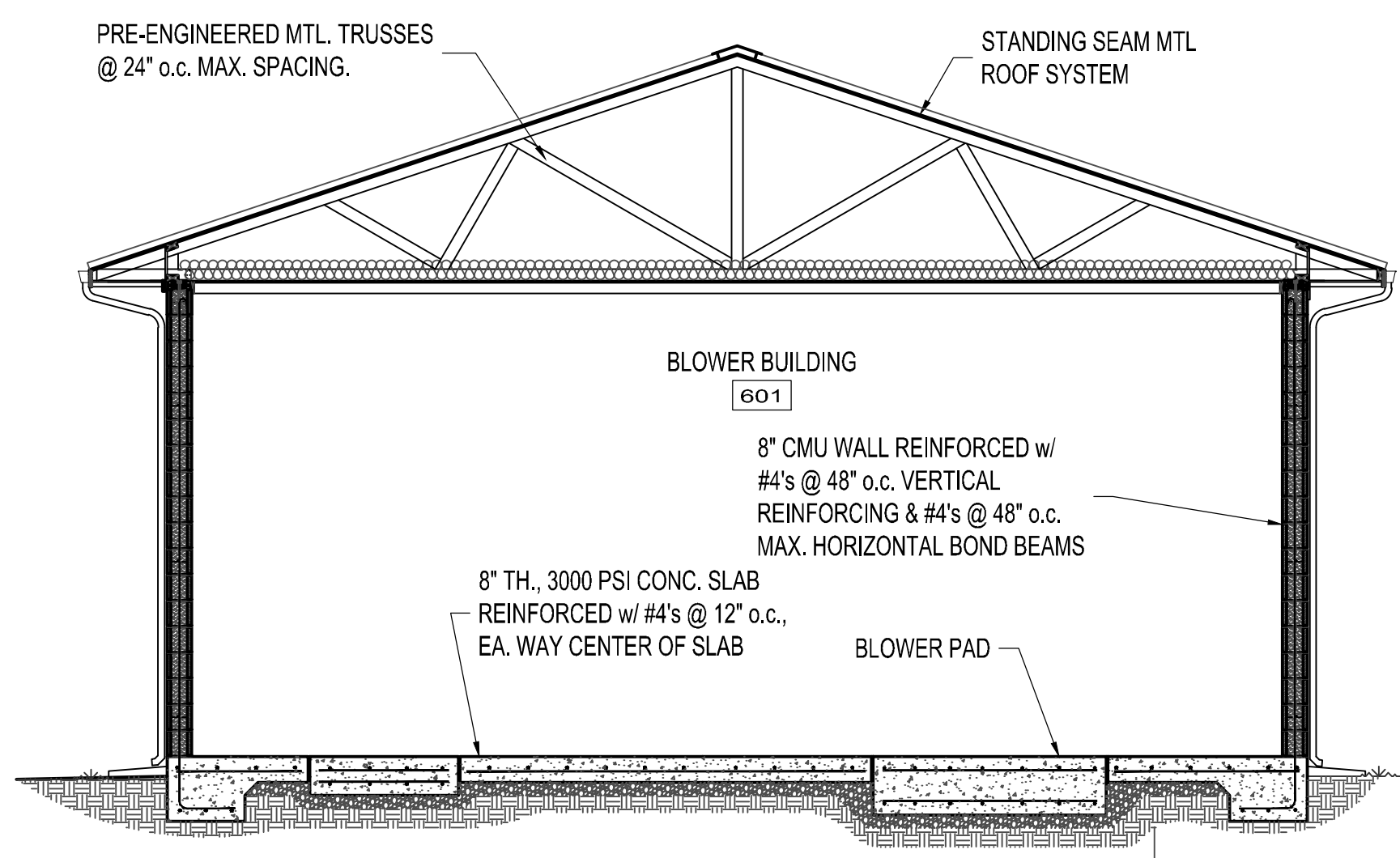
3 REAR ELEVATION  
1/4"=1'-0"



4 LEFT SIDE ELEVATION  
1/4"=1'-0"

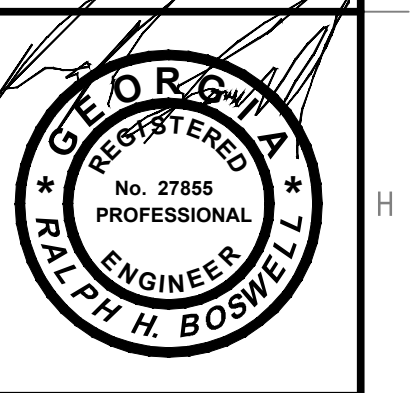


5 LONGITUDINAL BUILDING SECTION  
1/4"=1'-0"



6 TRANSVERSE BUILDING SECTION  
1/4"=1'-0"

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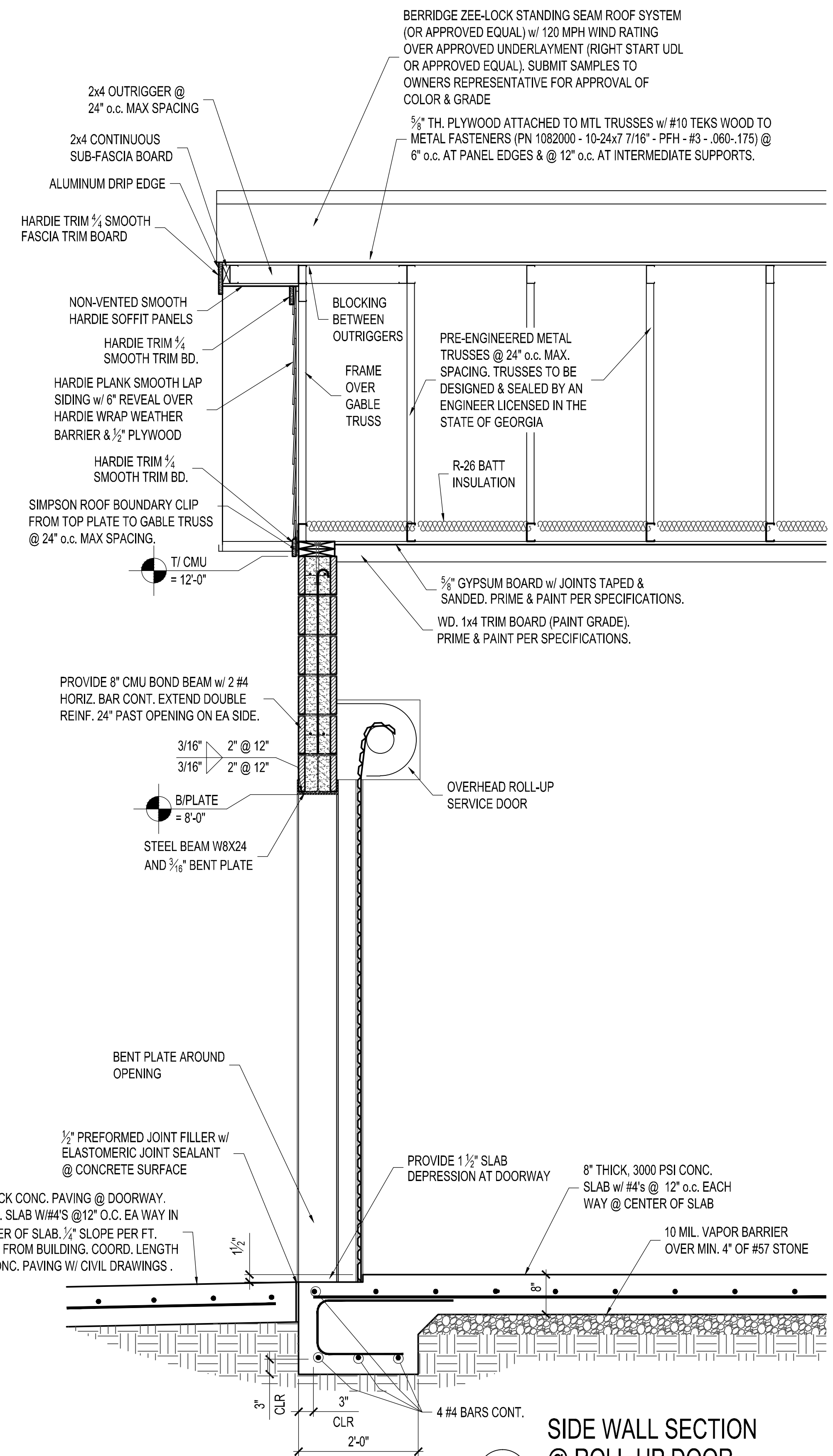
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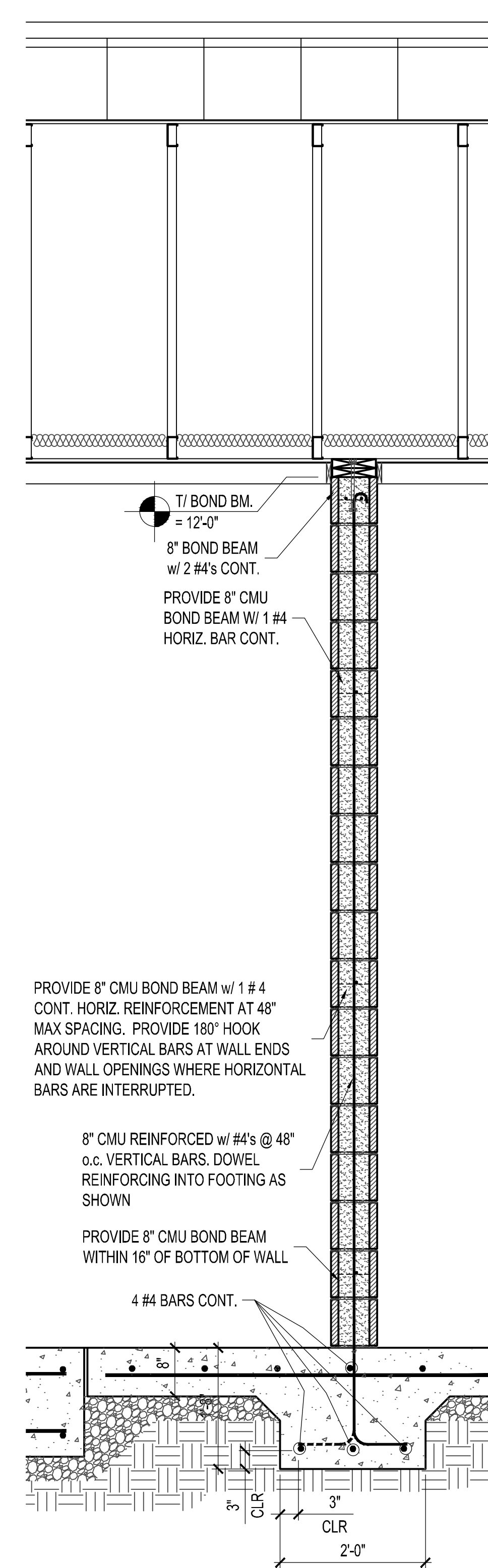
BLOWER BUILDING  
ELEVATIONS AND  
BUILDING SECTIONS

6S-2  
SHEET 2 OF 07

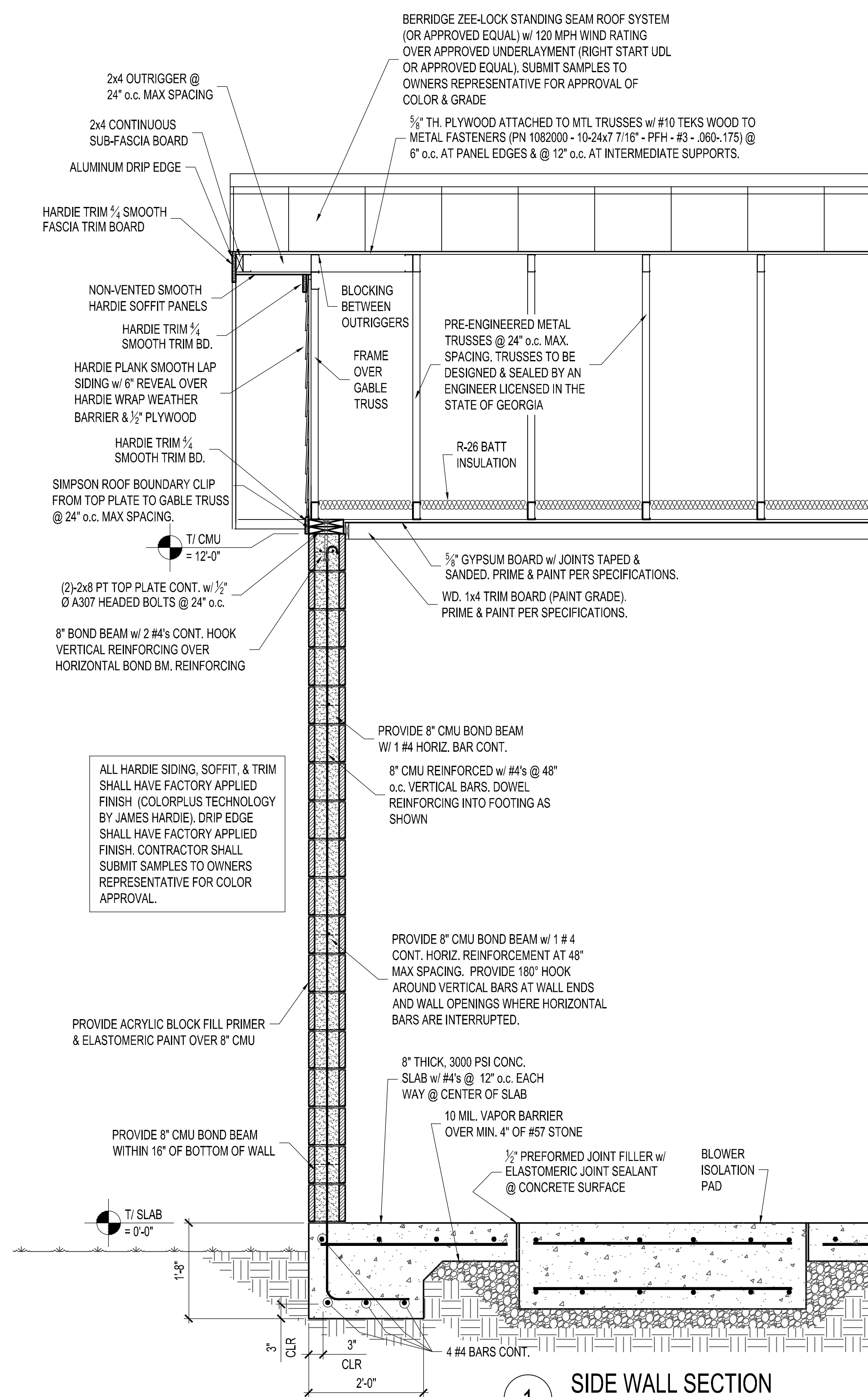
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**3**  
SIDE WALL SECTION  
@ ROLL-UP DOOR  
3/4"=1'-0"



**2**  
INTERIOR WALL SECTION  
3/4"=1'-0"



**1**  
SIDE WALL SECTION  
3/4"=1'-0"

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**REGISTERED PROFESSIONAL ENGINEER**  
 No. 27855  
 STATE OF GEORGIA  
 P. H. BOSWELL

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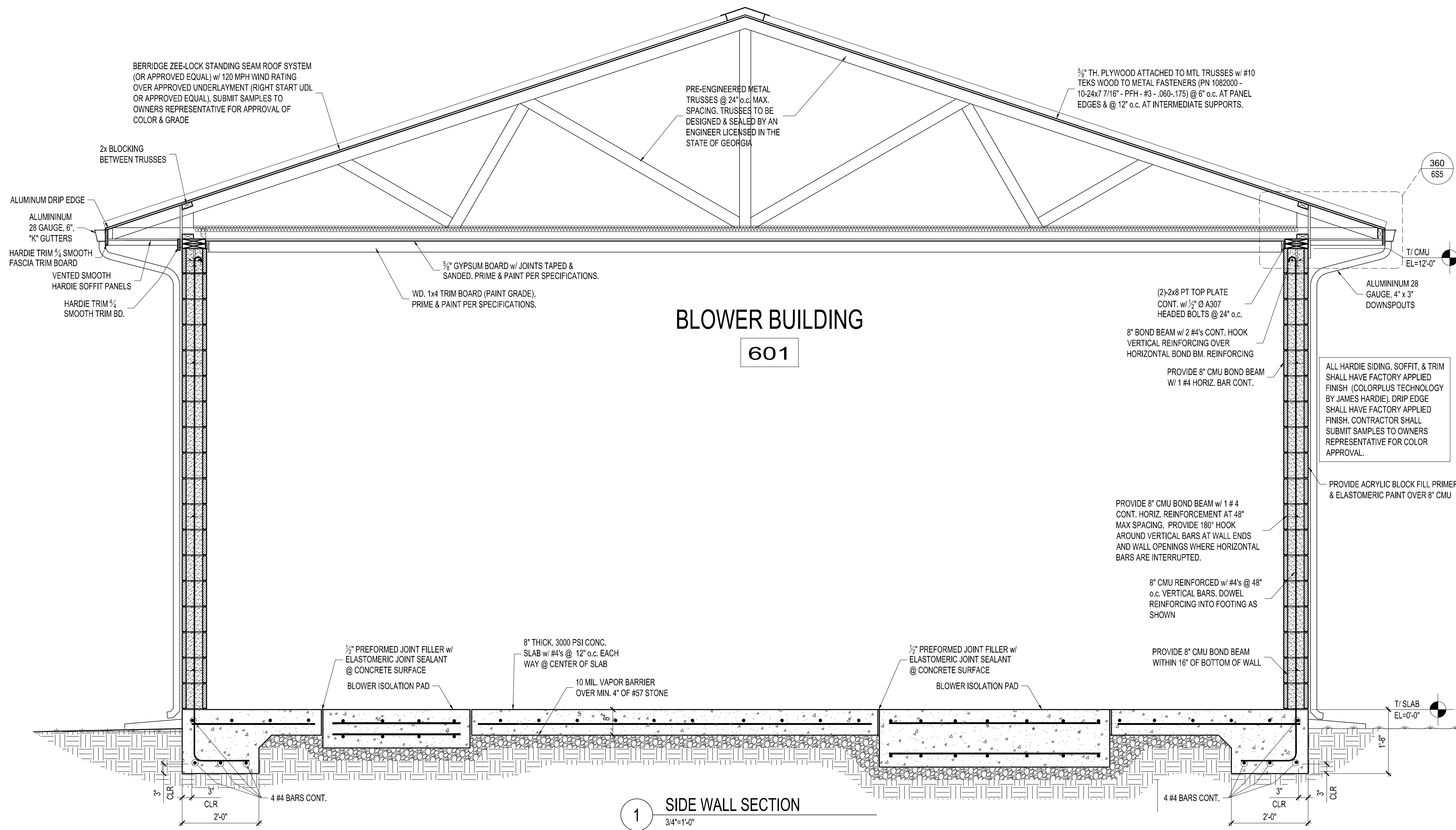
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BLOWER BUILDING  
 WALL SECTIONS,  
 DETAILS, & SCHEDULES  
**6S-3**  
 SHEET 3 OF 07

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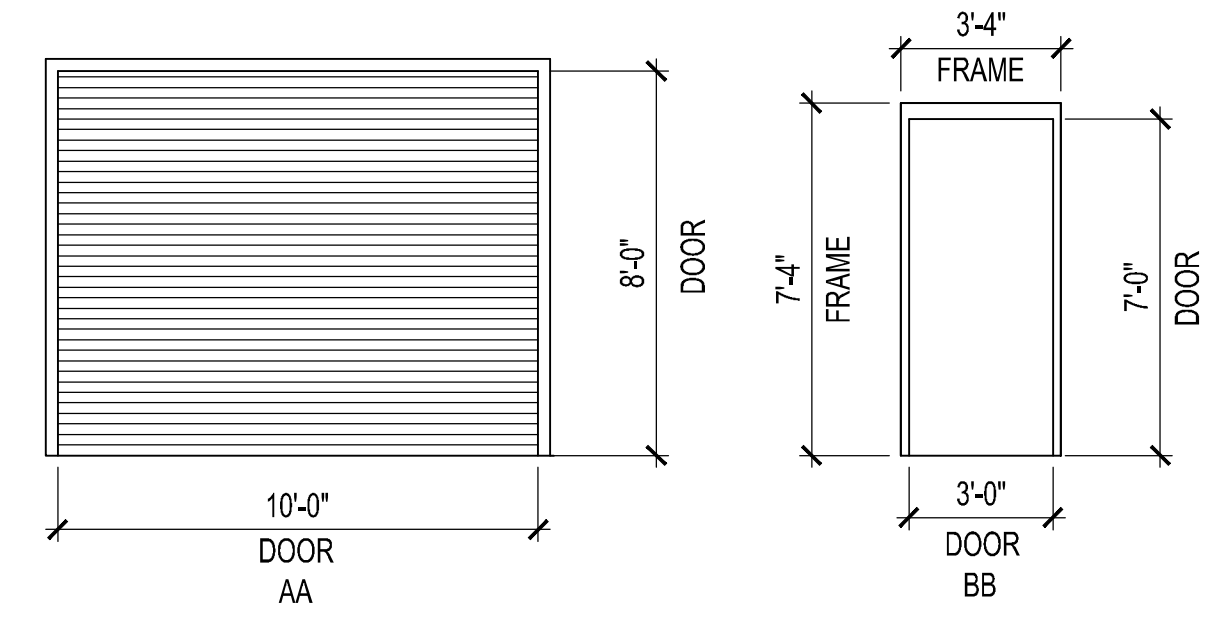




# BLOWER BUILDING

601

1 SIDE WALL SECTION  
3/4"=1'-0"



3 DOOR & FRAME ELEVATIONS  
N.T.S.

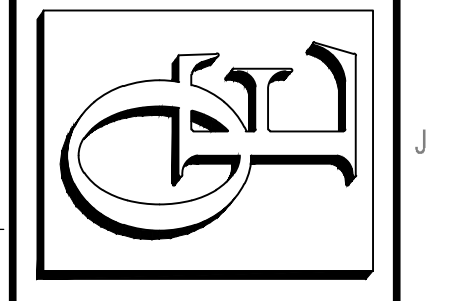
FINISH SCHEDULE								
ROOM NUMBER	FLOORS	WALLS	CEILING	REMARKS				
601	SEALED CONCRETE	PAINTED CMU	PAINTED GYP. BOARD					
602	SEALED CONCRETE	PAINTED CMU	PAINTED GYP. BOARD					

DOOR SCHEDULE								
DR. #	WIDTH	HEIGHT	THK.	TYPE	MATERIAL	FIRE LABEL	FRAME MTL.	REMARKS
601	10-0	8-0	5/8"	AA	GALV. STEEL		GALV. STEEL	FINISH SEE SPECS.
602	3-0	7-0	1 3/4"	BB	FRP		FRP	SEE NOTE FOR MFR.

NOTE: DOOR #602 BY CHEM-PRUF DOOR CO. OR APPROVED EQUAL.

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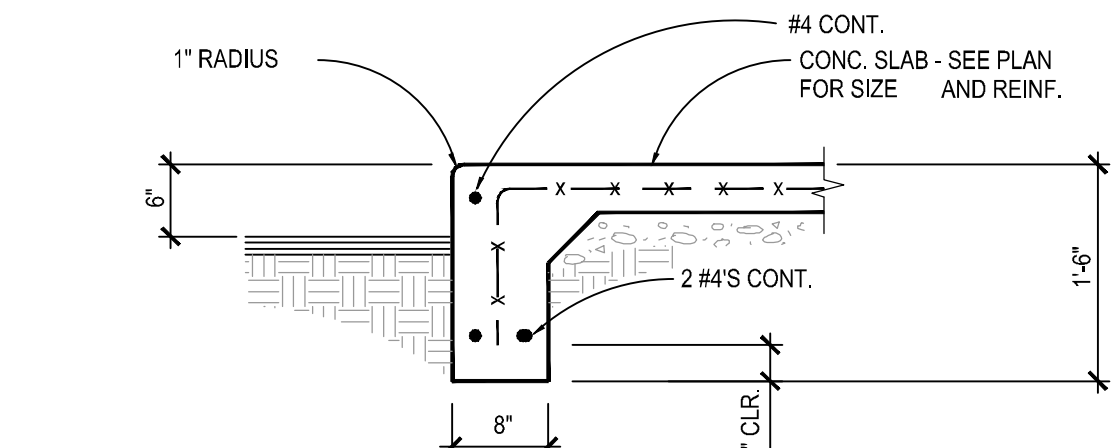
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 FOR:  
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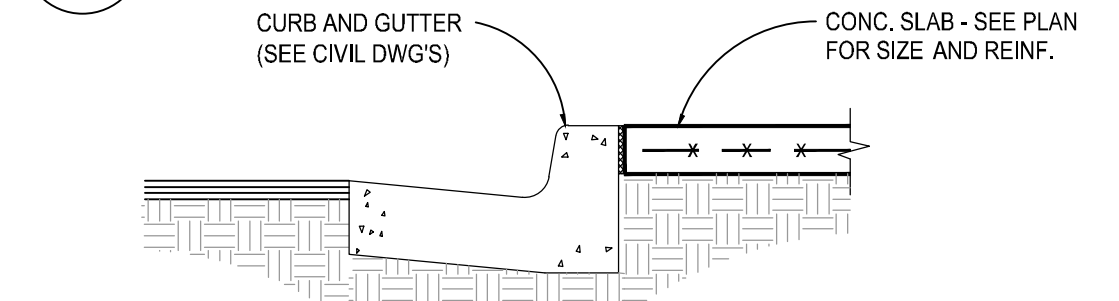
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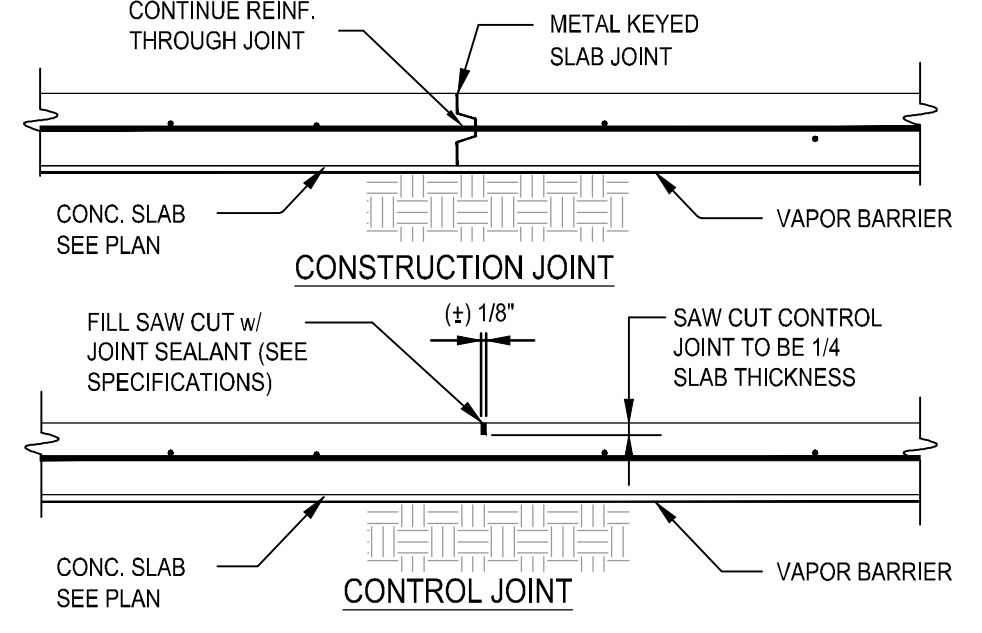
BLOWER BUILDING  
 ENLARGED TRANSVERSE BUILDING SECTION



**341 TURN-DOWN AT SIDEWALK**  
N.T.S.

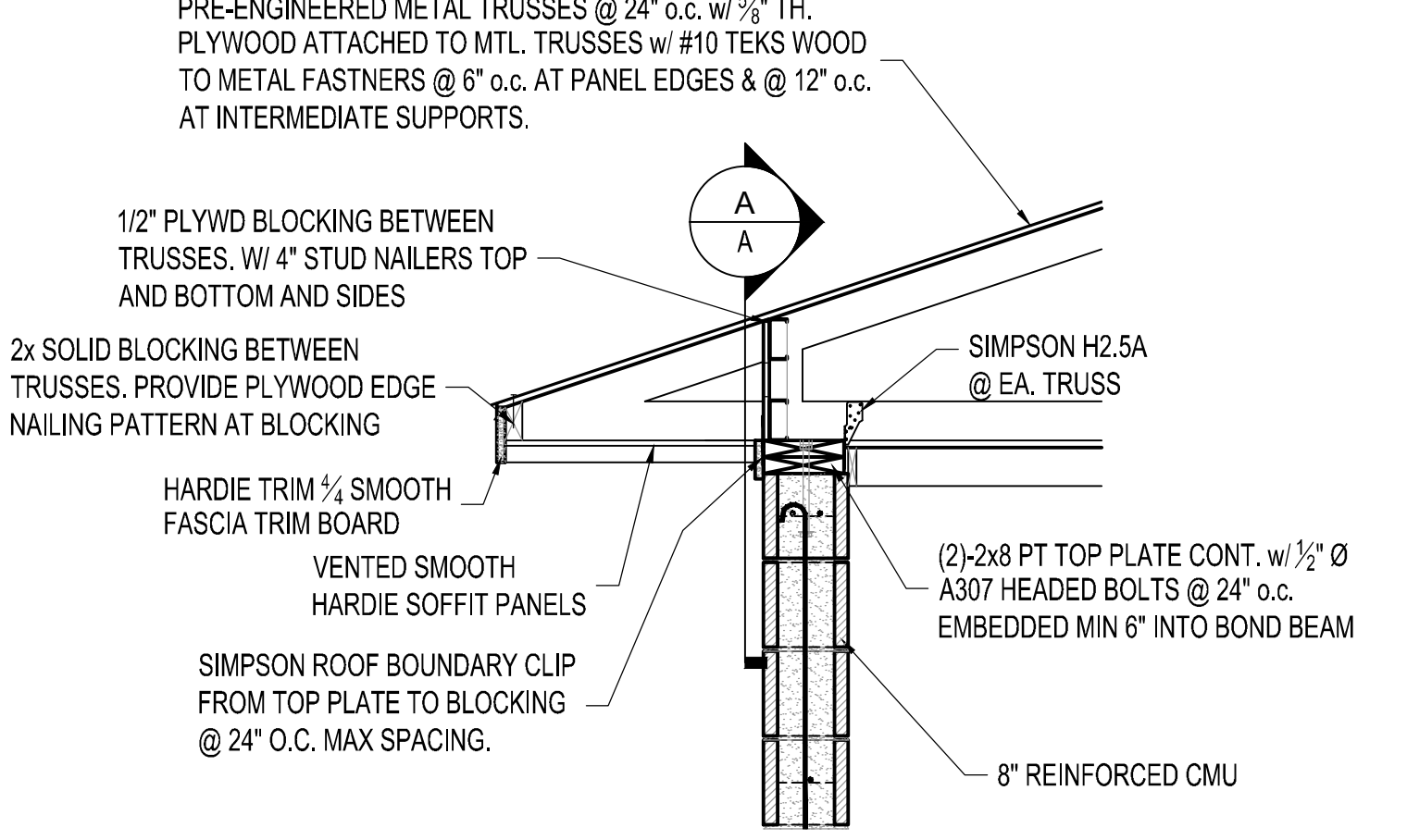


**342 CURB AND GUTTER**  
N.T.S.

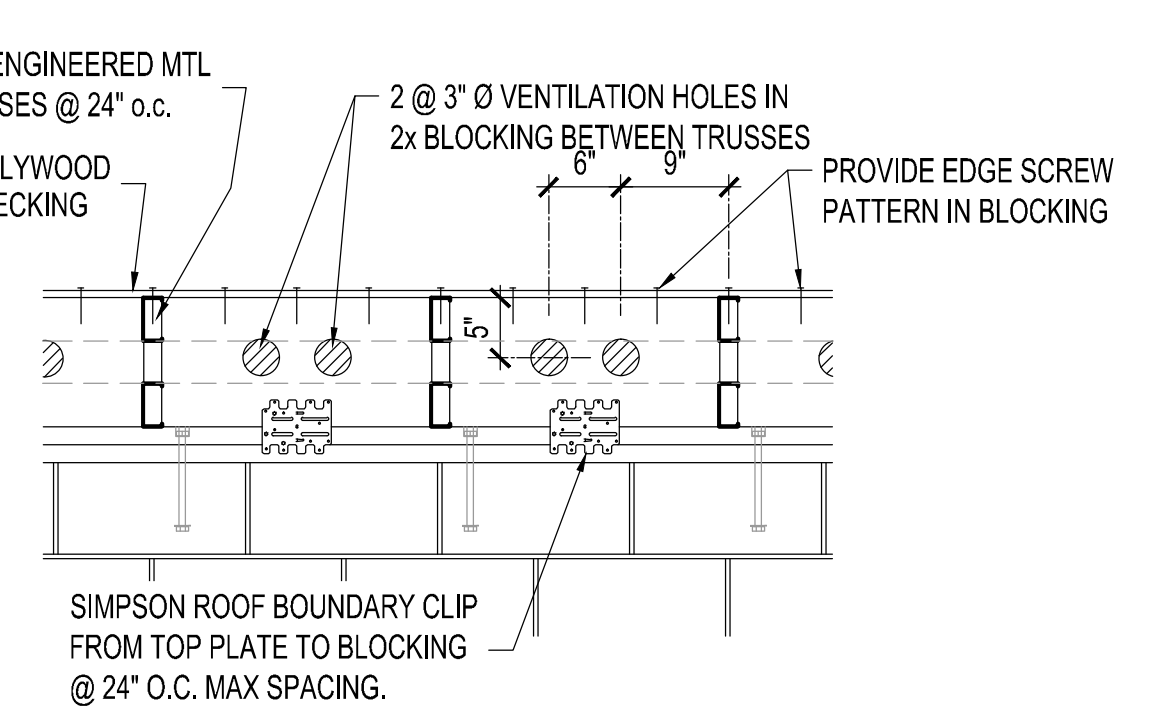


**NOTES:**  
SAW CUT AS SOON AS SLAB CAN SUPPORT WEIGHT.  
CONTROL JOINTS MAY BE REPLACED WITH CONSTRUCTION JOINTS.  
CONTROL JOINTS SHALL BE SPACED AT NO MORE THAN 18'-0" O.C.  
SLAB AREAS BOUNDED BY THESE JOINTS, SHALL HAVE THE LENGTH NO MORE THAN 2x THE WIDTH.

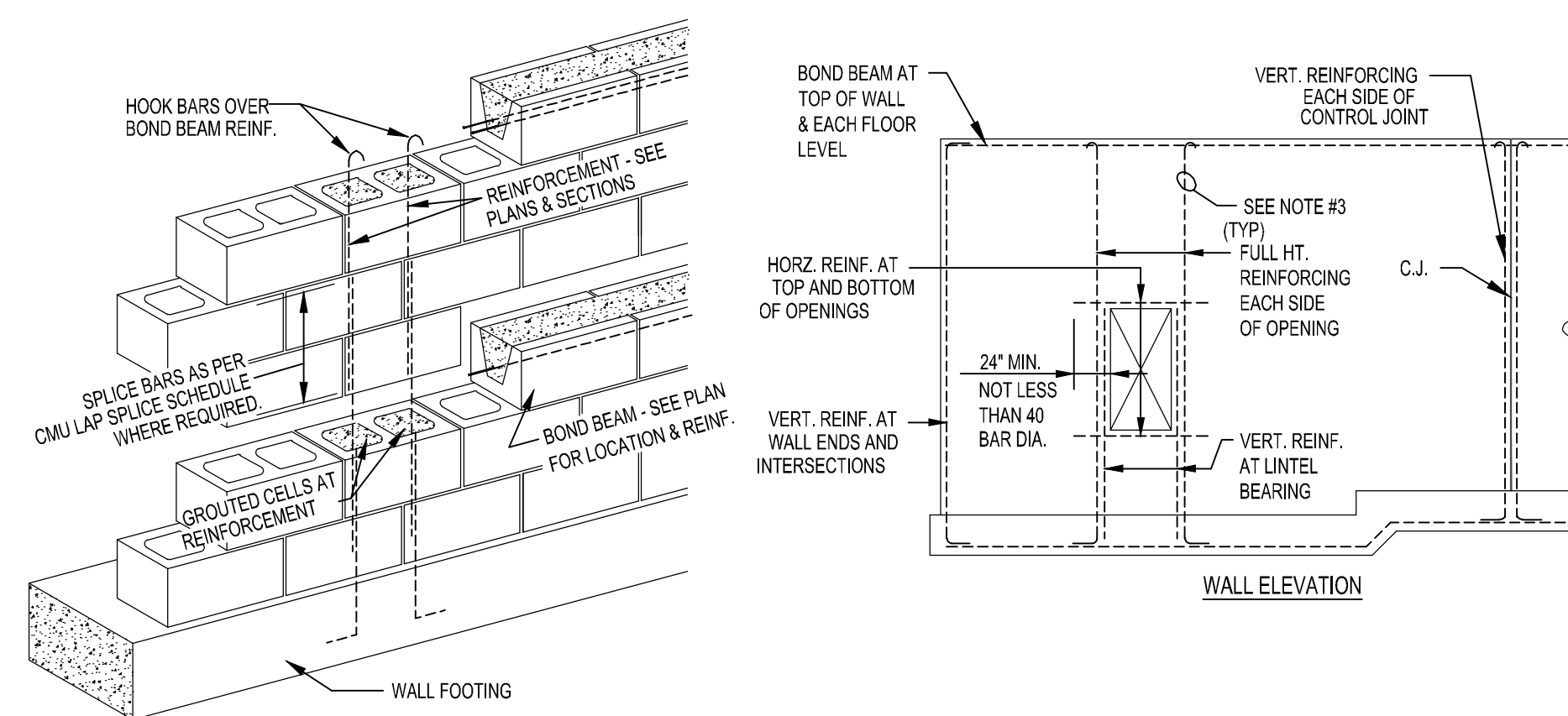
**344 6" SLAB JOINT DETAILS**  
N.T.S.



**360 TRUSS TO WALL CONNECTION DETAIL**  
N.T.S.

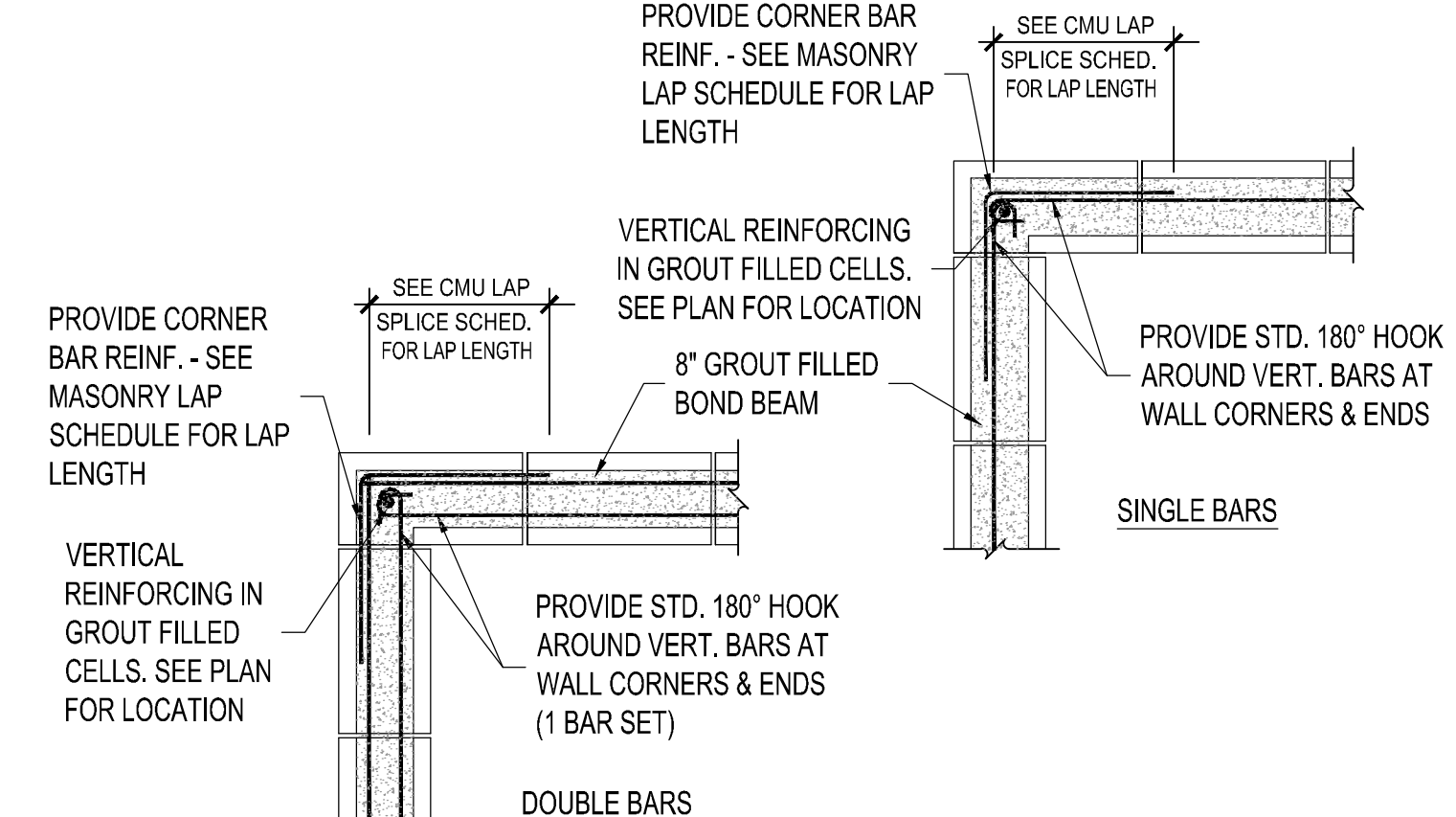


**A/A SECTION A-A**  
N.T.S.

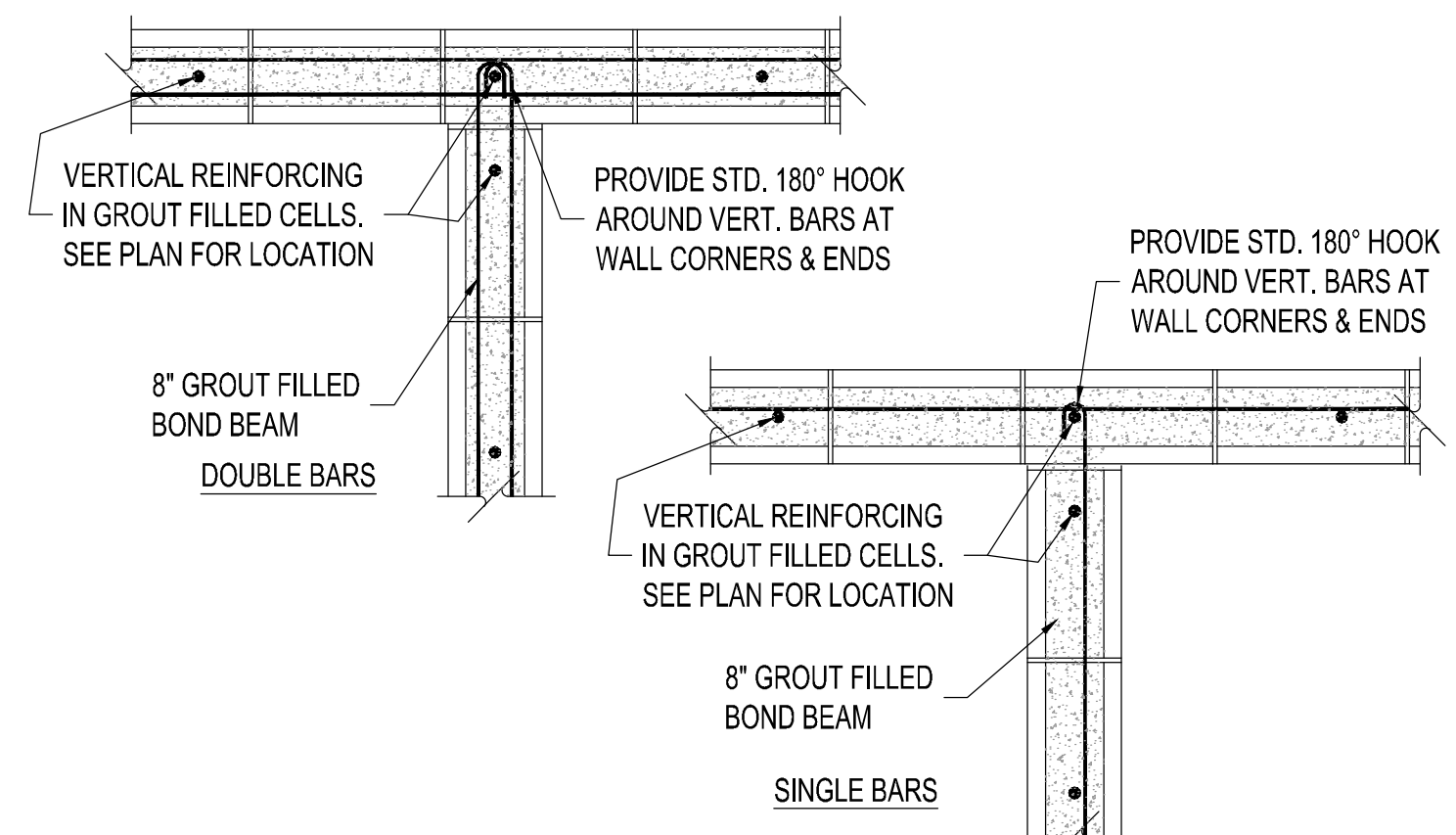


**LOW LIFT GROUTING PROCEDURE:**  
1. CONSTRUCT WALL TO HEIGHT OF 4'-0". ALLOW MORTAR TO SET SUFFICIENTLY TO WITHSTAND GROUT PRESSURE.  
2. INSPECT UNITS FOR ALIGNMENT. CLEAN OUT CELLS TO BE FILLED. LIGHTLY WET THE UNITS AND FILL CELLS TO 1 1/2" BELOW TOP COURSE.  
3. DELAY 3 TO 5 MINUTES PRIOR TO CONSOLIDATING TO ALLOW WATER TO BE ABSORBED BY MASONRY.  
**ELEVATION NOTES:**  
1. REINFORCING SHOWN SHALL BE MINIMUM #4 RE-BAR UNLESS SHOWN OTHERWISE ON PLANS AND DETAILS.  
2. BOND BEAM REINFORCING SHOWN SHALL BE DISCONTINUED AT CONTROL JOINTS.  
3. PROVIDE 4" x 4" OPENING IN BOTTOM OF BOND BEAM FOR PASSAGE OF VERTICAL REINFORCING IN CMU BOND BEAM. PROVIDE 1" HOLE IN BOTTOM OF PRECAST LINTEL FOR PASSAGE OF VERT REINF.

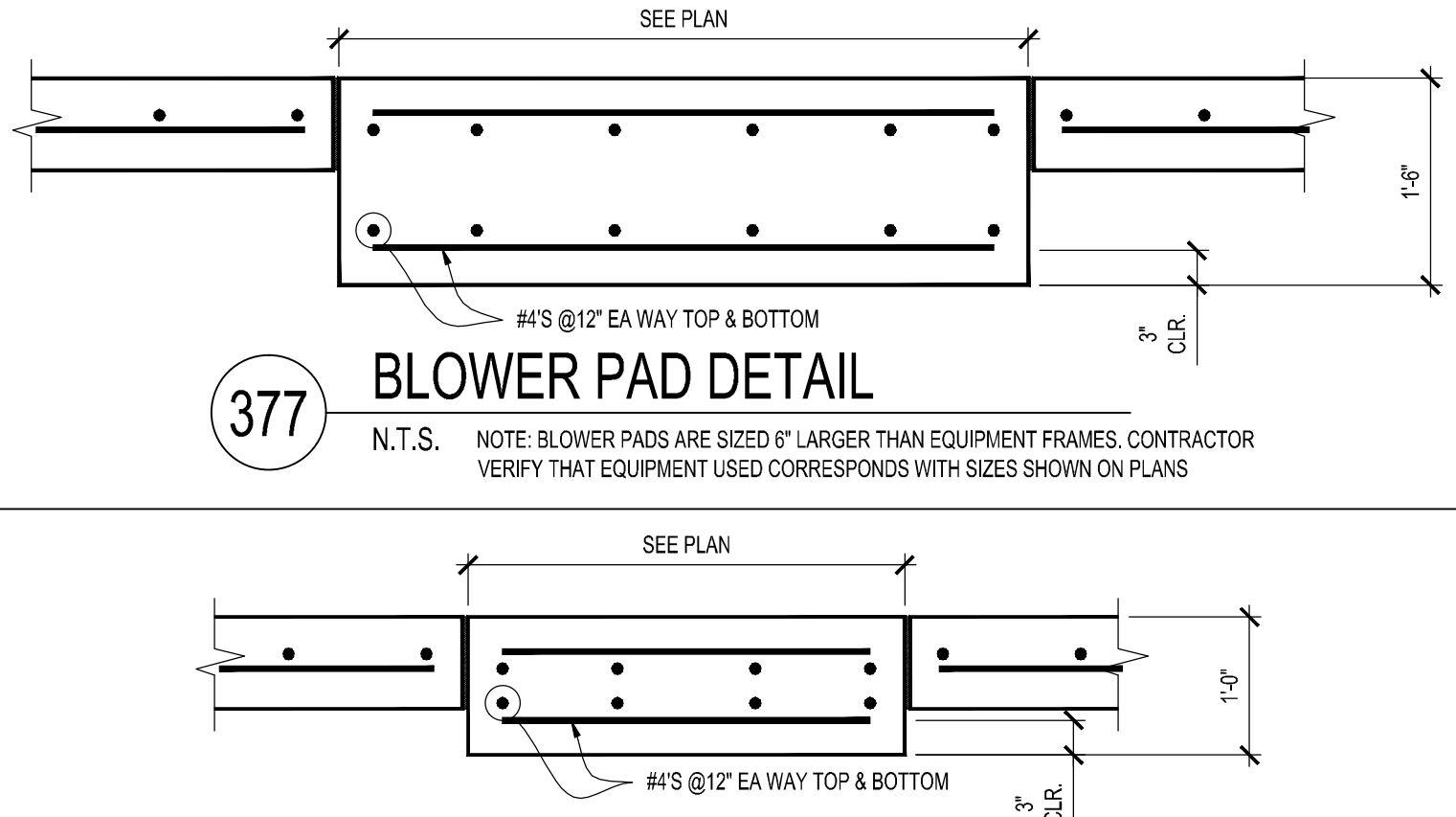
**370 REINFORCED MASONRY CONSTRUCTION & REINFORCING**  
N.T.S.



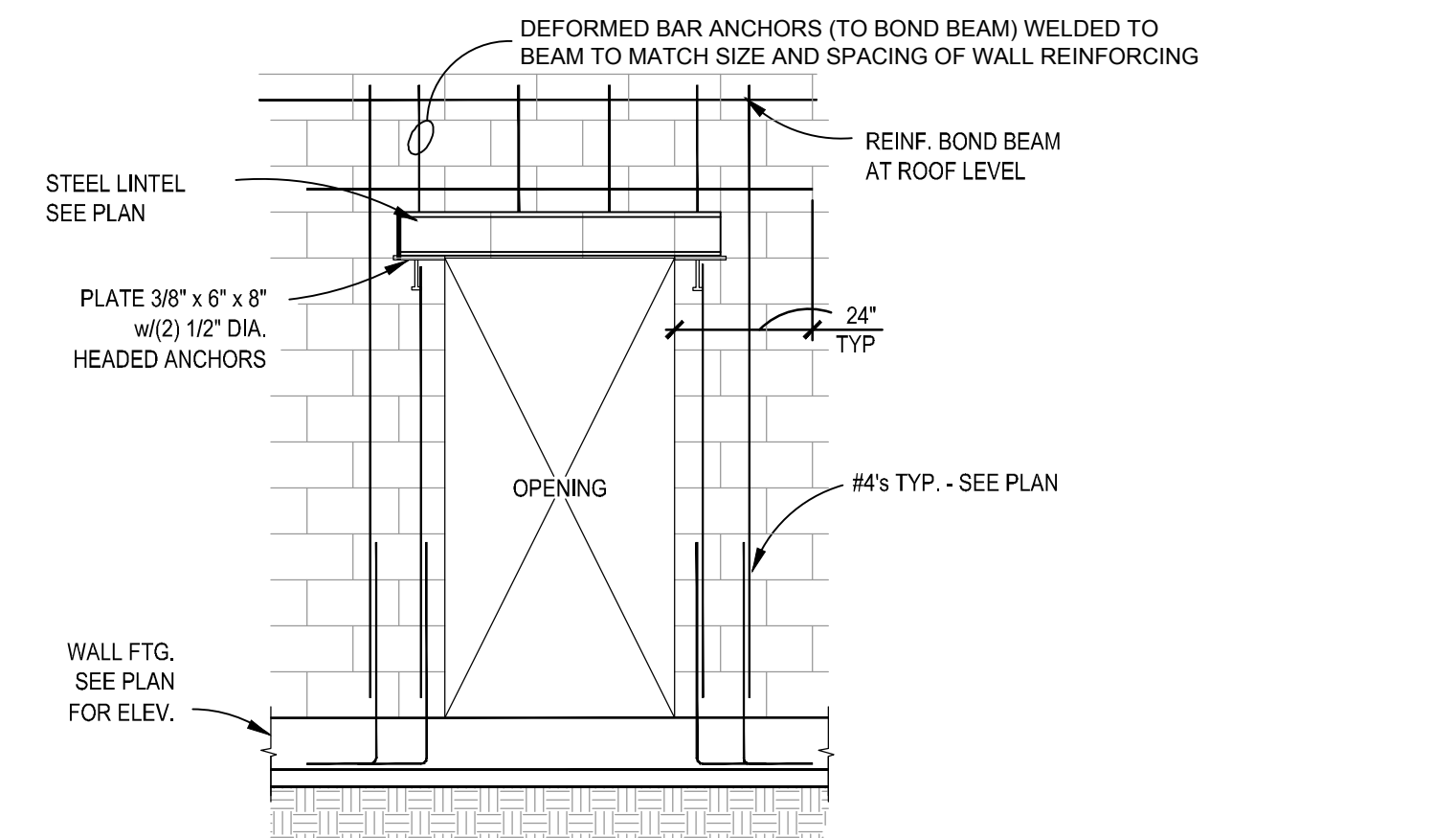
**375 CMU CORNER WALL DETAIL**  
N.T.S.



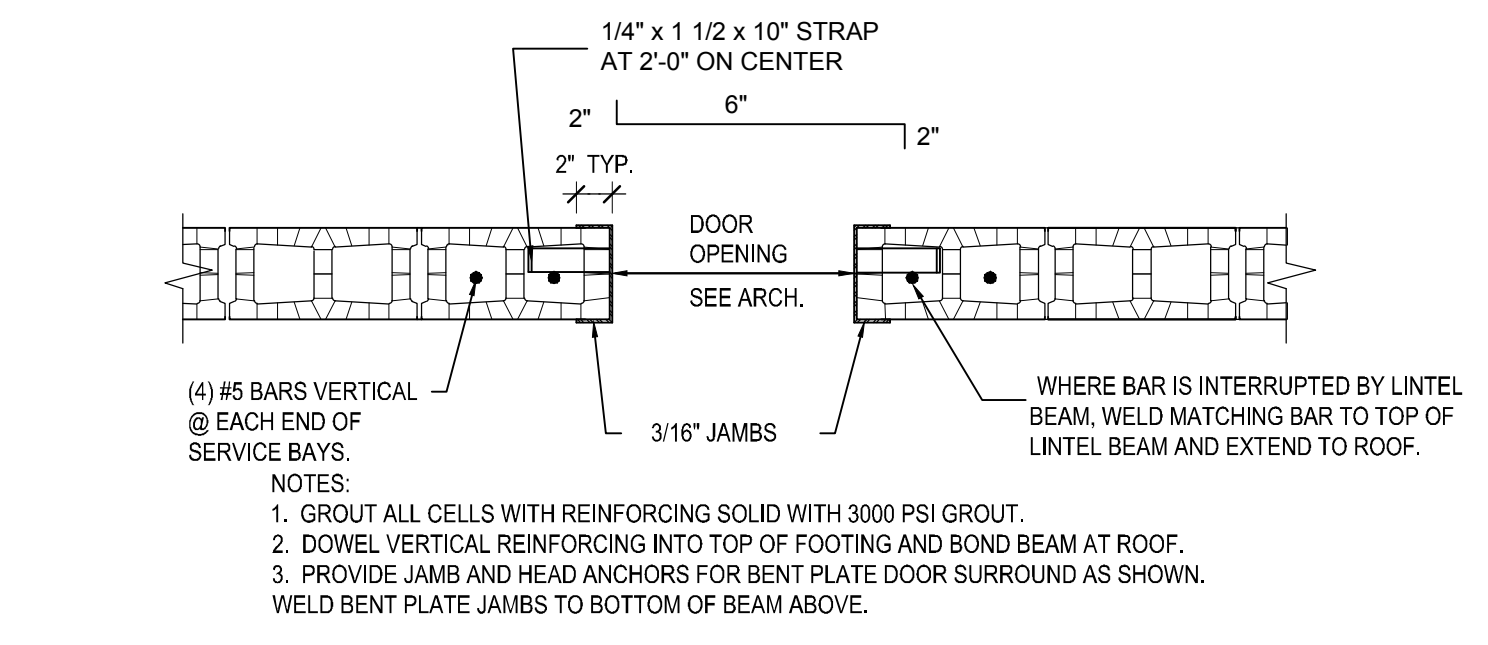
**376 CMU INTERSECTING WALL DETAIL**  
N.T.S.



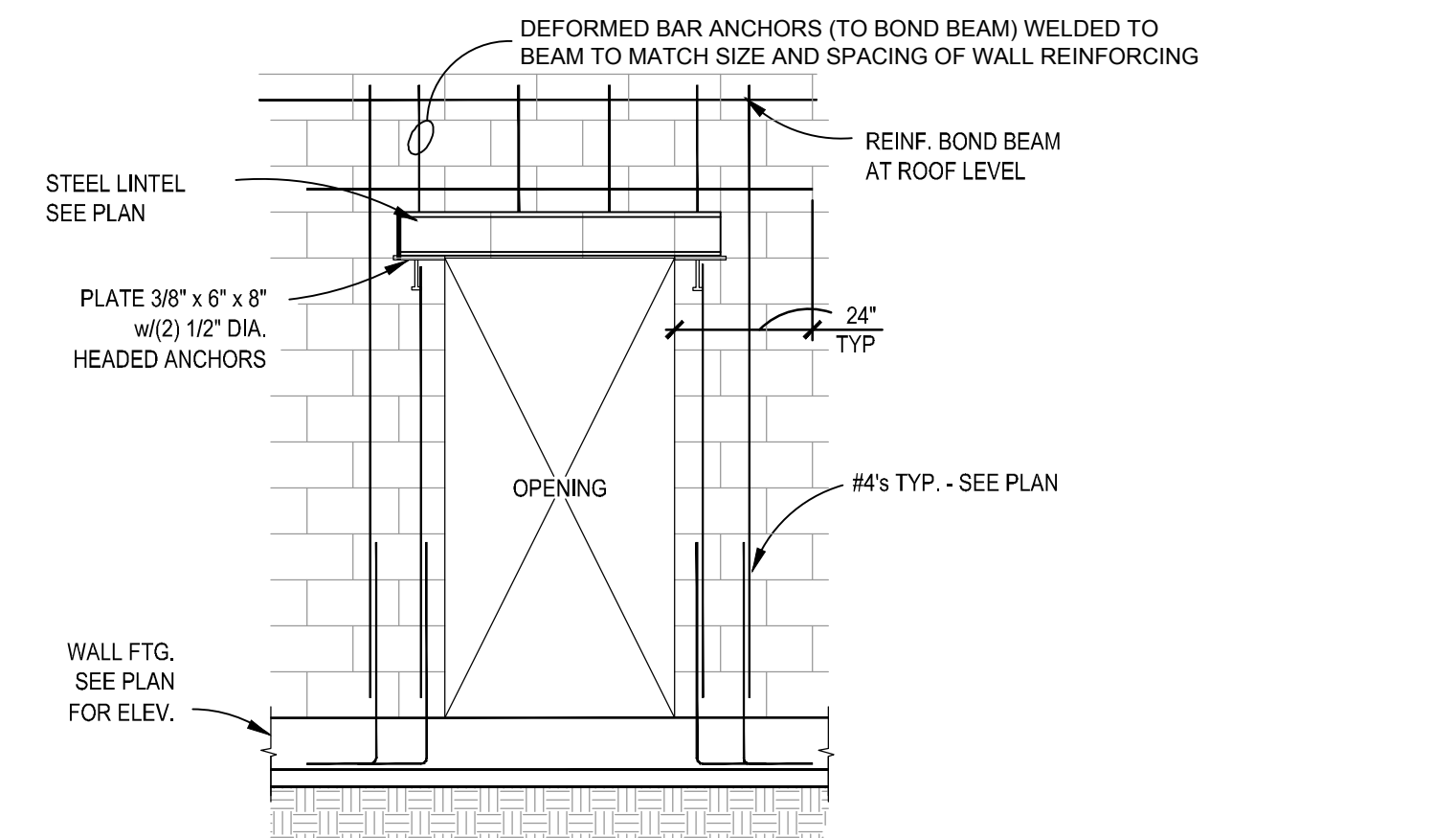
**377 BLOWER PAD DETAIL**  
N.T.S. NOTE: BLOWER PADS ARE SIZED 6" LARGER THAN EQUIPMENT FRAMES. CONTRACTOR VERIFY THAT EQUIPMENT USED CORRESPONDS WITH SIZES SHOWN ON PLANS



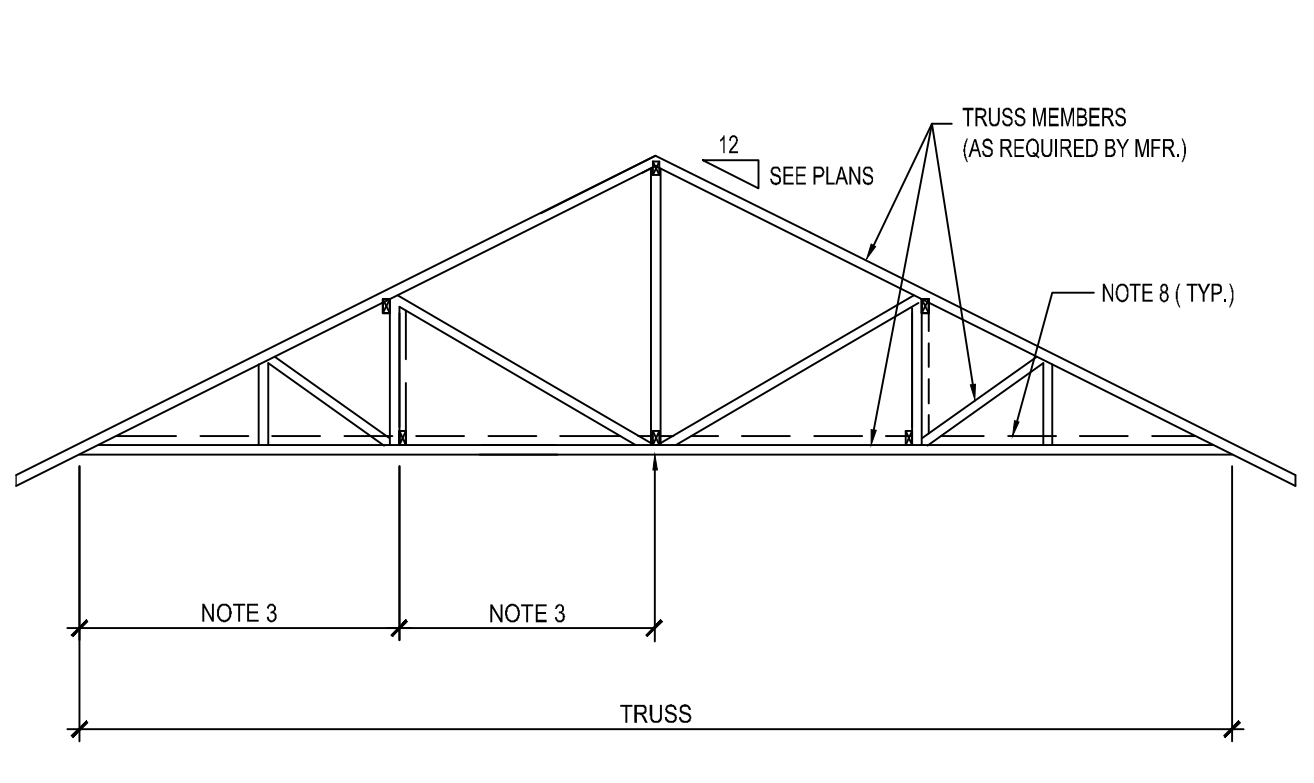
**378 SMALL BLOWER PAD DETAIL**  
N.T.S. NOTE: BLOWER PADS ARE SIZED 6" LARGER THAN EQUIPMENT FRAMES. CONTRACTOR VERIFY THAT EQUIPMENT USED CORRESPONDS WITH SIZES SHOWN ON PLANS



**372 ROLL-UP DOOR JAMB REINF.**  
N.T.S.

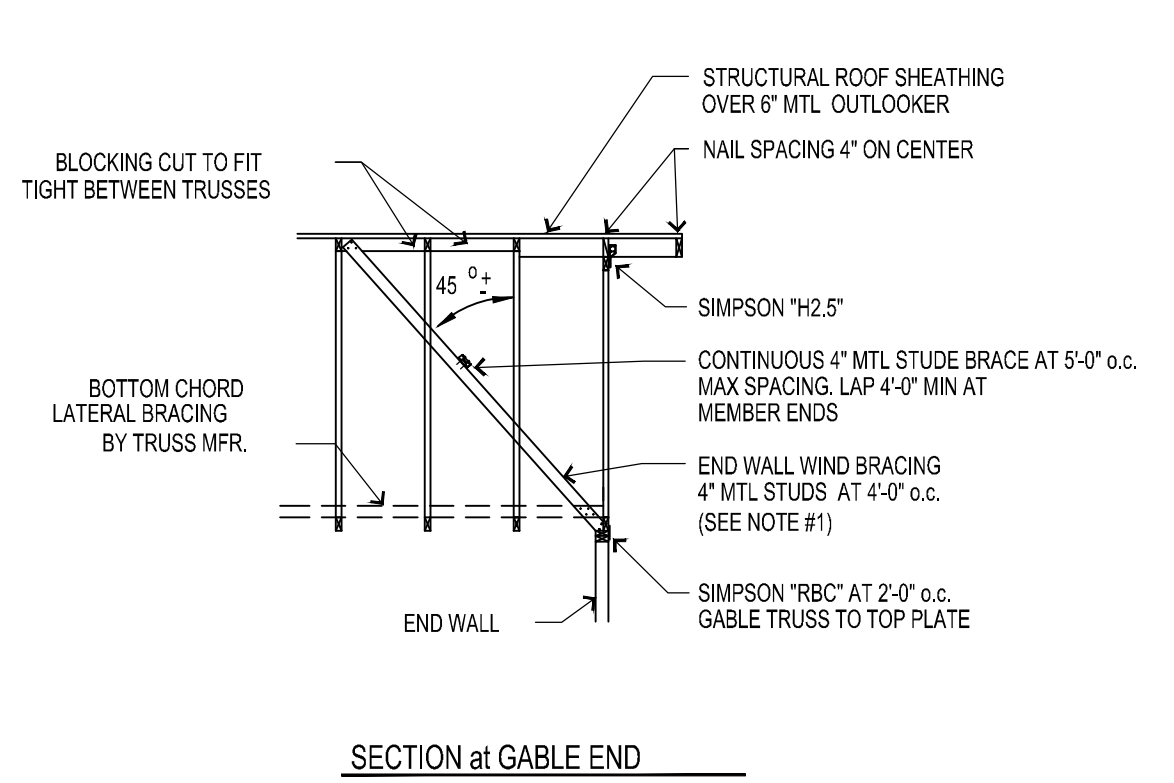


**373 WALL REINF. @ OPENING w/ STEEL LINTEL**  
N.T.S.



1. TRUSS AS SHOWN DOES NOT REPRESENT ACTUAL TRUSS DESIGN OR LAYOUT. SECTION SHOWN IS INTENDED FOR PERMANENT BRACING REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR TRUSS CONFIGURATION.  
2. TEMPORARY BRACING FOR ERECTION PURPOSES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.  
3. MAXIMUM HORIZONTAL DISTANCE BETWEEN VERTICAL DIAGONAL BRACING SHALL BE 8'-0". BRACING MEMBERS BRACING SHALL BE 2x4 MIN.  
4. 3 ROWS OF BRACING AS SHOWN IS MINIMUM BRACING REQUIRED.  
5. LAP LATERAL BRACING OVER AT LEAST TWO TRUSSES.  
6. USE 16d NAILS TO ATTACH LATERAL BRACING AT EACH TRUSS.  
7. PROVIDE VERTICAL X-BRACING AT EACH END FOR NOT LESS THAN 3 TRUSSES AT FIRST PANEL POINT FROM EACH END AND 5 TRUSSES AT INTERIOR PANEL POINTS.  
8. PROVIDE BOTTOM CHORD HORIZONTAL V-BRACING AT EACH END ENGAGING NOT LESS THAN 5 TRUSSES. PROVIDE ADDITIONAL DIAGONAL BRACING AT INTERVALS NOT TO EXCEED 20 FEET.  
9. FOR PURPOSES OF BRACING, DOUBLE TRUSSES SHOULD BE TREATED AS A SINGLE TRUSS.

**380 PERMANENT TRUSS BRACING DETAIL**  
N.T.S.



**SECTION at GABLE END**  
1. END WALL WIND BRACING MAY BE OMITTED IF GYPSUM BOARD DIAPHRAGM IS NAILED TO TRUSS BOTTOM CHORD.

