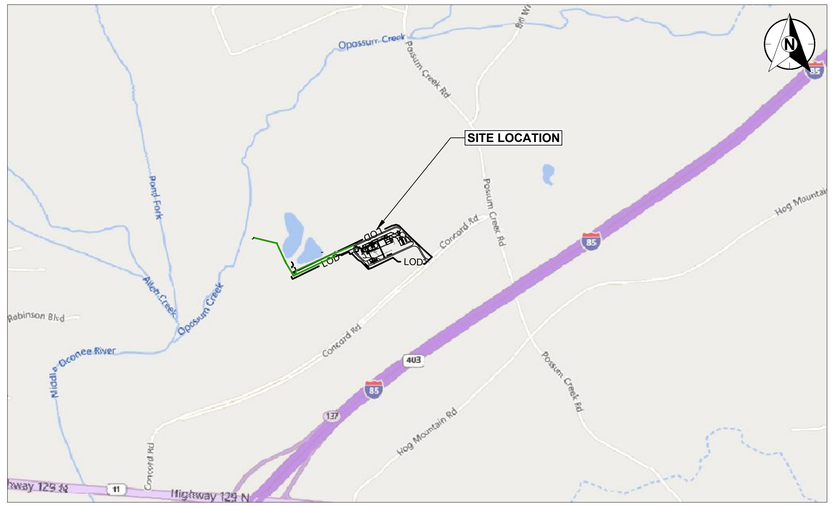
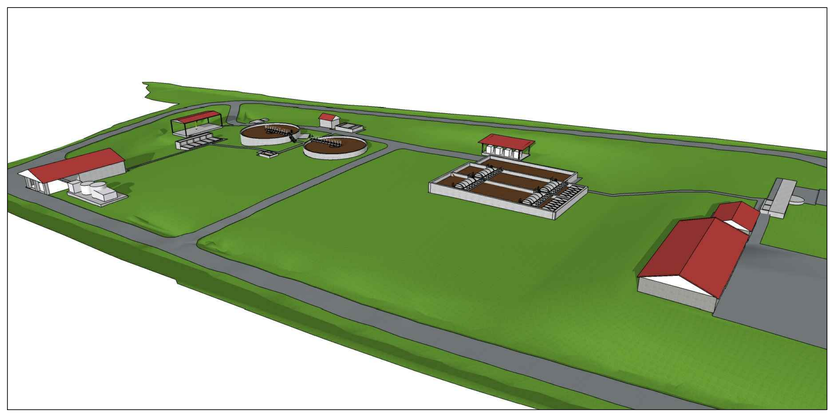
JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY
SITE DEVELOPMENT PLANS
CITY OF JEFFERSON, JACKSON COUNTY, GA



LOCATION MAP
SCALE: N.T.S.



SITE RENDERING
SCALE: N.T.S.

CONSTRUCTION READY DOCUMENTS : 07/05/2022

1. OWNER / PRIMARY PERMITTEE:
CITY OF JEFFERSON , GEORGIA

2. ENGINEER: CIVIL ENGINEERING CONSULTANTS, INC.
4994 LOWER ROSWELL RD SUITE 18,
MARIETTA, GA 30068
PHONE: (770) 977-5747

3. SURVEYOR: CIVIL ENGINEERING CONSULTANTS, INC.
4994 LOWER ROSWELL RD SUITE 18,
MARIETTA, GA 30068
PHONE: (770) 977-5747

ORIGIN OF SURVEY: FIELD RUN TOPOGRAPHY - 1/27/2022

4. SITE ADDRESS:
CONCORD ROAD
JEFFERSON, GA 30549

5. DISTURBED AREA:
TOTAL DISTURBED AREA: 6.0 AC.

6. NO PORTION OF THE PROPOSED TREATMENT PLANT SITE LIES WITHIN A FLOOD HAZARD AREA PER FEMA FLOOD INSURANCE RATE MAP PANEL 13157C0120C, DATED 12/17/2010

7. ZONING DISTRICTS: ZONING DISTRICT C-2

8. PARCEL: 092 003

9. PROJECT DESCRIPTION:
THIS PROJECT INCLUDE THE CONSTRUCTION OF A NEW 1.0 MILLION GALLON PER DAY WATER RECLAMATION FACILITY COMPLETE WITH HEADWORKS, SECONDARY TREATMENT, SECONDARY CLARIFICATION, FILTERS, UV DISINFECTION AND POST AERATION. A 24-INCH OUTFALL PIPE WILL CONVEY PLANT EFFLUENT FLOW FROM THE PROPOSED PLANT TO OPOSSUM CREEK. THE PROJECT SHALL INCLUDE FURNISHING ALL MATERIALS, LABOR, EQUIPMENT AND ANY APPURTENANCES AS NECESSARY FOR COMPLETION OF THE WORK DESCRIBED WITHIN THESE PLANS AND SPECIFICATIONS.

10. PROJECT LOCATION:
THIS PROJECT BEGINS AT 34°11'48.3"N, 84°07'10.0"W, AND ENDS AT 34°11'47.8"N, 84°07'07.4"W

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

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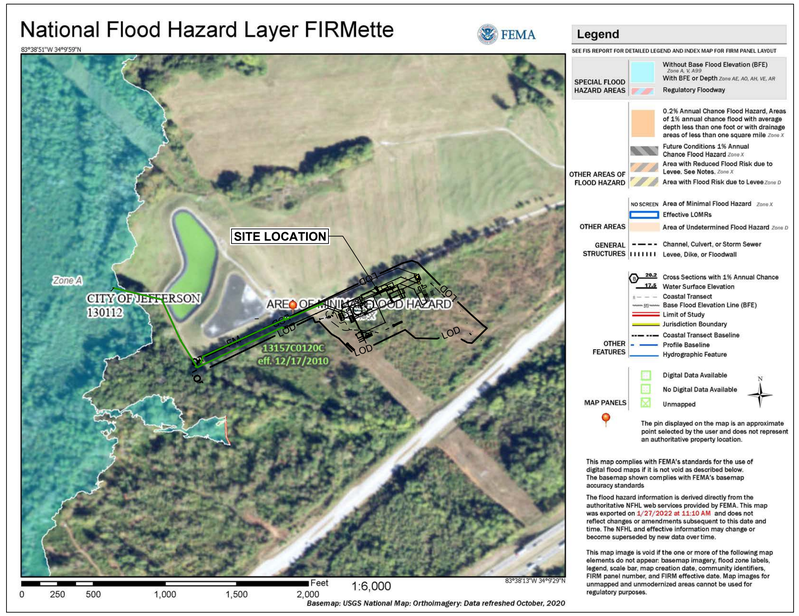

FLOOD MAP
SCALE: AS SHOWN

CONSTRUCTION SCHEDULE

CONSTRUCTION ACTIVITY	2022 JULY	AUG	SEPT	OCT	NOV	DEC	2023 JAN	FEB	MAR	APR	MAY	JUN	AUG	SEP	OCT	NOV
INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES																
INSTALLATION OF SITE IMPROVEMENTS																
MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES FOR ENTIRE PROJECT																
FINAL GRASSING																

UTILITIES PROTECTION CENTER, INC.

Call FREE THROUGHOUT GEORGIA 1-800-282-7411
IN ATLANTA: 325-5000

THREE WORKING DAYS BEFORE YOU DIG IT'S THE LAW

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 8:32 AM

Sheet List Table

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

DRAWING INDEX

DRAWING NUMBER

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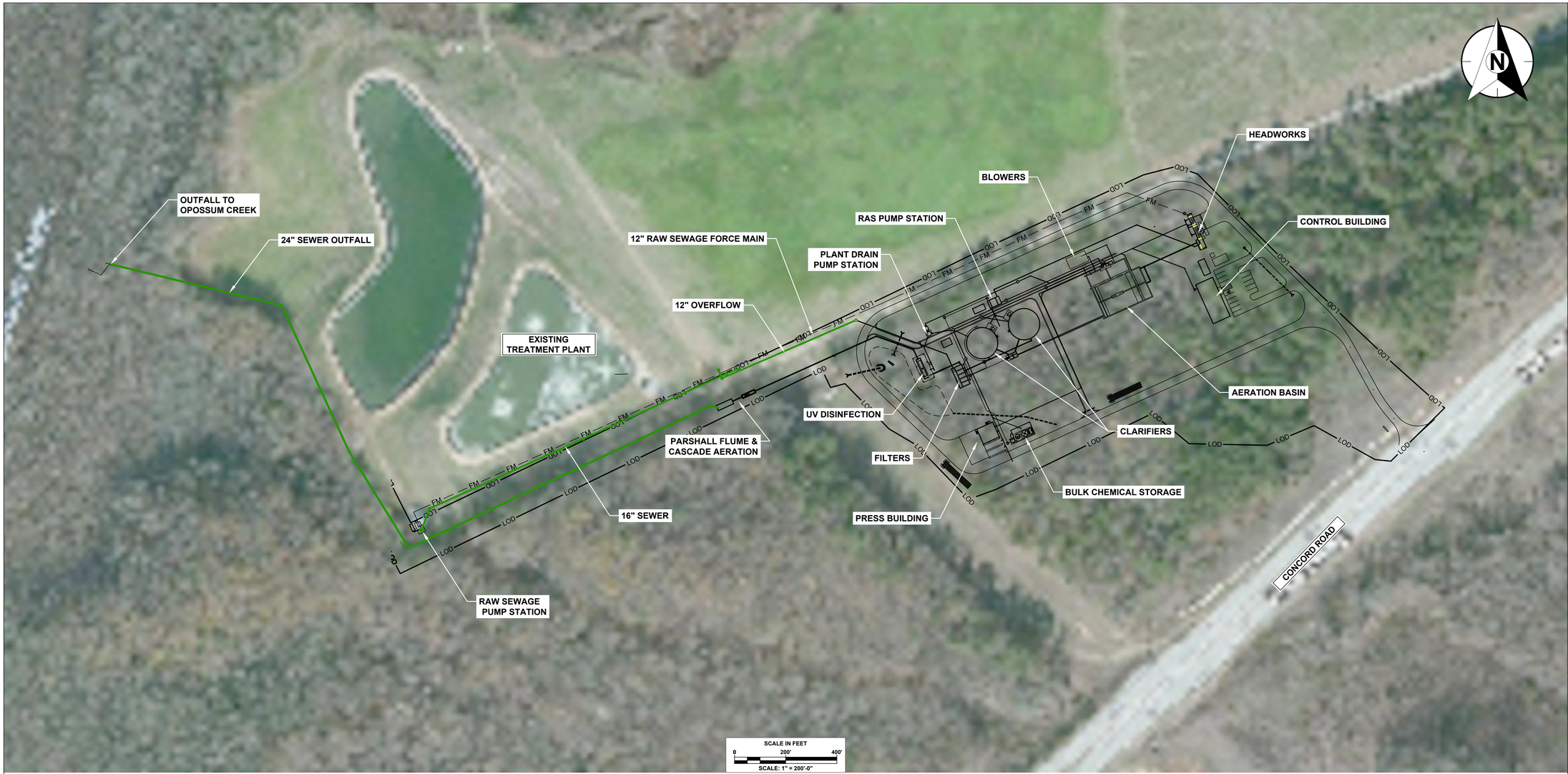

SURVEY LINE LEGEND	
EX. WATER LINE	— W — W — W — W — W —
ABANDONED WATER LINE	— W — X — W — X —
EX. SEWER LINE	— SS — SS — SS —
ABANDONED SEWER LINE	— SS — X —
EX. FORCE MAIN	— FM — FM — FM —
ABANDONED FORCE MAIN	— FM — X —
EX. OVERHEAD POWER LINE	— E — E — E —
EX. UNDERGROUND POWER LINE	— E — E — E —
EX. STORM DRAIN LINE	
EX. GUARD RAIL	
EX. GAS LINE	— G — G — G — G —
EX. FIBER OPTIC CABLE	— FO — FO — FO —
EX. COMMUNICATION CABLE	— COMM — COMM —
EX. UNDERGROUND TELEPHONE LINE	— TEL — TEL — TEL —
EX. OVERHEAD TELEPHONE LINE	— TEL — TEL —
CENTERLINE CREEK	
CENTERLINE ROAD	
EX. FENCE LINE	— X — X — X — X —
EX. MAJOR CONTOUR	1200
EX. MINOR CONTOUR	1200
WOODS LINE	

LEGEND OF SYMBOLS	
WATER VALVE	
WATER METER	W
FIRE HYDRANT	
UTILITY POLE	
LIGHT POLE	
SINGLE WING CATCH BASIN (LEFT/RIGHT)	
DOUBLE WING CATCH BASI N	
JUNCTION BOX	D
HEADWALL	
FLARED END SECTION	
SANITARY SEWER MANHOLE	S
SIGN SINGLE	
BENCHMARK	
CONTROL POINT	
GUY-WIRE	

LINE LEGEND	
EXISTING (SCREENED)	
PROPOSED (DARKER AND/OR COLOR)	
PROPOSED WATER	
PROPOSED SANITARY SEWER	
PROPOSED STEEL CASING	
PROPOSED CONTOURS	1200

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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OVERALL PLAN

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GENERAL PIPE LINE NOTES:

1. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATION & INSTRUCTIONS.
2. RESTRAINED FITTINGS SHALL HAVE FULL JOINT OF PIPE (NORMALLY 18 OR 20 FT.) ON EACH SIDE OF THE FITTING UNLESS STATED OTHERWISE ON THE DRAWING PLAN. WHERE ANOTHER FITTING IS LOCATED LESS THAN 20 FT. FROM THE FIRST FITTING, THE PIPE BETWEEN THE TWO SHALL BE A SINGLE PIECE OF PIPE.
3. FOR RESTRAINED JOINT PIPE INSTALLATION, JOINT PIPE ASSEMBLY EXTENSION "SLACK" MUST BE PERFORMED PER MANUFACTURE'S RECOMMENDATIONS AND INSTRUCTION.
4. CONTRACTOR SHALL COORDINATE ALL PIPE TIE-INS WITH THE ENGINEER AND THE CITY. CONTRACTOR SHALL PROVIDE A WRITTEN WORK PLAN AND SCHEDULE FOR APPROVAL PRIOR TO MAKING TIE-INS.
5. LOCATION OF HYDROSTATIC LEAK TESTS SHALL BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL NOTIFY THE ENGINEER A WEEK IN ADVANCED PRIOR TO CONDUCTING THE HYDROSTATIC LEAK TEST.

UTILITY NOTES:

1. LOCATIONS OF UNDERGROUND UTILITIES ARE APPROXIMATE, & SOME UTILITIES MAY EXIST THAT ARE NOT SHOWN. BEFORE BEGINNING BORING, CONTRACTOR SHALL FIELD LOCATE & POT HOLE ALL EXISTING UNDERGROUND UTILITIES TO DETERMINE THE EXACT LOCATIONS & ELEVATIONS, & CONFIRM THAT SPECIFIED ELEVATIONS OF CASINGS ARE NOT IN CONFLICT WITH EXISTING UNDERGROUND UTILITIES.
2. CARE SHALL BE TAKEN WHILE EXCAVATING AROUND ANY EXISTING UTILITIES. WATER AND GAS LINES MARKED ON THE PLAN AS ABANDONED AND TO BE REMOVED IF CONFLICTS WITH THE CONSTRUCTION OF THE PROPOSED WATER MAIN SHALL BE FIELD VERIFIED/CHECKED BY THE CONTRACTOR PRIOR TO COMMENCING WORK. NOTIFY THE ENGINEER FOR ANY DISCREPANCIES.

GENERAL NOTES:

1. ALL PIPES SHALL BE INSTALLED W/ A MINIMUM COVER OF 4'-0" BELOW EXISTING GRADE OR AS SHOWN ON THE DRAWING. (SEE PROFILE FOR REFERENCE)
2. PIPE BEDDING SHALL BE CLASS 5. REFERENCE TYPE 5 BEDDING DETAIL ON SHEET 1-C-25.

STORMWATER NOTES:

1. A PORTION OF THE PROPERTY LIES WITHIN A 100-YEAR FLOOD PLAIN (ZONE A OR AE) AS DESIGNATED ON F.I.R.M. FLOOD PANEL NO. 13157CO120C, DATED 12/17/2010. THE OUTFALL LINE WILL BE INSTALLED JUST INSIDE THE FLOOD PLAIN. THE 732.00FT FLOOD ELEVATION IS BASED ON FLOOD MAP PANEL GIS DATA AND JACKSON COUNTY LIDAR TOPO.
2. ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF JEFFERSON'S STANDARDS AND SPECIFICATION.
3. STORMWATER/DETENTION POND, OUTLET CONTROL STRUCTURE, AND TEMPORARY SEDIMENT BASIN FEATURES ARE TO BE CONSTRUCTED AND BE FULLY OPERATIONAL PRIOR TO ANY OTHER CONSTRUCTION OR GRADING NOT ASSOCIATED WITH THESE FACILITIES.
4. CONTRACTOR TO CLEAN OUT ACCUMULATED SEDIMENT IN STORM WATER/DETENTION POND AT THE END OF CONSTRUCTION ONCE DISTURBED AREA HAS BEEN STABILIZED.
5. CITY OF JEFFERSON ASSUMES NO RESPONSIBILITY FOR OVERFLOW OR EROSION OF NATURAL OR ARTIFICIAL DRAINS BEYOND THE EXTENT OF THE STREET RIGHT OF WAY OR FOR THE EXTENSION OF CULVERTS BEYOND THE POINT SHOWN ON THE APPROVED CONSTRUCTION DOCUMENT.
6. STORMWATER MANAGEMENT FOR THIS PROJECT IS PROVIDED ON-SITE.
7. THE OUTFALL PIPE WILL ENTER THE OPOSSUM CREEK STREAM BUFFER.
8. CITY OF JEFFERSON ASSUMES NO RESPONSIBILITY FOR OVERFLOW OR EROSION OF NATURAL OR ARTIFICIAL DRAINS BEYOND THE EXTENT OF THE STREET RIGHT-OF-WAY OR FOR THE EXTENSION OF CULVERTS BEYOND THE POINT SHOWN ON THE APPROVED AND RECORDED PLAN. THE CITY OF JEFFERSON DOES NOT ASSUME THE RESPONSIBILITY FOR THE MAINTENANCE OF PIPES IN DRAINAGE EASEMENTS BEYOND THE CITY RIGHT-OF-WAY.

STORMWATER SYSTEM NOTES:

1. GRATES WITH BARS SHALL BE PERPENDICULAR TO ROAD
2. THE THROAT OF THE CURB INLETS SHALL NOT EXCEED 8 INCHES
3. HDPE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-294 AND AASHTO MP7, TYPE S & D. CONNECTIONS SHALL USE A RUBBER GASKET, WHICH CONFORMS TO ASTM F-477. INSTALLATION SHALL BE IN ACCORDANCE WITH ASTM RECOMMENDED PRACTICE D-2321, AASHTO SECTION 30, OR WITH SECTION 550 OF THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS CONSTRUCTION OF TRANSPORTATION SYSTEMS, LATEST EDITION

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

GENERAL NOTES

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GATE SCHEDULE

PROCESS AREA	GATE TYPE	QUANTITY	DESCRIPTION	GATE SIZE WxH	INVERT ELEVATION	SEATING CONDITION	UNSEATING CONDITION	WALL THIMBLE (YES/NO)	MAX W.S.	TOP OF WALL	CONSTRUCTION MATERIAL	OPERATOR TYPE	COMMENTS
HEADWORKS	SLIDE, SELF CONTAINED	4	SCREEN CHANNEL ISOLATION	30" X 30"	823.25	6.981	----	NO		827.92	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
HEADWORKS	SLIDE, SELF CONTAINED	2	GRIT CHANNEL ISOLATION	33" X 30"	823.25	6.981	----	NO		827.25	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
HEADWORKS	SLIDE, SELF CONTAINED	2	GRIT CHANNEL ISOLATION (BY-PASS)	30" X 30"	823.25	6.981	----	NO		827.25	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
HEADWORKS	WEIR, SELF CONTAINED	4	HEADWORKS FLOW SPLIT	4'-0" X 1'-0"	825.58	6.981	----	NO		827.25	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
AERATION BASIN	SLIDE, SELF CONTAINED	3	ANAEROBIC ZONE ISOLATION	30" X 30"	799.00	6.981	----	NO	809.92	812.75	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
AERATION BASIN	SLIDE, SELF CONTAINED	1	AERATION BASIN TRANSFER PORT	42" X 42"	798.58	6.981	----	NO	809.75	812.75	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
SPLITTER BOX	WEIR, SELF CONTAINED	2	CLARIFIER FLOW SPLIT	7'-6" X 1'-0"	802.75	6.981	----	NO		805.00	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT
UV DISINFECTION	SLIDE, SELF CONTAINED	2	UV CHANNEL ISOLATION	1'-8" X 4'-6"	798.58	6.981	----	NO	809.75	812.75	ALUMINUM	MANUAL W/ 18" HAND WHEEL	WALL MOUNT

HEAT TRACING AND INSULATION SCHEDULE

FACILITY	PROCESS FLUID	HEAT TRACING PURPOSE	PIPE AND FITTING ESTIMATED QUANTITIES						INSULATION		HEAT CABLE	DESCRIPTION
			SIZE (in.)	MATERIAL	LENGTH (ft.)	VALVES	FITTINGS	PIPING SPECIALTIES	THICKNESS (in.)	TYPE	AREA CLASSIFICATION	
RAW SEWAGE PUMP STATION	ODOR CONTROL MAKE UP WATER	FREEZE PROTECTION	1	PVC	10	0	3	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED WATER SUPPLY PIPING
HEADWORKS	GRIT PIPING	FREEZE PROTECTION	6	DI	<10	0	4	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED GRIT PIPING
HEADWORKS	GRIT FLUIDIZATION WATER	FREEZE PROTECTION	½	PVC	10	0	3	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED WATER SUPPLY PIPING
HEADWORKS	BAR SCREEN SPRAY WASH WATER	FREEZE PROTECTION	½	PVC	10	0	3	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED WATER SUPPLY PIPING
HEADWORKS	ODOR CONTROL MAKE UP WATER	FREEZE PROTECTION	1	PVC	10	0	3	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED WATER SUPPLY PIPING
HEADWORKS	LIME SOLUTION RISER	FREEZE PROTECTION	½	PVC	10	0	3	NA	2	FIBERGLASS	NOT CLASSIFIED	FINISH GRADE TO DISCHARGE POINT
PROPOSED ALUM TANK	LIQUID ALUM	FREEZE PROTECTION	2	PVC	10	1	0	NA	2	FIBERGLASS	NOT CLASSIFIED	EXPOSED SUPPLY PIPING BETWEEN TANK AND CHEMICAL BUILDING
SPLITTER BOX	LIQUID ALUM	FREEZE PROTECTION	½	PVC	<10	0	1	NA	2	FIBERGLASS	NOT CLASSIFIED	FINISH GRADE TO DISCHARGE POINT

SAFETY SHOWER AND EYEWASH SCHEDULE

LOCATION	BASIS OF DESIGN	QTY	WATER	SHOWER MODEL	ADDITIONAL DETAILS
ADJACENT TO BULK CHEMICAL STORAGE	FREEZE PROTECTED SAFETY SHOWER AND EYE/FACE WASH	1	PLASTIC SHOWERHEAD WITH 20 GPM FLOW CONTROL, EYE/FACE WASH HEAD SHALL SUPPLY 1.2 GPM WITH FLOW CONTROL	HAWS 8300.158 GUARDIAN G1941	ABS PLASTIC EYEWASH ANTI-SURGE HEADS WITH INTEGRAL FLOW CONTROLS AND DUST COVERS, CHROME-PLATED BRASS STAY-OPEN SHOWER AND EYEWASH BALL VALVES EQUIPPED WITH STAINLESS STEEL BALL AND STEM, AND AUTOMATIC THERMAL ACTUATOR FREEZE PROTECTION BLEED VALVE THAT WILL FULLY OPEN AT 35°‹ F (1.7°‹ C), AND CLOSES WHEN THE WATER CLIMBS BACK TO 42°‹ F (5.6°‹ C).
ADJACENT TO BULK CHEMICAL STORAGE	SHOWER AND EYE/FACE WASH	1	PLASTIC SHOWERHEAD WITH 20 GPM FLOW CONTROL, EYE/FACE WASH HEAD SHALL SUPPLY 3.7 GPM WITH FLOW CONTROL	HAWS 8300 8309 GUARDIAN G1909	SCALD PROTECT BLEED VALVE: HAWS MODEL SP157A STAINLESS STEEL SCALD PROTECTION BLEED VALVE. THERMOSTATIC MIXING VALVE: HAWS MODEL 9201E AXION® OR GUARDIAN G6040 EMERGENCY TEMPERING VALVE THERMOSTATICALLY MIXES HOT AND COLD WATER TO PROVIDE A SAFE FLUID SUPPLY FOR EMERGENCY SHOWERS AND EYEWASH EQUIPMENT, WITH A FLOW RATE OF 31 GPM

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CITY OF JEFFERSON

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Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SCHEDULES

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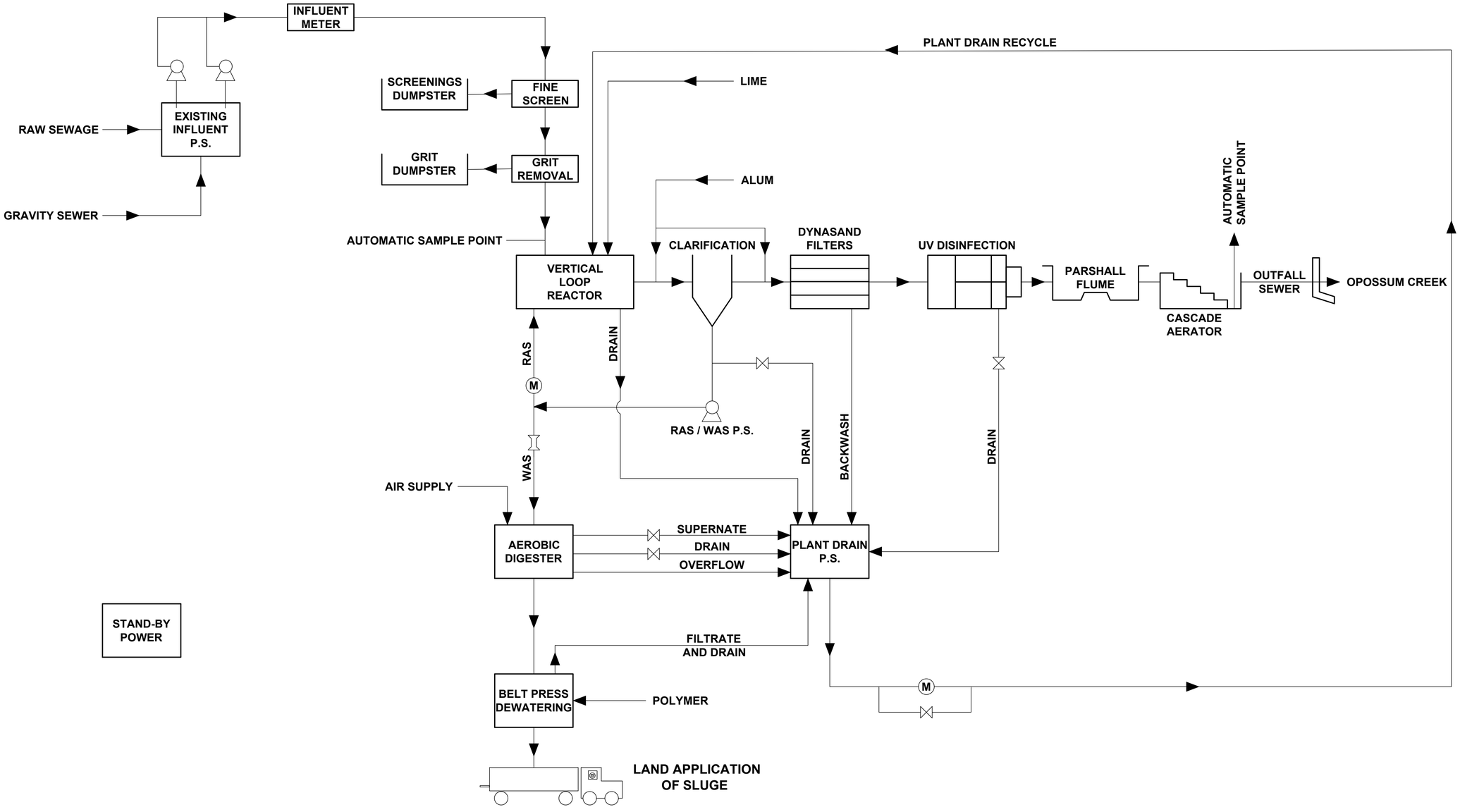

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PROCESS FLOW DIAGRAM

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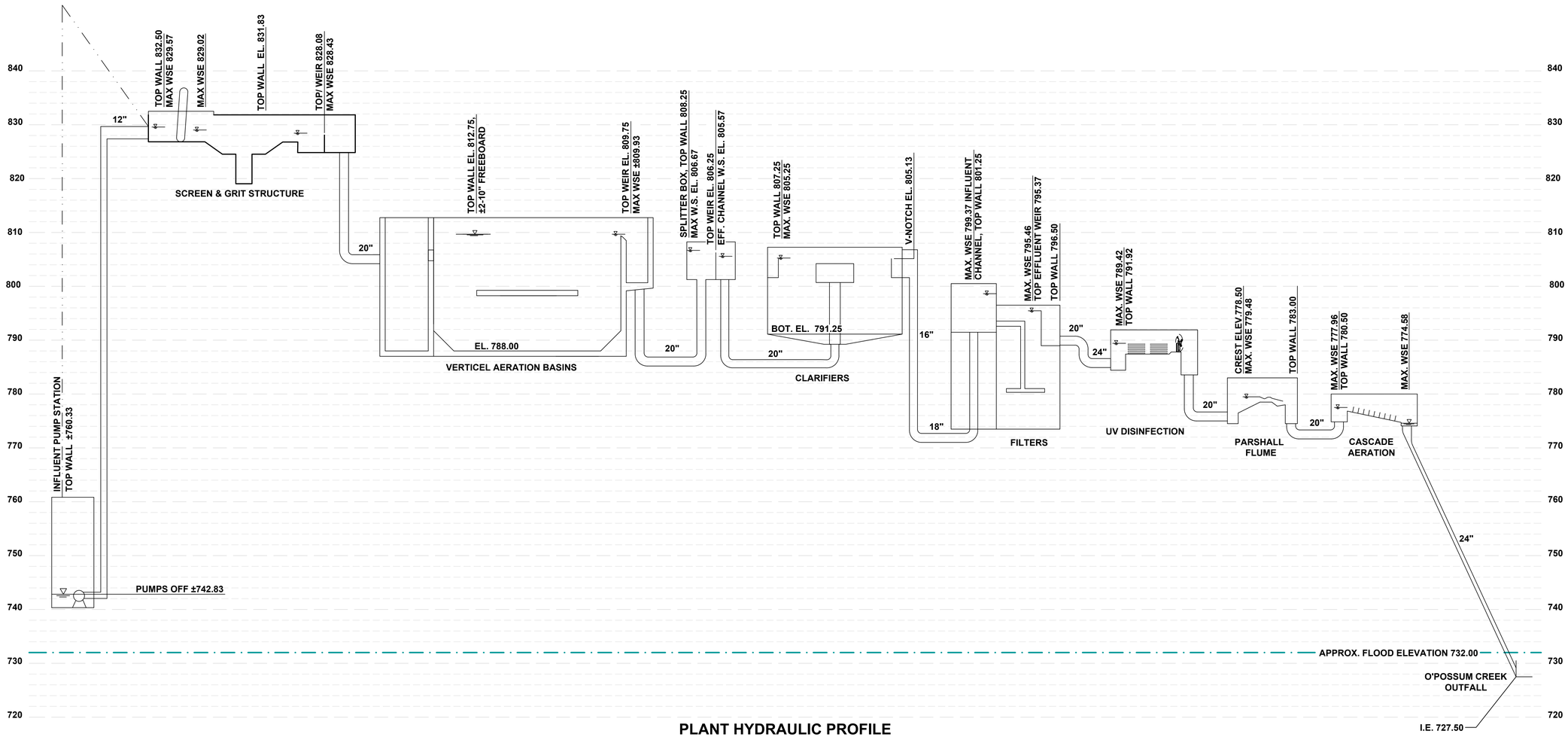

PLANT HYDRAULIC PROFILE

SCALE: VERT. 1" = 10'
HORZ. N.T.S.

IMPORTANT NOTES:

1) **WATER ELEVATIONS DESIGNATE LEVEL AT PROPOSED PEAK FLOW OF 2.5MGD.**
2) **CONTRACTOR IS TO USE THIS DRAWING TO SET TOP OF WALL OR WEIR ELEVATIONS. REPORT ANY INCONSISTENCIES TO THE ENGINEER IMMEDIATELY**

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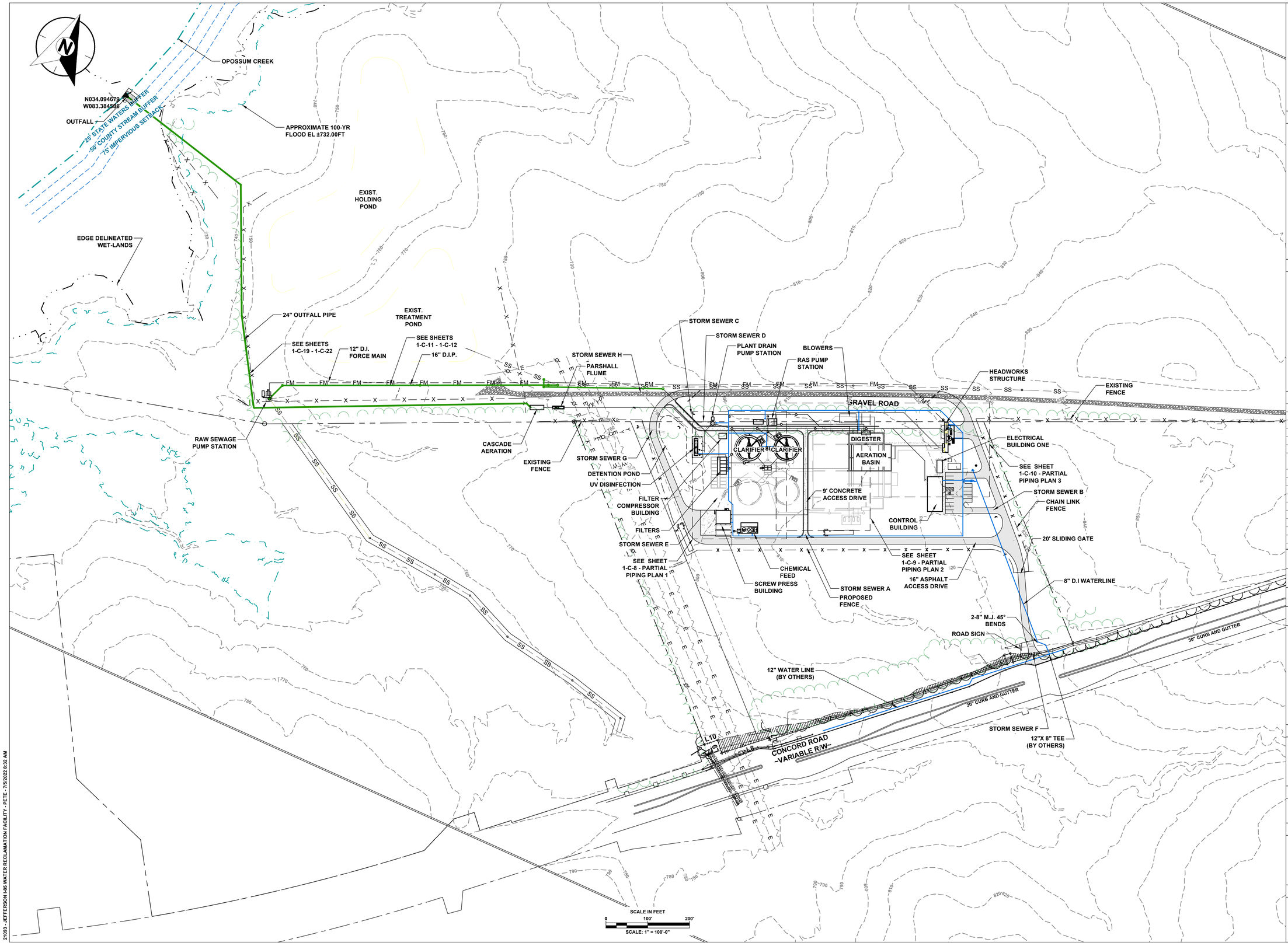

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PROJECT NAME

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SHEET TITLE

OVERALL SITE PLAN

DRAWING NUMBER

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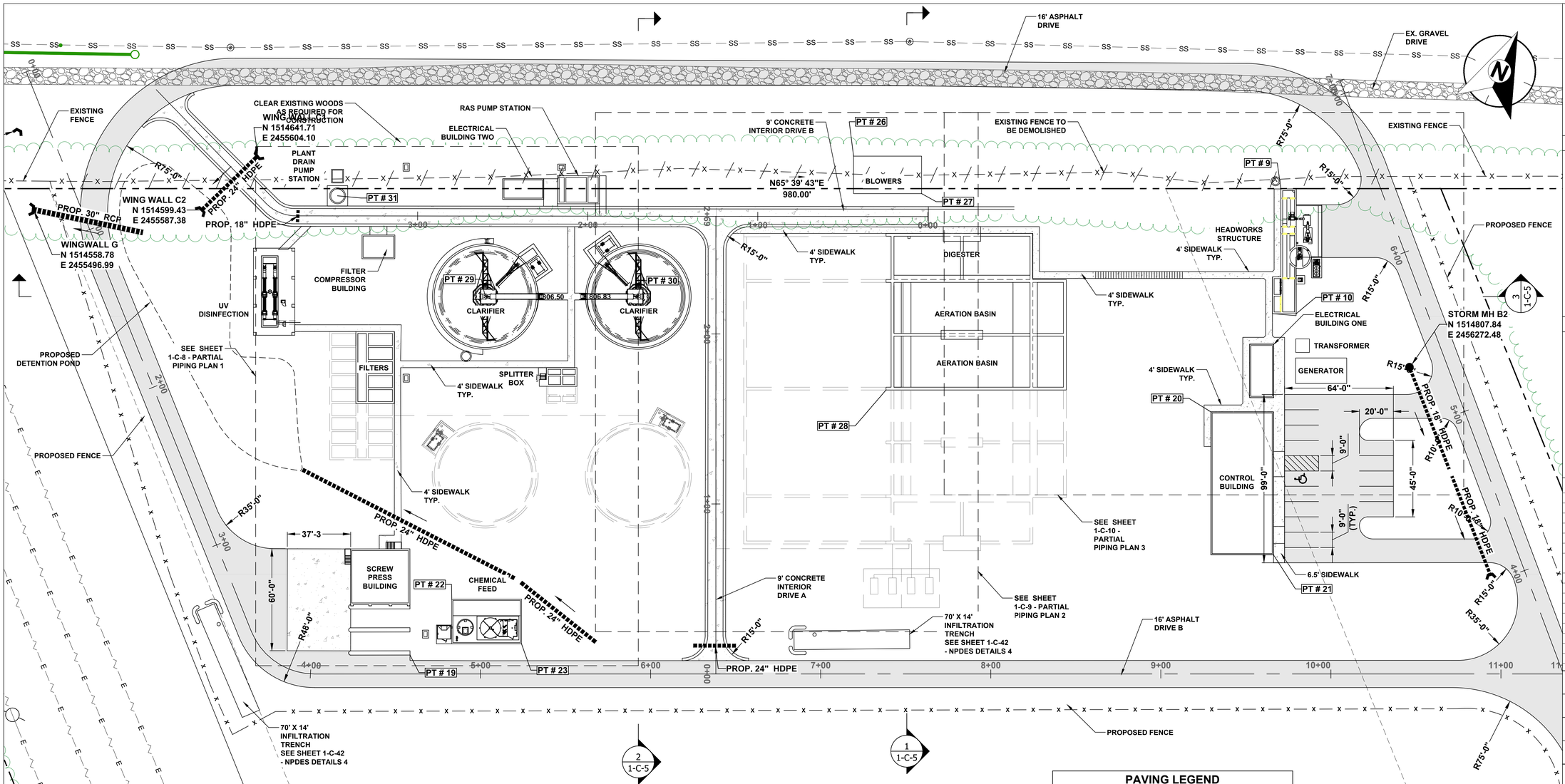

PAVING LEGEND	
ASHPHALT DRIVE	
CONCRETE DRIVE / SIDEWALK	

SITE STRUCTURES			
PT#	DESCRIPTION	NORTHING	EASTING
1	COR UV	1514591.4828	2455624.2816
2	COR UV	1514554.8157	2455667.5736
3	COR SPLTR	1514596.4994	2455805.9611
4	COR SPLTR	1514595.8166	2455831.1466
5	COR RAS PS	1514703.9530	2455769.5862
6	COR RAS PS	1514699.0847	2455798.8607
7	COR PARSHAL	1514519.8105	2455289.7832
8	COR PARSHAL	1514524.9716	2455318.1814
9	COR HDWK	1514872.2206	2456160.4151
10	COR HDWK	1514809.0377	2456198.8718
11	COR FILTER	1514571.6020	2455699.3829
12	COR FILTER	1514542.2900	2455737.5097
13	COR ELECT BLDG	1514689.0970	2455741.0007
14	COR ELECT BLDG	1514687.9712	2455768.0338
15	COR ELCT BLDG	1514781.4396	2456181.2687

SITE STRUCTURES			
PT#	DESCRIPTION	NORTHING	EASTING
16	COR ELCT BLDG	1514758.5774	2456207.1582
17	COR DIGESTER	1514788.2702	2456038.2791
18	COR DEWATERING	1514459.9733	2455738.7838
19	COR DEWATERING	1514411.3033	2455806.8315
20	COR CTRL BLDG	1514735.7684	2456176.9224
21	COR CTRL BLDG	1514674.2587	2456245.1704
22	COR CHEM BLDG	1514451.3293	2455815.6755
23	COR CHEM BLDG	1514444.3850	2455863.8156
24	COR CASCADE	1514499.6855	2455239.6473
25	COR CASCADE	1514503.0691	2455275.3989
26	COR BLWR PAD	1514786.2157	2455923.5118
27	COR BLWR PAD	1514782.6557	2455969.0236
28	COR AER BSN	1514668.7143	2455997.6013
29	CENTER CLARIFIER 2	1514621.7150	2455760.2146
30	CENTER CLARIFIER 1	1514658.8000	2455842.2189

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
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7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

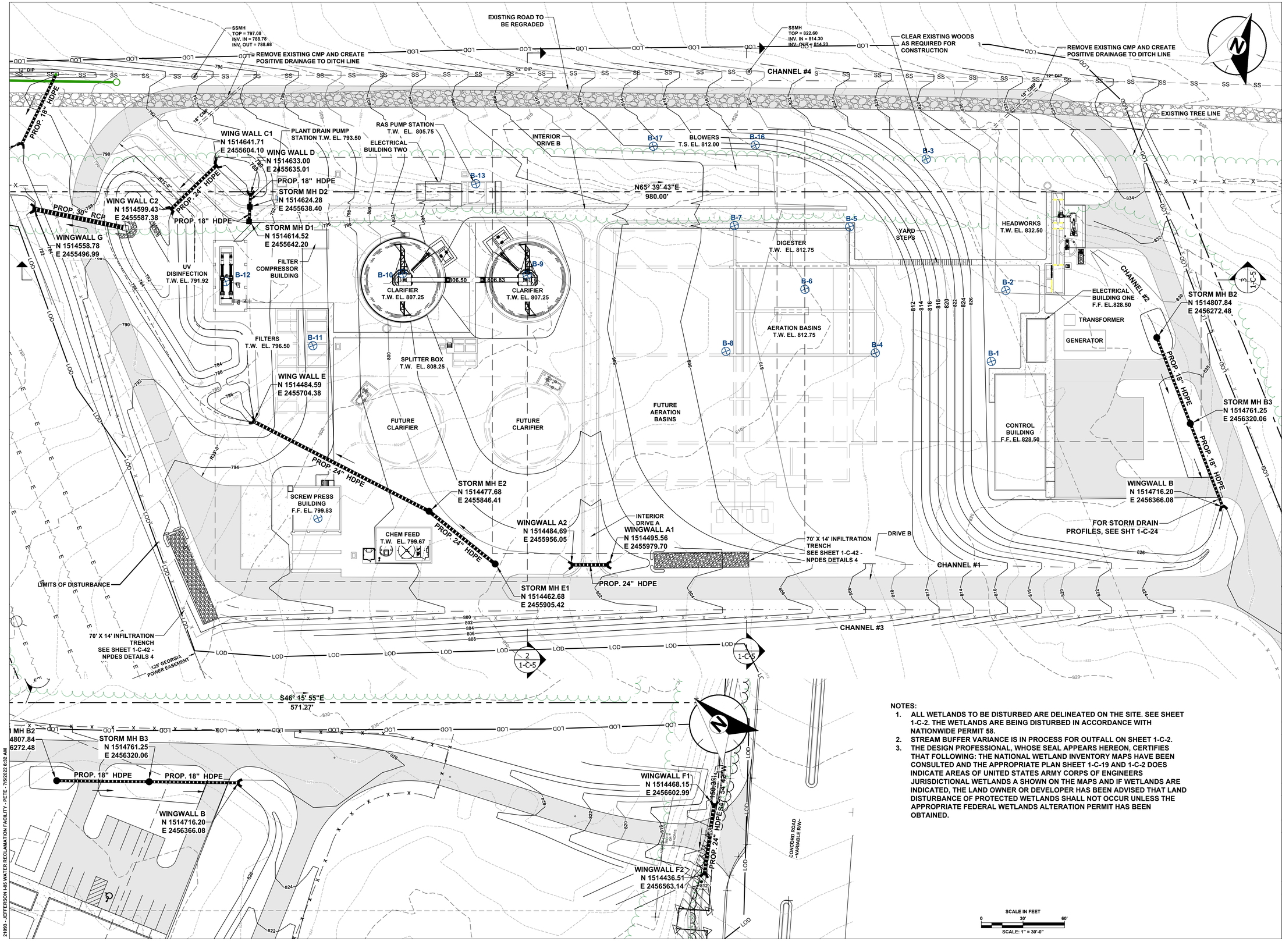
10/05/2021

SHEET TITLE

SITE PLAN

DRAWING NUMBER

1-C-3
OF
214



NOTES:

1. ALL WETLANDS TO BE DISTURBED ARE DELINEATED ON THE SITE. SEE SHEET 1-C-2. THE WETLANDS ARE BEING DISTURBED IN ACCORDANCE WITH NATIONWIDE PERMIT 58.
2. STREAM BUFFER VARIANCE IS IN PROCESS FOR OUTFALL ON SHEET 1-C-2.
3. THE DESIGN PROFESSIONAL, WHOSE SEAL APPEARS HEREON, CERTIFIES THAT FOLLOWING: THE NATIONAL WETLAND INVENTORY MAPS HAVE BEEN CONSULTED AND THE APPROPRIATE PLAN SHEET 1-C-19 AND 1-C-2 DOES INDICATE AREAS OF UNITED STATES ARMY CORPS OF ENGINEERS JURISDICTIONAL WETLANDS A SHOWN ON THE MAPS AND IF WETLANDS ARE INDICATED, THE LAND OWNER OR DEVELOPER HAS BEEN ADVISED THAT LAND DISTURBANCE OF PROTECTED WETLANDS SHALL NOT OCCUR UNLESS THE APPROPRIATE FEDERAL WETLANDS ALTERATION PERMIT HAS BEEN OBTAINED.

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RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
1	6/9/2022	ADDENDUM #2
2	6/21/2022	REVISION #1
3		
4		
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8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

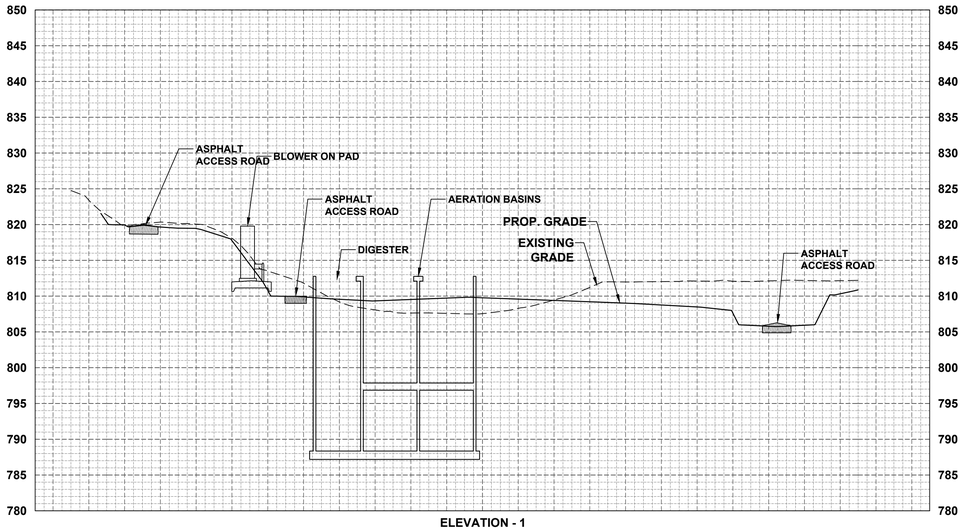
10/05/2021

SHEET TITLE

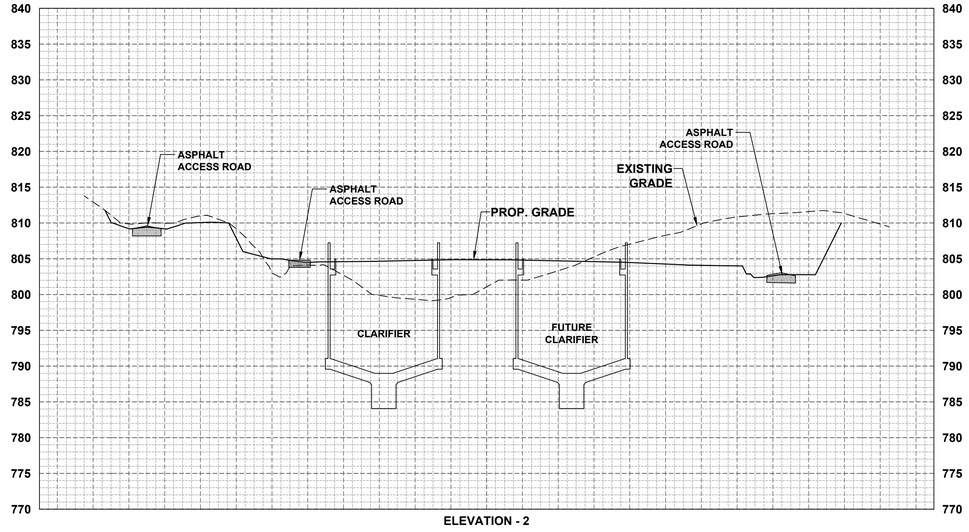
GRADING PLAN

DRAWING NUMBER

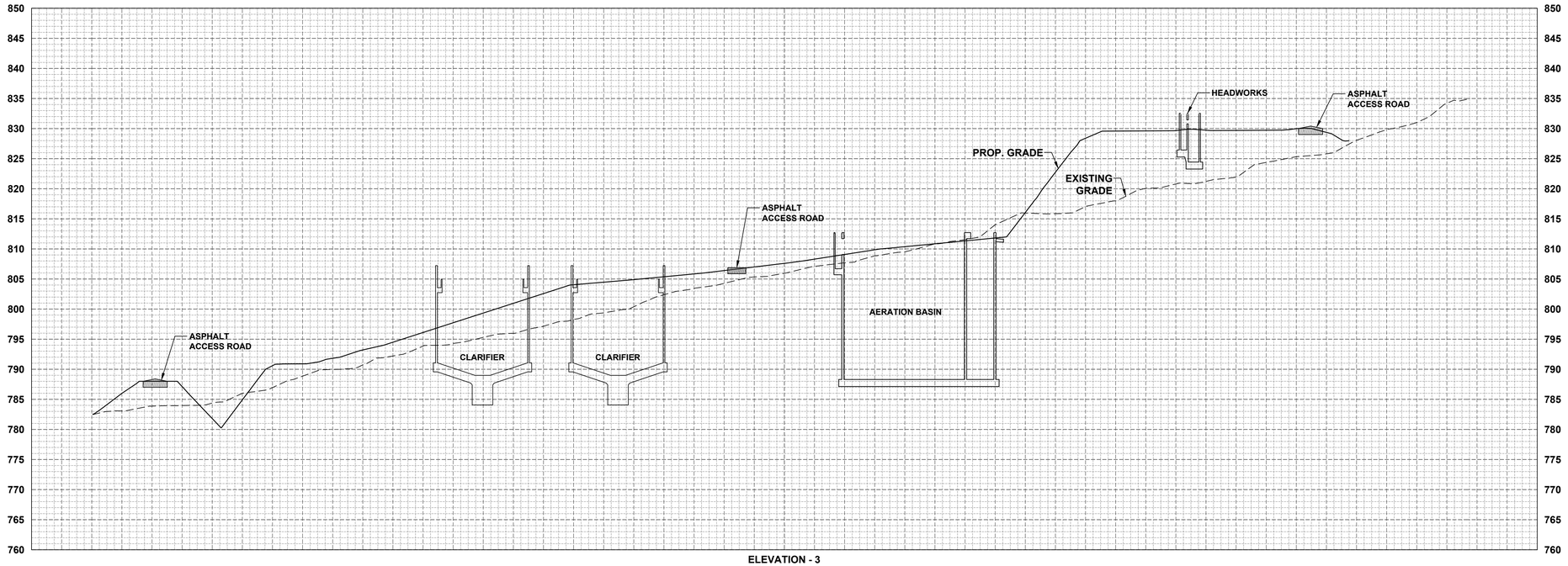
1-C-4
OF
214



ELEVATION - 1



ELEVATION - 2



ELEVATION - 3

SCALE:
1" = 40'-0" horiz.
1" = 10'-0" vert.

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

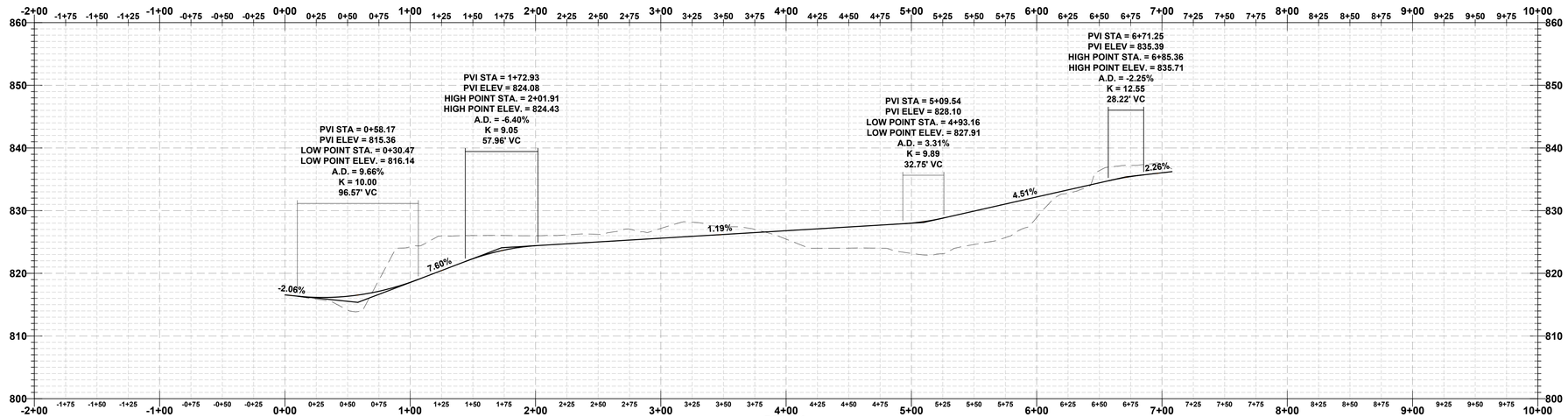
10/05/2021

SHEET TITLE

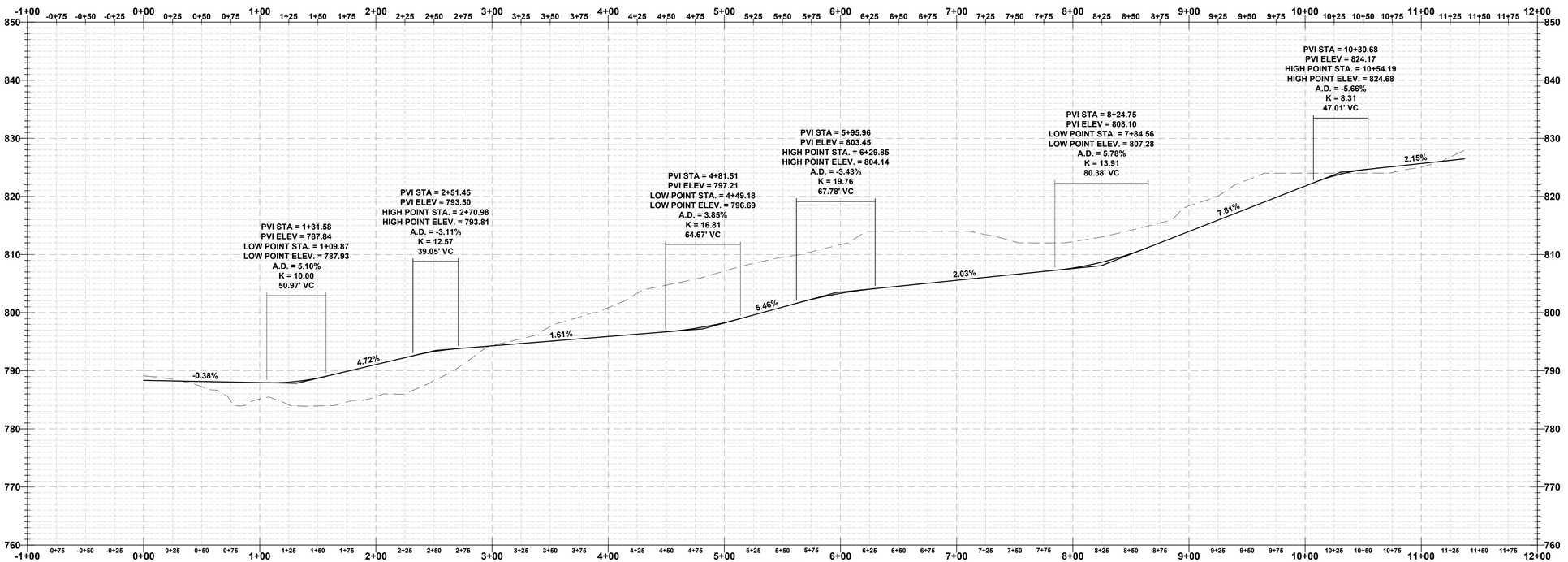
PLANT ELEVATIONS

DRAWING NUMBER

1-C-5
OF
214



DRIVE A
STAT -2+00 - 10+00
SCALE: VERT 1"=4
HORZ 1"=20



DRIVE B
STAT -1+00 - 12+00
SCALE: VERT 1"=4
HORZ 1"=20

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

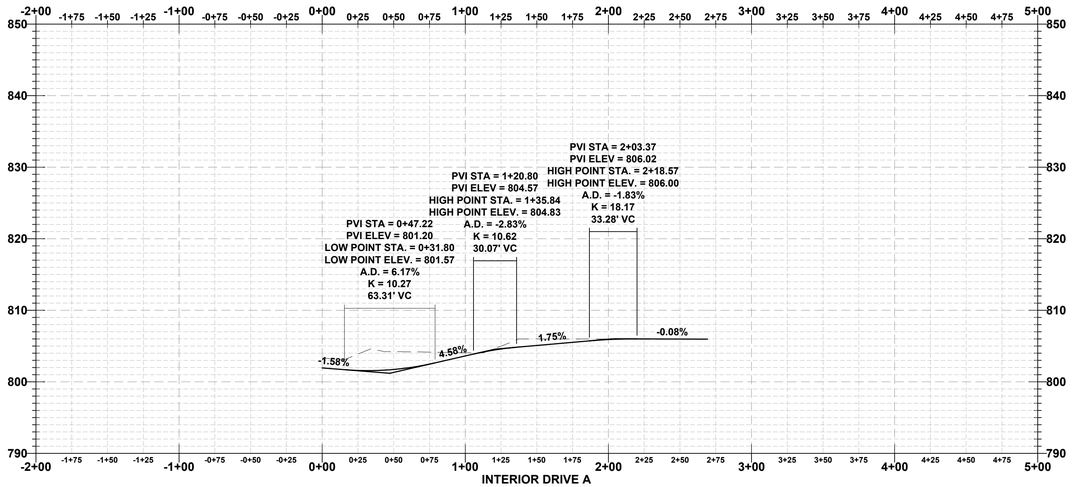
10/05/2021

SHEET TITLE

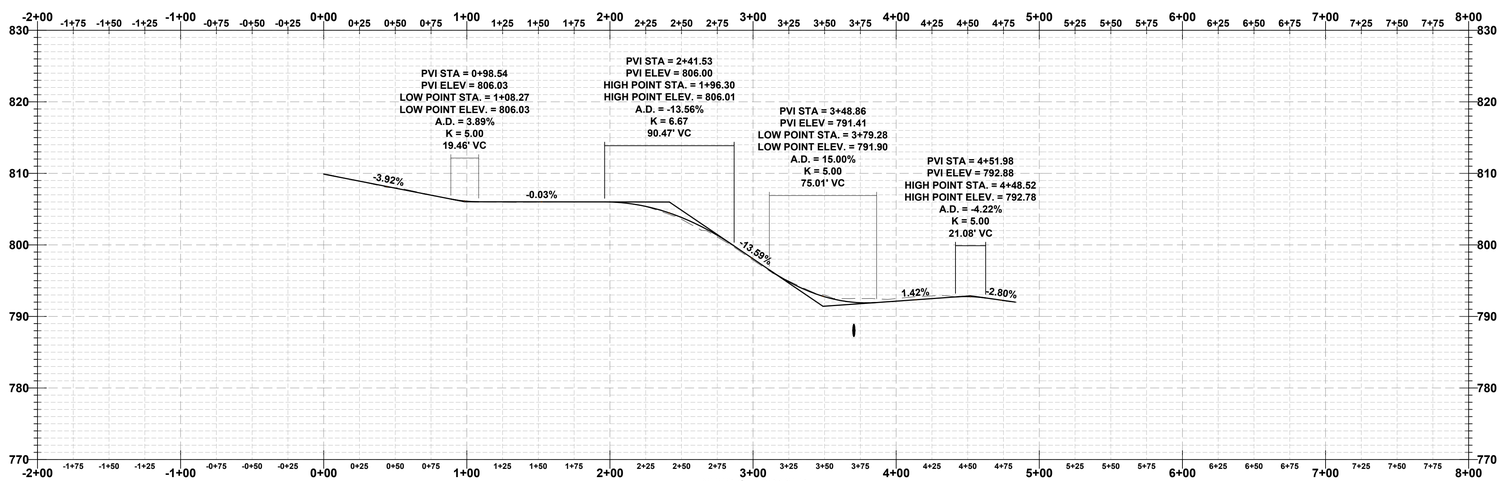
ACCESS DRIVE PROFILE

DRAWING NUMBER

1-C-6
OF
214



INTERIOR DRIVE A
STAT -2+00 - 5+00
SCALE: VERT 1"=4
HORZ 1"=20



INTERIOR DRIVE B
STAT -2+00 - 8+00
SCALE: VERT 1"=4
HORZ 1"=20

SCALE:
1" = 50'-0" horiz.
1" = 10'-0" vert.

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

INTERIOR ACCESS DRIVE PROFILES

DRAWING NUMBER

1-C-7
OF
214

NOTE:
FOR STORM DRAIN PROFILES,
SEE SHT 1-C-23

WING WALL E
N 1514484.59
E 2455704.38

SCREW PRESS BUILDING

2 - 6" X 8" WYES
2 - 6" 45° BENDS
8" CLEAN OUT

2 - 6" X 8" WYES
2 - 6" 45° BENDS

PROP. 24" HDPE

8"x6" WYE

8" DIP (PROFILE, SHT 1-C-16)

4" SCH 40 PVC CONDUIT

PULL BOX

4" SCH 40 PVC CONDUIT

4" DRAIN
2-4" 45° BENDS

6" DIP

CHEMICAL FEED

2" W.L.

PROP. 24" HDPE

18" SD (PROFILE, SHT 1-C-23)

6" DIP SLUDGE (PROFILE, SHT 1-C-17)

STORM MH E2
N 1514477.68
E 2455846.41

FUTURE CLARIFIER

FUTURE CLARIFIER

SCALE IN FEET
0 10' 20'
SCALE: 1" = 10'-0"

FILTERS

PULL BOX

4" SCH 40 PVC CONDUIT

8" DIP (PROFILE, SHT 1-C-16)

MH B-1

2-4" SCH 40 PVC CONDUIT

18" DIP (PROFILE, SHT. 1-C-14)

5'-0"Ø DOG HOUSE MANHOLE

CLARIFIER

18" FL. WAFER MIXER
18" FLANGE ADAPTOR

16"X18"X16" TEE
16"X18" REDUCER

16" DIP

20" DIP

SPLITTER BOX

MH D-1
RIM =806.00
INV.IN =798.17 (10")
INV.IN =798.17 (10")
INV.IN =797.23 (12")
INV.OUT =797.67 (16")

806.50

Y.H.

12" CAP

12" DIP

20" DIP, (PROFILE, SHT. 1-C-13)

20" DIP

806.83

Y.H.

8" DIP

10" DIP

CLARIFIER

UV DISINFECTION

24" DIP

24" 45° BEND

PROP. 18" HDPE

24" DIP

4" 90° BEND (VERT.)

4" TEE (3)

4" DIP

4" 45° BEND

18" SD

STORM MH D1
N 1514614.52
E 2455642.20

4" DIP

24"x20" RED.

20"x18" TEE

20" DIP

12" DIP

12" X 45°

FILTER COMPRESSOR BUILDING

2-20" 90° BENDS

4" DRAIN SEE SHT. 9-M-1

2" PVC SDR21 PR-200 WATER LINE

4" SCH 40 PVC CONDUIT

10" DIP (PROFILE, SHT 1-C-16)

MH A-1

STORM MH D2
N 1514624.28
E 2455638.40

PROP. 18" HDPE
(1) 8" TEE

Y.H.

PLANT DRAIN PUMP STATION

10" DIP

PULL BOX

8" DIP

2" PVC SDR21 PR-200 WATER LINE

10" DIP (PROFILE, SHT 1-C-16)

SEE SHEET 8-M-1
FOR ADDITIONAL
PIPING IN THIS AREA

MH A-2

ELECTRICAL BUILDING TWO

Y.H.

RAS PUMP STATION

PULL BOX

16" DIP

12" X 90°

4" SCH 40 PVC CONDUIT

8" DIP (PROFILE, SHT 1-C-15)

12" DIP (PROFILE, SHT 1-C-15)

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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5		

REVISIONS

No	Date	Description
1		
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

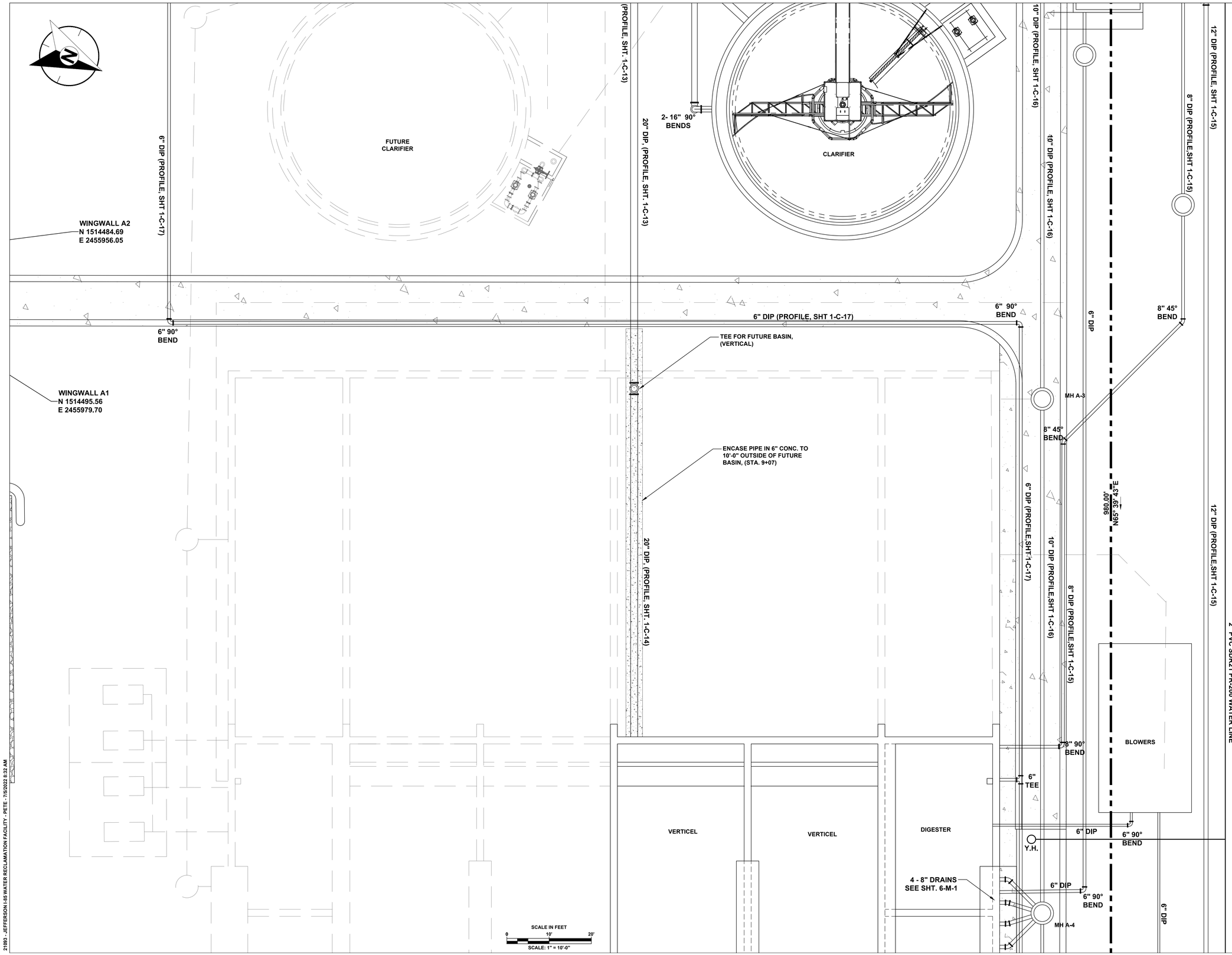
SHEET TITLE

PARTIAL PIPING PLAN 1

DRAWING NUMBER

1-C-8
OF
214

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 8:32 AM



21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/6/2022 8:32 AM

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

PARTIAL PIPING PLAN 2

DRAWING NUMBER

1-C-9
OF
214

C 2" PVC SDR21 PR-200 WATER LINE
12" DIP (PROFILE, SHT 1-C-15)
12" 45° BEND
6" DIP
6" 90° BEND
6" 90° BEND
6" DIP
6" DIP
MH A-4
8" DIP
4 - 8" DRAINS SEE SHT. 6-M-1
DIGESTER
8" WYE
8 X 6 REDUCER
6 X 4 WYE
8" 45° BEND
6" DIP (PROFILE, SHT 1-C-16)
8" DIP
VERTICEL
VERTICEL
20" TEE
20" DIP, (PROFILE SHT. 1-C-13)
20" DIP
20" 90° BEND
4" DIP
4" 45° BEND
4" WYE
4" 45° BEND
4" 90° BEND (VERT)
METERING MANHOLE
MECHANICAL SCREEN
Y.H.
(4) 6" WYE
(4) 6" 45° BENDS
6" DIP
HEADWORKS
CLASSIFIER
ODOR CONTROL
12" DIP (PROFILE, SHT 1-C-15)
12" 45° BEND
C 2" PVC SDR21 PR-200 WATER LINE
STORM MH
N 1514807.8
E 2456272.4
TRANSFORMER
GENSET
ELECTRICAL BUILDING ONE
CONTROL BUILDING
C 1.5" PVC SDR21 PR-200 WATER LINE
NOTE:
FOR STORM DRAIN PROFILES, SEE SHT 1-C-23
F.H.
1" BFP
2" BFP
2" WATER METER
12" SDR PROP 18" HDPE
8" D.I. WATER MAIN
SCALE IN FEET
0 10' 20'
SCALE: 1" = 10'-0"

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY, PETE 7/5/2022 8:32 AM

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RELEASES

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

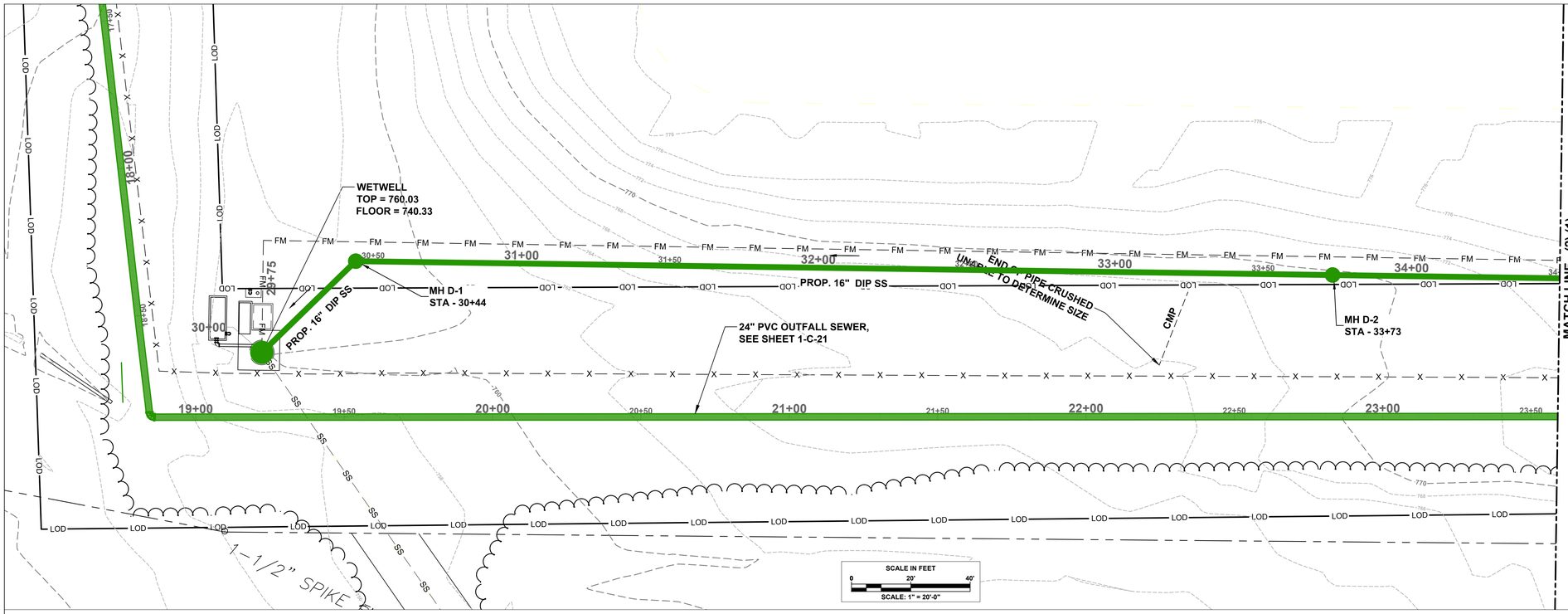
10/05/2021

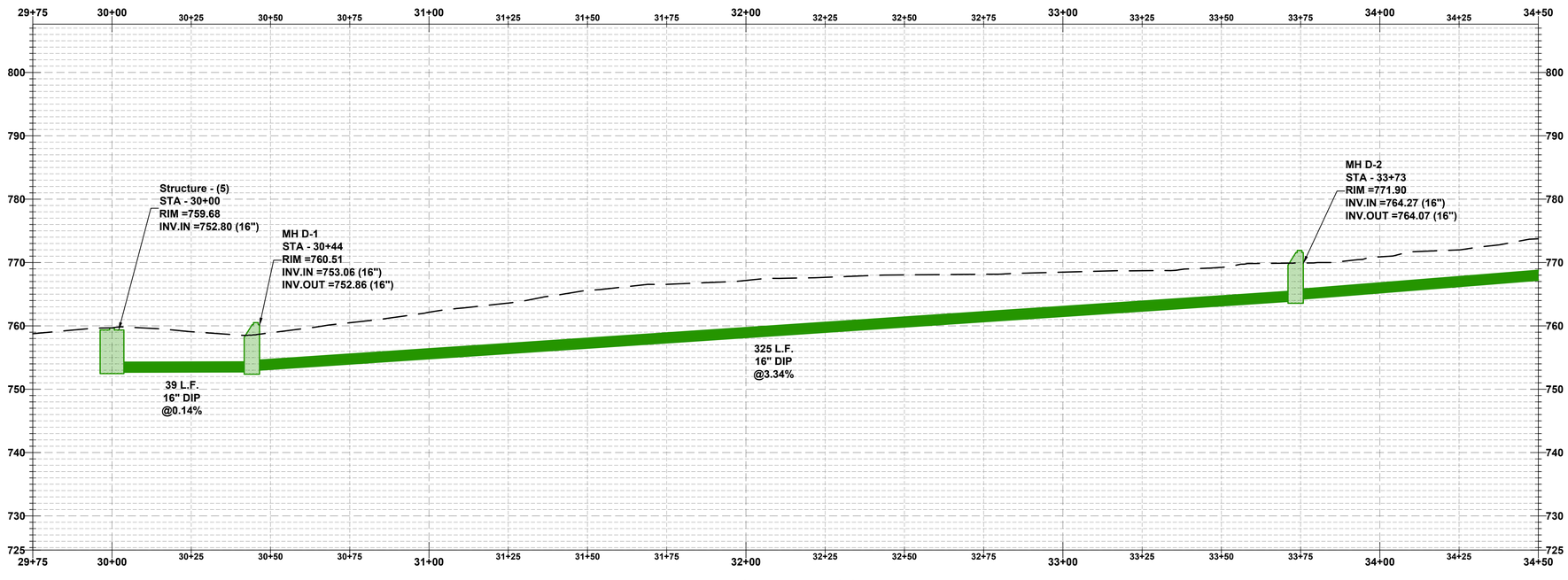
SHEET TITLE

PARTIAL PIPING PLAN 3

DRAWING NUMBER

1-C-10
OF
214





SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

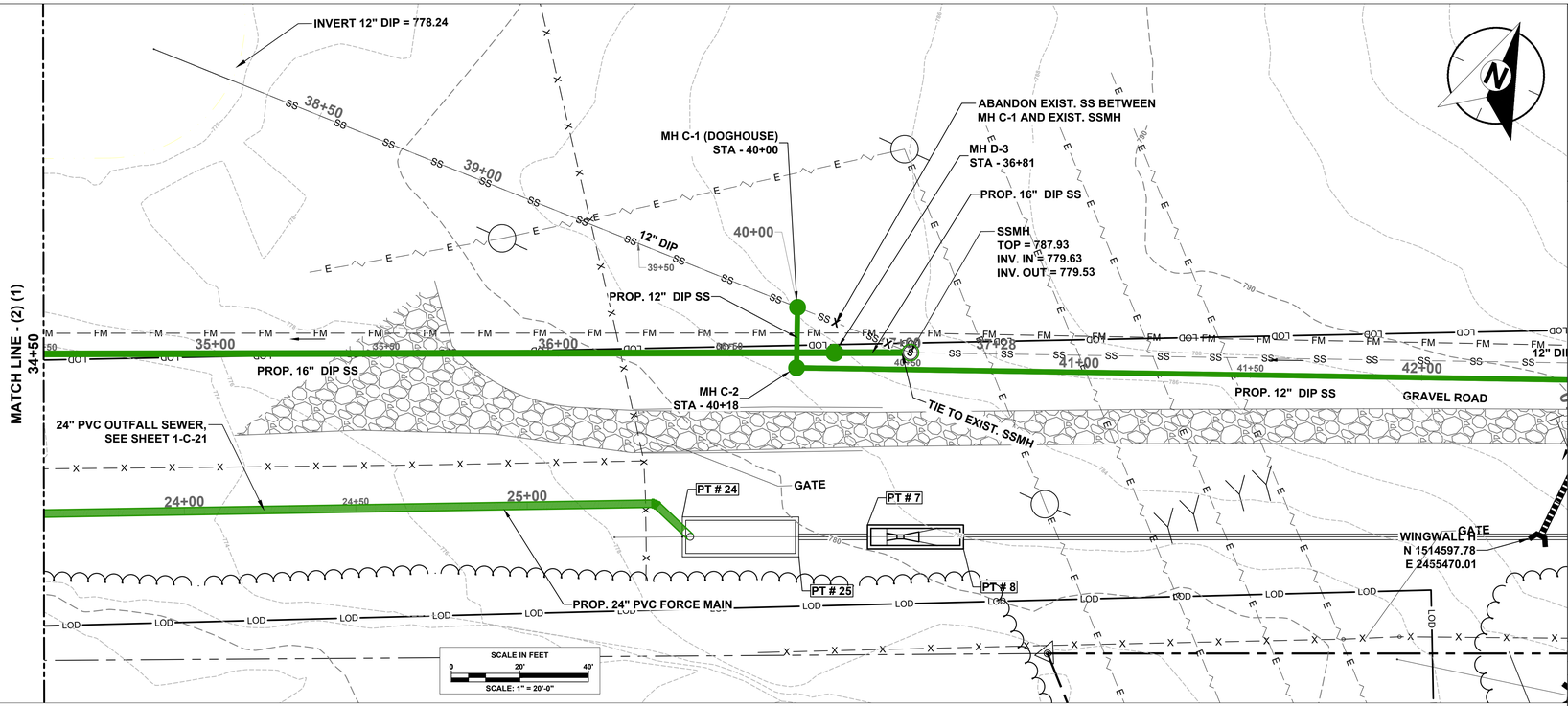
10/05/2021

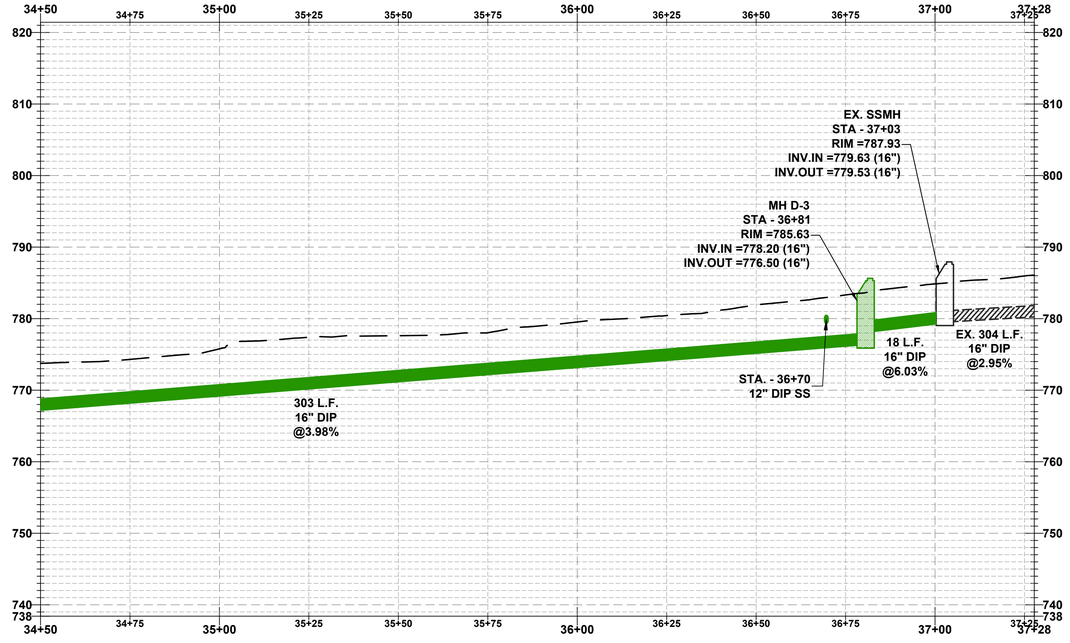
SHEET TITLE

SEWER PLAN AND PROFILE 1

DRAWING NUMBER

1-C-11
OF
214





SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

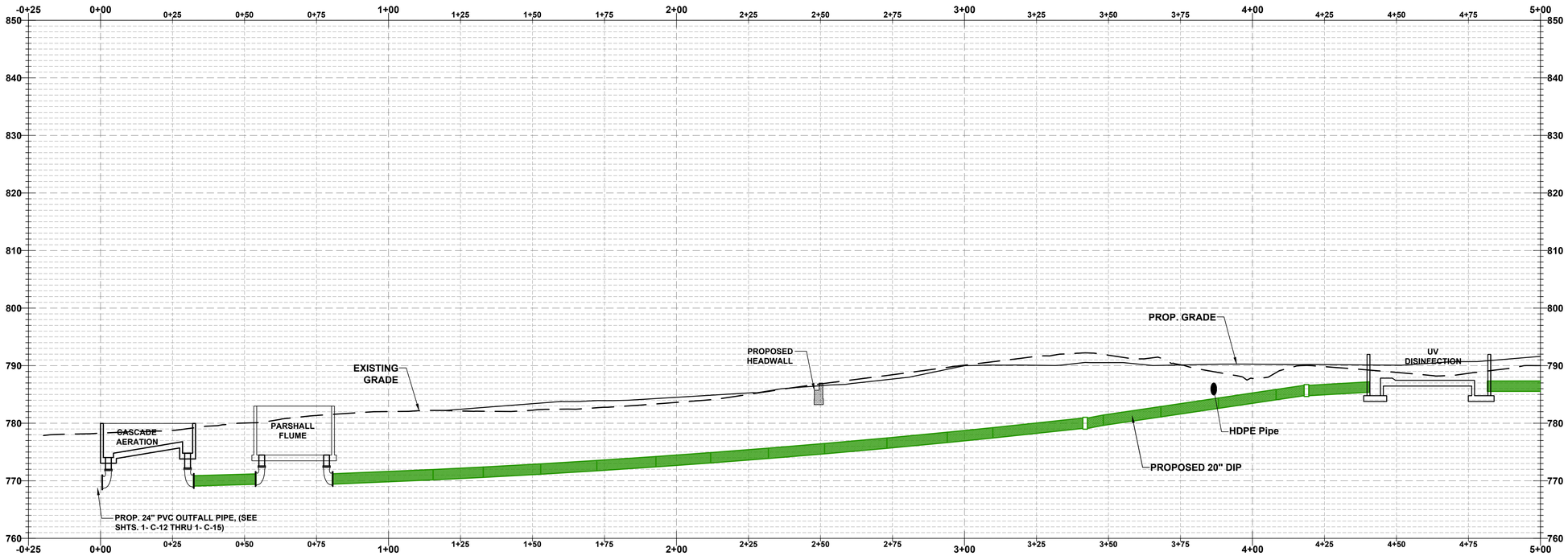
10/05/2021

SHEET TITLE

SEWER PLAN AND PROFILE 2

DRAWING NUMBER

1-C-12
OF
214



PROFILE:MAIN PROCESS 1

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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Checked By : CKB

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

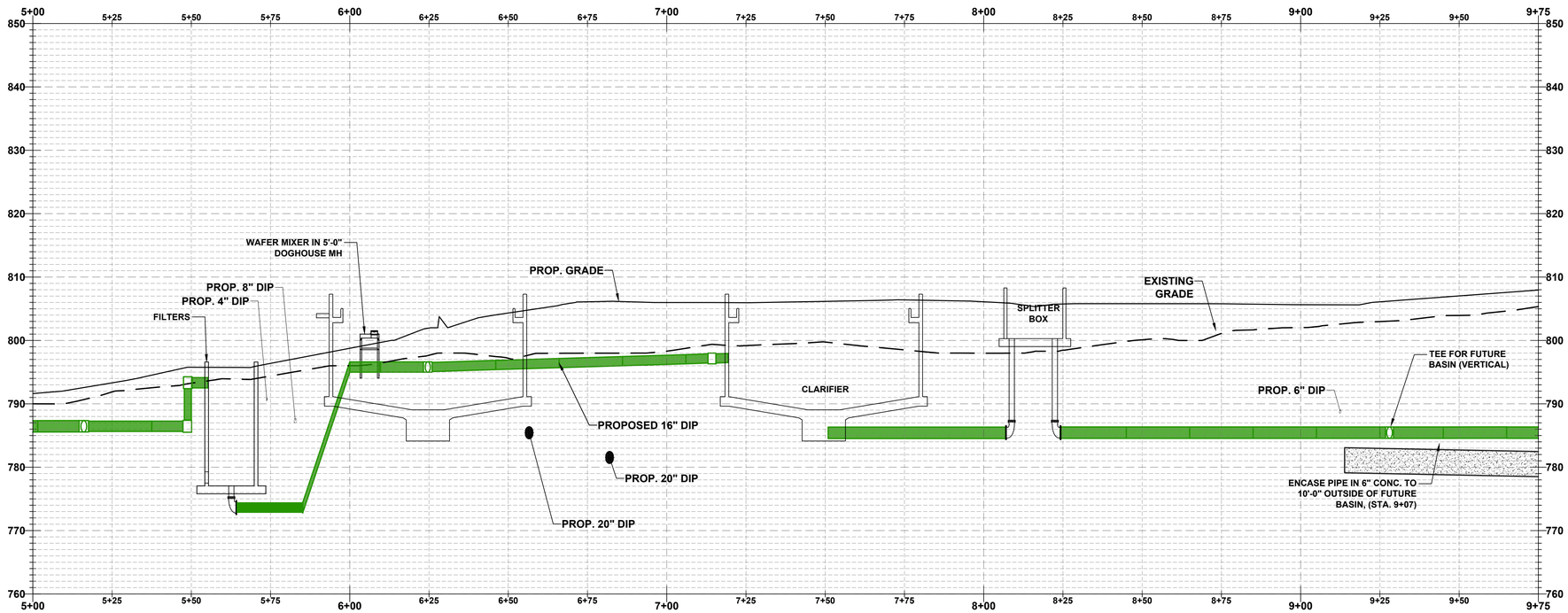
10/05/2021

SHEET TITLE

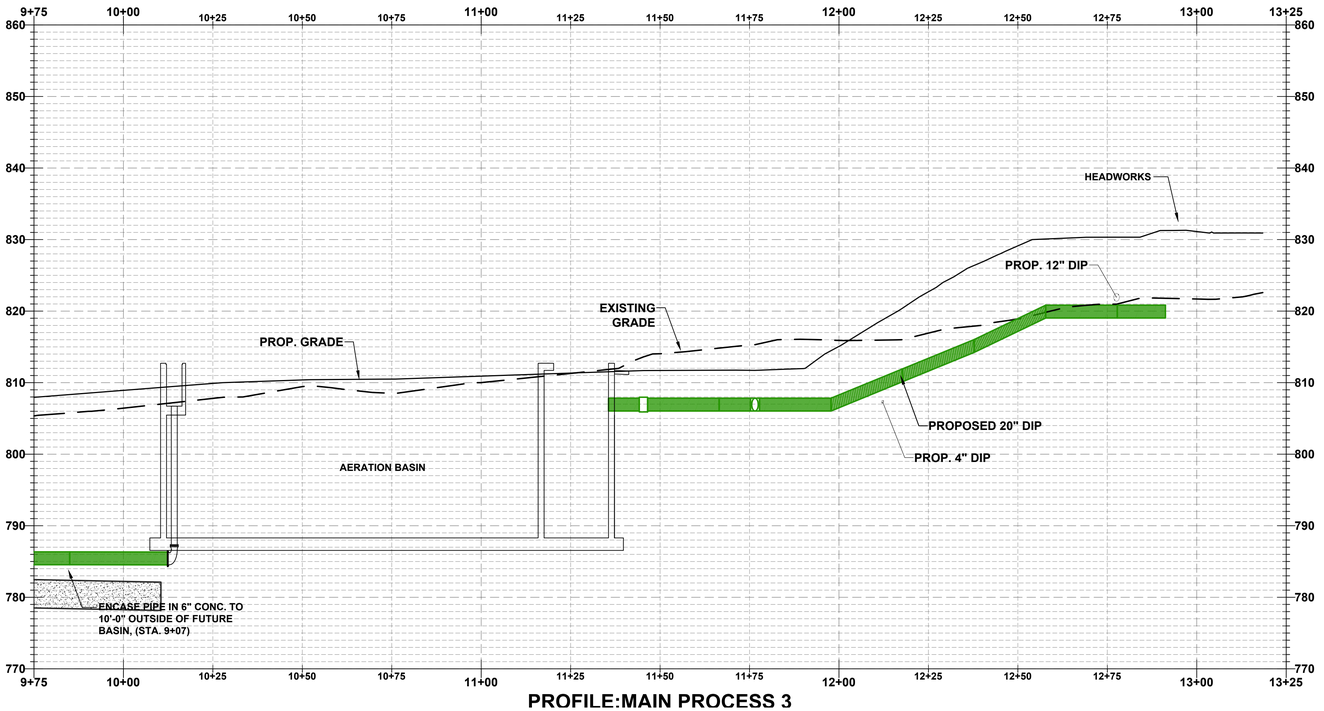
PLANT PROFILES 1

DRAWING NUMBER

1-C-13
OF
214



PROFILE:MAIN PROCESS 2



PROFILE:MAIN PROCESS 3

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 8:32 AM

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

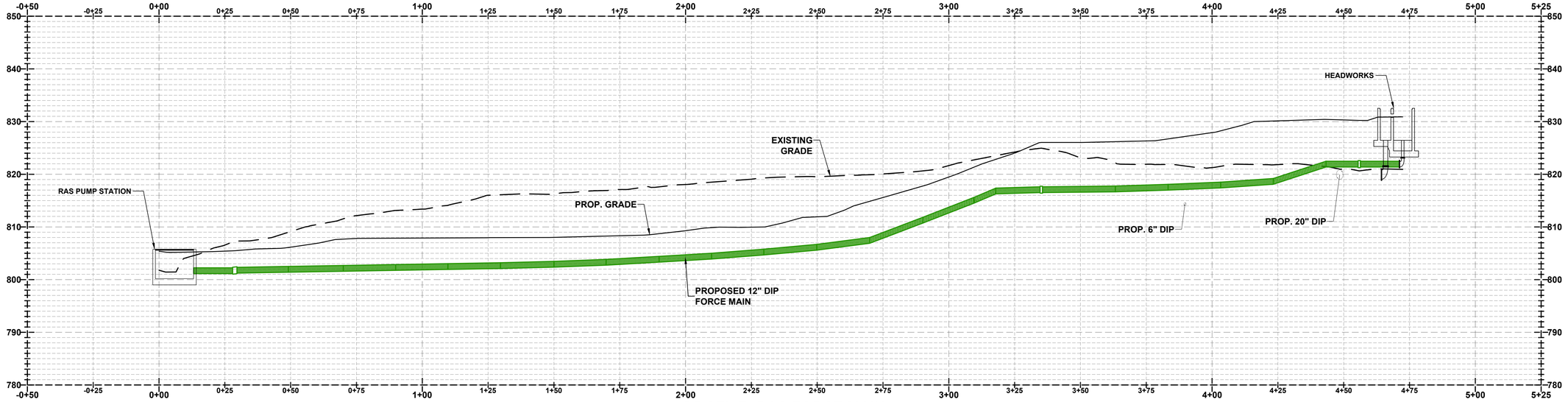
10/05/2021

SHEET TITLE

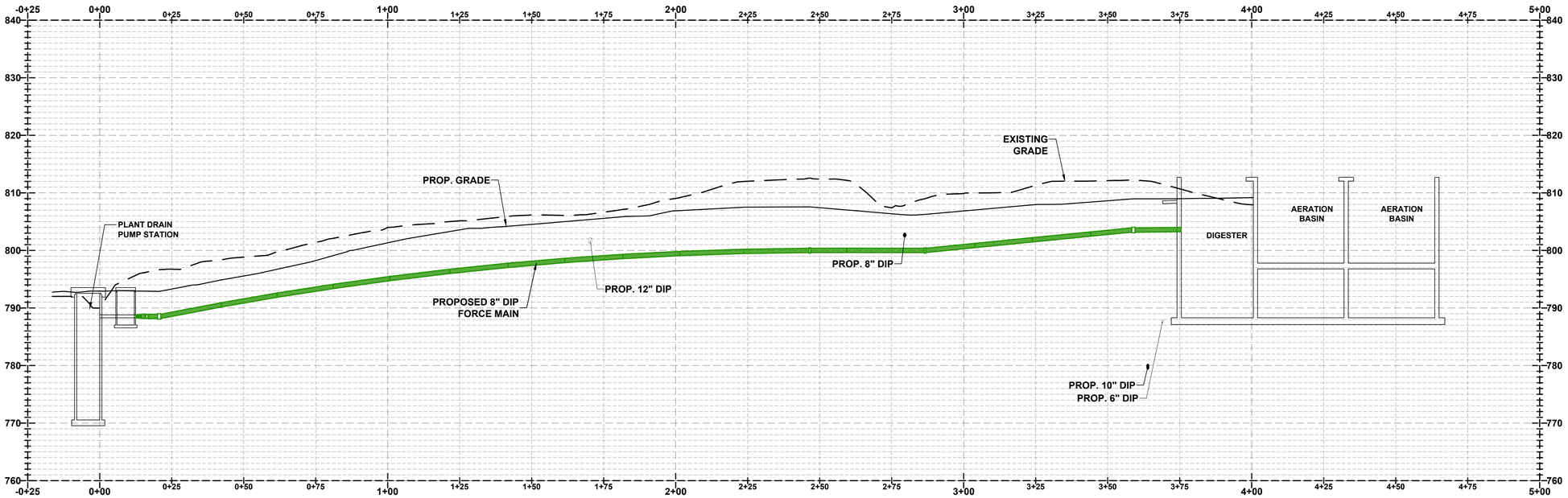
PLANT PROFILES 2

DRAWING NUMBER

1-C-14
OF
214



PROFILE: RAS FORCE MAIN



PROFILE: PLANT DRAIN FORCE MAIN

SCALE:
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1" = 10'-0" vert.

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No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

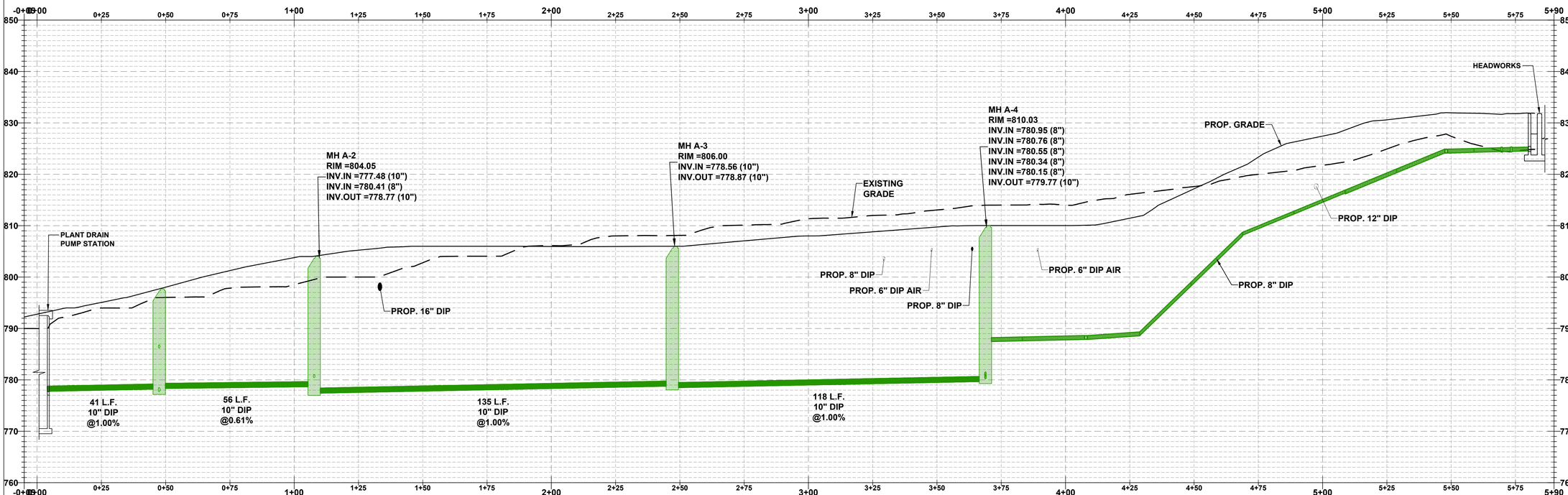
10/05/2021

SHEET TITLE

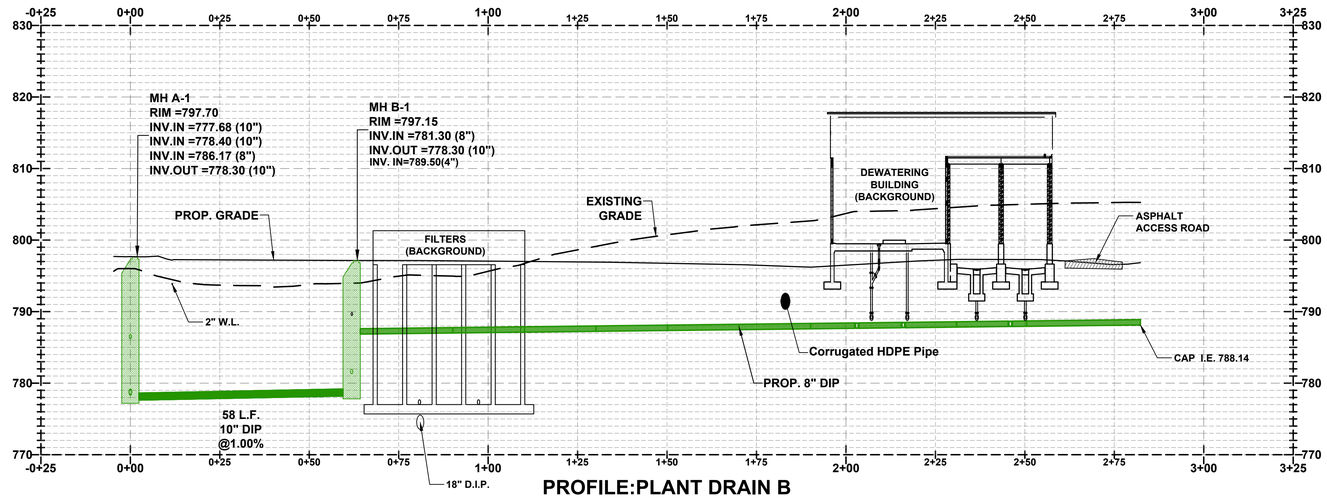
RAS & PLANT DRAIN FORCE MAIN PROFILES

DRAWING NUMBER

1-C-15
OF
214



PROFILE:PLANT DRAIN LINE A



PROFILE:PLANT DRAIN B

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

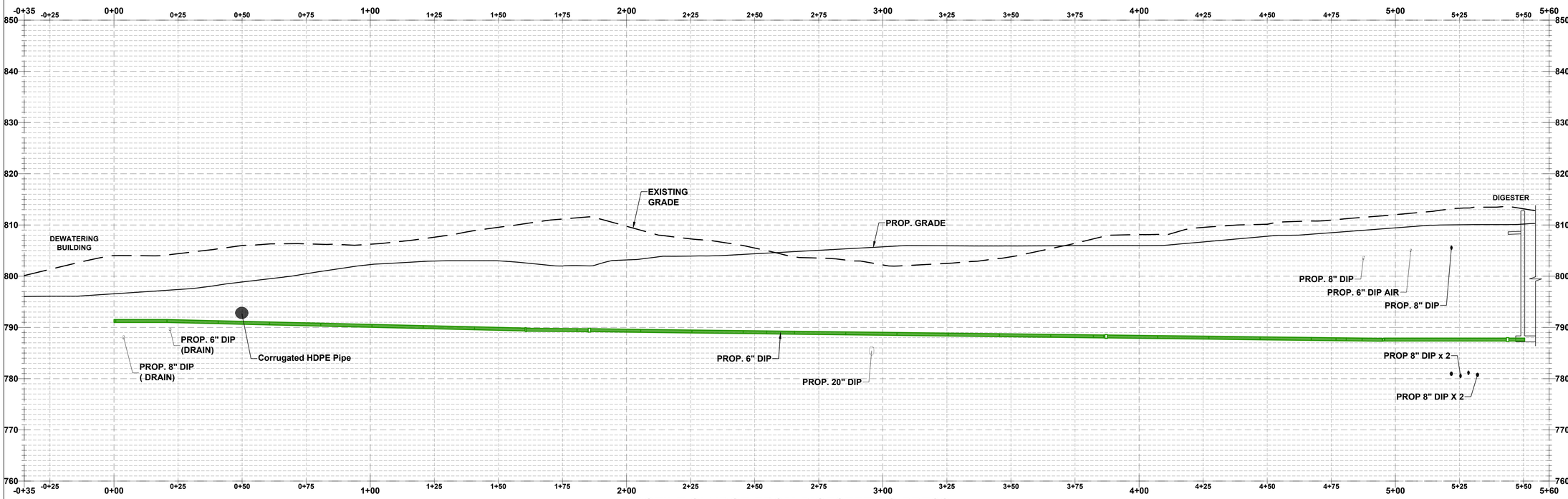
10/05/2021

SHEET TITLE

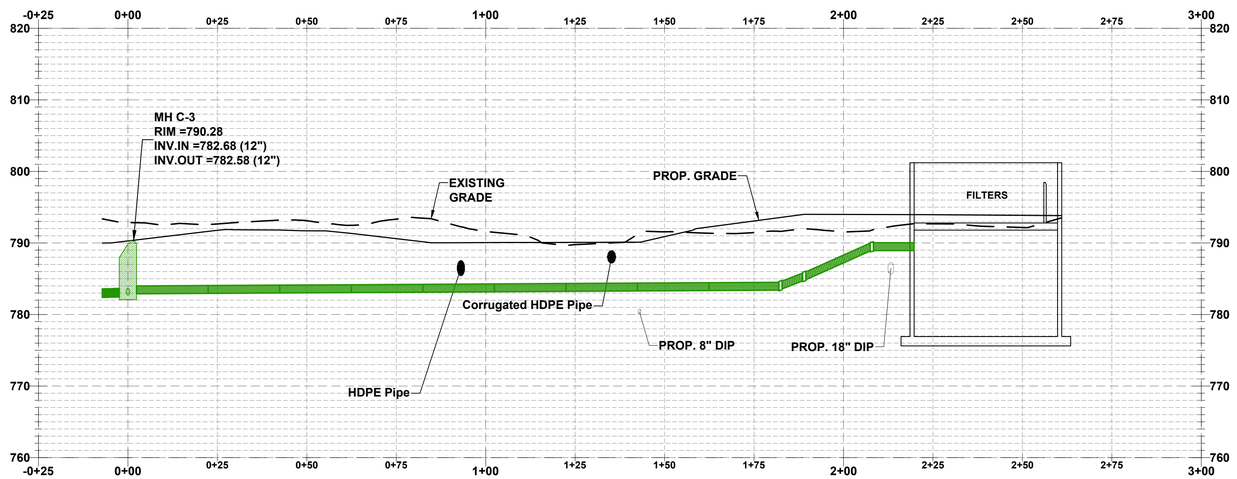
PLANT DRAIN PROFILES

DRAWING NUMBER

1-C-16
OF
214



PROFILE:SLUDGE FROM DIGESTER TO PRESS



PROFILE:FILTER OVERFLOW

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

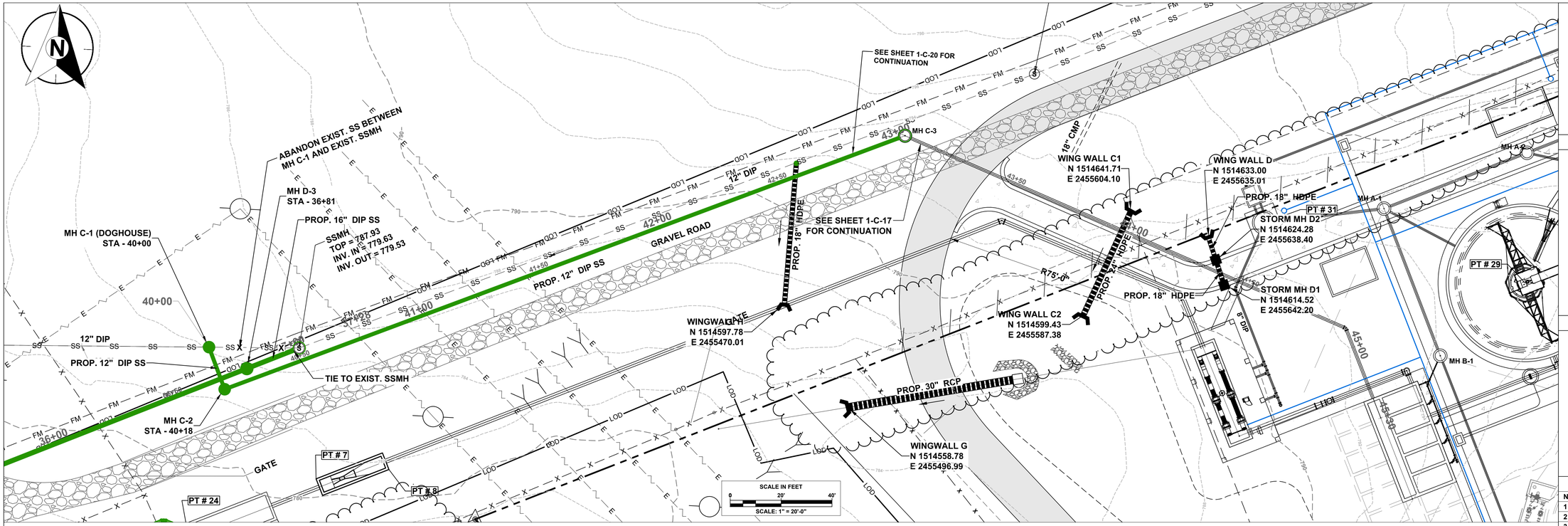
10/05/2021

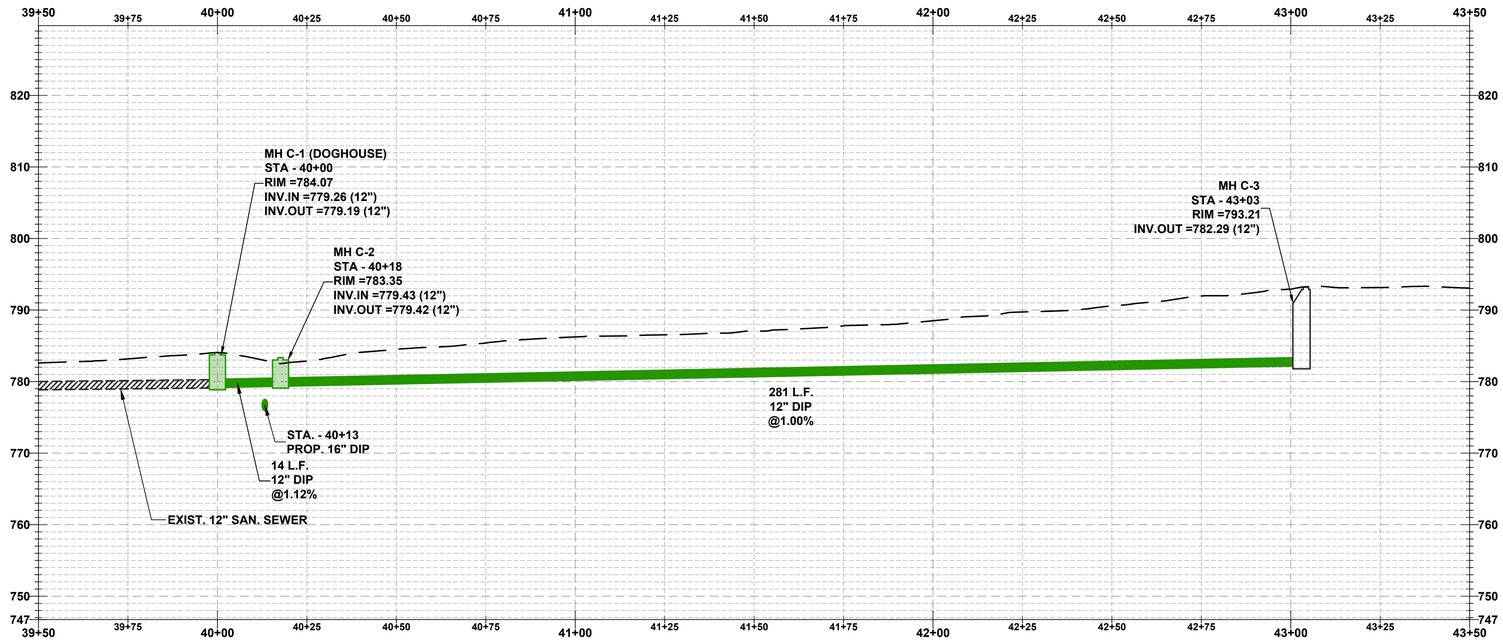
SHEET TITLE

SLUDGE FEED & FILTER OVERFLOW PROFILES

DRAWING NUMBER

1-C-17
OF
214





PROFILE:OVERFLOW

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

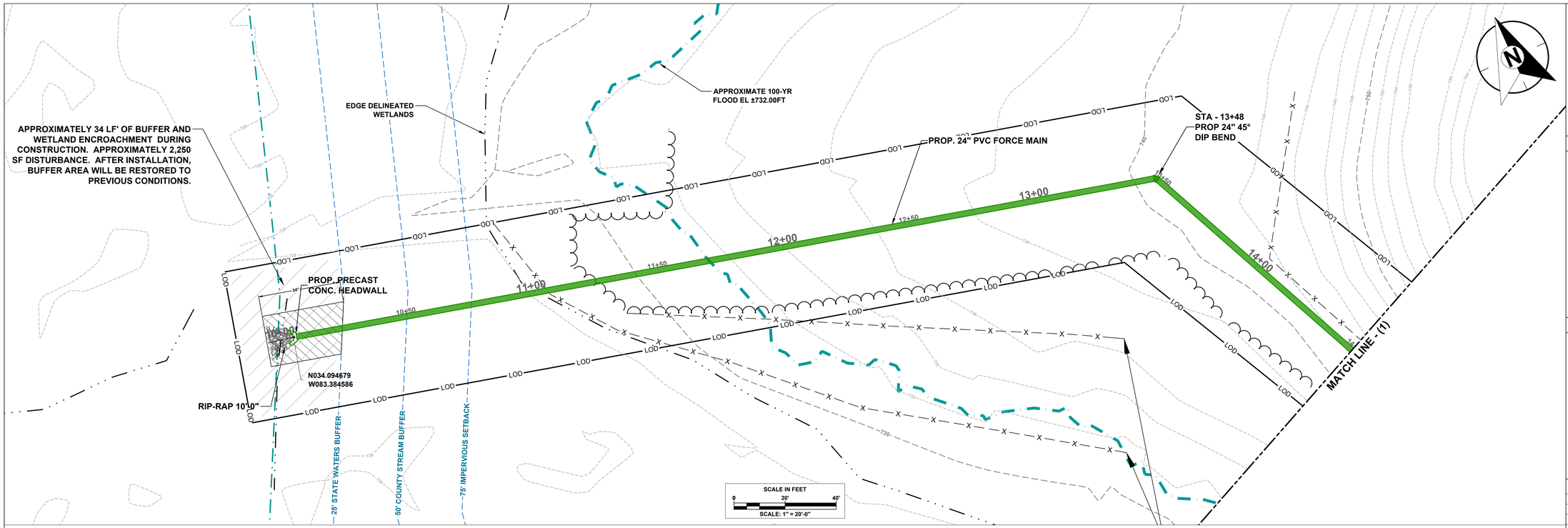
10/05/2021

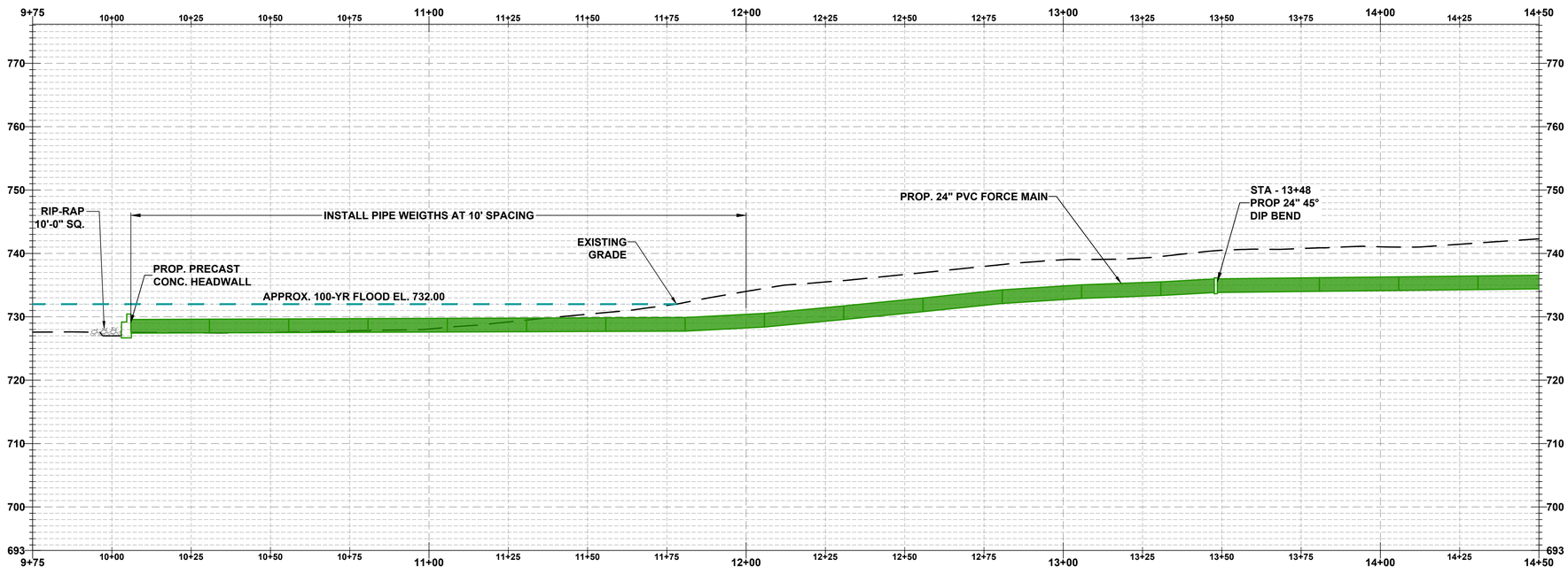
SHEET TITLE

OVERFLOW PLAN AND PROFILE

DRAWING NUMBER

1-C-18
OF
214





PROFILE:OUTFALL 1

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

OUTFALL PLAN AND PROFILE 1

DRAWING NUMBER

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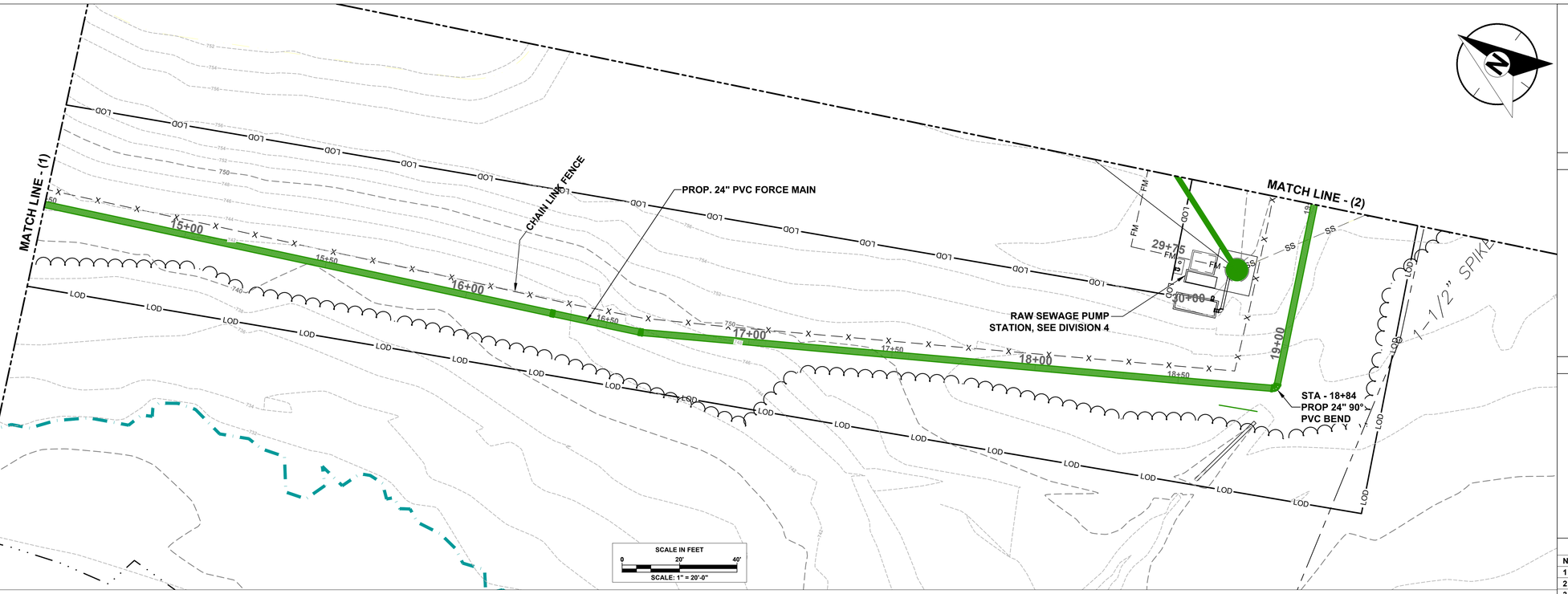
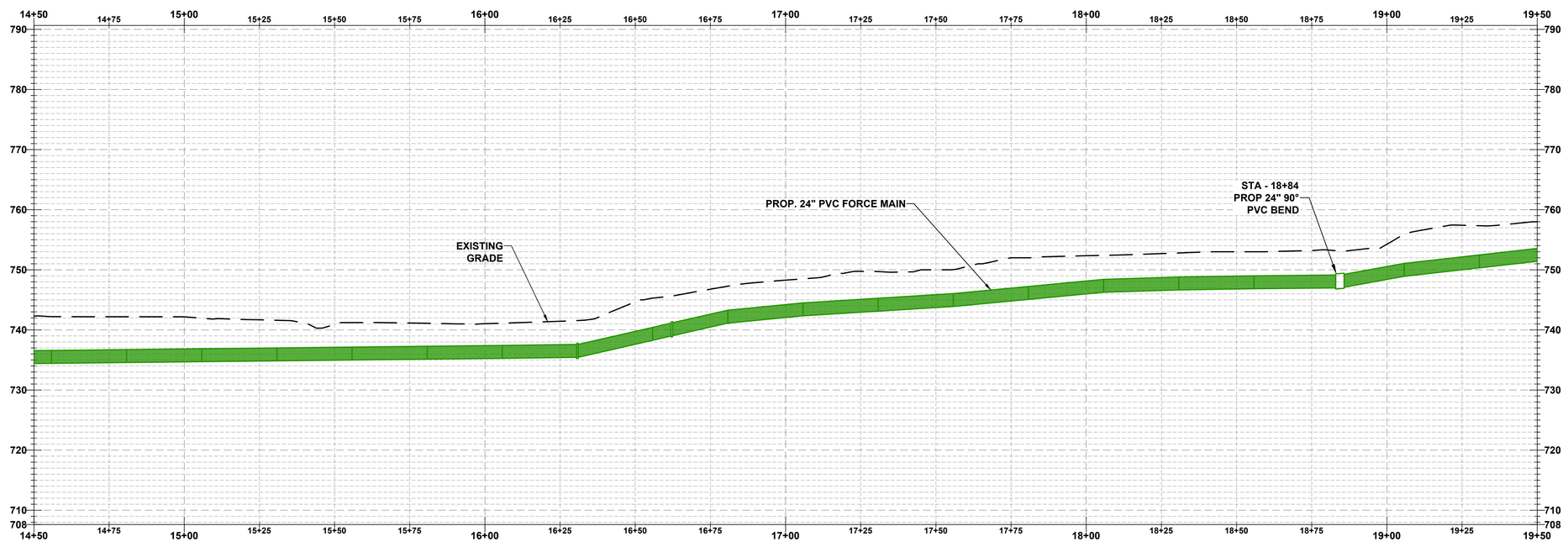
OF
214





PROFILE:OUTFALL 2

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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RELEASES

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1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

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Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

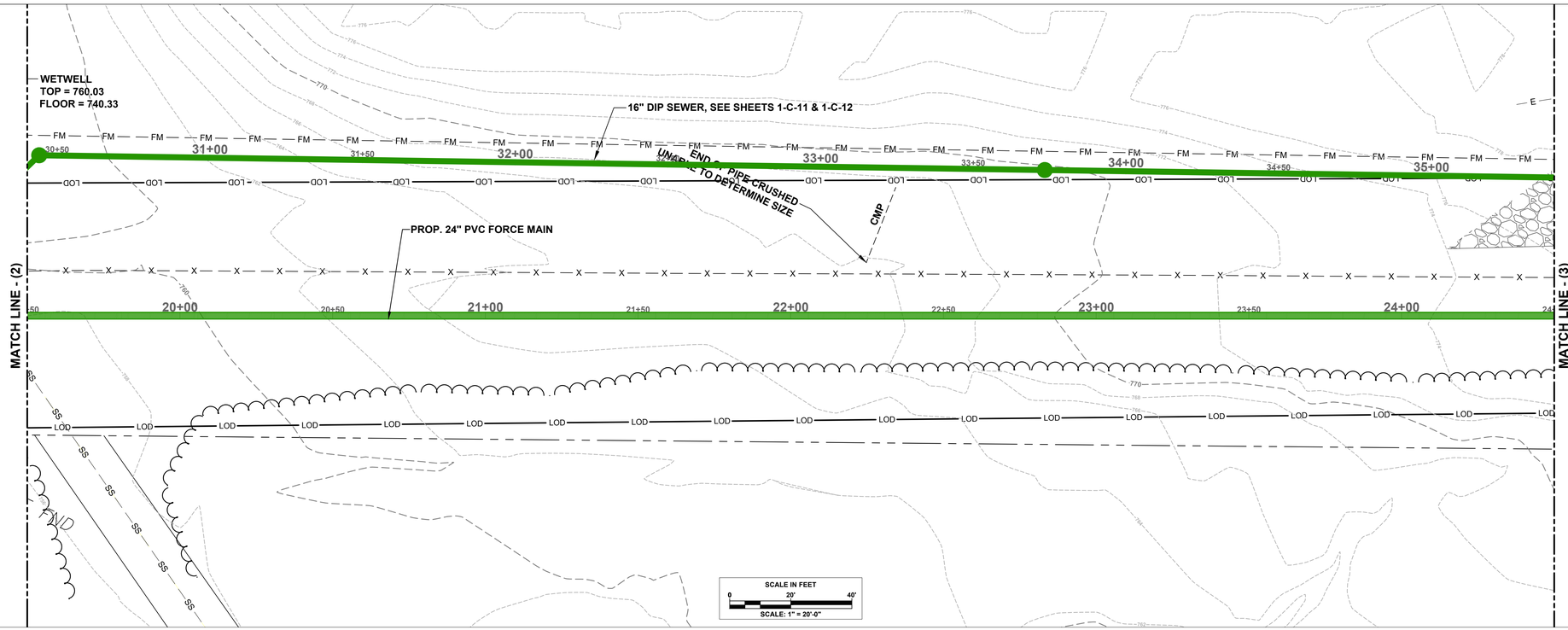
10/05/2021

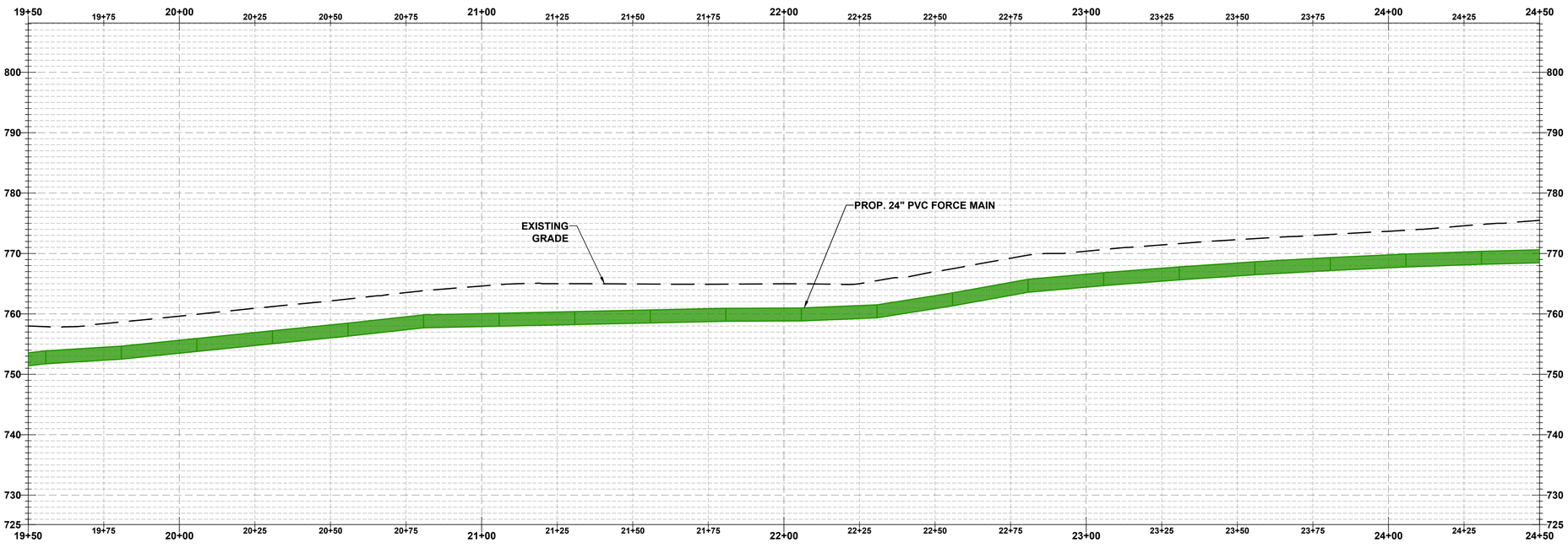
SHEET TITLE

OUTFALL PLAN AND PROFILE 2

DRAWING NUMBER

1-C-20
OF
214





PROFILE:OUTFALL 3

SCALE:
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1" = 10'-0" vert.

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RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

OUTFALL PLAN AND PROFILE 3

DRAWING NUMBER

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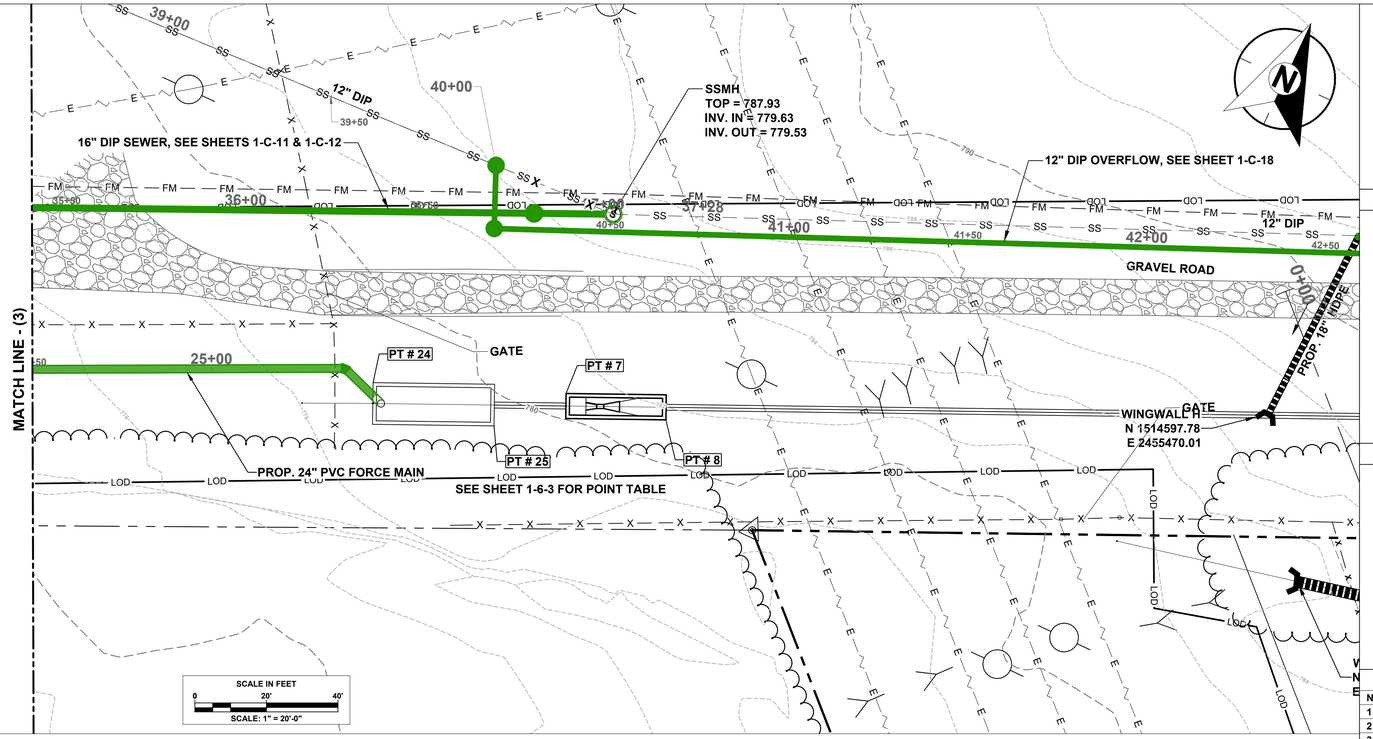
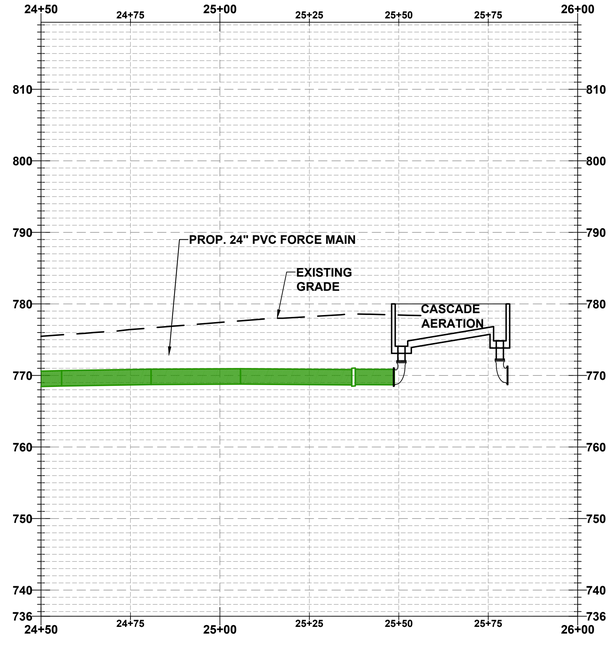
OF
214





PROFILE:OUTFALL 4

SCALE:
1" = 20'-0" horiz.
1" = 10'-0" vert.