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**REGISTERED PROFESSIONAL ENGINEER**  
No. 27855  
P.L.P. H. BOSWELL

HINESVILLE / FORT STEWART WWTP UPGRADE FOR: THE CITY OF HINESVILLE FORT STEWART LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/20/14	11/20/12		ISSUED FOR RFD APPROVAL
11/20/12			

DESIGNED: CE PROJECT NO. 0E1020  
DRAWN: FILE NAME: 0E1020-05-05-5  
CHECKED: ORIGINAL DRAWING SIZE: 36"x24"  
APPROVED: DATE: 11-20-2012  
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BLOWER BUILDING  
STRUCTURAL DETAILS  
**6S-5**  
SHEET 5 OF 07

PLOTTED BY: PLOTTING DATE: 11/20/2012 11:28:18 AM PLOT: 11/20/2012 11:28:18 AM PLOT: 11/20/2012 11:28:18 AM  
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# DOOR SCHEDULE

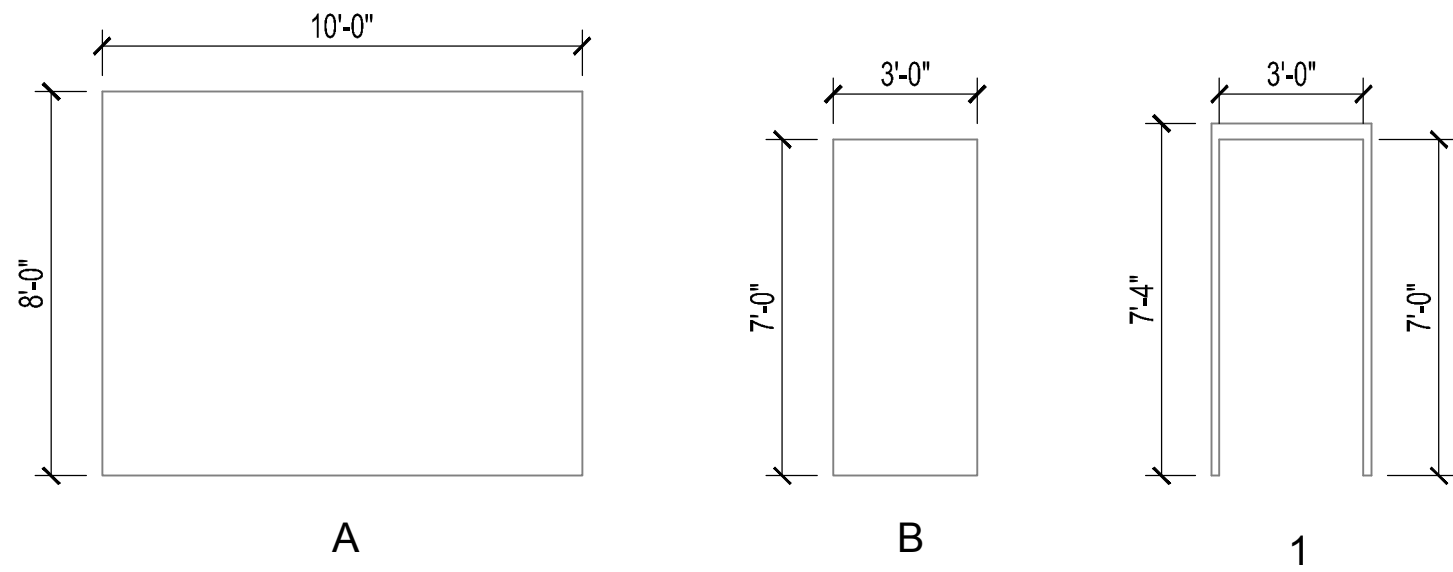
DOOR NUMBER	DOOR LOCATION	DOORS					FRAME							LABEL	HDW. SET (NOTE 1)	REMARKS	DOOR NUMBER		
		TYPE	WIDTH	HEIGHT	THICK	MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB					THR.	
601	BLOWER BUILDING	A	10'-0"	8'-0"	-	STL	PREFINISHED	-	-	-	-	1/A-5	2/A-5	-	-	-	-	601	
602	BLOWER BUILDING	B	3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	1/A-5	2/A-5	-	-	-	1	602	
603	SWITCH GEAR	B	3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	1/A-5	2/A-5	-	-	-	45 MIN	1	603

NOTES: 1. ALL DOOR HARDWARE SHALL BE OPERABLE LEVER TYPE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

# ROOM FINISH SCHEDULE

KEY	FLOOR	BASE	WALLS	CEILING	NOTES
⊗ -					
NO.	NAME				
	BLOWER ROOM				12'
	SWITCH GEAR ROOM				12'

# DOOR AND FRAME TYPES

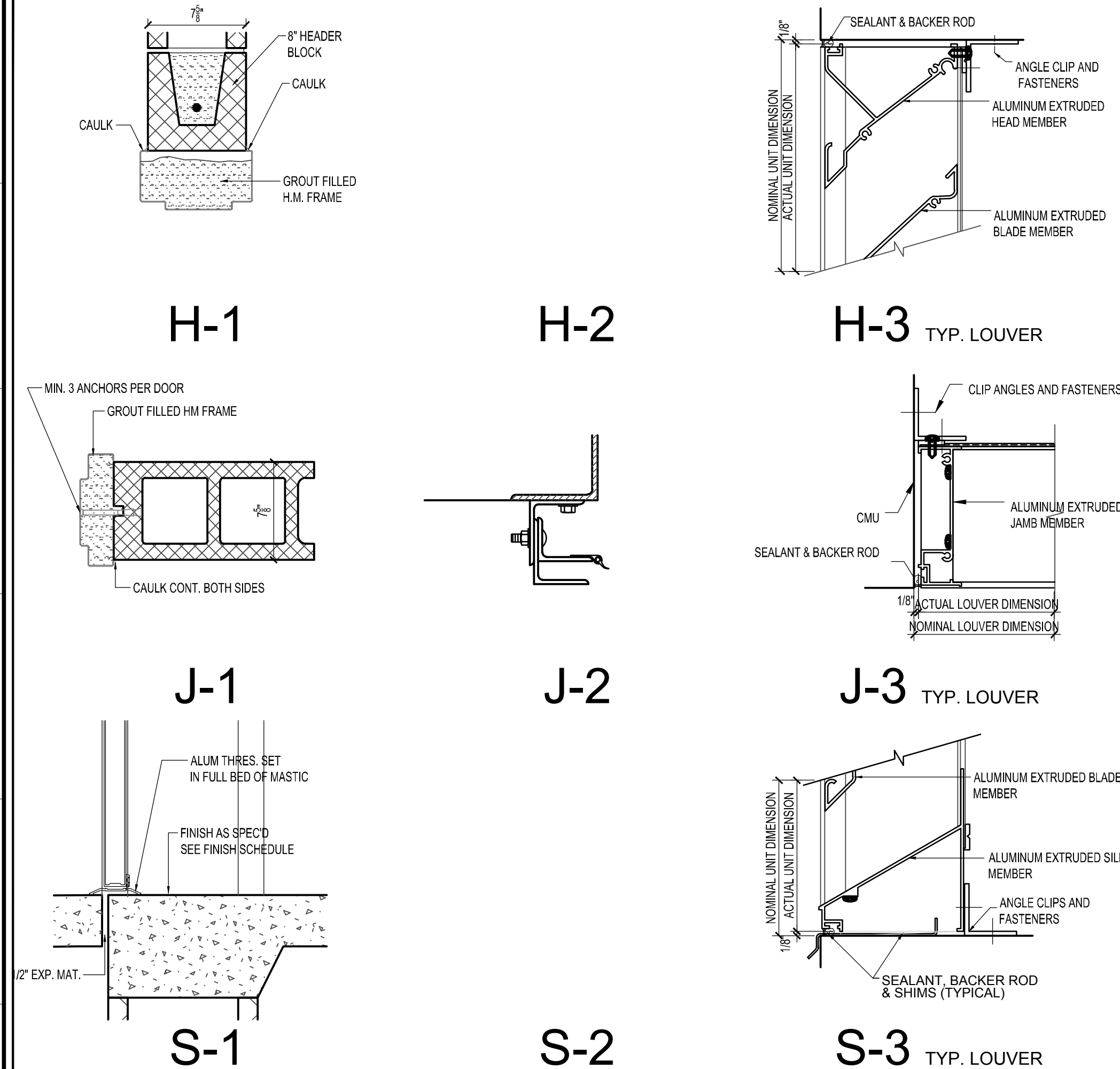


# ROOM FINISH NOTES

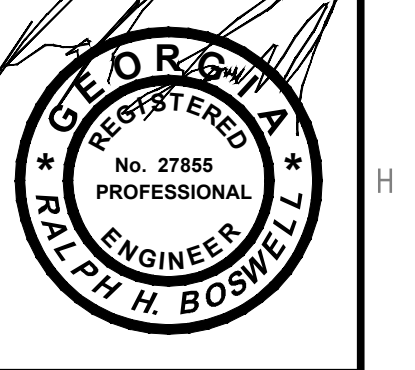
## LIST OF FINISHES

ITEM	MANUFACTURER	SPECIFICATION	COLOR NUMBER	COLOR	REMARKS
P-1	SHERWIN WILLIAMS	FLAT	-	BY OWNER	WALL
P-2	SHERWIN WILLIAMS	FLAT	-	BY OWNER	CEILING

# DOOR AND LOUVER DETAILS



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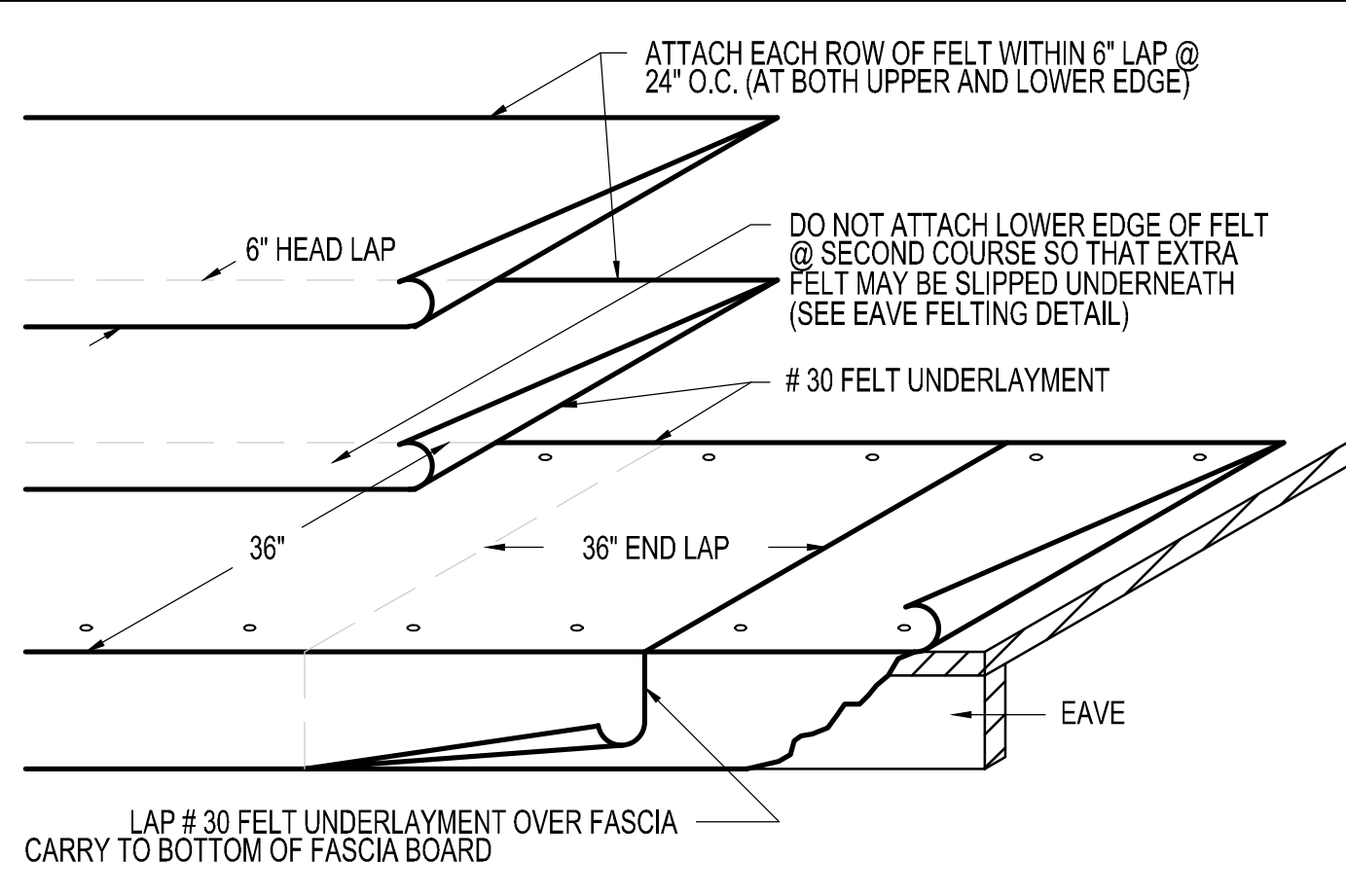
HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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	11/20/12		ISSUED FOR EPO APPROVAL

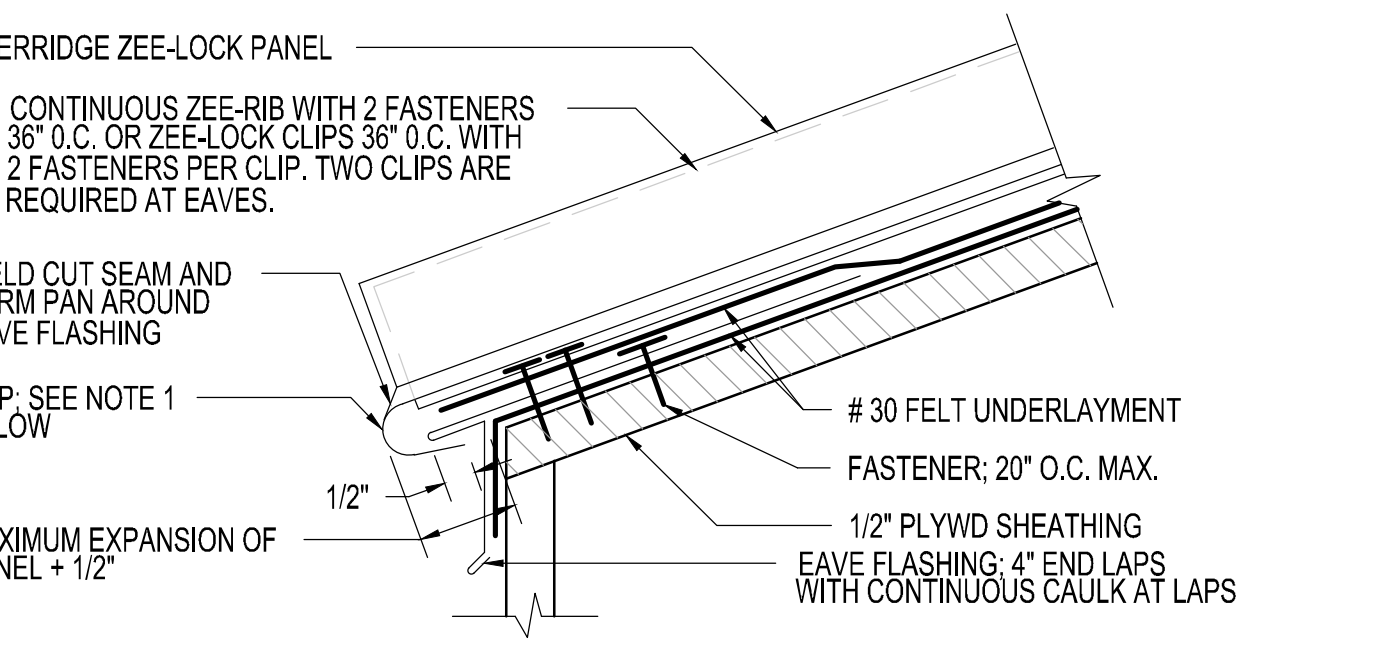
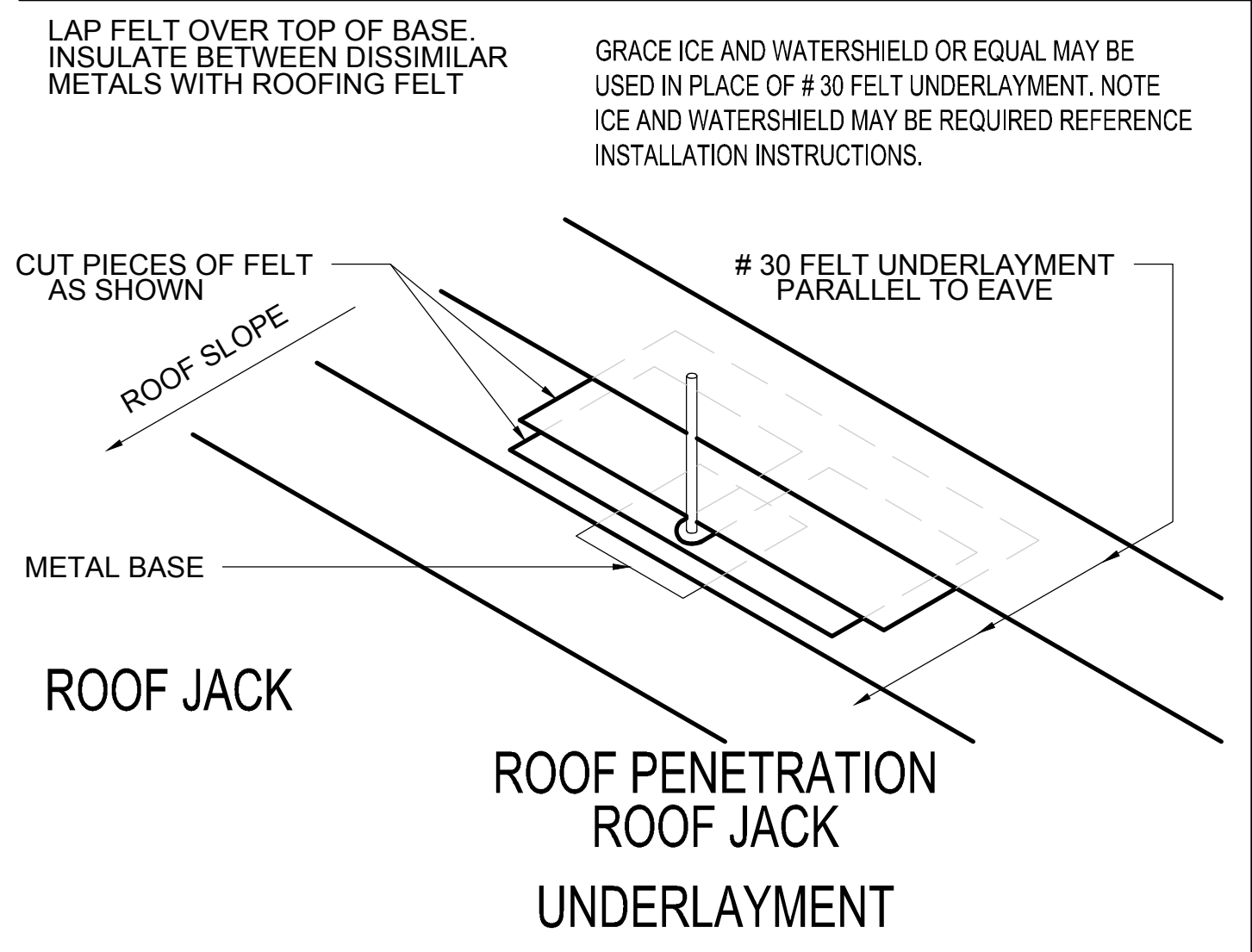
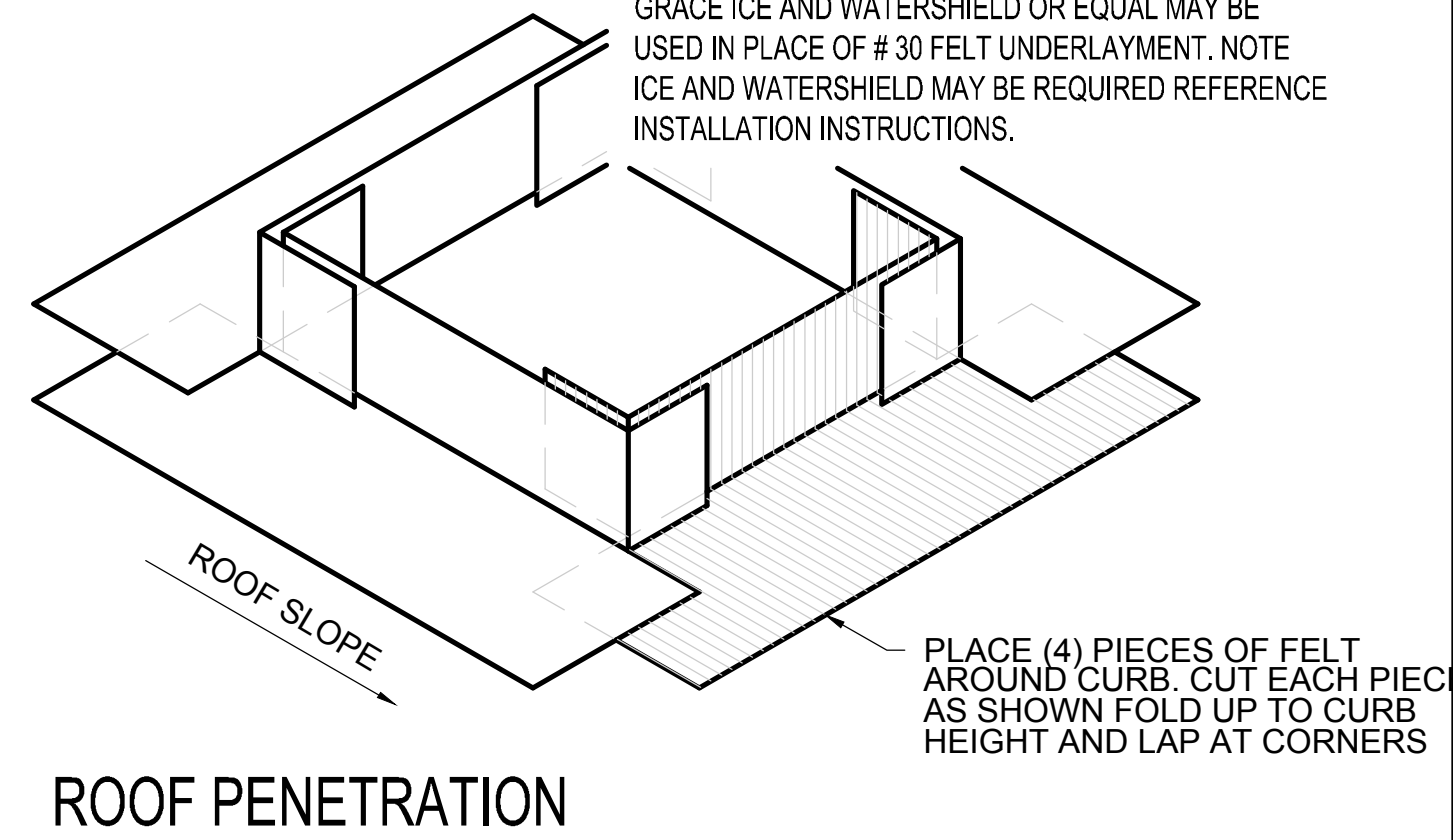
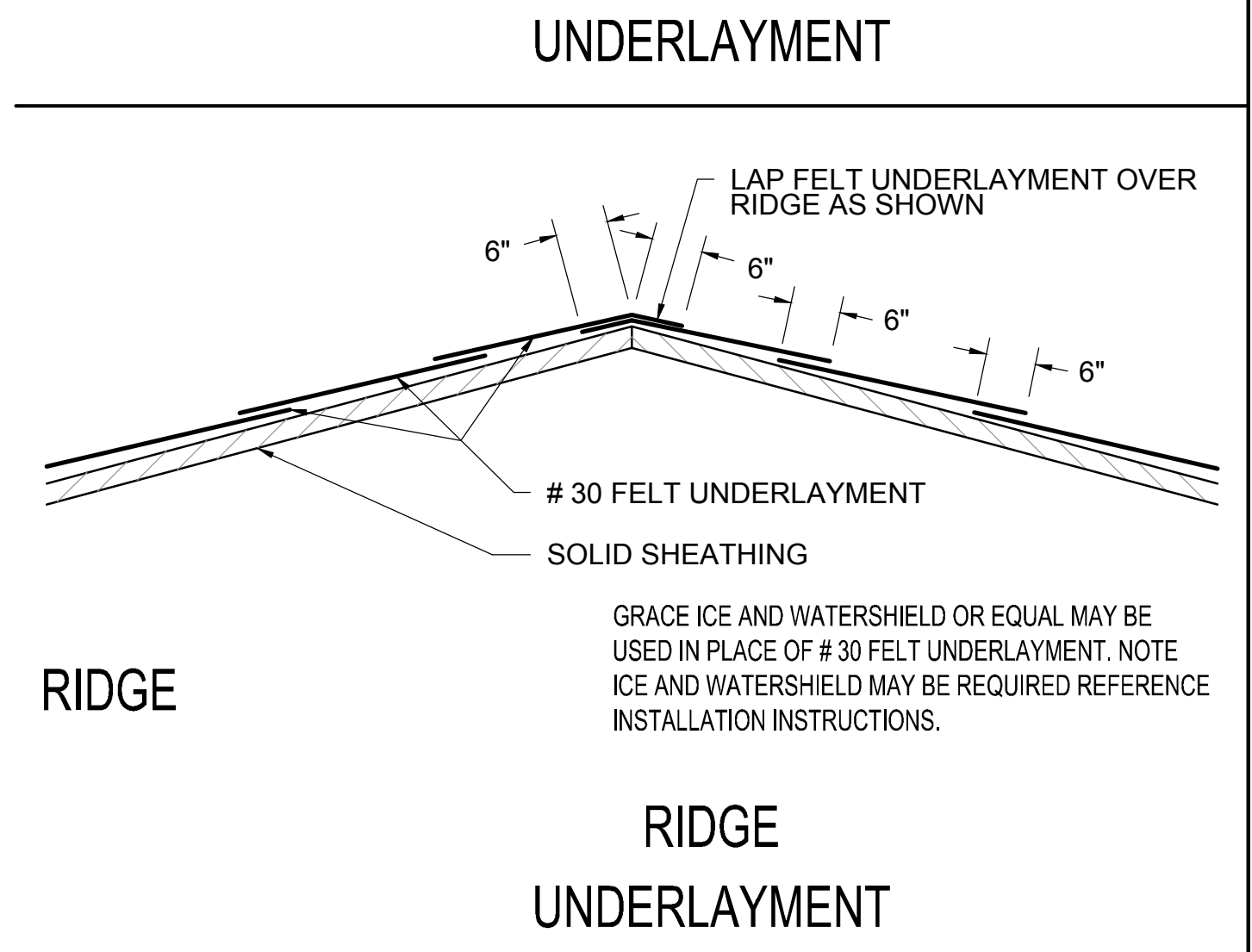
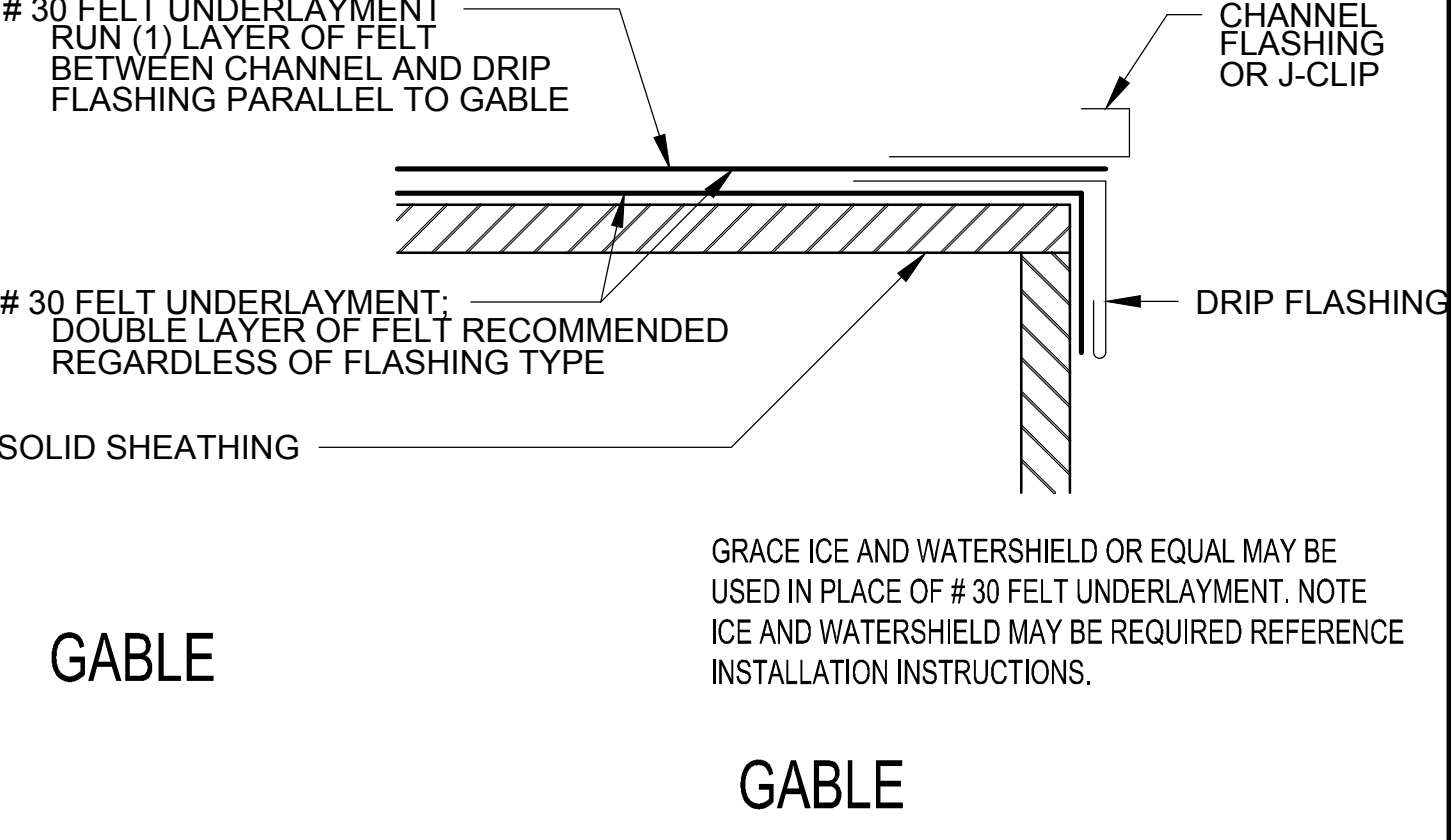
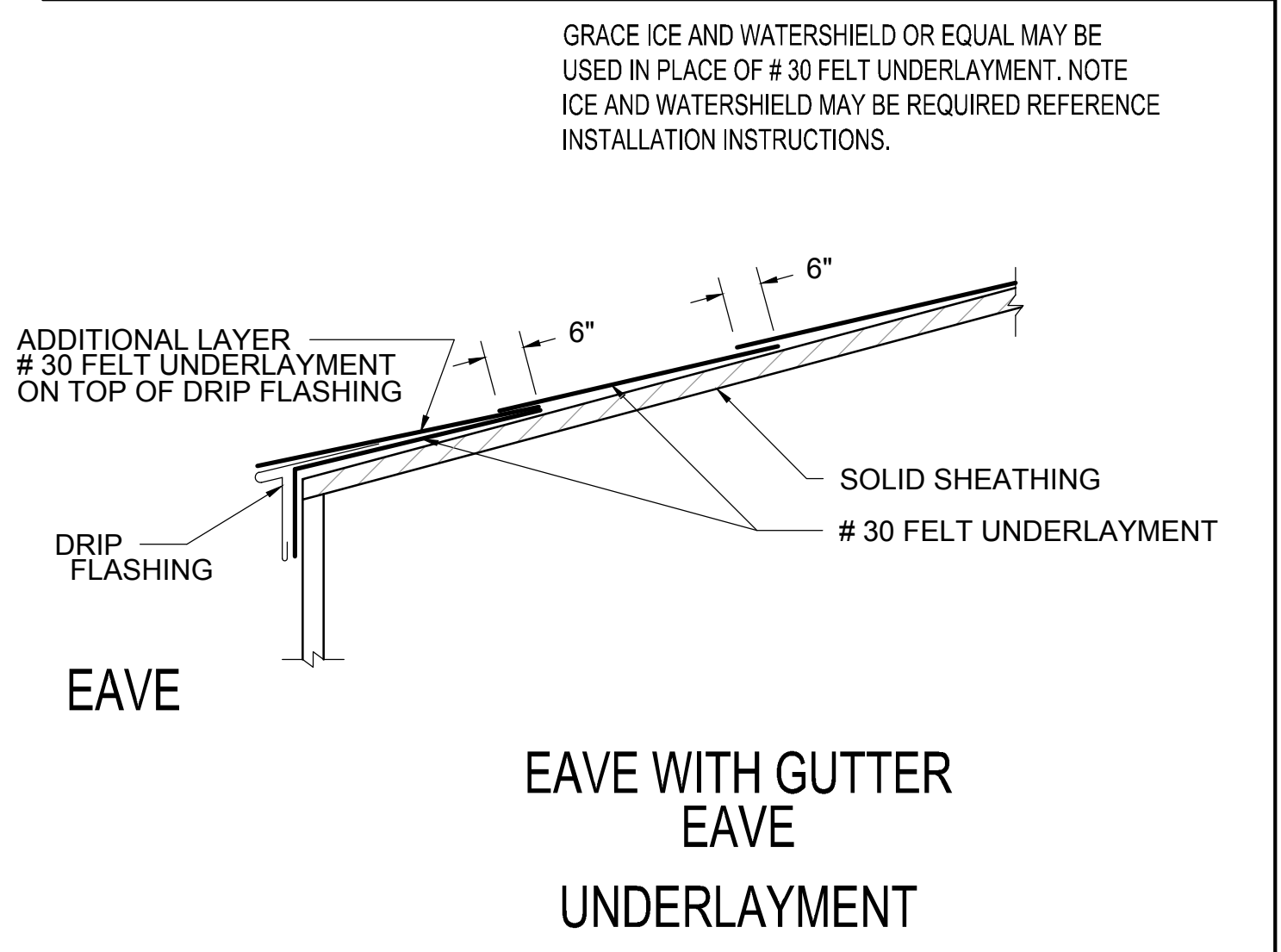
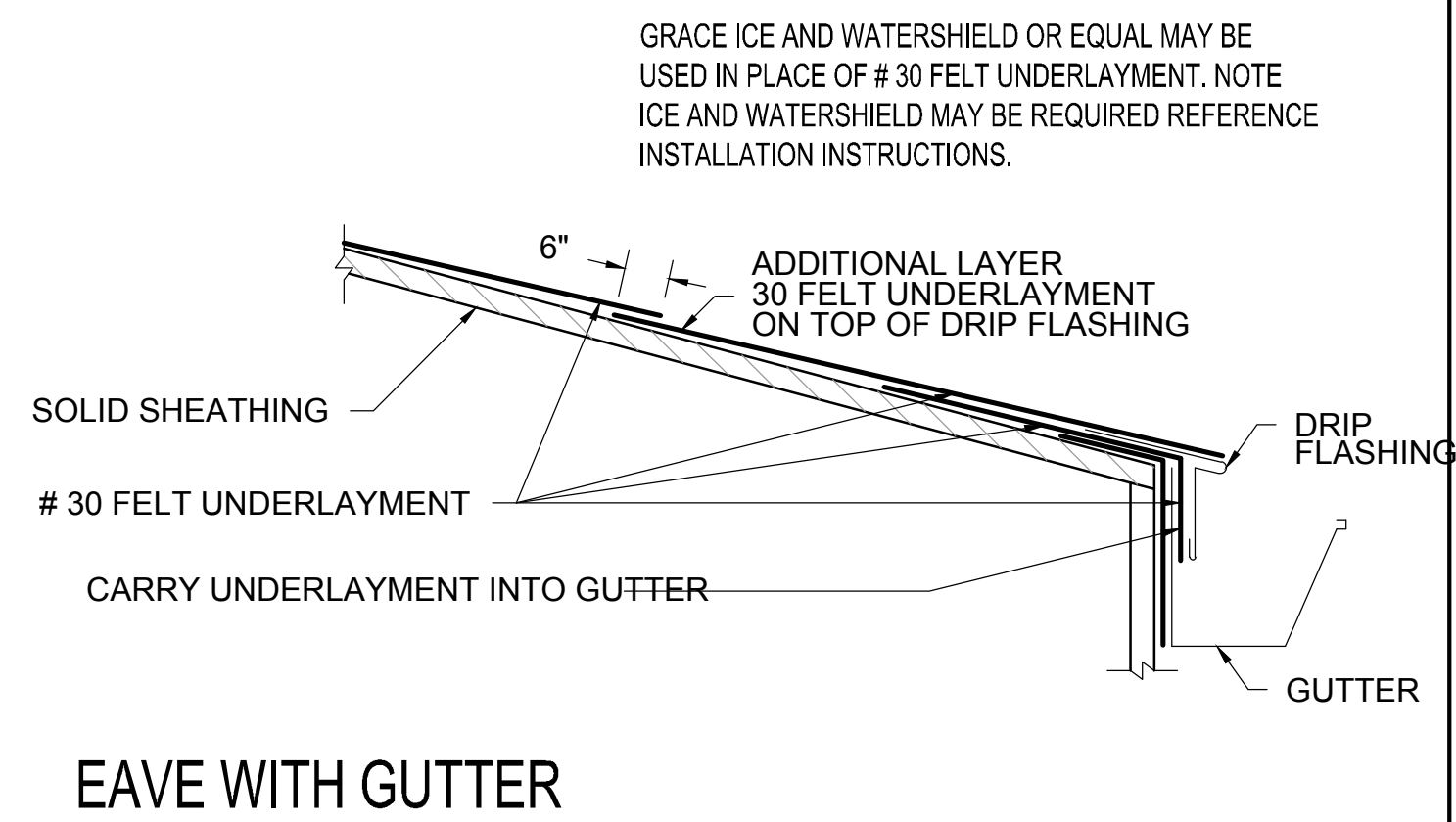
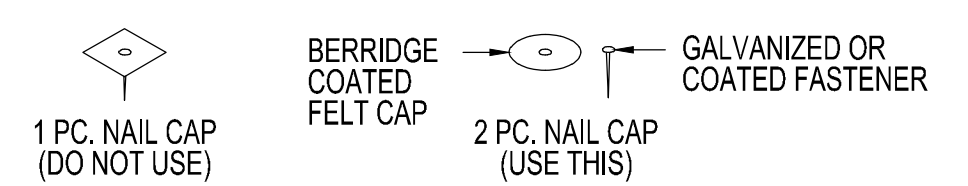
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BLOWER BUILDING  
 SCHEDULES  
**6S-6**  
 SHEET 6 OF 07

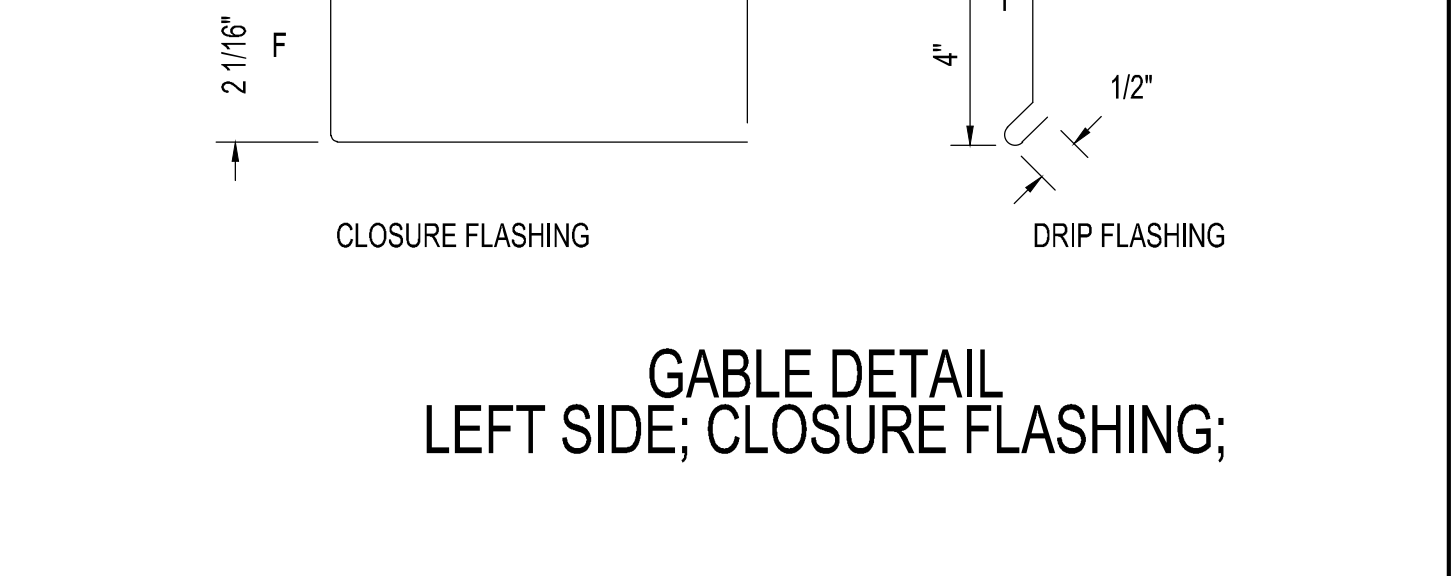
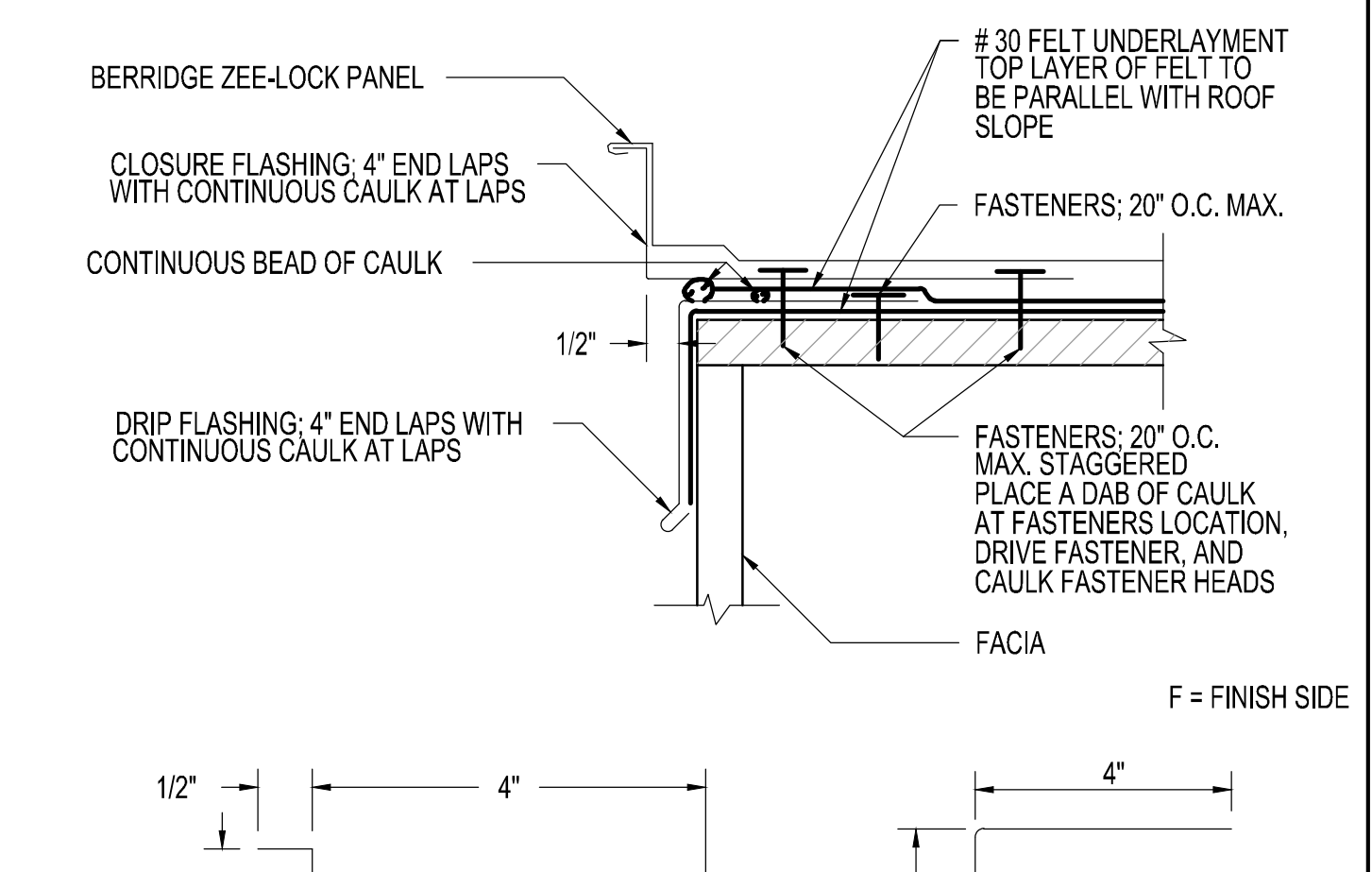
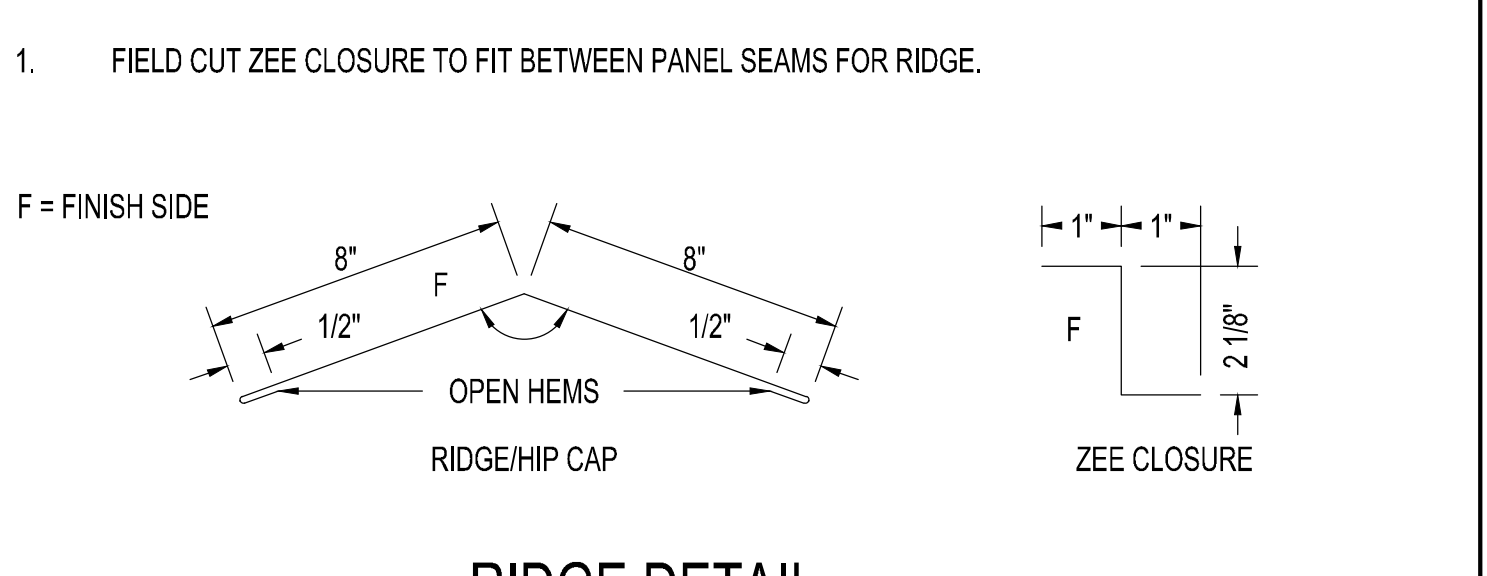
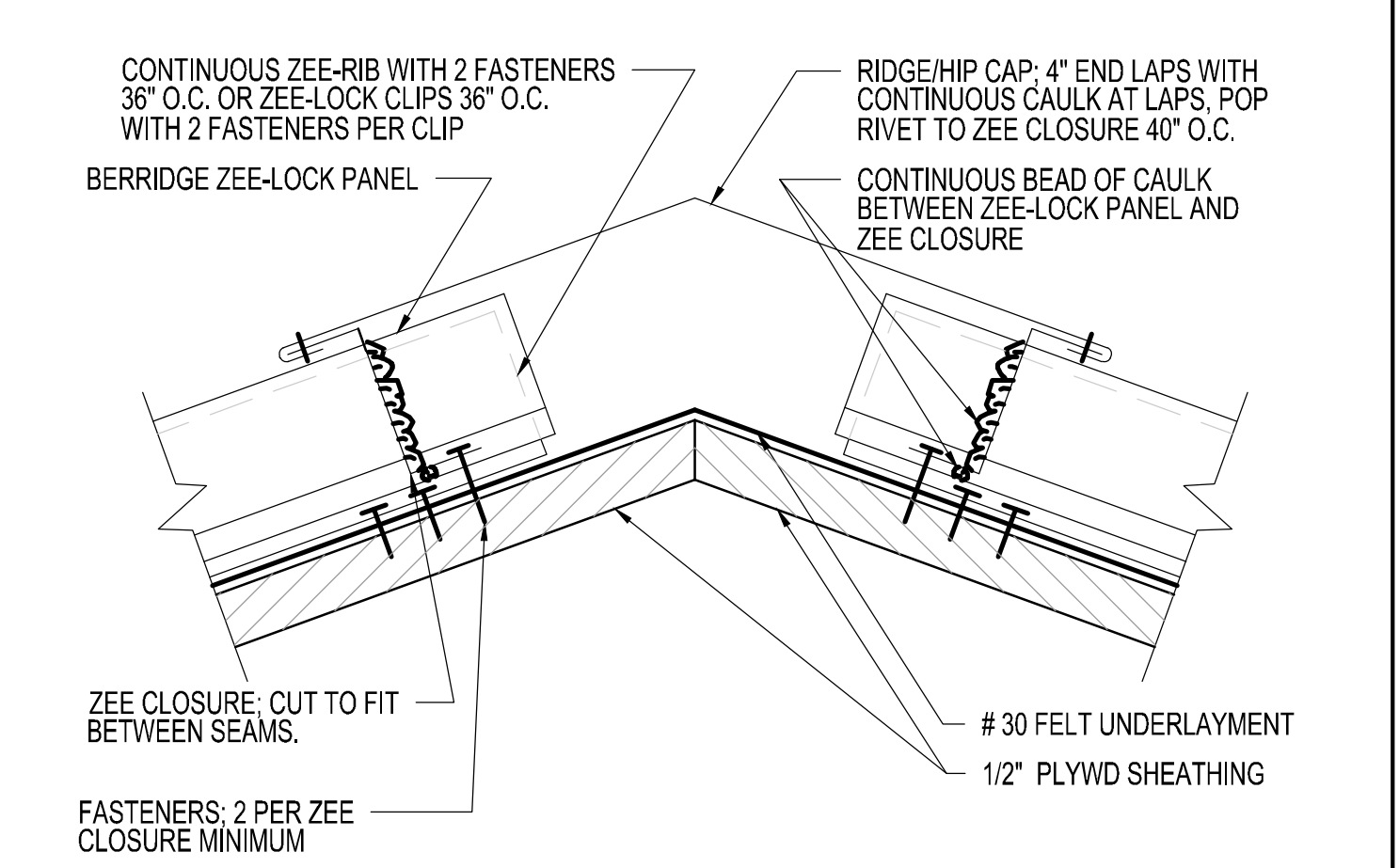
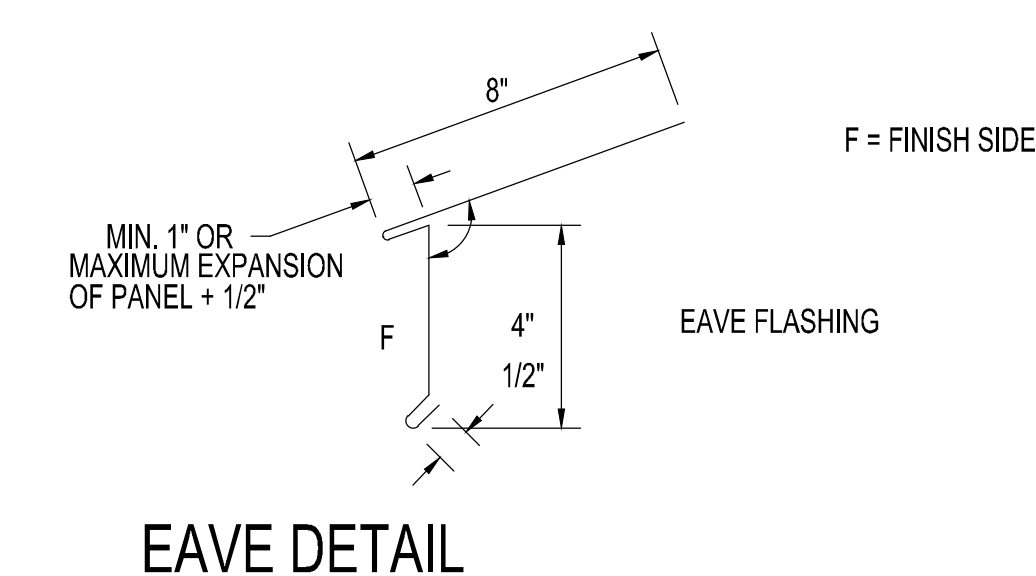
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 PLOTTER: HP DesignJet 1000 Series  
 PLOTTING: 11/29/2012 11:58 AM



- CLEAN ROOF SURFACE OF ALL OBJECTS WHICH MAY PUNCTURE OR TEAR FELT UNDERLAYMENT.
- ATTACH FELT UNDERLAYMENT TO DECK BELOW USING COATED FELT CAPS, FASTENERS MUST BE TOTALLY FLUSH WITH SUBSTRATE. DO NOT USE ONE PIECE NAIL CAPS, AS THESE WILL "READ THROUGH" THE SURFACE.
- DO NOT FASTEN LOWER EDGE OF FELT @ SECOND COURSE (SEE ABOVE ILLUSTRATION).
- ALWAYS RUN FELT UNDERLAYMENT HORIZONTALLY STARTING @ THE EAVE AND LAP SHINGLE FASHION.
- NEVER INSTALL BERRIDGE PRODUCTS OVER FELT UNDERLAYMENT THAT IS NOT LAID HORIZONTAL, FLAT, SMOOTH AND FREE FROM PUNCTURES AND TEARS.
- DO NOT APPLY PANELS OVER DRY OR BRITTLE FELT (A CONDITION CAUSED BY EXTENDED EXPOSURE TO THE ELEMENTS).
- DO NOT USE RED ROSIN PAPER UNDER ANY BERRIDGE METAL PRODUCT.



- THE "GAP" BETWEEN EAVE FLASHING AND PANEL (SEE DETAIL ABOVE) CAN BE INCREASED TO ALLOW FOR LINEAR EXPANSION AND CONTRACTION OF PANELS. NOTE 1/2" OF PAN MUST BE ENGAGED WITH EAVE FLASHING WHEN PANEL HAS EXPANDED TO ITS MAXIMUM LENGTH.
- GAP BETWEEN EAVE FLASHING AND PANEL MUST BE ADJUSTED TO SUIT TEMPERATURE DURING INSTALLATION.



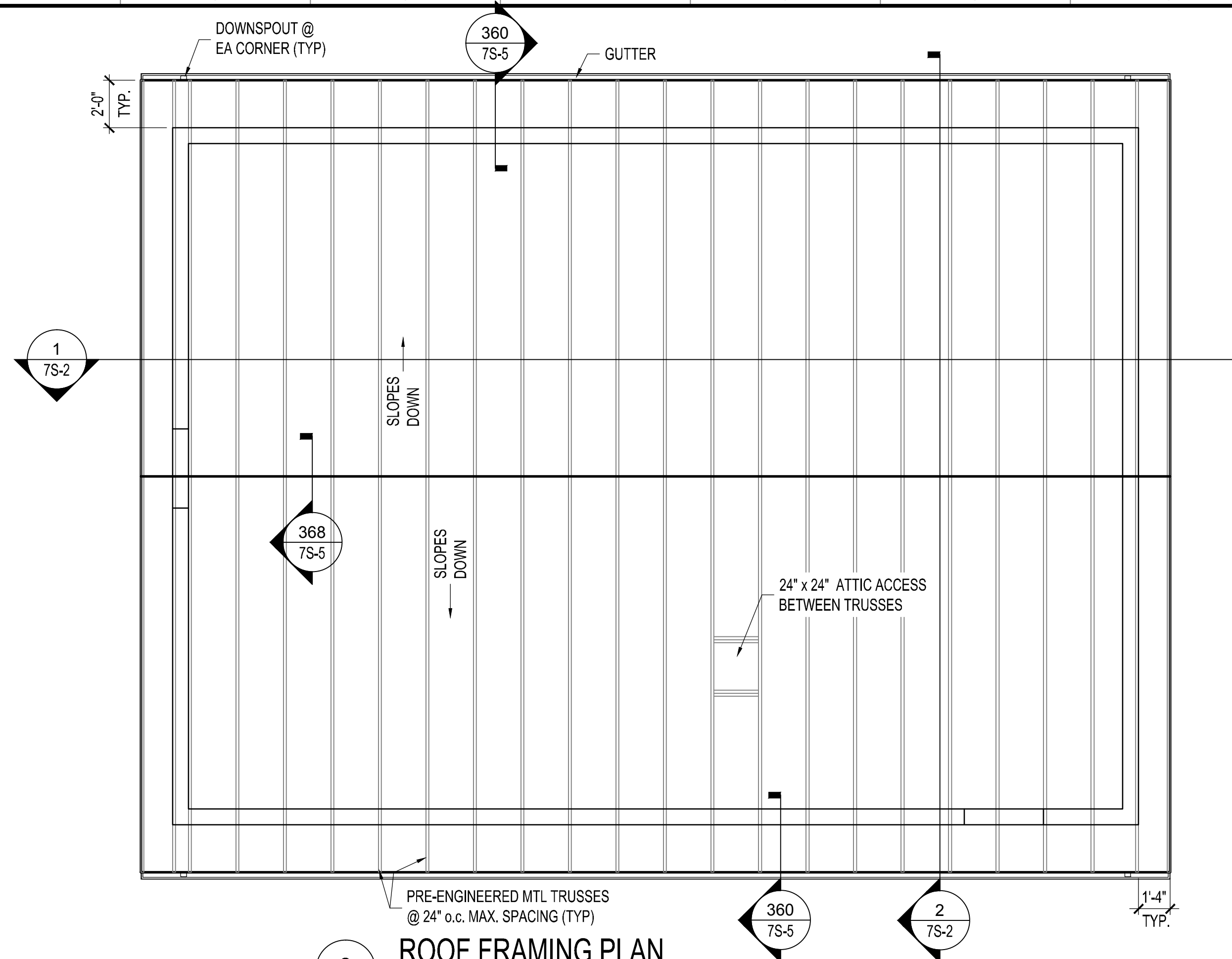
**OCONEE ENGINEERING L.L.C.**  
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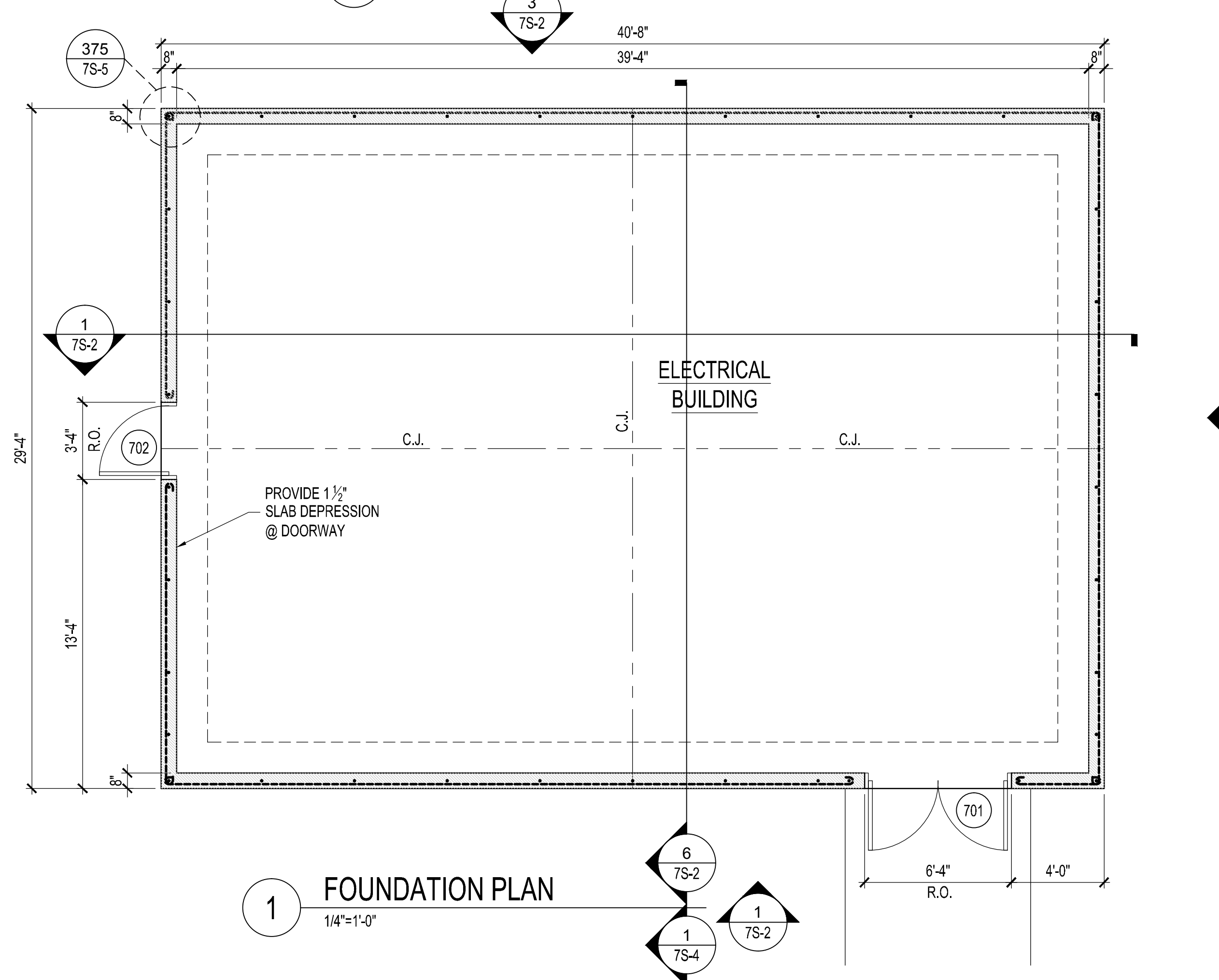
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2	11/20/12		

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 ORIGINAL DRAWING SIZE: 36"x24"  
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**2 ROOF FRAMING PLAN**  
1/4"=1'-0"



**1 FOUNDATION PLAN**  
1/4"=1'-0"

**CMU WALL NOTES**

- REINF CMU WALLS W/ #4@48"OC UNO.
- ADDITIONAL #4 VERT REINF AT:
  - EACH SIDE OF OPENINGS
  - WALL INTERSECTIONS
  - ENDS OF WALLS
  - AS NOTED & DETAILED ON DRAWINGS
- PROVIDE BOND BEAMS REINF W/ (2)#4 CONT AT:
  - T&B OF OPENINGS
  - TRUSS BEARING (CONT)
  - TOP COURSE OF MASONRY WALLS
  - AS NOTED & DETAILED ON DRAWINGS
- PROVIDE MATCHING DOWELS FOR VERT REINF INTO FOUNDATION AND BOND BEAM @ TOP.
- FILL ALL CMU CELLS BELOW FINISHED FLOOR & BELOW GRADE. FILL MATERIAL SHALL BE 3000 PSI GROUT, MIN.

**WOOD FRAMING NOTES**

- SEE PRE-ENGINEERED METAL TRUSS NOTES FOR ROOF TRUSSES.
- ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING W/ #10 TEKS SCREWS @6"OC @ PANEL EDGES & @12"OC @ INTERMEDIATE SUPPORTS.

**CONC REINF LAP LENGTH**  
3000 PSI (ACI 318-05)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	22"	
#4	29"	
#5	36"	
#6	43"	
#7	63"	
#8	72"	
#9	81"	

**CMU REINF LAP LENGTH**  
Fy=60 KSI, fm=1500 PSI

BAR SIZE	SPLICE LENGTH
#3	19"
#4	25"
#5	31"
#6	57"
#7	70"
#8	98"

**MASONRY LINTEL SCHEDULE**

OPENING WIDTH	8" CMU		16" CMU	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
3'-4"	3'-4"	5'-4"	2 - #4	2 - #4
3'-4"	5'-4"	7'-4"	2 - #5	2 - #5
5'-4"	7'-4"	10'-0"	2 - #6	2 - #6

**FOUNDATION NOTES**

- STEP FOOTINGS DOWN BELOW MECHANICAL, ELECTRICAL, OR PLUMBING LINES AS REQUIRED TO AVOID INTERFERENCE. SEE TYP FOOTING STEP DETAIL. COORDINATE W/ OTHER TRADES. PROVIDE PIPE SLEEVE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL.
- WHERE UTILITY LINES PASS UNDER A FOOTING, PROVIDE RELIEVING ARCH FOR PROTECTION.

**CONC SLAB NOTES**

- SIDEWALK SLABS SHALL BE 3000 PSI, 4" THICK CONC REINF W/ 6x6-W1.4xW1.4 WWF @ CENTER OF SLAB. FLOOR SLAB SHALL BE 3000 PSI, 8" THICK CONC REINFORCED W/ #4'S @ 12" o.c. EA WAY CTR. OF SLAB. SEE PLAN FOR FINISHED FLOOR ELEVATIONS. (REFER TO CIVIL DRAWINGS FOR SIDEWALK LOCATIONS & DETAILS.
- PROVIDE 4" THICK NO. 57 STONE GRANULAR BASE & VAPOR BARRIER UNDER INTERIOR FLOOR SLAB.
- CONDUITS & PIPES EMBEDDED IN SLABS:
  - SHALL NOT BE LARGER IN OUTSIDE DIM THAN 1/2 THE OVERALL THICKNESS OF SLAB.
  - SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
  - MIN SLAB THICKNESS OF 2 1/2" MUST BE MAINTAINED OVER THE EMBEDDED ITEMS.

**STRUCTURE NOTES**

- DESIGN SOIL BEARING PRESSURE = 2000 PSF. SOIL BRNG PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND ENGINEER SHALL BE NOTIFIED IF ACTUAL SOIL BEARING PRESSURE IS LOWER THAN DESIGN VALUE. FOUNDATION DESIGN & SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITTAKER LABORATORY, INC. (REPORT # 3-31-11-1).
- FLOOR LIVE LOAD = 100 PSF
- PRE-ENGINEERED TRUSS DESIGN LOADS:  
TOP CHORD:  
DEAD LOAD = 10 PSF + TRUSS WEIGHT  
LIVE LOAD = 20 PSF  
BOT CHORD:  
DEAD LOAD = 5 PSF + TRUSS WEIGHT  
LIVE LOAD = 10 PSF (60 PSF @ ACCESS LOCATIONS)  
MECH LOAD = 200# CONCENTRATED LOAD @ ANY LOCATION ALONG BOT CHORD
- WIND LOADS:  
BASIC WIND SPEED (V, 3 SEC GUST) = 110 MPH  
OCCUPANCY CATEGORY = IV  
WIND IMPORTANCE FACTOR (I<sub>w</sub>) = 1.15  
UPWIND EXPOSURE CATEGORY = B  
INTERNAL PRESSURE COEFF. (GC<sub>pi</sub>) = ±0.18  
COMPONENTS & CLADDING NET DESIGN PRESSURES (P<sub>NET</sub>) PER ASCE 7-05, METHOD (1)  
ROOF COMPONENTS & CLADDING DESIGN PRESSURES:  
MAIN ROOF = -55.1 PSF, +13.1 PSF (BASED ON 20 SF AREA)  
OVERHANG = -70.8 PSF  
WALL COMPONENTS & CLADDING DESIGN PRESSURES = -33.5 PSF, +25.0 PSF (BASED ON 10 SF AREA)
- SEISMIC DESIGN CRITERIA:  
OCCUPANCY CATEGORY = IV  
SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50  
S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101  
SITE CLASS = E  
S<sub>DS</sub> = 0.463 S<sub>01</sub> = 0.233  
BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 12.2-1 OR 12.14-1):  
BEARING WALL SYSTEM - SPECIAL REINFORCED MASONRY SHEAR WALLS  
RESPONSE MODIFICATION FACTOR (R) = 5.0  
SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.1405  
SEISMIC DESIGN CATEGORY = D  
DESIGN BASE SHEAR = 23.6 K  
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

**FOUNDATION NOTES**

MARK	DATE	BY	DESCRIPTION
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HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
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LIBERTY COUNTY GA

**FOUNDATION NOTES**

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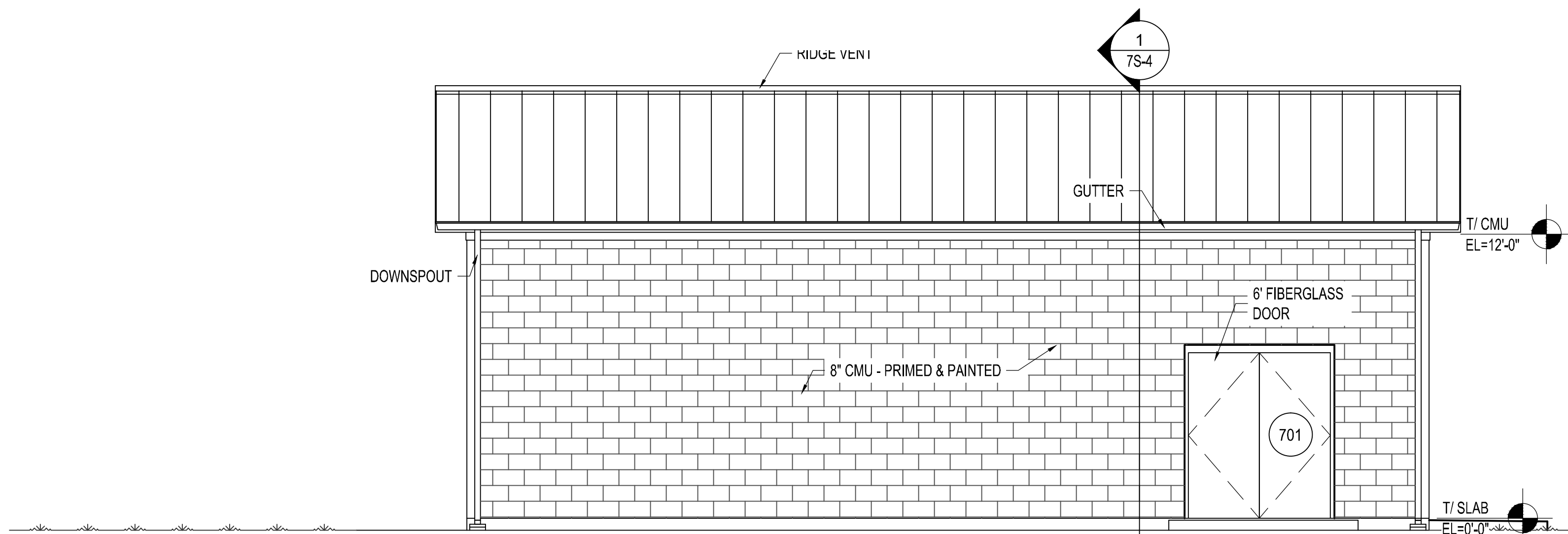
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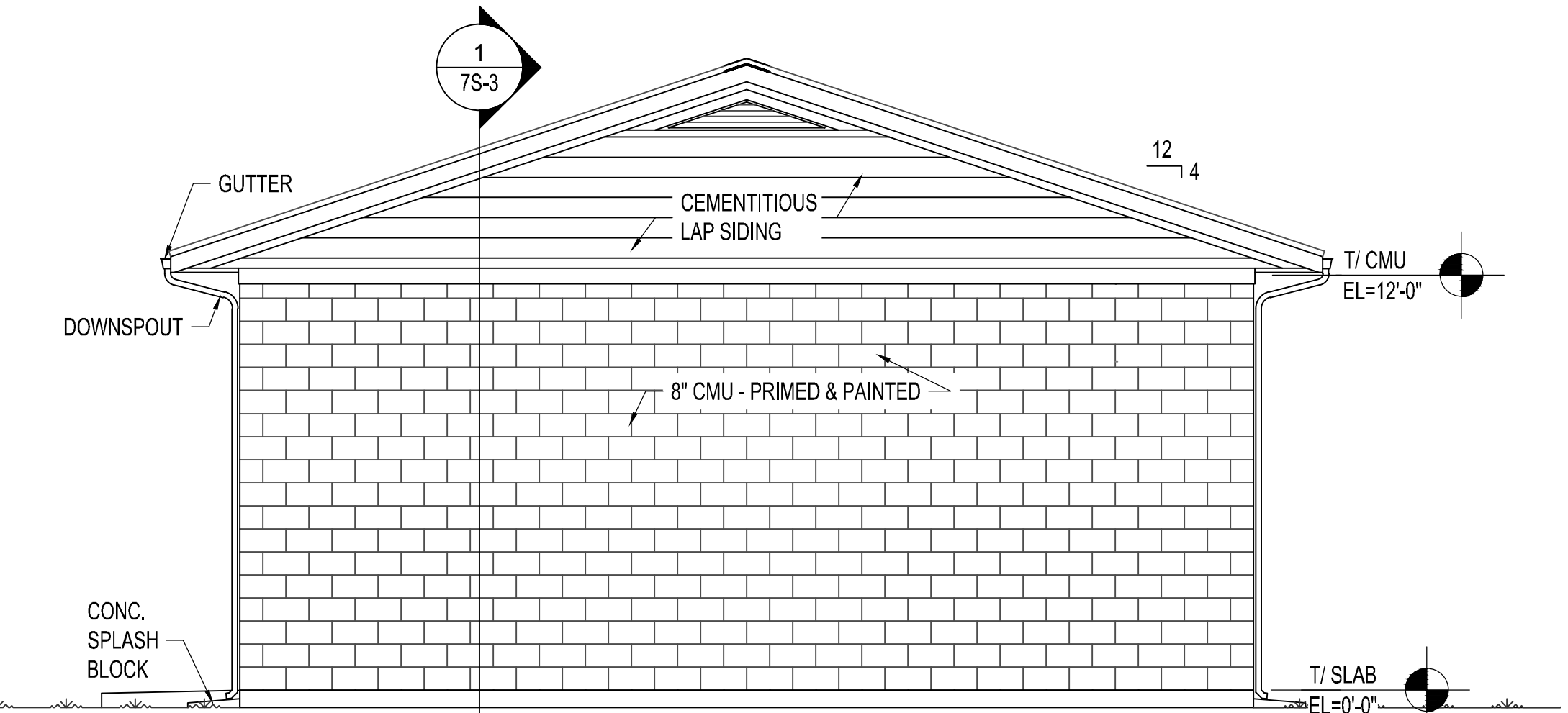
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ELECTRICAL BUILDING  
NOTES AND PLANS  
**7S-1**  
SHEET 1 OF 07

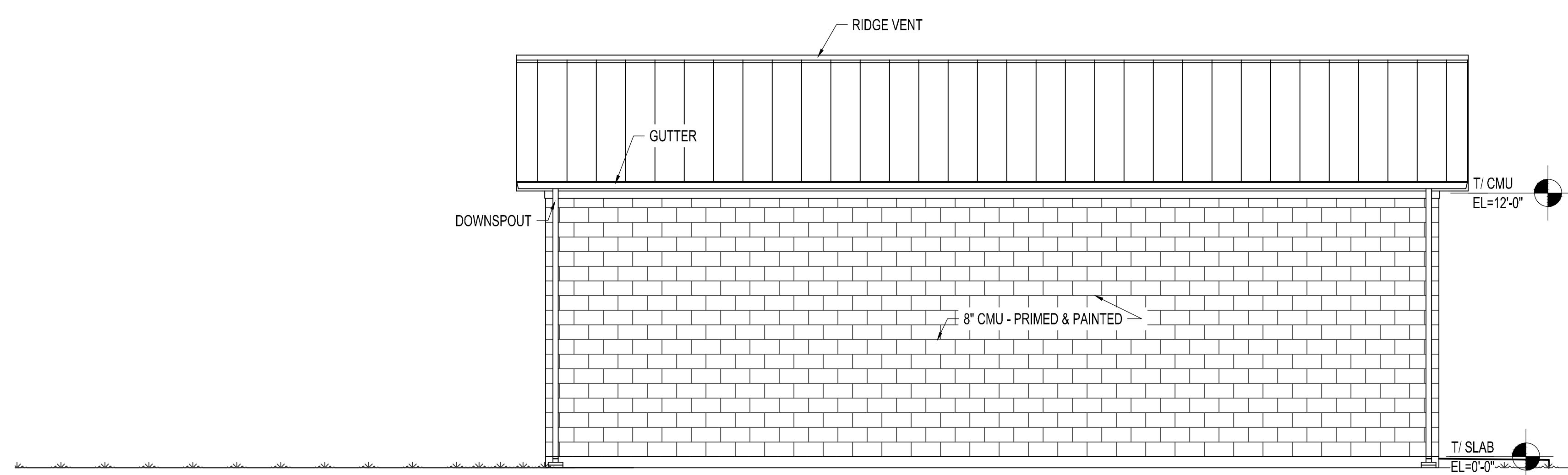
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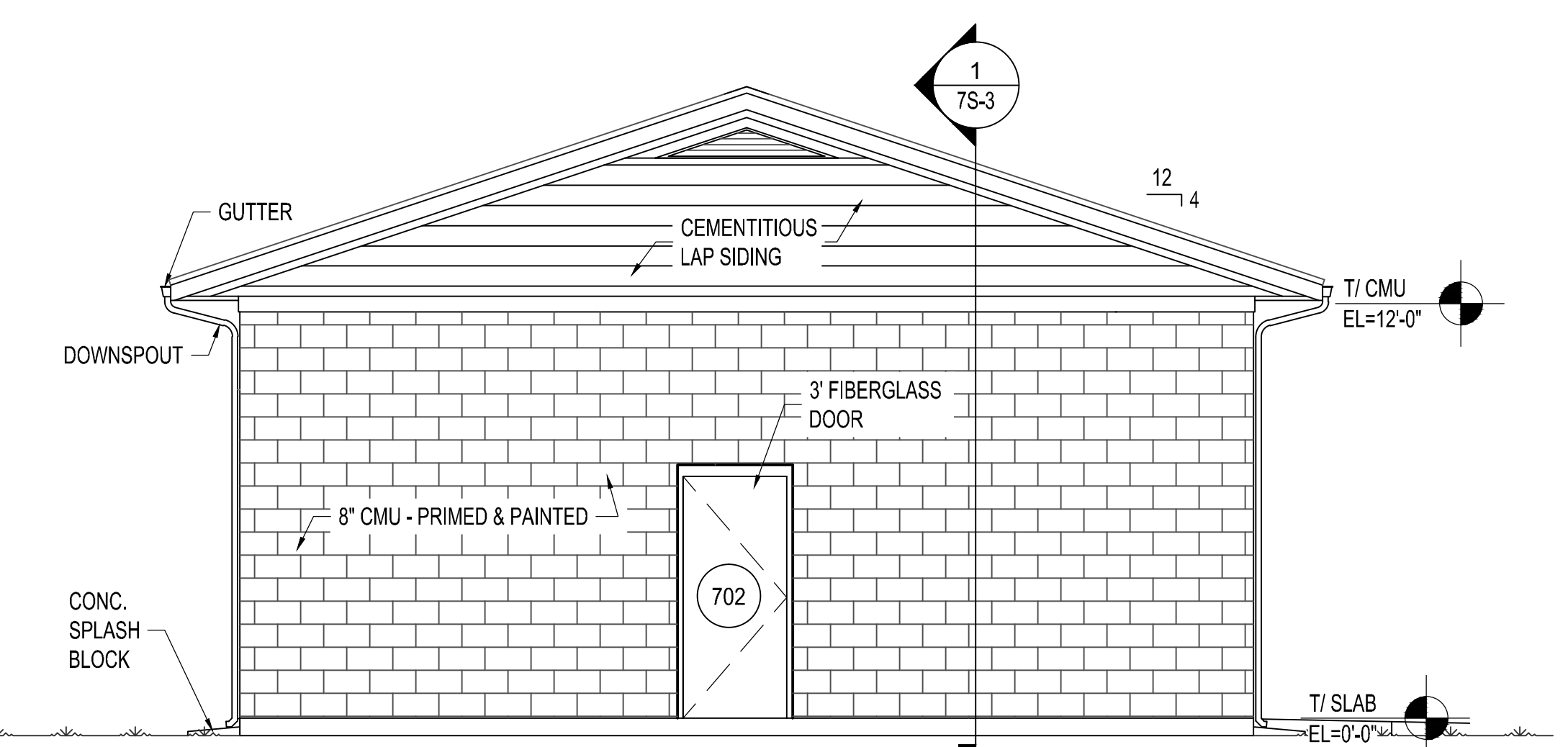
**1 FRONT ELEVATION**  
1/4"=1'-0"



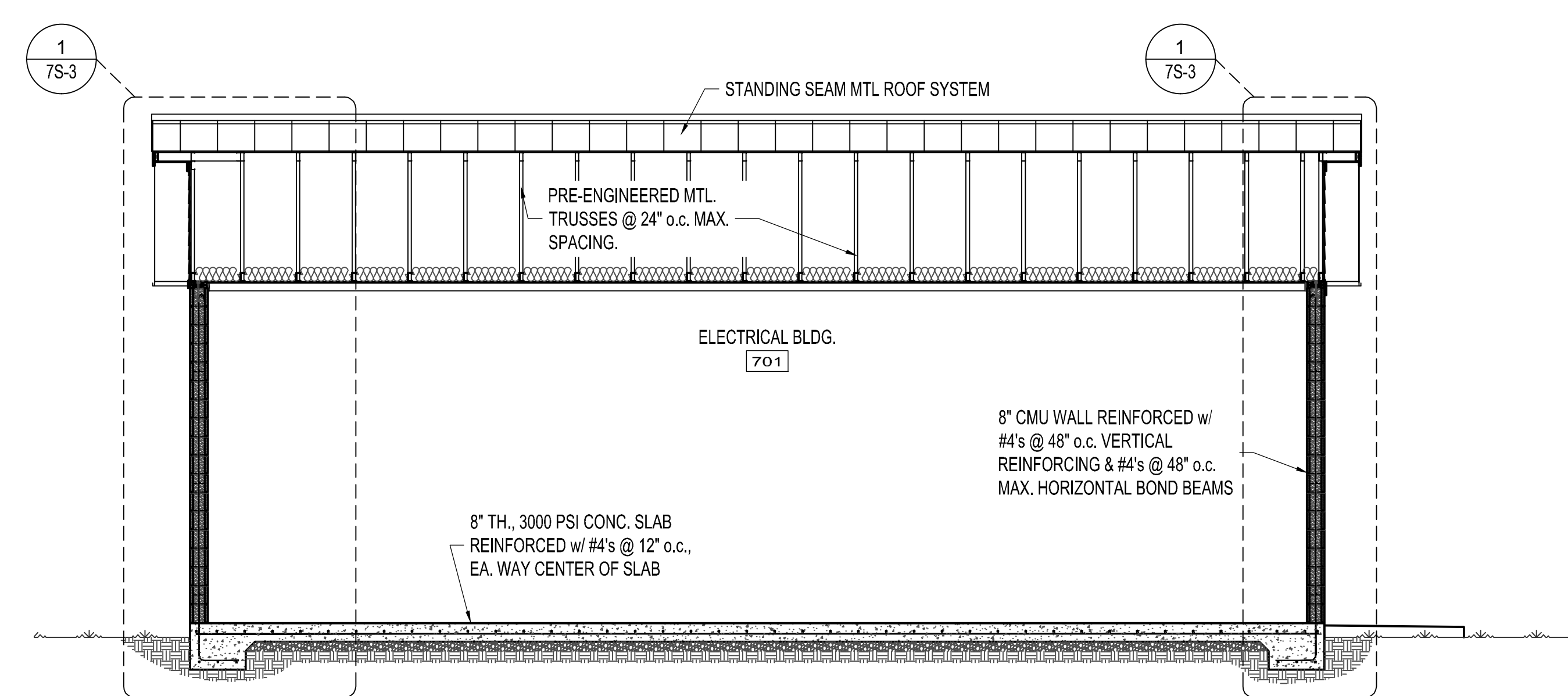
**2 RIGHT SIDE ELEVATION**  
1/4"=1'-0"



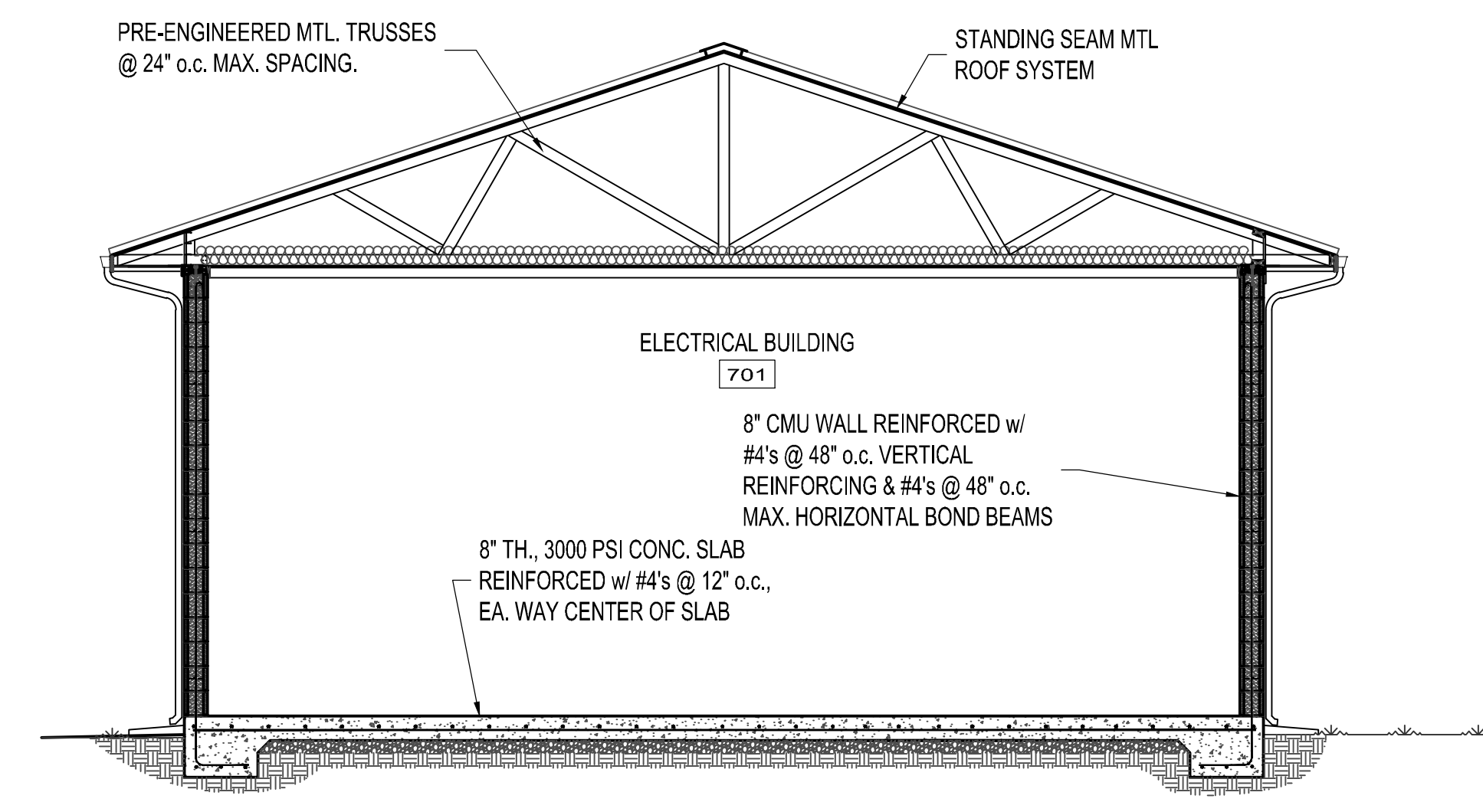
**3 REAR ELEVATION**  
1/4"=1'-0"



**4 LEFT SIDE ELEVATION**  
1/4"=1'-0"

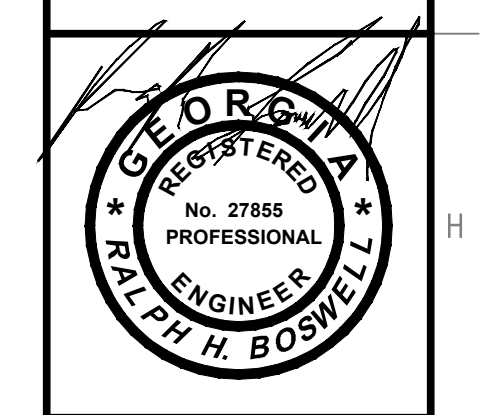


**5 LONGITUDINAL BUILDING SECTION**  
1/4"=1'-0"



**6 TRANSVERSE BUILDING SECTION**  
1/4"=1'-0"

PLOTTED BY RAJ.P.L/DTE Thursday, October 18, 2012 1:22:32 PM DRAWING FILE C:\WORK\0806111103\001\Bldg\RM\08110100\08110100.dwg LAST MODIFIED Thursday, October 18, 2012 12:17:28 PM  
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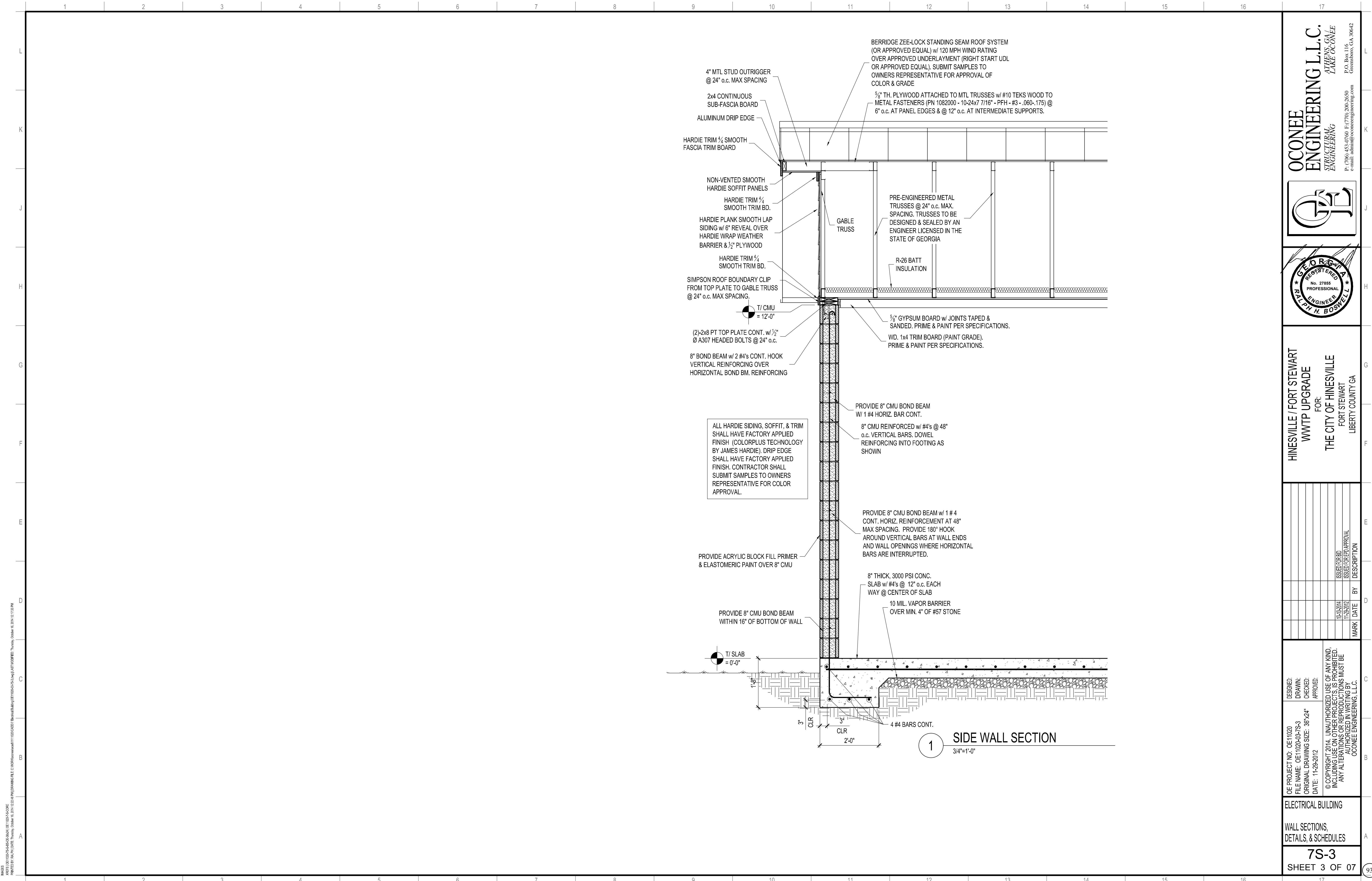


HINESVILLE/FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
1	11/28/2012		ISSUED FOR BID
2	11/28/2012		ISSUED FOR EPO APPROVAL

DESIGNED: [ ]  
 DRAWN: [ ]  
 ORIGINAL DRAWING SIZE: 36"x24"  
 DATE: 11-29-2012  
 CHECKED: [ ]  
 APPROVED: [ ]  
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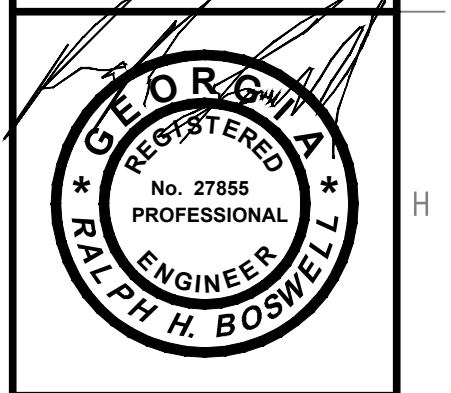
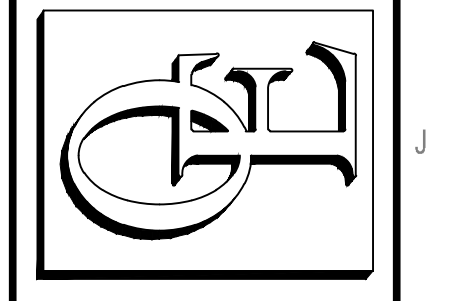
ELECTRICAL BUILDING  
 ELEVATIONS AND  
 BUILDING SECTIONS



**1**  
SIDE WALL SECTION  
3/4"=1'-0"

PLOTTED BY: RAJ.P. DATE: Thursday, October 18, 2012 12:22:47 PM DRAWING FILE C:\WORK\occonee\1110210201\Bldg\RAJ\1110210201.dwg LAST MODIFIED: Thursday, October 18, 2012 12:17:33 PM

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 e-mail: admin@oconeeengineering.com

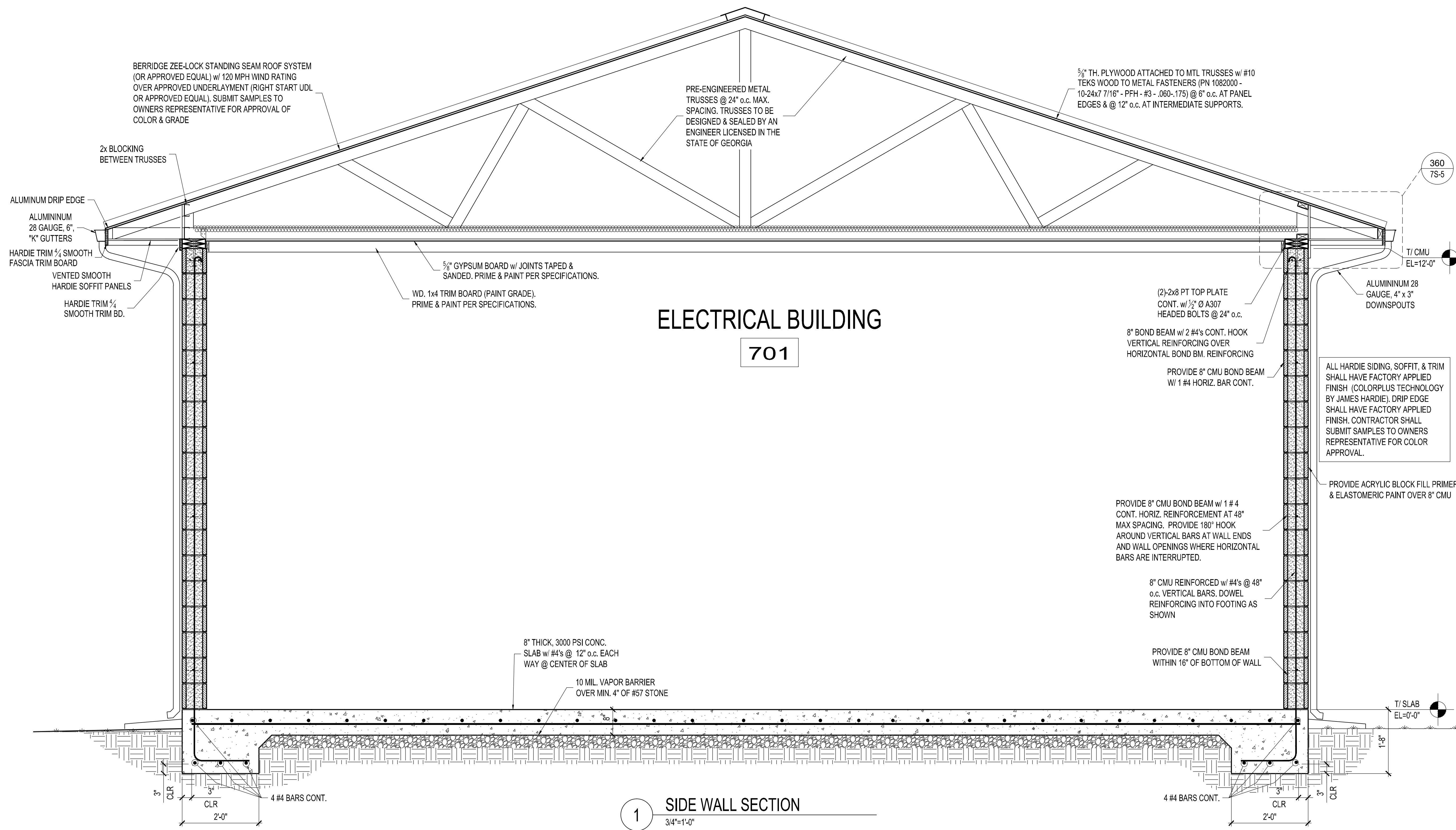


HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

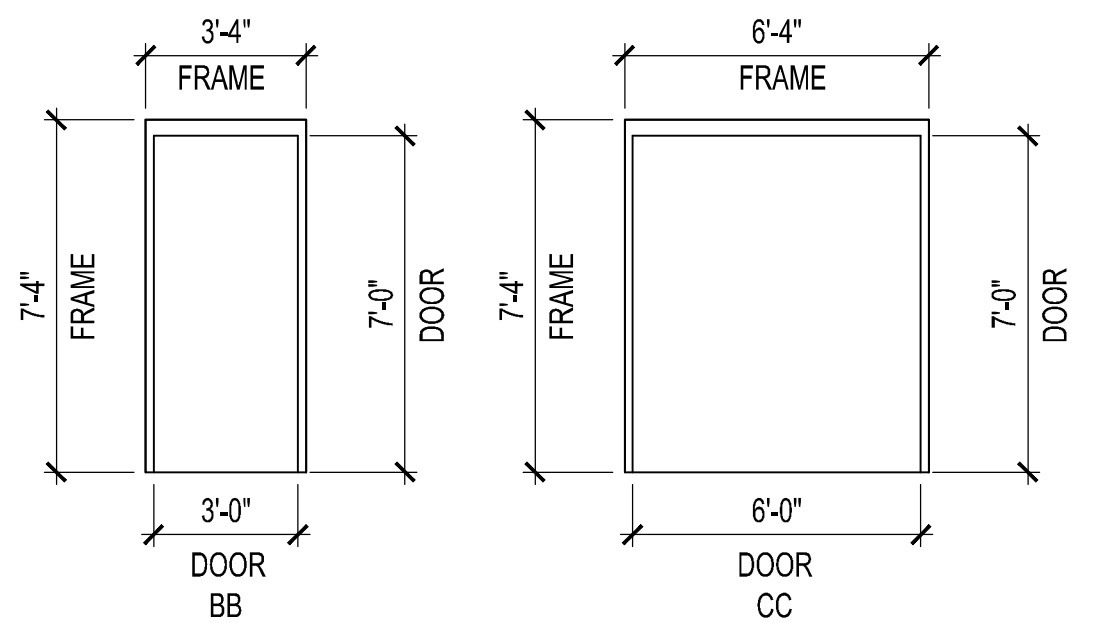
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 ORIGINAL DRAWING SIZE: 36"x24"  
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ELECTRICAL BUILDING  
 WALL SECTIONS,  
 DETAILS, & SCHEDULES  
**7S-3**  
 SHEET 3 OF 07



**1** SIDE WALL SECTION  
3/4"=1'-0"



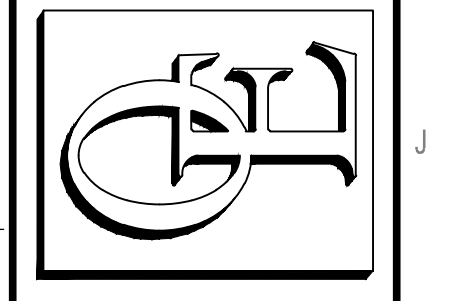
**3** DOOR & FRAME ELEVATIONS  
N.T.S.

FINISH SCHEDULE				
ROOM NUMBER	FLOORS	WALLS	CEILING	REMARKS
701	SEALED CONCRETE	PAINTED CMU	PAINTED GYP. BOARD	

DOOR SCHEDULE								
DR. #	WIDTH	HEIGHT	THK.	TYPE	MATERIAL	FIRE LABEL	FRAME MTL.	REMARKS
701	6-0	7-0	1 3/4"	CC	FRP		FRP	SEE NOTE FOR MFR.
702	3-0	7-0	1 3/4"	BB	FRP		FRP	SEE NOTE FOR MFR.

NOTE: DOOR #701 & #702 BY CHEM-PRUF DOOR CO. OR APPROVED EQUAL.

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**G. L. BOSWELL**  
REGISTERED PROFESSIONAL ENGINEER  
No. 27855  
STATE OF GEORGIA

HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/13/2014	11/23/2012		ISSUED FOR BID ISSUED FOR EPO APPROVAL

DESIGNED: CE PROJECT NO. 061020  
DRAWN: FILE NAME: 0611020-04-7S-4  
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APPROVED: DATE: 11-23-2012  
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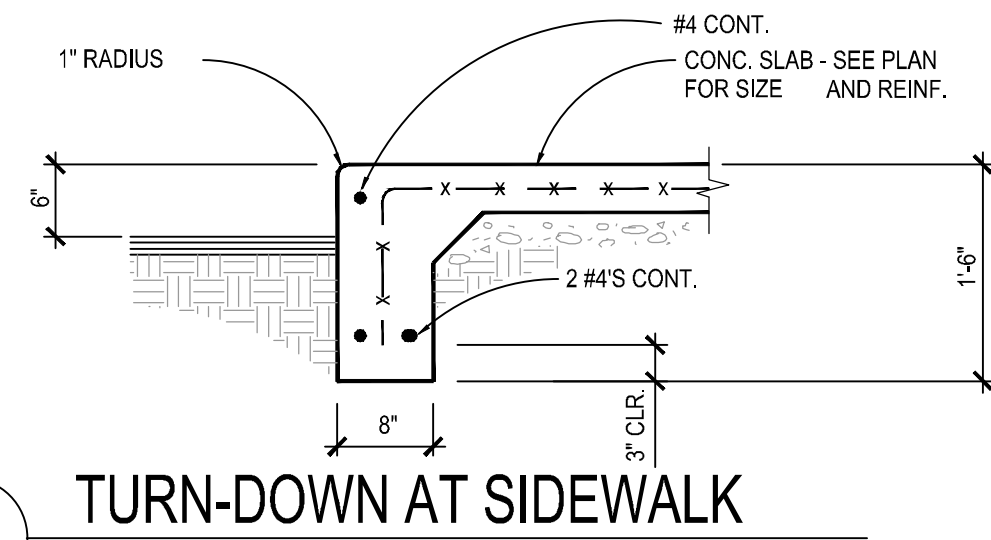
ELECTRICAL BUILDING  
ENLARGED TRANSVERSE  
BUILDING SECTION

**7S-4**  
SHEET 4 OF 07

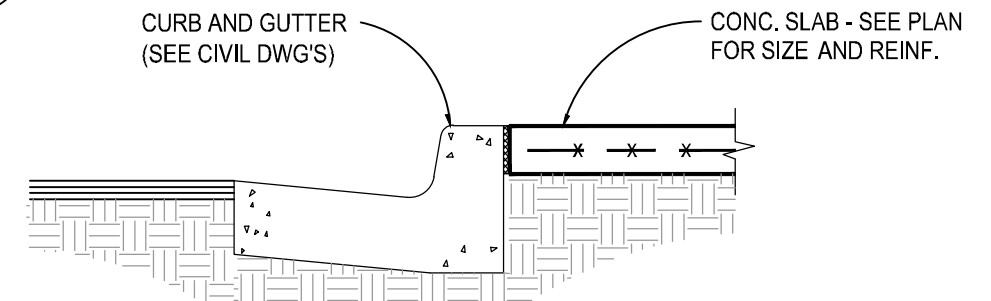
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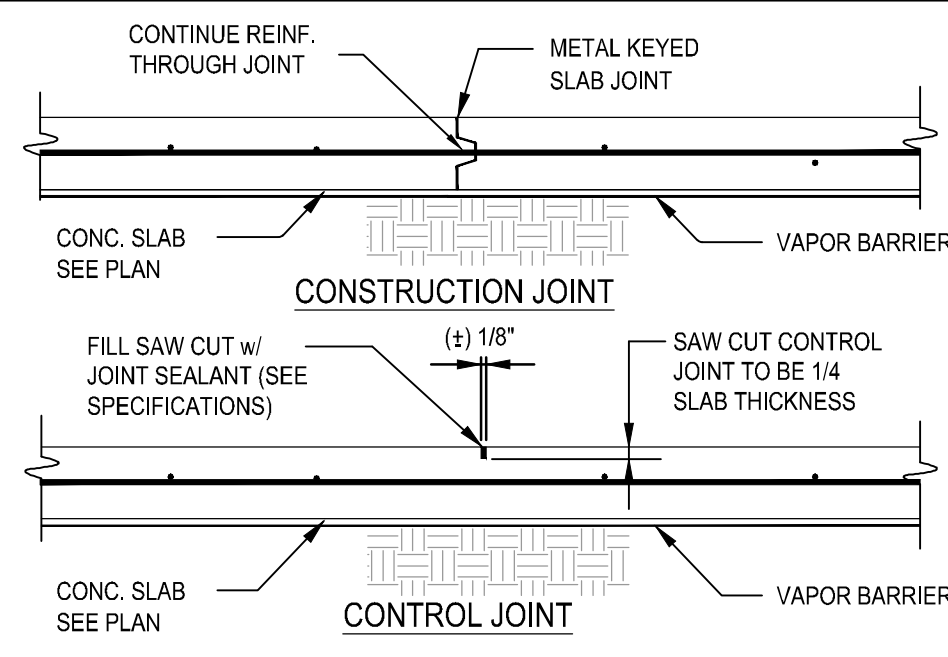
**341 TURN-DOWN AT SIDEWALK**  
N.T.S.



**342 CURB AND GUTTER**  
N.T.S.

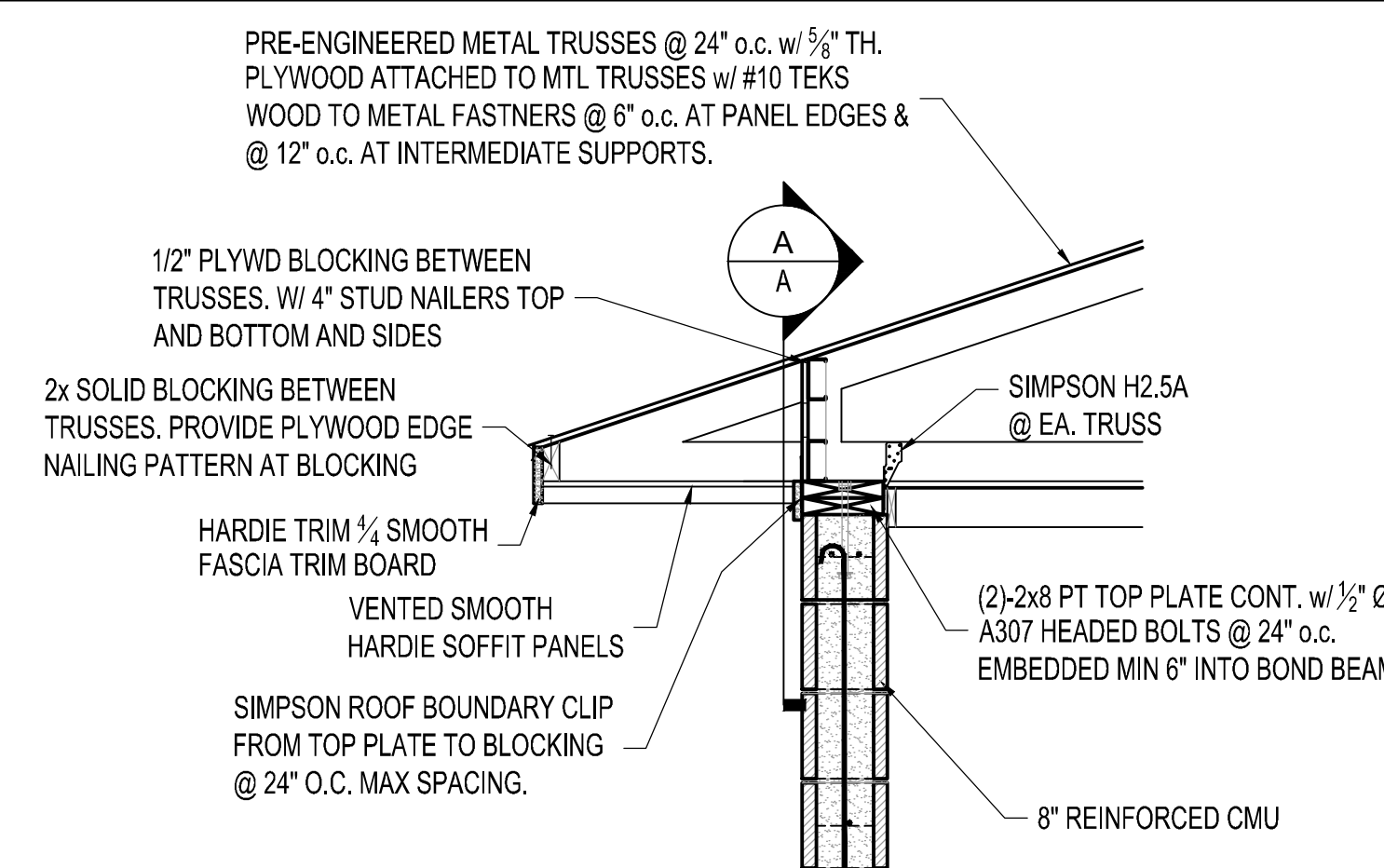


**344 6" SLAB JOINT DETAILS**  
N.T.S.

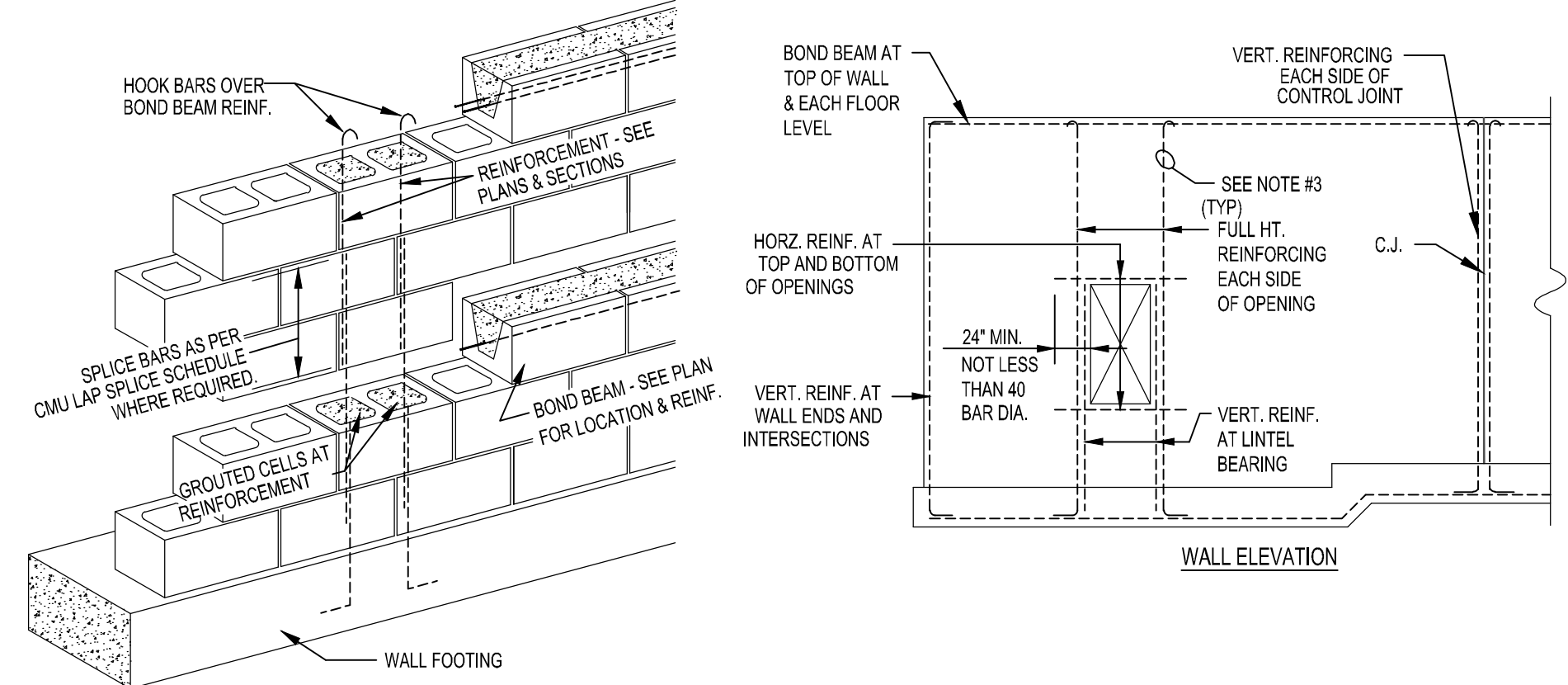
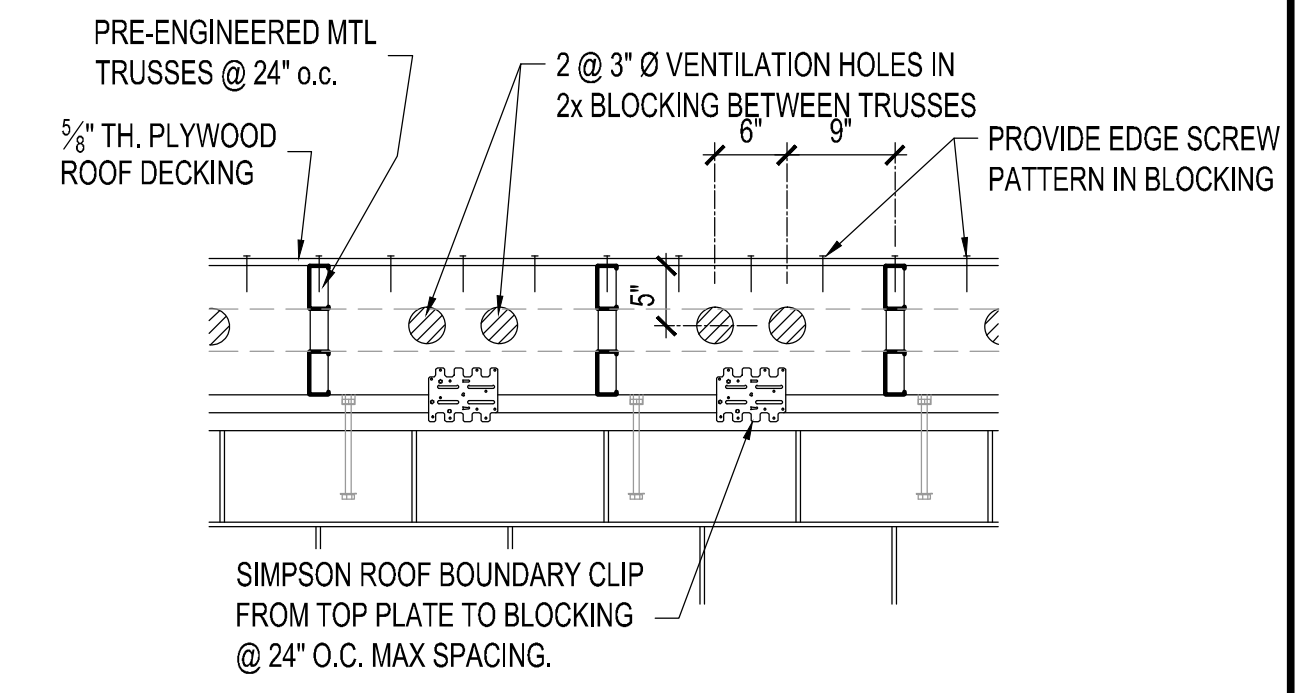


**NOTES:**  
SAW CUT AS SOON AS SLAB CAN SUPPORT WEIGHT.  
CONTROL JOINTS MAY BE REPLACED WITH CONSTRUCTION JOINTS.  
CONTROL JOINTS SHALL BE SPACED AT NO MORE THAN 18'-0" O.C.  
SLAB AREAS BOUNDED BY THESE JOINTS, SHALL HAVE THE LENGTH NO MORE THAN 2x THE WIDTH.

**360 TRUSS TO WALL CONNECTION DETAIL**  
N.T.S.



**A/A SECTION A-A**  
N.T.S.

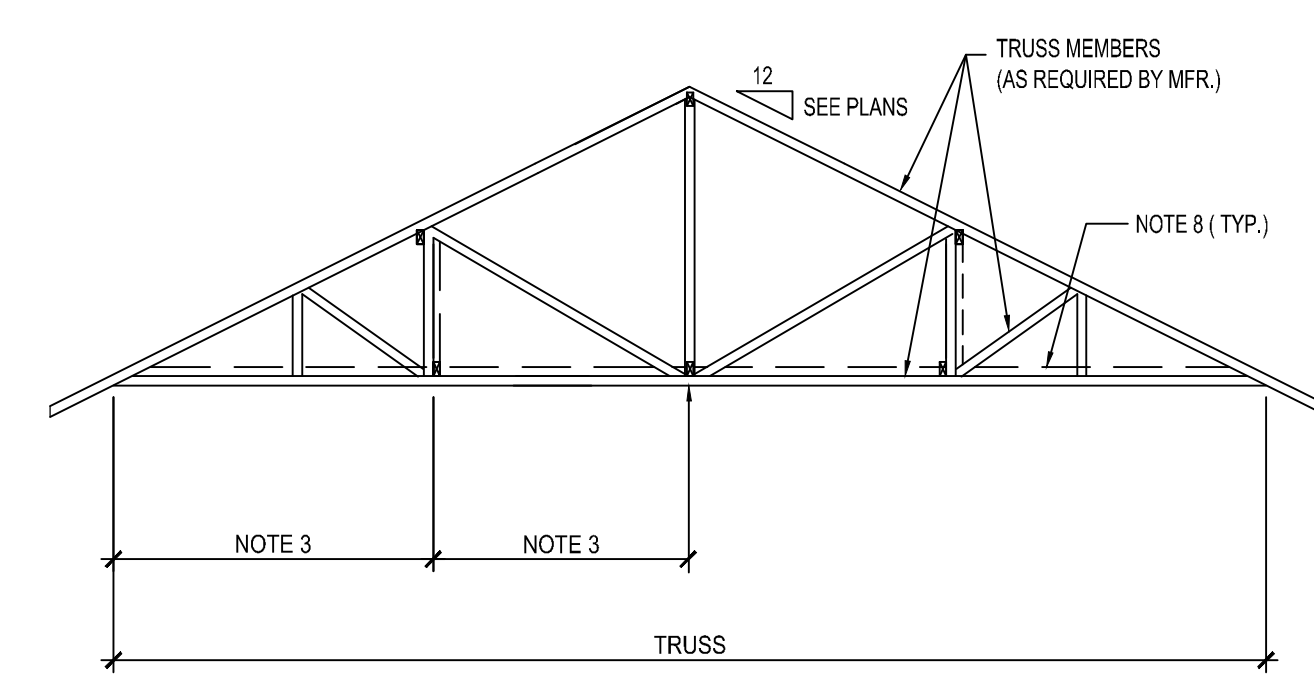
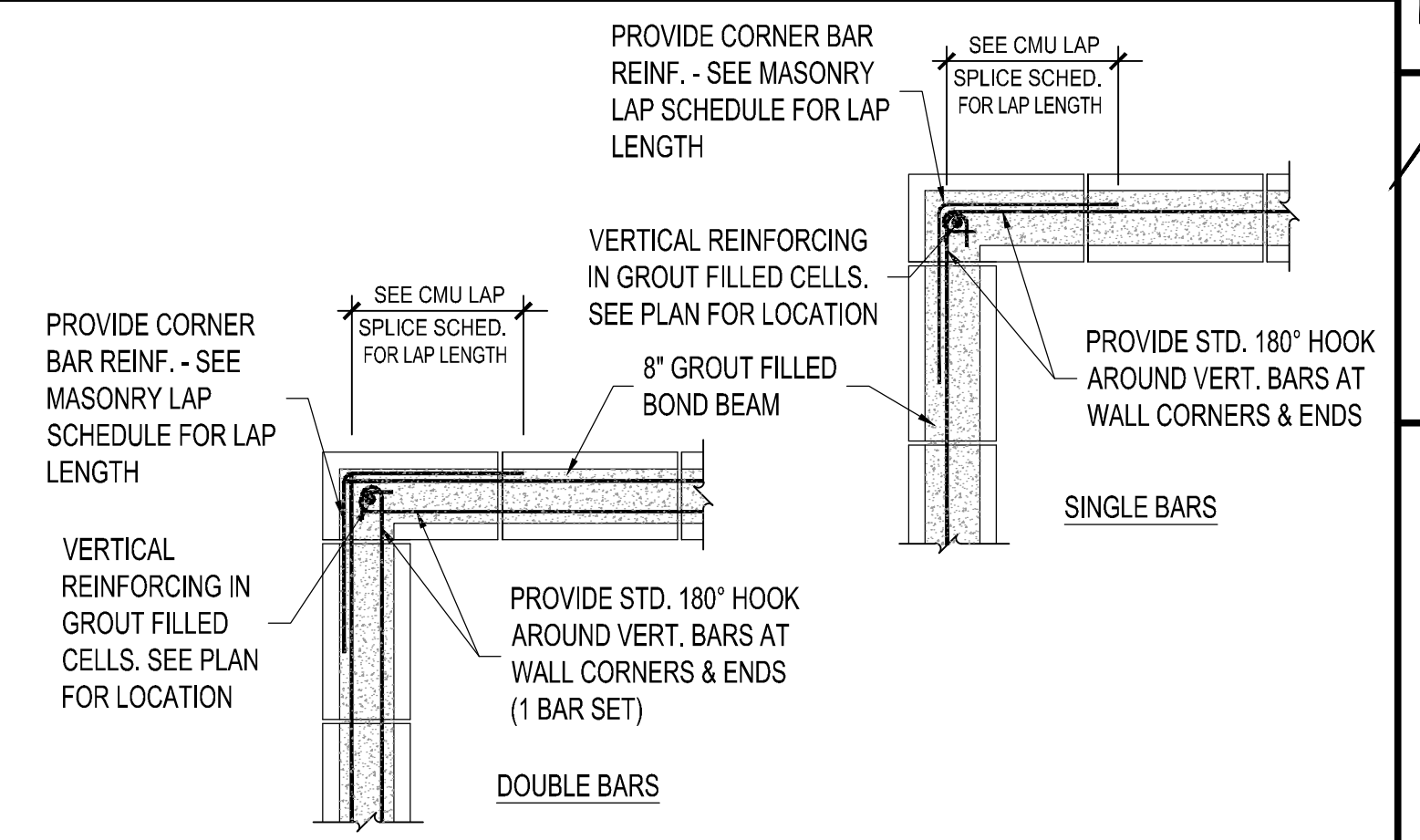


**370 REINFORCED MASONRY CONSTRUCTION & REINFORCING**  
N.T.S.

**LOW LIFT GROUTING PROCEDURE:**  
1. CONSTRUCT WALL TO HEIGHT OF 4'-0". ALLOW MORTAR TO SET SUFFICIENTLY TO WITHSTAND GROUT PRESSURE.  
2. INSPECT UNITS FOR ALIGNMENT. CLEAN OUT CELLS TO BE FILLED.  
3. LIGHTLY WET THE UNITS AND FILL CELLS TO 1 1/2" BELOW TOP COURSE.  
4. DELAY 3 TO 5 MINUTES PRIOR TO CONSOLIDATING TO ALLOW WATER TO BE ABSORBED BY MASONRY.

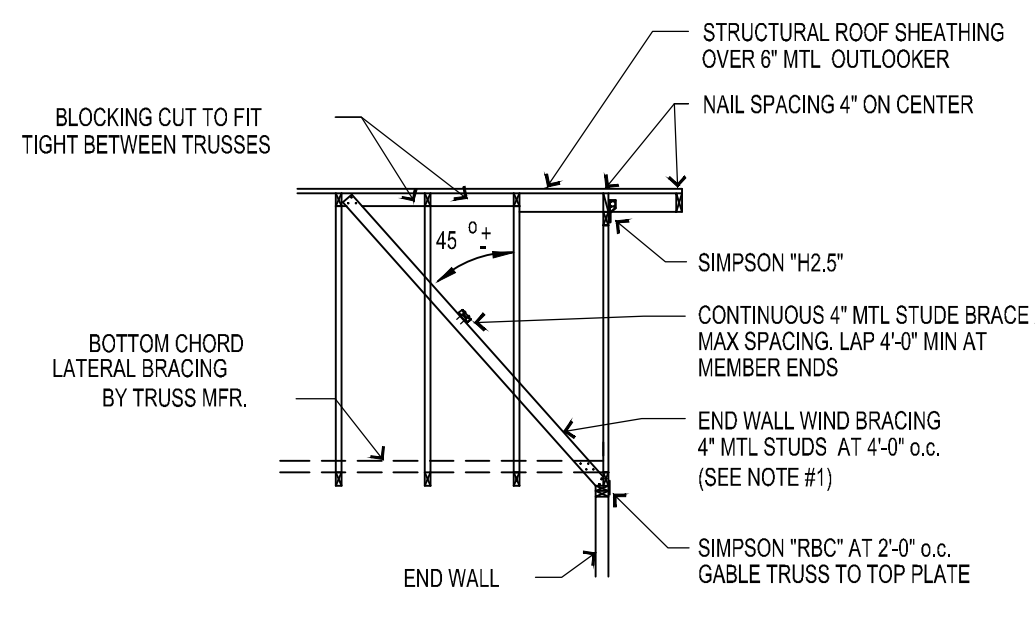
**ELEVATION NOTES:**  
1. REINFORCING SHOWN SHALL BE MINIMUM #4 RE-BAR UNLESS SHOWN OTHERWISE ON PLANS AND DETAILS.  
2. BOND BEAM REINFORCING SHOWN SHALL BE DISCONTINUED AT CONTROL JOINTS.  
3. PROVIDE 4" x 4" OPENING IN BOTTOM OF BOND BEAM FOR PASSAGE OF VERTICAL REINFORCING IN CMU BOND BEAM. PROVIDE 1" HOLE IN BOTTOM OF PRECAST LINTEL FOR PASSAGE OF VERT REINF.

**375 CMU CORNER WALL DETAIL**  
N.T.S.



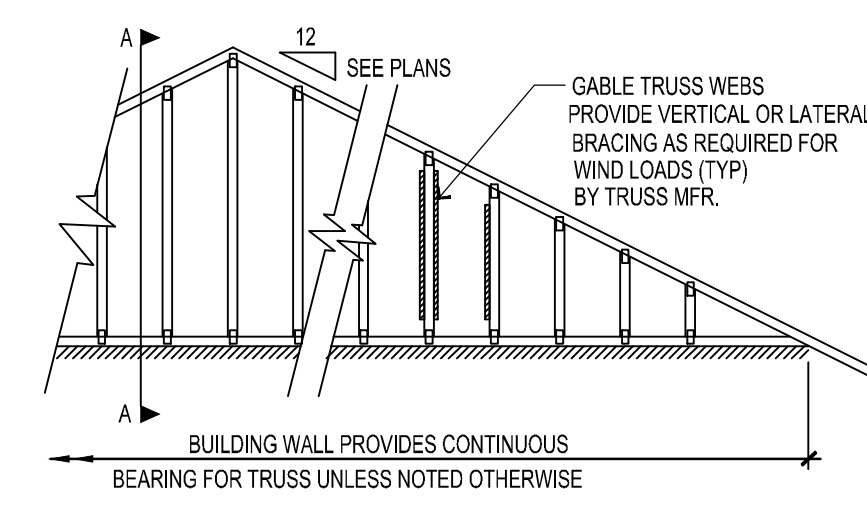
**380 PERMANENT TRUSS BRACING DETAIL**  
N.T.S.

1. TRUSS AS SHOWN DOES NOT REPRESENT ACTUAL TRUSS DESIGN OR LAYOUT. SECTION SHOWN IS INTENDED FOR PERMANENT BRACING REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR TRUSS CONFIGURATION.  
2. TEMPORARY BRACING FOR ERECTION PURPOSES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.  
3. MAXIMUM HORIZONTAL DISTANCE BETWEEN VERTICAL DIAGONAL BRACING SHALL BE 8'-0". BRACING MEMBERS BRACING SHALL BE 2x4 MIN.  
4. 3 ROWS OF BRACING AS SHOWN IS MINIMUM BRACING REQUIRED.  
5. LAP LATERAL BRACING OVER AT LEAST TWO TRUSSES.  
6. USE 16d NAILS TO ATTACH LATERAL BRACING AT EACH TRUSS.  
7. PROVIDE VERTICAL X-BRACING AT EACH END FOR NOT LESS THAN 3 TRUSSES AT FIRST PANEL POINT FROM EACH END AND 5 TRUSSES AT INTERIOR PANEL POINTS.  
8. PROVIDE BOTTOM CHORD HORIZONTAL V-BRACING AT EACH END ENGAGING NOT LESS THAN 5 TRUSSES. PROVIDE ADDITIONAL DIAGONAL BRACING AT INTERVALS NOT TO EXCEED 20 FEET.  
9. FOR PURPOSES OF BRACING, DOUBLE TRUSSES SHOULD BE TREATED AS A SINGLE TRUSS.

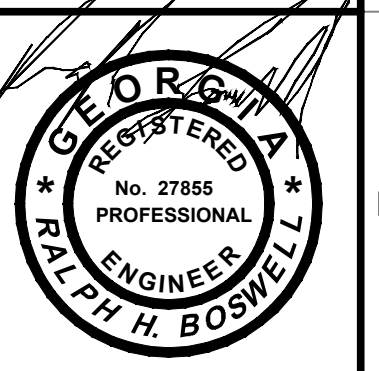
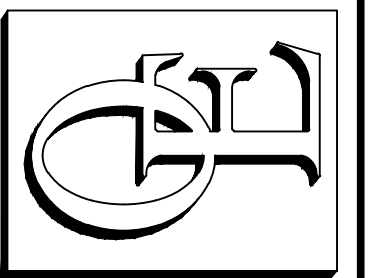


**SECTION at GABLE END**

1. END WALL WIND BRACING MAY BE OMITTED IF GYPSUM BOARD DIAPHRAGM IS NAILED TO TRUSS BOTTOM CHORD.



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HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/10/2014			ISSUED FOR BID
11/20/2012			ISSUED FOR ERO APPROVAL

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DRAWN: FILE NAME: 0E11020-05-TS-5  
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# DOOR SCHEDULE

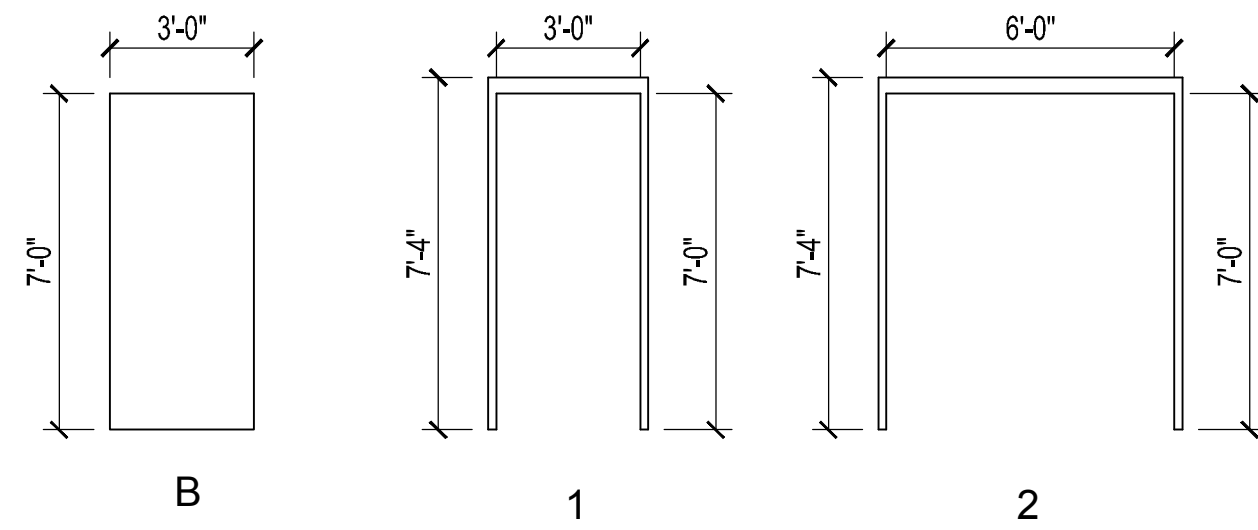
DOOR NUMBER	DOOR LOCATION	DOORS						FRAME							LABEL	HDW. SET (NOTE 1)	REMARKS	DOOR NUMBER	
		TYPE	WIDTH	HEIGHT	THICK	MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB	THR.					
701	ELECTRICAL BLDG	B	PR3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	2	H.M.	PAINT	1/A-5	2/A-5					1	601
702	ELECTRICAL BLDG	B	3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	1/A-5	2/A-5				45 MIN	1	602
																			603

NOTES: 1. ALL DOOR HARDWARE SHALL BE OPERABLE LEVER TYPE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

# ROOM FINISH SCHEDULE

KEY	FLOOR	BASE	WALLS	CEILING	NOTES
⊗ -					
	SEALED CONCRETE	NONE	PAINTED CMU-P1	PAINTED GYPSUM BD	HEIGHT
NO.	NAME				
	ELECTRICAL BLDG	⊗	⊗	⊗	⊗
					12'

# DOOR AND FRAME TYPES

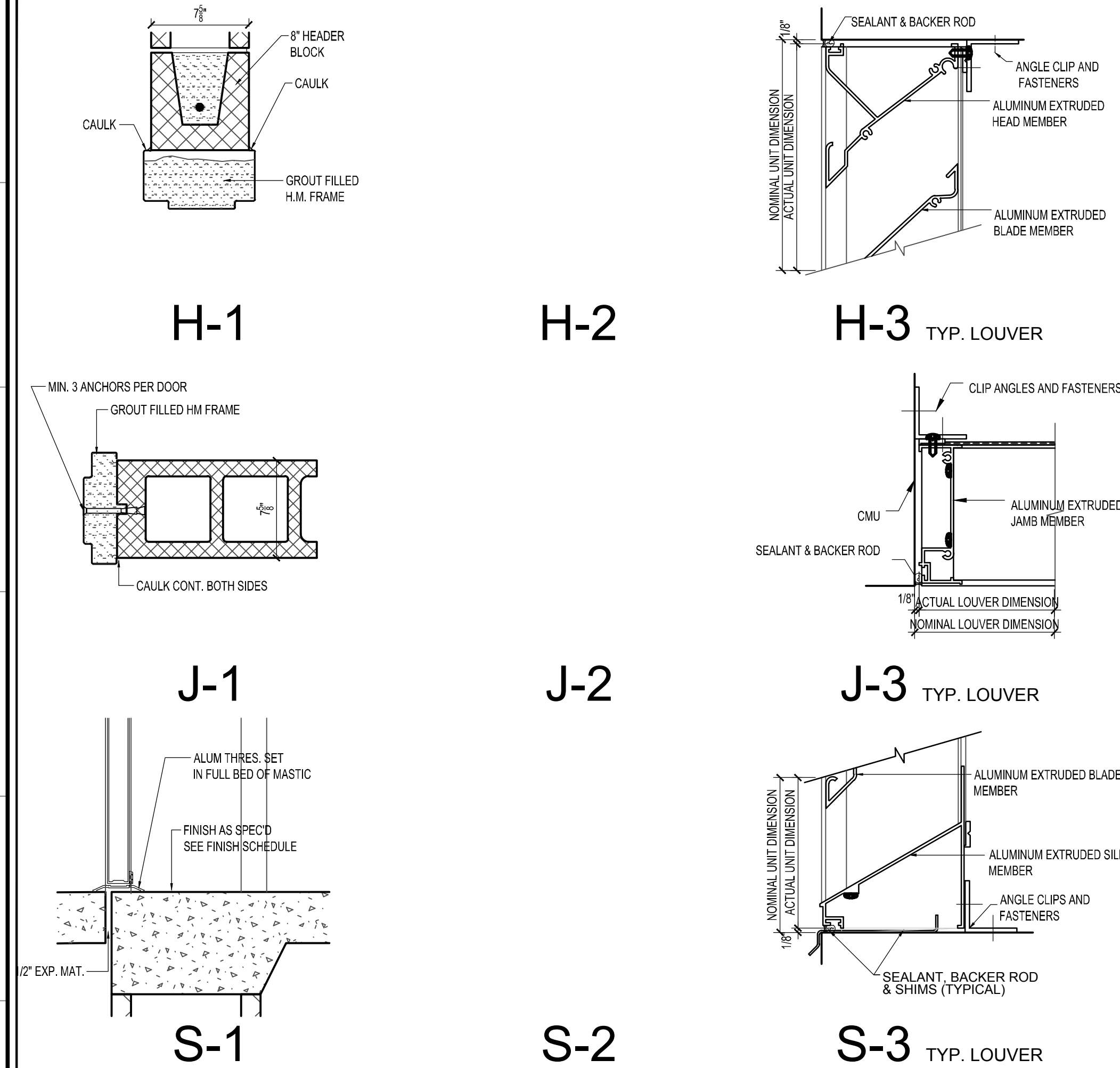


# ROOM FINISH NOTES

## LIST OF FINISHES

ITEM	MANUFACTURER	SPECIFICATION	COLOR NUMBER	COLOR	REMARKS
P-1	SHERWIN WILLIAMS	FLAT	-	BY OWNER	WALL
P-2	SHERWIN WILLIAMS	FLAT	-	BY OWNER	CEILING

# DOOR AND LOUVER DETAILS



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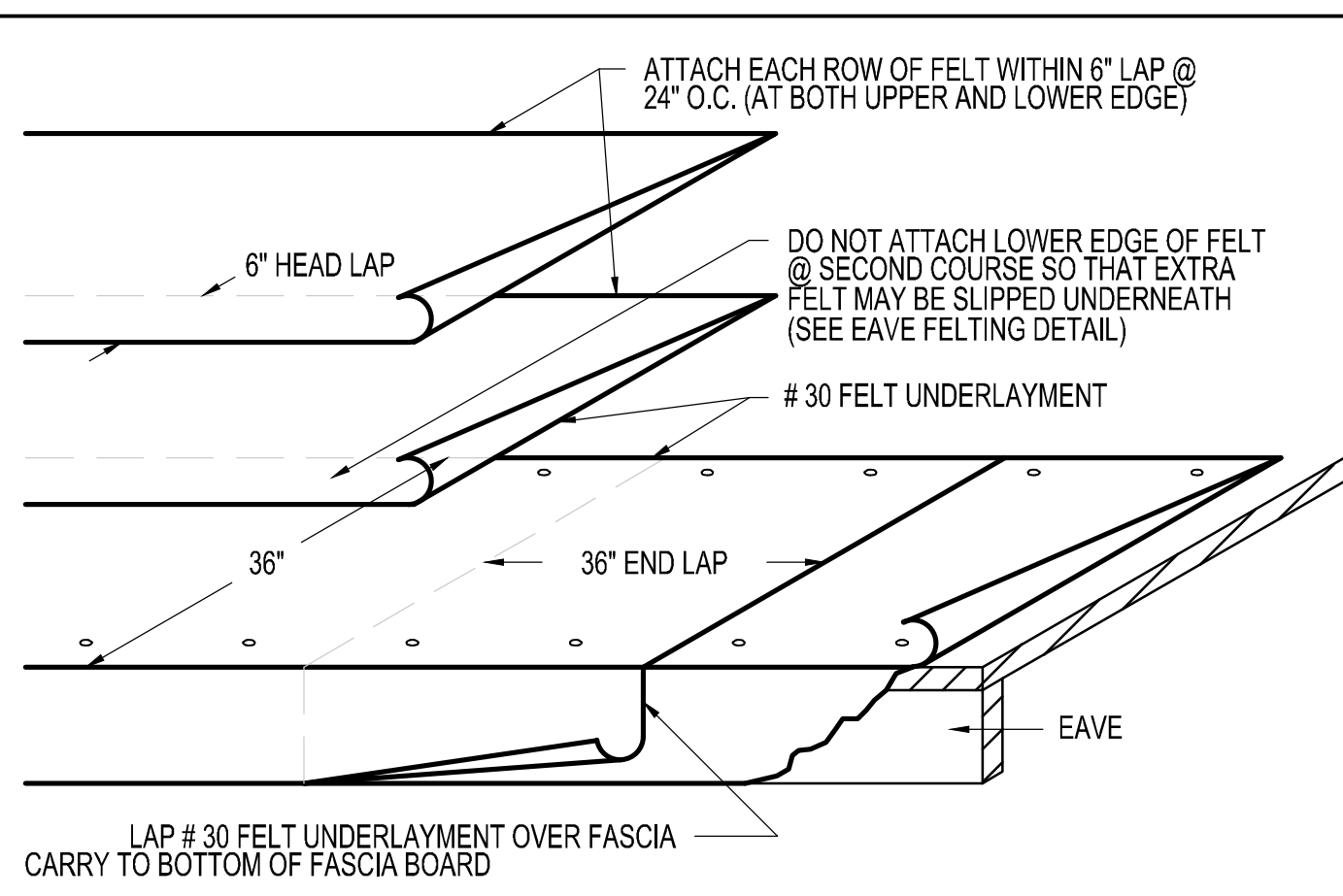
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MARK	DATE	BY	DESCRIPTION
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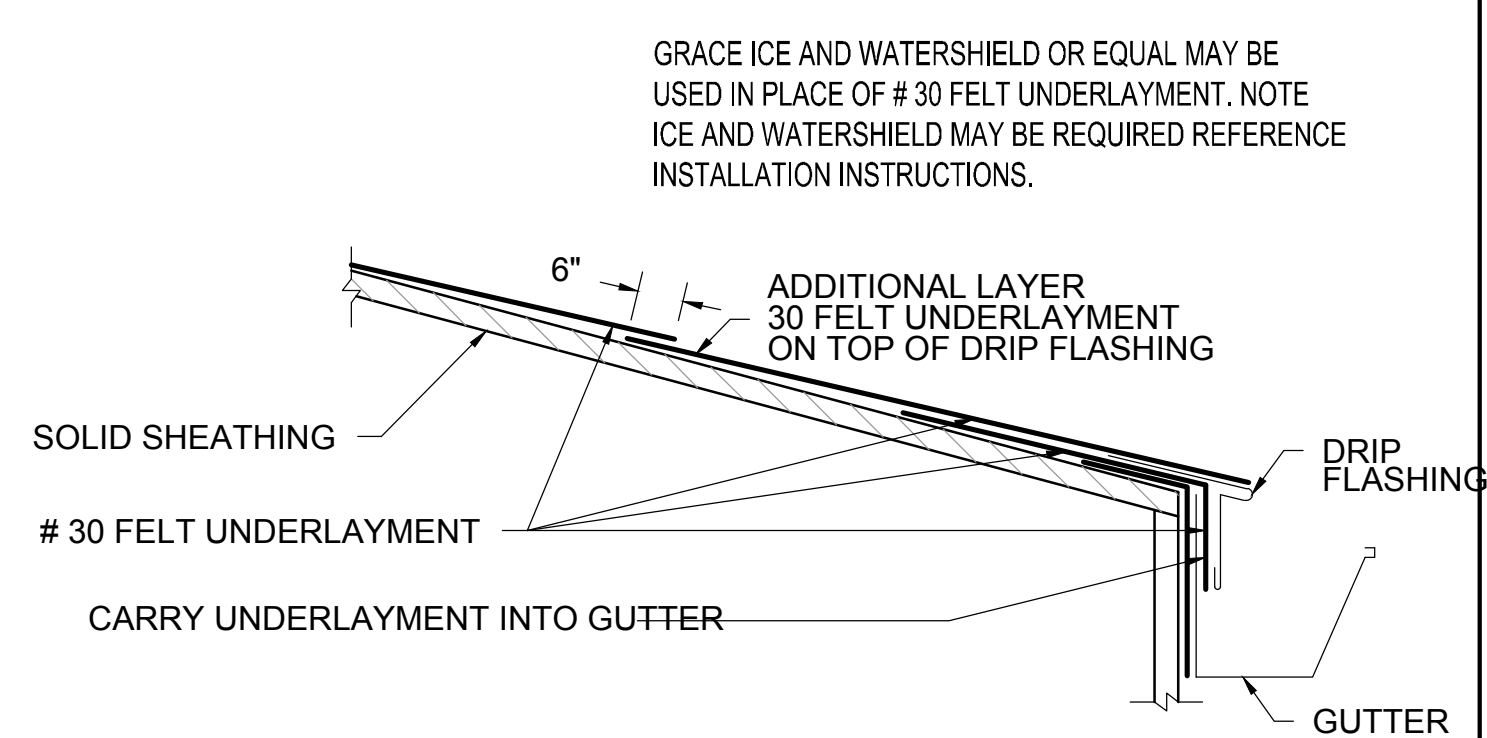
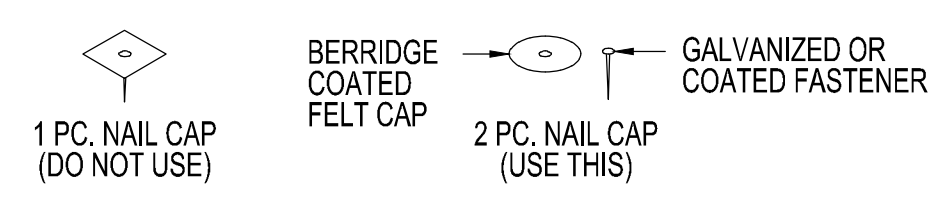
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ELECTRICAL BUILDING  
 SCHEDULES  
**7S-6**  
 SHEET 6 OF 07

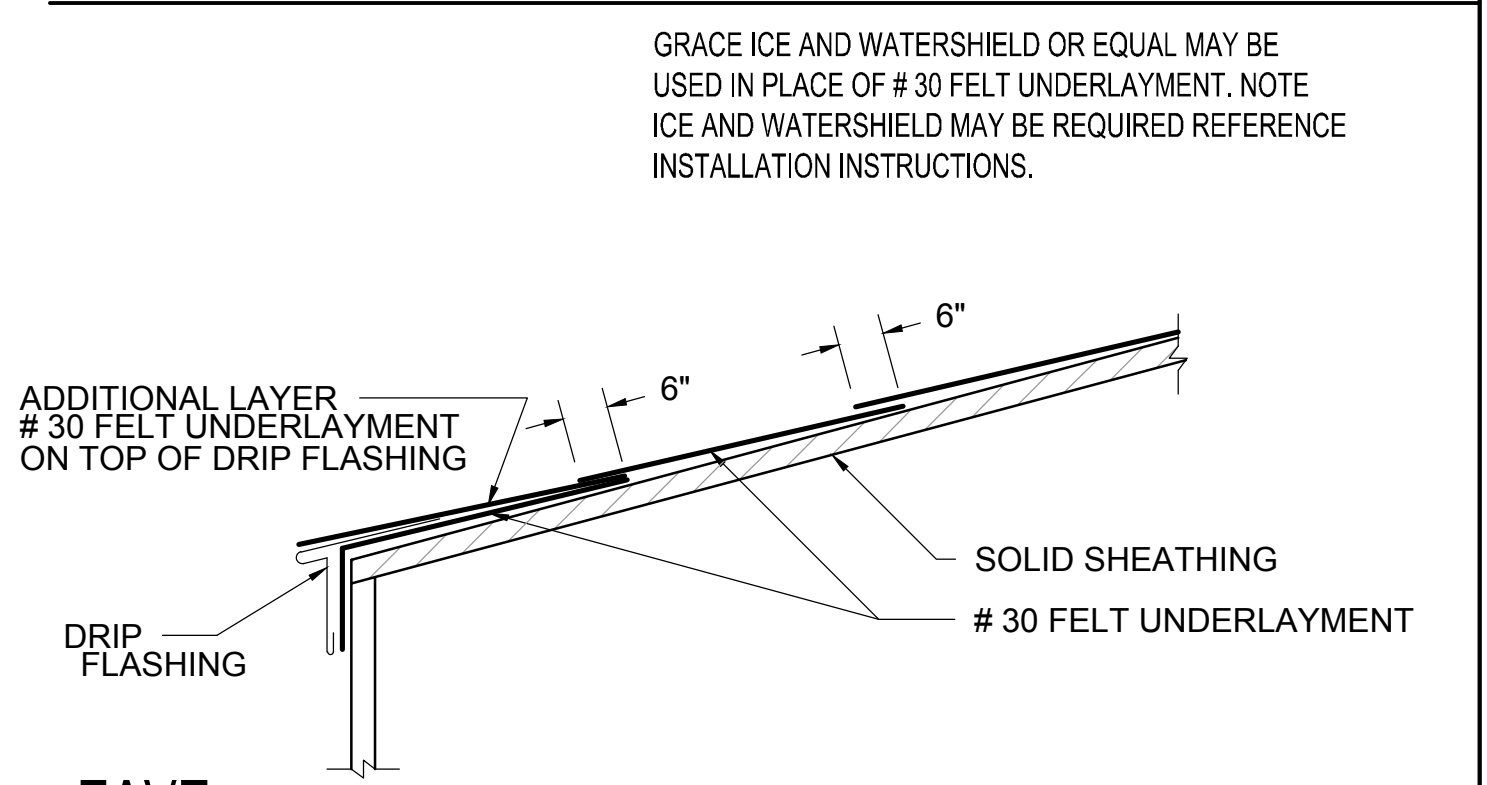
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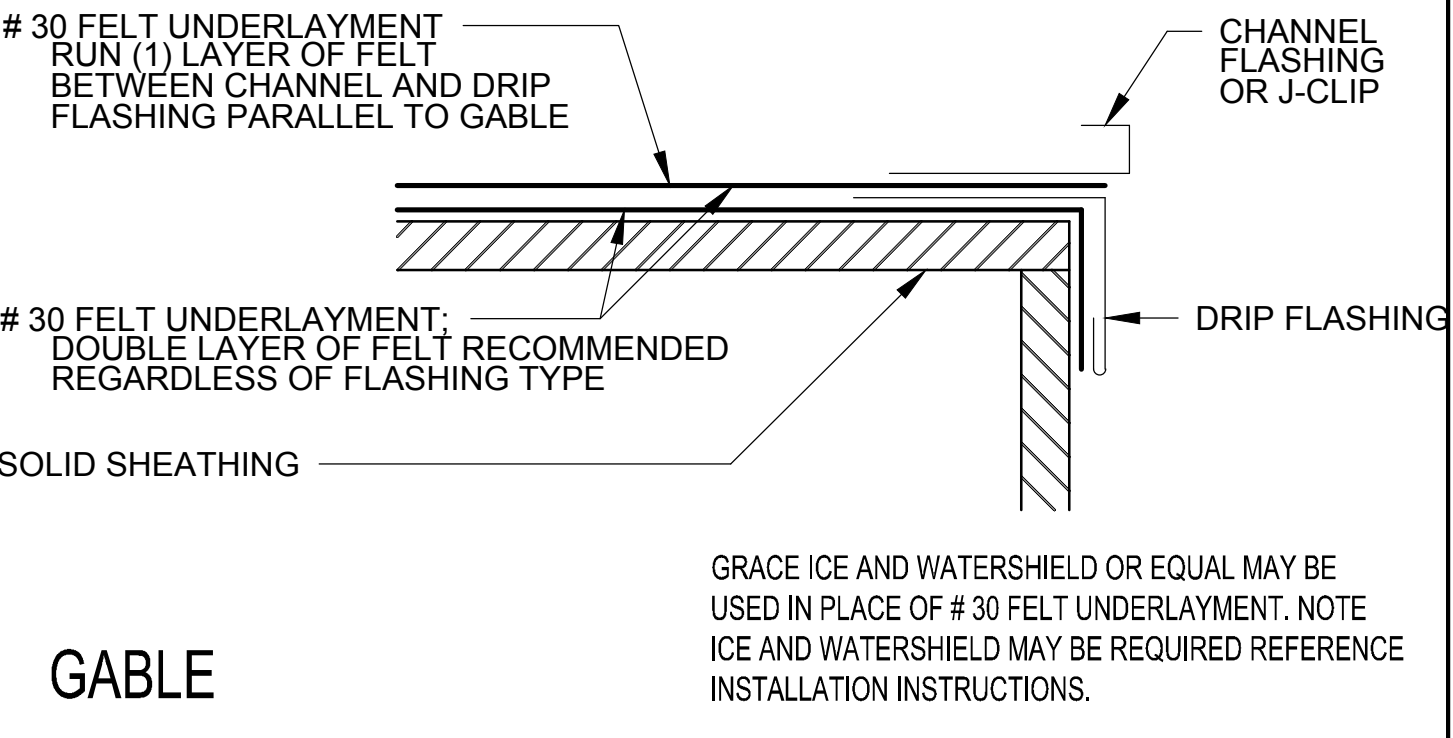
- CLEAN ROOF SURFACE OF ALL OBJECTS WHICH MAY PUNCTURE OR TEAR FELT UNDERLAYMENT. ATTACH FELT UNDERLAYMENT TO DECK BELOW USING COATED FELT CAPS. FASTENERS MUST BE TOTALLY FLUSH WITH SUBSTRATE. DO NOT USE ONE PIECE NAIL CAPS, AS THESE WILL "READ THROUGH" THE SURFACE.
- DO NOT FASTEN LOWER EDGE OF FELT @ SECOND COURSE (SEE ABOVE ILLUSTRATION). ALWAYS RUN FELT UNDERLAYMENT HORIZONTALLY STARTING @ THE EAVE AND LAP SHINGLE FASHION.
- NEVER INSTALL BERRIDGE PRODUCTS OVER FELT UNDERLAYMENT THAT IS NOT LAID HORIZONTAL, FLAT, SMOOTH AND FREE FROM PUNCTURES AND TEARS.
- DO NOT APPLY PANELS OVER DRY OR BRITTLE FELT (A CONDITION CAUSED BY EXTENDED EXPOSURE TO THE ELEMENTS).
- DO NOT USE RED ROSIN PAPER UNDER ANY BERRIDGE METAL PRODUCT.