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

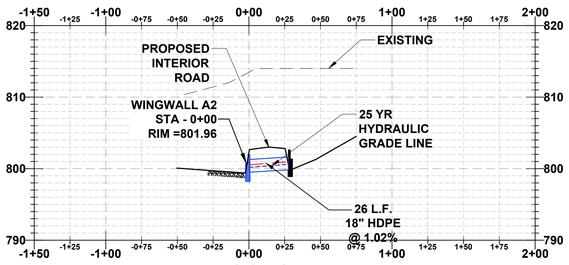
10/05/2021

SHEET TITLE

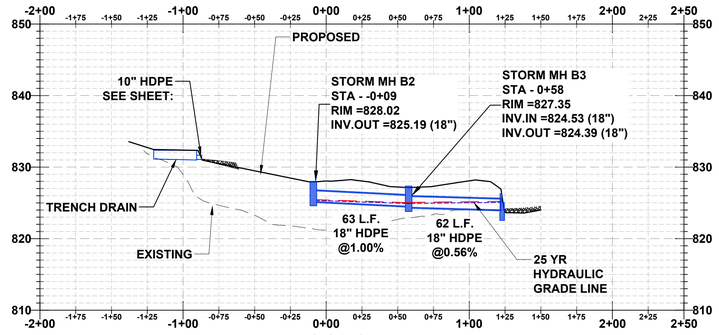
OUTFALL PLAN AND PROFILE 4

DRAWING NUMBER

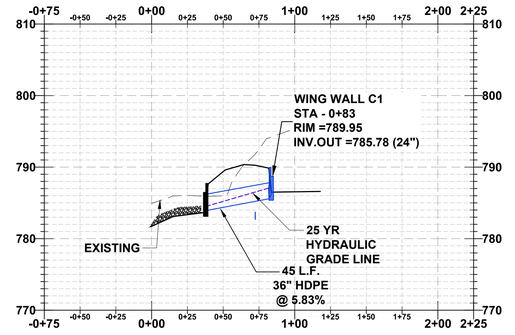
1-C-22
OF
214



STORM SEWER A
-1+50.00 - 2+00.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'



STORM SEWER B
-2+00.00 - 2+50.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'



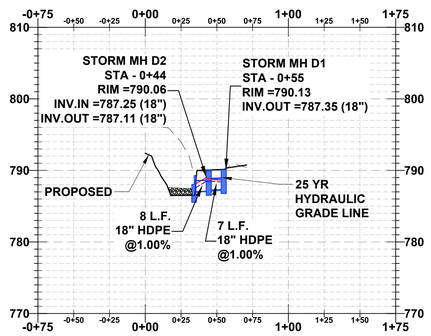
STORM SEWER C
-0+75.00 - 2+25.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'

NOTES:
1' OF COVER MINIMUM ON ALL STORMWATER PIPES PROPOSED.

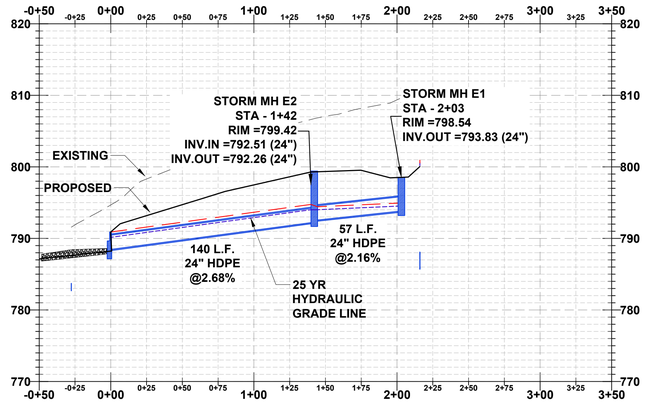
2. HDPE PIPE SHALL CONFORM TO THE REQUIRMENTS OF AASHTO M-294 AND AASHTO MP7, TYPE S & D. CONNECTIONS SHALL USE A RUBBER GASKET, WHICH CONFORMS TO ASTM F-477. INSTALLATION SHALL BE IN ACCORDANCE WTIH ASTM RECOMMENDED PRACTICE D-2321, AASHTO SECTION 30, OR WITH SECTION 550 OF THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS CONSTRUCTION OF TRANSPORTATION SYSTEM, LATEST EDITION.

3. ALL RCP PIPE JOINTS SHALL BE BELL & SPIGOT TYPES WITH A RUBBER GASKET CONFORMING TO ASTM C-443. THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH AASHTO M-170 AND/OR ASTM C-76. CLASS OF PIPE AND WALL THICKNESS SHALL BE IN ACCORDANCE WITH 1030-D, GEORGIA DOT SPECIFICATION, TABLE NO.1. INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 550 OF THE GEORGIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS CONSTRUCTION OF TRANSPORTATION SYSTEMS, LATEST ADDITION.

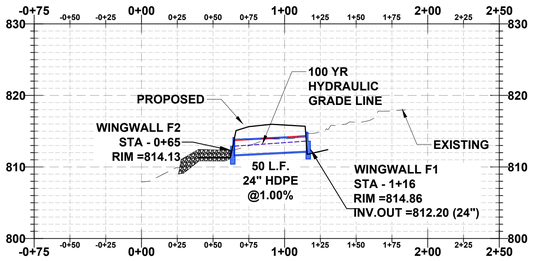
ST	3D0	La	W	d50
A	6'	15'	21'	0.5'
B	4.5'	9'	13.5'	0.2'
C	9'	28'	38'	0.6'
D	4.5'	9'	13.5'	0.2'
E	4.5'	11'	15.5'	0.3'
F	6'	12'	18'	0.4'
G	7.5'	12'	19.5'	0.4'
H	4.5'	9'	13.5'	0.2'



STORM SEWER D
-0+75.00 - 1+75.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'



STORM SEWER E
-0+50.00 - 3+50.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'

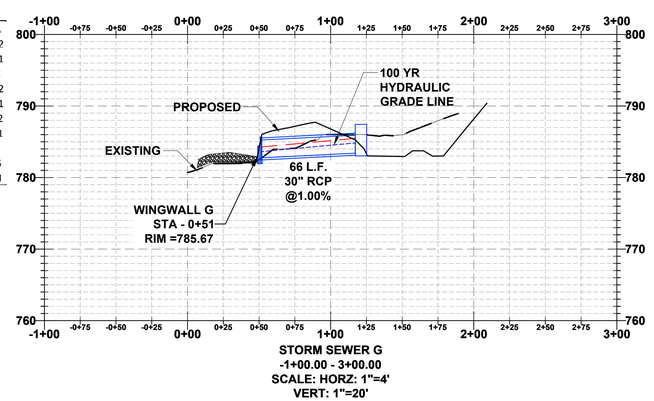


STORM SEWER F
-0+75.00 - 2+50.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'

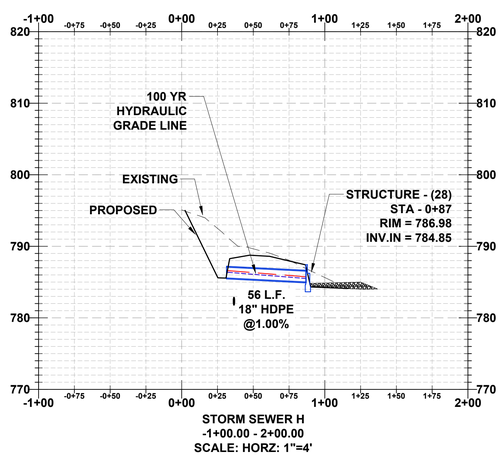
Line No.	Inlet ID	Q = CIA (cfs)	Q carry (cfs)	Q capt (cfs)	Q Byp (cfs)	Junc Type	Curb Inlet		Grate Inlet			Gutter							Inlet		
							Ht (in)	L (ft)	Area (sqft)	L (ft)	W (ft)	W (ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depr (in)
1	WINGWALL A1	8.18	0	8.18	0	Hdwl	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	STORM MH B3	0.63	0	0.63	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.16	5.13	0.16	5.13	0
3	STORM MH B2	0.87	0	0.87	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.19	6.46	0.19	6.46	0
4	WINGWALL C1	14.22	0	14.22	0	Hdwl	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	STORM MH D2	6.29	0	6.29	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.57	25.63	0.57	25.63	0
6	STORM MH D1	3.54	0	3.54	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.41	17.3	0.41	17.3	0
7	STORM MH E2	11.01	0	11.01	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.81	37.46	0.81	37.46	0
8	STORM MH E1	10.23	0	10.23	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.77	35.63	0.77	35.63	0
9	WINGWALL F1	22.55	0	22.55	0	Hdwl	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Null Structure	23.99	0	23.99	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	2.13	103.36	2.13	103.36	0
11	Null Structure	3.23	0	3.23	0	Grate	0	0	3.1	1.55	2	2	0.05	0.02	0	0.38	16.23	0.38	16.23	0

Station		Length (ft)	Drng Area		Runoff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel (ft/s)	Pipe		Invert Elev		HGL Elev		Grnd / Rim		Line ID
Line	To Line		Incr (ac)	Total (ac)	Coeff ©	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)		Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	25.59	2.08	2.08	0.4	0.83	0.83	5	5	9.8	8.18	24.7	6.08	24	1.02	799.39	799.65	800.18	800.67	801.46	801.71	SW PIPE A
2	End	64.4	0.16	0.38	0.4	0.06	0.15	5	7.3	9.1	1.38	8.62	2.22	18	0.57	824.16	824.53	825.07	824.97	826.3	826.79	SW PIPE B2
3	2	66.592	0.22	0.22	0.4	0.09	0.09	5	5	9.8	0.87	8.93	2.73	18	0.62	824.61	825.02	824.97	825.37	826.79	827.23	SW PIPE B1
4	End	45.463	4.5	4.5	0.4	1.8	1.8	12	12	7.9	14.22	174.4	10.12	36	5.83	786.1	788.75	786.68	789.95	788.9	790.81	SW PIPE C
5	End	9.359	1.6	2.5	0.4	0.64	1	5	5.1	9.8	9.8	32.2	7.47	18	8.01	786.61	787.36	787.54	788.57	789.14	790.06	SW PIPE D2
6	5	10.466	0.9	0.9	0.4	0.36	0.36	5	5	9.8	3.54	11.12	3.64	18	0.96	787.63	787.73	788.57	788.45	790.06	790.13	SW PIPE D1
7	End	142.199	2.8	5.4	0.4	1.12	2.16	5	5.2	9.8	21.11	19.64	12.18	18	2.98	788.76	793	790.15	794.47	790.89	799.42	SW PIPE E2
8	7	60.883	2.6	2.6	0.4	1.04	1.04	5	5	9.8	10.23	13.6	6.31	18	1.43	793.1	793.97	794.47	795.2	799.42	798.54	SW PIPE E1
9	End	50.883	12	12	0.4	4.8	4.8	38.4	38.4	4.7	22.55	26.39	8.7	24	1.16	811.48	812.07	812.9	813.76	814.13	814.73	SW PIPE F
10	End	65.816	6.1	6.1	0.4	2.44	2.44	5	5	9.8	23.99	48.75	8.39	30	1.41	782.38	783.31	783.62	784.98	785.67	0	SW PIPE G
11	End	55.723	0.82	0.82	0.4	0.33	0.33	5	5	9.8	3.23	14.38	4.25	18	1.6	784.85	785.74	785.5	786.42	786.98	0	SW PIPE H

Line No.	Line ID	Pipe Material	Flow Rate (cfs)	Line Size (in)	Manning s	Line Shape	Line Length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (FT)	HGL Up (ft)	Minor Loss (ft)	HGL Junct (ft)
1	SW PIPE A	HDPE	8.18	24	0.012	Cir	25.59	799.39	799.65	1.016	800.18	800.67	0.4	800.67
2	SW PIPE B2	HDPE	1.38	18	0.012	Cir	64.4	824.16	824.53	0.575	825.07	824.97	0.08	824.97
3	SW PIPE B1	HDPE	0.87	18	0.012	Cir	66.592	824.61	825.02	0.616	824.97	825.37	n/a	825.37 j
4	SW PIPE C	HDPE	14.22	36	0.012	Cir	45.463	786.1	788.75	5.829	786.68	789.95	n/a	789.95
5	SW PIPE D2	HDPE	9.8	18	0.012	Cir	9.359	786.61	787.36	8.014	787.54	788.57	0.32	788.57
6	SW PIPE D1	HDPE	3.54	18	0.012	Cir	10.466	787.63	787.73	0.955	788.57	788.45	0.28	788.45
7	SW PIPE E2	HDPE	21.11	18	0.012	Cir	142.199	788.76	793	2.982	790.15	794.47	1.12	794.47
8	SW PIPE E1	HDPE	10.23	18	0.012	Cir	60.883	793.1	793.97	1.429	794.47	795.2	n/a	795.2 j
9	SW PIPE F	RCP	22.55	24	0.012	Cir	50.883	811.48	812.07	1.16	812.9	813.76	n/a	813.76
10	SW PIPE G	RCP	23.99	30	0.012	Cir	65.816	782.38	783.31	1.413	783.62	784.98	n/a	784.98
11	SW PIPE H	HDPE	3.23	18	0.012	Cir	55.723	784.85	785.74	1.597	785.5	786.42	n/a	786.42



STORM SEWER G
-1+00.00 - 3+00.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'



STORM SEWER H
-1+00.00 - 2+00.00
SCALE: HORZ: 1"=4'
VERT: 1"=20'

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 8:31 AM

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Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

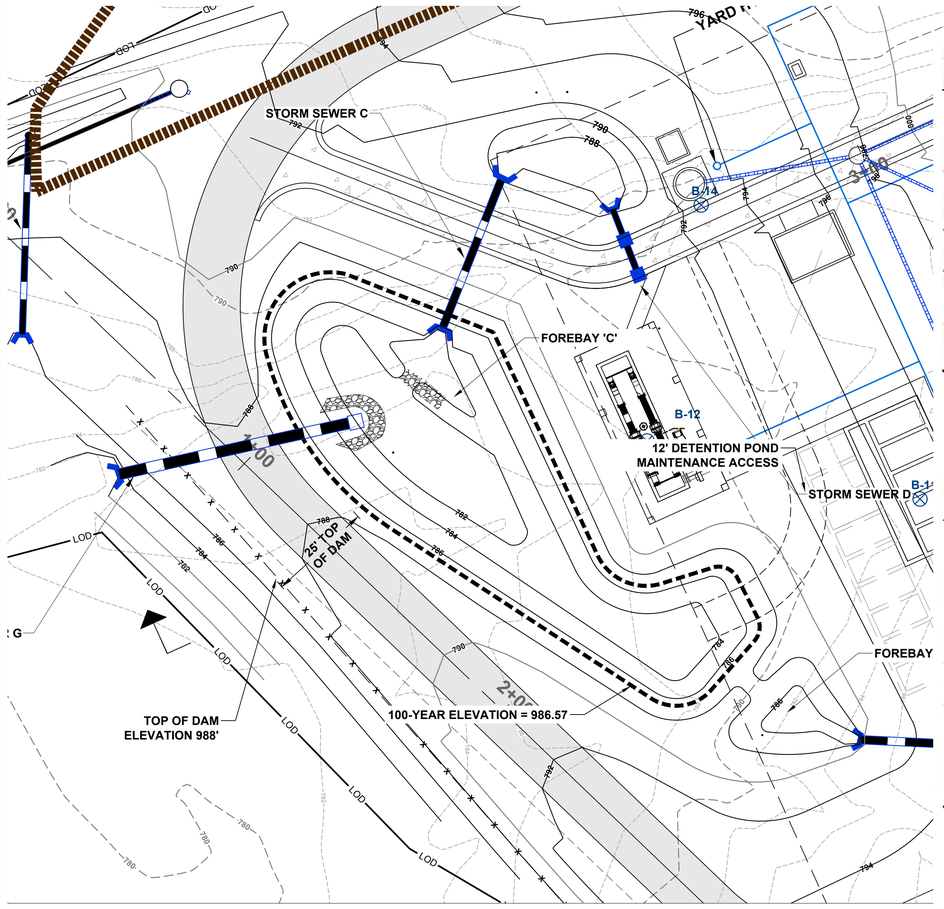
10/05/2021

SHEET TITLE

STORM SEWER PROFILES

DRAWING NUMBER

1-C-23
OF
214



21093 - Hydrology Pipe Q Calcs *Type II 24-hr 100-yr Rainfall=7.48"*
Prepared by Civil Engineering Consultants Printed 6/20/2022
HydroCAD® 10.10-5a s/n 11699 © 2020 HydroCAD Software Solutions LLC

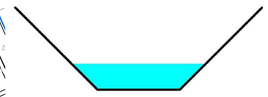
Summary for Reach 17R: CHANNEL #2

Inflow Area = 0.200 ac, 0.00% Impervious, Inflow Depth > 4.25" for 100-yr event
Inflow = 1.62 cfs @ 11.96 hrs, Volume= 0.071 af
Outflow = 1.57 cfs @ 11.96 hrs, Volume= 0.071 af, Atten= 3%, Lag= 0.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.87 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 1.04 fps, Avg. Travel Time= 1.3 min

Peak Storage= 33 cf @ 11.96 hrs
Average Depth at Peak Storage= 0.31' , Surface Width= 1.63'
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 13.85 cfs

1.00' x 1.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 3.00'
Length= 80.0' Slope= 0.0250 '/'
Inlet Invert= 830.00', Outlet Invert= 828.00'



21093 - Hydrology Pipe Q Calcs *Type II 24-hr 100-yr Rainfall=7.48"*
Prepared by Civil Engineering Consultants Printed 6/21/2022
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Summary for Reach 21R: CHANNEL #3

Inflow Area = 1.100 ac, 0.00% Impervious, Inflow Depth > 4.25" for 100-yr event
Inflow = 8.90 cfs @ 11.96 hrs, Volume= 0.390 af
Outflow = 8.17 cfs @ 12.04 hrs, Volume= 0.387 af, Atten= 8%, Lag= 5.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.85 fps, Min. Travel Time= 3.0 min
Avg. Velocity = 1.59 fps, Avg. Travel Time= 11.2 min

Peak Storage= 1,494 cf @ 11.99 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 3.10'
Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 90.00 cfs

2.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 6.00'
Length= 1,070.0' Slope= 0.0262 '/'
Inlet Invert= 824.00', Outlet Invert= 796.00'

21093 - Hydrology Pipe Q Calcs *Type II 24-hr 100-yr Rainfall=7.48"*
Prepared by Civil Engineering Consultants Printed 6/20/2022
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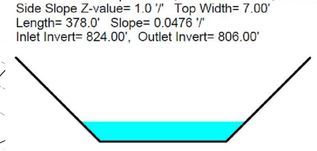
Summary for Reach 16R: CHANNEL #1

Inflow Area = 1.600 ac, 0.00% Impervious, Inflow Depth > 4.25" for 100-yr event
Inflow = 12.95 cfs @ 11.96 hrs, Volume= 0.567 af
Outflow = 12.35 cfs @ 11.98 hrs, Volume= 0.566 af, Atten= 5%, Lag= 1.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 7.68 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.95 fps, Avg. Travel Time= 3.2 min

Peak Storage= 621 cf @ 11.97 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 3.95'
Bank-Full Depth= 2.00' Flow Area= 10.0 sf, Capacity= 162.27 cfs

3.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 7.00'
Length= 378.0' Slope= 0.0476 '/'
Inlet Invert= 824.00', Outlet Invert= 806.00'



21093 - Hydrology Pipe Q Calcs *Type II 24-hr 100-yr Rainfall=7.48"*
Prepared by Civil Engineering Consultants Printed 6/21/2022
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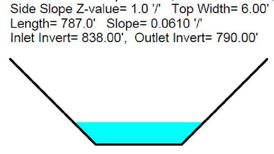
Summary for Reach 19R: CHANNEL #4

Inflow Area = 1.450 ac, 0.00% Impervious, Inflow Depth > 4.25" for 100-yr event
Inflow = 11.73 cfs @ 11.96 hrs, Volume= 0.514 af
Outflow = 10.89 cfs @ 12.00 hrs, Volume= 0.512 af, Atten= 7%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 8.60 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 2.32 fps, Avg. Travel Time= 5.7 min

Peak Storage= 1,028 cf @ 11.98 hrs
Average Depth at Peak Storage= 0.52' , Surface Width= 3.04'
Bank-Full Depth= 2.00' Flow Area= 8.0 sf, Capacity= 137.41 cfs

2.00' x 2.00' deep channel, n= 0.022 Earth, clean & straight
Side Slope Z-value= 1.0 '/' Top Width= 6.00'
Length= 787.0' Slope= 0.0610 '/'
Inlet Invert= 838.00', Outlet Invert= 790.00'

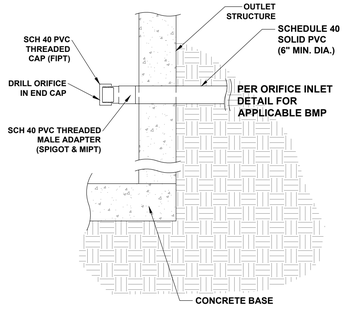


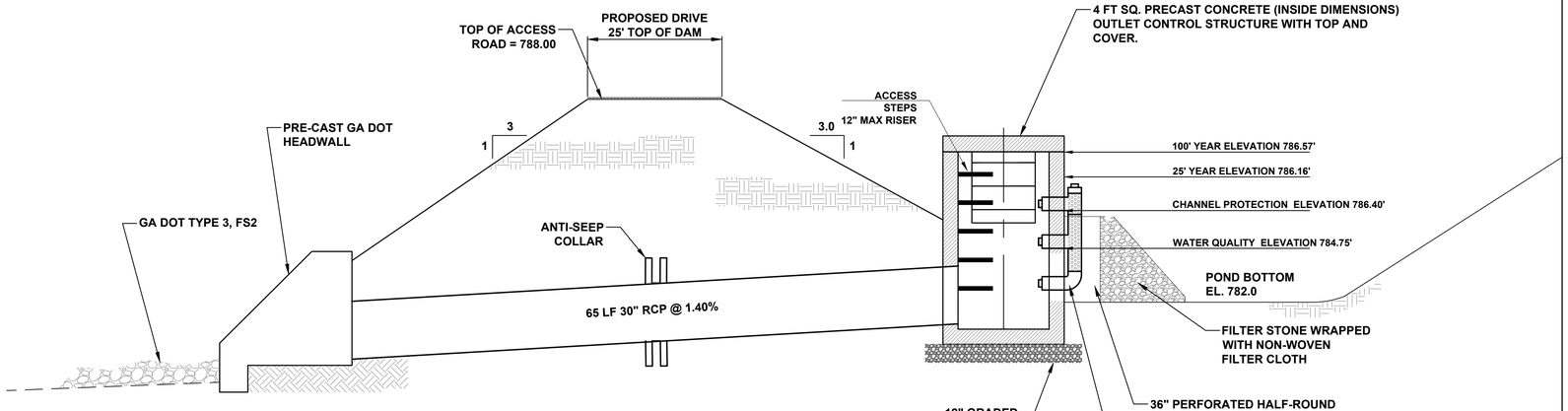
NOTES:

1. FILL GAP BETWEEN STRUCTURE & PVC WITH MORTAR OR INSTALL A FERNCO ADAPTER.
2. SIZE ORIFICE PER APPROVED PLANS.
3. PIPE SIZE SHALL BE SPECIFIED PER TABLE BELOW.

OUTLET ORIFICE DIAMETER	PIPE SIZE
<3"	6"
3" TO <5"	8"
5" TO <8"	12"
8" TO <12"	16"

4. VARIATIONS TO THIS DETAIL MAY BE ACCEPTABLE ON A CASE BY CASE BASIS. MODIFICATIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY GWINNETT COUNTY PLANNING AND DEVELOPMENT.
5. ALL PVC TO BE SCHEDULE 40.
6. ALL NON-THREADED PVC TO PVC CONNECTIONS TO BE BONDED WITH PVC CEMENT.
7. MONOLITHIC WALLS SHALL HAVE ORIFICES ON DOWNSTREAM FACE AND BE FULLY ACCESSIBLE FROM POND EXTERIOR.





POND AND OUTLET DETAIL
N.T.S.

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Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

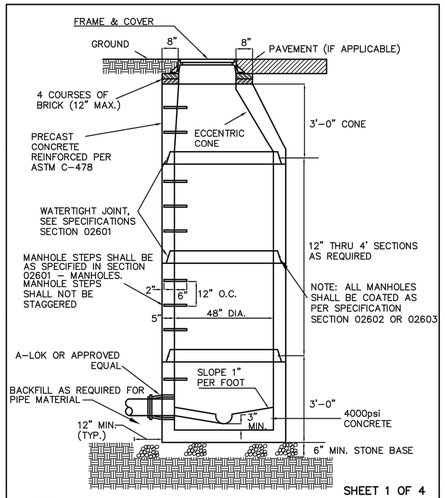
10/05/2021

SHEET TITLE

POND DETAILS

DRAWING NUMBER

1-C-24
OF
214

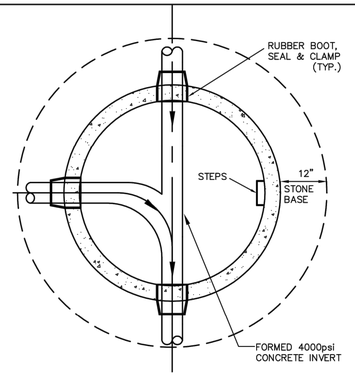


SHEET 1 OF 4

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601-MANHOLES, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	STANDARD MANHOLE	CKD BY:	A	EMI	7-31-07
		APPD. BY:	B	EMI	10-1-09
		DATE: MAR. 2002			
	DETAIL No. S-1	FILE No. 05062\S-1	SCALE: N.T.S.		



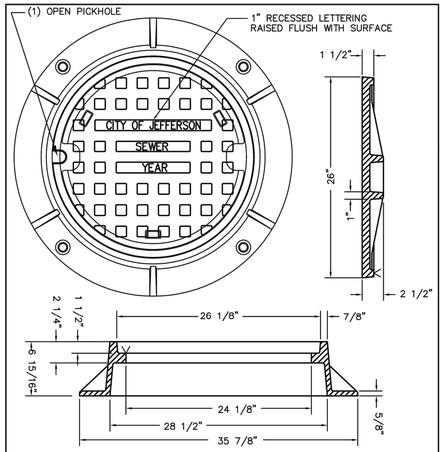
PLAN VIEW OF MANHOLE

NOTES:
1. A MINIMUM OF 0.2' (2/10') FALL ACROSS MANHOLE INVERT FROM INLET TO OUTLET IS REQUIRED.
2. TABLES ARE TO BE GENTLY SLOPED AND TROWELED FROM MANHOLE WALL TO INVERT WALL HEIGHT AND CONSTRUCTED OF AGGREGATE-MIX CEMENT WITH SMOOTH VENEER FINISH.
3. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601-MANHOLES OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION).

SHEET 2 OF 4

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	MANHOLE INVERT	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-2	FILE No. 05062\S-2	SCALE: N.T.S.		

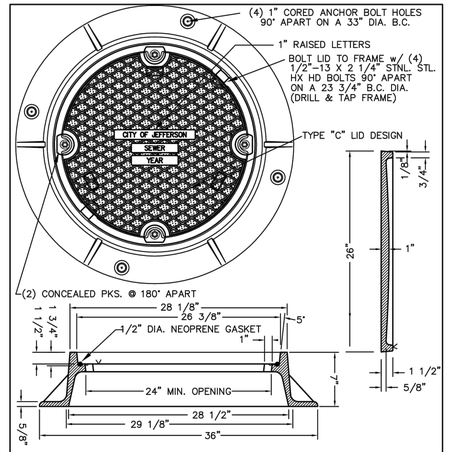


MATERIAL: CAST GRAY IRON ASTM A48, CLASS 35B
FINISH UNPAINTED
WEIGHT 276LBS. PER SET
PER NEENAH FOUNDRY R-1642
OR APPROVED EQUIVALENT BY CITY

SHEET 3 OF 4

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	ON-ROAD MANHOLE COVER	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-3	FILE No. 05062\S-3	SCALE: N.T.S.		

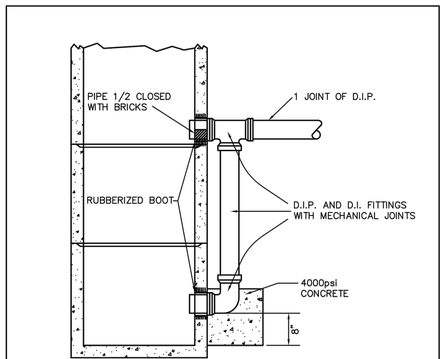


MATERIAL: CAST GRAY IRON ASTM A48, CLASS 35B
FINISH UNPAINTED
WEIGHT 342 LBS. PER SET
PER NEENAH FOUNDRY R-1916-F
OR APPROVED EQUIVALENT BY CITY

SHEET 4 OF 4

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	OFF-ROAD MANHOLE COVER	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-4	FILE No. 05062\S-4	SCALE: N.T.S.		



NOTES

MANHOLE SHALL BE INSTALLED LIKE STANDARD PRECAST MANHOLE, EXCEPT FOR DROP.

MAXIMUM ALLOWABLE DROP FOR LOWER INLET ON OUTSIDE DROP MANHOLES SHALL BE 8 INCHES.

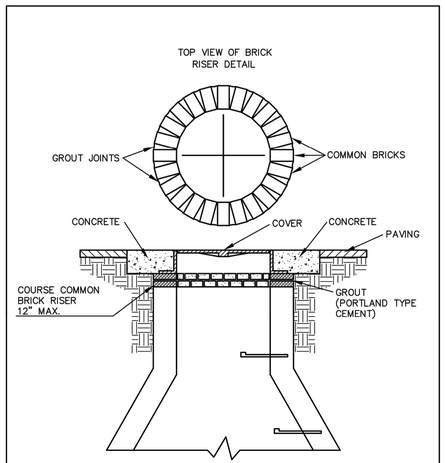
ALL MANHOLES SHALL BE COATED AS PER SPECIFICATION SECTION 02602/ 02603.

ALL BENCH, JOINTS, STEPS, ETC CONSTRUCTION SHALL CONFORM TO DETAIL S-1.

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601-MANHOLES, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

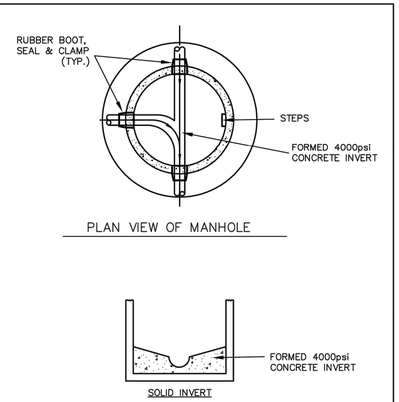
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	OUTSIDE DROP MANHOLE	CKD BY:	A	EMI	7-31-07
		APPD. BY:	B	EMI	10-1-09
		DATE: MAR. 2002			
	DETAIL No. S-6	FILE No. 05062\S-6	SCALE: N.T.S.		



NOTE: BRICK OR GRADE RINGS SHALL BE USED WHEN UPWARD ADJUSTMENTS TO FINISHED GRADE ARE REQUIRED.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	LID GROUTING DETAIL	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-7	FILE No. 05062\S-7	SCALE: N.T.S.		



PLAN VIEW OF MANHOLE

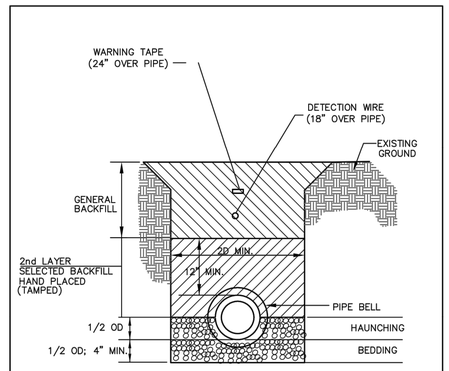
SOLID INVERT

NOTE: 1. PRECAST INVERTS ARE ACCEPTABLE.
2. A 0.2 FOOT DROP ACROSS INVERT REQUIRED.

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM VACUUM TESTS IN ACCORDANCE WITH SECTION 02601-MANHOLES, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	INVERT CONSTRUCTION	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-8	FILE No. 05062\S-8	SCALE: N.T.S.		



NOTES:
1. SEE SPECIFICATIONS SECTION 02225(EARTHWORK FOR UTILITIES) FOR BEDDING MATERIALS, BACKFILL MATERIALS, METHODS, AND ADDITIONAL REQUIREMENTS.
2. REGARDLESS OF TYPE OF PIPE, WHEN WET TRENCH CONDITIONS ARE ENCOUNTERED A MINIMUM OF CLASS 5 BEDDING SHALL BE REQUIRED.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	CLASS 5 BEDDING DETAIL	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-9	FILE No. 05062\S-9	SCALE: N.T.S.		

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CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

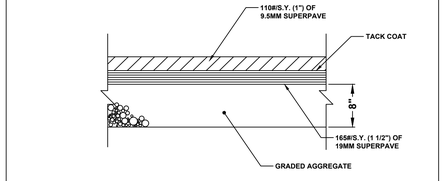
10/05/2021

SHEET TITLE

MISCELLANEOUS DETAILS 1

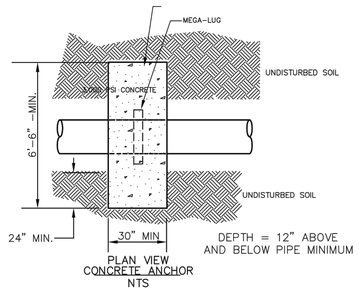
DRAWING NUMBER

1-C-25
OF
214



NOTE:
1. 8-INCH GRADED AGGREGATE SHALL CONFORM TO GDOT SECTION 815.
2. COMPACT SUBGRADE TO 95% STANDARD PROCTOR PER ASTM D698.
3. FOR USE IN SITE DRIVEWAY AND PARKING AREAS.

TYP. HEAVY DUTY ASPHALT
CROSS SECTION
Scale: N.T.S.

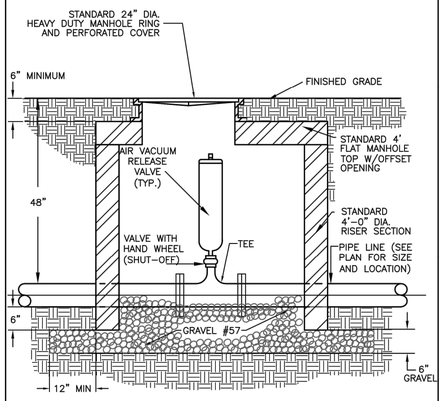


PLAN VIEW
CONCRETE ANCHOR
NTS

NOTE: DIMENSIONS SHOWN ARE MINIMUM ACCEPTABLE DIMENSIONS. DESIGN ENGINEER SHALL PROVIDE A THRUST COLLAR DETAIL APPROPRIATE FOR SPECIFIC PROJECT CONDITIONS ON THE PLANS.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DRAWING	THRUST COLLAR	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. S-36	FILE No. 05062\S-36	SCALE: N.T.S.		

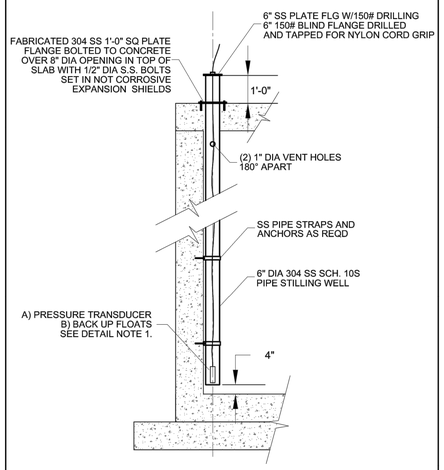


NOTE

1. SEE SPECIFICATIONS SECTION 02732 FOR TYPE AND SIZE OF AIR/VACUUM VALVE FOR SEWER FORCE MAINS.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	**AIR/VACUUM RELEASE VALVE**	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: SEP. 2004			
	DETAIL No. PS-10	FILE No. 05062\PS-10.dwg	SCALE: N.T.S.		

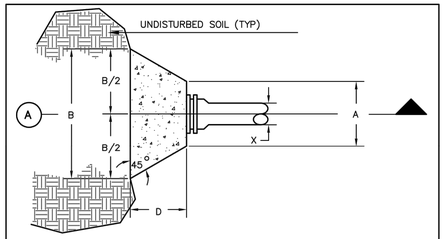


NOTES:

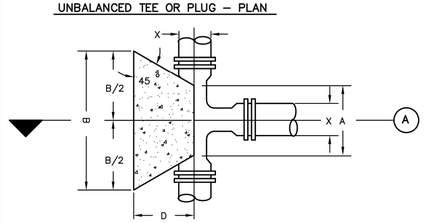
1. 2 EACH STILLING WELLS REQUIRED, ONE FOR TRANSDUCER, ONE FOR BACKUP FLOATS

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	**STILLING WELL DETAIL**	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: AUGUST 2007			
	DETAIL No. PS-12	FILE No. 05062PS-12.dwg	SCALE: N.T.S.		



UNBALANCED TEE OR PLUG – PLAN



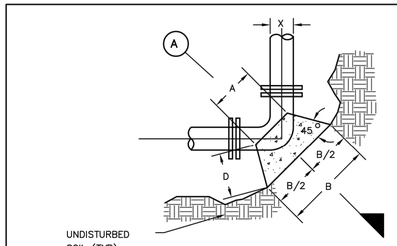
TEE – PLAN

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS AND SECTION 02732–SANITARY SEWER FORCE MAINS, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

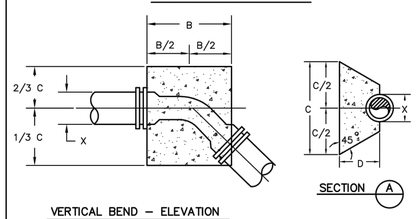
SHEET 1 of 4

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-1	FILE No. 05062\W-1	SCALE: N.T.S.		



HORIZONTAL BEND – PLAN



VERTICAL BEND – ELEVATION

NOTE:
DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS AND SECTION 02732–SANITARY SEWER FORCE MAINS, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING	CKD BY:	1	JK	7/29/97
		APPD. BY:	B	EMI	7-31-07
		DATE: MAR. 2002			
	DETAIL No. W-2	FILE No. 05062\W-2	SCALE: N.T.S.		

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
90 DEGREE BEND				
24"	2'-7"	7'-0"	7'-0"	4'-6"
20"	2'-1"	6'-0"	6'-0"	3'-9"
18"	1'-11"	5'-6"	5'-6"	3'-6"
16"	1'-9"	5'-0"	5'-0"	3'-3"
14"	1'-7"	4'-0"	4'-0"	2'-6"
12"	1'-4"	3'-6"	3'-6"	2'-3"
10"	1'-3"	3'-0"	3'-0"	2'-0"
8"	1'-0"	2'-6"	2'-6"	1'-9"
6"	0'-11"	1'-9"	1'-9"	1'-6"
4"	0'-9"	1'-3"	1'-3"	1'-3"
45 DEGREE BEND				
24"	2'-4"	5'-6"	5'-0"	3'-9"
20"	1'-11"	4'-6"	4'-0"	3'-0"
18"	1'-9"	4'-0"	4'-0"	2'-9"
16"	1'-7"	3'-6"	3'-6"	2'-3"
14"	1'-3"	3'-0"	3'-0"	2'-0"
12"	1'-3"	3'-0"	2'-6"	2'-0"
10"	1'-3"	2'-6"	2'-6"	1'-9"
8"	1'-0"	1'-9"	1'-9"	1'-3"
6"	0'-11"	1'-6"	1'-6"	1'-0"
4"	0'-9"	1'-3"	1'-0"	1'-0"

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
11 1/4 DEGREE BEND				
24"	1'-9"	2'-9"	2'-9"	1'-6"
20"	1'-6"	2'-3"	2'-3"	1'-3"
18"	1'-4"	2'-0"	2'-0"	1'-0"
16"	1'-3"	1'-9"	1'-9"	1'-0"
14"	1'-2"	1'-6"	1'-6"	1'-0"
12"	1'-2"	1'-6"	1'-6"	1'-0"
10"	1'-0"	1'-3"	1'-3"	1'-0"
8"	0'-10"	1'-0"	1'-0"	1'-0"
6"	0'-9"	1'-0"	1'-0"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"
22 1/2 DEGREE BEND				
24"	2'-0"	3'-6"	3'-6"	2'-6"
20"	1'-8"	3'-0"	3'-0"	1'-9"
18"	1'-6"	2'-9"	2'-9"	1'-6"
16"	1'-5"	2'-6"	2'-6"	1'-3"
14"	1'-4"	2'-3"	2'-3"	1'-0"
12"	1'-2"	2'-0"	2'-0"	1'-0"
10"	1'-0"	1'-9"	1'-9"	1'-0"
8"	0'-10"	1'-6"	1'-6"	1'-0"
6"	0'-9"	1'-3"	1'-3"	1'-0"
4"	0'-7"	1'-0"	1'-0"	1'-0"

Line Pressure = 150 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
Unbalanced Tee & Plug				
24"	2'-10"	6'-0"	6'-0"	2'-9"
20"	2'-5"	5'-0"	5'-0"	2'-3"
18"	2'-3"	4'-6"	4'-6"	2'-0"
16"	2'-1"	4'-0"	4'-0"	1'-9"
14"	1'-11"	3'-6"	3'-6"	1'-6"
12"	1'-8"	3'-0"	3'-0"	1'-3"
10"	1'-6"	2'-6"	2'-6"	1'-0"
8"	1'-4"	2'-0"	2'-0"	1'-0"
6"	1'-2"	1'-6"	1'-6"	1'-0"
4"	1'-0"	1'-0"	1'-0"	1'-0"

NOTES :
1. BLOCKING SHALL BE 3000psi CONCRETE ; "SACKCRETE" WILL NOT BE ALLOWED.
2. THE WATER LINE MUST BE LOWERED IN ORDER TO HAVE FIVE FEET (5') OF COVER AT THE BEND, TEE, OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS MAY BE UTILIZED.
3. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS AND 02732–SANITARY SEWER FORCE MAINS, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION).

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (150psi LINE PRESSURE)	CKD BY:	1	JK	7/29/97
		APPD. BY:	B	EMI	7-31-07
		DATE: MAR. 2002			
	DETAIL No. W-4	FILE No. 05062\W-4	SCALE: N.T.S.		

Line Pressure = 200 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
90 DEGREE BEND				
■ 12"	1'-4"	4'-6"	3'-6"	2'-2"
■ 10"	1'-3"	3'-4"	3'-4"	1'-4"
8"	1'-0"	3'-4"	2'-3"	1'-8"
6"	0'-11"	3'-4"	2'-3"	1'-6"
45 DEGREE BEND				
■ 12"	1'-4"	3'-9"	3'-6"	1'-8"
10"	1'-3"	4'-0"	2'-3"	1'-11"
8"	1'-0"	3'-4"	2'-3"	1'-2"
6"	0'-11"	2'-8"	2'-0"	1'-0"

Line Pressure = 200 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
11 1/4 DEGREE BEND				
12"	1'-2"	2'-0"	2'-0"	1'-0"
10"	1'-0"	1'-8"	1'-8"	1'-0"
8"	0'-10"	1'-5"	1'-5"	1'-0"
6"	0'-9"	1'-0"	1'-0"	1'-0"
22 1/2 DEGREE BEND				
12"	1'-2"	3'-7"	2'-3"	1'-3"
10"	1'-0"	2'-7"	2'-3"	1'-0"
8"	0'-10"	1'-8"	2'-3"	1'-0"
6"	0'-9"	1'-3"	1'-3"	1'-0"

Line Pressure = 200 PSI Soil Pressure = 2000 PSF				
Pipe Size X	A	B	C	D
Unbalanced Tee & Plug				
■ 12"	1'-8"	6'-0"	3'-6"	2'-4"
■ 10"	1'-6"	4'-8"	3'-6"	1'-9"
8"	1'-4"	4'-4"	2'-3"	1'-8"
6"	1'-2"	2'-3"	2'-7"	1'-3"
Tee				
■ 12"	1'-4"	6'-0"	3'-6"	2'-4"
■ 10"	1'-3"	4'-8"	3'-6"	1'-9"
8"	1'-0"	4'-4"	2'-3"	1'-8"
6"	0'-11"	2'-3"	2'-7"	1'-3"

NOTES :
1. BLOCKING SHALL BE 3000psi CONCRETE; "SACKCRETE" WILL NOT BE ALLOWED.
2. * THE WATER LINE MUST BE LOWERED IN ORDER TO HAVE FIVE FEET (5') OF COVER AT THE BEND, TEE, OR PLUG AT ALL LOCATIONS WHERE THESE FITTINGS MAY BE UTILIZED.
3. DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660–WATER DISTRIBUTION SYSTEMS AND 02732–SANITARY SEWER FORCE MAINS, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION).

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	THRUST BLOCKING DIMENSIONS (200psi LINE PRESSURE)	CKD BY:	1	JK	7/29/97
		APPD. BY:	B	EMI	7-31-07
		DATE: MAR. 2002			
	DETAIL No. W-5	FILE No. 05062\W-5	SCALE: N.T.S.		

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

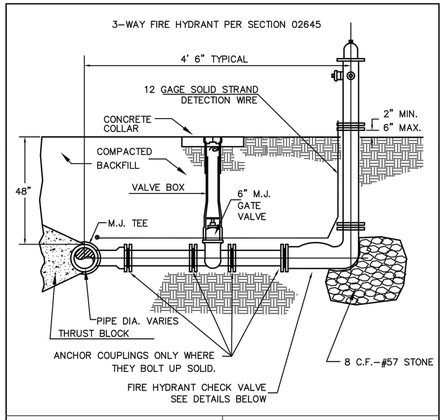
10/05/2021

SHEET TITLE

MISCELLANEOUS DETAILS 2

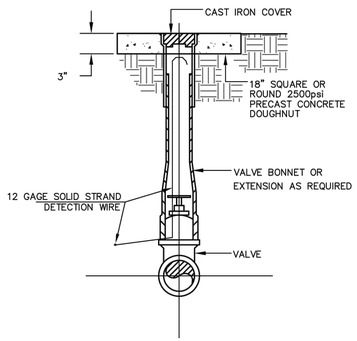
DRAWING NUMBER

1-C-26
OF
214



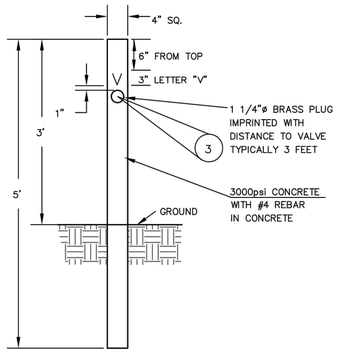
CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	FIRE HYDRANT ASSEMBLY WITH CHECK VALVE	CKD BY:	A	EMI	7-31-07
		APPD. BY:	B	EMI	5-12-10
		DATE: MAR. 2002			
	DETAIL No. W-7	FILE No. 05062\W-7	SCALE: N.T.S.		



CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

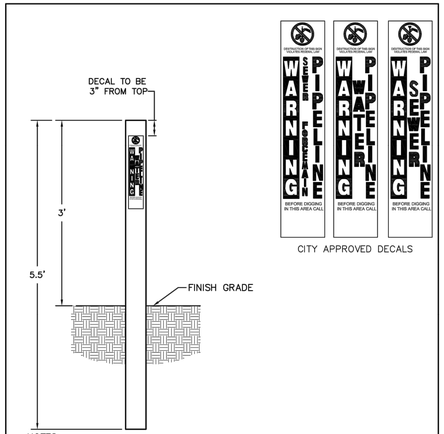
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	VALVE BOX	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-8	FILE No. 05062\W-8	SCALE: N.T.S.		



NOTE:
WHEN VALVE IS WITHIN GEORGIA DOT RIGHT-OF-WAY, A FLEXIBLE MARKER SHALL BE INSTALLED AS PER DETAIL W-10.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

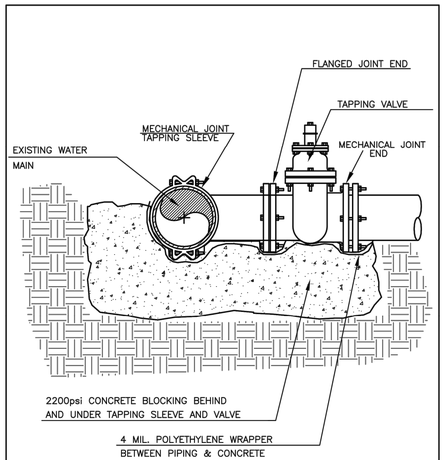
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	VALVE MARKER	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-9	FILE No. 05062\W-9	SCALE: N.T.S.		



NOTES:
1. VALVE MARKER SHALL BE RHINO 3-RAIL OR APPROVED EQUAL.
2. VALVE MARKER SHALL BE BLUE FOR WATER VALVES, GREEN FOR FORCEMAIN VALVES.
3. DECAL SHALL BE 2-7/8" X 14" OR APPROVED EQUAL.
4. VALVE MARKERS SHALL BE INSTALLED AT ALL VALVES.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

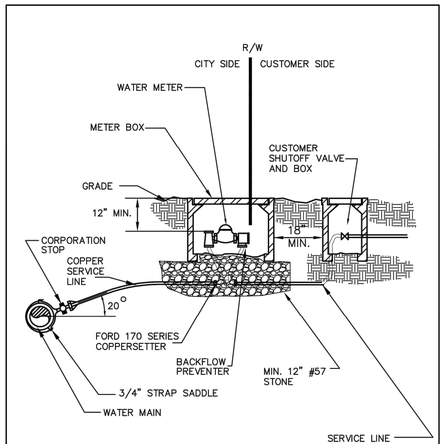
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	FLEXIBLE VALVE MARKER	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-10	FILE No. 05062\W-10	SCALE: N.T.S.		



NOTES:
1/ DEVELOPER/CONTRACTOR IS TO SUBMIT MANUFACTURER, SIZE, & TYPE OF MECHANICAL JOINT TAPPING SLEEVE AND VALVE TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
2/ DEVELOPER/CONTRACTOR IS REQUIRED TO PERFORM HYDROSTATIC PRESSURE TESTS IN ACCORDANCE WITH SECTION 02660-WATER DISTRIBUTION SYSTEMS, OF THE CITY OF JEFFERSON STANDARD SPECIFICATIONS (LATEST EDITION)

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

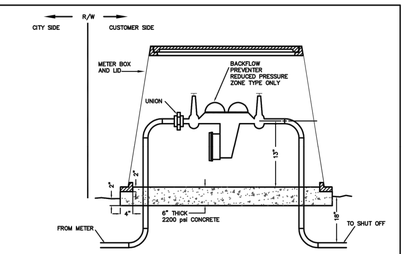
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	TAPPING SLEEVE AND VALVE	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-11	FILE No. 05062\W-11	SCALE: N.T.S.		



NOTE:
1. TOP OF METER MUST BE A MINIMUM OF 12" FROM THE TOP OF THE METER BOX.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

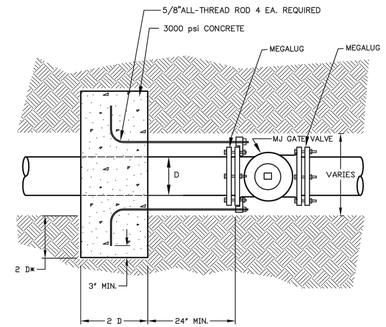
JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	SERVICE CONNECTION (WITH METER)	CKD BY:	A	EMI	NOV. 2003
		APPD. BY:	B	EMI	7-31-07
		DATE: MAR. 2002			
	DETAIL No. W-14	FILE No. 05062\W-14	SCALE: N.T.S.		



NOTE:
1) THE BACKFLOW PREVENTER SHALL BE OF THE REDUCED PRESSURE ZONE TYPE WHEN DEEMED NECESSARY BY CITY FOR POTENTIALLY HAZARDOUS CONNECTIONS INCLUDING BUT NOT LIMITED TO MEDICAL FACILITIES, WASTEWATER INFRASTRUCTURES AND PROCESS INDUSTRIES.
2) SHUT-OFF VALVE W/DRAIN TO BE INSTALLED IN METER BOX, W/ 2 C.F. CRUSHED STONE UNDERNEATH
3) ALL PIPES AND FITTINGS 2" THROUGH 4" MAY BE PVC OR BRASS. ALL PIPE AND FITTINGS LARGER THAN 4" SHALL BE D.I.P. CL 350 MIN.
4) METER BOX WITH LID TO BE "SUPER JUMBO" POLYETHYLENE METER BOX AND LID, OR APPROVED EQUAL.
5) BOTH THE BACKFLOW PREVENTER AND PIPING SHALL BE HEAT TAPED AND INSULATED TO PROVIDE PROTECTION TO 0°F. THE HEAT TRACING SHALL BE SELF REGULATING TYPE, 8 WATTS/FT, 120 VOLTS. THE HEAT TRACING SYSTEM SHALL BE CHEMELEX #8BTV, COMPLETE WITH POWER CONNECTION KIT WITH JUNCTION, END SEAL KIT, PIPE STRAPS. PROVIDE 1/4" THICK FIBERGLASS INSULATION AROUND EXPOSED PIPE, VALVES AND BACKFLOW PREVENTER IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS.

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY:	REV. NO.	BY	DATE
STANDARD DETAIL	RPZ BACKFLOW PREVENTER	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: MAR. 2002			
	DETAIL No. W-19	FILE No. 05062\W-19	SCALE: N.T.S.		



* DENOTES CONCRETE ANCHOR TO BE SET IN UNDISTURBED SOIL

CITY OF JEFFERSON PUBLIC WORKS DEPARTMENT

JOB TITLE	SHEET TITLE	DRN. BY: EMI	REV. NO.	BY	DATE
STANDARD DETAIL	CONCRETE RESTRAINT ANCHOR	CKD BY:	A	EMI	7-31-07
		APPD. BY:			
		DATE: SEP. 2004			
	DETAIL No. W-23	FILE No. 05062W-23.dwg	SCALE: N.T.S.		

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Civil & Environmental Engineering
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Marietta, GA 30068
(770) 977-5747
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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

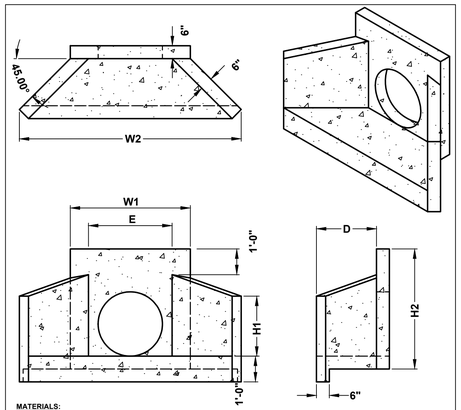
10/05/2021

SHEET TITLE

MISCELLANEOUS DETAILS 3

DRAWING NUMBER

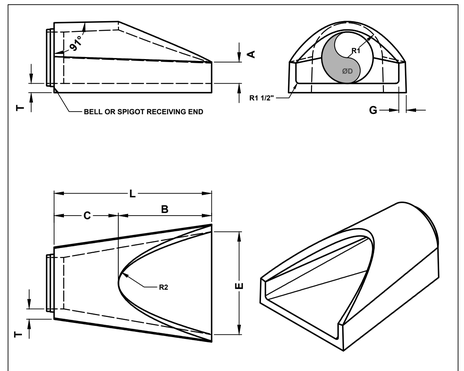
1-C-27
OF
214



MATERIALS:
CONCRETE: 4,000 PSI, TYPE I/II CEMENT

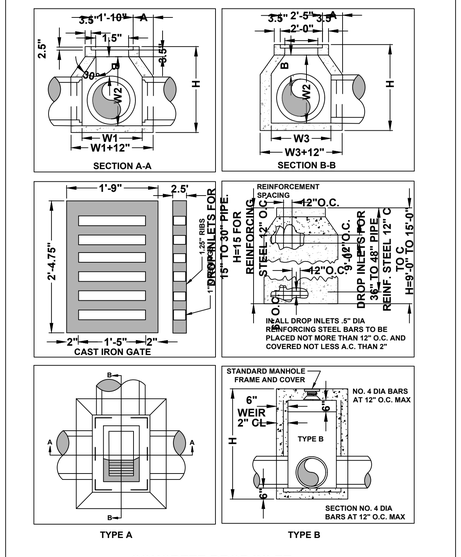
HEADWALL SIZE	W1	W2	H1	H2	D	E	TONS	BLOCKS
18"	3'-2"	4'-9"	1'-3"	3'-2"	1'-2"	1'-9"	0.92	1
24"	4'-2"	8'-2"	2'-0"	4'-2"	1'-8"	2'-9"	1.73	3
30", 36"	4'-8"	8'-8"	2'-4"	4'-8"	2'-4"	3'-3"	1.92	3
42", 48"	5'-8"	10'-11"	3'-6"	5'-9"	3'-0"	4'-3"	3.33	4
54", 60"	6'-5"	12'-6"	4'-0"	6'-5"	3'-5"	5'-0"	3.77	7
66", 72"	8'-5"	13'-5"	5'-7"	8'-0"	3'-0"	7'-0"	5.30	9
78", 84", 90", 96"	10'-2"	15'-10"	4'-0"	9'-0"	3'-4"	8'-4"	7.31	11

HEADWALL
PRECAST CONCRETE
Scale: N.T.S.



D	T	A	B	C	L	E	G	R1	R2	SLOPE	TONS
18"	4.50"	9"	27"	46"	73"	36"	2.50"	18.0"	13.5"	2:1	1.04
24"	4.50"	10"	43"	32"	75"	48"	3.00"	20.0"	15.0"	2.2:1	1.36
30"	4.75"	12"	54"	20"	74"	60"	3.50"	21.0"	16.0"	2.3:1	1.65
36"	4.75"	15"	63"	35"	98"	72"	4.00"	30.0"	22.0"	2.4:1	2.24
42"	5.00	21"	63"	35"	98"	78"	4.50"	33.0"	24.0"	2.4:1	3.15

FLARED END SECTION
PRECAST CONCRETE
Scale: N.T.S.

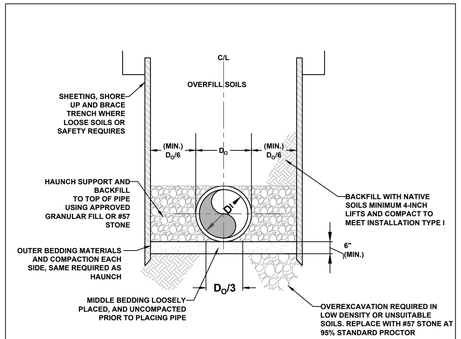


CONCRETE DROP INLET
Scale: N.T.S.

CONCRETE DROP INLET TYPE A						
D	W1	MIN W2	W3	a	b	MIN. H
1'-3"	2'-0"	2'-6 1/2"	2'-7"	0'-3 1/2"	0'-6"	3'-3"
1'-6"	2'-0"	2'-9 1/2"	3'	0'-3 1/2"	0'-6"	3'-6"
2'-0"	2'-8"	4'-0 1/2"	3'-3"	0'-7 1/2"	1'-1"	4'-9"
2'-6"	3'-4"	5'-1 1/2"	3'-11"	0'-11 1/2"	1'-8"	5'-10"
3'-0"	3'-10"	6'-1/2"	4'-5"	1'-2 1/2"	2'-1/4"	6'-10"
3'-6"	4'-5"	7'-2 1/2"	5'-0"	1'-6"	2'-7 1/4"	7'-11"
4'-0"	5'-0"	8'-3 1/2"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-0"
4'-6"	5'-7"	9'-4 1/2"	6'-2"	2'-1"	3'-7 1/4"	10'-1"
5'-0"	6'-2"	10'-5 1/2"	6'-9"	2'-4 1/2"	4'-1 1/2"	11'-2"
5'-6"	6'-9"	11'-6 1/2"	7'-4"	2'-8"	4'-7 1/2"	12'-3"
6'-0"	7'-4"	12'-7 1/2"	7'-11"	2'-11 1/2"	5'-1 1/2"	13'-4"

TYPE B		
NORMAL W OR W1	MIN h	MIN H
2'-0"	2'-7 1/2"	3'-9 1/2"
2'-3"	2'-10"	4'-0"
3'-0"	3'-8"	4'-10"
3'-6 1/2"	4'-2 1/2"	5'-4 1/2"
4'-2"	4'-10"	6'-0"
4'-8 1/2"	5'-4 1/2"	6'-6 1/2"
5'-3 1/2"	5'-11 1/2"	7'-1 1/2"
5'-10"	6'-6"	7'-8"
6'-4 1/2"	7'-0 1/2"	8'-2 1/2"
6'-11"	7'-7"	8'-9"
7'-5 1/2"	8'-1 1/2"	9'-3 1/2"

CONCRETE DROP INLET
Scale: N.T.S.

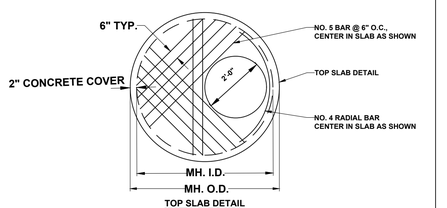


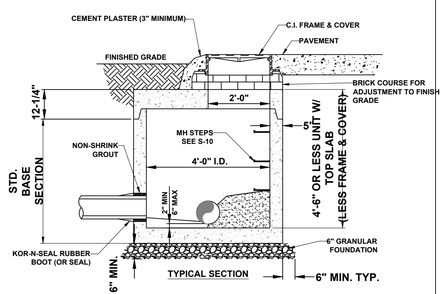
NOTE:
1. REINFORCED CONCRETE PIPE STRENGTH CLASS AND FILL HEIGHTS SHALL BE GOVERNED BY ASTM C1479 AND THE AASHTO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS, SECTION 27. ONLY STRENGTH CLASS OF III, IV OR V SHALL BE ACCEPTED.
2. TRENCH WIDTH MINIMUMS SHALL BE PER TRENCH WIDTH STANDARD DETAIL.
3. BACKFILL SHALL BE PLACED IN MAXIMUM 4-6 INCH LIFTS.
4. NATIVE OR LOOSE SOILS ARE THOSE EXCAVATED FROM THE TRENCH, FREE OF LARGE ROCKS (GREATER THAN 2-INCHES), FOREIGN MATERIALS, AND FROZEN EARTH.
5. GRANULAR OR SELECT FILL MATERIAL SHALL BE COMPACTED TO 95% STANDARD PROCTOR PER AASHTO T-99.
6. ONLY COARSE GRAINED SOILS SHALL BE USED FOR BACKFILL. USCS GW, SW, GP, SP GM, SM, GC & SC.
7. FOR TRENCH WITH EXPOSED ROCK, A CUSHION OF 6-9 INCH MIN. REQUIRED BETWEEN THE PIPE AND THE EXPOSED ROCK.
8. SOILS IN THE OUTER BEDDING, HAUNCH AND LOWER SIDE AREAS SHALL BE COMPACTED TO 98% PROCTER.

STANDARD EMABANKMENT BEDDING DETAIL FOR REINFORCED CONRETE STORMWATER PIPE
N.T.S.

PIPE SIZE (NOMINAL)	A SIDE CLEARANCE - INCH SOIL	A ROCK	B DITCH WIDTH - INCH SOIL MJ	B SOIL SJ	B ROCK MJ	B ROCK SJ	C SHORING WIDTH (ADDITIONAL - INCH)	D CUT REPAIR WIDTH - FEET SOIL MJ	D SOIL SJ	D ROCK MJ	D ROCK SJ
3/4"-2"	2	6	NA	8	NA	14	AS APPROVED	NA	3.00	NA	3.17
4"	9	12	25	23	27	25	AS APPROVED	4.08	3.92	4.25	4.08
6"	9	12	28	28	30	30	AS APPROVED	4.33	4.33	4.50	4.50
8"	9	12	32	30	34	32	AS APPROVED	4.67	4.50	4.83	4.67
10"	9	12	34	32	36	34	AS APPROVED	4.83	4.67	5.00	4.83
12"	9	12	36	34	38	36	AS APPROVED	5.00	4.83	5.17	5.00
14"	9	14	39	36	41	38	AS APPROVED	5.25	5.00	5.42	5.17
16"	9	14	42	38	44	40	AS APPROVED	5.50	5.17	5.67	5.33
20"	9	14	45	44	47	46	AS APPROVED	5.75	5.67	5.92	5.83
24"	9	14	50	48	52	50	AS APPROVED	6.17	6.00	6.33	6.17
30"	9	18	58	54	60	56	AS APPROVED	6.83	6.50	7.00	6.67
36"	9	18	64	61	66	63	AS APPROVED	7.33	7.08	7.50	7.25
42"	9	18	72	64	74	66	AS APPROVED	8.00	7.33	8.17	7.50
48"	9	18	78	73	80	75	AS APPROVED	8.50	8.08	9.34	8.25

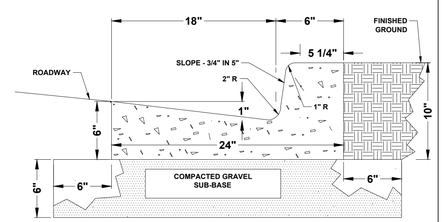
ALLOWABLETRENCH WIDTH CHART



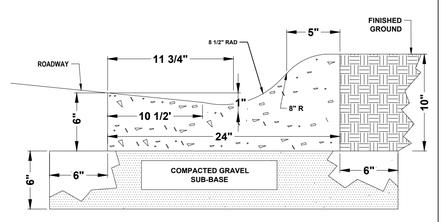


NOTE:
MANHOLE DESIGN SPECIFICATION CONFORMS TO: PRECAST REINFORCED CONCRETE MANHOLE SECTIONS A.S.T.M. DESIGNATION C-478 LATEST REVISION. CONCRETE COMPRESSIVE STRENGTH 4000 psi @ 28 DAYS.

SHALLOW MANHOLE
N.T.S.



HIGH BACK CURB



ROLL BACK CURB

STANDARD CURB DETAIL
N.T.S.

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

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1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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4		
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REVISIONS

No	Date	Description
1		
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8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

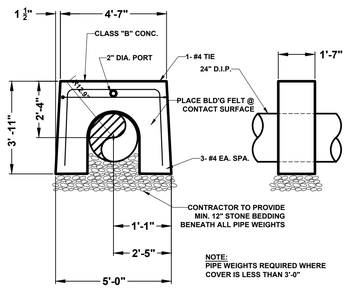
10/05/2021

SHEET TITLE

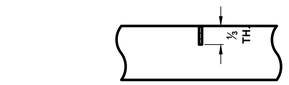
MISCELLANEOUS DETAILS 4

DRAWING NUMBER

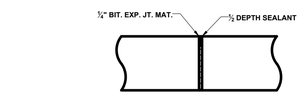
1-C-28
OF
214



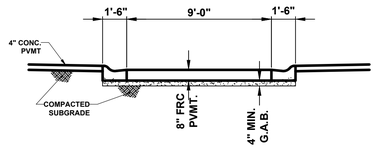
PIPE WEIGHT DETAIL
Scale: N.T.S.



SAW JOINT DETAIL

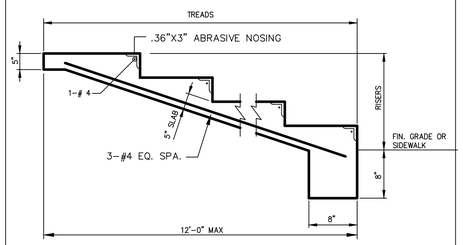


EXPANSION JOINT DETAIL



NOTE:
1. DRIVEWAY SHALL HAVE SAW JOINTS @ 18' MAX SPA. EVERY THIRD JOINT SHALL BE EXPANSION JOINT.
2. SIDEWALK PVMT. SHALL HAVE SAW JOINTS @ 9' MAX SPA. EVERY THIRD JOINT SHALL BE EXPANSION JOINT

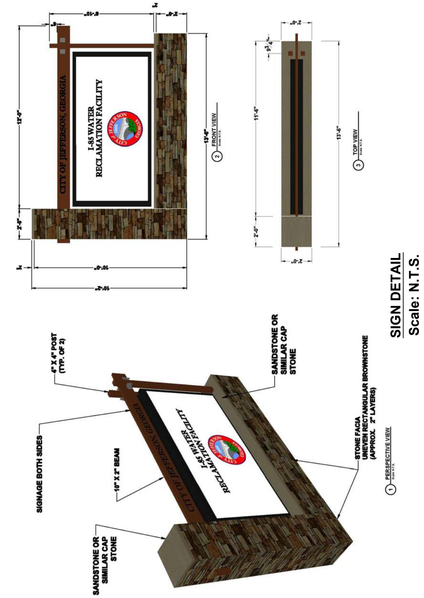
TYP. INTERIOR DRIVEWAY CROSS SECTION
Scale: N.T.S.



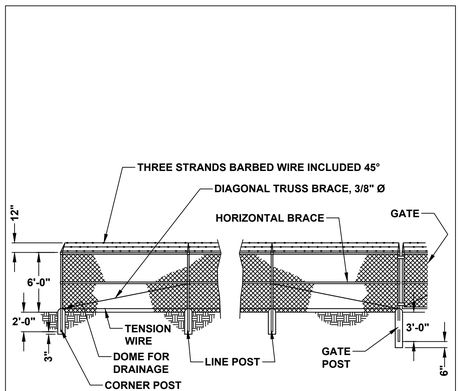
REPEAT SECTION FOR LENGTH > 12'-0".

SLOPE	TREADS	RISERS
3:1	18"	6"
4:1	18"	4'/2"
X:1	6X	6"

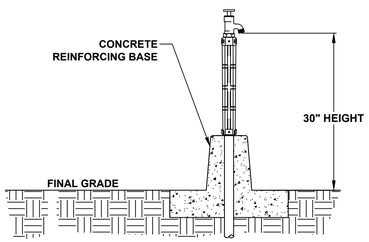
TYP. CONCRETE YARD STEP DETAIL
Scale: N.T.S.



SIGN DETAIL
Scale: N.T.S.

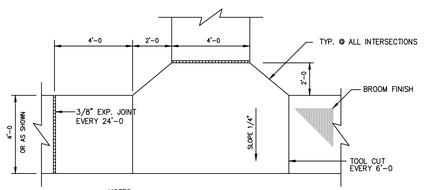


CHAIN LINK FENCE
Scale: N.T.S.



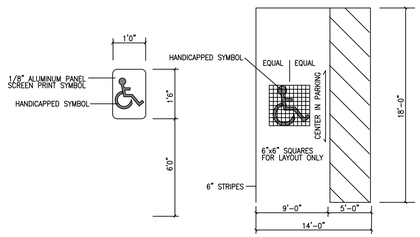
SPECIFICATIONS:
Z1385 POST HYDRANT SERIES NON-FREEZE POST HYDRANT. COMPLETE WITH GALVANIZED STEEL CASING AND CAST ALUMINUM CASING GUARD, ALL BRONZE INTERIOR PARTS, BRONZE SEAT AND REPLACEABLE SEAT WASHER, AND NON-TURNING OPERATING ROD.

YARD HYDRANT
Scale: N.T.S.

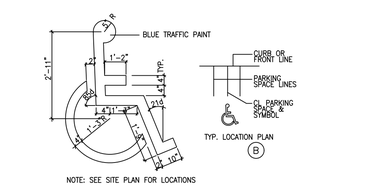


NOTES:
1. WALKS TO BE 4" THICK.
2. PROVIDE EXPANSION JOINTS AT INTERSECTIONS OF WALK WITH OTHER STRUCTURES & AT CHANGE OF DIRECTIONS.

SIDE WALK DETAIL
Scale: N.T.S.



PARKING SIGN DETAIL **PARKING SPACE**



NOTE: SEE SITE PLAN FOR LOCATIONS

PARKING SYMBOL

ADA PARKING & STRIPING DETAILS
Scale: N.T.S.

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

MISCELLANEOUS DETAILS 5

DRAWING NUMBER

1-C-29
OF
214

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS

SWCD: _____

Project Name: Jefferson WWTP **Address:** Jefferson, GA

City/County: Jefferson, Jackson **Date on Plans:** 5/4/2022

Name & email of person filling out checklist: Charles Butterfield

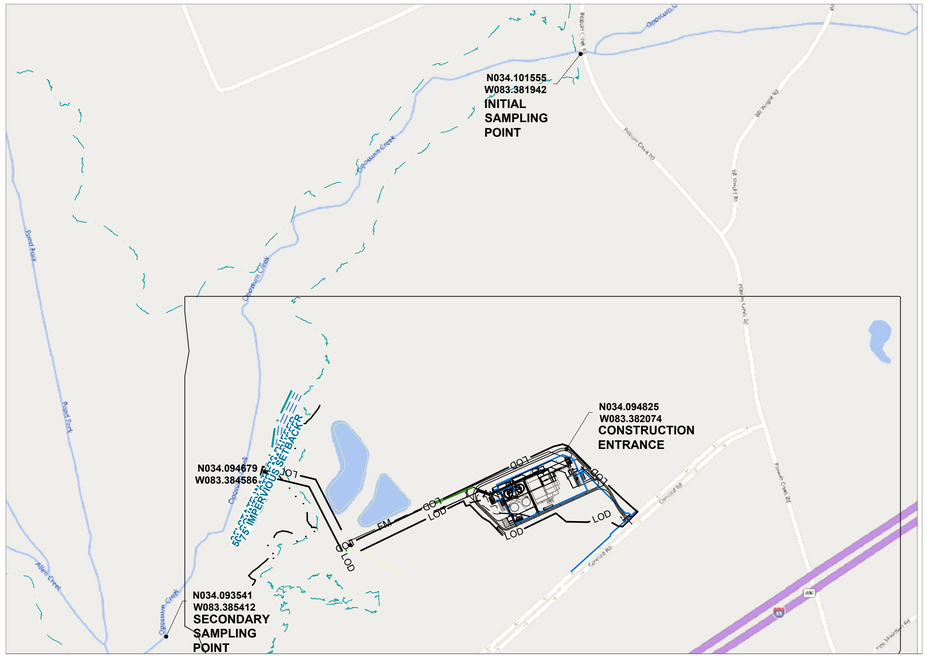
Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN	
Y	1-C-30	1	The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
Y	ALL	2	Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)
N/A	N/A	3	Limits of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the GAEPD District Office. If GAEPD approves the request to disturb 50 acres or more at any one time, the Plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist and the GAEPD approval letter. * (A copy of the written approval by GAEPD must be attached to the plan for the Plan to be reviewed.)
Y	1-C-37	4	The name and phone number of the 24-hour contact responsible for erosion, sedimentation and pollution controls.
Y	1-C-37	5	Provide the name, address, email address, and phone number of primary permittee.
Y	1-C-37	6	Note total and disturbed acreages of the project or phase under construction.
Y	1-C-37	7	Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
Y	ALL	8	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
Y	1-C-37	9	Description of the nature of construction activity and existing site conditions.
Y	1-G-1	10	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
Y	1-C-37	11	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residental areas, wetlands, marshlands, etc. which may be affected.
Y	1-C-37	12	Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on **Part IV page 19** of the permit.
Y	1-C-37	13	Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on **Part IV page 19** of the permit. *
Y	1-C-37	14	Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation." in accordance with **Part IV.A.5 page 25** of the permit. *
Y	1-C-37	15	Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
N/A	N/A	16	Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
Y	1-C-37	17	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional." *
Y	1-C-37	18	Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a Section 404 permit." *
Y	1-C-37	19	Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and sediment control measures and practices prior to land disturbing activities."
Y	1-C-37	20	Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved Plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented to control or treat the sediment source."
Y	1-C-37	21	Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
N/A	N/A	22	Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of a Biota Impaired Stream Segment must comply with Part III. C. of the permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment. *
N/A	N/A	23	If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan. *
Y	1-C-31	24	BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited. *
Y	1-C-37	25	Provide BMPs for the remediation of all petroleum spills and leaks.
Y	1-C-37	26	Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. *
Y	1-C-37	27	Description of practices to provide cover for building materials and building products on site. *
Y	1-C-37	28	Description of the practices that will be used to reduce the pollutants in storm water discharges. *
Y	1-C-37	29	Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
Y	1-C-38	30	Provide complete requirements of Inspections and record keeping by the primary permittee. *
Y	1-C-38	31	Provide complete requirements of Sampling Frequency and Reporting of sampling results. *
Y	1-C-38	32	Provide complete details for Retention of Records as per Part IV.F. of the permit. *
Y	1-C-37	33	Description of analytical methods to be used to collect and analyze the samples from each location. *
Y	1-C-37	34	Appendix B rationale for NTU values at all outfall sampling points where applicable. *
Y	1-C-30	35	Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged. *
Y	1-C-37	36	A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase. *
Y	ALL	37	Graphic scale and North arrow.
Y	ALL	38	Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft
1 inch = 100ft or larger scale	Flat 0 - 2%	0.5 or 1
	Rolling 2 - 8%	1 or 2
	Steep 8% +	2,5 or 10

n/a	n/a	39	Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by GAEPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.georgia.gov.
n/a	n/a	40	Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition. *
Y	1-C-31-34	41	Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
Y	1-C-31-34	42	Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
Y	HYDRO	43	Delineation and acreage of contributing drainage basins on the project site.
Y	HYDRO	44	Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions. *
Y	HYDRO	45	An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
Y	1-C-11-12	46	Storm-drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
Y	1-C-31-34	47	Soil series for the project site and their delineaton.
Y	1-C-31-34	48	The limits of disturbance for each phase of construction.
Y	1-C-37	49	Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan.
Y	1-C-31-34	50	Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
Y	1-C-36-37	51	Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
Y	1-C-36-37	52	Provide vegetative plan, noting all temporary and permenent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

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

Effective January 1, 2022



CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

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Civil & Environmental Engineering

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

NPDES CHECKLIST

DRAWING NUMBER

1-C-30
OF
214

NOTE:
CLEANOUT VOLUME SHALL BE MARKED ON A STAKE AT THE OUTLET OF THE TRAP. CLEAN OUT VALUME IS 107.19 CY AT 786.4'
EMERGENCY SPILLWAY AT 788.0'

4.8 DRAINAGE ACRES @67 CU YD OF SEDIMENT PER ACRE - REQUIRING 321.6 CUYDS OF SEDIMENT STORAGE OR 8683.2 ACRE FEET

TOP EL 988

980.00'

SCALE IN FEET
0 40' 80'
SCALE: 1" = 40'-0"

CONCRETE DITCH

STAGE STORAGE TABLE FOR Sd4-C

ELEV	AREA (sq. ft.)	DEPTH (ft)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
784.000	1,216.00	N/A	N/A	0.00
784.500	1,501.00	0.500	678.00	678.00
785.000	1,804.00	0.500	825.09	1503.09
785.500	2,125.00	0.500	981.16	2484.25
786.000	2,464.00	0.500	1146.21	3630.45
786.500	2,944.00	0.500	1350.22	4980.67
787.000	3,456.00	0.500	1598.29	6578.96
787.500	4,000.00	0.500	1862.34	8441.31
788.000	4,576.00	0.500	2142.39	10583.69

STRUCTURAL CONTROL PRACTICES

Code	Description
Cd	A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	A flexible conduit of heavy duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

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Tp	The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction
Tr	To protect desirable trees from injury during construction activity.
Wt	Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.
Bf	Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	Planting vegetation on dunes that are denuded, artificially constrcted, or re-nourished.

VEGETATIVE MEASURES

Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding
Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
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Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	Controlling surface and air movement of dust on construction sites, roadways and similar sites.
Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

Map Unit Symbol	Map Unit Name
CeC	Cecil sandy loam, 6 to 10 percent slopes
CfC2	Cecil sandy clay loam, 6 to 10 percent slopes, eroded
LuE	Rion-Wateree complex, 10 to 25 percent slopes
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

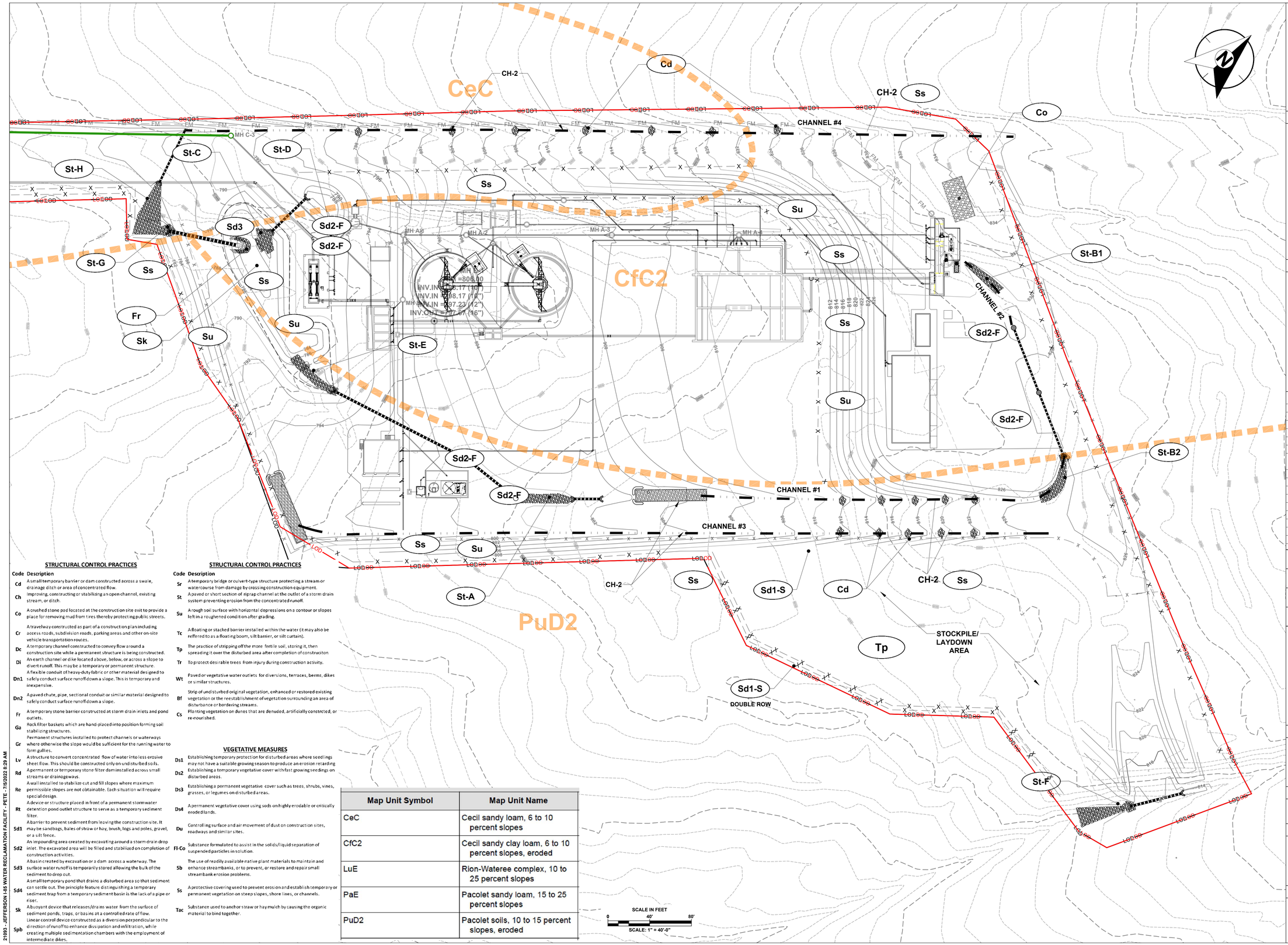
10/05/2021

SHEET TITLE

INITIAL EROSION CONTROL PLAN

DRAWING NUMBER

1-C-31
OF
214



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SCALE IN FEET
0 40' 80'
SCALE: 1" = 40'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

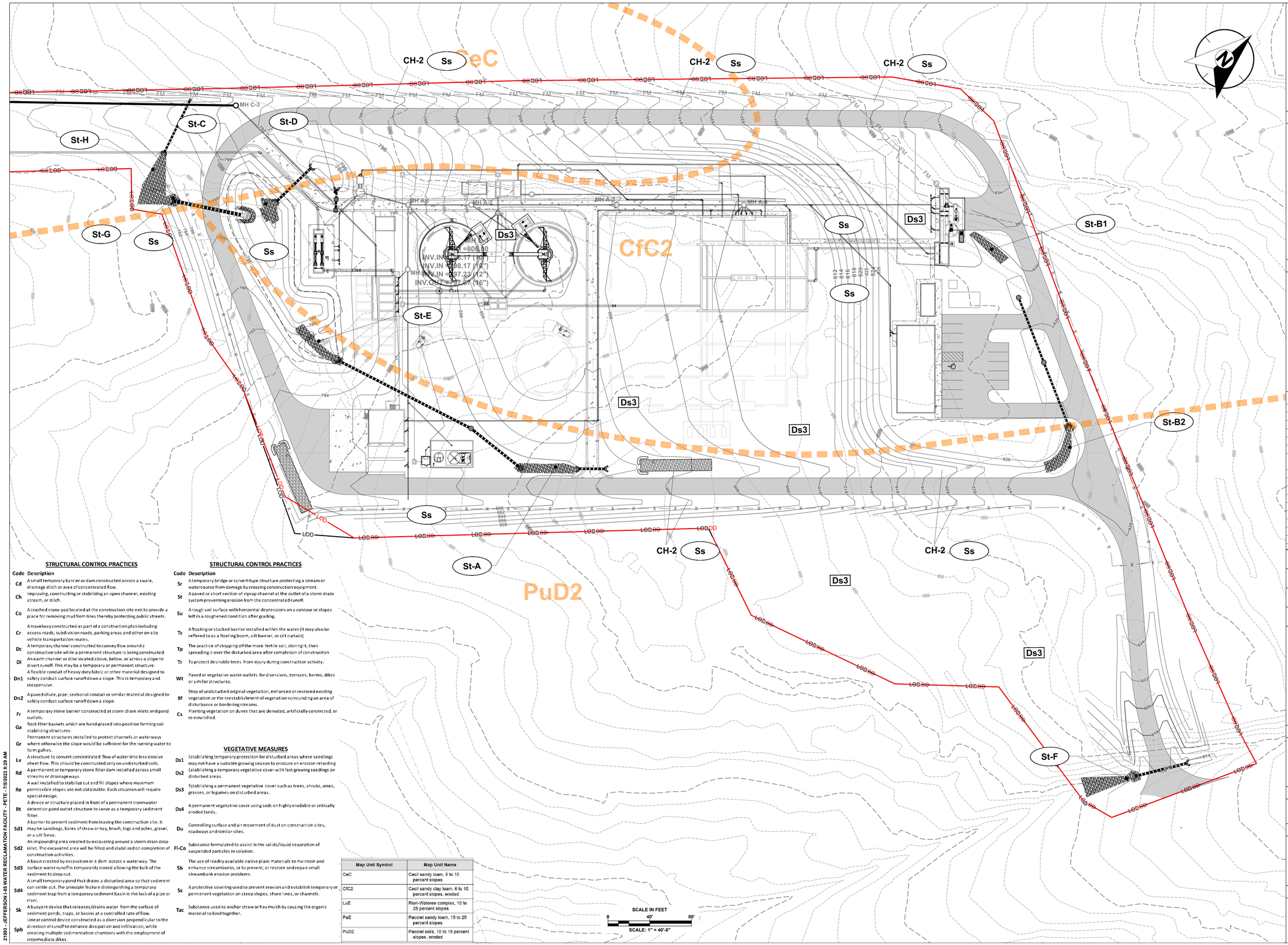
10/05/2021

SHEET TITLE

INTERMEDIATE EROSION CONTROL PLAN

DRAWING NUMBER

1-C-32
OF
214



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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

FINAL EROSION CONTROL PLAN

DRAWING NUMBER

1-C-33
OF
214

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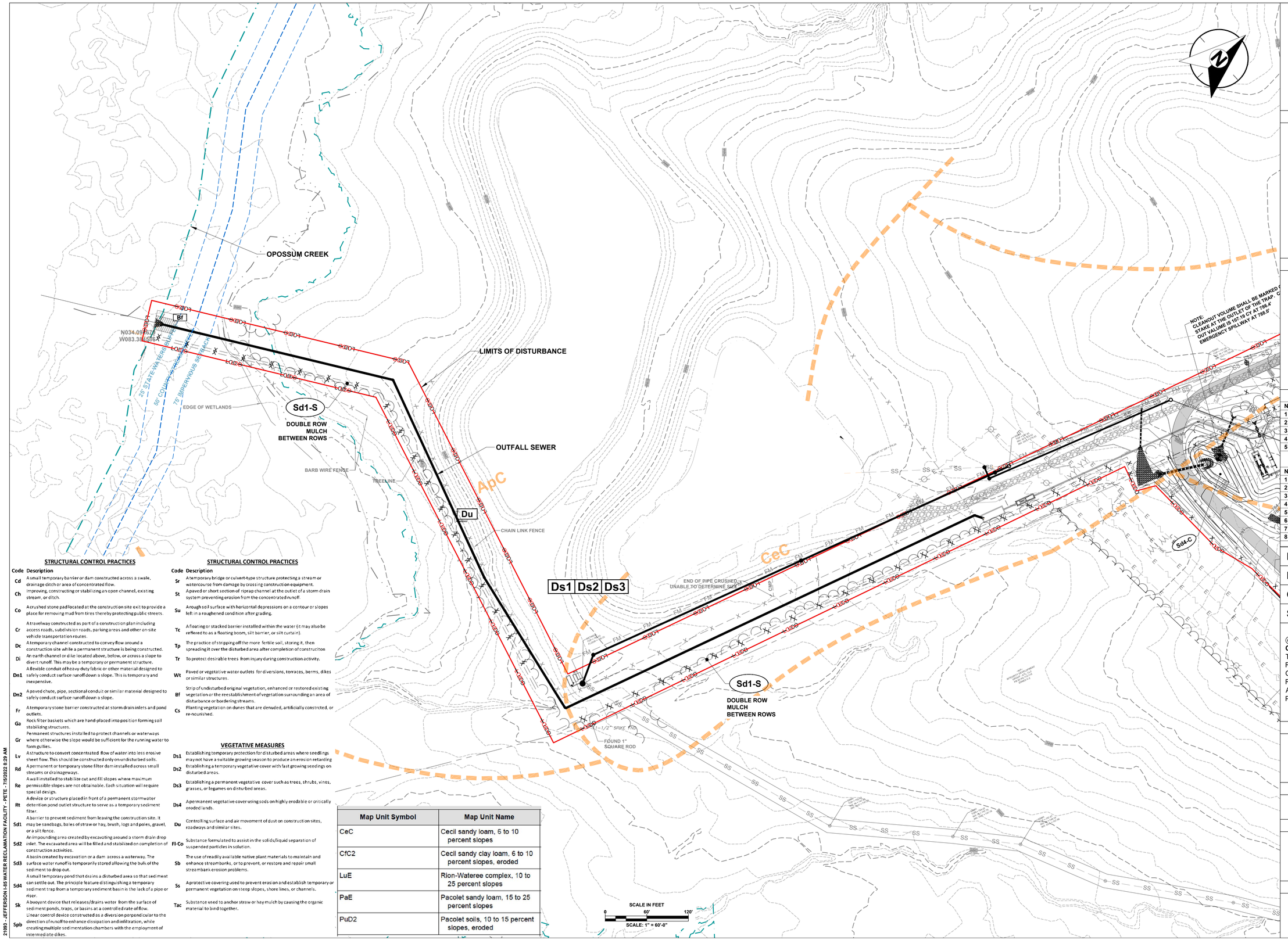

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Cr	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	An earth channel or dike located above, below, or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL CONTROL PRACTICES

Code	Description
Sr	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	A floating or stacked barrier installed within the water (it may also be reffered to as a floating boom, silt barrier, or silt curtain).
Tp	The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction
Tr	To protect desirable trees from injury during construction activity.
Wt	Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.
Bf	Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	Planting vegetation on dunes that are denuded, artificially constrcted, or re-nourished.

VEGETATIVE MEASURES

Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding
Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	Controlling surface and air movement of dust on construction sites, roadways and similar sites.
Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

Map Unit Symbol	Map Unit Name
CeC	Cecil sandy loam, 6 to 10 percent slopes
CfC2	Cecil sandy clay loam, 6 to 10 percent slopes, eroded
LuE	Rion-Wateree complex, 10 to 25 percent slopes
PaE	Pacolet sandy loam, 15 to 25 percent slopes
PuD2	Pacolet soils, 10 to 15 percent slopes, eroded

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4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
1		
2		
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

OUTFALL EROSION CONTROL PLAN

DRAWING NUMBER

1-C-34
OF
214

Ds3

Table 6-5.2 - Permanent Cover

PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

1/ Reduce seeding rates by 50% when drilled.
2/ PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications.
3/ M-L represents to Mountain; Blue Ridge; and Ridges and Valleys MLRAs.
P represents the Southern Piedmont MLRA.
C represents the Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs.
See Figure 6-4.1.

Species	Broadcast Rates 2/ - PLS 3/ Per Acre	Broadcast Rates 2/ - PLS 3/ Per 1000 sq. ft.	Resource Area 3	Planting Dates by Resource Areas Planting Dates (Solid lines indicate optimum dates,dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
BAHIA, PENSACOLA (Paspalum notatum)			P C		166,000 seed per pund. Low growing. Sod forming. Slow toestablish. Plant with a companion crop. Will spread into bermuda pastures and lawns. Mix with Sericea lespedeza or weeping lovegrass.
alone or with temporary cover	60 lbs.	1.4 lbs.			
with other perennials	30 lbs.	0.7 lbs.			
BAHIA, WILMINGTON (Paspalum notatum)			M-L P		Same as above
alone or with temporary cover	60 lbs.	1.4 lbs.			
with other perennials	30 lbs.	0.7 lbs.			
BERMUDA, COMMON (Cynodon dactylon) Hulled seed			P C		1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields.
alone	10 lbs.	0.2 lbs.			
with other perennials	6 lbs.	0.1 lbs.		J F M A M J J A S O N D	
BERMUDA, COMMON (Cynodon dactylon) Unhulled seed			P C		
with temporary cover	10 lbs.	0.2 lbs.			Plant with winter annuals.
with other perennials	6 lbs.	0.1 lbs.		J F M A M J J A S O N D	Plant with tall fescue.
BERMUDA SPRIGS (Cynodon dactylon)	40 cu. ft. or sod plugs 3' x 3'	0.9 cu. ft.	M-L		A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 sprigs.
Coastal, Common, Midland, or Tift 44			P C		Same as above.
Coastal, Common, or Tift 44			C		Southern Coastal Plain only.
Tift 78.					
CENTIPEDE (Eremochloa ophiuroides)	Block sod only		P C	J F M A M J J A S O N D	Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy as far north as Athens and Atlanta.
CROWNVETECH (Coronilla varia)					100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink, and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate seed with M inoculant. Use from North Atlanta and Northward.
with winter annuals or cool season grasses	15 lbs.	0.3 lbs.	M-L P		
FESCUE, TALL (Festuca arundinacea)					227,000 seed per pound. Use alone only on better sites. Not for droughty soils. Mix with perennial lespedezas or crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.
alone	50 lbs.	1.1 lbs.	M-L P		
with other perennials	30 lbs.	0.7 lbs.			
KUDZU (Pueraria thumbergiana)					Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
plants or crowns	3' - 7' apart		ALL		
LESPEDEZA, SERICEA (Lespedeza cuneata)				J F M A M J J A S O N D	350,000 seed per pound. Widely adapted. Low maintenance. Mix with weeping lovegrass, common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
scarified	60 lbs.	1.4 lbs.	M-L P C		
unscarified	75 lbs.	1.7 lbs.	M-L P C		Mix with Tall fescue or winter annuals.
seed-bearing hay	3 tons	138 lbs.	M-L P C		Mix with Tall fescue or winter annuals.
LESPEDEZA Ambro virgata (Lespedeza virgata DC) **or Appalow** (Lespedeza cuneata [Dumont] G. Don)				J F M A M J J A S O N D	300,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth has bronze coloration. Mix with Weeping lovegrass, Common bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedaza. Slow to develop solid stands. Inoculate seed with EL inoculate.
scarified	60 lbs.	1.4 lbs.	M-L P C		
unscarified	75 lbs.	1.7 lbs.	M-L P C		
LESPEDEZA, SHRUBM (Lespedeza bicolor) (Lespedeza thumbergii)			M-L P C		Provide wildlife food and cover.
plants	3' x 3'				
LOVEGRASS, WEEPING (Eragrostis curvula)				J F M A M J J A S O N D	1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedezaon roadbanks.
alone	4 lbs.	0.1 lbs.	M-L P C		
with other perennials	2 lbs.	0.05 lbs.			
MAIDENCANE (Panicum hemitomon)					For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
sprigs	2' x 3' spacing		all		
REED CANARY GRASS (Phalaris arundinacea)				J F M A M J J A S O N D	Grows similar to tall fescue.
alone with other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lbs.	M-L P		
SUNFLOWER, 'AZTEC' MAXIMILLIAM (Helianthus maximiliani)					227,000 seed per pound. Mix with weeping lovegrass or other low-growing grasses or legumes.

Ds2

Table 6-4.1 - Temporary Cover or Companion Crops 1/

PLANT, PLANTING RATES, AND PLANTING DATED FOR TEMPORARY COVER OR COMPANION CROPS 1/

Species	Broadcast Rates 2/ - PLS 3/ Per Acre	Broadcast Rates 2/ - PLS 3/ Per 1000 sq. ft.	Resource Area 4/	Planting Dates by Resource Areas Planting Dates (Solid lines indicate optimum dates,dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
BARLEY (Horduem vulgare) alone	3 bu (144 lbs)	C 3.3 lb.	M-L P		14,000 seed per pound. Winterhardy. Use on productive soils.
in mixture	1/2 bu. (24 lbs.)	0.6 lb.			
LESPEDEZA, ANNUAL (Lespedeza striata)			M-L P C		200,000 seed per pound. May volunteer for several years. Use inoculant EL.
alone	40 lbs.	0.9 lb. in			
mixtures	10 lbs.	0.2 lb.			
LOVEGRASS,WEEPING (Eragrostis curvula)			M-L P C		1,500,000 seed per pound. May last for several years. Mix with Sericea lespedeza.
alone	40 lbs.	0.1 lb.			
mixtures	2 lbs.	0.05 lb.			
MILLET, BROWNTOP (Panicum fasciculatum)		C	M-L P		137,000 seed per pound. Quick dense cover. Will provide too much competition in mixtures if seeded at high rates.
alone	40 lbs.	0.9 lb.			
mixtures	10 lbs.	0.2 lb.			
MILLET, PEARL (Pennesetum glaucum) alone	50 lbs	1.1 lbs	M-L P C		88,000 seed per pound. Quick dense cover. May reach 5 in height. Not recommended for mixtures.
OATS (Avena sativa) alone in	4 bu (128 lbs)	2.9 lb.	M-L P C		13,000 seed per pound. Use on productive soils. Not as winterhardy as rye or barley.
mixtures	1bu (92 lbs)	0.7 lb.			
RYE (Secale cereale) alone	3 bu	3.9 lb.	M-L P C		18,000 seed per pound. Quick cover. Drought tolerant and winterhardy.
in mixture	(168 lbs) 1/2 bu (28 lbs)	0.6 lb.			
RYEGRASS, ANNUAL (Lolium temulentum)		C	M-L P		227,000 seed per pound.Dense cover. Very competitive and is **not** to be used in mixtures.
alone	40 lbs	0.9 lbs			
SUDANGRASS(Sorghum Sudanese)			M-L P C		55,000 seed per pound. Good on droughty sites. **Not** recommended for mixtures.
alone	60 lbs.	1.4 lb.			
TRITICALE (X-riticosecale)		C			Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
alone	3 bu (144 lbs)	3.3 lb.			
in mixtures	1/2 bu (24 lbs)	0.6 lb.			
WHEAT (Triticum Aestivum)			M-L P C		15,000 seed per pound.
alone	3 bu (180 lbs)	4.1 lb.			
in mixtures	1/2 bu (30 lbs)	0.7 lb.			

1. Temporary cover crops are very competitive and will crown out perennials if seeded too heavily.
2. Reduce seeding rates by 50% when drilled.
3. PLS is an abbreviation for Pure Live Seed.
4. M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs
   P represents the Southern Piedmont MLRA
   C represents Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods ML
   (See Figure 6-4.1, p. 6-40).

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.

Lime spread by conventional equipment shall be "ground limestone." Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve.

Agricultural lime spread by hydraulic seeding equip- ment shall be "finely ground limestone." Finely ground limestone is calcitic or dolomitic limestone ground so that 98 percent of the material will pass through a 20- mesh sieve and not less than 70 percent will pass through a 100-mesh sieve.

It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1)

Agricultural lime is generally not required where only trees are planted.

Initial fertilization, nitrogen, topdressing, and main- tenance fertilizer requirements for each species or com- bination of species are listed in Table 6-5.1.

Fertilize low fertility soils prior to or during planting at the rate of 500-700 lbs per acre of 10-10-10 fertilizer or equivalent to 12-16 lbs/1000sqft

Finely ground limestone will be mixed with water and applied immediately after mulching is completed or in combination with the top dressing.

When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the follow- ing ways:

1. Apply before land preparation so that it will be mixed with the soil during seedbed prepara- tion.

2. Mix with the soil used to fill the holes, distrib- ute in furrows.

3. Broadcast after steep surfaces are scarified, pitted or trenched.

4. A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seed- ling.

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Lime and Fertilizer Application

When equipment is used, the initial hydraulic seeding fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder.

Ds1

Disturbed Area Stabilization (With Mulching Only)

DEFINITION

Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE

To reduce runoff and erosion

To conserve moisture

To prevent surface compaction or crusting

To control undesirable vegetation

To modify soil temperature

To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of distur- bance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.

Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months.

SPECIFICATIONS

Mulching Without Seeding

This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation

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

Mulching Materials

Select one of the following materials and apply at the depth indicated:

1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil cover- age. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.

1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.

If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.

Apply polyethylene film on exposed areas.

Anchoring Mulch

Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.

Straw or hay mulch spread with special blower-type equipment may be anchored. Tackifers, binders and hydraulic mulch with tackifier specifically designed for tacking straw can be substituted for emulsified asphalt. Please refer to specification Tackifers. Plastic mesh or netting with mesh no larger than one inch by one inch shall be installed according to manufacturer's specifications.

Netting of the appropriate size shall be used to anchor wood waste. Openings of the net- ting shall not be larger than the average size of the wood waste chips.

Polyethylene film shall be anchor trenched at the top as well as incrementally as necessary.

Ds2

Disturbed Area Stabilization (With Temporary Seeding)

DEFINITION

The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

PURPOSE

To reduce runoff and sediment damage of downstream resources

To protect the soil surface from erosion

* To improve wildlife habitat

* To improve aesthetics

To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to six months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding).**

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization.

Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping

Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation

When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer

Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to deter- mine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application

Seeding

Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer).

Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand.

See Table 6-4.1

Mulching

Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only).**

Irrigation

During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

VEGETATIVE MEASURES 1

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214

Disturbed Area Stabilization (With Permanent Vegetation)

Ds3

DEFINITION

The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization.

Permanent perennial vegetation shall be used to achieve final stabilization.

PURPOSE

To protect the soil surface from erosion

To reduce damage from sediment and runoff to down-stream areas

To improve wildlife habitat and visual resources

To improve aesthetics

REQUIREMENT FOR REGULATORY COMPLIANCE

This practice shall be applied immediately to rough graded areas that will be undisturbed for longer than six months. This practice or sodding shall be applied immediately to all areas at final grade. Final Stabilization means that all soil disturbing activities at the site have been com- pleted, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by the GA EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped ac- cording to the Plan (uniformly covered with land- scaping materials in planned landscaped areas), or equivalent permanent stabilization measures.

Permanent vegetation shall consist of, planted trees, shrubs, perennial vines; or a crop of perennial vegetation appropriate for the region, such that within the growing season a 70% coverage by perennial vegetation shall be achieved. Final stabilization applies to each phase of construction. For linear construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use. Until this standard is satisfied and permanent control measures and facilities are operational, interim stabilization measures and temporary erosion and sedimentation control measures shall not be removed.

CONDITIONS

Permanent perennial vegetation is used to provide a protective cover for exposed areas including cuts, fills, dams, and other denuded areas.

PLANNING CONSIDERATIONS

Use conventional planting methods where

possible.

When mixed plantings are done during marginal planting periods, companion crops shall be used.

No-till planting is effective when planting is done following a summer or winter annual cover crop. Sericea lespedeza planted no-till into stands of rye is an excellent procedure.

Block sod provides immediate cover. It is especially effective in controlling erosion adjacent to concrete flumes and other structures. Refer to Specification Ds4-Disturbed Area Stabilization (With Sodding).

Irrigation should be used when the soil is dry or when summer plantings are done.

Low maintenance plants, as well as natives, should be used to ensure long-lasting erosion control.

Mowing should not be performed during the quail nesting season (May to September).

Wildlife plantings should be included incritical area plantinWildlife Plantings

Commercially available plants beneficial to wildlife species include the following:

Mast Bearing Trees

Beech, Black Cherry, Blackgum, Chestnut, Chinkapin, Hackberry, Hickory, Honey Locust, Native Oak, Persimmon, Sawtooth Oak and Sweetgum.

All trees that produce nuts or fruits are favored by many game species. Hickory provides nuts used mainly by squirrels and bear.

Shrubs and Small Trees

Bayberry, Bicolor Lespedeza, Crabapple, Dog- wood, Huckleberry or Native Blueberry, Mountain Laurel, Native Holly, Red Cedar, Red Mulberry, Sumac, Wax Myrtle, Wild Plum and Blackberry.

Plant in patches without tall trees to develop stable shrub communities. All produce fruits used by many kinds of wildlife, except for lespedeza that produces seeds used by quail and songbirds.

Grasses, Legumes, Vines and Temporary Cover

Bahiagrass, Bermudagrass, Grass-Legume mixtures, Partridge Pea, Annual Lespedeza, Orchardgrass (for mountains), Browntop Millet (for temporary cover), and Native grapes.

Provides herbaceous cover in clearings for a game bird brood-rearing habitat. Appropriate legumes such as vetches, clovers, and lespedezas may be mixed with grass, but they may die out after a few years.

CONSTRUCTION SPECIFICATIONS

Grading and Shaping

Grading and shaping may not be required where hydraulic seeding and fertilizing equi ment is to be used. Vertical banks shall be sloped to enable plant establishment. When conventional seeding and fertilizing are to be done, grade and shape where feasible and practical, so that equipment can be used safely and efficiently during seedbed preparation, seeding, mulching and maintenance of the vegetation. Concentrations of water that will cause excessive soil erosion shall be diverted to a safe outlet. Diversions and other treatment practices shall conform with the appropriate standards and specifications.

Lime and Fertilizer Rates and Analysis

Agricultural lime is required at the rate of one to two tons per acre unless soil tests indicate otherwise. Graded areas require lime application. If lime is applied within six months of planting permanent perennial vegetation, additional lime is not required. Agricultural lime shall be within the specifications of the Georgia Department of Agriculture.

Lime spread by conventional equipment shall be “ground limestone.” Ground limestone is calcitic or dolomitic limestone ground so that 90 percent of the material will pass through a 10-mesh sieve, not less than 50 percent will pass through a 50-mesh sieve and not less than 25 percent will pass through a 100-mesh sieve.

Fast-acting lime spread by hydraulic seeding equipment should be “finely ground limestone” spanning from the 180 micron size to the 5 micron size. Finely ground limestone is calcitic or dolomitic limestone ground so that 95 percent of the material will pass through a 100-mesh sieve.

It is desirable to use dolomitic limestone in the Sand Hills, Southern Coastal Plain and Atlantic Coast Flatwoods MLRAs. (See Figure 6-4.1)

Agricultural lime is generally not required where only trees are planted.

Initial fertilization, nitrogen, topdressing, and maintenance fertilizer requirements for each species or combination of species are listed in Table 6-5.1.

Lime and Fertilizer Application

When hydraulic seeding equipment is used, the initial fertilizer shall be mixed with seed, innoculant (if needed), and wood cellulose or wood pulp fiber mulch and applied in a slurry. The innoculant, if needed, shall be mixed with the seed prior to being placed into the hydraulic seeder. The slurry mixture will be agitated during application to keep the ingredients thoroughly mixed. The mixture will be spread uniformly over the area within one hour after being placed in the hydroseeder.

Finely ground limestone can be applied in the mulch slurry or in combination with the top dressing.

When conventional planting is to be done, lime and fertilizer shall be applied uniformly in one of the following ways:

Apply before land preparation so that it will be mixed with the soil during seedbed preparation. Mix with the soil used to fill the holes, distribute in furrows. Broadcast after steep surfaces are scarified, pitted or trenched.

A fertilizer pellet shall be placed at root depth in the closing hole beside each pine tree seedling.

Plant Selection

Refer to Tables 6-4.1, 6-5.2, 6-5.3 and 6-5.4 for approved species. Species not listed shall be approved by the State Resource Conservationist of the Natural Resources Conservation Service before they are used.

Plants shall be selected on the basis of species characteristics, site and soil conditions, planned use and maintenance of the area; time of year of planting, method of planting; and the needs and desires of the land user.

Some perennial species are easily established and can be planted alone. Examples of these are Common Bermuda, Tall Fescue, and Weeping Lovegrass.

Other perennials, such as Bahia Grass and Sericea Lespedeza, are slow to become established and should be planted with another perennial spe- cies. The additional species will provide quick cover and ample soil protection until the target perennial species become established. For example, Com- mon seeding combinations are 1) Weeping Lovegrass with Sericea Lespedeza (scarified) and 2) Tall Fescue with Sericea Lespedeza (unscarified).

Plant selection may also include annual compan- ion crops. Annual companion crops should be used only when the perennial species are not planted during their optimum planting period. A common mixture is Brown Top Millet with Common Bermuda in mid-summer. Care should be taken in select- ing companion crop species and seeding rates because annual crops will compete with perennial species for water, nutrients, and growing space. A high seeding rate of the companion crop may prevent the establishment of perennial species.

Ryegrass shall not be used in any seeding mixtures containing perennial species due to its ability to out-compete desired species chosen for permanent perennial cover.

Seed Quality

The term “pure live seed” is used to express the quality of seed and is not shown on the label. Pure live seed, PLS, is expressed as a percent- age of the seeds that are pure and will germinate. Information on percent germination and purity can be found on seed tags. PLS is deter- mined by multiplying the percent of pure seed with the percent of germination; i.e.,

(PLS = % germination x % purity)

EXAMPLE:

Common Bermuda seed 70% germination, 80% purity

PLS = 70% germination x 80% purity PLS = 56%

The percent of PLS helps you determine the amount of seed you need. If the seeding rate is 10 pounds PLS and the bulk seed is 56 % PLS, the bulk seeding rate is:

10 lbs. PLS/acre = 17.9 lbs/acre

56% PLS

You would need to plant 17.9 lbs/acre to provide 10 lbs/acre of pure live seed.

Seedbed Preparation

Seedbed preparation may not be required where hydraulic seeding and fertilizing equip- ment is to be used (but is strongly recommended for any seeding process, when possible). When conventional seeding is to be used, seedbed preparation will be done as follows:

Broadcast plantings

Tillage, at a minimum, shall adequatelyvloosen the soil to a depth of 4 to 6 inches; alleviate compaction; incorporate lime and fertilizer; smooth and firm the soil; allow for the proper placement of seed, sprigs, or plants; and allow for the anchoring of straw or hay mulch if a disk is to be used.

Tillage may be done with any suitable equipment.

Tillage should be done on the contour where feasible. On slopes too steep for the safe operation of tillage equipment, the soil surface shall be pitted or trenched across the slope with appropriate hand tools to provide two places 6 to 8 inches apart in which seed may lodge and germinate. Hydraulic seeding may also be used.

Individual Plants

Where individual plants are to be set, the soil shall be prepared by excavating holes, opening furrows, or dibble planting.

For nursery stock plants, holes shall be large enough to accommodate roots without crowding.

Where pine seedlings are to be planted, subsoil under the row 36 inches deep on the contour four to six months prior to planting. Subsoiling should be done when the soil is dry, preferably in August or September.

Innoculants

All legume seed shall be inoculated with ap- propriate nitrogen-fixing bacteria. The innoculant shall be a pure culture prepared specifically for the seed species and used within the dates on the container.

A mixing medium recommended by the manu- facturer shall be used to bond the innoculant to the seed. For conventional seeding, use twice the amount of innoculant recommended by the manufacturer. For hydraulic seeding, four times the amount of innoculant recommended by the manufacturer shall be used.

All inoculated seed shall be protected from the sun and high temperatures and shall be planted the same day inoculated. No inoculated seed shall remain in the hydroseeder longer than one hour.

Planting

Hydraulic Seeding

Mix the seed (innoculated if needed), fertilizer, and wood cellulose or wood pulp fiber mulch with water and apply in a slurry uniformly over the area to be treated. Apply within one hour after the mixture is made.

Conventional Seeding

Seeding will be done on a freshly prepared and firmed seedbed. For broadcast planting, use a culti-packer-seeder, drill, rotary seeder, other mechanical seeder, or hand seeding to distribute the seed uniformly over the area to be treated. Cover the seed lightly with 1/8 to 1/4 inch of soil for small seed and 1/2 to 1 inch for large seed when using a cultipacker or other suitable equipment.

No-Till Seeding

No-till seeding is permissible into annual cover crops when planting is done following maturity of the cover crop or if the temporary cover stand is sparse enough to allow adequate growth of the permanent (perennial) species. No till seeding shall be done with appropriate no till seeding equipment. The seed must be uniformly distrib- uted and planted at the proper depth.

Individual Plants

Shrubs, vines and sprigs may be planted with appropriate planters or hand tools. Pine trees shall be planted manually in the subsoil furrow. Each plant shall be set in a manner that will avoid crowding the roots. Nursery stock plants shall be planted at the same depth or slightly deeper than they grew at the nursery. The tips of vines and sprigs must be at or slightly above the ground surface.

Where individual holes are dug, fertilizer shall be placed in the bottom of the hole, two inches of soil shall be added and the plant shall be set in the hole.

Mulching

Mulch is required for all permanent vegeta- tion applications. Mulch applied to seeded areas shall achieve 75% to 100% soil cover. When selecting a mulch, design professionals should consider the mulch's functional longevity, vegetation establishment enhancement, and erosion control effectiveness. Select the mulching mate- rial from the following and apply as indicated:

Dry straw or dry hay of good quality and free of weed seeds can be used. Dry straw shall be applied at the rate of 2 tons per acre. Dry hay shall be applied at a rate of 2 1/2 tons per acre.

Wood cellulose mulch or wood pulp fiber shall be used with hydraulic seeding. It shall be applied at the rate of 500 pounds per acre. Dry straw or dry hay shall be applied (at the rate indicated above) after hydraulic seeding.

One thousand pounds of wood cellulose or wood pulp fiber, which includes a tackifier, shall be used with hydraulic seeding on slopes 3/4:1 or steeper.

Sericea Lespedeza hay containing mature seed shall be applied at a rate of three tons per acre.

Pine straw or pine bark shall be applied at a thickness of 3 inches for bedding purposes. Other suitable materials in sufficient quantity may be used where ornamentals or other ground covers are planted. This is not appropriate for seeded areas.

When using temporary erosion control blankets or block sod, mulch is not required.

Bituminous treated roving may be applied on planted areas, slopes, in ditches or dry waterways to prevent erosion. Bituminous treated roving shall be applied within 24 hours after an area has been planted. Application rates and materials must meet Georgia Department of Transportation specifications. Wood cellulose and wood pulp fibers shall not contain germination or growth inhibiting factors. They shall be evenly dispersed when agitated in water. The fibers shall contain a dye to allow visual metering and aid in uniform application during seeding.

Applying Mulch

Straw or hay mulch will be spread uniformly within 24 hours after seeding and/or planting. The mulch may be spread by blower-type spreading equipment, other spreading equipment or by hand. Mulch shall be applied to cover 75% of the soil surface. Wood cellulose or wood fiber mulch shall be applied uniformly with hydraulic seeding equipment.

Anchoring Mulch

Anchor straw or hay mulch immediately after application by one of the following methods:

Hay and straw mulch shall be pressed into the soil immediately after the mulch is spread. A special “packer disk'” or disk harrow with the disks set straight may be used. The disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch shall not be plowed into the soil.

Synthetic tackifiers, binders or hydraulic mulch specifically designed to tack straw, shall be applied in conjunction with or immediately after the mulch is spread. Syn- thetic tackifiers shall be mixed and applied according to manufacturer's specifications. All tackifiers, binders or hydraulic mulch specifically designed to tack straw should be verified nontoxic through EPA 2021.0 testing. Refer to Tackifiers-Tac

Rye or wheat can be included with Fall and Winter plantings to stabilize the mulch. They shall be applied at a rate of one-quarter to one-half bushel per acre.

Plastic mesh or netting with mesh no larger than one inch by one inch may be needed to anchor straw or hay mulch on unstable soils and concentrated flow areas. These materials shall be installed and anchored according to manufacturer's specifications.

Bedding Material

Mulch is used as a bedding material to conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.

Material Depth

Grain straw	4” to 6”
Grass Hay	4” to 6”
Pine needles	3” to 5”
Wood waste	4” to 6”

Irrigation

Irrigation will be applied at a rate that will not cause runoff.

Topdressing

Topdressing will be applied on all temporary and permanent (perennial) species planted alone or in mixtures with other species. Recommended rates of application are listed in Table 6-5.1.

Second Year and Maintenance Fertilization

Second year fertilizer rates and maintenance fertilizer rates are listed in Table 6-5.1.

Lime Maintenance Application

Apply one ton of agricultural lime every 4 to 6 years or as indicated by soil tests. Soil tests can be conducted to determine more accurate requirements, if desired.

Use and Management

Mow Sericea Lespedeza only after frost to ensure that the seeds are mature. Mow between November and March.Bermudagrass, Bahiagrass and Tall Fescue may be mowed as desired. Maintain at least 6 inches of top growth under any use and management. Moderate use of top growth is beneficial after es- tablishment. Exclude traffic until the plants are well established. Because of the quail nesting season, mowing should not take place between May and September.

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

VEGETATIVE MEASURES 2

DRAWING NUMBER

1-C-36
OF
214

3 **24- HOUR CONTACT**
CITY OF JEFFERSON
147 ATHENS ST
JEFFERSON, GEORGIA 30549
706-367-5121
TCrumley@cityofjeffersonga.com

4 **PRIMARY PERMITEE**
TYLER CRUMLEY
CITY OF JEFFERSON
147 ATHENS ST
JEFFERSON, GEORGIA 30549
706-367-5121

5 **OVERALL SITE AREA: 12 ACRES**
TOTAL DISTURBED AREA: 6.20 ACRES

6 **1. GPS LOCATION BEGINNING N034.094825, W083.382074**

8 **THE PROPOSED PROJECT IS I-85 1.0MGD WATER RECLAMATION FACILITY CONSISTING OF MODIFICATIONS TO THE INFLUENT SEWER, EXISTING RAW SEWAGE PUMP STATION, RAW SEWAGE FORCE MAIN, HEADWORKS STRUCTURE, AERATION BASIN, SPLITTER BIX, FINAL CLARIFIERS, TERTIARY FILTERS, UV DISINFECTION, CASCADE AERATOR, PARSHALL FLUME STRUCTURE, OUTFALL SEWER, RETURN SLUDGE PUMP STATION, BLOWER EQUIPMENT PAD, SCREW PRESS BUILDING, PLANT PUMP STATION, BULK CHEMICAL STORAGE STRUCTURE, CONTROL BUILDINGS AND ELECTRICAL BUILDINGS.**

10 **THE PRJECT RECEIVING WATERS IS OPOSSUM CREEK, A TRIBUTARY OF MIDDLE OCONEE RIVER**

11 **CERTIFICATION STATEMENTS:**

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATION DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION.

12 **"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORMWATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR100002."**

13 **"I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF :(A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGEMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO. GAR 1000002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER.**

14 **THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMPS, AND SEDIMENT BASINS WITHIN 7 DAYS AFTER INSTALLATION.**

15 **NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHI THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.**

16 **NO BUFFER ENCROACHMENT PROPOSED ON THIS PROJECT.**

17 **AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.**

18 **WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATER OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.**

19 **THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURE AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.**

20 **EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.**

21 **ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 7 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.**

22 **(A) PROJECT SITE IS NOT LOCATED WITHING 1 LINEAR MILE OF AN IMPAIRED STREAM SEGMENT**

23 **PROJECT DOES NOT HAVE AN APPROVED TMDL PLAN.**

CTW 24 **CTW - WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.**

25 **SOIL AND PETROLEUM CLEANUP AND CONTROL PRACTICES**

1. LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.

2. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEAN WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT TO BROOMS, DUSTPANS, MAPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.

3. SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.

4. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATIONS.

5. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER). THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOUR AT 1(800)4262675.

6. FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATION CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-426-2675.

7. FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.

8. FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSION WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OF IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

26 **ALL POLLUTANTS THAT OCCUR AFTER CONSTRUCTION IS CONCLUDED WILL BE CONTROLLED BY PERMANENT VEGETATIVE MEASURES (DS3) AS SHOWN ON PLANS.**

27 **ALL WEATHER SENSITIVE MATERIALS WILL BE COVERED BY TARP ON BUILDING SITE.**

28 **ALL POLLUTANTS THAT OCCUR DURING STORM WATER DISCHARGES WILL BE CONTROLLED BY BMPS LOCATED ON THE PROJECT PLANS.**

29 **ACTIVITY SCHEDULE:**

CONSTRUCTION SCHEDULE

CONSTRUCTION ACTIVITY	2022 JULY	AUG	SEPT	OCT	NOV	DEC	2023 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES																	
INSTALLATION OF SITE IMPROVEMENTS																	
MAINTAIN EROSION AND SEDIMENT CONTROL MEASURES FOR ENTIRE PROJECT																	
FINAL GRASSING																	

30 **INSPECTIONS.**

a. PERMITTEE REQUIREMENTS.

(1). EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (A) ALL AREAS AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND (B) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.

(2). MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.

(3). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY FOURTEEN (14) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION;

30 **AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.A.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.**

(4). CERTIFIED PERSONNEL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.E., UNTIL A NOTICE OF TERMINATION IS SUBMITTED TO EPD) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).

(5). BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.

(6). A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.A.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION SITE THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A STATEMENT THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2. OF THIS PERMIT.

31 **E. REPORTING.**

1.THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORMWATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2.ALL SAMPLING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:

a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;

b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLINGAND MEASUREMENTS;

c. THE DATE(S) ANALYSES WERE PERFORMED;

d. THE TIME(S) ANALYSES WERE INITIATED;

e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;

f. REFERENCES AND WRITTEN PROCEDURES, WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;

g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;

h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND

i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

3.ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

j.

36 **CLEAR AND GRUB TO LIMITS OF DISTURBANCE.**

49 **SEDIMENT STORAGE FOR INITIAL DISTURBANCE SHALL BE AS FOLLOWS:**
INTIAL EROSION PLAN

6.2 ACRES DISTURBED AREA SEGMENT REQUIRING 67 CY OF SEDIMENT STORAGE = 415.4 CY REQUIRED OR 11208 CUFT
SEDIMENT STORAGE PROVIDED BY PROPOSED SD4-C WITH A TOTAL VOLUME OF 10508 CUFT
(3,625) X 3 FT X 1 FT/27 C.Y. = 402 CY SEDIMENT STORAGE PROVIDED BY SILT FENCE

32 **RETENTION OF RECORDS.**

1.THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI:

a. A COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD;
b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT;
c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5. OF THIS PERMIT;
d. A COPY OF ALL SAMPLING INFORMATION, RESULTS, AND REPORTS REQUIRED BY THIS PERMIT;
e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.A. OF THIS PERMIT;
f. A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART 111.D.2. OF THIS PERMIT AND
g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.A.(2). OF THIS PERMIT.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION , INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOT IS SUBMITTED IN ACCORDANCE WITH PART VI. OF THIS PERMIT. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

HAZARDOUS WASTES

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT, WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED, WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS'S) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS SHEETS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITH THIS ESPCP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIALS OR HAZARDOUS WASTES WILL BE ALLOWED TO COME IN CONTACT WITH STORMWATER DISCHARGES, IF SUCH CONTACT OCCURS, THE STORMWATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORMWATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

SANITARY WASTES

A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FROM EVERY TEN (10) WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS.

ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTING TO STORM WATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED, SUCH AS GRAVEL BAGS OR SPECIALLY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASE, TO PREVENT WASTES FROM CONTRIBUTING TO STORM WATER DISCHARGES. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED ON THE EROSION CONTROL PLAN GRADING PHASE. BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED.

Nephelometric Turbidity Unit (NTU)
Tables
APPENDIX B
Warm Water
(Supporting Warm Water Fisheries)
Surface Water Drainage Area
(Square Miles)

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Site Size (Acres)	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	50	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

49 **INTERMEDIATE EROSION CONTROL IS PROVIDED BY AN SD3 AS SHOWN WITH CALCULATION PROVIDED ON SHEET 1-C-40**

FINAL EROSION CONTROL AND STABILIZATION IS PROVIDED BY A RETROFIT DETENTION POND AND DS3 MEASURES AS SHOWN ON THE FINAL EROSION CONTROL SHEET.

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

NPDES NOTES 1

DRAWING NUMBER

1-C-37
OF
214

PART V. STANDARD PERMIT CONDITIONS

A. DUTY TO COMPLY.

1. EACH PERMITTEE MUST COMPLY WITH ALL APPLICABLE CONDITIONS OF THIS PERMIT. ANY PERMIT NONCOMPLIANCE CONSTITUTES A VIOLATION OF THE GEORGIA WATER QUALITY CONTROL ACT (O.C.G.A. §§12-5-20, ET SEQ.) AND IS GROUNDS FOR ENFORCEMENT ACTION; FOR PERMIT TERMINATION; OR FOR DENIAL OF A PERMIT RENEWAL APPLICATION. FAILURE OF A PRIMARY PERMITTEE TO COMPLY WITH ANY APPLICABLE TERM OR CONDITION OF THIS PERMIT SHALL NOT RELIEVE ANY OTHER PRIMARY PERMITTEE FROM COMPLIANCE WITH THEIR APPLICABLE TERMS AND CONDITIONS OF THIS PERMIT.

2. EACH PERMITTEE MUST DOCUMENT IN THEIR RECORDS ANY AND ALL KNOWN VIOLATIONS OF THIS PERMIT AT HIS/HER SITE WITHIN SEVEN (7) DAYS OF HIS/HER KNOWLEDGE OF THE VIOLATION. A SUMMARY OF THESE VIOLATIONS MUST BE SUBMITTED TO EPD BY THE PERMITTEE AT THE ADDRESSES SHOWN IN PART II.C. WITHIN FOURTEEN (14) DAYS OF HIS/HER DISCOVERY OF THE VIOLATION.

3. PENALTIES FOR VIOLATIONS OF PERMIT CONDITIONS. THE FEDERAL CLEAN WATER ACT AND THE GEORGIA WATER QUALITY CONTROL ACT (O.C.G.A. §§12-5-20, ET SEQ.) PROVIDE THAT ANY PERSON WHO FALSIFIES, TAMPERS WITH, OR KNOWINGLY RENDERS INACCURATE ANY MONITORING DEVICE OR METHOD REQUIRED TO BE MAINTAINED UNDER THIS PERMIT, MAKES ANY FALSE STATEMENT, REPRESENTATION, OR CERTIFICATION IN ANY RECORD OR OTHER DOCUMENT SUBMITTED OR REQUIRED TO BE MAINTAINED UNDER THIS PERMIT, INCLUDING MONITORING REPORTS OR REPORTS OF COMPLIANCE OR NONCOMPLIANCE SHALL, UPON CONVICTION BE PUNISHED BY A FINE OR BY IMPRISONMENT, OR BY BOTH. THE FEDERAL CLEAN WATER ACT AND THE GEORGIA WATER QUALITY CONTROL ACT ALSO PROVIDE PROCEDURES FOR IMPOSING CIVIL PENALTIES WHICH MAY BE LEVIED FOR VIOLATIONS OF THE ACTS, ANY PERMIT CONDITION OR LIMITATION ESTABLISHED PURSUANT

TO THE ACTS, OR NEGLIGENTLY OR INTENTIONALLY FAILING OR REFUSING TO COMPLY WITH ANY FINAL OR EMERGENCY ORDER OF THE DIRECTOR.

B. CONTINUATION OF THE EXPIRED GENERAL PERMIT. THIS PERMIT EXPIRES ON THE DATE SHOWN ON THE COVER PAGE OF THIS PERMIT. HOWEVER, AN EXPIRED GENERAL PERMIT CONTINUES IN FORCE AND EFFECT UNTIL A NEW GENERAL PERMIT IS ISSUED, FINAL AND EFFECTIVE.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE. IT SHALL NOT BE A DEFENSE FOR THE PERMITTEE IN AN ENFORCEMENT ACTION THAT IT WOULD HAVE BEEN NECESSARY TO HALT OR REDUCE THE PERMITTED ACTIVITY IN ORDER TO MAINTAIN COMPLIANCE WITH THE CONDITIONS OF THIS PERMIT.

D. DUTY TO MITIGATE. THE PERMITTEE SHALL TAKE ALL REASONABLE STEPS TO MINIMIZE OR PREVENT ANY DISCHARGE IN VIOLATION OF THIS PERMIT WHICH HAS A REASONABLE LIKELIHOOD OF ADVERSELY AFFECTING HUMAN HEALTH OR THE ENVIRONMENT.

E. DUTY TO PROVIDE INFORMATION. THE PERMITTEE SHALL FURNISH TO THE DIRECTOR; A STATE AGENCY APPROVING SOIL EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, GRADING PLANS, OR STORMWATER MANAGEMENT PLANS; OR IN THE CASE OF A STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY WHICH DISCHARGES THROUGH A MUNICIPAL SEPARATE STORM SEWER SYSTEM WITH AN NPDES PERMIT, TO THE LOCAL GOVERNMENT OPERATING THE MUNICIPAL SEPARATE STORM SEWER SYSTEM, ANY INFORMATION WHICH IS REQUESTED TO DETERMINE COMPLIANCE WITH THIS PERMIT. IN THE CASE OF INFORMATION SUBMITTED TO THE EPD SUCH INFORMATION SHALL BE CONSIDERED PUBLIC INFORMATION AND AVAILABLE UNDER THE GEORGIA OPEN RECORDS ACT.

F. OTHER INFORMATION. WHEN THE PERMITTEE BECOMES AWARE THAT HE/SHE FAILED TO SUBMIT ANY RELEVANT FACTS OR SUBMITTED INCORRECT INFORMATION IN THE NOTICE OF INTENT OR IN ANY OTHER REPORT REQUIRED TO BE SUBMITTED TO THE EPD, THE PERMITTEE SHALL PROMPTLY SUBMIT SUCH FACTS OR INFORMATION.

G. SIGNATORY REQUIREMENTS. ALL NOTICES OF INTENT, NOTICE OF TERMINATIONS, INSPECTION REPORTS, SAMPLING REPORTS, OR OTHER REPORTS REQUESTED BY THE EPD SHALL BE SIGNED AS FOLLOWS:

1. ALL NOTICES OF INTENT AND NOTICES OF TERMINATION SHALL BE SIGNED AS FOLLOWS:

a. FOR A CORPORATION: BY A RESPONSIBLE CORPORATE OFFICER. FOR THE PURPOSE OF THIS PERMIT, A RESPONSIBLE CORPORATE OFFICER MEANS: (1) A PRESIDENT, SECRETARY, TREASURER, OR VICE-PRESIDENT OF THE CORPORATION IN CHARGE OF A PRINCIPAL BUSINESS FUNCTION, OR ANY OTHER PERSON WHO PERFORMS SIMILAR POLICY- OR DECISION-MAKING FUNCTIONS FOR THE CORPORATION; OR (2) THE MANAGER OF ONE OR MORE MANUFACTURING, PRODUCTION OR OPERATING FACILITIES PROVIDED THE MANAGER IS AUTHORIZED TO MAKE MANAGEMENT DECISIONS WHICH GOVERN THE OPERATION OF THE REGULATED FACILITY INCLUDING HAVING THE EXPLICIT OR IMPLICIT DUTY OF MAKING MAJOR CAPITAL INVESTMENT RECOMMENDATIONS, AND INITIATING AND DIRECTING OTHER COMPREHENSIVE MEASURES TO ASSURE LONG TERM ENVIRONMENTAL COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS; THE MANAGER CAN ENSURE THE NECESSARY SYSTEMS ARE ESTABLISHED OR ACTIONS TAKEN TO GATHER COMPLETE AND ACCURATE INFORMATION FOR PERMIT APPLICATION REQUIREMENTS; AND WHERE

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AUTHORITY TO SIGN DOCUMENTS HAS BEEN ASSIGNED OR DELEGATED TO THE MANAGER IN ACCORDANCE WITH CORPORATE PROCEDURES;

b. FOR A PARTNERSHIP OR SOLE PROPRIETORSHIP: BY A GENERAL PARTNER OR THE PROPRIETOR, RESPECTIVELY; OR

c. FOR A MUNICIPALITY, STATE, FEDERAL, OR OTHER PUBLIC FACILITY: BY EITHER A PRINCIPAL EXECUTIVE OFFICER OR RANKING ELECTED OFFICIAL; AND

d. CHANGES TO AUTHORIZATION. IF AN AUTHORIZATION UNDER PART II.B. IS NO LONGER ACCURATE, A MODIFICATION NOI SATISFYING THE REQUIREMENTS OF PART II.B. MUST BE SUBMITTED TO THE EPD PRIOR TO OR TOGETHER WITH ANY INSPECTION REPORTS, SAMPLING REPORTS, OR OTHER REPORTS REQUESTED BY THE EPD TO BE SIGNED BY A PERSON DESCRIBED ABOVE OR BY A DULY AUTHORIZED REPRESENTATIVE OF THAT PERSON.