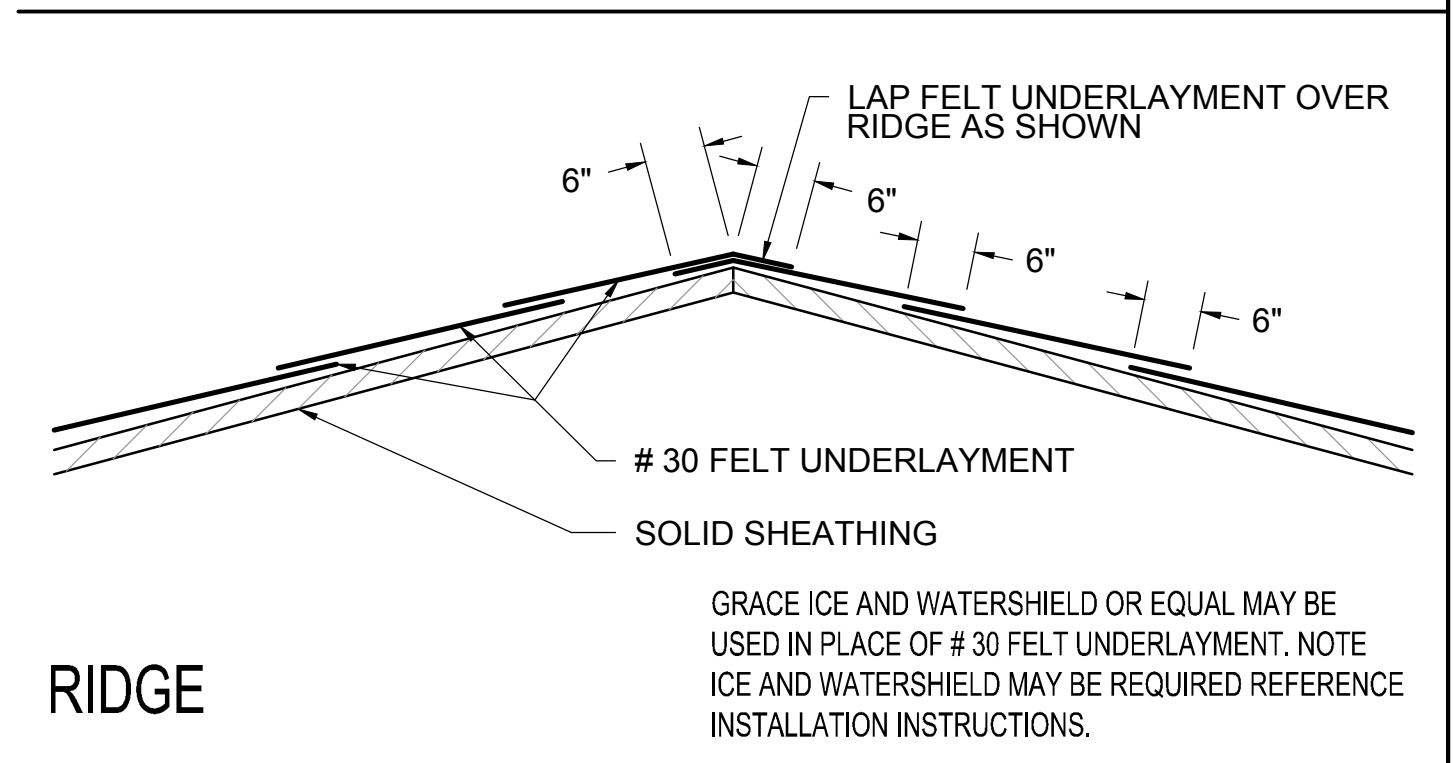
EAVE WITH GUTTER



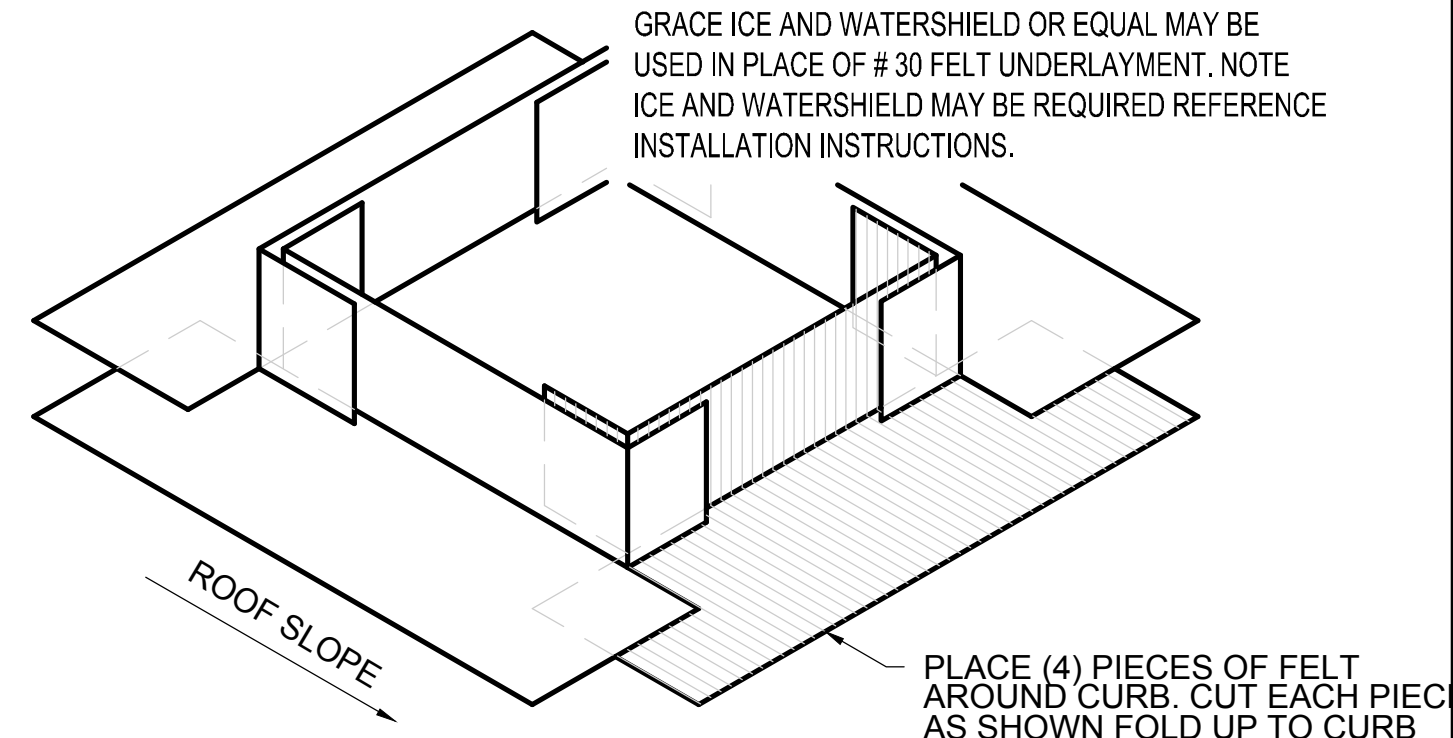
EAVE WITH GUTTER UNDERLAYMENT



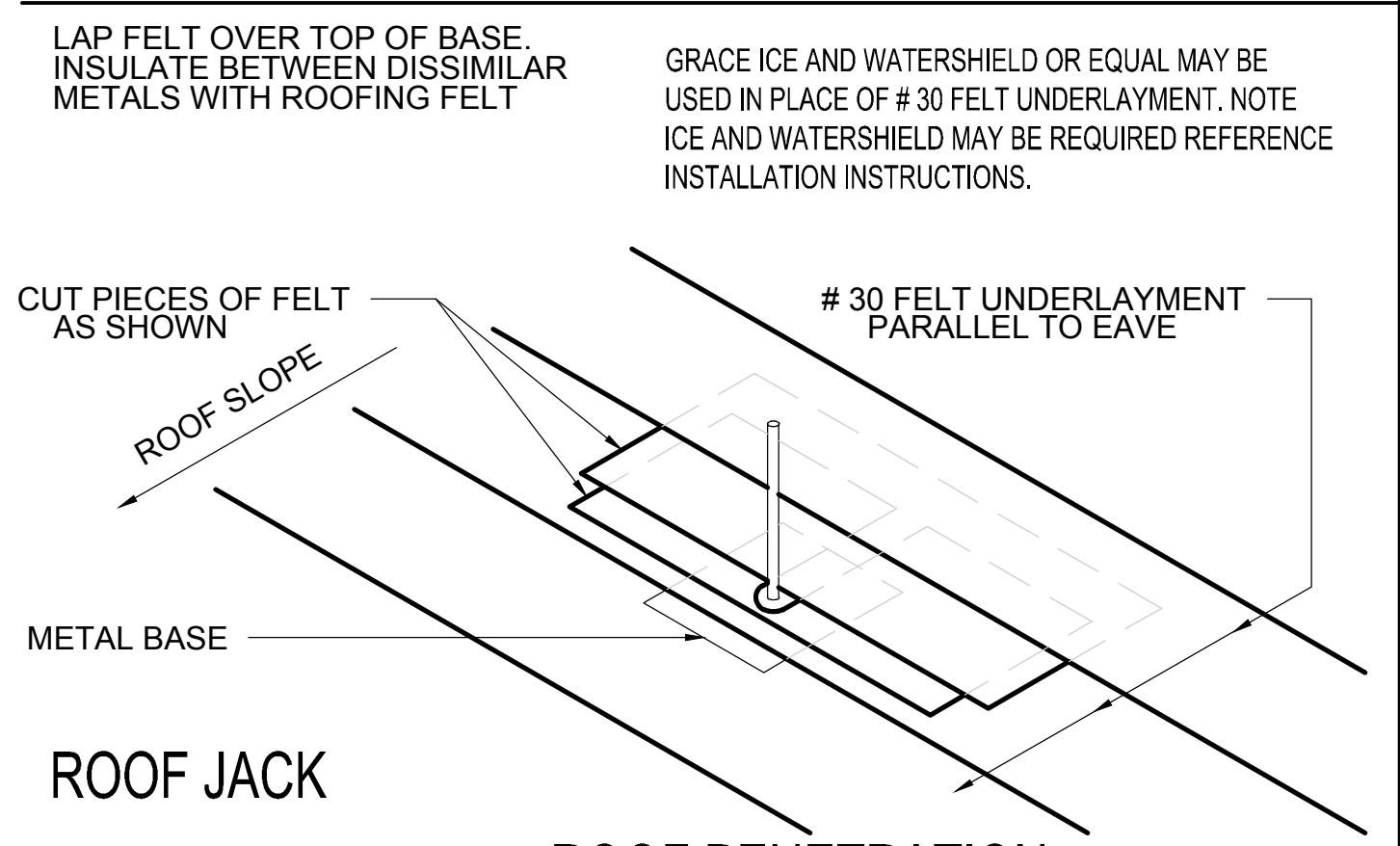
GABLE UNDERLAYMENT



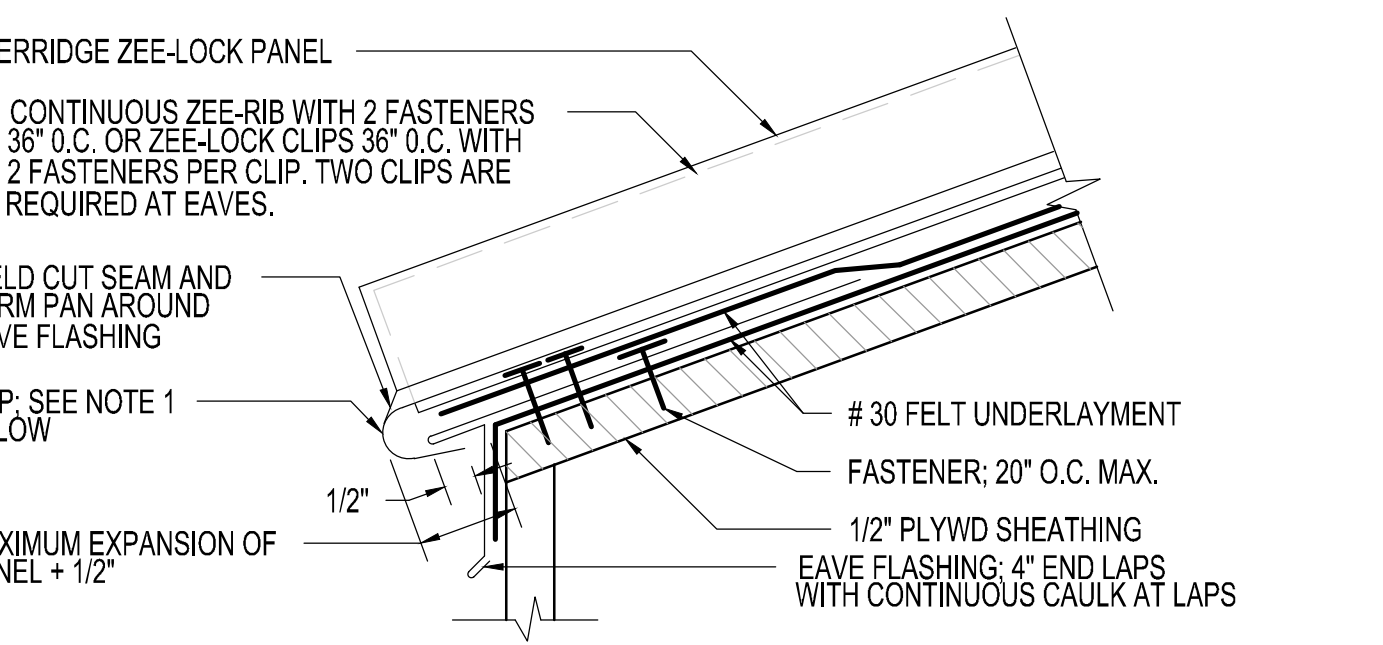
RIDGE UNDERLAYMENT



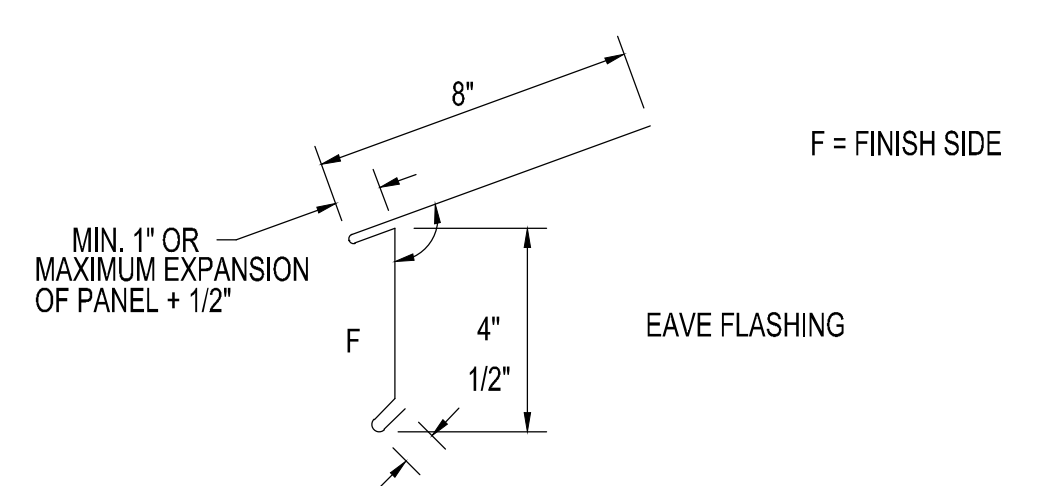
ROOF PENETRATION UNDERLAYMENT



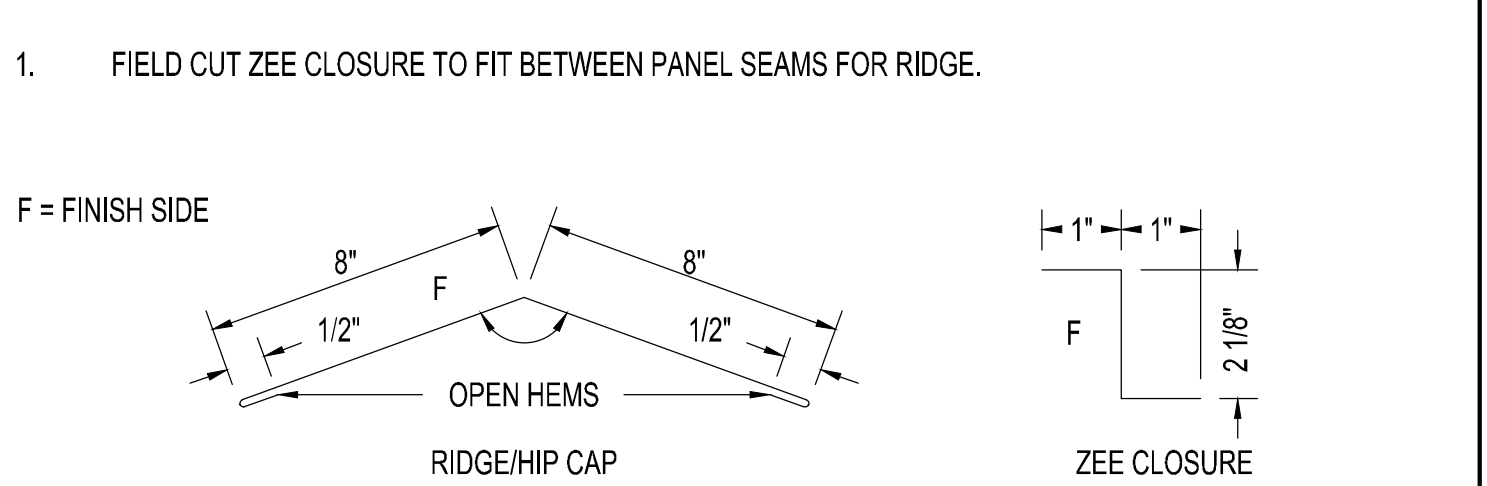
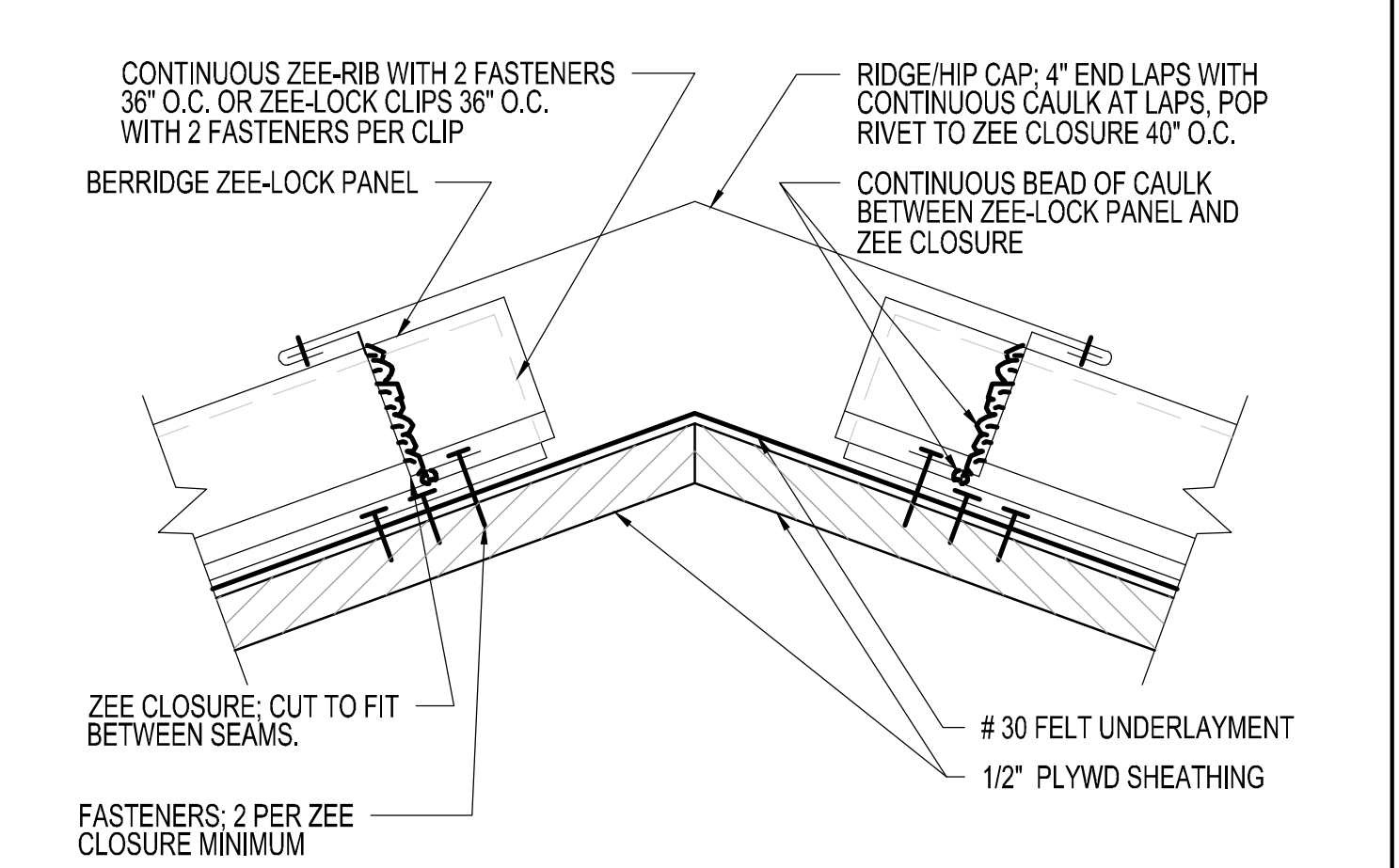
ROOF JACK UNDERLAYMENT



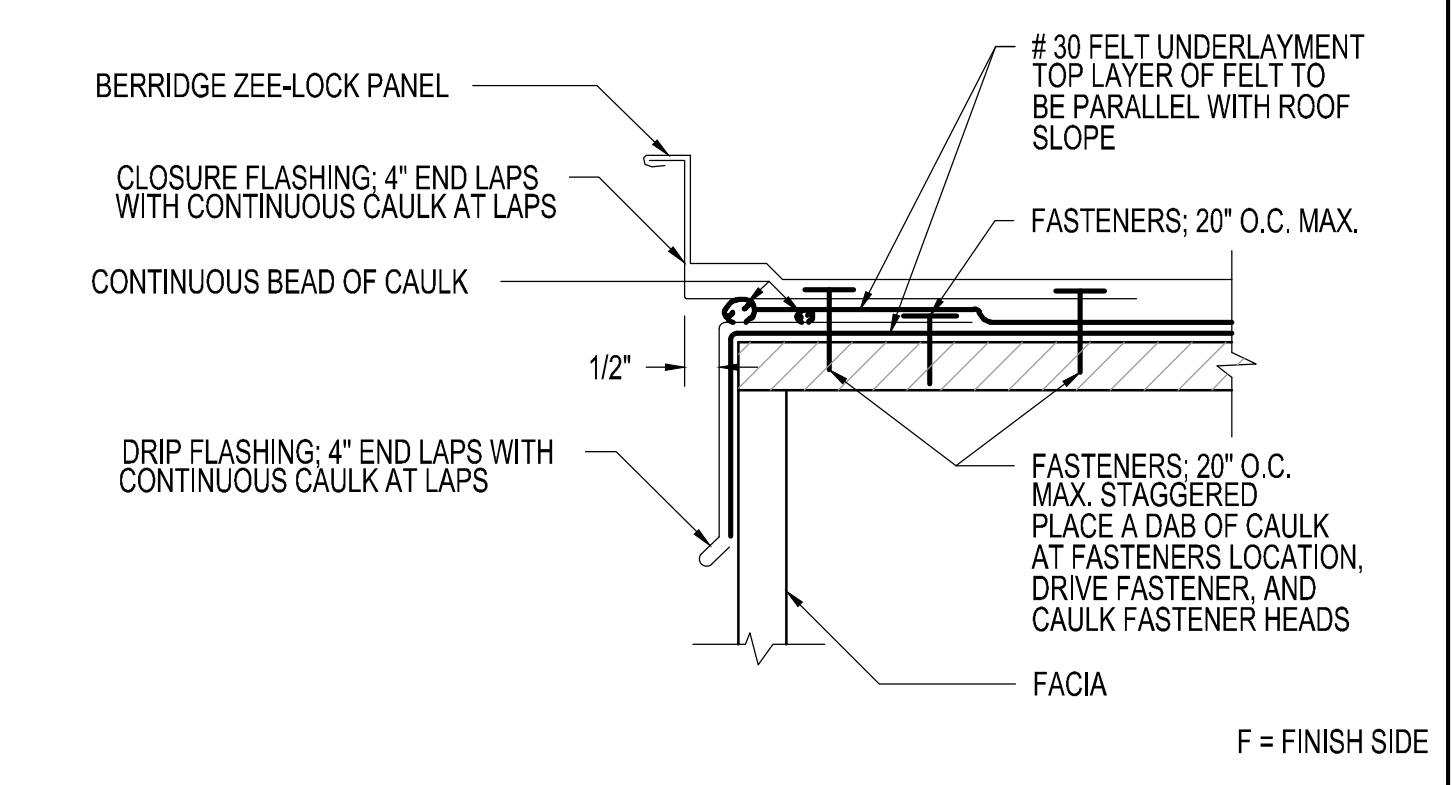
- THE "GAP" BETWEEN EAVE FLASHING AND PANEL (SEE DETAIL ABOVE) CAN BE INCREASED TO ALLOW FOR LINEAR EXPANSION AND CONTRACTION OF PANELS. NOTE 1/2" OF PAN MUST BE ENGAGED WITH EAVE FLASHING WHEN PANEL HAS EXPANDED TO ITS MAXIMUM LENGTH.
- GAP BETWEEN EAVE FLASHING AND PANEL MUST BE ADJUSTED TO SUIT TEMPERATURE DURING INSTALLATION.



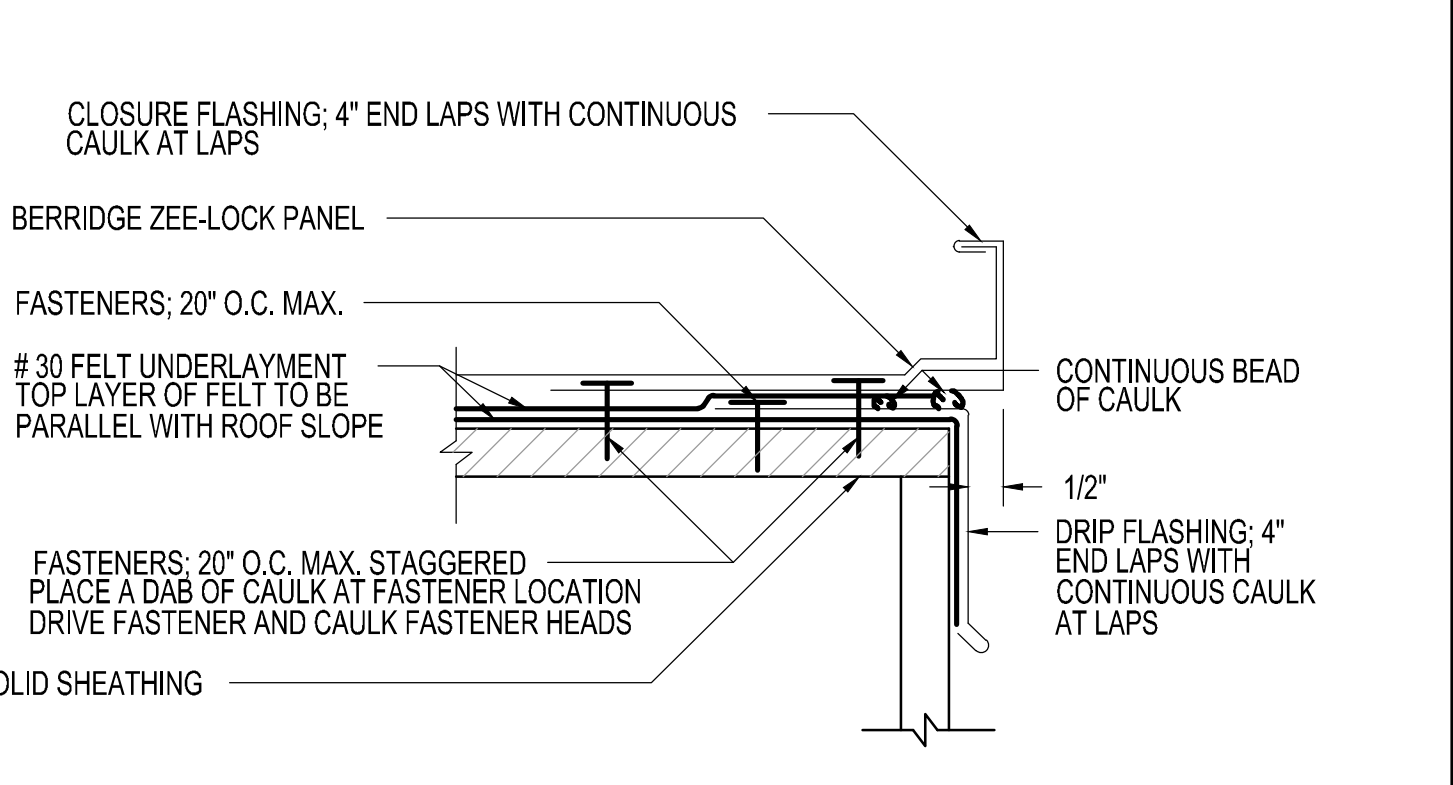
EAVE DETAIL



RIDGE DETAIL



GABLE DETAIL LEFT SIDE; CLOSURE FLASHING;



GABLE DETAIL RIGHT SIDE; CLOSURE FLASHING;

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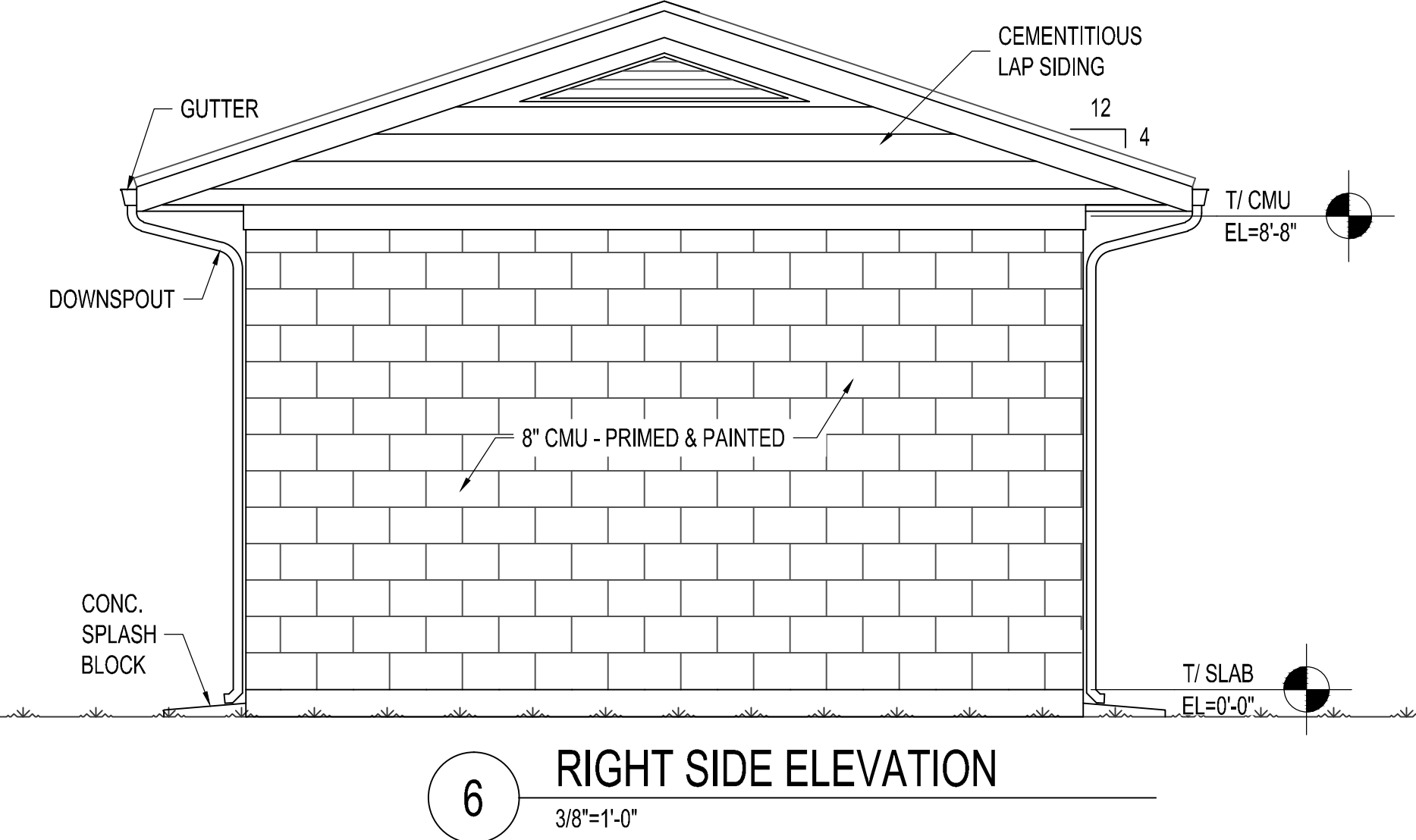
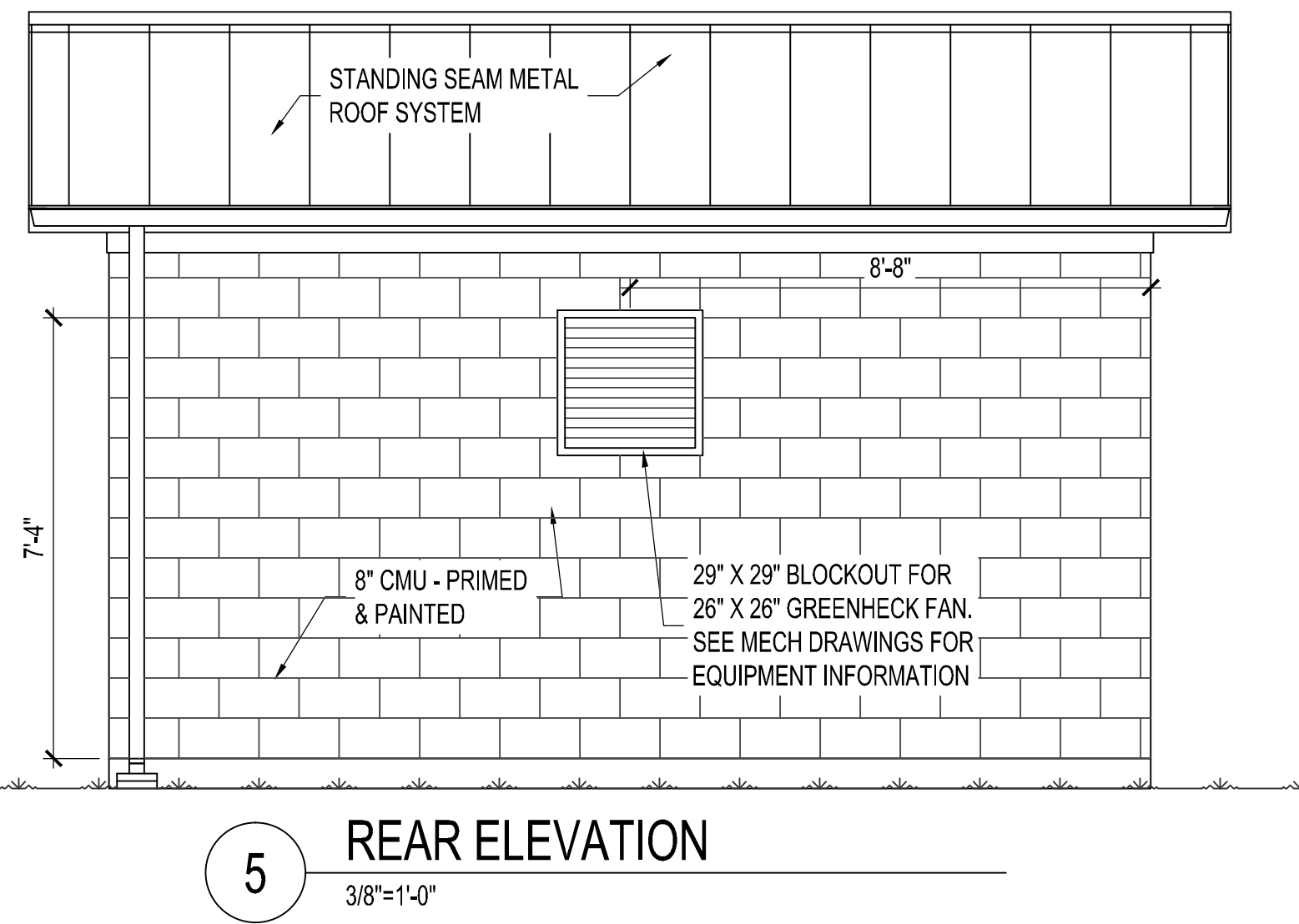
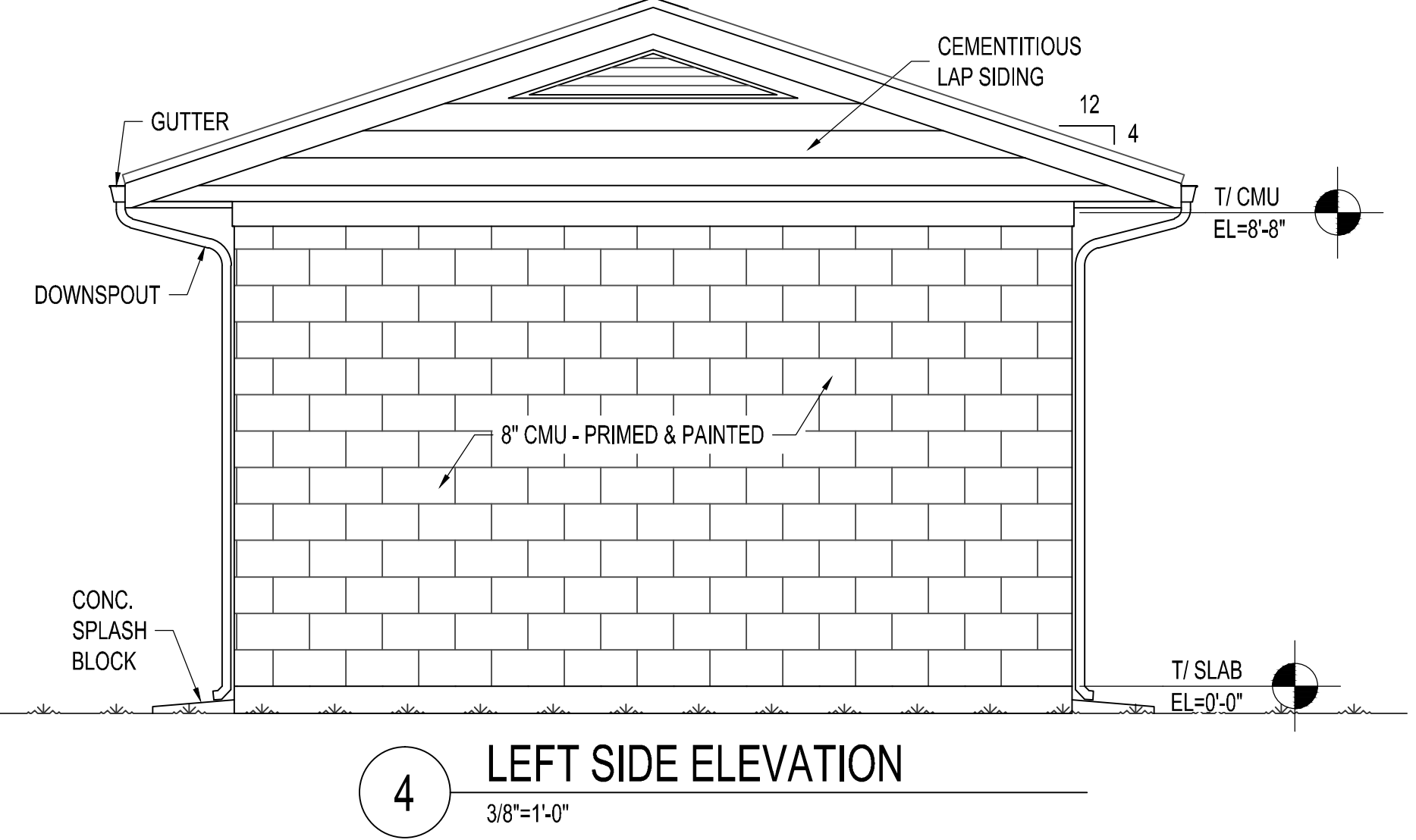
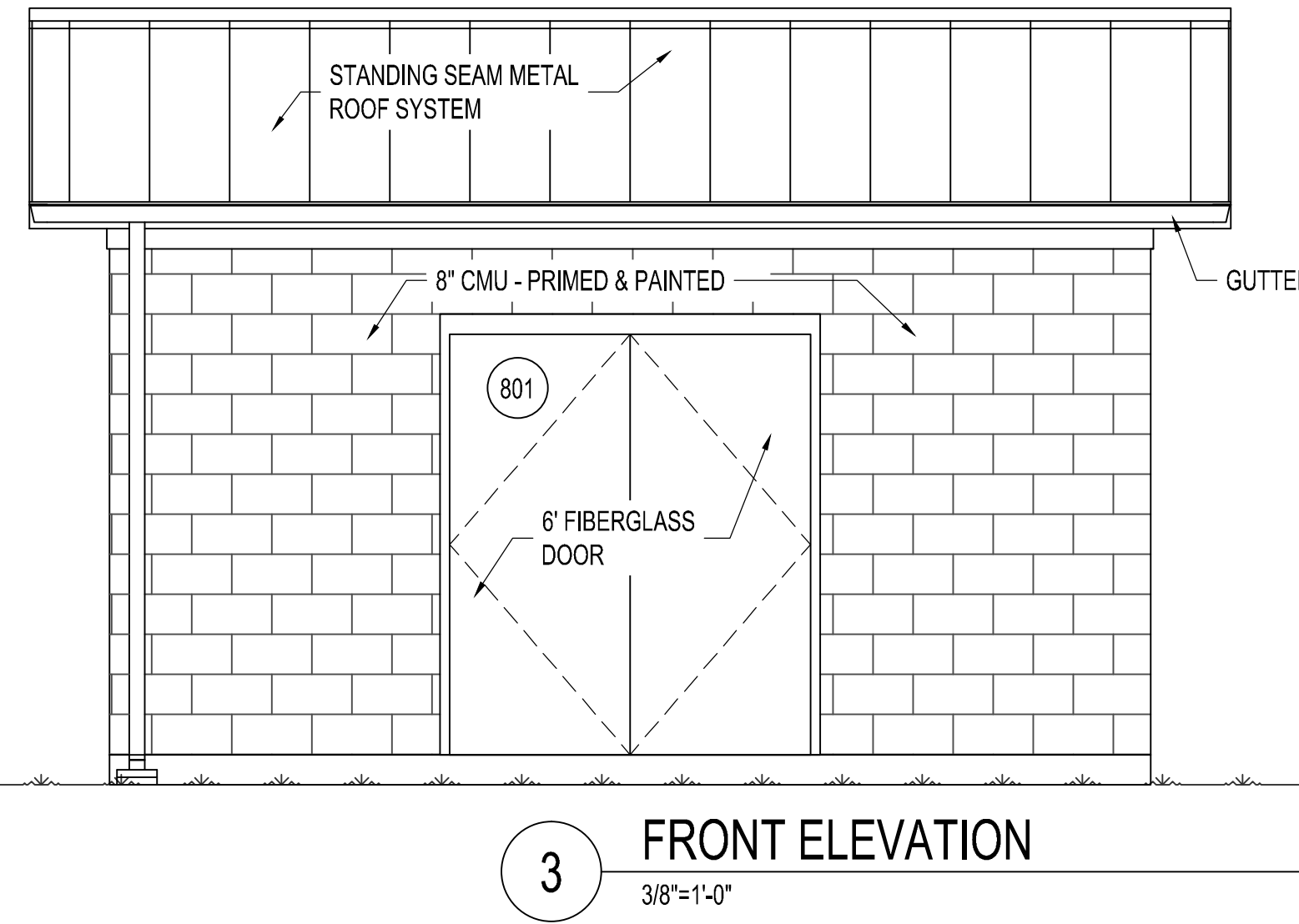
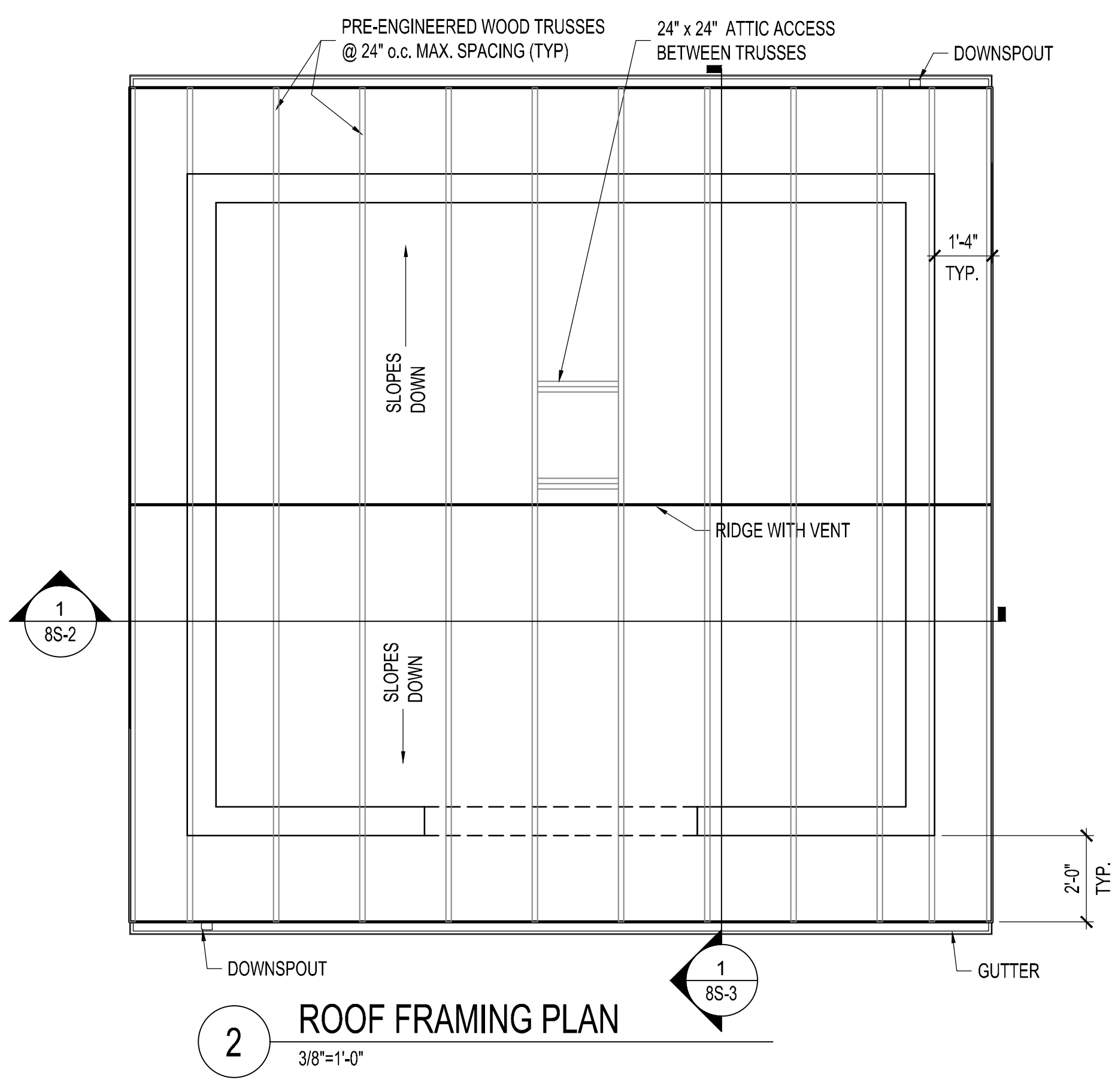
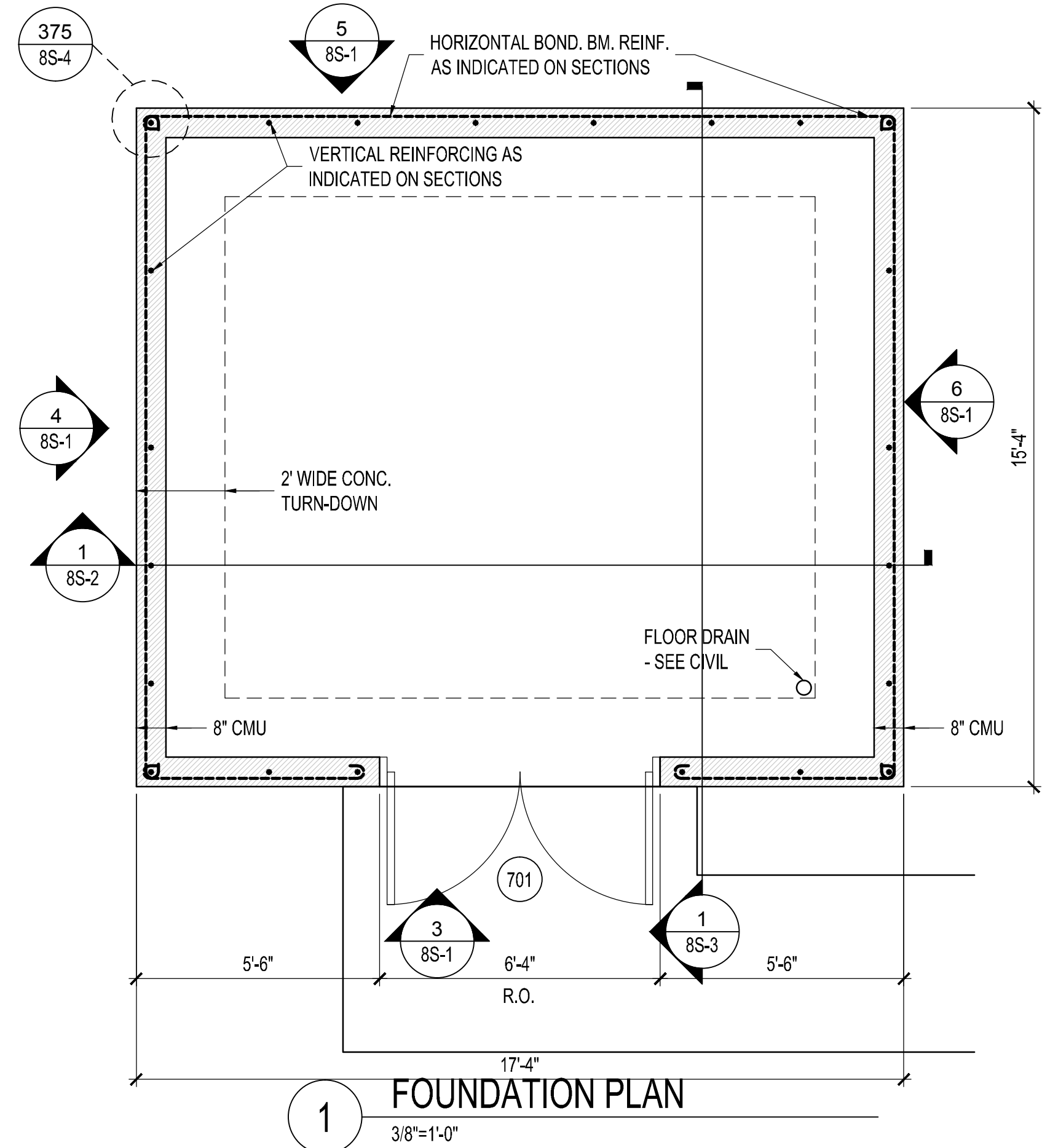
**Professional Engineer**  
 No. 27855  
 P. H. BOSWELL

HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
1	11/29/2012		ISSUED FOR RFD APPROVAL

DESIGNED: CE101020  
 DRAWN: 0E110100-07-75-7  
 ORIGINAL DRAWING SIZE: 36"x24"  
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ELECTRICAL BUILDING  
 UNDERLAYMENT AND ROOF DETAILS



**CMU WALL NOTES**

1. REINF CMU WALLS W/ #4@32"OC UNO.
2. ADDITIONAL #4 VERT REINF AT:
  - 2.1. EACH SIDE OF OPENINGS
  - 2.2. WALL INTERSECTIONS
  - 2.3. ENDS OF WALLS
  - 2.4. AS NOTED & DETAILED ON DRAWINGS
3. PROVIDE BOND BEAMS REINF W/ (2)#4 CONT AT:
  - 3.1. T&B OF OPENINGS
  - 3.2. TRUSS BEARING (CONT)
  - 3.3. TOP COURSE OF MASONRY WALLS
  - 3.4. AS NOTED & DETAILED ON DRAWINGS
4. PROVIDE MATCHING DOWELS FOR VERT REINF INTO FOUNDATION AND BOND BEAM @ TOP.
5. FILL ALL CMU CELLS BELOW FINISHED FLOOR & BELOW GRADE. FILL MATERIAL SHALL BE 3000 PSI GROUT, MIN.

**WOOD FRAMING NOTES**

1. SEE PRE-ENGINEERED METAL TRUSS NOTES FOR ROOF TRUSSES.
2. ROOF SHEATHING SHALL BE 5/8" APA RATED SHEATHING W/ #10 TEKS WOOD TO METAL FASTENERS @6"OC @ PANEL EDGES & @12"OC @ INTERMEDIATE SUPPORTS.

**CONC REINF LAP LENGTH**  
3000 PSI (ACI 318-05)

BAR SIZE	TENSION SPLICE	
	CLASS 'B'	
#3	22"	
#4	29"	
#5	36"	
#6	43"	
#7	63"	
#8	72"	
#9	81"	

**CMU REINF LAP LENGTH**  
Fy=60 KSI, fm=1500 PSI

BAR SIZE	SPLICE LENGTH
#3	19"
#4	25"
#5	31"
#6	57"
#7	70"
#8	98"

**MASONRY LINTEL SCHEDULE**

OPENING WIDTH	8" CMU		16" CMU	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
3'-4"	3'-4"	5'-4"	2 - #4	2 - #4
3'-4"	5'-4"	7'-4"	2 - #5	2 - #5
5'-4"	7'-4"	10'-0"	2 - #6	2 - #6
7'-4"	10'-0"		2 - #6	

1. EXTEND BOND BEAM REINFORCING 24" OR 40 BAR DIAMETERS (WHICHEVER IS GREATER) BEYOND THE EXTENTS OF THE OPENING. VERTICAL REINFORCING AT THE SIDES OF THE OPENING SHALL BE CONTINUOUS THROUGH THE BOND BEAM. PROVIDE KNOCK OUTS IN THE BOTTOM OF THE BOND BEAM BLOCK AS REQUIRED TO ALLOW REINFORCING TO PASS THROUGH.
2. SEE DETAILS 373 & 374 FOR ADDITIONAL REINFORCING AT OPENINGS.

**STRUCTURE NOTES**

1. DESIGN SOIL BEARING PRESSURE = 2000 PSF. SOIL BRNG PRESSURE SHALL BE VERIFIED AT TIME OF EXCAVATION AND ENGINEER SHALL BE NOTIFIED IF ACTUAL SOIL BEARING PRESSURE IS LOWER THAN DESIGN VALUE. FOUNDATION DESIGN & SUBSURFACE INFORMATION IS BASED ON A SOILS REPORT PREPARED BY WHITTAKER LABORATORY, INC. (REPORT # 3-31-11).
2. FLOOR LIVE LOAD = 100 PSF
3. PRE-ENGINEERED TRUSS DESIGN LOADS:
 

TOP CHORD:  
DEAD LOAD = 10 PSF + TRUSS WEIGHT  
LIVE LOAD = 20 PSF

BOT CHORD:  
DEAD LOAD = 5 PSF + TRUSS WEIGHT  
LIVE LOAD = 10 PSF (60 PSF @ ACCESS LOCATIONS)

MECH LOAD = 200# CONCENTRATED LOAD @ ANY LOCATION ALONG BOT CHORD
4. WIND LOADS:
 

BASIC WIND SPEED (V, 3 SEC GUST) = 110 MPH  
OCCUPANCY CATEGORY = IV  
WIND IMPORTANCE FACTOR (I<sub>w</sub>) = 1.15  
UPWIND EXPOSURE CATEGORY = B  
INTERNAL PRESSURE COEFF. (GC<sub>pi</sub>) = ±0.18  
COMPONENTS & CLADDING NET DESIGN PRESSURES (P<sub>NET</sub>) PER ASCE 7-05, METHOD 1)  
ROOF COMPONENTS & CLADDING DESIGN PRESSURES:  
MAIN ROOF = -55.1 PSF, +13.1 PSF (BASED ON 20 SF AREA)  
OVERHANG = -70.8 PSF  
WALL COMPONENTS & CLADDING DESIGN PRESSURES = -33.5 PSF, +25.0 PSF (BASED ON 10 SF AREA)
5. SEISMIC DESIGN CRITERIA:
 

OCCUPANCY CATEGORY = IV  
SEISMIC IMPORTANCE FACTOR (I<sub>e</sub>) = 1.50  
S<sub>s</sub> = 0.300 S<sub>1</sub> = 0.101  
SITE CLASS = E  
S<sub>DS</sub> = 0.463 S<sub>D1</sub> = 0.233  
BASIC SEISMIC-FORCE-RESISTING SYSTEM (PER ASCE 7-05 TABLE 12.2-1 OR 12.14-1):  
BEARING WALL SYSTEM - SPECIAL REINFORCED MASONRY SHEAR WALLS  
RESPONSE MODIFICATION FACTOR (R) = 5.0  
SEISMIC RESPONSE COEFF. (C<sub>s</sub>) = 0.1405  
SEISMIC DESIGN CATEGORY = D  
DESIGN BASE SHEAR = 3.4 K  
ANALYSIS PROCEDURE USED = EQUIVALENT LATERAL FORCE

**FOUNDATION NOTES**

1. STEP FOOTINGS DOWN BELOW MECHANICAL, ELECTRICAL, OR PLUMBING LINES AS REQUIRED TO AVOID INTERFERENCE. SEE TYP FOOTING STEP DETAIL. COORDINATE W/ OTHER TRADES. PROVIDE PIPE SLEEVE TWO PIPE SIZES GREATER THAN THE PIPE PASSING THROUGH THE WALL.
2. WHERE UTILITY LINES PASS UNDER A FOOTING, PROVIDE RELIEVING ARCH FOR PROTECTION.

**CONC SLAB NOTES**

1. SIDEWALK SLABS SHALL BE 3000 PSI, 4" THICK CONC REINF W/ 6x6-W1.4xW1.4 WWF @ CENTER OF SLAB. FLOOR SLAB SHALL BE 3000 PSI, 6" THICK CONC REINFORCED W/ #4'S @ 18" o.c. EA WAY CTR. OF SLAB. SEE PLAN FOR FINISHED FLOOR ELEVATIONS. (REFER TO CIVIL DRAWINGS FOR SIDEWALK, PLANTER, & PAVEMENT LOCATIONS & DETAILS.
2. PROVIDE 4" THICK NO. 57 STONE GRANULAR BASE & VAPOR BARRIER UNDER INTERIOR FLOOR SLAB.
3. CONDUITS & PIPES EMBEDDED IN SLABS:
  - 3.1. SHALL NOT BE LARGER IN OUTSIDE DIM THAN 1/2 THE OVERALL THICKNESS OF SLAB.
  - 3.2. SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS OR WIDTHS ON CENTER.
  - 3.3. MIN SLAB THICKNESS OF 2 1/2" MUST BE MAINTAINED OVER THE EMBEDDED ITEMS.

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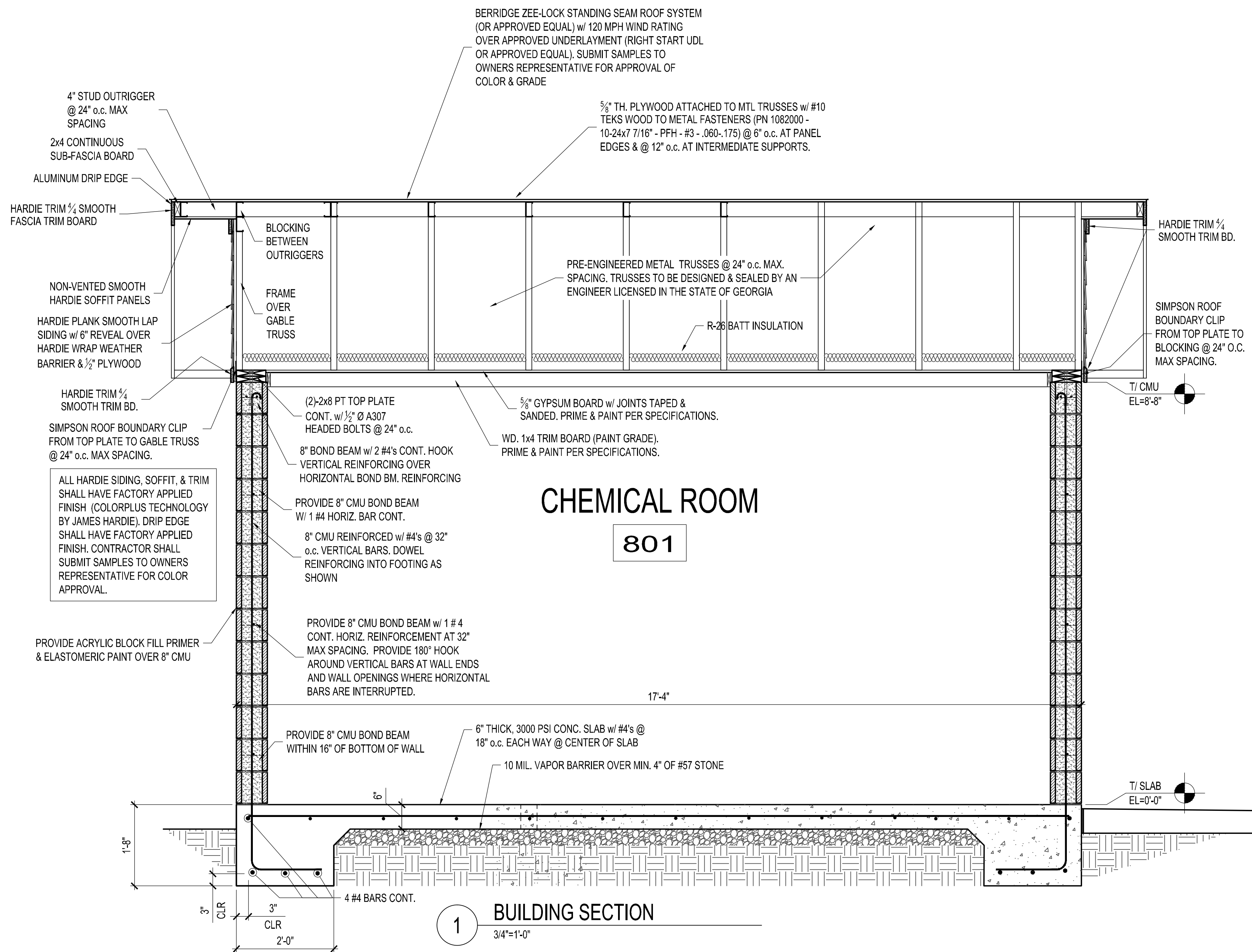
HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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			ISSUED FOR ERO APPROVAL

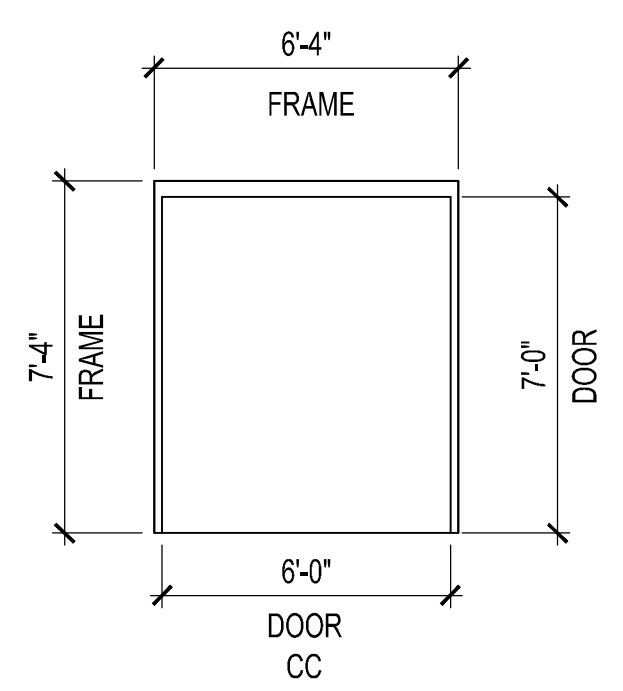
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CHEMICAL METERING  
PUMP BUILDING  
NOTES,  
PLANS, & ELEVATIONS

NOTES:  
 1. ALL DIMENSIONS UNLESS OTHERWISE NOTED.  
 2. ALL MATERIALS SHALL BE AS NOTED OR AS SHOWN ON DRAWINGS.  
 3. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF ALL APPLICABLE CODES AND SPECIFICATIONS.  
 4. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
 5. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
 6. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
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 17. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
 18. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
 19. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.  
 20. ALL WORK SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE LOCAL AUTHORITY.



**1 BUILDING SECTION**  
3/4"=1'-0"



**3 DOOR & FRAME ELEVATION**  
N.T.S.

FINISH SCHEDULE				
ROOM NUMBER	FLOORS	WALLS	CEILING	REMARKS
801	SEALED CONCRETE	PAINTED CMU	PAINTED GYP. BOARD	

DOOR SCHEDULE								
DR. #	WIDTH	HEIGHT	THK.	TYPE	MATERIAL	FIRE LABEL	FRAME MTL.	REMARKS
701	3-0	7-0	1 3/4"	CC	FRP		FRP	SEE NOTE FOR MFR.

NOTE: DOOR #801 BY CHEM-PRUF DOOR CO. OR APPROVED EQUAL.

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**REGISTERED PROFESSIONAL ENGINEER**  
No. 27855  
PHILLIP H. BOSWELL

HINESVILLE / FORT STEWART  
WWTP UPGRADE  
FOR:  
THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
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	11/28/2012		ISSUED FOR EPO APPROVAL

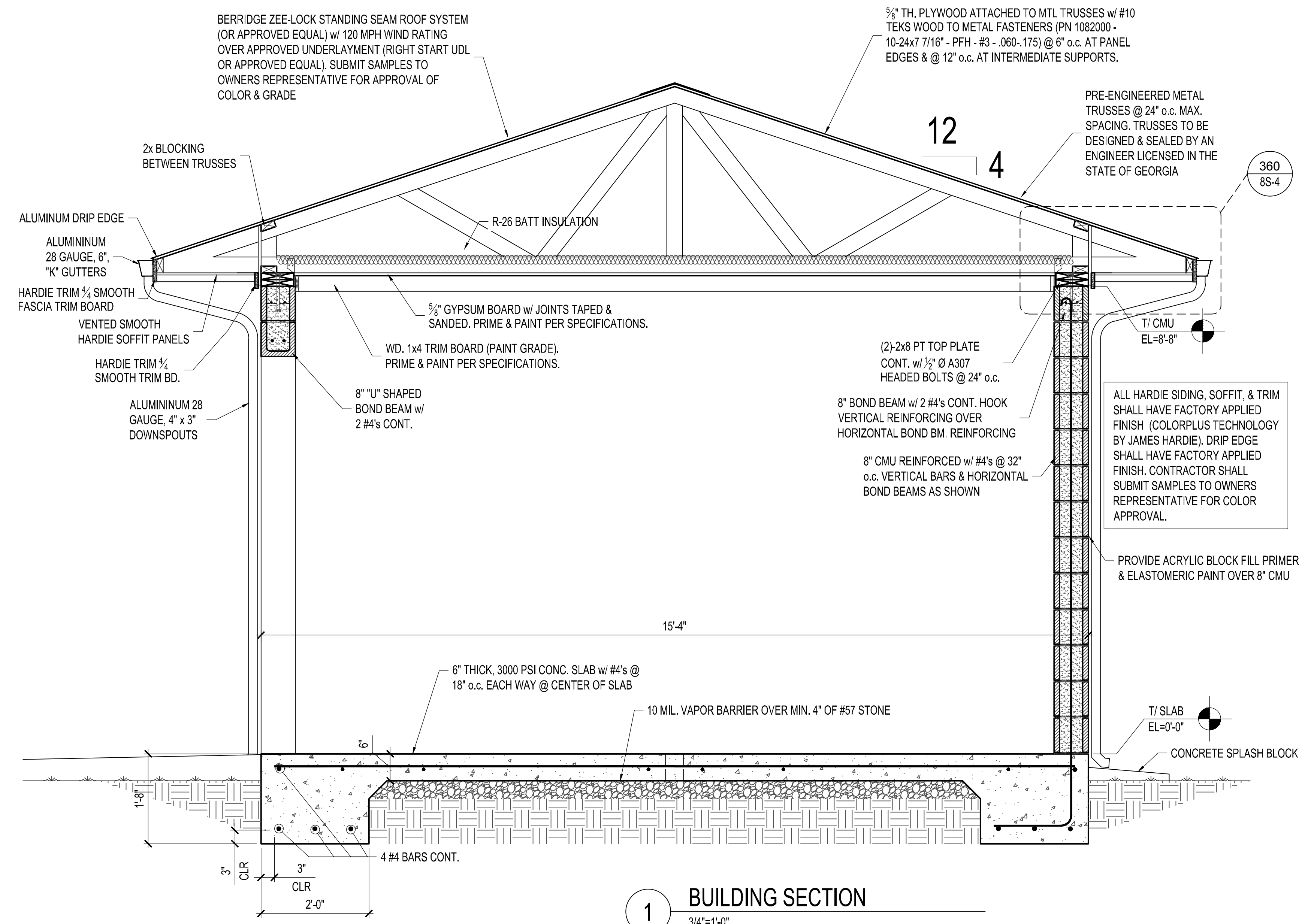
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CHEMICAL METERING PUMP BUILDING

SECTIONS & SCHEDULES

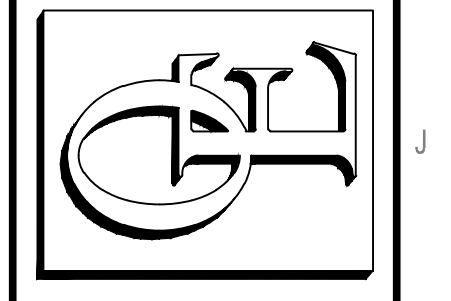
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**1 BUILDING SECTION**  
3/4"=1'-0"

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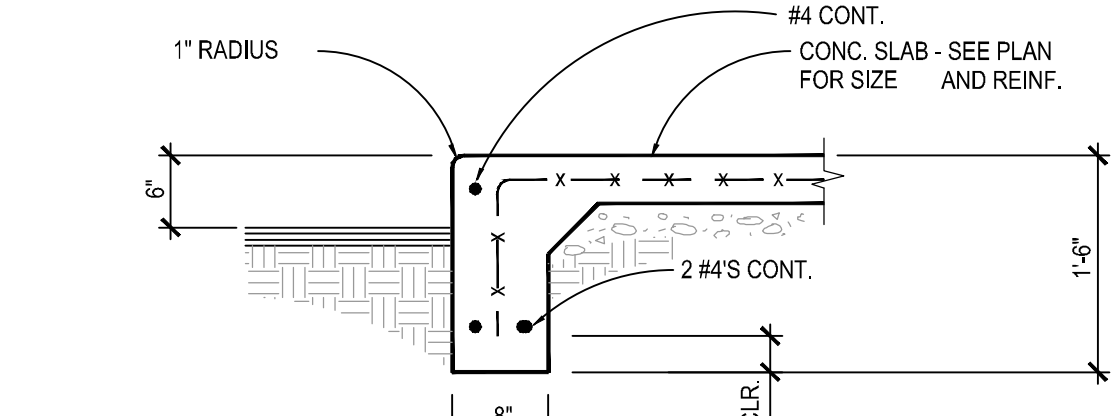
**FOR:**  
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 WWTP UPGRADE  
 THE CITY OF HINESVILLE  
 FORT STEWART  
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10-10-2014			ISSUED FOR BID

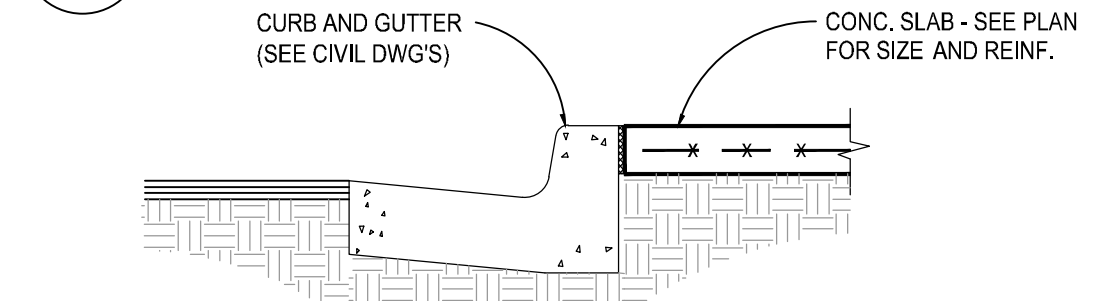
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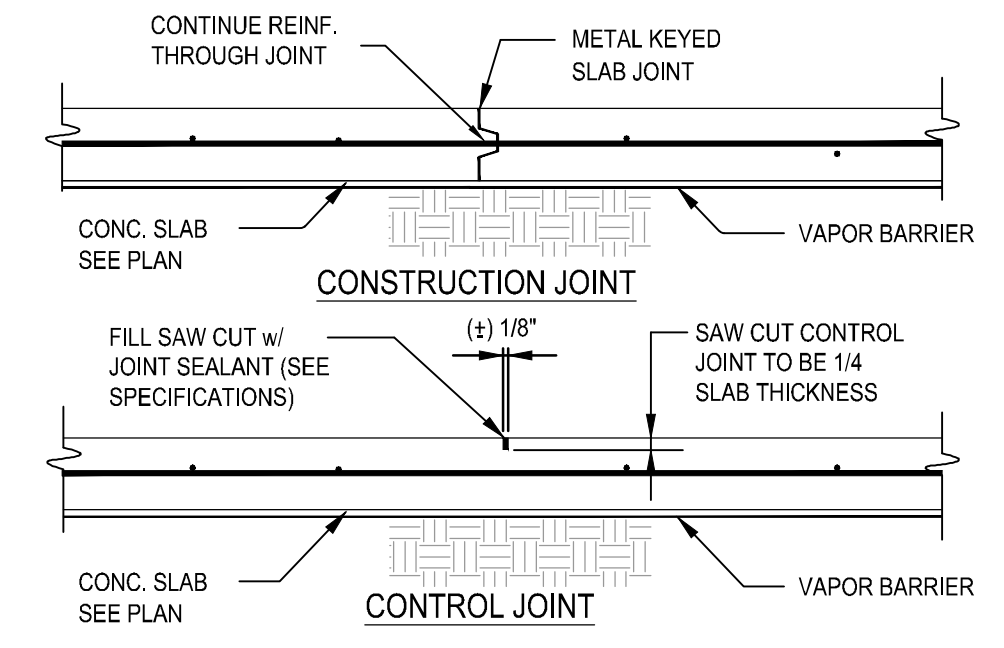
CHEMICAL METERING PUMP BUILDING  
 SECTIONS & SCHEDULES  
**8S-3**  
 SHEET 3 OF 06



341 TURN-DOWN AT SIDEWALK  
N.T.S.

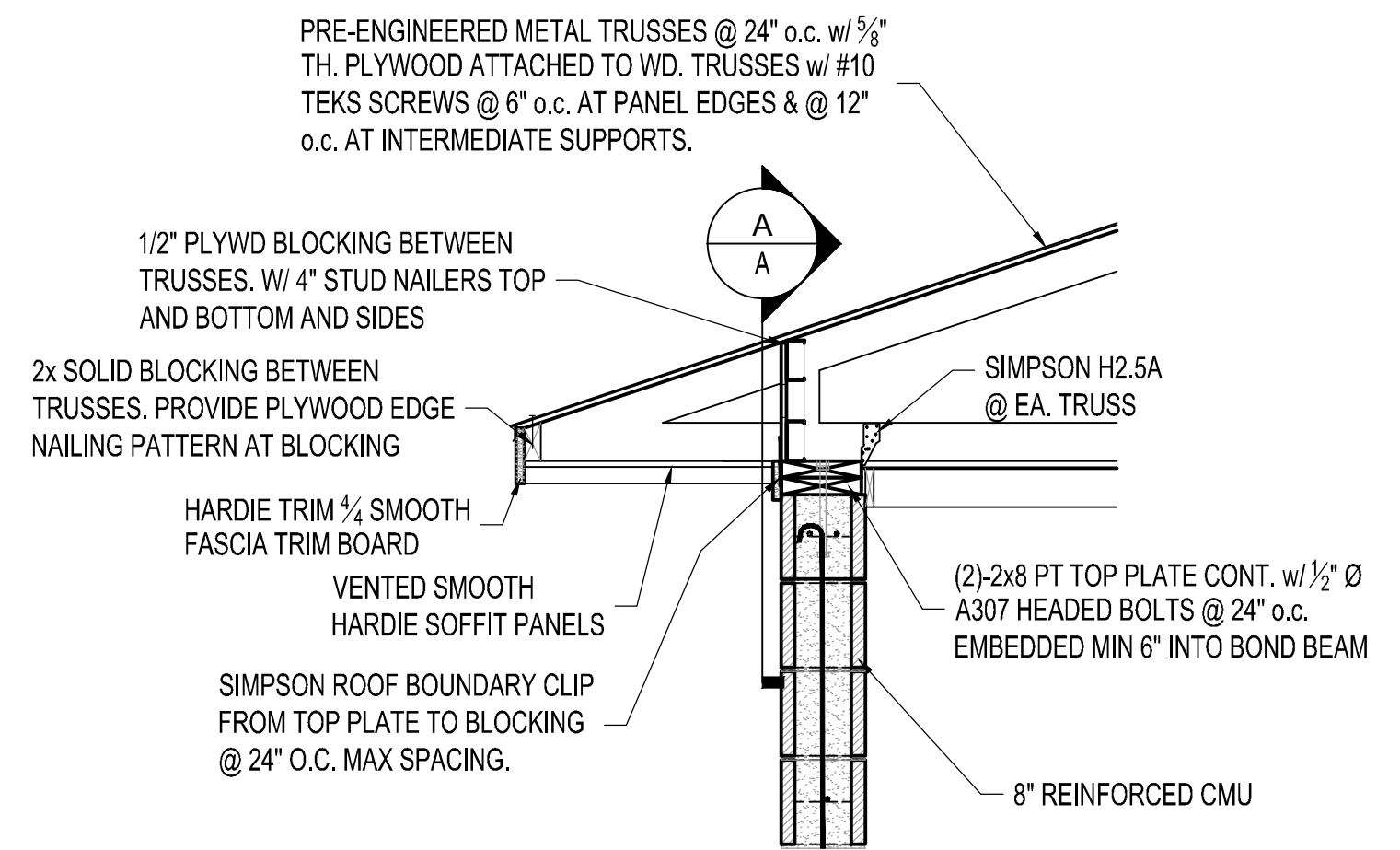


342 CURB AND GUTTER  
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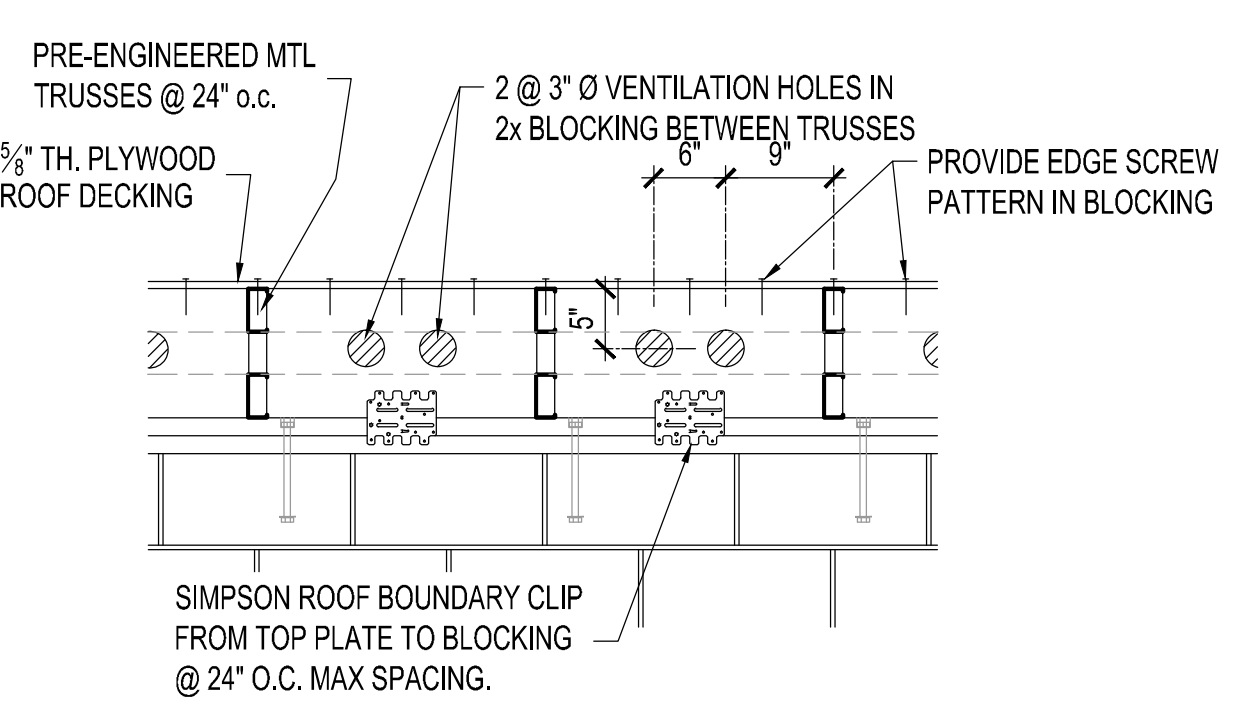


NOTES:  
SAW CUT AS SOON AS SLAB CAN SUPPORT WEIGHT.  
CONTROL JOINTS MAY BE REPLACED WITH CONSTRUCTION JOINTS.  
CONTROL JOINTS SHALL BE SPACED AT NO MORE THAN 18'-0" O.C.  
SLAB AREAS BOUNDED BY THESE JOINTS, SHALL HAVE THE LENGTH NO MORE THAN 2x THE WIDTH.

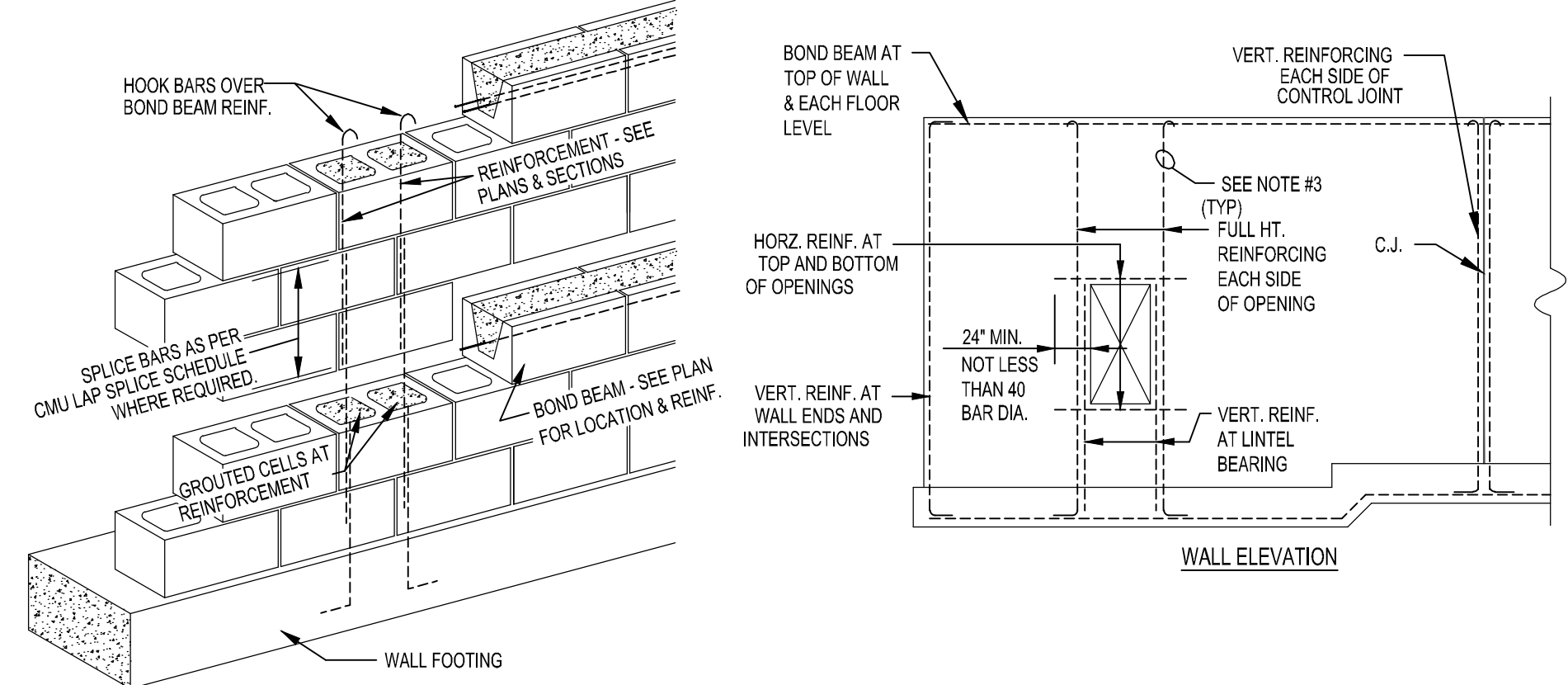
344 6" SLAB JOINT DETAILS  
N.T.S.