2. ALL INSPECTION REPORTS, SAMPLING REPORTS, OR OTHER REPORTS REQUESTED BY THE EPD SHALL BE SIGNED BY A PERSON DESCRIBED ABOVE OR BY A DULY AUTHORIZED REPRESENTATIVE OF THAT PERSON. A PERSON IS A DULY AUTHORIZED REPRESENTATIVE ONLY IF:

a. THE AUTHORIZATION IS MADE IN WRITING BY A PERSON(S) DESCRIBED ABOVE AND SUBMITTED TO THE EPD;

b. THE AUTHORIZATION SPECIFIES EITHER AN INDIVIDUAL OR A POSITION HAVING RESPONSIBILITY FOR SPECIFIED OPERATION(S) OF THE REGULATED FACILITY OR ACTIVITY, SUCH AS THE POSITION OF MANAGER, OPERATOR, SUPERINTENDENT, OR POSITION OF EQUIVALENT RESPONSIBILITY OR AN INDIVIDUAL OR POSITION HAVING OVERALL RESPONSIBILITY FOR ENVIRONMENTAL MATTERS FOR THE COMPANY. (A DULY AUTHORIZED REPRESENTATIVE MAY BE EITHER A NAMED INDIVIDUAL OR ANY INDIVIDUAL OCCUPYING A NAMED POSITION); AND

c. *CERTIFICATION.* REPORTS DELINEATED IN PART V.G.2. SHALL BE SIGNED BY THE PERMITTEE OR DULY AUTHORIZED REPRESENTATIVE AND SHALL MAKE THE FOLLOWING CERTIFICATION:

> "I CERTIFY UNDER PENALTY OF LAW THAT THIS REPORT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT CERTIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

H. OIL AND HAZARDOUS SUBSTANCE LIABILITY. NOTHING IN THIS PERMIT SHALL BE CONSTRUED TO PRECLUDE THE INSTITUTION OF ANY LEGAL ACTION OR RELIEVE THE PERMITTEE FROM ANY RESPONSIBILITIES, LIABILITIES, OR PENALTIES TO WHICH THE PERMITTEE IS OR MAY BE SUBJECT UNDER THE GEORGIA HAZARDOUS WASTE MANAGEMENT ACT, O.C.G.A. § 12-8-60, ET SEQ. OR UNDER CHAPTER 14 OF TITLE 12 OF THE

ENVIRONMENTAL PROTECTION DIVISION

OFFICIAL CODE OF GEORGIA ANNOTATED; NOR IS THE OPERATOR RELIEVED FROM ANY RESPONSIBILITIES, LIABILITIES OR PENALTIES TO WHICH THE PERMITTEE IS OR MAY BE SUBJECT UNDER SECTION 311 OF THE CLEAN WATER ACT OR SECTION 106 OF COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT.

I. PROPERTY RIGHTS. THE ISSUANCE OF THIS PERMIT DOES NOT CONVEY ANY PROPERTY RIGHTS OF ANY SORT, NOR ANY EXCLUSIVE PRIVILEGES, NOR DOES IT AUTHORIZE ANY INJURY TO PRIVATE PROPERTY NOR ANY INVASION OF PERSONAL RIGHTS, NOR ANY INFRINGEMENT OF FEDERAL, STATE OR LOCAL LAWS OR REGULATIONS.

J. SEVERABILITY. THE PROVISIONS OF THIS PERMIT ARE SEVERABLE, AND IF ANY PROVISION OF THIS PERMIT, OR THE APPLICATION OF ANY PROVISION OF THIS PERMIT TO ANY CIRCUMSTANCE, IS HELD INVALID, THE APPLICATION OF SUCH PROVISION TO OTHER CIRCUMSTANCES, AND THE REMAINDER OF THIS PERMIT SHALL NOT BE AFFECTED THEREBY.

K. OTHER APPLICABLE ENVIRONMENTAL REGULATIONS AND LAWS. NOTHING IN THIS PERMIT SHALL BE CONSTRUED TO PRECLUDE THE INSTITUTION OF ANY LEGAL ACTION OR RELIEVE THE PERMITTEE FROM ANY RESPONSIBILITIES, LIABILITIES, OR PENALTIES ESTABLISHED PURSUANT TO ANY APPLICABLE STATE LAW OR REGULATION UNDER AUTHORITY PRESERVED BY SECTION 510 OF THE CLEAN WATER ACT. NOTHING IN THIS PERMIT, UNLESS EXPLICITLY STATED, EXEMPTS THE PERMITTEE FROM COMPLIANCE WITH OTHER APPLICABLE LOCAL, STATE AND FEDERAL ORDINANCES, RULES, REGULATIONS, AND LAWS. FURTHERMORE, IT IS NOT A DEFENSE TO COMPLIANCE WITH THIS PERMIT THAT A LOCAL GOVERNMENT AUTHORITY HAS APPROVED THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN OR FAILED TO TAKE ENFORCEMENT ACTION AGAINST THE PERMITTEE FOR VIOLATIONS OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, OR OTHER PROVISIONS OF THIS PERMIT.

NO CONDITION OF THIS PERMIT SHALL RELEASE THE PERMITTEE FROM ANY RESPONSIBILITY OR REQUIREMENTS UNDER OTHER ENVIRONMENTAL STATUTES OR REGULATIONS.

L. PROPER OPERATION AND MAINTENANCE. THE PERMITTEE SHALL AT ALL TIMES PROPERLY OPERATE AND MAINTAIN ALL FACILITIES AND SYSTEMS OF TREATMENT AND CONTROL (AND RELATED APPURTENANCES) WHICH ARE INSTALLED OR USED BY THE PERMITTEE TO ACHIEVE COMPLIANCE WITH THE CONDITIONS OF THIS PERMIT AND WITH THE REQUIRED PLANS. PROPER OPERATION AND MAINTENANCE ALSO INCLUDES ADEQUATE LABORATORY CONTROLS AND APPROPRIATE QUALITY ASSURANCE PROCEDURES. PROPER OPERATION AND MAINTENANCE REQUIRES THE OPERATION OF BACKUP OR AUXILIARY FACILITIES OR SIMILAR SYSTEMS, INSTALLED BY A PERMITTEE ONLY WHEN NECESSARY TO ACHIEVE COMPLIANCE WITH THE CONDITIONS OF THE PERMIT.

M. INSPECTION AND ENTRY. THE PERMITTEE SHALL ALLOW THE DIRECTOR OR AN AUTHORIZED REPRESENTATIVE OF EPA OR EPD OR, IN THE CASE OF A CONSTRUCTION SITE WHICH DISCHARGES THROUGH A MUNICIPAL SEPARATE STORM SEWER SYSTEM WITH AN NPDES PERMIT, AN AUTHORIZED REPRESENTATIVE OF THE MUNICIPAL OPERATOR OF THE SEPARATE STORM SEWER SYSTEM RECEIVING THE DISCHARGE, UPON THE PRESENTATION OF CREDENTIALS AND OTHER DOCUMENTS AS MAY BE REQUIRED BY LAW, TO:

1. ENTER UPON THE PERMITTEE'S PREMISES WHERE A REGULATED FACILITY OR ACTIVITY IS LOCATED OR CONDUCTED OR WHERE RECORDS MUST BE KEPT UNDER THE CONDITIONS OF THIS PERMIT;

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2. HAVE ACCESS TO AND COPY AT REASONABLE TIMES, ANY RECORDS THAT MUST BE KEPT UNDER THE CONDITIONS OF THIS PERMIT; AND
3. INSPECT AT REASONABLE TIMES ANY FACILITIES OR EQUIPMENT (INCLUDING MONITORING AND CONTROL EQUIPMENT).

33

N. PERMIT ACTIONS. THIS PERMIT MAY BE REVOKED AND REISSUED, OR TERMINATED FOR CAUSE INCLUDING BUT NOT LIMITED TO CHANGES IN THE LAW OR REGULATIONS. THE FILING OF A REQUEST BY THE PERMITTEE FOR TERMINATION OF THE PERMIT, OR A NOTIFICATION OF PLANNED CHANGES OR ANTICIPATED NONCOMPLIANCE, DOES NOT STAY ANY PERMIT CONDITION.

SAMPLING REQUIREMENTS. THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. *SAMPLING REQUIREMENTS* SHALL INCLUDE THE FOLLOWING:

(1). A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE INFRASTRUCTURE CONSTRUCTION; (A) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORMWATER IS DISCHARGED AND (B) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS FOR EACH REPRESENTATIVE STORMWATER OUTFALL. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORMWATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2). A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3). WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX B. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4). ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

a. *SAMPLE TYPE.* ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED), THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

(1). SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.

(2). SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.

(3). LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.

(4). MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.

(5). SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

b. *SAMPLING POINTS*.

(1). FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR ALL OUTFALLS INTO SUCH STREAMS AND OTHER WATER BODIES, OR A COMBINATION THEREOF. HOWEVER, PROVIDED FOR IN AND IN ACCORDANCE WITH PART IV.D.6.C.(2). OF THIS PERMIT, PRIMARY PERMITTEES ON AN INFRASTRUCTURE CONSTRUCTION PROJECT MAY SAMPLE THE REPRESENTATIVE PERENNIAL AND INTERMITTENT STREAMS, OTHER WATER BODIES OR OUTFALLS, OR A COMBINATION THEREOF. SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORMWATER OUTFALLS USING THE FOLLOWING MINIMUM GUIDELINES:

(A). THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORMWATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

(B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORMWATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

(C). IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORMWATER OUTFALL CHANNEL(S).

(D). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORMWATER CHANNEL.

(E). THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

(F). THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

(G). PERMITTEES DO NOT HAVE TO SAMPLE SHEET FLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL OR SILVICULTURAL PURPOSES, FINAL STABILIZATION MAY BE ACCOMPLISHED BY STABILIZING THE DISTURBED LAND FOR ITS AGRICULTURAL OR SILVICULTURAL USE.

(H). ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING, AND

FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORMWATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

(2). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, THE PERMITTEE IS NOT REQUIRED TO SAMPLE A PERENNIAL OR INTERMITTENT STREAM OR OTHER WATER BODIES (OR THE ASSOCIATED OUTFALL, IF APPLICABLE) IF THE DESIGN PROFESSIONAL PREPARING THE PLAN CERTIFIES THAT AN INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED RECEIVING WATER TO BE SAMPLED WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN- SAMPLED RECEIVING WATER. A WRITTEN JUSTIFICATION AND DETAILED ANALYSIS SHALL BE PREPARED BY THE DESIGN PROFESSIONAL JUSTIFYING SUCH PROPOSED SAMPLING. A SUMMARY CHART OF THE JUSTIFICATION AND ANALYSIS FOR THE REPRESENTATIVE SAMPLING MUST BE INCLUDED ON THE PLAN. THE JUSTIFICATION AND ANALYSIS SHALL INCLUDE THE LOCATION AND DESCRIPTION OF THE SPECIFIED SAMPLED AND UN-SAMPLED RECEIVING WATER AND SHALL CONTAIN A DETAILED COMPARISON AND DISCUSSION OF EACH SUCH RECEIVING WATER IN THE FOLLOWING AREAS:

(A). SITE LAND DISTURBANCES AND CHARACTERISTICS;

(B). RECEIVING WATER WATERSHED SIZES AND CHARACTERISTICS; AND

(C). SITE AND WATERSHED RUNOFF CHARACTERISTICS UTILIZING THE METHODS IN APPENDIX A-1 (UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE'S TR-55, URBAN HYDROLOGY FOR SMALL WATERSHEDS) OF THE MOST RECENT VERSION OF THE "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA" FOR THE VARIOUS PRECIPITATION EVENTS AND ANY OTHER SUCH CONSIDERATIONS NECESSARY TO SHOW THAT THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASES IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATERS.

(3). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, WHEN THE PERMITTEE DETERMINES THAT SOME RECEIVING WATER(S) WILL NOT BE SAMPLED DUE TO REPRESENTATIVE SAMPLING, THE DESIGN PROFESSIONAL MAKING THIS DETERMINATION AND PREPARING THE PLAN MUST INCLUDE AND SIGN THE FOLLOWING CERTIFICATION IN THE PLAN:

> "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STEAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGMENT, UTILIZING THE FACTORS REQUIRED IN THE
>
> GENERAL NPDES PERMIT NO. GAR100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER."

(4). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A SELECTED RECEIVING WATER NO LONGER REPRESENTS ANOTHER RECEIVING WATER, THEN THE PERMITTEE SHALL SAMPLE THE LATTER RECEIVING WATER UNTIL SELECTION OF AN ALTERNATIVE REPRESENTATIVE RECEIVING WATER.

(5). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, IF AT ANY TIME DURING THE LIFE OF THE PROJECT A RECEIVING WATER IS DETERMINED NOT TO BE REPRESENTED AS CERTIFIED IN THE PLAN, THE PERMITTEE SHALL SAMPLE THAT RECEIVING WATER UNTIL A NOTICE OF TERMINATION IS SUBMITTED OR UNTIL THE APPLICABLE PHASE IS STABILIZED IN ACCORDANCE WITH THIS PERMIT.

(6). FOR INFRASTRUCTURE CONSTRUCTION PROJECTS, MONITORING OBLIGATIONS SHALL CEASE FOR ANY PHASE OF THE PROJECT THAT HAS BEEN STABILIZED IN ACCORDANCE WITH PART IV.D.6.C.(1).(G).

c. SAMPLING FREQUENCY.

(1). THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORMWATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.

(2). HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORMWATER DISCHARGE.

(3). SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

(A). FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION;

(B). IN ADDITION TO (A) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE REPRESENTATIVE SAMPLING LOCATION, WHICHEVER COMES FIRST;

(C). AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

(D). WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.A.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE;

(E). EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (b) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

NO. 27817
ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD
WATER RECLAMATION
FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

NPDES NOTES 2

DRAWING NUMBER

1-C-38
OF
214

GEORGIA
UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

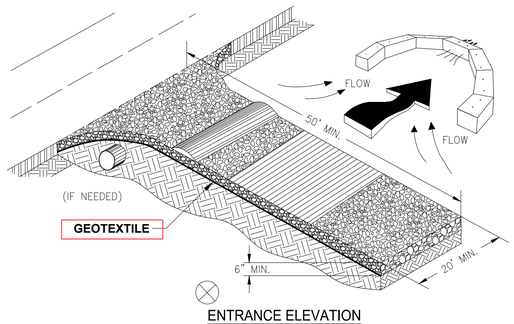
VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS		Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

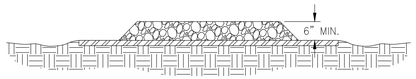
Co

CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM



ENTRANCE ELEVATION

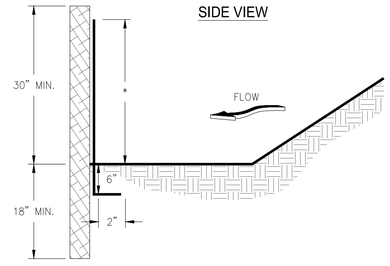


NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD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

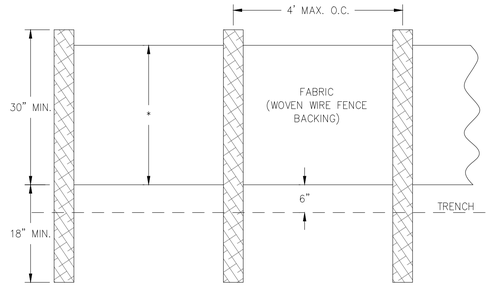
Sd1-S

SILT FENCE - TYPE SENSITIVE

SIDE VIEW



FRONT VIEW

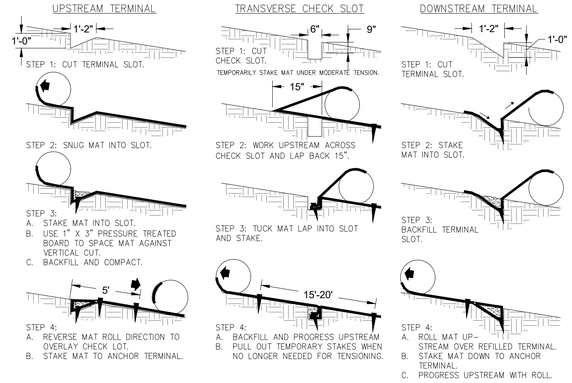


NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

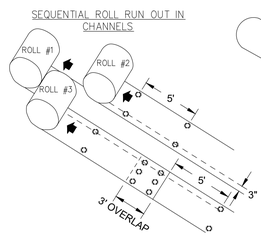
SS

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

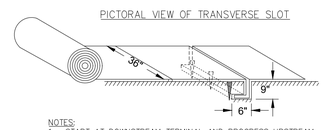
BLANKET AND MATTING CROSS-SECTIONS



SEQUENTIAL ROLL RUN OUT IN CHANNELS



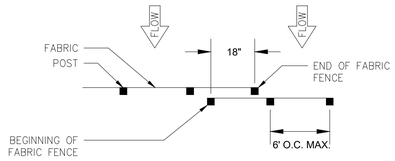
PICTORAL VIEW OF TRANSVERSE SLOT



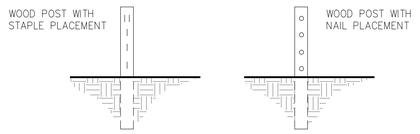
NOTES:
1. START AT DOWNSTREAM TERMINAL AND PROGRESS UPSTREAM.
2. FIRST ROLL IS CENTERED LONGITUDINALLY IN MID-CHANNEL AND PINNED WITH TEMPORARY STAKES TO MAINTAIN ALIGNMENT.
3. SUBSEQUENT ROLLS FOLLOW IN STAGGERED SEQUENCE BEHIND THE FIRST ROLL. USE THE CENTER ROLL FOR ALIGNMENT TO THE CHANNEL CENTER.
4. WORK OUTWARDS FROM THE CHANNEL CENTER TO THE EDGE.
5. USE 3" OVERLAPS AND STAKE AT 5' INTERVALS ALONG THE SEAMS.
6. USE 3' OVERLAPS AND SHINGLE DOWNSTREAM TO CONNECT THE LINING AT THE ROLL ENDS.

FASTENERS FOR SILT FENCES

OVERLAP AT FABRIC ENDS



TOP VEIW - NOT TO SCALE



FRONT VIEWS - NOT TO SCALE

NOTES:
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO PROVIDE A CONTINUOUS FABRIC BARRIER AROUND THE INLET.

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

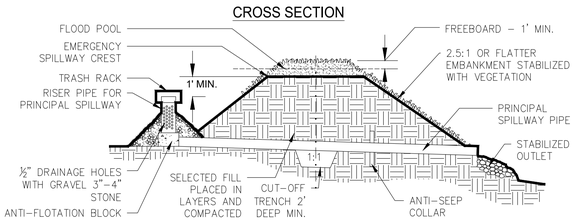
NPDES DETAILS 1

DRAWING NUMBER

1-C-39
OF
214

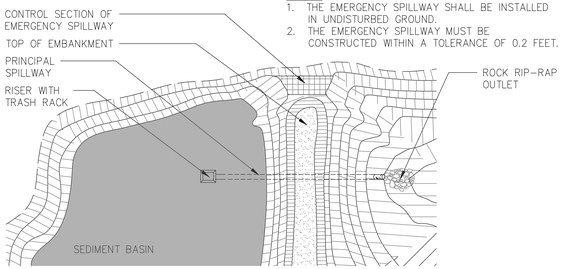
BASIC COMPONENTS OF TEMPORARY SEDIMENT BASIN

CROSS SECTION



FILL HEIGHT	MINIMUM TOP WIDTH
LESS THAN 10 FEET	8.0 FEET
10 FEET TO 15 FEET	10.0 FEET

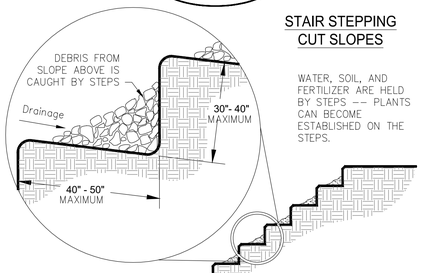
PLAN VIEW



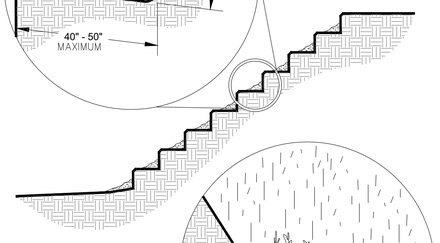
NOTES:
1. THE EMERGENCY SPILLWAY SHALL BE INSTALLED IN UNDISTURBED GROUND.
2. THE EMERGENCY SPILLWAY MUST BE CONSTRUCTED WITHIN A TOLERANCE OF 0.2 FEET.

Su

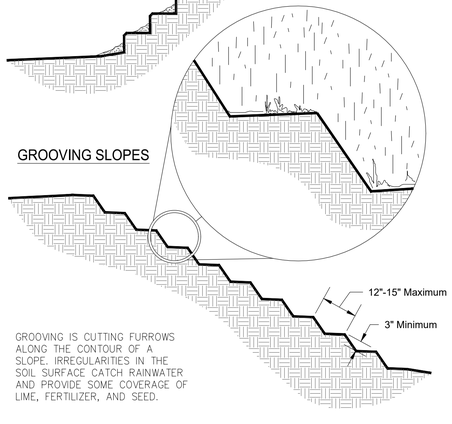
STAIR STEPPING CUT SLOPES



WATER, SOIL, AND FERTILIZER ARE HELD BY STEPS — PLANTS CAN BECOME ESTABLISHED ON THE STEPS.



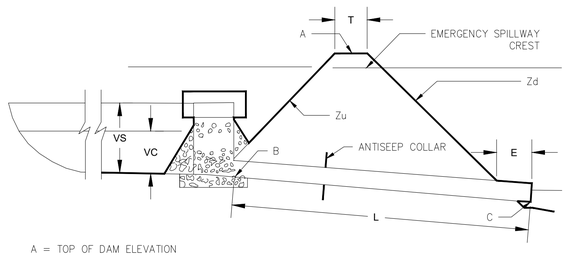
GROOVING SLOPES



GROOVING IS CUTTING FURROWS ALONG THE CONTOUR OF A SLOPE. IRREGULARITIES IN THE SOIL SURFACE CATCH RAINWATER AND PROVIDE SOME COVERAGE OF LIME, FERTILIZER, AND SEED.

SPILLWAYS

PRINCIPLE SPILLWAY DESIGN



A = TOP OF DAM ELEVATION

B = LOWEST ELEVATION OF PIPE AT RISER

C = LOWEST ELEVATION OF PIPE AT OUTLET

E = EXTENDED LENGTH OF PIPE BEYOND TOE OF DAM

L = TOTAL LENGTH OF PIPE, FT.

L = [A – (B + C) /2] [ZU + ZD] + T + E

T = TOP WIDTH OF DAM, FT.

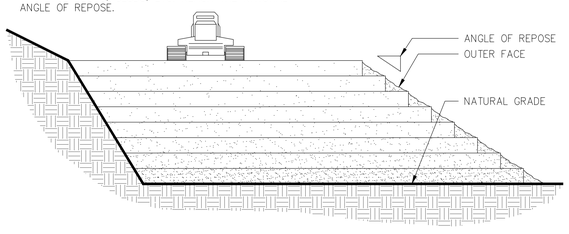
Zu = UPSTREAM SIDE SLOPE

Zd = DOWNSTREAM SIDE SLOPE

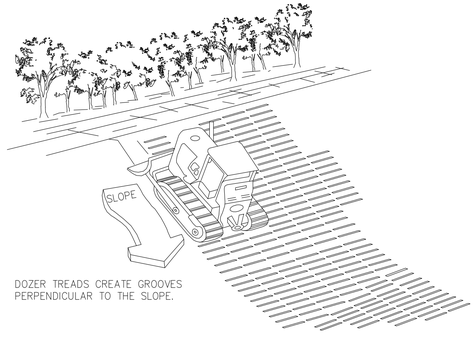
Su

FILL SLOPE TREATMENT

EACH LIFT OF THE FILL IS COMPACTED, BUT THE OUTER FACE OF THE SLOPE IS ALLOWED TO REMAIN LOOSE SO THAT THE ROCKS, CLODS, ETC. REACH THE NATURAL ANGLE OF REPOSE.



TRACKING



DOZER TREADS CREATE GROOVES PERPENDICULAR TO THE SLOPE.

TEMPORARY SEDIMENT BASIN DESIGN SHEET

Computed by CHH Date 5/4/2022
Checked by _____ Date _____

Project Name Jefferson WWTP
Basin No. 1
Total area draining to basin = 9.6 acres
Disturbed area draining to basin = 6.15 acres

Volume

1. Compute minimum required storage volume (V_r).
   V_r = 67 cy/ac * 6.15 acres = 412.05 cy
2. Compute volume of basin at clean-out (V_c).
   V_c = 22 cy/ac * 6.15 acres = 135.3 cy
3. Determine elevation corresponding to minimum required storage volume, V_r.
   Minimum riser crest elevation = 783.3 ft (determined by stage/storage relationship)
4. Determine elevation corresponding to clean-out volume, V_c.
   Clean-out elevation = 782.50 ft (determined by stage/storage relationship)
   Note: Clean-out elevation shall be clearly marked on the riser or marked by a post near the riser.
5. Compute length of riser.
   Riser length = Minimum elevation of riser crest - Lowest elevation of pipe at riser
   Riser length = 783.3 ft - 781.00 ft
   Riser length = 2.3 ft

Stormwater Runoff

6. Compute peak discharge from a 2-yr, 24-hr storm event.
   Q_a = 5.9 cfs (Attach runoff computation sheet.)
7. Compute peak discharge from a 25-yr, 24-hr storm event.
   Q_{25} = 15.83 cfs (Attach runoff computation sheet.)

Surface Area/Configuration Design

8. Compute minimum basin surface area (SA_{min}).
   SA_{min} = 0.01 ac/cfs * Q_a
   SA_{min} = 0.01 ac/cfs * 34 cfs
   SA_{min} = .059 ac = 43560 sf/ac * 0.059 ac = 2570 sf
9. Check available area at elevation of riser crest.
   Available area = 3223 sf (determined by stage/storage relationship)
   Available area SA_{min}? Yes X No _____
10. Compute required length to achieve 2:1 L:W ratio.
    Average width = 46 ft
    Required length = 2 * average width
    Required length = 2 * 92 ft
    Required length = 92 ft
    Available length = 100 ft
    2:1 L:W ratio satisfied? Yes X No _____
    If "no", refer to Figure 6-29.2 for baffle designs. Note any required baffles on E&SC Plan and include calculations and details for baffle(s).

Principal Spillway (ps)

11. Determine maximum principal spillway capacity.
    Q_{max} = Q_p = 5.9 cfs
12. Compute the vertical distance between the centerline of the outlet pipe and the emergency spillway crest (H).
    H = 6 ft
13. Compute the total pipe length of the principal spillway, L, using Figure 6-29.3.
    L = [A - (B+C)/2] [Zu+Zd] + T + E = [_____ - (_____+_____)/2] [_____+_____] + _____ + _____
    L = 60 ft

TEMPORARY SEDIMENT BASIN DESIGN SHEET
Project Name Jefferson WWTP
Page 2

14. Determine diameter of principal spillway (D_{ps}) and flow through the principal spillway (Q) from Table 6-29.1 using H and Q_{max}.
    D_{ps} = 18 in. Q = 15.5 cfs (value directly from table)
15. Compute actual flow through the principal spillway, using Table 6-29.1 to determine the correction factor for pipe length, L.
    Q_{ps} = Q * correction factor = 15.5 cfs * 1
    Q_{ps} = 15.5 cfs
16. Compute riser diameter (D_r).
    D_r = 1.5 * D_{ps}
    D_r = 1.5 * 18 in.
    D_r = 27 in.
    D_r = 36 in.
17. Compute trash rack diameter (D_t).
    D_t = 1.4 * D_r
    D_t = 1.4* 36 in.
    D_t = 50 in.
    D_t = 54 in.
18. Determine the minimum distance between the riser crest and the emergency spillway crest, h, using Table 6-29.2 D_r and Q_{ps}.
    h = 24 ft

Concrete Riser Base Design

19. Determine the volume of concrete per vertical foot of riser height needed, from Table 6-29.3 to prevent flotation.
    Required volume of concrete per vertical foot = 6.18 cf/v.f.
20. Compute total volume of concrete required.
    Total required volume of concrete = Required volume per vertical foot * Riser length
    Total required volume of concrete = 6.18 cf/v.f. * 2.3 ft
    Total volume of concrete required = 14.2 cf
21. Assume base thickness, B (usually 18").
    B = 18 in = 1.5 ft
22. Compute required surface area.
    Required surface area = Total volume required / B
    Required surface area = 14.2 cf / 1.5 ft
    Required surface area = 9.5 sf
23. Compute riser base length (l) and width (w) (assume square base).
    l = w = (required surface area)$^{1/2}$
    l = w = (9.5 sf)$^{1/2}$
    l = w = 3.08 ft = 12in/ft* 3.08 ft = 37 in

Anti-Seep Collar Design

24. Determine if anti-seep collar is required. If yes, to any of the following conditions, a collar is required:
    _____ The settled height of the dam is greater than 15 feet.
    _____ The principal spillway diameter (D_{ps}) is smooth pipe larger than 8".
    _____ The principal spillway diameter (D_{ps}) is corrugated metal pipe larger than 12".
25. Determine size of anti-seep collar required.
    _____ 18-inch projection (for heads (H) less than or equal to 10 feet).
    _____ 24-inch projection (for heads (H) greater than 10 feet).

Emergency Spillway (es)

26. Compute minimum capacity of emergency spillway (Q_{es})
    Q_{es} = Q_a - Q_{ps} = 15.83 cfs - 15.5 cfs
    Q_{es} = 0.33 cfs

TEMPORARY SEDIMENT BASIN DESIGN SHEET
Project Name Jefferson WWTP
Page 3

27. Determine stage (H_s), bottom width (b), velocity (V) and minimum exit slope (S) using Table 6-29.4 and Q_{es}.
    H_s = 0.5 ft b = 8 ft V = 2.7 fps S = 3.9 %
28. Actual entrance channel slope, S_c = 1.00 %
29. Actual exit channel slope, S_x = 4.0 %
    Note: If S_x is steeper than S (from Table 6-29.4), then the velocity in the exit channel will increase.

    a.) Calculate new exit velocity (V_x)
    V_x = V (S_x/S) $^{0.3}$ = 2.7 fps * (4.0 / 3.9) $^{0.3}$
    V_x = 1.0276 fps
    Note: Refer to Channel Stabilization (Ch) to determine the proper lining for the emergency spillway.
    Grass X Rip-rap _____ Concrete _____

Design Elevations

30. Riser crest elevation = 783.3 ft
31. Compute minimum emergency spillway crest elevation.
    Minimum emergency spillway crest elevation = Riser crest elevation + h
    Minimum emergency spillway crest elevation = 783.3 ft + 0.8 ft
    Minimum emergency spillway crest elevation = 784.1 ft
32. Determine design high water elevation
    Design high water elevation = Minimum emergency spillway crest elevation + Stage elevation (Hp)
    Design high water elevation = 784.1 ft + 0.5 ft
    Design high water elevation = 784.6 ft
33. Determine elevation of top of dam
    Elevation of top of dam = Design high water elevation + 1 ft freeboard
    Elevation of top of dam = 784.4 ft + 1 ft
    Elevation of top of dam = 785.5 ft

PLEASE NOTE THAT DESIGN VALUES DETERMINED BY THIS SHEET REPRESENT THE MINIMUM REQUIREMENTS FOR A TEMPORARY SEDIMENT BASIN.

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

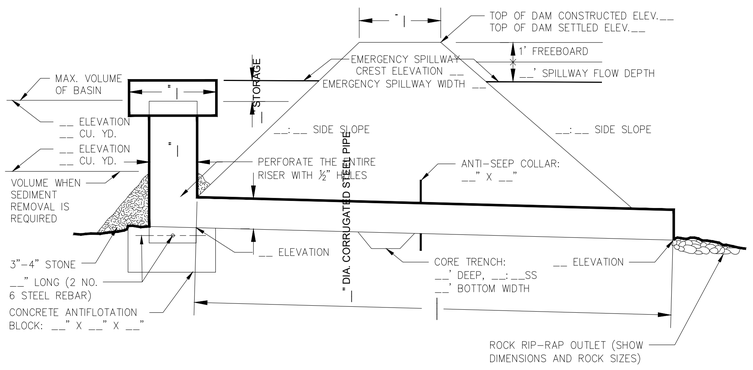
NPDES DETAILS 2

DRAWING NUMBER

1-C-40
OF
214

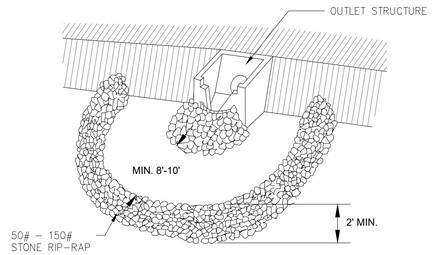
TEMPORARY SEDIMENT BASIN

CROSS-SECTIONAL DETAIL

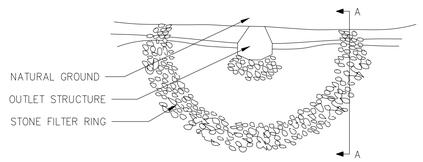


STONE FILTER RING

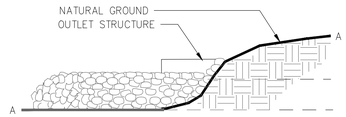
PERSPECTIVE VIEW



PLAN VIEW (NOT TO SCALE)

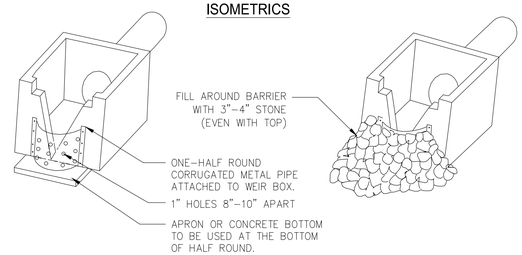


CROSS SECTION (NOT TO SCALE)

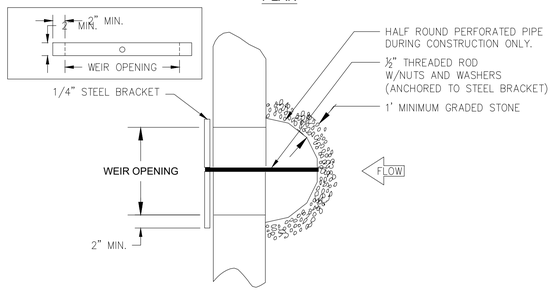


PERFORATED HALF-ROUND PIPE WITH STONE FILTER

ISOMETRICS



PLAN



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(770) 977-5747
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1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
1		
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

NPDES DETAILS 3

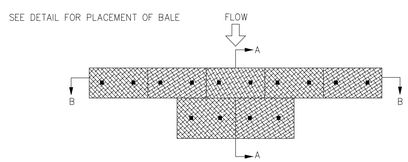
DRAWING NUMBER

1-C-41
OF
214

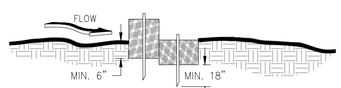
CD-HB

TYPICAL STRAW BALE CHECK DAM

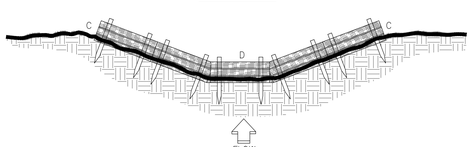
PLAN



SECTION A-A



SECTION B-B

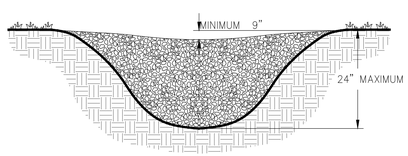


NOTES:
1. BALES SHOULD BE BOUND WITH WIRE OR NYLON STRING AND SHOULD BE PLACED IN ROWS WITH BALE ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. REMOVE #4 REBAR AFTER STRAW BALES ARE NO LONGER IN PLACE.
3. POINT C OF SECTION B-B SHOULD ALWAYS BE HIGHER THAN POINT D.

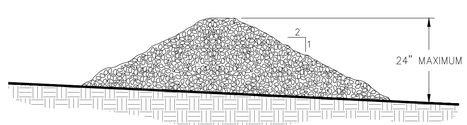
CD-S

STONE CHECK DAM

CROSS SECTION



PROFILE VIEW



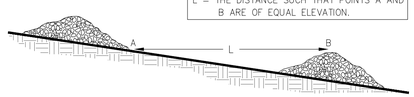
NOTES:
1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
5. THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
6. GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

CD-S

STONE CHECK DAM

SPACING BETWEEN CHECK DAMS

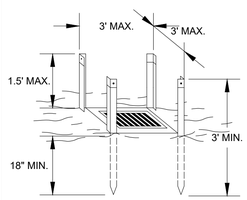
A = THE TOE OF THE UPSTREAM CHECK DAM.
B = TOP OF THE DOWNSTREAM CHECK DAM.
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION.



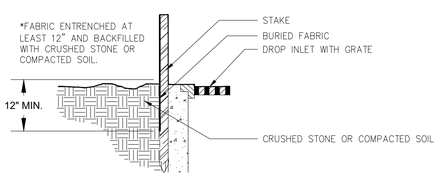
Sd2-F

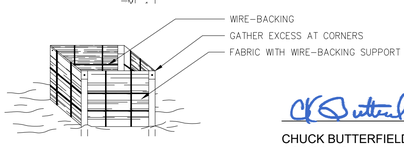
FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

STEEL FRAME AND SILT FENCE INSTALLATION



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





CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

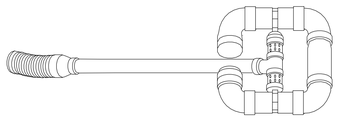
21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 8:28 AM

Sk

TEMPORARY SEDIMENT POND SKIMMER

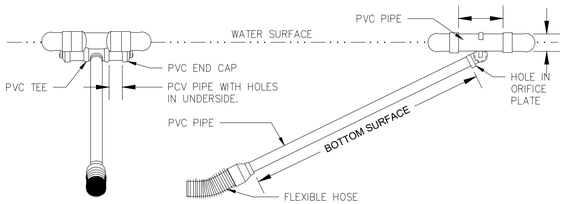
NOTE:
SKIMMER CONFIGURATION SHOWN IS TYPICAL. THE DESIGNER/ENGINEER MAY SUBMIT AN ALTERNATE SKIMMER DETAIL FOR REVIEW.

SKIMMER PERSPECTIVE



SKIMMER FRONTAL SECTION VIEW

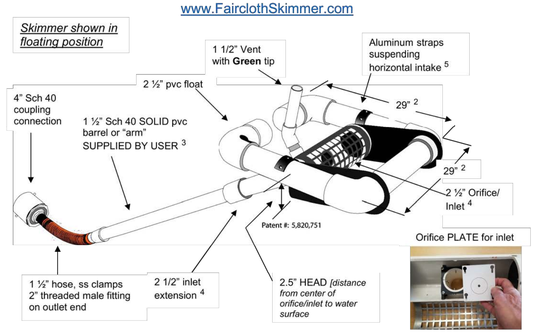
SKIMMER SIDE SECTION VIEW



2.5" *Faircloth Skimmer®* Surface Drain Cut Sheet

J. W. Faircloth & Son, Inc.
www.FairclothSkimmer.com

Skimmer shown in floating position



1. Skimmer can be attached to a straight 4" sch 40 pipe through the dam but the pipe may need to be anchored to the bottom at the connection so it is secure. Coupling can be removed and hose attached to outlet using the threaded 2" fitting. Typical methods used: a) a metal structure with a steel stub out welded on the side at the bottom with a 2" threaded coupling or reducer(s); b) a concrete structure with a hole or orifice at the bottom - use a steel plate with a hole cut in it and coupling welded to it that will fit over the hole in the concrete and bolted to the structure with sealant; or c) grout a 4" pvc pipe in a hole in the concrete to connect the skimmer.

2. Dimensions are approximate, not intended as plans for construction.

3. Barrel (solid, not foam core pipe) should be 1.4 times the depth of water with a minimum length of 6' so the inlet can be pulled to the side for maintenance. If more than 8' long weight may have to be added to inlet to counter the increased buoyancy.

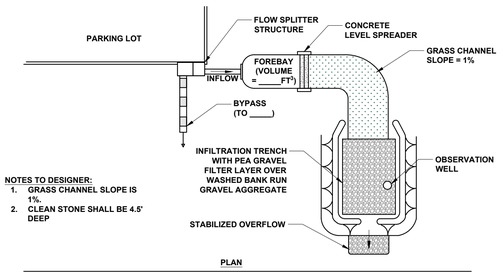
4. Orifice/inlet tapers down from 2 ½" maximum inlet to a 1½" barrel and hose. Barrel is smaller to reduce buoyancy and tendency to lift inlet but is sufficient for flow through inlet because of slope. The orifice/inlet can be reduced using the plate and cutter provided to control the outflow rate – see #6.

5. Horizontal intake is 5" pipe between the straps with aluminum screen door for access to the 2½" inlet and orifice inside.

6. **Capacity**: 6,234 cubic feet per day maximum with 2½" inlet and 2.5 head. Inlet can be reduced by installing a smaller orifice using the plate and cutter provided to adjust flow rate for the particular drawdown time required. Please use the sizing template at www.fairclothskimmer.com .

7. Ships assembled. User glues inlet extension and barrel, installs vent, cuts orifice in plate and attaches to outlet pipe or structure. Includes float, flexible hose, rope, and orifice plate and cutter. Does NOT include 1 ½" Sch 40 SOLID pvc barrel or "arm" SUPPLIED BY USER.

2-5inchCut 5-1-19



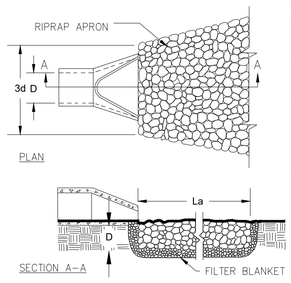
NOTES TO DESIGNER:
1. GRASS CHANNEL SLOPE IS 1%.
2. CLEAN STONE SHALL BE 4.5' DEEP

INFILTRATION TRENCH DETAIL

St

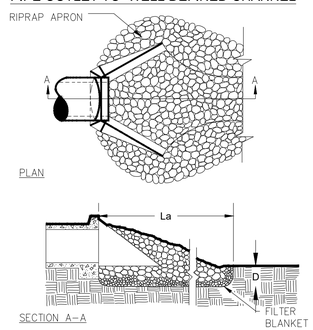
RIPRAP OUTLET PROTECTION

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



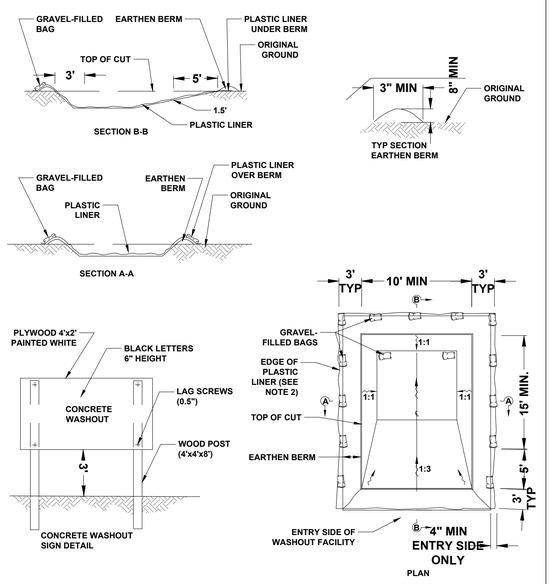
NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESSTHAN 6".
3. IN A WELL–DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.

PIPE OUTLET TO WELL DEFINED CHANNEL



CTW

CONCRETE WASHOUT AREA

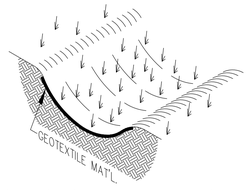


NOTES:
1. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
2. 10 MIL PLASTIC LINER SHALL BE ANCHORED WITH GRAVEL FILLED BAGS FOR BLOW GRADE CONCRETE WASHOUT FACILITY.

SCALE: NOT TO SCALE

Turf Reinforcement Matting (TRM) shall be used, if a vegetated lining is used in channels with velocities greater than or equal to 5 feet/ sec but less than 10 ft/sec. TRM is permanent geosynthetic erosion control matting that is used in channels to stabilize the soil while permanent vegetation is rooting, and to provide additional long-term protection.
Velocities in channels when flowing at the bankfull discharge or the 25-year frequency discharge, whichever is the greater, shall be used in determining the appropriate TRM for stabilization of the channels.

Ch-1



Vegetated Lining A vegetated lining may be used to stabilize channels with a velocity of less than five ft/s temporary erosion control blankets or sod shall be used on all channels and concentrated flow areas to aid in the establishment of the vegetated lining. Refer to specifications Ds3 - Disturbed Area Stabilization (With Permanent Vegetation), Ds4 - DisturbedArea Stabilization (With Sodding), and Ss – Slope Stabilization, Hydraulic Erosion Control Products (HECPs) are not intended to be applied in channels, swales or other areas where concentrated flows are anticipated, unless installed in conjunction with Rolled Erosion Control Products (RECPs).

Ch-2

IMPROVING, CONSTRUCTING OR STABILIZING AN OPEN CHANNEL, EXISTING STREAM, OR DITCH.

CHANNEL STABILIZATION

CHUCK BUTTERFIELD, P.E.
GSWCC NO. 0000017551

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

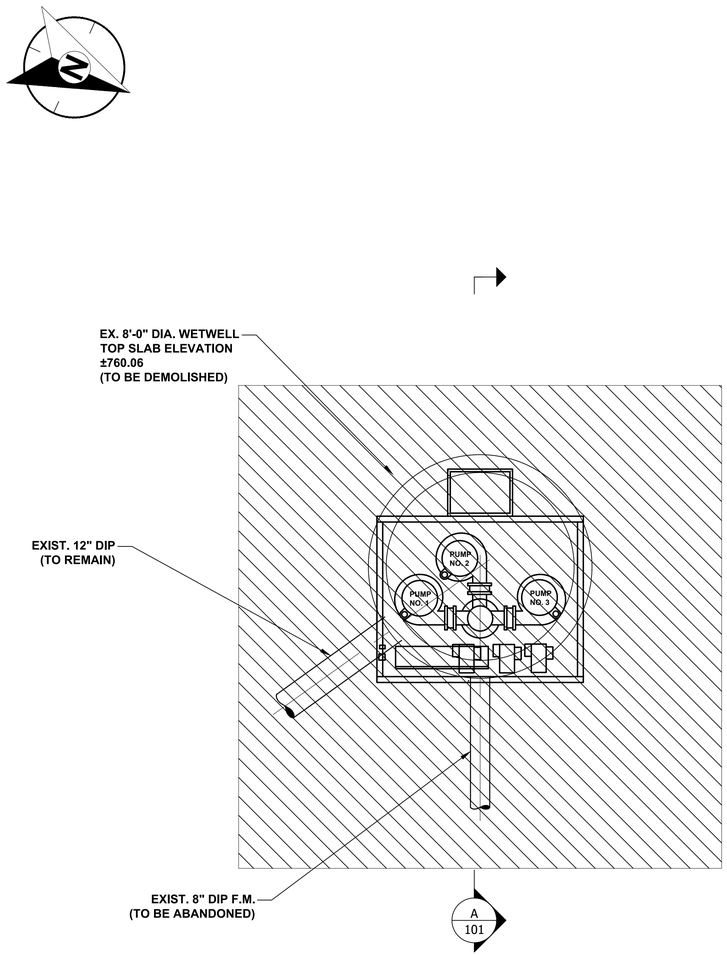
10/05/2021

SHEET TITLE

NPDES DETAILS 4

DRAWING NUMBER

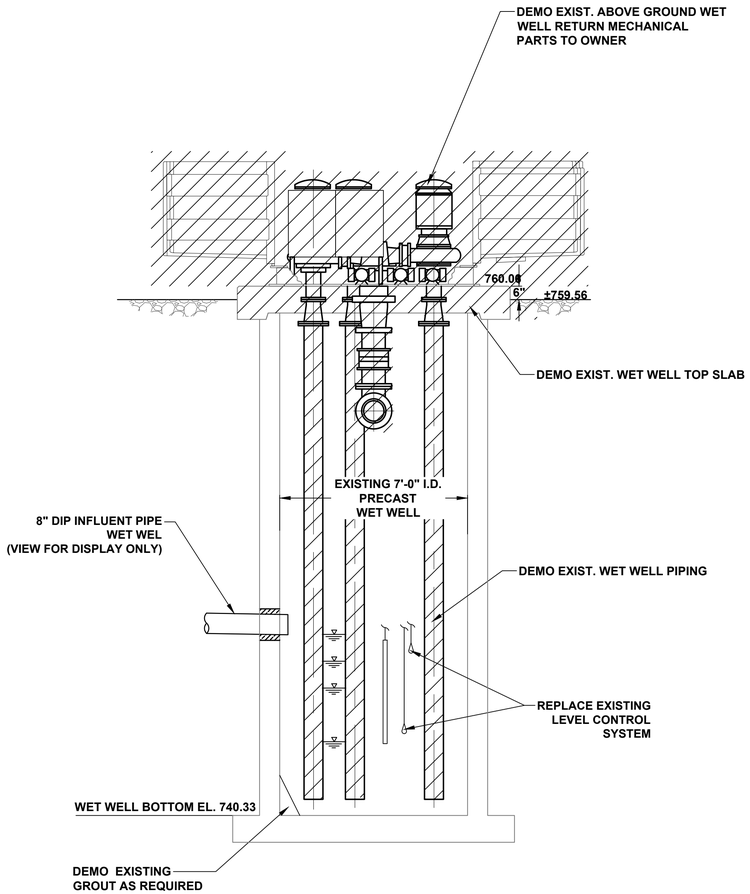
1-C-42
OF
214



NOTE: PROVIDE TEMPORARY PUMPING SYSTEM AS NEEDED DURING DEMOLITION AND PUMP STATION MODIFICATION.

1 PLANT DRAIN PUMP STATION PLAN

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



A SECTION

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

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Scale : SEE DETAIL

PROJECT NAME

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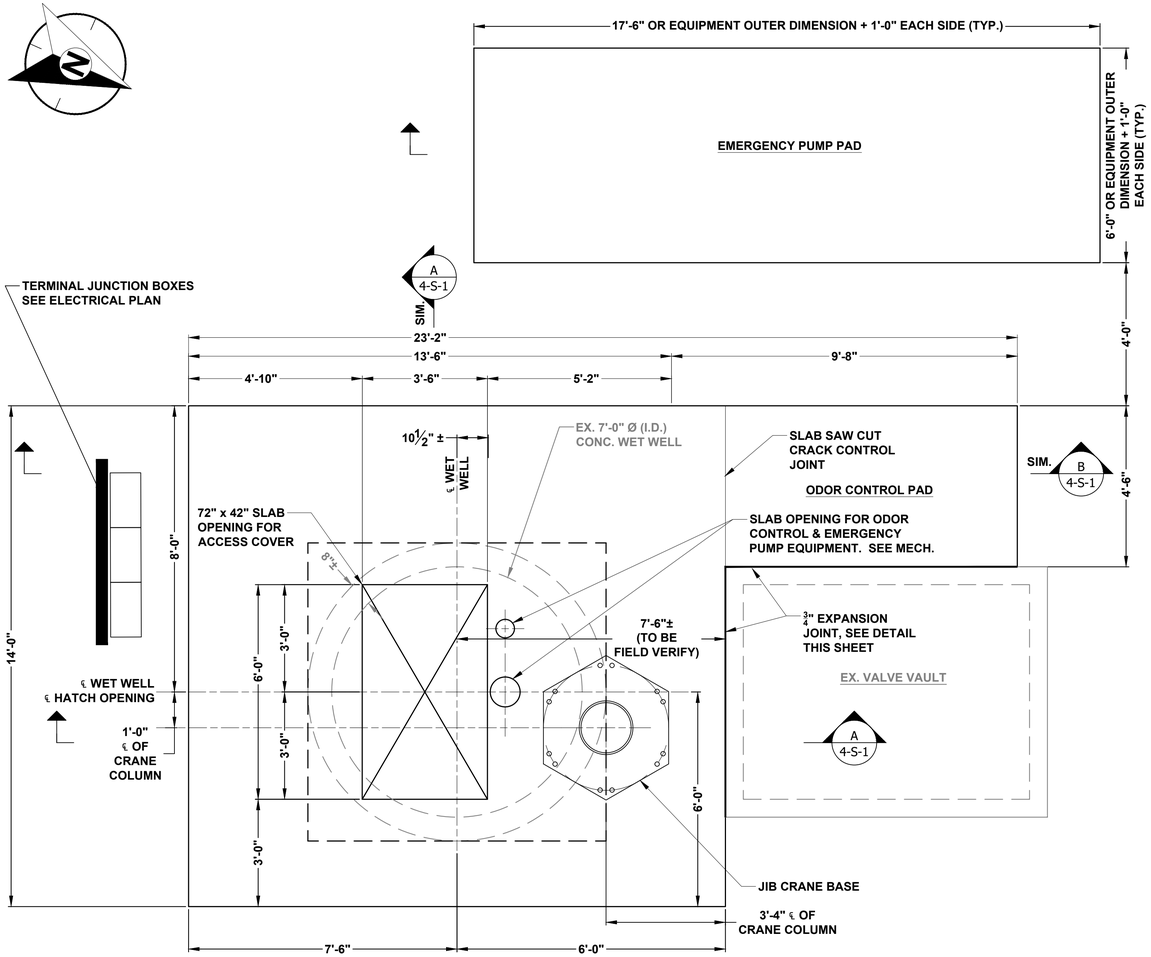
SHEET TITLE

RAW SEWAGE PUMP STATION DEMO PLAN

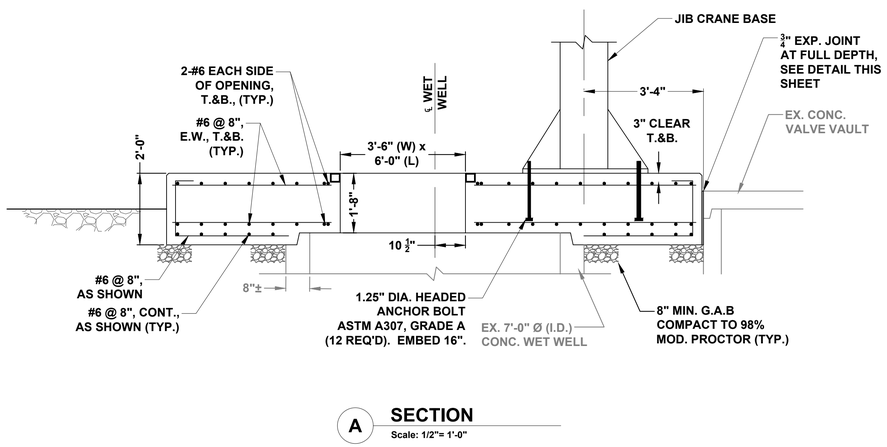
DRAWING NUMBER

4-D-1
OF
214



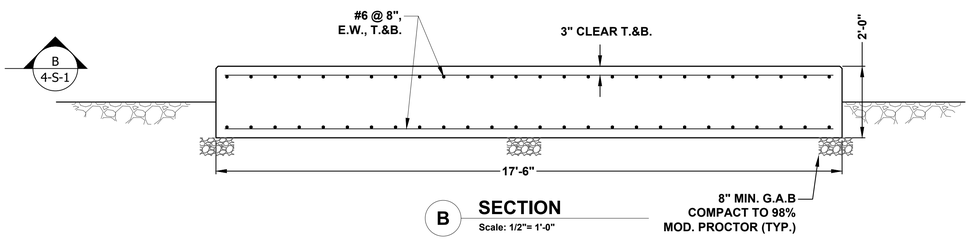
1 TOP SLAB STRUCTURAL PLAN

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



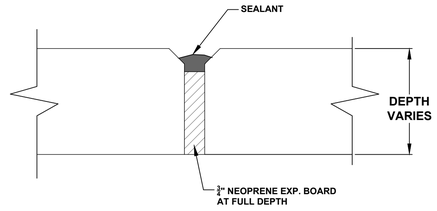
A SECTION

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



B SECTION

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



EXPANSION JOINT DETAIL

N.T.S.

NOTE:
1. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4"

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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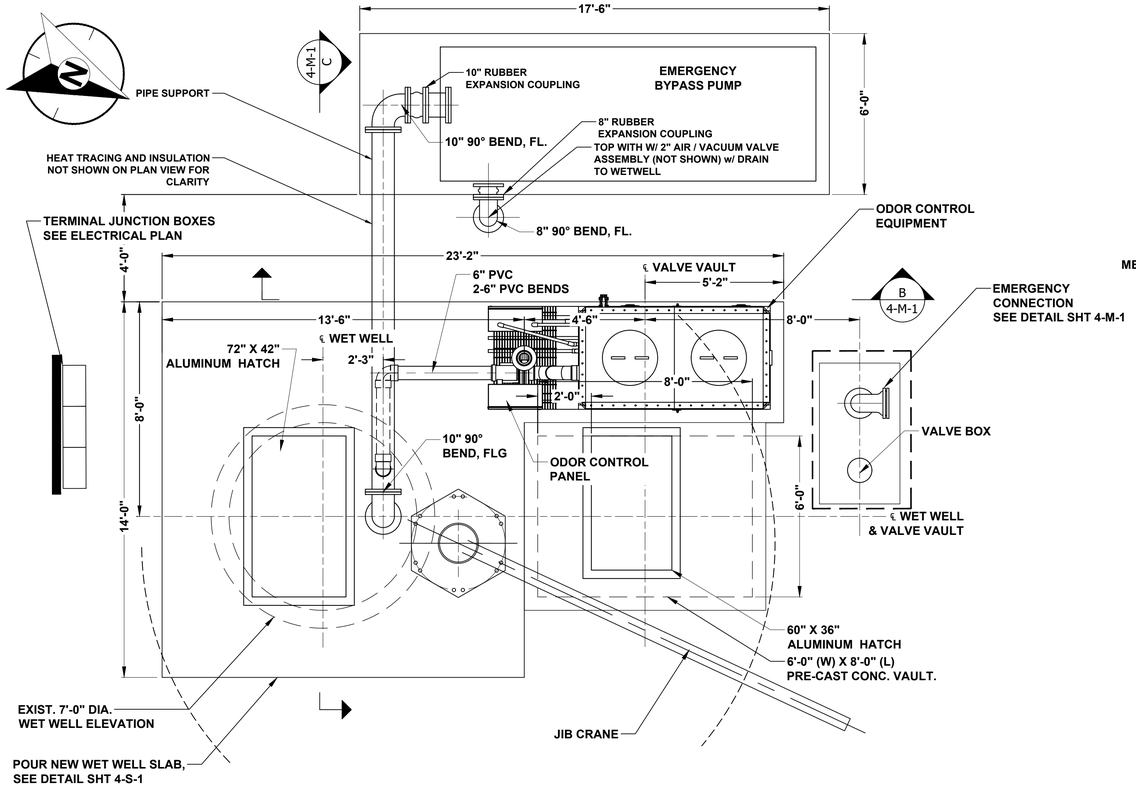
10/05/2021

SHEET TITLE

RAW SEWAGE PUMP STATION STRUCTURAL

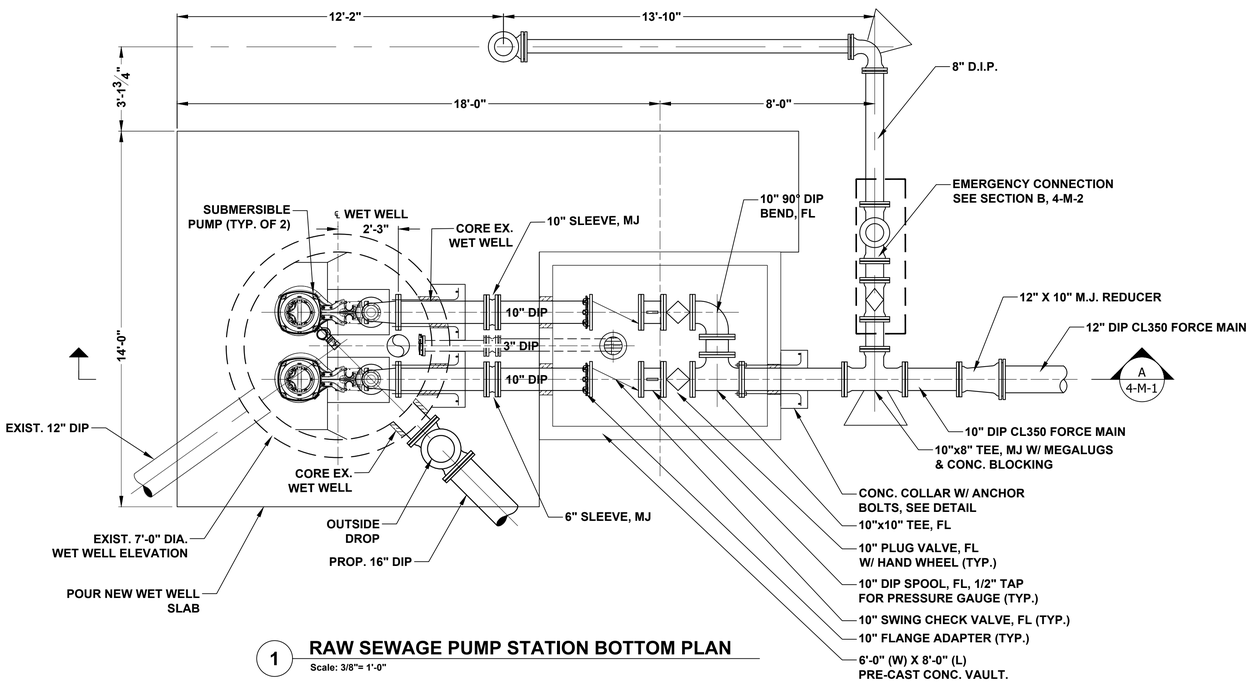
DRAWING NUMBER

4-S-1
OF
214



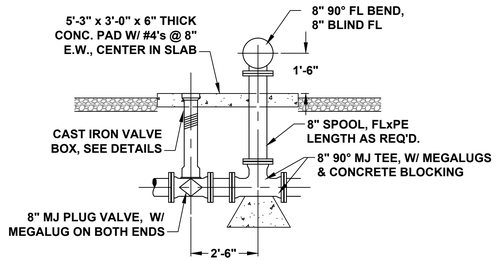
1 RAW SEWAGE PUMP STATION TOP PLAN

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



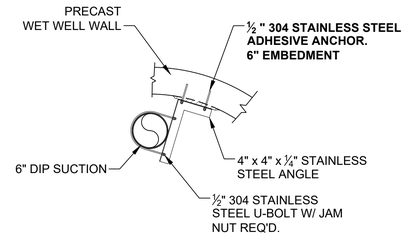
1 RAW SEWAGE PUMP STATION BOTTOM PLAN

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



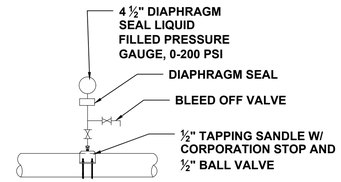
BY-PASS CONNECTION DETAIL

SCALE 3/8" = 1'-0"



EMERGENCY PUMP SUCTION PIPE SUPPORT DETAIL

N.T.S.



ONE GAUGE REQUIRED FOR EACH PUMP DISCHARGE

PRESSURE GAUGE DETAIL

N.T.S.

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

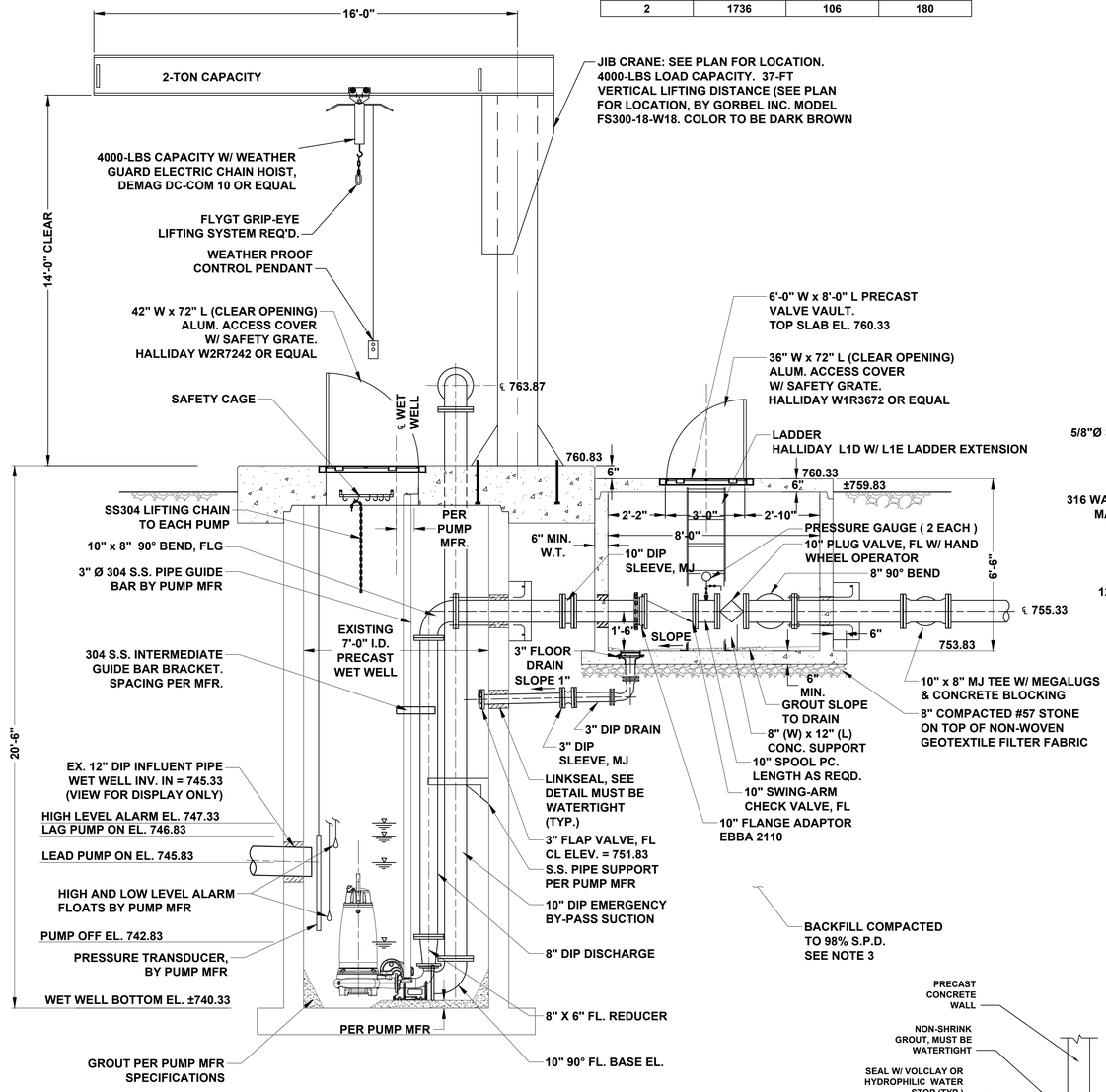
SHEET TITLE

RAW SEWAGE PUMP STATION MECHANICAL PLANS

DRAWING NUMBER

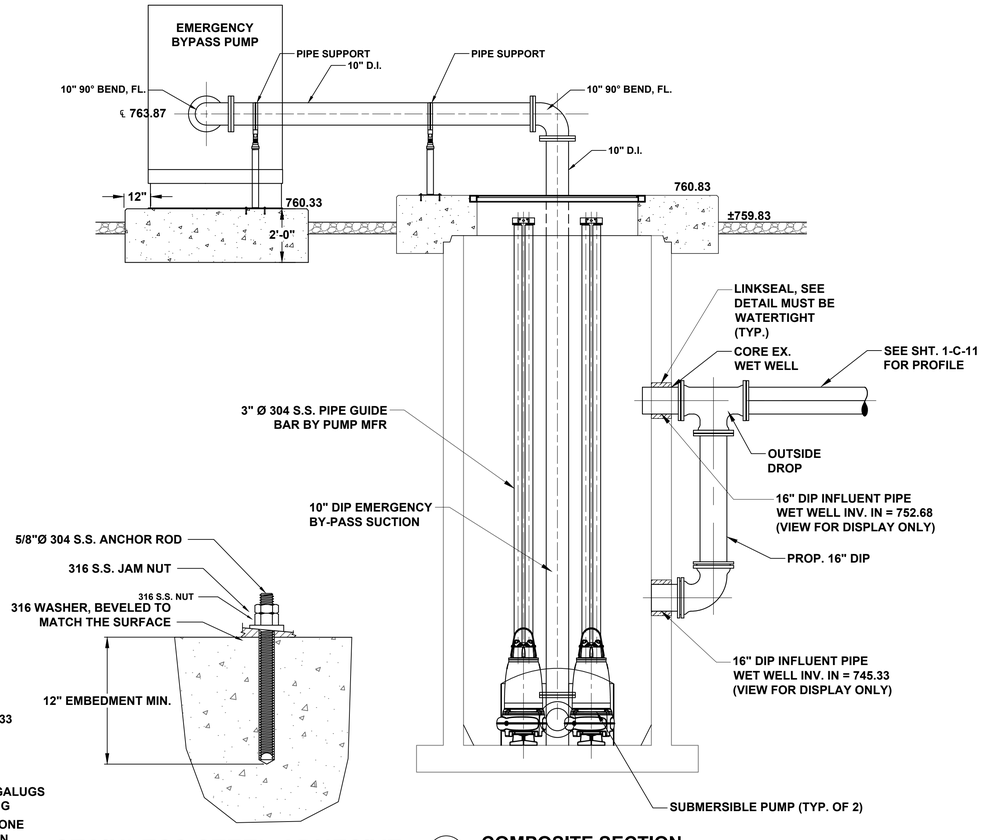
4-M-1
OF
214

PUMP OPERATING SCHEME			
NO. OF PUMPS ON	FLOW (GPM)	PUMP TDH (FEET)	SHUT-OFF HEAD (FEET)
2	1736	106	180



A COMPOSITE SECTION

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

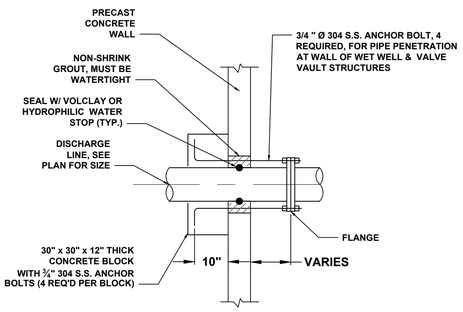


C COMPOSITE SECTION

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

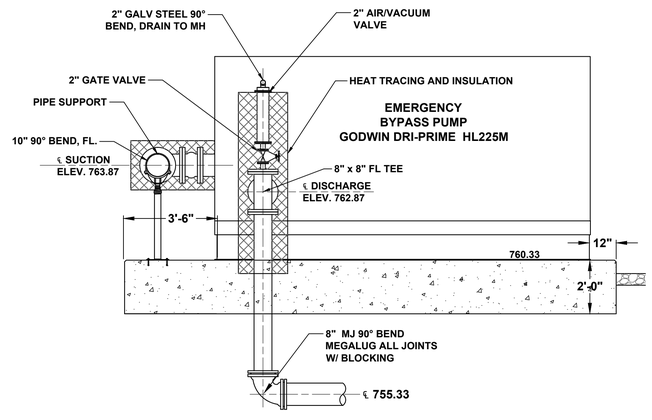
STAINLESS STEEL ADHESIVE ANCHOR FOR EMERGENCY PUMP DETAIL

N.T.S.



PIPE PENETRATION DETAIL

N.T.S.



B SECTION

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

NOTES

1. TWO SUBMERSIBLE PUMPS REQUIRED, EACH PUMP OPERATES AT 868GPM @ 106.1' TDH. EACH PUMP DRIVEN BY A 45 HP MOTOR, 460 VOLTS, 3 PHASE, 60 HZ, 1,770 RPM. SHUT OFF HEAD 210FEET. PUMPS SHALL BE MANUFACTURED BY FLYGT, MODEL NP 3202 HT3 468 - IMPELLER 316 MM.
2. THE DUTY POINT IS 1,736 GPM @ 106.1-FT TDH, 1,225 RPM FOR THE EMERGENCY PUMP. THE MAX SPEED OF EMERGENCY PUMP SHALL BE 1600 RPM.
3. BACKFILL SHALL CONSIST OF SELECT MATERIAL COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. BACKFILL SOIL MUST BE PLACED IN MAXIMUM 8-INCH THICK (LOOSE) LIFTS PRIOR TO COMPACTION. A MINIMUM OF TWO FIELD DENSITY TESTS ARE TO BE PERFORMED FOR EVERY TWO FEET OF FILL PLACED IN ORDER TO CONFIRM SOIL COMPACTION MEETS THE MINIMUM REQUIRED DENSITY. ALL TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION OF PUMP STATION SLAB AND VAULT.
4. SEE SPECIFICATIONS FOR COATING REQUIREMENT FOR INSIDE WALL OF WET WELL, PIPING INSIDE OF WET WELL, VALVE VAULT PIPING & VALVES, AND MISC. METALS.
5. HARDWARE FOR LINKSEAL SHALL BE 316 S.S.
6. ALUMINUM ACCESS COVERS FOR WET WELL AND VALVE VAULTS SHALL BE RATED FOR 300 PSF. ACCESS COVER SHALL HAVE A STAINLESS STEEL LOCKING BAR W/ PAD LOCK OUTSIDE AND OPENING HANDLE INSIDE.
7. VERIFY SLAB OPENING DIMENSIONS WITH HATCH FRAME SHOP DRAWINGS.
8. FOR WET WELL AND OTHER SUBMERGED LOCATIONS, NUTS AND BOLTS ARE TO BE 304 STAINLESS STEEL, A193 GRADE B8 HEAVY HEX HEAD BOLT AND STAINLESS STEEL A193 GRADE 8 HEAVY HEX HEAD NUT.
9. MOUNT THE PRESSURE GAUGES SO THE FACES POINT TOWARDS THE TOP OF THE VAULT AND MAY BE OBSERVED FROM OUTSIDE THE VAULT.
10. EMERGENCY BYPASS PUMP DRAIN LINES NOT SHOWN FOR CLARITY.
11. EMERGENCY PUMP ON IF WATER LEVEL RISES DUE TO FAILURE OF SUBMERSIBLE PUMPS.

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

RAW SEWAGE PUMP STATION MECHANICAL SECTIONS

DRAWING NUMBER

4-M-2
OF
214

HYDRAULIC CALCULATION:

TOTAL AVERAGE DAILY FLOW: 1.0 MGD
PEAK FLOW FACTOR 2.5
DESIGN FLOW RATE 2.5 MGD

MINIMUM REQUIRED PUMPING RATE:

USE 1,736 GPM FOR A VELOCITY OF 4.58 FT/S

PUMPING RATE THROUGH 12-INCH DUCTILE IRON FORCE MAIN = 1,736 GPM @ 4.58 FT/S

HYDRAULIC CALCULATIONS:

STATIC HEAD: 828.00 (PHYSICAL AND HYDRAULIC HP)
735.50 (PUMP STATION PUMP-OFF ELEVATION)
92.50 FT OF STATIC HEAD

FRICTION LOSSES:

HEAD LOSS IN 8" DIP WET WELL = 10.44(868)^1.85 (30) / (130)^1.85(8.38)^4.87 = 01.21 FT

HEAD LOSS IN 10" DIP DISCHARGE = 10.44(868)^1.85 (20) / (130)^1.85(10.39)^4.87 = 0.28 FT

HEAD LOSS IN 12" DIP FORCE MAIN = 10.44(1,736)^1.85 (1,670) / (130)^1.85(12.45)^4.87 = 9.66 FT

FITTING LOSSES:

HEAD LOSS IN 8" DIP WET WELL = 5(6.57)^2 / 64.4 = 1.98 FT

HEAD LOSS IN 10" DIP DISCHARGE = 5(6.57)^2 / 64.4 = 1.68 FT

HEAD LOSS IN 12" DIP FORCE MAIN = 30(4.58)^2 / 64.4 = 4.88 FT

TOTAL DYNAMIC HEAD: 92.50 + 1.21 + 0.28 + 9.66 + 1.98 + 1.68 + 4.88 = 106.1 FT @ 1,736 GPM

SURGE ANALYSIS:

a = 4660 / (1+K/Ed X (DR-2))^0.5 = 4660 / (1+300000/24000000 X (52.8-2))^0.5 = 3,644 FT/S

ΔH = aΔV / G WHERE: a = 3,644 FT/S
ΔV = 4.58 FT/S (1,736 GPM IN 12-INCH DIP)
G = 32.2 FT/S²

ΔH = (3,644 FT/S) X (4.58 FT/S) / (32.2 FT/S²) = 518.1 FEET

STATIC HEAD = PHYSICAL HIGH POINT - CHECK VALVE ELEVATION
= 829.20 - 756.33= 72.87 FEET

TOTAL PRESSURE = 518.1 + 72.87 = 59.0 FEET = 255.8 PSI

255.8 PSI > 250 PSI, USE SURGE RELIEF VALVE

PUMP CYCLE TIMES CHART

Qout = 868.1 GPM (EACH PUMP DISCHARGE CAPACITY)
Qin = 434.0 GPM (SEWER INFLOW RATE; WHEN Qin IS 50% OF PUMP RATE THE TIME BETWEEN PUMP STARTS IS AT A MINIMUM
LEAD PUMP ON ELEVATION = 745.83
LAG PUMP ON ELEVATION = 746.33
PUMP OFF ELEVATION = 742.83
WET WELL DIAMETER = 7

Cycle	Time (Minutes)	Phase	Water Elevation in Wetwell	Sewer Volume Decrease in Wetwell (gallons)	Sewer Volume Increase in Wetwell (gallons)	Pump No. 1	Pump No. 2	Sewer Influent Volume (Gallons)	Volume Pumped Out During Phase (Gallons)
1	0.00		745.83			ON	OFF		
		1-1		863.59				863.59	1727.18
	1.99		742.83			OFF	OFF		
		1-2			863.59			863.59	0.00
	3.98		745.83			OFF	ON		
		1-3		863.59				863.59	1727.18
	5.97		742.83			OFF	OFF		
		1-4			863.59			863.59	0.00
2	7.96		745.83			ON	OFF		
		2-1		863.59				863.59	1727.18
	9.95		742.83			OFF	OFF		
		2-2			863.59			863.59	0.00
	11.94		745.83			OFF	ON		
		2-3		863.59				863.59	1727.18
	13.93		742.83			OFF	OFF		
		2-4			863.59			863.59	0.00

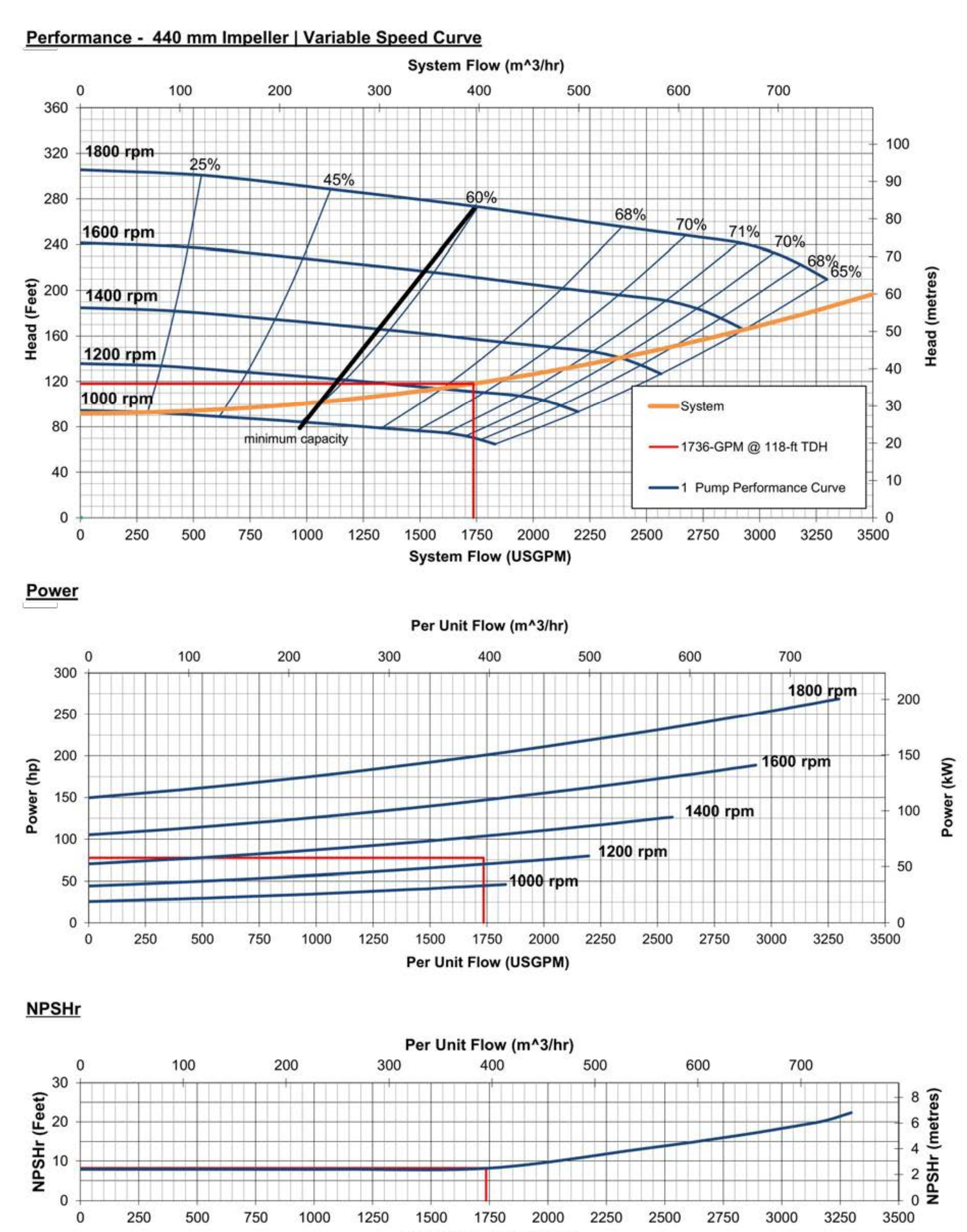
Pump Cycle Time = 7.96 Minutes
Pump Start Times = 7.54 Times/Hour - Pump rated 30 starts / hour

GODWIN DRI-PRIME® HL225M
ONE (1) VARIABLE SPEED PUMP | SYSTEM CURVE
JEFFERSON WRF RAW SEWAGE PUMP SATION DBS
JEFFERSON, GA

HL225M

Suction Lift: 20 ft (Maximum suction lift with 2ft NPSH margin)
Suction Pipe: 30 ft 10" Pipe , (3)90°, (1)Ent Loss

Discharge Head: 72 ft
Duty Point: 1736gpm @ 118' TDH

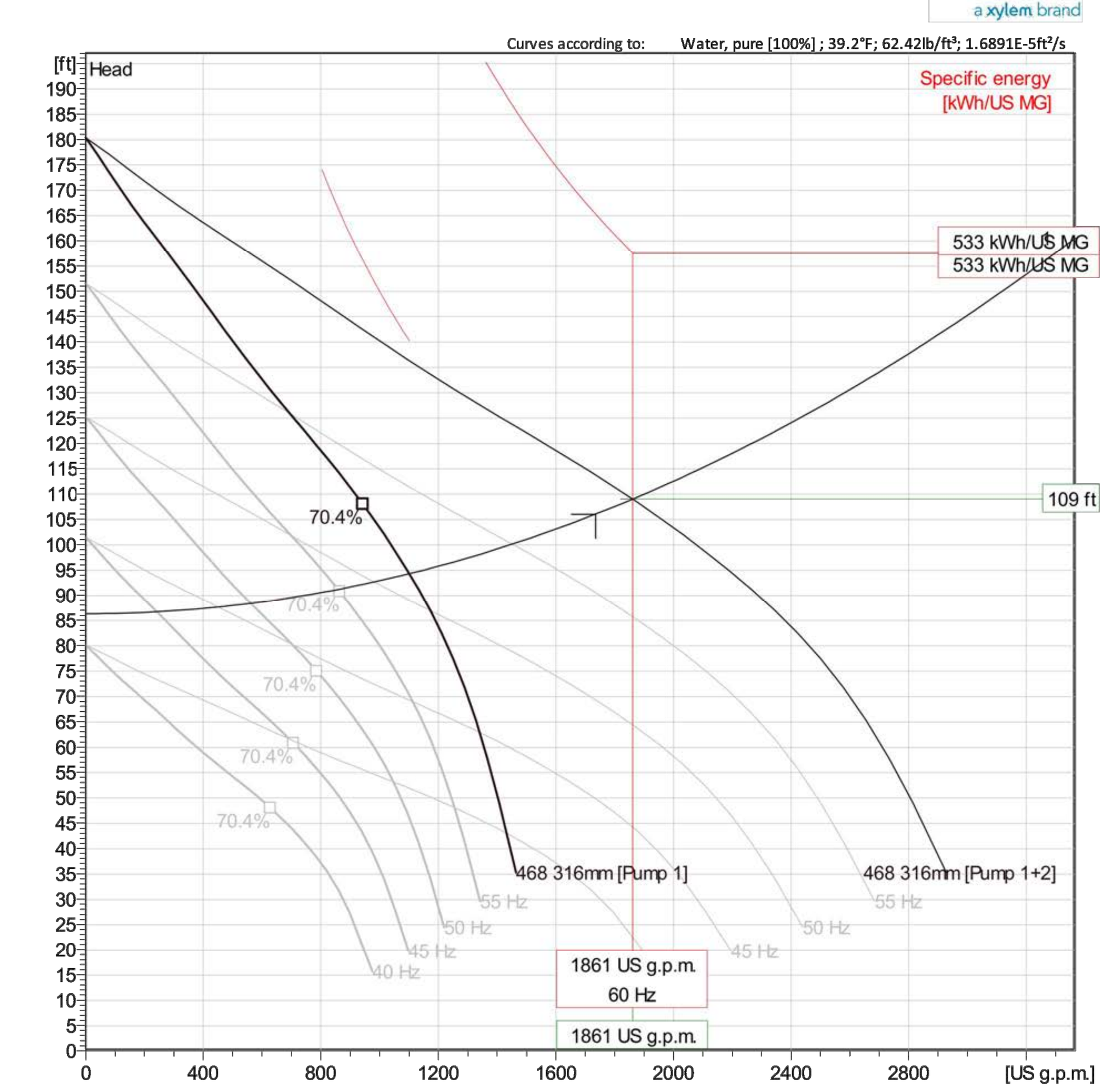


GODWIN PUMPS OF AMERICA, 84 FLOODGATE ROAD, BRIDGEPORT, NJ, 08014. Tel - 856-467-3636. Fax - 856-467-4841. godwinpumps.com

godwin a xylem brand

HL225M.22005.bjc.Jefferson WRF Raw Sewage DBS.Jerfferson.GA.BR11 3/10/2022

NP 3202 HT 3~ 468
VFD Analysis



Operating Characteristics

Pumps / Systems	Frequency	Flow (US g.p.m.)	Head (ft)	Shaft power (hp)	Flow (US g.p.m.)	Head (ft)	Shaft power (hp)	Hydr.eff.	Specific energy (kWh/US MG)	NPSHre (ft)
2 / 1	40 Hz									
1 / 1	60 Hz	1100	94.3	38.3	1100	94.3	38.3	68.6 %	474	14.4
1 / 1	55 Hz	859	91.2	28.1	859	91.2	28.1	70.4 %	563	11.8
1 / 1	50 Hz	562	88.4	19.1	562	88.4	19.1	65.8 %	758	10.7

Project		Created by	Charles Butterfield		
Block		Created on	3/22/2022	Last update	3/22/2022

Program version 62.0 - 2/11/2022 (Build 107) Data version 3/8/2022 8:55 A3P3 User group(s) Xylem: USA - EXT

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

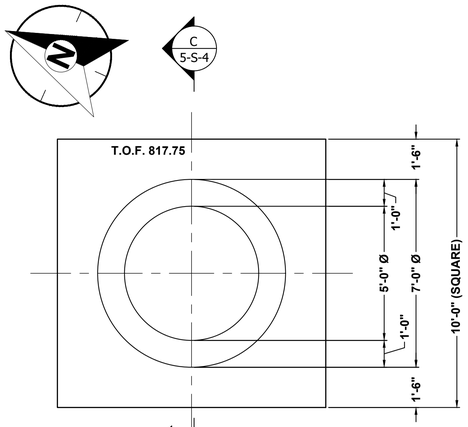
10/05/2021

SHEET TITLE

RAW SEWAGE PUMP STATION MECHANICAL DETAILS

DRAWING NUMBER

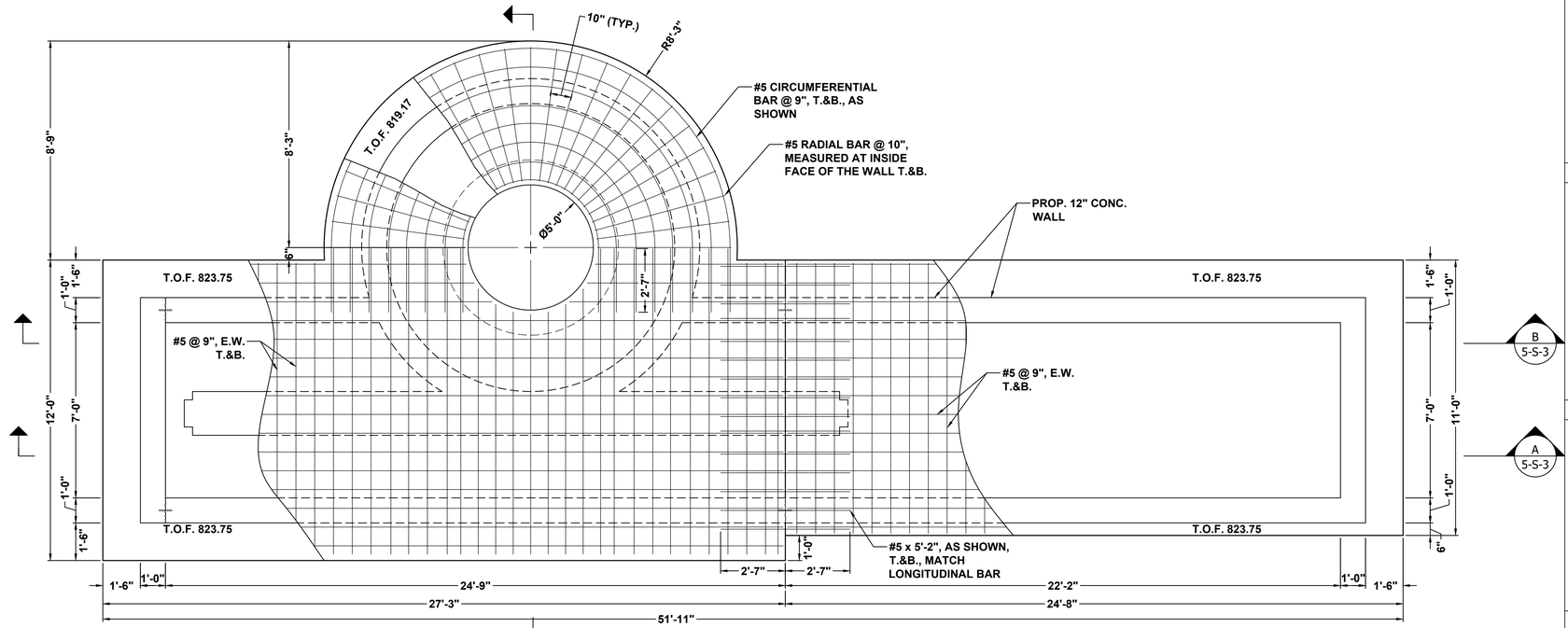
4-M-3
OF
214



HEADWORKS LOWER FOUNDATION PLAN @ 817.75

1

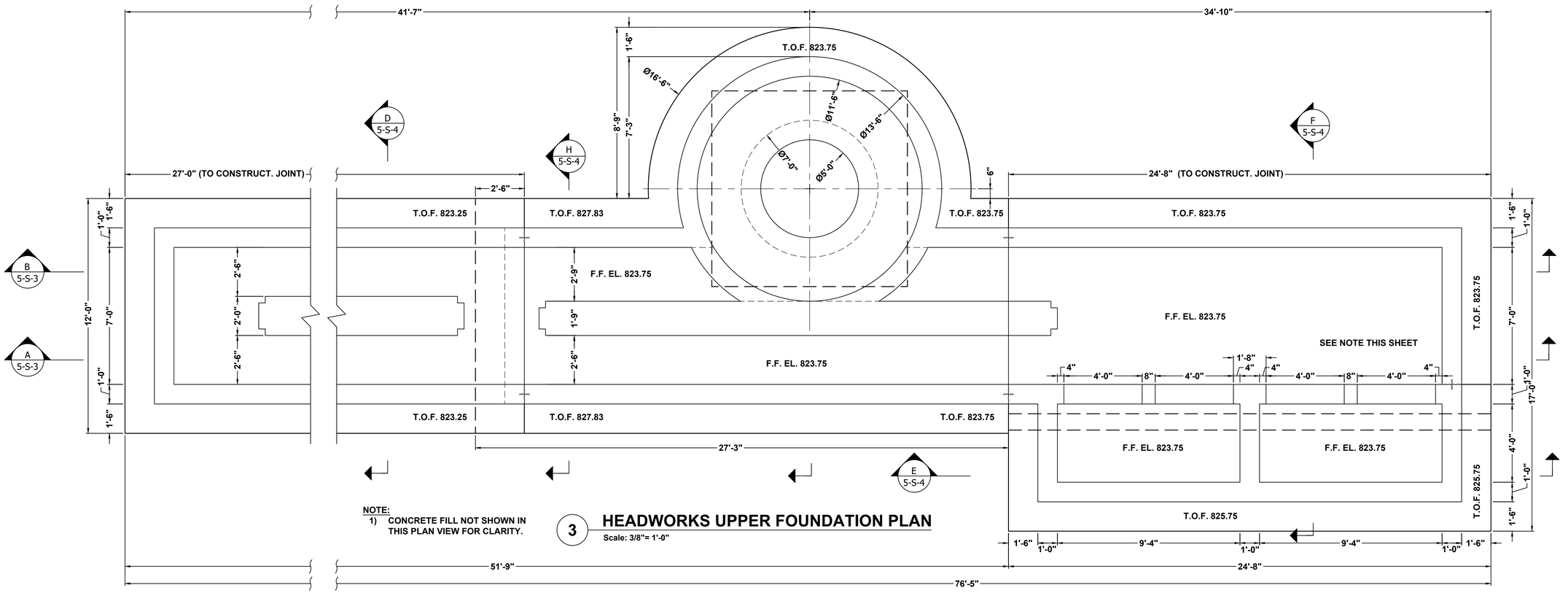
Scale: 3/8"= 1'-0"



HEADWORKS INTERMEDIATE FOUNDATION PLAN @ 823.75

2

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



NOTE:

1) CONCRETE FILL NOT SHOWN IN THIS PLAN VIEW FOR CLARITY.

HEADWORKS UPPER FOUNDATION PLAN

3

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

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : PY

Drawn By : PY

Checked By : DLG

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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HEADWORKS STRUCTURAL FOUNDATION PLAN

DRAWING NUMBER

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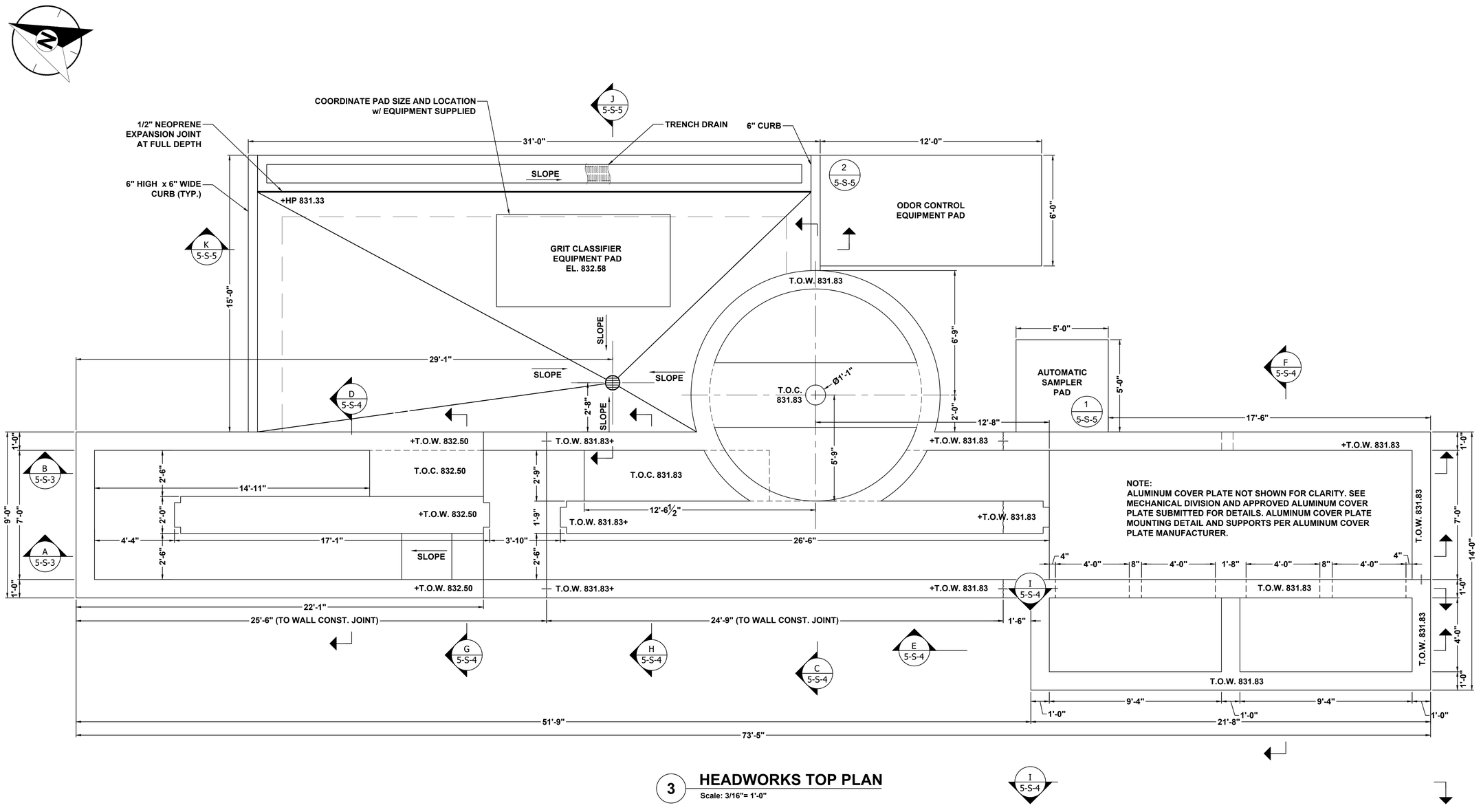

3 HEADWORKS TOP PLAN

Scale: 3/16"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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10/05/2021

SHEET TITLE

HEADWORKS STRUCTURAL UPPER LEVEL PLAN

DRAWING NUMBER

5-S-2
OF
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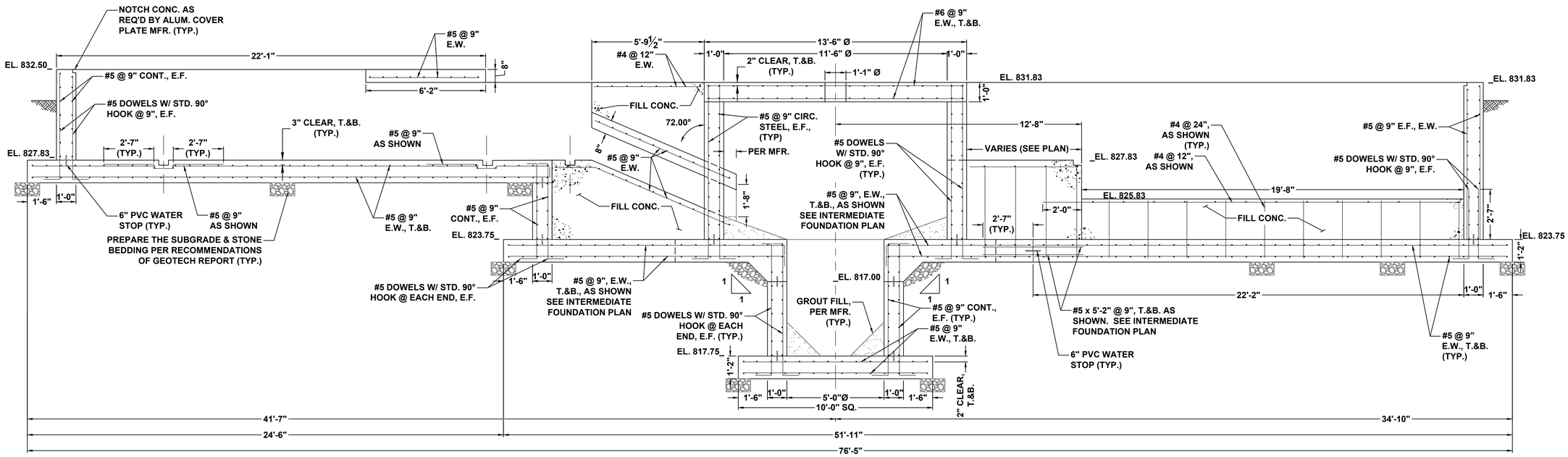

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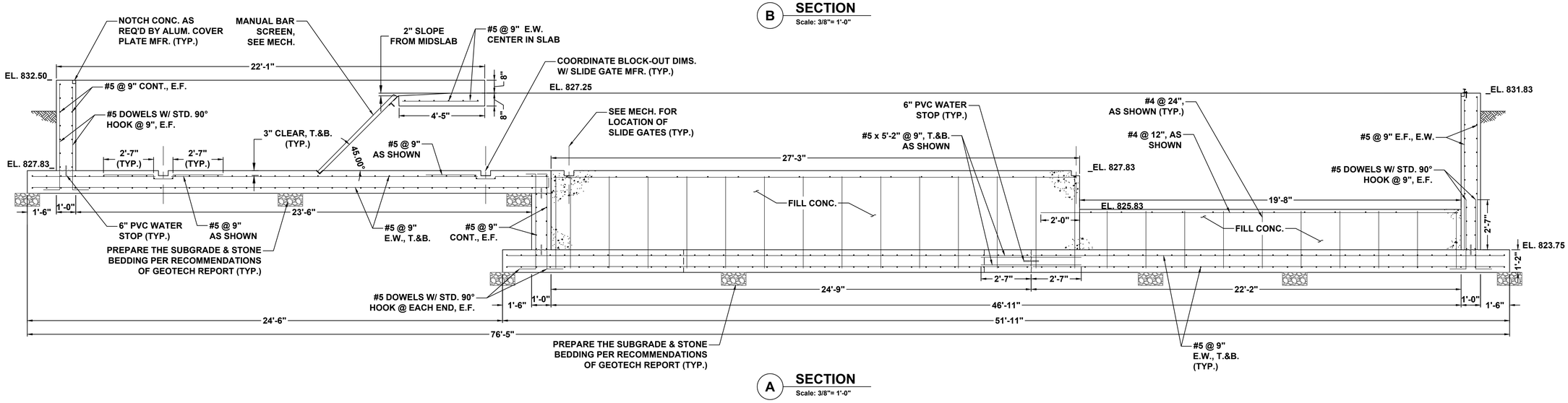

A SECTION

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

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

HEADWORKS STRUCTURAL SECTIONS & DETAILS 1

DRAWING NUMBER

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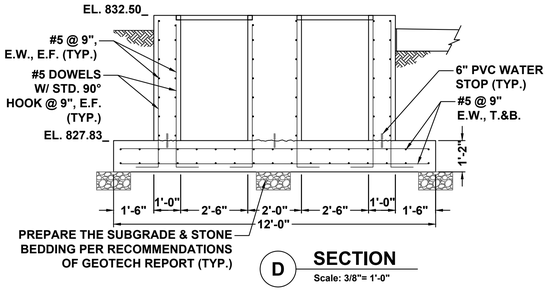

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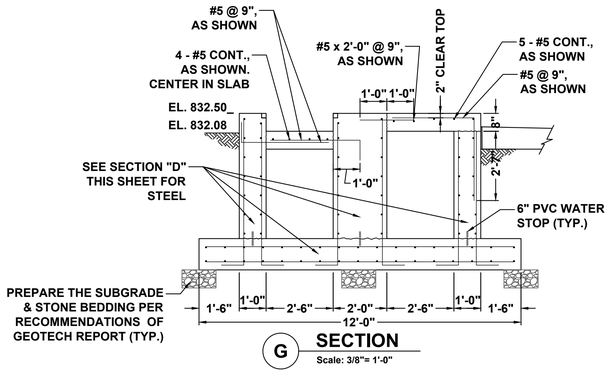

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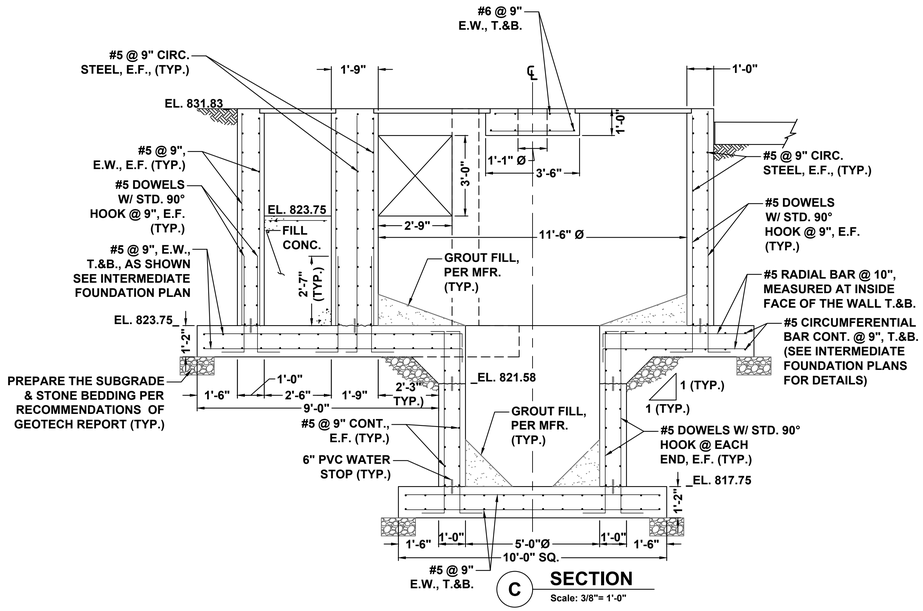

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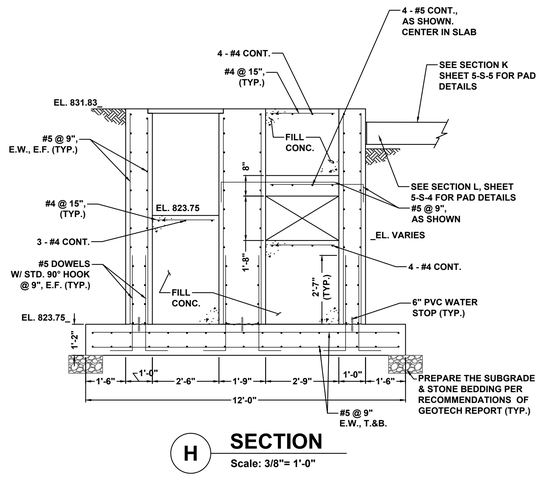

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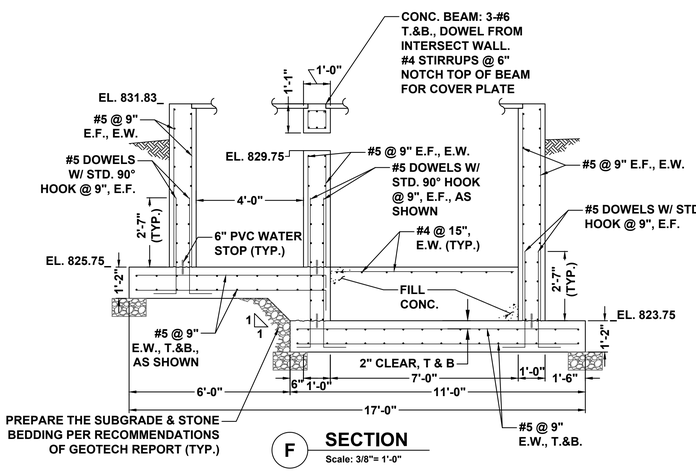

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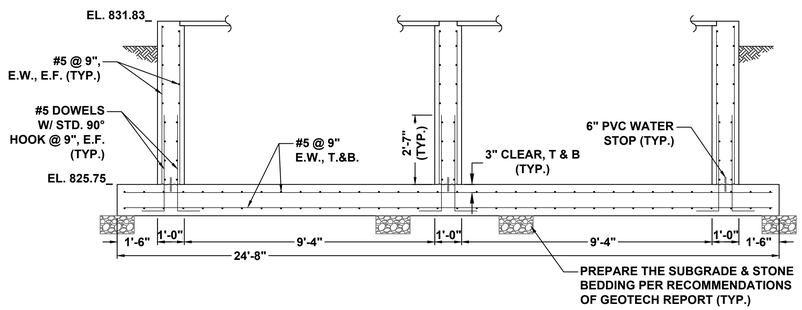

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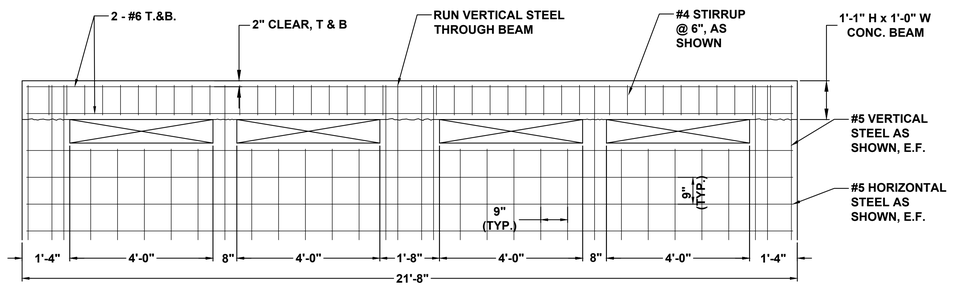

I **SECTION**
Scale: 1/2"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

HEADWORKS STRUCTURAL SECTIONS & DETAILS 2

DRAWING NUMBER

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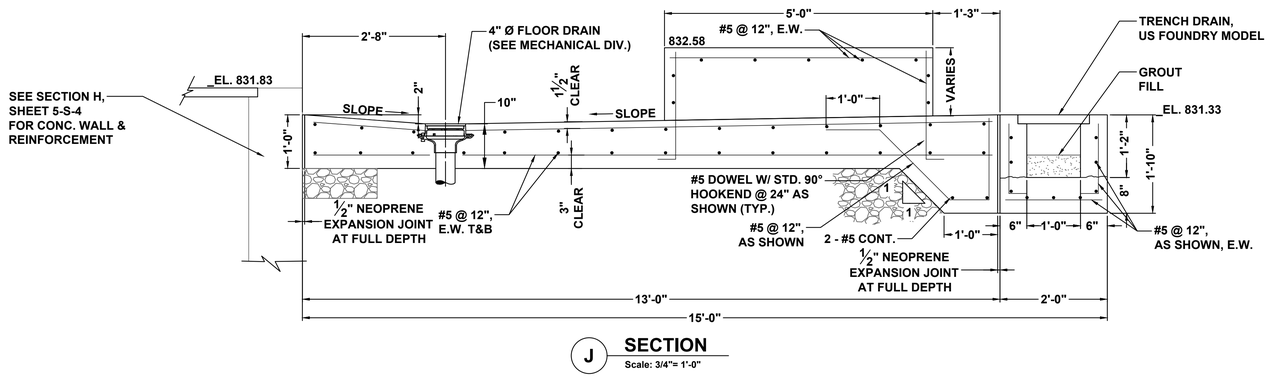

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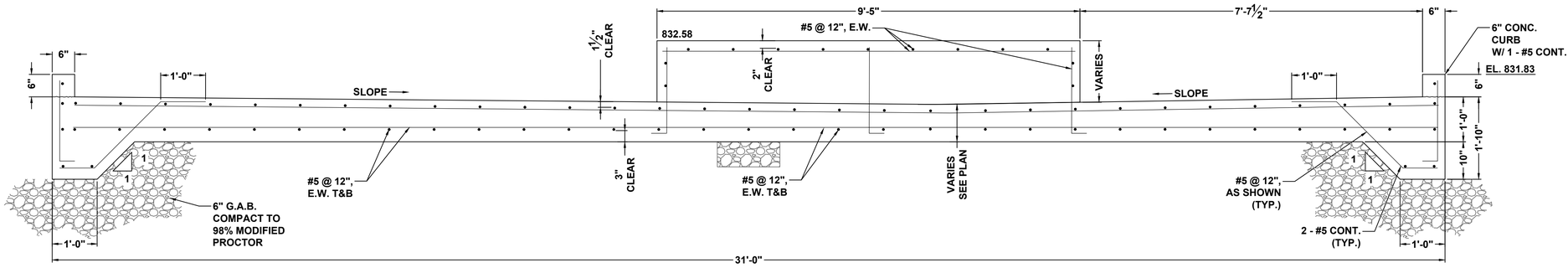

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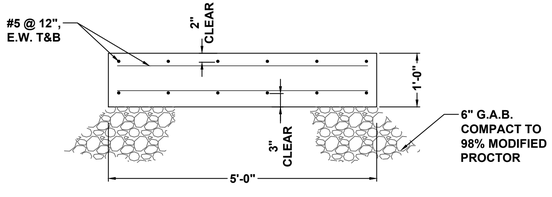
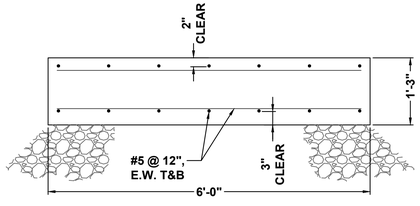
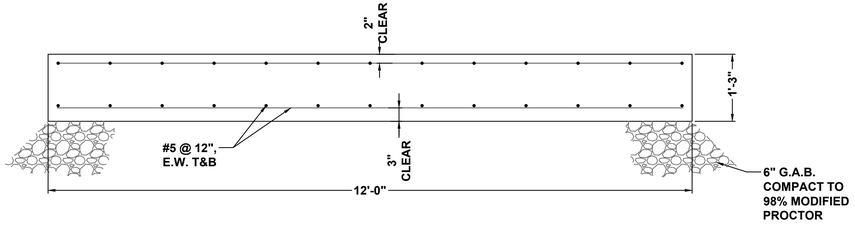


1 **AUTOMATIC SAMPLER EQUIPMENT PAD DETAIL (BOTH DIRECTIONS)**
Scale: 3/4"= 1'-0"





2 **ODOR CONTROL EQUIPMENT PAD DETAIL**
Scale: 3/4"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

HEADWORKS STRUCTURAL SECTIONS & DETAILS 3

DRAWING NUMBER

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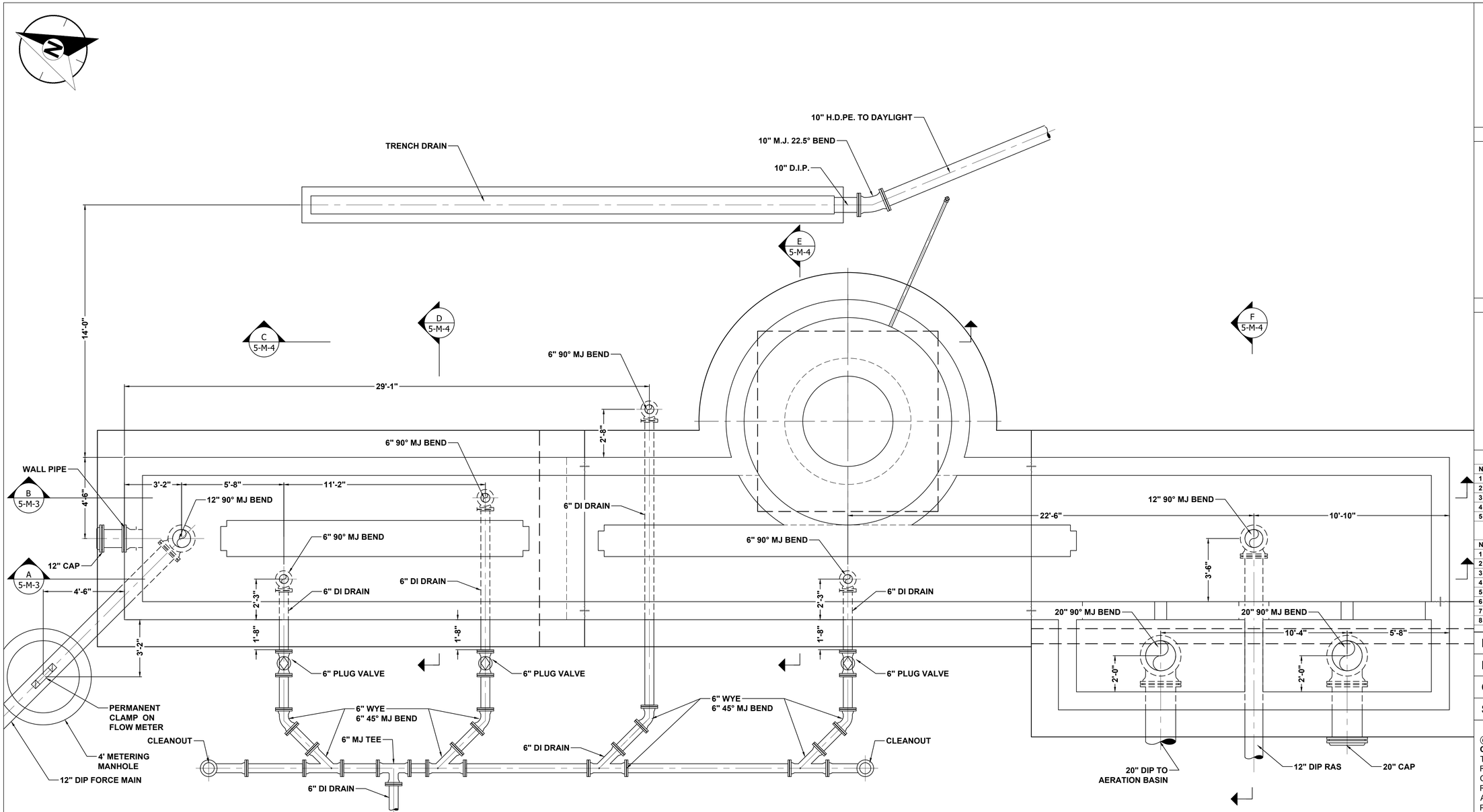
21083 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 12:47 PM



1 HEADWORKS TOP PLAN

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

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HEADWORKS MECHANICAL BOTTOM PLAN

DRAWING NUMBER

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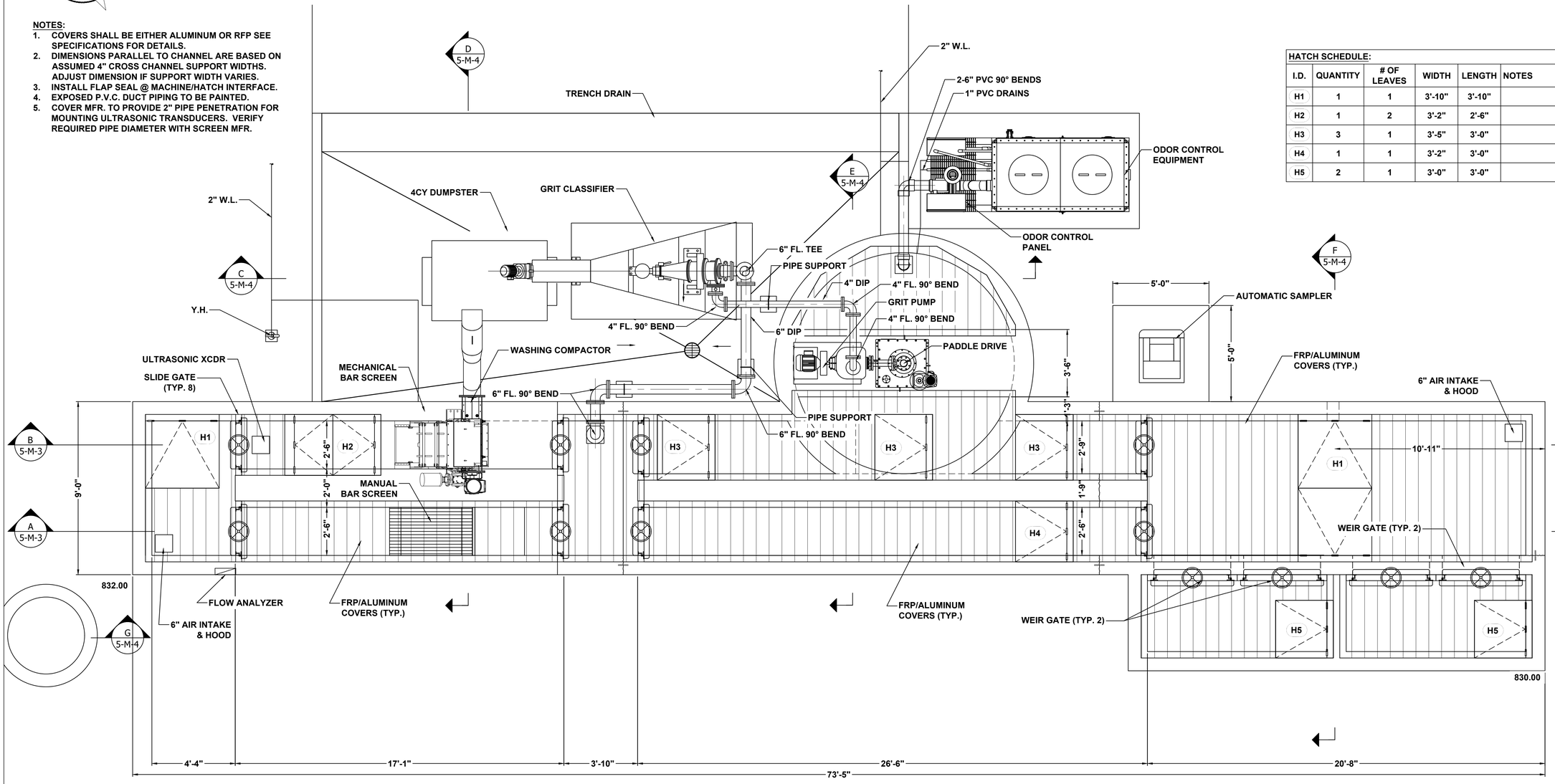
NOTES:

1. COVERS SHALL BE EITHER ALUMINUM OR RFP SEE SPECIFICATIONS FOR DETAILS.
2. DIMENSIONS PARALLEL TO CHANNEL ARE BASED ON ASSUMED 4" CROSS CHANNEL SUPPORT WIDTHS. ADJUST DIMENSION IF SUPPORT WIDTH VARIES.
3. INSTALL FLAP SEAL @ MACHINE/HATCH INTERFACE.
4. EXPOSED P.V.C. DUCT PIPING TO BE PAINTED.
5. COVER MFR. TO PROVIDE 2" PIPE PENETRATION FOR MOUNTING ULTRASONIC TRANSDUCERS. VERIFY REQUIRED PIPE DIAMETER WITH SCREEN MFR.

HATCH SCHEDULE:					
I.D.	QUANTITY	# OF LEAVES	WIDTH	LENGTH	NOTES
H1	1	1	3'-10"	3'-10"	
H2	1	2	3'-2"	2'-6"	
H3	3	1	3'-5"	3'-0"	
H4	1	1	3'-2"	3'-0"	
H5	2	1	3'-0"	3'-0"	



1 HEADWORKS TOP PLAN

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

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HEADWORKS MECHANICAL TOP PLAN

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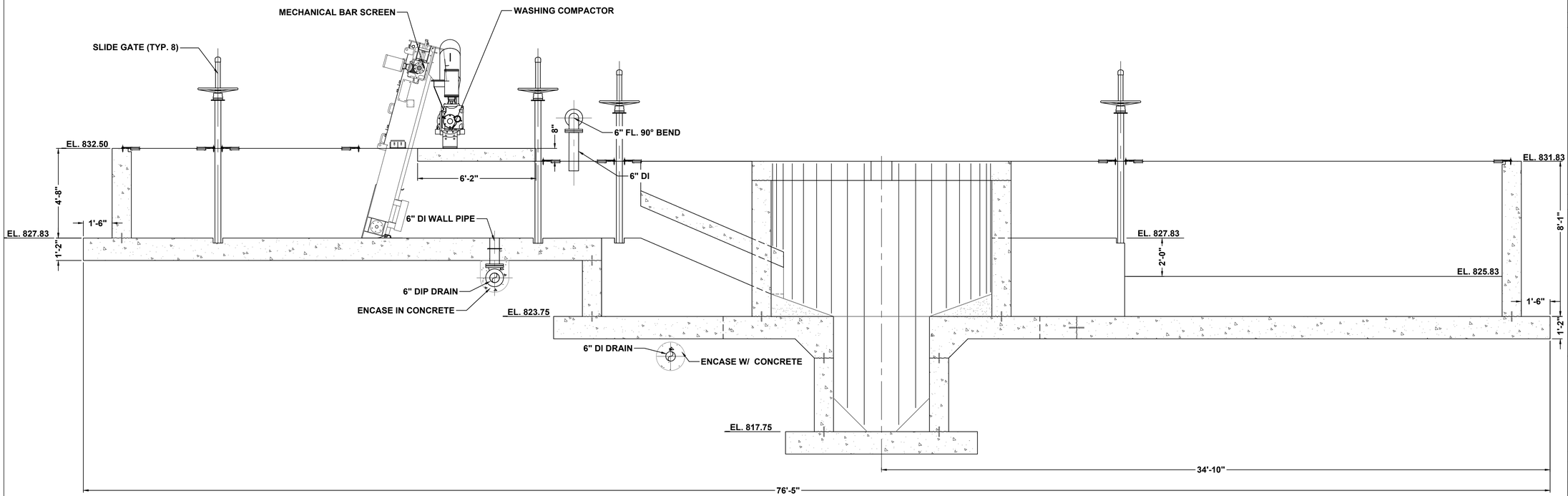

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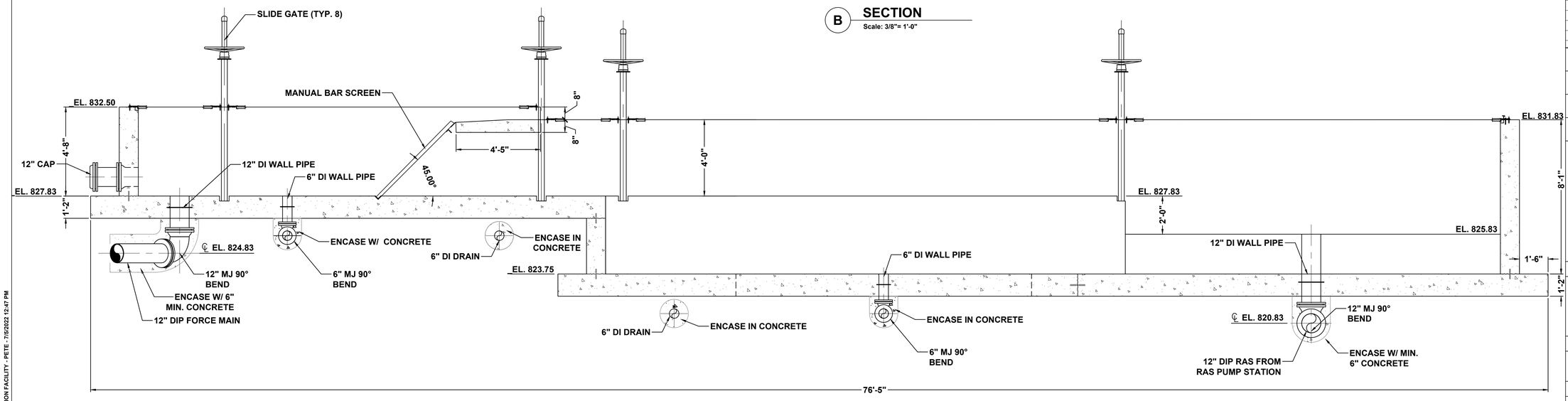
Scale: 3/8"= 1'-0"



A SECTION

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

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HEADWORKS MECHANICAL SECTIONS 1

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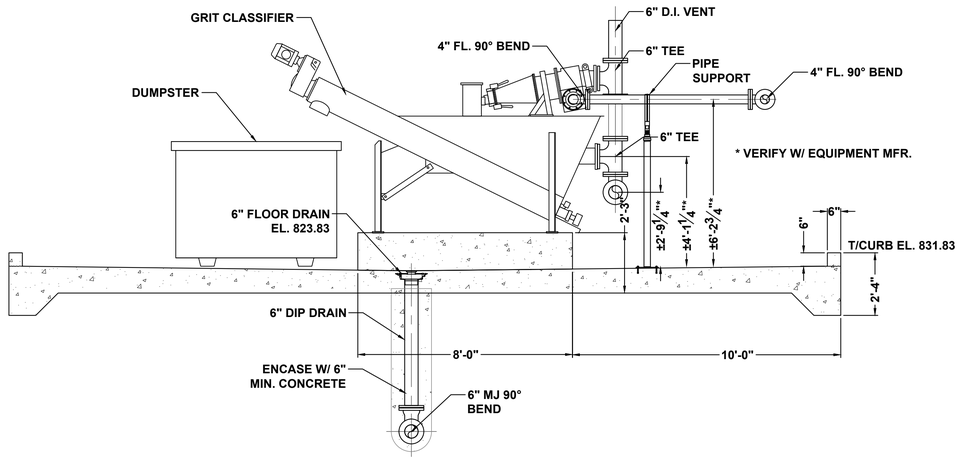

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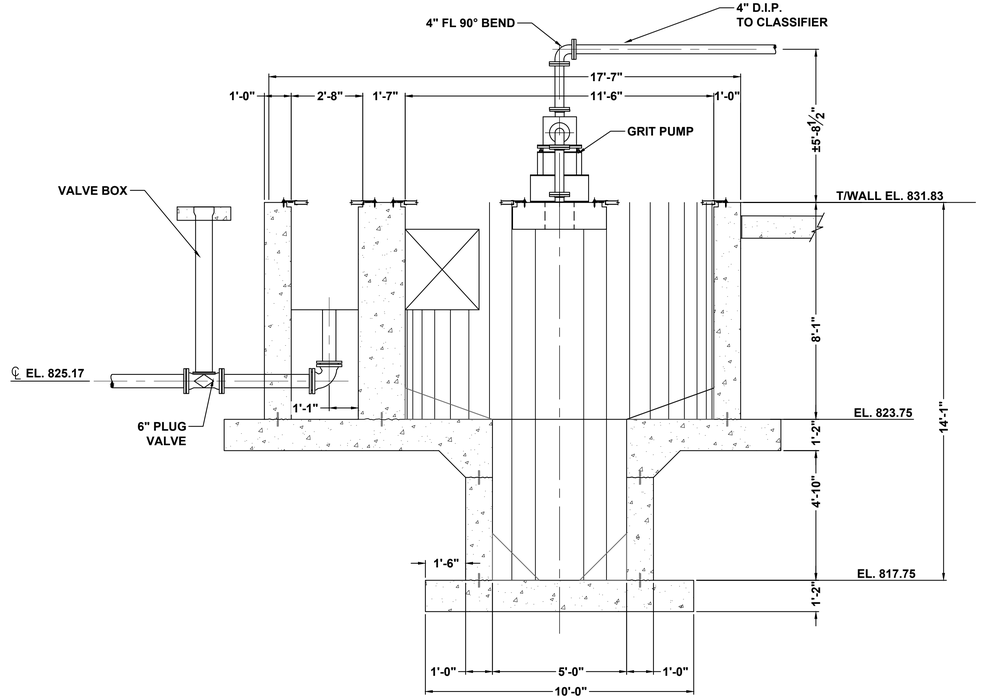

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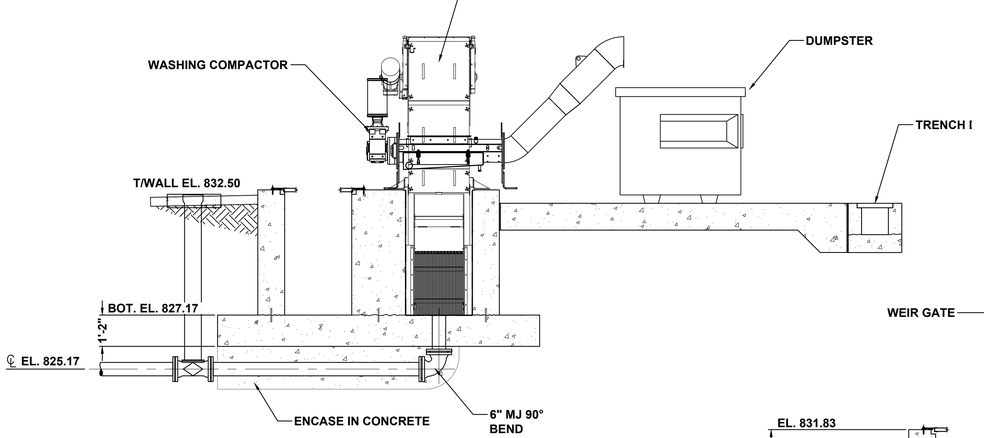

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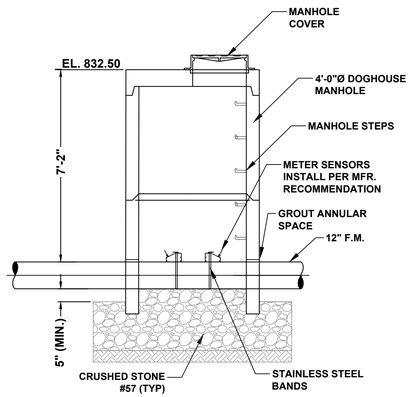

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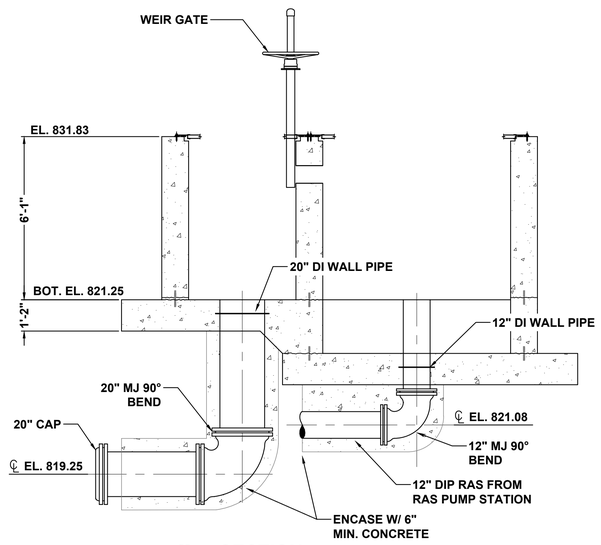

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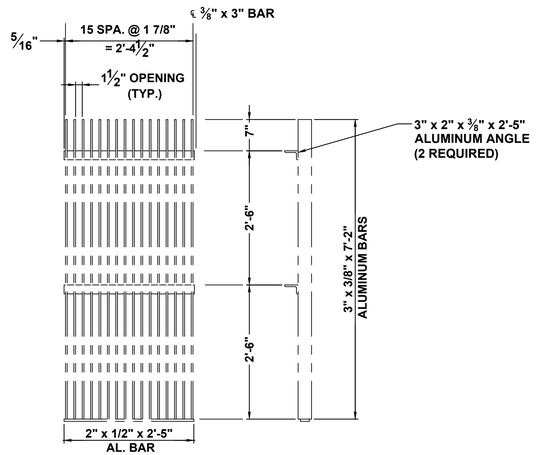
Scale: 3/8"= 1'-0"



NOTES:
1. MANUAL SCREEN FABRICATOR SHALL PROVIDE A RAKE WITH SUFFICIENT LENGTH HANDLE TO CLEAN SCREEN. RAKE SHALL BE LIGHTWEIGHT ALUMINUM.