360 TRUSS TO WALL CONNECTION DETAIL  
N.T.S.



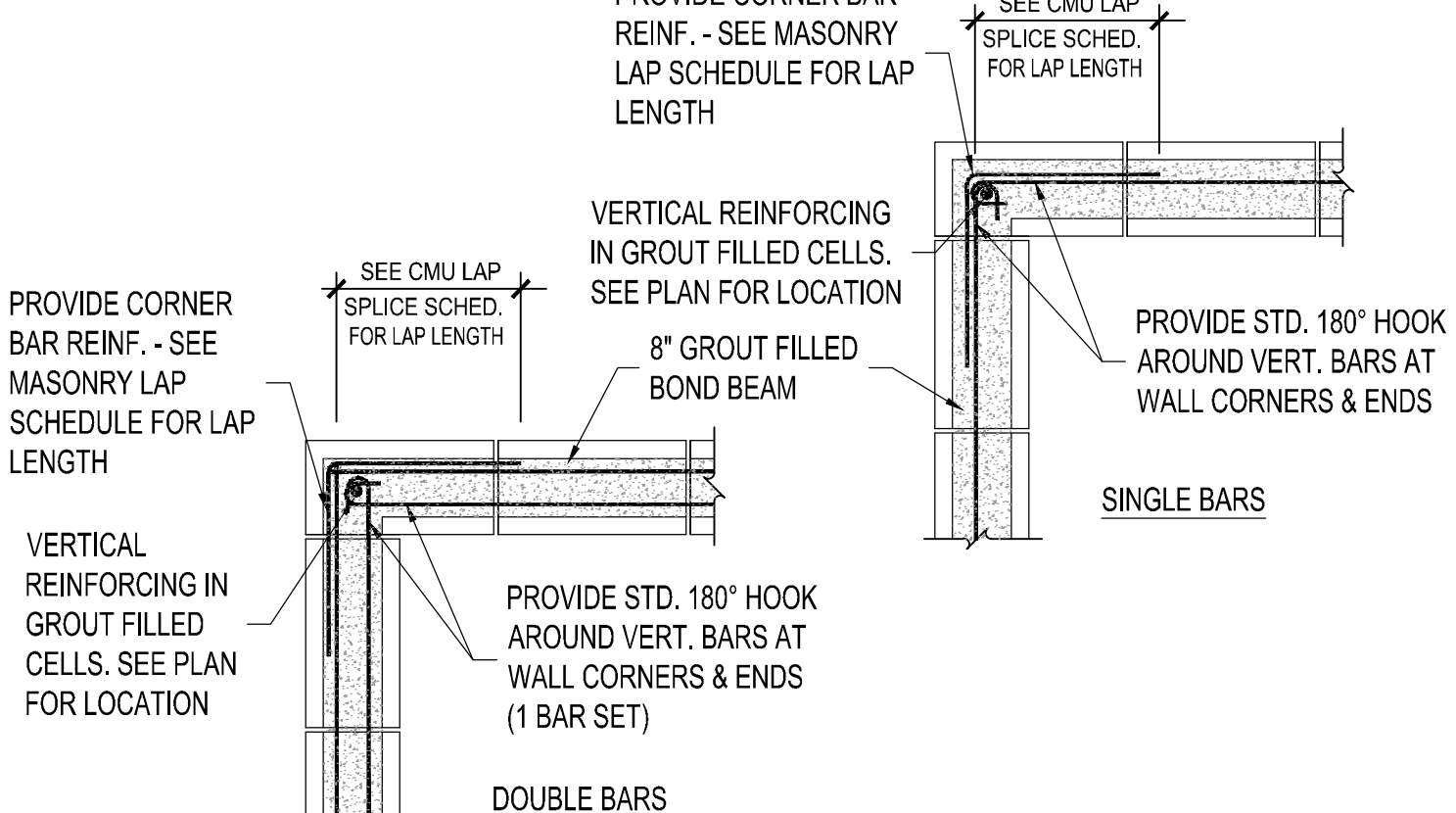
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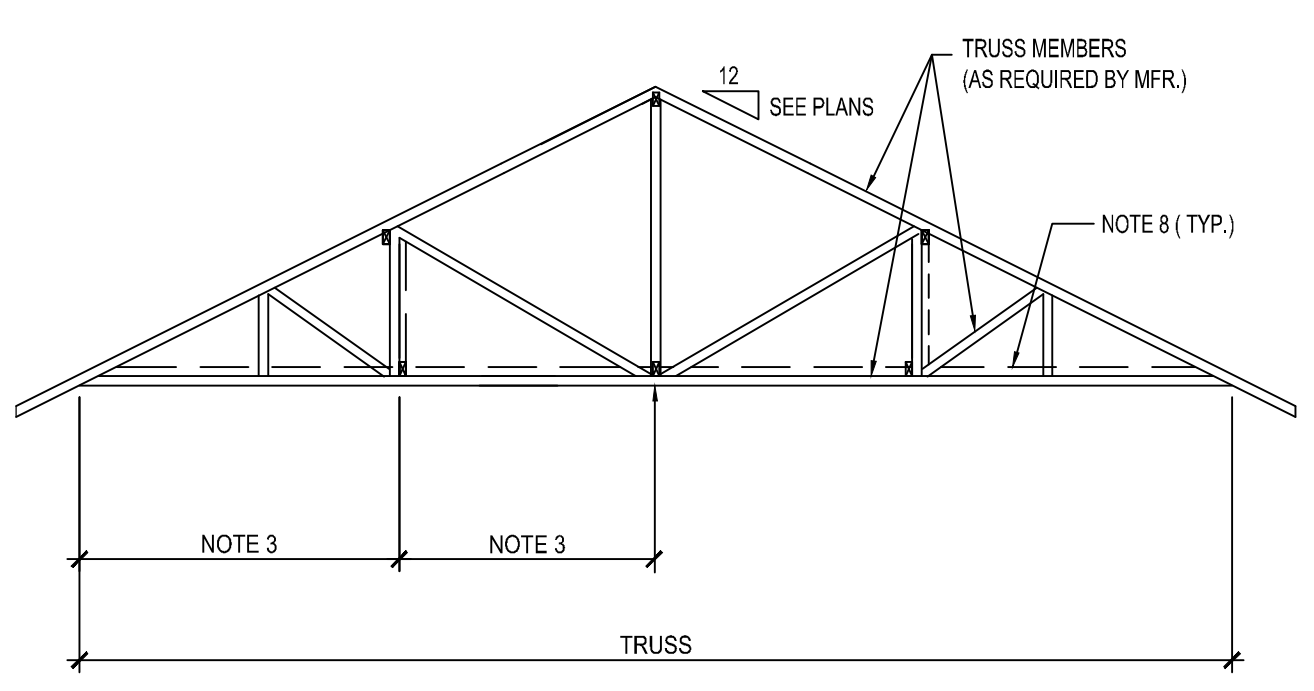
LOW LIFT GROUTING PROCEDURE:  
1. CONSTRUCT WALL TO HEIGHT OF 4'-0". ALLOW MORTAR TO SET SUFFICIENTLY TO WITHSTAND GROUT PRESSURE.  
2. INSPECT UNITS FOR ALIGNMENT. CLEAN OUT CELLS TO BE FILLED.  
3. LIGHTLY WET THE UNITS AND FILL CELLS TO 1 1/2" BELOW TOP COURSE.  
4. DELAY 3 TO 5 MINUTES PRIOR TO CONSOLIDATING TO ALLOW WATER TO BE ABSORBED BY MASONRY.

ELEVATION NOTES:  
1. REINFORCING SHOWN SHALL BE MINIMUM #4 RE-BAR UNLESS SHOWN OTHERWISE ON PLANS AND DETAILS.  
2. BOND BEAM REINFORCING SHOWN SHALL BE DISCONTINUED AT CONTROL JOINTS.  
3. PROVIDE 4" x 4" OPENING IN BOTTOM OF BOND BEAM FOR PASSAGE OF VERTICAL REINFORCING IN CMU BOND BEAM. PROVIDE 1" HOLE IN BOTTOM OF PRECAST LINTEL FOR PASSAGE OF VERT REINF.

370 REINFORCED MASONRY CONSTRUCTION & REINFORCING  
N.T.S.

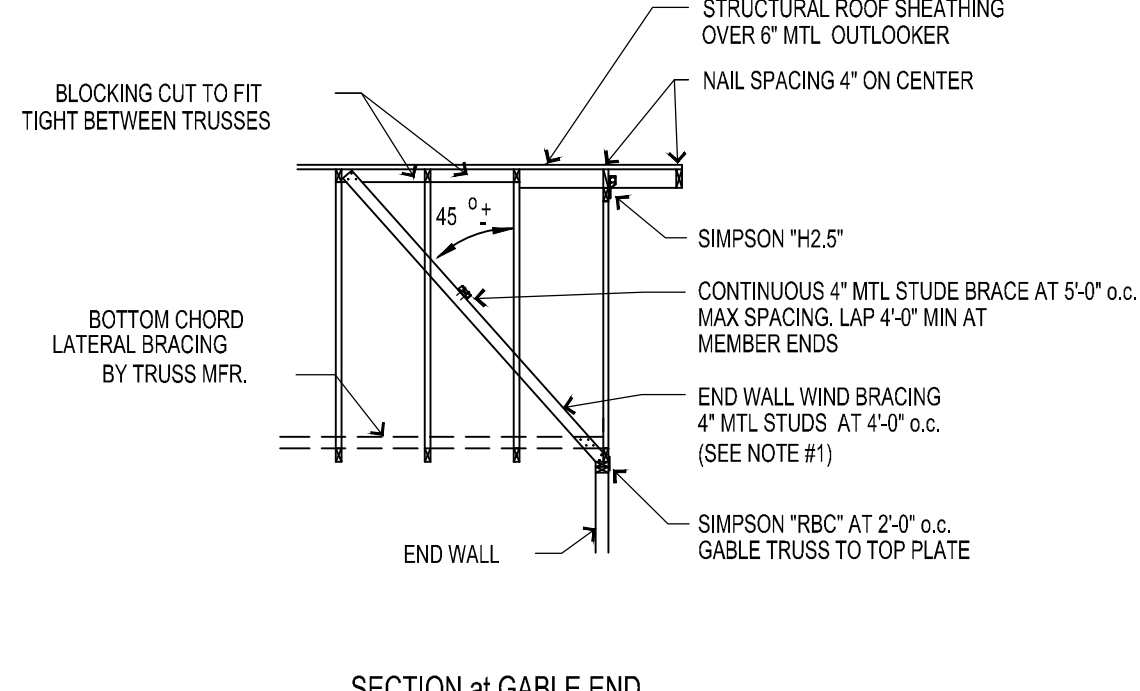


375 CMU CORNER WALL DETAIL  
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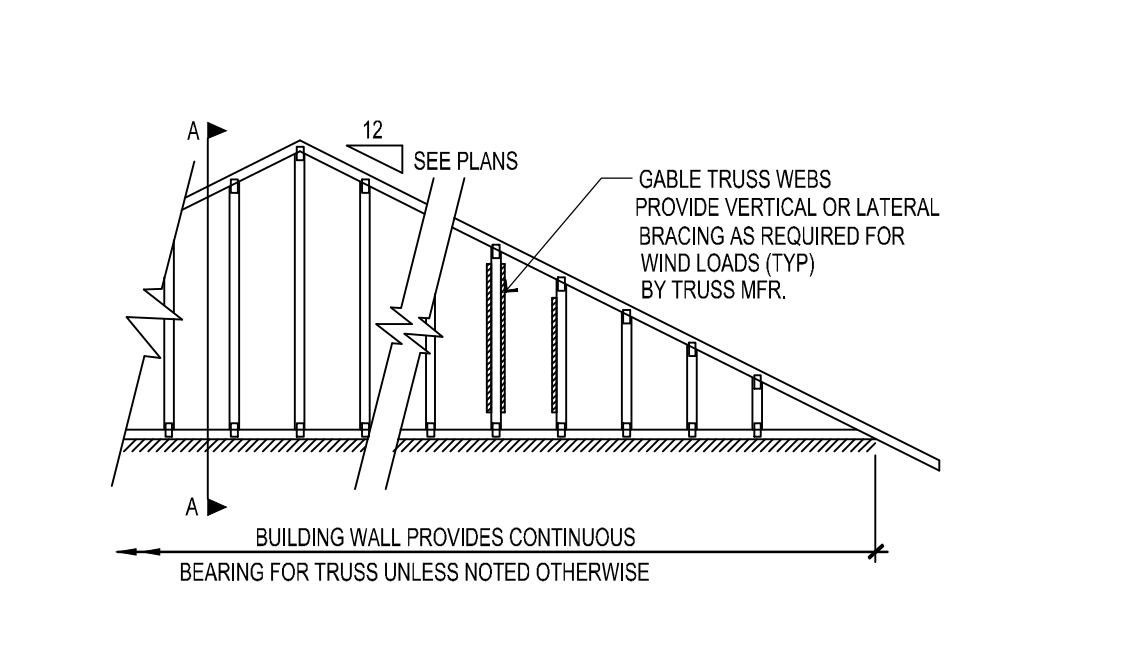


1. TRUSS AS SHOWN DOES NOT REPRESENT ACTUAL TRUSS DESIGN OR LAYOUT. SECTION SHOWN IS INTENDED FOR PERMANENT BRACING REFERENCE ONLY. SEE ARCHITECTURAL DRAWINGS FOR TRUSS CONFIGURATION.  
2. TEMPORARY BRACING FOR ERECTION PURPOSES IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR.  
3. MAXIMUM HORIZONTAL DISTANCE BETWEEN VERTICAL DIAGONAL BRACING SHALL BE 8'-0". BRACING MEMBERS BRACING SHALL BE 2x4 MIN.  
4. 3 ROWS OF BRACING AS SHOWN IS MINIMUM BRACING REQUIRED.  
5. LAP LATERAL BRACING OVER AT LEAST TWO TRUSSES.  
6. USE 16d NAILS TO ATTACH LATERAL BRACING AT EACH TRUSS.  
7. PROVIDE VERTICAL X-BRACING AT EACH END FOR NOT LESS THAN 3 TRUSSES AT FIRST PANEL POINT FROM EACH END AND 5 TRUSSES AT INTERIOR PANEL POINTS.  
8. PROVIDE BOTTOM CHORD HORIZONTAL V-BRACING AT EACH END ENGAGING NOT LESS THAN 5 TRUSSES. PROVIDE ADDITIONAL DIAGONAL BRACING AT INTERVALS NOT TO EXCEED 20 FEET.  
9. FOR PURPOSES OF BRACING, DOUBLE TRUSSES SHOULD BE TREATED AS A SINGLE TRUSS.

380 PERMANENT TRUSS BRACING DETAIL  
N.T.S.



1. END WALL WIND BRACING MAY BE OMITTED IF GYPSUM BOARD DIAPHRAGM IS NAILED TO TRUSS BOTTOM CHORD.



SECTION at GABLE END

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**PHILIP H. BOSWELL**  
REGISTERED PROFESSIONAL ENGINEER  
No. 27855

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THE CITY OF HINESVILLE  
FORT STEWART  
LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
10/10/2014			ISSUED FOR RFD
11/20/2012			ISSUED FOR EFD APPROVAL

DESIGNED: CE1020  
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CHEMICAL METERING PUMP BUILDING

STRUCTURAL DETAILS

8S-4  
SHEET 4 OF 06

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# DOOR SCHEDULE

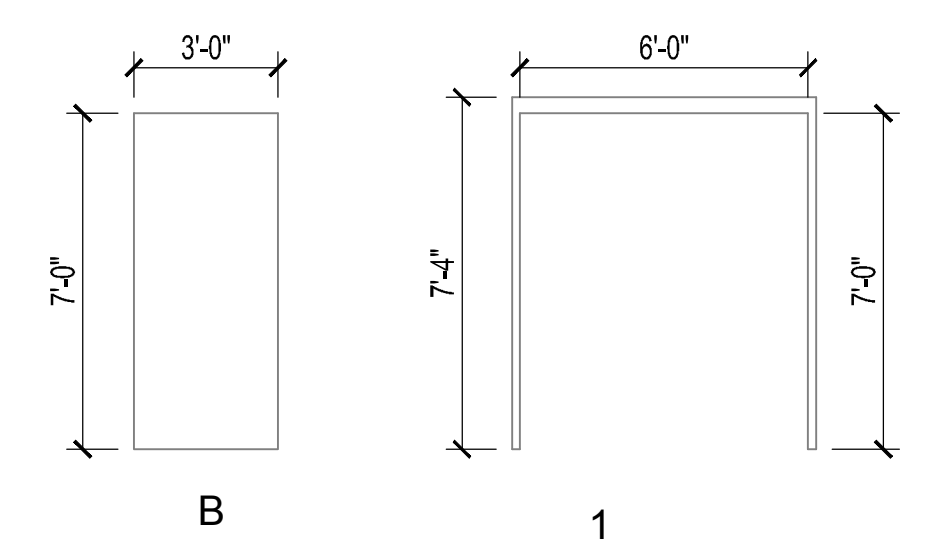
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		TYPE	WIDTH	SIZE HEIGHT	THICK	MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB				
801	CHEMICAL METER'G	B	PR3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	1/A-5	2/A-5		4		601 602 603

NOTES: 1. ALL DOOR HARDWARE SHALL BE OPERABLE LEVER TYPE WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST TO OPERATE.

# ROOM FINISH SCHEDULE

KEY	FLOOR	BASE	WALLS	CEILING	NOTES
⊗					
	SEALED CONCRETE	NONE	PAINTED CMU - P1	PAINTED GYPSUM BD	HEIGHT
NO.	NAME				
	BLOWER ROOM				
	⊗	⊗	⊗	⊗	8'-8"

# DOOR AND FRAME TYPES



# ROOM FINISH NOTES

# LIST OF FINISHES

INTERIOR PAINT					
ITEM	MANUFACTURER	SPECIFICATION	COLOR NUMBER	COLOR	REMARKS
P-1	SHERWIN WILLIAMS	FLAT	-	BY OWNER	WALL
P-2	SHERWIN WILLIAMS	FLAT	-	BY OWNER	CEILING

# DOOR AND LOUVER DETAILS

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HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

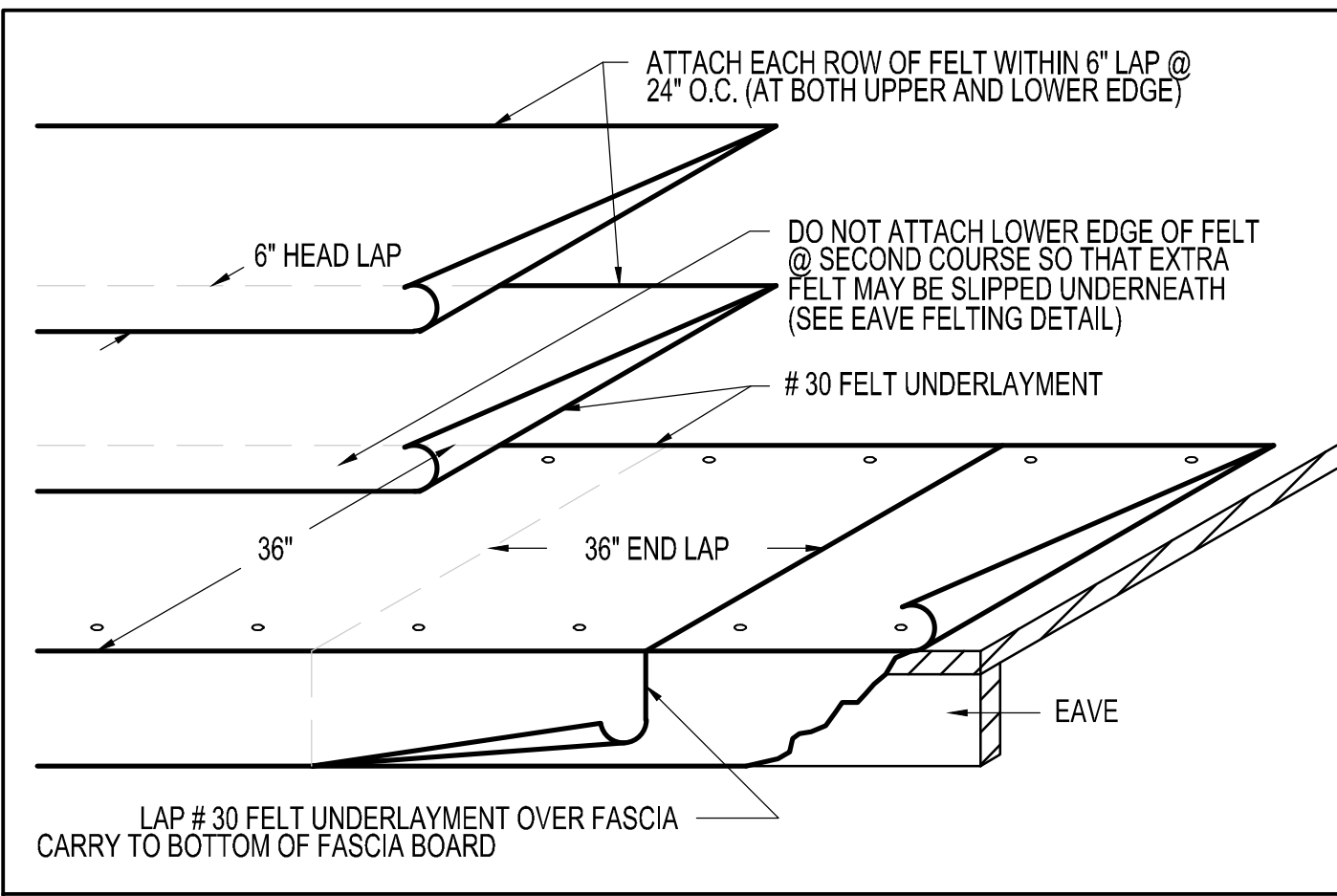
MARK	DATE	BY	DESCRIPTION
	11/28/2012		ISSUED FOR BID
	11/28/2012		ISSUED FOR EPO APPROVAL

DESIGNED: [ ]  
 DRAWN: [ ]  
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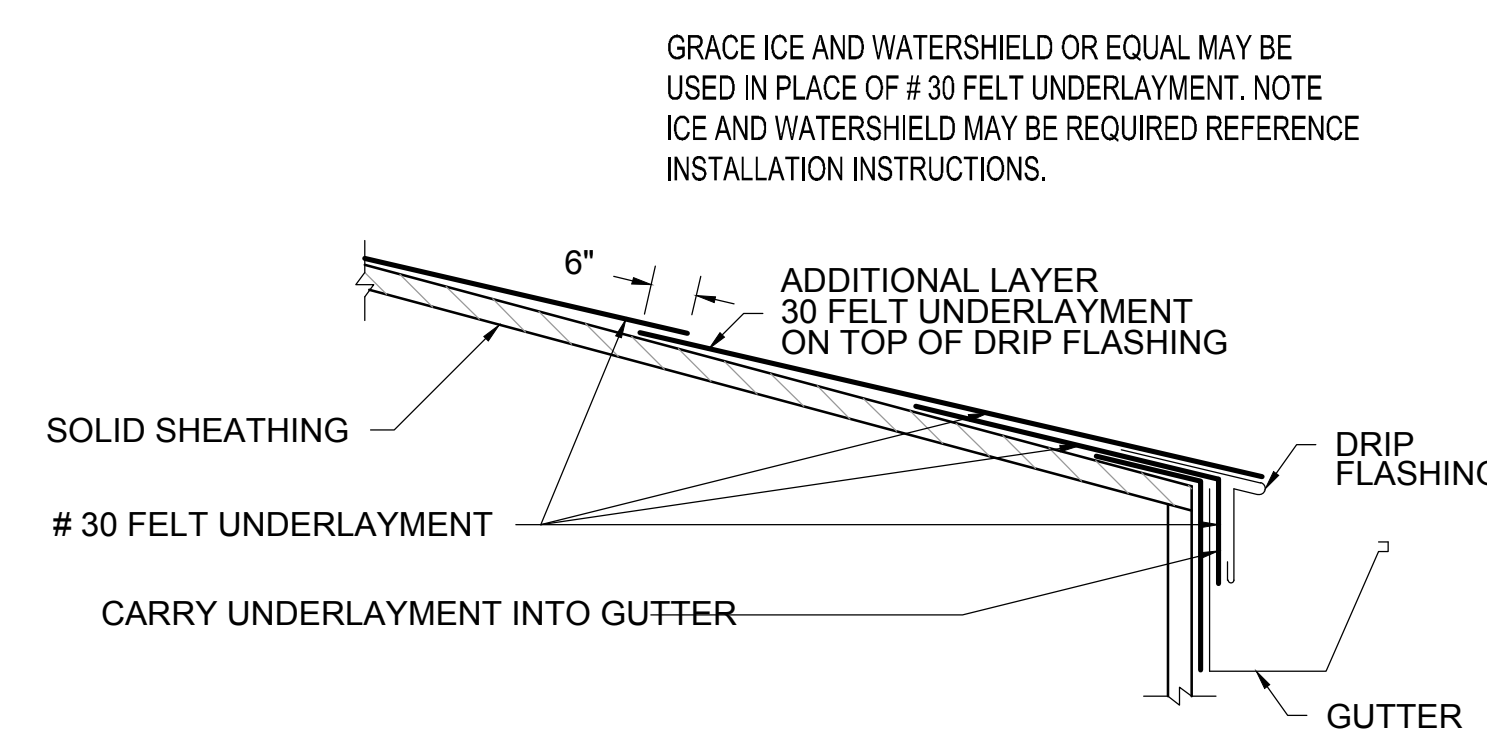
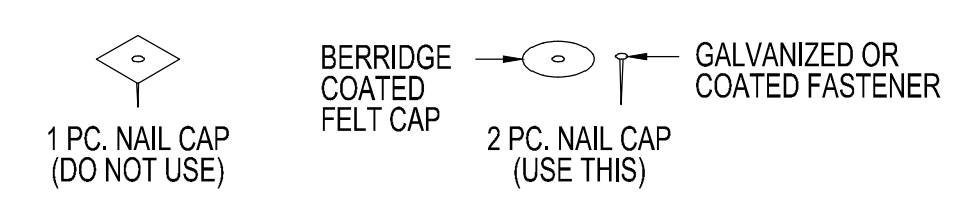
CHEMICAL METERING  
 PUMP BUILDING  
 SCHEDULES

PLOTTED BY: RAU-PJL DATE: THURSDAY, 11/29/2012 10:58 AM [P:\MORPHEUS\CAD\WORKSPACE\111027202011\027202011.Dwg] USER: MORPHEUS\morpheus DATE: 11/29/2012 10:58 AM

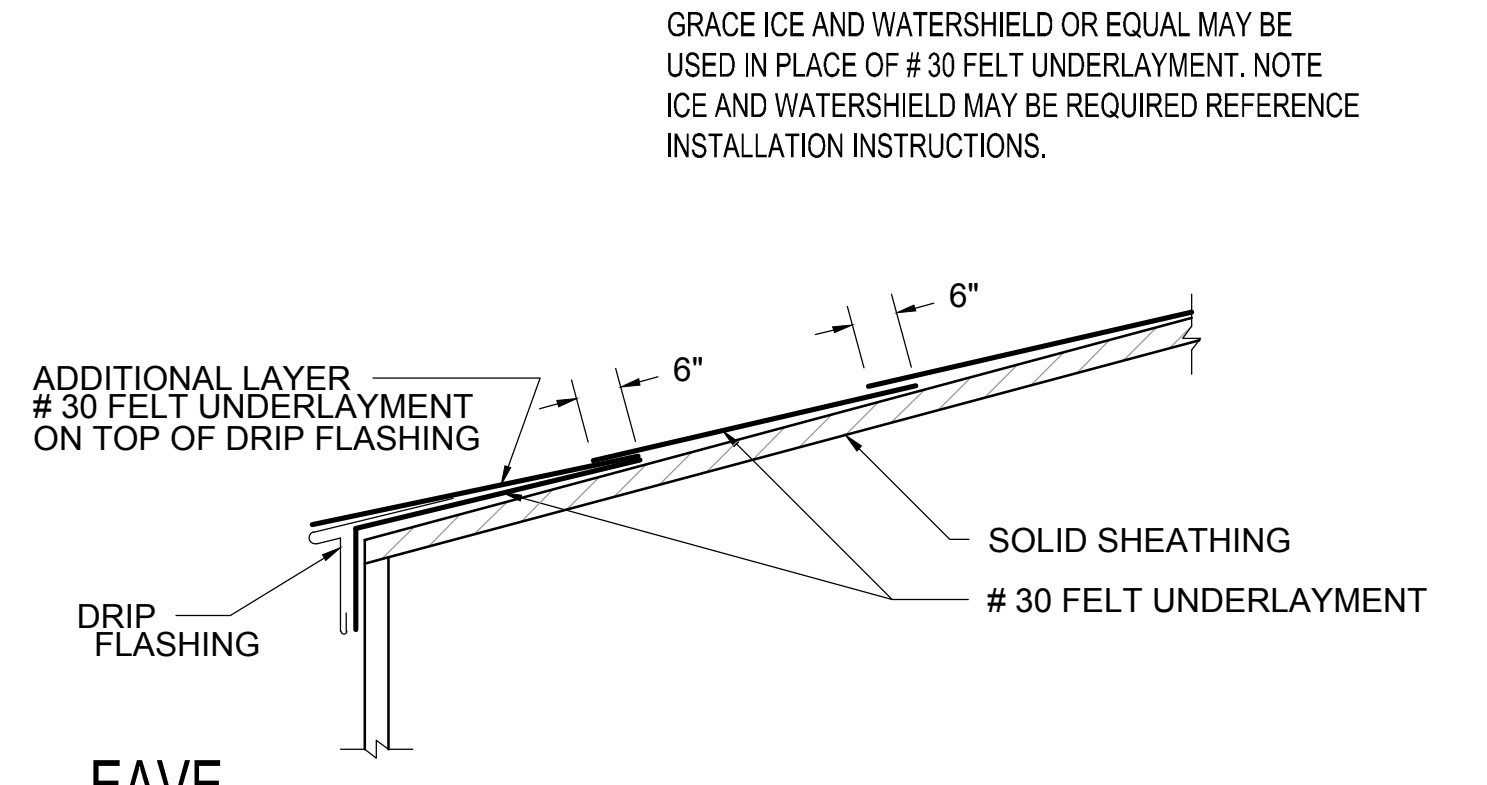




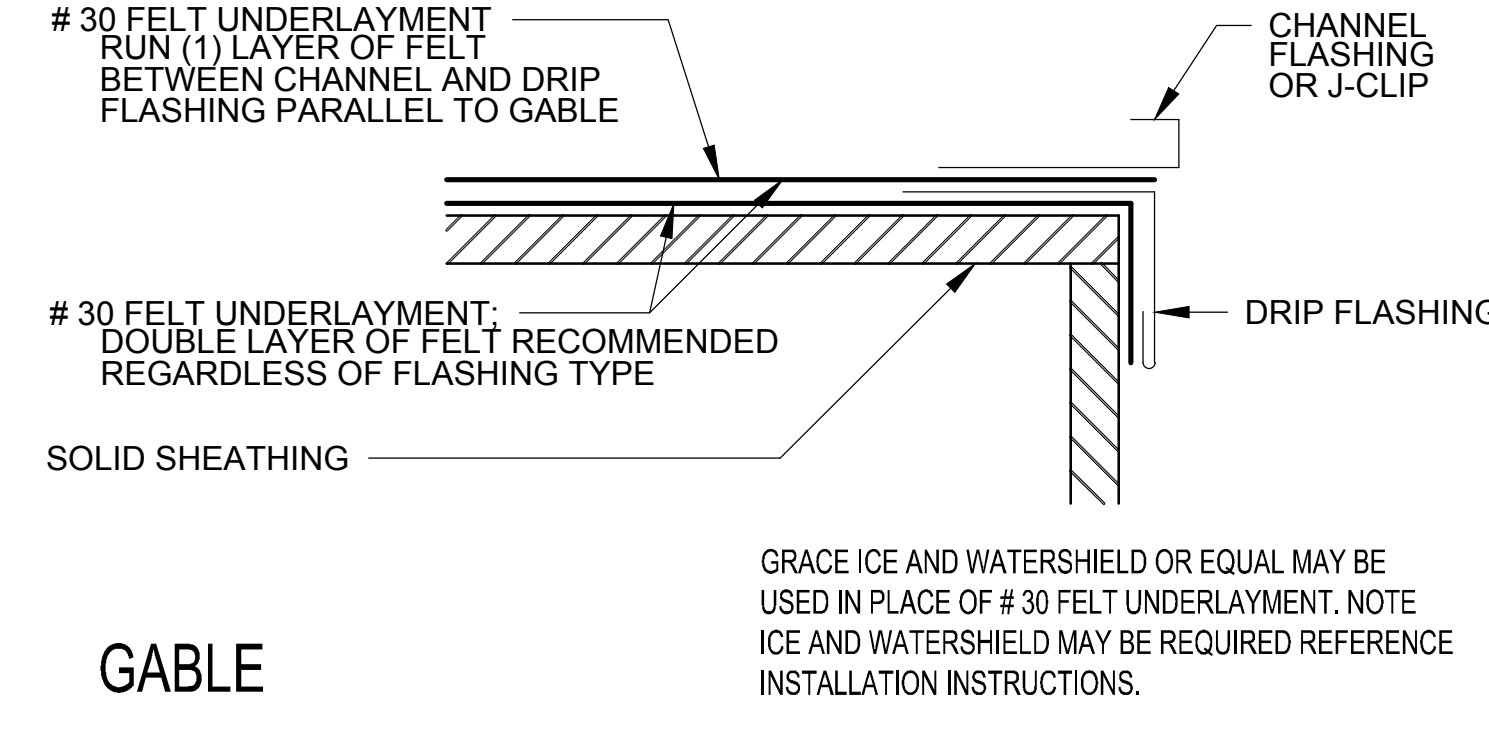
- CLEAN ROOF SURFACE OF ALL OBJECTS WHICH MAY PUNCTURE OR TEAR FELT UNDERLAYMENT.
- ATTACH FELT UNDERLAYMENT TO DECK BELOW USING COATED FELT CAPS. FASTENERS MUST BE TOTALLY FLUSH WITH SUBSTRATE. DO NOT USE ONE PIECE NAIL CAPS, AS THESE WILL "READ THROUGH" THE SURFACE.
- DO NOT FASTEN LOWER EDGE OF FELT @ SECOND COURSE (SEE ABOVE ILLUSTRATION).
- ALWAYS RUN FELT UNDERLAYMENT HORIZONTALLY STARTING @ THE EAVE AND LAP SINGLE FASHION.
- NEVER INSTALL BERRIDGE PRODUCTS OVER FELT UNDERLAYMENT THAT IS NOT LAID HORIZONTAL, FLAT, SMOOTH AND FREE FROM PUNCTURES AND TEARS.
- DO NOT APPLY PANELS OVER DRY OR BRITTLE FELT (A CONDITION CAUSED BY EXTENDED EXPOSURE TO THE ELEMENTS).
- DO NOT USE RED ROSIN PAPER UNDER ANY BERRIDGE METAL PRODUCT.



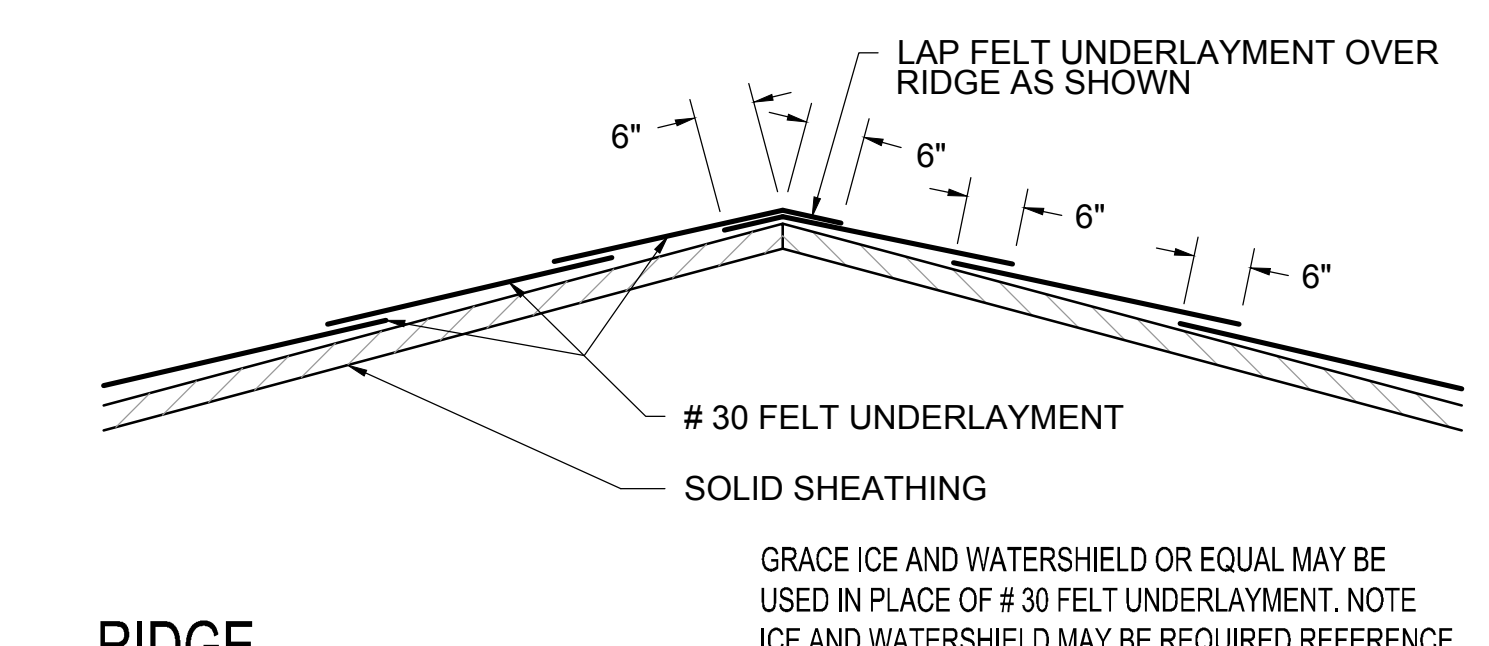
**EAVE WITH GUTTER**



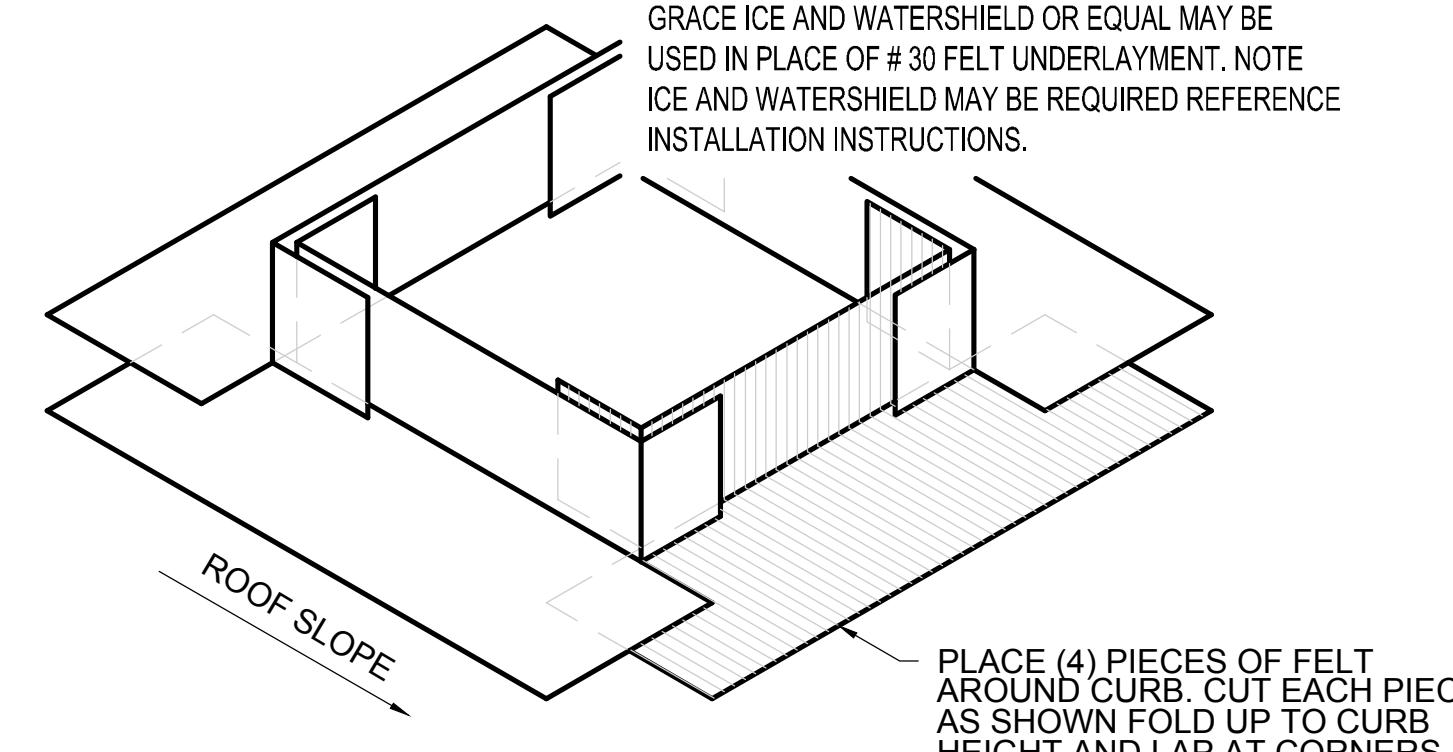
**EAVE WITH GUTTER EAVE UNDERLAYMENT**



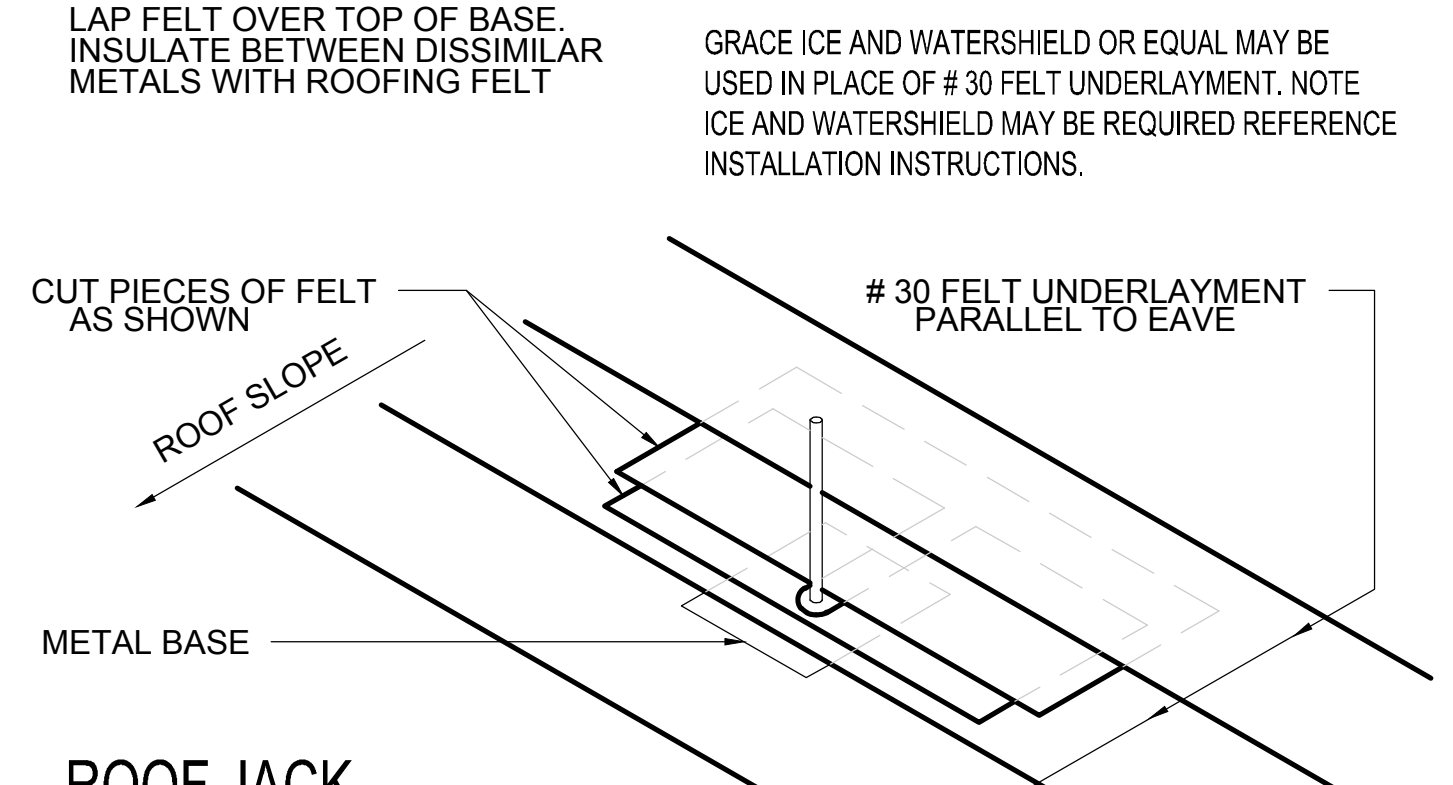
**GABLE UNDERLAYMENT**



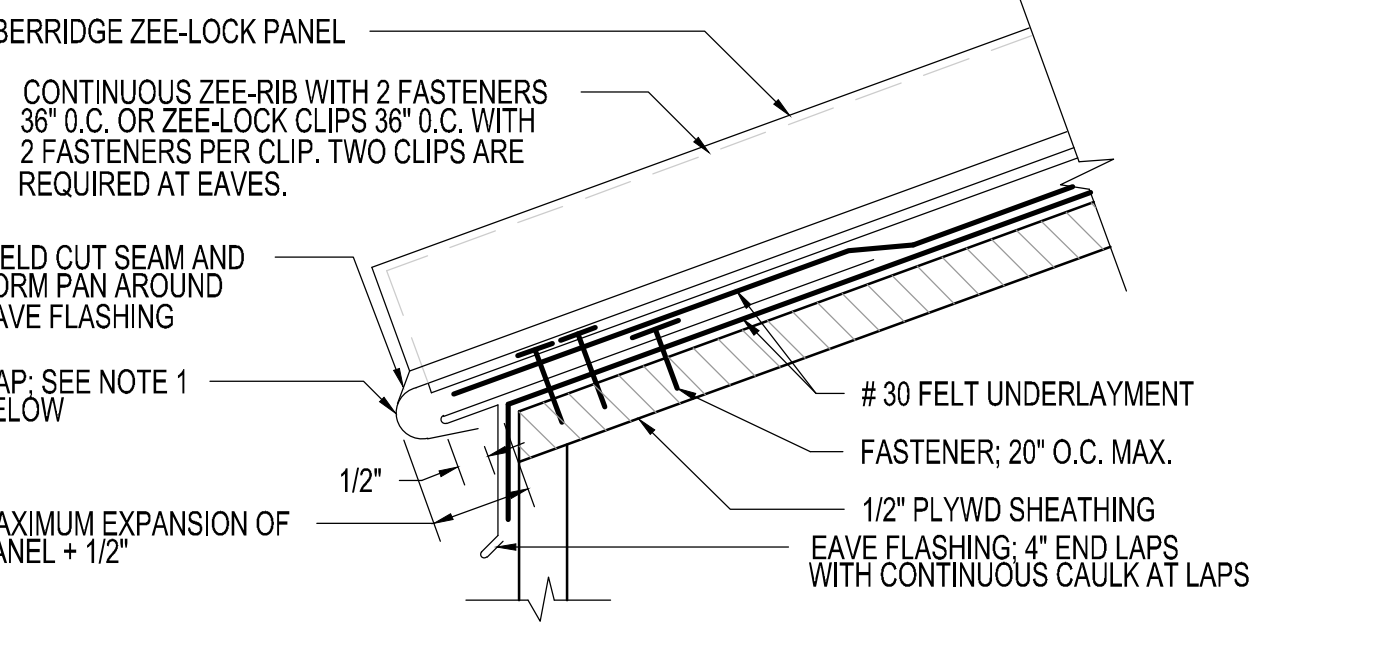
**RIDGE UNDERLAYMENT**



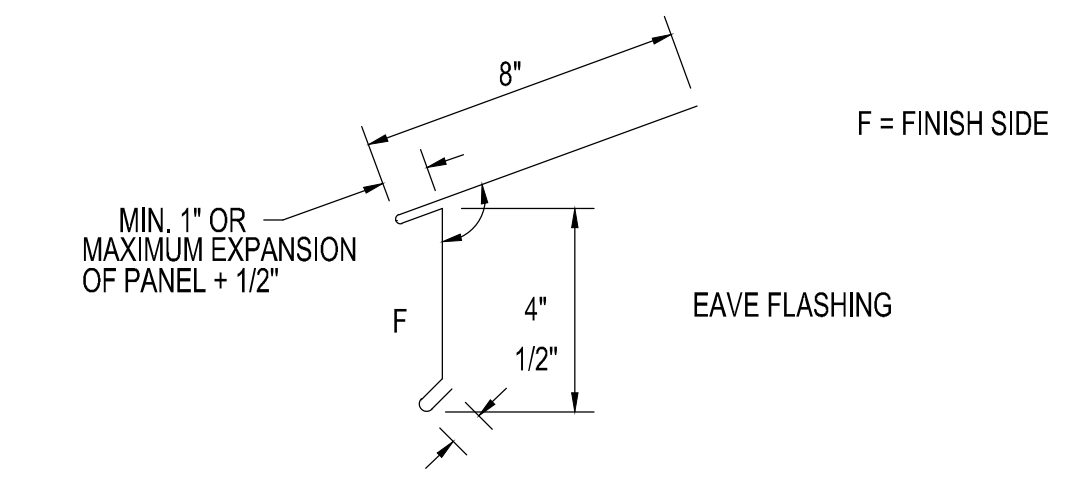
**ROOF PENETRATION**



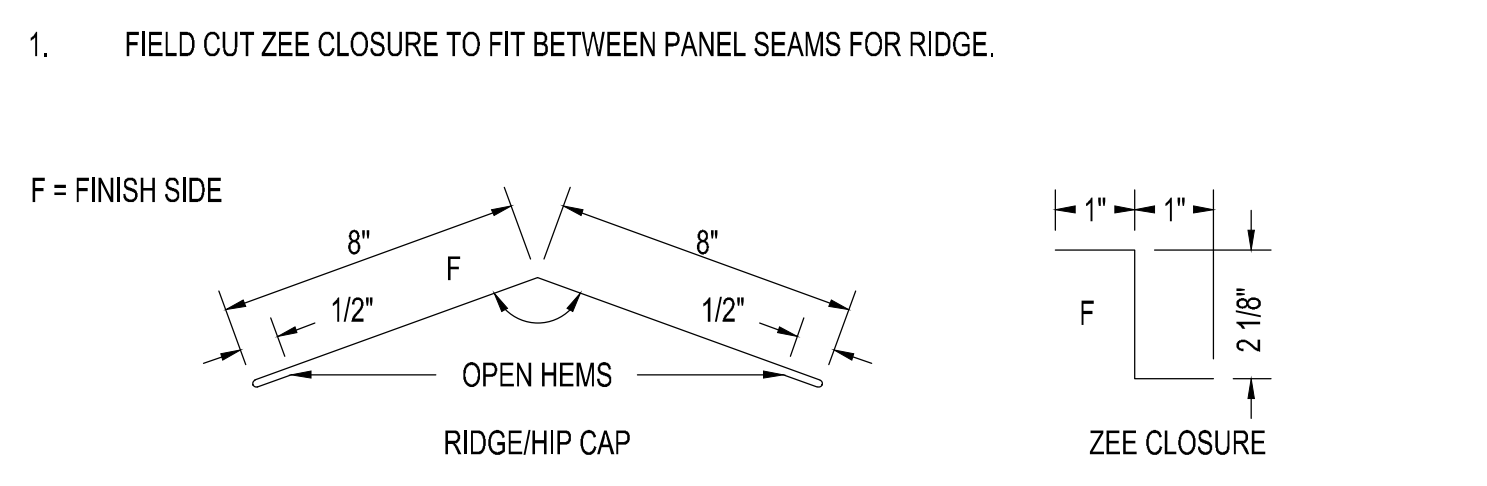
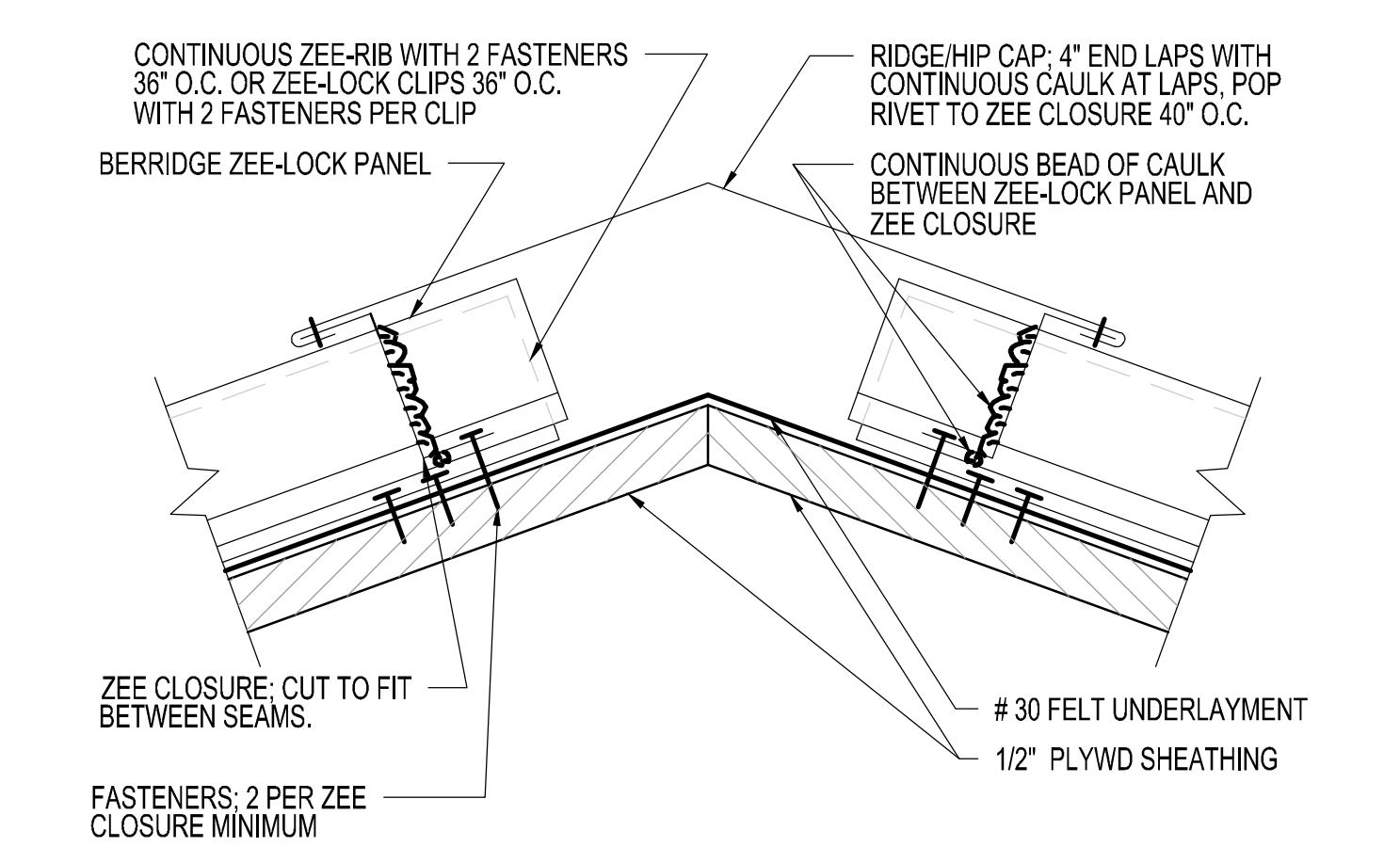
**ROOF JACK UNDERLAYMENT**



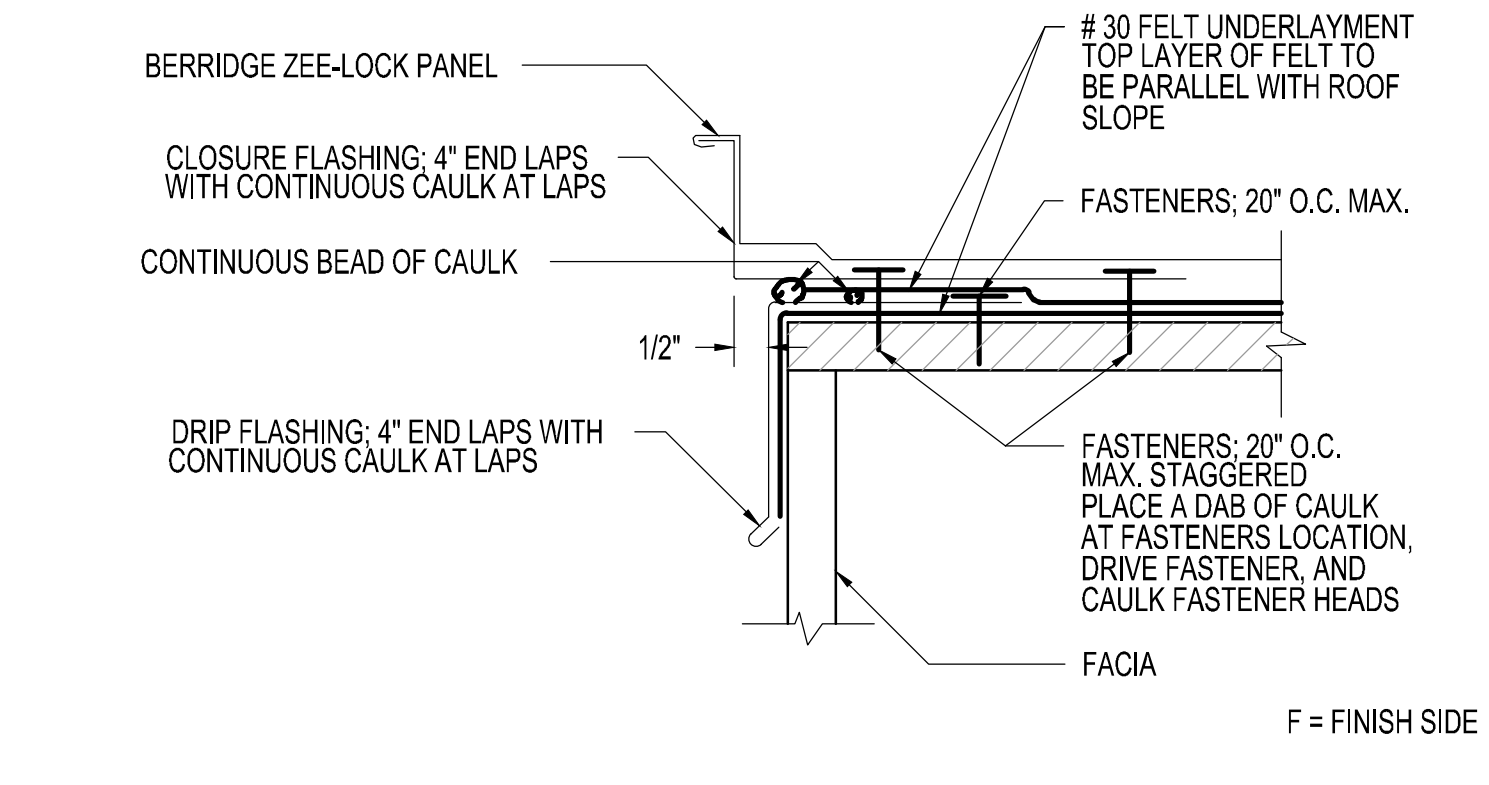
- THE "GAP" BETWEEN EAVE FLASHING AND PANEL (SEE DETAIL ABOVE) CAN BE INCREASED TO ALLOW FOR LINEAR EXPANSION AND CONTRACTION OF PANELS. NOTE 1/2" OF PAN MUST BE ENGAGED WITH EAVE FLASHING WHEN PANEL HAS EXPANDED TO ITS MAXIMUM LENGTH.
- GAP BETWEEN EAVE FLASHING AND PANEL MUST BE ADJUSTED TO SUIT TEMPERATURE DURING INSTALLATION.



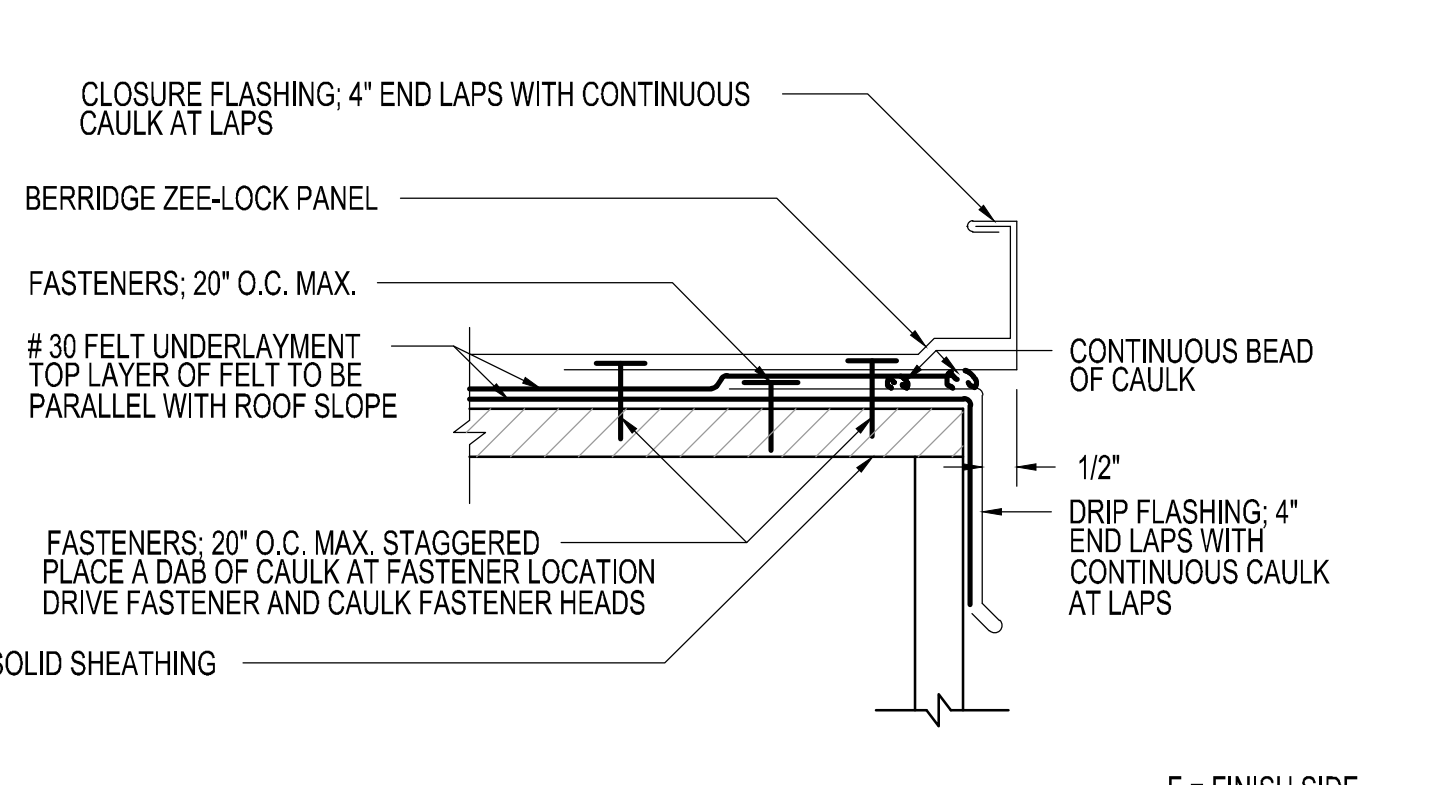
**EAVE DETAIL**



**RIDGE DETAIL**

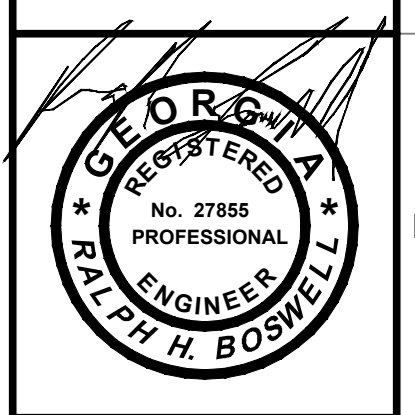


**GABLE DETAIL LEFT SIDE; CLOSURE FLASHING;**



**GABLE DETAIL RIGHT SIDE; CLOSURE FLASHING;**

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HINESVILLE / FORT STEWART  
 WWTP UPGRADE  
 FOR:  
 THE CITY OF HINESVILLE  
 FORT STEWART  
 LIBERTY COUNTY GA

MARK	DATE	BY	DESCRIPTION
1	11/29/2012		ISSUED FOR RFD APPROVAL

DESIGNED: CE PROJECT NO. 0E11020  
 DRAWN: FILE NAME: 0E11020-06-05-6  
 CHECKED: ORIGINAL DRAWING SIZE: 36"x24"  
 APPROVED: DATE: 11-29-2012  
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CHEMICAL METERING  
 PUMP BUILDING  
 UNDERLAYMENT AND  
 ROOF DETAILS

LEGEND	
SYMBOL	DESCRIPTION
	A-1,3,5 ADJACENT TO ARROW INDICATES HOME-RUN OF CIRCUITS 1,3,5 TO PANEL A. 3,5 OR A-3,5 ADJACENT TO ARROW INDICATES CIRCUIT CONTINUATION. MARKS ACROSS RACEWAY RUNS INDICATE THE NUMBER OF NO. 12 CONDUCTORS. UNLESS NOTED, NO MARKS INDICATES TWO NO. 12 CONDUCTORS. EQUIPMENT GROUNDING CONDUCTORS ARE NOT SHOWN, SEE GENERAL NOTES. IF INDICATED ADJACENT TO OUTLET, NUMERAL AND LOWER CASE LETTER B INDICATES CIRCUIT CONNECTION AND SWITCHLEG DESIGNATION RESPECTIVELY. TYPE B OR CAPITAL LETTER B INDICATES LIGHT FIXTURE TYPE. UNLESS NOTED, DIMENSIONS INDICATED IN LEGEND AND ON PLANS ARE TO BOTTOM OF OUTLET OR DEVICE. ALL SYMBOLS INDICATED HEREIN MAY NOT NECESSARILY BE USED ON THE PLANS.
	CEILING OUTLET AND FLUORESCENT FIXTURE
	WALL OUTLET AND FLUORESCENT OR H.I.D. FIXTURE
	WALL OUTLET AND FLUORESCENT OR H.I.D. FIXTURE - EGRESS/EMERGENCY LIGHTING
	OUTLET AND EXIT LIGHT - LETTERS INDICATE FIXTURE TYPE. PROVIDE ARROWS INDICATED
	POST TOP LUMINAIRE, POLE, AND CONCRETE BASE
	POLE TOP FLOOD LIGHTS, POLE, AND CONCRETE BASE
	WALL MOUNTED TWO HEAD EMERGENCY FIXTURE
	PHOTOCELL, TORK MODEL 2107, MOUNTED UNDER EAVE
	WEATHERPROOF JUNCTION BOX MOUNTED TO CONCRETE STRUCTURE
	POLYMER CONCRETE JUNCTION BOX MOUNTED FLUSH IN GRADE
	DUPLEX RECEPTACLE- MT. 16" AFF, NUMBER DESIGNATES LOCAL BRANCH CIRCUIT SERVING OUTLET
	DUPLEX RECEPTACLE- MT. 48" AFF AND/OR ABOVE COUNTER TOP
	WEATHERPROOF DUPLEX RECEPTACLE, MT. 16" ABOVE FLOOR AND 36" ABOVE EARTH W/ IN-USE COVER, TYPE 'WR' RECEPTACLE
	SPECIAL PURPOSE RECEPTACLE, CAPITAL LETTER INDICATES TYPE- REFER TO SPECS OR SCHEDULE
	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE- MT. 48" AFF AND/OR ABOVE COUNTER TOP OR AS INDICATED
	DOUBLE DUPLEX RECEPTACLE- MT. 16" AFF
	DUPLEX RECEPTACLE, NEMA 5-20R- MT. 16" AFF
	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE WITH IN-USE COVER, NOTE G6.
	TELEPHONE OUTLET- MT. 16" AFF U.N.O. EXTEND 1'C TO NEAREST TELEPHONE CABINET OR BACKBOARD
	SINGLE POLE TOGGLE SWITCH- MT. 48" UP
	THREE-WAY TOGGLE SWITCH- MT. 48" UP
	MOTOR RATED SWITCH WITH OVERLOAD PROTECTION - MT. 48" UP.
	MOTOR RATED DISCONNECT SWITCH, SINGLE PHASE - MT. 48" UP.
	PUSH-BUTTON START/STOP SWITCH
	EMERGENCY POWER-OFF PUSHBUTTON STATION
	PANELBOARD, SURFACE MOUNTED
	TELEPHONE OR SIGNAL BACKBOARD, 3/4" X 4' X 8' UNLESS NOTED
	DRY-TYPE TRANSFORMER - VOLTAGE, PHASE, AND KVA AS INDICATED
	EQUIPMENT AS NOTED
	ELECTRIC METER
	MOTOR, HORSEPOWER AS INDICATED
	NON-FUSIBLE DISCONNECT SWITCH, RATING/POLES/ENCLOSURE AS INDICATED
	MAGNETIC STARTER
	COMBINATION MAGNETIC STARTER/NON-FUSIBLE DISCONNECT SWITCH
	ELECTRIC THERMOSTAT- MT. 54" A.F.F.
	RACEWAY INSTALLED CONCEALED IN WALLS AND/OR ABOVE CEILING
	RACEWAY INSTALLED CONCEALED IN/OR BELOW FLOOR SLAB OR BELOW GRADE
	RACEWAY INSTALLED EXPOSED
	FLEXIBLE METALLIC RACEWAY
	CONDUIT STUB-UP AND HOMERUN
	CONDUIT UP/CONDUIT DOWN
	CONDUIT TERMINATION, STUB-OUT
	GROUND
	GROUND ROD LOCATION
	FLOW METER, ULTRASONIC TYPE, PROVIDED BY OTHERS
	SOLENOID VALVE, PROVIDED WITH EQUIPMENT, FIELD INSTALLED AND WIRED.
	PRESSURE SWITCH, PROVIDED WITH EQUIPMENT, FIELD INSTALLED AND WIRED

ABBREVIATIONS	
A OR AMP	AMPERES
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AM	AMMETER
AS	AMMETER SELECTOR SWITCH
ASYM	ASYMMETRICAL
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CNTL	CONTROL
CT	CURRENT TRANSFORMER
D	DEPTH
DISC	DISCONNECT SWITCH
DISC SW	DISCONNECT SWITCH
EXP	EXPLOSION PROOF
F	FUSE
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FMPX	FIRE ALARM MULTIPLEX PANEL
G OR GND	GROUND
H	HEIGHT
HP	HORSEPOWER
JB OR J	JUNCTION BOX
KVA	KILOVOLT - AMPS
KW	KILOWATTS
L	LENGTH
LA	LIGHTNING ARRESTOR
MCB OR MB	MAIN CIRCUIT BREAKER
MH OR MTG	MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
MT OR MTD	MOUNT OR MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION ASSOC.
NTS	NOT TO SCALE
P	POLE
PMT	PAD MOUNT TRANSFORMER
PNL	PANELBOARD
RC	REMOTE CONTROL SWITCH
RECEPT	RECEPTACLE
RMS	ROOT MEAN SQUARE
SW	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TBB	TELEPHONE BACKBOARD
TYP	TYPICAL
UG	UNDERGROUND
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
VM	VOLTMETER
VS	VOLTMETER SELECTOR SWITCH
W	WIDTH
W/	WITH
WHDM	WATT HOUR DEMAND METER
WM	WATTMETER
WP	WEATHER PROOF
XFMR	TRANSFORMER

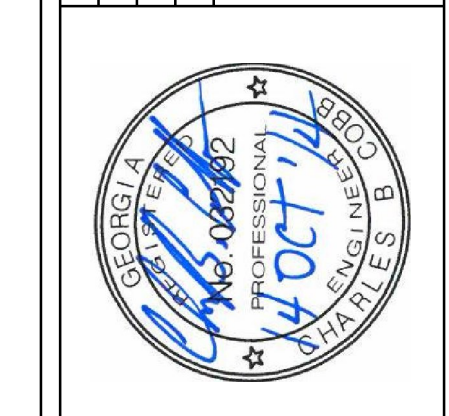
**GENERAL NOTES:** (FOR ALL DRAWINGS WHERE APPLICABLE)

- G1. WHEN CONDUCTOR SIZE IS INDICATED FOR BRANCH CIRCUIT HOME RUN, THE CONDUCTOR SIZE INDICATED SHALL BE USED FOR THE COMPLETE CIRCUIT.
- G2. ALL EQUIPMENT SUPPORTS AND HANGERS SHALL BE COORDINATED WITH STRUCTURAL DRAWINGS TO INSURE THAT LOCATION OF SUPPORTS AND HANGERS OCCUR WITHIN 4" OF PANEL POINT.
- G3. PIPING HEAT TAPE CONNECTIONS SHALL BE DIRECT CONNECTIONS.
- G4. GROUNDING CONDUCTORS SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS. REFER TO SECONDARY GROUNDING SPECIFICATION SECTION.
- G5. THE CONTRACTOR SHALL COORDINATE THE ELECTRICAL REQUIREMENTS OF THE EQUIPMENT PROVIDED WITH THE DRAWINGS. ANY DISCREPANCIES SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY REQUIRED ADJUSTMENTS IN BREAKER RATINGS, MOTOR RATINGS, FEEDERS, ETC. SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER. ALL REQUIRED ADJUSTMENTS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER BEFORE PROCEEDING.
- G6. THE RECEPTACLE SHALL BE STANCHION MOUNTED ON THE TOP OF THE SBR TANK WALL. REFER TO DETAIL 8/E0.2. PROVIDE WEATHER RESISTANT TYPE 'WR'.
- G7. THE AUTOMATIC TRANSFER SWITCH SHALL PROVIDE A PRE TRANSFER AND POST TRANSFER SIGNAL TO THE IN-PLANT SCADA SYSTEM AND TO THE AQUAROBCS CONTROL PANEL. THE SCADA AND AQUAROBCS PANELS SHALL PROVIDE THE LOAD STEP SEQUENCE REQUIRED IN SPECIFICATION SECTION 16210.
- G8. THE EMERGENCY POWER SYSTEM PARALLELING CONTROLLER SHALL PROVIDE A LOAD SHED CONTROL SIGNAL TO THE IN-PLANT SCADA PANEL AND AQUAROBCS CONTROL PANEL. SHOULD ONE OF THE GENERATORS FAIL TO START, OR IS OTHERWISE UNAVAILABLE, THE CONTROL PANELS SHALL PROVIDE FOR AN AUTOMATIC LOAD-SHED SEQUENCE SO NOT TO OVERLOAD THE OPERATIONAL GENERATOR.
- G9. THE GENERATOR REMOTE ANNUNCIATORS SHALL BE LOCATED IN THE CONTROL BUILDING. COORDINATE TRANSMISSION OF SIGNAL FROM THE GENERATORS THROUGH THE IN-PLANT SCADA SYSTEM, TO THE CONTROL ROOM.
- G10. REFER TO SPECIFICATION SECTION 16055 FOR REQUIRED SHORT CIRCUIT COORDINATION AND ARC FLASH STUDY.
- G11. REFER TO SPECIFICATION SECTION 16481 FOR REQUIRED HARMONIC ANALYSIS STUDY FOR IEEE 519 COMPLIANCE.
- G12. PROVIDE FOR HAZARDOUS INSTALLATIONS AS REQUIRED BY NFPA 820.

**LIGHTING FIXTURE SCHEDULE**

TYPE	DESCRIPTION	LAMP	MOUNTING	NOTES
A	FLUORESCENT VAPORTITE	2-F32T8/TL835/XLL/ALTO	SURFACE	
	METALUX VT3-232-DR-100-120V-GL-ER81-SSL			
	OR APPROVED EQUAL BY LITHONIA OR WILLIAMS			
B	LED WALL PACK	LED INCLUDED	WALL	
	LUMARK XTOR2A		7'-6" AFG	
	OR APPROVED EQUAL BY LITHONIA OR PHILLIPS			
	LED FLOOD LIGHT	LED INCLUDED	SERVICE	
	LUMARK XTOR3A-PC1 WITH XTORFFLD-TRN		POLE MTD	
	OR APPROVED EQUAL BY LITHONIA OR PHILLIPS			
	LED AREA LIGHT - SINGLE FIXTURE ON POLE	LED INCLUDED	30' AFG	
	HOLOPHANE MGLD 5 5K AS F L VZ P3		POLE MTD	
	OR APPROVED EQUAL			
POLE	HOLOPHANE RTS 3066B P2 ND BZ			
	LED AREA LIGHT - THREE FIXTURES ON POLE	LED INCLUDED	50' AFG	
	HOLOPHANE MGLD 7 5K AS F L VZ P3		POLE MTD	
	OR APPROVED EQUAL			
POLE	HOLOPHANE RTS 5010F P4 ND BZ			
ARM	HOLOPHANE BR904 BZ			
	LED AREA LIGHT - SINGLE FIXTURE ON POLE	LED INCLUDED	30' AFG	
	HOLOPHANE MGLD 5 5K AS W L V2 P3		POLE MTD	
	OR APPROVED EQUAL			
POLE	HOLOPHANE RTS 3066B P2 ND BZ			

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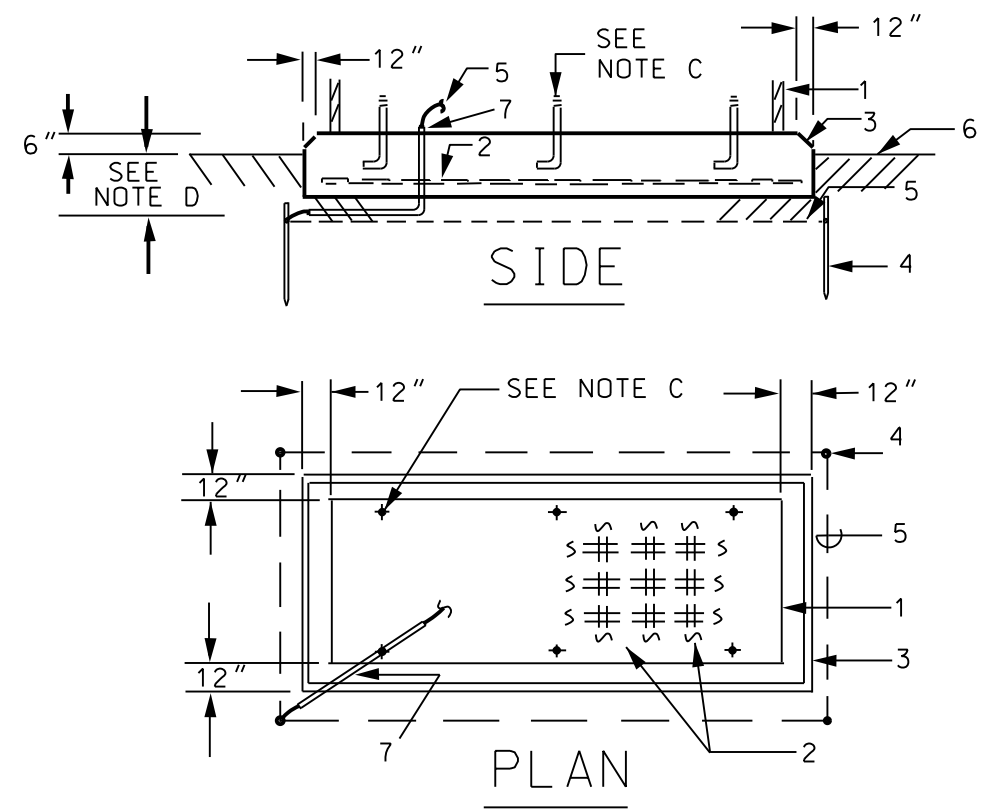


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**Hinesville/Ft Stewart  
 WWTP Upgrade  
 for  
 The City of Hinesville**  
 Ft Stewart  
 Liberty County, Georgia

**LEGEND,  
 ABBREVIATIONS  
 & GENERAL NOTES**  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E0.1

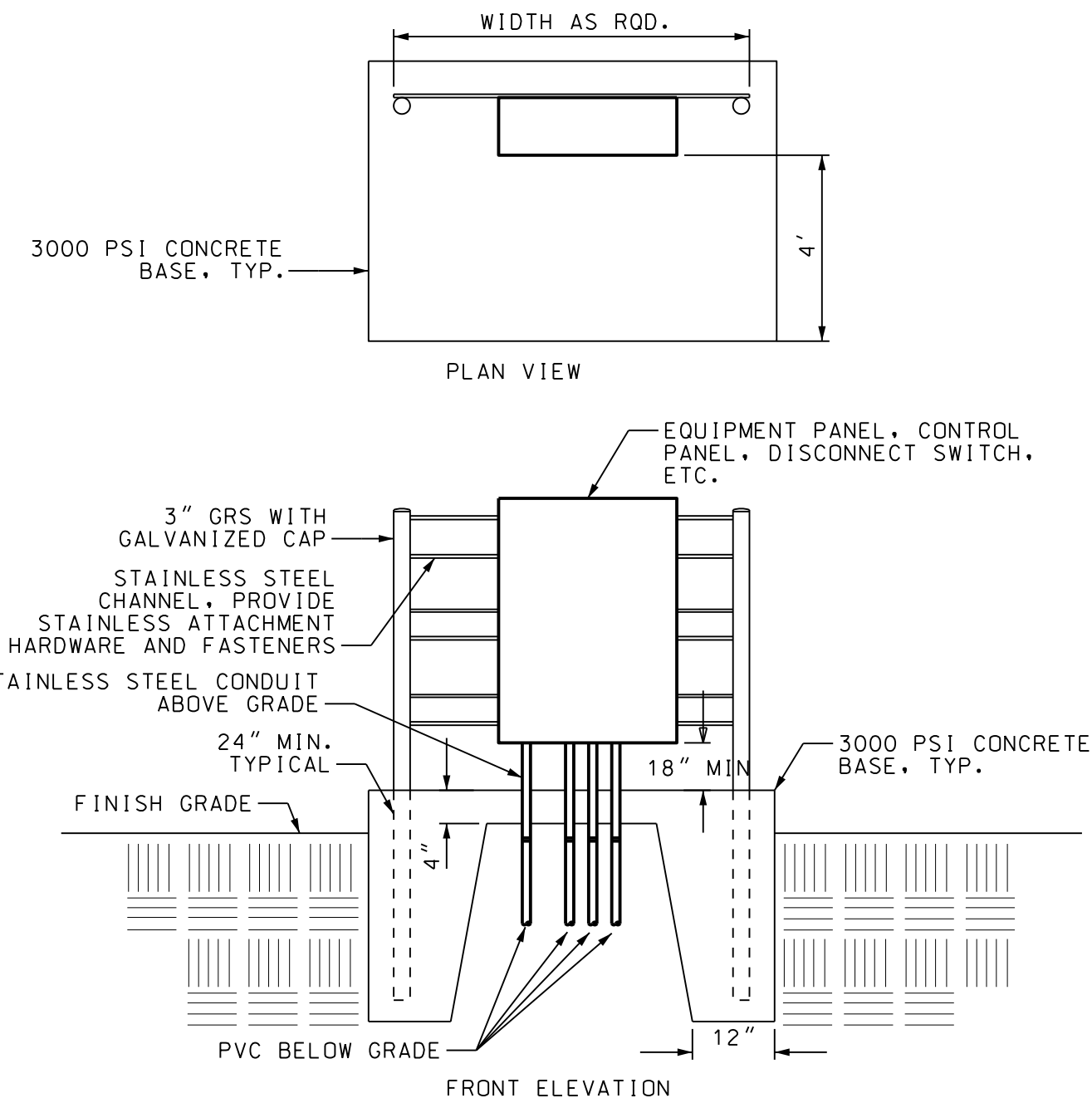


- 1 - GENERATOR SET ENCLOSURE OUTLINE
- 2 - REINFORCING STEEL, NOTE A
- 3 - 1" CHAMFER
- 4 - 3/4" X 10' COPPERCLAD GROUND ROD AND
- 5 - #1/0 CU BARE GROUND CONDUCTOR
- 6 - FINISHED GRADE
- 7 - 3/4" PVC, SEE NOTE B
- 8 - SILICONE CAULK WATERTIGHT SEAL

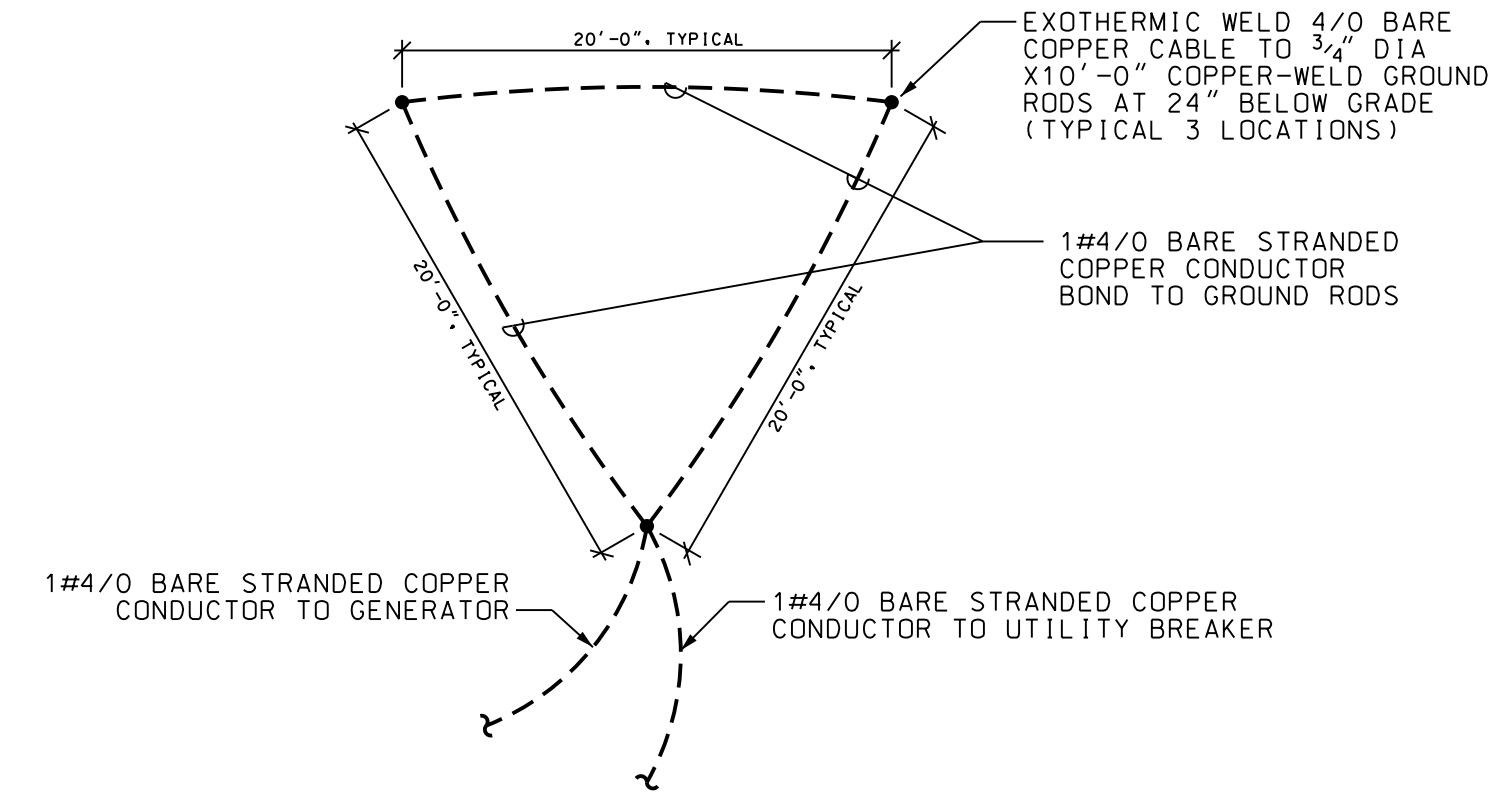
**1 GENERATOR FOUNDATION DETAIL**  
E02 N.T.S.

**NOTES:** GENERATOR FOUNDATION DETAIL

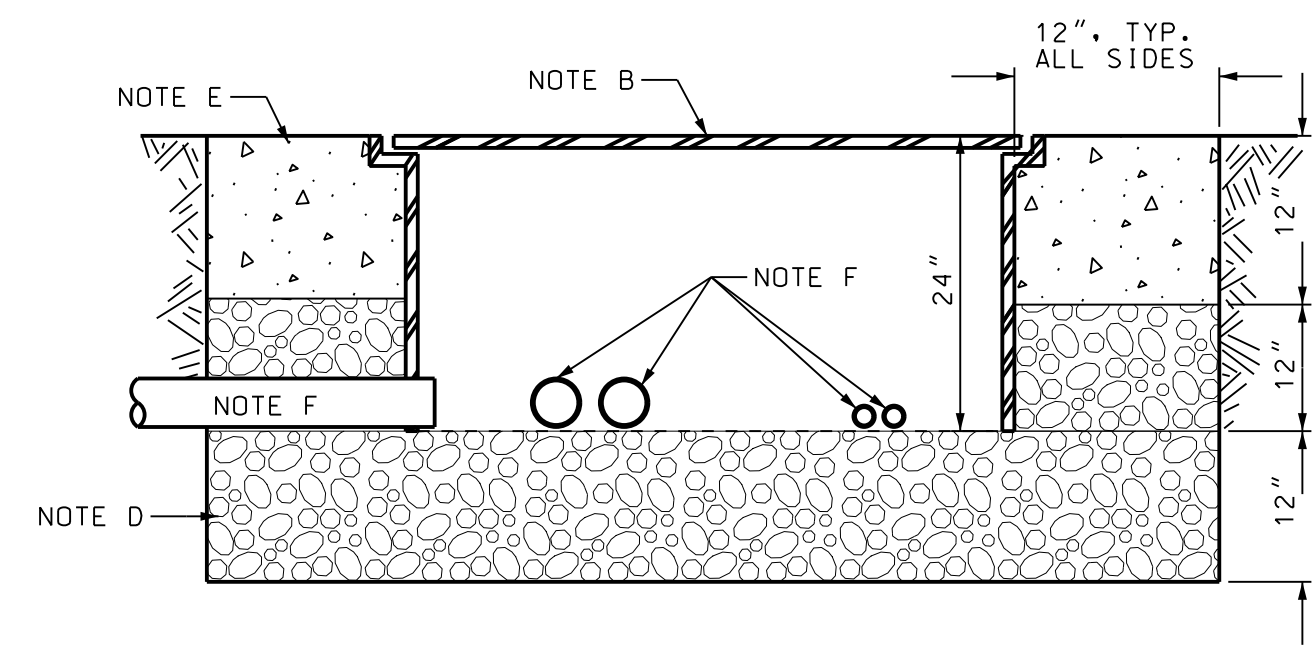
- A. #8 GA. STEEL WIRE MESH, 6" O.C. OR #6 REBAR, 12" O.C., HORIZ. & VERTICALLY.
- B. CONNECT TO GENERATOR GROUND CONNECTION LUG. VERIFY STUB UP LOCATION WITH MANUFACTURERS SHOP DRAWINGS. WATERPROOF CONDUIT END WITH SEALING COMPOUND.
- C. ANCHOR BOLTS FURNISHED WITH GENERATOR SET. PROVIDE SIX MINIMUM. TIE TO REINFORCING STEEL.
- D. DIMENSION SHALL BE 6" (12" OVERALL DEPTH) UP TO & INCLUDING 600 KW, 12" (18" OVERALL DEPTH) LARGER THAN 600 KW.



**2 EQUIPMENT RACK**  
E02 N.T.S.



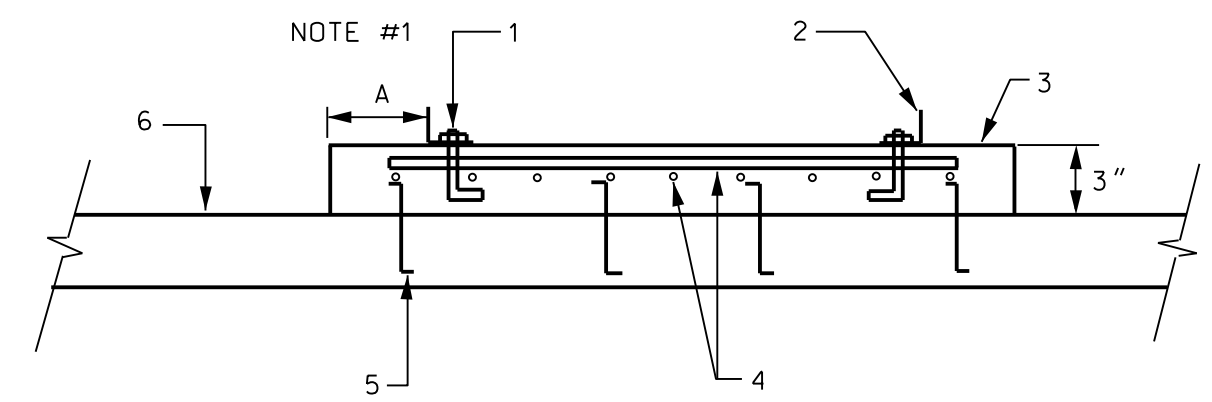
**3 SECONDARY ELECTRICAL GROUNDING**  
E02 N.T.S.



**4 JUNCTION BOX - FLUSH WITH FINISHED GRADE**  
E02 N.T.S.

**NOTES:**

- A. JUNCTION BOXES SHALL BE QUAZITE POLYMER CONCRETE TYPE "PG" OPEN BOTTOM, OR EQUIVALENT BY OLD CASTLE OR PENCEL.
- B. THE COVER SHALL BE TIER 22 RATED, LOGO - "ELECTRIC".
- C. BOX DIMENSIONS SHALL BE AS NOTED ON THE DRAWINGS.
- D. PROVIDE A BASE OF CRUSHED STONE, 12" DEEP AND EXTENDING 12" BEYOND THE BOX ON ALL SIDES.
- E. PROVIDE A CONCRETE SUPPORT AROUND THE BOX, 12" WIDE AND 12" DEEP, ALL SIDES.
- F. CONDUIT ENTRY SHALL BE THROUGH THE SIDE WALL AT THE BOTTOM BELOW THE CONCRETE OR UP THROUGH THE BOTTOM.
- G. FOR ALL CONDUCTORS: PROVIDE PERMANENT TAGS IDENTIFYING ALL CABLES.

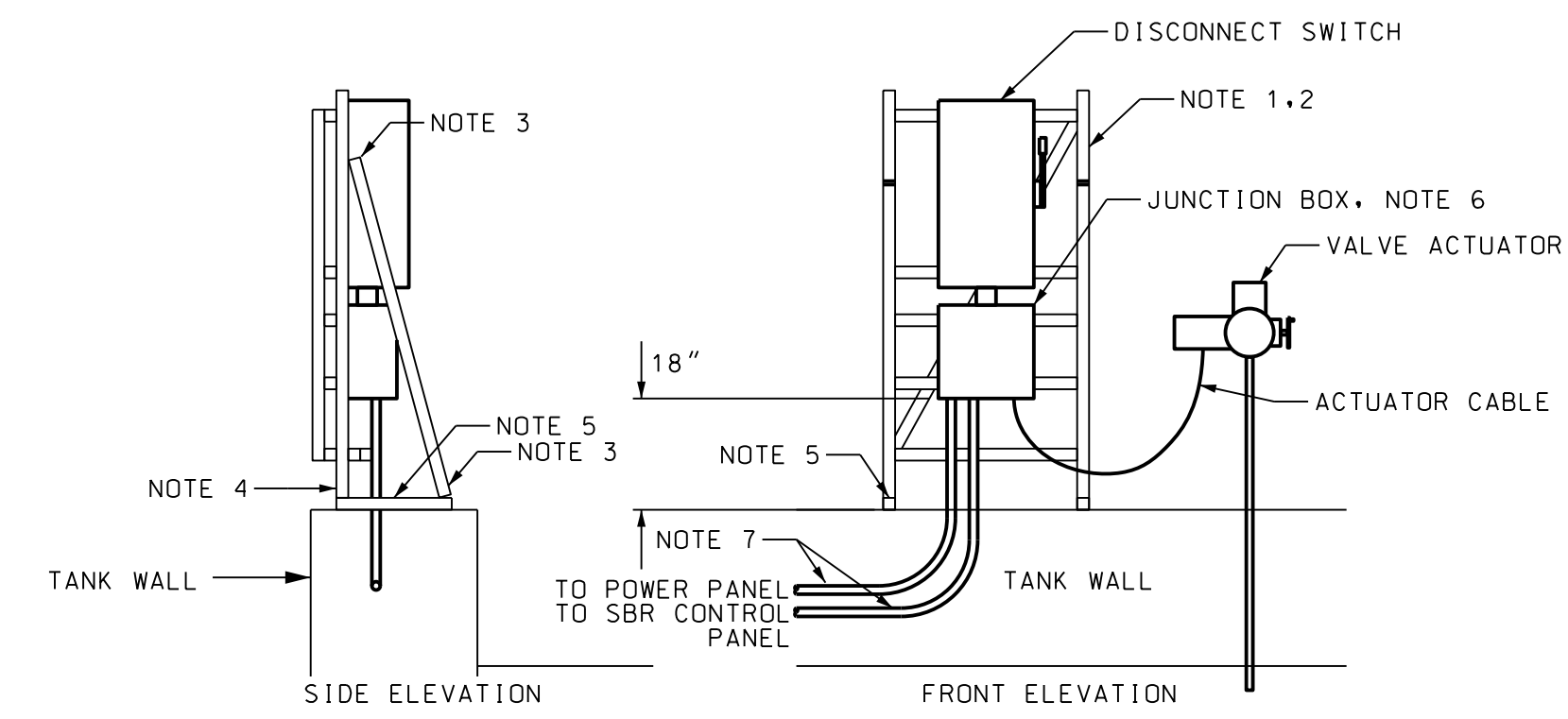


1. 1/2" GALV. ANCHOR BOLTS - 24" O.C. MIN.
2. ELECTRICAL EQUIPMENT MOUNTING FRAME
3. HOUSEKEEPING BASE
4. REINFORCING #4 BAR 12" O.C. BOTH DIRECTIONS
5. #4 Z BAR DOWELLS - 12" O.C. BOTH DIRECTIONS
6. FLOOR SLAB

**5 ELECTRICAL EQUIPMENT HOUSEKEEPING BASE**  
E02 N.T.S.

**NOTES:**

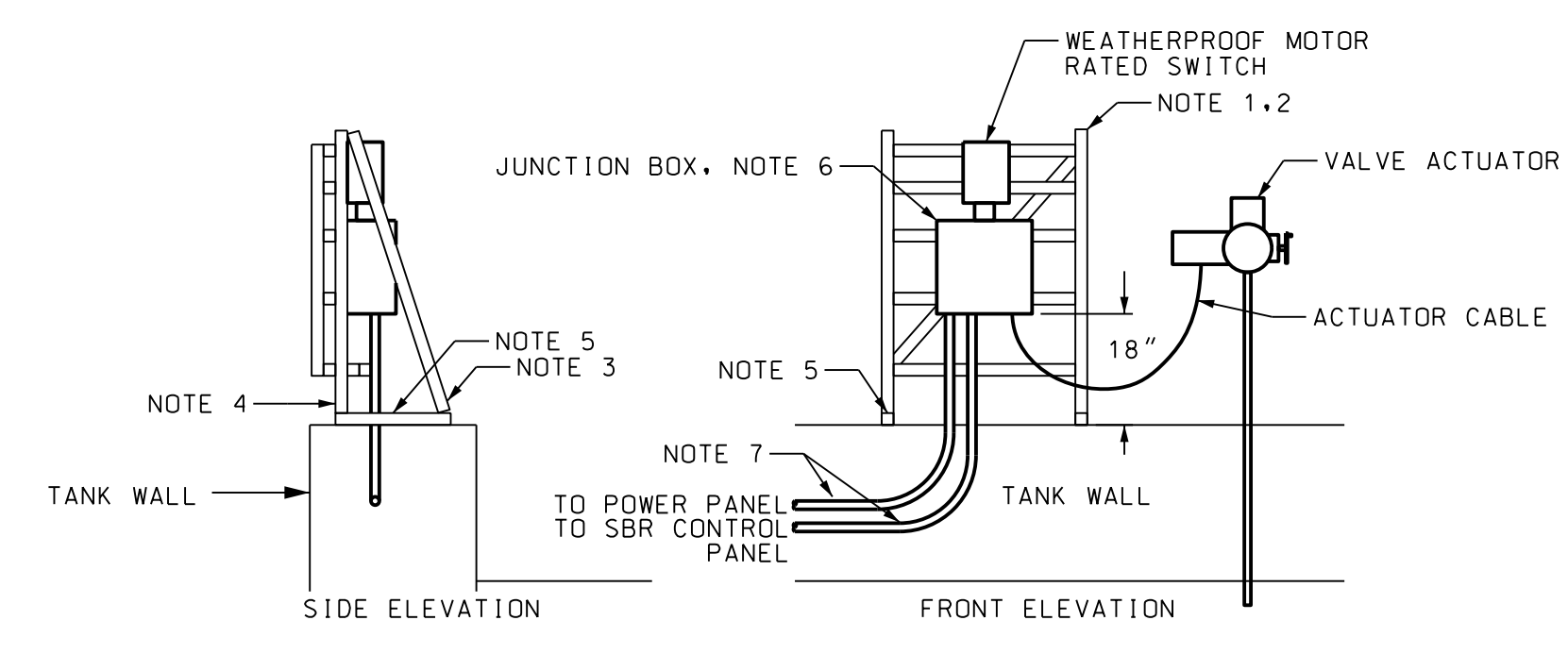
1. DIMENSION "A" SHALL EXCEED DIMENSIONS OF EQUIPMENT BASE BY NOT LESS THAN THREE INCHES IN ALL DIMENSIONS.
2. THIS DETAIL SHALL BE APPLICABLE TO MAIN SWITCHBOARD, FLOOR MOUNTED DRY TYPE TRANSFORMER, FLOOR MOUNTED AUTOMATIC TRANSFER SWITCHES, COMMUNICATION EQUIPMENT RACKS AND OTHER FLOOR MOUNTED ELECTRICAL EQUIPMENT EXCEEDING 200 LBS IN WEIGHT.



**6 480V VALVE ACTUATOR DISCONNECT DETAIL**  
E02 N.T.S.

**NOTES:** 480V VALVE ACTUATOR DISCONNECT DETAIL

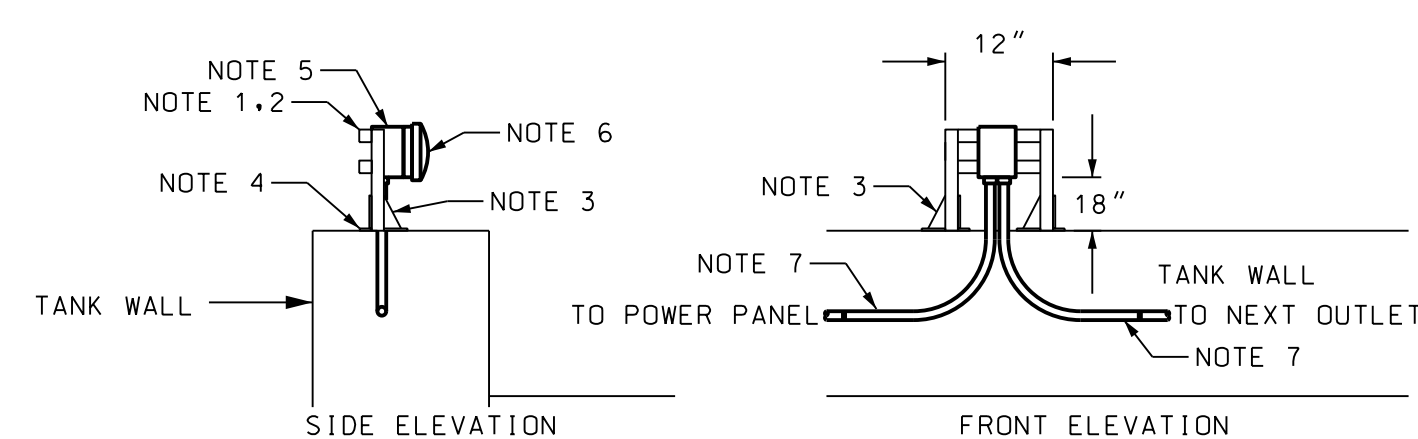
1. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL. MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
2. 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" X 1 5/8", B-LINE B22 SERIES OR EQUAL.
3. B-LINE B335 FOUR-HOLE ADJUSTABLE HINGE, FOUR LOCATIONS.
4. B-LINE B104 FOUR-HOLE CORNER ANGLE.
5. PROVIDE FOUR RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWW1236, 1/2" X 3 3/4" ANCHOR.
6. JUNCTION BOX SHALL HAVE POWER TERMINAL BLOCK AND TERMINAL STRIP AS REQUIRED FOR TERMINATION OF ACTUATOR CABLE CONDUCTORS. A CORD GRIP AND KELLUM GRIP CABLE SUPPORT SHALL BE PROVIDED FOR THE MOTOR CABLE. FIELD COORDINATE REQUIRED TERMINAL WITH EQUIPMENT PROVIDED. PROVIDE SINGLE EYE, CLOSED MESH KELLUM, FIELD COORDINATE WITH CABLE FURNISHED BY OTHERS.
7. STAINLESS STEEL CONDUIT FROM WITHIN CONCRETE TO JUNCTION BOX. PVC WITHIN CONCRETE. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.



**7 120V VALVE ACTUATOR DISCONNECT DETAIL**  
E02 N.T.S.

**NOTES:** 120V VALVE ACTUATOR DISCONNECT DETAIL

1. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL. MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
2. 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" X 1 5/8", B-LINE B22 SERIES OR EQUAL.
3. B-LINE B335 FOUR-HOLE ADJUSTABLE HINGE, FOUR LOCATIONS.
4. B-LINE B104 FOUR-HOLE CORNER ANGLE.
5. PROVIDE FOUR RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWW1236, 1/2" X 3 3/4" ANCHOR.
6. JUNCTION BOX SHALL HAVE POWER TERMINAL BLOCK AND TERMINAL STRIP AS REQUIRED FOR TERMINATION OF ACTUATOR CABLE CONDUCTORS. A CORD GRIP AND KELLUM GRIP CABLE SUPPORT SHALL BE PROVIDED FOR THE MOTOR CABLE. FIELD COORDINATE REQUIRED TERMINAL WITH EQUIPMENT PROVIDED. PROVIDE SINGLE EYE, CLOSED MESH KELLUM, FIELD COORDINATE WITH CABLE FURNISHED BY OTHERS.
7. STAINLESS STEEL CONDUIT FROM WITHIN CONCRETE TO JUNCTION BOX. PVC WITHIN CONCRETE. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.



**8 SBR TANK RECEPTACLE DETAIL**  
E02 N.T.S.

**NOTES:** SBR TANK RECEPTACLE DETAIL

1. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL. MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
2. 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" X 1 5/8", B-LINE B22 SERIES OR EQUAL.
3. B-LINE B278 STAINLESS STEEL POST BASE FOR B22, TWO PER ASSEMBLY.
4. PROVIDE SIX RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWW1236, 1/2" X 3 3/4" ANCHOR.
5. RECEPTACLE OUTLET BOX SHALL BE A CROUSE-HINDS FDS2SS, STAINLESS STEEL DEVICE BOX WITH TWO 3/4" CONDUIT HUBS.
6. RECEPTACLE OUTLET WEATHERPROOF COVER SHALL BE A CALBRITE STAINLESS STEEL 1-GANG DEEP LID WEATHERPROOF COVER, S6000FVCD.
7. STAINLESS STEEL CONDUIT FROM WITHIN CONCRETE TO OUTLET BOX, PVC WITHIN CONCRETE. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.

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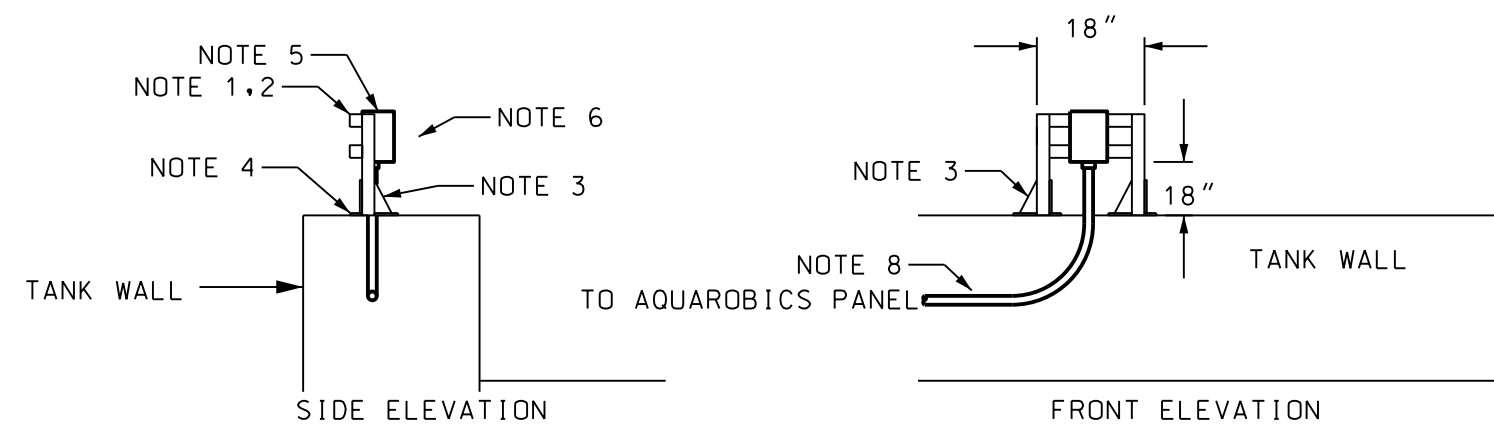
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Consulting Engineers

Hinesville/Ft Stewart  
WWTP Upgrade  
for  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

ELECTRICAL  
DETAILS  
DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E0.2

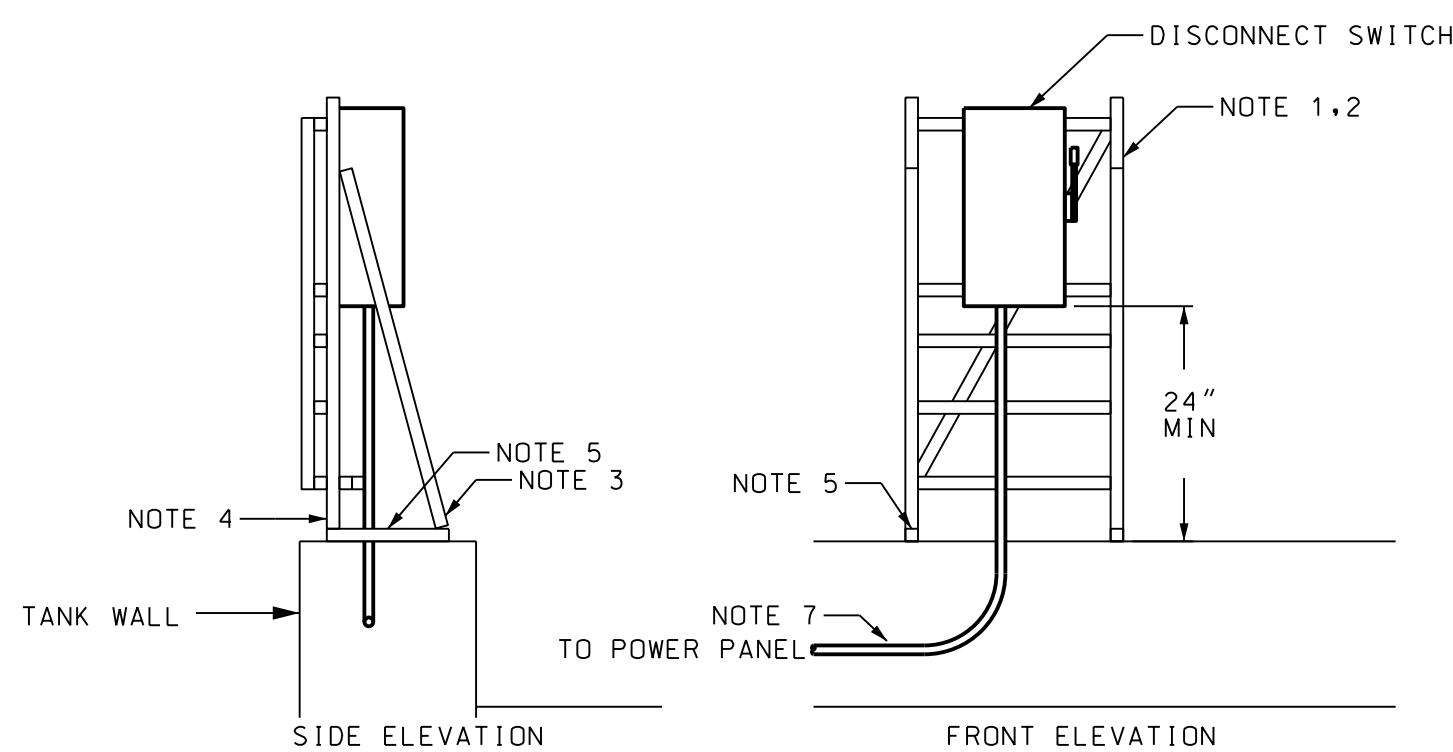
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**1 SBR TANK JUNCTION BOX DETAIL**  
E0.3 N.T.S.

**NOTES:** SBR TANK JUNCTION BOX DETAIL

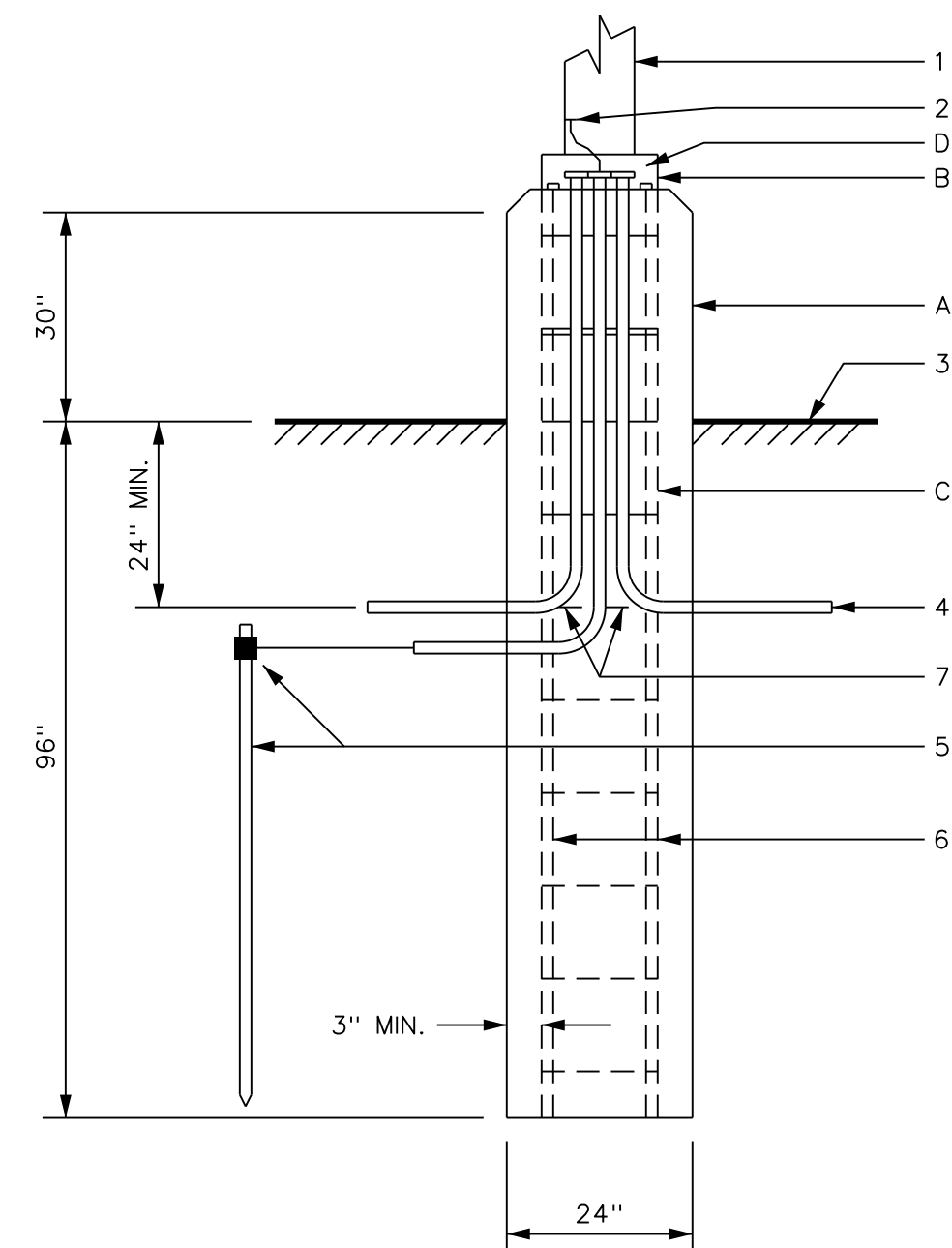
- ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL, MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
- 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" x 1 5/8", B-LINE B22 SERIES OR EQUAL.
- B-LINE B278 STAINLESS STEEL POST BASE FOR B22, TWO PER ASSEMBLY.
- PROVIDE SIX RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWM1236, 1/2"x3 3/4" ANCHOR.
- RECEPTACLE OUTLET BOX SHALL BE A CROUSE-HINDS FDS2SS, STAINLESS STEEL DEVICE BOX WITH TWO 3/4" CONDUIT HUBS.
- RECEPTACLE OUTLET WEATHERPROOF COVER SHALL BE A ARROW/HART WIU-1D; EXTRA DEPTH, 1-GANG, SELF CLOSING POLYCARBONATE PROTECTIVE COVER.
- 12" X 12" X 8" NEMA 4X STAINLESS STEEL JUNCTION BOX, HOFFMAN FUSION G7 SERIES, CATALOG NO. G300300225G.
- STAINLESS STEEL CONDUIT FROM JUNCTION BOX TO WITHIN CONCRETE, SCH. 80 PVC CONDUIT THEREAFTER. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.



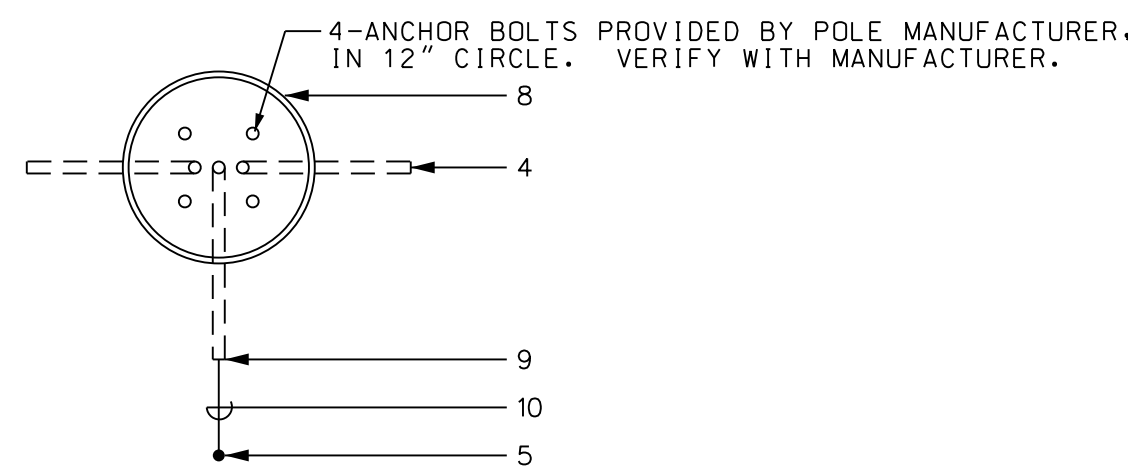
**2 DISCONNECT DETAIL**  
E0.3 N.T.S.

**NOTES:** DISCONNECT DETAIL

- ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL, MINIMUM. PROVIDE PRODUCTS OF B-LINE, UNISTRUT OR POWERSTRUT.
- 12GA, 304 STAINLESS STEEL CHANNEL, 1 5/8" x 1 5/8", B-LINE B22 SERIES OR EQUAL.
- B-LINE B335 FOUR-HOLE ADJUSTABLE HINGE, FOUR LOCATIONS.
- B-LINE B104 FOUR-HOLE CORNER ANGLE.
- PROVIDE FOUR RED HEAD TRUBOLT TYPE 316 ANCHORS TO SECURE FRAME TO STRUCTURE. PROVIDE SWM1236, 1/2"x3 3/4" ANCHOR.
- JUNCTION BOX SHALL HAVE POWER TERMINAL BLOCK AND TERMINAL STRIP AS REQUIRED FOR TERMINATION OF ACTUATOR CABLE CONDUCTORS. A CORD GRIP AND KELLUM GRIP CABLE SUPPORT SHALL BE PROVIDED FOR THE MOTOR CABLE. FIELD COORDINATE REQUIRED TERMINAL WITH EQUIPMENT PROVIDED. PROVIDE SINGLE EYE, CLOSED MESH KELLUM. FIELD COORDINATE WITH CABLE FURNISHED BY OTHERS.
- STAINLESS STEEL CONDUIT FROM JUNCTION BOX TO WITHIN CONCRETE, SCH. 80 PVC CONDUIT THEREAFTER. NO FITTINGS ALLOWED 18" OR LESS ABOVE TANK WALL.



**SECTION**



**PLAN**

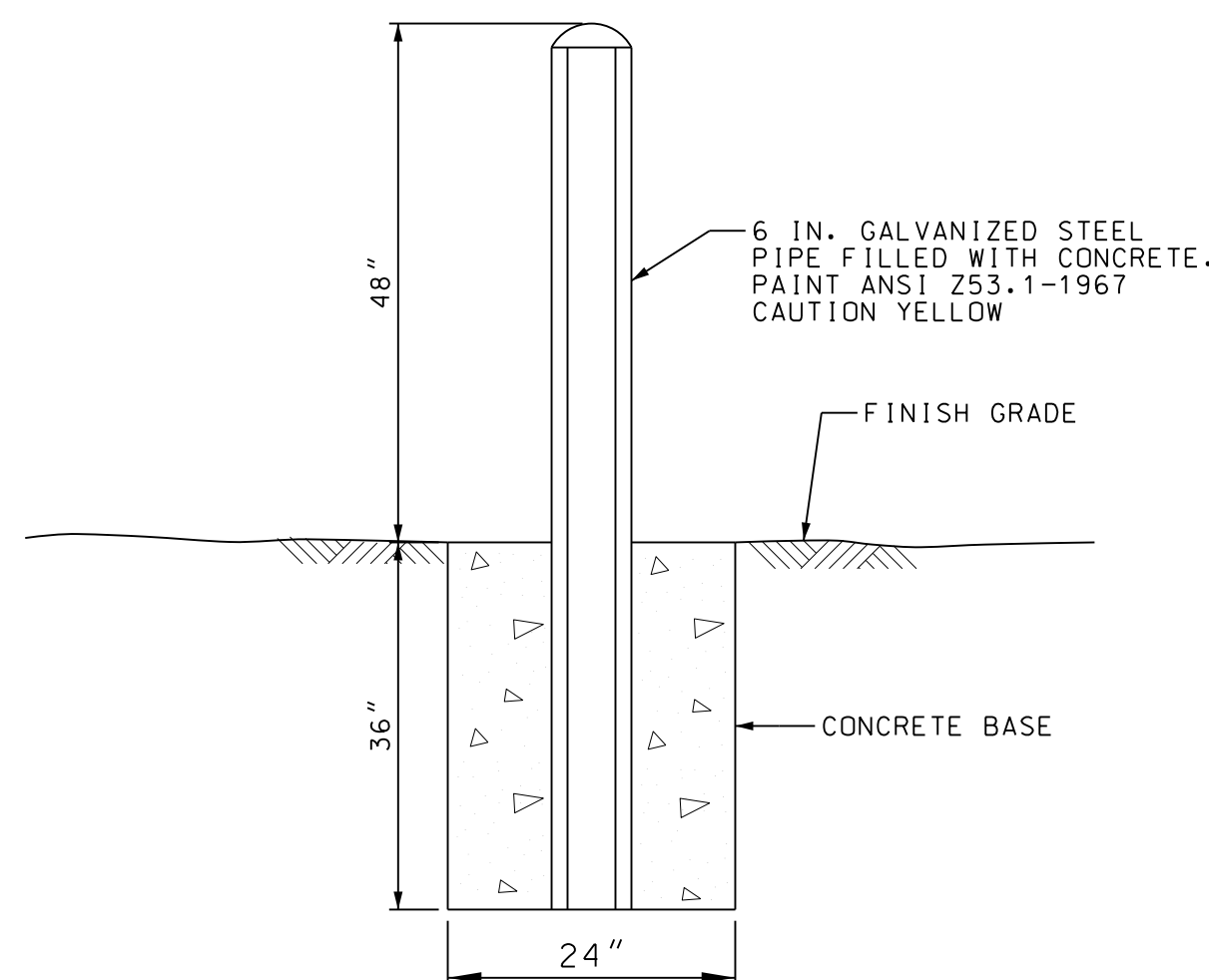
**3 POLE BASE DETAIL (VERTICAL FOOTING)**  
E0.3 N.T.S.

**LEGEND**

- POLE
- GROUND LUG BOND POLE TO GROUND ROD
- FINISHED GRADE OF PAVING
- RACEWAY AND CONDUCTORS
- 3/4" x 10' GROUND ROD WITH EXOTHERMIC CONNECTION
- REINFORCING STEEL STRUCTURE 4\*8 VERTICAL
- 4#12 RE-BAR TIES TO ANCHOR BOLTS
- SONO-TUBE CONSTRUCTION WITH 1" CHAMFER
- WEATHERPROOF WITH SEALING COMPOUND
- 1\*6 CU. GROUND IN 1/2" PVC.

**NOTES:** POLE BASE DETAIL

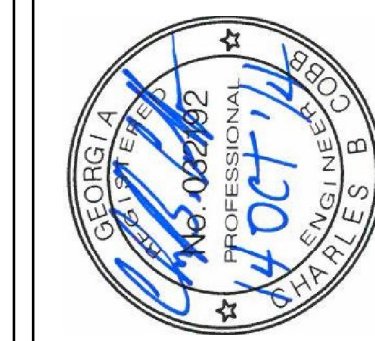
- UNLESS NOTED, BASES SHALL BE INSTALLED ABOVE GRADE. FOR ABOVE GRADE BASE, INSTALL 30" ABOVE FINISHED GRADE OR PAVING. HAND RUB EXPOSED BASE TO SAND FINISH.
- ANCHOR BOLT COVER SHALL BE SECURED BY STAINLESS STEEL SCREWS.
- ANCHOR BOLTS SHALL BE PRE-FABRICATED AND FURNISHED BY THE POLE MANUFACTURER. ANCHOR BOLTS SHALL BE COORDINATED WITH AND TIED TO THE REINFORCING STEEL STRUCTURE.
- PACK HIGH STRENGTH GROUT BETWEEN POLE BASE AND FOUNDATION TO INSURE FULL CONTACT WITH FOOTING.



**4 BOLLARD DETAIL**  
E0.3 N.T.S.

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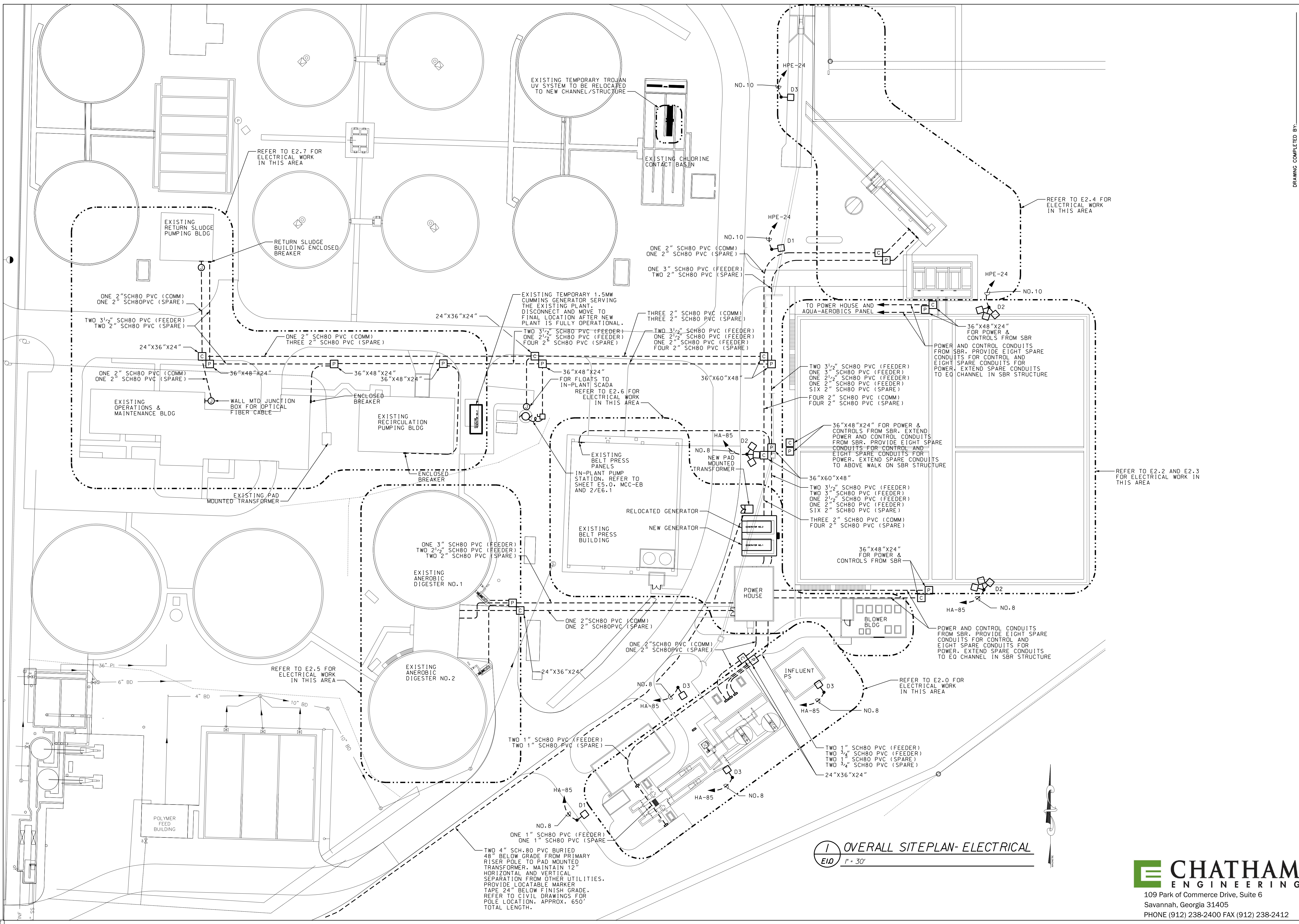


Hinesville/Ft Stewart  
WWTP Upgrade  
for  
The City of Hinesville  
Ft Stewart  
Liberty County, Georgia

ELECTRICAL  
DETAILS

DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E0.3

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**OVERALL SITEPLAN- ELECTRICAL**  
 EIO 1" = 30'

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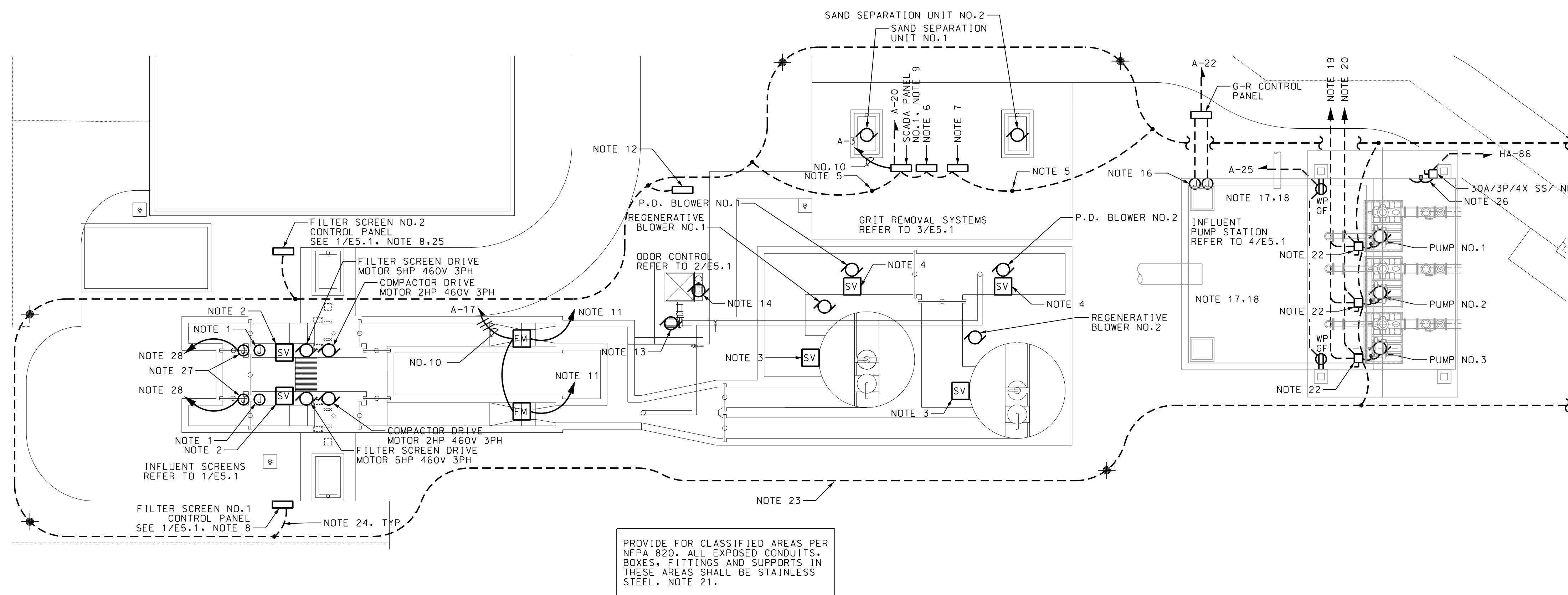


**Hinesville/Ft Stewart  
 WWTP Upgrade  
 for  
 The City of Hinesville**  
 Ft Stewart  
 Liberty County, Georgia

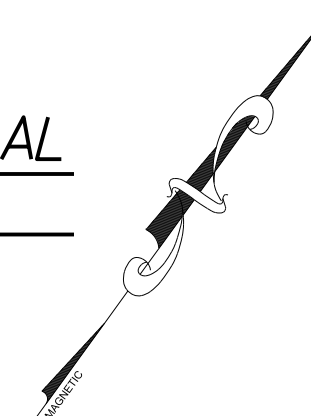
OVERALL SITE PLAN -  
 ELECTRICAL  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E10

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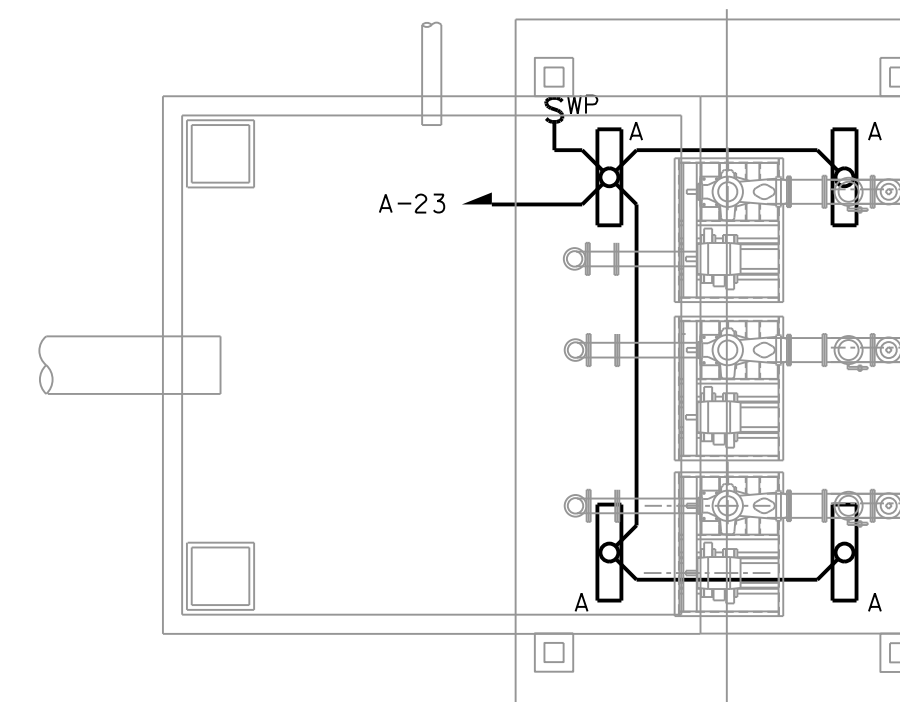


**1** INFLUENT SYSTEMS - SITE ELECTRICAL  
E20 1" = 10'

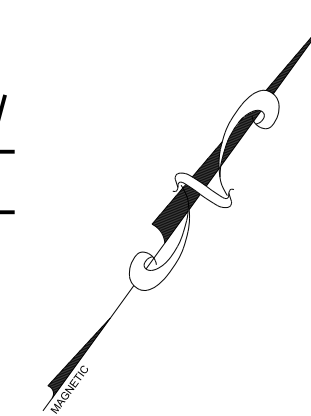


**NOTES:**

1. JUNCTION BOX CONNECTION FOR FLOAT SWITCH TO INFLUENT SCREEN. FIELD COORDINATE LOCATION AND CONNECTION TO FLOAT. PROVIDE CORD GRIP FOR TERMINATION OF FLOAT CABLE INTO JUNCTION BOX.
2. SOLENOID VALVE PROVIDED WITH EQUIPMENT. FIELD INSTALLED BY OTHERS. ELECTRICAL CONNECTION BY DIV.16. COORDINATE WITH EQUIPMENT PROVIDED.
3. AIR LIFT SOLENOID VALVE. FIELD INSTALLED BY OTHERS. ELECTRICAL CONNECTION BY DIV.16. COORDINATE WITH EQUIPMENT PROVIDED.
4. AIR SCOUR SOLENOID VALVE. FIELD INSTALLED BY OTHERS. ELECTRICAL CONNECTION BY DIV.16. COORDINATE WITH EQUIPMENT PROVIDED.
5. MAKE GROUND CONNECTION TO SUPPORT LEG OF GRIT REMOVAL SCREW.
6. GRIT SEPARATION UNIT NO.1 CONTROL PANEL. MOUNT ON 304 STAINLESS STEEL CHANNEL FRAME. FIELD COORDINATE LOCATION WITH CIVIL DRAWINGS AND OTHER TRADES. SEE 1/ES.0 & 3/ES.1.
7. GRIT SEPARATION UNIT NO.2 CONTROL PANEL. MOUNT ON 304 STAINLESS STEEL CHANNEL FRAME. FIELD COORDINATE LOCATION WITH CIVIL DRAWINGS AND OTHER TRADES. SEE 1/ES.0 & 3/ES.1.
8. FILTER SCREEN CONTROL PANEL. MOUNT ON 304 STAINLESS STEEL CHANNEL FRAME. FIELD COORDINATE LOCATION WITH CIVIL DRAWINGS AND OTHER TRADES.
9. SCADA PANEL NO.1. MOUNT ON EQUIPMENT FRAME. COMMUNICATIONS FROM FILTER SCREEN, GRIT REMOVAL, INFLUENT FLOW METERS AND WET WELL LEVEL SENSORS SHALL BE EXTENDED TO THIS PANEL FOR SIGNAL COMMUNICATION TO CONTROLS. REFER TO SCADA RISER DIAGRAM, 1/ES.4.
10. FIELD COORDINATE LOCATION WITH EQUIPMENT PROVIDED.
11. 3/4" W/ONE BELDEN 5240F1 CABLE. EXTEND TO SCADA PANEL NO.1, NOTE 9.
12. ODOR CONTROL SYSTEM CONTROL PANEL. REFER TO 2/ES.1. COORDINATE ALL REQUIRED FIELD CONNECTIONS WITH EQUIPMENT SUPPLIED; PROVIDE CONNECTIONS FOR FRACTIONAL HP NUTRIENT PUMP, IRRIGATION VALVE AND PURGE VALVE POWERED FROM CONTROL PANEL. FIELD COORDINATE LOCATIONS OF THESE ITEMS.
13. ODOR CONTROL SYSTEM SUPPLY FAN.
14. ODOR CONTROL SYSTEM RECIRCULATION PUMP.
15. REFER TO SHEET ES.1 FOR RISER DIAGRAMS OF EACH SYSTEM AND REQUIRED FIELD CONNECTIONS.
16. JUNCTION BOX CONNECTION FOR FLOAT SWITCH AND LEVEL TRANSDUCER. FIELD COORDINATE LOCATION.
17. PROVIDE STAINLESS STEEL CABLE SUPPORT IN WET WELL FOR PUMP, FLOAT AND TRANSDUCER CABLES.
18. PROVIDE KELLUM GRIP/CABLE SUPPORT FOR PUMP, FLOAT AND TRANSDUCER CABLES. KELLUM GRIP/CABLE SUPPORT SHALL BE HEAVY DUTY, STAINLESS STEEL, CLOSED MESH, DOUBLE EYE(FOR PUMP MOTOR CABLES).
19. EXTEND TO MCC-EA VFD FOR POWER FEED TO PUMPS.
20. EXTEND TO MCC-EA VFD FOR CONTROL OF PUMPS.
21. LOCATE CONTROL PANELS AND BOXES TEN (10) FEET FROM INFLUENT CHANNELS. MOUNT ALL EQUIPMENT 18" ABOVE GRADE AND/OR STRUCTURE. NO FITTINGS SHALL BE PLACED WITHIN 18" OF GRADE OR STRUCTURE.
22. THE DISCONNECT BETWEEN THE VARIABLE FREQUENCY DRIVE AND THE MOTOR SHALL BE EQUIPPED WITH A NORMALLY OPEN AUXILIARY CONTACT. THE AUXILIARY CONTACT SHALL BE WIRED INTO THE CONTROL VOLTAGE STOP/START CIRCUIT ON THE DRIVE. THE AUXILIARY CONTACT SHALL BE EARLY BREAK, SO THAT THE START STOP CIRCUIT DROPS OUT BEFORE THE DISCONNECT POWER CIRCUIT OPENS, AND LATE MAKE SO THAT THE DISCONNECT POWER CIRCUIT CLOSURE BEFORE THE START CIRCUIT ON THE DRIVE IS CLOSED.
23. NO. 6 CU GROUND. 24" BELOW GRADE. PROVIDE WARNING TAPE 12" BELOW GRADE.
24. BONDING JUMPER, 3/4" SCH. 80 PVC W/ 1 No. 1 CU. PROVIDE HYDRAULIC COMPRESSION LUG ON EQUIPMENT OR PIPEWORK. PROVIDE EXOTHERMIC WELD TO 6 CU. GROUND.
25. FILTER SCREEN NO.2, EXISTING OWNER FURNISHED EQUIPMENT TO BE RELOCATED FROM HPS PUMP STATION.
26. THE CONTRACTOR SHALL PROVIDE TWO COMPLETE FESTOON CABLE SYSTEMS, TO PROVIDE POWER TO THE MOTORIZED TROLLEY/HOIST. THE SYSTEM CONSISTS OF STAINLESS STEEL C-RAIL, STAINLESS STEEL CABLE TROLLEYS, FESTOON CABLE(SUNLIGHT RESISTANT/OUTSIDE INSTALLATION RATED). THE C-RAIL SHALL BE MOUNTED TO THE SHELTER FRAME ADJACENT TO THE HOIST SUPPORT BEAM. INSTALL AND SUPPORT IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS. PROVIDE PRODUCTS OF CONDUCTIX/WAMPFLER. NO SUBSTITUTIONS. CONTACT RICHARD S. BAZLEY, INSIDE SALES, CONDUCTIX/WAMPFLER, (800)521-4888, EXT.574. COORDINATE EQUIPMENT WITH ELECTRICAL REQUIREMENTS OF THE HOIST PROVIDED.
27. JUNCTION BOX CONNECTION FOR FLOAT SWITCH TO IN-PLANT SCADA. FIELD COORDINATE LOCATION AND CONNECTION TO FLOAT. PROVIDE CORD GRIP FOR TERMINATION OF FLOAT CABLE INTO JUNCTION BOX.
28. 3/4" W/2NO.14, 1ND. 14(G) TO IN-PLANT SCADA PANEL NO.1.



**2** INFLUENT PUMP STATION - LIGHTING PLAN  
E20 1" = 10'



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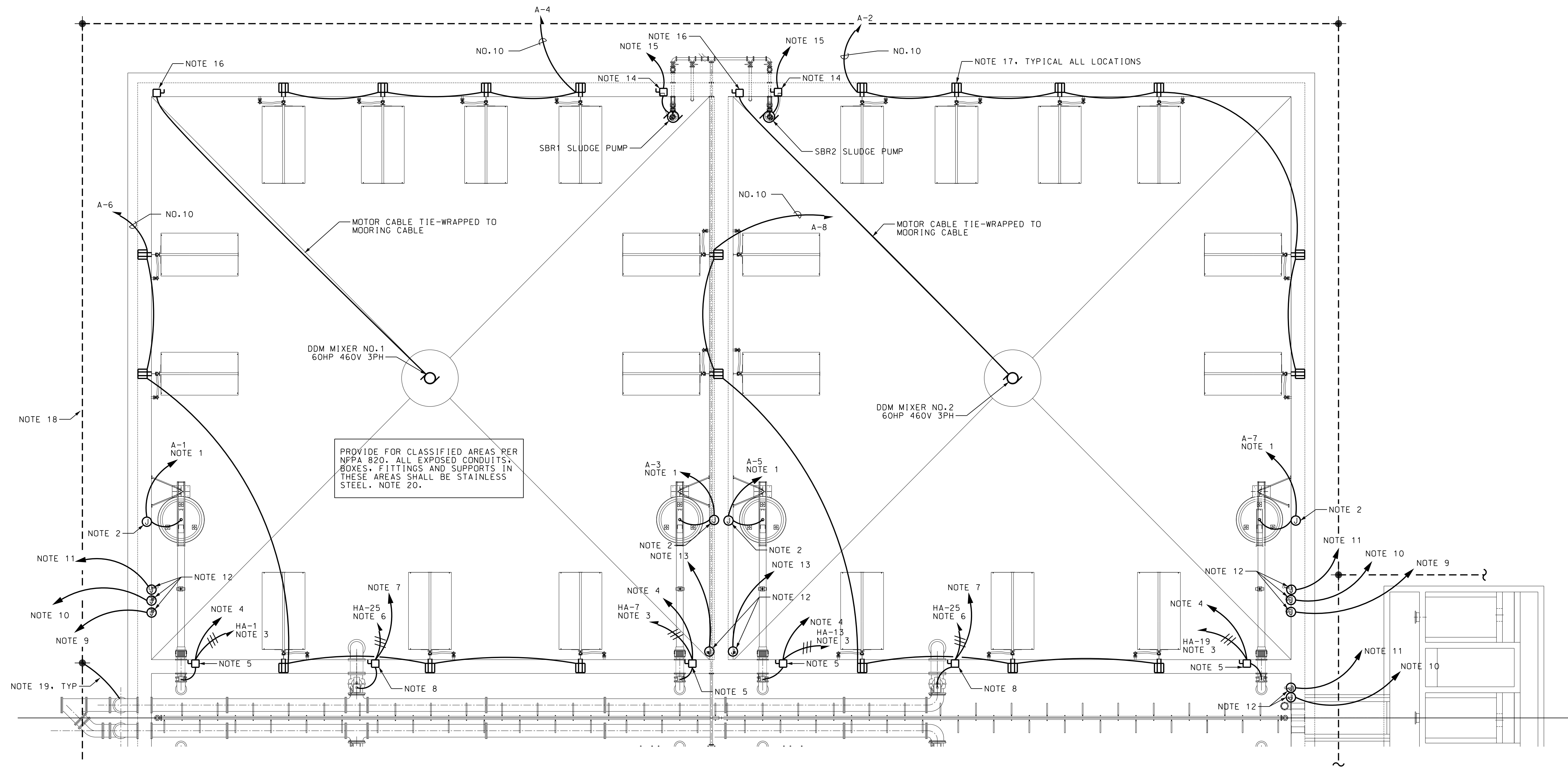
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WWTP Upgrade**  
for  
**The City of Hinesville**  
Ft Stewart  
Liberty County, Georgia

INFLUENT SYSTEMS  
ELECTRICAL PLAN  
DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E20

**CHATHAM ENGINEERING**  
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Savannah, Georgia 31405  
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**1** SBR TANKS 1&2 - ELECTRICAL PLAN  
E22 1" = 10'

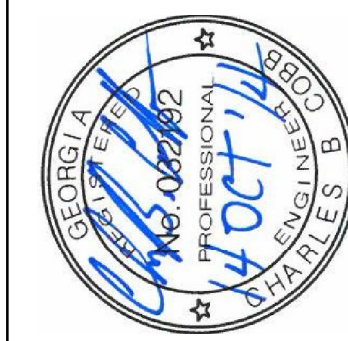
**NOTES:**

1. DECANTER WEIR ACTUATOR CONTROL CIRCUIT. EXTEND 1" C W/3NO.12(OPEN/CLOSE), 4NO.14(LS OPEN/CLOSE), 2NO.14(S.PARE), 1NO.12(G) TO SBR CONTROL PANEL. EXTEND 3/4" C W/2NO.12, 1NO.12(G) FROM THE SBR CONTROL PANEL TO THE BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED.
2. DECANTER WEIR ACTUATOR JUNCTION BOX. REFER TO DETAIL 1/E0.3 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
3. DECANT FLOW CONTROL VALVE POWER CIRCUIT: EXTEND POWER CIRCUIT FROM JUNCTION BOX THROUGH DISCONNECT SWITCH (30A/3P/4X SS/NF) AND TO BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED; PROVIDE 3/4" C W/3NO.12, 1NO.12(G) POWER CIRCUIT.
4. DECANT FLOW CONTROL VALVE CONTROL CIRCUIT: EXTEND CONTROL CONDUCTORS FROM JUNCTION BOX TO SBR CONTROL PANEL; PROVIDE 1 1/4" C W/22NO.14, 1NO.14(G).
5. DECANT FLOW CONTROL VALVE JUNCTION BOX AND DISCONNECT SWITCH: REFER TO DETAIL 6/E0.2 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM VALVE ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
6. SBR INFLUENT PLUG VALVE POWER CIRCUIT: EXTEND POWER CIRCUIT FROM JUNCTION BOX THROUGH DISCONNECT SWITCH (30A/3P/4X SS/NF) AND TO BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED; PROVIDE 3/4" C W/3NO.12, 1NO.12(G) POWER CIRCUIT.
7. SBR INFLUENT PLUG VALVE CONTROL CIRCUIT: EXTEND CONTROL CONDUCTORS FROM JUNCTION BOX TO SBR CONTROL PANEL; PROVIDE 1 1/4" C W/22NO.14, 1NO.14(G).
8. SBR INFLUENT PLUG VALVE JUNCTION BOX AND DISCONNECT SWITCH: REFER TO DETAIL 6/E0.2 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM VALVE ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
9. SHIELDED CABLE TO SBR CONTROL PANEL FOR D.O. SENSOR. EXTEND 3/4" C W/1 BELDEN 5240F1 (16AWG T.S. PR).
10. SHIELDED CABLE TO SBR CONTROL PANEL FOR PRESSURE TRANSDUCER. EXTEND 3/4" C W/1 BELDEN 5240F1 (16AWG T.S. PR).
11. TO SBR CONTROL PANEL FOR FLOAT SWITCH. EXTEND 3/4" C W/2NO.14, 1NO.14(G).
12. JUNCTION BOX MOUNTED TO TOP OF WALL. REFER TO DETAIL 1/E0.3 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF CONDUCTORS AND/OR CABLE AS REQUIRED. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE. REFER TO DETAIL.
13. TO SBR CONTROL PANEL FOR CHEMICAL SOLENOID VALVES. EXTEND 3/4" C W/4NO.14, 1NO.14(G).
14. SBR SLUDGE PUMP DISCONNECT SWITCH: REFER TO DETAIL 2/E0.3 FOR MOUNTING. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
15. TO SBR CONTROL PANEL FOR SLUDGE PUMP MOTOR PROTECTION CIRCUIT. EXTEND 3/4" C W/4NO.12, 1NO.12(G).
16. SBR DDM MIXER DISCONNECT SWITCH: REFER TO DETAIL 2/E0.3 FOR MOUNTING. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE. PROVIDE CABLE SLACK AS REQUIRED.
17. WALL MOUNTED RECEPTACLE, TYPICAL. REFER TO DETAIL 8/E0.2 FOR MOUNTING. FIELD COORDINATE LOCATION WITH BUBBLER HOIST SOCKET.
18. NO. 6 CU GROUND, 24" BELOW GRADE. PROVIDE WARNING TAPE 12" BELOW GRADE.
19. BONDING JUMPER. 3/4" PVC SCH 80 W/ NO. 1 CU. PROVIDE HYDRAULIC COMPRESSION LUG ON EQUIPMENT OR PIPEWORK. PROVIDE EXOTHERMIC WELD TO 6 CU. GROUND.
20. MOUNT ALL EQUIPMENT 18" ABOVE STRUCTURE. NO FITTINGS SHALL BE PLACED WITHIN 18" OF STRUCTURE.

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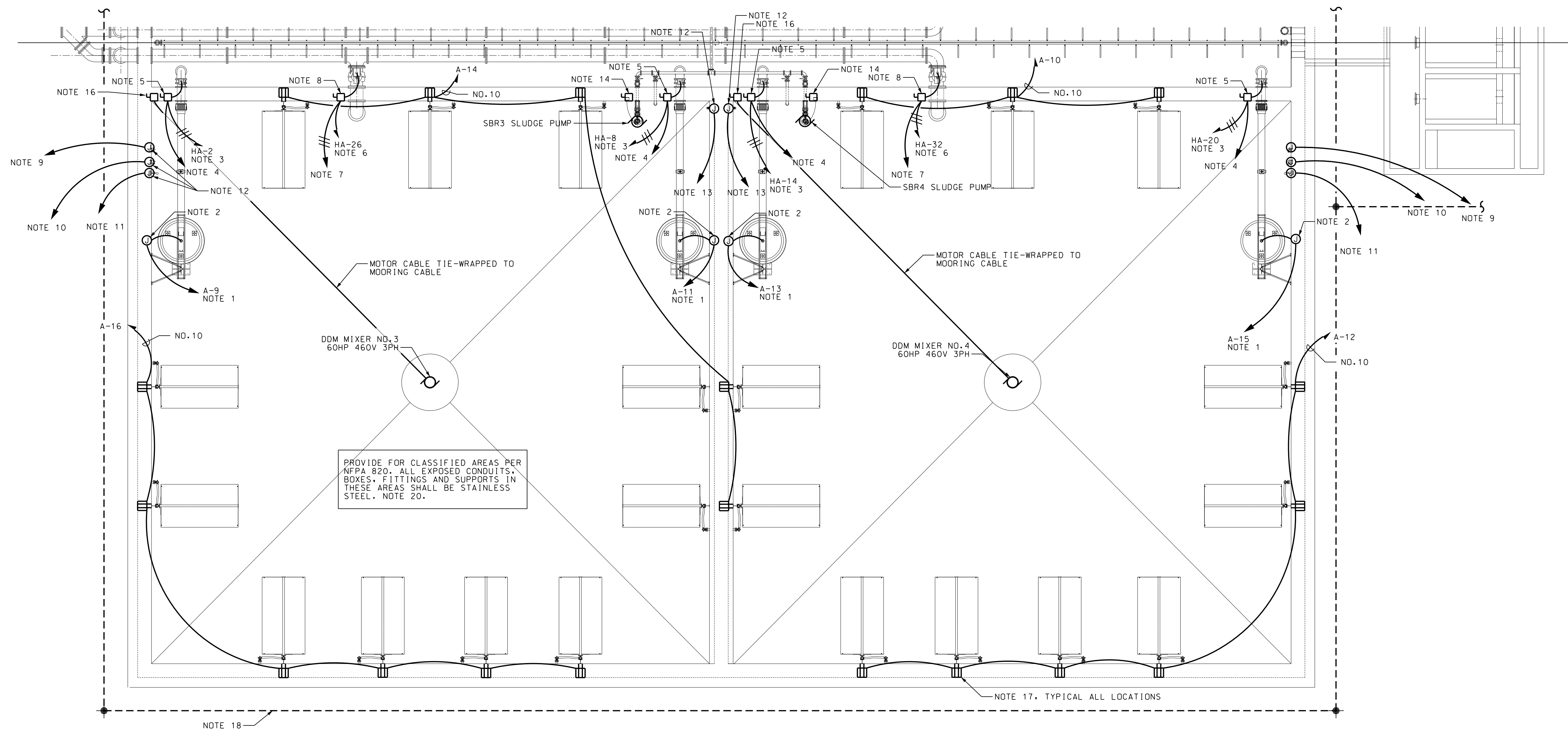
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for  
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Liberty County, Georgia

SBR 1 & 2 TANKS  
ELECTRICAL

DATE: NOVEMBER 29, 2012  
FILE NO: 2009-6BPRJ  
SHEET: E2.2

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**1 SBR TANKS 3&4 - ELECTRICAL PLAN**  
 E2.3 1" = 10'

**NOTES:**

1. DECANTER WEIR ACTUATOR CONTROL CIRCUIT. EXTEND 1" C W/3NO.12(OPEN/CLOSE), 4NO.14(LS OPEN/CLOSE), 2NO.14(S.PARE), 1NO.12(G) TO SBR CONTROL PANEL. EXTEND 3/4" C W/2NO.12, 1NO.12(G) FROM THE SBR CONTROL PANEL TO THE BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED.
2. DECANTER WEIR ACTUATOR JUNCTION BOX. REFER TO DETAIL 1/E0.3 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
3. DECANT FLOW CONTROL VALVE CONTROL CIRCUIT: EXTEND POWER CIRCUIT FROM JUNCTION BOX THROUGH DISCONNECT SWITCH (30A/3P/4X SS/NF) AND TO BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED; PROVIDE 3/4" C W/3NO.12, 1NO.12(G) POWER CIRCUIT.
4. DECANT FLOW CONTROL VALVE CONTROL CIRCUIT: EXTEND CONTROL CONDUCTORS FROM JUNCTION BOX TO SBR CONTROL PANEL; PROVIDE 1 1/4" C W/22NO.14, 1NO.14(G).
5. DECANT FLOW CONTROL VALVE JUNCTION BOX AND DISCONNECT SWITCH: REFER TO DETAIL 6/E0.2 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM VALVE ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
6. SBR INFLUENT PLUG VALVE POWER CIRCUIT: EXTEND POWER CIRCUIT FROM JUNCTION BOX THROUGH DISCONNECT SWITCH (30A/3P/4X SS/NF) AND TO BRANCH CIRCUIT PANEL AND CIRCUIT INDICATED; PROVIDE 3/4" C W/3NO.12, 1NO.12(G) POWER CIRCUIT.
7. SBR INFLUENT PLUG VALVE CONTROL CIRCUIT: EXTEND CONTROL CONDUCTORS FROM JUNCTION BOX TO SBR CONTROL PANEL; PROVIDE 1 1/4" C W/22NO.14, 1NO.14(G).
8. SBR INFLUENT PLUG VALVE JUNCTION BOX AND DISCONNECT SWITCH: REFER TO DETAIL 6/E0.2 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF MULTI-CONDUCTOR CABLE FROM VALVE ACTUATOR. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
9. SHIELDED CABLE TO SBR CONTROL PANEL FOR D.O. SENSOR. EXTEND 3/4" C W/1 BELDEN 5240F1 (16AWG T.S. PR).
10. SHIELDED CABLE TO SBR CONTROL PANEL FOR PRESSURE TRANSDUCER. EXTEND 3/4" C W/1 BELDEN 5240F1 (16AWG T.S. PR).
11. TO SBR CONTROL PANEL FOR FLOAT SWITCH. EXTEND 3/4" C W/2NO.14, 1NO.14(G).
12. JUNCTION BOX MOUNTED TO TOP OF WALL. REFER TO DETAIL 1/E0.3 FOR MOUNTING. PROVIDE TERMINAL STRIP FOR TERMINATION OF CONDUCTORS AND/OR CABLE AS REQUIRED. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
13. TO SBR CONTROL PANEL FOR CHEMICAL SOLENOID VALVES. EXTEND 3/4" C W/4NO.14, 1NO.14(G).
14. SBR SLUDGE PUMP DISCONNECT SWITCH: REFER TO DETAIL 2/E0.3 FOR MOUNTING. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE.
15. TO SBR CONTROL PANEL FOR SLUDGE PUMP MOTOR PROTECTION CIRCUIT. EXTEND 3/4" C W/4NO.12, 1NO.12(G).
16. SBR DDM MIXER DISCONNECT SWITCH: REFER TO DETAIL 2/E0.3 FOR MOUNTING. PROVIDE CORD GRIP AND STAINLESS STEEL SUPPORT KELLUM FOR CABLE. PROVIDE CABLE SLACK AS REQUIRED.
17. WALL MOUNTED RECEPTACLE, TYPICAL. REFER TO DETAIL 8/E0.2 FOR MOUNTING. FIELD COORDINATE LOCATION WITH BUBBLER HOIST SOCKET.
18. NO. 4/0 CU GROUND. 24" BELOW GRADE. PROVIDE WARNING TAPE 12" BELOW GRADE.
19. BONDING JUMPER. 3/4" PVC SCH 80 W/ NO. 1 CU. PROVIDE HYDRAULIC COMPRESSION LUG ON EQUIPMENT OR PIPEWORK. PROVIDE EXOTHERMIC WELD TO 4/0 CU. GROUND.
20. MOUNT ALL EQUIPMENT 18" ABOVE STRUCTURE. NO FITTINGS SHALL BE PLACED WITHIN 18" OF STRUCTURE.