1 **MANUAL BAR SCREEN DETAIL**
Scale: 3/4"= 1'-0"

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HEADWORKS MECHANICAL SECTIONS 2

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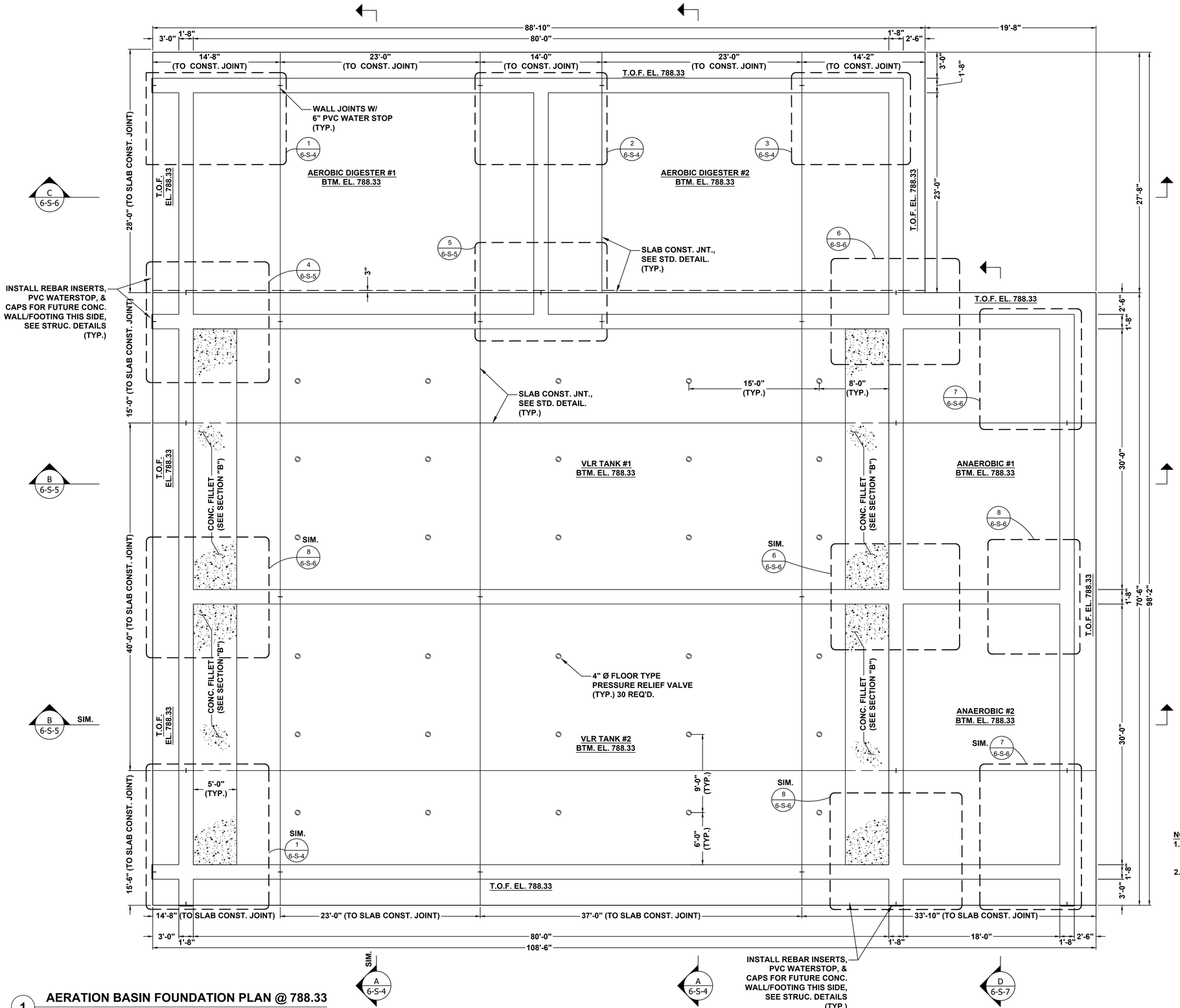

1 AERATION BASIN FOUNDATION PLAN @ 788.33

Scale: 3/16"= 1'-0"

NOTES:

1. WALL JOINTS ARE TO BE CONSTRUCTED AS CONTROL JOINTS PER STANDARD DETAIL UNLESS NOTED.
2. ALL WATER & WASTEWATER HOLDING STRUCTURES SHALL BE LEAK TESTED UPON COMPLETION AND PROPER CURING OF NEW CONCRETE. LEAK TESTING SHALL BE DONE ACCORDING TO ACI 350.1 LATEST REVISION INCLUDING VISUAL INSPECTION, AND HYDROSTATIC TESTING PER SPECIFICATIONS FOR HST-050. ALL VISIBLE LEAKS SHALL BE REPAIRED AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

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10/05/2021

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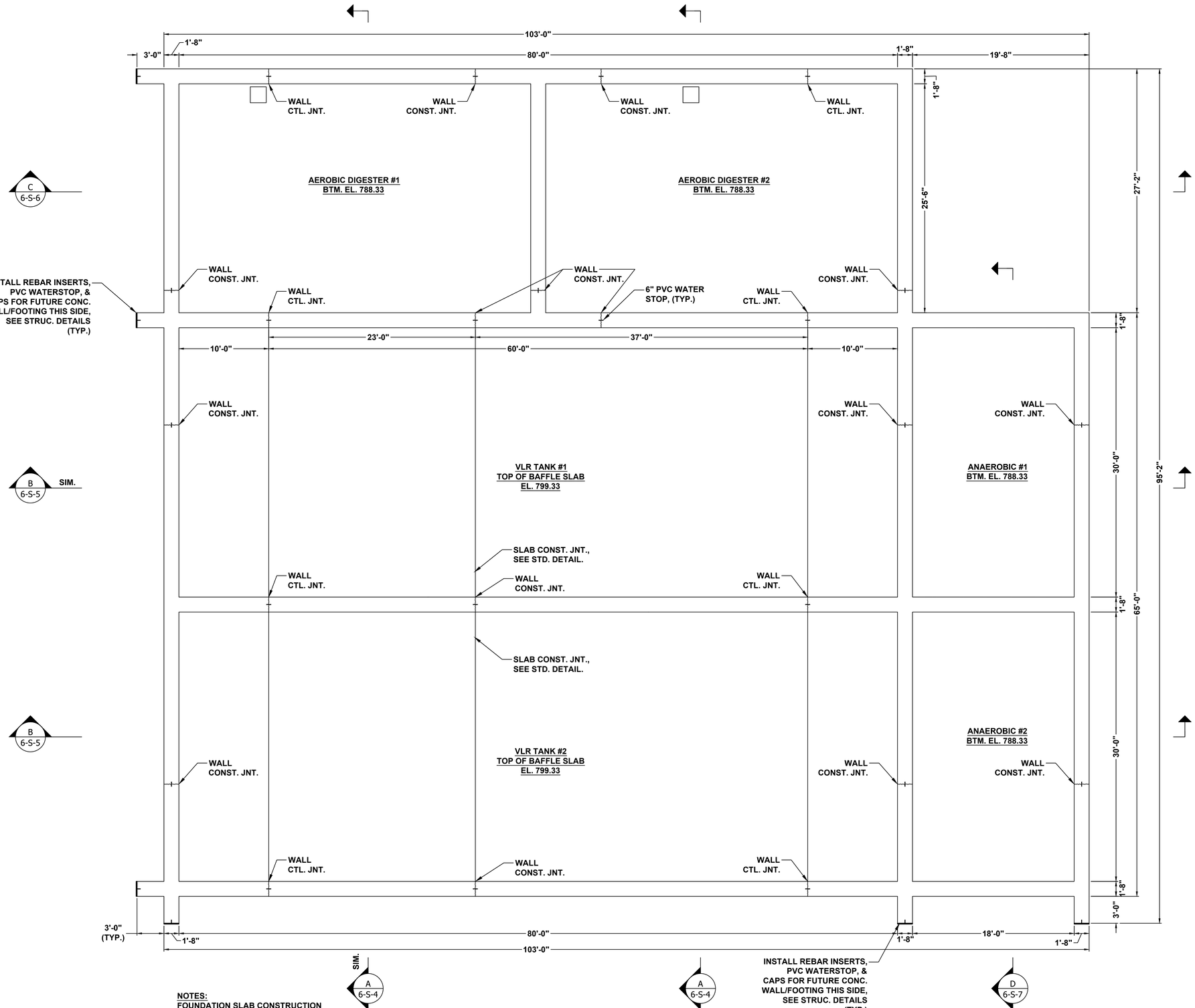
AERATION BASIN STRUCTURAL FOUNDATION PLAN

DRAWING NUMBER

6-S-1
OF
214



NOTES:
FOUNDATION SLAB CONSTRUCTION JOINTS NOT SHOWN FOR CLARITY.

2 AERATION BASIN STRUC. LOWER LEVEL PLAN

Scale: 3/16"= 1'-0"

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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4		
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

AERATION BASIN STRUCTURAL LOWER PLAN

DRAWING NUMBER

6-S-2
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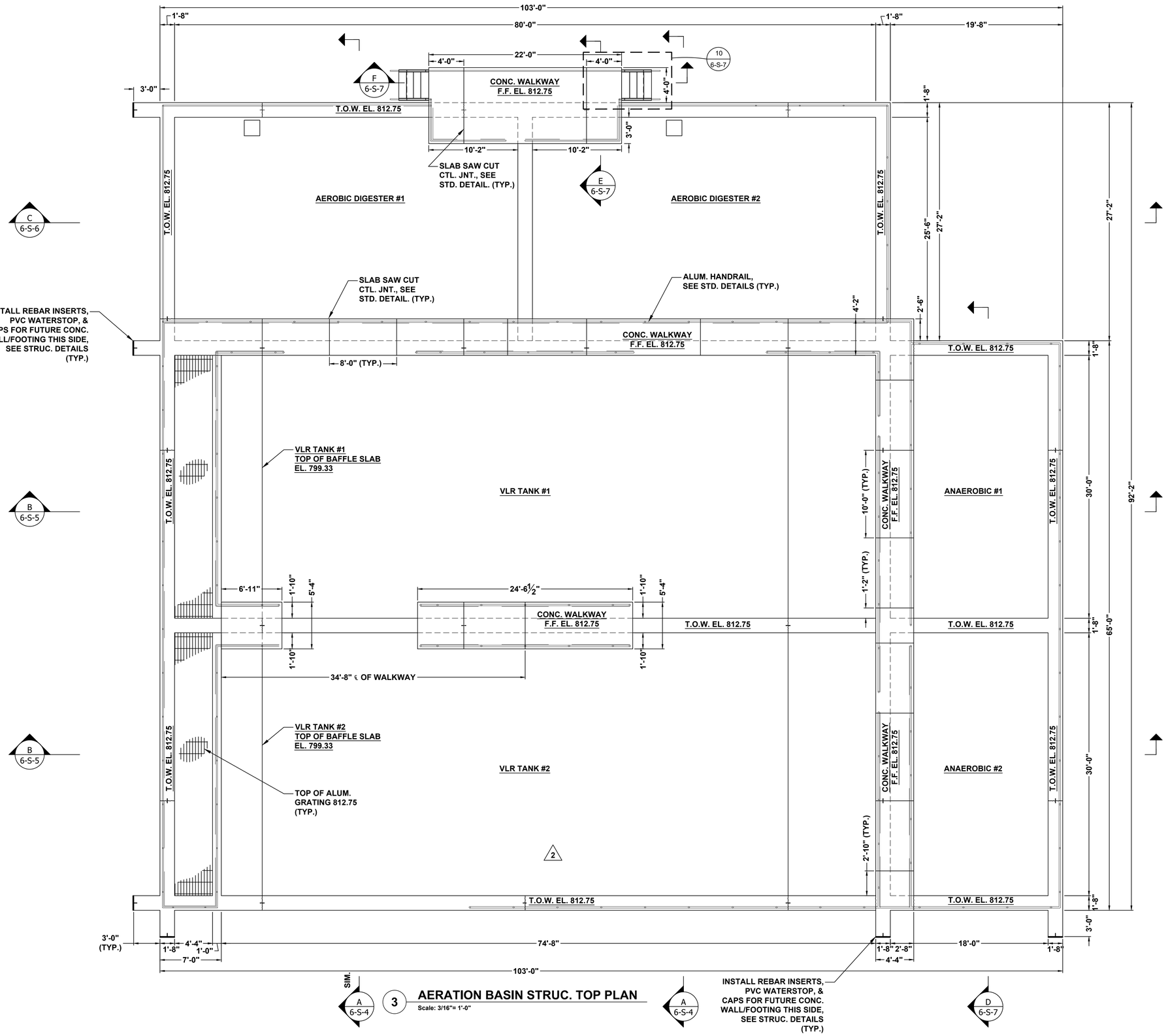
214



3 AERATION BASIN STRUC. TOP PLAN

Scale: 3/16"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

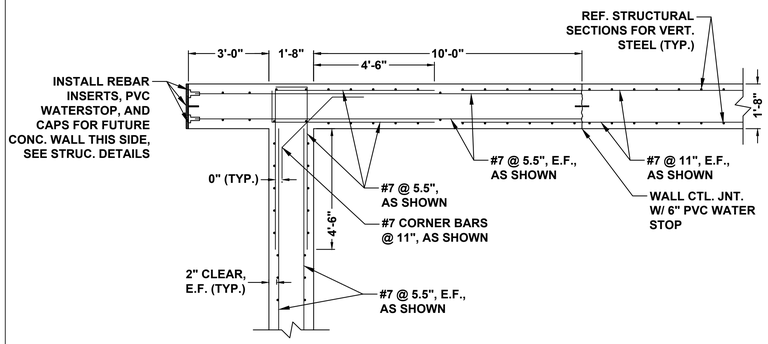
10/05/2021

SHEET TITLE

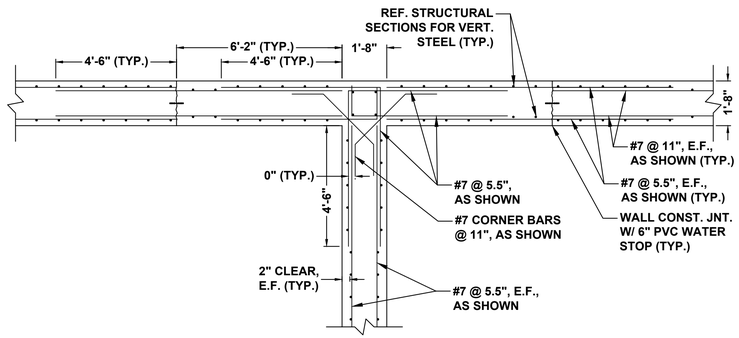
AERATION BASIN STRUCTURAL UPPER PLAN

DRAWING NUMBER

6-S-3
OF
214



1 **DETAIL**
Scale: 3/8"= 1'-0"



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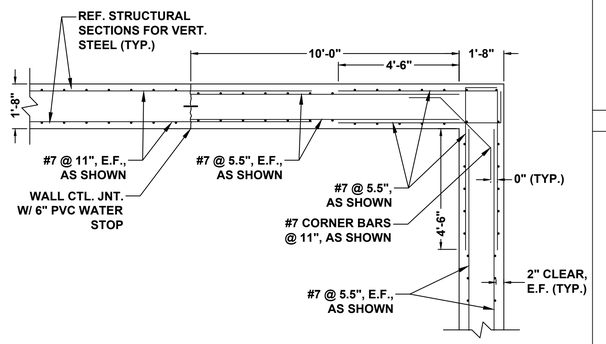

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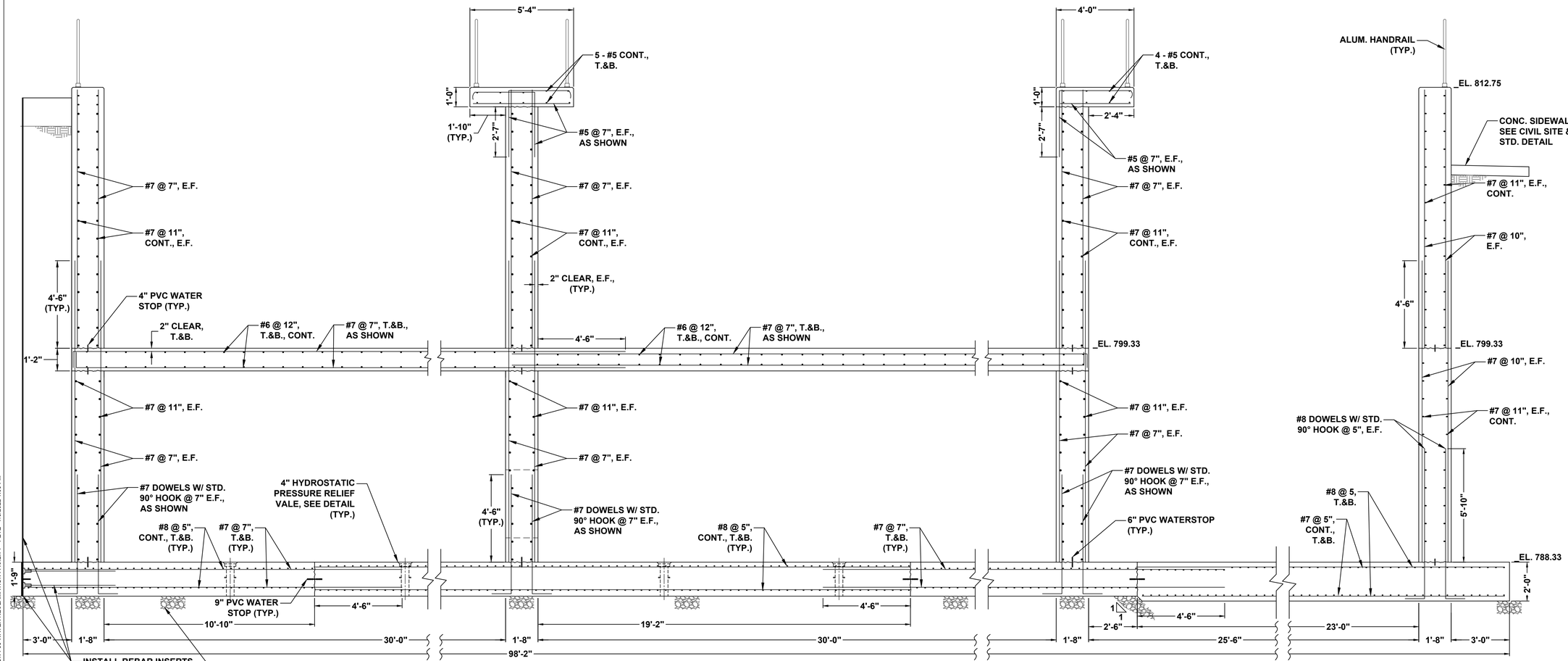
Scale: 3/8"= 1'-0"



A **SECTION**
Scale: 3/8"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

AERATION BASIN STRUCTURAL SECTIONS 1

DRAWING NUMBER

6-S-4
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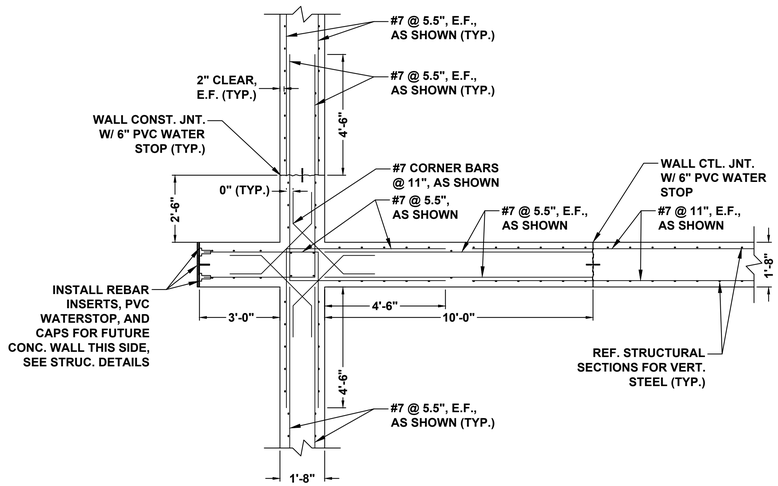
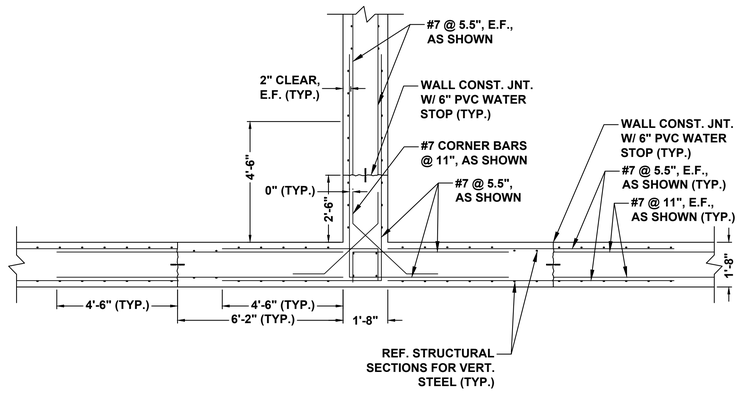
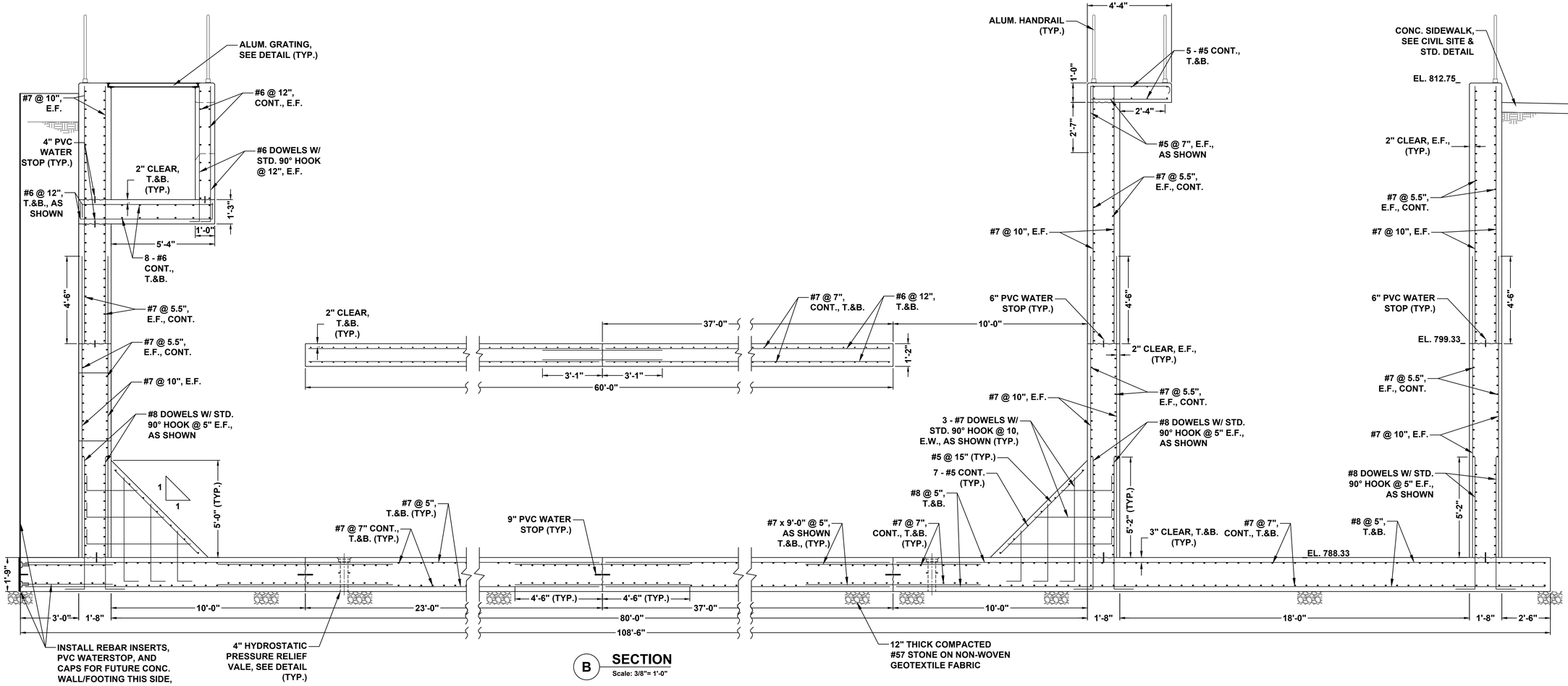
214



4 DETAIL
Scale: 3/8"= 1'-0"



5 DETAIL
Scale: 3/8"= 1'-0"



B SECTION
Scale: 3/8"= 1'-0"

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

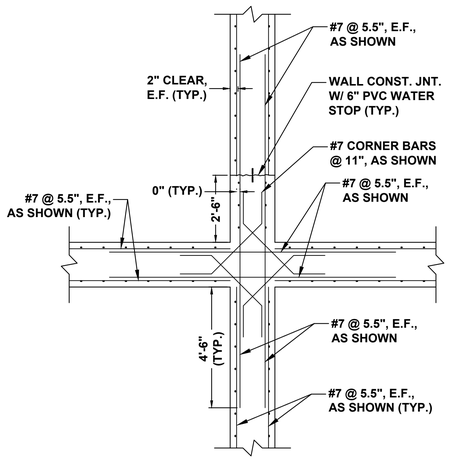
10/05/2021

SHEET TITLE

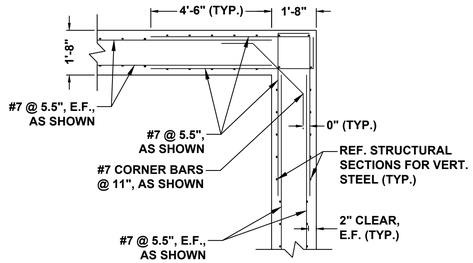
AERATION BASIN STRUCTURAL SECTIONS 2

DRAWING NUMBER

6-S-5
OF
214



6 **DETAIL**
Scale: 3/8"= 1'-0"



7 **DETAIL**
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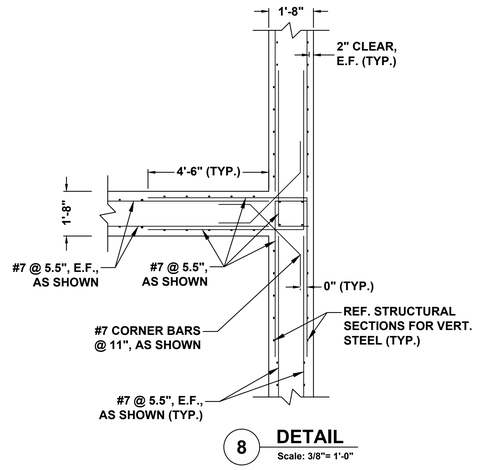

8 **DETAIL**
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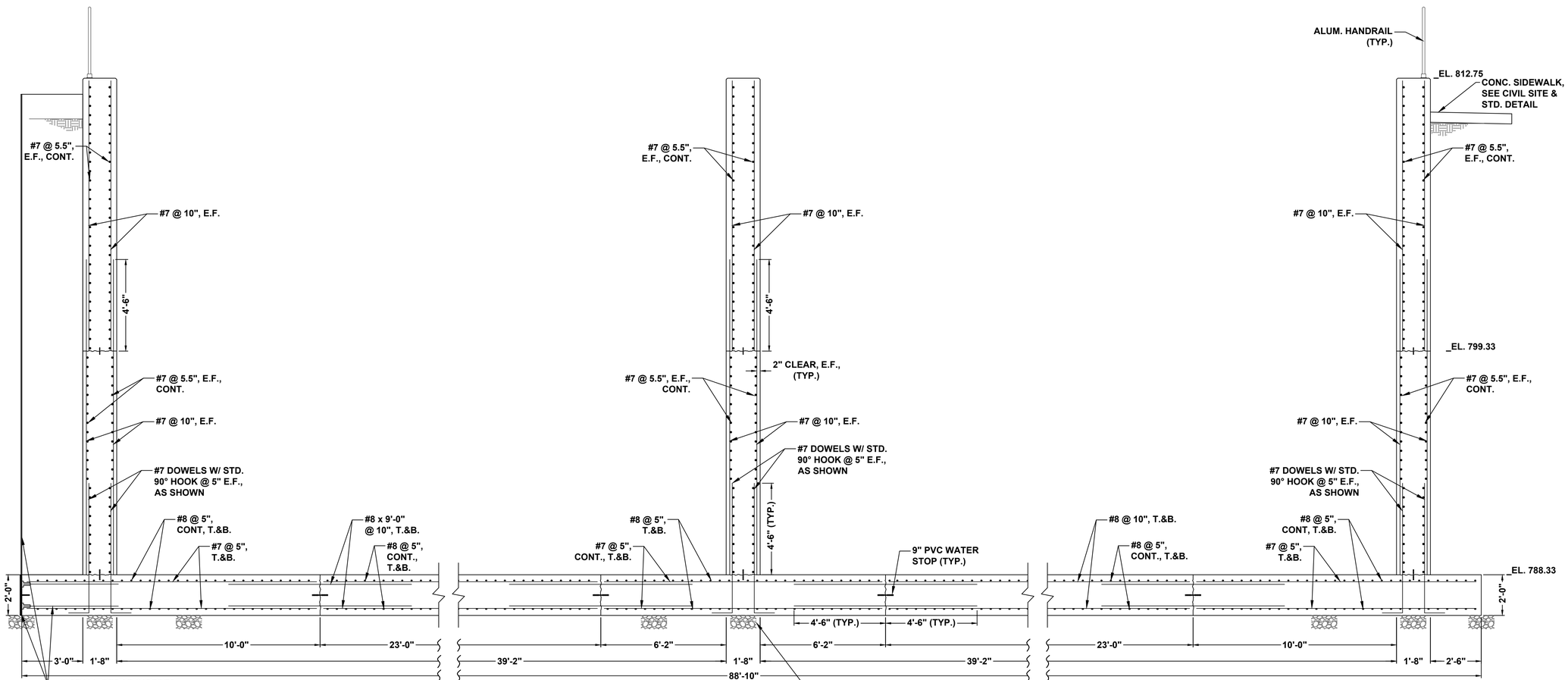

C **SECTION**
Scale: 3/8"= 1'-0"

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

AERATION BASIN STRUCTURAL SECTIONS 3

DRAWING NUMBER

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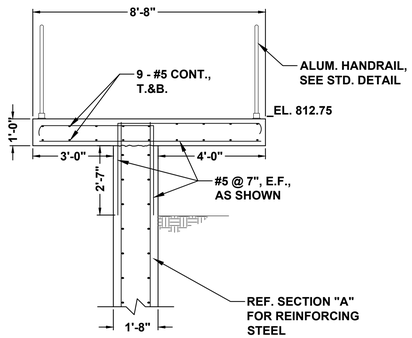
214



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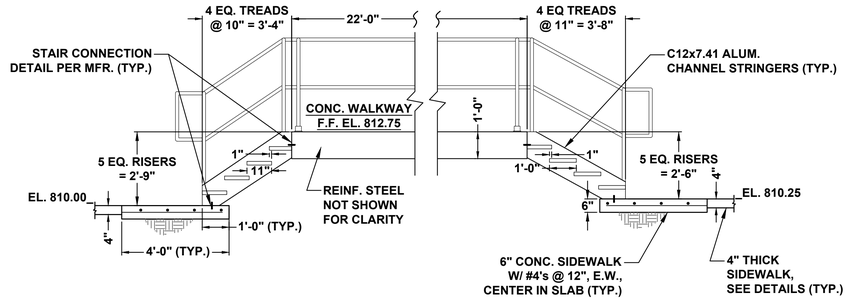
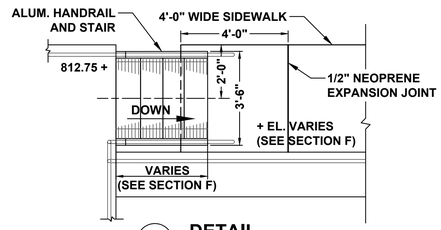
Scale: 3/8"= 1'-0"



F **SECTION**
Scale: 3/8"= 1'-0"



10 **DETAIL**
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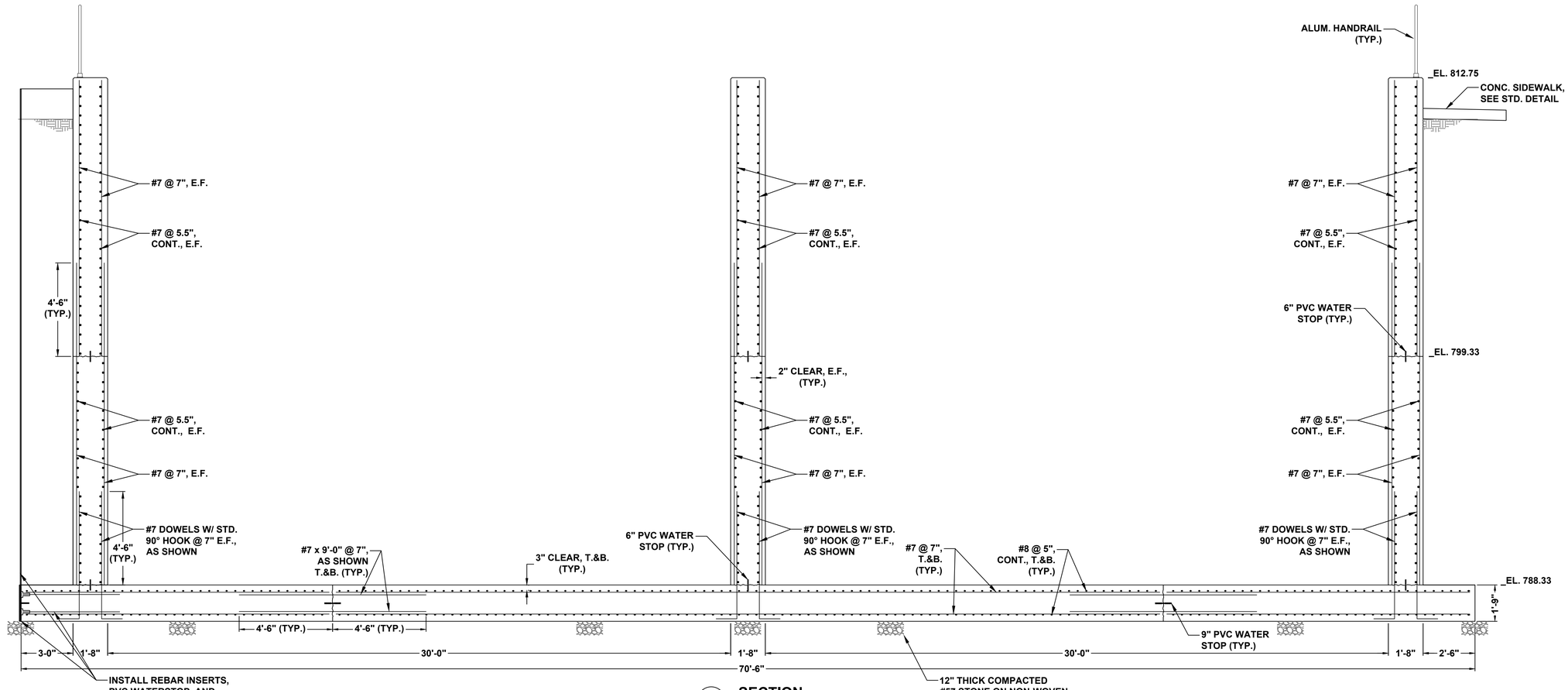

D **SECTION**
Scale: 3/8"= 1'-0"

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

AERATION BASIN STRUCTURAL SECTIONS 4

DRAWING NUMBER

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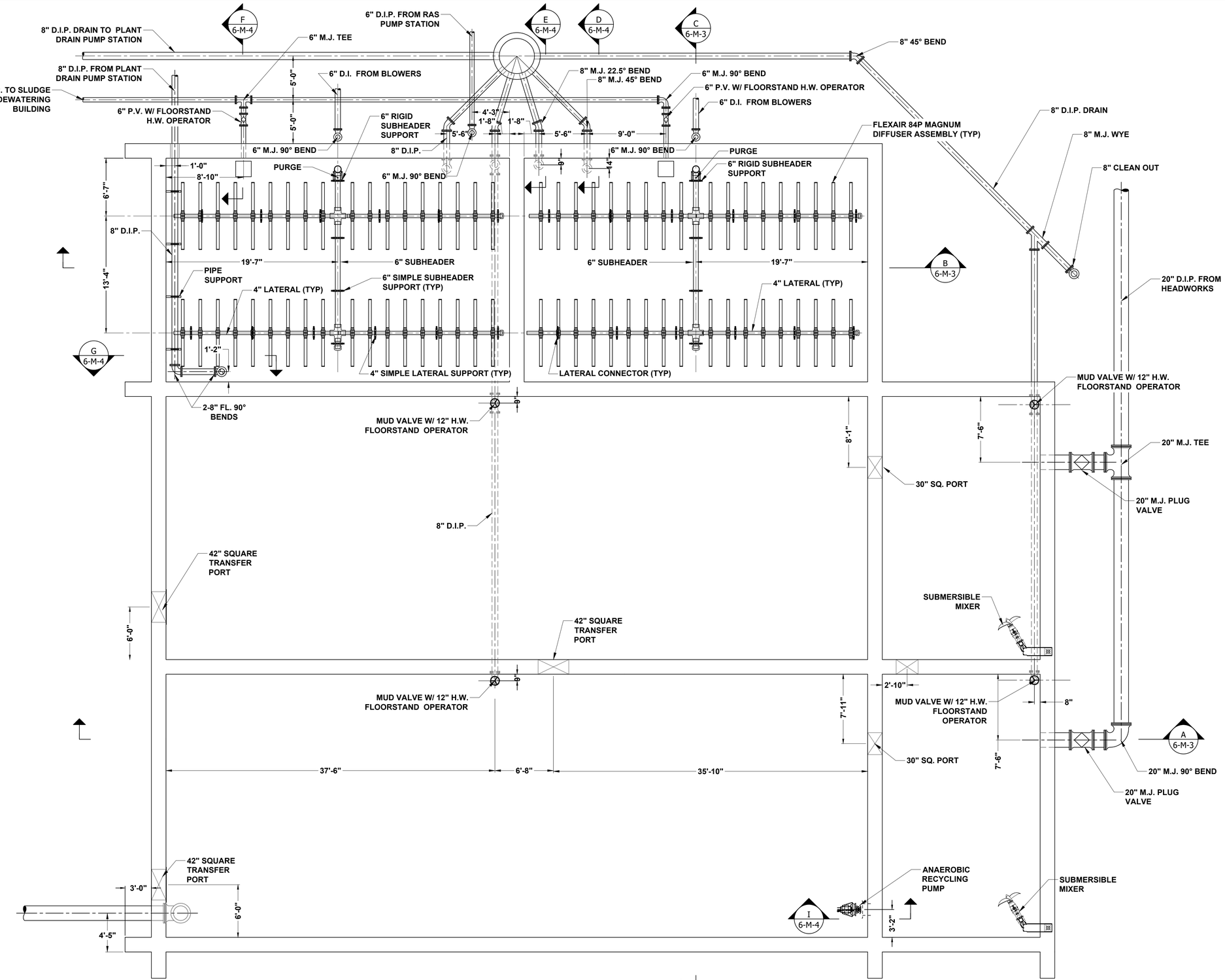
214

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/6/2022 1:03 PM



1 AERATION BASIN PLAN

Scale: 3/16"= 1'-0"

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE 7/5/2022 1:03 PM

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

AERATION BASIN MECHANICAL BOTTOM PLAN

DRAWING NUMBER

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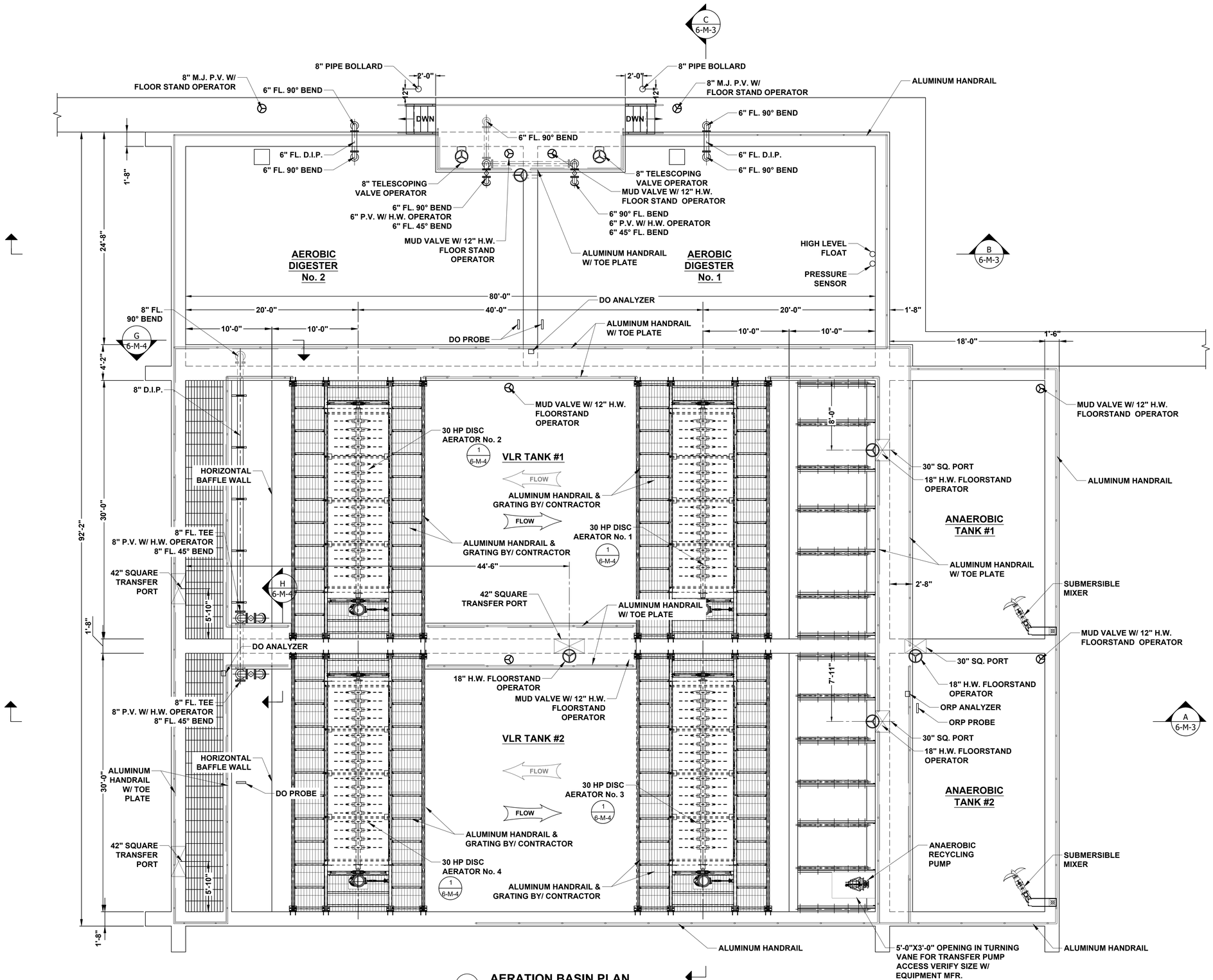
OF
214



1 AERATION BASIN PLAN

Scale: 3/16"= 1'-0"

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 1:03 PM

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SHEET TITLE

AERATION BASIN MECHANICAL TOP PLAN

DRAWING NUMBER

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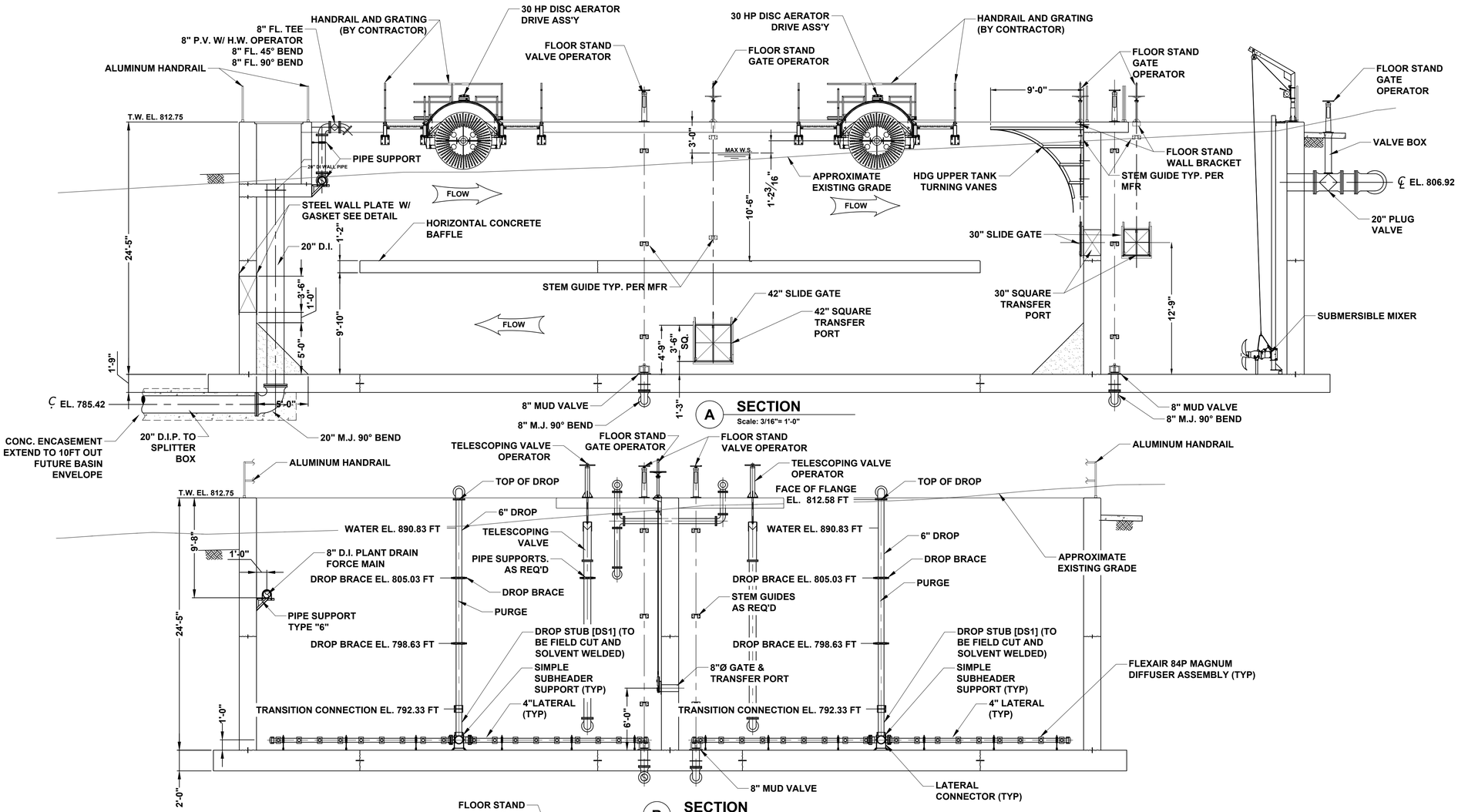

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

AERATION BASIN MECHANICAL SECTIONS 1

DRAWING NUMBER

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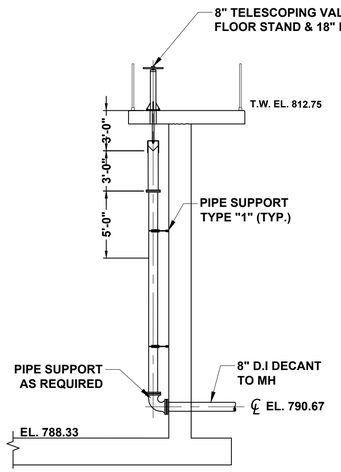
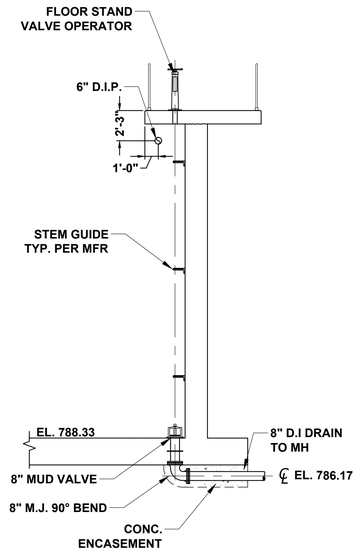


D **SECTION**
Scale: 3/16"= 1'-0"



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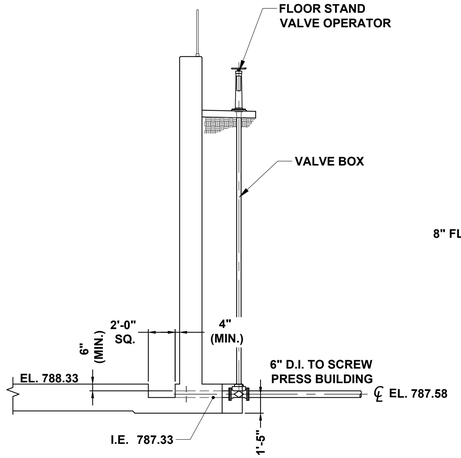

F **SECTION**
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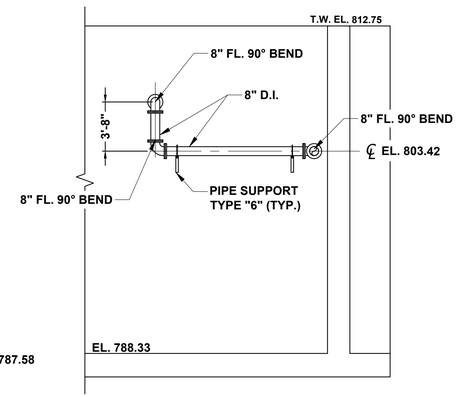
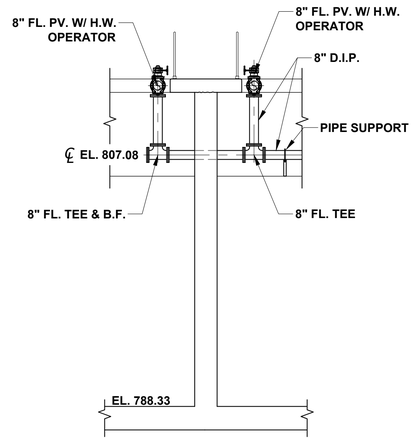


G **SECTION**
Scale: 3/16"= 1'-0"



H **SECTION**
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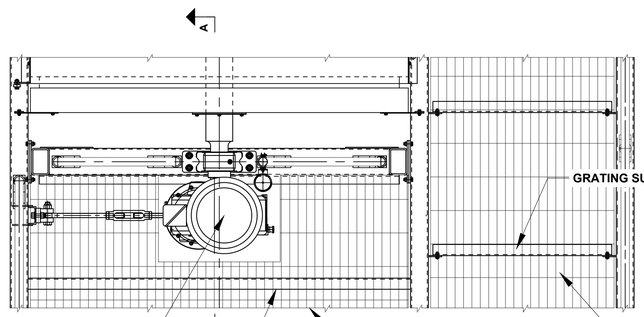
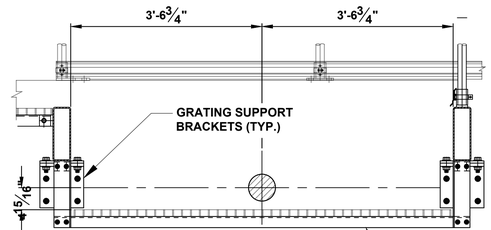
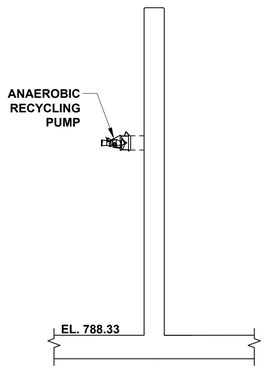


PLAN



SECTION C



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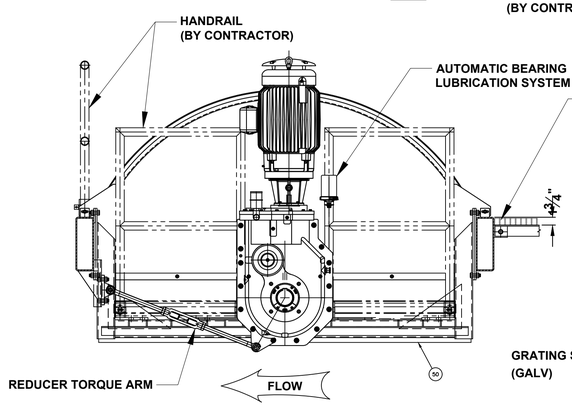
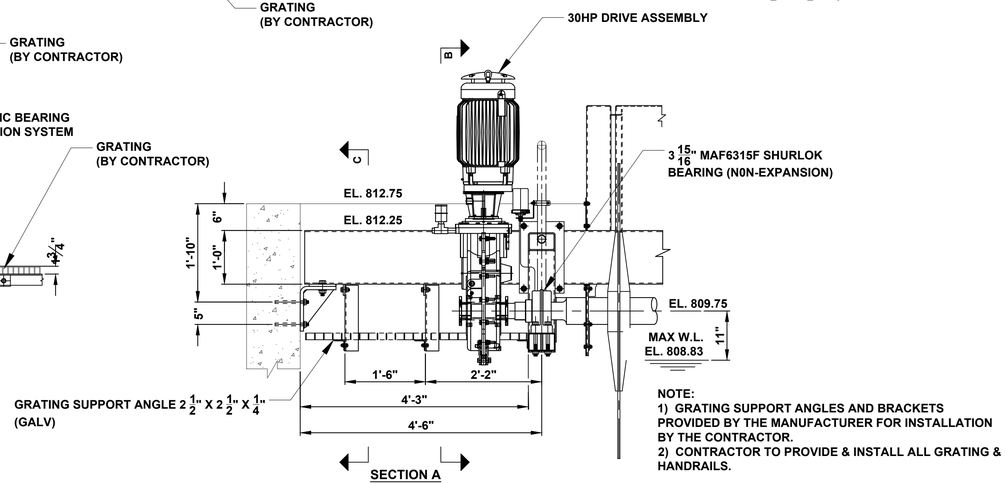
Scale: 3/16"= 1'-0"



SECTION B



SECTION A

NOTE:
1) GRATING SUPPORT ANGLES AND BRACKETS PROVIDED BY THE MANUFACTURER FOR INSTALLATION BY THE CONTRACTOR.
2) CONTRACTOR TO PROVIDE & INSTALL ALL GRATING & HANDRAILS.

1 **AERATOR DETAILS**
Scale: 3/4"= 1'-0"

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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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AERATION BASIN MECHANICAL SECTIONS 2

DRAWING NUMBER

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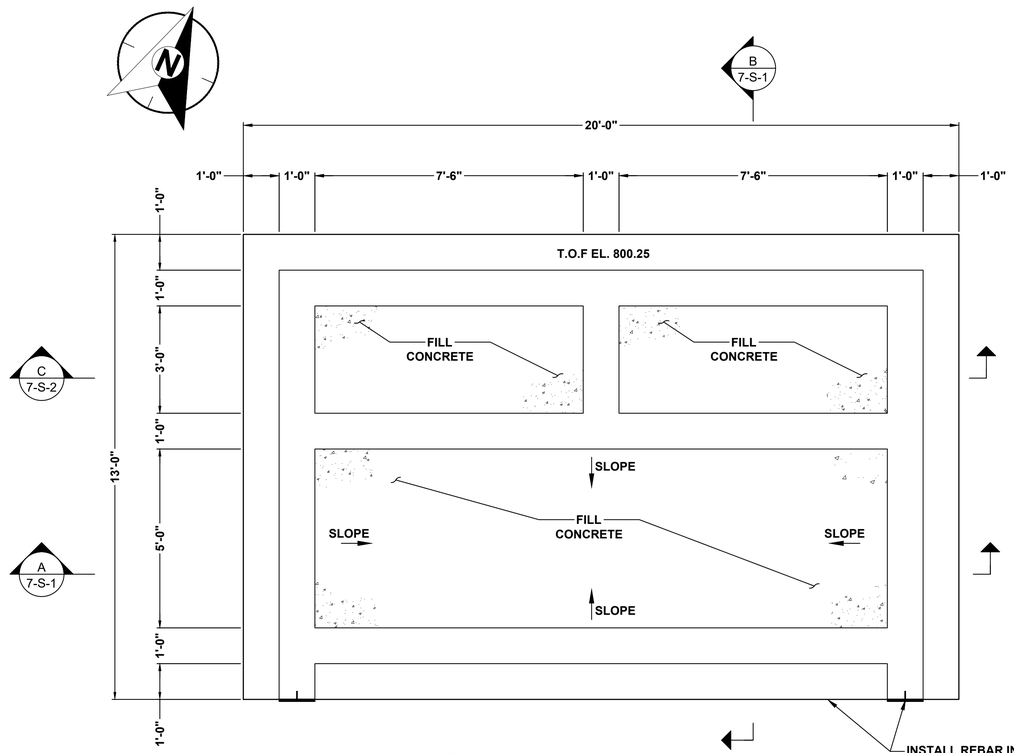
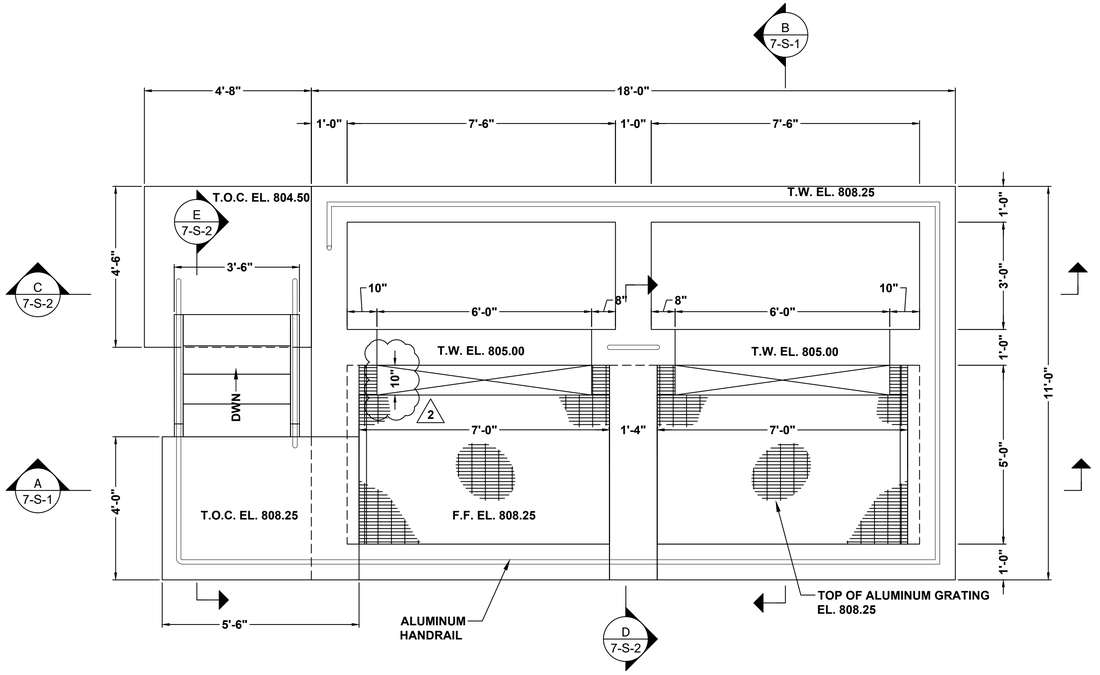


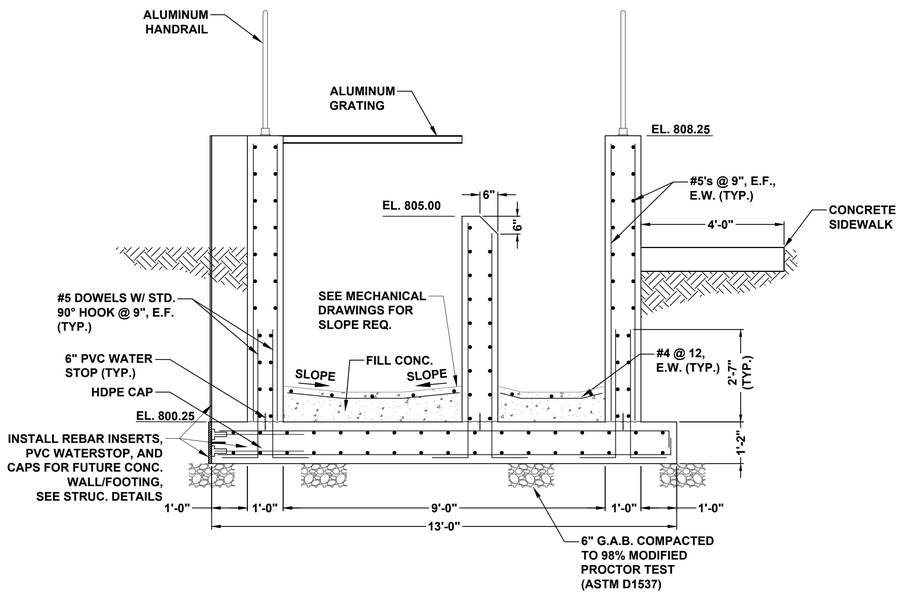
1 SPLITTER BOX FOUNDATION PLAN

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



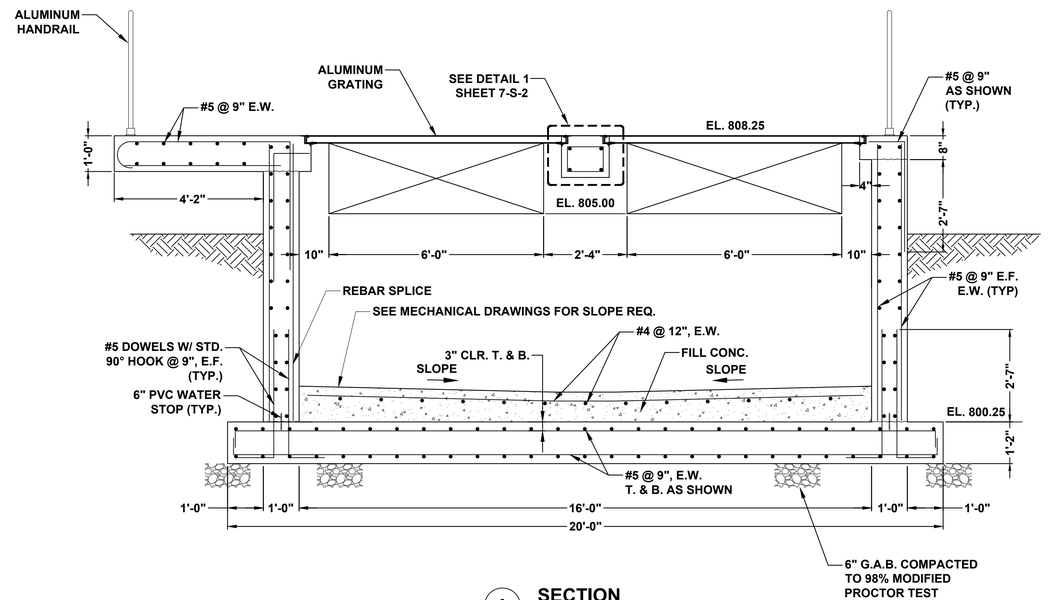
2 SPLITTER BOX TOP PLAN

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



B SECTION

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



A SECTION

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

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SPLITTER BOX STRUCTURAL 1

DRAWING NUMBER

7-S-1
OF
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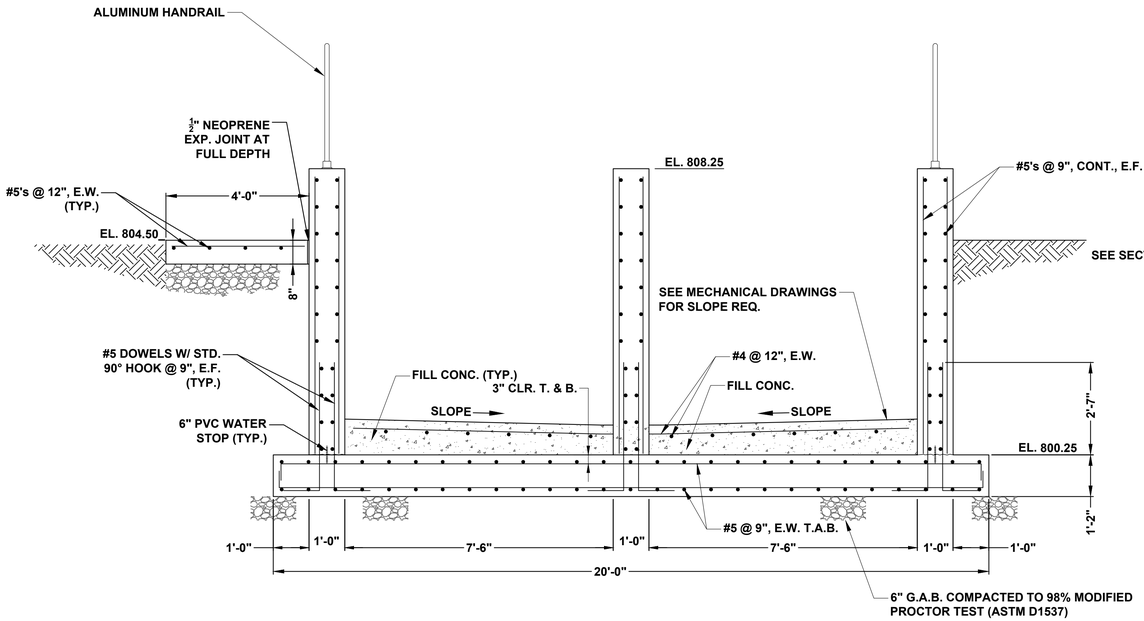
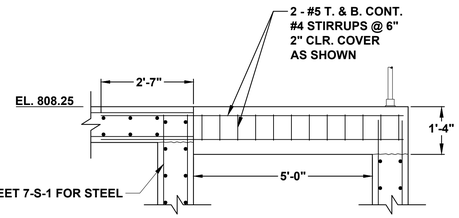
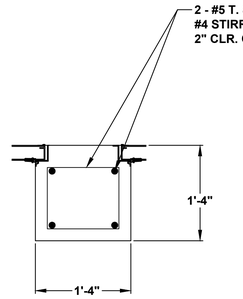


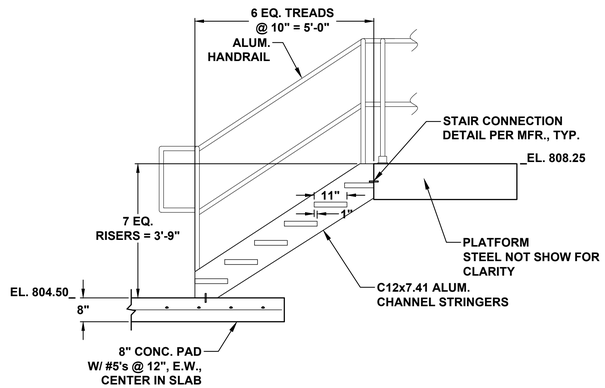
C **SECTION**
Scale: 1/2"= 1'-0"



D **SECTION**
Scale: 1/2"= 1'-0"



1 **DETAIL**
Scale: 1"= 1'-0"



E **SECTION**
Scale: 1/2"= 1'-0"

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SPLITTER BOX STRUCTURAL 2

DRAWING NUMBER

7-S-2
OF
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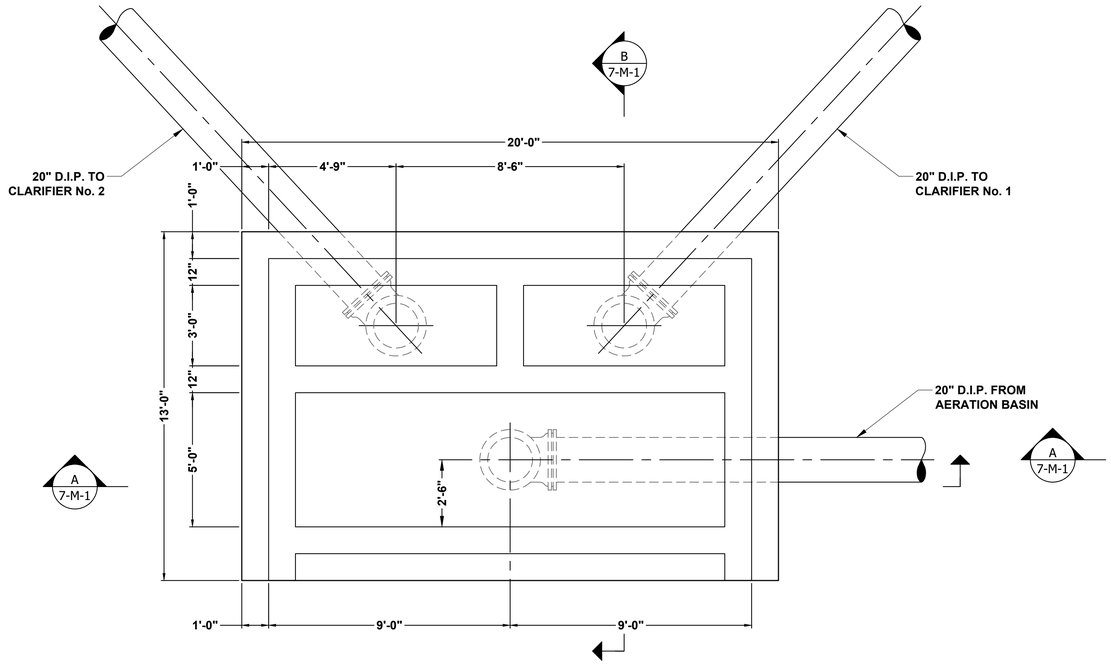
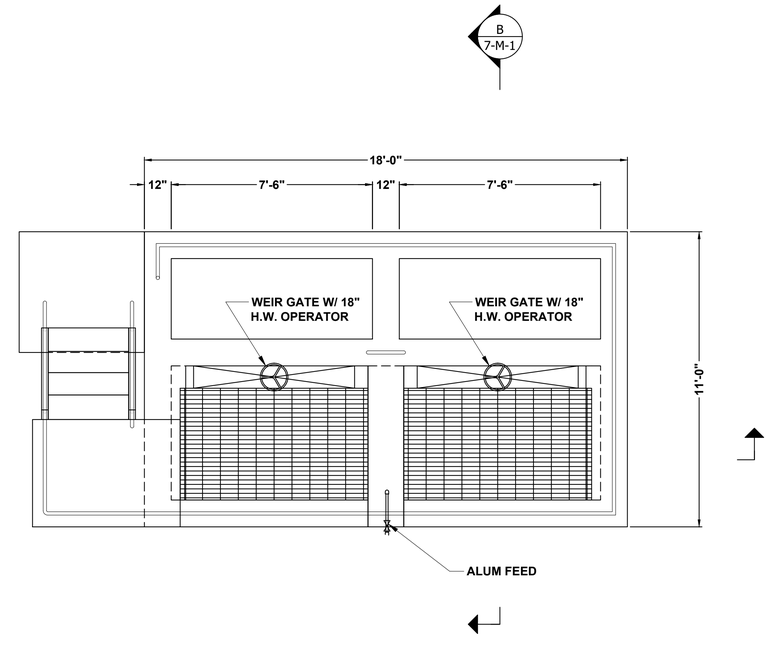


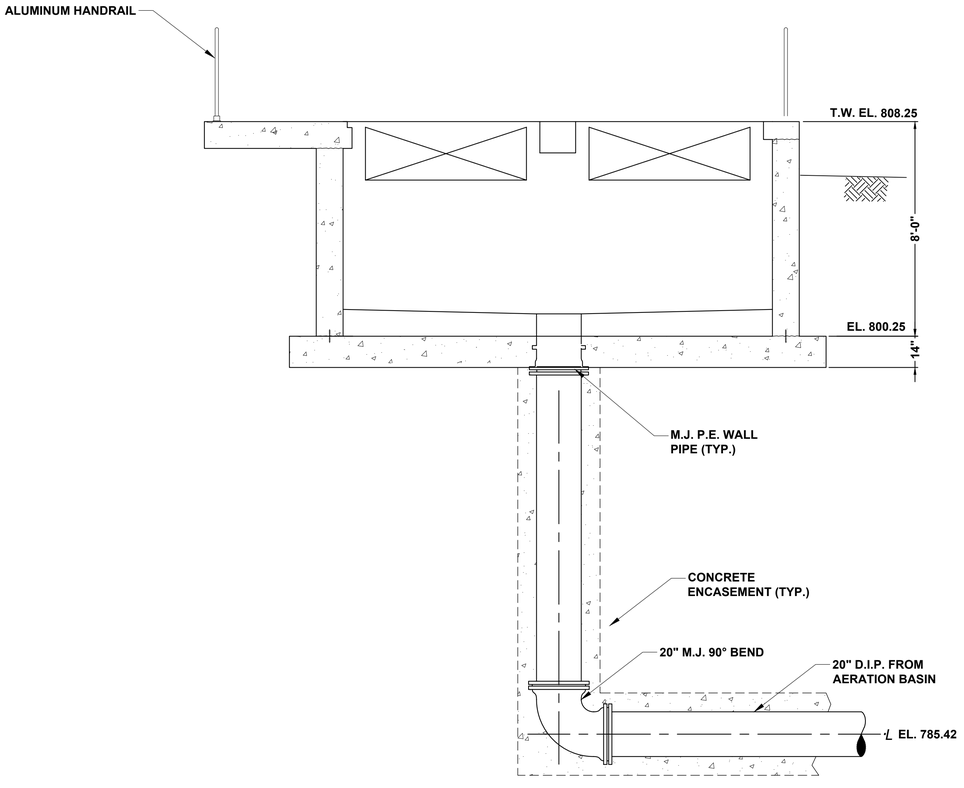
1 SPLITTER BOX BOTTOM PLAN

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



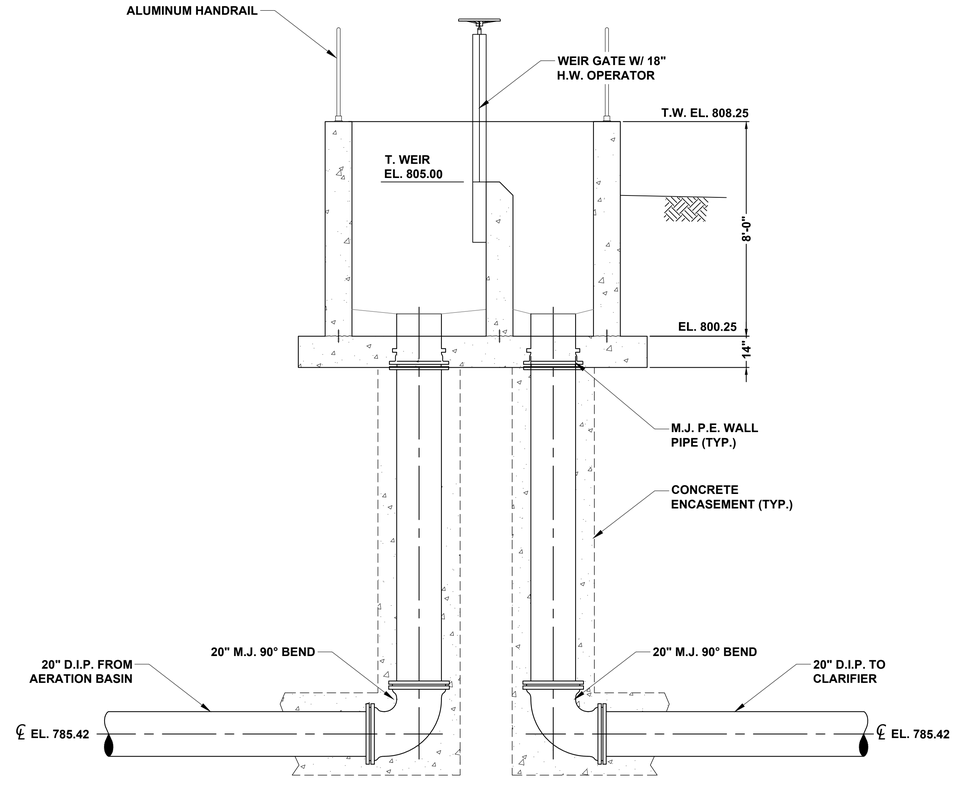
2 SPLITTER BOX TOP PLAN

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



A SECTION

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



B SECTION

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

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Drawn By : JWN

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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10/05/2021

SHEET TITLE

SPLITTER BOX MECHANICAL

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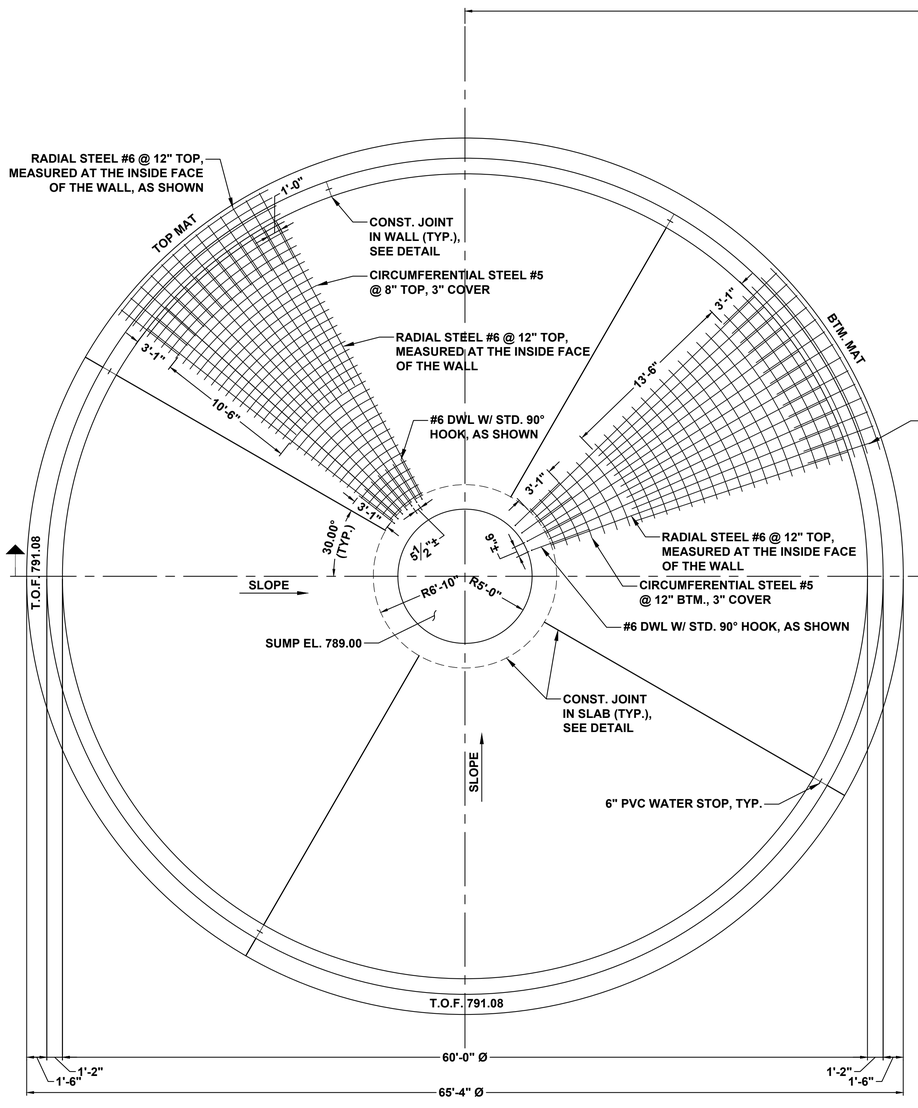
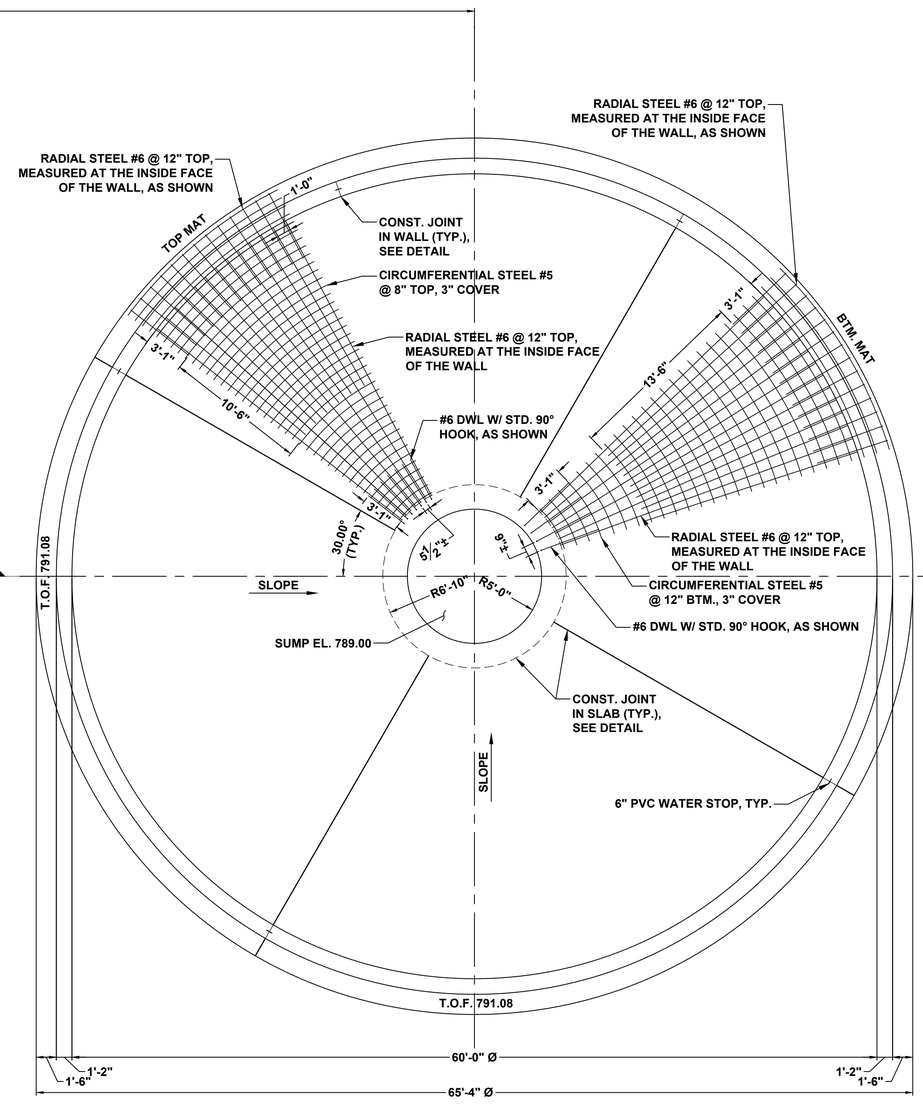


1 CLARIFIER NO. 2 STRUCTURAL FOUNDATION PLAN

Scale: 3/16"= 1'-0"



2 CLARIFIER NO. 1 STRUCTURAL FOUNDATION PLAN

Scale: 3/16"= 1'-0"

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

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Checked By : CKB

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SHEET TITLE

FINAL CLARIFIER STRUCTURAL FOUNDATION PLAN

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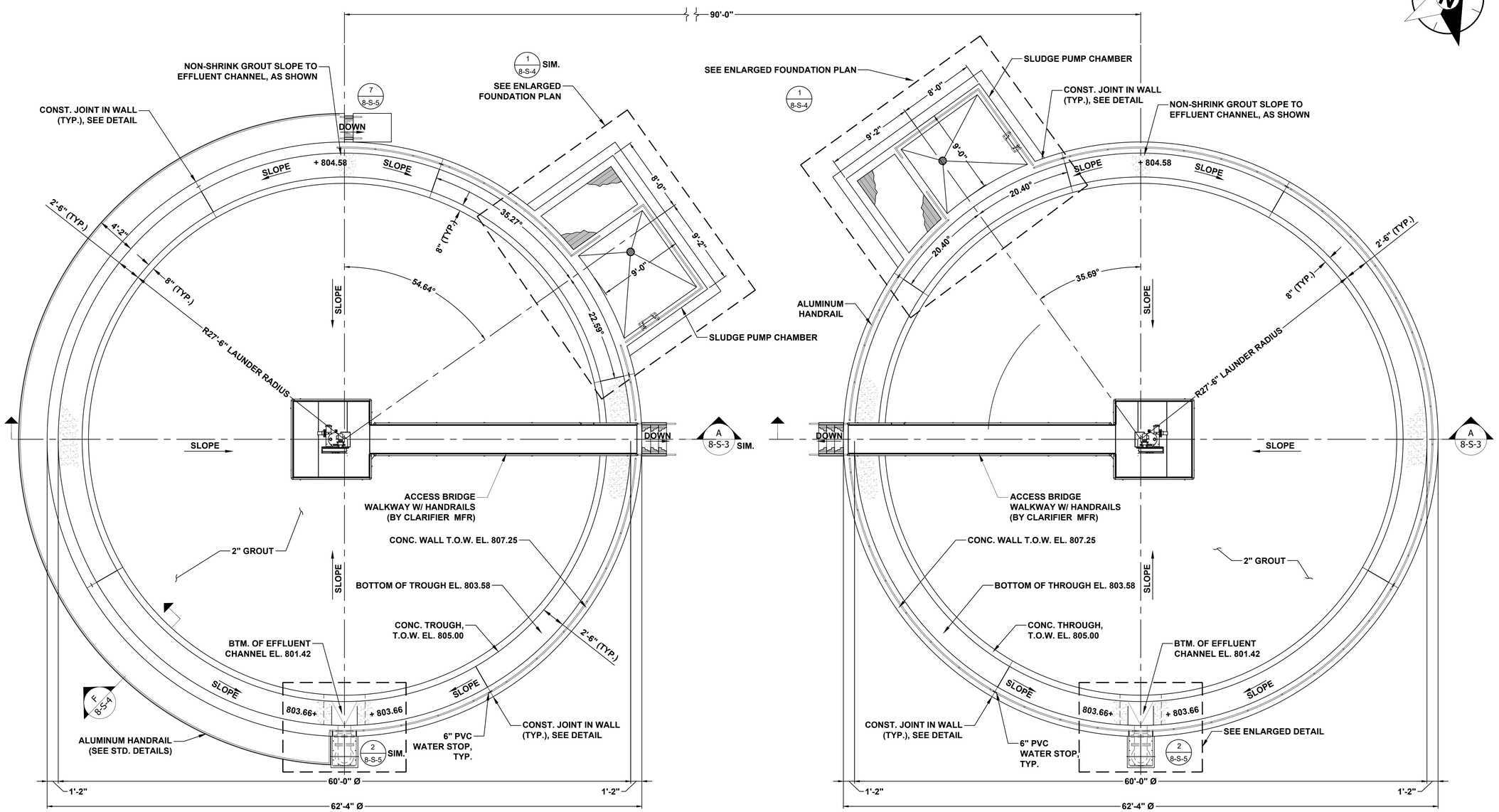

3 CLARIFIER NO. 2 STRUCTURAL TOP PLAN

Scale: 3/16"= 1'-0"

4 CLARIFIER NO. 1 STRUCTURAL TOP PLAN

Scale: 3/16"= 1'-0"

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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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FINAL CLARIFIER STRUCTURAL TOP PLAN

DRAWING NUMBER

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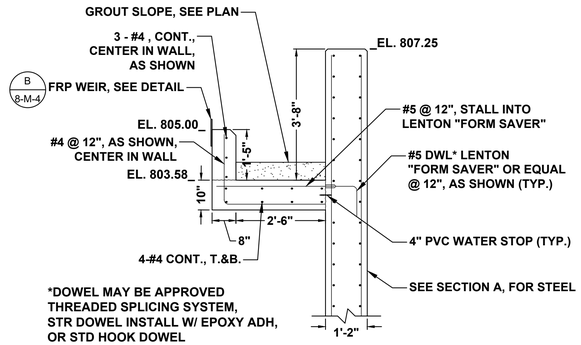
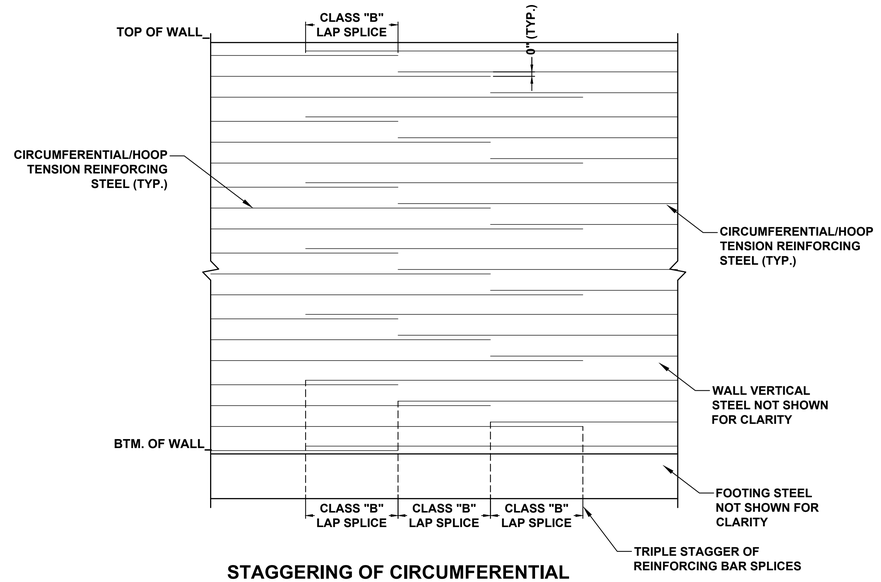
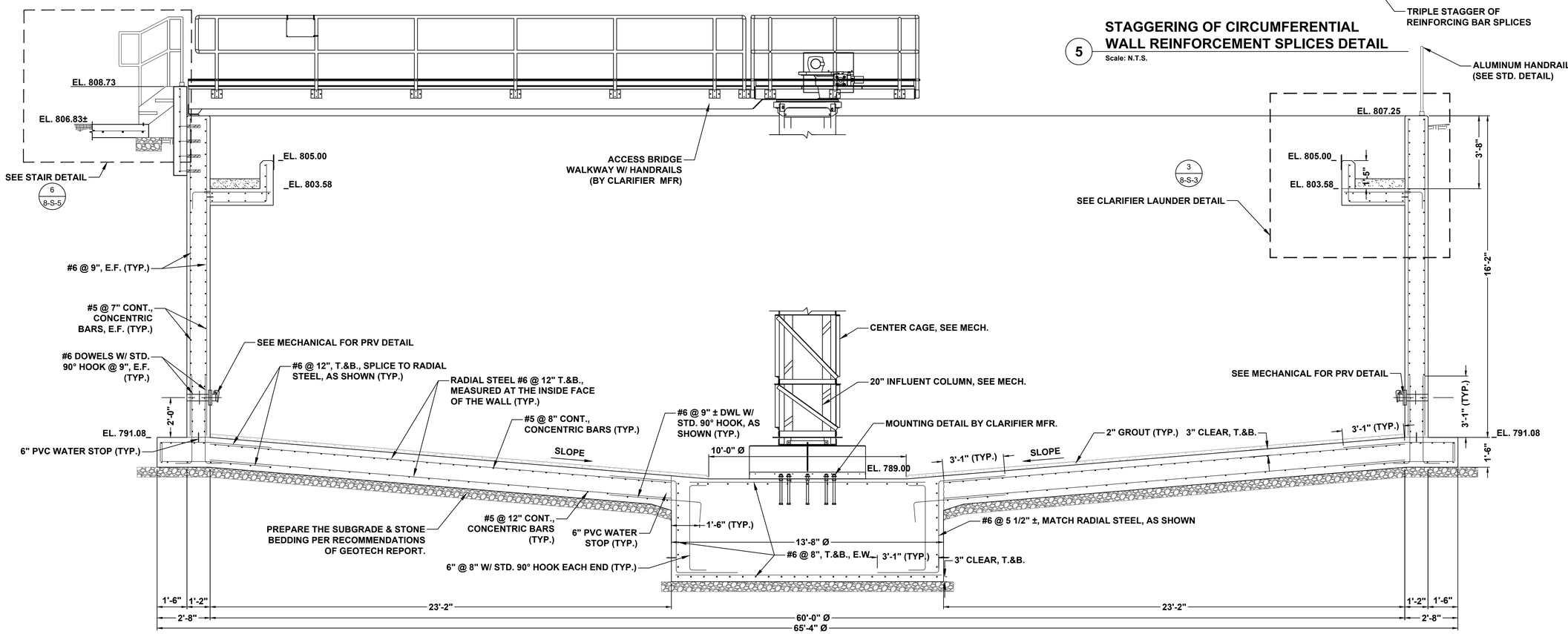


3 DETAIL
Scale: 1/2"= 1'-0"



5 STAGGERING OF CIRCUMFERENTIAL WALL REINFORCEMENT SPLICES DETAIL
Scale: N.T.S.



A SECTION
Scale: 3/8"= 1'-0"

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

FINAL CLARIFIER STRUCTURAL SECTIONS 1

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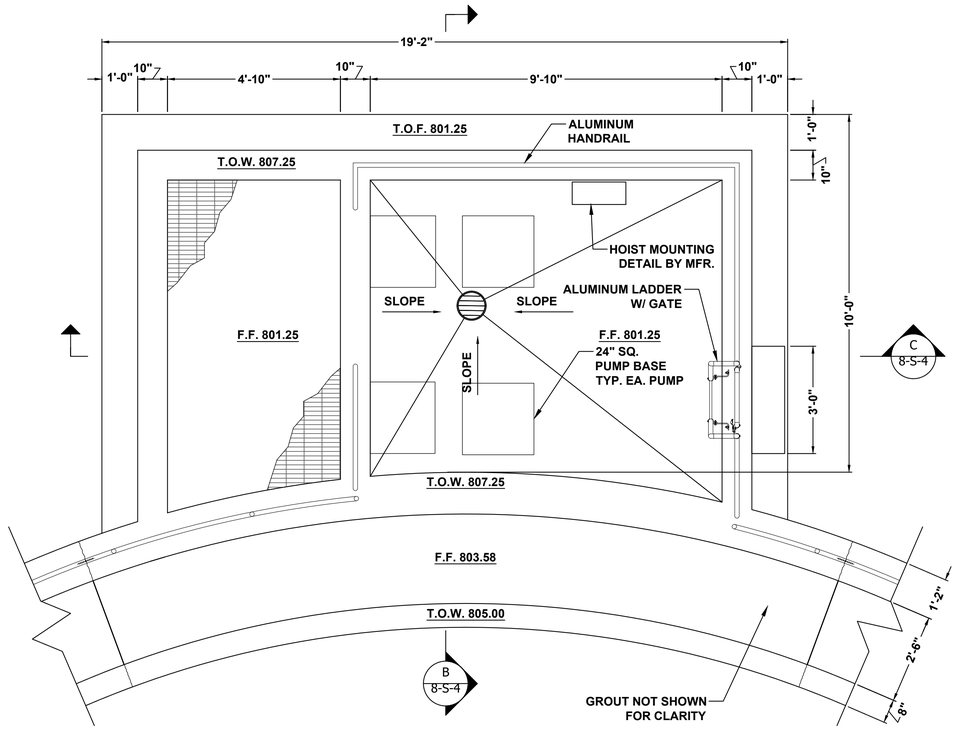
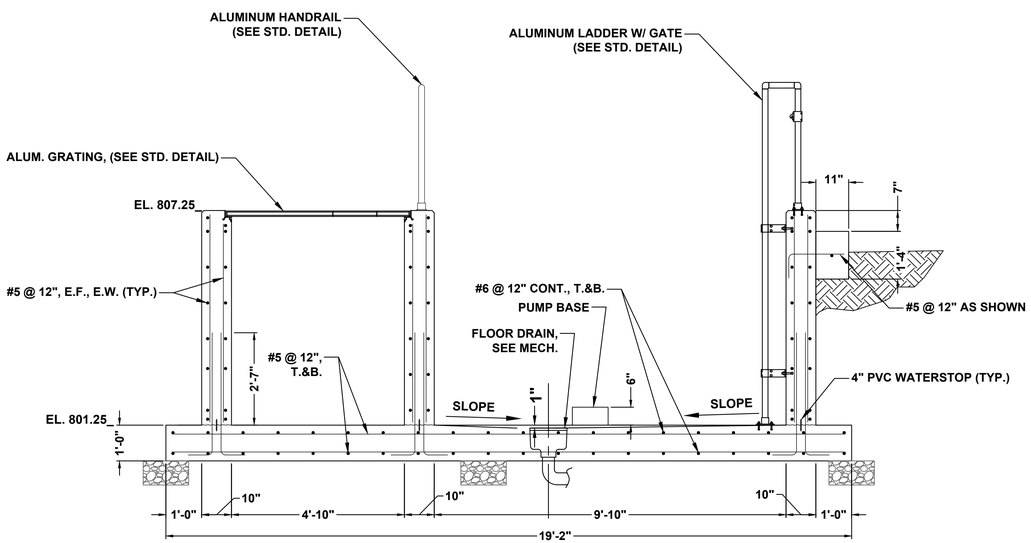


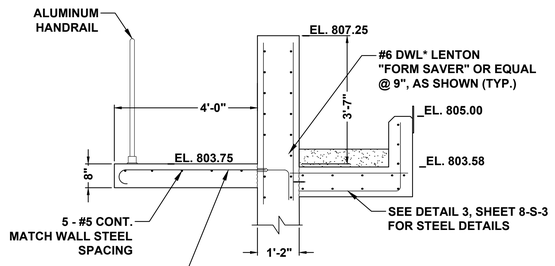
1 CLARIFIER RETURN SLUDGE PUMP FOUNDATION PLAN

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



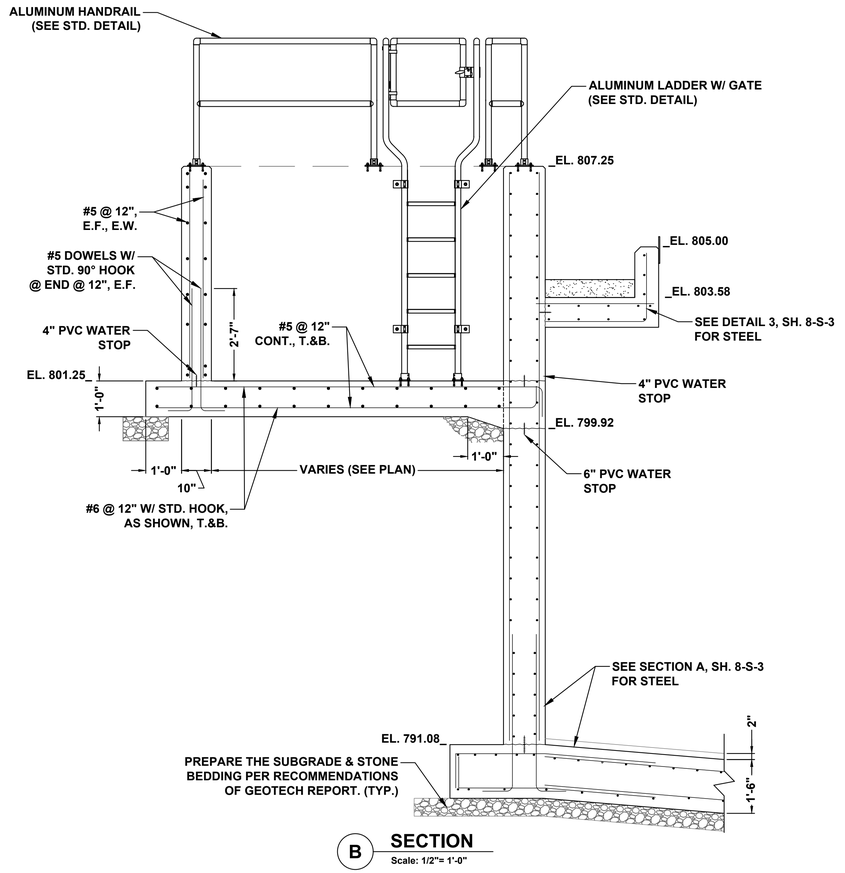
C SECTION

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



F SECTION

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



B SECTION

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

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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10/05/2021

SHEET TITLE

FINAL CLARIFIER STRUCTURAL SECTIONS 2

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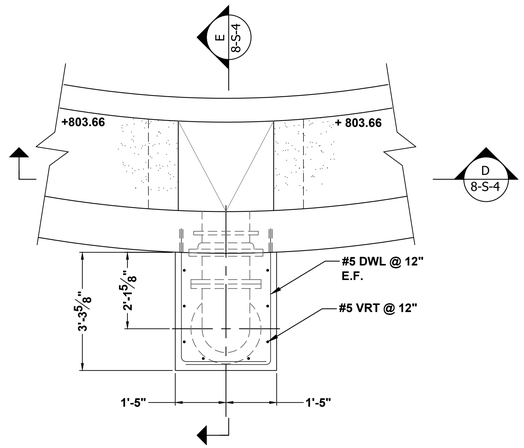
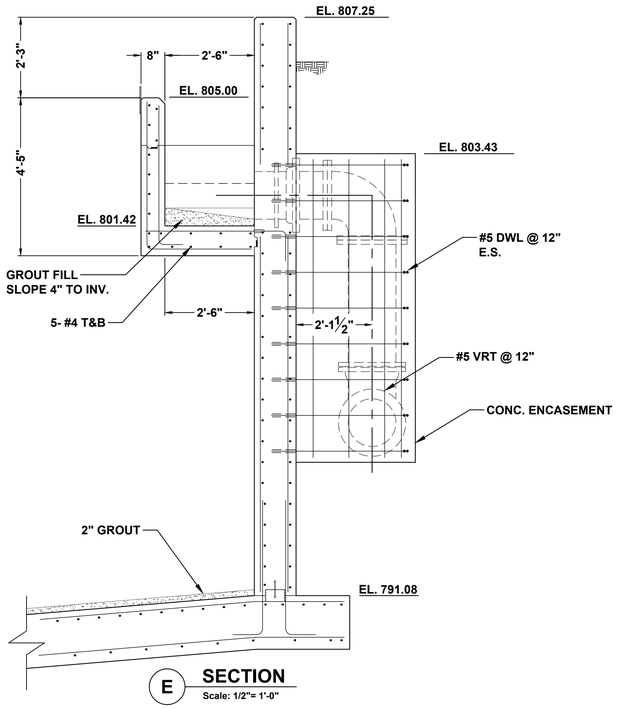


2 CLARIFIER EFFLUENT DETAIL
Scale: 1/2"= 1'-0"



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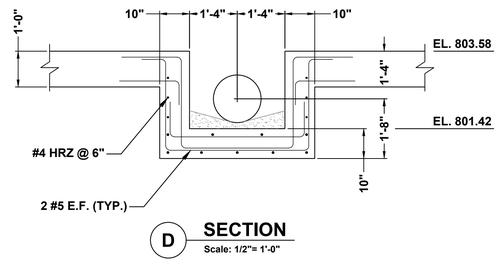
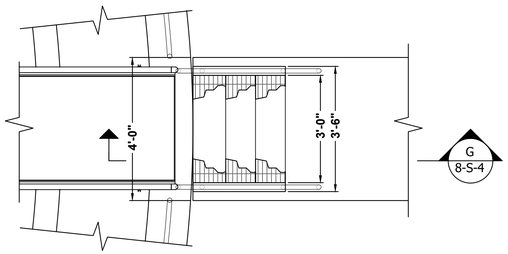
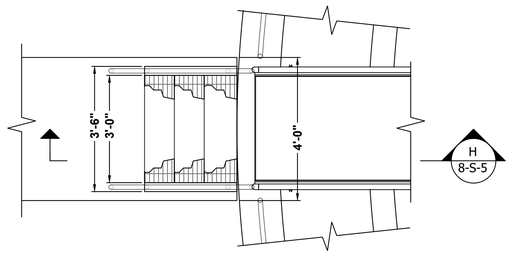
Scale: 1/2"= 1'-0"



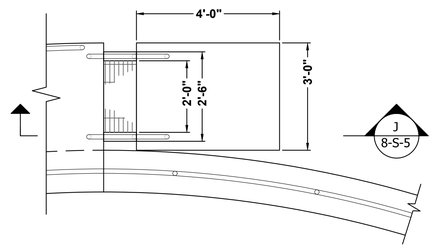
D SECTION
Scale: 1/2"= 1'-0"



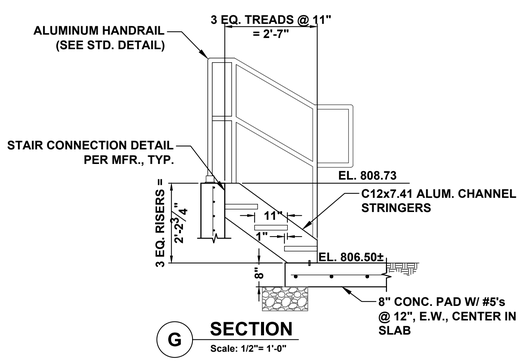
5 CLARIFIER #2 STAIRS
Scale: 1/2"= 1'-0"



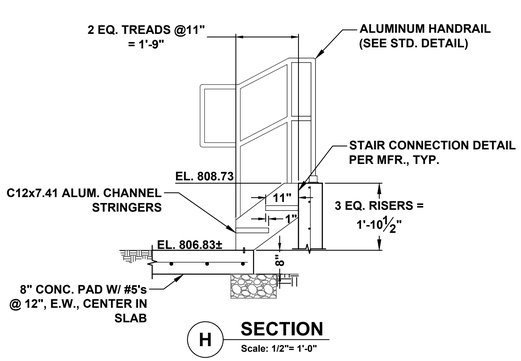
6 CLARIFIER #1 STAIRS
Scale: 1/2"= 1'-0"



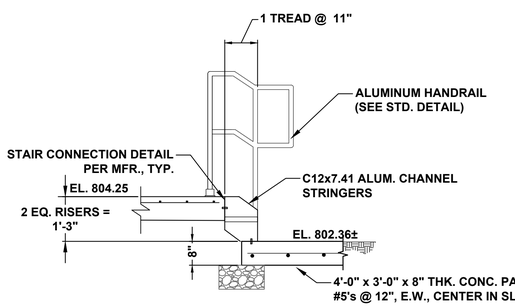
7 CLARIFIER #2 CANTILEVER WALKWAY STAIRS
Scale: 1/2"= 1'-0"



G SECTION
Scale: 1/2"= 1'-0"



H SECTION
Scale: 1/2"= 1'-0"



J SECTION
Scale: 1/2"= 1'-0"

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

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SHEET TITLE

FINAL CLARIFIER STRUCTURAL SECTIONS 3

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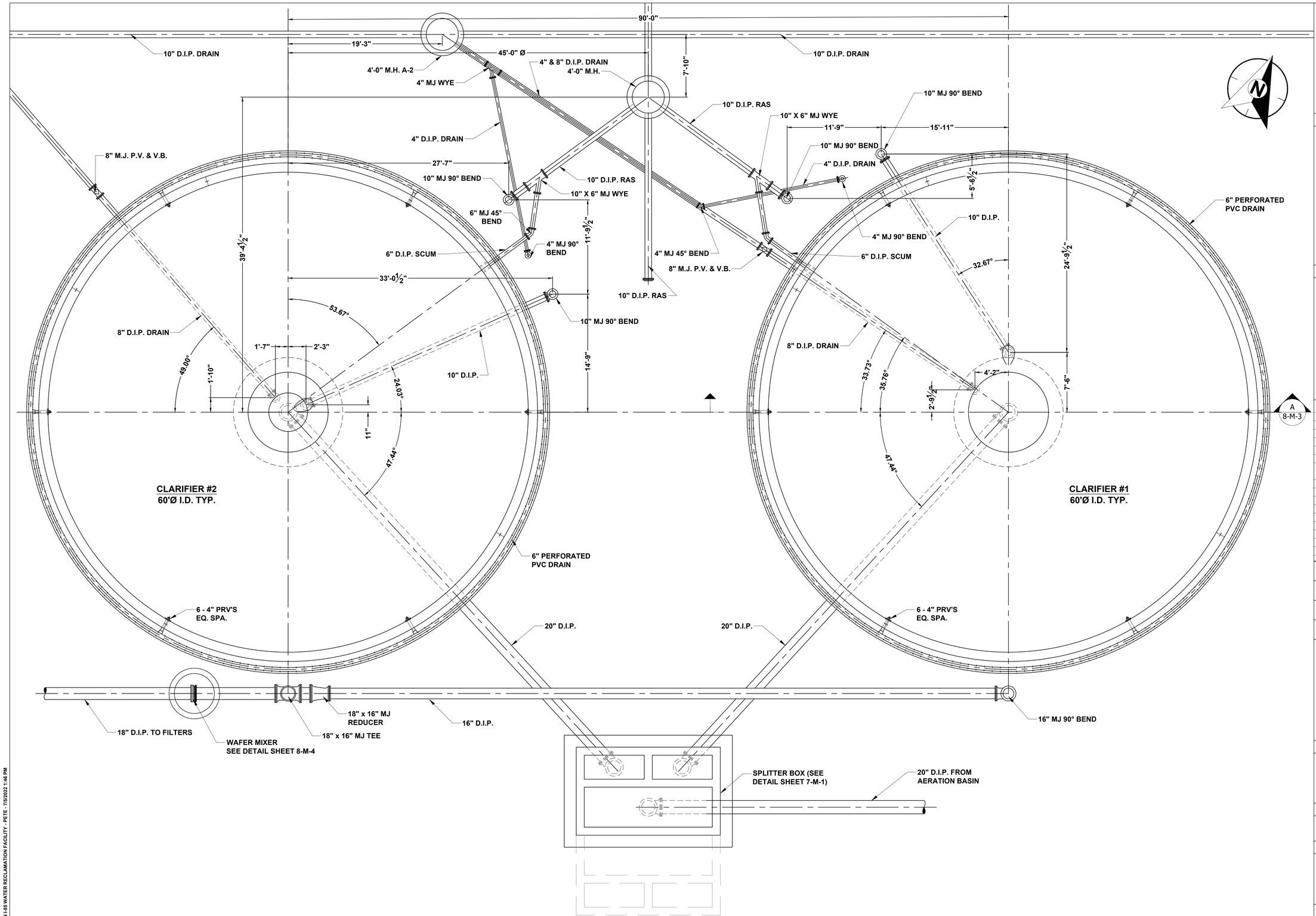

1 **CLARIFIER BOTTOM PLAN**
Scale: 3/16"= 1'-0"

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PROJECT NAME

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FINAL CLARIFIER MECHANICAL BOTTOM PLAN

DRAWING NUMBER

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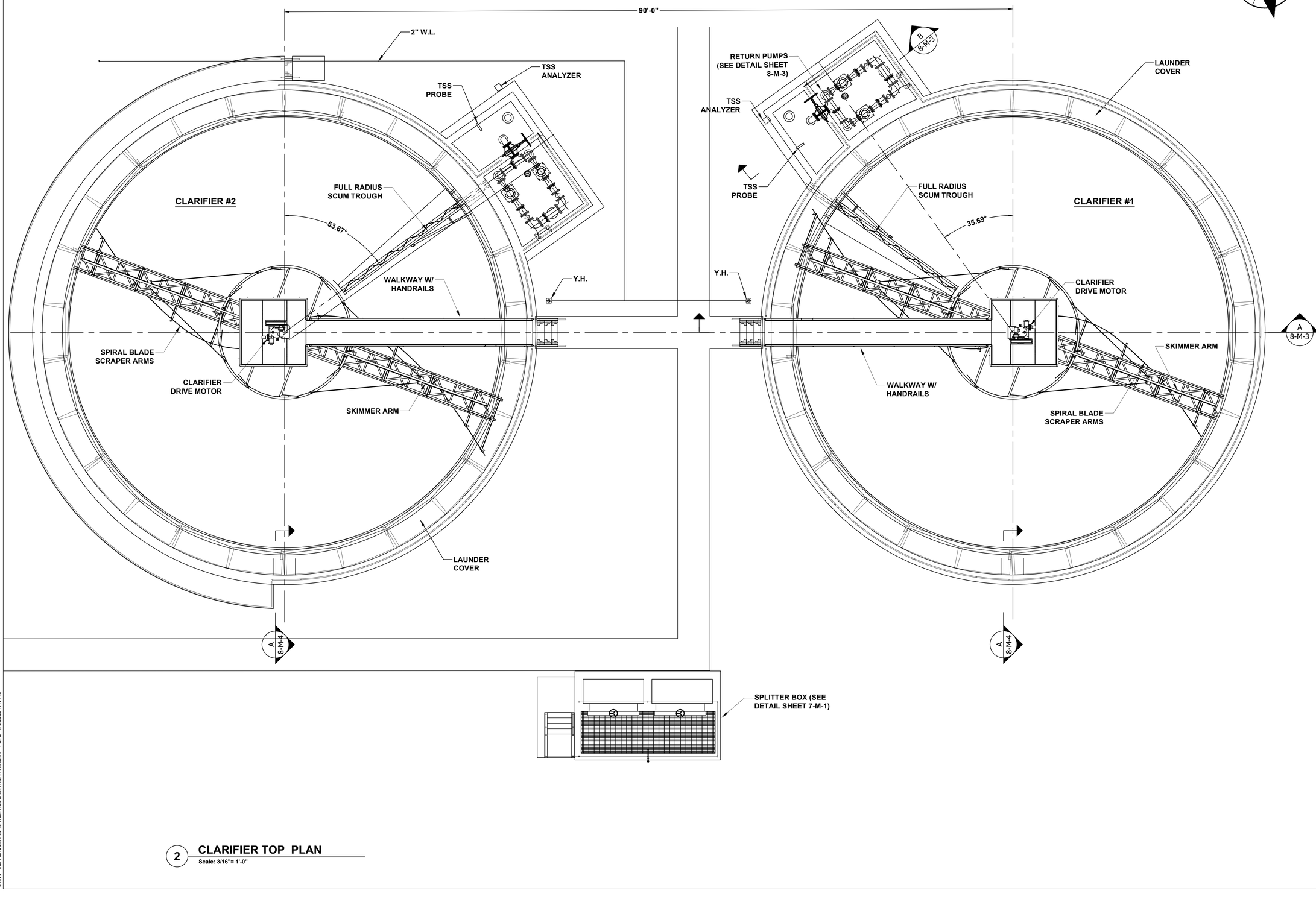

2 CLARIFIER TOP PLAN

Scale: 3/16"= 1'-0"

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FINAL CLARIFIER MECHANICAL TOP PLAN

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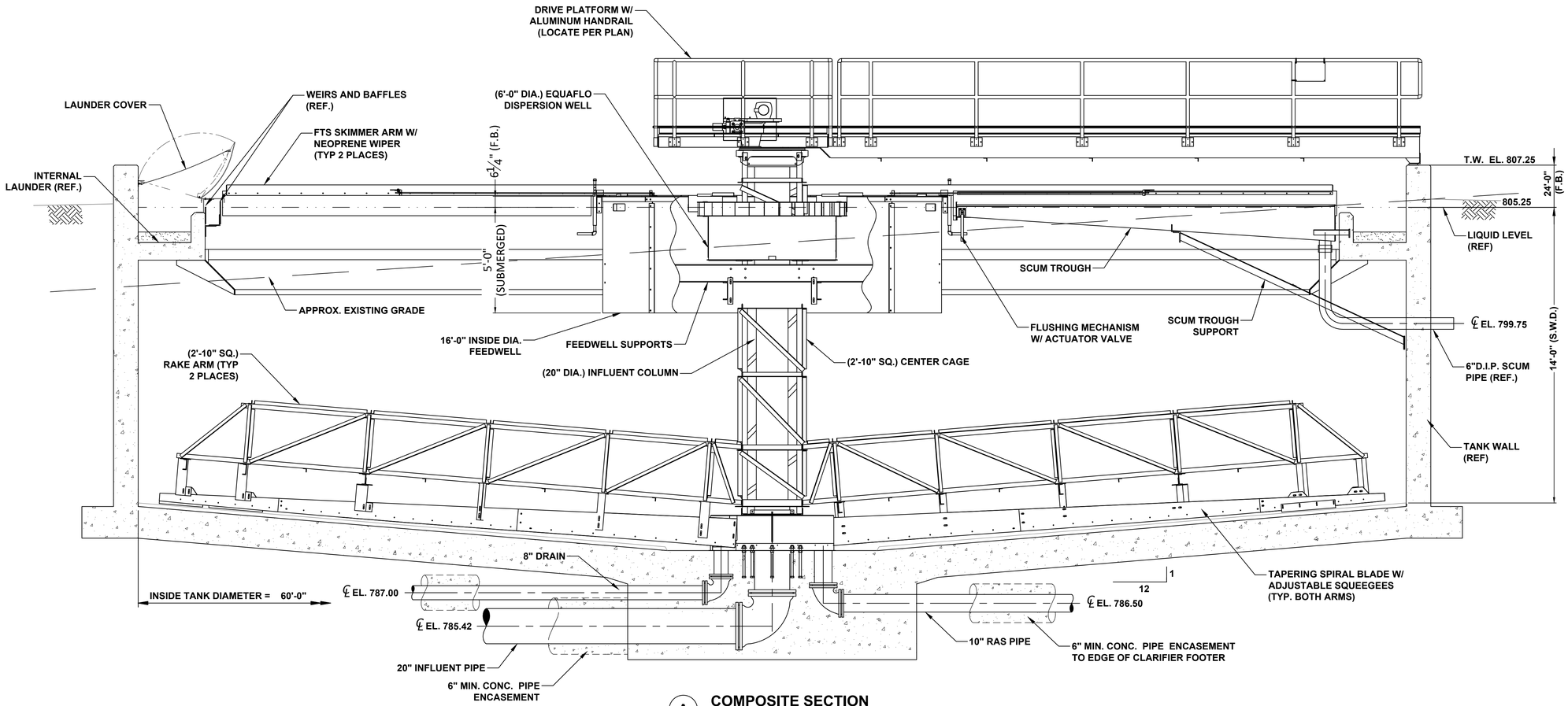
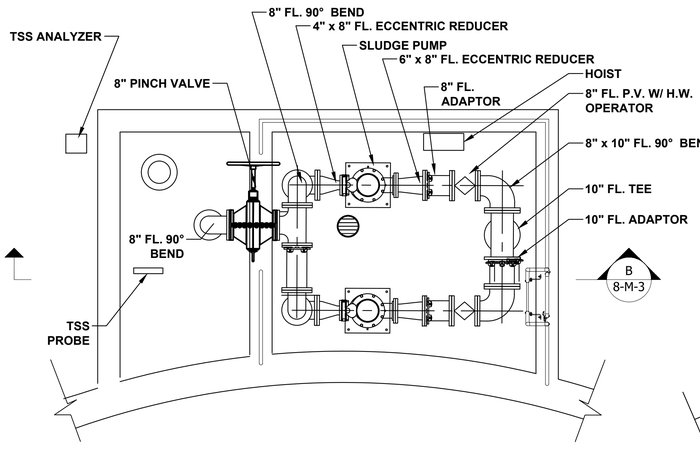
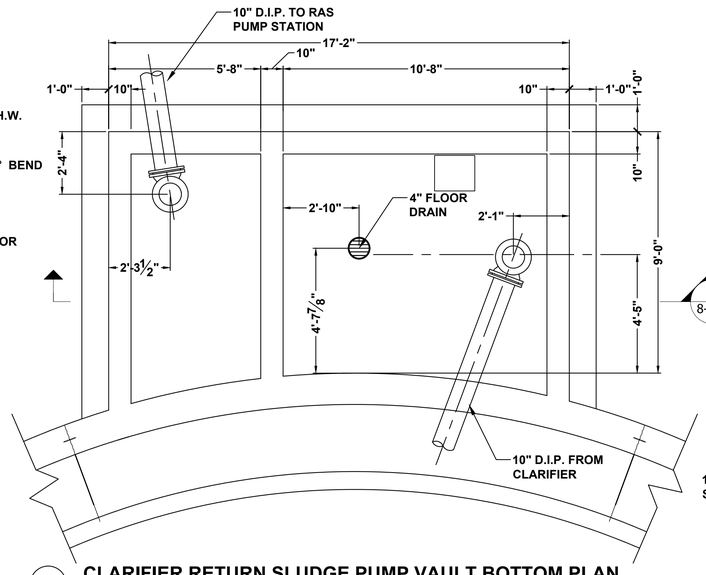


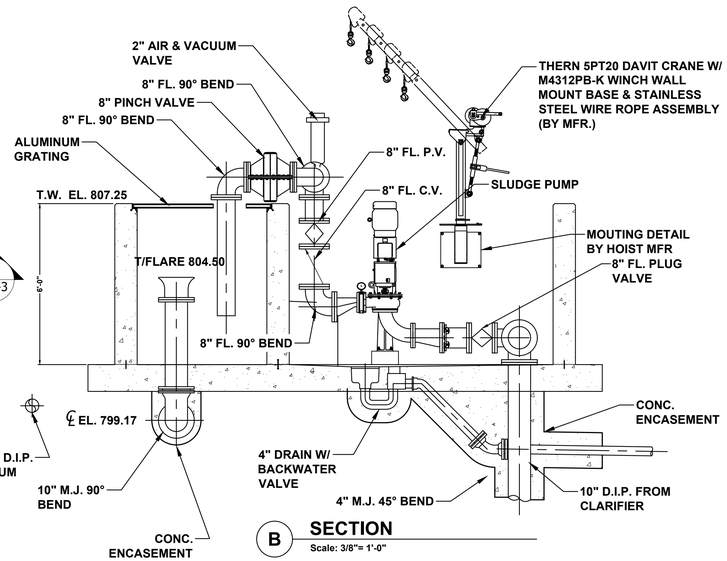
A COMPOSITE SECTION
Scale: 3/8"= 1'-0"



1 CLARIFIER RETURN SLUDGE PUMP VAULT TOP PLAN
Scale: 3/8"= 1'-0"



2 CLARIFIER RETURN SLUDGE PUMP VAULT BOTTOM PLAN
Scale: 3/8"= 1'-0"



B SECTION
Scale: 3/8"= 1'-0"

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

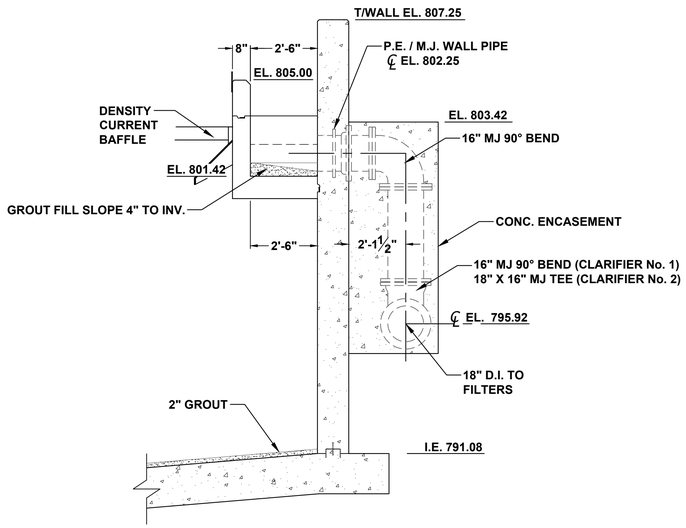
10/05/2021

SHEET TITLE

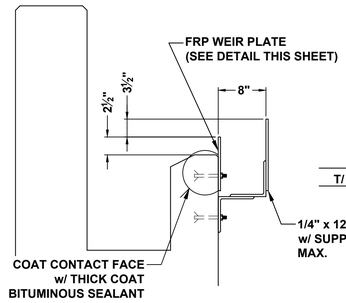
FINAL CLARIFIER MECHANICAL SECTION

DRAWING NUMBER

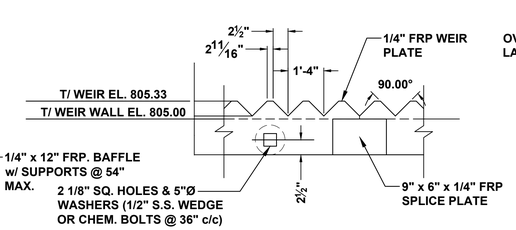
8-M-3
OF
214



A **EFFLUENT SECTION**
Scale: 3/8"= 1'-0"



A **WEIR & BAFFLE MOUNTING DETAIL**
Scale: N.T.S.



B **WEIR DETAIL**
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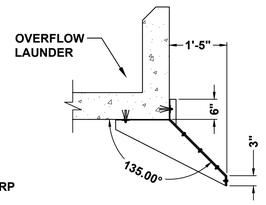
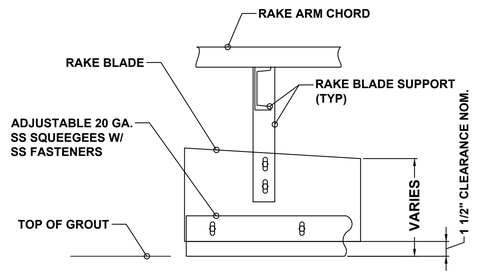
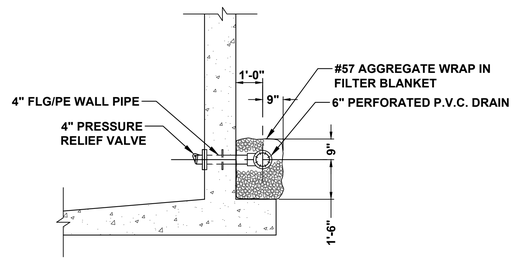


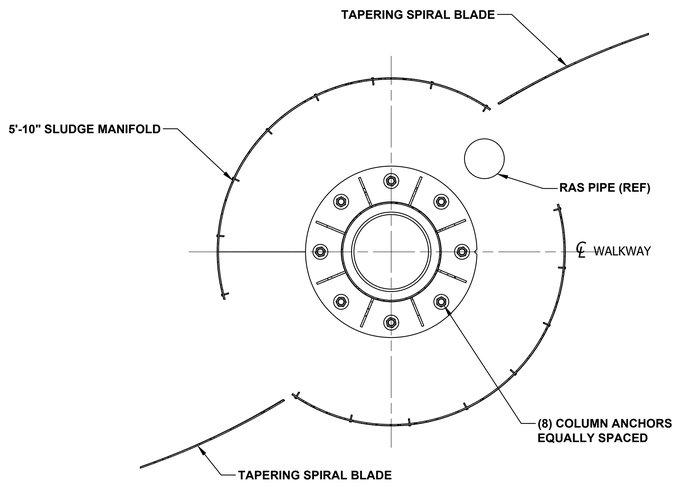
C **DENSITY CURRENT BAFFLE DETAIL**
Scale: N.T.S.



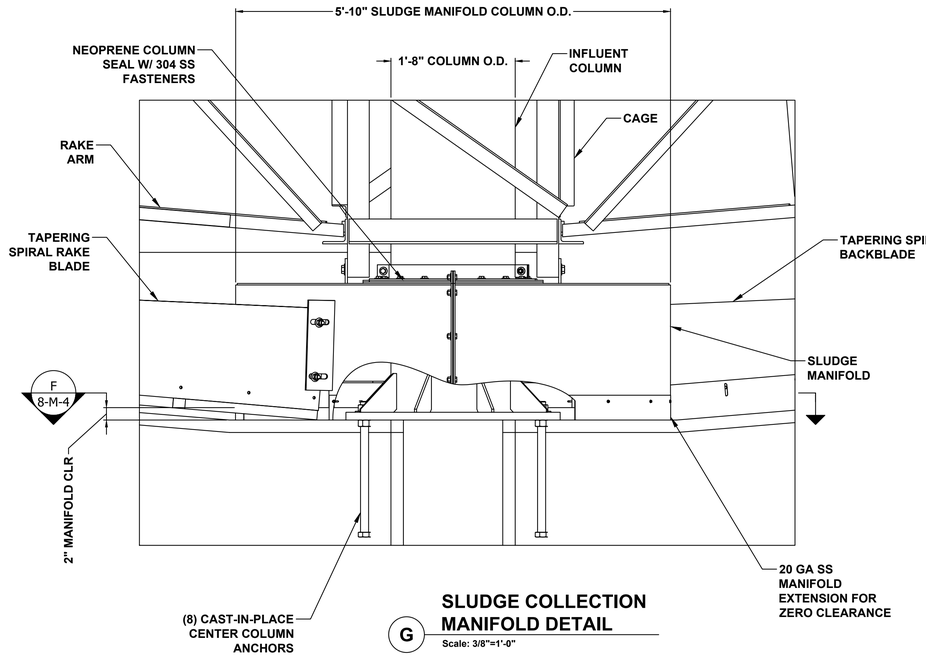
D **SPIRAL BLADE DETAIL**
Scale: N.T.S.



E **TYP. GROUNDWATER DRAIN DETAIL**
Scale: N.T.S.



F **SLUDGE COLLECTION MANIFOLD SECTION**
Scale: 3/8"=1'-0"



G **SLUDGE COLLECTION MANIFOLD DETAIL**
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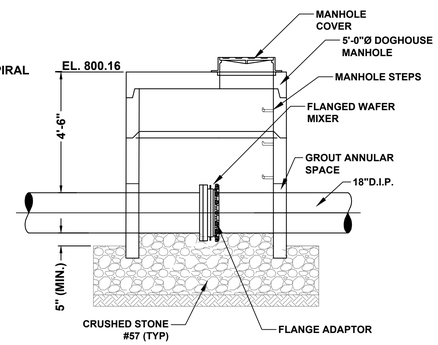

H **WAFER MIXER DETAIL**
Scale: 3/8"=1'-0"

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PROJECT NAME

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SHEET TITLE

FINAL CLARIFIER MECHANICAL DETAILS

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8-M-4
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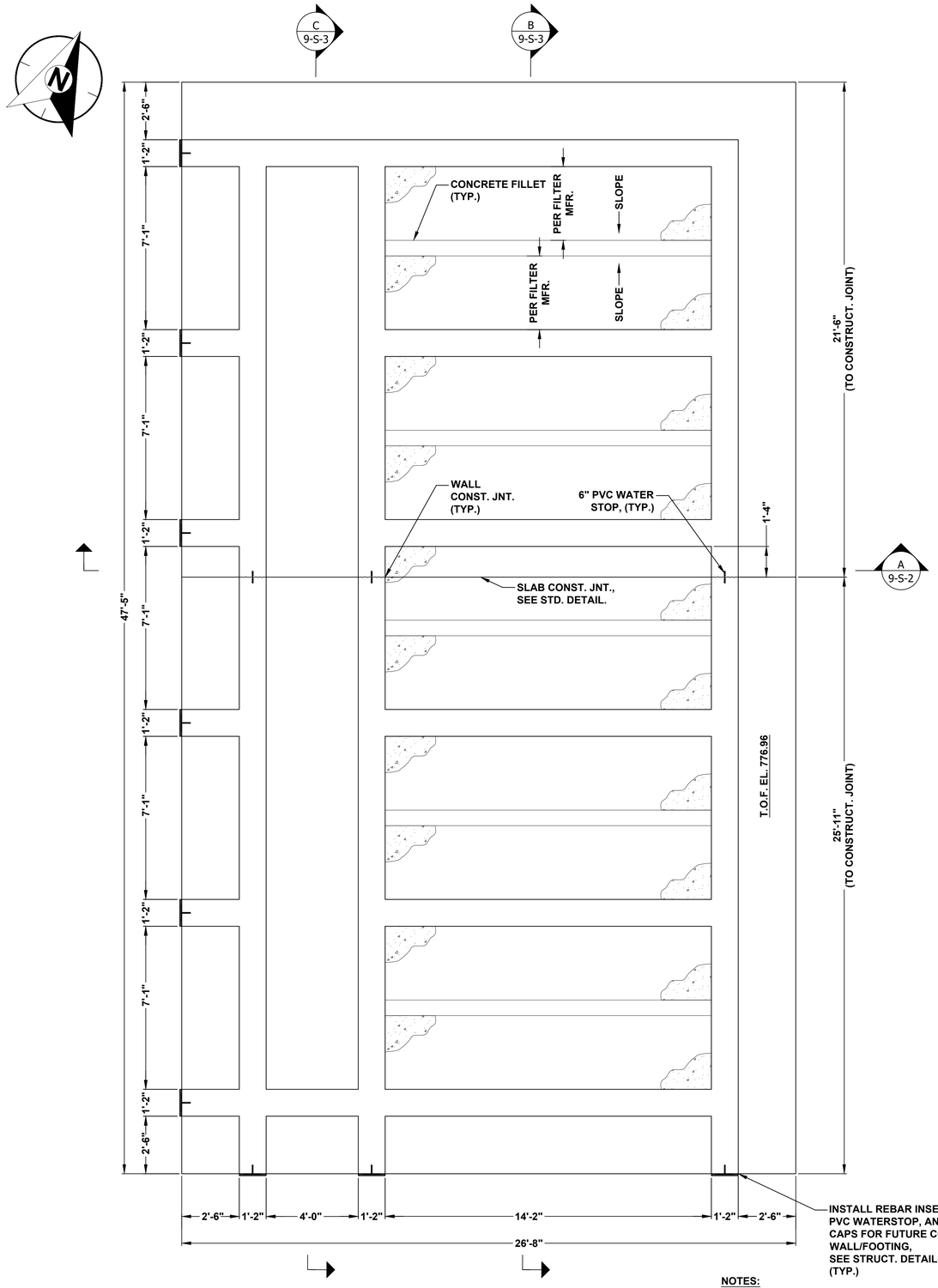
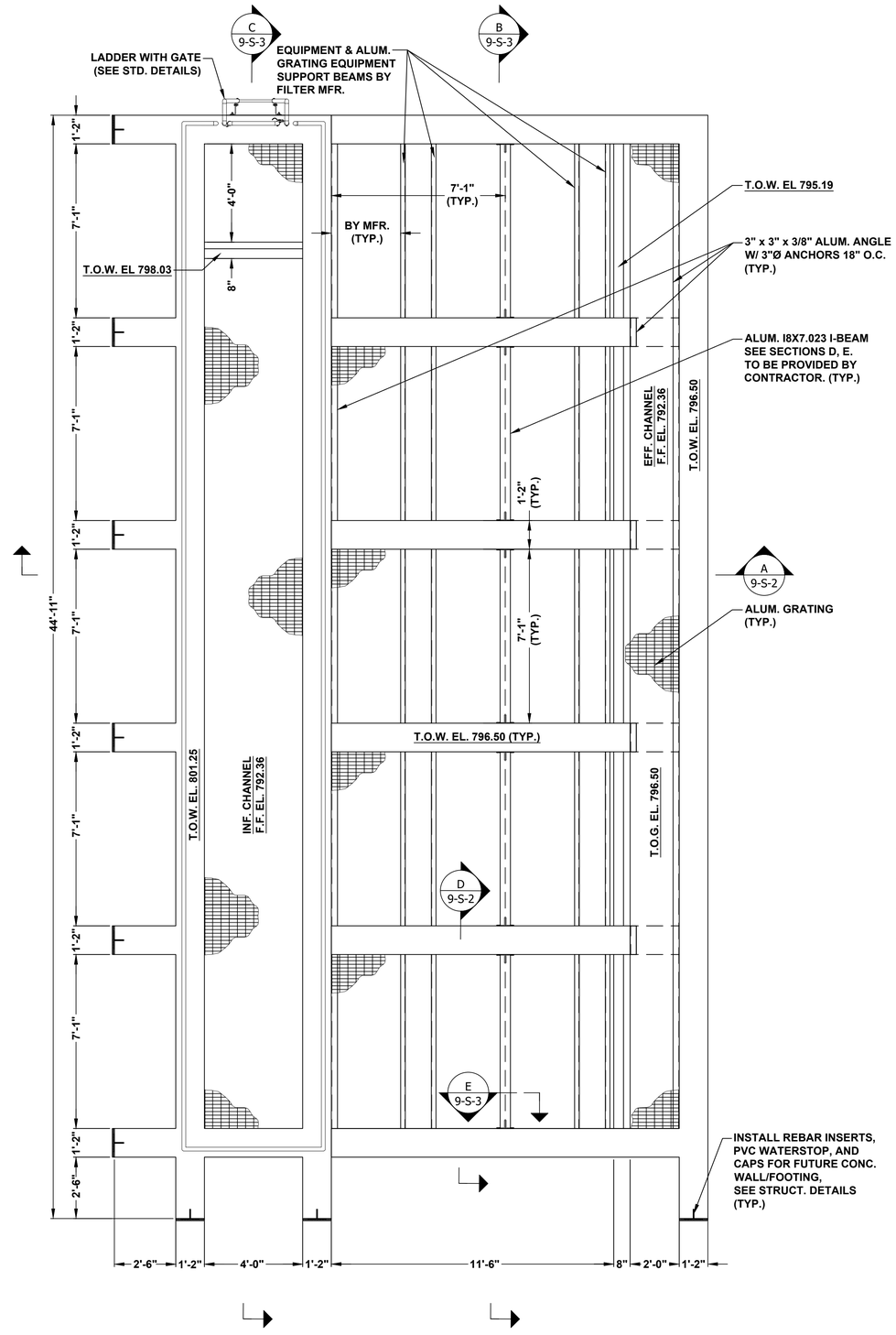
214



1 FOUNDATION LEVEL PLAN @776.96

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



2 TOP LEVEL PLAN

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

NOTES:

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SHEET TITLE

FILTER STRUCTURAL FOUNDATION & TOP PLAN

DRAWING NUMBER

9-S-1
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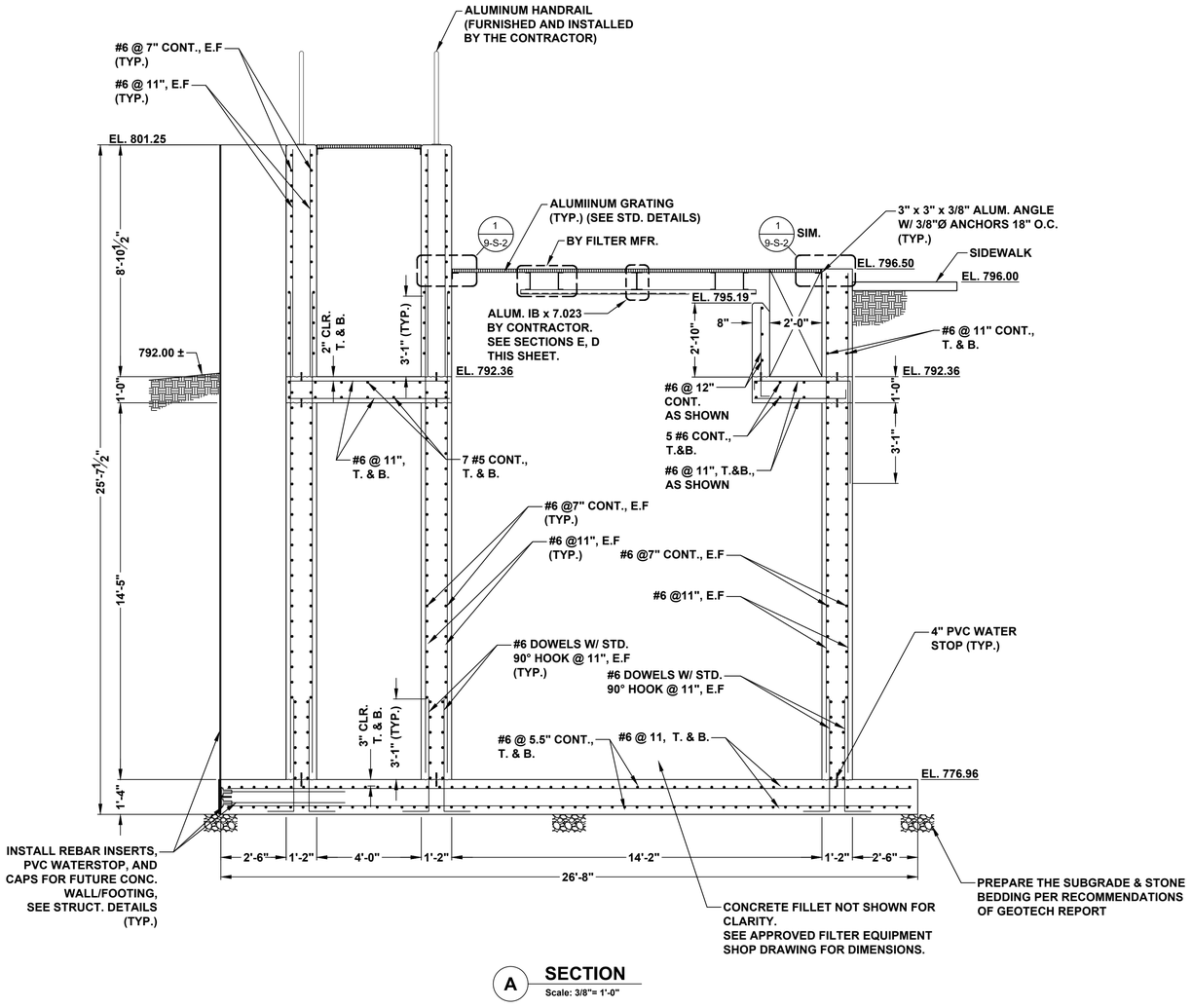
214



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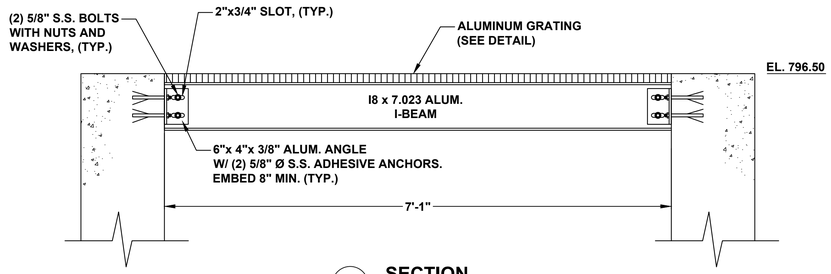
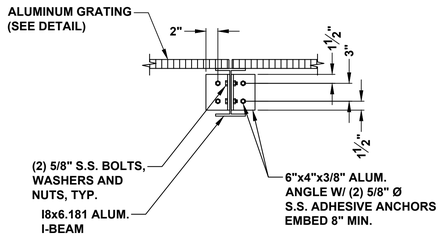


D SECTION
Scale: 1"= 1'-0"



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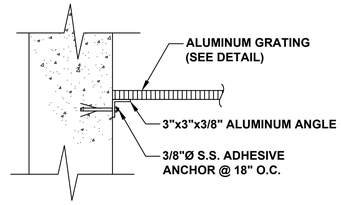

1 DETAIL
Scale: 1"= 1'-0"

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

FILTER STRUCTURAL SECTIONS 1

DRAWING NUMBER

9-S-2
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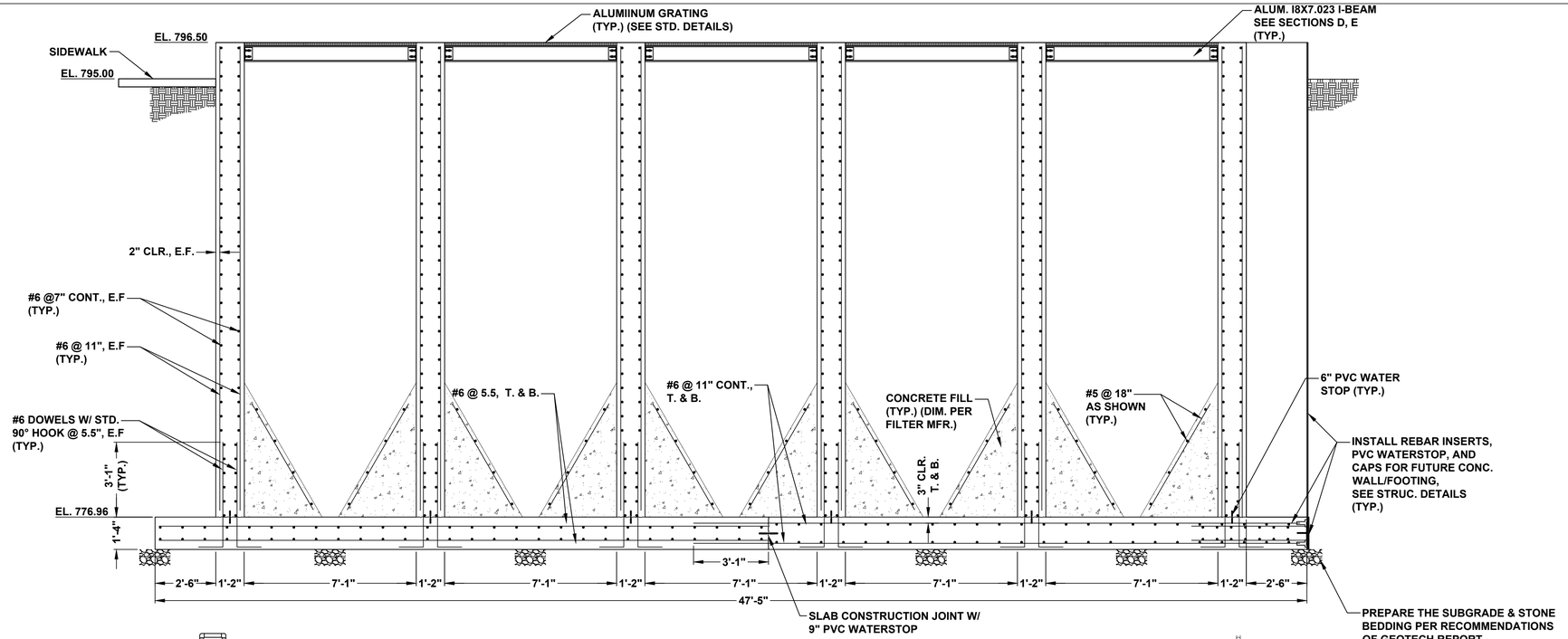
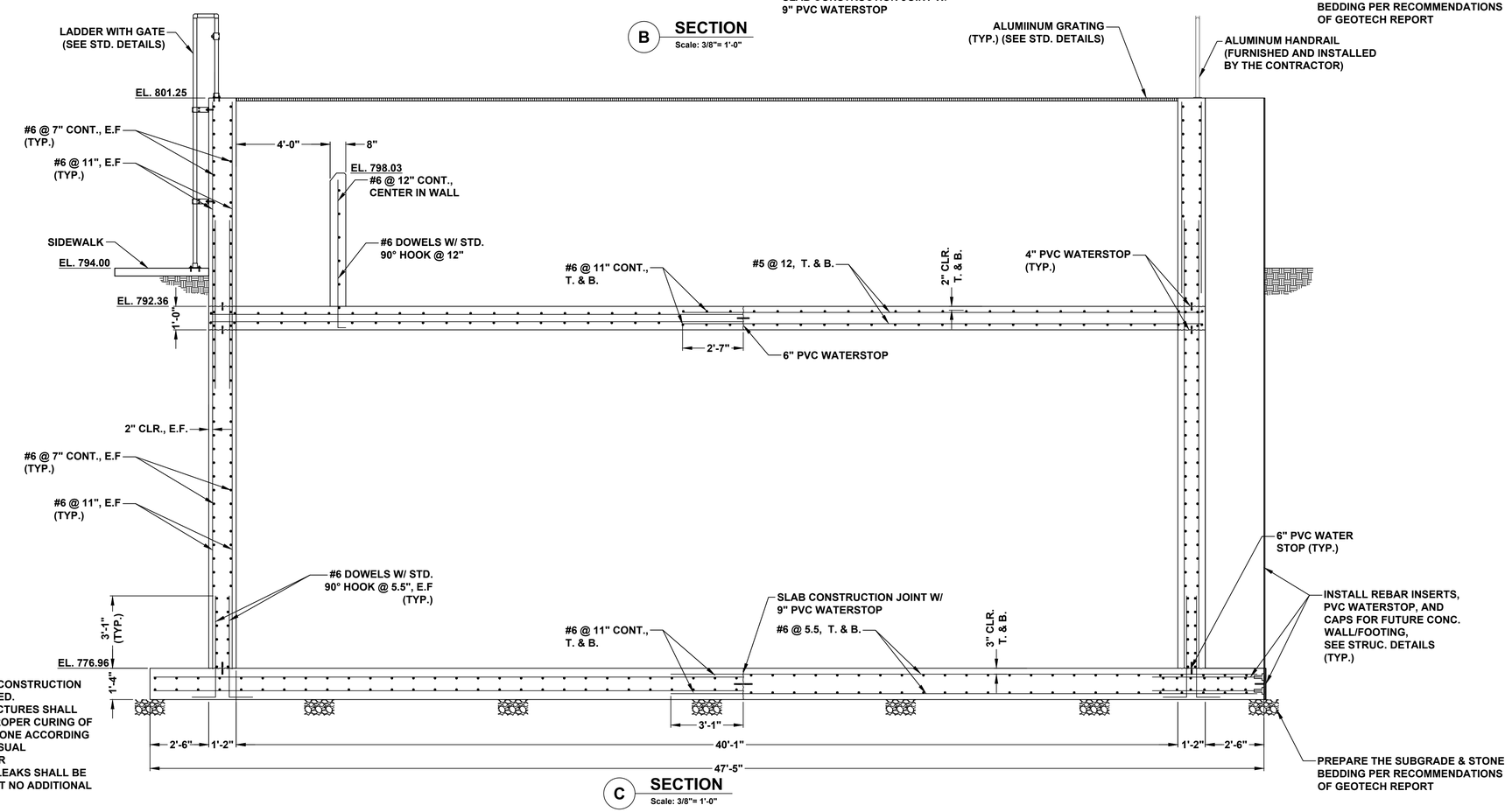


B SECTION
Scale: 3/8"= 1'-0"



C SECTION
Scale: 3/8"= 1'-0"

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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10/05/2021

SHEET TITLE

FILTER STRUCTURAL SECTIONS 2

DRAWING NUMBER

9-S-3
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BUILDING NOTES:

CONSTRUCTION TYPE:
1. FOUNDATION = MOMENT RESISTING CONC. FOUNDATION.
2. BUILDING = UNPROTECTED COMBUSTIBLE ORDINARY CONSTRUCTION w/ BLOCK WALLS (TYPE III-B)
3. ROOF = WOODEN ROOF

NFFA 101/ 5000 OCCUPANCY TYPE = FACTORY / INDUSTRIAL
IBC 2018 GROUP = FACTORIES W/ LOW HARZARD

OCCUPANT LOAD:
OFFICE AREA = 1 PERSON

BUILDING HEIGHT AND AREA
AREA = 277 SF (14'-2" W x 19'-6" L)
BUILDING HEIGHT = 10'-0" EAVE (4:12 SLOPE)
ALLOWABLE AREA AS PER IBC 2018 = 55-FT
ALLOWABLE NUMBER OF STORIES AS PER IBC 2018 = 3
ALLOWABLE HEIGHT AND AREA AS PER IBC 2018 = 23,000 SF

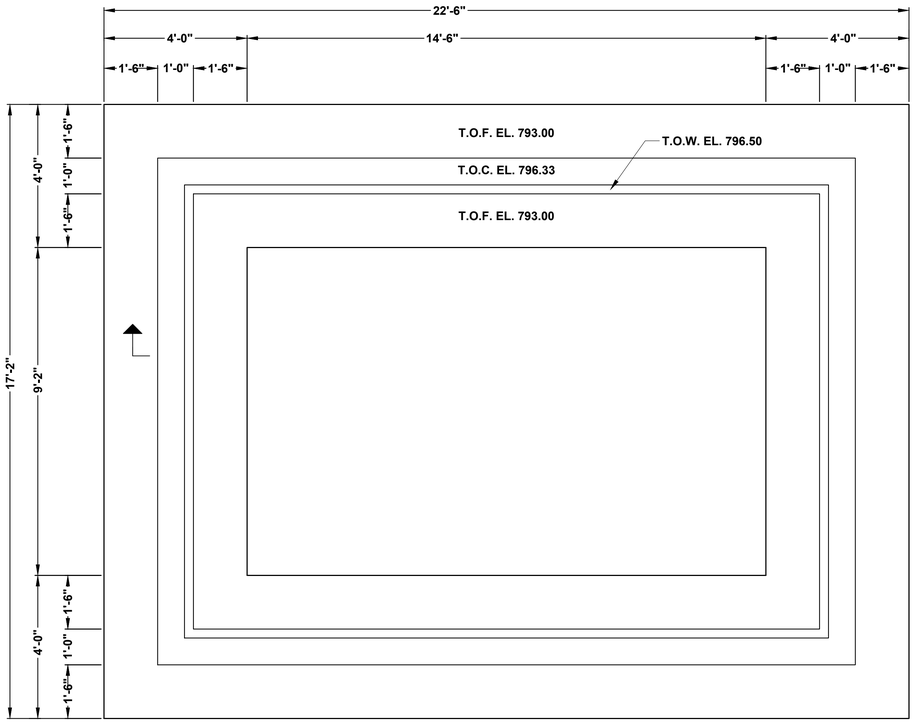
FIRE RATING:
1. III-B BUILDING = 2 HOUR EXTERIOR WALLS
2. CMU WALLS = 2 HOURS
3. METAL DOORS AND FRAME = 1-1/2 HOURS

APPLICABLE DESIGN CODES:
1. 2018 INTERNATIONAL BUILDING CODE WITH 2020 GEORGIA AMENDMENTS.
2. 2018 INTERNATIONAL PLUMBING CODE WITH 2020 GEORGIA AMENDMENTS.
3. 2017 NATIONAL ELECTRICAL CODE
4. 2018 INTERNATIONAL MECHANICAL CODE / 2014 & 2015 GEORGIA AMENDMENTS.
5. INTERNATIONAL FUEL GAS CODE / 2014 & 2015 GEORGIA AMENDMENTS.
6. CITY OF JEFFERSON DEVELOPMENTAL REGULATIONS
7. 2018 INTERNATIONAL FIRE CODE WITH CURRENT GEORGIA AMENDMENTS.
8. 2018 NFPA 101 LIFE SAFETY CODE WITH CURRENT GEORGIA AMENDMENTS.
9. 2020 GEORGIA AMENDMENTS 120-3-3, STATE MINIMUM FIRE SAFETY STANDARDS.

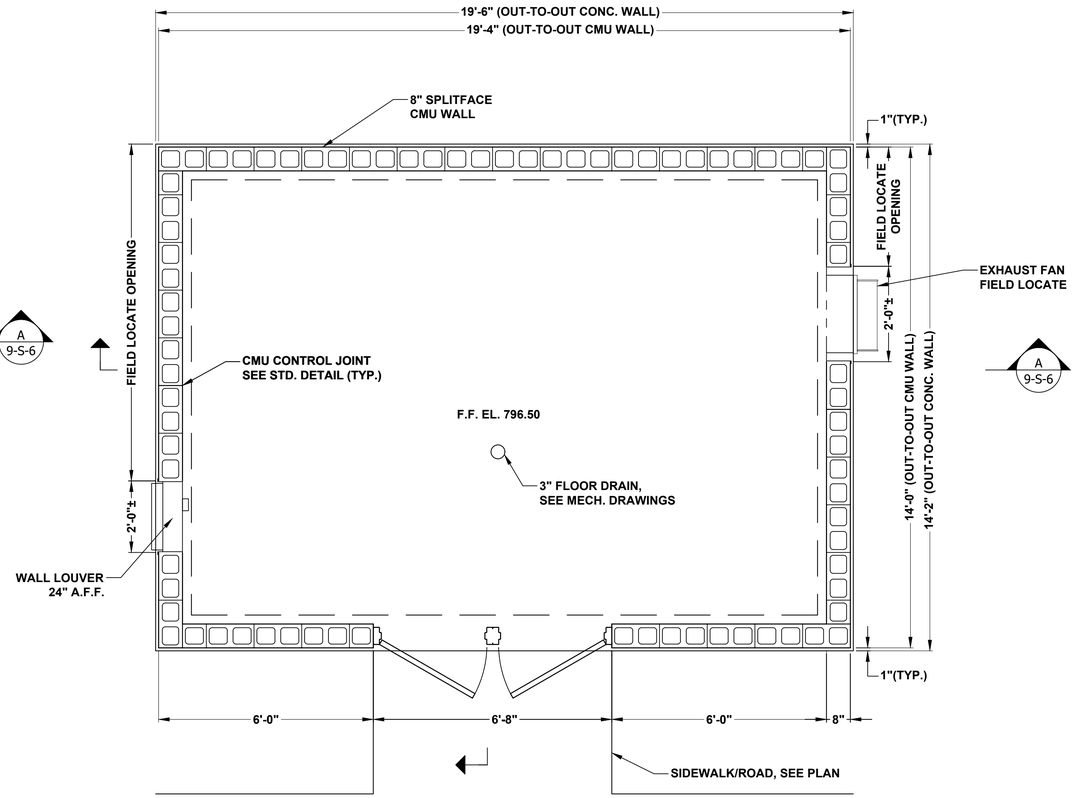
SCHEDULE OF SPECIAL INSPECTIONS PER IBC 2018 SECTION 1705:
1. SOIL COMPACTION = REQUIRED
2. CONCRETE PLACEMENT = REQUIRED
3. CMU BOND BEAMS AND GROUTING = REQUIRED
4. STRUCTURAL STEEL = REQUIRED
5. CONCRETE REINFORCING STEEL PLACEMENT = REQUIRED
6. ANCHOR RODS/BOLTS = REQUIRED
7. WELDING = REQUIRED IF ANY IS USED

DESIGN LOADS:

LIVE LOAD: 300 PSF SLABS-ON-GRADE
LIVE LOAD: 100 PSF ACCESS PLATFORM
ROOF LIVE LOAD: 20 PSF
WIND LOAD: ULTIMATE WIND SPEED = 120 MPH
EXPOSURE CATEGORY = C
RISK CATEGORY = III
ENCLOSURE CLASSIFICATION
1. TRUCK BAY = OPEN
2. BUILDING = ENCLOSED
DESIGN WIND PRESSURE (MWFRS)
1. BUILDING = 35 PSF
DESIGN WIND PRESSURE (C&C)
1. BUILDING = 40 PSF
SNOW LOAD: 5 PSF
SEISMIC DESIGN PARAMETER:
RESPONSE MODIFICATION, R = 3
SEISMIC DESIGN CATEGORY = C
SITE CLASS = D
RISK CATEGORY = III
SDS = 0.223
SD1 = 0.152



1 **COMPRESSOR BUILDING FOUNDATION PLAN**
Scale: 1/2"= 1'-0"



2 **COMPRESSOR BUILDING WALL PLAN**
Scale: 1/2"= 1'-0"

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

FILTER COMPRESSOR BUILDING STRUCTURAL PLANS 1

DRAWING NUMBER

9-S-4
OF
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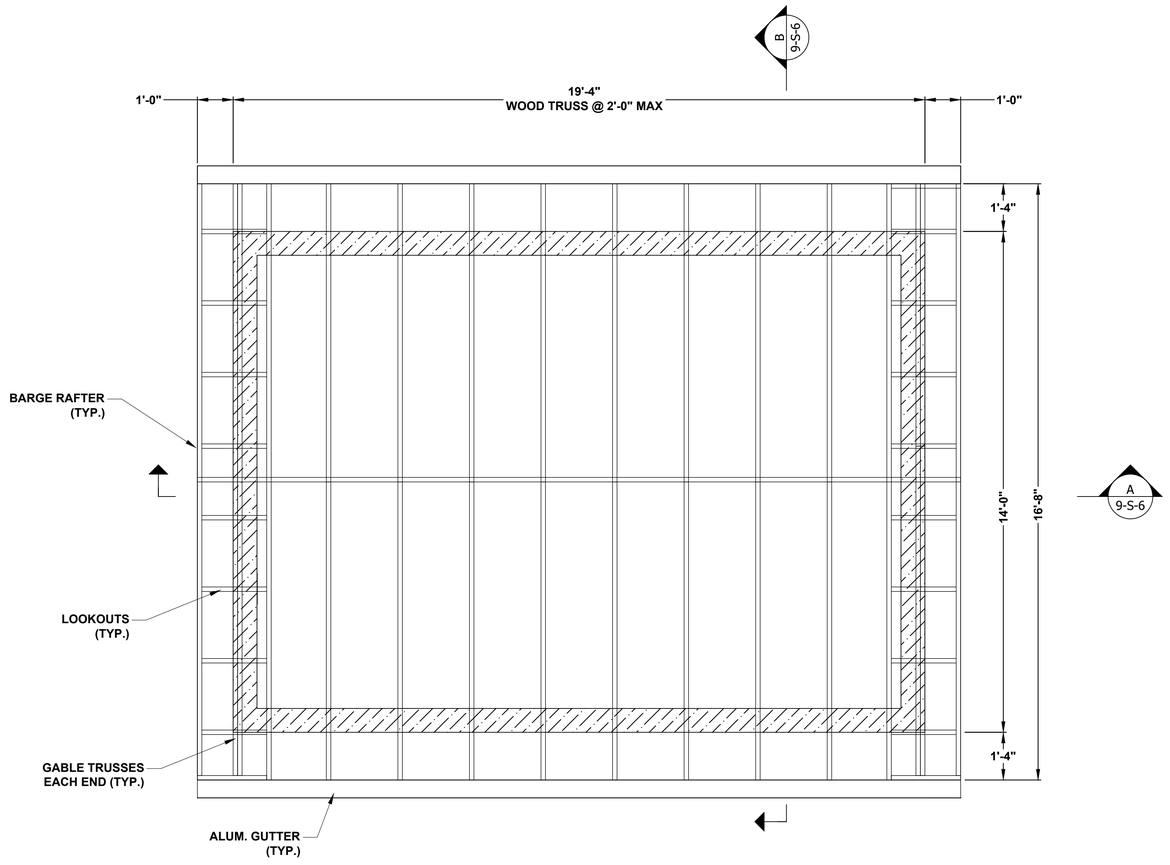
PREFABRICATED WOOD TRUSS NOTES

DESIGN LOADS: **ROOF**

TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF + TRUSS SELFWEIGHT
BOTTOM CHORD LIVE LOAD	10 PSF (HVAC PLATFORM = 20 PSF)
BOTTOM CHORD DEAD LOAD	10 PSF
TOP CHORD WIND UPLIFT LOAD	SEE WIND LOAD DATA

1. TRUSSES SHALL BE SPACED AS SHOWN ON PLANS.
2. SEE PLAN FOR TRUSS LOCATIONS AND SPANS. ACTUALL TRUSS SPACING SHALL BE USED TO DETERMINE UNIFORM LOADS PER FOOT.
3. TRUSSES SHALL BE DESIGNED AND FABRICATED BY THE TRUSS MANUFACTURER.
4. DESIGN SHALL CARRY THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF GEORGIA.
5. CONFIGURATION AND SIZE OF WEB MEMBERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.
6. SHOP DRAWINGS AND CALCULATIONS FOR TRUSSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
7. MAXIMUM LIVE LOAD DEFLECTION FOR ROOF TRUSSES = L/240.
8. PERMANENT BRACING OF ROOF TRUSSES, AS REQUIRED BY STRUCTURAL DESIGN OF THE TRUSSES, AND PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADINGS, SHALL BE INDICATED AND FULLY DETAILED ON SHOP DRAWINGS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSS DURING ERECTION, IN ACCORDANCE WITH TRUSS PLATE INSTITUTES "HANDLING, INSTALLING AND BRACING METAL PATE CONNECTED WOOD TRUSSES, HIB-91."
10. TRUSS DESIGN SHALL ACCOUNT FOR LOAD IMPOSED UPON TRUSSES BY WEIGHT OF MECHANICAL UNITS, AS SHOWN ON MECHANICAL DRAWINGS.
11. ALL PRE-ENGINEERED TRUSS SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE, DURING THE TIMES OF INSPECTION SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
12. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC.) REQUIRED FOR CONNECTIONS BETWEEN PRE-ENGINEERED TRUSSES SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS DESIGN ENGINEER.



3 COMPRESSOR BUILDING ONE ROOF FRAMING PLAN

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

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FILTER COMPRESSOR BUILDING STRUCTURAL PLANS 2

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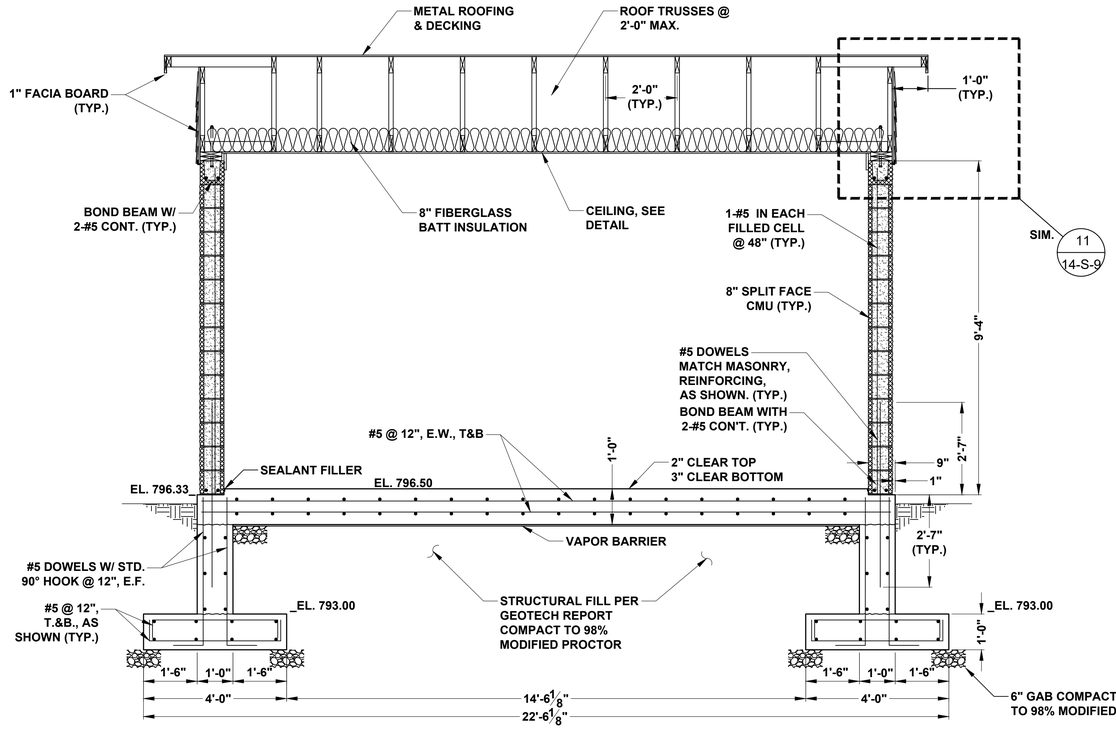

A **SECTION**
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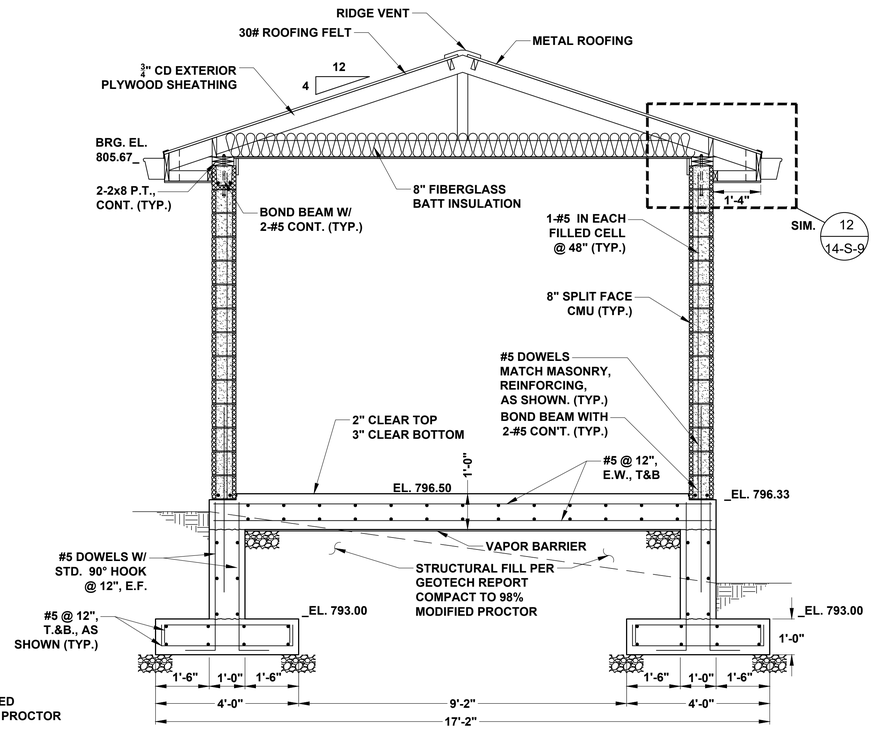

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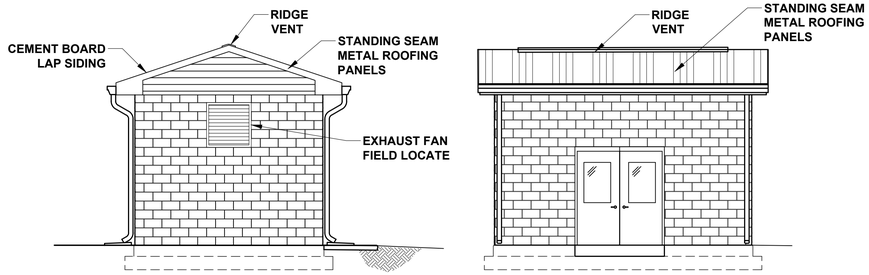
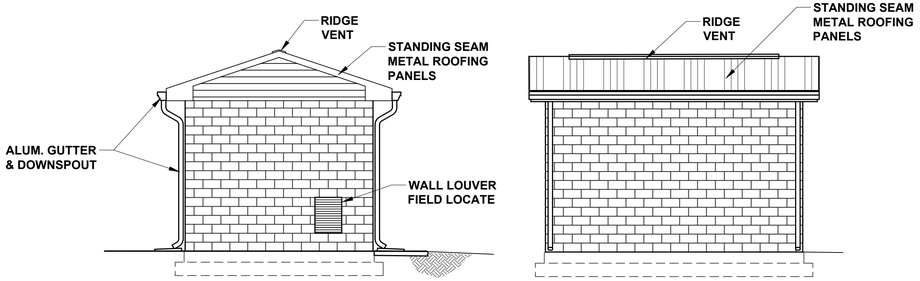


NORTH EAST

SOUTH EAST



SOUTH WEST

NORTH WEST

1 **FILTER COMPRESSOR BUILDING ELEVATIONS**
Scale: 3/16"= 1'-0"

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

FILTER COMPRESSOR BUILDING STRUCTURAL SECTIONS

DRAWING NUMBER

9-S-6
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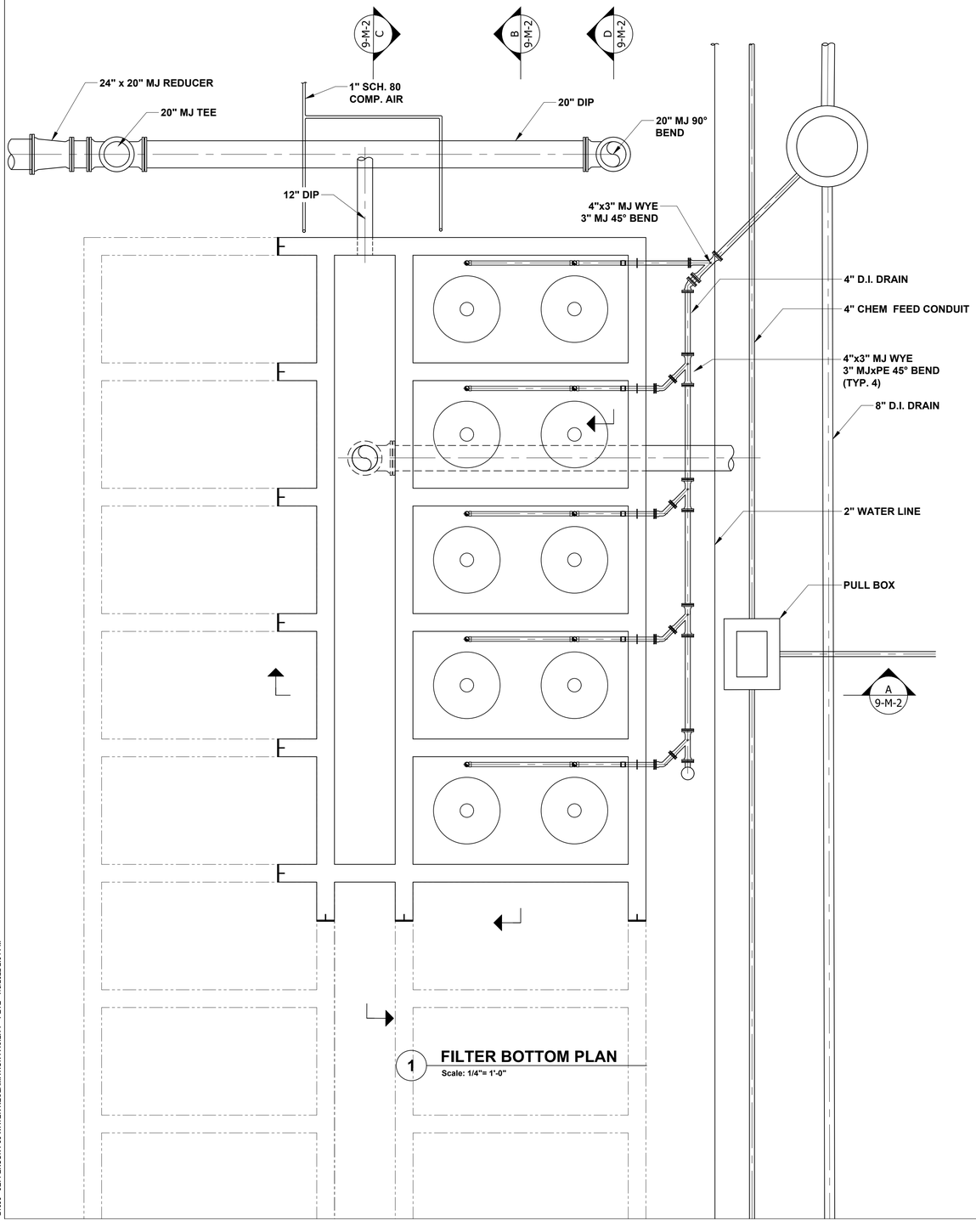
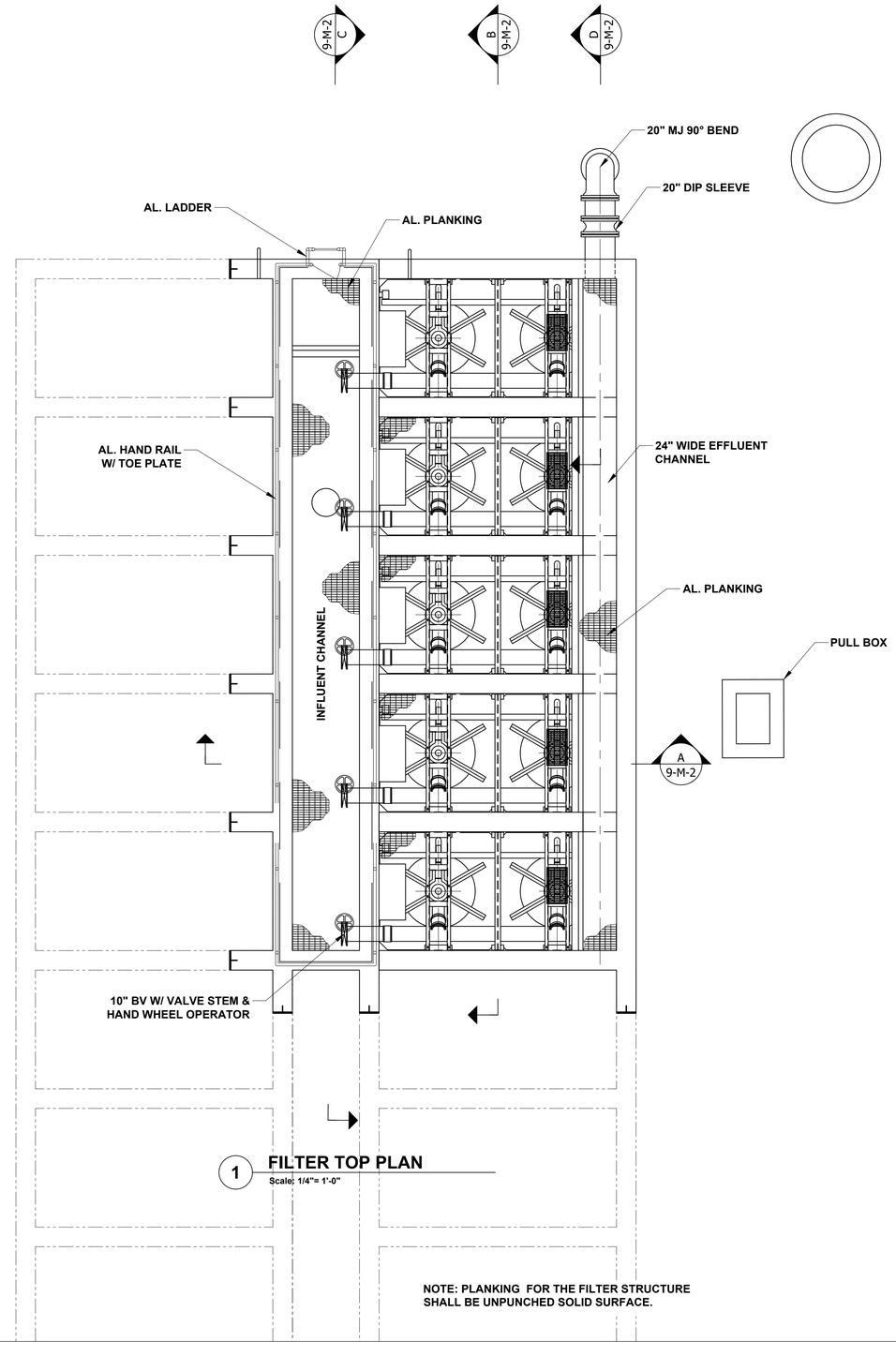


1 **FILTER BOTTOM PLAN**
Scale: 1/4"= 1'-0"



1 **FILTER TOP PLAN**
Scale: 1/4"= 1'-0"

NOTE: PLANKING FOR THE FILTER STRUCTURE SHALL BE UNPUNCHED SOLID SURFACE.

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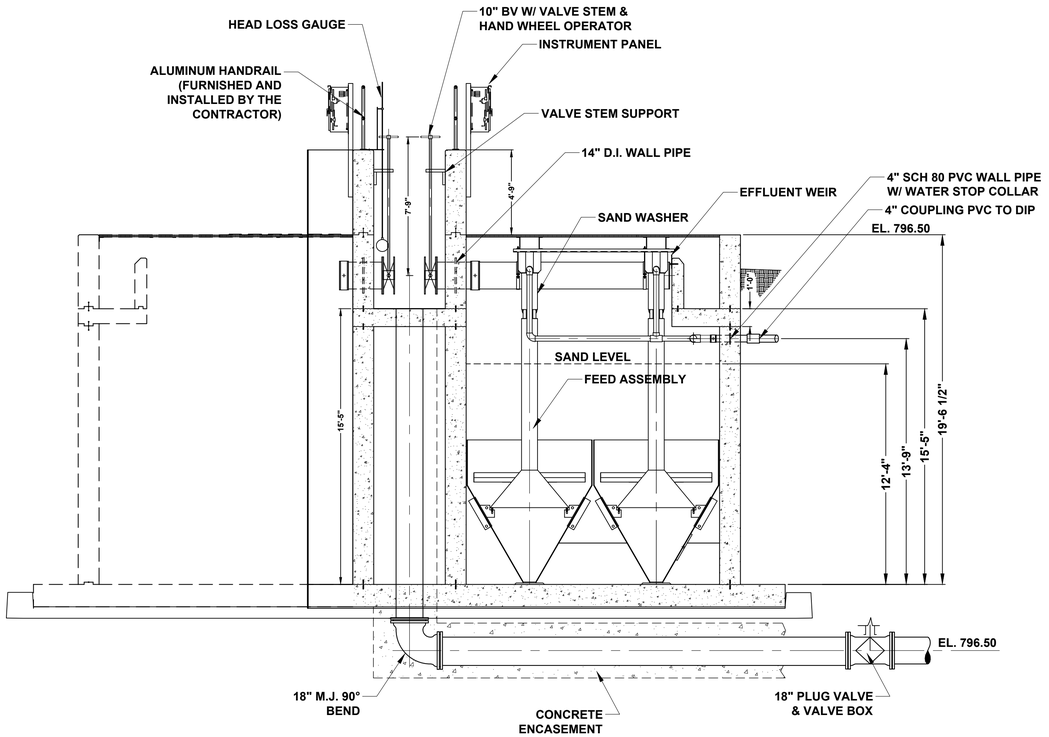
FILTER MECHNICAL PLANS

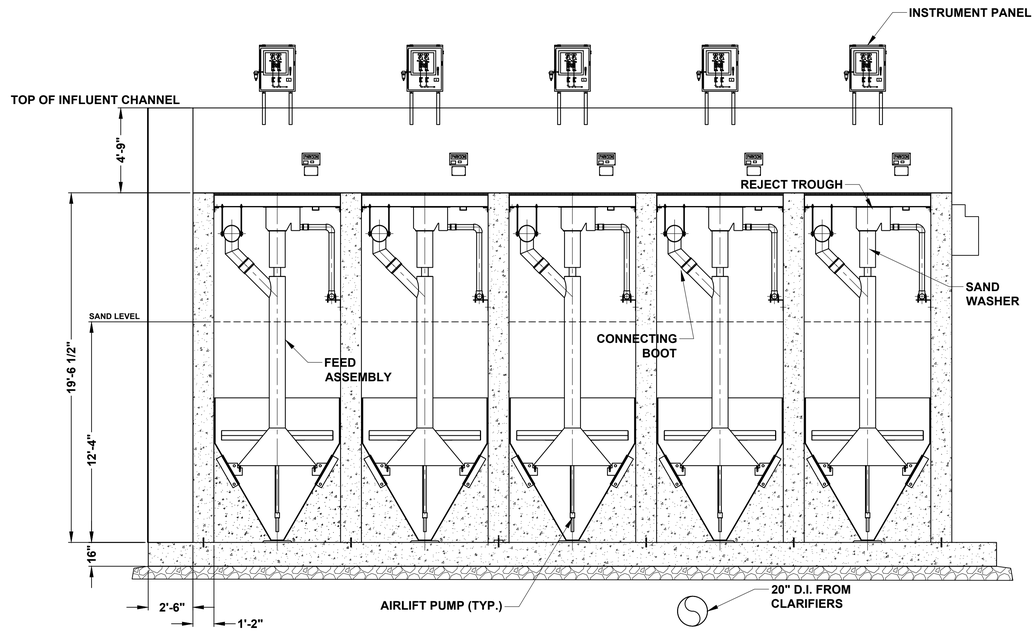
DRAWING NUMBER

9-M-1
OF
214

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/5/2022 2:04 PM

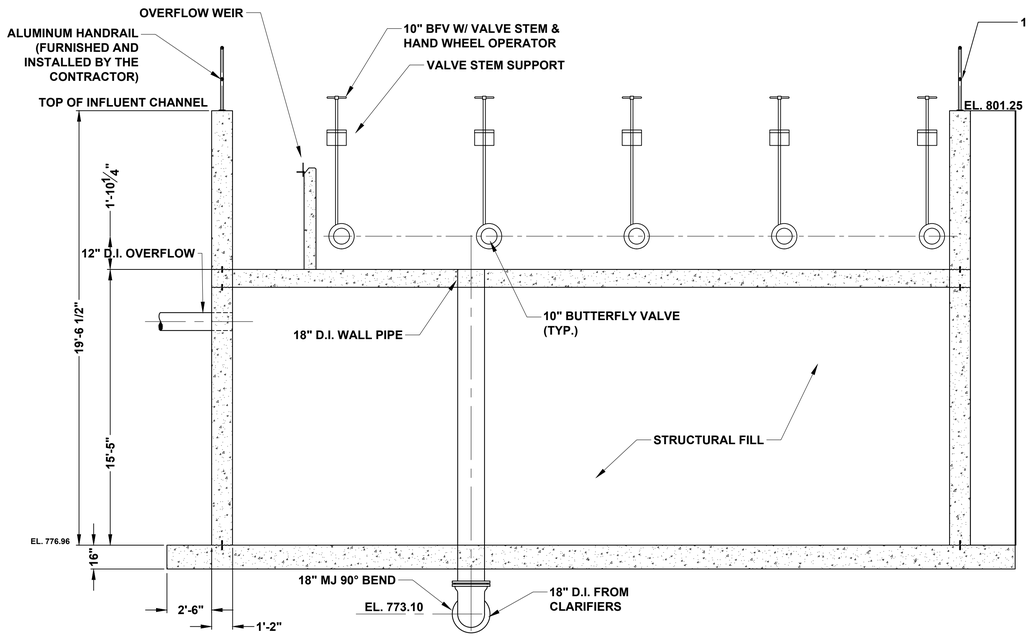


A SECTION
Scale: 1/4"= 1'-0"

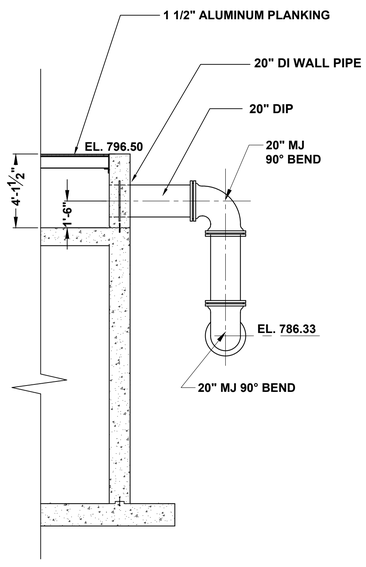


B SECTION
Scale: 1/4"= 1'-0"

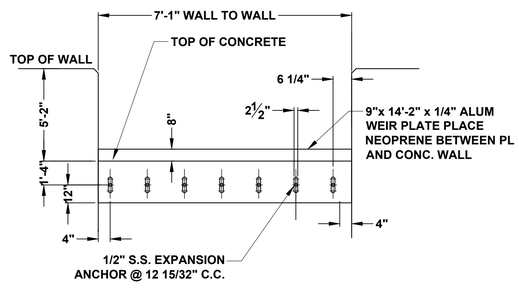
NOTE: CONTRACTOR TO PROVIDE ALL COMPRESSED AIR PIPING AS REQUIRED FROM COMPRESSORS TO FILTERS PER MANUFACTURE'S INSTRUCTION.



C SECTION
Scale: 1/4"= 1'-0"



D SECTION
Scale: 1/4"= 1'-0"



2 EFFLUENT WEIR DETAIL
Scale: N.T.S.

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FILTER MECHANICAL SECTIONS & DETAILS

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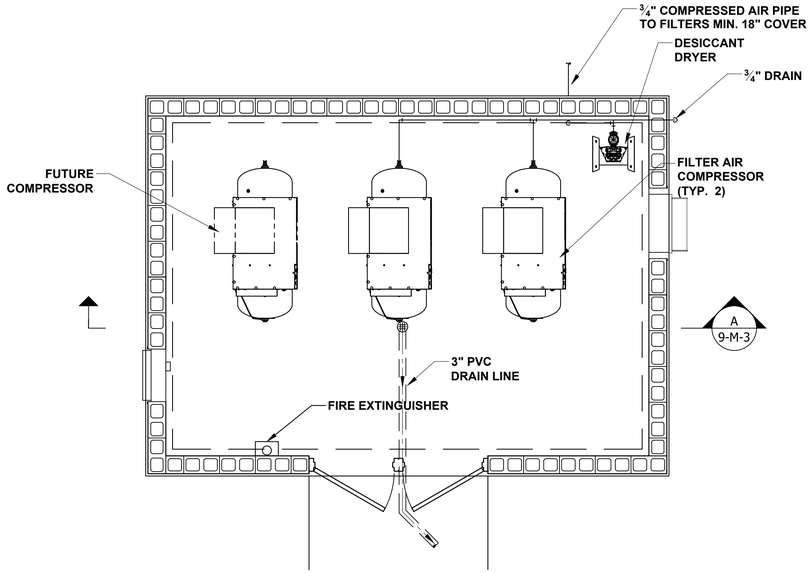
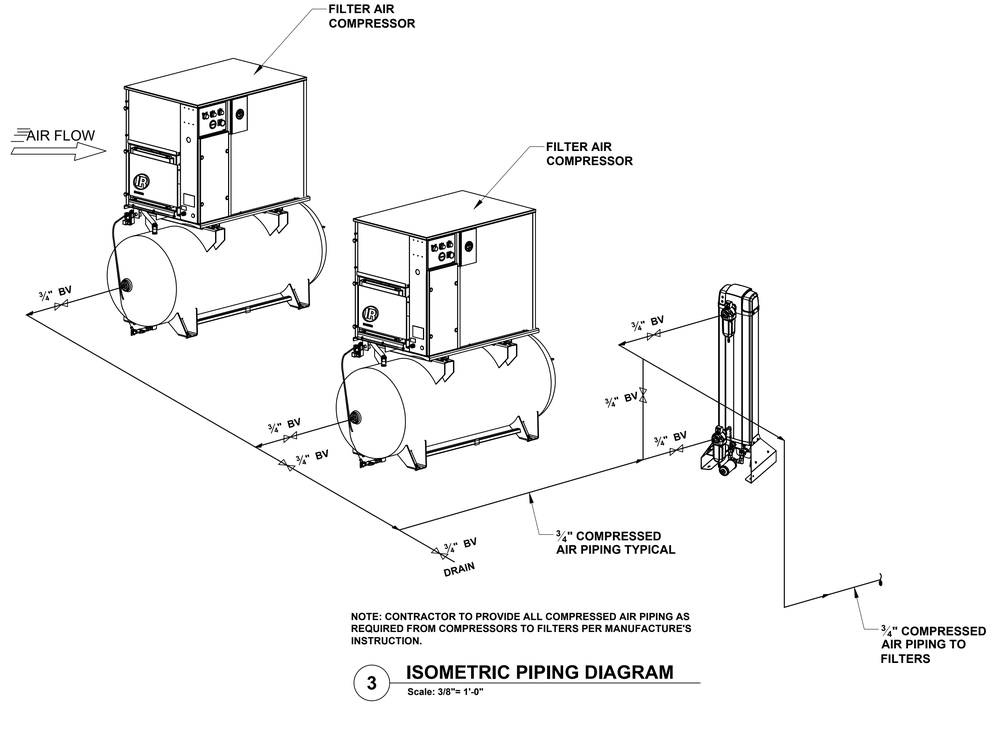


1 FILTER COMPRESSOR BUILDING MECHANICAL FLOOR PLAN

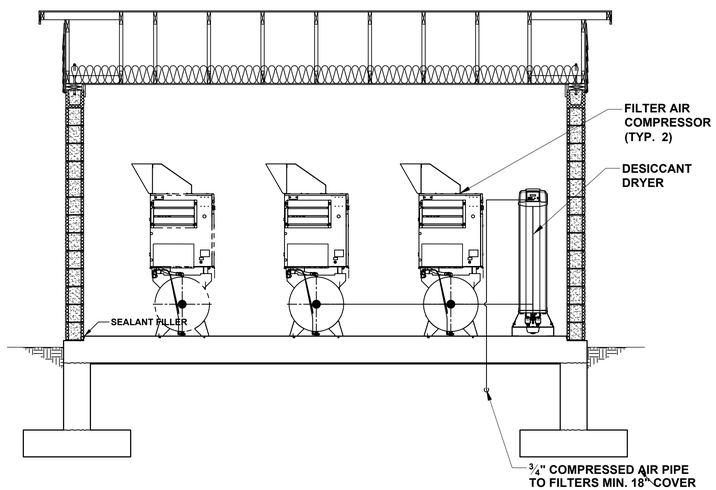
Scale: 3/8"= 1'-0"



NOTE: CONTRACTOR TO PROVIDE ALL COMPRESSED AIR PIPING AS REQUIRED FROM COMPRESSORS TO FILTERS PER MANUFACTURE'S INSTRUCTION.

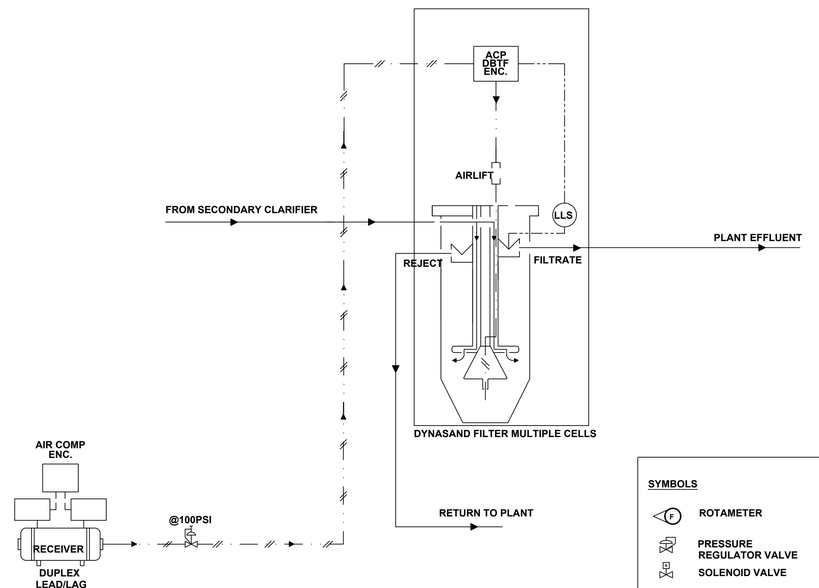
3 ISOMETRIC PIPING DIAGRAM

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



A SECTION

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



3 FILTER P&ID

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

SYMBOLS

- ROTAMETER
- PRESSURE REGULATOR VALVE
- SOLENOID VALVE

LEGEND

- PROCESS PIPING
- PRESSURIZED AIR SUPPLY LINES
- REMOTE ELECTRICAL CONNECTION

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FILTER COMPRESSOR BUILDING MECHANICAL PLAN

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9-M-3
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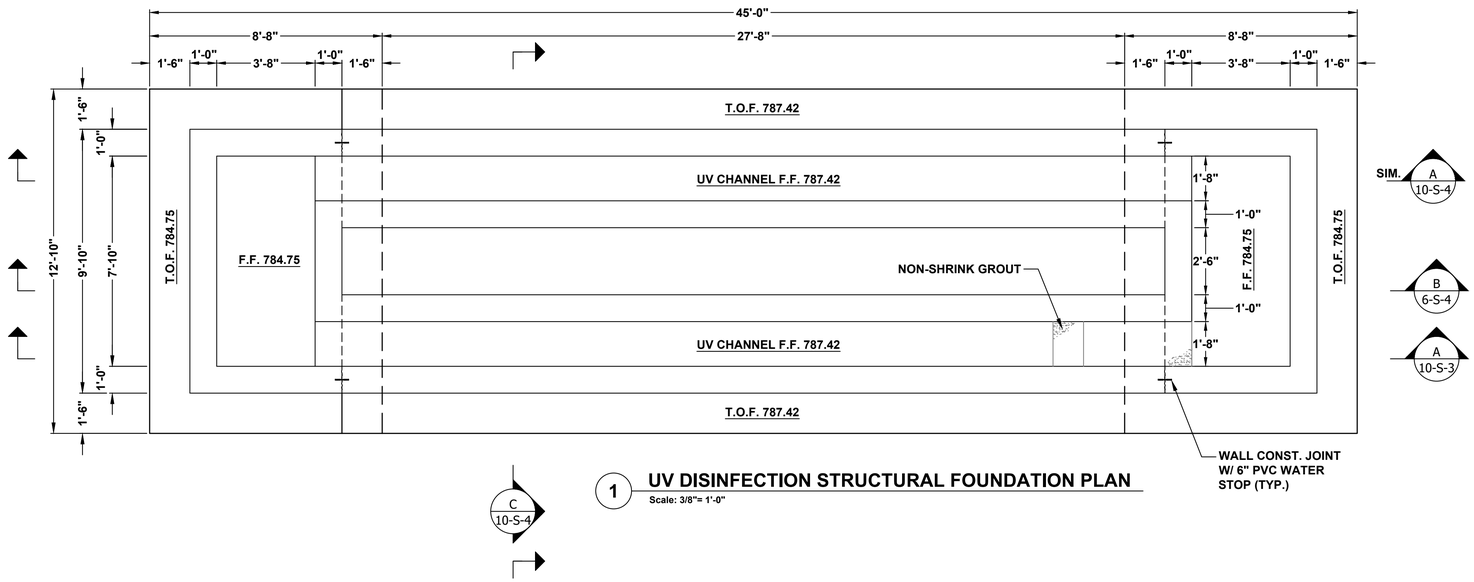
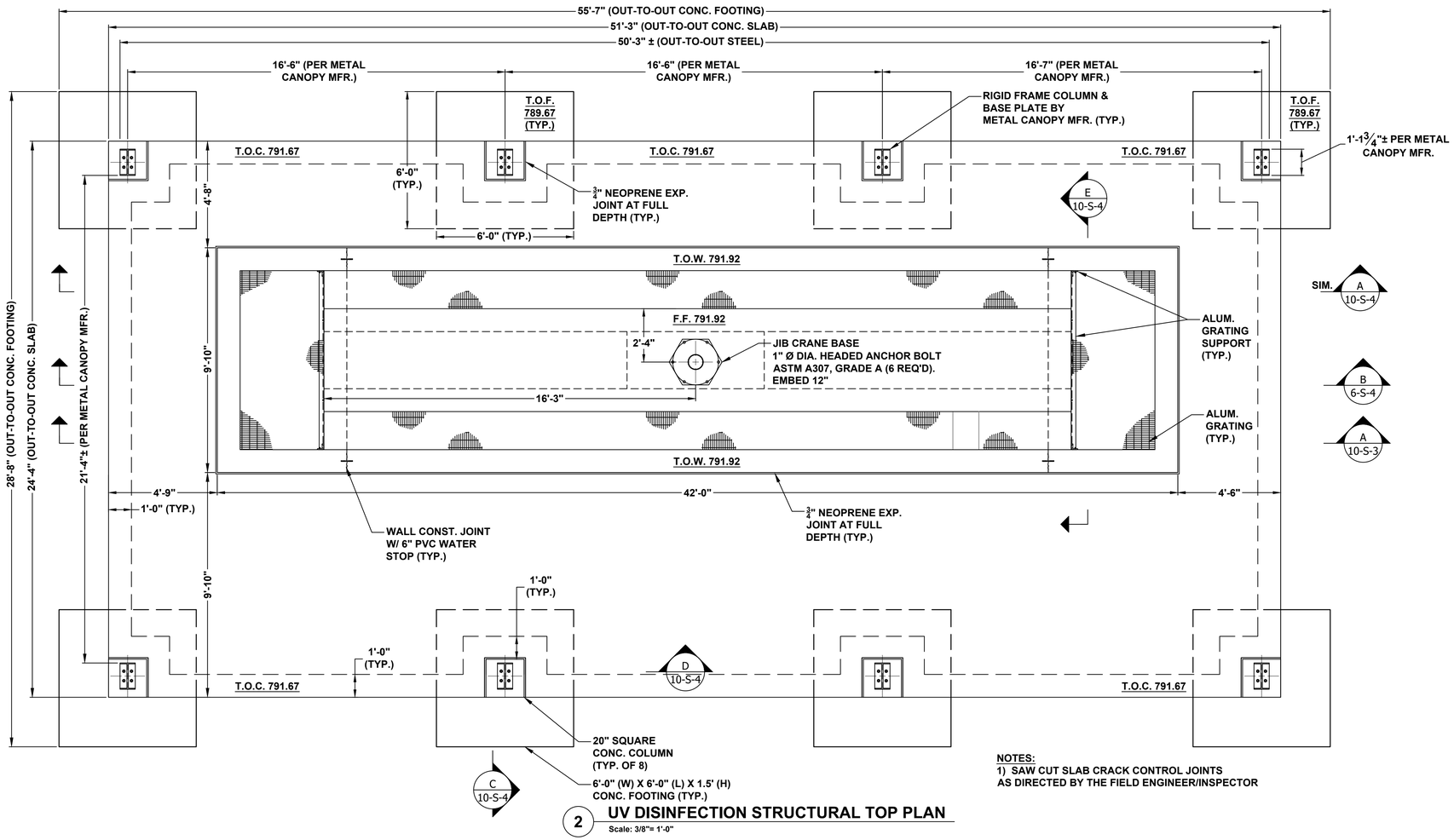


C 10-S-4

1 UV DISINFECTION STRUCTURAL FOUNDATION PLAN

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



C 10-S-4

2 UV DISINFECTION STRUCTURAL TOP PLAN

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

NOTES:
1) SAW CUT SLAB CRACK CONTROL JOINTS AS DIRECTED BY THE FIELD ENGINEER/INSPECTOR

DESIGN LOADS:

1. DEAD LOAD - WEIGHT OF THE BUILDING SYSTEM AS DETERMINED BY MANUFACTURER
2. ROOF LIVE LOAD - 20 PSF
3. COLLATERAL LOAD - 5 PSF
4. ROOF SNOW LOAD:
   - ROOF SNOW LOAD - 10 PSF
   - IMPORTANCE FACTOR (I_S) - 1.10
5. WIND LOAD:
   - BASIC WIND SPEED - 120 MPH
   - EXPOSURE CATEGORY - C
   - RISK CATEGORY - III
   - IMPORTANCE FACTOR (I_W) - 1.15
6. SEISMIC LOAD:
   - SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIODS (S_{DS}) - 22.3%
   - SPECTRAL RESPONSE ACCELERATION FOR 1-SEC. PERIOD (S_{D1}) - 15.2%
   - SITE CLASS - D
   - SEISMIC DESIGN CATEGORY - C
   - IMPORTANCE FACTOR (I_E) - 1.25
   - RESPONSE MODIFICATION FACTOR (R) - 3.25
7. FLOOR LOAD:
   - LIVE LOAD - 300 PSF
   - DEAD LOAD (WEIGHT OF MECHANICAL EQUIPMENT BY OTHERS)
8. COLLATERAL LOAD - PROCESS PIPING AND MEP AS DETERMINED BY MANUFACTURER

GENERAL SERVICEABILITY LIMITS:

1. DEFLECTION LIMITS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE METAL BUILDING SYSTEMS MANUAL (MBMA), LATEST EDITION
2. VERTICAL DEFLECTIONS:
   - ROOF SECONDARY (PURLINS) - L/150
   - MAIN FRAME ROOF BEAMS - L/180
3. VERTICAL DEFLECTION LIMITS APPLY FOR SNOW LOAD (50-YEAR MEAN-RECURRENCE INTERVAL) PLUS COLLATERAL LOAD, OR THE CODE REQUIRED LIVE LOAD. THE HORIZONTAL DRIFT AND DEFLECTIONS LIMITS APPLY FOR THE LOADS INDUCED BY A BASIC WIND SPEED CORRESPONDING TO A 10-YEAR MEAN-RECURRENCE INTERVAL.

CONSTRUCTION NOTES:

1. PRE-ENGINEERED CANOPY MANUFACTURER IS RESPONSIBLE FOR PROPER ANCHORING OF BUILDING TO SUPPORT FOOTING.
2. PRE-ENGINEERED CANOPY SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST INTERNATIONAL BUILDING CODE (IBC), ASCE-7, GEORGIA BUILDING CODE, AND OTHER APPLICABLE CODES AND REGULATIONS.
3. CONTRACTOR SHALL BRING AND POTENTIAL CONFLICT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO CONSTRUCTION
4. CONTRACTOR SHALL SUBMIT PRE-ENGINEERED CANOPY SHOP DRAWINGS AND CALCULATION FOR REVIEW. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A GEORGIA P.E.
5. ANCHOR RODS/BOLTS
   a. ALL ANCHOR RODS SHALL BE CAST-IN-PLACE HEADED ANCHOR RODS. USE OF POST-INSTALLED (EPOXY, ADHESIVE, EXPANSION, SCREW, ETC.) ANCHORS IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM EOR OR UNLESS SPECIFICALLY NOTED IN THE DRAWINGS
   b. STEEL COLUMN ANCHOR RODS/BOLTS - ASTM F593B WITH ASTM F594B HEAVY HEX NUTS AND HARDENED WASHERS (UNLESS NOTED OTHERWISE OR EQUIVALENT.
   c. ANCHOR BOLT PLACEMENT AND ANCHOR BOLT, NUT, AND WASHER MATERIAL INFORMATION, INCLUDING MATERIAL CERTIFICATIONS, SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL
   d. RECORD COPY OF DESIGN CALCULATIONS AND DETAILS SHOWING THE REQUIRED DIAMETER, LENGTH, EMBEDMENT, EDGE DISTANCE, CONFINEMENT, ANCHOR REINFORCEMENT, ANCHOR BOLT SLEEVES, CONNECTION REDESIGN, AND OTHER CONDITIONS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF GEORGIA. CALCULATIONS SHALL COMPLY WITH THE PROVISIONS OF ACI 318-14, CHAPTER 17 BASE ANCHOR CAPACITY DETERMINATION ON CRACKED CONCRETE CONDITION AND COMPRESSIVE STRENGTH OF NEW CONCRETE PER SECTION 03 30 00. ASSUME COMPRESSIVE STRENGTH OF CONCRETE IS 3,000 PSI UNLESS OTHERWISE NOTED.
6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" x 3/4"
7. ALL STRUCTURAL DIMENSIONS EXCLUDING FLOOR AND FOUNDATION SLAB TO BE DETERMINED BY BUILDING MANUFACTURER.
8. SAW-CUT SLAB CONTROL JOINTS SHALL BE CARRIED OUT WITHIN 24 HOURS AFTER THE COMPLETION OF THE NEW CONCRETE.

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

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Drawn By : JWN

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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

UV DISINFECTION STRUCTURAL PLANS

DRAWING NUMBER

10-S-1
OF
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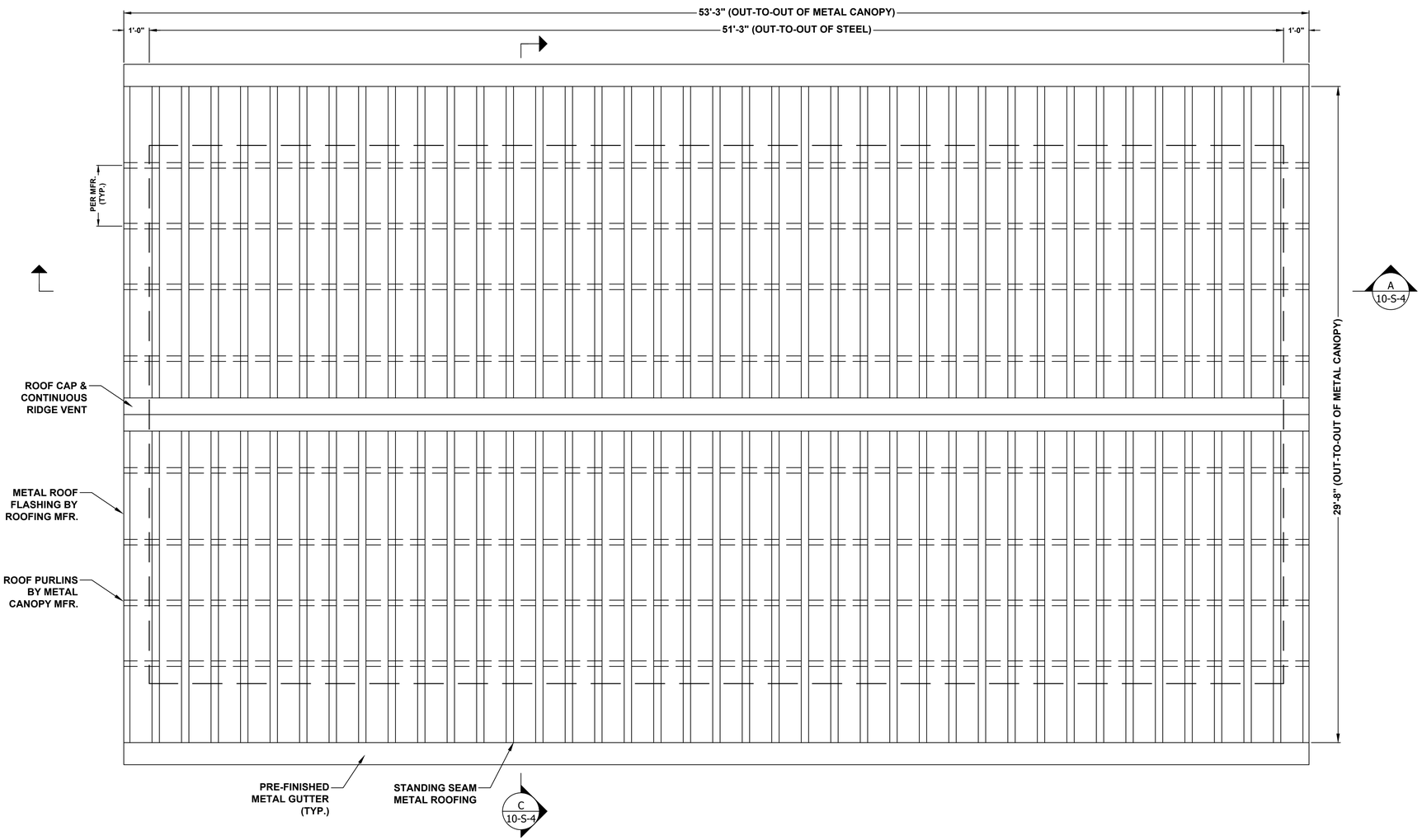

3 UV DISINFECTION ROOFING PLAN

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

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UV DISINFECTION STRUCTURAL ROOFING PLAN

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10-S-2
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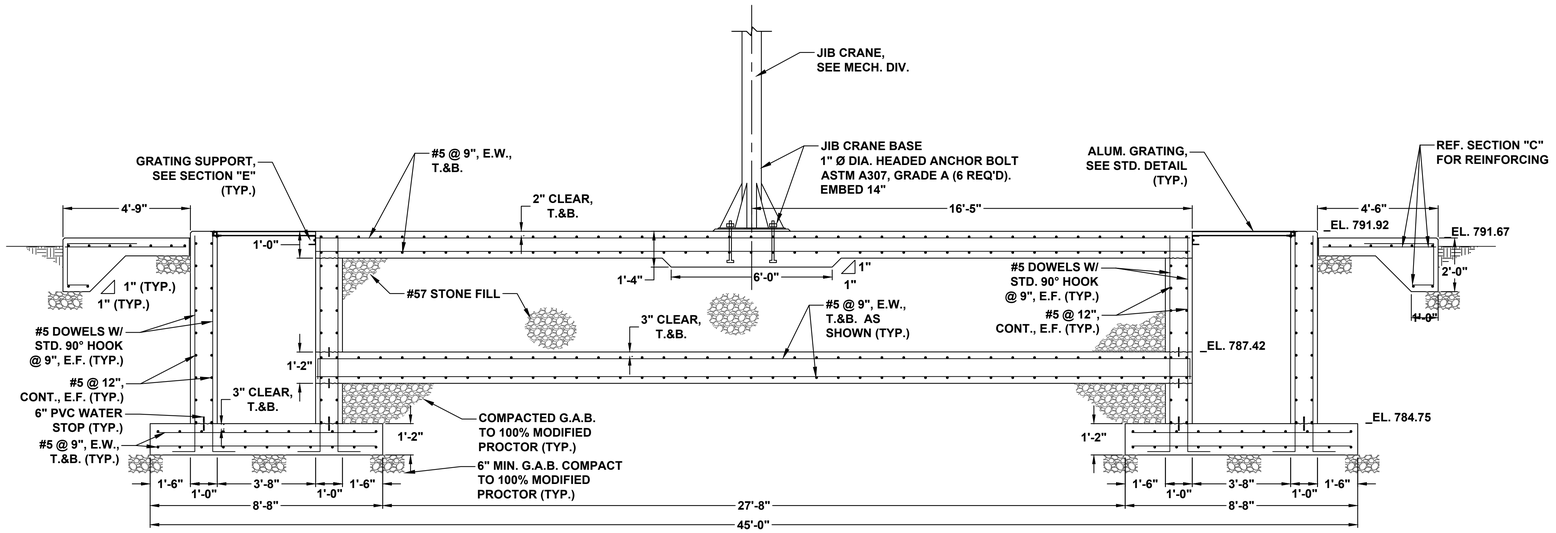
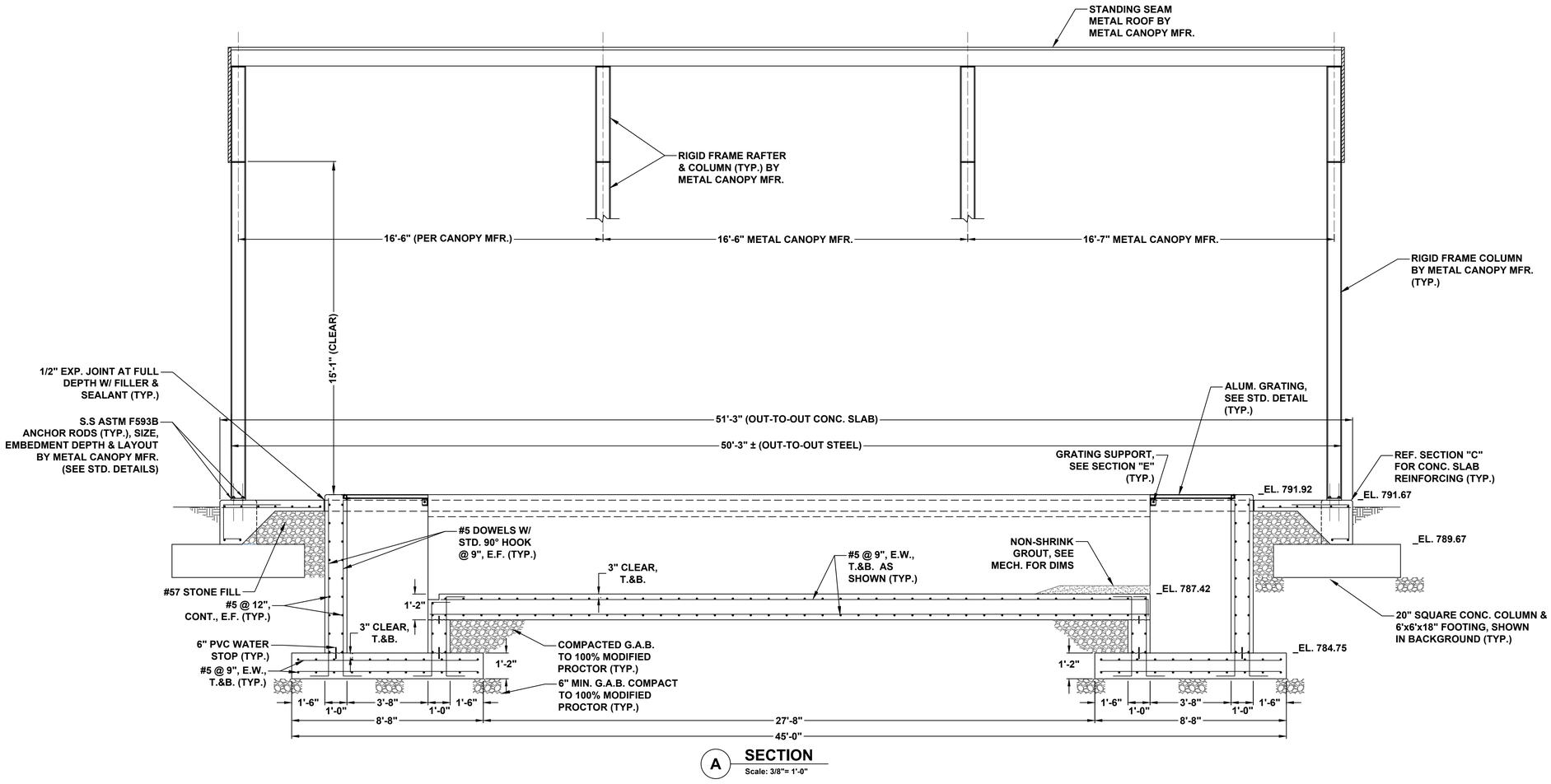


B **SECTION**
Scale: 3/8"= 1'-0"



A **SECTION**
Scale: 3/8"= 1'-0"

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UV DISINFECTION STRUCTURAL SECTIONS 1

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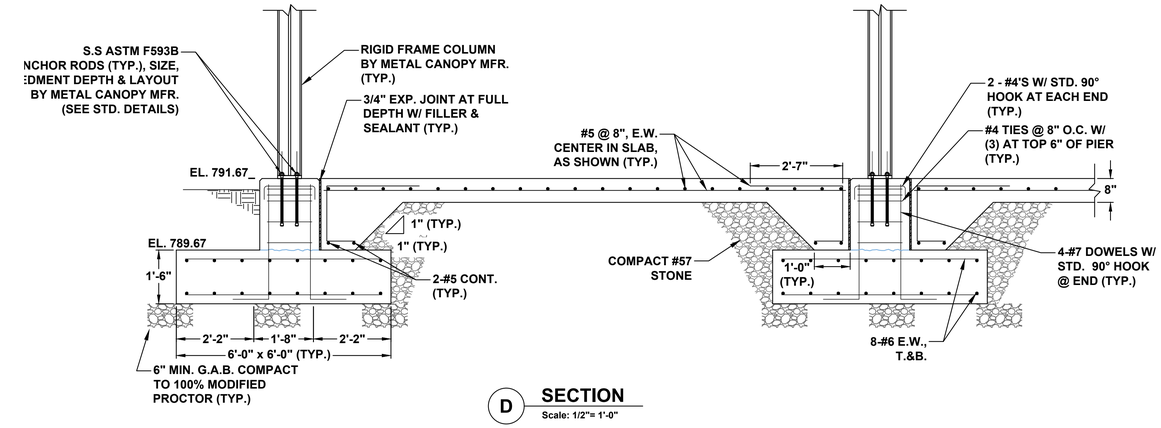
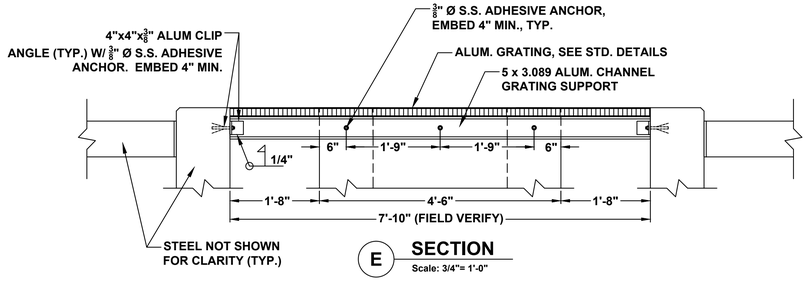
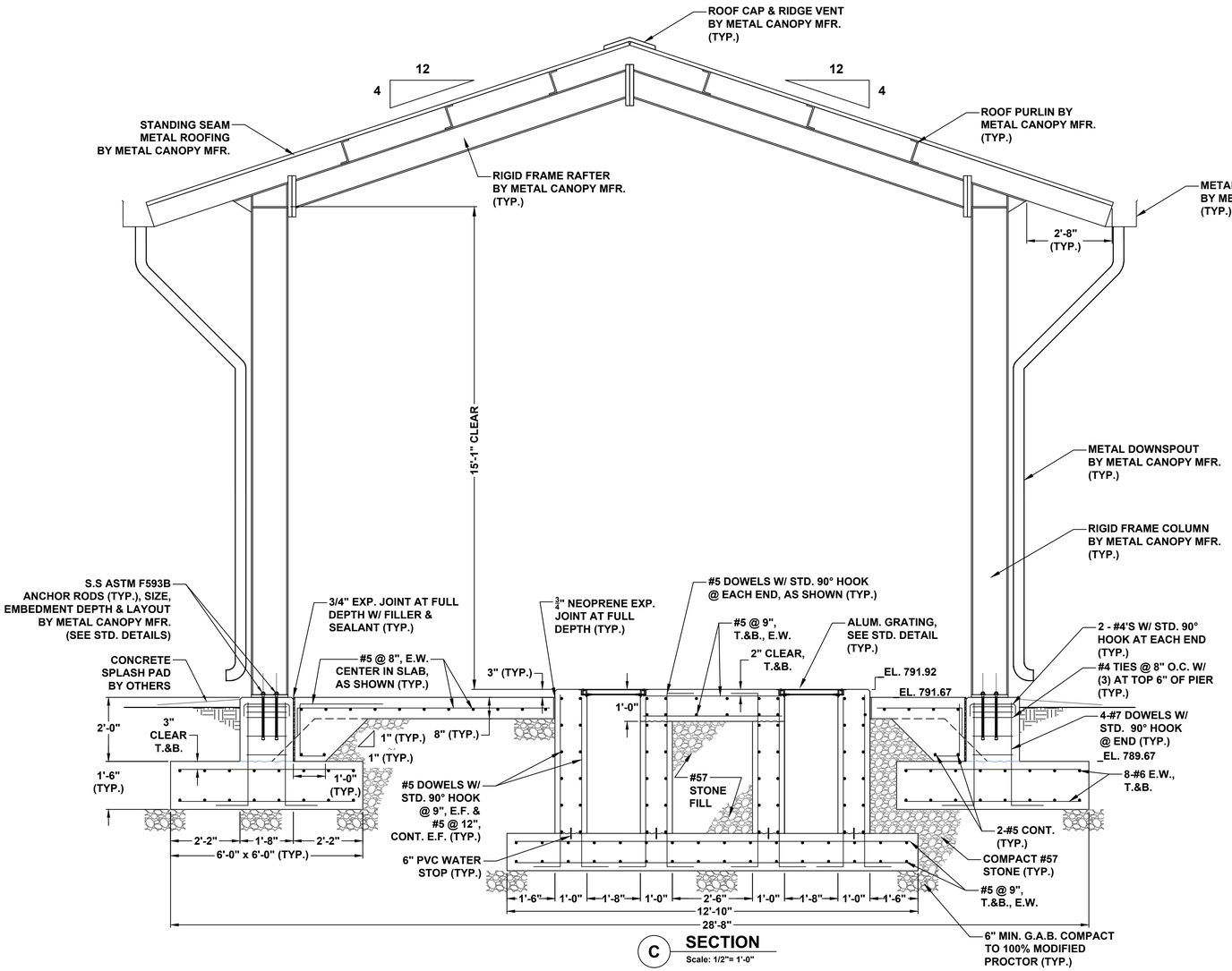


D **SECTION**
Scale: 1/2"= 1'-0"



E **SECTION**
Scale: 3/4"= 1'-0"



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

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UV DISINFECTION STRUCTURAL SECTIONS 2

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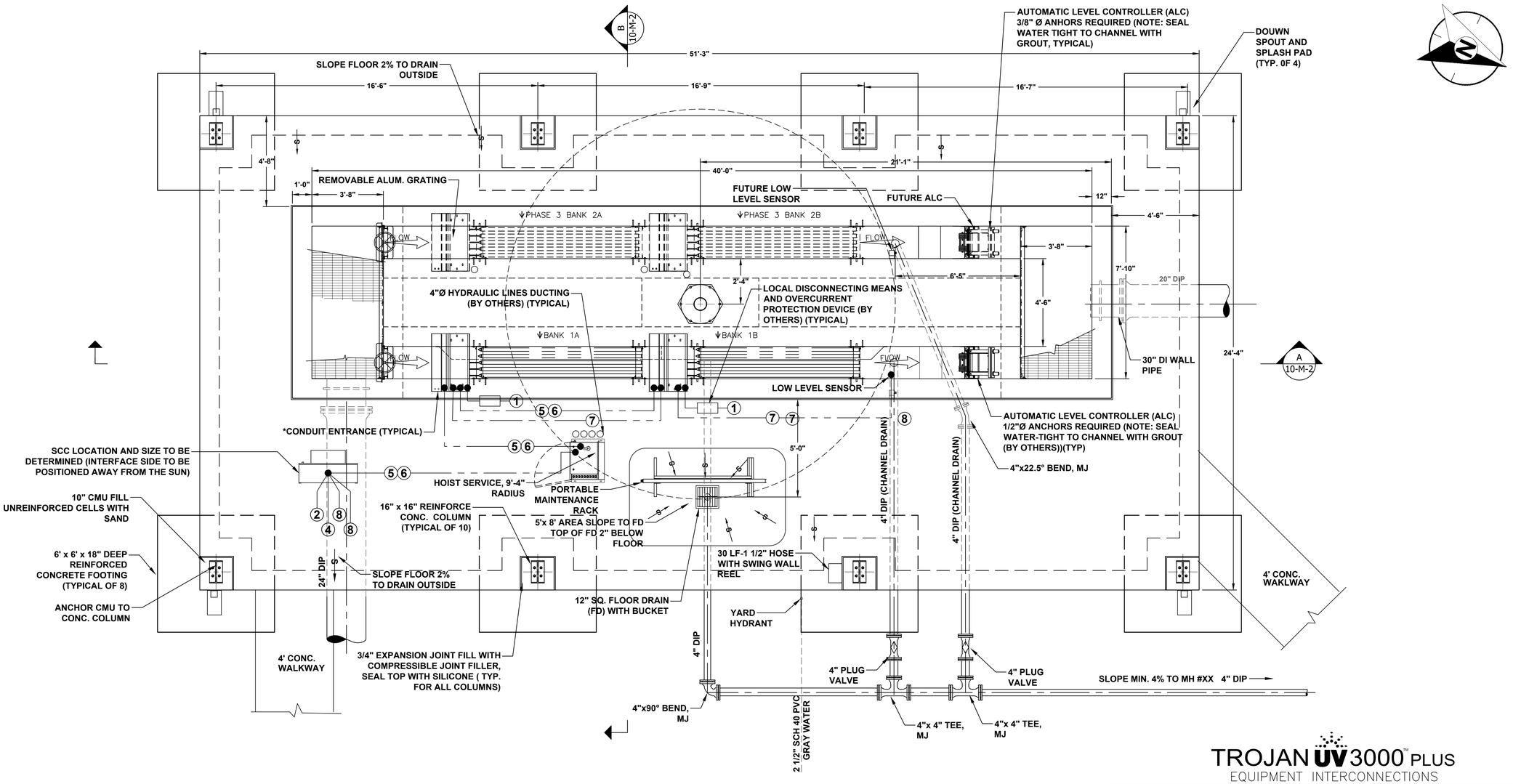

1 UV DISINFECTION PLAN

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

TROJAN UV3000™ PLUS
EQUIPMENT INTERCONNECTIONS

No.	DESCRIPTION	FROM	TO
1	POWER DISTRIBUTION CENTER (PDC) POWER SUPPLY 480Y/277V, 3 PHASE, 4 WIRE + GROUND 7.7 kVA/PDC POWER DRAW 12 AMPS MAXIMUM CURRENT/PHASE	DISTRIBUTION PANEL (DP) (BY OTHERS) (NOT SHOWN)	PDCs
2	SYSTEM CONTROL CENTER (SCC) POWER SUPPLY 120V, 1 PHASE, 2 WIRE + GROUND 1.8 kVA	DISTRIBUTION PANEL (DP) (BY OTHERS) (NOT SHOWN)	SCC
3	HYDRAULIC SYSTEMS CENTER (HSC) POWER SUPPLY 480V, 3 PHASE, 3 WIRE + GROUND 2.5 kVA, 3 AMPS	DISTRIBUTION PANEL (DP) (BY OTHERS) (NOT SHOWN)	HSC
4	FLOW METER 4-20 mA, DC ANALOG INPUT	FLOW METER PANEL (NOT SHOWN) (BY OTHERS)	SCC
5	GROUND LINK 14 AWG TYPE TWH STRANDED	SCC	PDCs THRU HSC (DAISY CHAINED)
6	MODBUS 1 SHIELDED TWISTED PAIR	SCC	PDCs THRU HSC (DAISY CHAINED)
7	DISCRETE LOW LEVEL SIGNAL 12 VDC, 2 CONDUCTORS	LOW LEVEL SENSOR	PDCs (DAISY CHAINED)
8	DISCRETE GATE OPEN CONTROL OUTPUT 2 CONDUCTORS DISCRETE GATE CLOSED CONTROL OUTPUT 2 CONDUCTORS DISCRETE OPENED STATUS INPUT 2 CONDUCTORS DISCRETE CLOSED STATUS INPUT 2 CONDUCTORS DISCRETE GATE LOCAL/REMOTE MODE INPUT 2 CONDUCTORS	SLIDE GATE (BY OTHERS) SLIDE GATE (BY OTHERS) SCC SCC SLIDE GATE (BY OTHERS)	SCC SCC SLIDE GATE (BY OTHERS) SLIDE GATE (BY OTHERS) SCC

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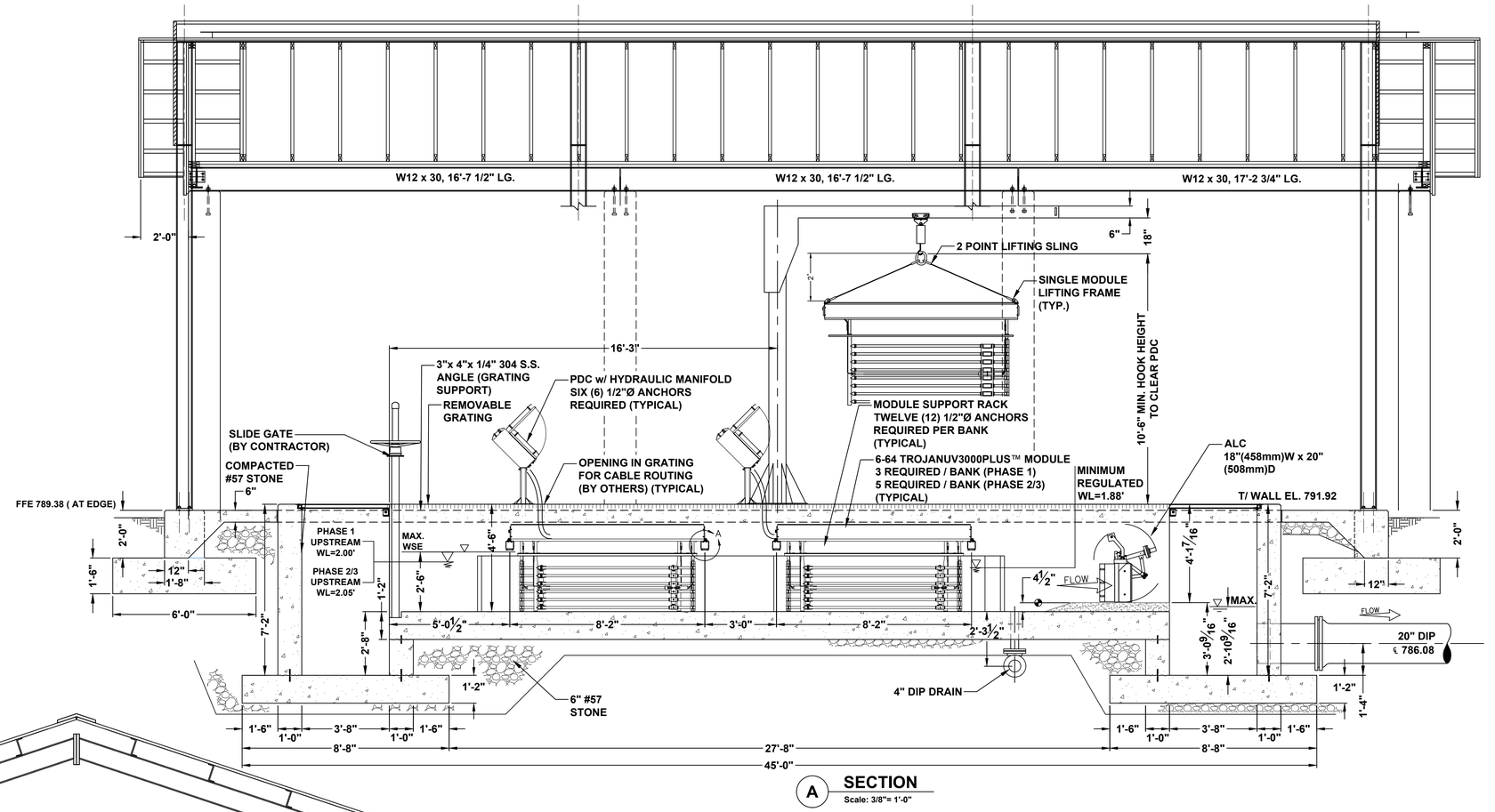
SHEET TITLE

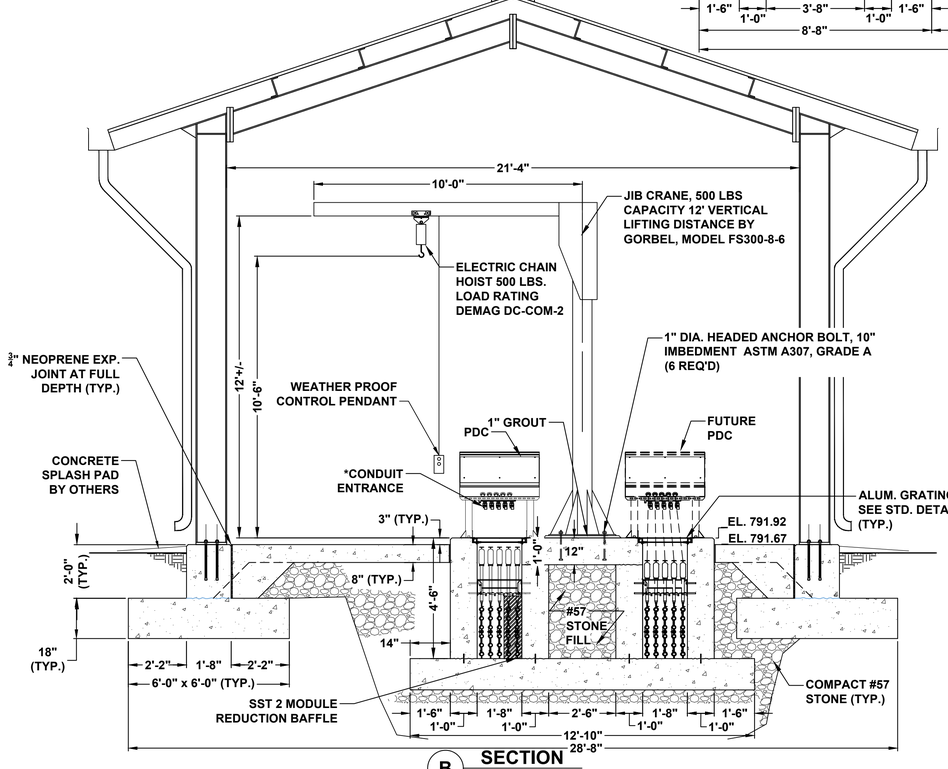
UV DISINFECTION MECHANICAL PLAN

DRAWING NUMBER

10-M-1
OF
214



A **SECTION**
Scale: 3/8"= 1'-0"



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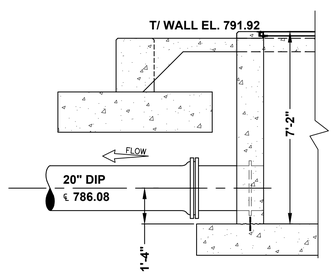
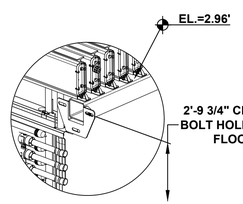
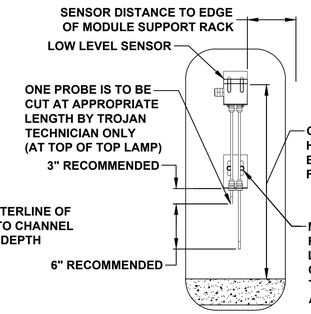


C **SECTION**
Scale: 3/8"= 1'-0"



DETAIL A
SCALE: NOT TO SCALE



DETAIL B
SCALE: NOT TO SCALE

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

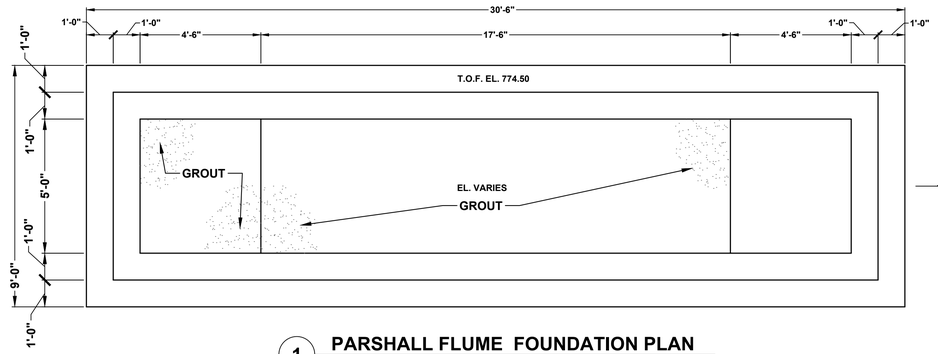
SHEET TITLE

UV DISINFECTION MECHANICAL SECTION

DRAWING NUMBER

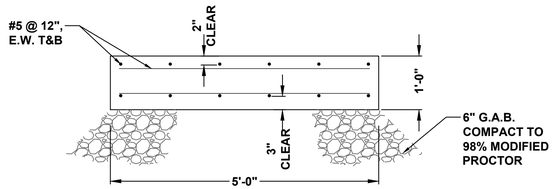
10-M-2
OF
214

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - CHUCK - 7/6/2022 2:58 PM
S:\21093 - Jefferson I-85 WWTP\Plan\Drawings\21093 - UVDisinfectionMech.dwg, 7/6/2022 2:53:53 PM



1 PARSHALL FLUME FOUNDATION PLAN

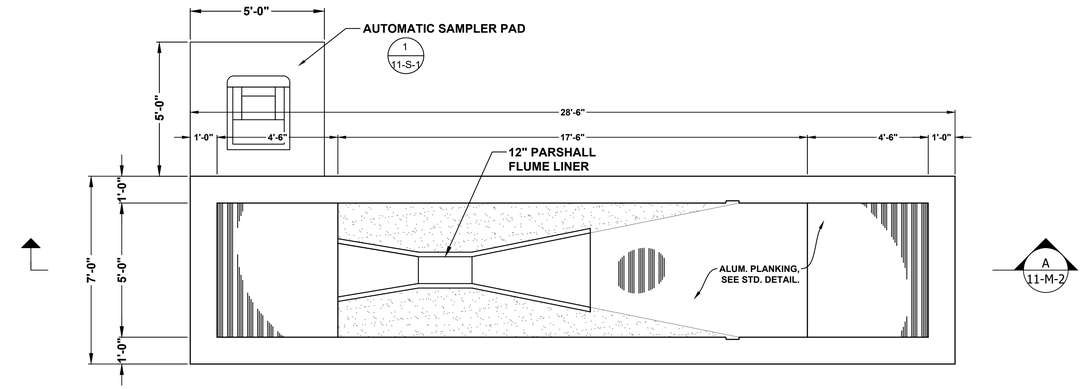
Scale: 3/8"= 1'-0"



AUTOMATIC SAMPLER EQUIPMENT PAD DETAIL (BOTH DIRECTIONS)

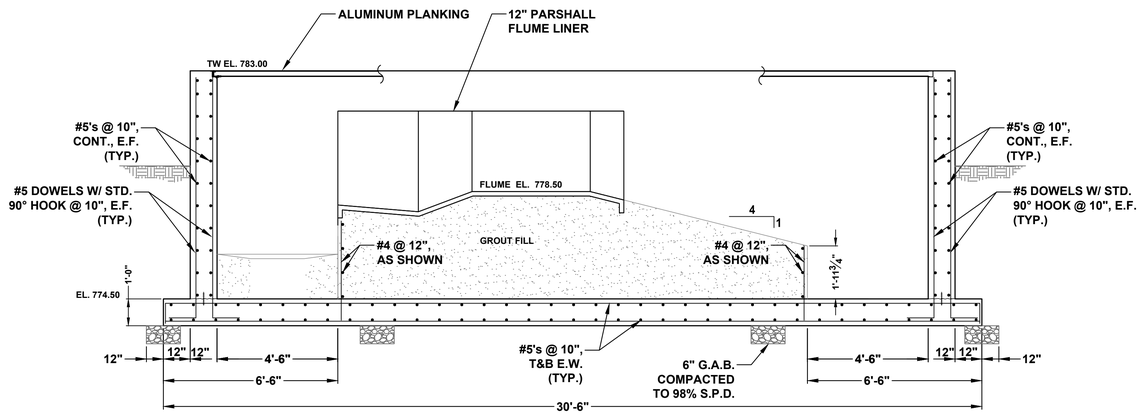
1

Scale: 3/4"= 1'-0"



2 PARSHALL FLUME TOP PLAN

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



A SECTION

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

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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PARSHALL FLUME STRUCTURAL

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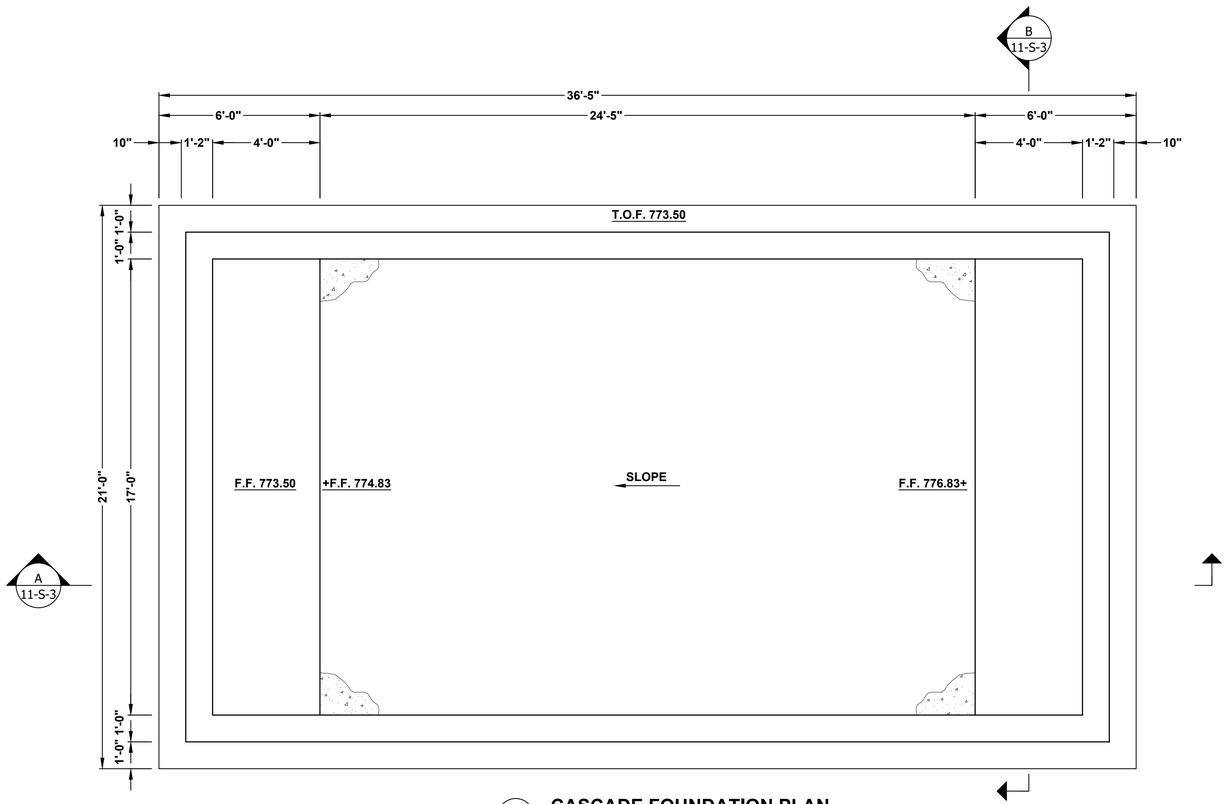
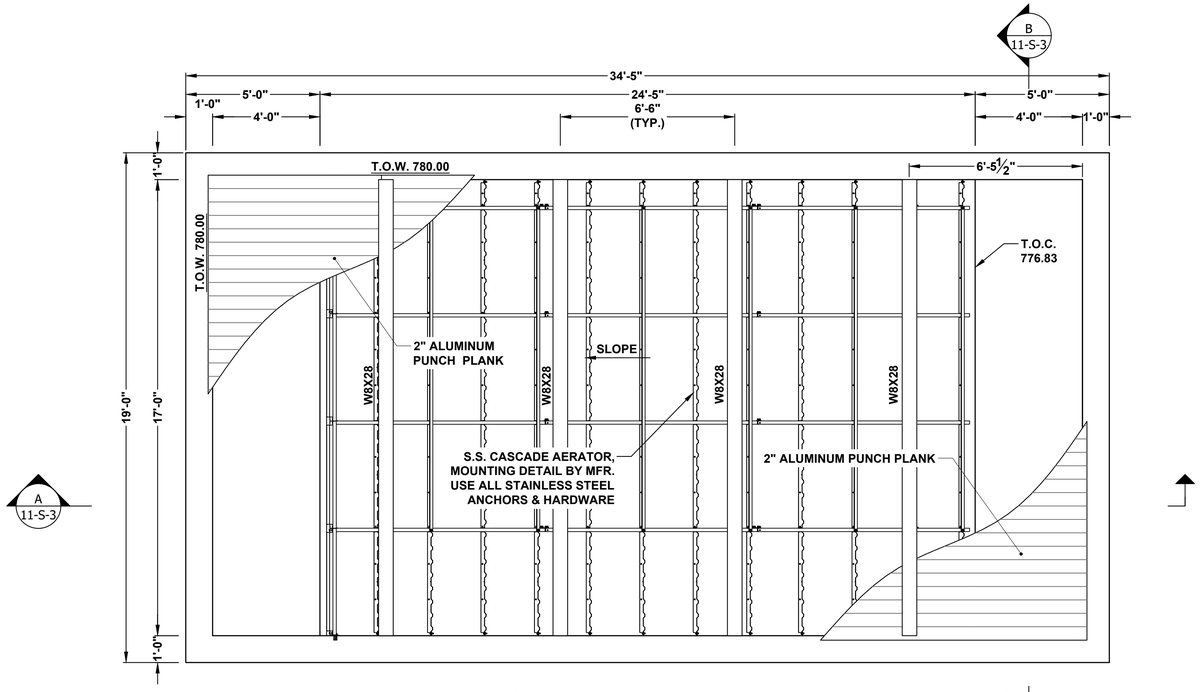


1 CASCADE FOUNDATION PLAN

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



2 CASCADE TOP PLAN

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

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CASCADE AERATION STRUCTURAL PLANS

DRAWING NUMBER

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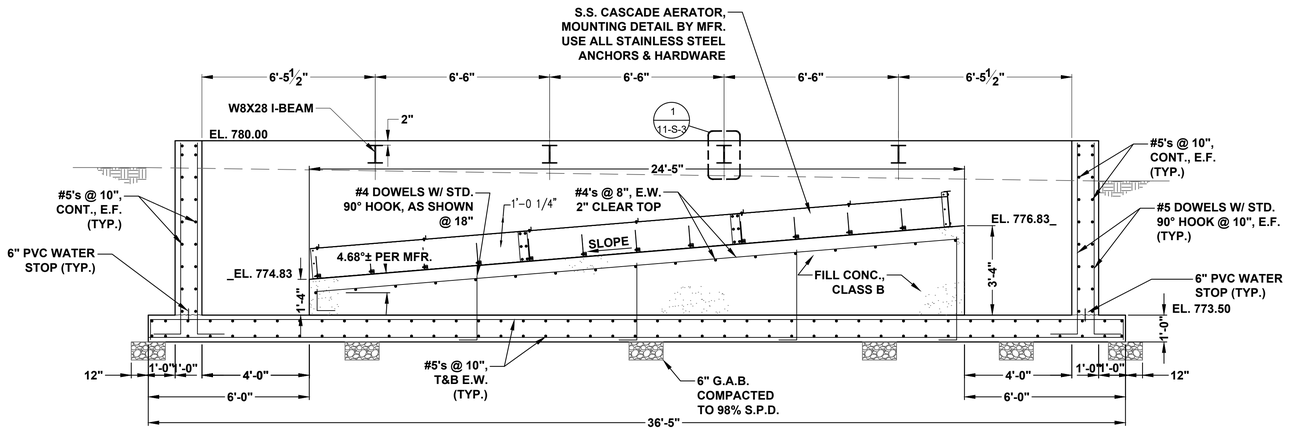
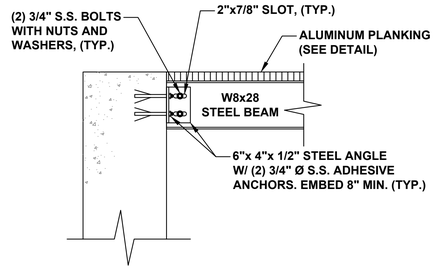
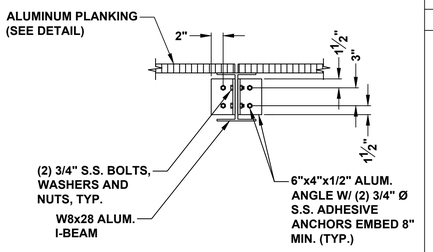
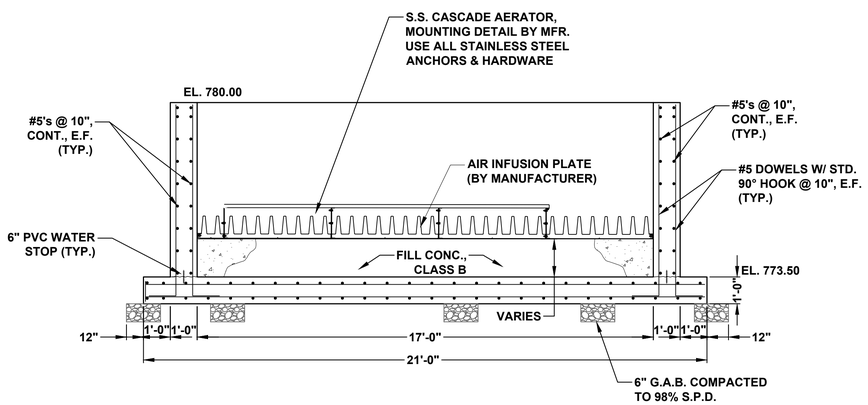


A **SECTION**
Scale: 3/8"= 1'-0"





1 **DETAIL**
Scale: 1"= 1'-0"



B **SECTION**
Scale: 3/8"= 1'-0"

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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CASCADE AERATION STRUCTURAL SECTIONS

DRAWING NUMBER

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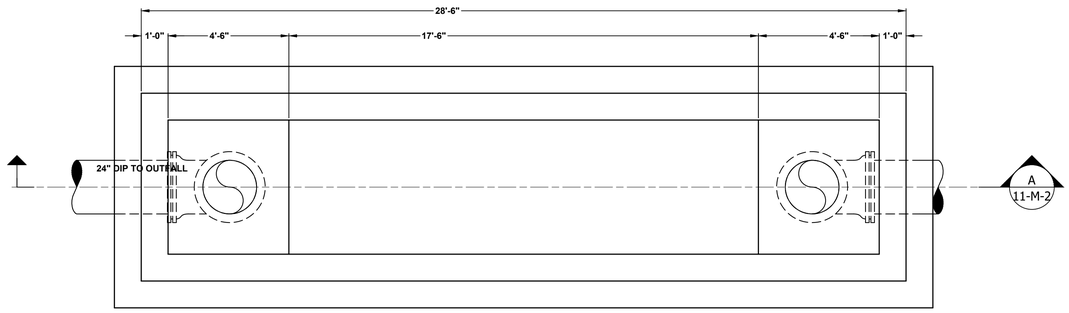
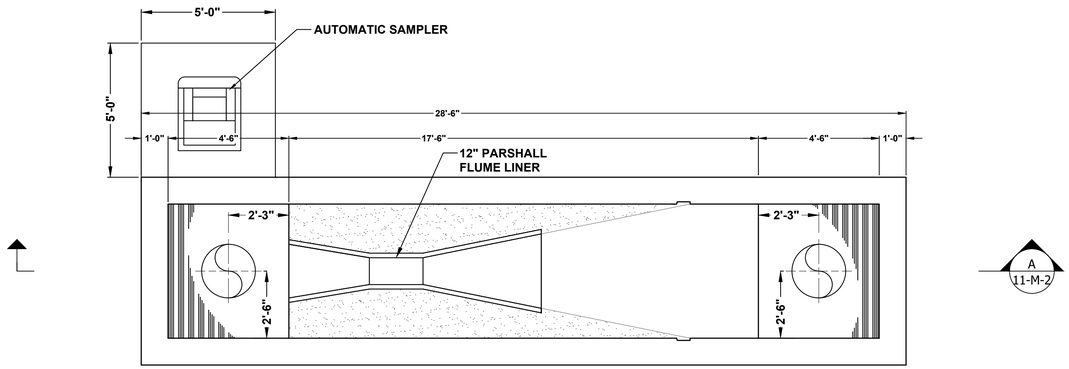
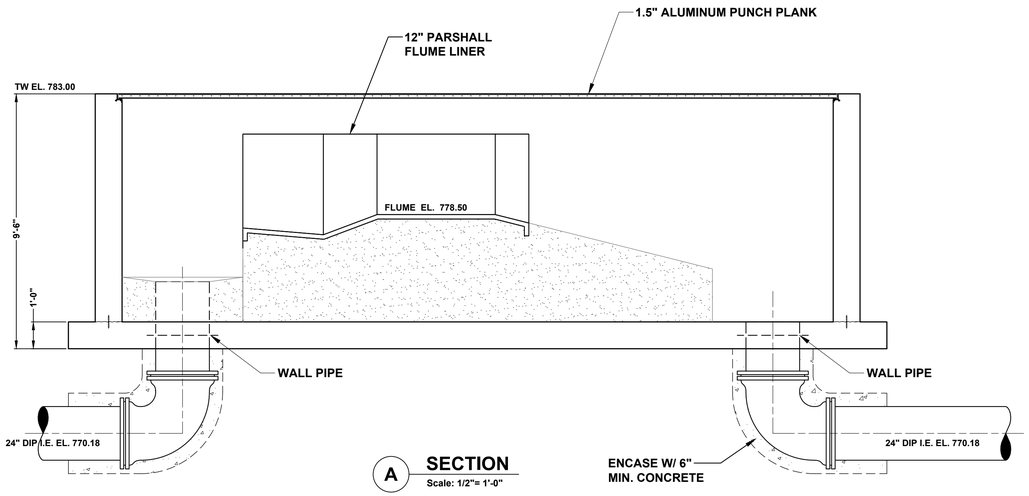


1 **PARSHALL FLUME FOUNDATION PLAN**
Scale: 3/8"= 1'-0"



1 **PARSHALL FLUME TOP PLAN**
Scale: 3/8"= 1'-0"



A **SECTION**
Scale: 1/2"= 1'-0"

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PARSHALL FLUME MECHANICAL

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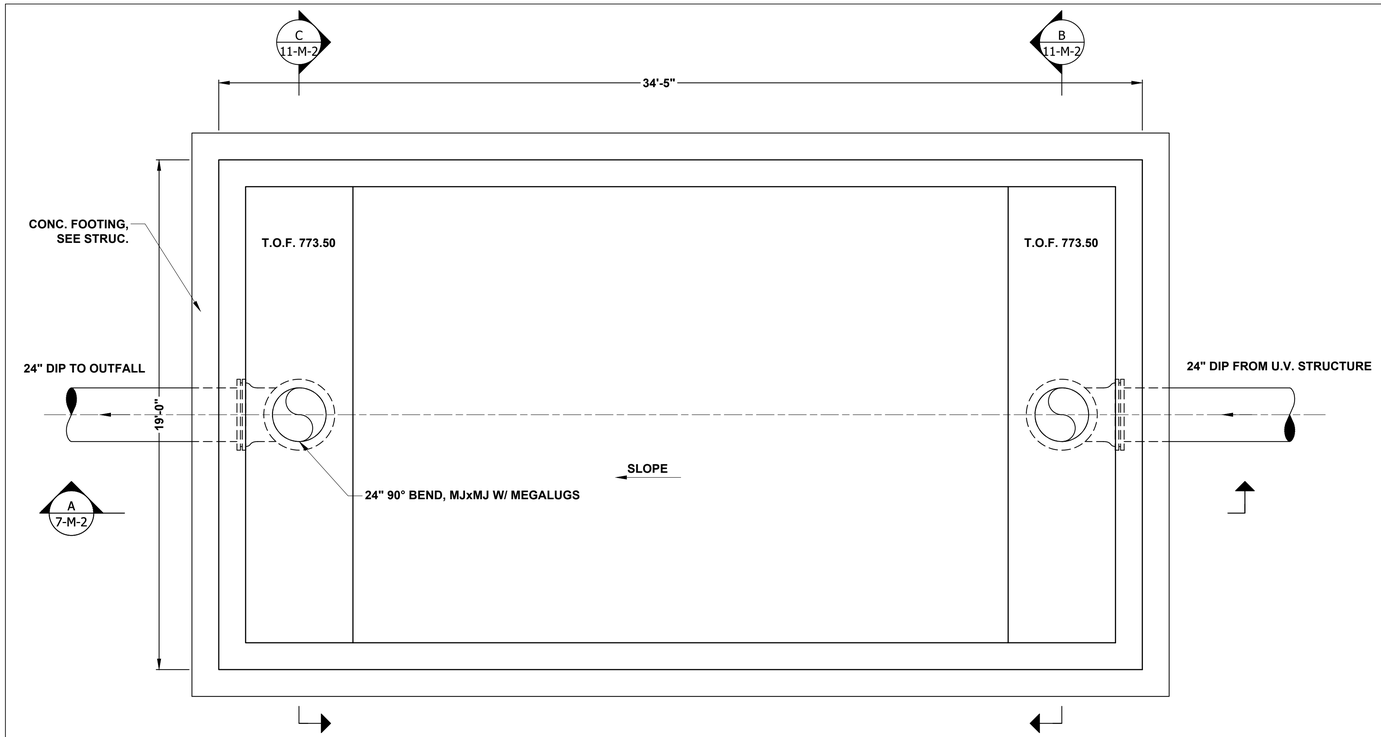
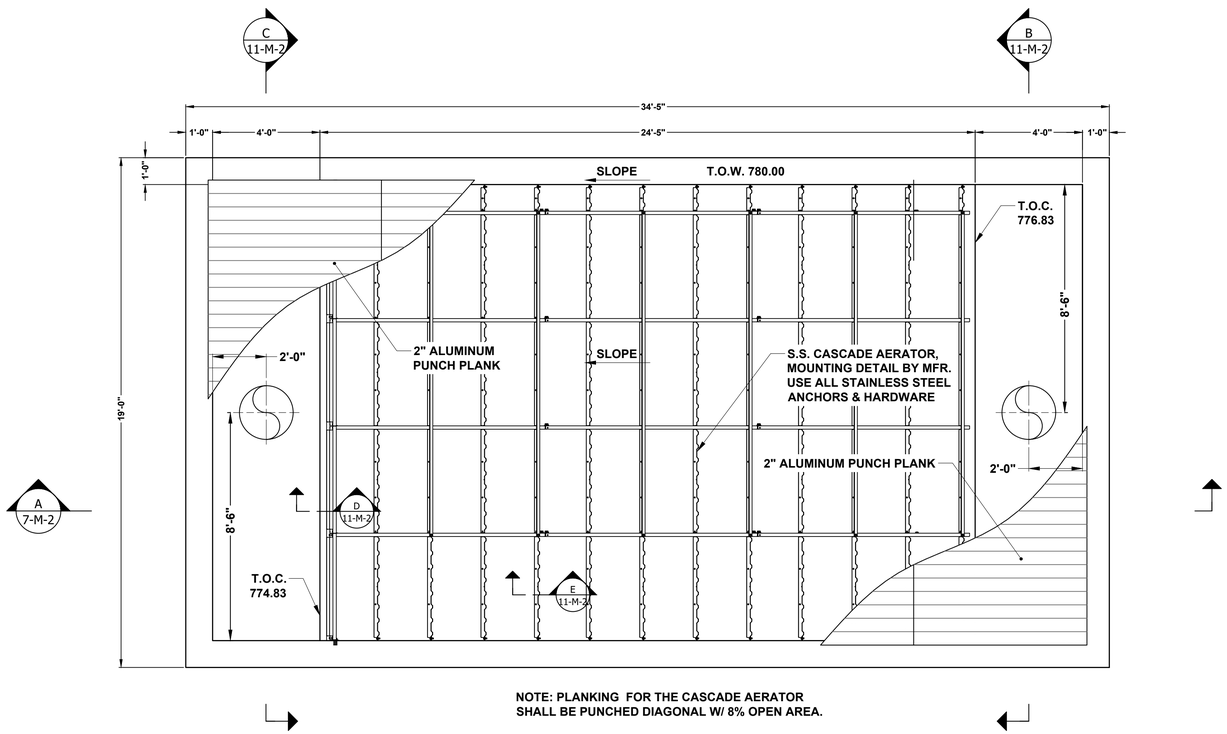


1 **CASCADE BOTTOM PLAN**
Scale: 3/8"= 1'-0"



NOTE: PLANKING FOR THE CASCADE AERATOR SHALL BE PUNCHED DIAGONAL W/ 8% OPEN AREA.

1 **CASCADE TOP PLAN**
Scale: 3/8"= 1'-0"

NOTES:
1. SLOPE OF CONCRETE FLOOR AND LEVEL OF CONCRETE FLOOR ACROSS WIDTH OF BASIN IS CRITICAL TO PROPER SYSTEM PERFORMANCE.
2. CONCRETE SURFACE TO BE FLAT AND SMOOTH (1/4" IN 10' IN ALL DIRECTIONS), AND IS CRITICAL FOR PROPER SEALING.
3. PLACE SEAL MATERIAL BETWEEN MATING STEEL AND CONCRETE SURFACES BEFORE ANCHORING.
4. BY MFR : INDIVIDUAL CHANNEL WIDTHS WILL CHANGE FOR JOB SPECIFIC APPLICATION FLOW RATES AND WILL BE DETERMINED AT TIME OF SUBMITTAL.
5. BY MFR : THE PATENT PENDING LPCA INFLUENT FLOW CONTROL GATE & AIR INFUSION PLATES WILL BE TRAPEZOIDAL SHAPED. THEY ARE DESIGNED FOR JOB SPECIFIC APPLICATION FLOW RATES TO OPTIMIZE AIR INFUSION AT MINIMUM FLOW RATES & ACHIEVE THE "DO" CONCENTRATION SPECIFIED THROUGHOUT, THE FULL RANGE OF FLOW.

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

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CASCADE AERATION MECHANICAL PLANS

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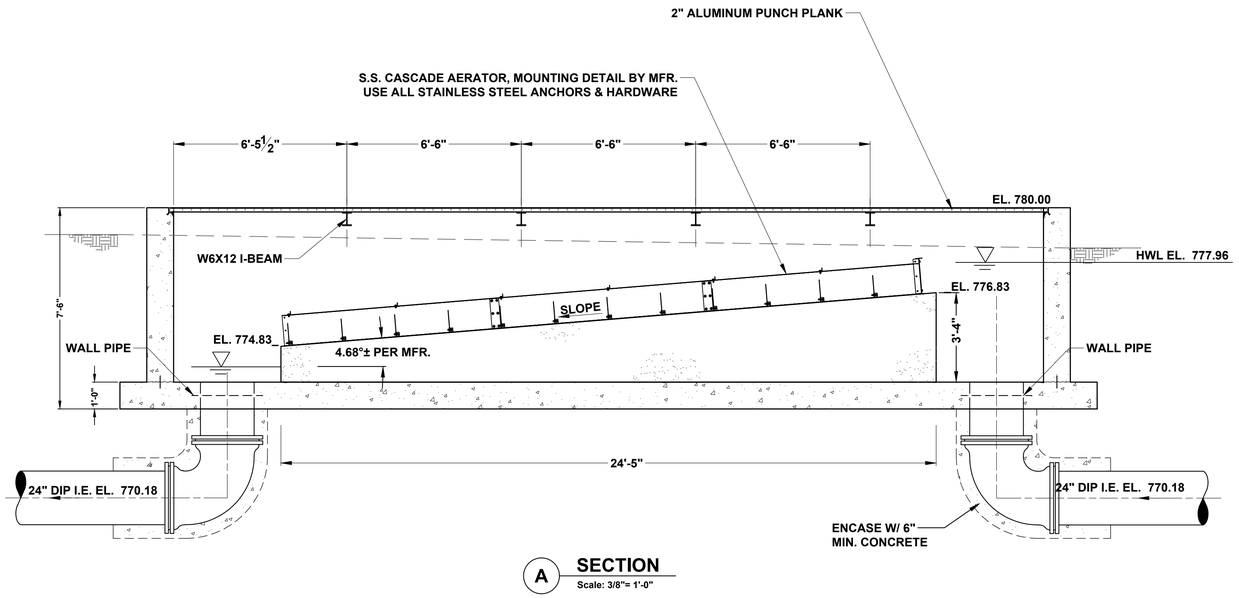
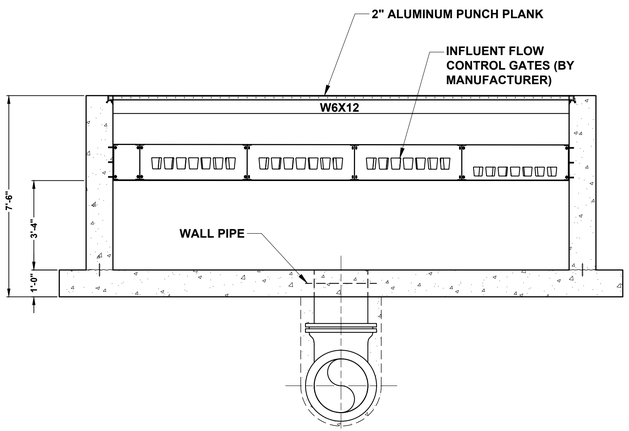
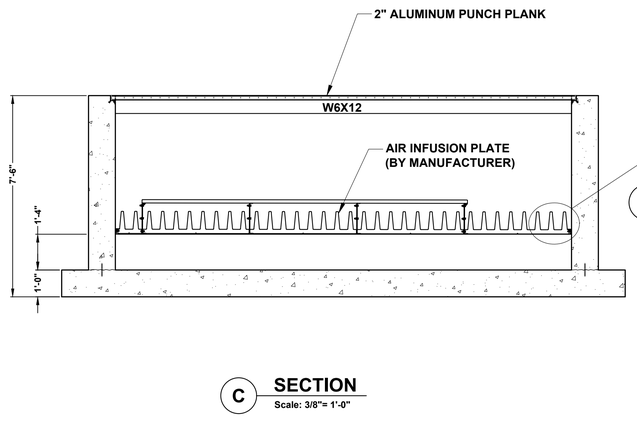


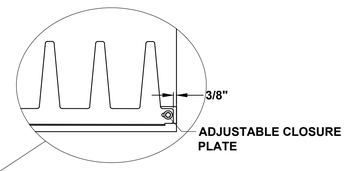
A **SECTION**
Scale: 3/8"= 1'-0"



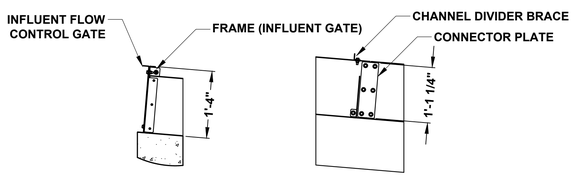
B **SECTION**
Scale: 3/8"= 1'-0"



C **SECTION**
Scale: 3/8"= 1'-0"



2 **CLOSURE PLATE DETAIL**
Scale: N.T.S



D **SECTION**
Scale: N.T.S.