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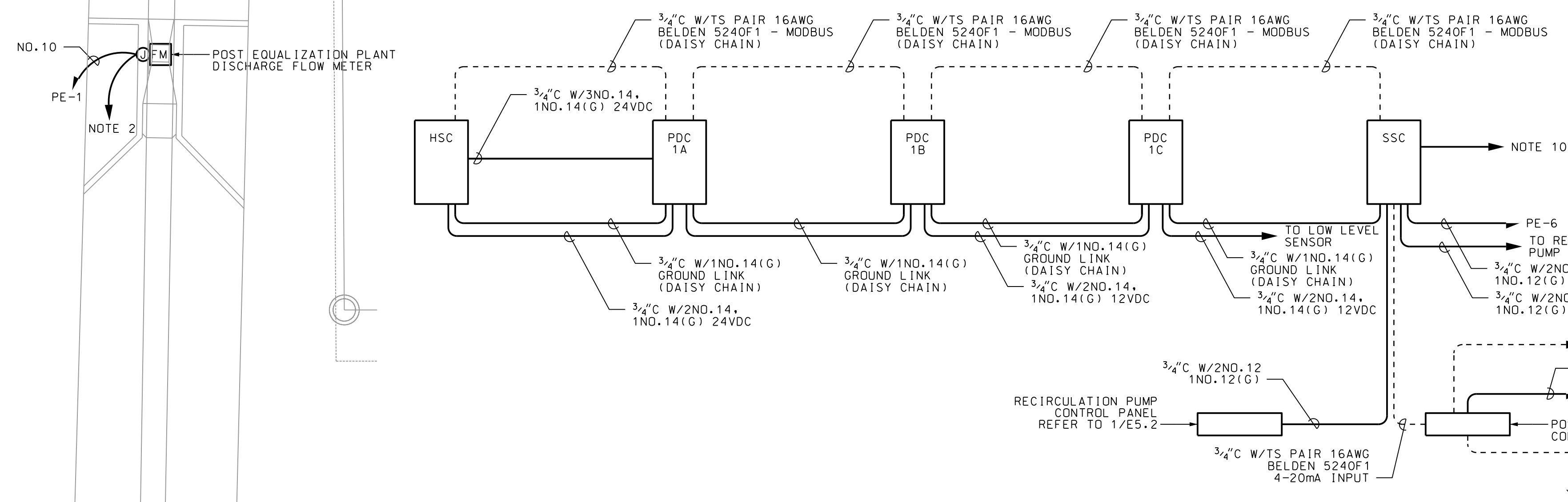
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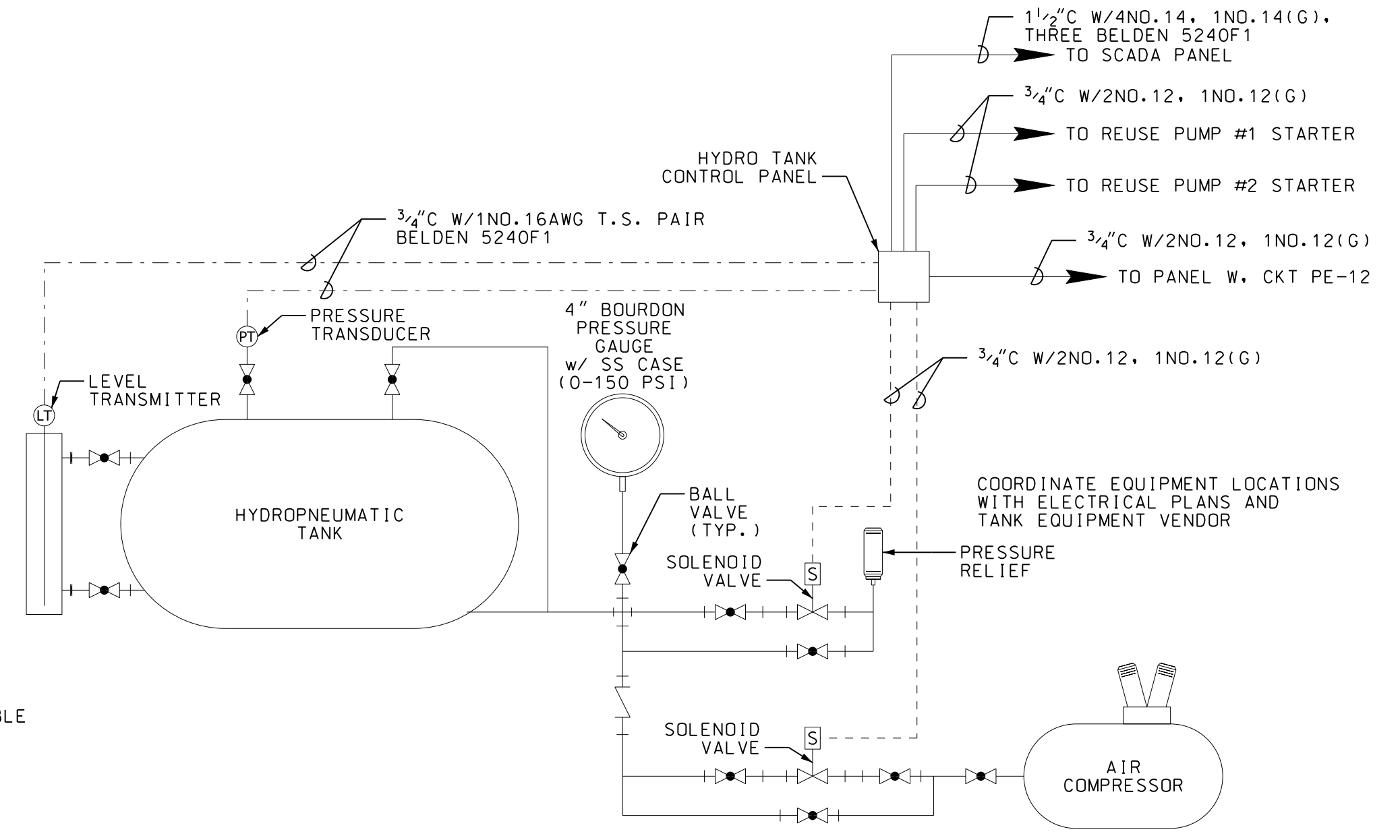
**SBR 3 & 4 TANKS  
 ELECTRICAL**  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E2.3

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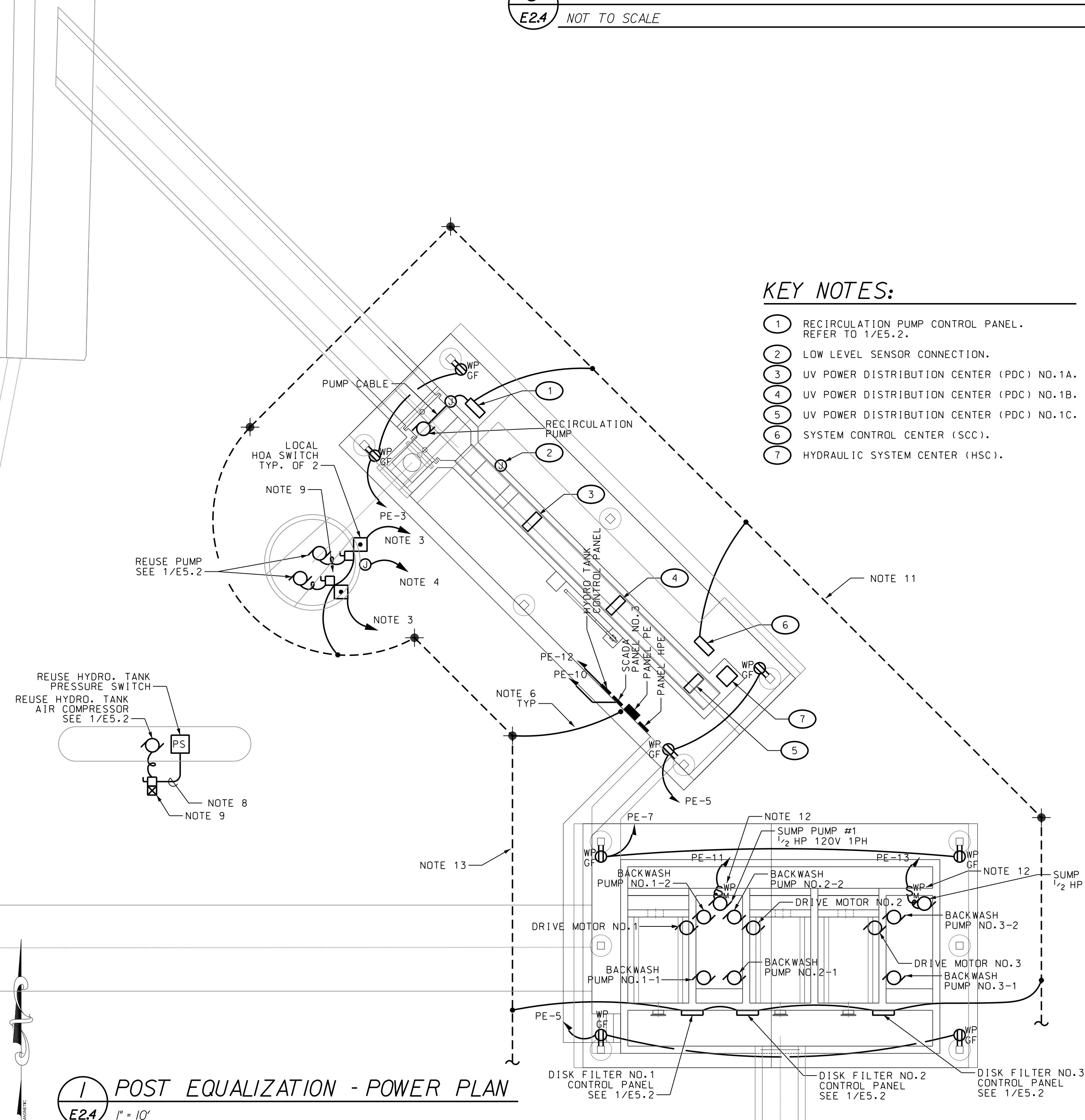




**3 ONE-LINE DIAGRAM - U.V. CONTROL & COMMUNICATIONS**  
 E2.4 NOT TO SCALE

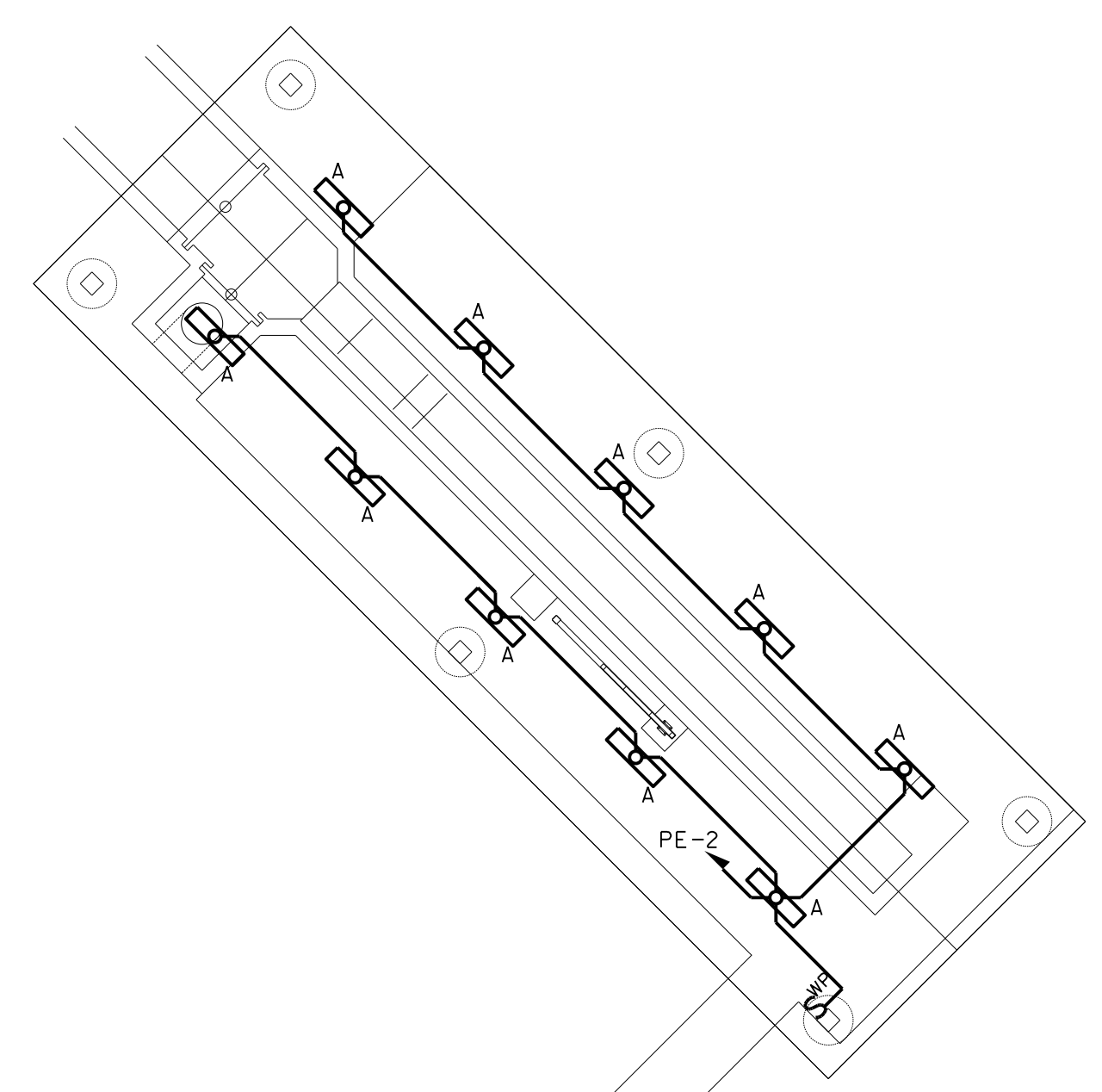


**4 HYDROPNEUMATIC TANK CONTROL DIAGRAM**  
 E2.4 NOT TO SCALE



**1 POST EQUALIZATION - POWER PLAN**  
 E2.4 1" = 10'

- KEY NOTES:**
- 1 RECIRCULATION PUMP CONTROL PANEL. REFER TO 1/E5.2.
  - 2 LOW LEVEL SENSOR CONNECTION.
  - 3 UV POWER DISTRIBUTION CENTER (PDC) NO.1A.
  - 4 UV POWER DISTRIBUTION CENTER (PDC) NO.1B.
  - 5 UV POWER DISTRIBUTION CENTER (PDC) NO.1C.
  - 6 SYSTEM CONTROL CENTER (SSC).
  - 7 HYDRAULIC SYSTEM CENTER (HSC).



**2 POST EQUALIZATION - LIGHTING PLAN**  
 E2.4 1" = 10'

**NOTES:**

1. FIELD COORDINATE ALL REQUIRED ELECTRICAL CONNECTIONS WITH THE EQUIPMENT PROVIDED AND WITH THE OTHER TRADES.
2. EXTEND 1" C W/TWO BELDEN 5240F1 CABLES (18AWG T.S.S. PAIR) TO THE POST EQUALIZATION SCADA PANEL (SCADA PANEL NO.3) LOCATED AT THE UV SHELTER.
3. EXTEND 3/4" C W/2NO.14, 1NO.14(G) TO SCADA PANEL NO.3 FOR LOCAL HAND/OFF/AUTO CONTROL OF THE REUSE PUMP.
4. EXTEND 1" C W/8NO.14, 1NO.14(G) TO SCADA PANEL NO.3 FOR LEVEL INPUT (HIGH/ON/OFF/LDW) CONTROL OF THE REUSE PUMP.
5. THE U.V. SYSTEM CONTROL PANEL (SSC), PDC-1A, PDC-1B AND HSC ARE EXISTING EQUIPMENT LOCATED AT THE EXISTING PLANT U.V. SYSTEM. THIS EQUIPMENT SHALL BE RELOCATED TO THE NEW U.V. SYSTEM STRUCTURE.
6. BONDING JUMPER. 3/4" PVC SCH 80 W/ NO. 1 CU. PROVIDE HYDRAULIC COMPRESSION LUG ON EQUIPMENT OR PIPEWORK. PROVIDE EXOTHERMIC WELD TO 4/0 CU. GROUND.
7. 3/4" C W/3NO.12, 1NO.12(G).
8. 3/4" C W/2NO.14, 1NO.14(G) TO COMBINATION STARTER FOR ON/OFF CONTROL OF THE REUSE HYDRO. TANK AIR COMPRESSOR IN THE 'AUTO' POSITION
9. MOUNT COMBINATION STARTER ON STAINLESS STEEL CHANNEL FRAME. REFER TO DETAIL SHEET FOR ELEVATION AND FABRICATION REQUIREMENTS.
10. 1" C W/10NO.14, 1NO.14(G) TO SCADA PANEL NO.10.
11. No. 3/8 CU GROUND. 24" BELOW GRADE. PROVIDE WARNING TAPE 12" BELOW GRADE.
12. WEATHERPROOF NEMA 4X STAINLESS STEEL ENCLOSED MOTOR RATED SWITCH. PROVIDE ARROW HART AH7810XC-00S OR APPROVED EQUAL.

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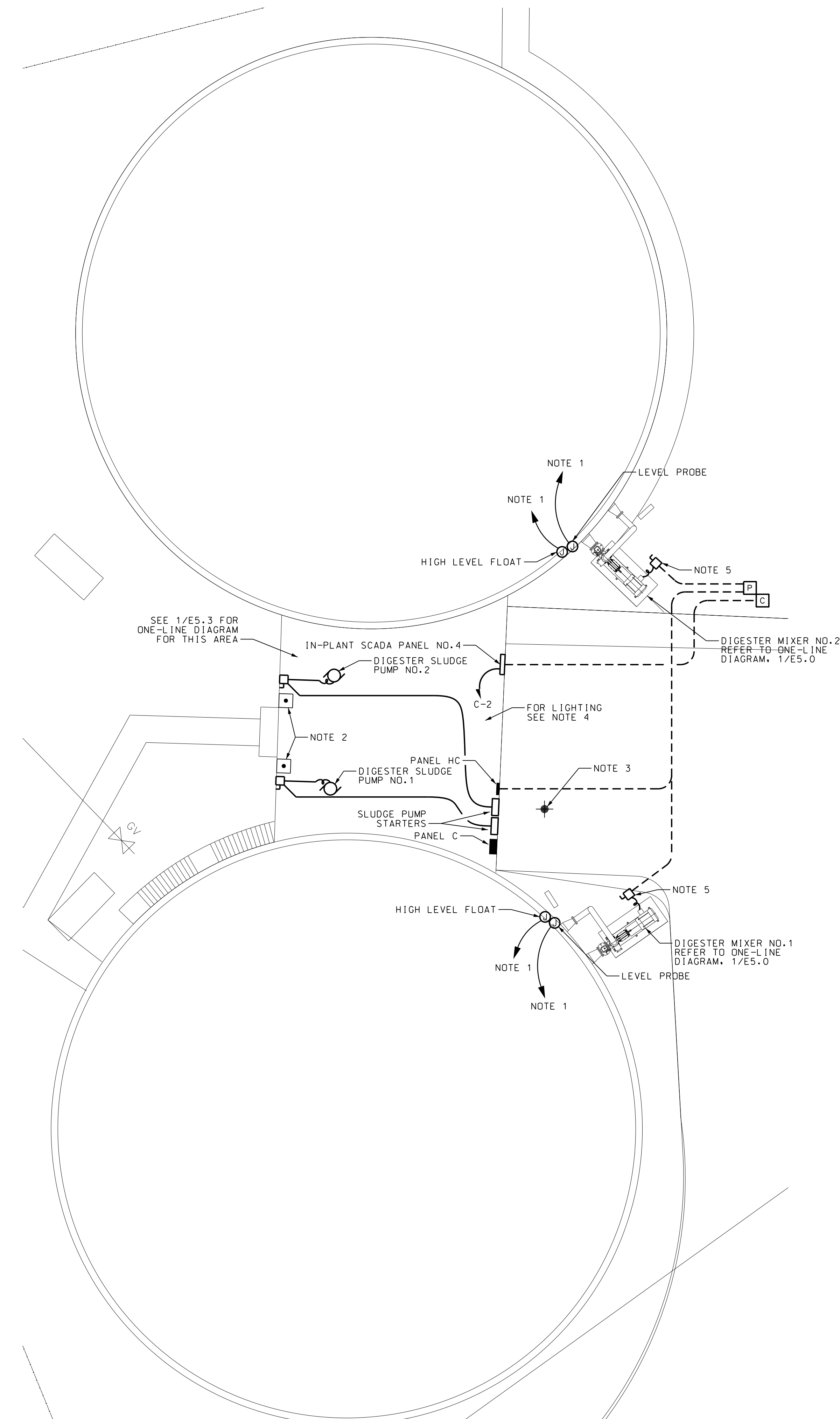
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**POST EQUALIZATION  
 ELECTRICAL PLAN**  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E2.4

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- NOTES:**
1. EXTEND 3/4" C W/ ONE BELDEN 5240F1 CABLE TO LOCAL IN-PLANT SCADA PANEL (NO.5).
  2. START/STOP PUSH-BUTTON FOR ADJACENT MOTOR. EXTEND 3/4" C W/ 3 No 14, 1 No 14(G) TO STARTER SERVING MOTOR.
  3. DRIVE GROUND ROD IN THIS AREA.
  4. EXISTING LIGHTS SHALL BE CONNECTED TO CIRCUIT C-1. FIELD VERIFY VOLTAGE OF EXISTING LIGHTS BEFORE CONNECTION.
  5. MOUNT DISCONNECT SWITCH ON EQUIPMENT FRAME. REFER TO DETAIL 2/E0.2.

**1** AEROBIC DIGESTER - ELECTRICAL PLAN  
 E25 1" = 10'

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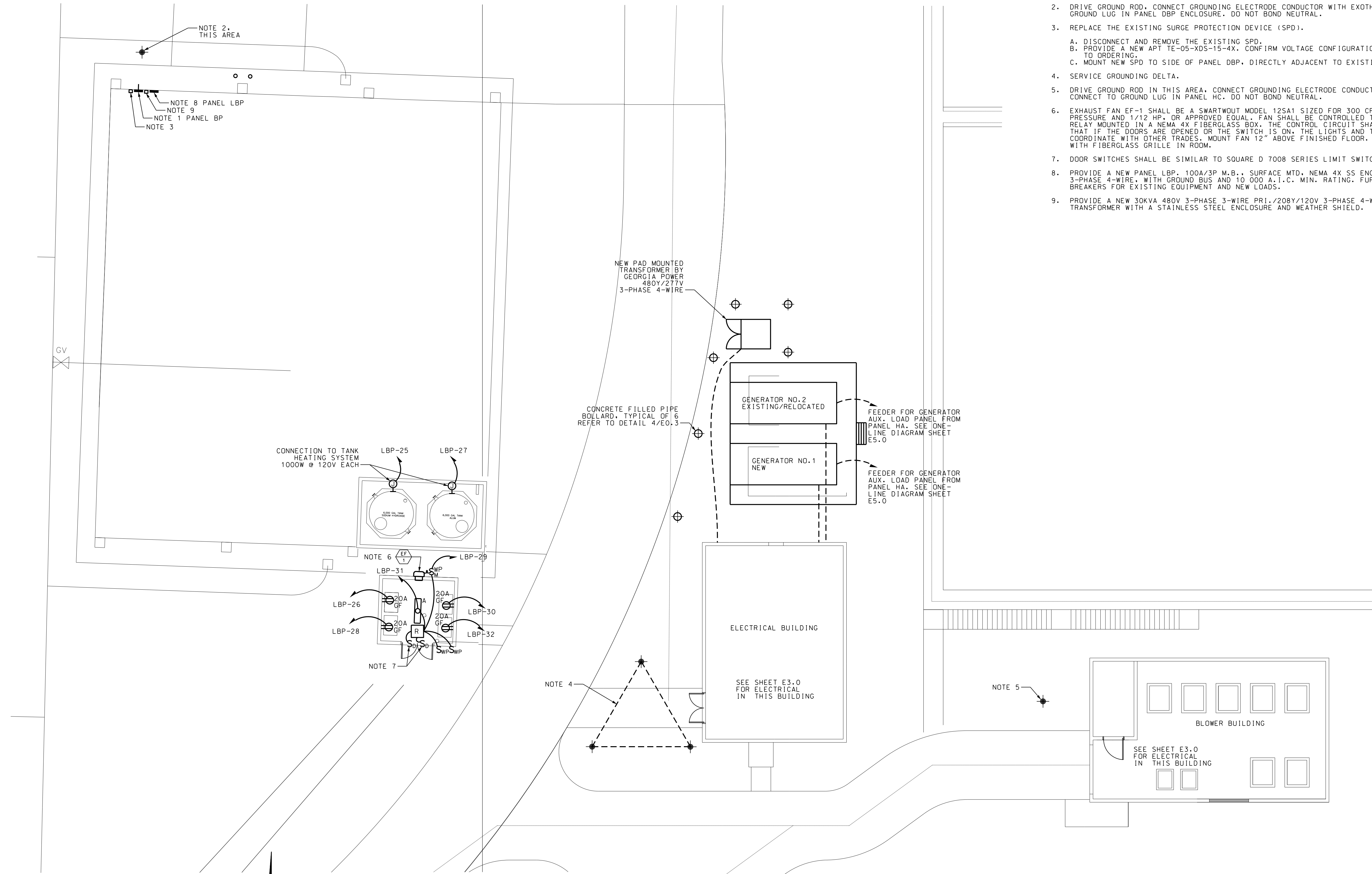


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AEROBIC DIGESTER  
 ELECTRICAL PLAN

DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E2.5





**1** BLOWER AND SLUDGE BLDG - ELECTRICAL PLAN  
**E26** 1" = 10'

**NOTES:**

1. EXISTING PANEL DBP SHALL BE REPLACED WITH A NEW NEMA 4X STAINLESS STEEL ENCLOSED PANEL WITH THE SAME MAIN AND BRANCH BREAKERS AS EXISTING:
  - A. THE EXISTING BREAKERS AND FEEDERS TO TRANSFORMER T-LBP, POLYMER SYSTEM BELT PRESS NO.1, POLYMER SYSTEM BELT PRESS NO.2, BELT PRESS NO.1 & NO.2 CONTROL PANEL SHALL REMAIN IN SERVICE.
  - B. THE EXISTING FEEDER TO PANEL HW WILL BE DECOMMISSIONED AS THE EXISTING PLANT IS TAKEN OFFLINE. THE BREAKER SHALL REMAIN IN THE PANEL AND LABELED AS 'SPARE'.
  - C. PROVIDE A 225A M.B., SURFACE MTD, NEMA 4X SS ENCLOSED, PANEL, 480Y/277V 3-PHASE 4-WIRE, WITH GROUND BUS AND 25 000 A.I.C. MIN. RATING. FURNISH BRANCH BREAKERS MATCHING EXISTING EQUIPMENT.
2. DRIVE GROUND ROD, CONNECT GROUNDING ELECTRODE CONDUCTOR WITH EXOTHERMIC WELD. CONNECT TO GROUND LUG IN PANEL DBP ENCLOSURE. DO NOT BOND NEUTRAL.
3. REPLACE THE EXISTING SURGE PROTECTION DEVICE (SPD).
  - A. DISCONNECT AND REMOVE THE EXISTING SPD.
  - B. PROVIDE A NEW APT TE-05-XDS-15-4X. CONFIRM VOLTAGE CONFIGURATION IS 480V DELTA PRIOR TO ORDERING.
  - C. MOUNT NEW SPD TO SIDE OF PANEL DBP, DIRECTLY ADJACENT TO EXISTING 30A/3P SPARE BREAKER.
4. SERVICE GROUNDING DELTA.
5. DRIVE GROUND ROD IN THIS AREA, CONNECT GROUNDING ELECTRODE CONDUCTOR WITH EXOTHERMIC WELD. CONNECT TO GROUND LUG IN PANEL HC. DO NOT BOND NEUTRAL.
6. EXHAUST FAN EF-1 SHALL BE A SWARTWOUT MODEL 12SA1 SIZED FOR 300 CFM AT 0.25" STATIC PRESSURE AND 1/12 HP, OR APPROVED EQUAL. FAN SHALL BE CONTROLLED THROUGH AN AUXILIARY RELAY MOUNTED IN A NEMA 4X FIBERGLASS BOX. THE CONTROL CIRCUIT SHALL BE CONFIGURED SUCH THAT IF THE DOORS ARE OPENED OR THE SWITCH IS ON, THE LIGHTS AND THE FAN WILL OPERATE. COORDINATE WITH OTHER TRADES. MOUNT FAN 12" ABOVE FINISHED FLOOR. FAN SHALL BE PROVIDED WITH FIBERGLASS GRILLE IN ROOM.
7. DOOR SWITCHES SHALL BE SIMILAR TO SQUARE D 7008 SERIES LIMIT SWITCHES WITH ROLLER ARM.
8. PROVIDE A NEW PANEL LBP, 100A/3P M.B., SURFACE MTD, NEMA 4X SS ENCLOSED, PANEL, 208Y/120V, 3-PHASE 4-WIRE, WITH GROUND BUS AND 10 000 A.I.C. MIN. RATING. FURNISH 42 20A/1P BRANCH BREAKERS FOR EXISTING EQUIPMENT AND NEW LOADS.
9. PROVIDE A NEW 30KVA 480V 3-PHASE 3-WIRE PRI./208Y/120V 3-PHASE 4-WIRE SEC. DRY TYPE TRANSFORMER WITH A STAINLESS STEEL ENCLOSURE AND WEATHER SHIELD.

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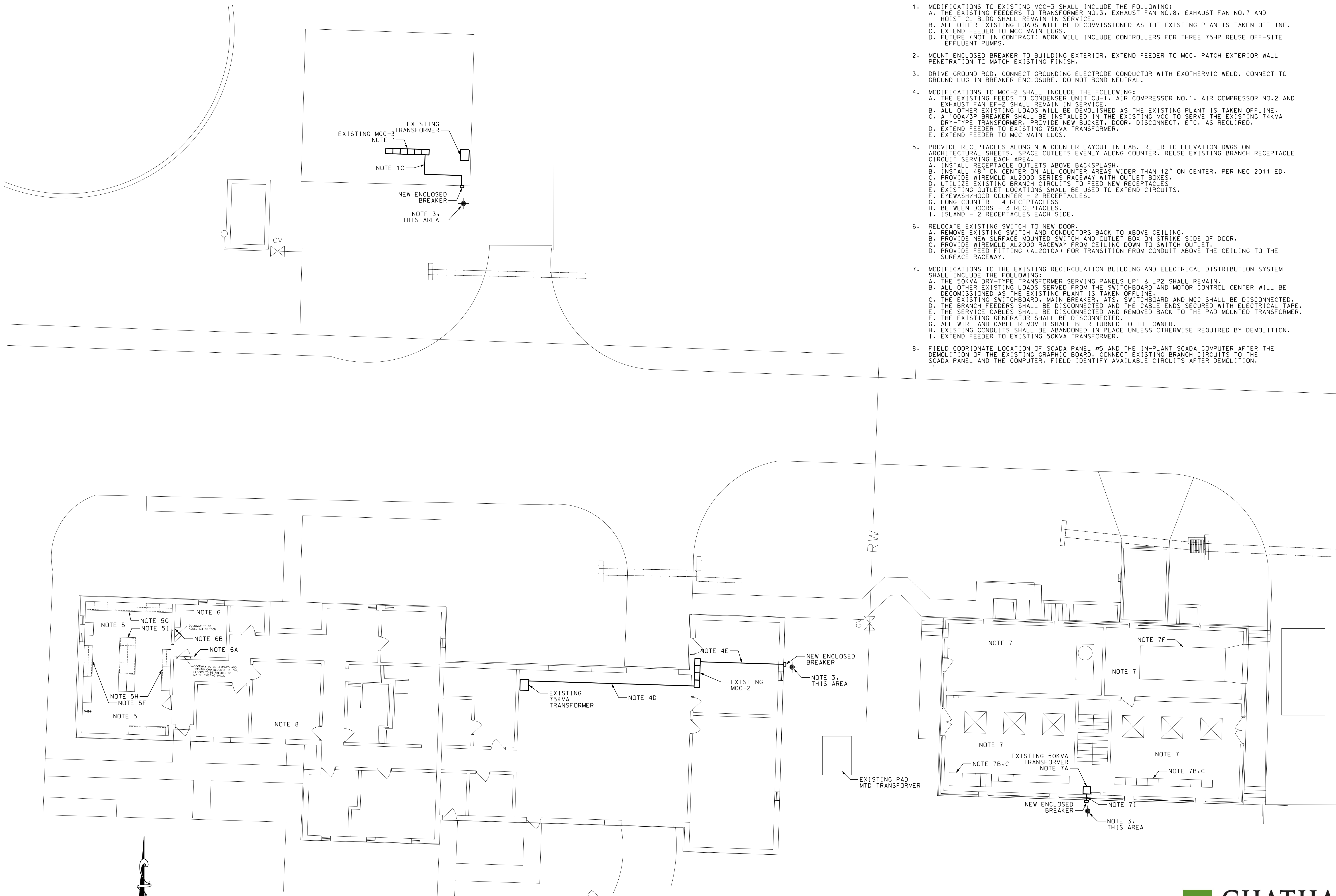
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POWER HOUSE & BELT  
 PRESS BUILDING SITE  
 PLANS - ELECTRICAL  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
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- NOTES:**
- MODIFICATIONS TO EXISTING MCC-3 SHALL INCLUDE THE FOLLOWING:
    - THE EXISTING FEEDERS TO TRANSFORMER NO.3, EXHAUST FAN NO.8, EXHAUST FAN NO.7 AND HOIST CL BLDG SHALL REMAIN IN SERVICE.
    - ALL OTHER EXISTING LOADS WILL BE DECOMMISSIONED AS THE EXISTING PLAN IS TAKEN OFFLINE.
    - EXTEND FEEDER TO MCC MAIN LUGS.
    - FUTURE (NOT IN CONTRACT) WORK WILL INCLUDE CONTROLLERS FOR THREE 75HP REUSE OFF-SITE EFFLUENT PUMPS.
  - MOUNT ENCLOSED BREAKER TO BUILDING EXTERIOR, EXTEND FEEDER TO MCC, PATCH EXTERIOR WALL PENETRATION TO MATCH EXISTING FINISH.
  - DRIVE GROUND ROD, CONNECT GROUNDING ELECTRODE CONDUCTOR WITH EXOTHERMIC WELD, CONNECT TO GROUND LUG IN BREAKER ENCLOSURE, DO NOT BOND NEUTRAL.
  - MODIFICATIONS TO MCC-2 SHALL INCLUDE THE FOLLOWING:
    - THE EXISTING FEEDS TO CONDENSER UNIT CU-1, AIR COMPRESSOR NO.1, AIR COMPRESSOR NO.2 AND EXHAUST FAN EF-2 SHALL REMAIN IN SERVICE.
    - ALL OTHER EXISTING LOADS WILL BE DEMOLISHED AS THE EXISTING PLANT IS TAKEN OFFLINE.
    - A 100A/3P BREAKER SHALL BE INSTALLED IN THE EXISTING MCC TO SERVE THE EXISTING 74KVA DRY-TYPE TRANSFORMER, PROVIDE NEW BUCKET, DOOR, DISCONNECT, ETC. AS REQUIRED.
    - EXTEND FEEDER TO EXISTING 75KVA TRANSFORMER.
    - EXTEND FEEDER TO MCC MAIN LUGS.
  - PROVIDE RECEPTACLES ALONG NEW COUNTER LAYOUT IN LAB, REFER TO ELEVATION DWGS ON ARCHITECTURAL SHEETS, SPACE OUTLETS EVENLY ALONG COUNTER, REUSE EXISTING BRANCH RECEPTACLE CIRCUIT SERVING EACH AREA.
    - INSTALL RECEPTACLE OUTLETS ABOVE BACKSPLASH.
    - INSTALL 48" ON CENTER ON ALL COUNTER AREAS WIDER THAN 12" ON CENTER, PER NEC 2011 ED.
    - PROVIDE WIREMOLD AL2000 SERIES RACEWAY WITH OUTLET BOXES.
    - UTILIZE EXISTING BRANCH CIRCUITS TO FEED NEW RECEPTACLES.
    - EXISTING OUTLET LOCATIONS SHALL BE USED TO EXTEND CIRCUITS.
    - EYEWASH/HOOD COUNTER - 2 RECEPTACLES.
    - LONG COUNTER - 4 RECEPTACLES.
    - BETWEEN DOORS - 3 RECEPTACLES.
    - ISLAND - 2 RECEPTACLES EACH SIDE.
  - RELOCATE EXISTING SWITCH TO NEW DOOR.
    - REMOVE EXISTING SWITCH AND CONDUCTORS BACK TO ABOVE CEILING.
    - PROVIDE NEW SURFACE MOUNTED SWITCH AND OUTLET BOX ON STRIKE SIDE OF DOOR.
    - PROVIDE WIREMOLD AL2000 RACEWAY FROM CEILING DOWN TO SWITCH OUTLET.
    - PROVIDE FEED FITTING (AL2010A) FOR TRANSITION FROM CONDUIT ABOVE THE CEILING TO THE SURFACE RACEWAY.
  - MODIFICATIONS TO THE EXISTING RECIRCULATION BUILDING AND ELECTRICAL DISTRIBUTION SYSTEM SHALL INCLUDE THE FOLLOWING:
    - THE 50KVA DRY-TYPE TRANSFORMER SERVING PANELS LP1 & LP2 SHALL REMAIN.
    - ALL OTHER EXISTING LOADS SERVED FROM THE SWITCHBOARD AND MOTOR CONTROL CENTER WILL BE DECOMMISSIONED AS THE EXISTING PLANT IS TAKEN OFFLINE.
    - THE EXISTING SWITCHBOARD, MAIN BREAKER, ATS, SWITCHBOARD AND MCC SHALL BE DISCONNECTED.
    - THE BRANCH FEEDERS SHALL BE DISCONNECTED AND THE CABLE ENDS SECURED WITH ELECTRICAL TAPE.
    - THE SERVICE CABLES SHALL BE DISCONNECTED AND REMOVED BACK TO THE PAD MOUNTED TRANSFORMER.
    - THE EXISTING GENERATOR SHALL BE DISCONNECTED.
    - ALL WIRE AND CABLE REMOVED SHALL BE RETURNED TO THE OWNER.
    - EXISTING CONDUITS SHALL BE ABANDONED IN PLACE UNLESS OTHERWISE REQUIRED BY DEMOLITION.
    - EXTEND FEEDER TO EXISTING 50KVA TRANSFORMER.
  - FIELD COORDINATE LOCATION OF SCADA PANEL #5 AND THE IN-PLANT SCADA COMPUTER AFTER THE DEMOLITION OF THE EXISTING GRAPHIC BOARD, CONNECT EXISTING BRANCH CIRCUITS TO THE SCADA PANEL AND THE COMPUTER, FIELD IDENTIFY AVAILABLE CIRCUITS AFTER DEMOLITION.

**1** EXIST. RECIRC., CONTROL AND CHEM. BLDGS - ELECTRICAL PLAN  
 E2.7 1" = 10'

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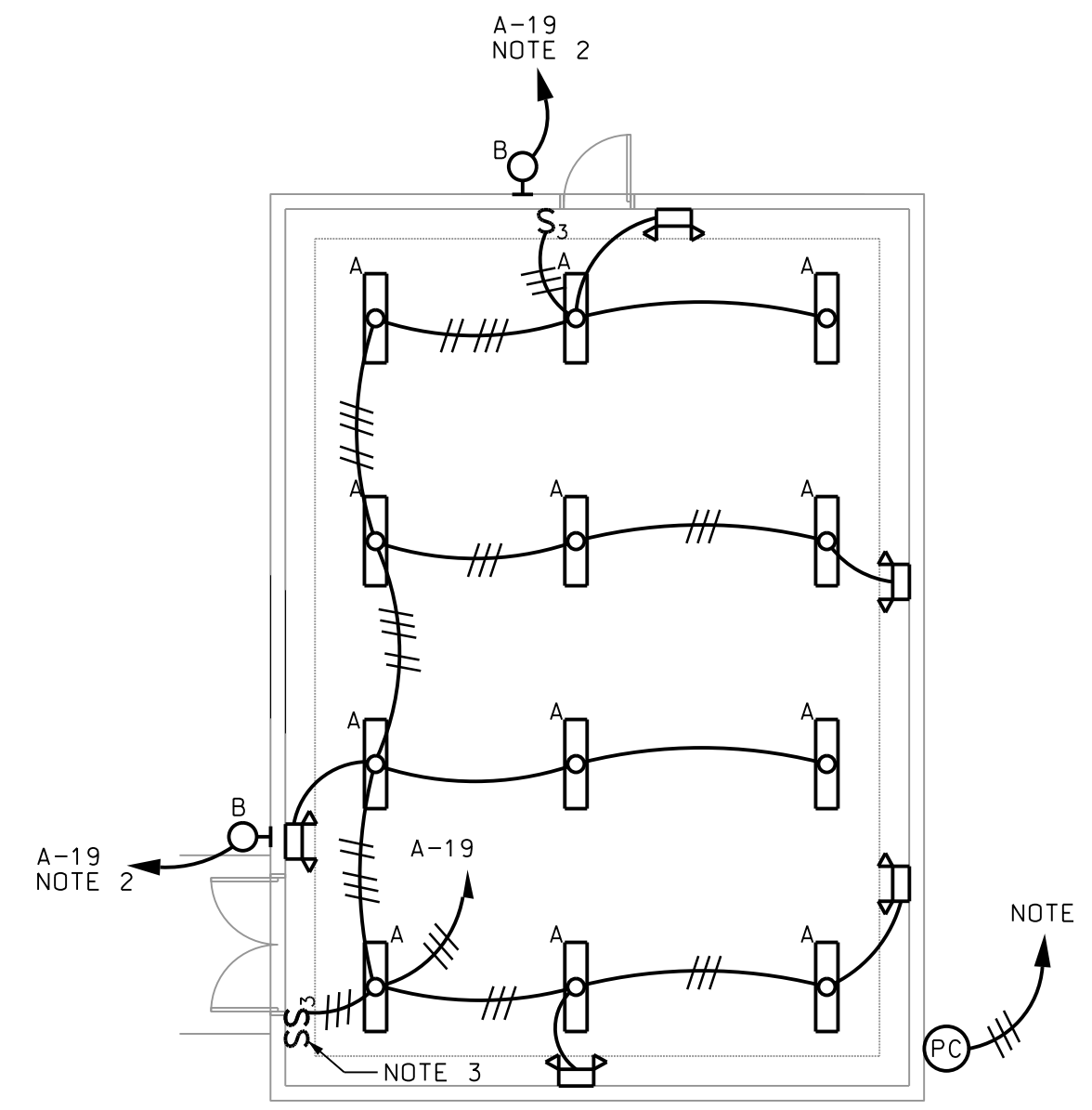
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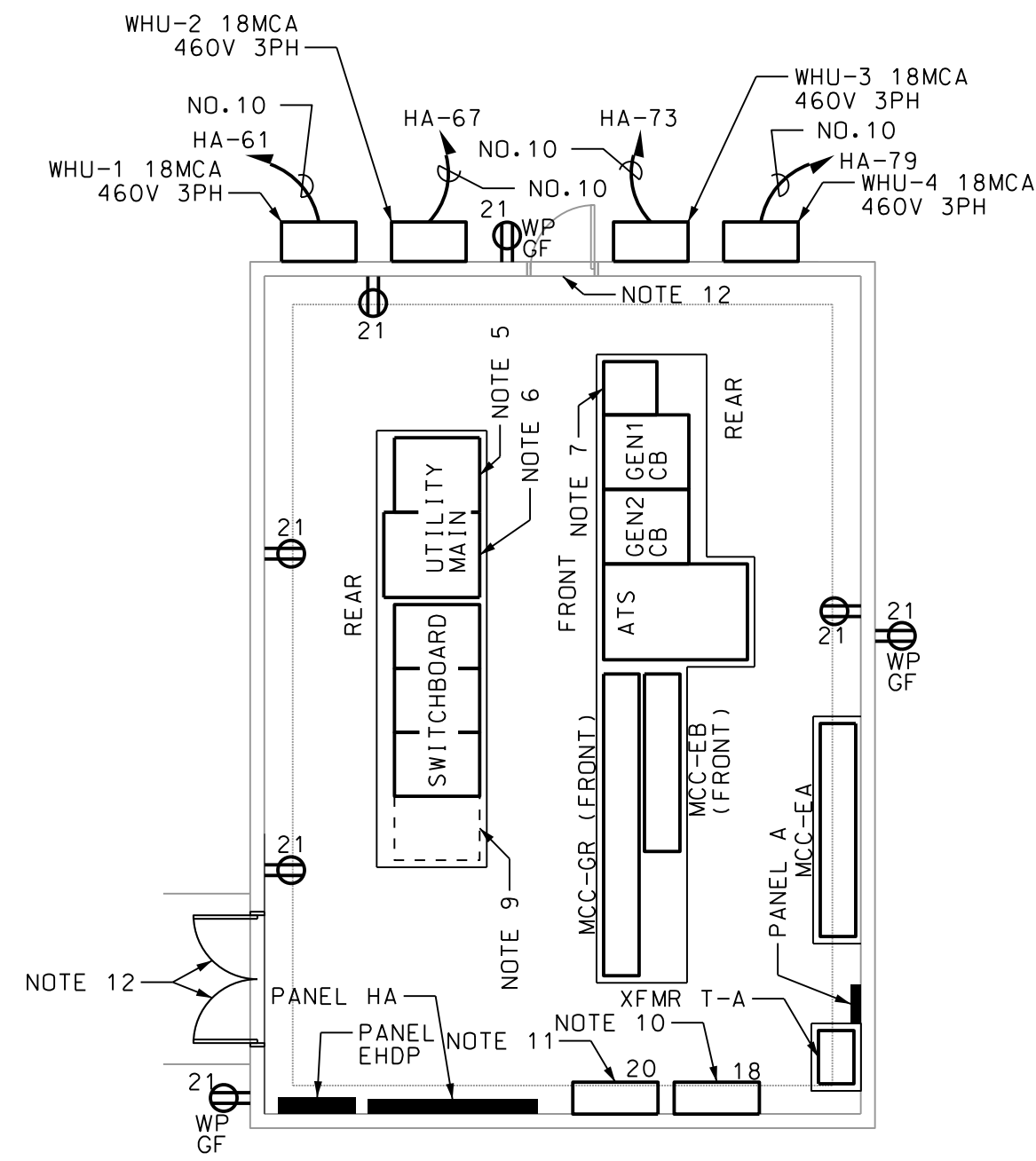
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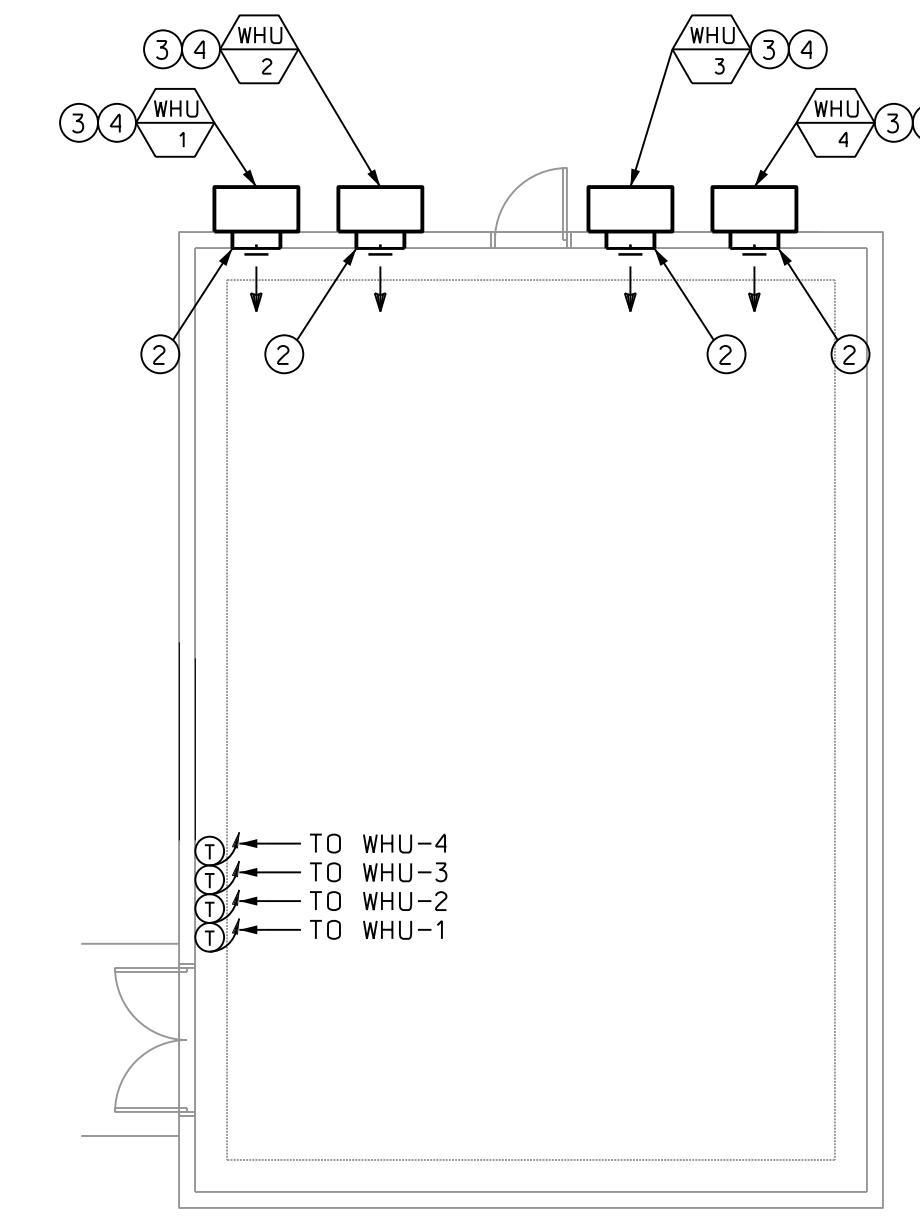




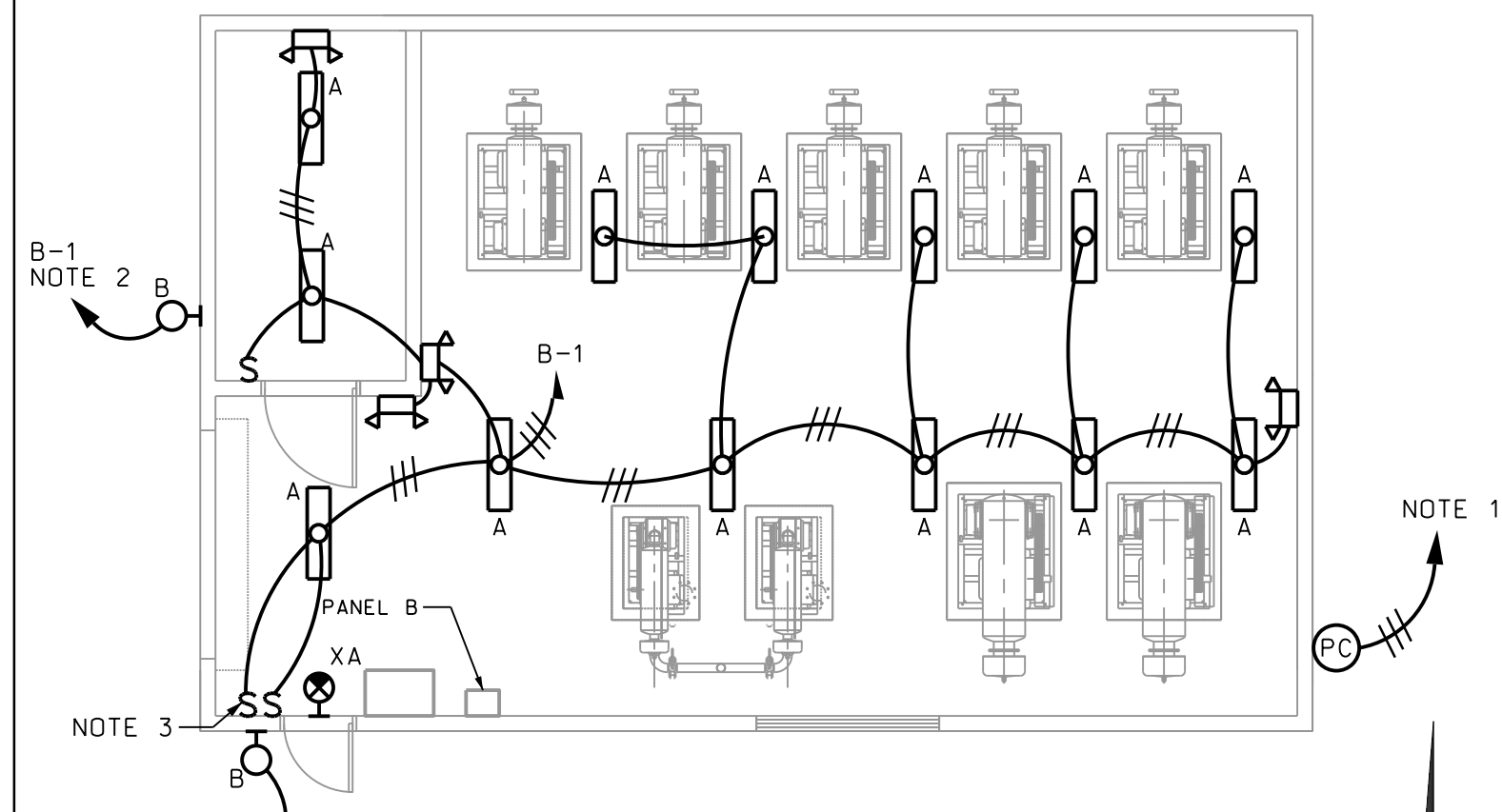
**1 POWER HOUSE - LIGHTING PLAN**  
E30 1/8" = 1'-0"



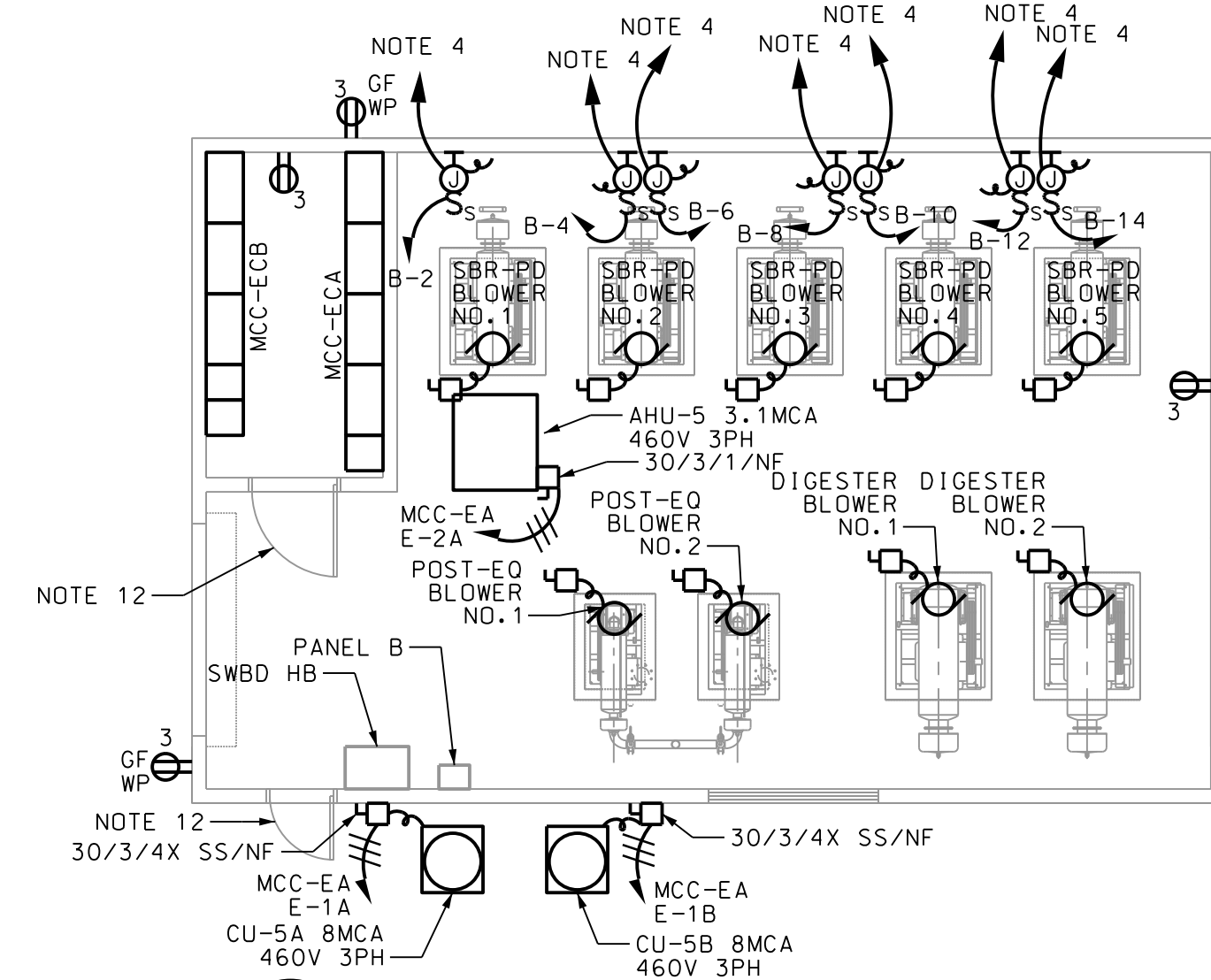
**2 POWER HOUSE - POWER PLAN**  
E30 1/8" = 1'-0"



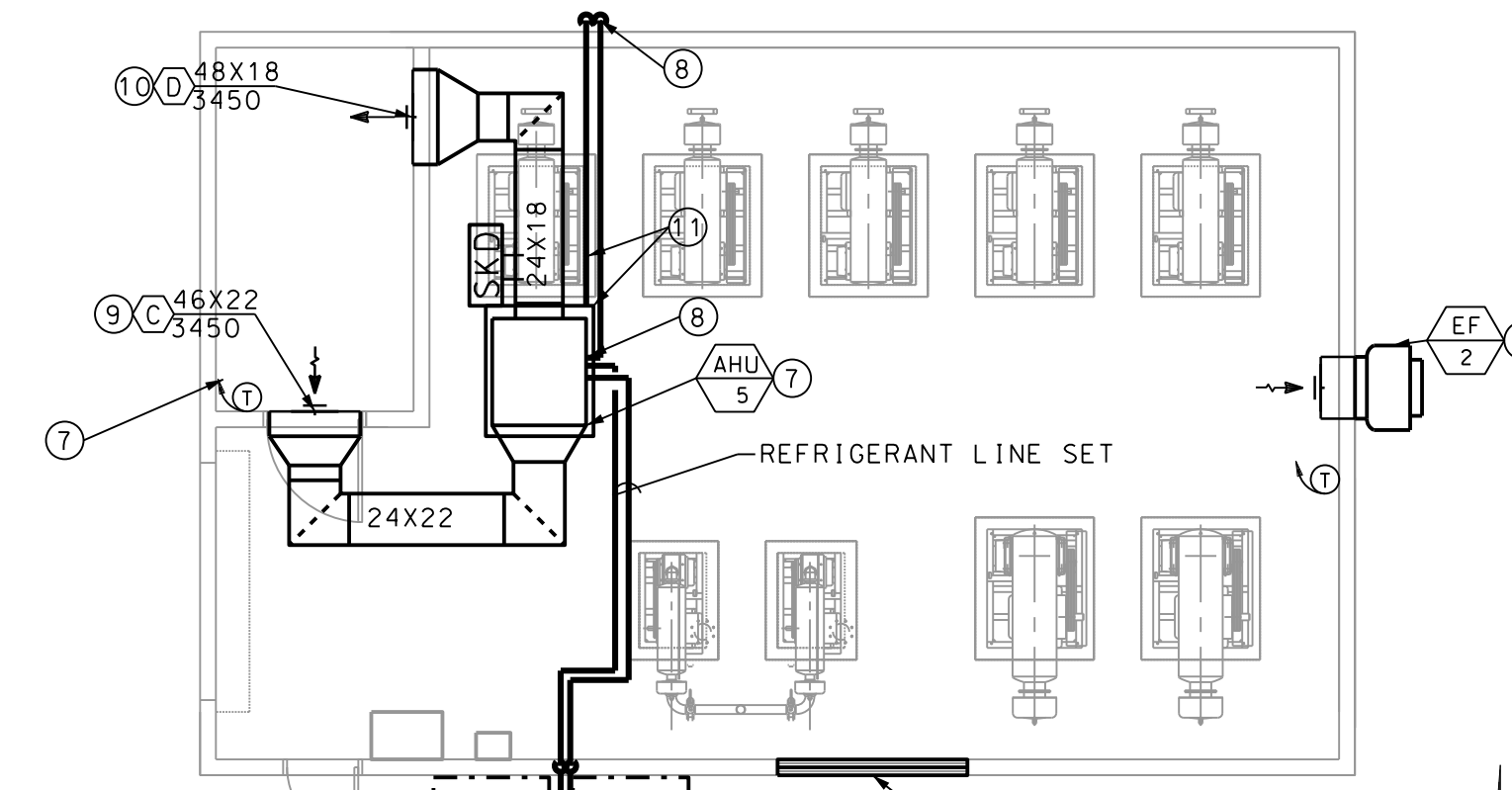
**3 POWER HOUSE - HVAC PLAN**  
E30 1/8" = 1'-0"



**4 BLOWER BUILDING - LIGHTING PLAN**  
E30 1/8" = 1'-0"



**5 BLOWER BUILDING - POWER PLAN**  
E30 1/8" = 1'-0"



**6 BLOWER BUILDING - HVAC PLAN**  
E30 1/8" = 1'-0"

**ELECTRICAL NOTES**

- EXTEND PHOTO CELL CONTROL THROUGH 'PHOTO' POSITION ON EXTERIOR LIGHTING CONTROL SWITCH.
- EXTEND THROUGH 3-POSITION EXTERIOR LIGHTING CONTROL SWITCH.
- EXTERIOR LIGHTING CONTROL SWITCH: THREE POSITION, MAINTAINED CONTACT, CENTER OFF. LABEL SWITCH POSITIONS: UP-PHOTO, CENTER-OFF, DOWN-MANUAL ON. PROVIDE COOPER 2225 OR EQUAL BY HUBBELL OR LEGRAND.
- EXTEND 1 1/2" C W/22NO.14, 1NO.14(G) FROM JUNCTION BOX TO SBR CONTROL PANEL IN ELECTRICAL BUILDING.
- UTILITY CABLE TERMINATION SECTION.
- UTILITY MAIN BREAKER.
- GENERATOR PARALLELING CONTROLLER.
- OMITTED.
- FUTURE SWITCHBOARD SECTION.
- AQUAROBICS CONTROL PANEL.
- IN-PLANT SCADA PANEL.
- COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE PANIC HARDWARE ON ALL MAN-DOORS IN MAIN ELECTRICAL BUILDING AND BLOWER BUILDING.

**GENERAL HVAC NOTES**

- 96"X72" STATIONARY ACUSTICAL LOUVER RUSKIN MODEL ACL845 OR APPROVED EQUAL. LOUVER SHALL BE PROVIDED WITH BIRD SCREEN AND HAVE A CLEAR ANODIZED FINISHED. CAULK AROUND FRAME TO MAKE LOUVER WATERTIGHT.
- INSTALL P-TRAP ON CONDENSATE DRAIN LINE. SUPPLY AND INSTALL SPLASH BLOCK ON GROUND. TURN CONDENSATE DRAIN LINE DOWN TO DRIP ON SPLASH BLOCK ON GROUND.
- WALL HUNG UNIT MOUNTED ON WALL. UNIT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. UNIT SHALL BE PROVIDED WITH FACTORY STANDARD WALL GRILLES, LEAD/LAG CONTROLLER AND 7-DAY PROGRAMMABLE THERMOSTAT. UNITS 1 THRU 4 SHALL BE BARD W61A1-COZ. PROVIDE INTEGRAL MAIN DISCONNECT.
- WALL HUNG UNITS SHALL HAVE THE FOLLOWING SEQUENCE OF OPERATION:
  - UNIT'S SHALL BE CONTROLLED BY THERMOSTAT MOUNTED IN THE SPACE. THERMOSTAT SHALL BE SET TO MAINTAIN 80°F (ADJ.).
  - UNIT'S FAN AND COMPRESSOR SHALL CYCLE AS REQUIRED TO MAINTAIN SET POINT IN SPACE.
  - WALL HUNG UNITS 1 THRU 4 SHALL HAVE THE FOLLOWING ADDITIONAL SEQUENCE:
    - WHU-1 AND 3 SHALL OPERATE AS LEAD UNITS FOR 30 DAYS.
    - WHU-2 AND 4 SHALL OPERATE AS LAG UNITS FOR 30 DAYS.
    - AFTER 30 DAYS WHU-2 AND 4 SHALL BE LEAD UNITS, WHU-1 AND 3 SHALL BE LAG UNITS FOR 30 DAYS.
  - DURING LEAD OPERATION WHU-1 (WHU-2) SHALL BE FIRST STAGE OF COOLING. UPON A FURTHER RISE IN TEMPERATURE, WHU-3 (WHU-4) SHALL BE THE SECOND STAGE OF COOLING.
- EXHAUST FAN EF-2 SHALL BE GREENHECK MODEL CWB OR APPROVED EQUAL. FAN SHALL BE SIZED FOR 3600 CFM AT 0.25" S.P. AND 1/2 HP. FAN SHALL BE PROVIDED WITH GRAVITY DAMPER, DISCONNECT SWITCH, WALL GRILLE AND WALL MOUNTED THERMOSTAT.
- CONDENSING UNIT MOUNTED ON CONCRETE PAD. ROUTE REFRERGERANT LINES AS SHOWN. UNIT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S GUIDELINES. UNIT SHALL BE TRANE 4TTA3048D4 OR APPROVED EQUAL.
- AIR HANDLING SHALL BE TRANE MODEL TWE09E3 OR APPROVED EQUAL. AIR HANDLER SHALL BE PROVIDED WITH MANUFACTURER'S 7 DAY PROGRAMMABLE THERMOSTAT. UNIT SHALL HAVE THE FOLLOWING SEQUENCE OF OPERATION:
  - UNIT'S SHALL BE CONTROLLED BY THERMOSTAT MOUNTED IN THE SPACE. THERMOSTAT SHALL BE SET TO MAINTAIN 80°F (ADJ.).
  - UNIT'S FAN AND COMPRESSOR SHALL CYCLE AS REQUIRED TO MAINTAIN SET POINT IN SPACE.
- INSTALL P-TRAP FULL SIZE OF CONNECTION AT UNIT AND ROUTE CONDENSATE DRAIN TO EXTERIOR AS SHOWN. TURN DOWN ON SPLASH BLOCK.
- TYPE C AIR DEVICE SHALL BE TITUS 350 OR APPROVED EQUAL. PROVIDE WITH OBD.
- TYPE D AIR DEVICE SHALL BE TITUS 300 OR APPROVED EQUAL. PROVIDE WITH OBD.
- INSTALL AUXILIARY DRAIN PAN UNDER UNIT AND ROUTE CONDENSATE LINE TO EXTERIOR AS SHOWN.

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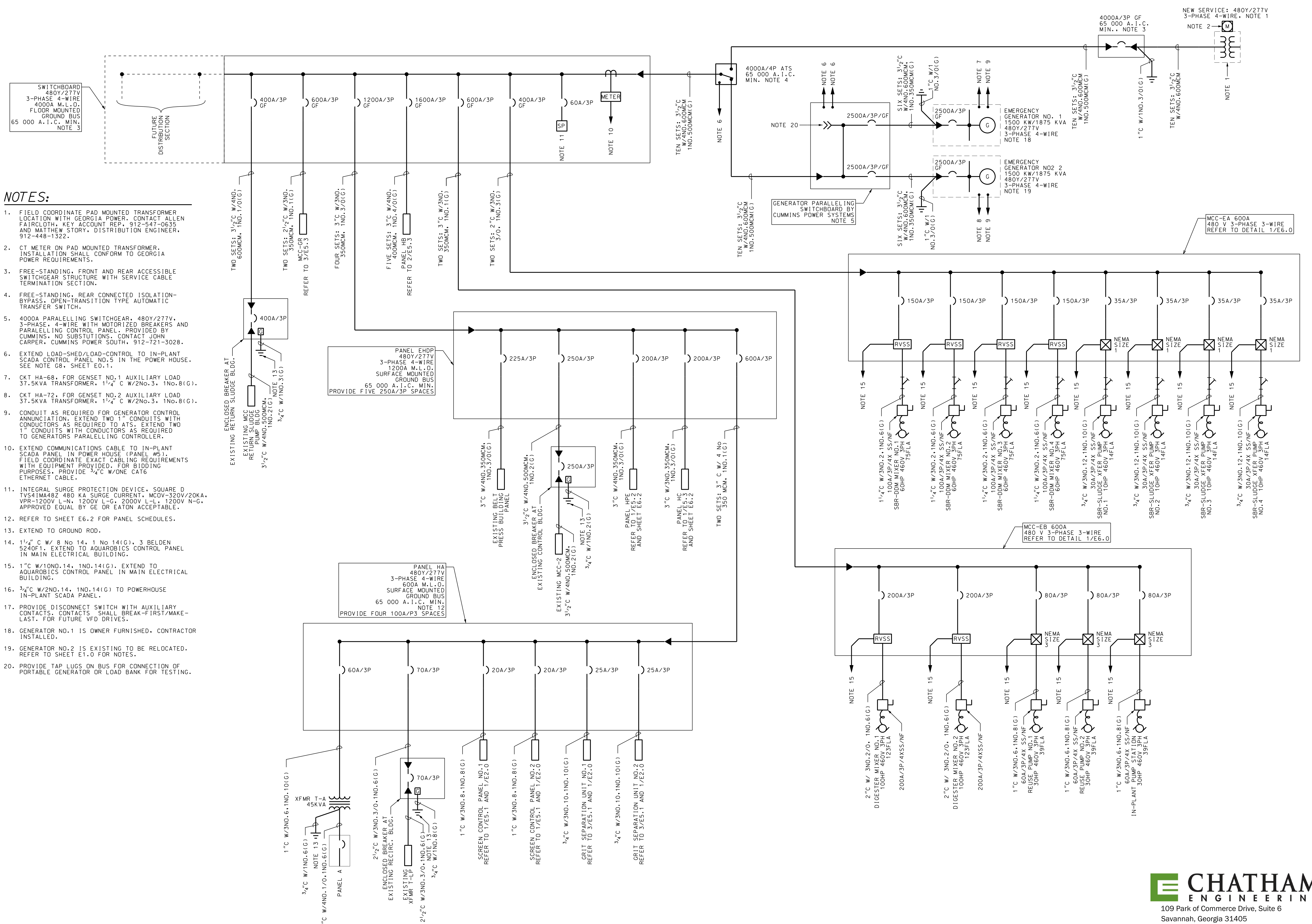
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for  
**WWTP Upgrade**  
The City of Hinesville  
Ft Stewart, Georgia  
Liberty County, Georgia

**POWER HOUSE & BLOWER BUILDING - LIGHTING, POWER & HVAC PLANS**  
DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E30

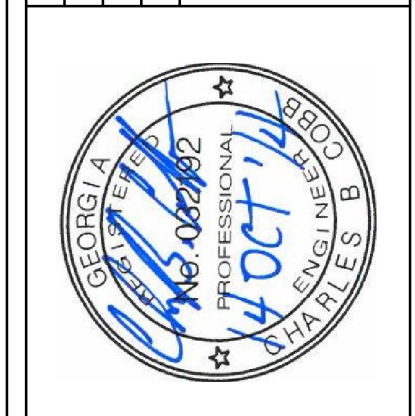
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Savannah, Georgia 31405  
PHONE (912) 238-2400 FAX (912) 238-2412

**NOTES:**

- FIELD COORDINATE PAD MOUNTED TRANSFORMER LOCATION WITH GEORGIA POWER. CONTACT ALLEN FAIRCLOTH, KEY ACCOUNT REP, 912-547-0635 AND MATTHEW STORY, DISTRIBUTION ENGINEER, 912-448-1322.
- CT METER ON PAD MOUNTED TRANSFORMER. INSTALLATION SHALL CONFORM TO GEORGIA POWER REQUIREMENTS.
- FREE-STANDING, FRONT AND REAR ACCESSIBLE SWITCHGEAR STRUCTURE WITH SERVICE CABLE TERMINATION SECTION.
- FREE-STANDING, REAR CONNECTED ISOLATION-BYPASS, OPEN-TRANSITION TYPE AUTOMATIC TRANSFER SWITCH.
- 4000A PARALLELING SWITCHGEAR, 480Y/277V, 3-PHASE, 4-WIRE WITH MOTORIZED BREAKERS AND PARALLELING CONTROL PANEL, PROVIDED BY CUMMINS. NO SUBSTITUTIONS. CONTACT JOHN CARPER, CUMMINS POWER SOUTH, 912-721-3028.
- EXTEND LOAD-SHED/LOAD-CONTROL TO IN-PLANT SCADA CONTROL PANEL NO.5 IN THE POWER HOUSE. SEE NOTE 08, SHEET E0.1.
- CKT HA-68, FOR GENSET NO.1 AUXILIARY LOAD 37.5KVA TRANSFORMER, 1 1/2" C W/2NO.3, 1NO.8(G).
- CKT HA-72, FOR GENSET NO.2 AUXILIARY LOAD 37.5KVA TRANSFORMER, 1 1/2" C W/2NO.3, 1NO.8(G).
- CONDUIT AS REQUIRED FOR GENERATOR CONTROL ANNUNCIATION. EXTEND TWO 1" CONDUITS WITH CONDUCTORS AS REQUIRED TO ATS. EXTEND TWO 1" CONDUITS WITH CONDUCTORS AS REQUIRED TO GENERATORS PARALLELING CONTROLLER.
- EXTEND COMMUNICATIONS CABLE TO IN-PLANT SCADA PANEL IN POWER HOUSE (PANEL #5). FIELD COORDINATE EXACT CABLING REQUIREMENTS WITH EQUIPMENT PROVIDED. FOR BIDDING PURPOSES, PROVIDE 3/4" C W/ONE CAT6 ETHERNET CABLE.
- INTEGRAL SURGE PROTECTION DEVICE, SQUARE D TVS41M48Z 480 KA SURGE CURRENT, MCOV-320V/20KA, VPR-1200V L-N, 1200V L-G, 2000V L-L, 1200V N-G, APPROVED EQUAL BY GE OR EATON ACCEPTABLE.
- REFER TO SHEET E6.2 FOR PANEL SCHEDULES.
- EXTEND TO GROUND ROD.
- 1 1/2" C W/ 8 NO 14, 1 NO 14(G), 3 BELDEN 5240F1. EXTEND TO AQUAROBICS CONTROL PANEL IN MAIN ELECTRICAL BUILDING.
- 1" C W/10NO.14, 1NO.14(G). EXTEND TO AQUAROBICS CONTROL PANEL IN MAIN ELECTRICAL BUILDING.
- 3/4" C W/2NO.14, 1NO.14(G) TO POWERHOUSE IN-PLANT SCADA PANEL.
- PROVIDE DISCONNECT SWITCH WITH AUXILIARY CONTACTS. CONTACTS SHALL BREAK-FIRST/MAKE-LAST. FOR FUTURE VFD DRIVES.
- GENERATOR NO.1 IS OWNER FURNISHED, CONTRACTOR INSTALLED.
- GENERATOR NO.2 IS EXISTING TO BE RELOCATED. REFER TO SHEET E1.0 FOR NOTES.
- PROVIDE TAP LUGS ON BUS FOR CONNECTION OF PORTABLE GENERATOR OR LOAD BANK FOR TESTING.