E **SECTION**
Scale: N.T.S.

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 6/15/2022 7:46 AM

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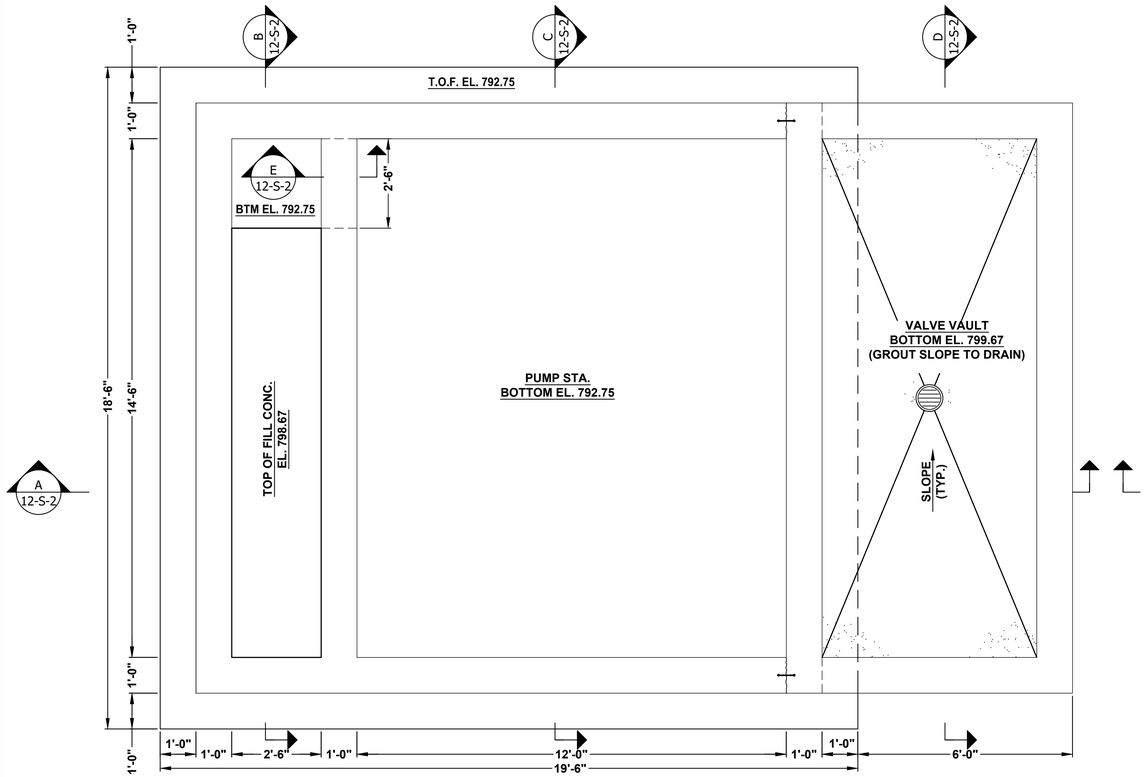
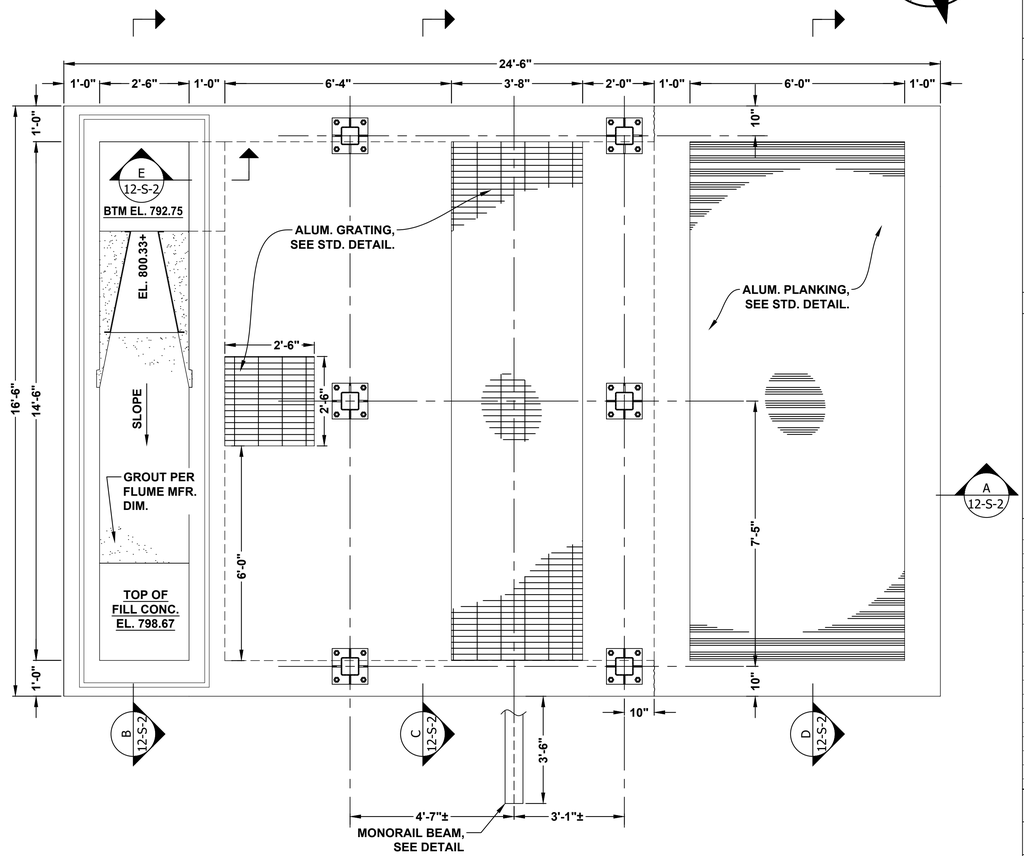


1 RETURN SLUDGE PUMP STATION FOUNDATION PLAN

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



2 RETURN SLUDGE PUMP STATION TOP PLAN

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

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RETURN SLUDGE PUMP STATION STRUCTURAL PLAN

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12-S-1
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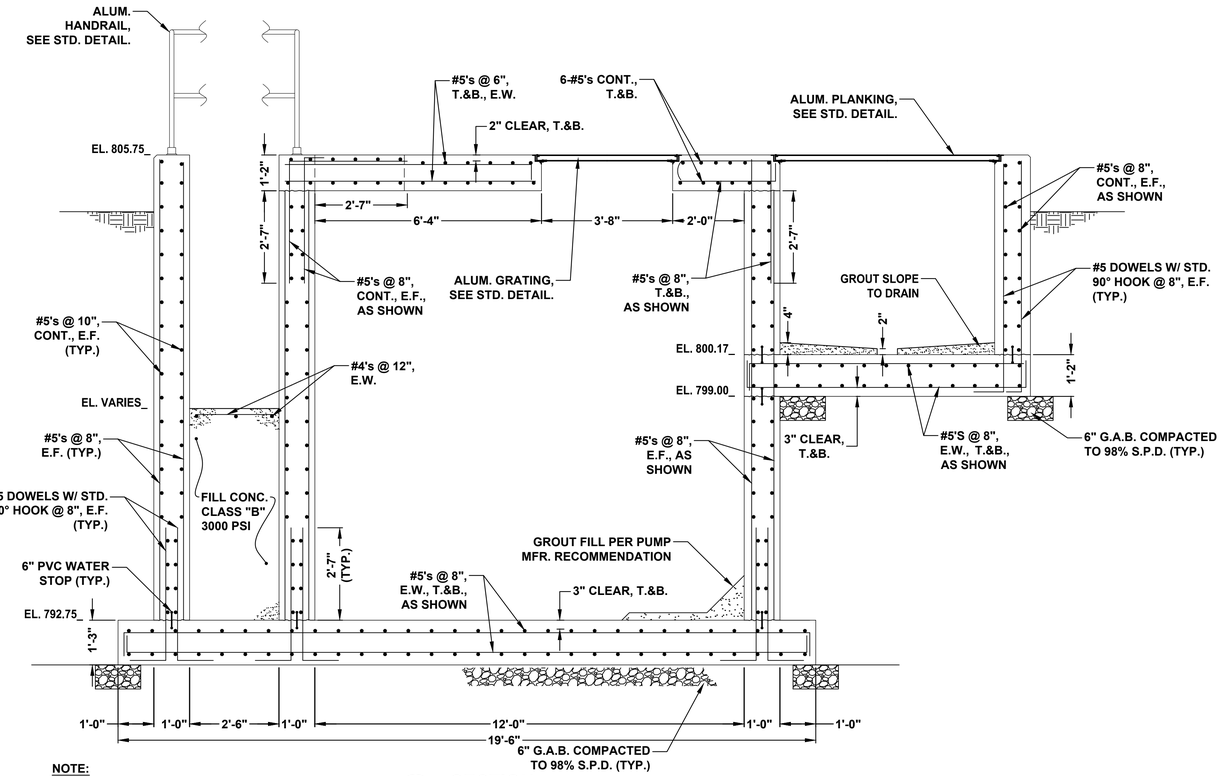
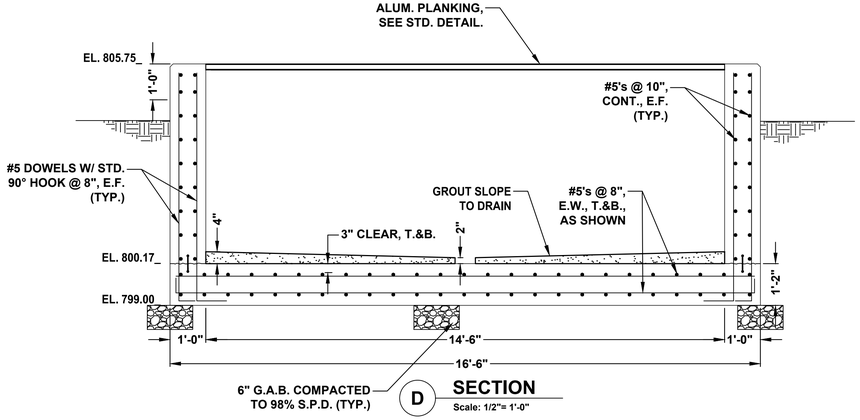


A **SECTION**
Scale: 1/2"= 1'-0"

NOTE:
STEEL COLUMNS
NOT SHOWN FOR CLARITY.



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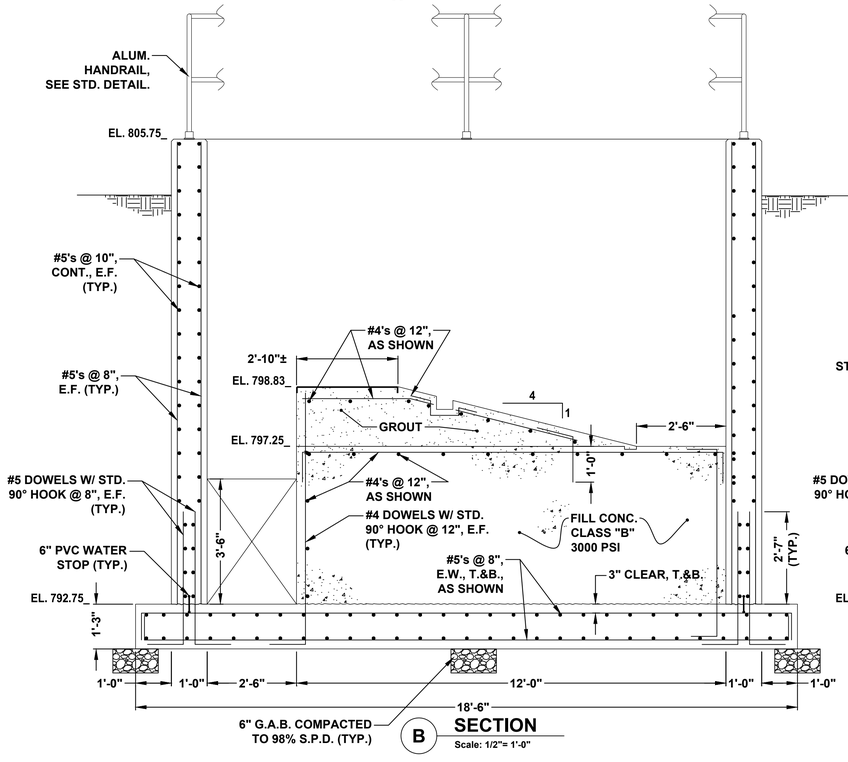
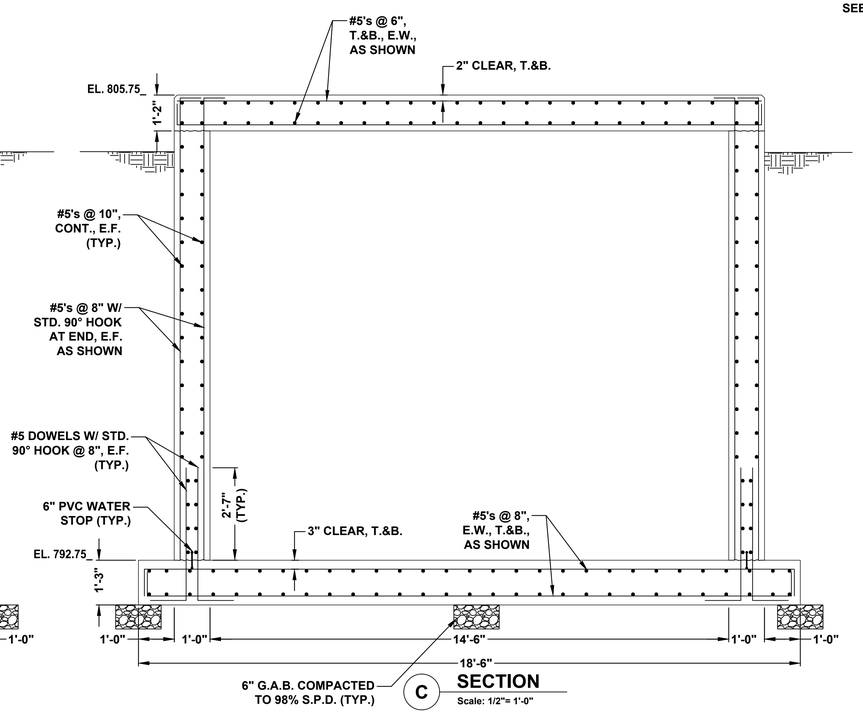
Scale: 1/2"= 1'-0"



B **SECTION**
Scale: 1/2"= 1'-0"



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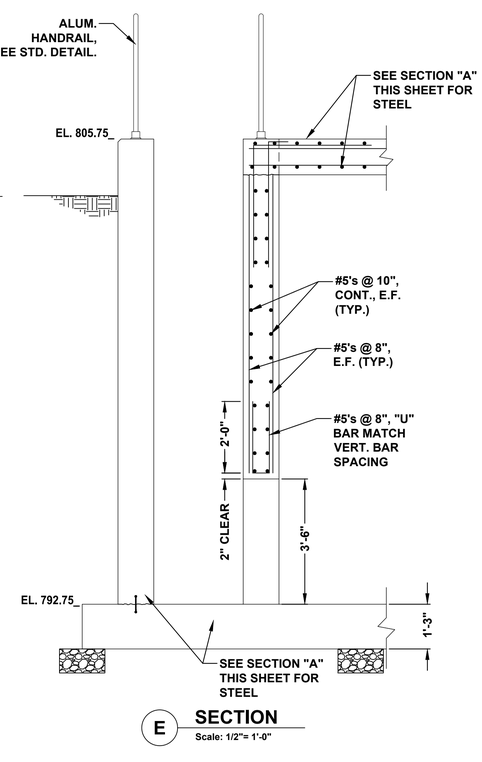

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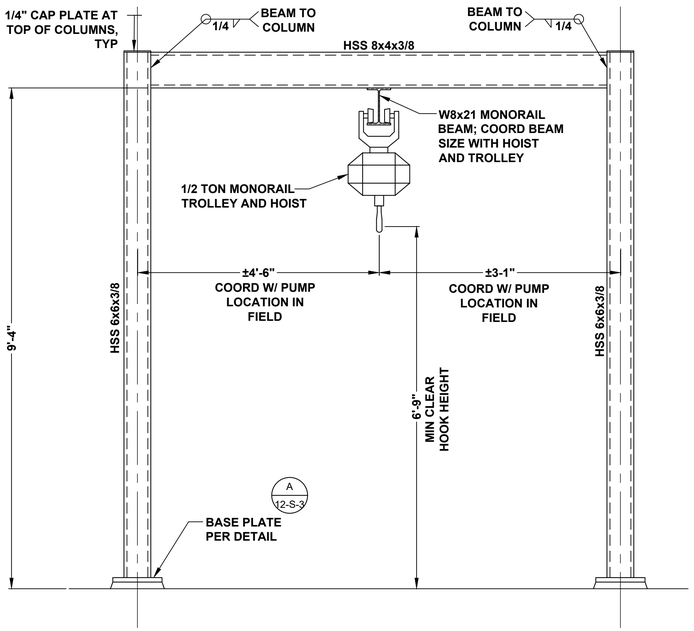
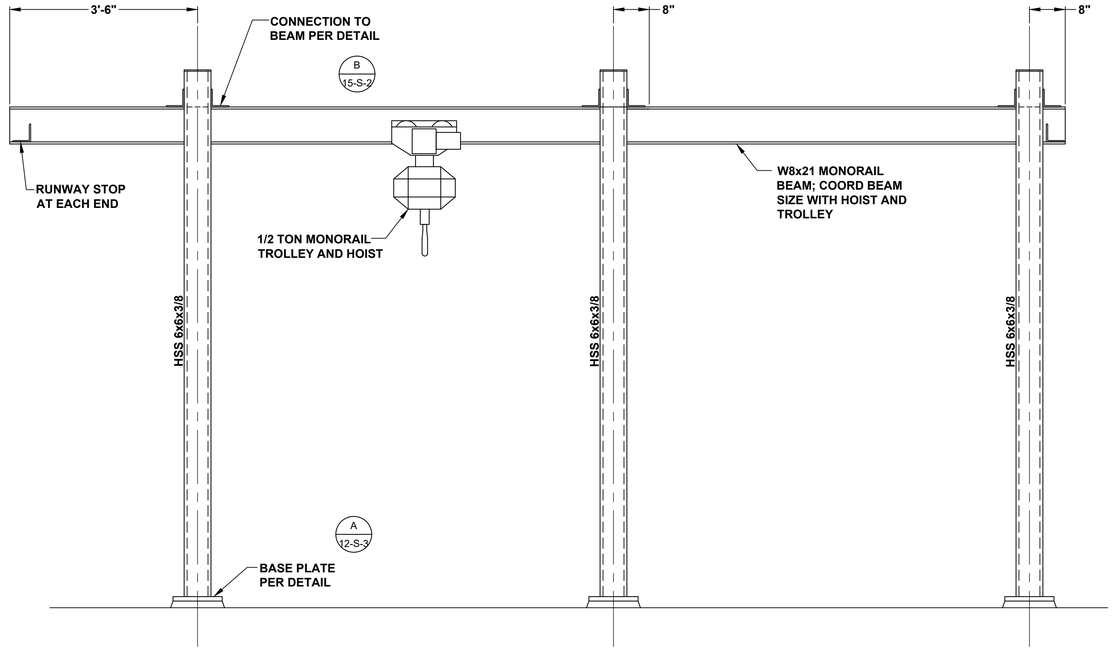


A ELEVATION

Scale: 3/4"= 1'-0"

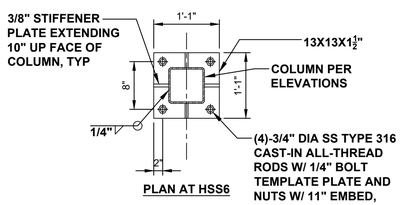


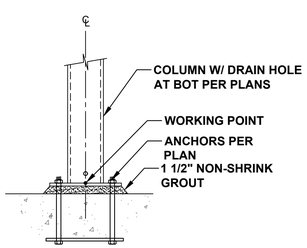
B ELEVATION

Scale: 3/4"= 1'-0"

NOTE:

1. ALL STEEL AND HARDWARE SHOWN TO BE HOT-DIPPED GALVANIZED.

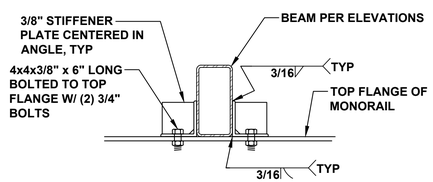




SECTION
COLUMN TO SLAB CONNECTION

A DETAIL

Scale: 1"= 1'-0"



MONORAIL TO BEAM CONNECTION

B DETAIL

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

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

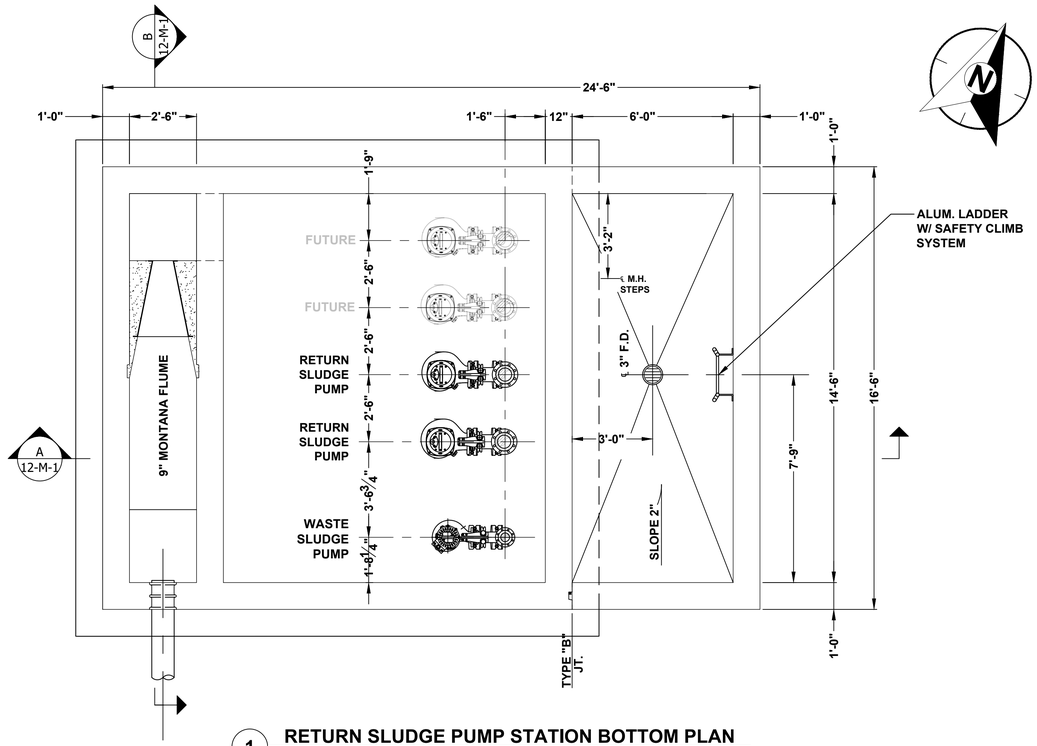
10/05/2021

SHEET TITLE

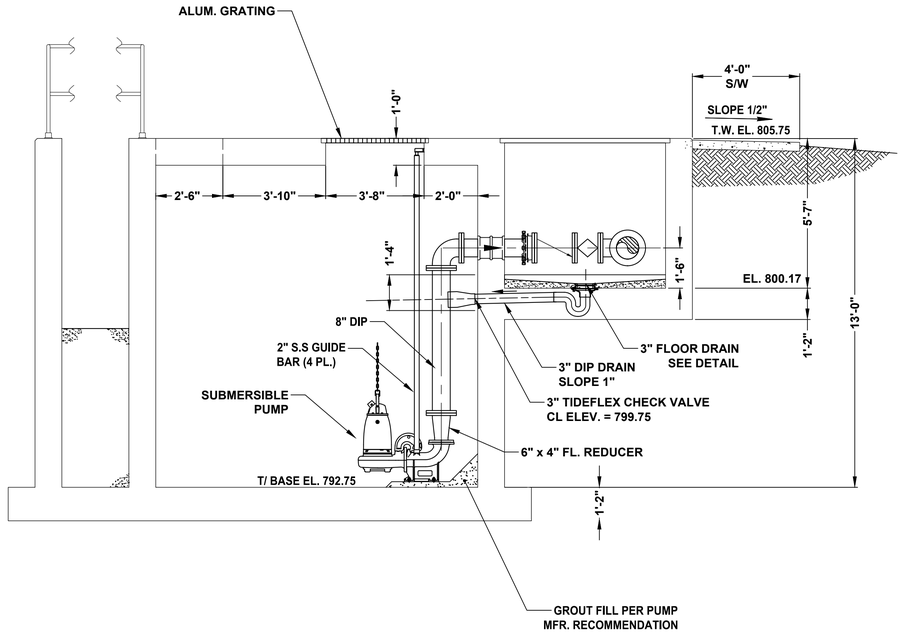
RETURN SLUDGE PUMP STATION MONORAIL ELEVATIONS & DETAILS

DRAWING NUMBER

12-S-3
OF
214

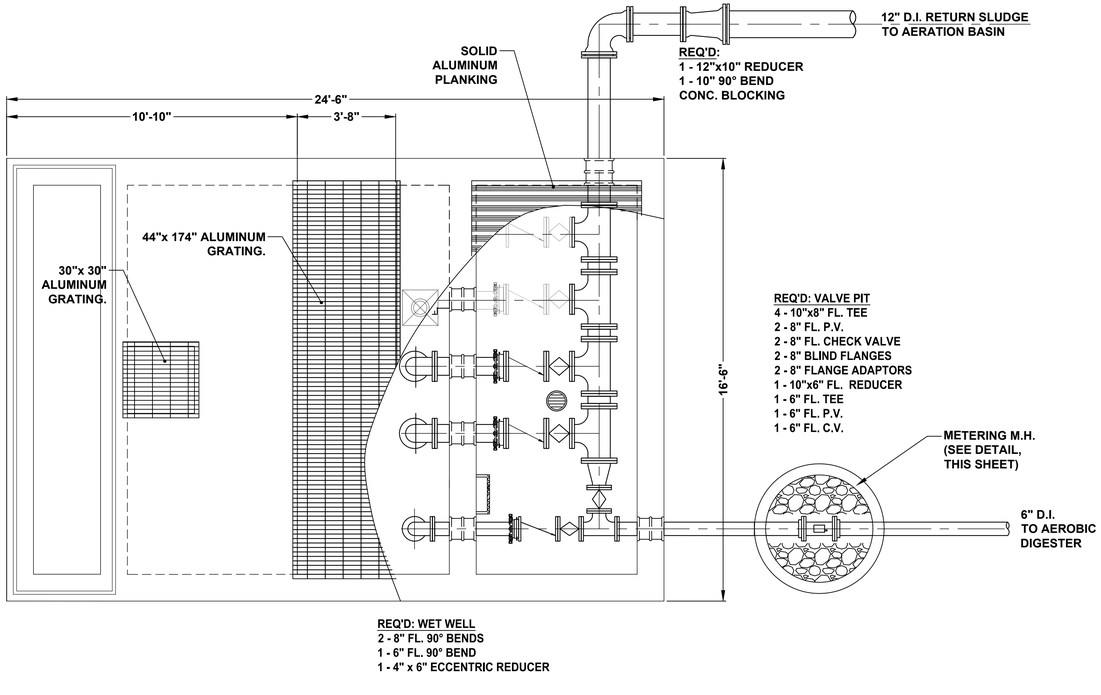


1 **RETURN SLUDGE PUMP STATION BOTTOM PLAN**
Scale: 3/8"= 1'-0"

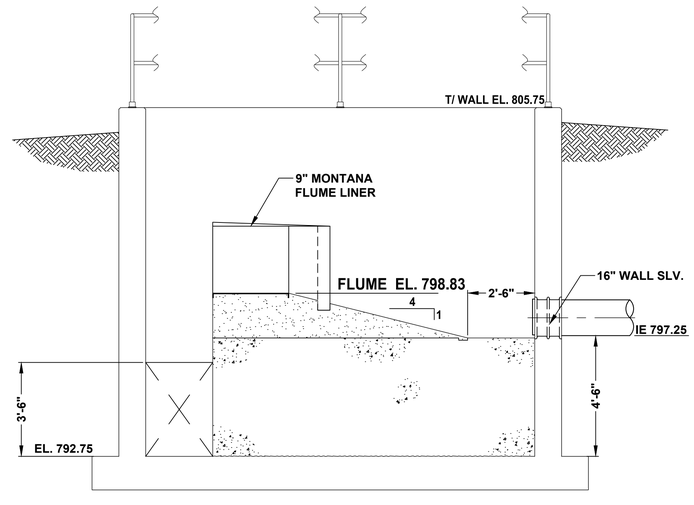


A **SECTION**
Scale: 3/8"= 1'-0"

RETURN SLUDGE PUMP LEVELS	
HIGH WATER ALARM	EL. 797.75
LAG LAG PUMP ON	EL. 797.25
LAG PUMP ON	EL. 796.75
LEAD PUMP ON	EL. 796.25
ALL PUMPS OFF	EL. 794.25
BOTTOM	EL. 792.75



2 **RETURN SLUDGE PUMP STATION TOP PLAN**
Scale: 3/8"= 1'-0"



B **SECTION**
Scale: 3/8"= 1'-0"

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Checked By : CKB

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

RETURN SLUDGE PUMP STATION MECHANICAL

DRAWING NUMBER

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214

RAS PUMP HYDRAULIC CALCULATIONS:

TOTAL AVERAGE DAILY FLOW: 1.0 MGD
PEAK FLOW FACTOR 1.5
DESIGN FLOW RATE 1.5 MGD

MINIMUM REQUIRED PUMPING RATE:

USE 1,150 GPM FOR A VELOCITY OF 3.03FT/S, PUMP WILL OPERATE ON VFDS

PUMPING RATE THROUGH 12-INCH DUCTILE IRON FORCE MAIN = 1,150 GPM @ 3.03 FT/S

HYDRAULIC CALCULATIONS:

STATIC HEAD: 828.43 (PHYSICAL AND HYDRAULIC HP)
791.50 (PUMP STATION PUMP-OFF ELEVATION)
36.93 FT OF STATIC HEAD

FRICTION LOSSES:

HEAD LOSS IN 8" DIP DISCHARGE = 10.44(1,150)^1.85 (15) / (120)^1.85(8.38)^4.87 = 0.33 FT

HEAD LOSS IN 10" DIP HEADER = 10.44(1,150)^1.85 (10) / (120)^1.85(10.39)^4.87 = 0.08 FT

HEAD LOSS IN 12" DIP FORCE MAIN = 10.44(1,150)^1.85 (450) / (120)^1.85(12.45)^4.87 = 1.42 FT

FITTING LOSSES:

HEAD LOSS IN 8" DIP DISCHARGE = 5(6.69)^2 / 64.4 = 3.47 FT

HEAD LOSS IN 10" DIP DISCHARGE = 5(4.35)^2 / 64.4 = 1.47 FT

HEAD LOSS IN 12" DIP FORCE MAIN = 10(3.03)^2 / 64.4 = 1.43 FT

TOTAL DYNAMIC HEAD: 36.93 + 0.33 + 0.08 + 1.42 + 3.47 + 1.47 + 1.43 = 45.12 FT @ 1,150 GPM

WAS PUMP HYDRAULIC CALCULATIONS:

TOTAL AVERAGE DAILY FLOW: 1.0 MGD
PEAK FLOW FACTOR 0.5
DESIGN FLOW RATE 0.5 MGD

MINIMUM REQUIRED PUMPING RATE:

USE 350 GPM FOR A VELOCITY OF 2.04 FT/S

PUMPING RATE THROUGH 12-INCH DUCTILE IRON FORCE MAIN = 350 GPM @ 2.04 FT/S

HYDRAULIC CALCULATIONS:

STATIC HEAD: 809.75 (PHYSICAL AND HYDRAULIC HP)
791.50 (PUMP STATION PUMP-OFF ELEVATION)
18.25 FT OF STATIC HEAD

FRICTION LOSSES:

HEAD LOSS IN 6" DIP DISCHARGE = 10.44(350)^1.85 (15) / (120)^1.85(8.38)^4.87 = 0.043 FT

HEAD LOSS IN 6" DIP FORCE MAIN = 10.44(1,042)^1.85 (205) / (120)^1.85(8.38)^4.87 = 0.49 FT

FITTING LOSSES:

HEAD LOSS IN 6" DIP DISCHARGE = 5(2.04)^2 / 64.4 =0.32 FT

HEAD LOSS IN 6" DIP FORCE MAIN = 10(2.04)^2 / 64.4 = 0.64 FT

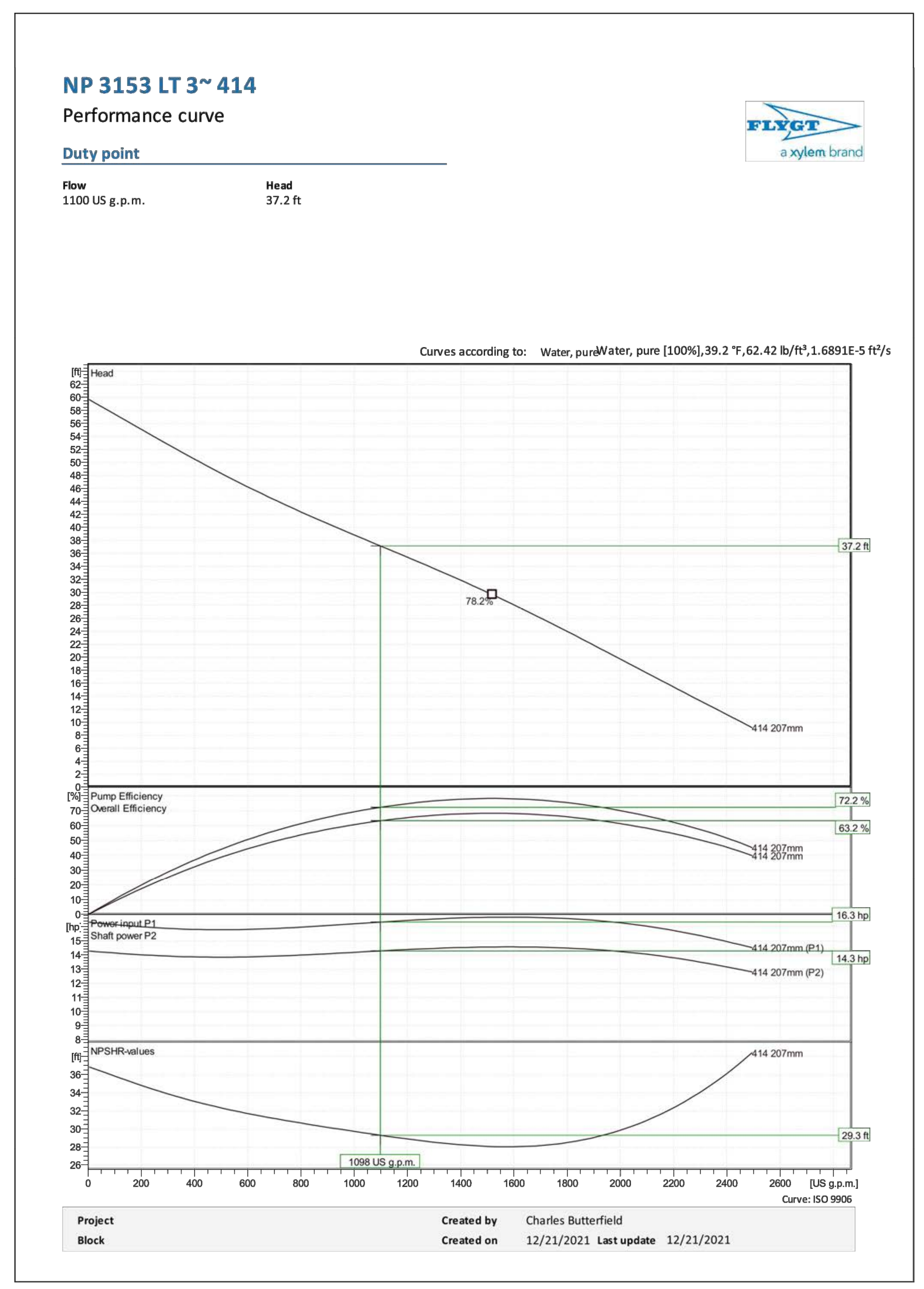
TOTAL DYNAMIC HEAD: 18.25 + 0.04 + 0.49 + 0.32 + 0.64 = 19.75 FT @ 350 GPM

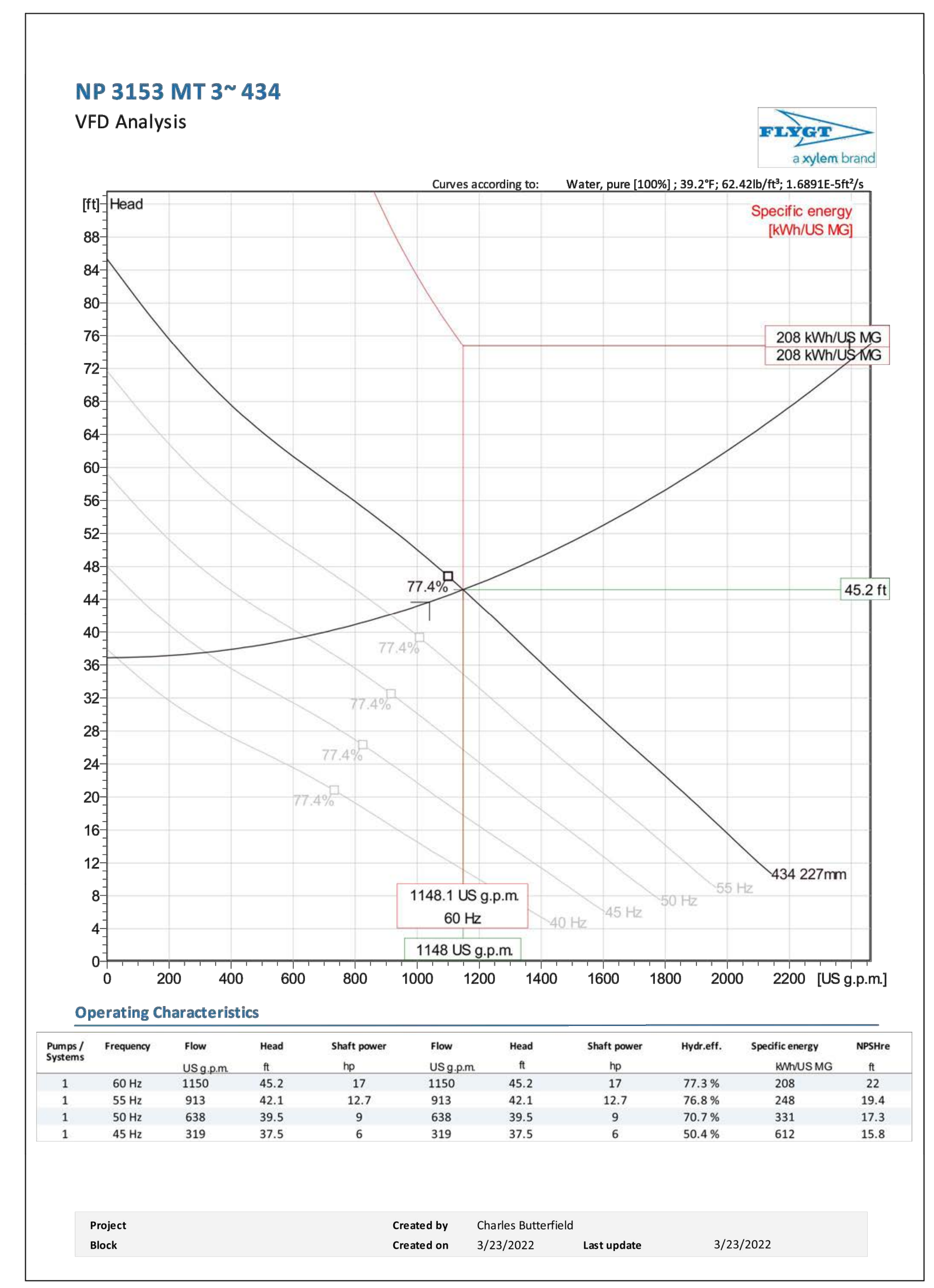
PUMP CYCLE TIMES CHART

Qout = 1042 GPM (EACH PUMP DISCHARGE CAPACITY, PHASE 4)
Qin = 521 GPM (SEWER INFLOW RATE; WHEN Qin IS 50% OF PUMP RATE THE TIME BETWEEN PUMP STARTS IS AT A MINIMUM
LEAD PUMP ON ELEVATION = 793.50
LAG PUMP ON ELEVATION = 794.00
PUMP OFF ELEVATION = 791.50
WET WELL LENGTH = 14.50
WET WELL WITDH = 12

Cycle	Time (Minutes)	Phase	Water Elevation in Wetwell	Sewer Volume Decrease in Wetwell (gallons)	Sewer Volume Increase in Wetwell (gallons)	Pump No. 1	Pump No. 2	Sewer Influent Volume (Gallons)	Volume Pumped Out During Phase (Gallons)
1	0.00		793.50			ON	OFF		
		1-1		2603.04				2603.04	5206.08
	5.00		791.50			OFF	OFF		
		1-2			1691.94			1691.94	0.00
	8.25		793.50			OFF	ON		
		1-3		2603.04				2603.04	5206.08
	13.24		791.50			OFF	OFF		
		1-4			1691.94			1691.94	0.00
2	16.49		793.50			ON	OFF		
		2-1		2603.04				2603.04	5206.08
	21.49		791.50			OFF	OFF		
		2-2			1691.94			1691.94	0.00
	24.74		793.50			OFF	ON		
		2-3		2603.04				2603.04	5206.08
	29.74		791.50			OFF	OFF		
		2-4			1691.94			2603.04	0.00

Pump Cycle Time = 16.49 Minutes
Pump Start Times = 3.64 Times/Hour





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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

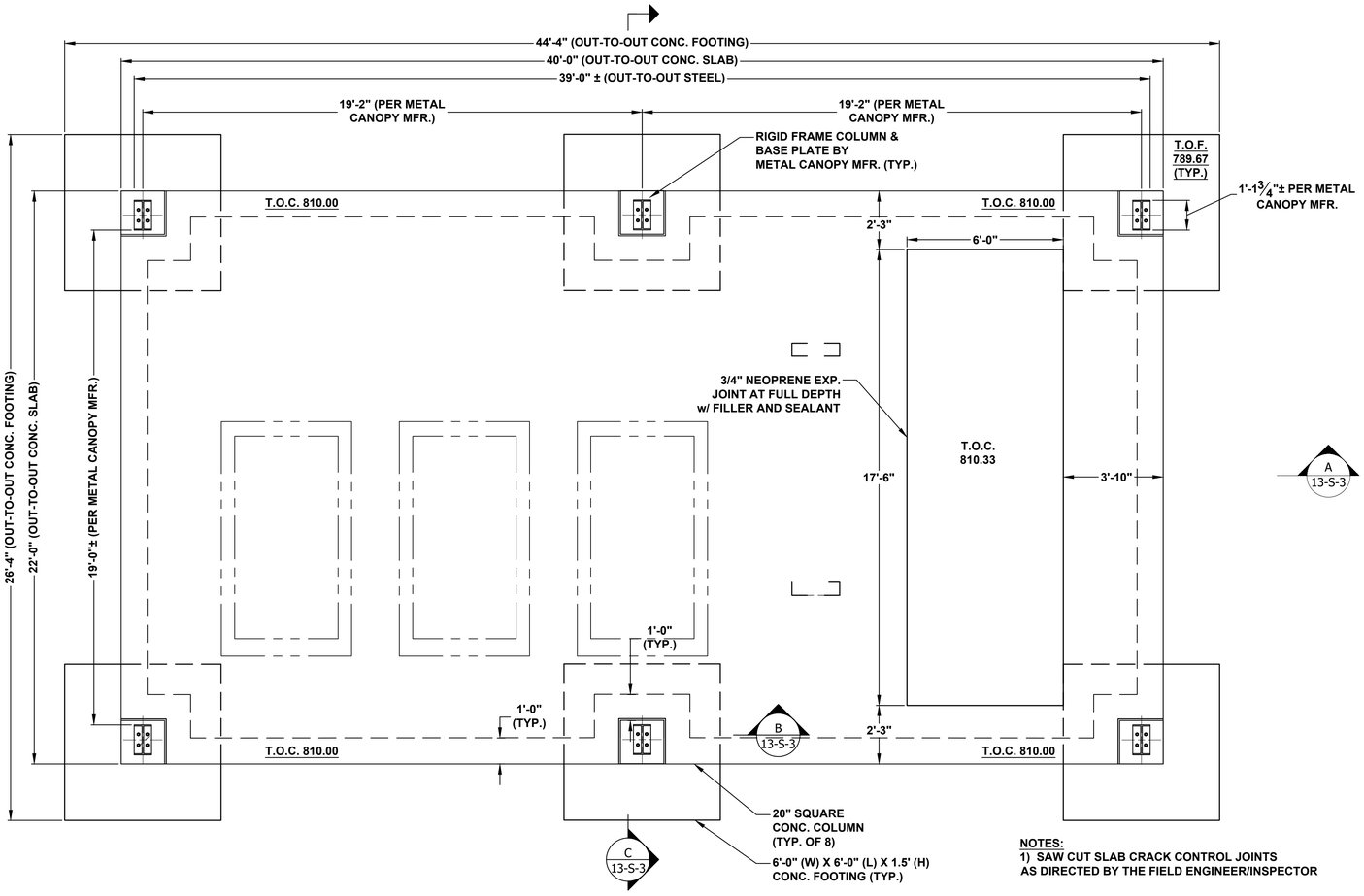
10/05/2021

SHEET TITLE

RETURN SLUDGE PUMP STATION MECHANICAL DETAILS

DRAWING NUMBER

12-M-2
OF
214



NOTES:
1) SAW CUT SLAB CRACK CONTROL JOINTS AS DIRECTED BY THE FIELD ENGINEER/INSPECTOR

1 BLOWER PAD STRUCTURAL PLAN

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

DESIGN LOADS:

1. DEAD LOAD - WEIGHT OF THE BUILDING SYSTEM AS DETERMINED BY MANUFACTURER
2. ROOF LIVE LOAD - 20 PSF
3. COLLATERAL LOAD - 5 PSF
4. ROOF SNOW LOAD:
   - ROOF SNOW LOAD - 10 PSF
   - IMPORTANCE FACTOR (I_S) - 1.10
5. WIND LOAD:
   - BASIC WIND SPEED - 120 MPH
   - EXPOSURE CATEGORY - C
   - RISK CATEGORY - III
   - IMPORTANCE FACTOR (I_W) - 1.15
6. SEISMIC LOAD:
   - SPECTRAL RESPONSE ACCELERATION FOR SHORT PERIODS (S_{DS}) - 22.3%
   - SPECTRAL RESPONSE ACCELERATION FOR 1-SEC. PERIOD (S_{D1}) - 15.2%
   - SITE CLASS - D
   - SEISMIC DESIGN CATEGORY - C
   - IMPORTANCE FACTOR (I_E) - 1.25
   - RESPONSE MODIFICATION FACTOR (R) - 3.25
7. FLOOR LOAD:
   - LIVE LOAD - 300 PSF
   - DEAD LOAD (WEIGHT OF MECHANICAL EQUIPMENT BY OTHERS)
8. COLLATERAL LOAD - PROCESS PIPING AND MEP AS DETERMINED BY MANUFACTURER

GENERAL SERVICEABILITY LIMITS:

1. DEFLECTION LIMITS SHALL BE IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF THE METAL BUILDING SYSTEMS MANUAL (MBMA), LATEST EDITION
2. VERTICAL DEFLECTIONS:
   - ROOF SECONDARY (PURLINS) - L/150
   - MAIN FRAME ROOF BEAMS - L/180
3. VERTICAL DEFLECTION LIMITS APPLY FOR SNOW LOAD (50-YEAR MEAN-RECURRENCE INTERVAL) PLUS COLLATERAL LOAD, OR THE CODE REQUIRED LIVE LOAD. THE HORIZONTAL DRIFT AND DEFLECTIONS LIMITS APPLY FOR THE LOADS INDUCED BY A BASIC WIND SPEED CORRESPONDING TO A 10-YEAR MEAN-RECURRENCE INTERVAL.

CONSTRUCTION NOTES:

1. PRE-ENGINEERED CANOPY MANUFACTURER IS RESPONSIBLE FOR PROPER ANCHORING OF BUILDING TO SUPPORT FOOTING.
2. PRE-ENGINEERED CANOPY SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST INTERNATIONAL BUILDING CODE (IBC), ASCE-7, GEORGIA BUILDING CODE, AND OTHER APPLICABLE CODES AND REGULATIONS.
3. CONTRACTOR SHALL BRING AND POTENTIAL CONFLICT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO CONSTRUCTION
4. CONTRACTOR SHALL SUBMIT PRE-ENGINEERED CANOPY SHOP DRAWINGS AND CALCULATION FOR REVIEW. SHOP DRAWINGS AND CALCULATIONS SHALL BE SIGNED AND SEALED BY A GEORGIA P.E.
5. ANCHOR RODS/BOLTS
   a. ALL ANCHOR RODS SHALL BE CAST-IN-PLACE HEADED ANCHOR RODS. USE OF POST-INSTALLED (EPOXY, ADHESIVE, EXPANSION, SCREW, ETC.) ANCHORS IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM EOR OR UNLESS SPECIFICALLY NOTED IN THE DRAWINGS
   b. STEEL COLUMN ANCHOR RODS/BOLTS - ASTM F593B WITH ASTM F594B HEAVY HEX NUTS AND HARDENED WASHERS (UNLESS NOTED OTHERWISE OR EQUIVALENT.
   c. ANCHOR BOLT PLACEMENT AND ANCHOR BOLT, NUT, AND WASHER MATERIAL INFORMATION, INCLUDING MATERIAL CERTIFICATIONS, SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL
   d. RECORD COPY OF DESIGN CALCULATIONS AND DETAILS SHOWING THE REQUIRED DIAMETER, LENGTH, EMBEDMENT, EDGE DISTANCE, CONFINEMENT, ANCHOR REINFORCEMENT, ANCHOR BOLT SLEEVES, CONNECTION REDESIGN, AND OTHER CONDITIONS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF GEORGIA. CALCULATIONS SHALL COMPLY WITH THE PROVISIONS OF ACI 318-14, CHAPTER 17 BASE ANCHOR CAPACITY DETERMINATION ON CRACKED CONCRETE CONDITION AND COMPRESSIVE STRENGTH OF NEW CONCRETE PER SECTION 03 30 00. ASSUME COMPRESSIVE STRENGTH OF CONCRETE IS 3,000 PSI UNLESS OTHERWISE NOTED.
6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" x 3/4"
7. ALL STRUCTURAL DIMENSIONS EXCLUDING FLOOR AND FOUNDATION SLAB TO BE DETERMINED BY BUILDING MANUFACTURER.
8. SAW-CUT SLAB CONTROL JOINTS SHALL BE CARRIED OUT WITHIN 24 HOURS AFTER THE COMPLETION OF THE NEW CONCRETE.

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

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SHEET TITLE

BLOWER PAD STRUCTURAL PLAN 1

DRAWING NUMBER

13-S-1
OF
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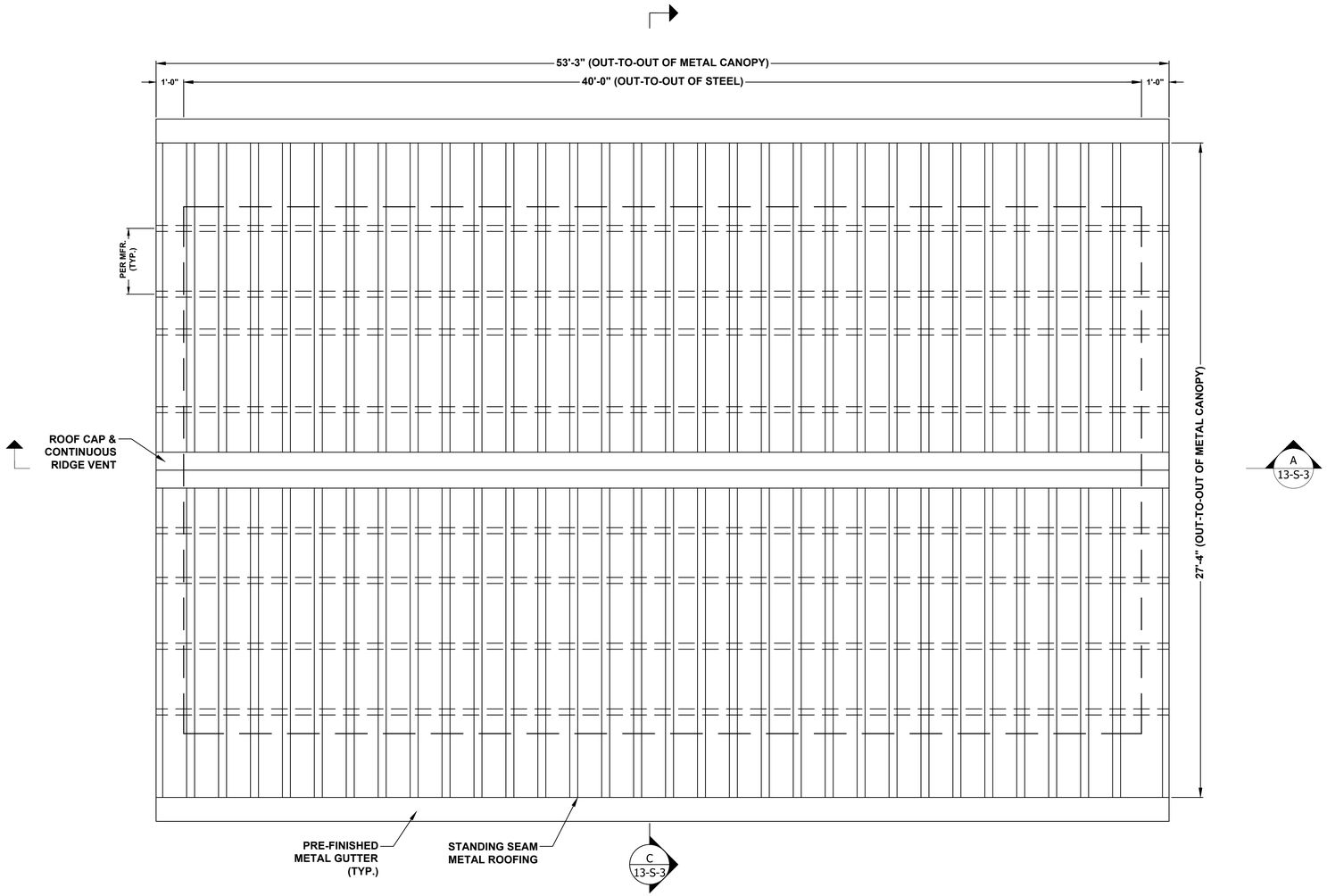

2 BLOWER PAD ROOFING PLAN
Scale: 3/8"= 1'-0"

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SHEET TITLE

BLOWER PAD STRUCTURAL PLAN 2

DRAWING NUMBER

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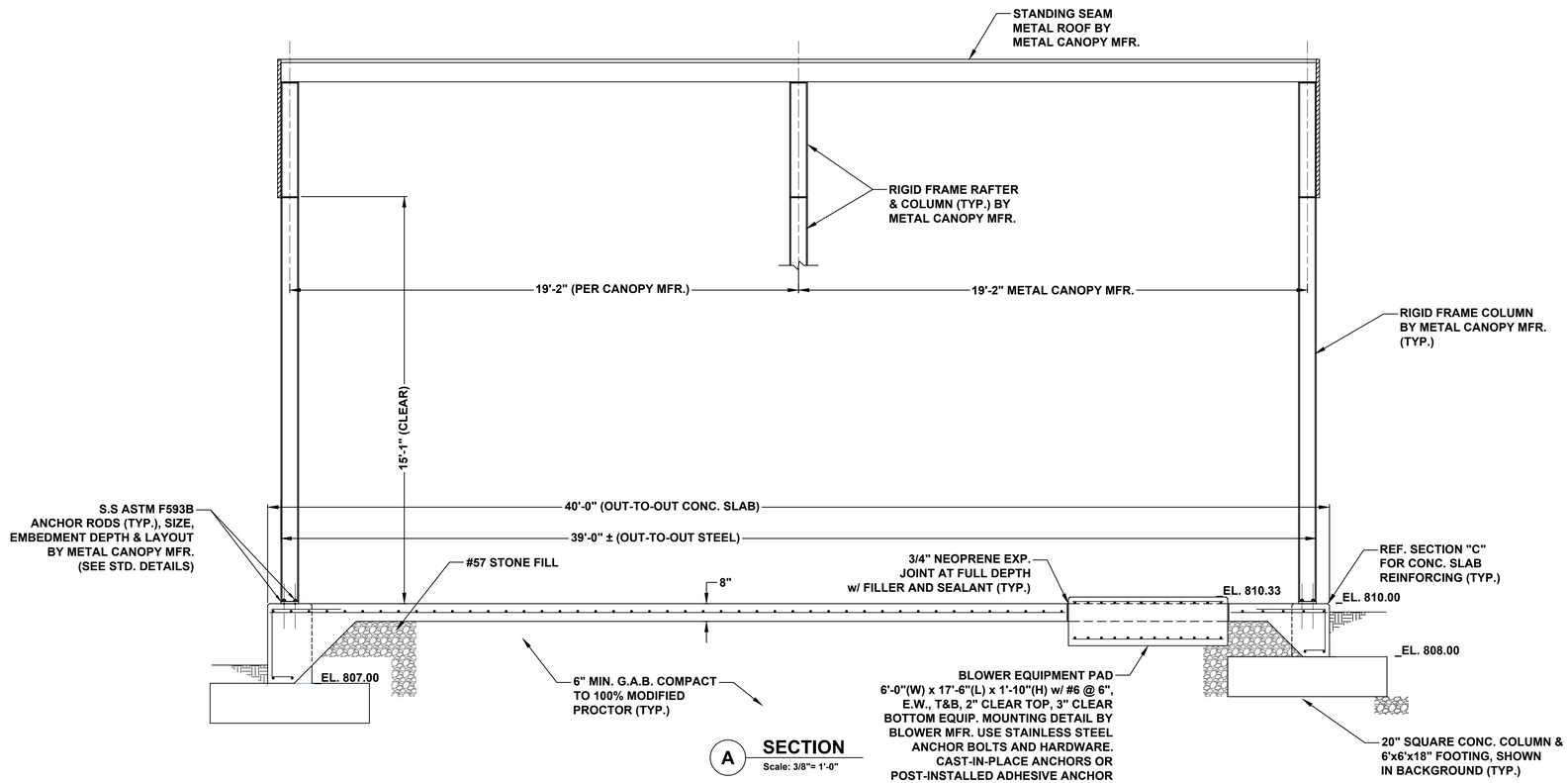

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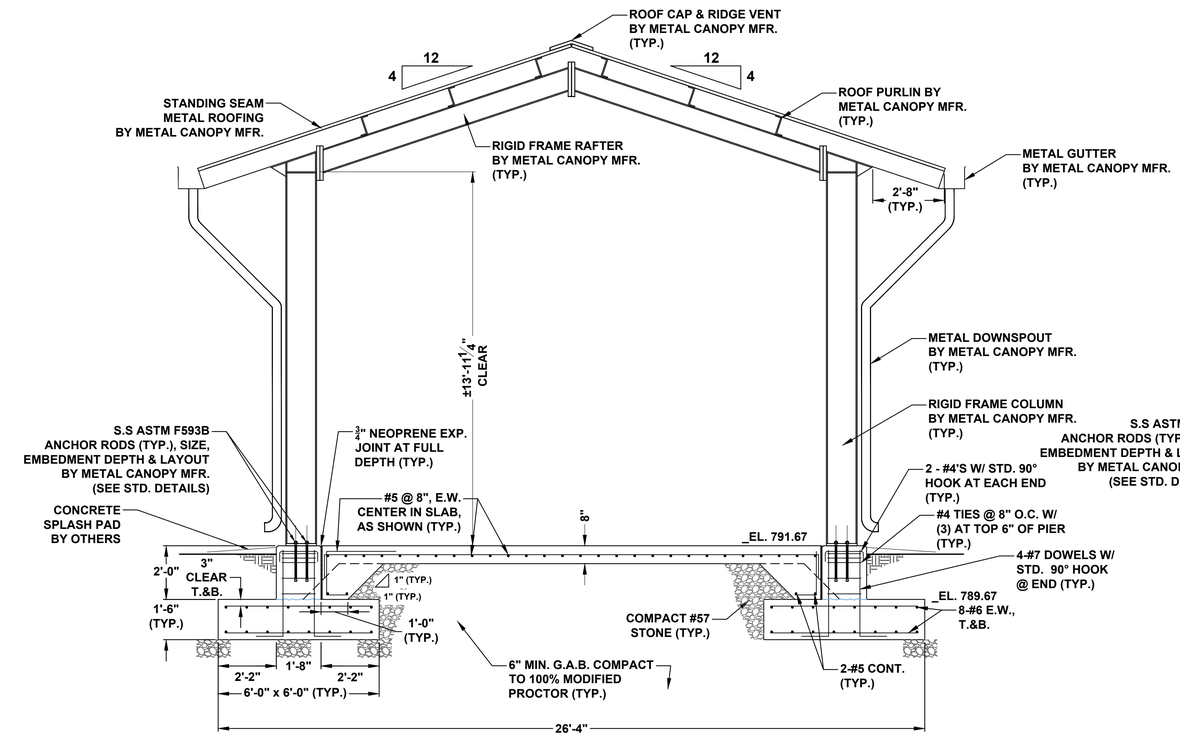
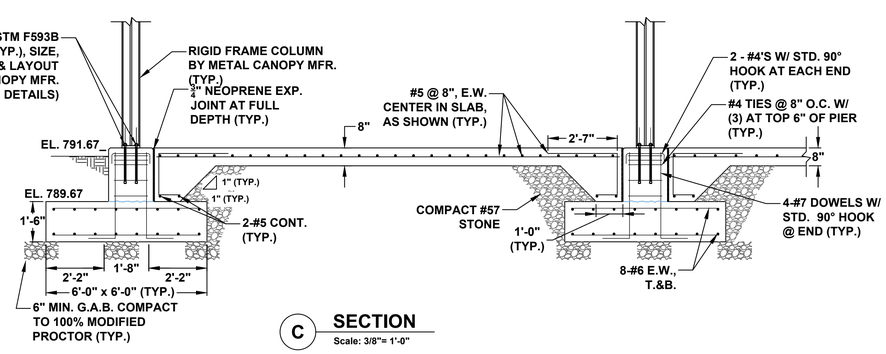


C **SECTION**
Scale: 3/8"= 1'-0"



C **SECTION**
Scale: 3/8"= 1'-0"

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SHEET TITLE

BLOWER PAD STRUCTURAL SECTIONS

DRAWING NUMBER

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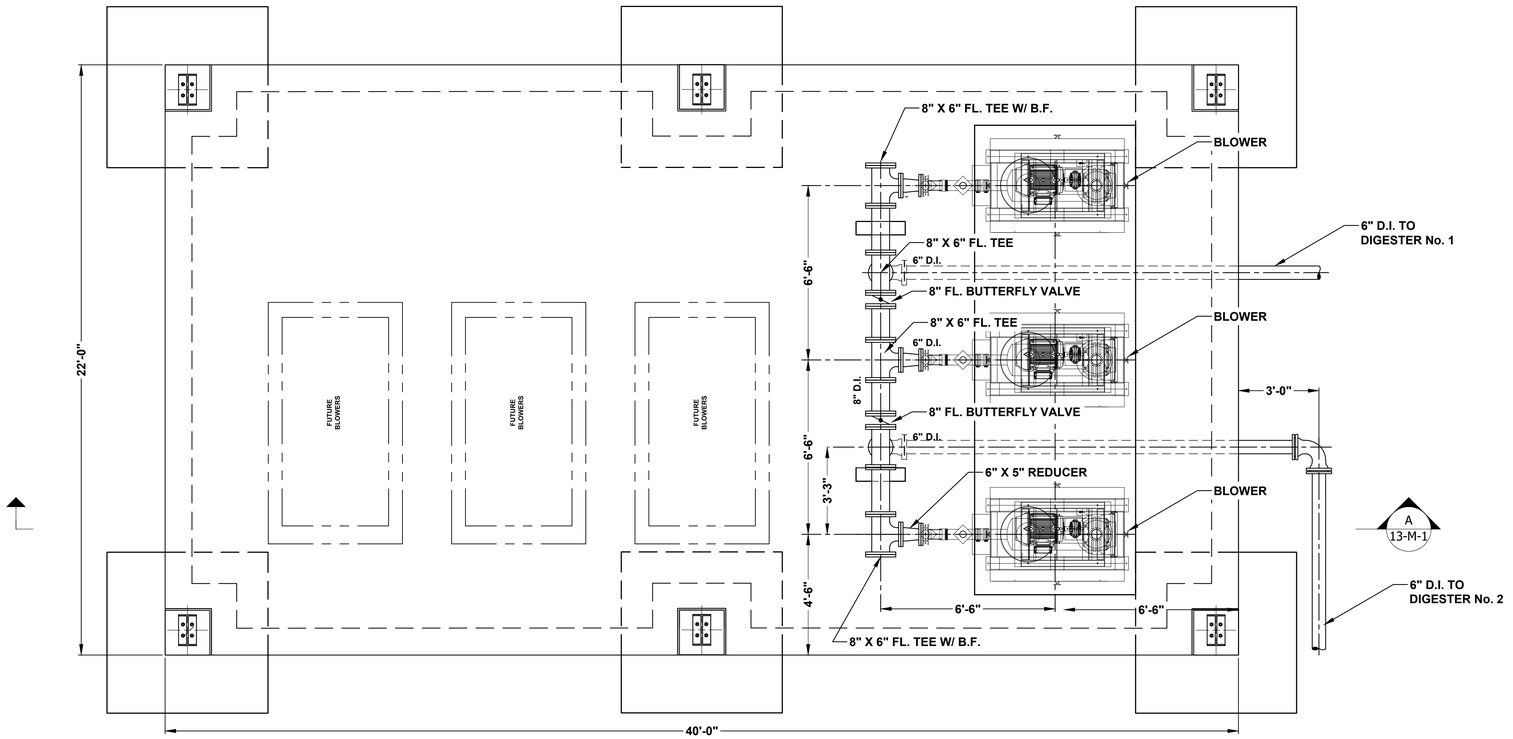
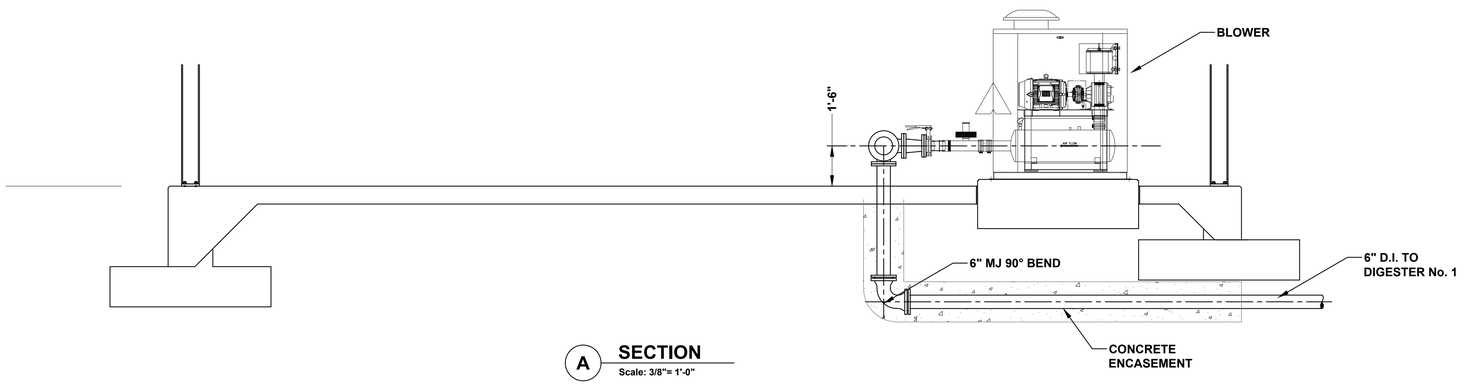


1 **BLOWER PAD PLAN**
Scale: 3/8"= 1'-0"



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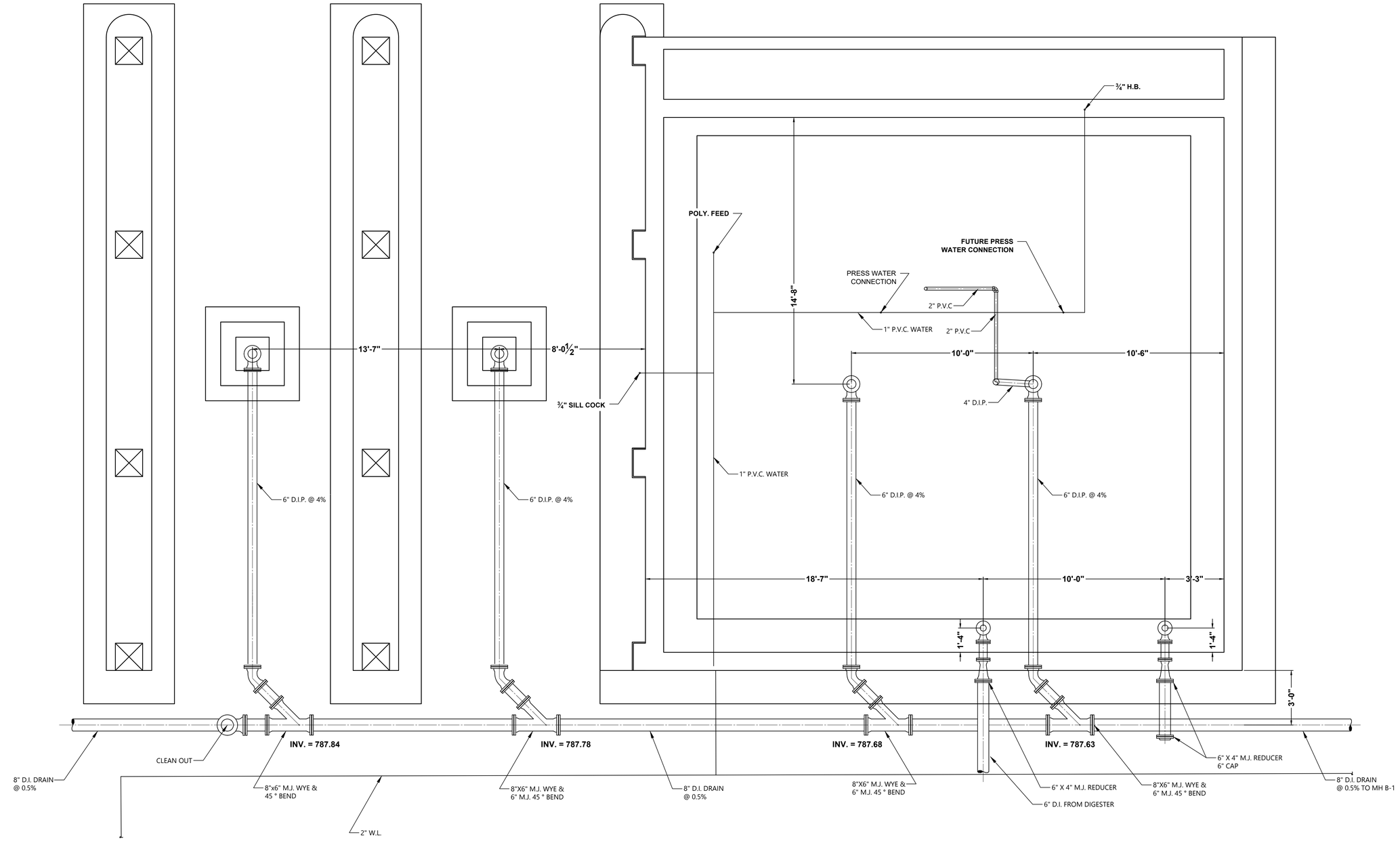

1 SCREW PRESS BUILDING PLUMBING PLAN

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

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING PLUMBING PLAN

DRAWING NUMBER

14-P-1
OF
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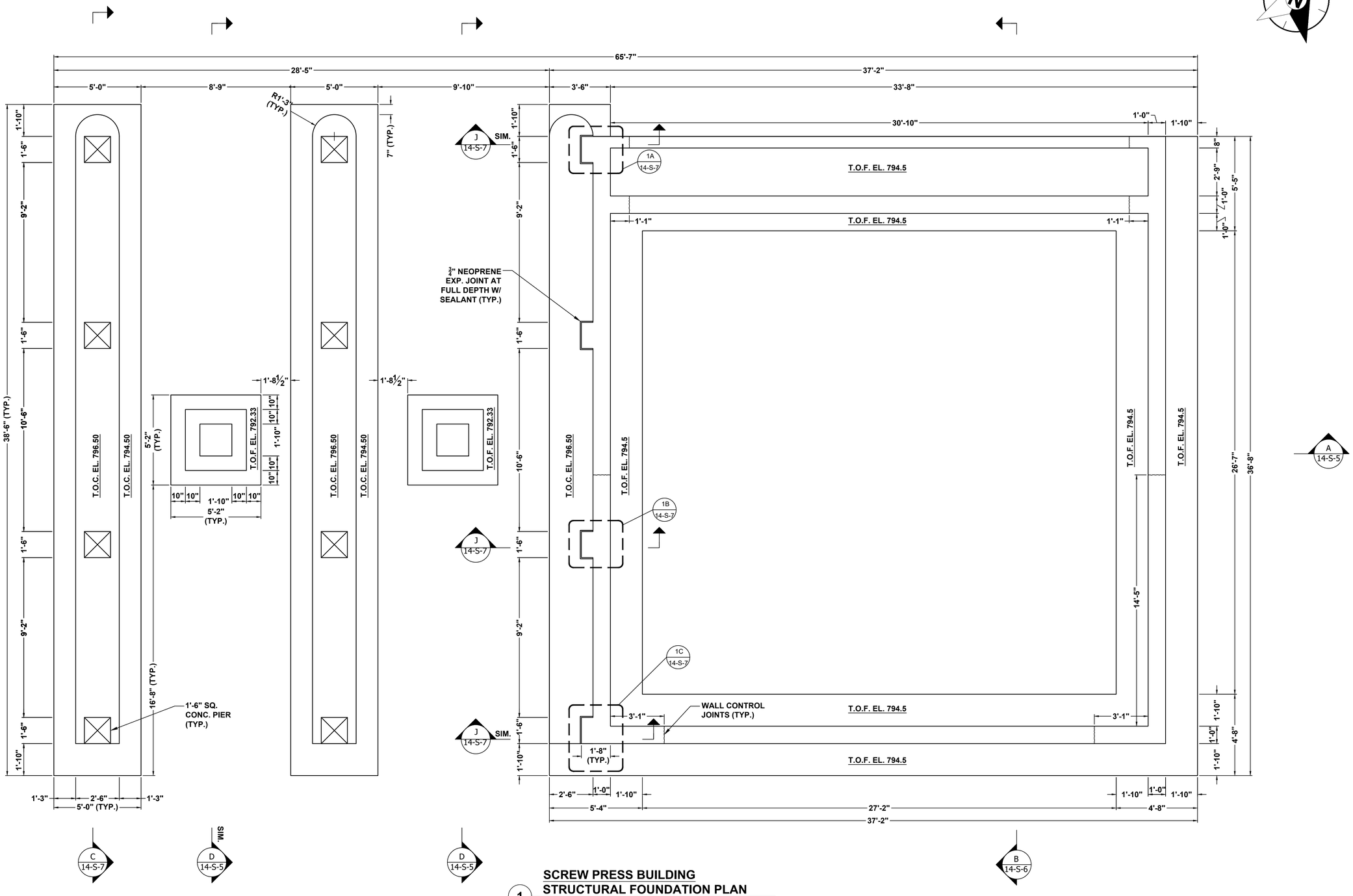

SCREW PRESS BUILDING STRUCTURAL FOUNDATION PLAN

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

NOTE:
1. WALL JOINTS ARE TO BE CONSTRUCTED AS CONTROL JOINTS PER STD. DETAILS UNLESS NOTED.
2. COORDINATE WITH MECH., HVAC, ARCH., AND PLUMBING DIV. FOR LOCATIONS & SIZES OF SLAB & WALL PENETRATIONS.
3. SAW CUT SLAB CONTROL JOINTS SHALL BE CARRIED OUT WITHIN 24-HOURS AFTER THE COMPLETION OF NEW CONCRETE.

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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SCREW PRESS BUILDING STRUCTURAL FOUNDATION PLAN

DRAWING NUMBER

14-S-1
OF
214

DESIGN LOADS:

LIVE LOAD:	300 PSF SLABS-ON-GRADE	
LIVE LOAD:	100 PSF ACCESS PLATFORM	
ROOF LIVE LOAD:	20 PSF	
WIND LOAD:	ULTIMATE WIND SPEED	= 120 MPH
	EXPOSURE CATEGORY	= C
	RISK CATEGORY	= III
	ENCLOSURE CLASSIFICATION	
	1. TRUCK BAY	= OPEN
	2. BUILDING	= ENCLOSED
	DESIGN WIND PRESSURE (MWFRS)	
	1. TRUCK BAY	= 40 PSF
	2. BUILDING	= 40 PSF
	DESIGN WIND PRESSURE (C&C)	
	1. TRUCK BAY	= 45 PSF
	2. BUILDING	= 45 PSF
SNOW LOAD:	5 PSF	
SEISMIC DESIGN PARAMETER:		
	RESPONSE MODIFICATION, R = 3	
	SEISMIC DESIGN CATEGORY	= C
	SITE CLASS	= D
	RISK CATEGORY	= III
	SDS	= 0.223
	SD1	= 0.152

BUILDING NOTES:

CONSTRUCTION TYPE:

1. FOUNDATION = MOMENT RESISTING CONC. FOUNDATION.
2. BUILDING = PROTECTED COMBUSTIBLE ORDINARY CONSTRUCTION w/ BLOCK AND GYPSUM BOARD WALLS (TYPE III-B)
3. ROOF = WOOD TRUSS W/ STANDING SEAM METAL ROOF

NFFA 101/ 5000 OCCUPANCY TYPE = FACTORY / INDUSTRIAL
IBC 2018 GROUP = FACTORY WITH LOW HAZARD

OCCUPANT LOAD:

SCREW PRESS AREA = 9 PEOPLE

BUILDING HEIGHT AND AREA

AREA =	1024 SF (31'-4" W x 32'-8" L)
BUILDING HT.=	16'-0" EAVE (4:12 SLOPE)
ALLOWABLE AREA AS PER IBC 2018 =	65-FT
ALLOWABLE NUMBER OF STORIES AS PER IBC 2018 =	3
ALLOWABLE HEIGHT AND AREA AS PER IBC 2018 =	19,000 SF

FIRE RATING:

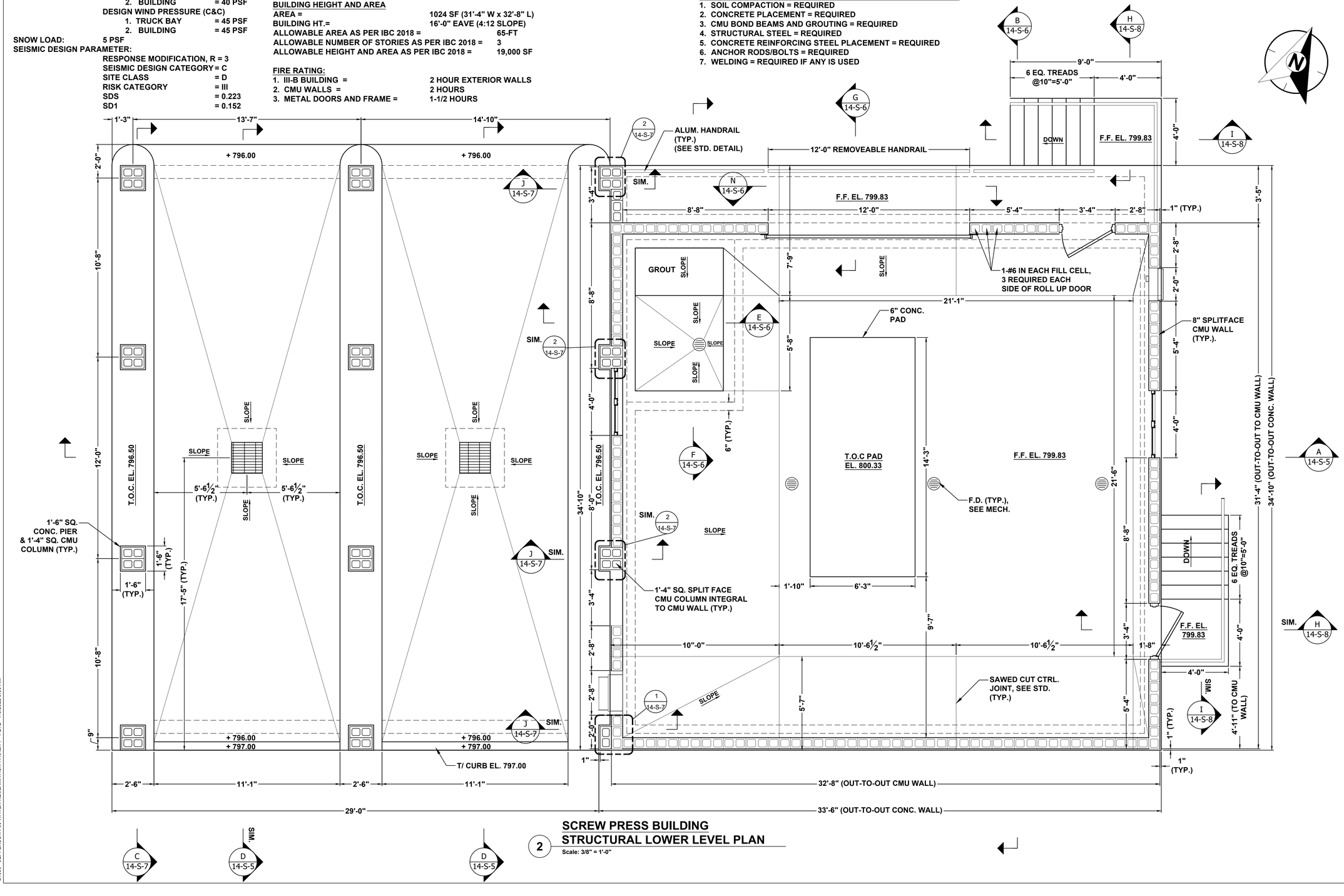
1. III-B BUILDING =	2 HOUR EXTERIOR WALLS
2. CMU WALLS =	2 HOURS
3. METAL DOORS AND FRAME =	1-1/2 HOURS

APPLICABLE DESIGN CODES:

1. 2018 INTERNATIONAL BUILDING CODE WITH 2020 GEORGIA AMENDMENTS.
2. 2018 INTERNATIONAL PLUMBING CODE WITH 2020 GEORGIA AMENDMENTS.
3. 2017 NATIONAL ELECTRICAL CODE
4. 2018 INTERNATIONAL MECHANICAL CODE / 2014 & 2015 GEORGIA AMENDMENTS.
5. INTERNATIONAL FUEL GAS CODE / 2014 & 2015 GEORGIA AMENDMENTS.
6. CHEROKEE COUNTY DEVELOPMENTAL REGULATIONS
7. 2018 INTERNATIONAL FIRE CODE WITH CURRENT GEORGIA AMENDMENTS.
8. 2018 NFPA 101 LIFE SAFETY CODE WITH CURRENT GEORGIA AMENDMENTS.
9. 2020 GEORGIA AMENDMENTS 120-3-3, STATE MINIMUM FIRE SAFETY STANDARDS.

SCHEDULE OF SPECIAL INSPECTIONS PER IBC 2018 SECTION 1705:

1. SOIL COMPACTION = REQUIRED
2. CONCRETE PLACEMENT = REQUIRED
3. CMU BOND BEAMS AND GROUTING = REQUIRED
4. STRUCTURAL STEEL = REQUIRED
5. CONCRETE REINFORCING STEEL PLACEMENT = REQUIRED
6. ANCHOR RODS/BOLTS = REQUIRED
7. WELDING = REQUIRED IF ANY IS USED



2 SCREW PRESS BUILDING STRUCTURAL LOWER LEVEL PLAN

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

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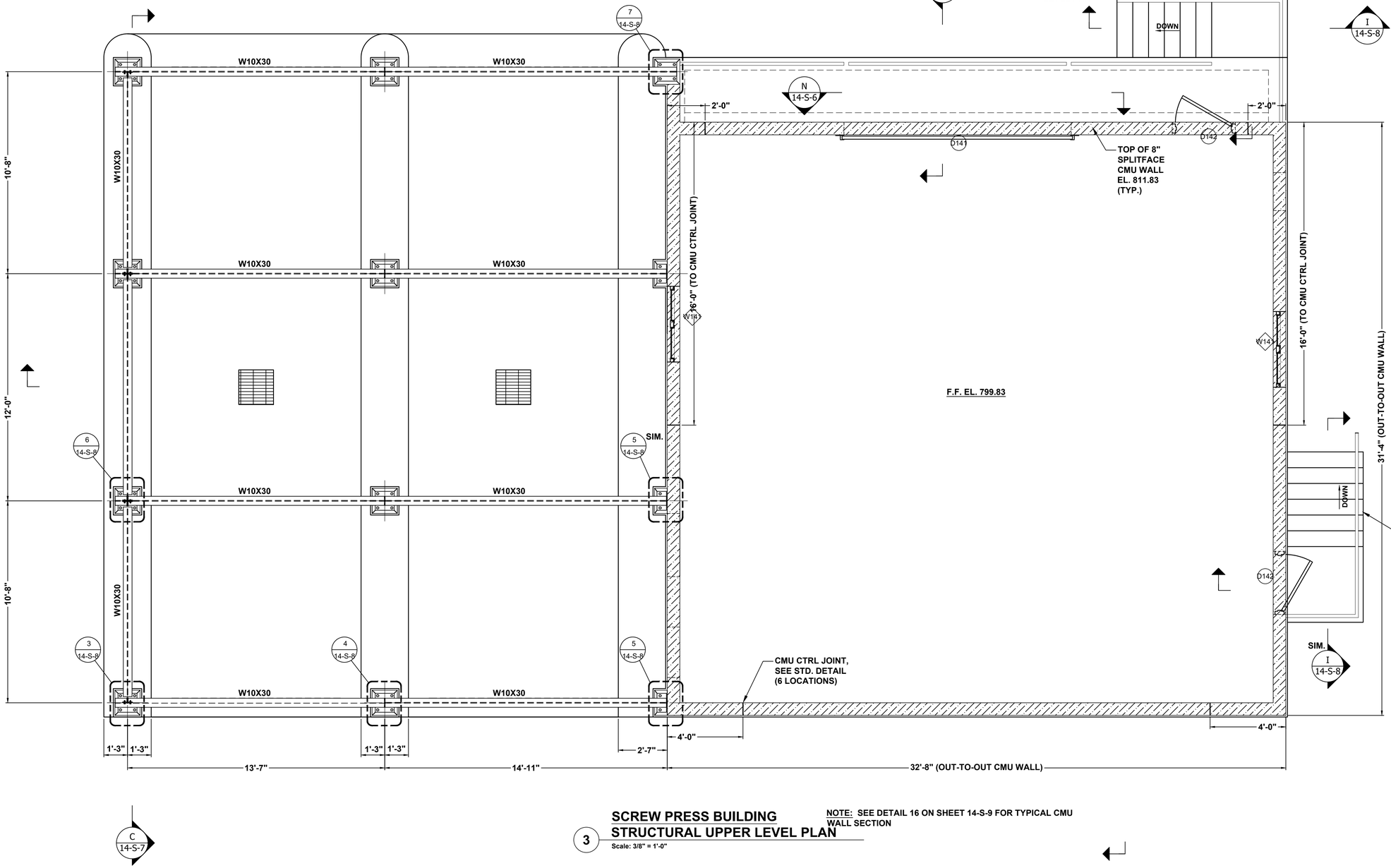
SHEET TITLE

SCREW PRESS BUILDING STRUCTURAL LOWER LEVEL PLAN

DRAWING NUMBER

14-S-2
OF
214



SCREW PRESS BUILDING STRUCTURAL UPPER LEVEL PLAN

3

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

NOTE: SEE DETAIL 16 ON SHEET 14-S-9 FOR TYPICAL CMU WALL SECTION

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SCREW PRESS BUILDING STRUCTURAL UPPER LEVEL PLAN

DRAWING NUMBER

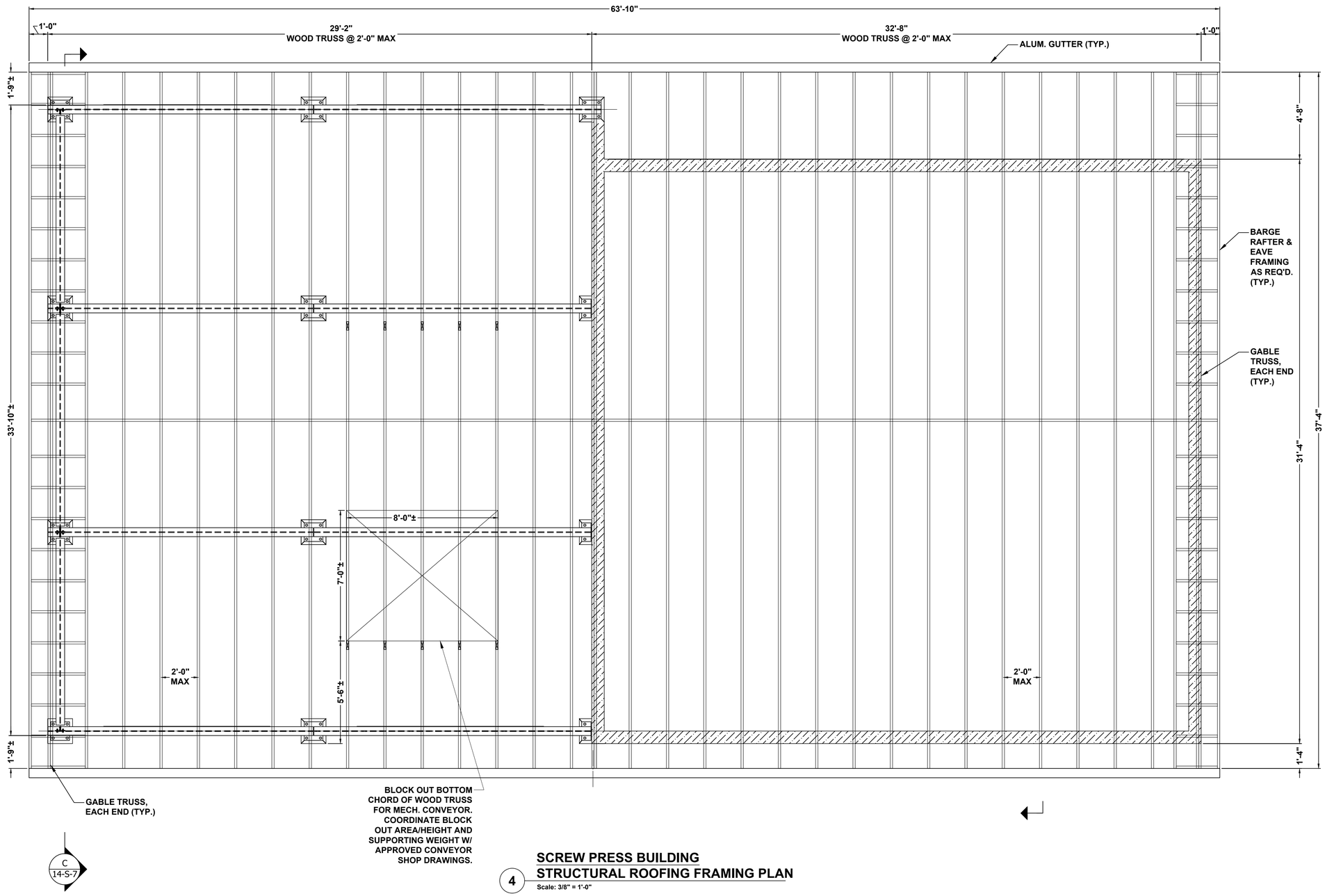
14-S-3
OF
214

PREFABRICATED WOOD TRUSS NOTES

DESIGN LOADS: **ROOF**

TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF + TRUSS SELFWEIGHT
BOTTOM CHORD LIVE LOAD	10 PSF (HVAC PLATFORM = 20 PSF)
BOTTOM CHORD DEAD LOAD	10 PSF
TOP CHORD WIND UPLIFT LOAD	SEE WIND LOAD DATA

1. TRUSSES SHALL BE SPACED AS SHOWN ON PLANS.
2. SEE PLAN FOR TRUSS LOCATIONS AND SPANS. ACTUALL TRUSS SPACING SHALL BE USED TO DETERMINE UNIFORM LOADS PER FOOT.
3. TRUSSES SHALL BE DESIGNED AND FABRICATED BY THE TRUSS MANUFACTURER.
4. DESIGN SHALL CARRY THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF GEORGIA.
5. CONFIGURATION AND SIZE OF WEB MEMBERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.
6. SHOP DRAWINGS AND CALCULATIONS FOR TRUSSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
7. MAXIMUM LIVE LOAD DEFLECTION FOR ROOF TRUSSES = L/240.
8. PERMANENT BRACING OF ROOF TRUSSES, AS REQUIRED BY STRUCTURAL DESIGN OF THE TRUSSES, AND PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADINGS, SHALL BE INDICATED AND FULLY DETAILED ON SHOP DRAWINGS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSS DURING ERECTION, IN ACCORDANCE WITH TRUSS PLATE INSTITUTES "HANDLING, INSTALLING AND BRACING METAL PATE CONNECTED WOOD TRUSSES, HIB-91."
10. TRUSS DESIGN SHALL ACCOUNT FOR LOAD IMPOSED UPON TRUSSES BY WEIGHT OF MECHANICAL UNITS, AS SHOWN ON MECHANICAL DRAWINGS.
11. ALL PRE-ENGINEERED TRUSS SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE, DURING THE TIMES OF INSPECTION SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
12. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC.) REQUIRED FOR CONNECTIONS BETWEEN PRE-ENGINEERED TRUSSES SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS DESIGN ENGINEER.



4 **SCREW PRESS BUILDING STRUCTURAL ROOFING FRAMING PLAN**

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

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SCREW PRESS BUILDING STRUCTURAL ROOFING FRAMING PLAN

DRAWING NUMBER

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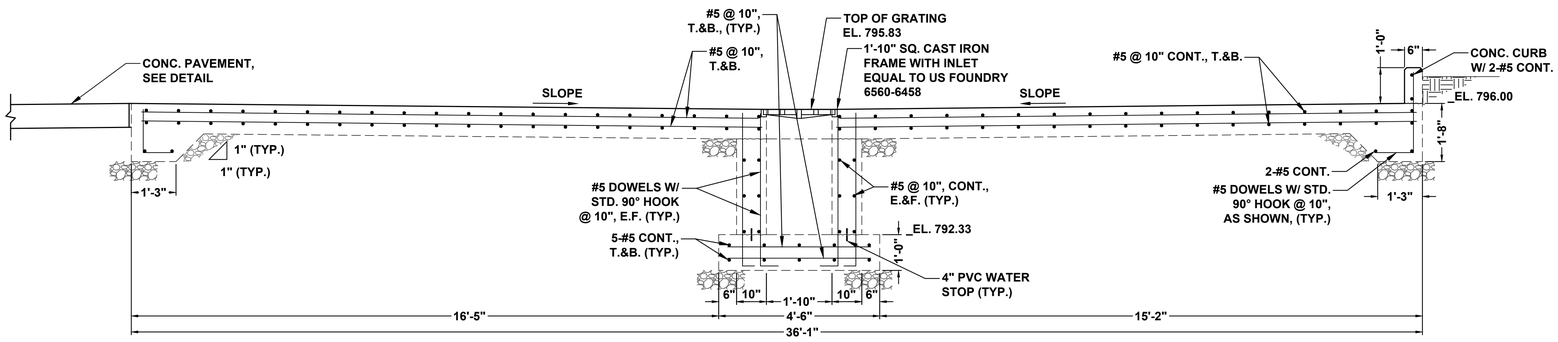
OF
214



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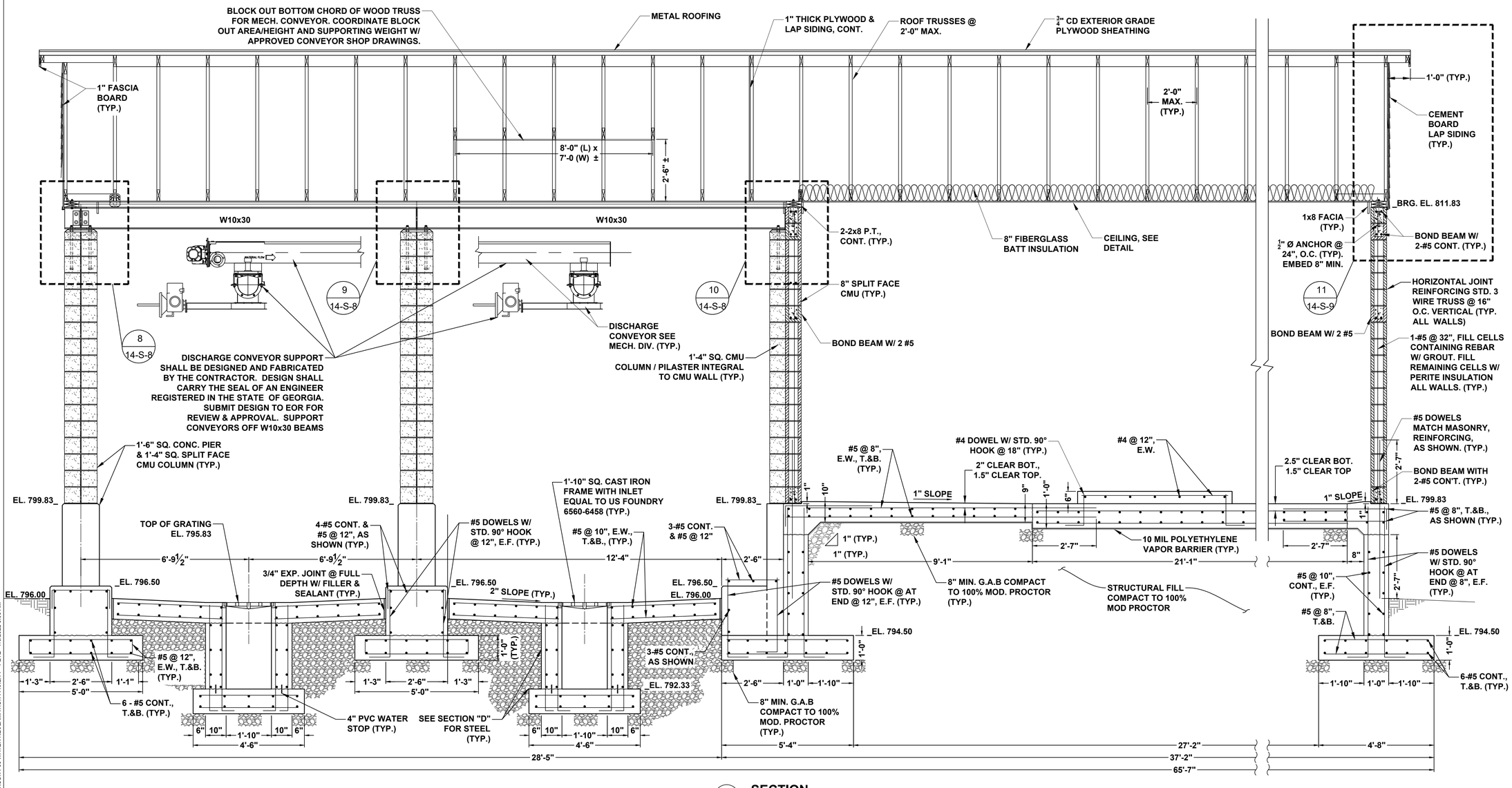

A **SECTION**
Scale: 1/2" = 1'-0"

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SHEET TITLE

SCREW PRESS BUILDING STRUCTURAL SECTIONS 1

DRAWING NUMBER

14-S-5
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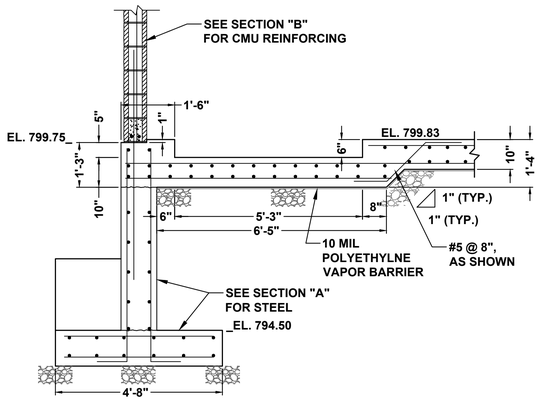

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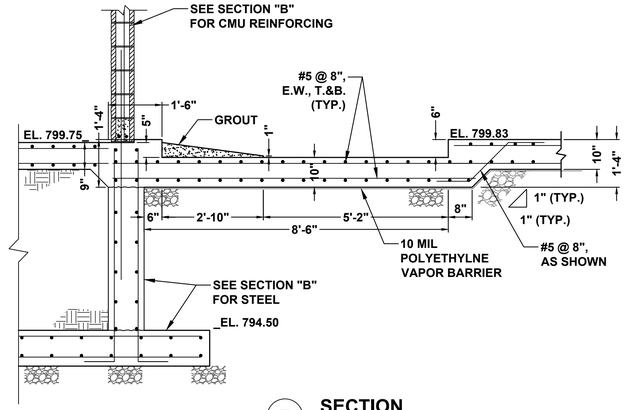

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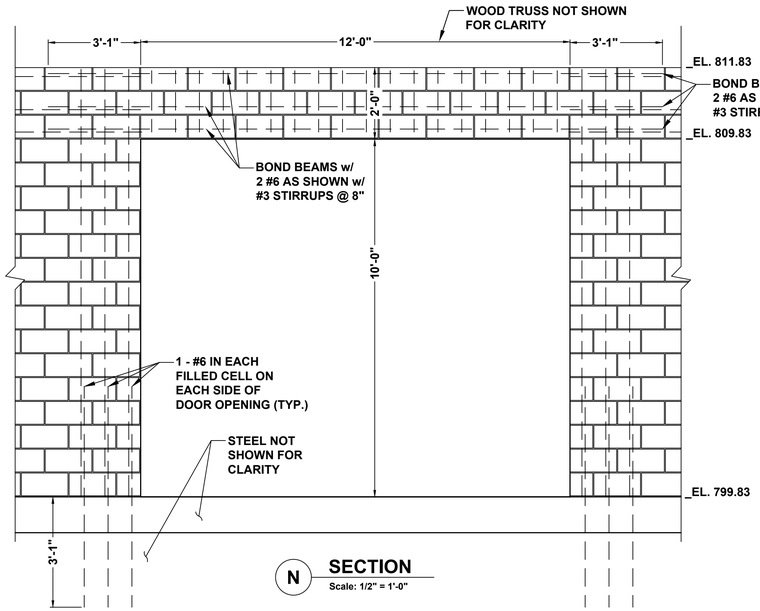

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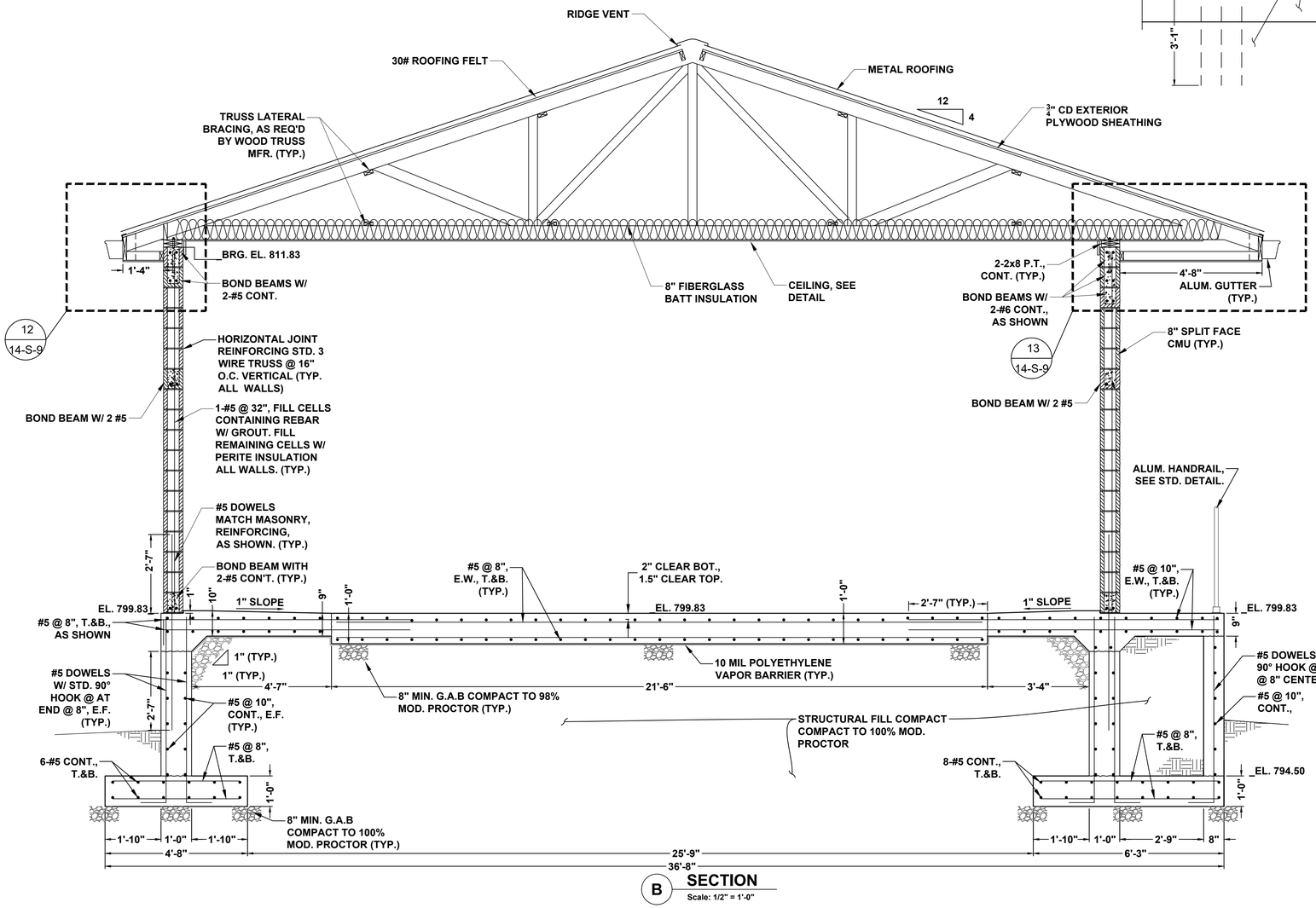

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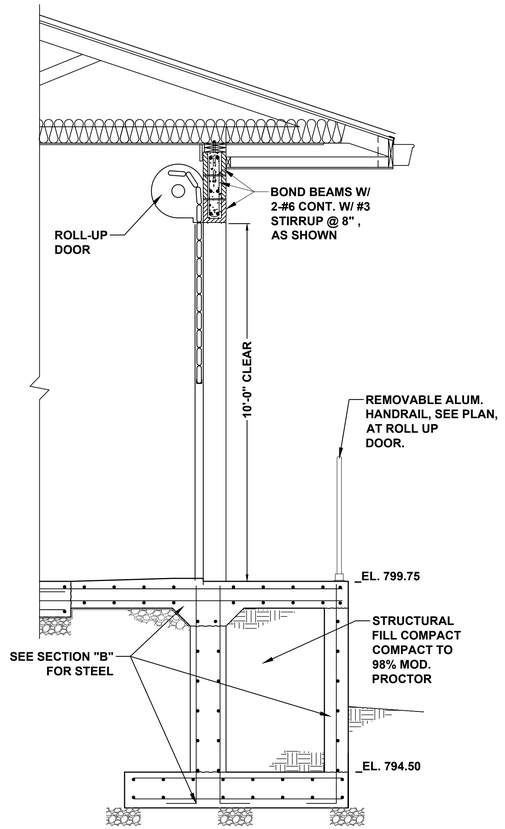

G **SECTION**
Scale: 1/2" = 1'-0"

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SHEET TITLE

SCREW PRESS BUILDING STRUCTURAL SECTIONS 2

DRAWING NUMBER

14-S-6
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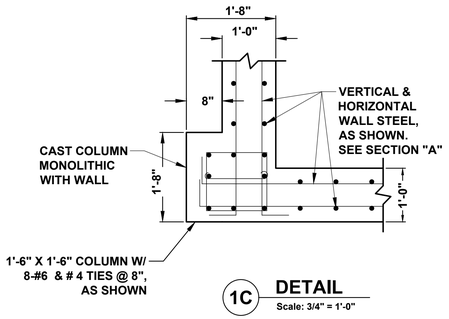
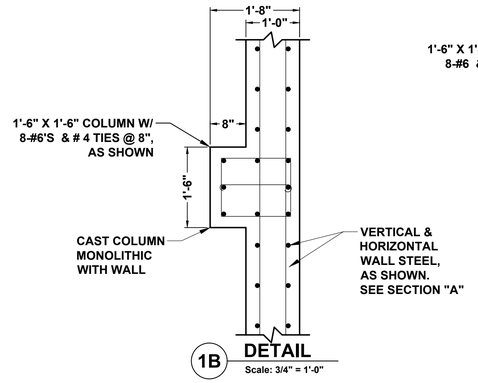


1C **DETAIL**
Scale: 3/4" = 1'-0"



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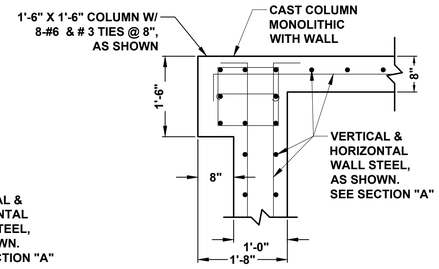

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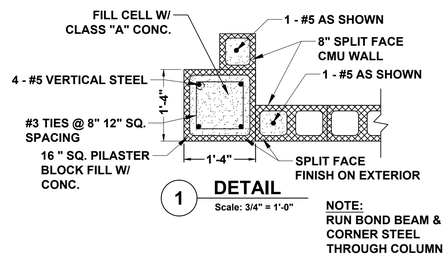
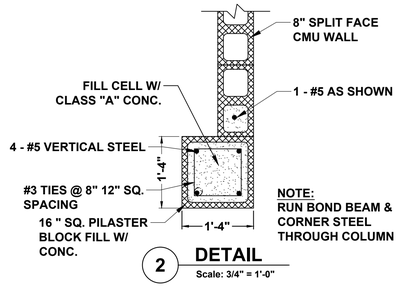


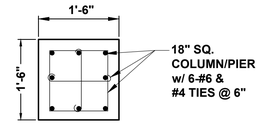
1 **DETAIL**
Scale: 3/4" = 1'-0"

NOTE:
RUN BOND BEAM & CORNER STEEL THROUGH COLUMN



2 **DETAIL**
Scale: 3/4" = 1'-0"

NOTE:
RUN BOND BEAM & CORNER STEEL THROUGH COLUMN



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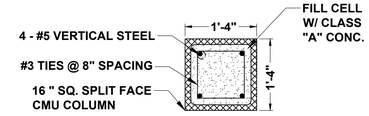

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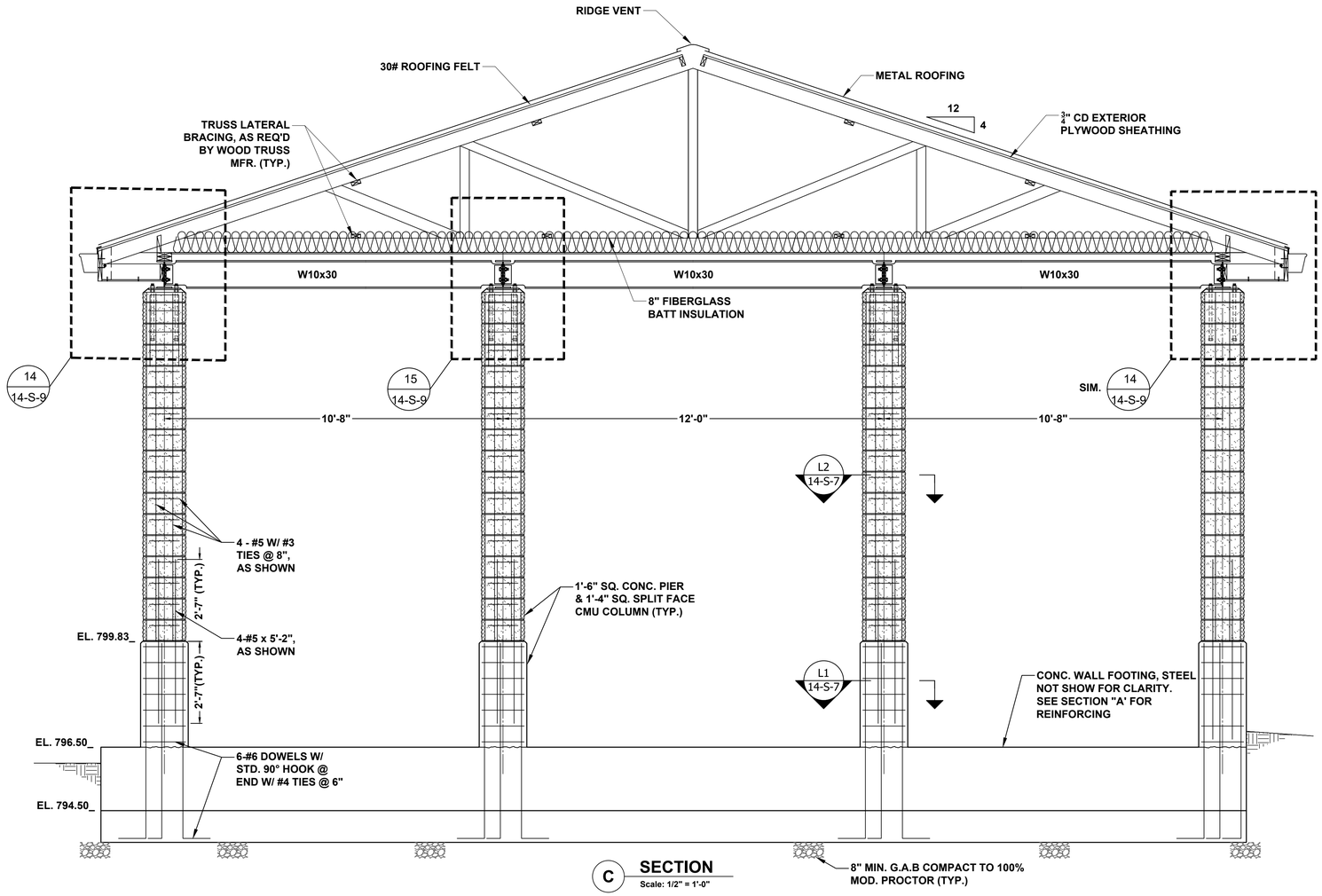

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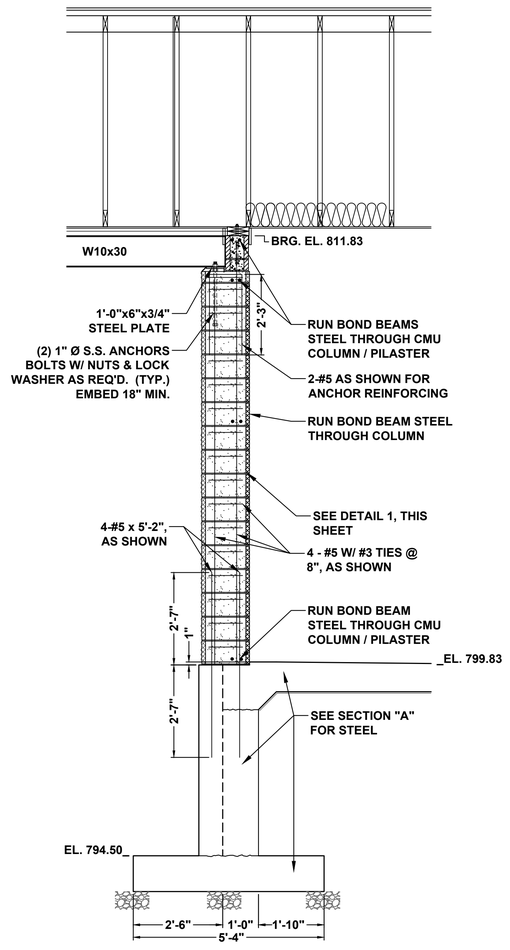

J **SECTION**
Scale: 1/2" = 1'-0"

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SCREW PRESS BUILDING STRUCTURAL SECTIONS 3

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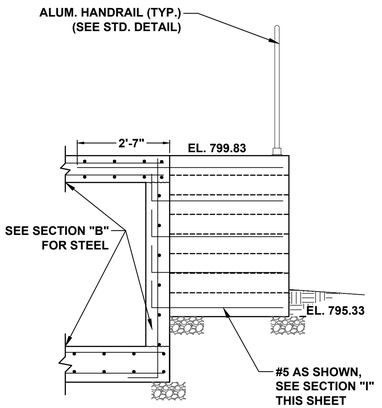

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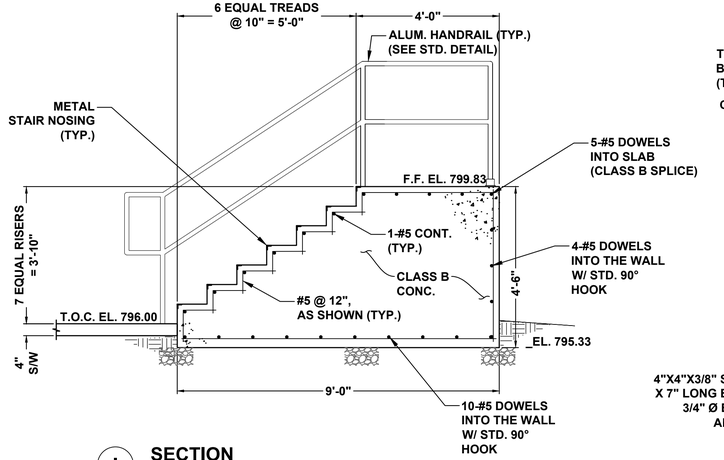

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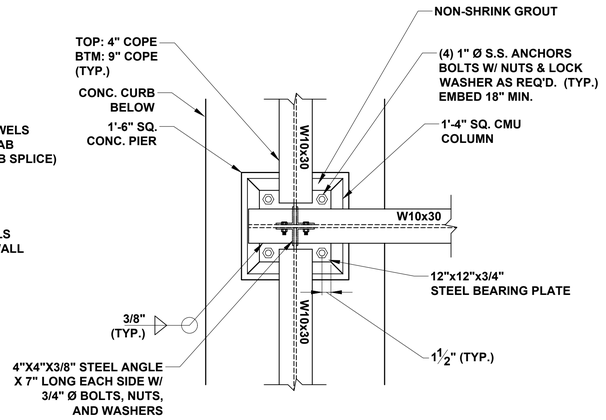
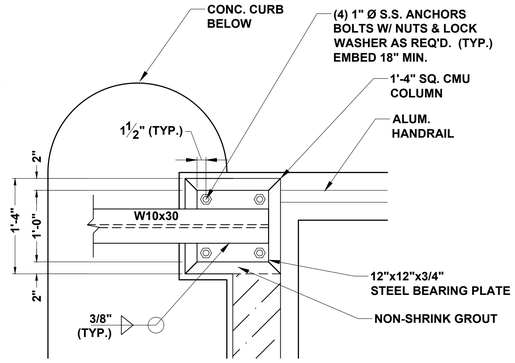


6 **DETAIL**
Scale: 1"= 1'-0"



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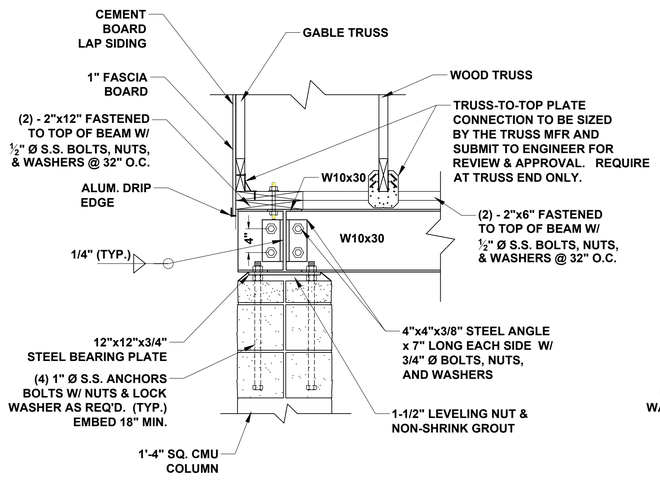
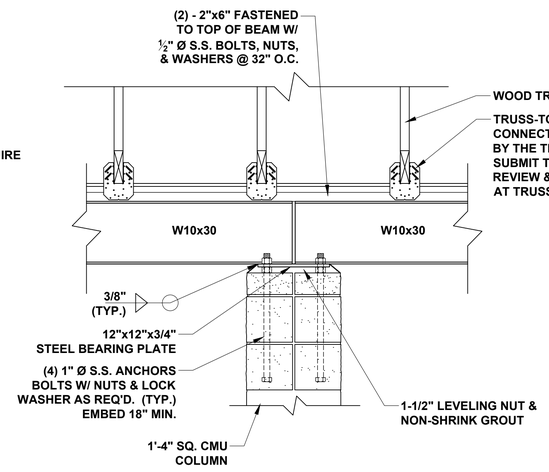
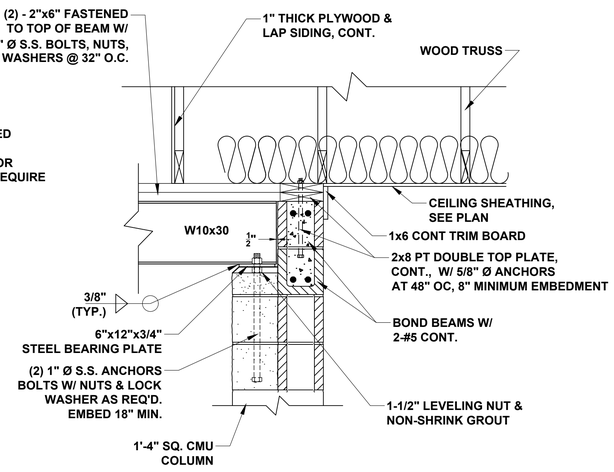


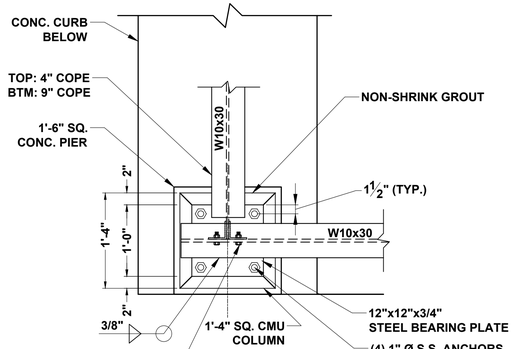
8 **DETAIL**
Scale: 1"= 1'-0"



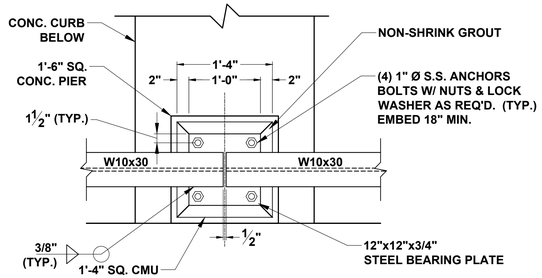
9 **DETAIL**
Scale: 1"= 1'-0"



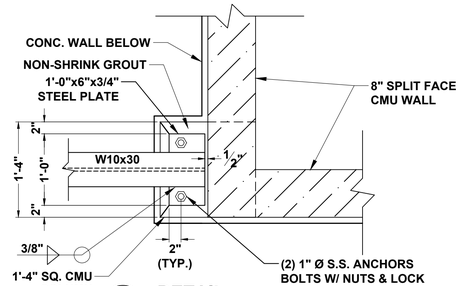
10 **DETAIL**
Scale: 1"= 1'-0"



3 **DETAIL**
Scale: 1"= 1'-0"



4 **DETAIL**
Scale: 1"= 1'-0"



5 **DETAIL**
Scale: 1"= 1'-0"

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING STRUCTURAL SECTIONS 4

DRAWING NUMBER

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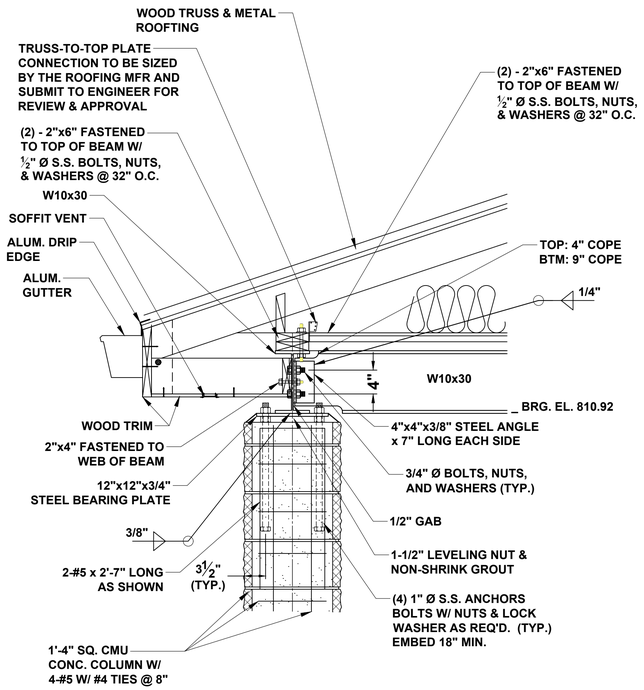
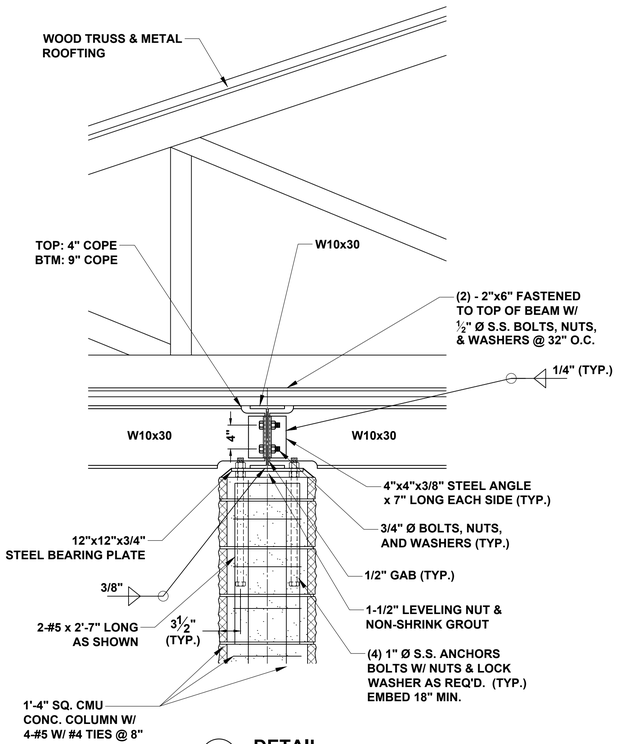
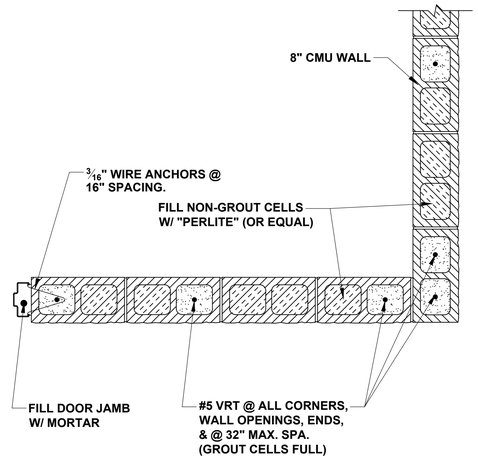


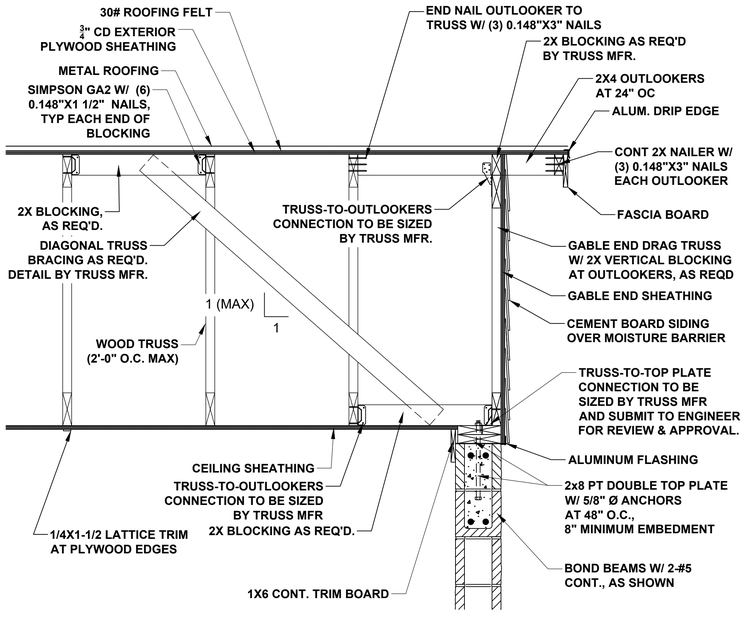
14 DETAIL
Scale: 1" = 1'-0"



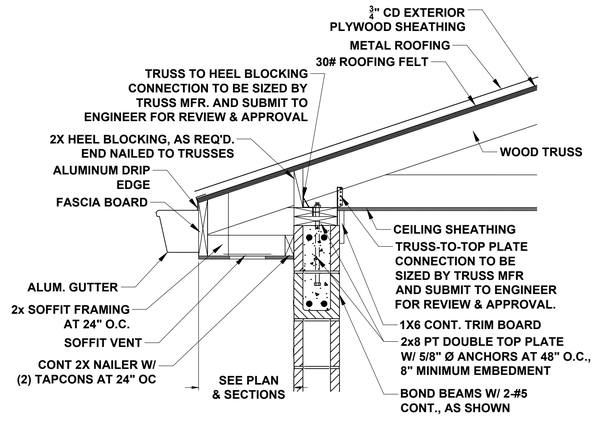
15 DETAIL
Scale: 1" = 1'-0"



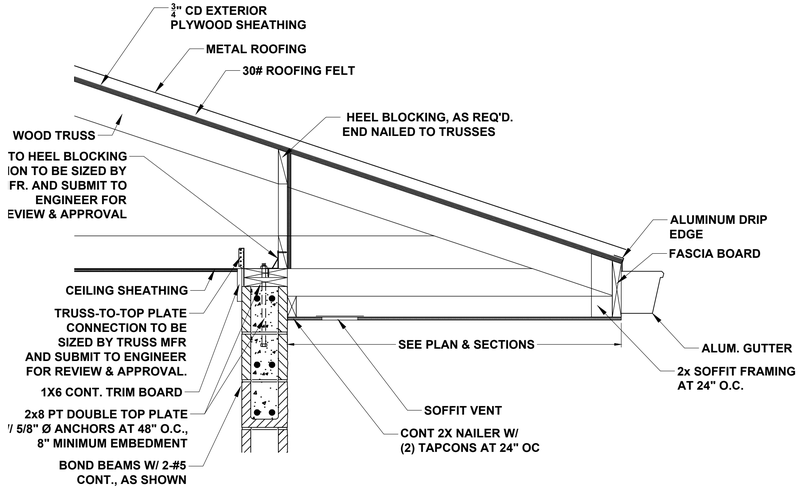
16 DETAIL - TYPICAL CMU WALL SECTION
Scale: 1"= 1'-0"



11 DETAIL
Scale: 1"= 1'-0"



12 DETAIL
Scale: 1"= 1'-0"



13 DETAIL
Scale: 1"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING STRUCTURAL SECTIONS 5

DRAWING NUMBER

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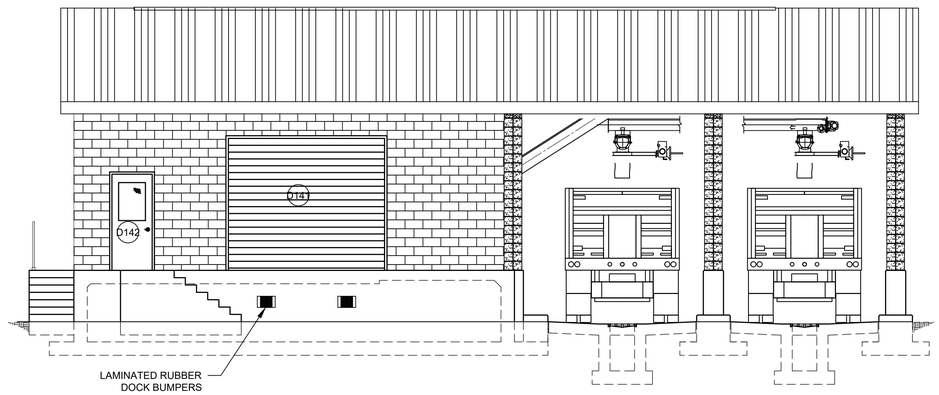
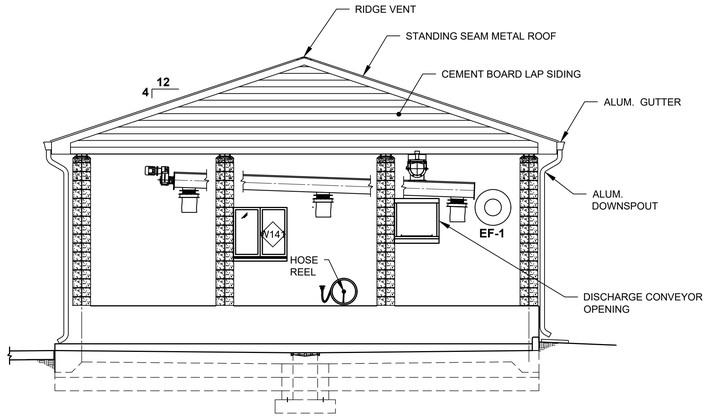
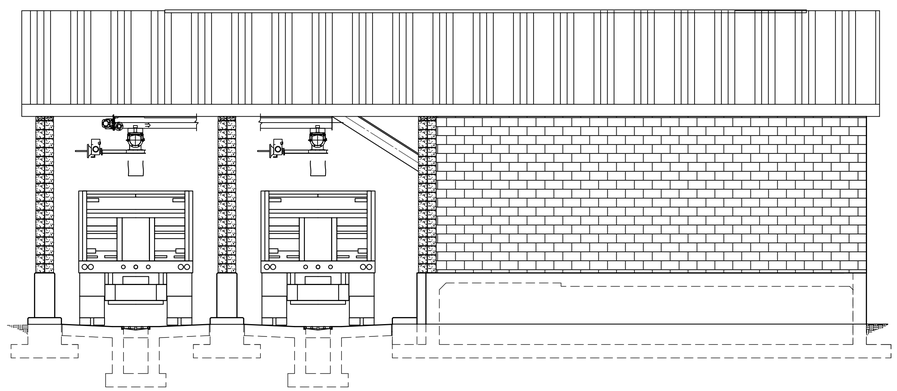


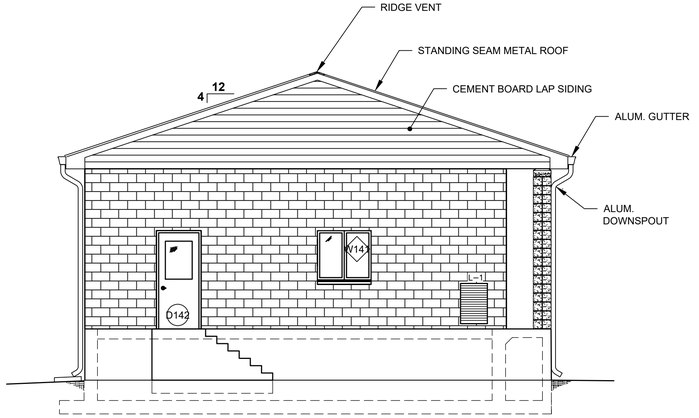
NOTE: **ALUMINUM HANDRAIL NOT SHOWN FOR CLARITY**



B **ELEVATION**
Scale: 3/16" = 1'-0"



C **ELEVATION**
Scale: 3/16" = 1'-0"



D **ELEVATION**
Scale: 3/16" = 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING ELEVATIONS

DRAWING NUMBER

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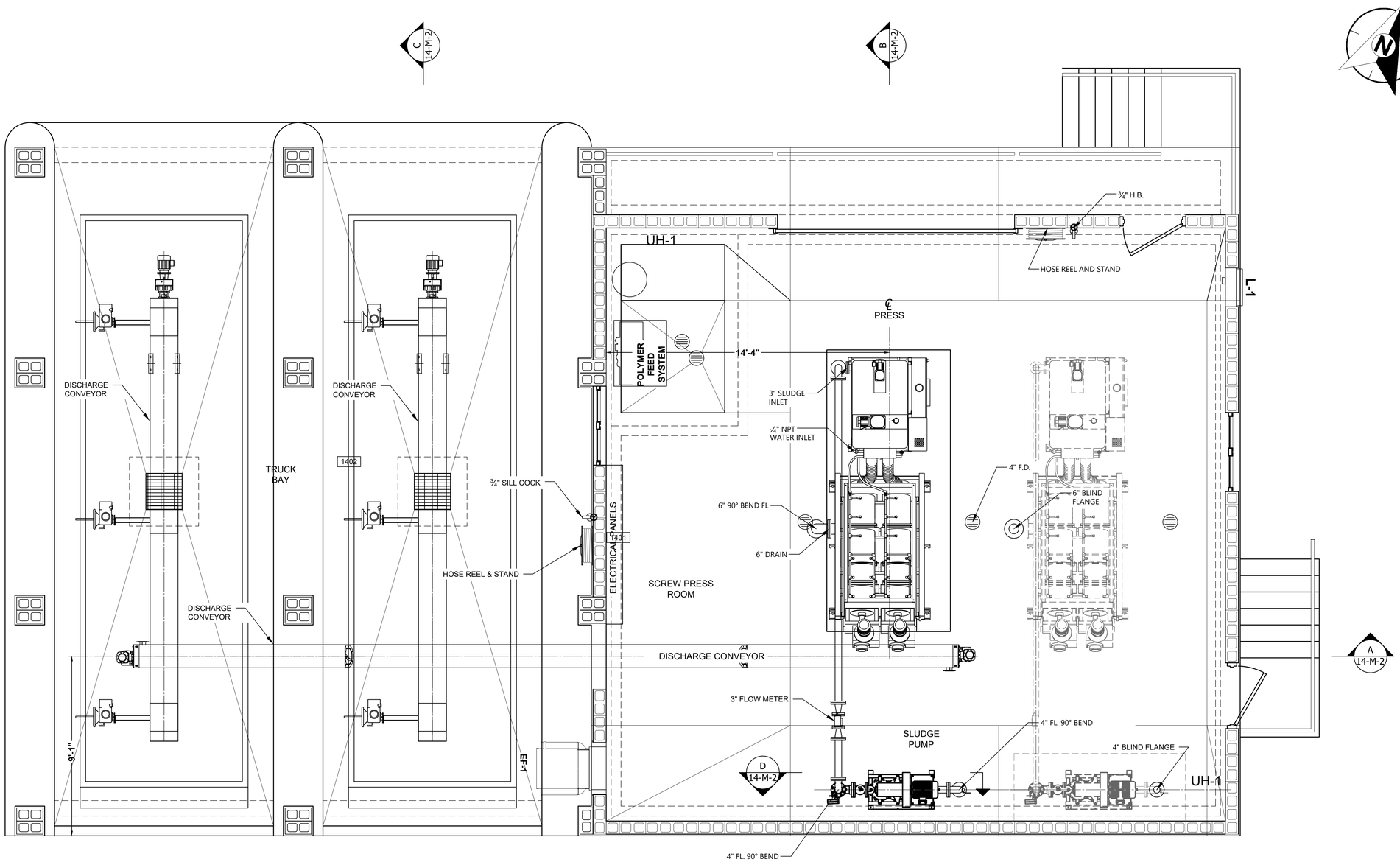

1 SCREW PRESS BUILDING MECHANICAL FLOOR PLAN

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

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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING MECHANICAL FLOOR PLAN

DRAWING NUMBER

14-M-1
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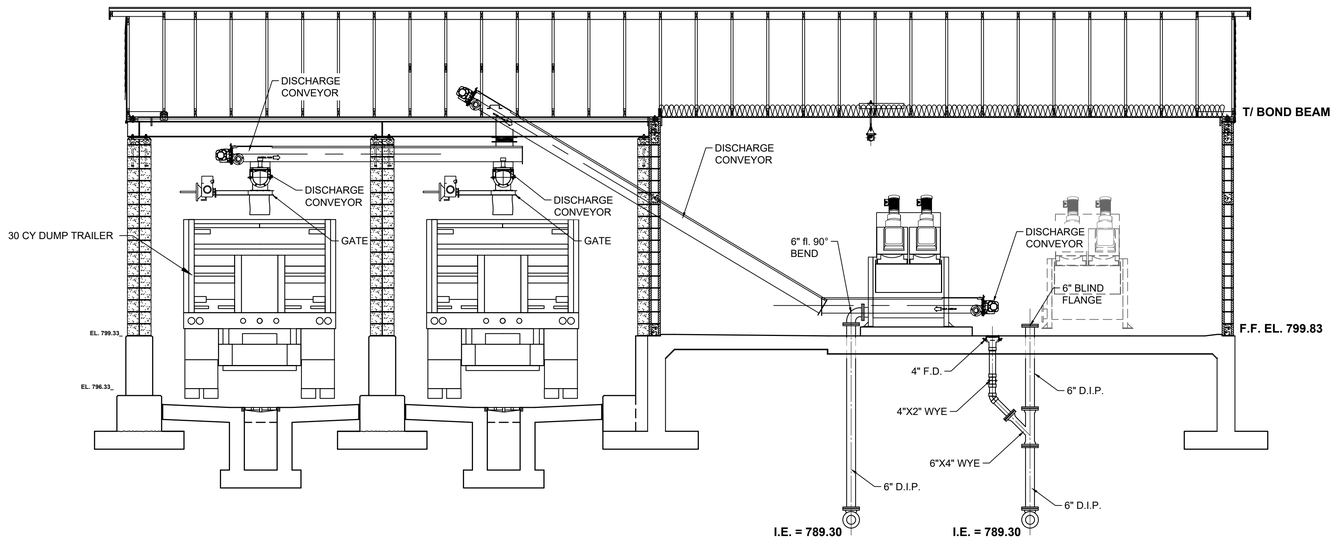
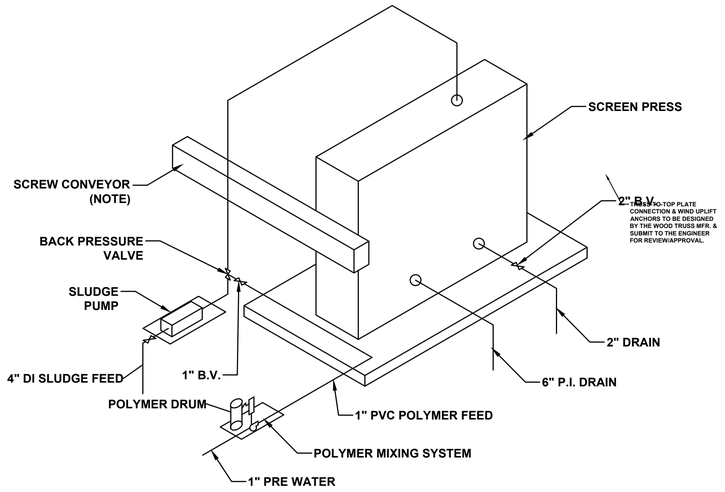
21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE 7/6/2022 8:33 AM



A **SECTION**
Scale: 1/4" = 1'-0"

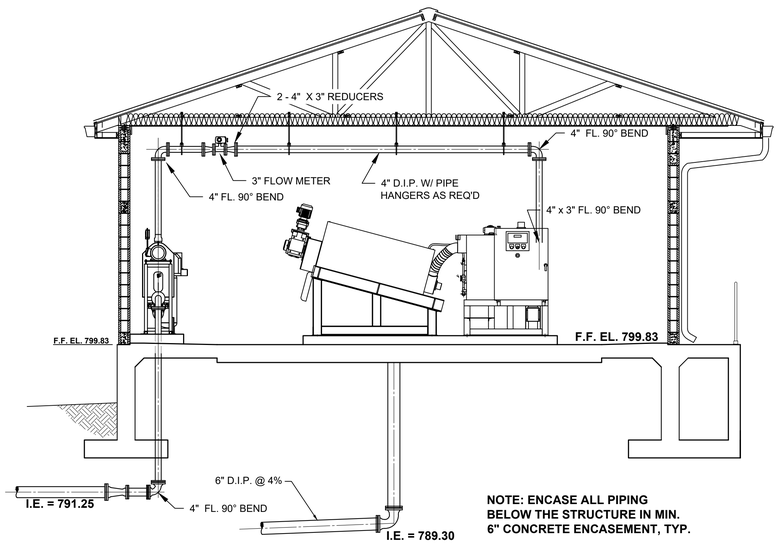
NOTE: ENCASE ALL PIPING BELOW THE STRUCTURE IN MIN. 6" CONCRETE ENCASEMENT, TYP.



NOTE: ROOF-TO-TOP PLATE CONNECTION & WIND UPLIFT ANCHORS TO BE DESIGNED BY THE WOOD TRUSS MFR. & SUBMIT TO THE ENGINEER FOR REVIEW/APPROVAL.

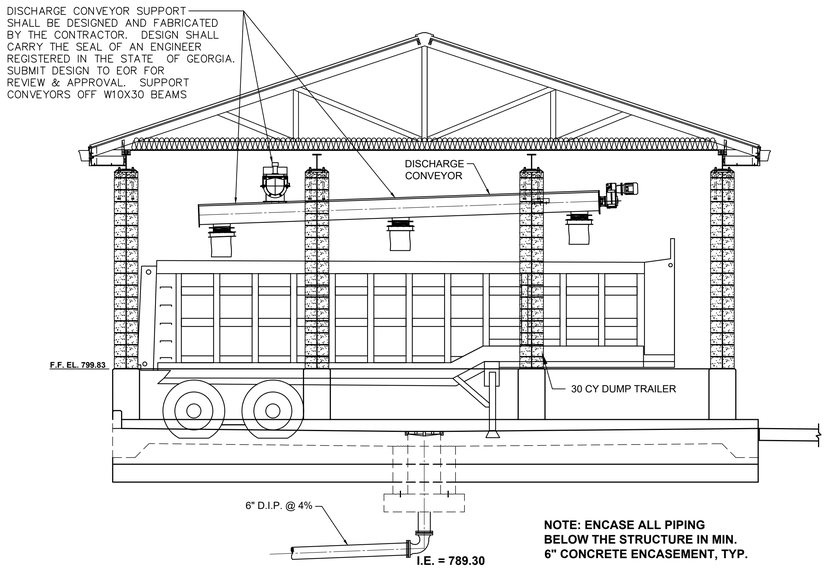
NOTES:
1. SEE PLANS FOR DISTRIBUTION CONVEYOR LAYOUT.

1 **SCREW PRESS ISOMETRIC DIAGRAM**
Scale: NTS



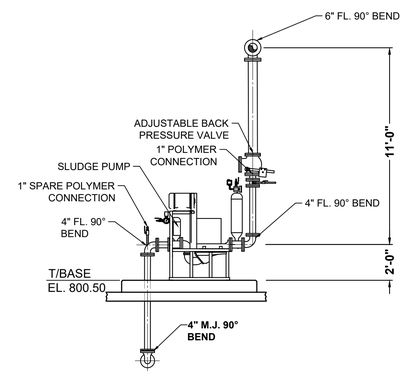
B **SECTION**
Scale: 1/4" = 1'-0"

NOTE: ENCASE ALL PIPING BELOW THE STRUCTURE IN MIN. 6" CONCRETE ENCASEMENT, TYP.



C **SECTION**
Scale: 1/4" = 1'-0"

NOTE: ENCASE ALL PIPING BELOW THE STRUCTURE IN MIN. 6" CONCRETE ENCASEMENT, TYP.



D **SLUDGE PUMP SECTION**
Scale: 1/4" = 1'-0"

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 7/6/2022 8:33 AM

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING MECHANICAL SECTIONS

DRAWING NUMBER

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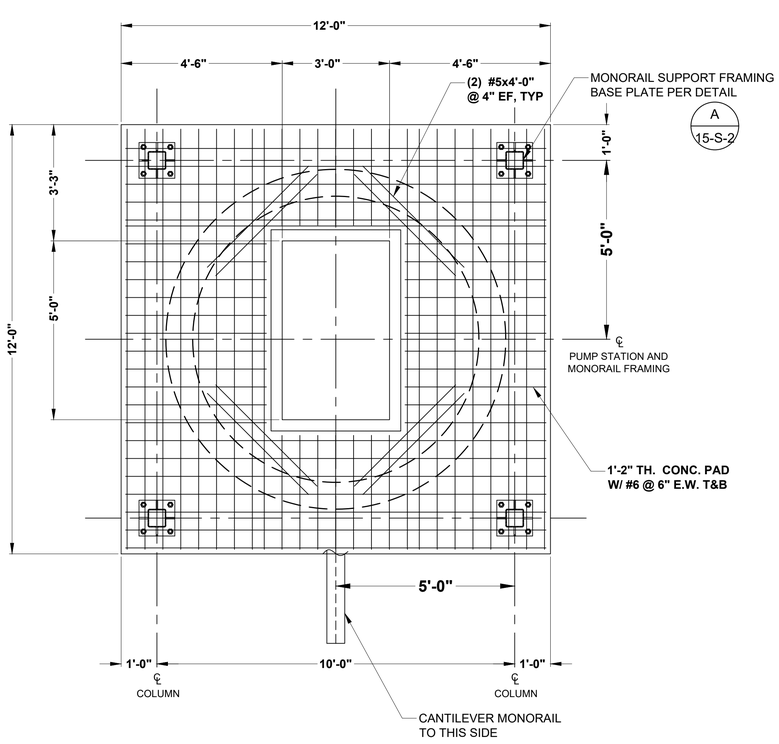
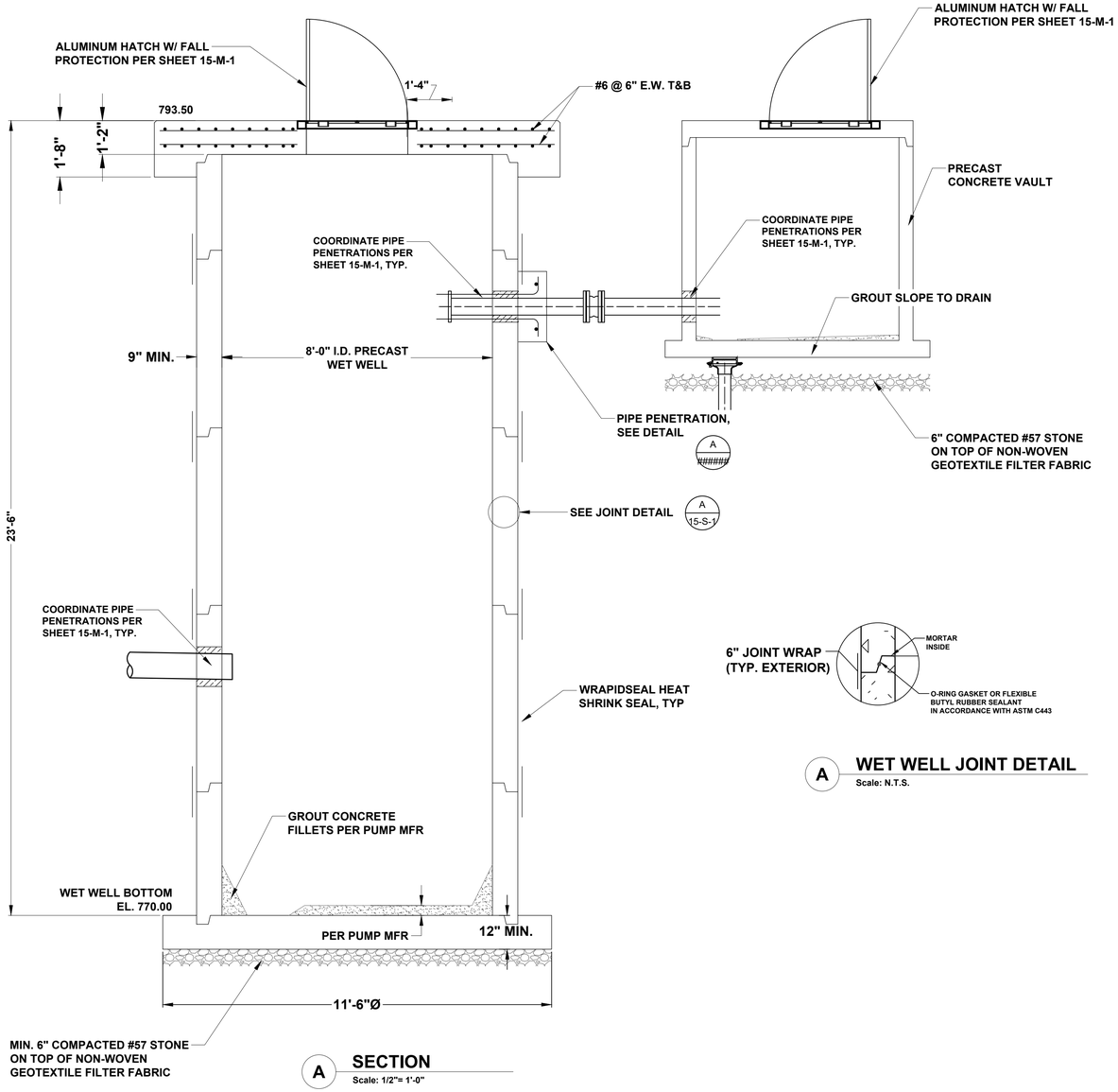


1 **TOP SLAB DETAIL**
Scale: 1/2"= 1'-0"



A **SECTION**
Scale: 1/2"= 1'-0"

A **WET WELL JOINT DETAIL**
Scale: N.T.S.

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Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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10/05/2021

SHEET TITLE

PLANT DRAIN PUMP STATION STRUCTURAL

DRAWING NUMBER

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OF
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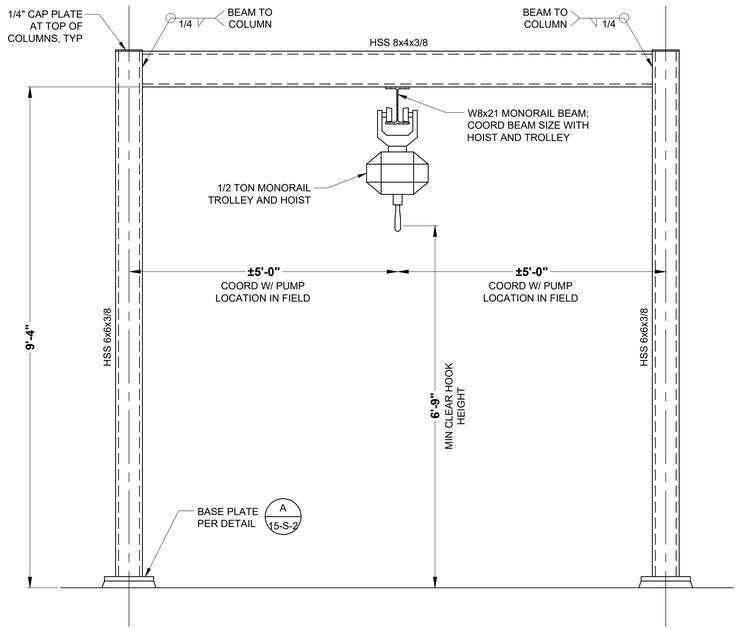
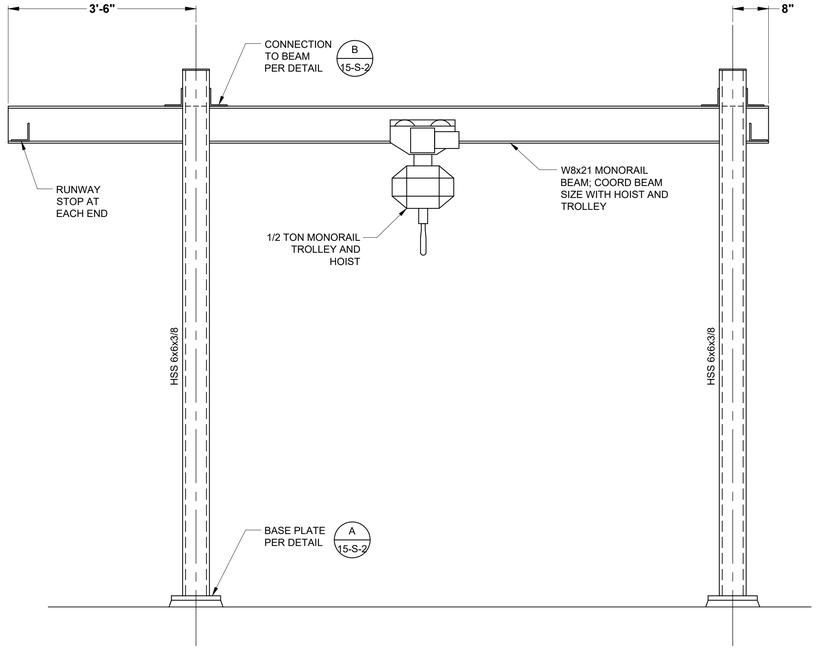


A ELEVATION

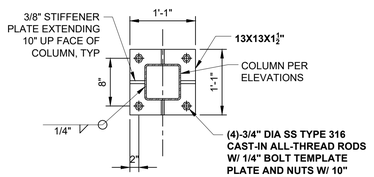
Scale: 3/4"= 1'-0"

NOTE:
1. ALL STEEL AND HARDWARE SHOWN TO BE HOT-DIPPED GALVANIZED.

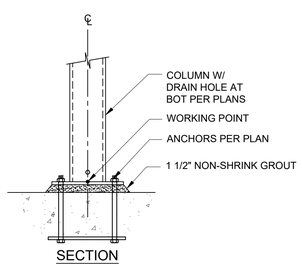


B ELEVATION

Scale: 3/4"= 1'-0"



PLAN AT HSS6

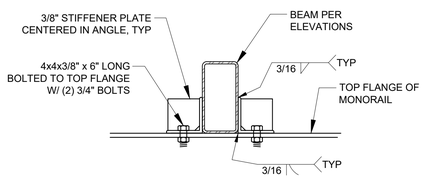


SECTION

COLUMN TO SLAB CONNECTION

A DETAIL

Scale: 1"= 1'-0"



MONORAIL TO BEAM CONNECTION

B DETAIL

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

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Checked By : CKB

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

PLANT DRAIN PUMP STATION MONORAIL ELEVATIONS & DETAILS

DRAWING NUMBER

15-S-2
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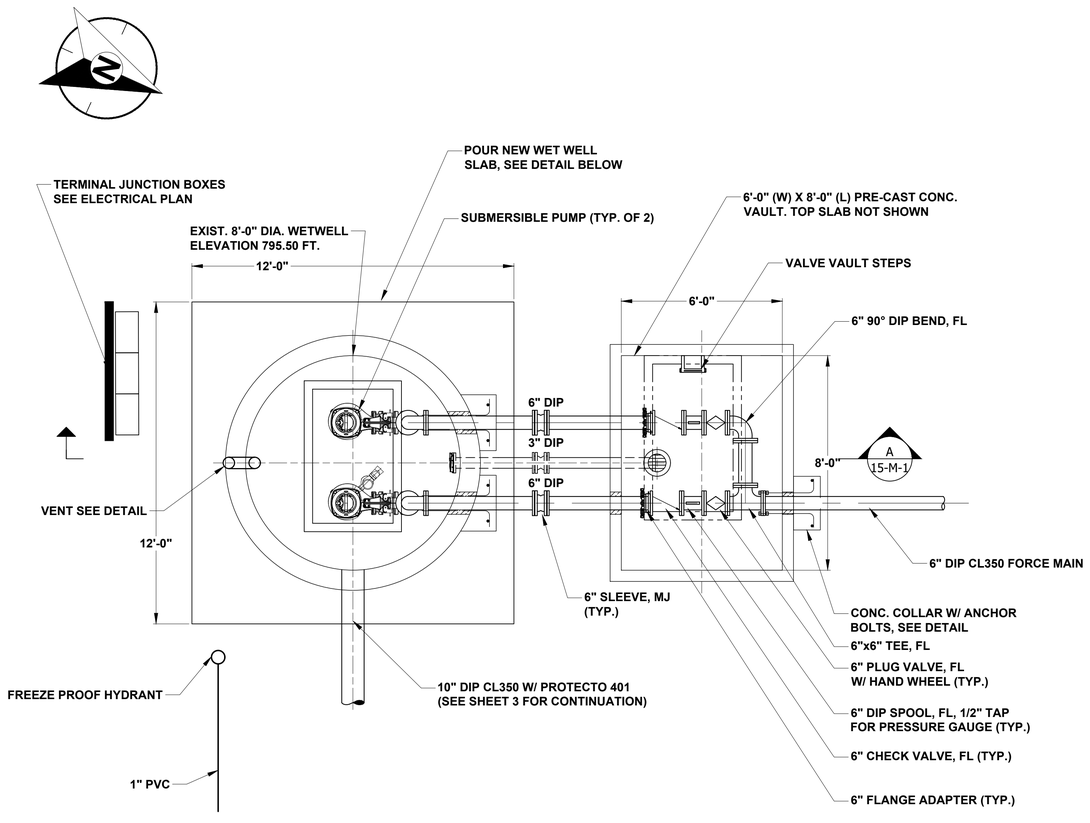
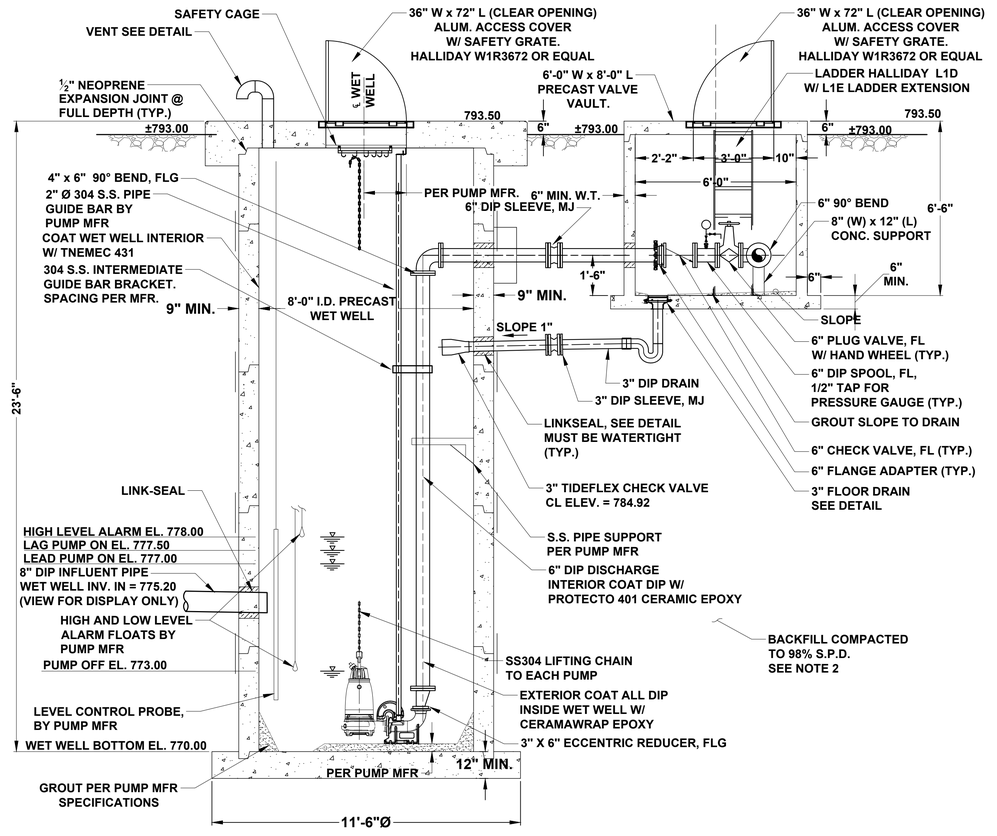


1 PLANT DRAIN PUMP STATION PLAN

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



A SECTION

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

NOTES

1. TWO SUBMERSIBLE PUMPS REQUIRED, EACH PUMP OPERATES AT 702GPM @ 55.8' TDH. EACH PUMP DRIVEN BY A 15 HP MOTOR, 460 VOLTS, 3 PHASE, 60 HZ, 1,770 RPM. SHUT OFF HEAD 210FEET. PUMPS SHALL BE MANUFACTURED BY FLYGT, MODEL NP 3153 HT3 456 - IMPELLER 229 MM.
2. BACKFILL SHALL CONSIST OF SELECT MATERIAL COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR (ASTM D698) MAXIMUM DRY DENSITY. BACKFILL SOIL MUST BE PLACED IN MAXIMUM 8-INCH THICK (LOOSE) LIFTS PRIOR TO COMPACTION. A MINIMUM OF TWO FIELD DENSITY TESTS ARE TO BE PERFORMED FOR EVERY TWO FEET OF FILL PLACED IN ORDER TO CONFIRM SOIL COMPACTION MEETS THE MINIMUM REQUIRED DENSITY. ALL TEST RESULTS MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION OF PUMP STATION SLAB AND VAULT AND SLAB FOR CHEMICAL BUILDING.
3. SEE SPECIFICATIONS FOR COATING REQUIREMENT FOR INSIDE WALL OF WET WELL, PIPING INSIDE OF WET WELL, VALVE VAULT PIPING & VALVES, AND MISC. METALS.
4. HARDWARE FOR LINKSEAL SHALL BE 316 S.S.
5. ALUMINUM ACCESS COVERS FOR WET WELL AND VALVE VAULTS SHALL BE RATED FOR 300 PSF. ACCESS COVER SHALL HAVE A STAINLESS STEEL LOCKING BAR W/ PAD LOCK OUTSIDE AND OPENING HANDLE INSIDE.
6. VERIFY SLAB OPENING DIMENSIONS WITH HATCH FRAME SHOP DRAWINGS.
7. FOR WET WELL AND OTHER SUBMERGED LOCATIONS, NUTS AND BOLTS ARE TO BE 304 STAINLESS STEEL, A193 GRADE B8 HEAVY HEX HEAD BOLT AND STAINLESS STEEL A193 GRADE 8 HEAVY HEX HEAD NUT.
8. MOUNT THE PRESSURE GAUGES SO THE FACES POINT TOWARDS THE TOP OF THE VAULT AND MAY BE OBSERVED FROM OUTSIDE THE VAULT.

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PROJECT NAME

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SHEET TITLE

PLANT DRAIN PUMP STATION MECHANICAL

DRAWING NUMBER

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PUMPING RATE THROUGH 8-INCH DUCTILE IRON FORCE MAIN = 702 GPM @ 4.09 FT/S

HYDRAULIC CALCULATIONS:

STATIC HEAD: 812.00 (PHYSICAL AND HYDRAULIC HP)
773.00 (PUMP STATION PUMP-OFF ELEVATION)
39.00 FT OF STATIC HEAD

FRICTION LOSSES:

HEAD LOSS IN 8" DIP WET WELL = $\frac{10.44(702)^{1.85}(30)}{(130)^{1.85}(6.27)^{4.87}}$ = 0.93 FT

HEAD LOSS IN 10" DIP DISCHARGE = $\frac{10.44(702)^{1.85}(20)}{(130)^{1.85}(8.38)^{4.87}}$ = 0.15 FT

HEAD LOSS IN 12" DIP FORCE MAIN = $\frac{10.44(702)^{1.85}(500)}{(130)^{1.85}(8.38)^{4.87}}$ = 3.77 FT

FITTING LOSSES:

HEAD LOSS IN 6" DIP WET WELL = $\frac{5(7.30)^2}{64.4}$ = 4.14 FT

HEAD LOSS IN 6" DIP DISCHARGE = $\frac{10(4.09)^2}{64.4}$ = 2.59 FT

HEAD LOSS IN 6" PVC C900 DR18 FORCE MAIN = $\frac{20(4.09)^2}{64.4}$ = 5.18 FT

TOTAL DYNAMIC HEAD: 39.00 + 0.93 + 0.15 + 3.77 + 4.14 + 2.59 + 5.18 = 55.8 FT @ 702 GPM

BUOYANCY CHECK:

WET WELL BASE: 11'-0" x 11'-0" x 0.75' =	90.75 CF
WET WELL : π/4 x (9.5')² x (22.5') =	1,594.85 CF
TOTAL VOLUME OF WATER DISPLACED :	1,685.60 CF

BUOYANT FORCE: B↑ = 1,685.60 CF X 62.4 #/CF = 105,182 #↑

WEIGHT OF STRUCTURE:

WET WELL BASE: 12'-0" x 12'-10" x 1' =	90.75 CF
WET WELL TOP: (14-0" x 10'-0" - 6'-0" x 5'-0") x 1'-6" =	165.00 CF
WET WELL WALL: π/4 x [(9.5')² - (8')²] x 21.5' =	443.30 CF
VOLUME OF CONCRETE:	699.0 CF

TOTAL WEIGHT OF CONCRETE: W↓ = 699.0 CF X 145 #/CF = 101,356 #↓

SOIL ABOVE FOOTING:

(11-0" x 11'-0" - π/4 x 9.5'²) x (22.5') = 1,127.65 CF

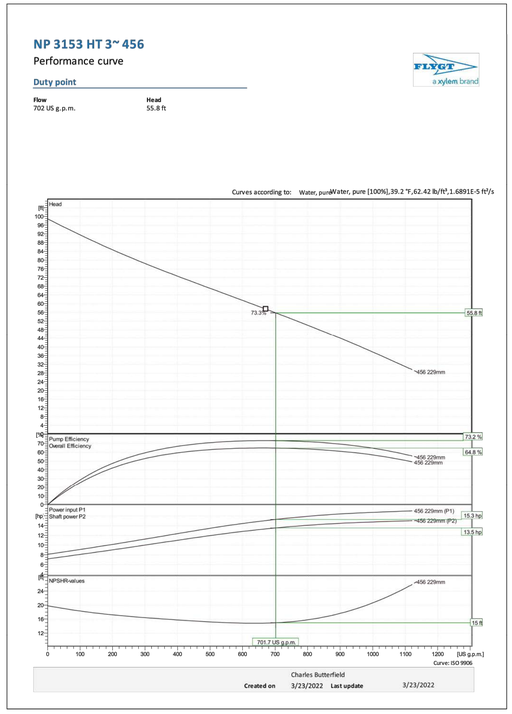
UNIT WEIGHT OF SUBMERGED SOIL:
γ = 120 #/CF - 62.4 #/CF = 57.6 #/CF

WEIGHT OF SUBMERGED SOIL ABOVE FOOTING:
1,127.65 CF X 57.6 #/CF = 64,953#↓

TOTAL RESISTING WEIGHT = 101,356#↓ + 64,953#↓ 166,309 #↓

TOTAL WEIGHT (166,309#↓) > BUOYANT FORCE (105,182 #↑)

SAFETY FACTOR
166,309#↓ / 105,182 #↑ = 1.58



Program version: 62.0 - 3/11/2023 (Build 107)
Data version: 5/8/2022 8:55 AM(R)
User group(s): Xylem/USA - EXT

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

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REVISIONS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

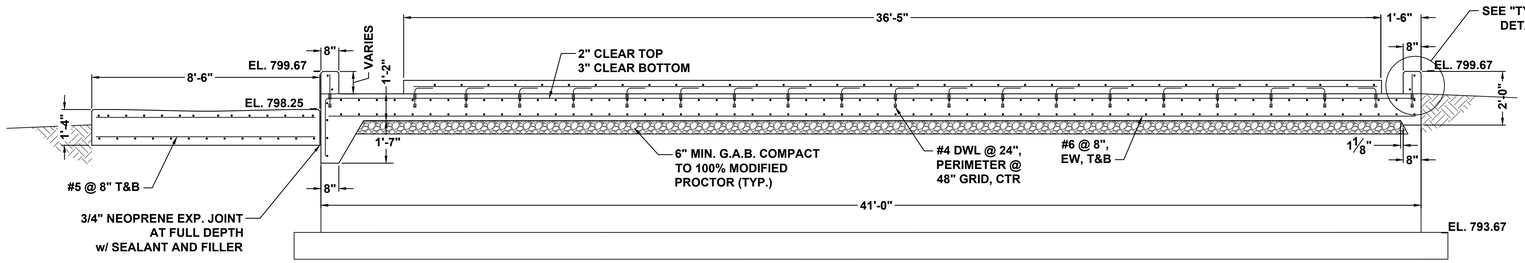
10/05/2021

SHEET TITLE

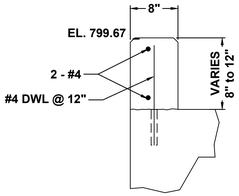
PLANT DRAIN PUMP STATION MECHANICAL DETAILS

DRAWING NUMBER

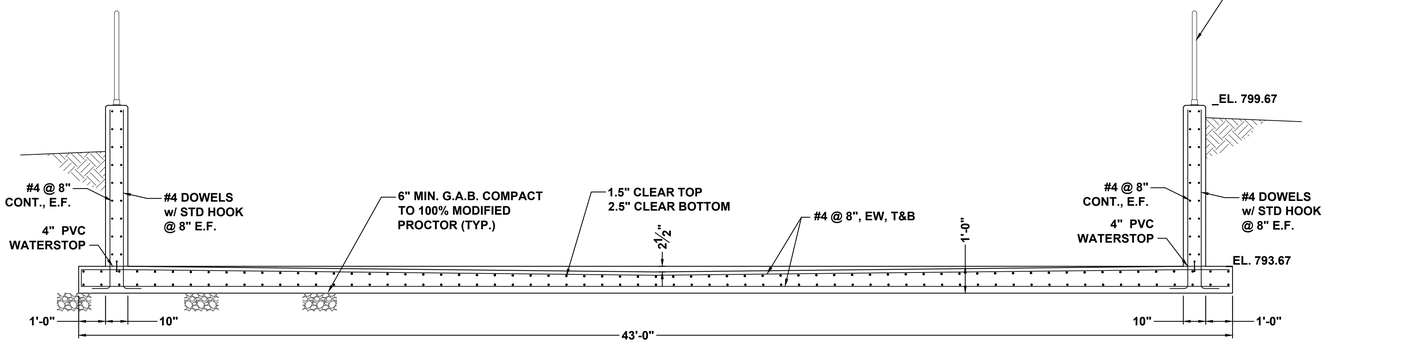
15-M-2
OF
214



A **SECTION**
Scale: 3/8"= 1'-0"



1 **TYP. CURB DETAIL**
Scale: 1"= 1'-0"



B **SECTION**
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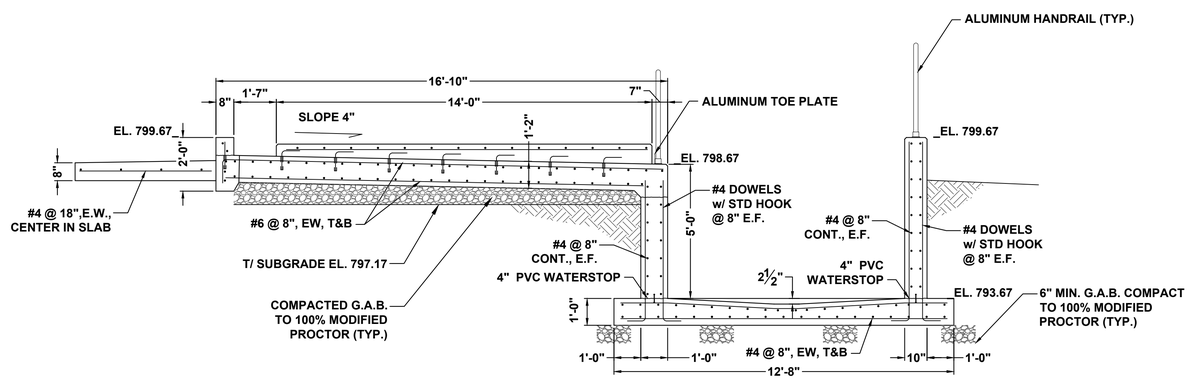

C **SECTION**
Scale: 3/8"= 1'-0"

NOTE:
CHEMICAL TANK ANCHORING DETAIL TO BE PROVIDED BY TANK MFR.
USE STAINLESS STEEL HARDWARE.
USE HILTI HIT500 V3 ADHESIVE ANCHORING SYSTEM OR ENGINEER APPROVED EQUAL.

DESIGN LOADS:

ALUM TANK WEIGHT (EMPTY) -	1,900 LBS
ALUM TANK WEIGHT (FULL) -	75,000 LBS
LIME TANK WEIGHT (EMPTY) -	10,050 LBS
LIME TANK WEIGHT (FULL) -	163,000 LBS
LIVE LOADS:	
SLAB LIVE LOAD -	300 PSF
SLAB-ON-GRADE	
ROOF LIVE LOAD -	20 PSF
SNOW LOADS:	
GROUND SNOW LOAD -	10 PSF (GROUND)
IMPORTANCE FACTOR (I_S) -	1.10
EXPOSURE FACTOR -	0.9
WIND LOADS:	
BASIC WIND SPEED -	120 MPH
EXPOSURE CATEGORY -	C
RISK CATEGORY -	III
IMPORTANCE FACTOR (I_W) -	1.15
SEISMIC:	
S_S -	0.209
S_1 -	0.095
S_{DS} -	0.233
S_{D1} -	0.152
SITE CLASS -	D
SEISMIC DESIGN CATEGORY -	C
IMPORTANCE FACTOR (I_E) -	1.25
RESPONSE MODIFICATION FACTOR (R) -	1.25
SEISMIC RESPONSE COEF. (C_S) -	0.236

CONSTRUCTION NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROPER ANCHORING OF ALUM AND LIME CHEMICAL STORAGE TANK TO THE SUPPORT FOOTING. ANCHORING DETAILS TO BE SUPPLIED BY THE CHEMICAL TANKS MANUFACTURER. USE ALL STAINLESS STEEL HARDWARES.
2. CONTRACTOR SHALL BRING AND POTENTIAL CONFLICT TO THE ENGINEER'S ATTENTION FOR CLARIFICATION PRIOR TO CONSTRUCTION
3. ANCHOR RODS/BOLTS
   a. ALL CHEMICAL TANKS ANCHOR RODS SHALL BE CAST-IN-PLACE HEADED ANCHOR RODS. USE OF POST-INSTALLED (EPOXY, ADHESIVE, EXPANSION, SCREW, ETC.) ANCHORS IS NOT ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER OF RECORDS (EOR) OR UNLESS SPECIFICALLY NOTED IN THE DRAWINGS
   b. CHEMICAL TANK ANCHOR RODS/BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F593B WITH ASTM F594B HEAVY HEX NUTS AND HARDENED WASHERS (UNLESS NOTED OTHERWISE OR EQUIVALENT OR APPROVED EQUAL)
   c. ANCHOR BOLT PLACEMENT AND ANCHOR BOLT, NUT, AND WASHER MATERIAL INFORMATION, INCLUDING MATERIAL CERTIFICATIONS, SHALL BE SUBMITTED TO THE EOR FOR REVIEW AND APPROVAL
   d. RECORD COPY OF DESIGN CALCULATIONS AND DETAILS SHOWING THE REQUIRED DIAMETER, LENGTH, EMBEDMENT, EDGE DISTANCE, CONFINEMENT, ANCHOR REINFORCEMENT, ANCHOR BOLT SLEEVES, CONNECTION REDESIGN, AND OTHER CONDITIONS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF GEORGIA. CALCULATIONS SHALL COMPLY WITH THE PROVISIONS OF ACI 318-14, CHAPTER 17 BASE ANCHOR CAPACITY DETERMINATION ON CRACKED CONCRETE CONDITION AND COMPRESSIVE STRENGTH OF NEW CONCRETE PER SECTION 03 30 00. ASSUME COMPRESSIVE STRENGTH OF CONCRETE IS 3,000 PSI UNLESS OTHERWISE NOTED.
6. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4" x 3/4"
7. SAW-CUT SLAB CONTROL JOINTS SHALL BE CARRIED OUT WITHIN 24 HOURS AFTER THE COMPLETION OF THE NEW CONCRETE.

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

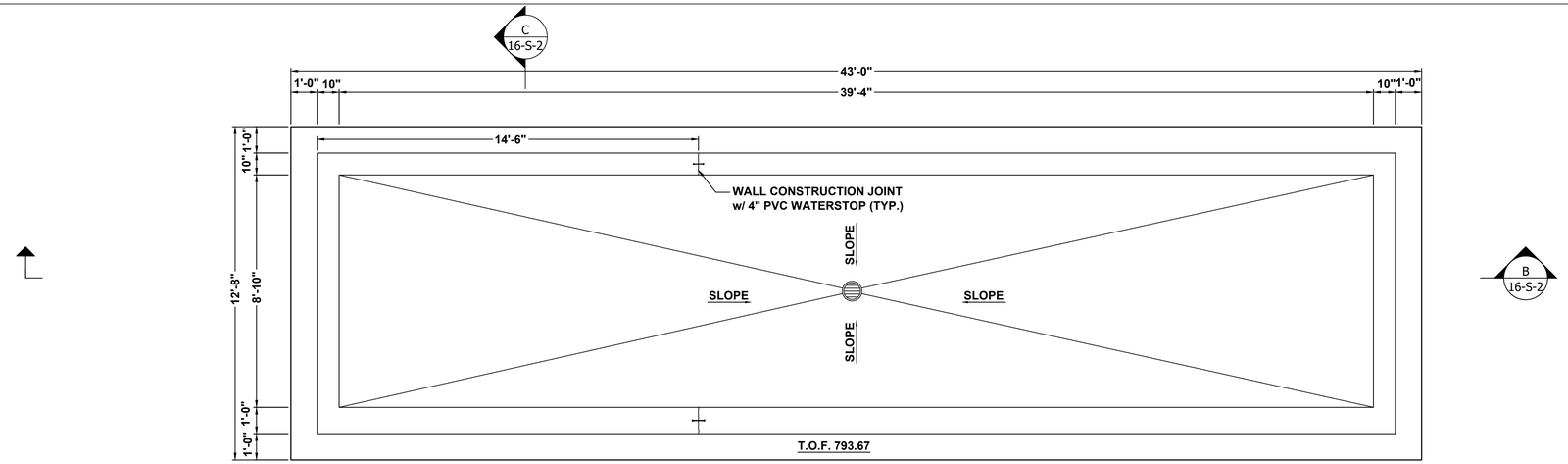
10/05/2021

SHEET TITLE

BULK CHEMICAL STORAGE STRUCTURAL PLANS

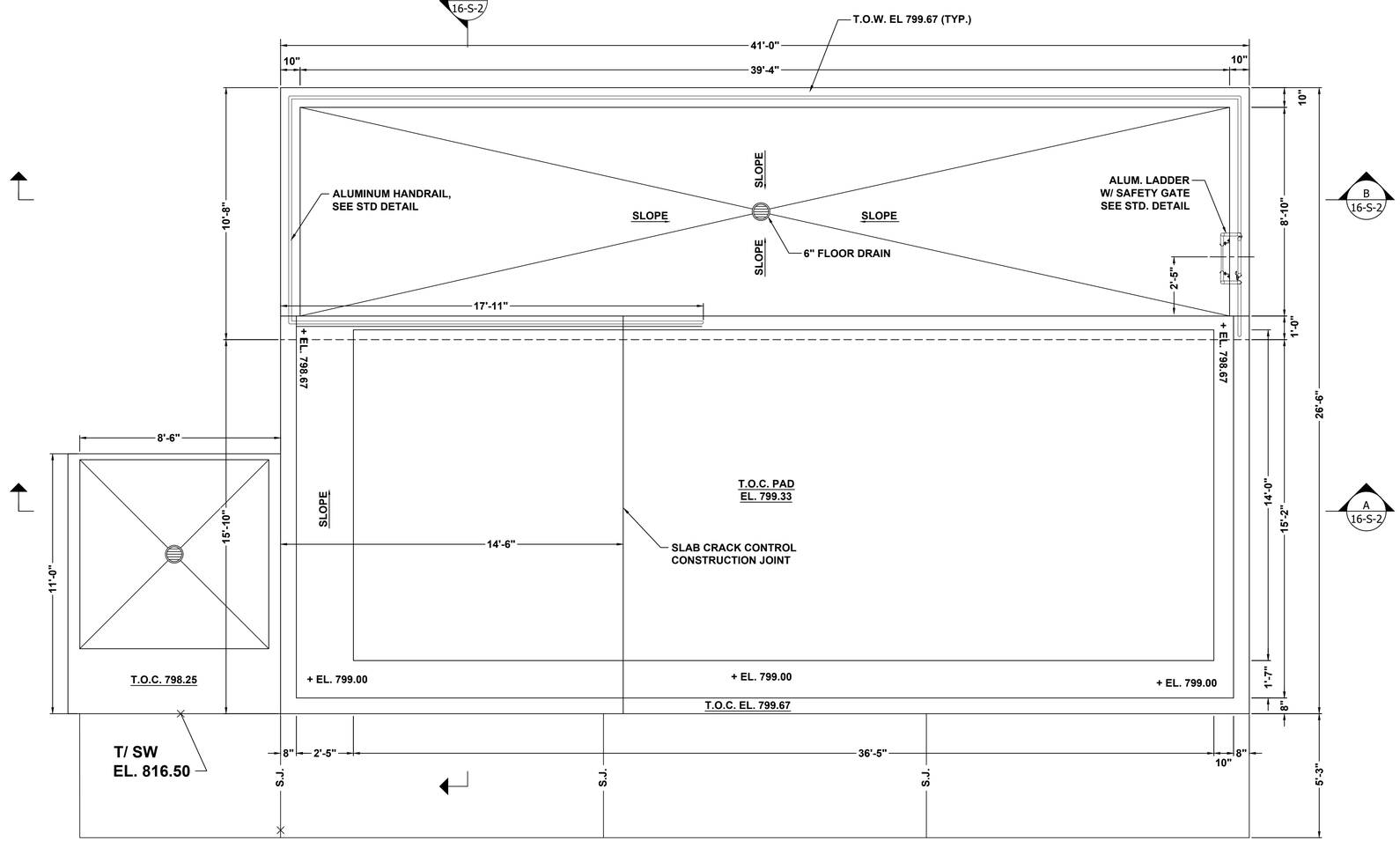
DRAWING NUMBER

16-S-1
OF
214



1 BULK CHEMICAL STORAGE STRUCTURAL FOUNDATION PLAN

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



1 BULK CHEMICAL STORAGE STRUCTURAL TOP PLAN

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

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Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

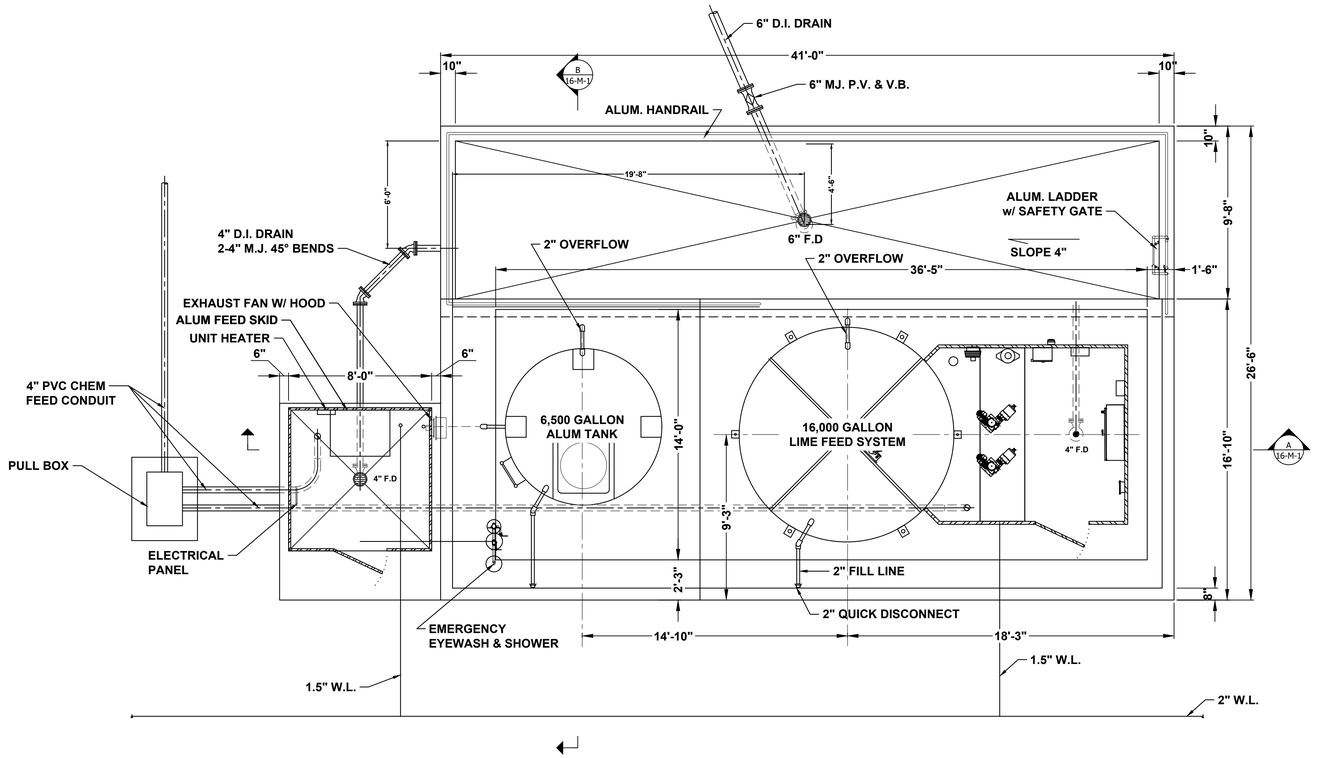
SHEET TITLE

BULK CHEMICAL STORAGE STRUCTURAL SECTIONS

DRAWING NUMBER

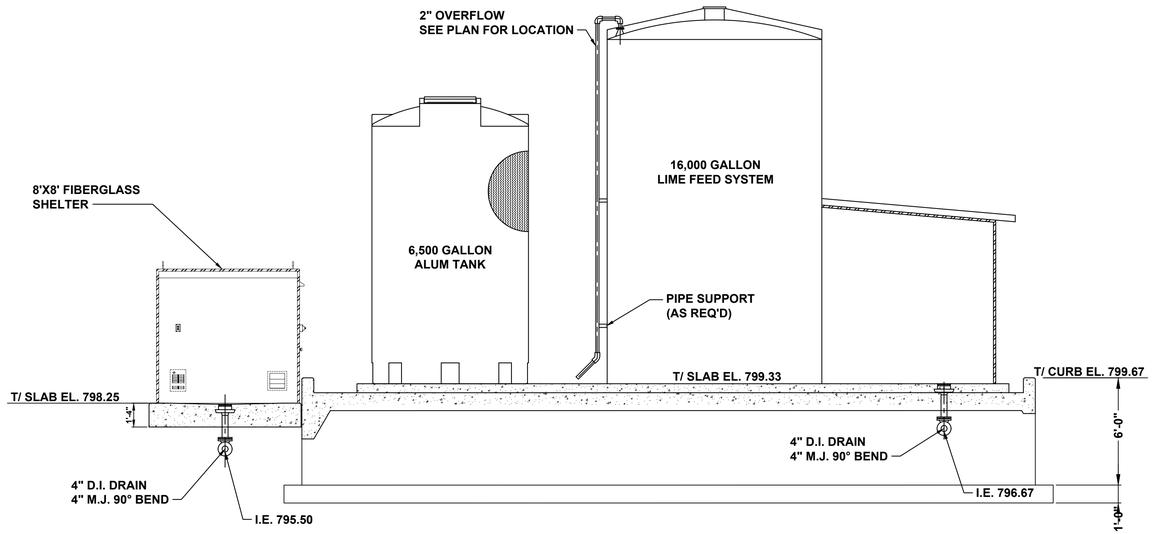
16-S-2
OF
214

21093 - JEFFERSON I-85 WATER RECLAMATION FACILITY - PETE - 5/20/2022 7:59 AM



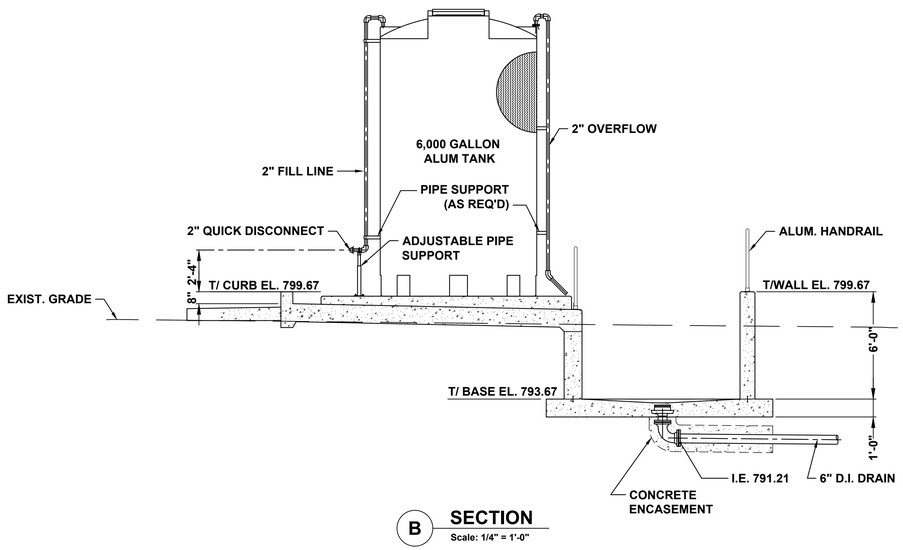
1 BULK CHEMICAL STORAGE

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



A SECTION

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



B SECTION

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

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PROJECT NAME

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SHEET TITLE

BULK CHEMICAL STORAGE MECHANICAL

DRAWING NUMBER

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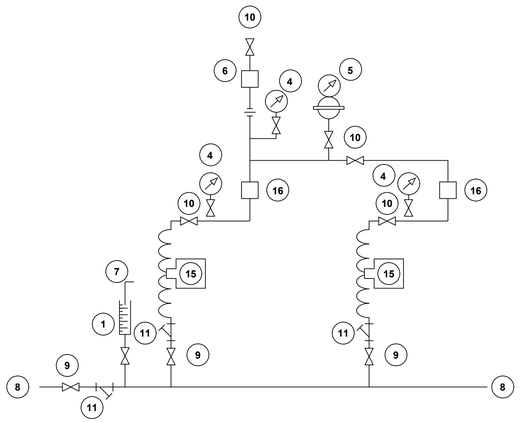
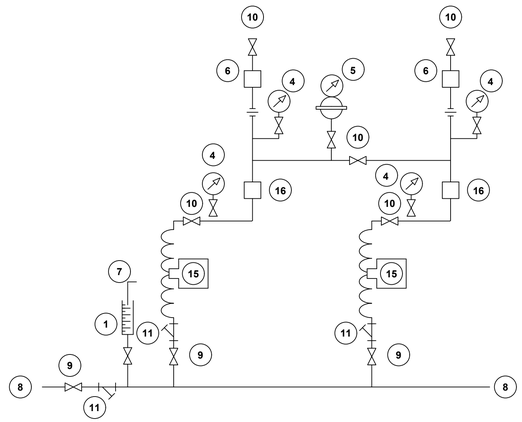


A **LIME FEED PIPING DIAGRAM**
Scale: N.T.S.

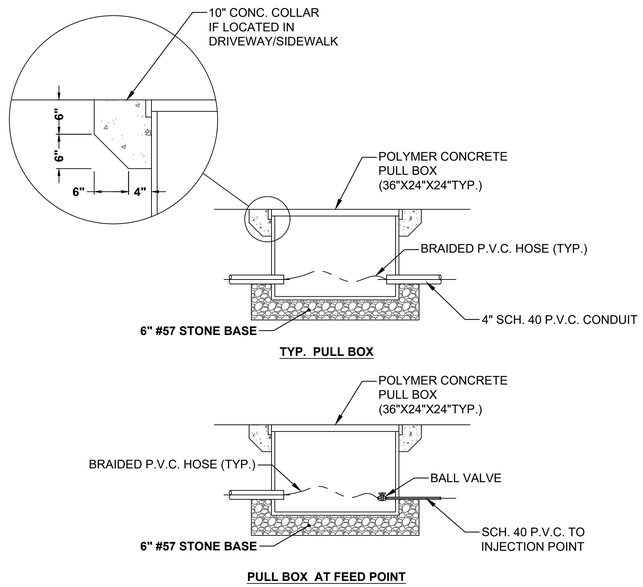


B **ALUM FEED PIPING DIAGRAM**
Scale: N.T.S.

CHEMICAL FEED LEGEND

1	CALIBRATION COLUMN
2	METERING PUMP
3	MULTIFUNCTION VALVE
4	2 1/2" PRESSURE GAUGE
5	PULSATION DAMPENER (*NOT REQUIRED FOR QDOS PUMPS)
6	1/2" BACK PRESSURE VALVE
7	1/2" TUBING VENT TO TANK
8	3/4" SCH. 80 PVC INFLUENT
9	3/4" BALL VALVE
10	1/2" BALL VALVE
11	3/4" WYE STRAINER
12	3/4" AUTOMATIC FLUSHING SOLENOID VALVE
13	3/4" BACK FLOW PREVENTER
14	3/4" PRESSURE REDUCING VALVE
15	PERISTALTIC PUMP
16	PRESSURE SWITCH
⊣|⊢	TRUE UNION
∿∿∿	DEPICTS FLEXHOSE

NOTE: PROVIDE 2-3/8" I.D. BRAIDED PVC HOSE FROM CHEMICAL FEED PUMP TO EACH CHEMICAL FEED LOCATION IN 4" PVC CONDUIT SHOWN ON PIPING PLAN.



A **CHEMICAL FEED PULL BOX DETAIL**
Scale: N.T.S.

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JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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CHEMICAL FEED DETAILS

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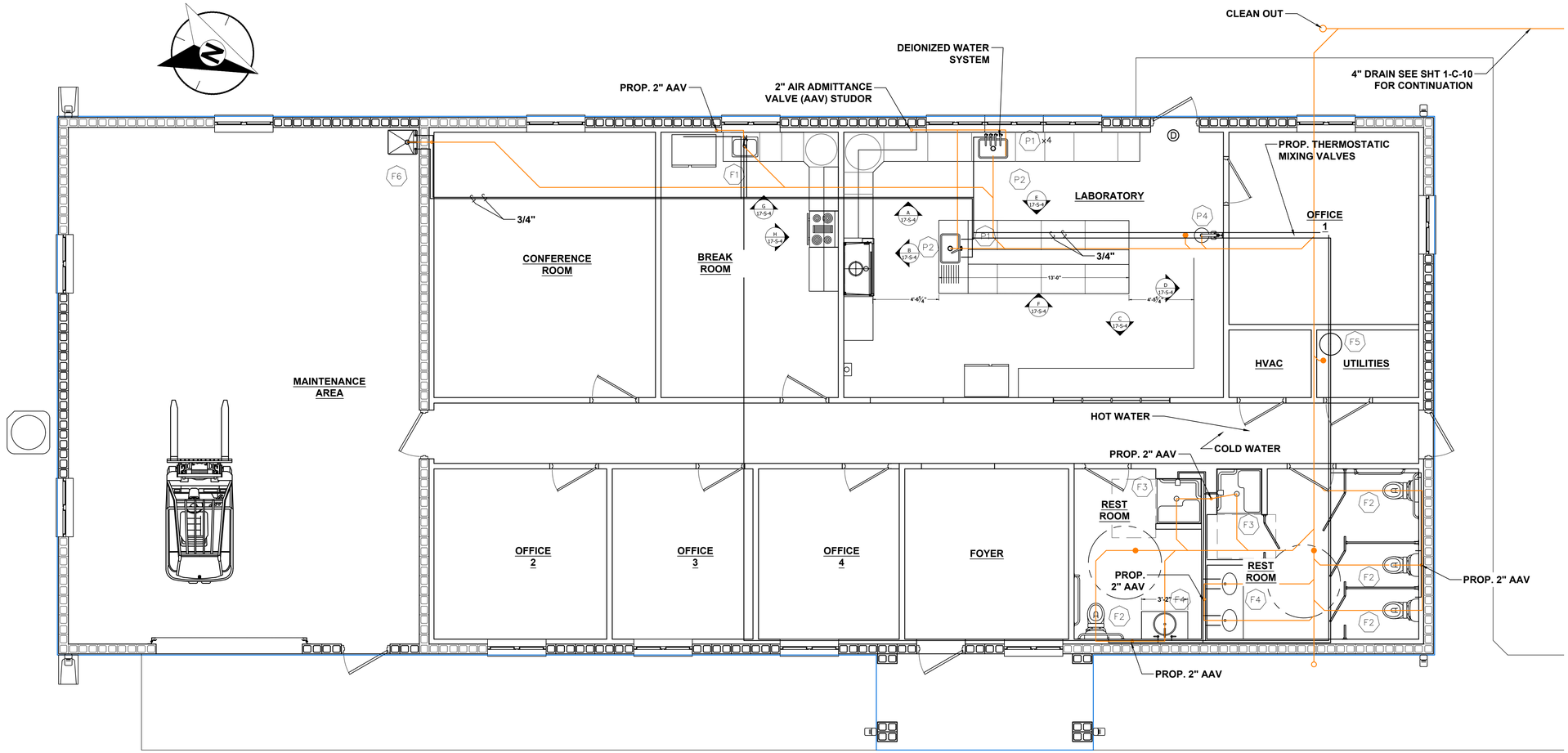

1 CONTROL BUILDING PLUMBING PLAN

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

PLUMBING NOTES

1. WORK SHALL BE INSTALLED IN A MANNER THAT WILL COMPLY WITH APPLICABLE CODES. THE CONTRACTOR SHALL COMPLY WITH THE CONTRACT DOCUMENTS WHERE THEY EXCEED CODE REQUIREMENTS. FOR CONSTRUCTION CODES REFER TO https://www.dca.ga.gov/local-government-assistance/construction-codes-industrialized-buildings/construction-codes

2. INSTALL ALL PLUMBING SYSTEMS ACCORDING TO THE MANUFACTURERS WRITTEN INSTRUCTIONS AND REQUIREMENTS.

3. CONTRACTOR SHALL INCLUDE ALL MATERIALS AND LABOR REQUIRED TO INSTALL THE PLUMBING SYSTEM TO A POINT OF 5'-0" OUTSIDE THE BUILDING WALL UNLESS OTHERWISE NOTED BY THE ARCH. OR CIVIL ENGINEERS.

4. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY ON SITE CONFLICTS BETWEEN THE PLUMBING, FIRE PROTECTION AND ANY OTHER TRADES.

5. SANITARY AND STORM DRAINAGE PIPING SHALL HAVE A MINIMUM SLOPE AS FOLLOWS UNLESS NOTED ON THE DRAWINGS. SLOPES NOT TO EXCEED MAXIMUM ALLOWED BY CODE.

A. 2-1/2" SANITARY AND SMALLER 1/4" PER FOOT.
B. 3" SANITARY AND LARGER 1/8" PER FOOT.
C. ALL STORM PIPING 1/8" PER FOOT.

6. MATERIALS SHALL BE NEW AND AS FOLLOWS.
A. SANITARY WASTE & VENT PIPING: STANDARD WEIGHT DWV PVC.
B. WATER PIPING: BELOW GRADE: TYPE L SOFT COPPER TUBING, ABOVE GRADE: TYPE L HARD COPPER TUBING OR OTHER CODE APPROVED MATERIAL. NOTE: NO JOINTS SHALL BE INSTALLED IN PRESSURE PIPING LOCATED BELOW SLAB ON GRADE.

7. ALL HOSE BIBBS AND WALL HYDRANTS SHALL BE EQUIPPED WITH AN APPROVED BACK FLOW PREVENTER.

8. PROVIDE SUBMITTAL INFORMATION ON ALL EQUIPMENT, FIXTURES, SYSTEMS, AND MATERIALS NOTED WITH-IN THE DOCUMENTS, SHOWING SUFFICIENT DATA: (SIZES, CAPACITIES, MATERIALS, LISTING, ETC.) TO INDICATE COMPLIANCE WITH THE DOCUMENTS AND LOCAL CODES.

9. WHERE THE FLOOD RIMS OF PLUMBING FIXTURES ARE BELOW THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER, SUCH FIXTURES SHALL BE PROTECTED BY A BACKWATER VALVE INSTALLED IN THE BUILDING DRAIN, BRANCH OF THE BUILDING DRAIN OR HORIZONTAL BRANCH SERVING SUCH FIXTURES. PLUMBING FIXTURES HAVING FLOOD LEVEL RIMS ABOVE THE ELEVATION OF THE MANHOLE COVER OF THE NEXT UPSTREAM MANHOLE IN THE PUBLIC SEWER SHALL NOT DISCHARGE THROUGH A BACKWATER VALVE.

10. PROVIDE A STOP VALVE AT EACH PLUMBING FIXTURE.

11. LOCATE ALL WATER PIPING ON THE HEATED SIDE OF BUILDING EXTERIOR INSULATION.

12. TEST NEW SANITARY WASTE AND VENT PIPING AT A HYDROSTATIC PRESSURE OF 10FT OF WATER.

13. DISINFECT POTABLE WATER SYSTEM AS REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION.

14. CONTRACTOR TO PROVIDE ALL TUBING, AND CONNECTIONS FOR DIEONIZIED WATER SYSTEM AND FAUCET AS REQUIRED.

15. CONTRACTOR TO PROVIDE WATER SUPPLY AND DRAIN FOR DISH WASHER IN LABORATORY.

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURE PRODUCT N0.
F1	SINGLE BOWL SINK: 20 GAUGE STAINLESS STEEL, SET-IN TOP MOUNT 15"x15", P-TRAP, STOP VALVE, SUPPLEIS	AMERICAN STANDARD: 22SB.6151511S.075
	KITCHEN FAUCET W/ GOOSENECK SWIVEL SPOUT	AMERICAN STANDARD: 7074.400.075
F2	WATER CLOSET: WHITE, ELONGATED, FLOOR MOUNTED W/ FLUSH VALVE INLET STUD (16.5" RIM HEIGHT) (FIXTURE TO MEET ADA GUIDELINES) SEAT & COVER, STOP VALVE, SUPPLY, WAX RING	AMERICAN STANDARD: 2467016.020
F3	36"x36" ACRYLIC SHOWER STALL W/ FIBERGLASS REINFORCEMENT. RECTANGULAR BASE.	AMERICAN STANDARD: 4834Y1.SW W/ 4834Y1.ST BASE
	CRAWFORD SHOWER TRIM KIT WITH PRESSURE BALANCE VALVE CARTRIDGE, 1.8 GPM	CRAWFORD: TU612507.002
F4	LAVATORY - SINGLE BOWL SELF-RIMMING SINK 19"Ø x8"DEEP (FAUCET HOLES ON 4" CENTERS), P-TRAP, STOP VALVES AND SUPPLIES	AMERICAN STANDARD: 0427.444EC
	CENTERSET DOUBLE HANDLE BATHROOM FAUCET WITH POP-UP HOLE, PLUG BUTTON, AND ROD	AMERICAN STANDARD: 7075.205.295
F5	WATER HEATER W/ TWO (2) 4,500 WATT 208V SINGLE PHASE ELEMENTS 40 GALLON STORAGE, EXPANSION TANK (EP), T&P RELIEF VALVE (T&P), VACUUM RELIEF VALVE (VRV)	A.O. SMITH: DEN-40
F6	SHOP SINK	

LAB FIXTURE SCHEDULE

MARK	DESCRIPTION	MANUFACTURE PRODUCT N0.
P1	SWING GOOSENECK, DECK MOUNTED FAUCET W/ AERATOR (FOR HOT AND COLD WATER)	KEWAUNEE SCIENTIFIC: SG0340-DVA
P2	25"X15"X10"DEEP EPOXY RESIN SINGLE COMPARTMENT UNDER COUNTER SINK	KEWAUNEE SCIENTIFIC: 1005-00
P3	RIGID GOOSENECK, DECK MOUNTED SINGLE VALVE FAUCET, (FOR WATER SAMPLES)	KEWAUNEE SCIENTIFIC: W0337-0V
P4	COMBINATION SAFETY SHOWER AND EYE WASH W/ SAFETY PROTECTION BLEED VALVE HAWS MODEL SP157A.	HAWS CORPORATION: 8309PCP

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

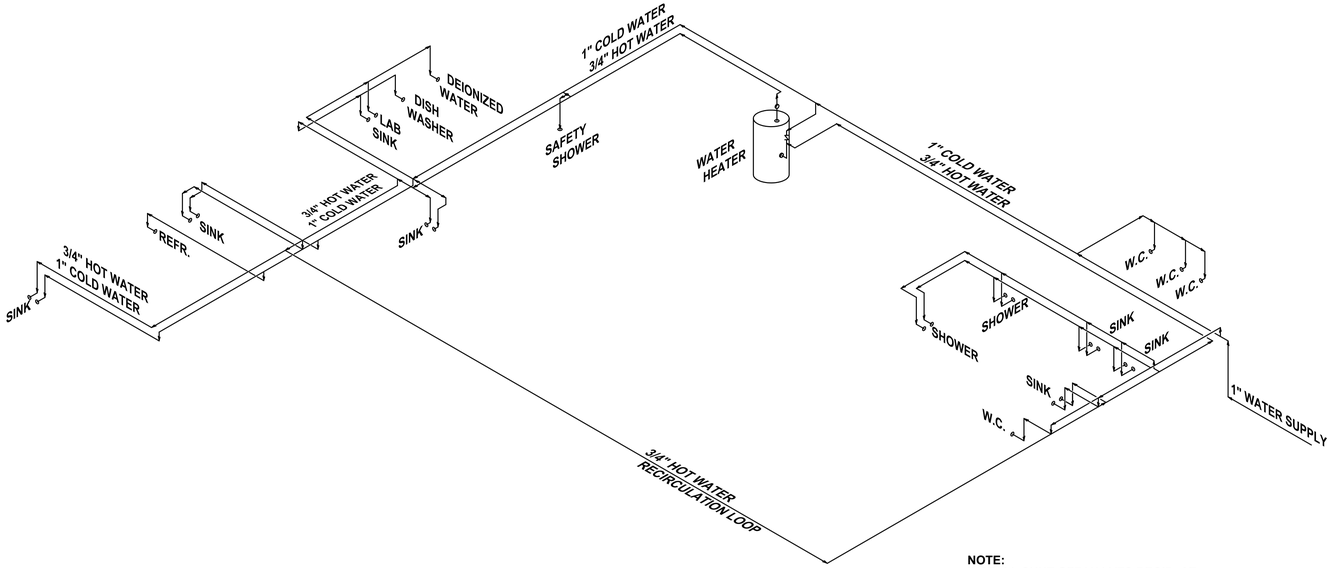
10/05/2021

SHEET TITLE

CONTROL BUILDING PLUMBING PLAN

DRAWING NUMBER

17-P-1
OF
214

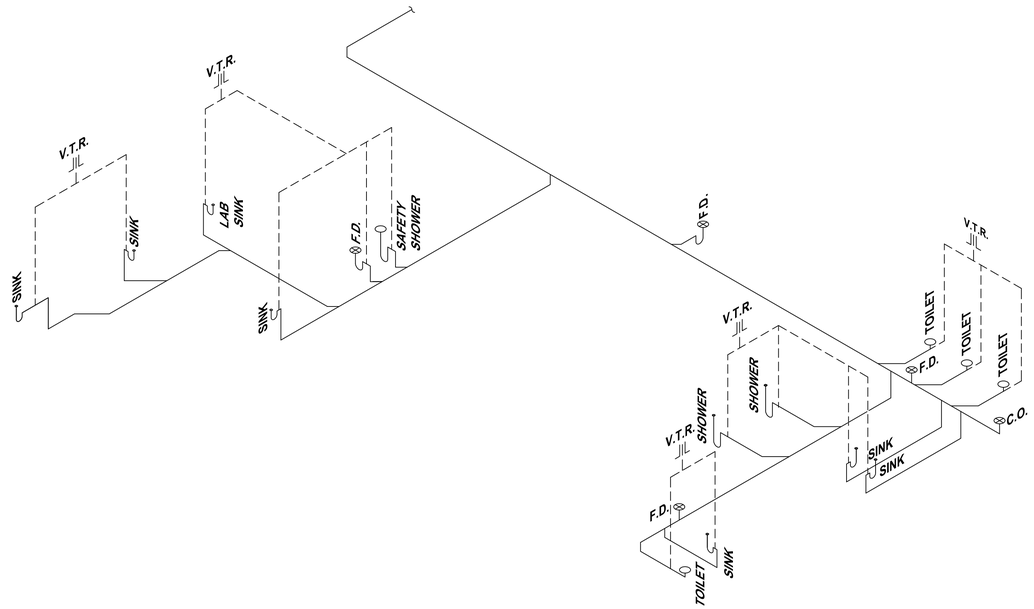


WATER SUPPLY RISER DIAGRAM
N.T.S.

NOTE:
INSTALL SHUT OFF VALVES REQ'D. AT EACH WATER CLOSET AND URINAL

PLUMBING FIXTURE CONNECTION SCHEDULE

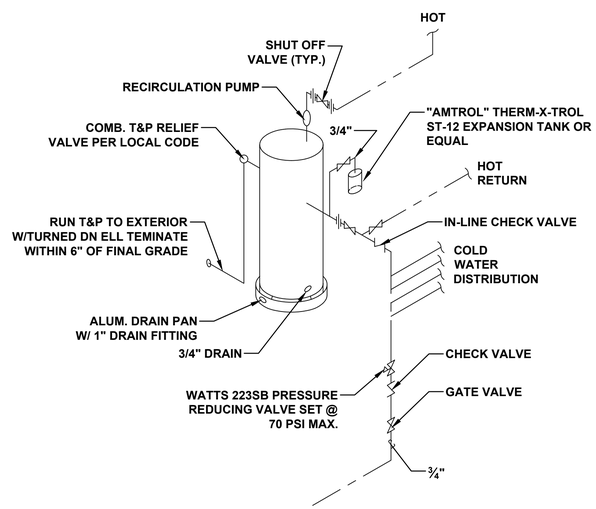
MARK	DESCRIPTION	MINIMUM SIZE UTILITY TO FIXTURE		
		WASTE CONNECTION	HOT WATER SUPPLY	COLD WATER SUPPLY
F1	SINK	1 1/4"	1/2"	1/2"
F2	WATER CLOSET	3"	---	1/2"
F3	SHOWER	2"	1/2"	1/2"
F4	LAVATORY	1 1/4"	3/8"	3/8"
F6	SHOP SINK	1 1/4"	1/2"	1/2"
P2	LAB SINK	1 1/4"	1/2"	1/2"



NOTES:

1. FLOOR DRAINS SHALL BE EQUIPPED WITH TRAP GUARDS BY PROSET SYSTEMS (OR EQUAL).

WASTE PIPING RISER DIAGRAM
N.T.S.



A **TYPICAL ELECTRIC WATER HEATER DETAIL**
Scale: N.T.S.

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

CONTROL BUILDING PLUMBING RISER DIAGRAMS & DETAILS

DRAWING NUMBER

17-P-2
OF
214

DESIGN LOADS:

LIVE LOAD:	300 PSF SLABS-ON-GRADE	
LIVE LOAD:	100 PSF ACCESS PLATFORM	
ROOF LIVE LOAD:	20 PSF	
WIND LOAD:	ULTIMATE WIND SPEED	= 120 MPH
	EXPOSURE CATEGORY	= C
	RISK CATEGORY	= III
	ENCLOSURE CLASSIFICATION	= ENCLOSED
	I wind	= 1.15
	DESIGN WIND PRESSURE (MWFRS)	= 40 PSF
	DESIGN WIND PRESSURE (C&C)	= 45 PSF
SNOW LOAD:	5 PSF	

SEISMIC DESIGN PARAMETER:

RESPONSE MODIFICATION, R	= 3
SEISMIC DESIGN CATEGORY	= C
SITE CLASS	= D
RISK CATEGORY	= III
SDS	= 0.223
SD1	= 0.152
I seismic	= 1.25

NOTES:

CONSTRUCTION TYPE:

1. FOUNDATION = MOMENT RESISTING CONC. FOUNDATION.
2. BUILDING = PROTECTED COMBUSTIBLE ORDINARY CONSTRUCTION w/ BLOCK AND GYPSUM BOARD WALLS (TYPE III-A)
3. ROOF = 1 HOUR FIRE RATED GYPSUM BOARD CEILING

NFFA 101/ 5000 OCCUPANCY TYPE =	BUSINESS
IBC 2018 GROUP =	BUSINESS GROUP B

OCCUPANT LOAD:

OFFICE AREA =	31 PEOPLE
MAINTENANCE AREA =	9 PEOPLE

BUILDING HEIGHT AND AREA

AREA =	3469 SF (36'-10" W x 94'-2" L)
BUILDING HT. (OFFICE AREA) =	10'-0" EAVE (4:12 SLOPE)
BUILDING HT. (MAINTENANCE AREA) =	12'-6" EAVE (4:12 SLOPE)
ALLOWABLE AREA AS PER IBC 2018 =	65-FT
ALLOWABLE NUMBER OF STORIES AS PER IBC 2018 =	3
ALLOWABLE HEIGHT AND AREA AS PER IBC 2018 =	19,000 SF

FIRE RATING:

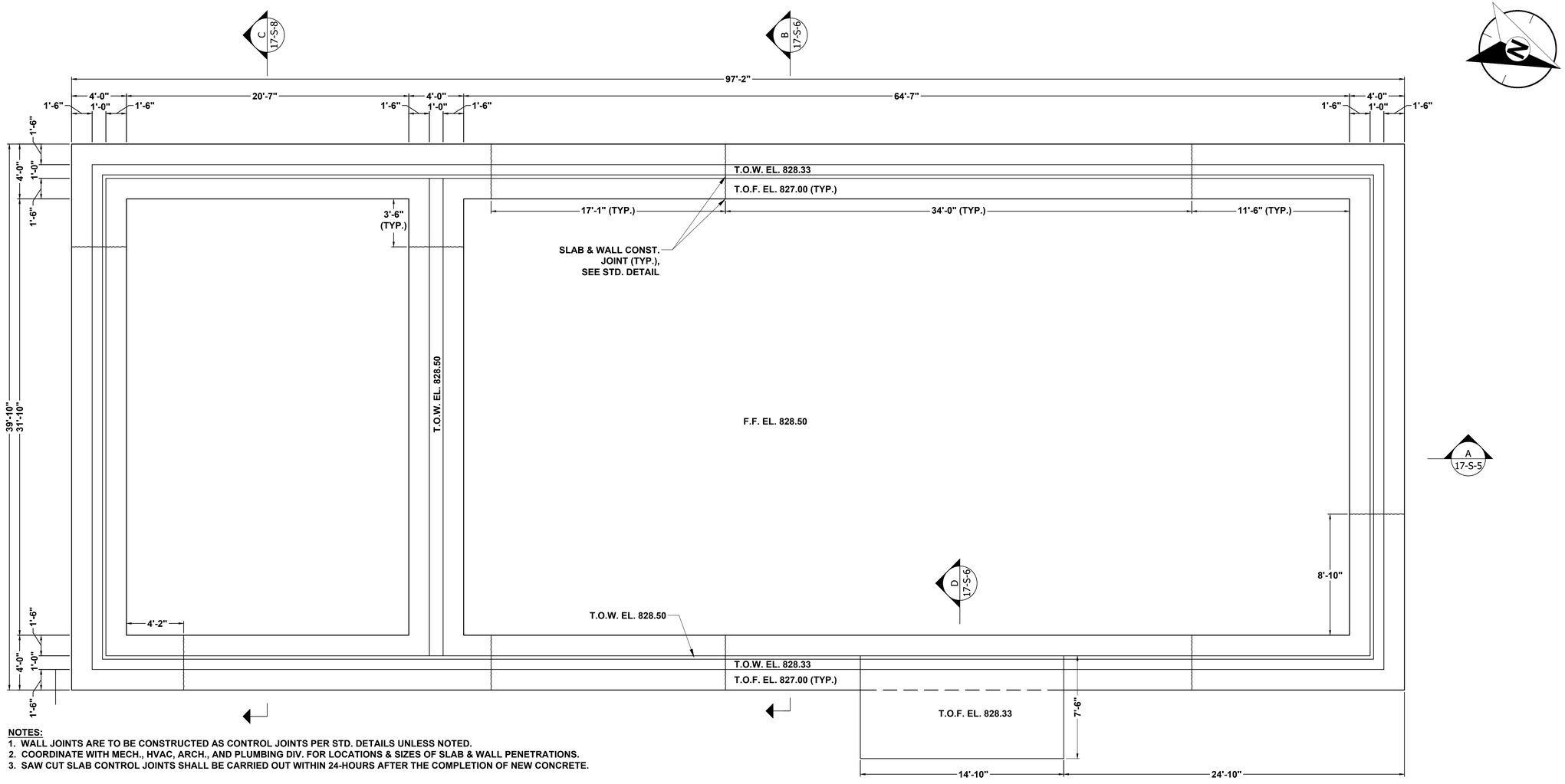
1. III-A BUILDING =	2 HOUR EXTERIOR WALLS
	1 HOUR STRUCTURAL FRAME
	1 HOUR FLOOR/CEILING/ROOF PROTECTION
2. CMU WALLS =	2 HOURS
3. METAL DOORS AND FRAME =	1-1/2 HOURS

APPLICABLE DESIGN CODES:

1. 2018 INTERNATIONAL BUILDING CODE WITH 2020 GEORGIA AMENDMENTS.
2. 2018 INTERNATIONAL PLUMBING CODE WITH 2020 GEORGIA AMENDMENTS.
3. 2017 NATIONAL ELECTRICAL CODE
4. 2018 INTERNATIONAL MECHANICAL CODE / 2014 & 2015 GEORGIA AMENDMENTS.
5. INTERNATIONAL FUEL GAS CODE / 2014 & 2015 GEORGIA AMENDMENTS.
6. CHEROKEE COUNTY DEVELOPMENTAL REGULATIONS
7. 2018 INTERNATIONAL FIRE CODE WITH CURRENT GEORGIA AMENDMENTS.
8. 2018 NFPA 101 LIFE SAFETY CODE WITH CURRENT GEORGIA AMENDMENTS.
9. 2020 GEORGIA AMENDMENTS 120-3-3, STATE MINIMUM FIRE SAFETY STANDARDS.

SCHEDULE OF SPECIAL INSPECTIONS PER IBC 2018 SECTION 1705:

1. SOIL COMPACTION = REQUIRED
2. CONCRETE PLACEMENT = REQUIRED
3. CMU BOND BEAMS AND GROUTING = REQUIRED
4. STRUCTURAL STEEL = REQUIRED
5. CONCRETE REINFORCING STEEL PLACEMENT = REQUIRED
6. ANCHOR RODS/BOLTS = REQUIRED
7. WELDING = REQUIRED IF ANY IS USED



NOTES:

1. WALL JOINTS ARE TO BE CONSTRUCTED AS CONTROL JOINTS PER STD. DETAILS UNLESS NOTED.
2. COORDINATE WITH MECH., HVAC, ARCH., AND PLUMBING DIV. FOR LOCATIONS & SIZES OF SLAB & WALL PENETRATIONS.
3. SAW CUT SLAB CONTROL JOINTS SHALL BE CARRIED OUT WITHIN 24-HOURS AFTER THE COMPLETION OF NEW CONCRETE.

1 FOUNDATION PLAN

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

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

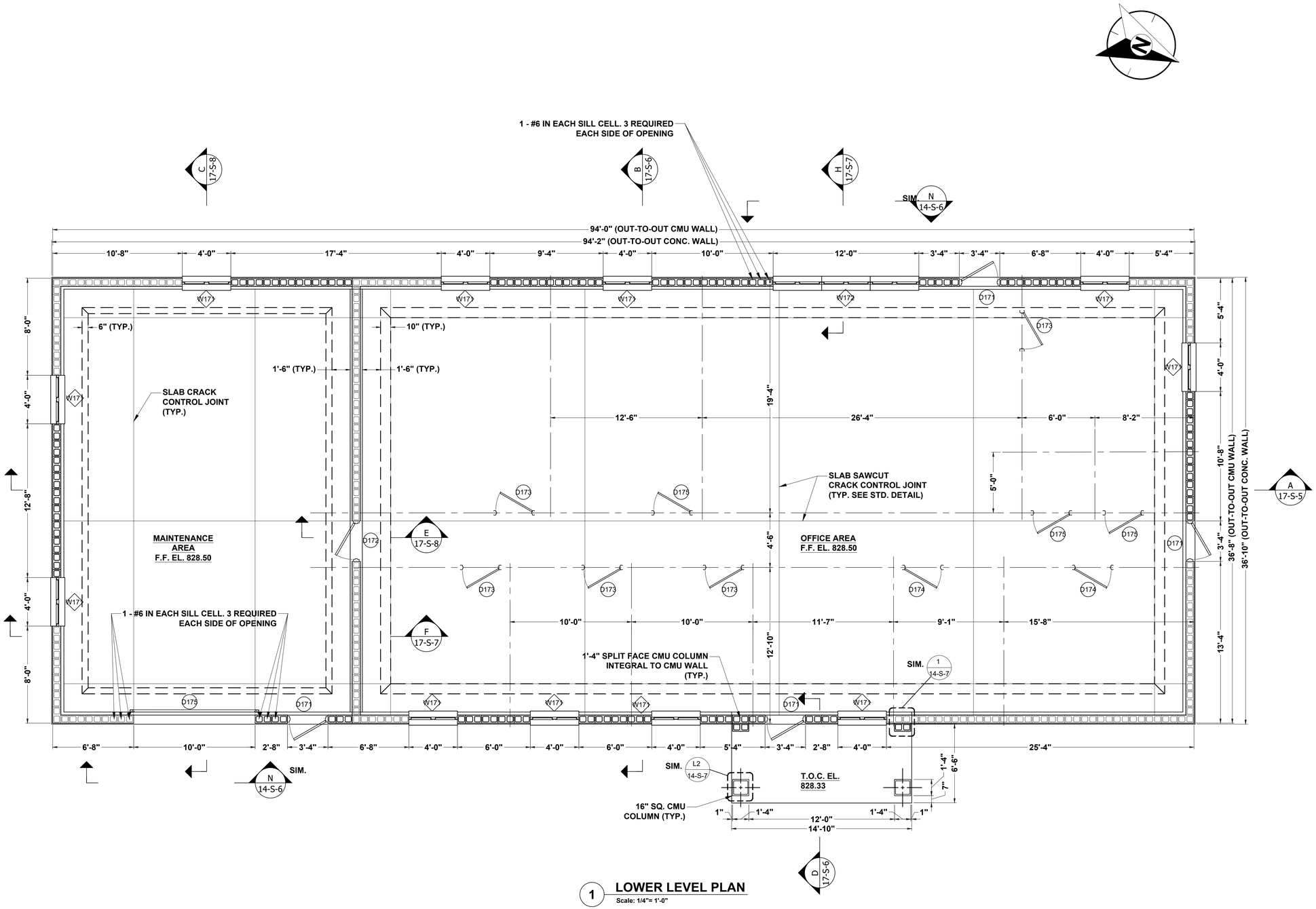
10/05/2021

SHEET TITLE

CONTROL BUILDING STRUCTURAL FOUNDATION PLAN

DRAWING NUMBER

17-S-1
OF
214



1 LOWER LEVEL PLAN

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

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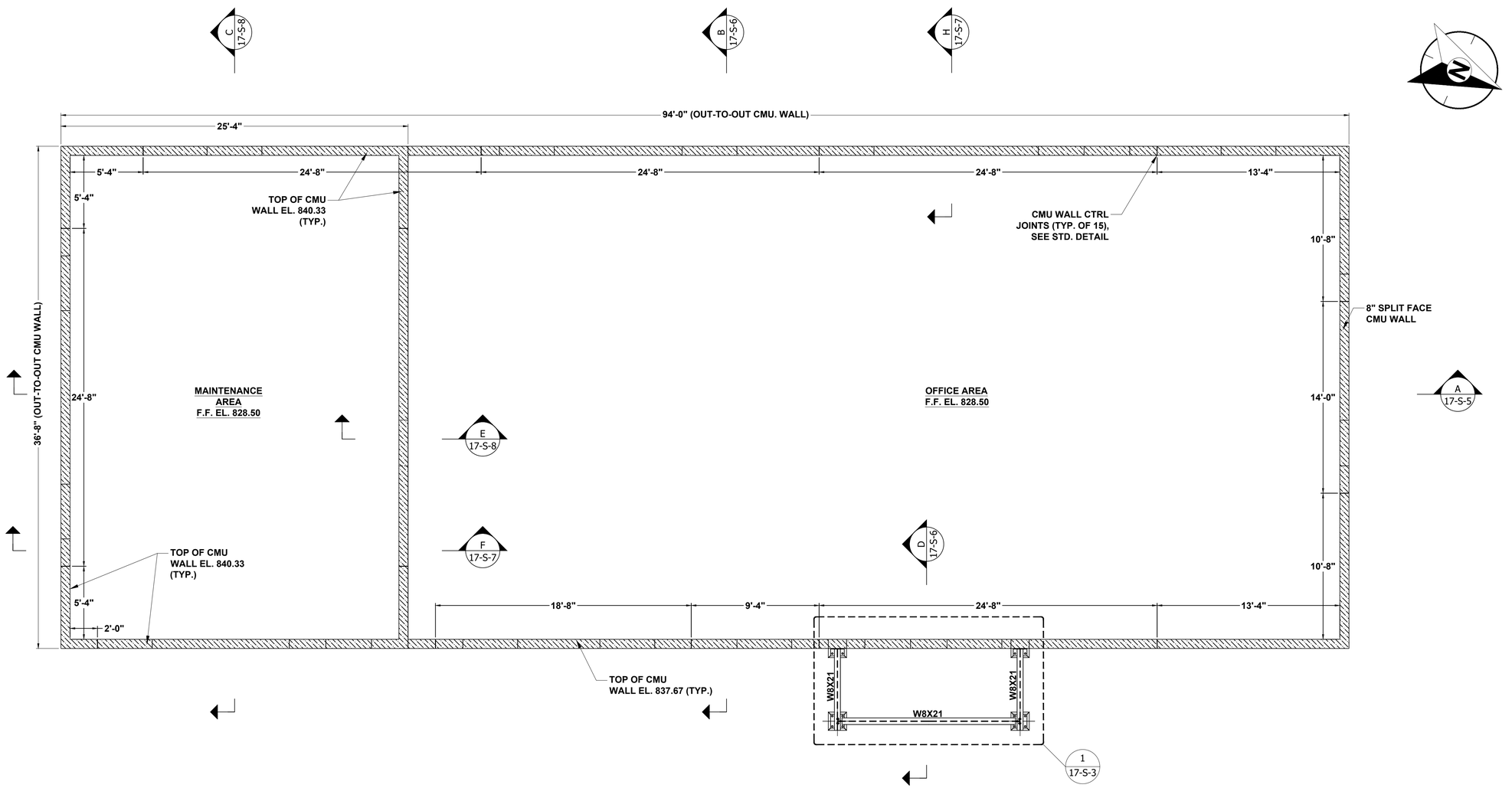
10/05/2021

SHEET TITLE

CONTROL BUILDING STRUCTURAL LOWER LEVEL PLAN

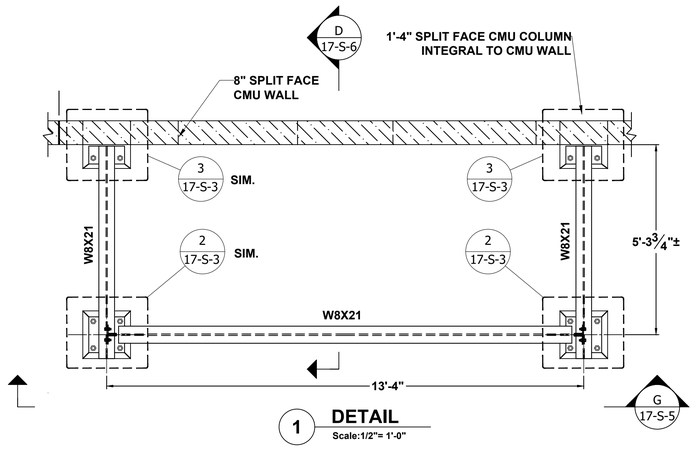
DRAWING NUMBER

17-S-2
OF
214

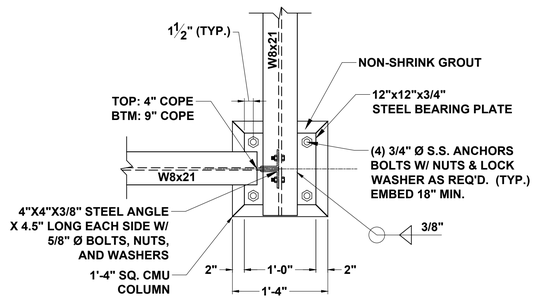


3 **UPPER LEVEL PLAN**
Scale: 1/4"= 1'-0"

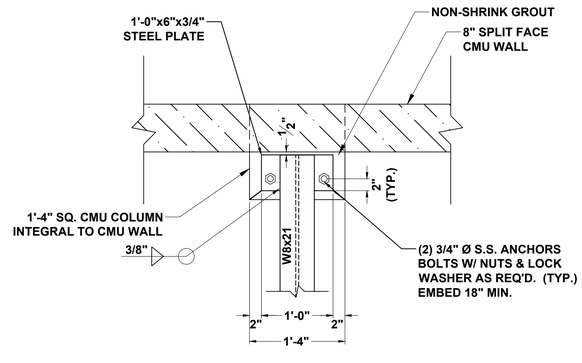
NOTE: SEE DETAIL 16 ON SHEET 14-S-9 FOR TYPICAL CMU WALL SECTION



1 **DETAIL**
Scale:1/2"= 1'-0"



2 **DETAIL**
Scale: 1"= 1'-0"



3 **DETAIL**
Scale: 1"= 1'-0"

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Drawn By : JWN

Checked By : CKB

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

CONTROL BUILDING STRUCTURAL UPPER LEVEL PLAN

DRAWING NUMBER

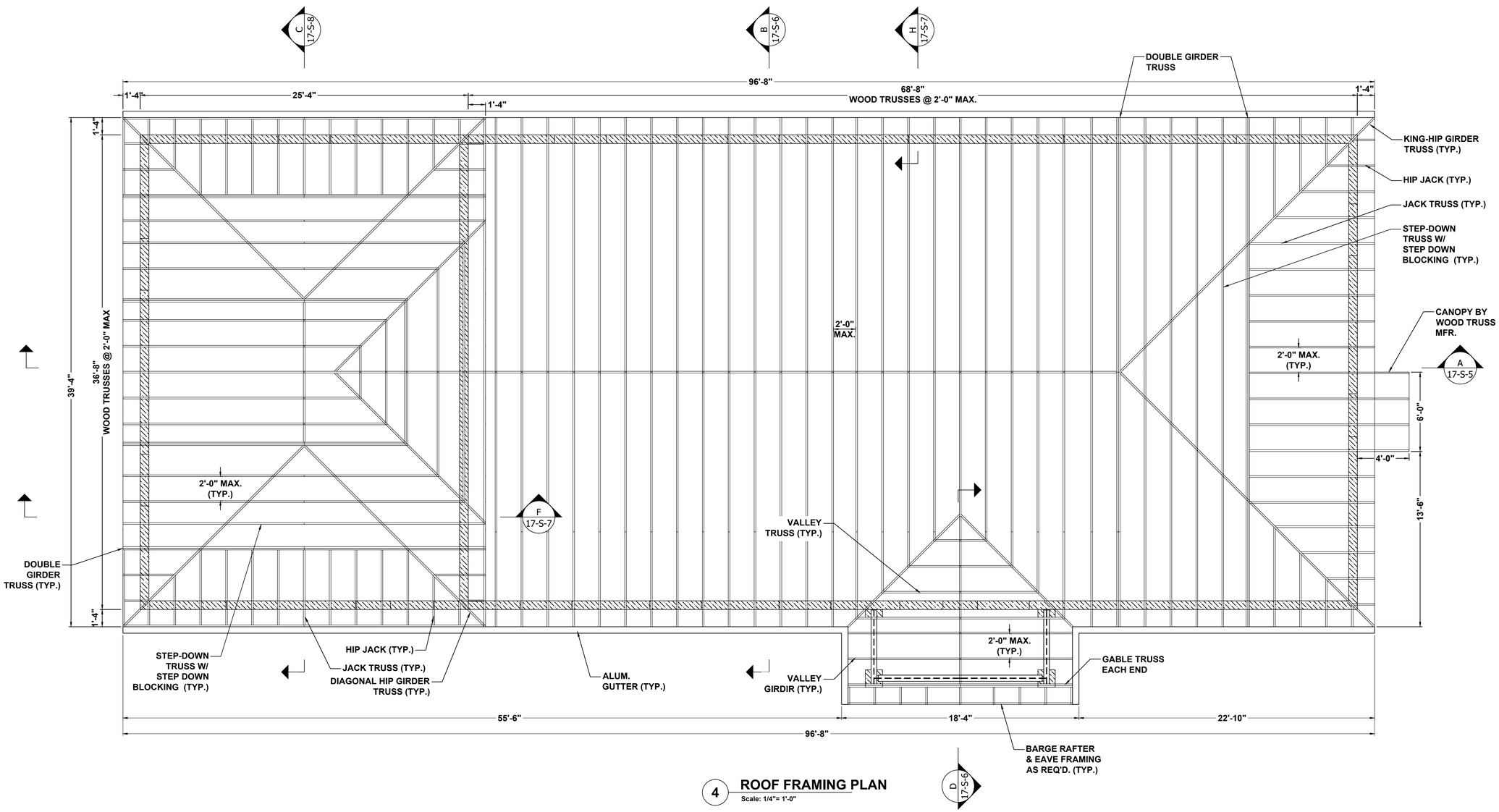
17-S-3
OF
214

PREFABRICATED WOOD TRUSS NOTES

DESIGN LOADS: **ROOF**

TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF + TRUSS SELFWEIGHT
BOTTOM CHORD LIVE LOAD	10 PSF (HVAC PLATFORM = 20 PSF)
BOTTOM CHORD DEAD LOAD	10 PSF
TOP CHORD WIND UPLIFT LOAD	SEE WIND LOAD DATA

1. TRUSSES SHALL BE SPACED AS SHOWN ON PLANS.
2. SEE PLAN FOR TRUSS LOCATIONS AND SPANS. ACTUALL TRUSS SPACING SHALL BE USED TO DETERMINE UNIFORM LOADS PER FOOT.
3. TRUSSES SHALL BE DESIGNED AND FABRICATED BY THE TRUSS MANUFACTURER.
4. DESIGN SHALL CARRY THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF GEORGIA.
5. CONFIGURATION AND SIZE OF WEB MEMBERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.
6. SHOP DRAWINGS AND CALCULATIONS FOR TRUSSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
7. MAXIMUM LIVE LOAD DEFLECTION FOR ROOF TRUSSES = L/240.
8. PERMANENT BRACING OF ROOF TRUSSES, AS REQUIRED BY STRUCTURAL DESIGN OF THE TRUSSES, AND PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADINGS, SHALL BE INDICATED AND FULLY DETAILED ON SHOP DRAWINGS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSS DURING ERECTION, IN ACCORDANCE WITH TRUSS PLATE INSTITUTES "HANDLING, INSTALLING AND BRACING METAL PATE CONNECTED WOOD TRUSSES, HIB-91."
10. TRUSS DESIGN SHALL ACCOUNT FOR LOAD IMPOSED UPON TRUSSES BY WEIGHT OF MECHANICAL UNITS, AS SHOWN ON MECHANICAL DRAWINGS.
11. ALL PRE-ENGINEERED TRUSS SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE, DURING THE TIMES OF INSPECTION SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
12. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC.) REQUIRED FOR CONNECTIONS BETWEEN PRE-ENGINEERED TRUSSES SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS DESIGN ENGINEER.



4 ROOF FRAMING PLAN
Scale: 1/4"= 1'-0"

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Drawn By : JWN

Checked By : CKB

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SHEET TITLE

CONTROL BUILDING STRUCTURAL ROOF FRAMING PLAN

DRAWING NUMBER

17-S-4
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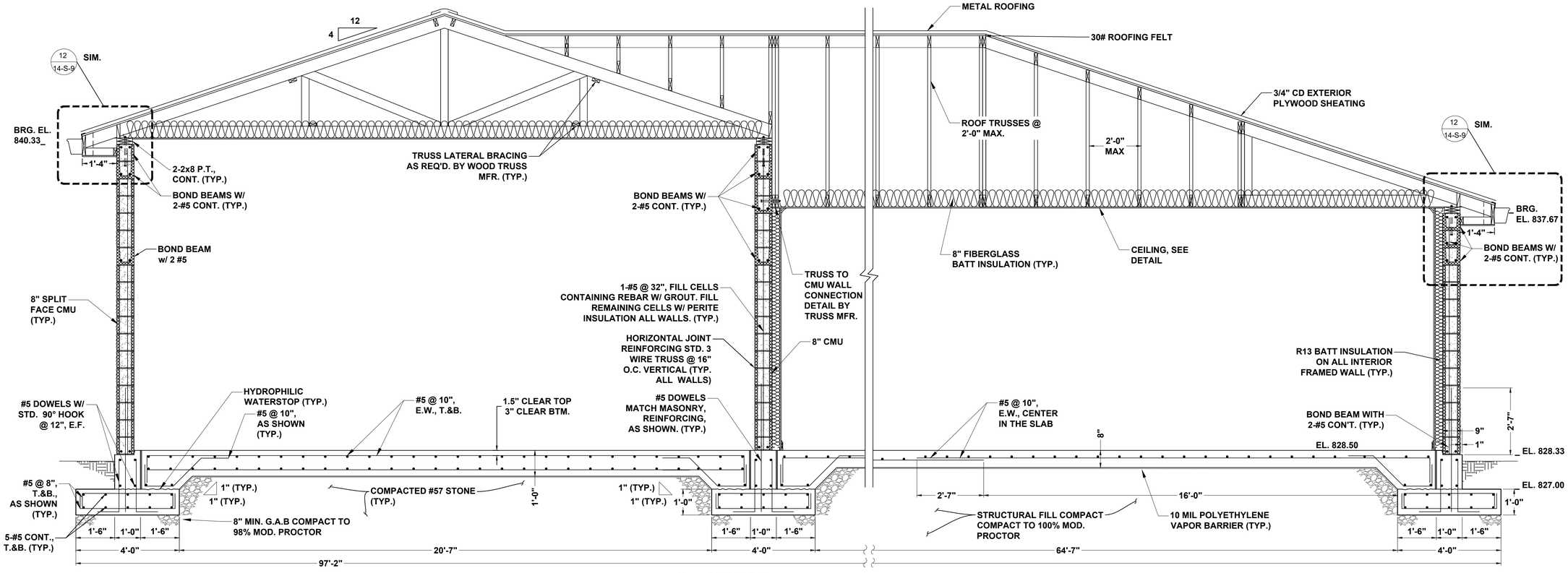

A **SECTION**
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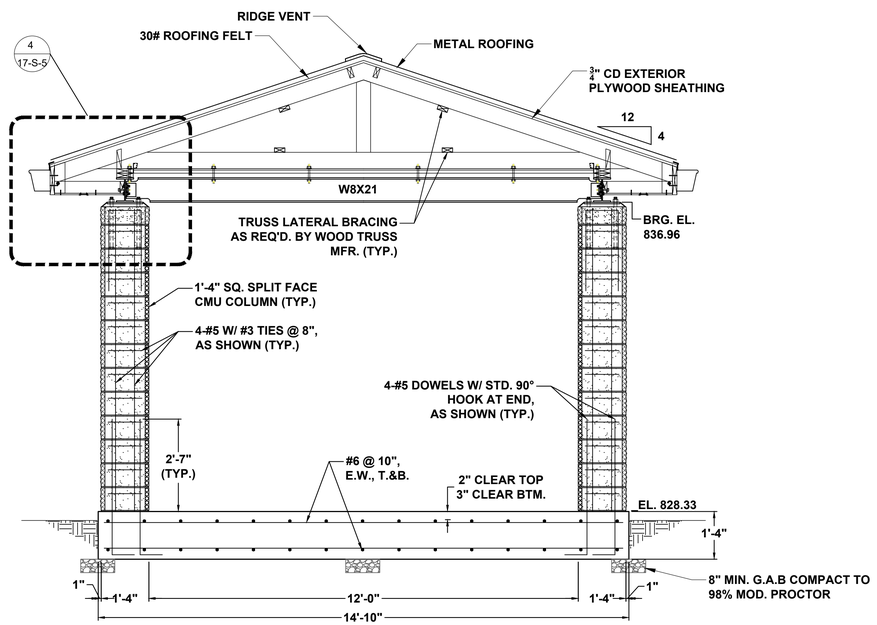
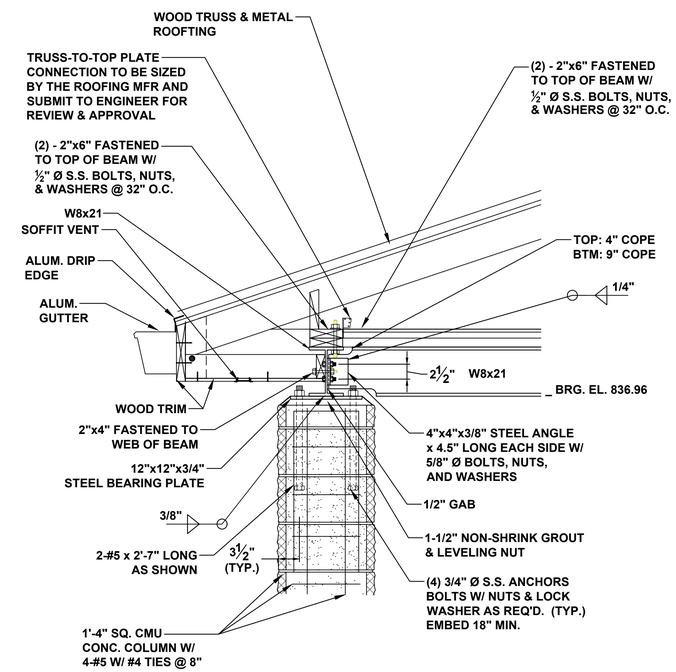


G **SECTION**
Scale: 3/4"= 1'-0"



4 **DETAIL**
Scale: 1" = 1'-0"

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SHEET TITLE

CONTROL BUILDING STRUCTURAL SECTIONS 1

DRAWING NUMBER

17-S-5
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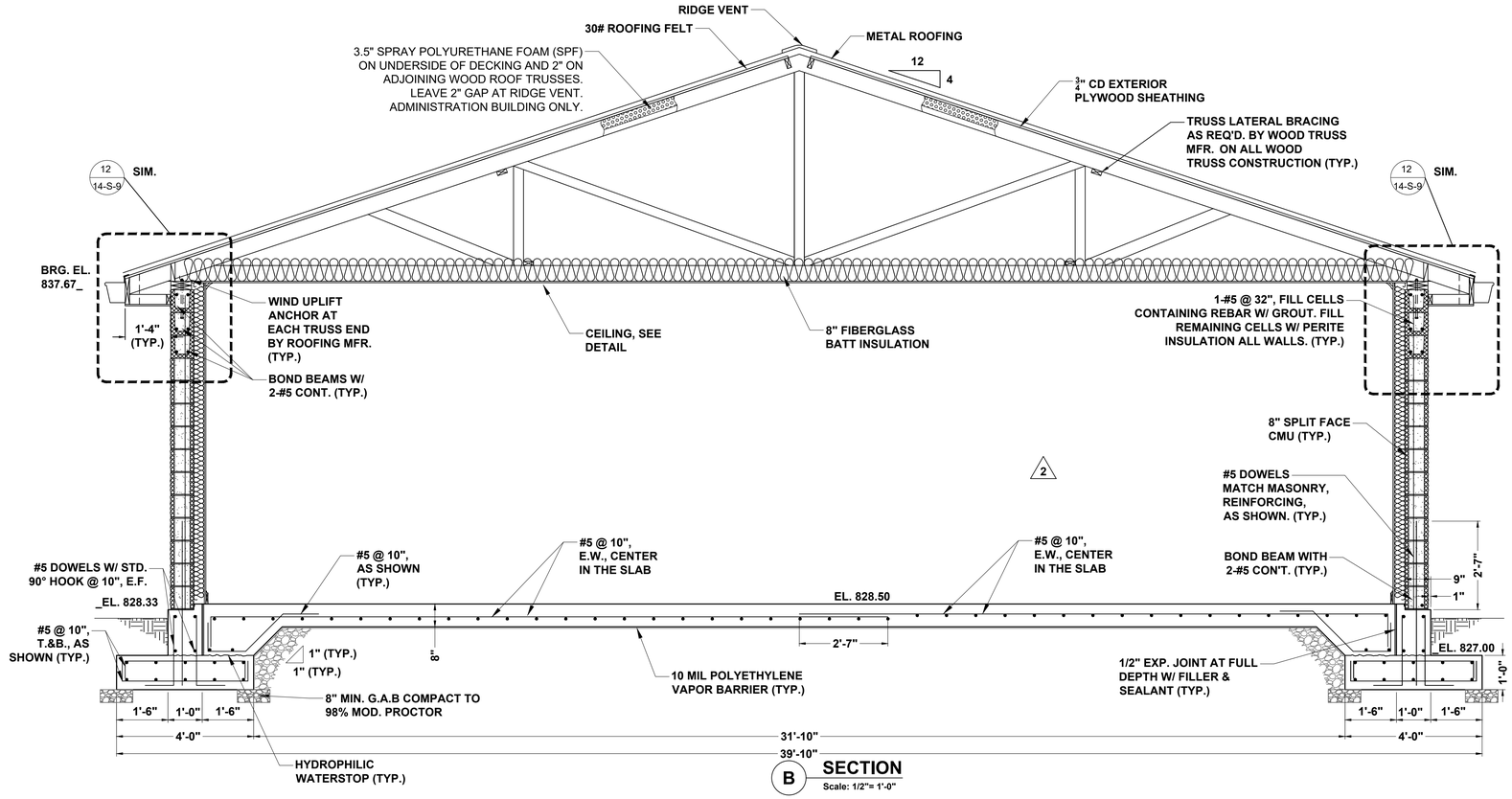

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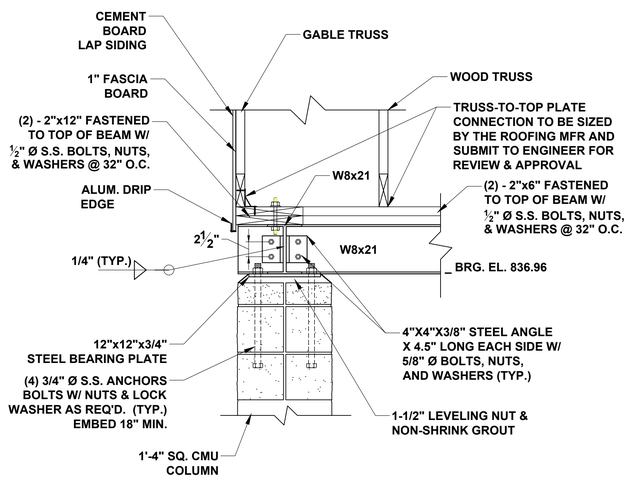
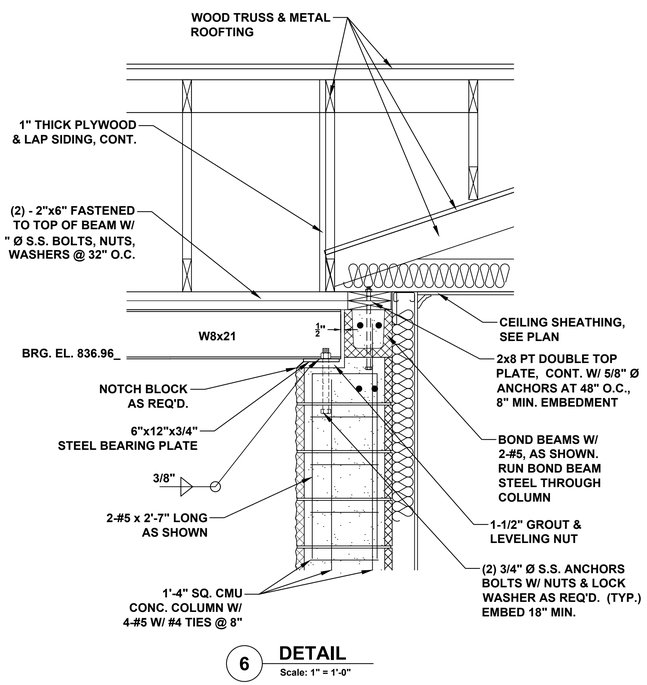
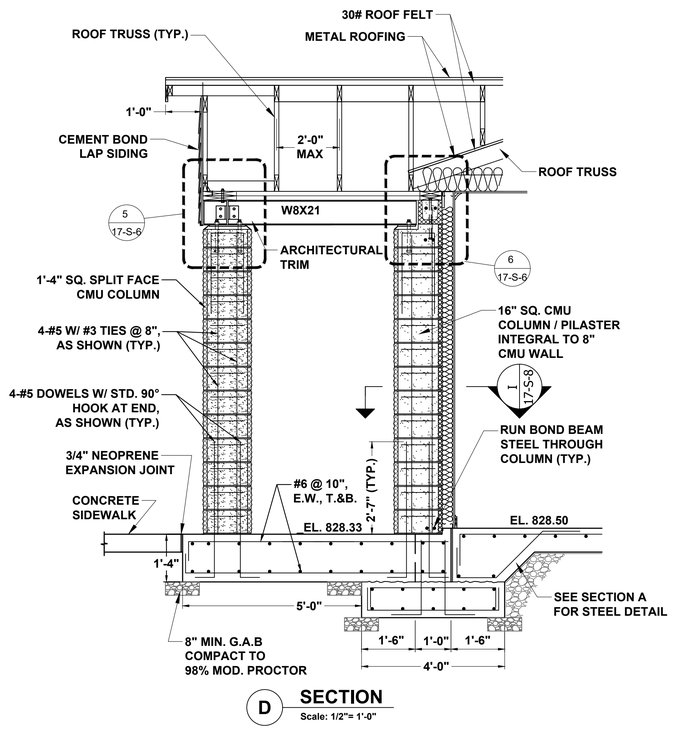
Scale: 1/2"= 1'-0"



5 **DETAIL**
Scale: 1"= 1'-0"



6 **DETAIL**
Scale: 1" = 1'-0"



D **SECTION**
Scale: 1/2"= 1'-0"

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Drawn By : JWN

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SHEET TITLE

CONTROL BUILDING STRUCTURAL SECTIONS 2

DRAWING NUMBER

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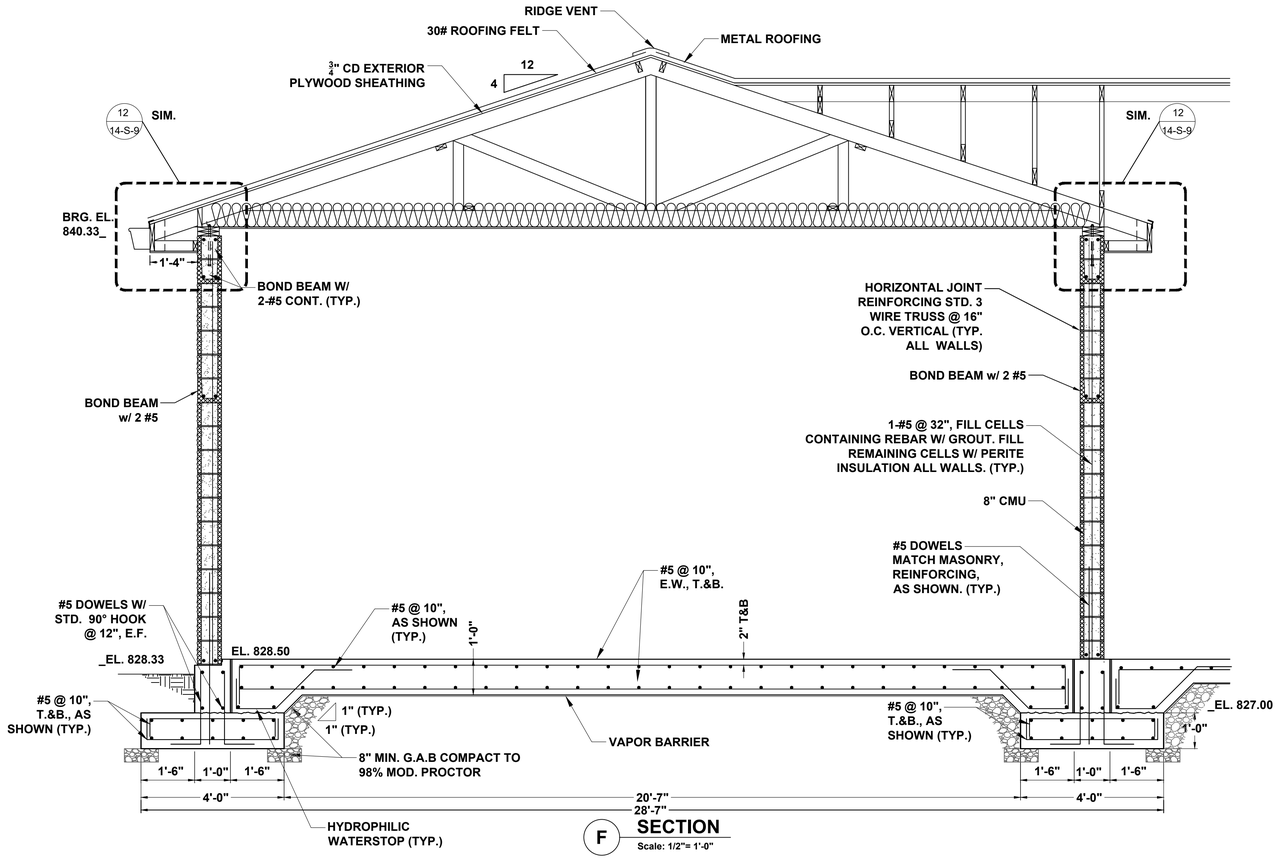

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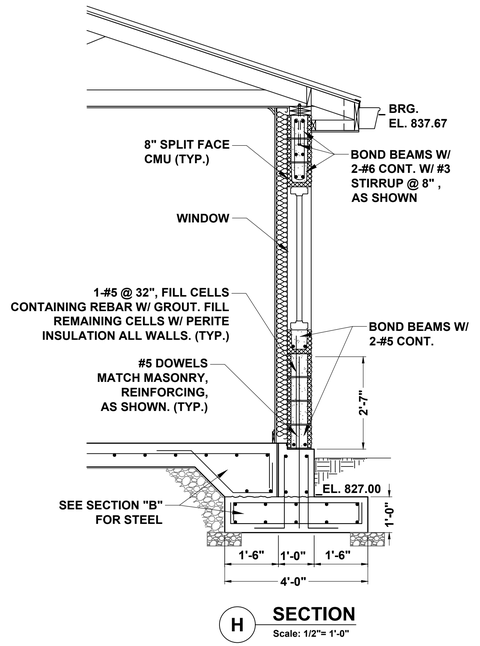

H **SECTION**
Scale: 1/2"= 1'-0"

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CONTROL BUILDING STRUCTURAL SECTIONS 3

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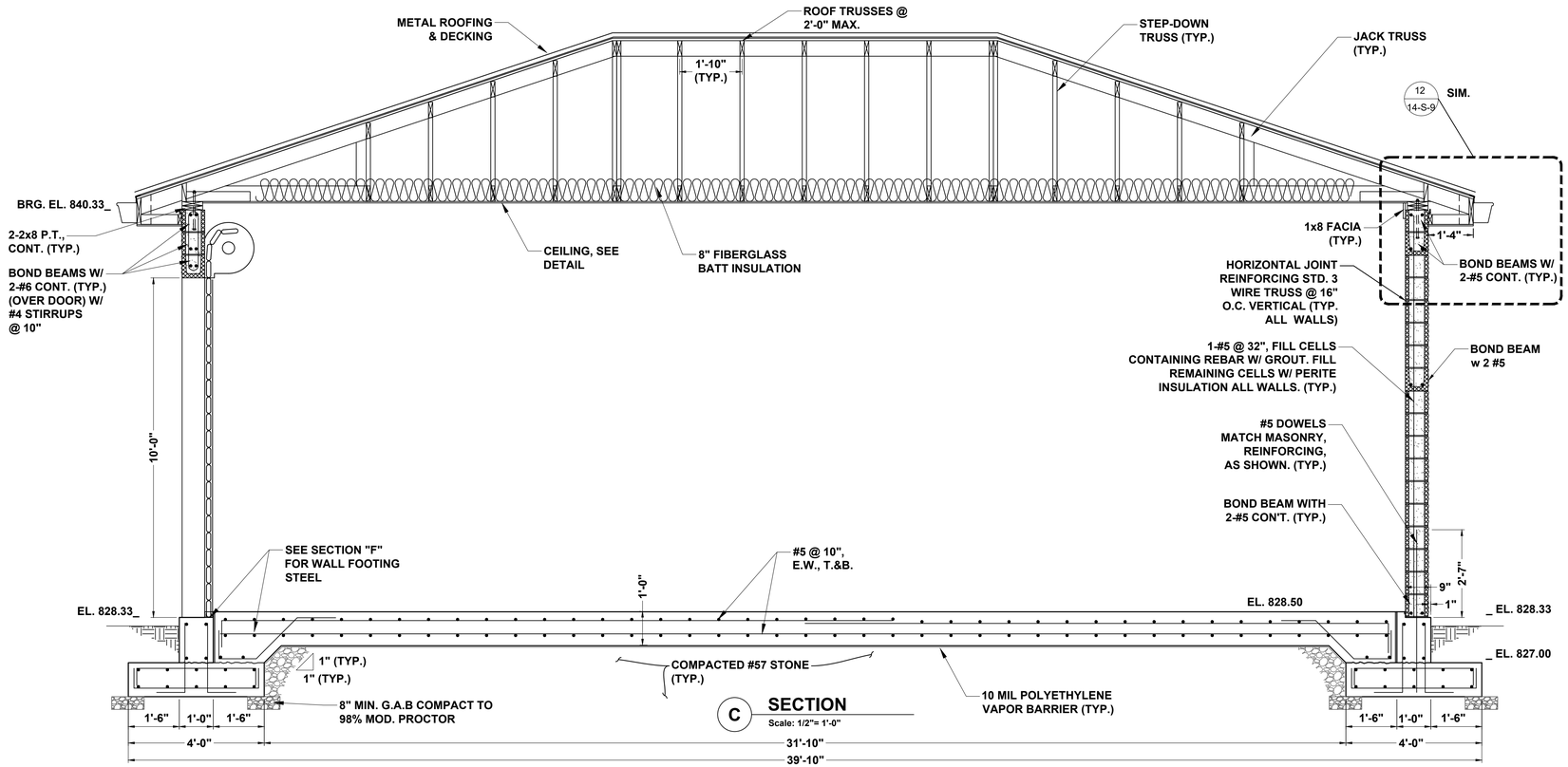

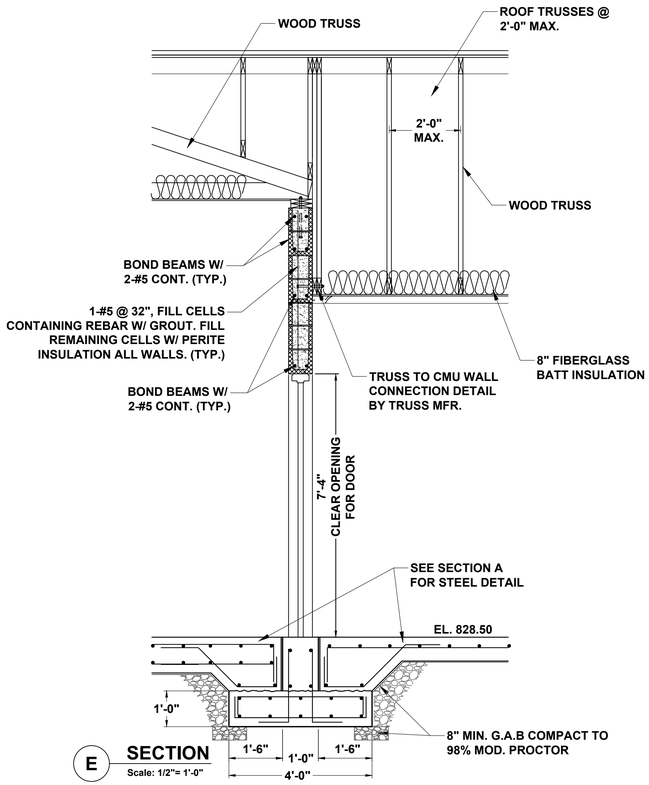

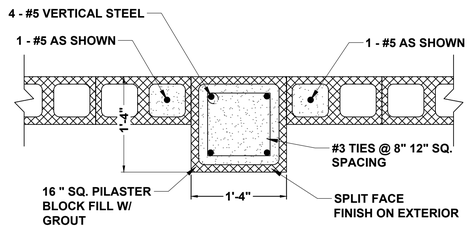

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CONTROL BUILDING STRUCTURAL SECTIONS 4

DRAWING NUMBER

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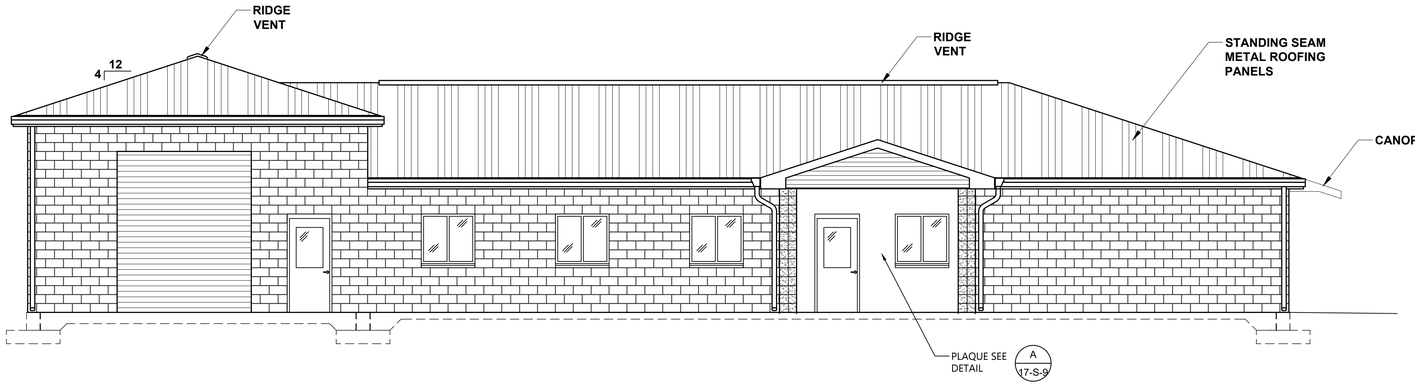
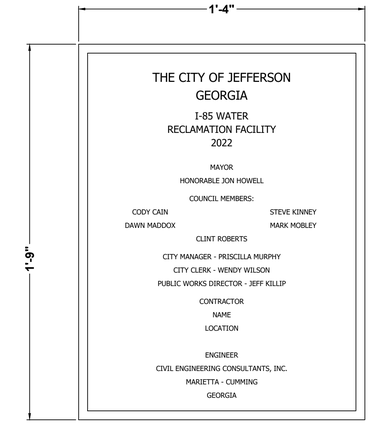
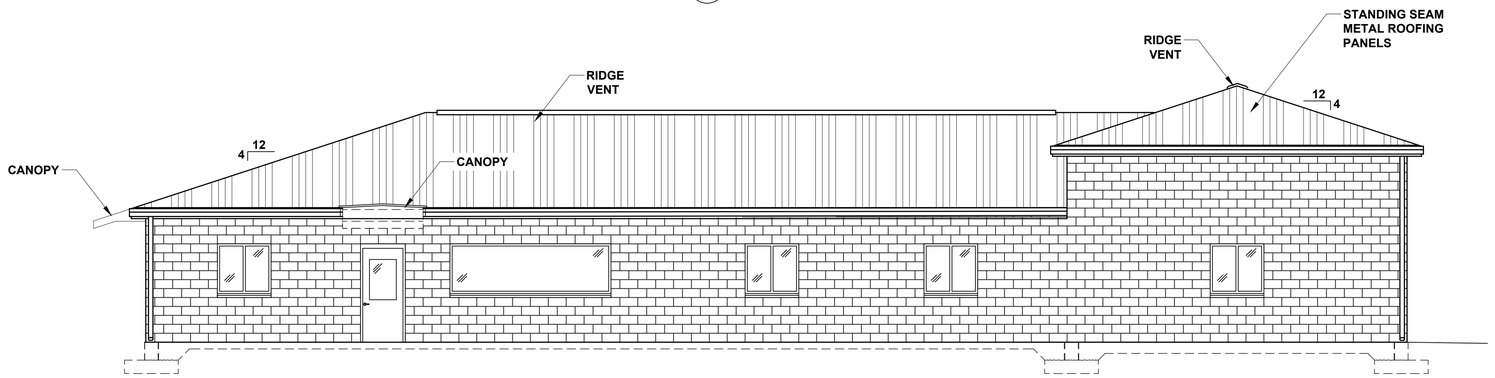