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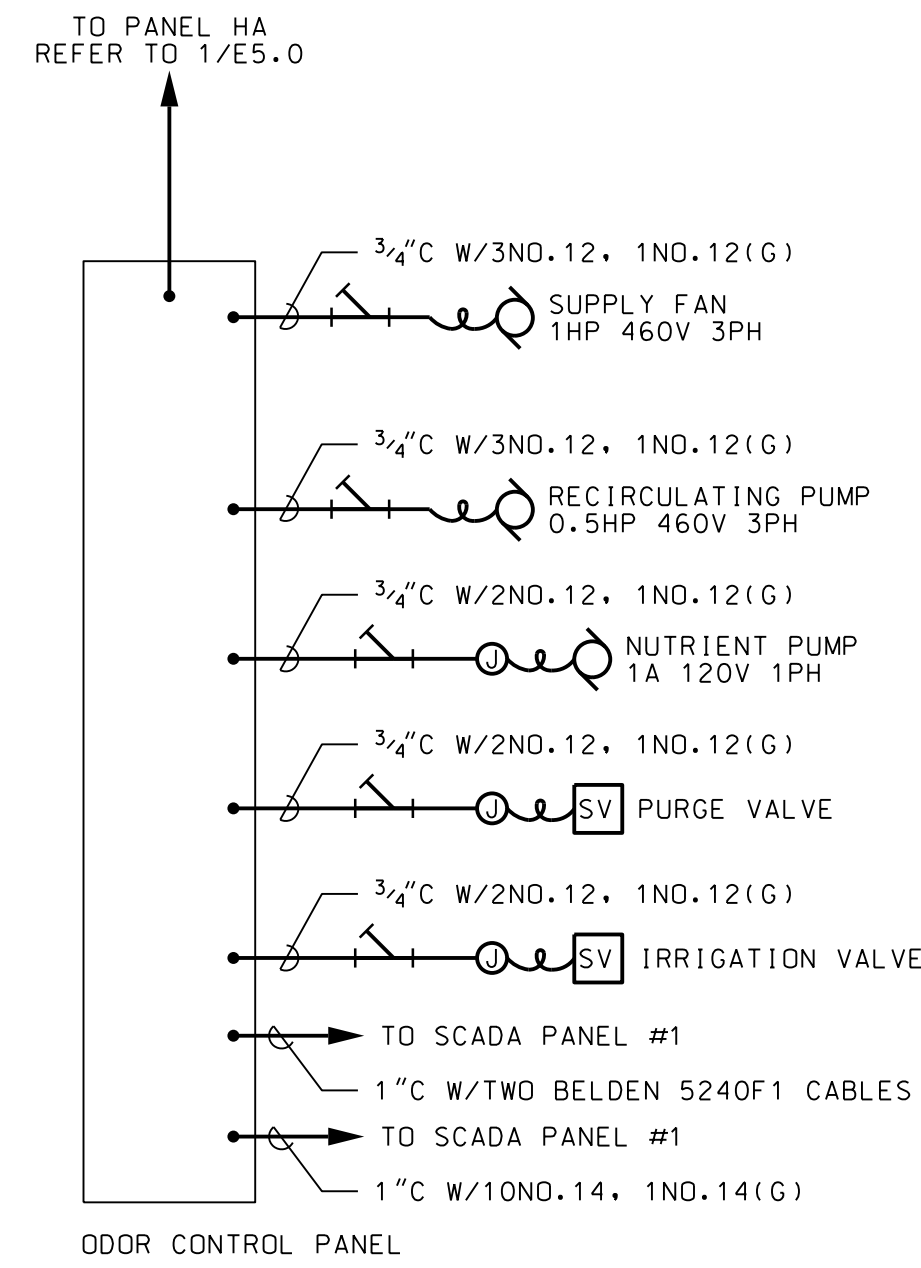
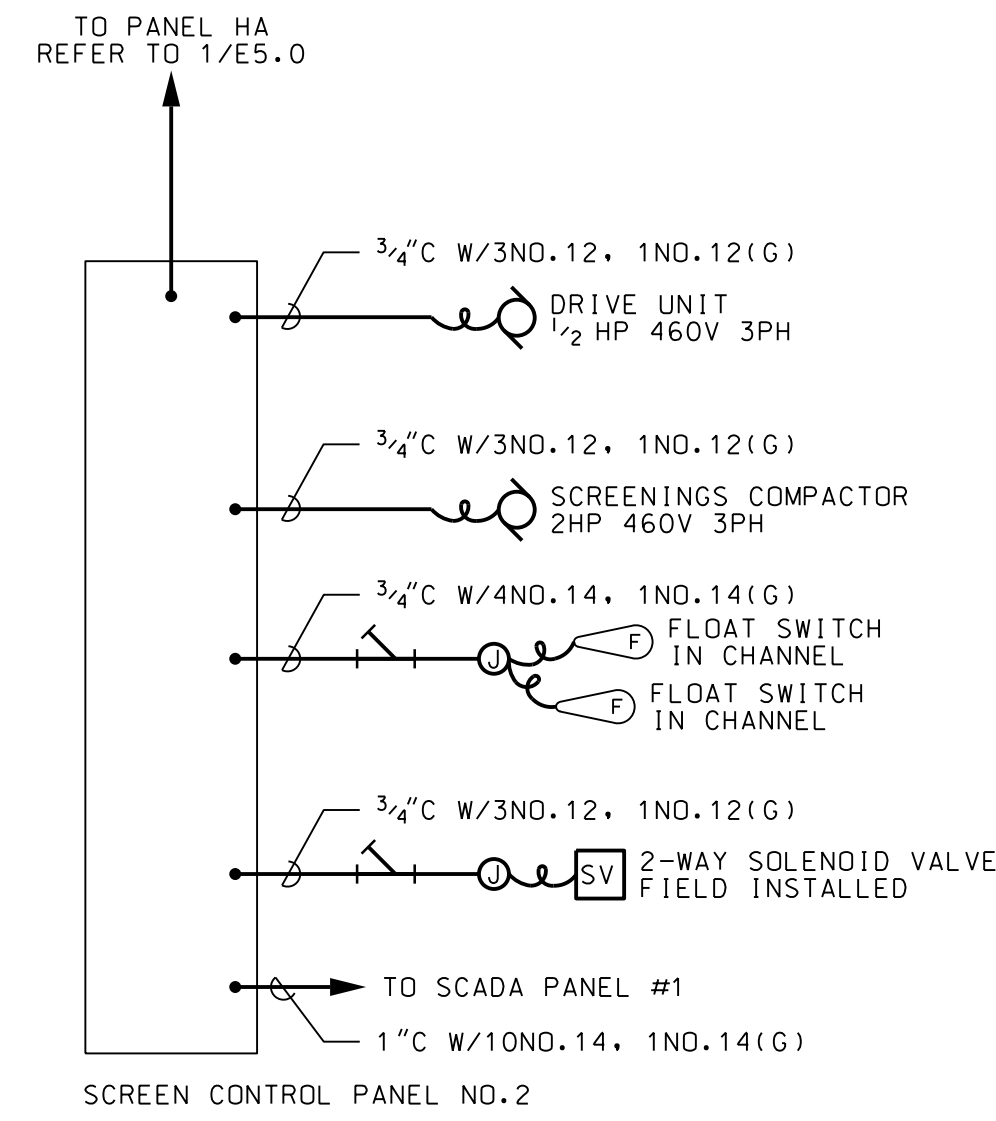
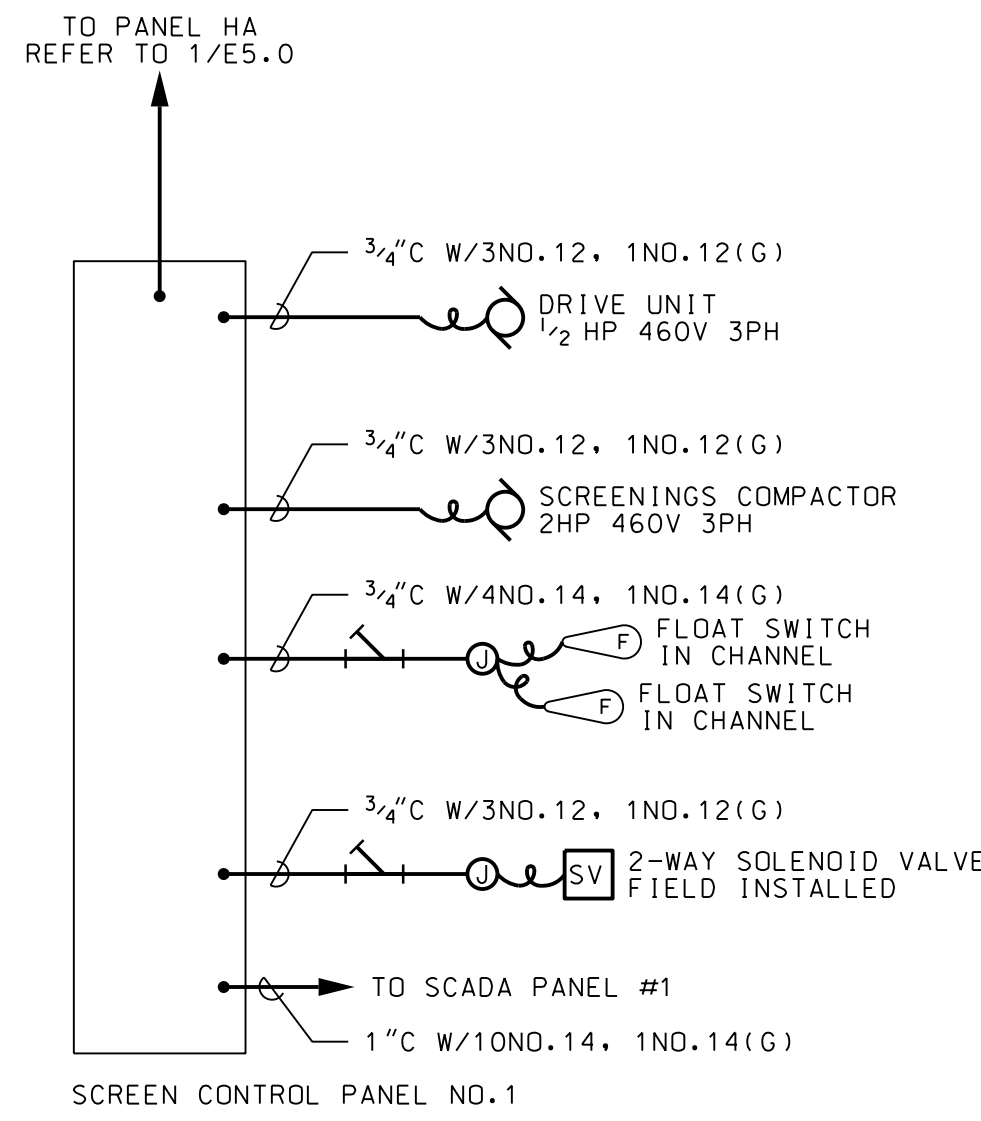
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MAIN DISTRIBUTION  
 ONE-LINE DIAGRAM

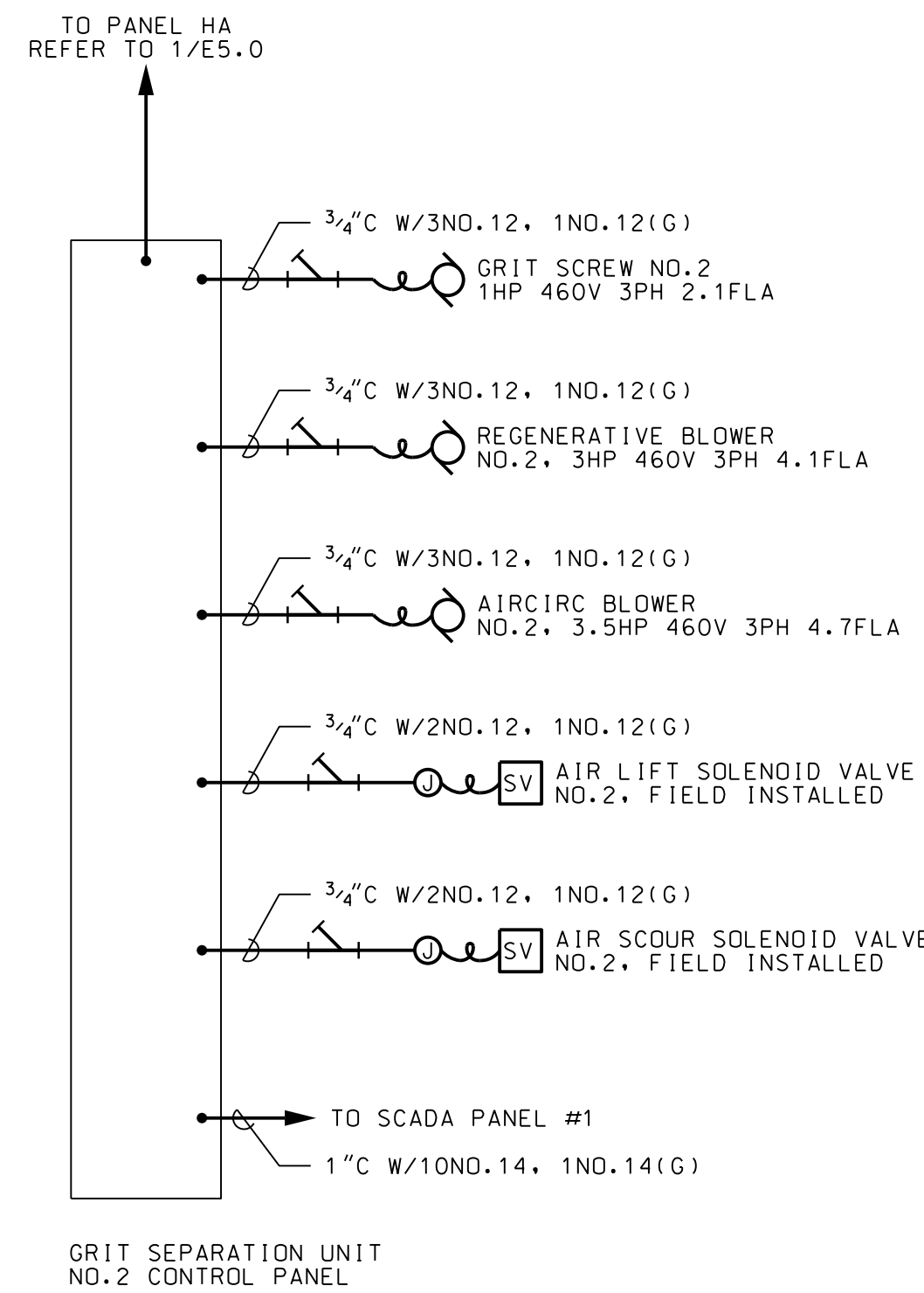
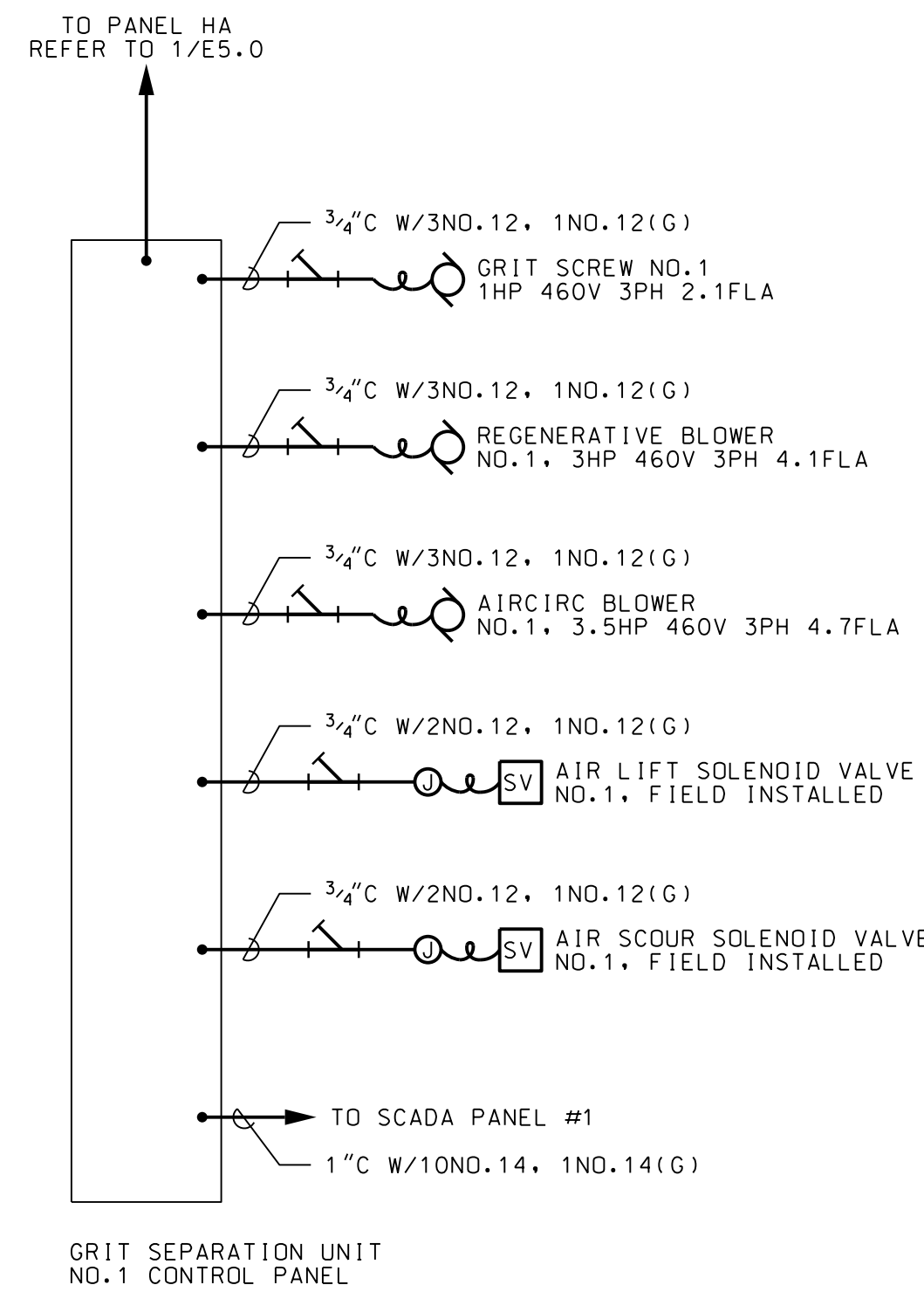
DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E5.0



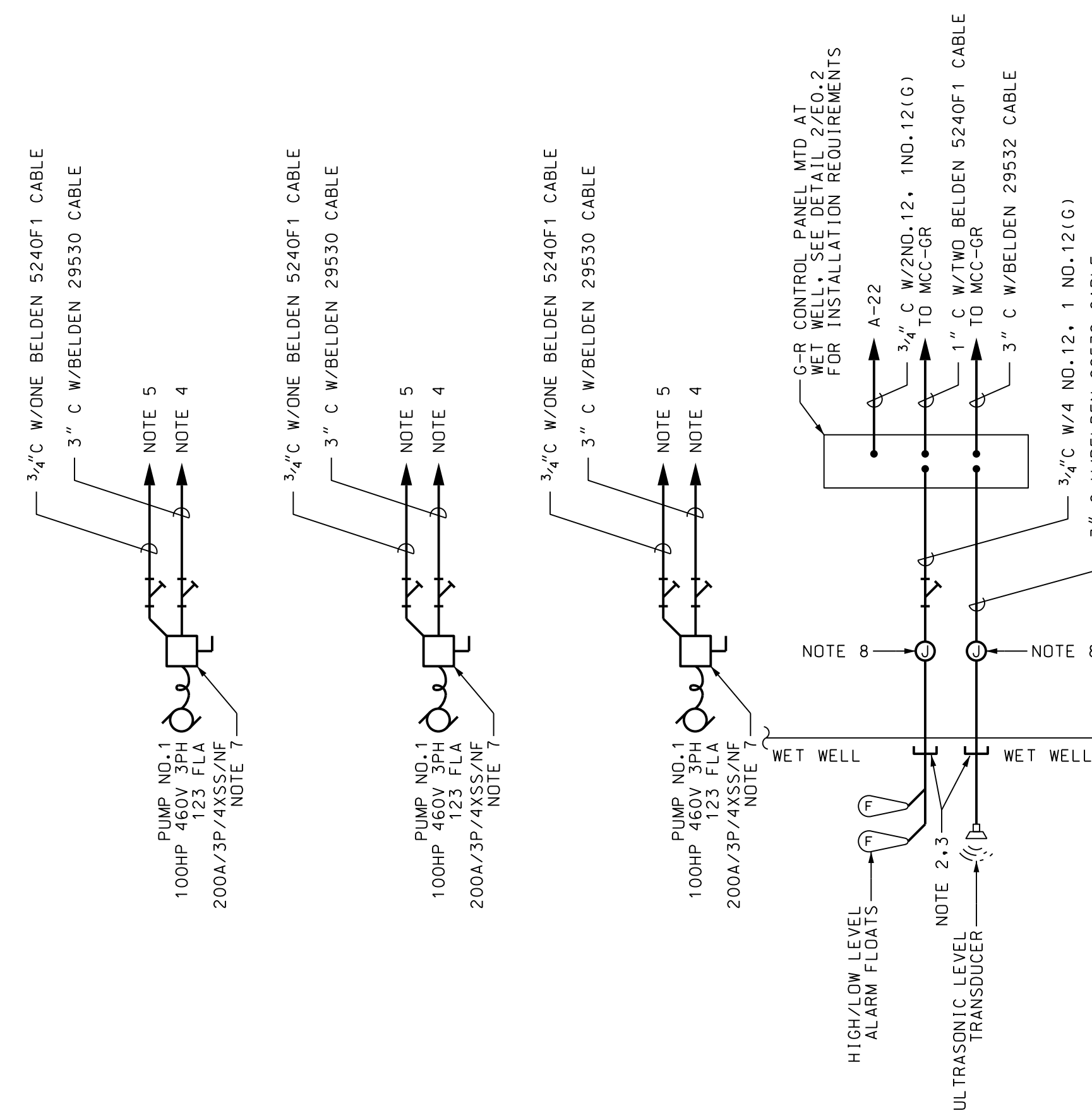


**1** SCREEN CONTROL PANEL - RISER DIAGRAM  
E5J SCHEMATIC

**2** ODOR CONTROL SYSTEM - RISER DIAGRAM  
E5J SCHEMATIC



**3** GRIT SEPARATION - RISER DIAGRAM  
E5J SCHEMATIC

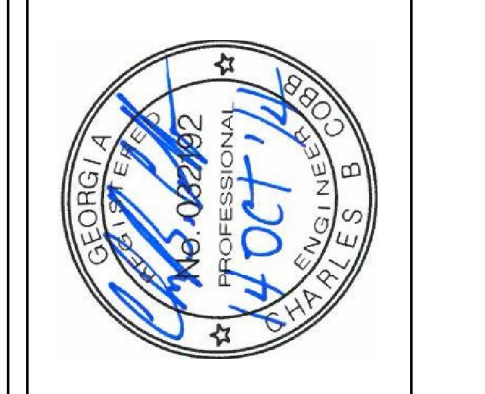


**4** INFLUENT PUMP STATION - RISER DIAGRAM  
E5J SCHEMATIC

**NOTES:**

- REFER TO SHEET E2.0 FOR IN-FIELD LOCATIONS OF PANELS AND EQUIPMENT.
- PROVIDE STAINLESS STEEL CABLE SUPPORT IN WET WELL FOR PUMP, FLOAT AND TRANSDUCER CABLES.
- PROVIDE KELLUM GRIP/CABLE SUPPORT FOR FLOAT AND TRANSDUCER CABLES. KELLUM GRIP/CABLE SUPPORT SHALL BE HEAVY DUTY, STAINLESS STEEL, CLOSED MESH, SINGLE EYE.
- EXTEND TO MCC-GR VFD FOR POWER FEED TO PUMPS.
- EXTEND TO MCC-GR VFD FOR CONTROL OF PUMPS.
- SCADA PANEL #1. MOUNT ON FRAME, REFER TO DETAIL 2/E0.2 FOR MOUNTING DETAIL.
- THE DISCONNECT BETWEEN THE VARIABLE FREQUENCY DRIVE AND THE MOTOR SHALL BE EQUIPPED WITH A NORMALLY OPEN AUXILIARY CONTACT. THE AUXILIARY CONTACT SHALL BE WIRED INTO THE CONTROL VOLTAGE STOP/START CIRCUIT ON THE DRIVE. THE AUXILIARY CONTACT SHALL BE EARLY BREAK, SO THAT THE START STOP CIRCUIT DROPS OUT BEFORE THE DISCONNECT POWER CIRCUIT OPENS, AND LATE MAKE SO THAT THE DISCONNECT POWER CIRCUIT CLOSURE BEFORE THE START CIRCUIT ON THE DRIVE IS CLOSED.
- JUNCTION BOXES FOR FLOAT SWITCHES AND LEVEL TRANSDUCER. PROVIDE PENTAIR 11.81" X 9.84" X 5.91" 316L STAINLESS STEEL NEMA 4X BOX WITH 1/4 TURN LATCH. CAT. NO. LHC302515556. FIELD COORDINATE LOCATION.

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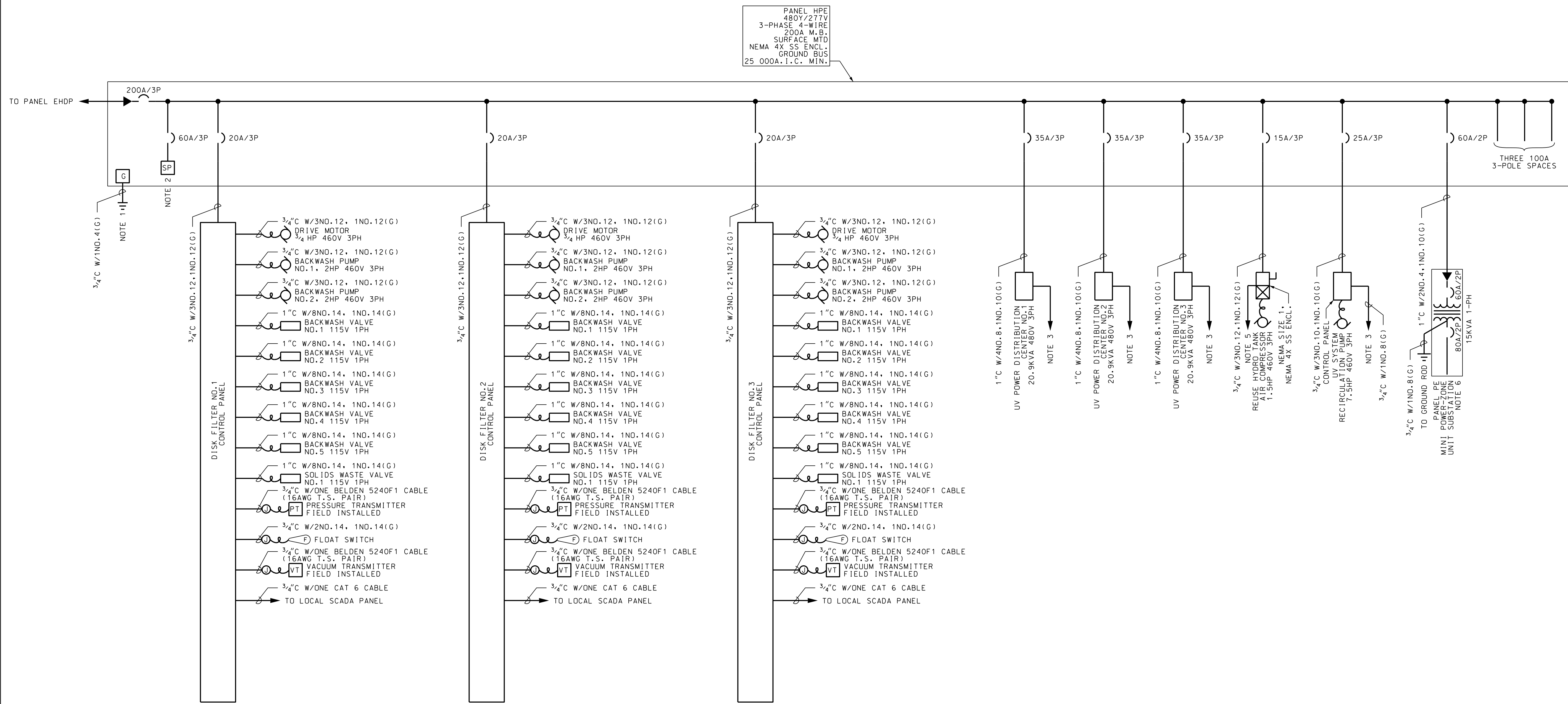
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INLUENT SUB-SYSTEMS  
RISER DIAGRAMS  
DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E5.1

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PANEL HPE  
480V/277V  
3-PHASE 4-WIRE  
200A M.B.  
SURFACE MTD  
NEMA 4X SS ENCL.  
GROUND BUS  
25 000A.1.C. MIN.

1 POST EQUALIZATION RISER DIAGRAM  
E5.2 N.T.S.

NOTES:

1. EXTEND TO GROUND ROD.
2. INTEGRAL SURGE PROTECTION DEVICE. SQUARE D TVSIM12P. MCOV-320V/20KA, VPR-1200V L-N, 1200V L-L, 2000V L-L. 1200V N-G. EQUAL BY GE OR EATON IS ACCEPTABLE.
3. EXTEND CONTROL CONDUCTORS TO UV SYSTEM CONTROL PANEL.
4. EXTEND 3/4" C W/ 2 No 14, 4 No 14(SPARE), 1 No 14(G) TO LOCAL SCADA PANEL FOR REUSE PUMP CONTROL.
5. EXTEND 3/4" C W/ 2 No 14, 1 No 14(G) TO PRESSURE SWITCH CONTROL.
6. REFER TO SCHEDULE, SHEET E6.2.

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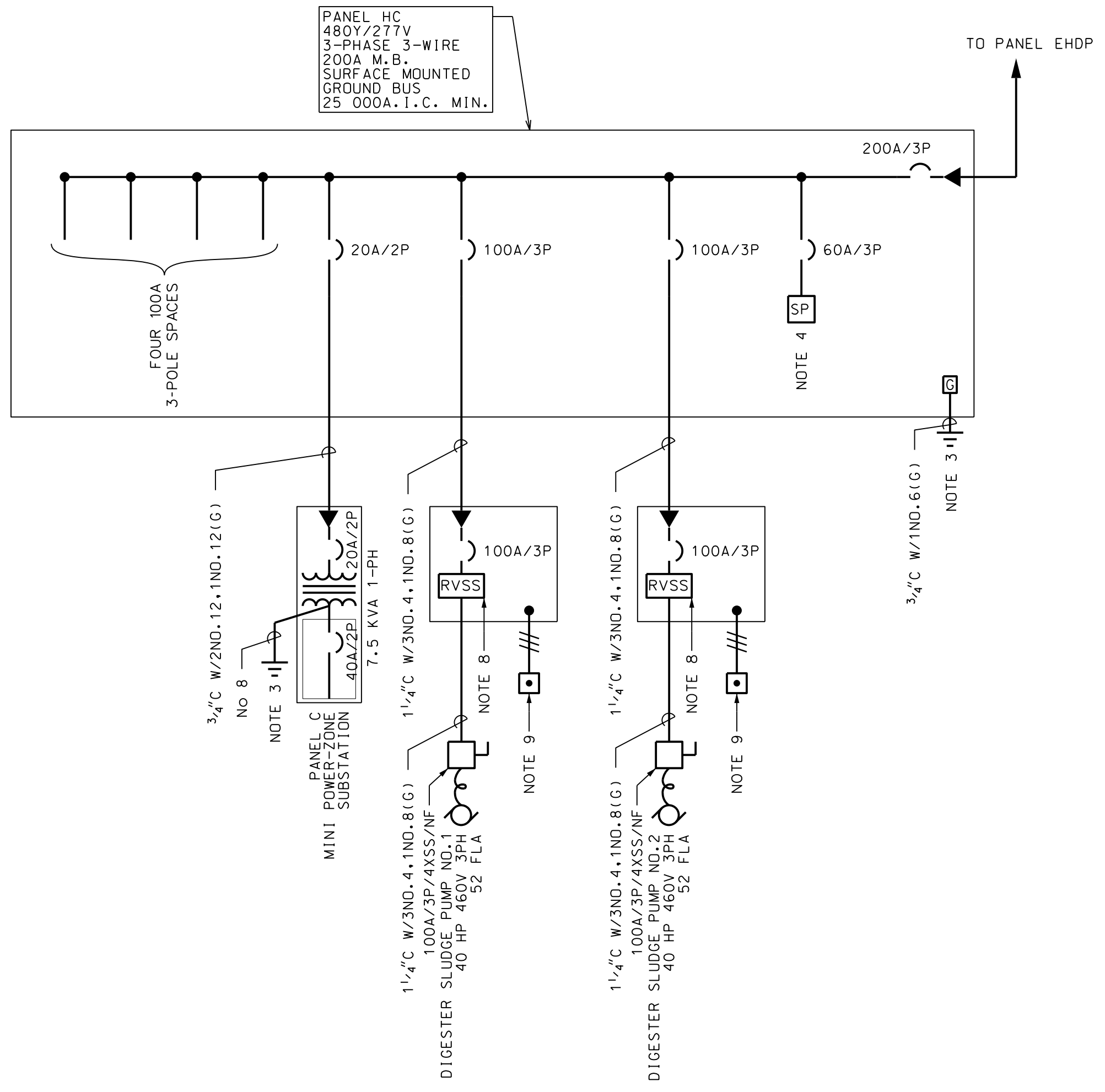


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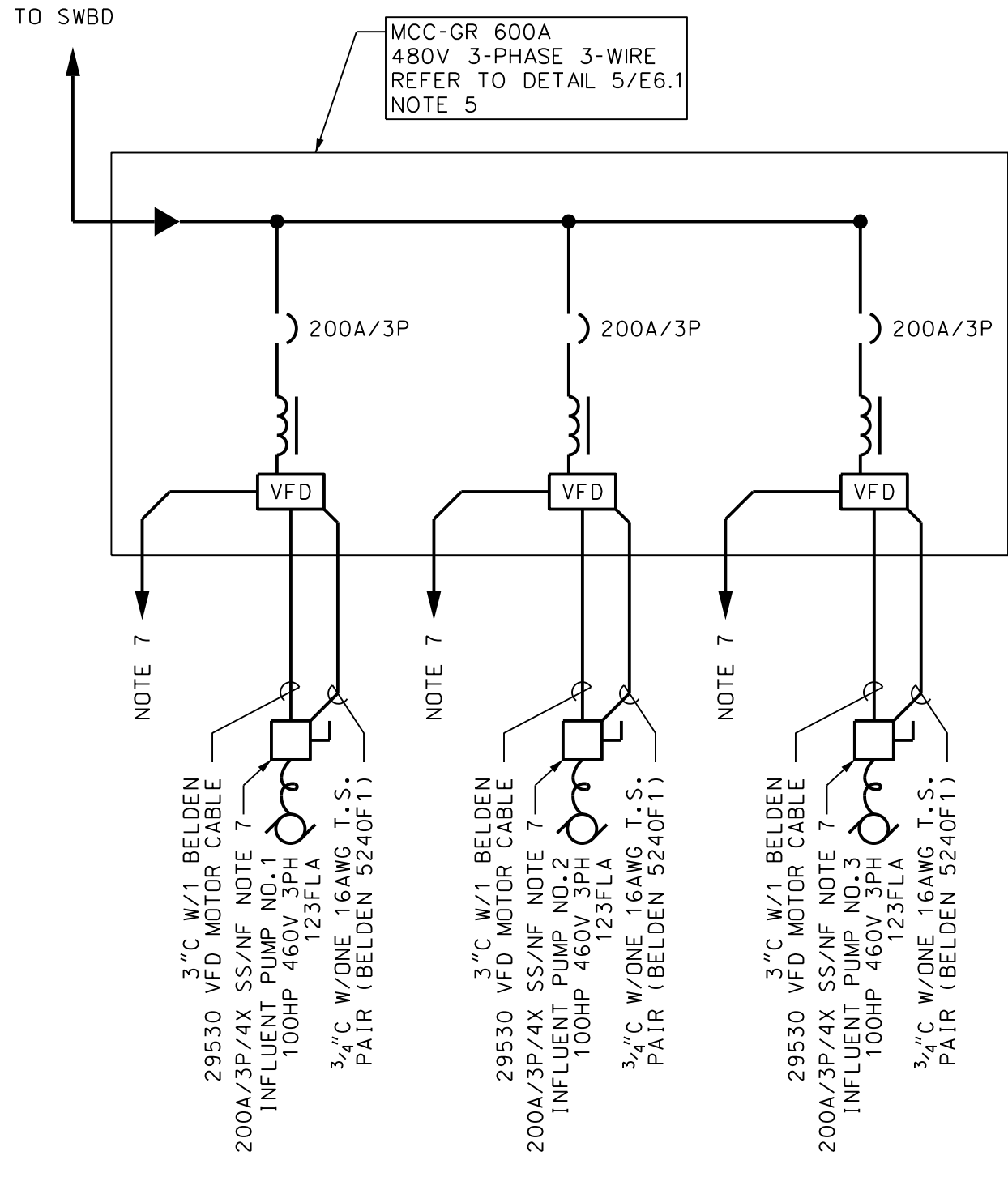
POST EQUALIZATION  
SUB-SYSTEMS RISER  
DIAGRAMS  
DATE: NOVEMBER 29, 2012  
FILE NO: 2009-63PRJ  
SHEET: E5.2





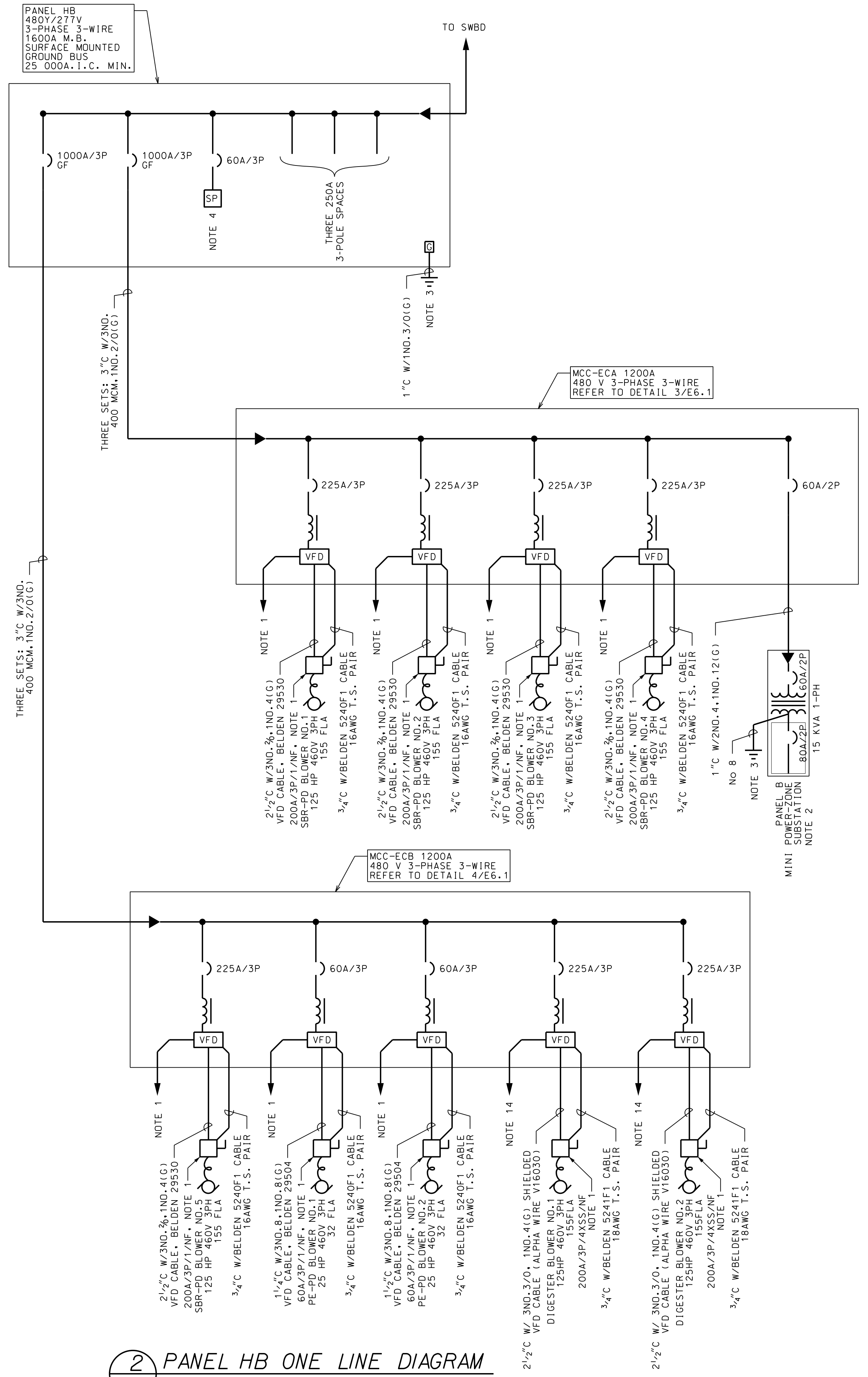


**1** PANEL HC ONE LINE DIAGRAM  
E5.3 NOT TO SCALE



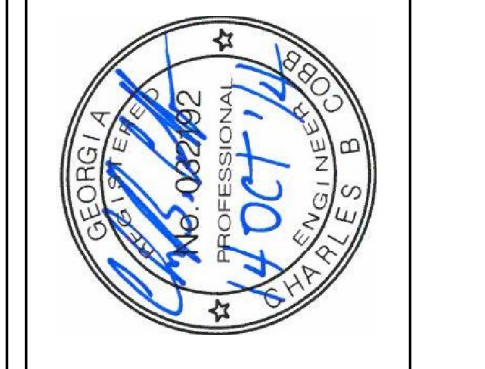
**3** MCC-GR ONE LINE DIAGRAM  
E5.3 NOT TO SCALE

- NOTES:**
- 1 1/2" C W/ 8 No 14, 1 No 14(G), 3 BELDEN 5240F1. EXTEND TO AQUAROBIOS CONTROL PANEL IN MAIN ELECTRICAL BUILDING.
  - REFER TO SCHEDULE, SHEET E6.2.
  - EXTEND TO GROUND ROD.
  - INTEGRAL SURGE PROTECTION DEVICE, SQUARE D HL41MA12C 120 KA SURGE CURRENT, MCOV-320V/20KA, VPR-1200V L-G. 1200V L-L. APPROVED EQUAL BY GE OR EATON ACCEPTABLE.
  - MCC-GR FURNISHED BY GORMAN-RUPP WITH THE INFLUENT PUMP STATION 100HP 460V 3-PHASE PUMPS.
  - THE DISCONNECT BETWEEN THE VARIABLE FREQUENCY DRIVE AND THE MOTOR SHALL BE EQUIPPED WITH A NORMALLY OPEN AUXILIARY CONTACT. THE AUXILIARY CONTACT SHALL BE WIRED INTO THE CONTROL VOLTAGE STOP/START CIRCUIT ON THE DRIVE. THE AUXILIARY CONTACT SHALL BE EARLY BREAK, SO THAT THE START STOP CIRCUIT DROPS OUT BEFORE THE DISCONNECT POWER CIRCUIT CLOSURE. AND LATE MAKE SO THAT THE DISCONNECT POWER CIRCUIT CLOSURE BEFORE THE START CIRCUIT ON THE DRIVE IS CLOSED.
  - 1 1/2" C W/ 8 No 14, 1 No 14(G), 3 BELDEN 5240F1. EXTEND TO GORMAN-RUPP CONTROL PANEL AT INFLUENT PUMP STATION WET WELL.
  - SELECT REDUCED VOLTAGE STARTER FOR HIGH-TORQUE LOADING.
  - LOCATE START/STOP PUSH-BUTTON ADJACENT TO PUMP IN SLUDGE BUILDING (BETWEEN CONVERTED AEROBIC DIGESTERS).



**2** PANEL HB ONE LINE DIAGRAM  
E5.3 NOT TO SCALE

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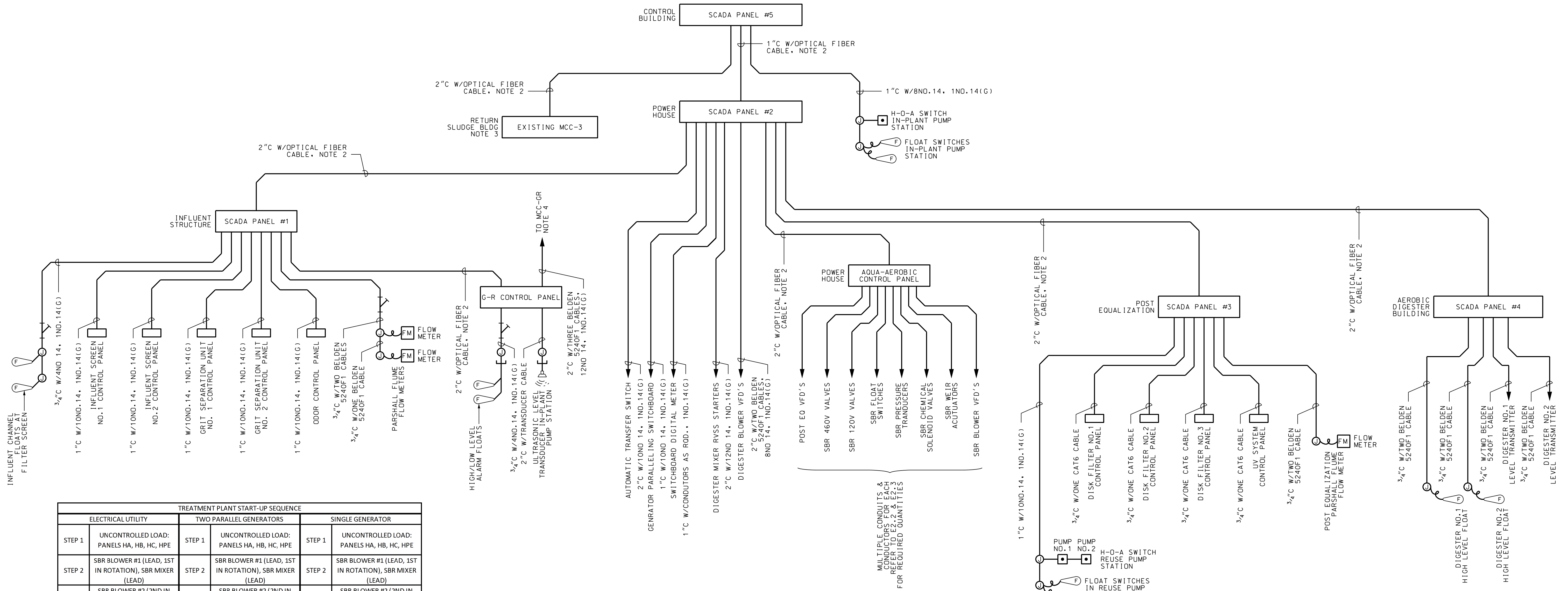


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PANELS HB, HC,  
 MCC-ECB, MCC-ECB &  
 MCC-GR ONE-LINE  
 DIAGRAMS

DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E5.3

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**1** SCADA SYSTEM RISER DIAGRAM  
E5.4 N.T.S.

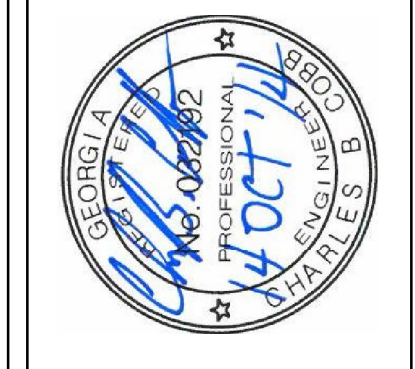
TREATMENT PLANT START-UP SEQUENCE					
ELECTRICAL UTILITY		TWO PARALLEL GENERATORS		SINGLE GENERATOR	
STEP 1	UNCONTROLLED LOAD: PANELS HA, HB, HC, HPE	STEP 1	UNCONTROLLED LOAD: PANELS HA, HB, HC, HPE	STEP 1	UNCONTROLLED LOAD: PANELS HA, HB, HC, HPE
STEP 2	SBR BLOWER #1 (LEAD, 1ST IN ROTATION), SBR MIXER (LEAD)	STEP 2	SBR BLOWER #1 (LEAD, 1ST IN ROTATION), SBR MIXER (LEAD)	STEP 2	SBR BLOWER #1 (LEAD, 1ST IN ROTATION), SBR MIXER (LEAD)
STEP 3	SBR BLOWER #2 (2ND IN ROTATION), SBR MIXER (2ND)	STEP 3	SBR BLOWER #2 (2ND IN ROTATION), SBR MIXER (2ND)	STEP 3	SBR BLOWER #2 (2ND IN ROTATION), SBR MIXER (2ND)
STEP 4	SBR BLOWER #3 (3RD IN ROTATION), SBR MIXER (3RD)	STEP 4	SBR BLOWER #3 (3RD IN ROTATION), SBR MIXER (3RD)	STEP 4	SBR BLOWER #3 (3RD IN ROTATION), SBR MIXER (3RD)
STEP 5	SBR BLOWER #4 (4TH IN ROATION), SBR MIXER (4TH)	STEP 5	SBR BLOWER #4 (4TH IN ROATION), SBR MIXER (4TH)	STEP 5	SBR BLOWER #4 (4TH IN ROATION), SBR MIXER (4TH)
STEP 6	AEROBIC DIGESTER BLOWER #1	STEP 6	AEROBIC DIGESTER BLOWER #1	STEP 6	INFLUENT PUMP #1 (LEAD)
STEP 7	AEROBIC DIGESTER BLOWER #2	STEP 7	INFLUENT PUMP #1 (LEAD)	STEP 7	INFLUENT PUMP #2 (LAG)
STEP 8	INFLUENT PUMP #1 (LEAD)	STEP 8	INFLUENT PUMP #2 (LAG)	STEP 8	UV SYSTEM - TWO LIGHT BANKS
STEP 9	INFLUENT PUMP #2 (LAG)	STEP 9	AEROBIC DIGESTER MIXER #1	STEP 9	DISK FILTERS
STEP 10	AEROBIC DIGESTER MIXER #1	STEP 10	UV SYSTEM - TWO LIGHT BANKS	STEP 10	ALL REMAINING SBR EQUIPMENT
STEP 11	AEROBIC DIGESTER MIXER #2	STEP 11	DISK FILTERS	LOCKED OUT	AEROBIC DIGESTER BLOWER #1
STEP 12	UV SYSTEM - TWO LIGHT BANKS	STEP 12	ALL REMAINING SBR EQUIPMENT	LOCKED OUT	AEROBIC DIGESTER BLOWER #2
STEP 13	DISK FILTERS	LOCKED OUT	AEROBIC DIGESTER BLOWER #2	LOCKED OUT	AEROBIC DIGESTER MIXER #1
STEP 14	REUSE PUMP STATION	LOCKED OUT	AEROBIC DIGESTER MIXER #2	LOCKED OUT	AEROBIC DIGESTER MIXER #2
STEP 15	IN-PLANT PUMP STATION	LOCKED OUT	REUSE PUMP STATION	LOCKED OUT	REUSE PUMP STATION
STEP 16	FUTURE OFF-SITE REUSE PUMP #1	LOCKED OUT	IN-PLANT PUMP STATION	LOCKED OUT	IN-PLANT PUMP STATION
STEP 17	FUTURE OFF-SITE REUSE PUMP #2	LOCKED OUT	FUTURE OFF-SITE REUSE PUMP #2	LOCKED OUT	FUTURE OFF-SITE REUSE PUMP #2
STEP 18	ALL REMAINING SBR EQUIPMENT	LOCKED OUT	FUTURE OFF-SITE REUSE PUMP #2	LOCKED OUT	FUTURE OFF-SITE REUSE PUMP #2

**2** START-UP SEQUENCE SCHEDULE  
E5.4 N.T.S.

**NOTES:**

- THE ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL SCADA CONDUCTORS AND OPTICAL FIBER CABLES.
  - TERMINATION OF COPPER CONDUCTORS SHALL BE BY THE SCADA SYSTEM INTEGRATOR.
  - OPTICAL FIBER CABLE SHALL BE CORNING FREEDOM LST SERIES, OR APPROVED EQUAL.
    - THE CABLE SHALL BE PROVIDED TERMINATED WITH SC CONNECTORS
    - THE CABLE SHALL BE PROVIDED WITH A FAN OUT KIT
    - THE CABLE SHALL BE PROVIDED WITH PULLING EYES ON EACH END TO FACILITATE INSTALLATION IN CONDUIT, AND PREVENT DAMAGE TO THE FACTORY TERMINATIONS.
    - THE FIBER SHALL BE TESTED AFTER INSTALLATION FOR CONTINUITY AND INSERTION LOSS. THE INSERTION LOSS SHALL BE LESS THAN 3 DB.
    - THE FIBER OPTIC CABLE SHALL BE SUPPLIED BY THE SCADA CSI.
- EXTEND CONDUCTORS TO THE EXISTING RETURN SLUDGE BUILDING MCC-3. FUTURE REUSE PUMPS WILL NOT BE INSTALLED IN THIS PROJECT.
- PROVIDE CONTROL CONDUCTORS AS REQUIRED BY G-R FOR OPERATION OF THE INFLUENT PUMP STATION. FOR BIDDING PURPOSES, PROVIDE CONDUIT AND CONTROL CABLE AS SPECIFIED ON THE SCADA SYSTEM RISER. COORDINATE WITH G-R BEFORE INSTALLATION OF ANY EQUIPMENT OR MATERIALS.
- REFER TO PLAN SHEETS FOR IN-FIELD LOCATIONS OF PANELS AND EQUIPMENT.
- PROVIDE STAINLESS STEEL CABLE SUPPORT IN WET WELL FOR FLOAT AND TRANSDUCER CABLES.
- PROVIDE KELLUM GRIP/CABLE SUPPORT FOR FLOAT AND TRANSDUCER CABLES. KELLUM GRIP/CABLE SUPPORT SHALL BE HEAVY DUTY, STAINLESS STEEL, CLOSED MESH, SINGLE EYE.
- MOUNT ALL EXTERIOR LOCATED CONTROL PANELS ON FRAME. REFER TO DETAIL 2/E0.2.
- THE TREATMENT PLANT EQUIPMENT SHALL BE ENABLED/STARTED IN THE SEQUENCE SPECIFIED IN THE SCHEDULE. THE SCADA INTEGRATOR AND AQUA-AEROBIC SYSTEMS SHALL COORDINATE THEIR RESPECTIVE PROGRAMMING TO ACCOMPLISH THE SPECIFIED SEQUENCE.
  - THE AUTOMATIC TRANSFER SWITCH WILL PROVIDE A PRE-TRANSFER SIGNAL TO THE IN-PLANT SCADA SYSTEM TO INITIATE A SHUT-DOWN OF ALL CONTROLLED EQUIPMENT PRIOR TO A TRANSFER FROM ONE SOURCE SUPPLYING LOAD TO ANOTHER (I.E. FOR EXERCISE FROM UTILITY TO GENERATOR, OR RE-TRANSFER FROM GENERATOR TO UTILITY).
  - THE AUTOMATIC TRANSFER SWITCH AND GENERATOR PARALLELING SWITCHGEAR WILL PROVIDE INPUT SIGNALS TO THE IN-PLANT SCADA SYSTEM TO INITIATE THE LOAD START-UP SEQUENCE. AN INPUT SIGNAL WILL BE PROVIDED TO INDICATE IF THE SOURCE AVAILABLE IS THE ELECTRICAL UTILITY, TWO PARALLEL GENERATORS OR A SINGLE GENERATOR. BASED UPON THESE INPUTS, THE IN-PLANT SCADA SYSTEM AND THE AQUA-AEROBIC SYSTEM WILL ADJUST THE PERMITTED LOADS AND THE STARTING SEQUENCE.
  - COORDINATE WITH JOHN CARPER, CUMMINS POWER SOUTH, (912)721-3028, FOR INPUT SIGNAL POINT OF ORIGIN AND THE NATURE OF THE SIGNAL.

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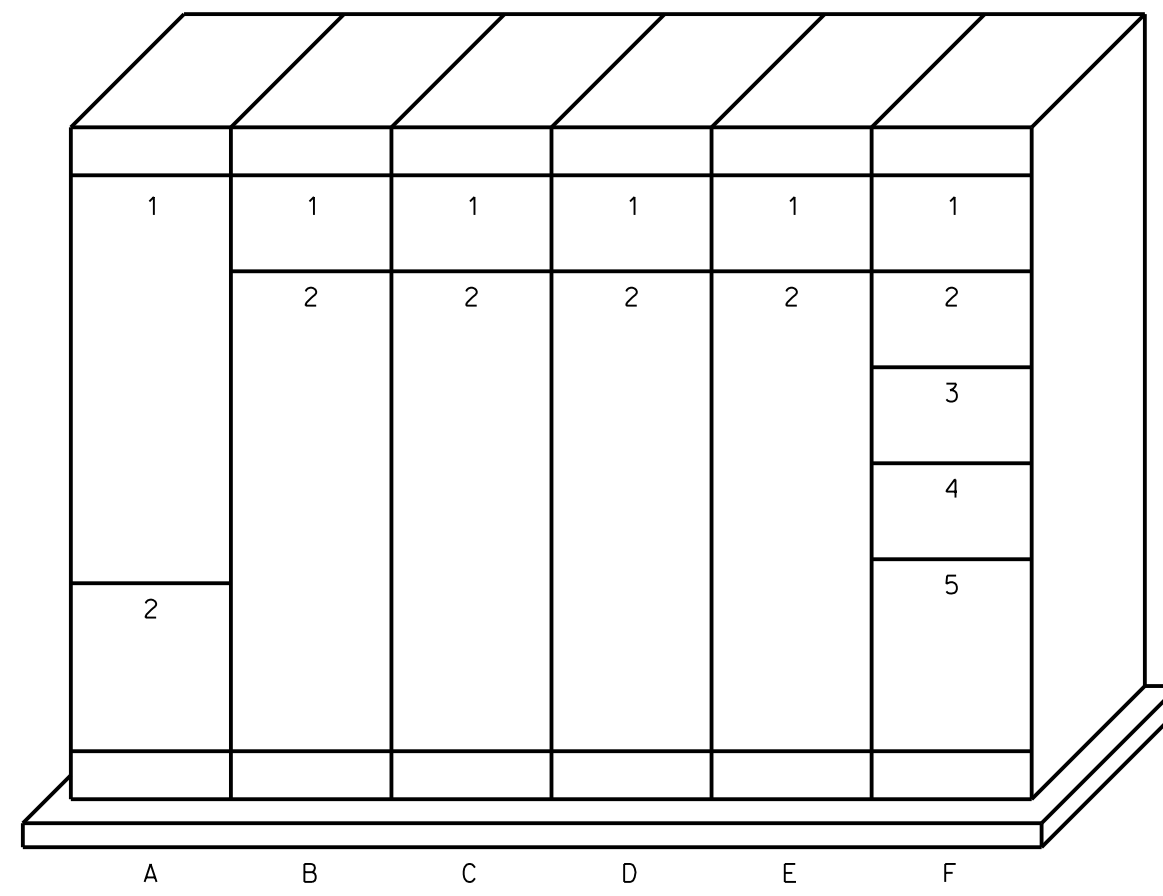
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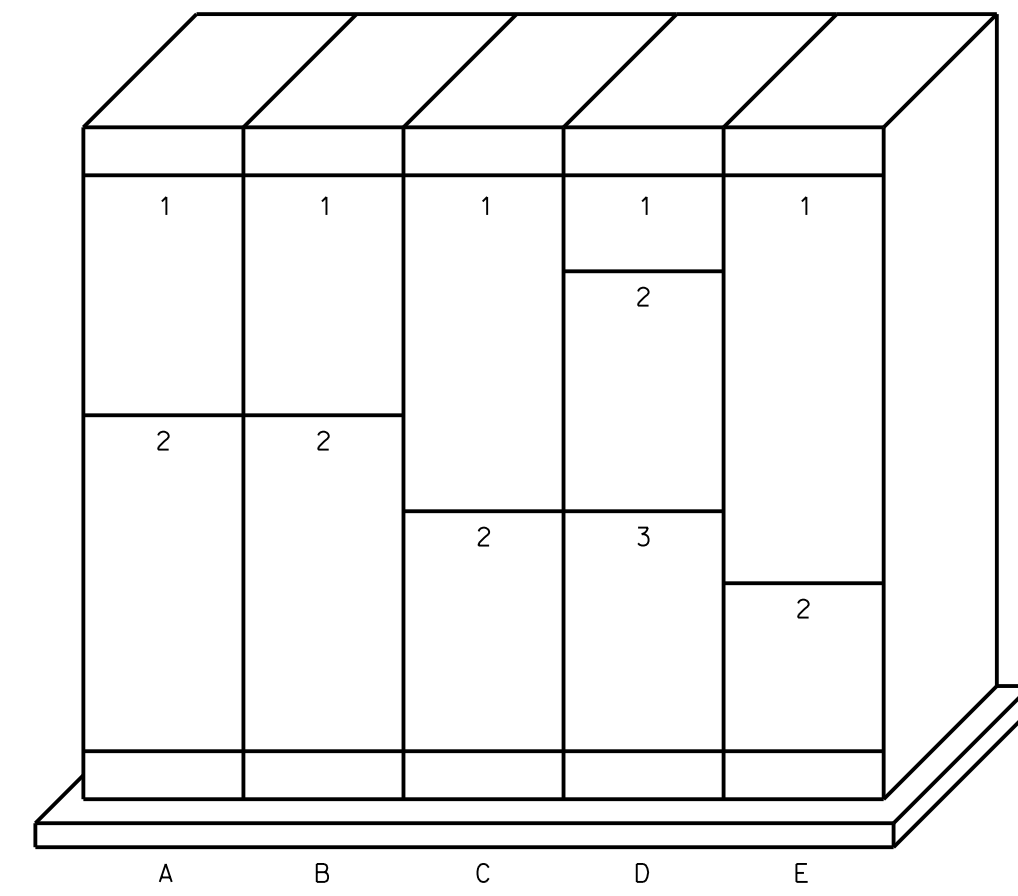
SCADA SYSTEM RISER  
 DIAGRAM  
 & START-UP SEQUENCE  
 SCHEDULE  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E5.4





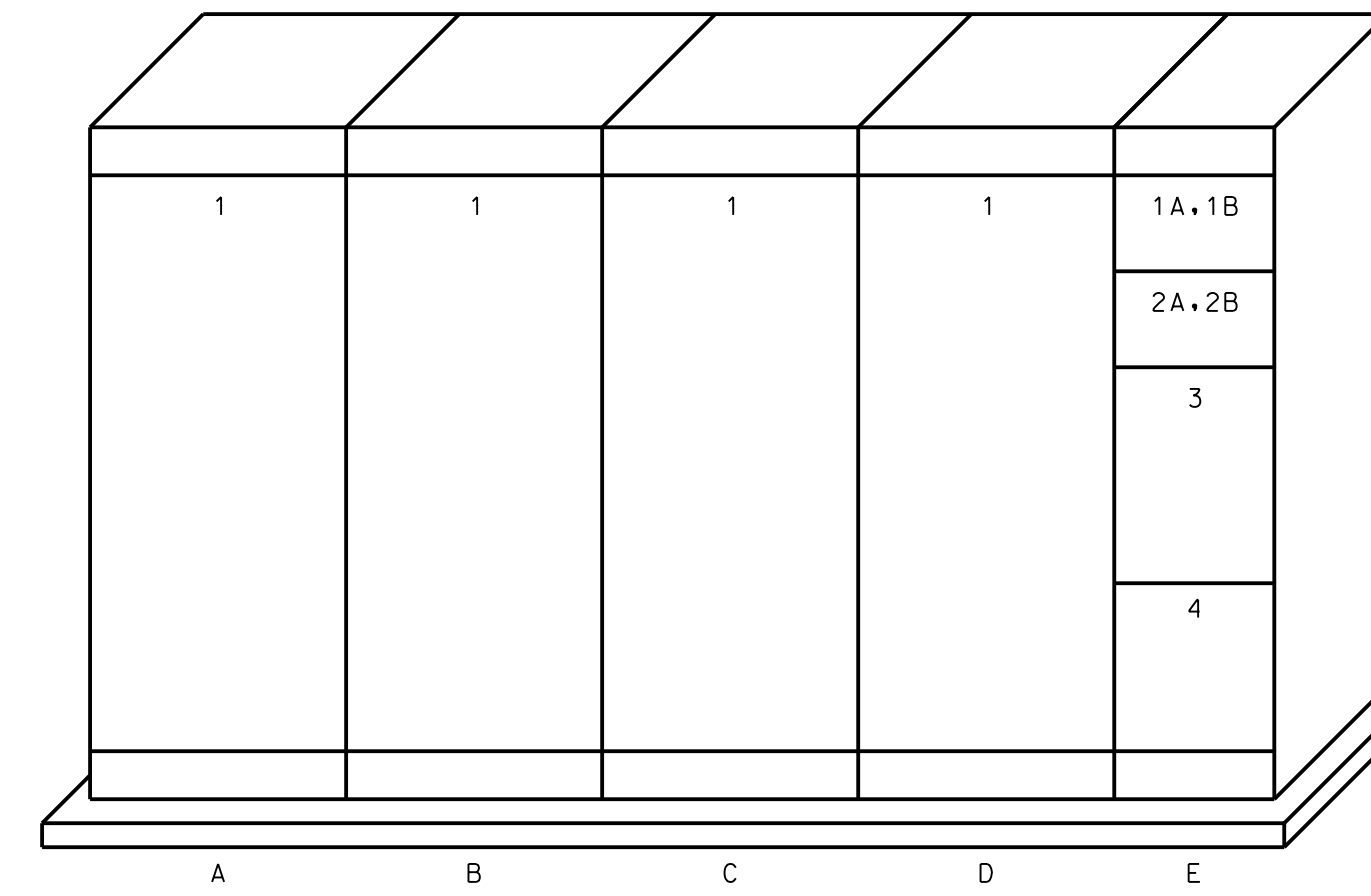
MOTOR CONTROL CENTER MCC-EA								
VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 600A		VERT BUS: 300		
BUS BRACING: 65 000		MAX. OVERALL LENGTH: 120"				DEMAND LOAD: 244KVA		
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER			CONTROLS	REMARKS
				FRAME	TRIP	POLES		
A-1	SPACE	N/A	N/A	-	-	-	-	51"
A-2	MAIN LUGS	N/A	N/A	-	-	-	-	21"
B-1	SPACE	N/A	N/A	-	-	-	-	12"
B-2	SBR1 DDM MIXER	60	RVSS	250	150	3	M2	60"
C-1	SPACE	N/A	N/A	-	-	-	-	12"
C-2	SBR2 DDM MIXER	60	RVSS	250	150	3	M2	60"
D-1	SPACE	N/A	N/A	-	-	-	-	12"
D-2	SBR3 DDM MIXER	60	RVSS	250	150	3	M2	60"
E-1	SPACE	N/A	N/A	-	-	-	-	12"
E-2	SBR4 DDM MIXER	60	RVSS	250	150	3	M2	60"
F-1	SBR1 SLUDGE PUMP	10	FVNR	150	35	3	M2,M7	12"
F-2	SBR2 SLUDGE PUMP	10	FVNR	150	35	3	M2,M7	12"
F-3	SBR3 SLUDGE PUMP	10	FVNR	150	35	3	M2,M7	12"
F-4	SBR4 SLUDGE PUMP	10	FVNR	150	35	3	M2,M7	12"
F-5	SPACE	N/A	N/A	-	-	-	-	24"

**1** MCC-EA ELEVATION & SCHEDULE  
E6J NOT TO SCALE



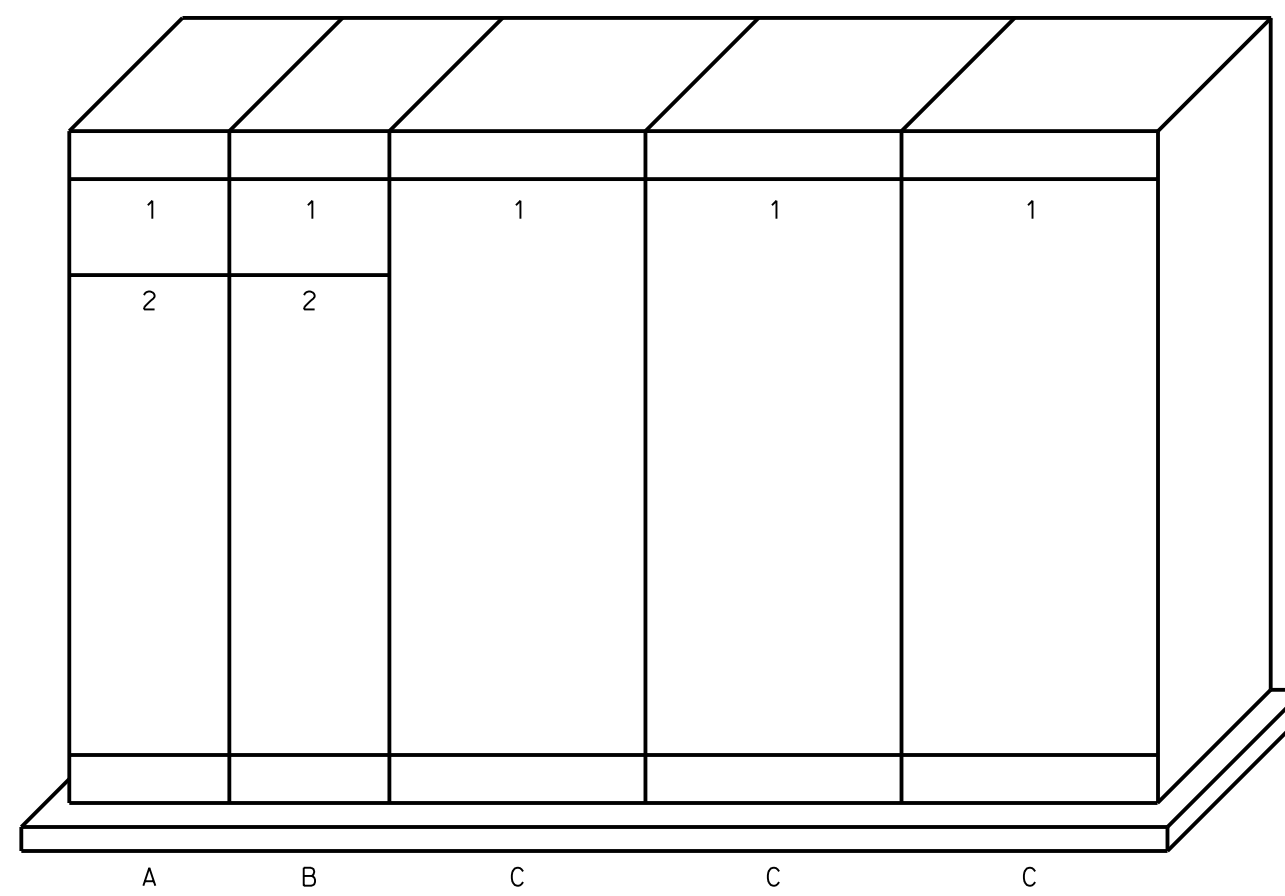
MOTOR CONTROL CENTER MCC-EB								
VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 600A		VERT BUS: 600		
BUS BRACING: 65 000		MAX. OVERALL LENGTH: 100"				DEMAND LOAD: 607.6KVA		
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER			CONTROLS	REMARKS
				FRAME	TRIP	POLES		
A-1	SPACE	N/A	N/A	-	-	-	-	30"
A-2	EXST DIGEST MXR1	100	RVSS	250	200	3	M1	42"
B-1	SPACE	N/A	N/A	-	-	-	-	30"
B-2	EXST DIGEST MXR1	100	RVSS	250	200	3	M1	42"
C-1	SPACE	-	-	-	-	-	-	42"
C-2	IN-PLANT PMP STN	30	3 FVNR	150	80	3	M1,M6,M7	30"
D-1	SPACE	-	-	-	-	-	-	12"
D-2	REUSE PUMP NO.1	30	3 FVNR	150	80	3	M1,M6,M7	30"
D-3	REUSE PUMP NO.2	30	3 FVNR	150	80	3	M1,M6,M7	30"
E-1	SPACE	N/A	N/A	-	-	-	-	51"
E-2	MAIN LUGS	N/A	N/A	-	-	-	-	21"

**2** MCC-EB ELEVATION & SCHEDULE  
E6J NOT TO SCALE



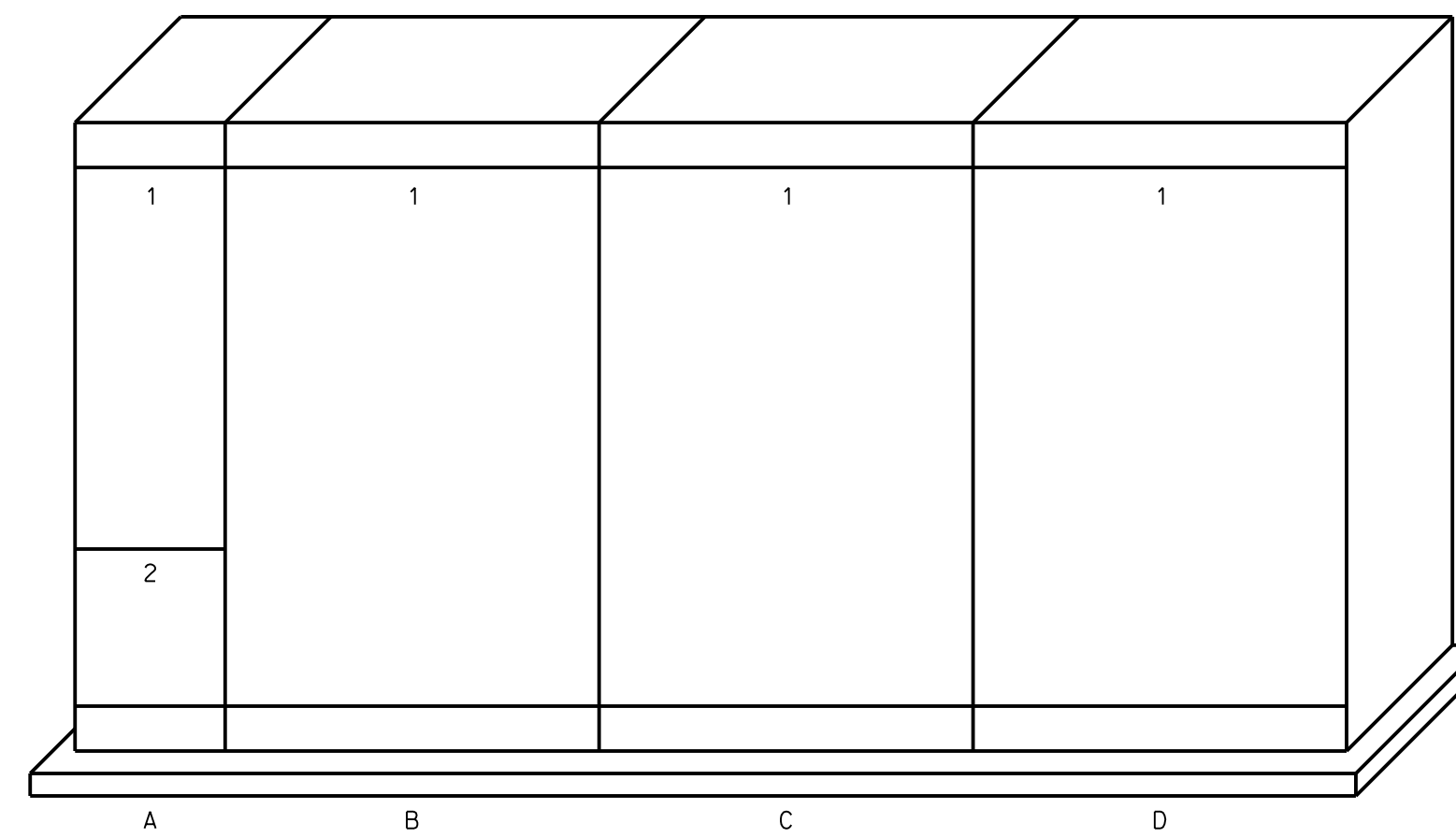
MOTOR CONTROL CENTER MCC-ECA								
VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 1200A		VERT BUS: 600		
BUS BRACING: 65 000		MAX. OVERALL LENGTH: 148"				DEMAND LOAD: 555KVA		
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER			CONTROLS	REMARKS
				FRAME	TRIP	POLES		
A-1	SBR PD BLWR NO.5	125	VFD	250	225	3	M2,M4	32"W X 72"
B-1	SBR PD BLWR NO.4	125	VFD	250	225	3	M2,M4	32"W X 72"
C-1	SBR PD BLWR NO.3	125	VFD	250	225	3	M2,M4	32"W X 72"
D-1	SBR PD BLWR NO.2	125	VFD	250	225	3	M2,M4	32"W X 72"
E-1A	CU-5A	N/A	N/A	150	15	3	-	12"
E-1B	CU-5B	N/A	N/A	150	15	3	-	12"
E-2A	AHU-5	N/A	N/A	150	15	3	-	12"
E-2B	SPACE	N/A	N/A	-	-	-	-	12"
E-3	SPACE	N/A	N/A	-	-	-	-	27"
E-3	MAIN LUGS	N/A	N/A	-	-	-	-	21"

**3** MCC-ECA ELEVATION & SCHEDULE  
E6J NOT TO SCALE



MOTOR CONTROL CENTER MCC-ECB								
VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 1200A		VERT BUS: 300		
BUS BRACING: 65 000		MAX. OVERALL LENGTH: 136"				DEMAND LOAD: 167KVA		
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER			CONTROLS	REMARKS
				FRAME	TRIP	POLES		
A-1	MAIN LUGS	N/A	N/A	-	-	-	-	12"
A-2	PE-PD BLOWER NO.1	25	VFD	150	60	3	M1,M3	60"
B-1	SPACE	N/A	N/A	-	-	-	-	12"
B-2	PE-PD BLOWER NO.2	25	VFD	150	60	3	M1,M3	60"
C-1	SBR PD BLWR NO.5	125	VFD	250	225	3	M2,M4	32"W X 72"
D-1	DIGESTER BLWR NO.1	125	VFD	250	225	3	M1,M3	32"W X 72"
E-1	DIGESTER BLWR NO.2	125	VFD	250	225	3	M1,M3	32"W X 72"

**4** MCC-ECB ELEVATION & SCHEDULE  
E6J NOT TO SCALE



MOTOR CONTROL CENTER MCC-GR								
VOLTAGE: 480V		PHASE: 3	WIRE: 3	MAIN BUS: 600A		VERT BUS: 300		
BUS BRACING: 65 000		MAX. OVERALL LENGTH: 170"				DEMAND LOAD: 272KVA		
UNIT NO.	EQUIPMENT SERVED	HP	STARTER SIZE	CIRCUIT BREAKER			CONTROLS	REMARKS
				FRAME	TRIP	POLES		
A-1	SPACE	N/A	N/A	-	-	-	-	51"
A-2	MAIN LUGS	N/A	N/A	-	-	-	-	21"
B-1	INFLUENT PMP NO.1	100	VFD	250	200	3	M1,M3	50"W X 72"
C-1	INFLUENT PMP NO.2	100	VFD	250	200	3	M1,M3	50"W X 72"
D-1	INFLUENT PMP NO.3	100	VFD	250	200	3	M1,M3	50"W X 72"

**5** MCC-GR ELEVATION & SCHEDULE  
E6J NOT TO SCALE

**NOTES:**

- M1. START/STOP COMMAND & SEQUENCE ROTATION BY IN-PLANT SCADA SYSTEM.
- M2. START/STOP COMMAND & SEQUENCE ROTATION BY AQUAROBICS CONTROL PANEL.
- M3. SPEED REGULATION BY IN-PLANT SCADA SYSTEM.
- M4. SPEED REGULATION BY AQUAROBICS CONTROL PANEL.
- M5. FUTURE MCC SECTIONS, NOT PROVIDED IN THIS PROJECT.
- M6. EQUIPMENT LOCKED OUT ON EMERGENCY GENERATOR OPERATION.
- M7. ALL FVNR STARTERS WILL BE PROVIDED WITH A SOLID STATE OVERLOAD RELAY. REDUCED VOLTAGE SOLID STATE STARTERS AND VARIABLE FREQUENCY DRIVES DO NOT REQUIRE ADDITIONAL OVERLOAD PROTECTION.

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MOTOR CONTROL CENTER ELEVATIONS & SCHEDULES  
 DATE: NOVEMBER 29, 2012  
 FILE NO: 2009-63PRJ  
 SHEET: E6.1

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