1 ELEVATION
Scale: 3/16"= 1'-0"



A PLAQUE DETAIL
Scale: 3"= 1'-0"



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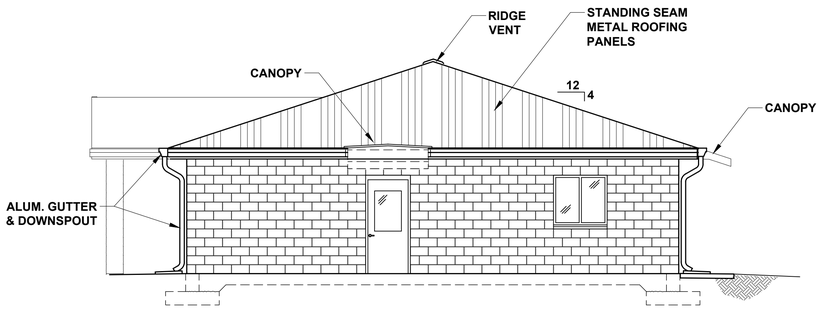

2 ELEVATION
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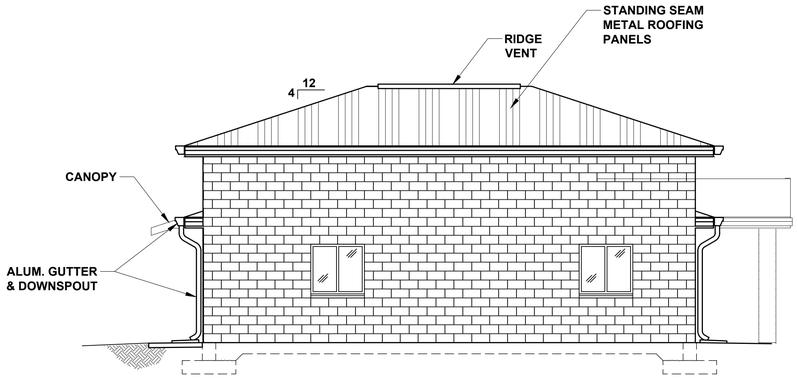

4 ELEVATION
Scale: 3/16"= 1'-0"

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
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3		
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8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

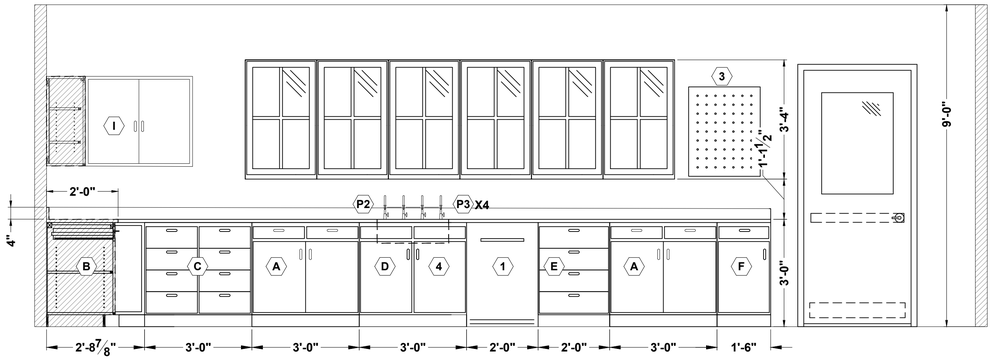
10/05/2021

SHEET TITLE

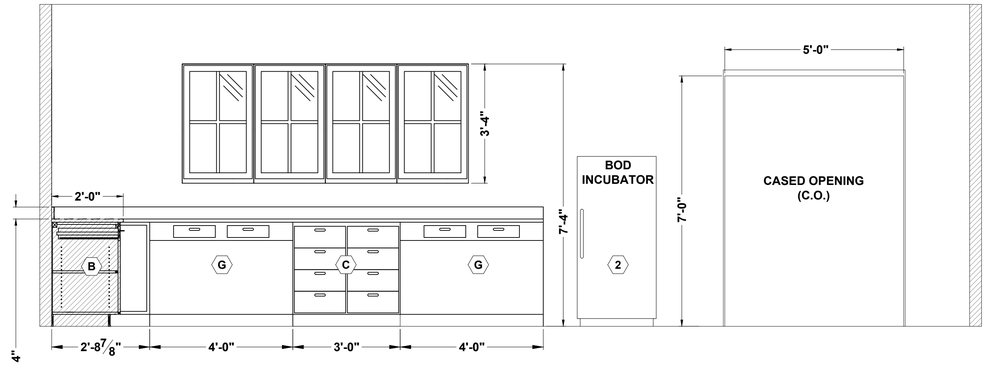
CONTROL BUILDING ELEVATIONS

DRAWING NUMBER

17-S-9
OF
214



Ⓐ LAB ELEVATION
SCALE: ½" = 1'-0"



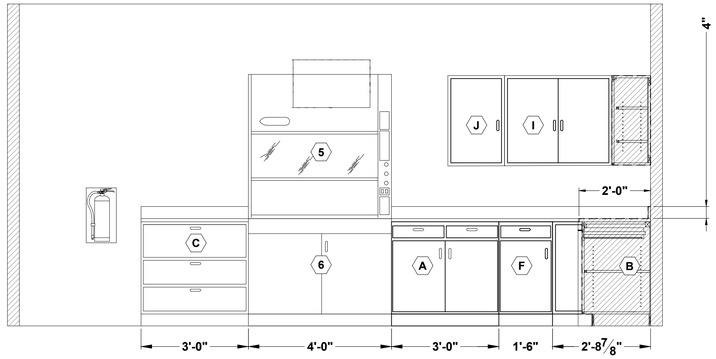
Ⓒ LAB ELEVATION
SCALE: ½" = 1'-0"

CASEWORK SCHEDULE

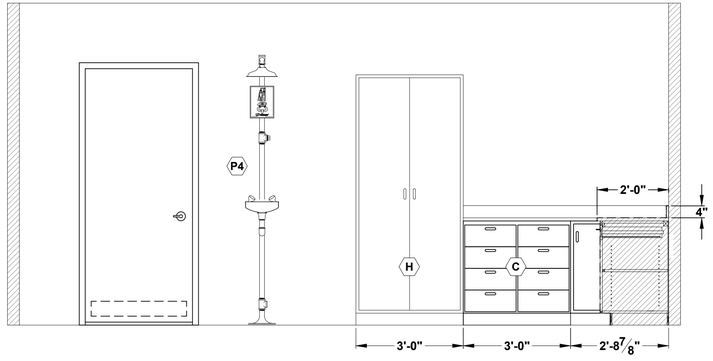
MARK	DESCRIPTION
	STEEL CABINETS
A	36"Wx35"Hx24"D BASE CABINET
B	36"Wx35"Hx36"D PIE CUT CORNER CABINET W/ 2 REVOLVING SHELVES
C	36"Wx35"Hx24"D BASE DRAWER CABINET
D	36"Wx35"Hx24"D SINK CABINET
E	24"Wx35"Hx24"D BASE DRAWER CABINET
F	18"Wx35"Hx24"D BASE CABINET
G	48"Wx35"Hx24"D DESK/WORKSTATION
H	36"Wx84"Hx24"D TALL CABINET
I	36"Wx30"Hx14"D WALL CASE
J	18"Wx30"Hx14"D WALL CASE
K	COUNTERTOP SHELVING
	WOOD CABINETS
L	36"Wx34.5"Hx24"D BASE CABINET
M	18"Wx34.5"Hx24"D BASE CABINET
N	18"Wx34.5"Hx24"D BASE DRAWER CABINET
O	28.5"Wx34.5"Hx24"D CORNER W/ 2 REVOLVING SHELVES
P	30"Wx34.5"Hx24"D SINK CABINET
Q	36"Wx30"Hx12"D WALL CABINET
R	36"Wx23"Hx12"D WALL BRIDGE CABINET

EQUIPMENT SCHEDULE

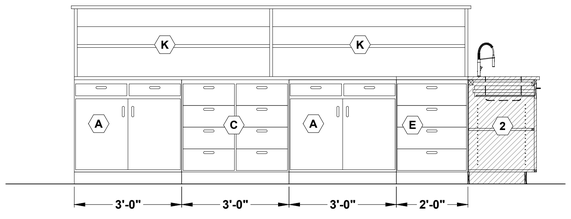
MARK	DESCRIPTION
1	BOTTLE WASHER (LABORATORY EQUIPMENT ALLOWANCE)
2	BOD INCUBATOR (LABORATORY EQUIPMENT ALLOWANCE)
3	DRYING RACK (BASE BID)
4	DEIONIZED WATER SYSTEM (LABORATORY EQUIPMENT ALLOWANCE)
5	FUME HOOD LABCONCO BASIC 47 2247300 W/ BUILT-IN BLOWER OR EQUAL (BASE BID)
6	BASE STORAGE CABINET FOR FUEM HOOD LABCONCO OR EQUAL (BASE BID)
7	REFRIGERATOR (LABORATORY EQUIPMENT ALLOWANCE)
8	ELECTRIC RANGE (LABORATORY EQUIPMENT ALLOWANCE)
9	MICROWAVE (LABORATORY EQUIPMENT ALLOWANCE)



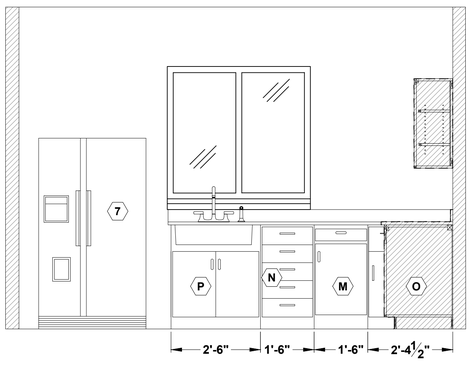
Ⓑ **LAB ELEVATION**
SCALE: ½" = 1'-0"



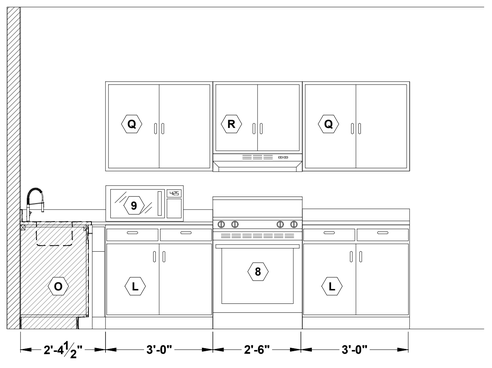
Ⓓ LAB ELEVATION
SCALE: ½" = 1'-0"



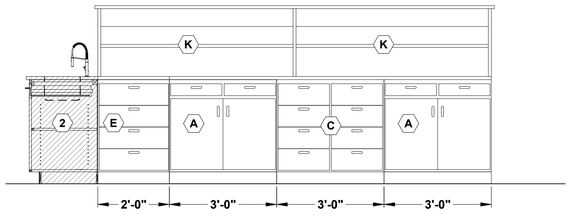
Ⓔ LAB ELEVATION
SCALE: ½" = 1'-0"



Ⓖ **BREAKROOM ELEVATION**
SCALE: ½" = 1'-0"



Ⓗ **BREAKROOM ELEVATION**
SCALE: ½" = 1'-0"



Ⓕ LAB ELEVATION
SCALE: ½" = 1'-0"

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

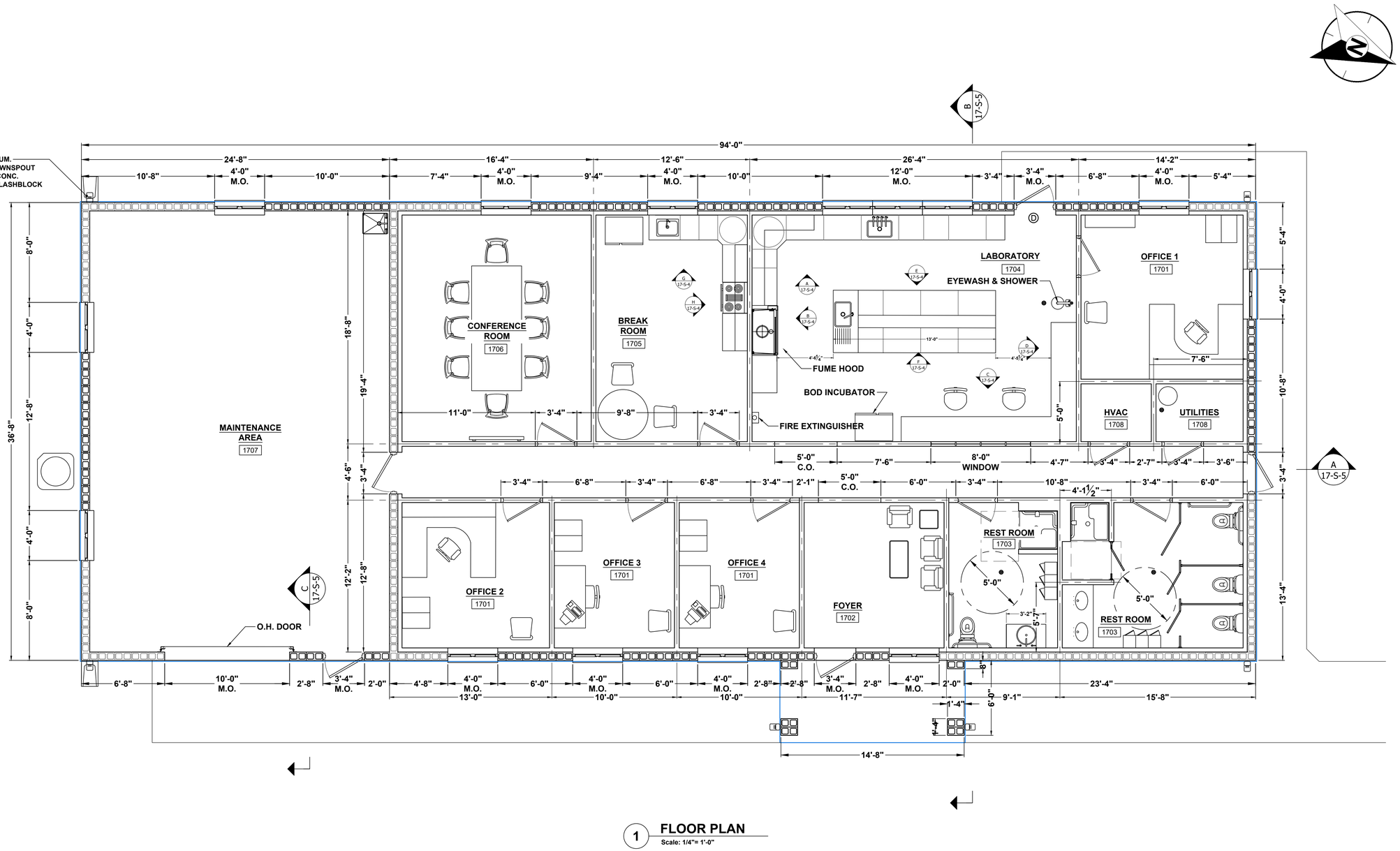
10/05/2021

SHEET TITLE

CONTROL BUILDING INTERIOR ELEVATIONS

DRAWING NUMBER

17-S-10
OF
214



1 FLOOR PLAN

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

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Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

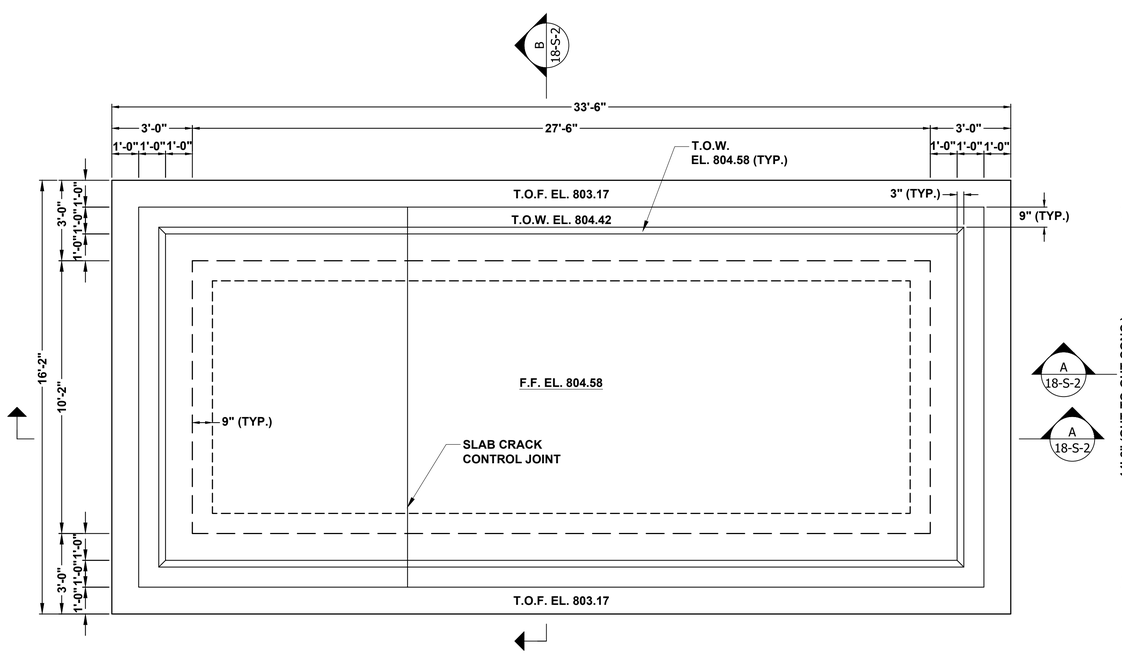
10/05/2021

SHEET TITLE

CONTROL BUILDING MECHANICAL FLOOR PLAN

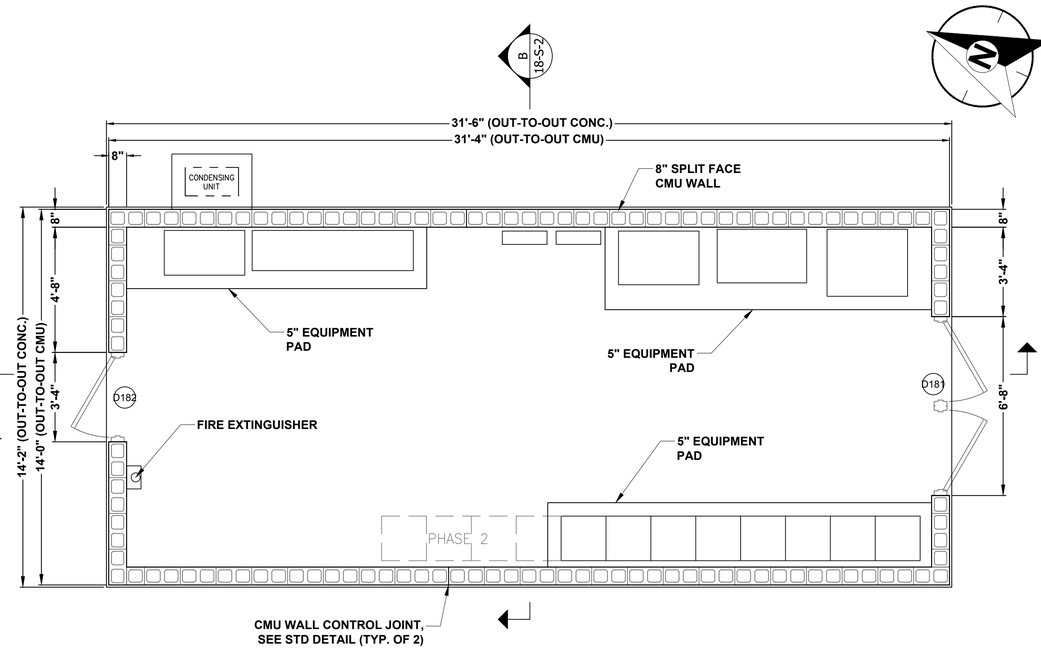
DRAWING NUMBER

17-M-1
OF
214



1 ELECTRICAL BUILDING ONE FOUNDATION PLAN

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



2 ELECTRICAL BUILDING ONE WALL PLAN

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

DESIGN LOADS:

LIVE LOAD:	300 PSF SLABS-ON-GRADE	
LIVE LOAD:	100 PSF ACCESS PLATFORM	
ROOF LIVE LOAD:	20 PSF	
WIND LOAD:	ULTIMATE WIND SPEED	= 120 MPH
	EXPOSURE CATEGORY	= C
	RISK CATEGORY	= III HI
	ENCLOSURE CLASSIFICATION	
	1. TRUCK BAY	= OPEN
	2. BUILDING	= ENCLOSED
	DESIGN WIND PRESSURE (MWFRS)	
	1. BUILDING	= 35 PSF
	DESIGN WIND PRESSURE (C&C)	
	1. BUILDING	= 40 PSF
SNOW LOAD:	5 PSF	
SEISMIC DESIGN PARAMETER:		
	RESPONSE MODIFICATION, R = 3	
	SEISMIC DESIGN CATEGORY = C	
	SITE CLASS	= D
	RISK CATEGORY	= III
	SDS	= 0.223
	SD1	= 0.152

BUILDING NOTES:

CONSTRUCTION TYPE:

1. FOUNDATION = MOMENT RESISTING CONC. FOUNDATION.
2. BUILDING = PROTECTED COMBUSTIBLE ORDINARY CONSTRUCTION w/ BLOCK AND GYPSUM BOARD WALLS (TYPE III-A)
3. ROOF = 1 HOUR FIRE RATED GYPSUM BOARD CEILING

NFFA 101/ 5000 OCCUPANCY TYPE =	FACTORY / INDUSTRIAL
IBC 2018 GROUP =	FACTORIES W/ LOW HARZARD

OCCUPANT LOAD:

OFFICE AREA =	3 PEOPLE

BUILDING HEIGHT AND AREA

AREA =	447 SF (14'-2" W x 31'-6" L)
BUILDING HEIGHT =	12'-0" EAVE (4:12 SLOPE)
ALLOWABLE AREA AS PER IBC 2018 =	65-FT
ALLOWABLE NUMBER OF STORIES AS PER IBC 2018 =	3
ALLOWABLE HEIGHT AND AREA AS PER IBC 2018 =	19,000 SF

FIRE RATING:

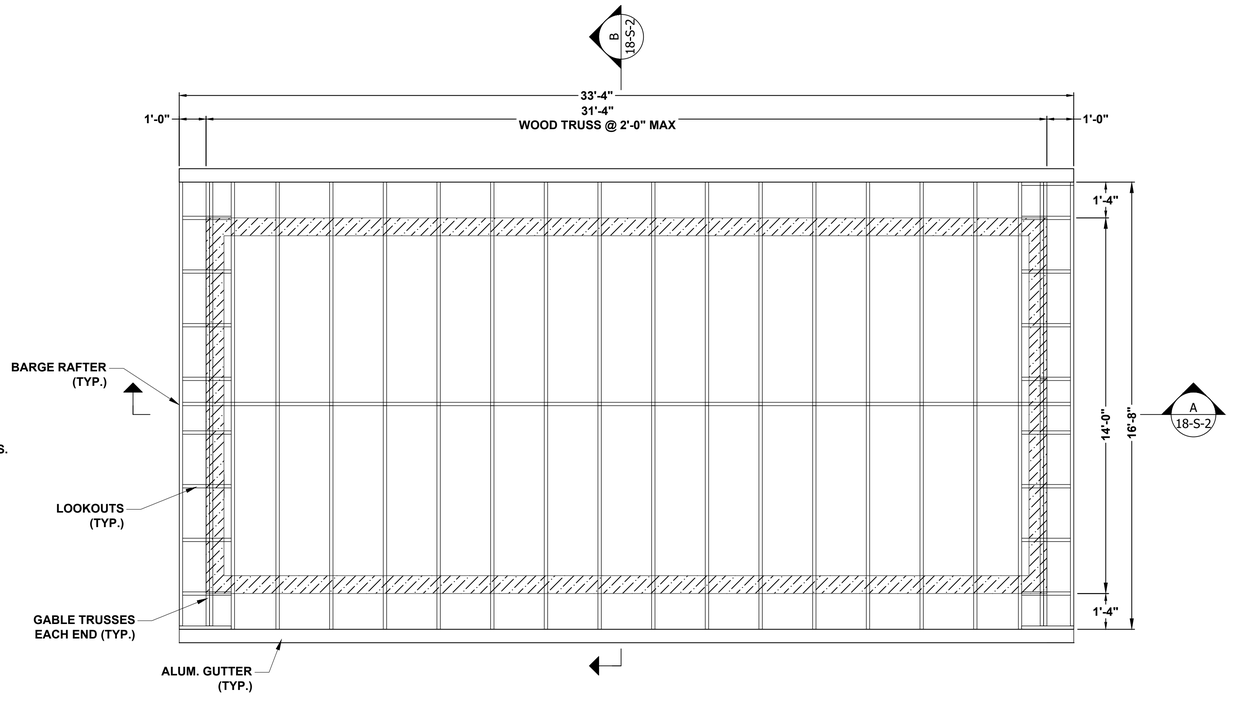
1. III-A BUILDING =	2 HOUR EXTERIOR WALLS
	1 HOUR STRUCTURAL FRAME
	1 HOUR FLOOR/CEILING/ROOF
PROTECTION	
2. CMU WALLS =	2 HOURS
3. METAL DOORS AND FRAME =	1-1/2 HOURS

APPLICABLE DESIGN CODES:

1. 2018 INTERNATIONAL BUILDING CODE WITH 2020 GEORGIA AMENDMENTS.
2. 2018 INTERNATIONAL PLUMBING CODE WITH 2020 GEORGIA AMENDMENTS.
3. 2017 NATIONAL ELECTRICAL CODE
4. 2018 INTERNATIONAL MECHANICAL CODE / 2014 & 2015 GEORGIA AMENDMENTS.
5. INTERNATIONAL FUEL GAS CODE / 2014 & 2015 GEORGIA AMENDMENTS.
6. CHEROKEE COUNTY DEVELOPMENTAL REGULATIONS
7. 2018 INTERNATIONAL FIRE CODE WITH CURRENT GEORGIA AMENDMENTS.
8. 2018 NFPA 101 LIFE SAFETY CODE WITH CURRENT GEORGIA AMENDMENTS.
9. 2020 GEORGIA AMENDMENTS 120-3-3, STATE MINIMUM FIRE SAFETY STANDARDS.

SCHEDULE OF SPECIAL INSPECTIONS PER IBC 2018 SECTION 1705:

1. SOIL COMPACTION = REQUIRED
2. CONCRETE PLACEMENT = REQUIRED
3. CMU BOND BEAMS AND GROUTING = REQUIRED
4. STRUCTURAL STEEL = REQUIRED
5. CONCRETE REINFORCING STEEL PLACEMENT = REQUIRED
6. ANCHOR RODS/BOLTS = REQUIRED
7. WELDING = REQUIRED IF ANY IS USED



3 ELECTRICAL BUILDING ONE ROOF FRAMING PLAN

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

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

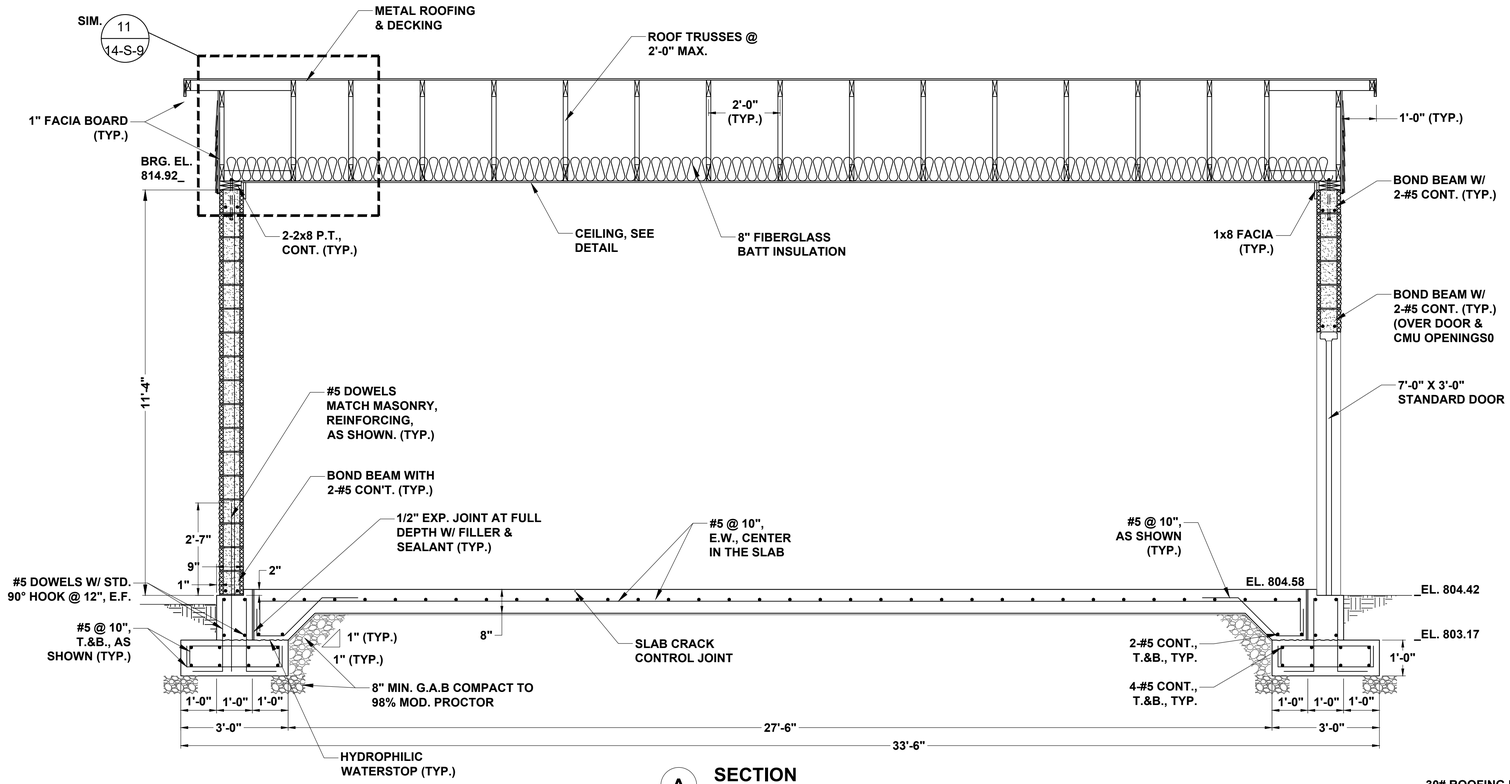
10/05/2021

SHEET TITLE

ELECTRICAL BUILDING ONE PLANS

DRAWING NUMBER

18-S-1
OF
214



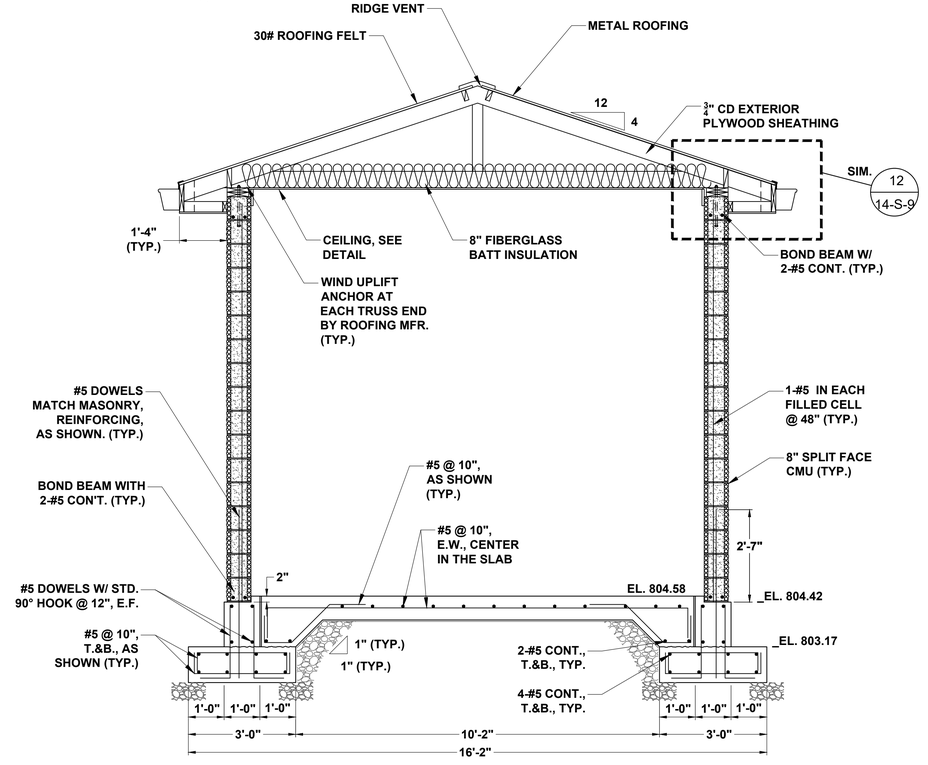
A **SECTION**
Scale: 1/2"= 1'-0"

PREFABRICATED WOOD TRUSS NOTES

DESIGN LOADS: ROOF

TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF + TRUSS SELFWEIGHT
BOTTOM CHORD LIVE LOAD	10 PSF (HVAC PLATFORM = 20 PSF)
BOTTOM CHORD DEAD LOAD	10 PSF
TOP CHORD WIND UPLIFT LOAD	SEE WIND LOAD DATA

1. TRUSSES SHALL BE SPACED AS SHOWN ON PLANS.
2. SEE PLAN FOR TRUSS LOCATIONS AND SPANS. ACTUALL TRUSS SPACING SHALL BE USED TO DETERMINE UNIFORM LOADS PER FOOT.
3. TRUSSES SHALL BE DESIGNED AND FABRICATED BY THE TRUSS MANUFACTURER.
4. DESIGN SHALL CARRY THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF GEORGIA.
5. CONFIGURATION AND SIZE OF WEB MEMBERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.
6. SHOP DRAWINGS AND CALCULATIONS FOR TRUSSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
7. MAXIMUM LIVE LOAD DEFLECTION FOR ROOF TRUSSES = L/240.
8. PERMANENT BRACING OF ROOF TRUSSES, AS REQUIRED BY STRUCTURAL DESIGN OF THE TRUSSES, AND PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADINGS, SHALL BE INDICATED AND FULLY DETAILED ON SHOP DRAWINGS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSS DURING ERECTION, IN ACCORDANCE WITH TRUSS PLATE INSTITUTES "HANDLING, INSTALLING AND BRACING METAL PATE CONNECTED WOOD TRUSSES, HIB-91."
10. TRUSS DESIGN SHALL ACCOUNT FOR LOAD IMPOSED UPON TRUSSES BY WEIGHT OF MECHANICAL UNITS, AS SHOWN ON MECHANICAL DRAWINGS.
11. ALL PRE-ENGINEERED TRUSS SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE, DURING THE TIMES OF INSPECTION SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
12. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC.) REQUIRED FOR CONNECTIONS BETWEEN PRE-ENGINEERED TRUSSES SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS DESIGN ENGINEER.



B **SECTION**
Scale: 1/2"= 1'-0"

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Designed By : CKB

Drawn By : JWN

Checked By : KB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

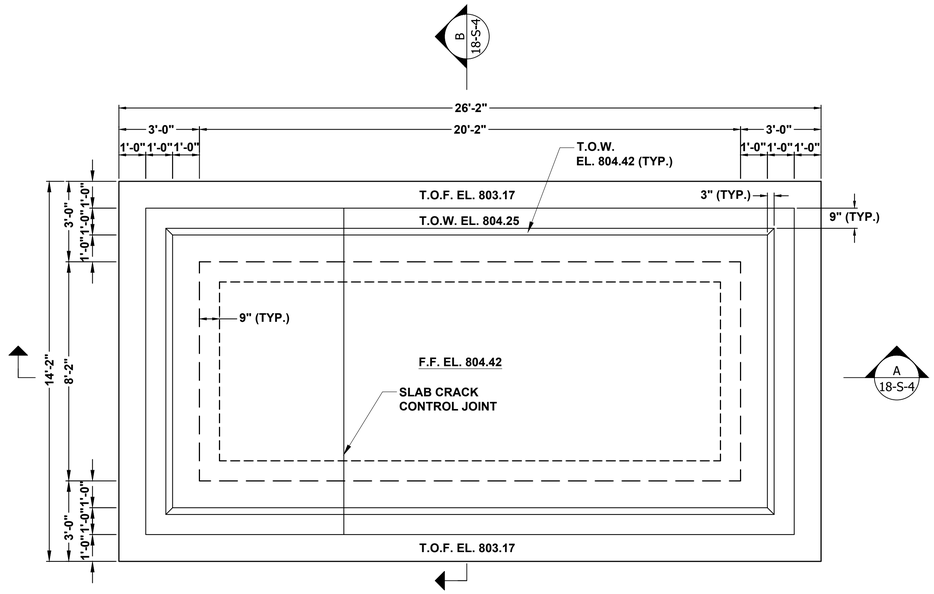
10/05/2021

SHEET TITLE

ELECTRICAL BUILDING ONE SECTIONS

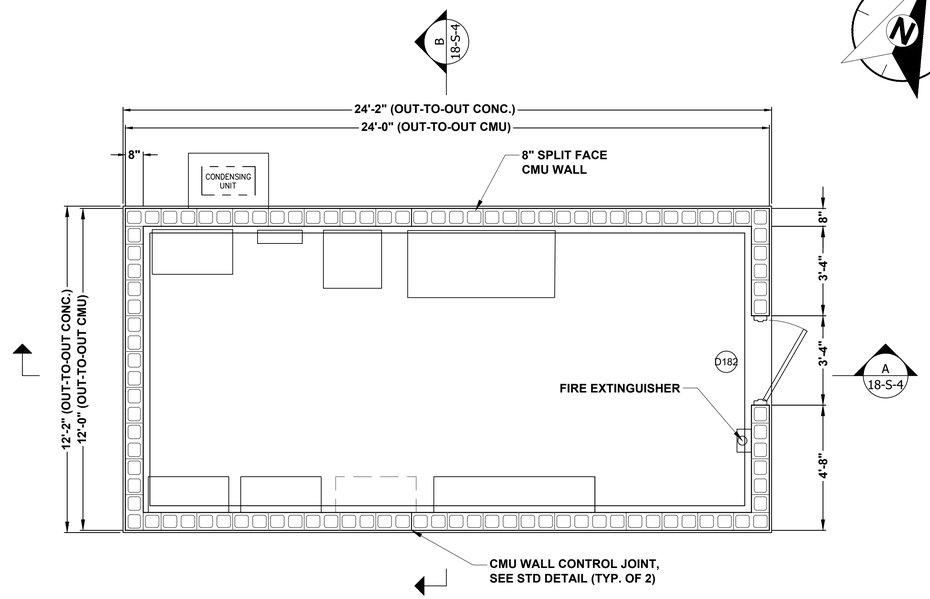
DRAWING NUMBER

18-S-2
OF
214



1 ELECTRICAL BUILDING TWO FOUNDATION/LOWER LEVEL FLOOR PLAN

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



2 ELECTRICAL BUILDING TWO WALL PLAN

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

DESIGN LOADS:

LIVE LOAD:	300 PSF SLABS-ON-GRADE	
LIVE LOAD:	100 PSF ACCESS PLATFORM	
ROOF LIVE LOAD:	20 PSF	
WIND LOAD:	ULTIMATE WIND SPEED	= 120 MPH
	EXPOSURE CATEGORY	= C
	RISK CATEGORY	= III
	ENCLOSURE CLASSIFICATION	
	1. BUILDING	= ENCLOSED
	DESIGN WIND PRESSURE (MWFRS)	
	1. BUILDING	= 35 PSF
	DESIGN WIND PRESSURE (C&C)	
	1. BUILDING	= 40 PSF
SNOW LOAD:	5 PSF	
SEISMIC DESIGN PARAMETER:		
	RESPONSE MODIFICATION, R = 3	
	SEISMIC DESIGN CATEGORY	= C
	SITE CLASS	= D
	RISK CATEGORY	= III
	SDS	= 0.223
	SD1	= 0.152

BUILDING NOTES:

CONSTRUCTION TYPE:

1. FOUNDATION = MOMENT RESISTING CONC. FOUNDATION.
2. BUILDING = PROTECTED COMBUSTIBLE ORDINARY CONSTRUCTION w/ BLOCK AND GYPSUM BOARD WALLS (TYPE III-A)
3. ROOF = 1 HOUR FIRE RATED GYPSUM BOARD CEILING

NFFA 101/ 5000 OCCUPANCY TYPE =	FACTORY / INDUSTRIAL
IBC 2018 GROUP =	FACTORIES W/ LOW HARZARD

OCCUPANT LOAD:

OFFICE AREA =	2 PEOPLE

BUILDING HEIGHT AND AREA

AREA =	288 SF (12'-0" W x 24'-0" L)
BUILDING HEIGHT =	12'-0" EAVE (4:12 SLOPE)
ALLOWABLE AREA AS PER IBC 2018 =	65-FT
ALLOWABLE NUMBER OF STORIES AS PER IBC 2018 =	2
ALLOWABLE HEIGHT AND AREA AS PER IBC 2018 =	19,000 SF

FIRE RATING:

1. III-A BUILDING =	2 HOUR EXTERIOR WALLS
	1 HOUR STRUCTURAL FRAME
	1 HOUR FLOOR/CEILING/ROOF
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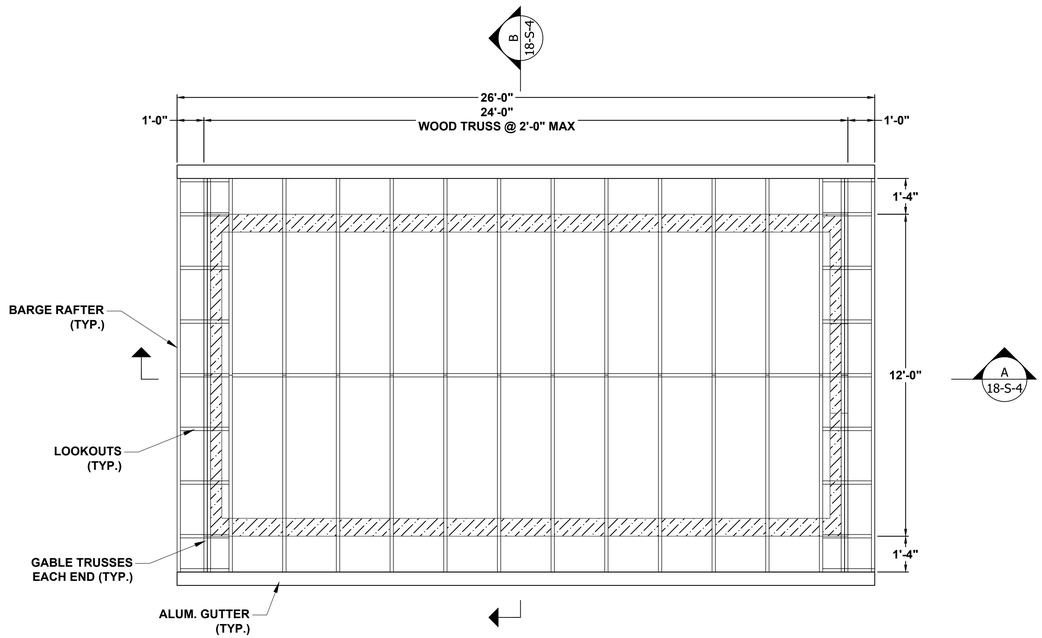

3 ELECTRICAL BUILDING TWO ROOF FRAMING PLAN

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

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(770) 977-5747
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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVEJOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

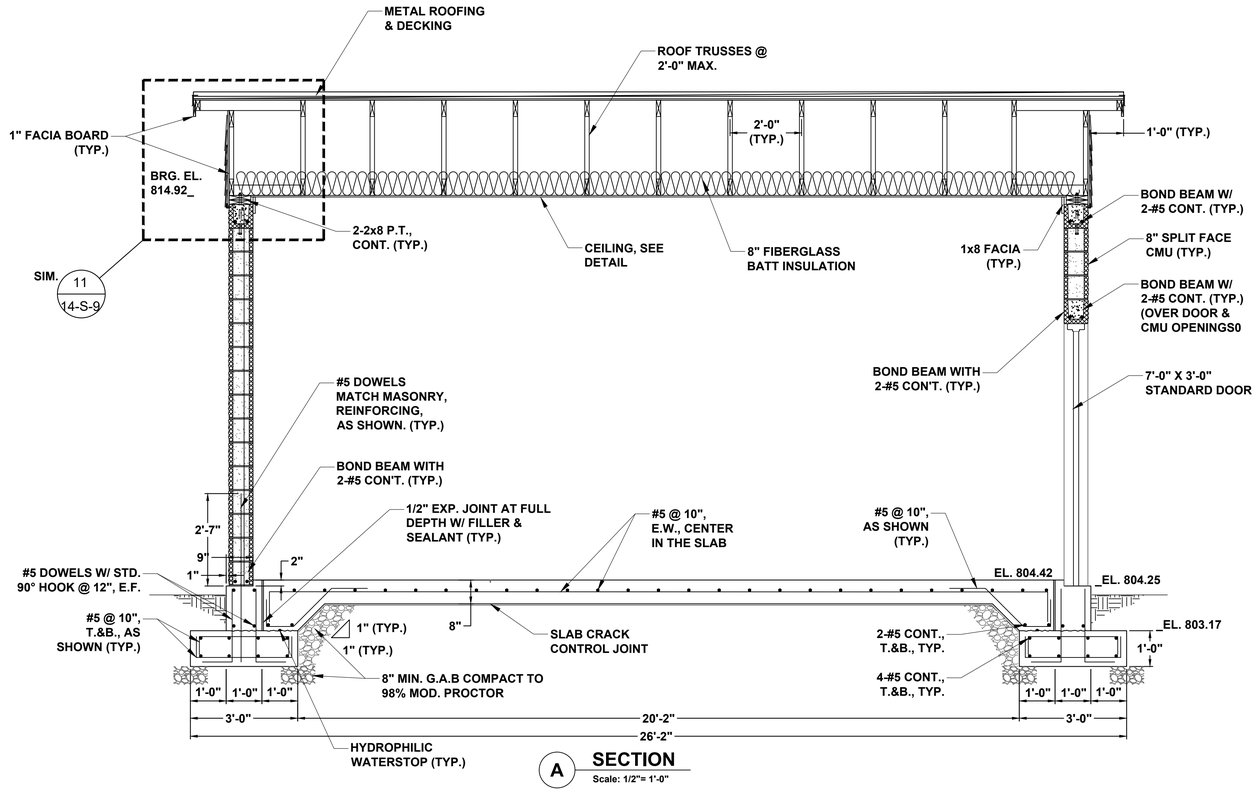
10/05/2021

SHEET TITLE

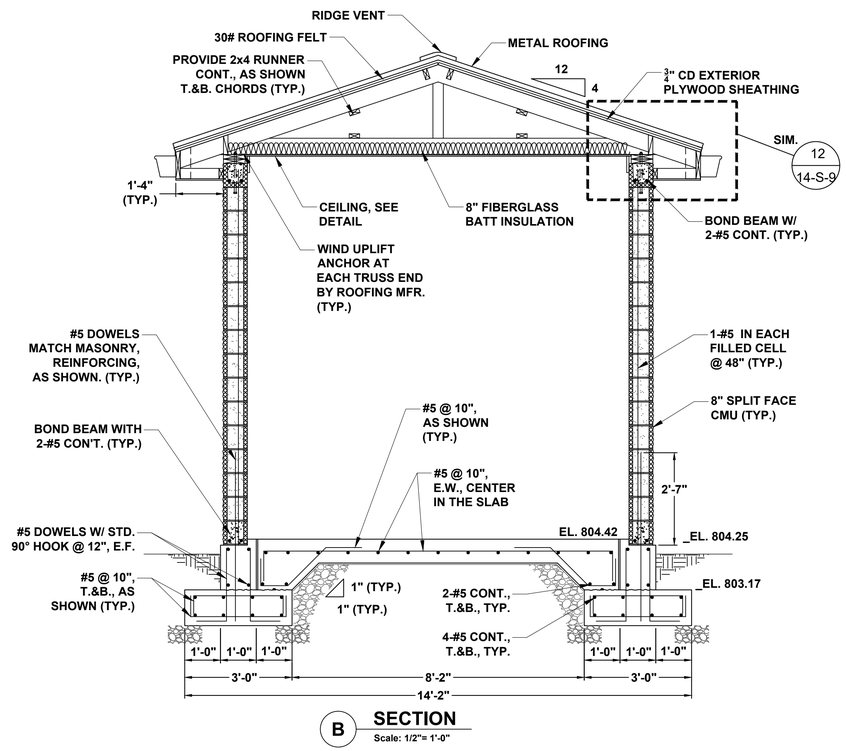
ELECTRICAL BUILDING TWO PLANS

DRAWING NUMBER

18-S-3
OF
214



A **SECTION**
Scale: 1/2"= 1'-0"



B **SECTION**
Scale: 1/2"= 1'-0"

PREFABRICATED WOOD TRUSS NOTES

DESIGN LOADS:	ROOF
TOP CHORD LIVE LOAD	20 PSF
TOP CHORD DEAD LOAD	10 PSF + TRUSS SELFWEIGHT
BOTTOM CHORD LIVE LOAD	10 PSF (HVAC PLATFORM = 20 PSF)
BOTTOM CHORD DEAD LOAD	10 PSF
TOP CHORD WIND UPLIFT LOAD	SEE WIND LOAD DATA

1. TRUSSES SHALL BE SPACED AS SHOWN ON PLANS.
2. SEE PLAN FOR TRUSS LOCATIONS AND SPANS. ACTUALL TRUSS SPACING SHALL BE USED TO DETERMINE UNIFORM LOADS PER FOOT.
3. TRUSSES SHALL BE DESIGNED AND FABRICATED BY THE TRUSS MANUFACTURER.
4. DESIGN SHALL CARRY THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF GEORGIA.
5. CONFIGURATION AND SIZE OF WEB MEMBERS SHALL BE DETERMINED BY THE TRUSS MANUFACTURER.
6. SHOP DRAWINGS AND CALCULATIONS FOR TRUSSES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
7. MAXIMUM LIVE LOAD DEFLECTION FOR ROOF TRUSSES = L/240.
8. PERMANENT BRACING OF ROOF TRUSSES, AS REQUIRED BY STRUCTURAL DESIGN OF THE TRUSSES, AND PERMANENT BRACING AS REQUIRED FOR STABILITY OF THE TRUSS SYSTEM UNDER ALL GRAVITY AND LATERAL LOADINGS, SHALL BE INDICATED AND FULLY DETAILED ON SHOP DRAWINGS.
9. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING FOR THE TRUSS DURING ERECTION, IN ACCORDANCE WITH TRUSS PLATE INSTITUTES "HANDLING, INSTALLING AND BRACING METAL PATE CONNECTED WOOD TRUSSES, HIB-91."
10. TRUSS DESIGN SHALL ACCOUNT FOR LOAD IMPOSED UPON TRUSSES BY WEIGHT OF MECHANICAL UNITS, AS SHOWN ON MECHANICAL DRAWINGS.
11. ALL PRE-ENGINEERED TRUSS SHOP DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE, DURING THE TIMES OF INSPECTION SHALL BEAR CLEAR INDICATION THAT THEY HAVE BEEN REVIEWED AND APPROVED BY THE PROJECT STRUCTURAL ENGINEER OF RECORD.
12. ALL HARDWARE (BOLTS, HANGERS, STRAPS, ETC.) REQUIRED FOR CONNECTIONS BETWEEN PRE-ENGINEERED TRUSSES SHALL BE DESIGNED AND SPECIFIED BY THE TRUSS DESIGN ENGINEER.

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SHEET TITLE

ELECTRICAL BUILDING TWO SECTIONS

DRAWING NUMBER

18-S-4
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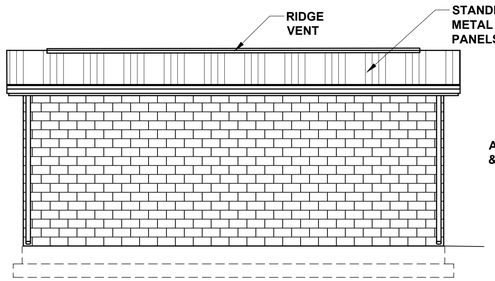
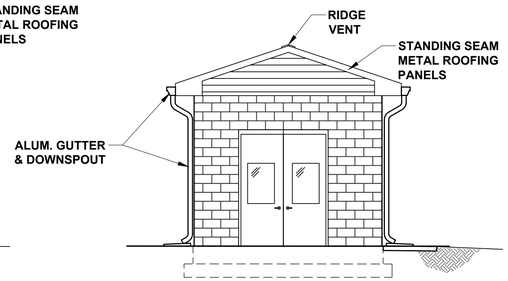
214



NORTH EAST



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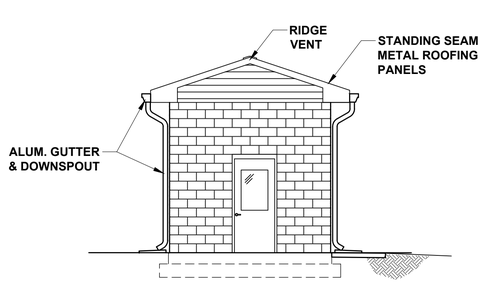

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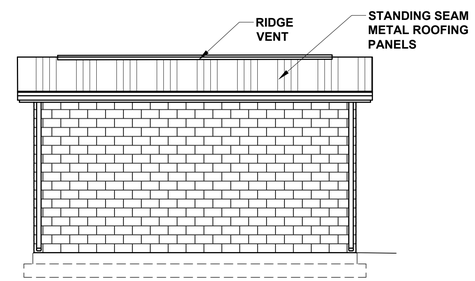

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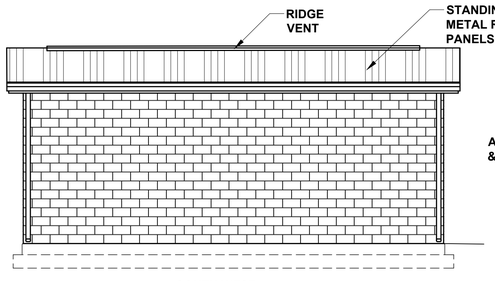

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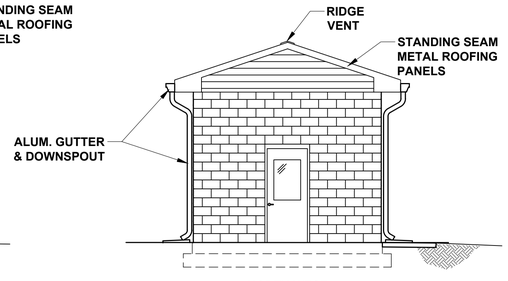

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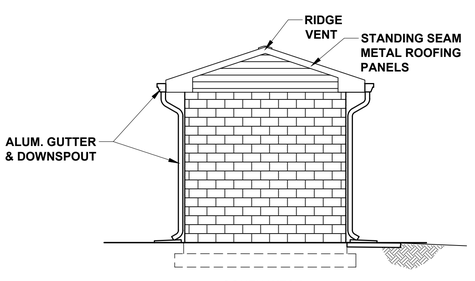

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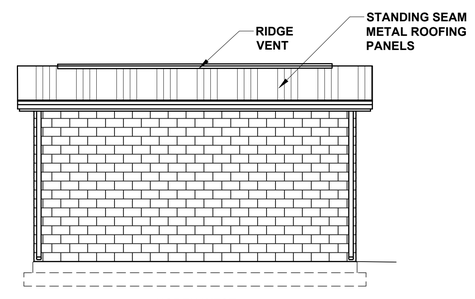

NORTH WEST

3 ELECTRICAL BUILDING ONE ELEVATIONS

Scale: 3/16"= 1'-0"

2 ELECTRICAL BUILDING TWO ELEVATIONS

Scale: 3/16"= 1'-0"

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SHEET TITLE

ELECTRICAL BUILDING ELEVATIONS

DRAWING NUMBER

18-S-5
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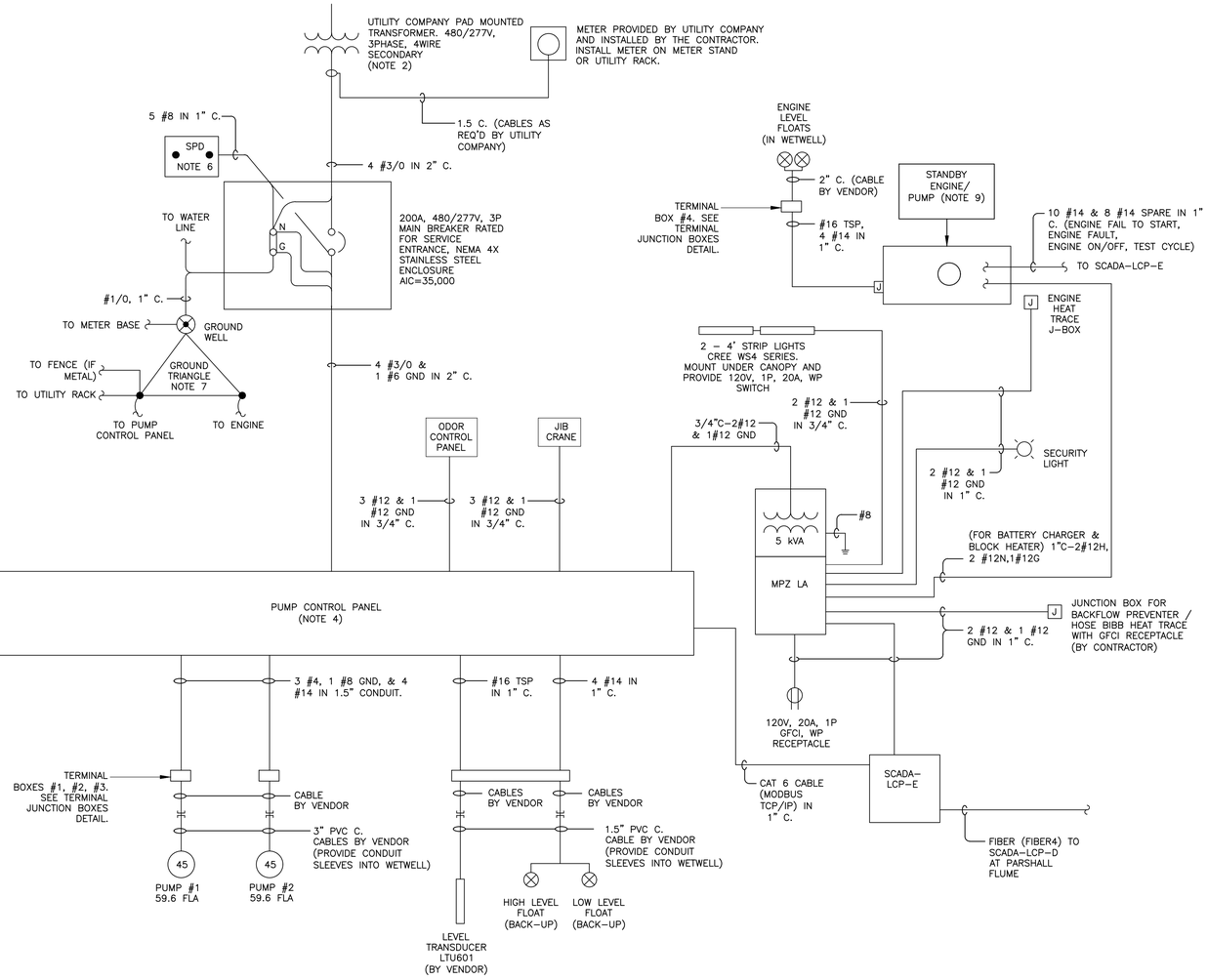

ONE LINE DIAGRAM

SCALE: N.T.S.

SERVICE 240/120V,1ø,3W — PANEL MPZ-RSPS — MAIN: 15A M.B.

MTG SURFACE — A.I.C. 35,000 @ 480V — REMARKS NEMA 3R SS

BRANCH CIRCUIT NO.	LOAD DESCRIPTION	LOAD(kVA) A	LOAD(kVA) B	TRIP	PHASE	TRIP	LOAD(kVA) A	LOAD(kVA) B	BRANCH CIRCUIT LOAD DESCRIPTION	BRANCH CIRCUIT NO.
1	ENGINE PUMP BATT. CHGR	0.5		20	A B	20	0.2		SECURITY LIGHT	2
3	ENGINE BLK HEATER		1.0	20		20		0.5	HEAT TRACE (HOSE BIBB)	4
5	ENGINE HEAT TRACE	0.5		20		20	0.18		OUTDOOR RECEPTACLE (1)	6
7	CANOPY LIGHT	0.18		20					SPACE	8
9	SCADA-LCP-E	0.1		20					SPACE	10

CONNECTED LOAD: A 1.48 kVA B 1.68 kVA TOTAL 3.16 kVA

NOTES: MPZ-LA SHALL BE A 5kVA MINI POWER ZONE, SQUARE D MPZB5S40F W/ BOLT ON BREAKERS AND 2 - 20A, 1P, 30mA GFI BREAKERS FOR HEAT TRACE.

ONE LINE DIAGRAM NOTES

1. CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS/CABLES SHOWN ON THE SINGLE LINE DIAGRAM. REFER TO SITE LAYOUT FOR SERVICE POLE AND PUMP CONTROL PANEL LOCATIONS.

2. CONTRACTOR SHALL COORDINATE 480/277V, 3ø, 4W SERVICE TO THE PUMP STATION. ALL COSTS ASSOCIATED WITH UTILITY COMPANY WILL BE PAID FOR BY THE CITY FROM ALLOWANCE.

3. THE CONTRACTOR SHALL COORDINATE THE EXACT CONDUIT ENTRANCE LOCATIONS WITH THE PUMP MANUFACTURER'S SHOP DRAWINGS PRIOR TO STUB UPS.

4. THE PUMP CONTROL PANEL SHALL BE FURNISHED BY THE PUMP VENDOR AND IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE CONTROL PANEL IS FURNISHED WITH, BUT NOT LIMITED TO, THE FOLLOWING:
   - A. NEMA 4X STAINLESS STEEL ENCLOSURE / RACK MOUNTED
   - B. 2 - 45HP, 480V, 3 PHASE VFDS (SQUARE D ATV630)
   - C. SECONDARY LIGHTNING ARRESTOR
   - D. HOA SWITCHES, START/STOP PUSHBUTTONS, ELAPSED TIME METERS, ALARM RESET PUSHBUTTON MOUNTED THROUGH THE DOOR OF THE CONTROL PANEL.
   - E. ON-TIME DELAY RELAYS TO PREVENT SIMULTANEOUS PUMPS START.
   - F. MPE SC2000 CONTROLLER WITH MODBUS TCP/IP COMMUNICATION MODULE
   - G. CONTROL POWER TRANSFORMER AND CIRCUIT BREAKERS REQUIRED FOR CONTROL PANEL 120V CONTROL CIRCUIT.
   - H. THE FOLLOWING LED LIGHTS SHALL BE PROVIDED ON THE FRONT OF THE CONTROL PANEL:
     1. HIGH WET WELL LEVEL ALARM
     2. LOW WET WELL LEVEL ALARM
     3. PUMP #1 RUN/STOPPED/FAILED
     4. PUMP #2 RUN/STOPPED/FAILED
     5. 115 VOLT POWER AVAILABLE
   - I. TWO BACK-UP FLOAT SWITCHES (HIGH AND LOW)
   - J. MPE TRANSDUCER
   - K. MAIN 480V BREAKER RATED 35 kAIC
   - L. 480V, 2P, 15A BREAKER FOR MINI POWER ZONE.
   - M. 480V, 3P, 15A BREAKER FOR JIB CRANE
   - N. 480V, 3P, 15A BREAKER FOR ODOR CONTROL PANEL
   - O. INTEGRAL AC UNIT

5. ALL WORK SHALL CONFORM TO THE 2020 NATIONAL ELECTRICAL CODE.

6. THE SURGE PROTECTION DEVICE (SPD) SHALL BE IN A NEMA 4X STAINLESS STEEL ENCLOSURE. THE SPD SHALL BE UL LISTED AND LABELED UNDER UL1449 AND UL1283, HAVE AN INTEGRAL DISCONNECT, AND HAVE A SURGE RATING OF 160KA PER PHASE. PROVIDE EATON PTE160-3Y201 (277/480V)-SD-SS-D (STAINLESS STEEL ENCLOSURE).

7. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE GROUND TRIANGLE, AND MAKE CONNECTIONS TO THE MAIN BREAKER AND THE CONTROL PANEL. THE TRIANGLE SHALL CONSIST OF #1/0 BARE COPPER GROUND CONDUCTOR, 3 - 3/4" DIAMETER 10' GROUND RODS, AND CADWELD CONNECTIONS TO GROUND RODS. PROVIDE COMPRESSION CONNECTIONS (AL/CU WHERE REQUIRED) TO UTILITY RACK, WATER PIPE, AND FENCE.

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

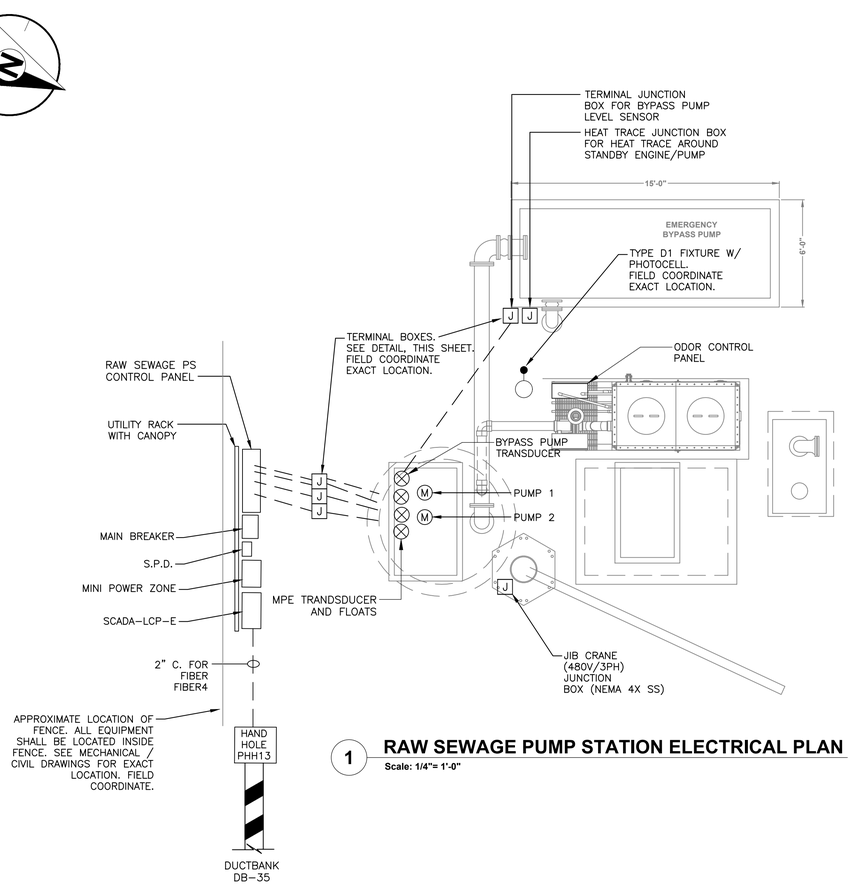
RAW SEWAGE PUMP STATION ONE LINE AND NOTES

DRAWING NUMBER

4-E-1
OF
214

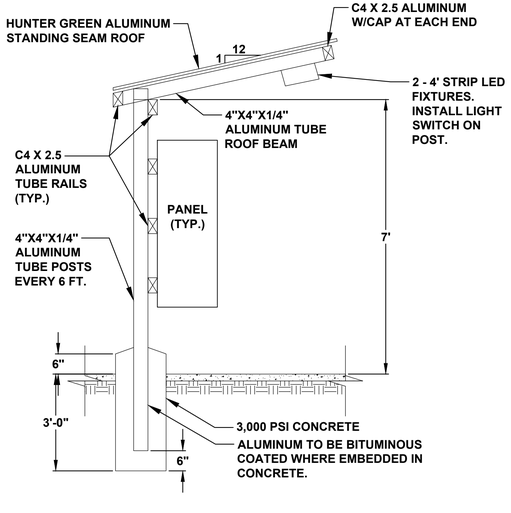
ESAD PROJECT #22014

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



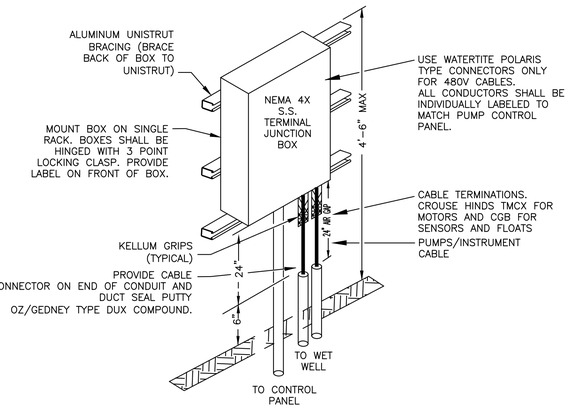
1 RAW SEWAGE PUMP STATION ELECTRICAL PLAN

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



UTILITY RACK LAYOUT SIDE VIEW

N.T.S.



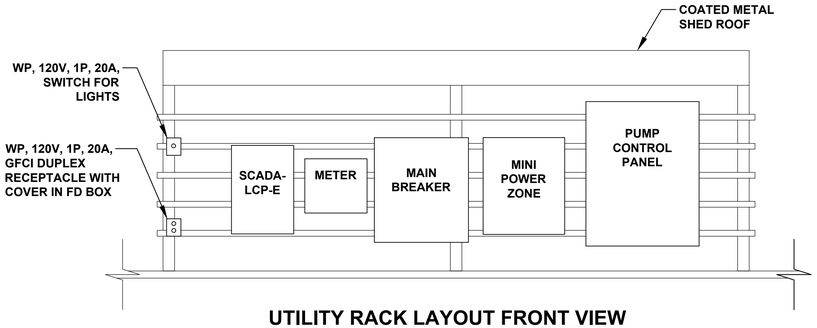
NOTES:
1. SEE ONE LINE DIAGRAM FOR CONDUIT SIZE AND QUANTITY.
2. USE RAINTIGHT MYERS HUBS FOR ALL CONDUIT PENETRATIONS.
3. BOXES SHALL BE UL LISTED AND LABELED. BOXES SHALL BE SINGLE HINGED WITH DOOR. DO NOT USE SCREW CLAMPS TO SECURE DOOR TO ENCLOSURE.
4. PROVIDE ENGRAVED LAMINATED PLASTIC NAMEPLATE TO IDENTIFY THE TERMINAL BOXES AND EQUIPMENT SERVED.
5. INSTALL ON 6" ALUMINUM C-CHANNELS AND UNISTRUT. PROVIDE CONCRETE ANCHORS FOR CHANNELS.
6. MOUNT BOX A MINIMUM OF 3 FEET FROM WET WELL OPENING AND VENT (IF INSTALLED) TO REMAIN UNCLASSIFIED PER NFPA 820. BOX FRONT DOOR SHALL OPEN AWAY FROM WETWELL.
7. PROVIDE A TOTAL OF 4 TERMINAL BOXES – PUMP 1, PUMP 2, FLOATS/PROBE, AND THE TRANSDUCER FOR THE BACKUP ENGINE.
8. ALL CONDUCTORS SHALL BE LABELED AT BOTH ENDS. USE HEAT SHRINK TYPE LABELS. LABELING SYSTEM SHALL MATCH FLYGT'S CONTROL PANEL TERMINAL NUMBERS.
9. BOXES SHALL HAVE DEDICATED TERMINAL BLOCKS (W/ SHIELDS) / DIN RAILS FOR ALL CONTROL WIRES (TRANSDUCER, FLOATS).

TERMINAL BOXES INSTALLATION DETAIL

SCALE: N.T.S

CONTROL PANEL NOTES:

1. **FRAME TO BE WELDED BY CERTIFIED WELDER TO DEVELOP FULL STRENGTH OF MATERIAL. RAILS WILL BE BOLTED.**
2. **PROVIDE A SMALL DRAINAGE HOLE AT THE BASE OF THE POST AND ON THE UNDERSIDE OF THE BEAMS.**
3. **ALL CONNECTIONS TO THE ALUMINUM FRAME SHALL BE MADE WITH COMPATIBLE MATERIALS OR COATINGS TO PREVENT CORROSION.**
4. **ALTERNATE RAIL SIZE IS ALUMINUM TUBE 2" DIA. X 0.154" OR $1\frac{1}{2}$" X $2\frac{1}{2}$" X $\frac{1}{8}$".**
5. **ALL SCREWS, FASTENERS, AND HARDWARE SHALL BE STAINLESS STEEL.**
6. **ELECTRICAL EQUIPMENT MAY BE RE-ARRANGED TO MATCH SITE CONDITIONS.**
7. **FOR CLARITY, ALL EQUIPMENT IS NOT SHOWN ON RACK.**



UTILITY RACK LAYOUT FRONT VIEW

N.T.S.

ESAD PROJECT #22014

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

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PROJECT NAME

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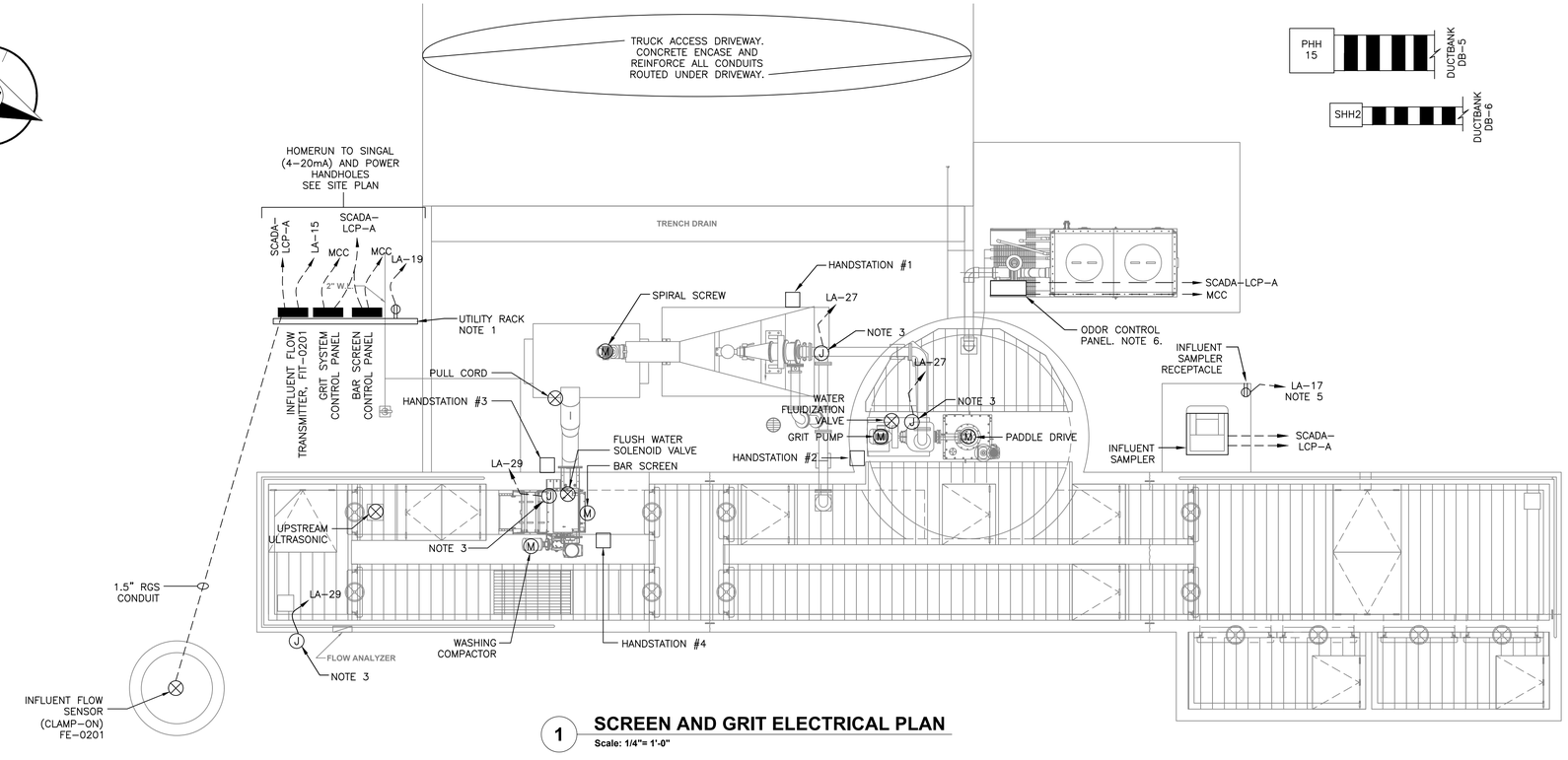
SHEET TITLE

RAW SEWAGE PUMP STATION PLAN ELECTRICAL

DRAWING NUMBER

4-E-2
OF
214



1 SCREEN AND GRIT ELECTRICAL PLAN

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

NOTES:

1. UTILITY RACK SHALL CONSIST OF 6' ALUMINUM C-CHANNELS AND ALUMINUM UNISTRUT. FIELD VERIFY EXACT LOCATION WITH OWNER / ENGINEER AND EQUIPMENT PRIOR TO INSTALLATION.
2. CONTRACTOR SHALL NOTE THAT THE HEADWORKS, SCREENING AND GRIT SYSTEM AREAS ARE CLASS 1, DIVISION 2 PER NFPA 820. CONTRACTOR SHALL INSTALL ALL CONDUITS IN ACCORDANCE WITH NEC ARTICLES 500, 501, AND 502. INSTALL AIR GAPS IN CONDUIT BETWEEN PANELS AND CLASSIFIED AREAS PER ELECTRICAL DETAIL.
3. HEAT TRACE JUNCTION BOX FOR 120V CONNECTION TO HEAT TRACE AROUND WATER LINES. ROUTE 2 #8 AND 1 #8 GND TO PANEL LA. PROVIDE HEAT TRACE JUNCTION BOXES AT FOUR AREAS – GRIT PIPING, GRIT FLUIDIZATION WATER, BAR SCREEN SPRAY WASH WATER, AND LIME SOLUTION RISER.
4. REFER TO MANUFACTURER'S SHOP DRAWINGS FOR ALL REQUIRED INTERCONNECTING WIRING AND CONDUIT AND EXACT LOCATIONS OF ALL FIELD DEVICES (MOTORS, SOLENOIDS, SENSORS, SWITCHES, ETC.).
5. ROUTE 3 #8 IN 1" CONDUIT FOR INFLUENT SAMPLER. INSTALL RECEPTACLE ON ALUMINUM STAND 24" A.F.G. LOCATE WITH 5 FEET OF SAMPLER PLUG.
6. THE ODOR CONTROL SYSTEM WILL BE FURNISHED ON A SKID AND ALL COMPONENTS (SOLENOIDS, MOTORS, PUMPS, INSTRUMENTS) WILL BE PREWIRED.
7. ALL EXTERIOR RECEPTACLES SHALL BE WP, GFCI.
8. ALL HOMERUNS ON THIS SHEET SHALL BE ROUTED TO THE HANDHOLES (PHH FOR POWER & SHH FOR SIGNALS) AND THEN BACK TO PANELS VIA DUCTABNKS.
9. SEE SCHEMATIC DIAGRAM ON SHEET 5-E-2 FOR INTERCONNECTING WIRING AND CONDUIT.

ESAD PROJECT #22014

ESAD, LLC
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ROSWELL, GA 30075
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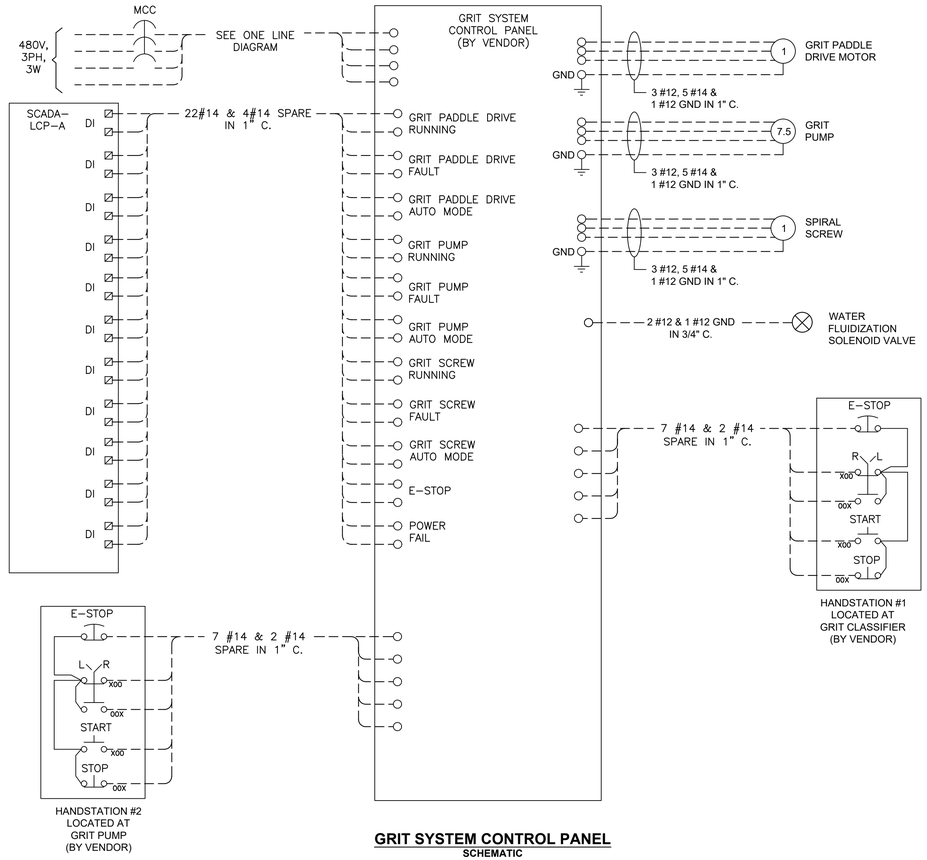
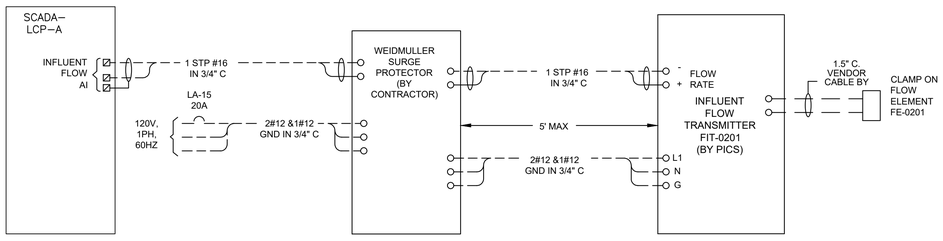
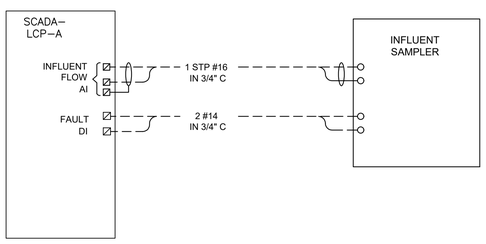


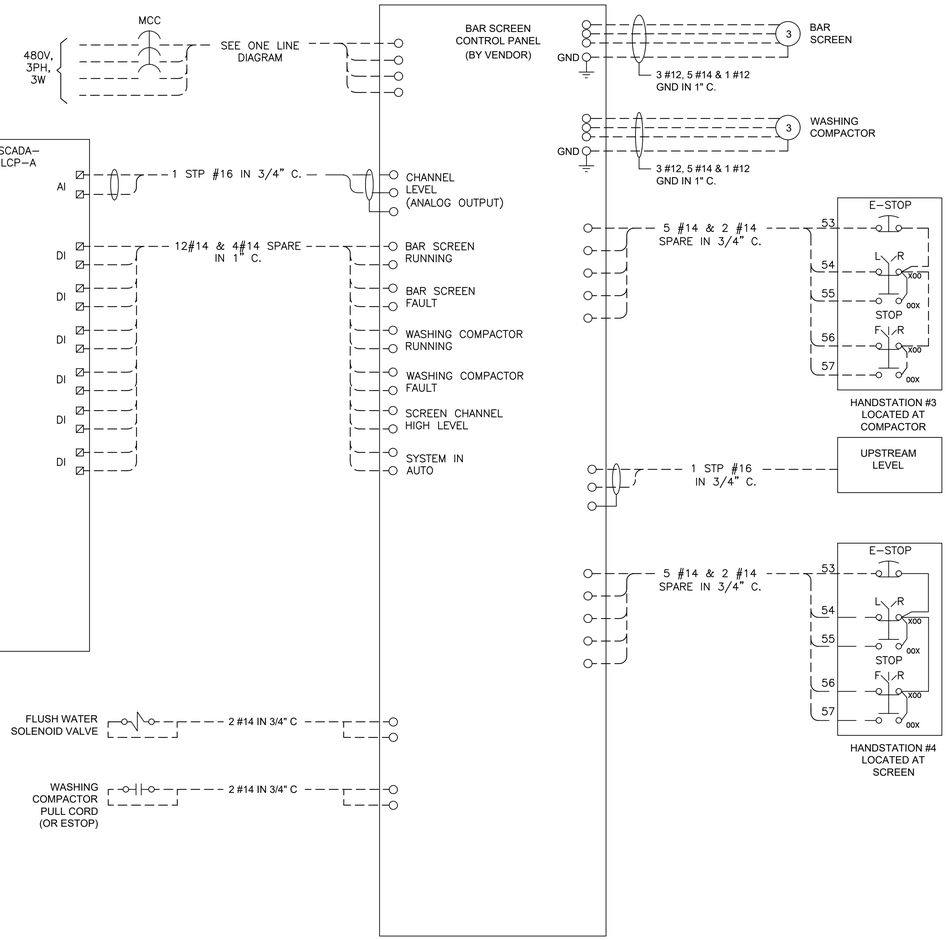
GRIT SYSTEM CONTROL PANEL
SCHEMATIC



INFLUENT FLOW METER
SCHEMATIC



INFLUENT SAMPLER
SCHEMATIC



BAR SCREEN CONTROL PANEL
SCHEMATIC

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CITY OF JEFFERSON

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REVISIONS

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

010/05/2021

SHEET TITLE

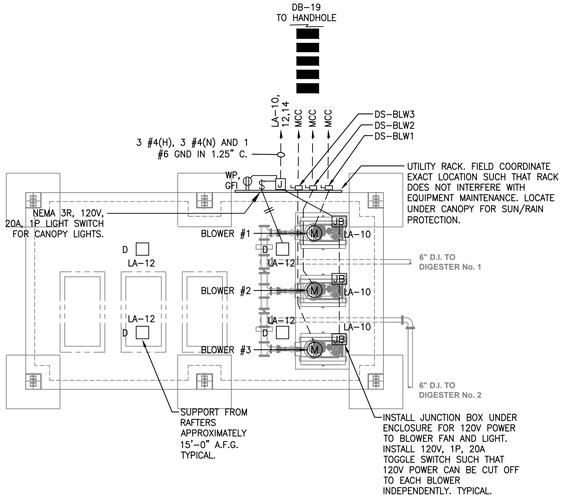
SCREEN & GRIT ELECTRICAL SCHEMATIC

DRAWING NUMBER

5-E-2
OF
214

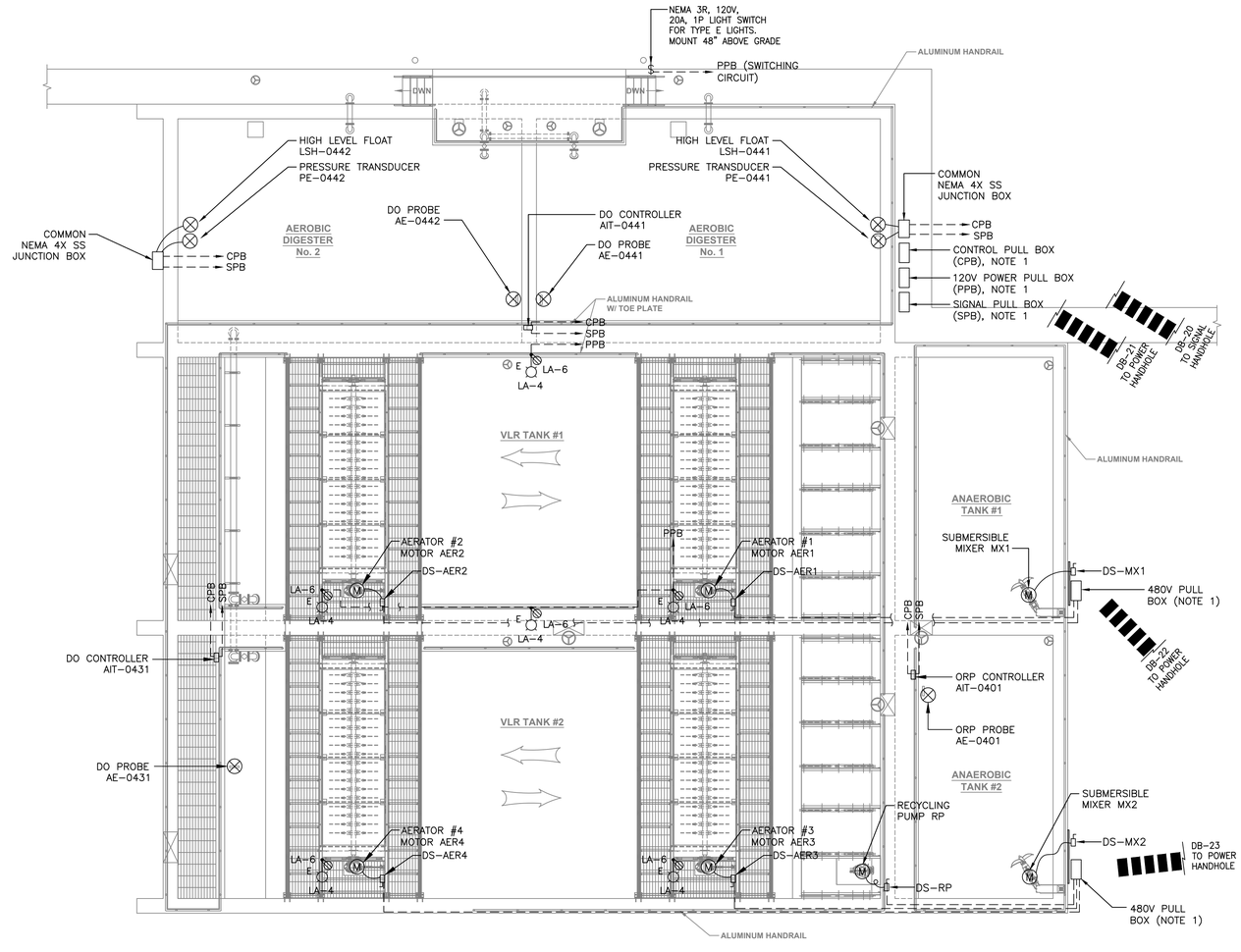
ESAD PROJECT #22014

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



1 BLOWER PAD PLAN

Scale: 1/8"= 1'-0"



2 AERATION BASIN ELECTRICAL PLANS

Scale: 1/8"= 1'-0"

NOTES:
1. CONTRACTOR SHALL FURNISH AND INSTALL NEMA 4X SS PULL BOXES FOR TRANSITION OF DUCTBANKS TO FIELD DEVICES. SUCH THAT BOTTOM IS 24" ABOVE GRADE. BOXES SHALL BE CONTINUOUS HINGED WITH SINGLE HANDLE (NO SCREW CLAMPS). INSTALL BOX ON ALUMINUM UNISTRUT STAND. DO NOT SPLICE CABLE IN BOX.
2. ALL CONDUIT IN AERATION BASINS SHALL BE BURIED IN THE CONCRETE WALLS AND/OR WALKWAYS. CONDUIT MAY BE DOWNSIZED TO 3/4" IF NEC CODE PERMITS. FIELD COORDINATE ROUGH-IN WITH GENERAL CONTRACTOR AND SUPPORT CONDUITS PRIOR TO POUR.
3. 120V POWER TO ANALYTICAL INSTRUMENTS (AIT) WILL BE PROVIDED FROM CONTROL PANEL (SCADA-LCP-A OR VLR CONTROL PANEL).
4. ALL 120V CONDUCTORS TO LIGHTS AND RECEPTACLES SHALL BE 3 #8 IN 3/4" C.
5. FORT TYPE E FIXTURE MOUNTING, SEE DETAIL G/20-E-7.

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

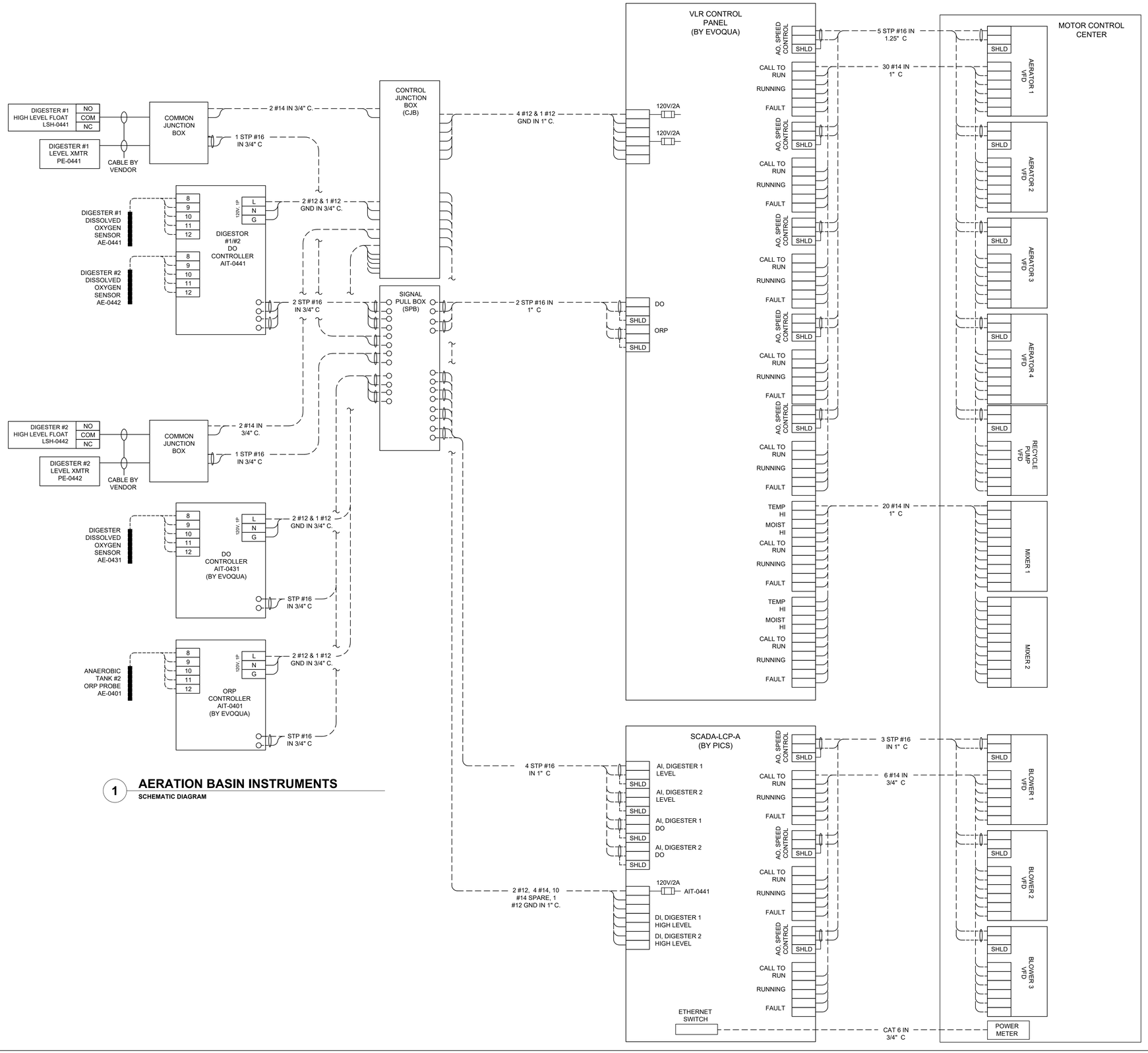
10/05/2021

SHEET TITLE

AERATION BASIN ELECTRICAL

DRAWING NUMBER

6-E-1
OF
214



1 AERATION BASIN INSTRUMENTS

SCHEMATIC DIAGRAM

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

AERATION BASIN SCHEMATICS

DRAWING NUMBER

6-E-2
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214

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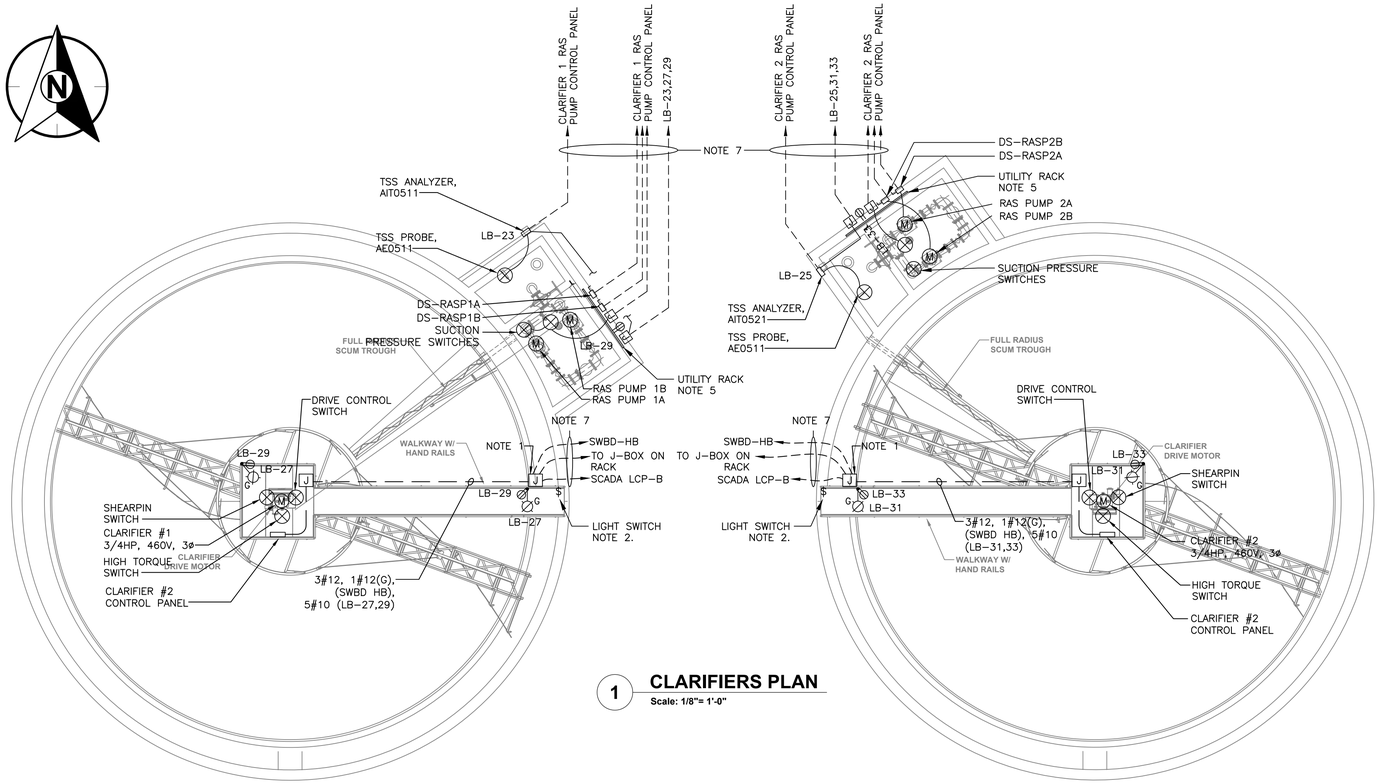
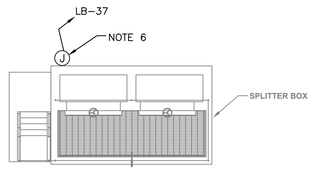


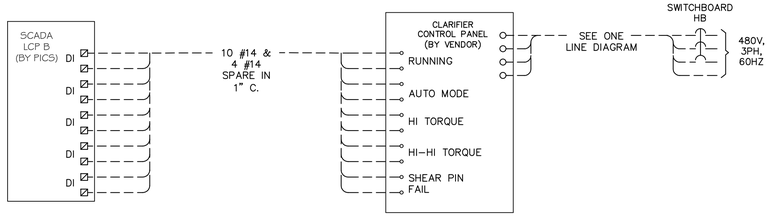
1 CLARIFIERS PLAN

Scale: 1/8"= 1'-0"

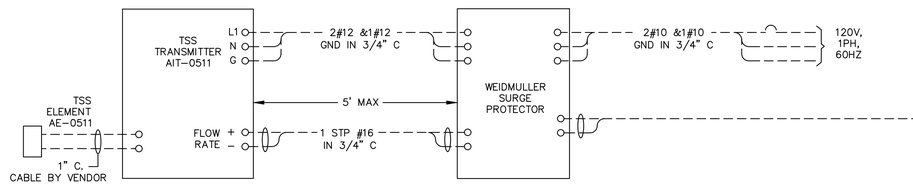
NOTES:

1. INSTALL NEMA 4X STAINLESS STEEL JUNCTION BOX AT BASE OF PLATFORM FOR TRANSITION OF UNDERGROUND CONDUITS. MOUNT MINIMUM OF 24" ABOVE GRADE.
2. INSTALL A NEMA 3R, 120V, 1P, 20A LIGHT SWITCH AT STAIRS TO CONTROL TYPE 'G' LIGHT ON WALKWAY. LOCATE SWITCH 48" ABOVE GROUND.
3. ALL RECEPTACLES SHALL BE NEMA 3R, GFCI, 20A, 120V.
4. ALL 120V CIRCUITS FOR LIGHTING, RECEPTACLES, ETC. SHALL UTILIZE #6 CONDUCTORS TO ACCOMMODATE FOR VOLTAGE DROP.
5. INSTALL DISCONNECTS, RECEPTACLES, AND BOXES ON AN ALUMINUM UTILITY RACK CONSISTING OF 6" C-CHANNELS AND ALUMINUM UNISTRUT. FIELD COORDINATE EXACT LOCATION SUCH THAT RACK DOES NOT INTERFERE WITH REMOVAL OF EQUIPMENT.
6. HEAT TRACE JUNCTION BOX FOR 120V CONNECTION TO HEAT TRACE AROUND ALUM LINES. ROUTE 2 #8 AND 1 #8 GND TO PANEL LB.
7. ELECTRICAL BUILDING 2 IS APPROXIMATELY 75 FEET FROM EQUIPMENT BEING SERVED. ROUTE HOMERUNS INDIVIDUALLY (OR GROUP) TO CORRESPONDING PANEL. CONCRETE ENCASE EACH HOMERUN. DO NOT EXCEED 3 – 90 DEGREE TURNS IN CONDUIT RUNS.

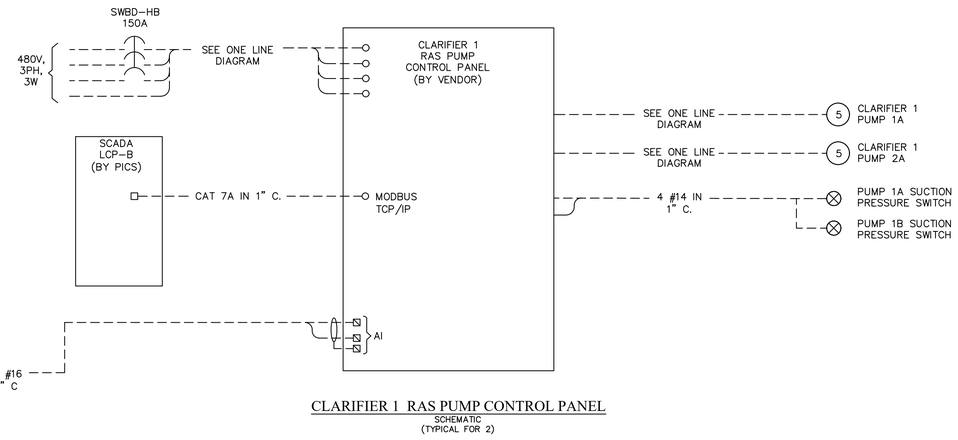




CLARIFIER CONTROL PANEL
SCHEMATIC
(TYPICAL FOR 2)



TSS TRANSMITTERS
SCHEMATIC
(TYPICAL FOR 2 – AIT/AE0511 & AIT/AE0521)



CLARIFIER 1 RAS PUMP CONTROL PANEL
SCHEMATIC
(TYPICAL FOR 2)

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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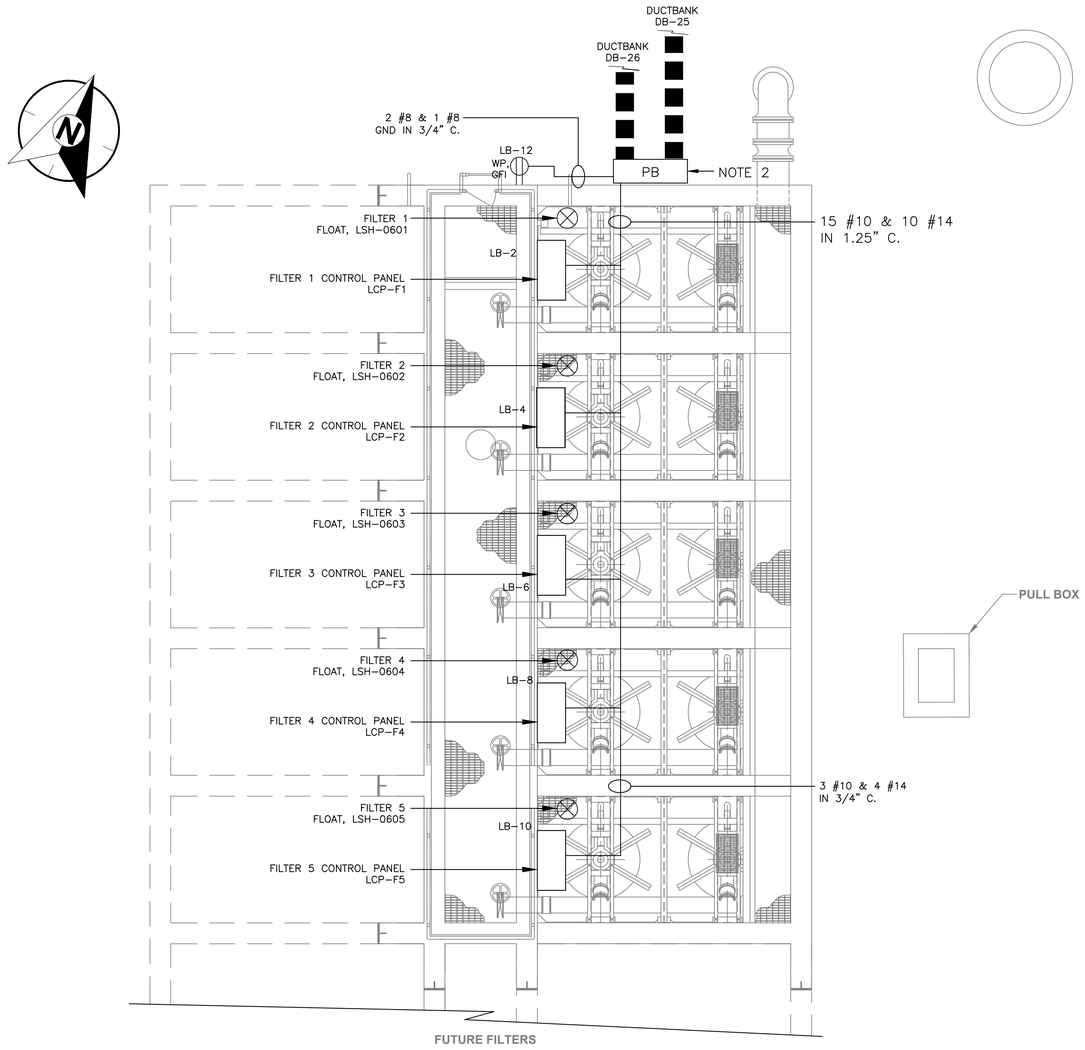
10/05/2021

SHEET TITLE

FINAL CLARIFIER ELECTRICAL PLAN

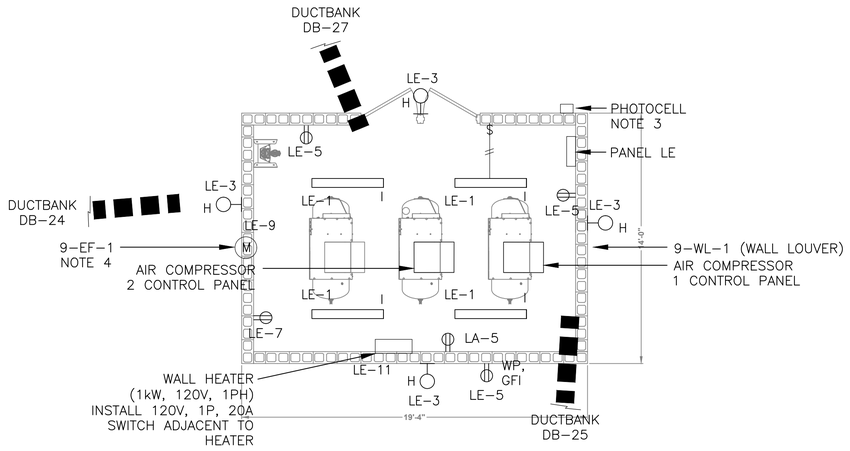
DRAWING NUMBER

8-E-1
OF
214



1 FILTER TOP PLAN

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



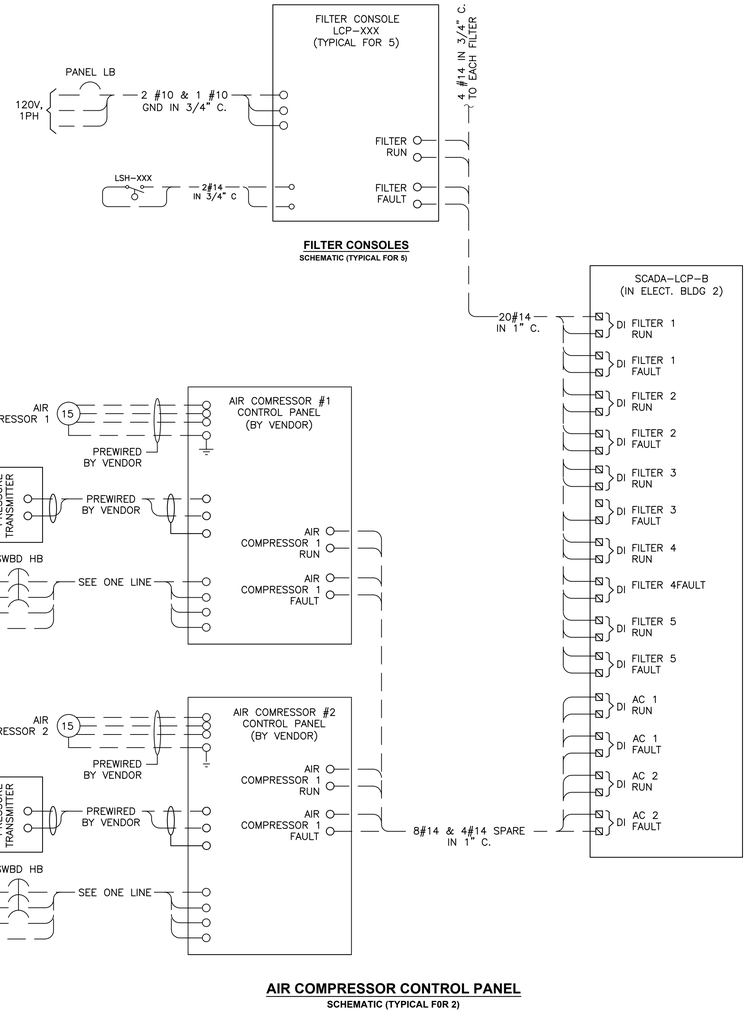
2 AIR COMPRESSOR BUILDING

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

NOTES:

1. ROUTE 3 #10 (120V POWER) & 4 #14 (CONTROLS) IN 3/4" C. TO EACH FILTER CONTROL PANEL.
2. INSTALL NEMA 4X STAINLESS STEEL PULL BOX AT BASE OF PLATFORM FOR TRANSITION OF UNDERGROUND CONDUITS. MOUNT MINIMUM OF 24" ABOVE GRADE.
3. INSTALL PHOTOCELL ON WALL FACING NORTH. ROUTE CIRCUIT FOR WALL PACKS THROUGH PHOTOCELL SUCH THAT FIXTURES AUTOMATICALLY TURN ON AT DUSK.
4. INSTALL A NEMA 1, 120V, 0.5HP, MOTOR RATED TOGGLE SWITCH. INSTALL ADJACENT TO FAN AND INTERLOCK WITH LOUVER SUCH THAT LOUVER OPENS WHEN FAN RUNS.

FILTER CONSOLE NO.	PANEL LB CB-X	LSH-XXX NO.
LCP-F1	CB-2	LSH-0601
LCP-F2	CB-4	LSH-0602
LCP-F3	CB-6	LSH-0603
LCP-F4	CB-8	LSH-0604
LCP-F5	CB-10	LSH-0610



FILTER CONSOLES

SCHEMATIC (TYPICAL FOR 5)

AIR COMPRESSOR CONTROL PANEL

SCHEMATIC (TYPICAL F0R 2)

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

FILTERS ELECTRICAL PLAN

DRAWING NUMBER

9-E-1
OF
214

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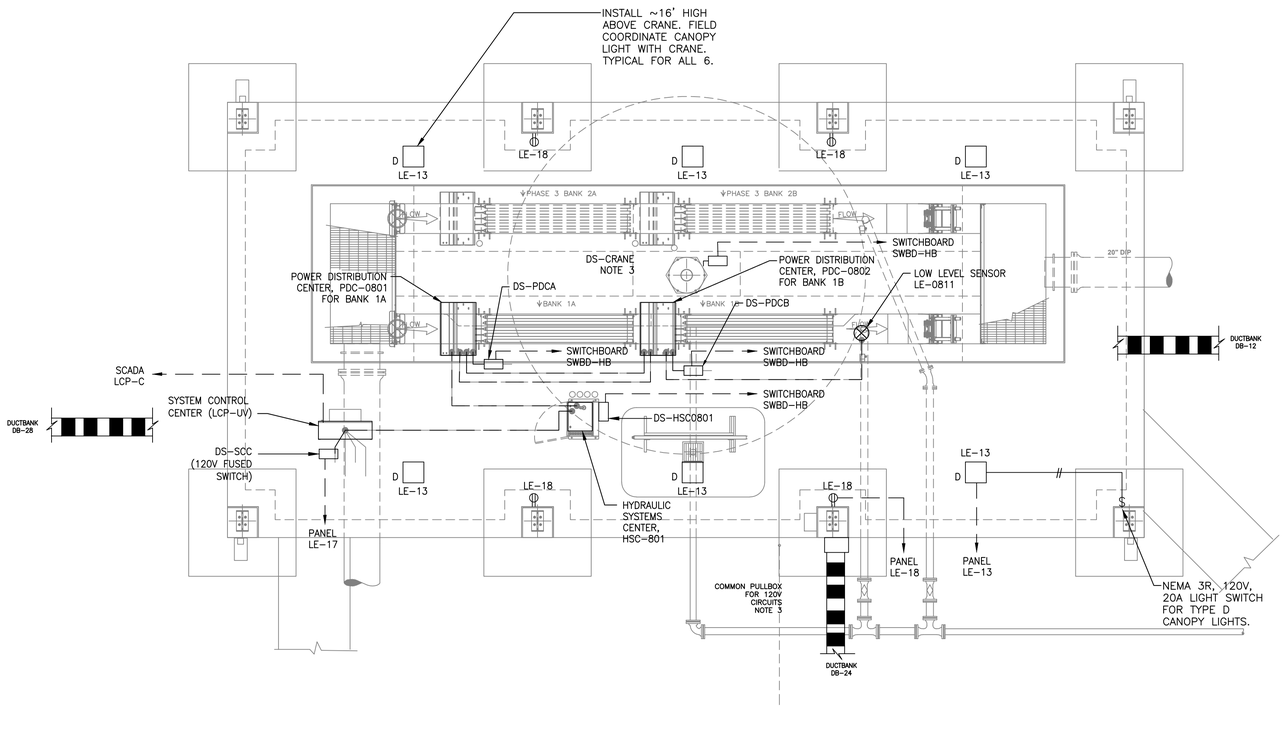

1 UV DISINFECTION PLAN - ELECTRICAL

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

NOTES:
1. ALL RECEPTACLES SHALL BE WP, GFCI RATED.

2. CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTING WIRING AND CONDUIT ASSOCIATED WITH A FULLY FUNCTIONAL CRANE. FUSE DISCONNECT PER MANUFACTURER'S RECOMMENDATION. FIELD COORDINATE EXACT LOCATION WITH UV EQUIPMENT. SEE NOTES / DETAILS ON DRAWING 10-M-1 FOR ADDITIONAL MANUFACTURER'S REQUIREMENTS AND TROJAN 3000+ INTERCONNECTING WIRING.

3. CONTRACTOR SHALL PROVIDE AND INSTALL NEMA 4X RATED PULLBOX FOR INTERFACE WITH UNDERGROUND DUCTBANK. THE PULLBOX SHALL BE SIZED IN ACCORDANCE WITH NEC 314.28. THE EXACT PULLBOX LOCATION SHALL BE DETERMINED IN THE FIELD.

4. CONDUIT RUNS AND STUB-UP LOCATIONS SHALL BE COORDINATED WITH THE MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGH-IN.

5. ALL 120V CIRCUITS TO LIGHTS, RECEPTACLES, AND SYSTEM CONTROL CENTER SHALL USE 3 #10 CONDUCTORS.

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UV DISINFECTION ELECTRICAL PLAN

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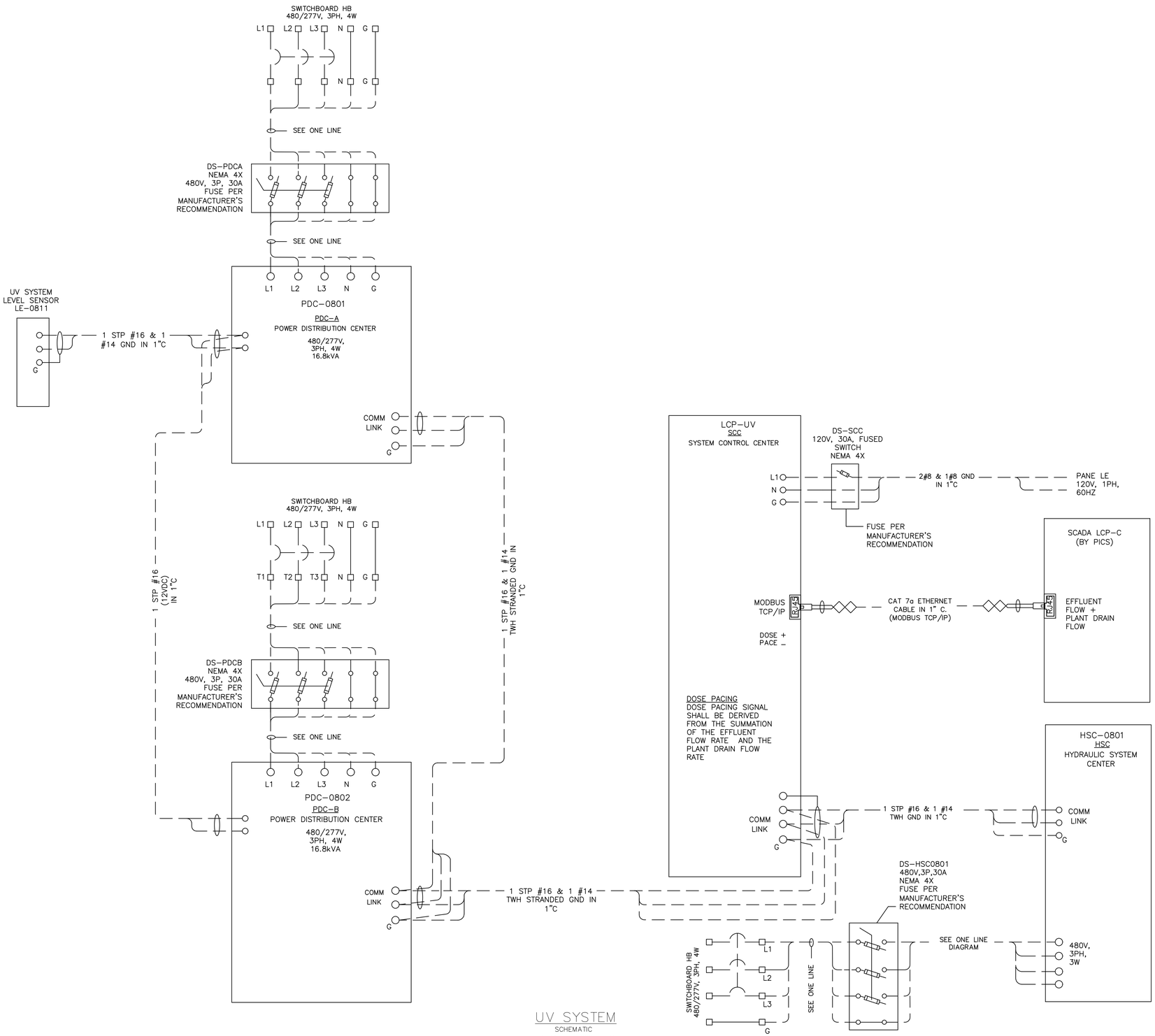

UV SYSTEM
SCHEMATIC
TROJAN UV 3000 PLUS

ESAD PROJECT #22014

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UV DISINFECTION SCHEMATIC

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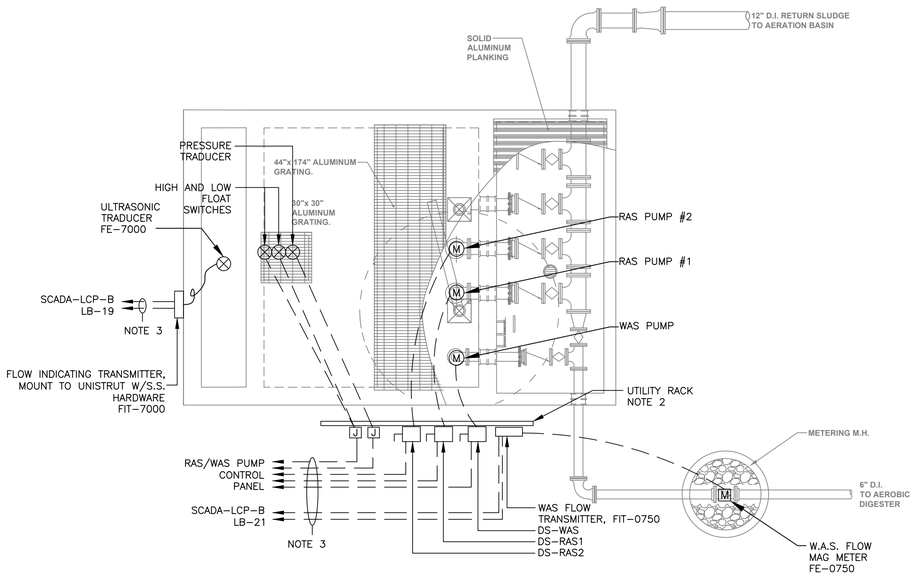
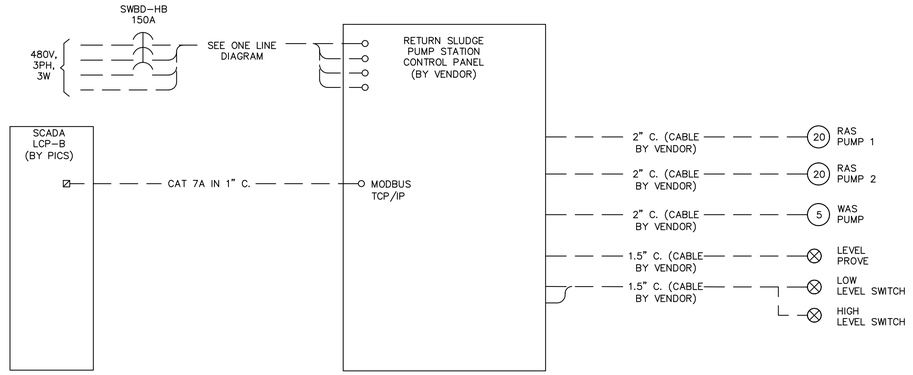


1 RETURN SLUDGE PS

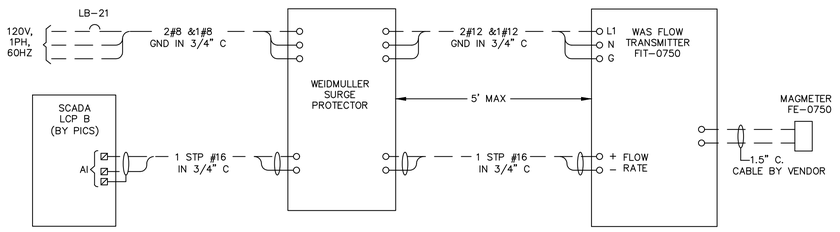
Scale: 1/4"= 1'-0"

NOTES:

1. ALL 120V CIRCUITS FOR LIGHTING, RECEPTACLES, ETC. SHALL UTILIZE #10 CONDUCTORS TO ACCOMMODATE FOR VOLTAGE DROP.
2. INSTALL DISCONNECTS, RECEPTACLES, AND BOXES ON AN ALUMINUM UTILITY RACK CONSISTING OF 6" C-CHANNELS AND ALUMINUM UNISTRUT. FIELD COORDINATE EXACT LOCATION SUCH THAT RACK DOES NOT INTERFERE WITH REMOVAL OF EQUIPMENT.
3. ELECTRICAL BUILDING 2 IS APPROXIMATELY 50 FEET FROM EQUIPMENT BEING SERVED. ROUTE HOMERUNS INDIVIDUALLY (OR GROUP) TO CORRESPONDING PANEL. CONCRETE ENCASE EACH HOMERUN. DO NOT EXCEED 3 - 90 DEGREE TURNS IN CONDUIT RUNS.

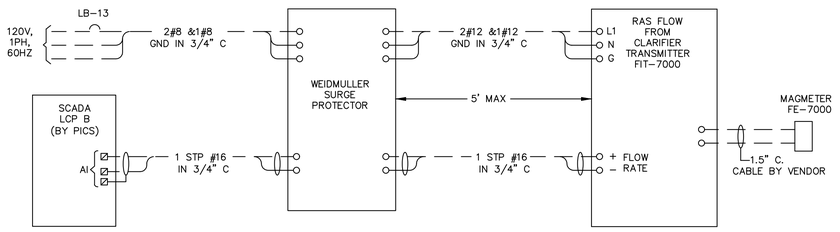


RAS/WAS PUMP CONTROL PANEL



WAS FLOW TO DIGESTER METER

SCHEMATIC



RAS FLOW FROM CLARIFIER METER

SCHEMATIC

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

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SHEET TITLE

RETURN SLUDGE PUMP STATION ELECTRICAL PLAN

DRAWING NUMBER

12-E-1
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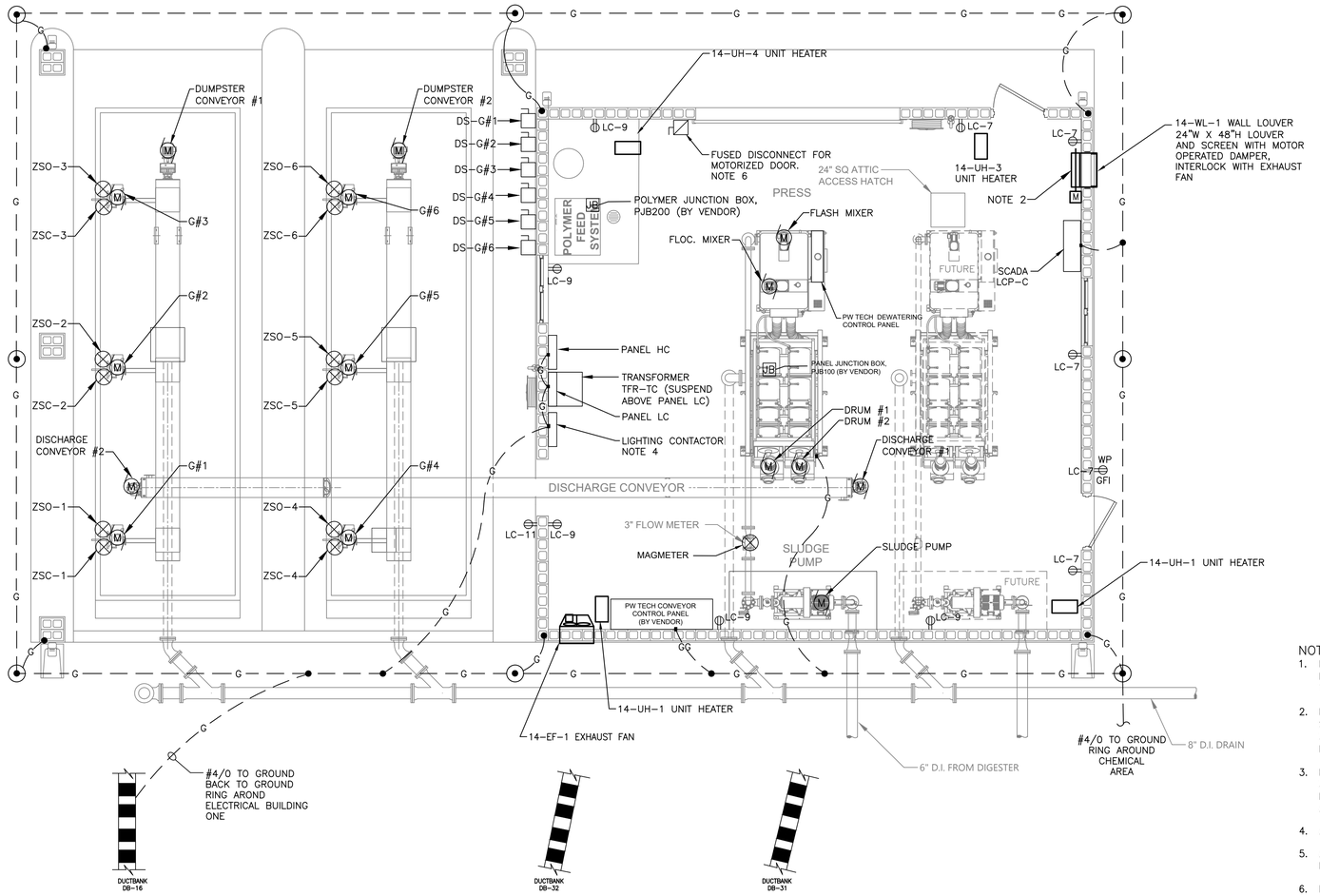

1 SCREW PRESS BUILDING POWER AND GROUNDING FLOOR PLAN

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

NOTES:

1. PROVIDE A 120V, 1P, 1/8HP, SQUARE D MOTOR TOGGLE SWITCH FOR LOUVER. ROUTE 3 #12 IN 3/4" C. FROM DAMPER, TO SWITCH, AND THEN TO FAN STARTER. INTERLOCK DAMPER WITH EXHAUST FAN.
2. EF-1, WALL MOUNTED EXHAUST FAN. PROVIDE A 120V, 1P, 3/4HP, SQUARE D MOTOR RATED TOGGLE SWITCH. ROUTE 2 #12 & 1 #12 GND IN 3/4" C. FROM FAN TO SWITCH AND THEN TO PANEL LC. INTERLOCK WITH LOUVER.
3. EUH-1 AND EUH-4, ELECTRIC UNIT HEATER (5KW, 480V, 3PH). PROVIDE 30A, 480V, 3P, NEMA 4X SS DISCONNECT SWITCH FOR EACH HEATER. ROUTE 3 #12 & 1 #12 GND IN 3/4" GND FROM HEATER TO DISCONNECT AND THEN TO PANEL HC.
4. ALL CONDUIT SHALL BE ALUMINUM.
5. ALL RECEPTACLES SHALL BE WP, 120V, DUPLEX, 20A, GFCI WITH ALUMINUM PLATES. MOUNT 18" A.F.F.
6. INSTALL A 30A, 480V, 3P, NEMA 4X FUSED DISCONNECT SWITCH FOR OVERHEAD DOOR. FUSE PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTING WIRING AND CONDUIT ASSOCIATED WITH THE OVERHEAD DOOR, INCLUDING DOOR STOPS, HANDSTATIONS, ETC. ROUTE 3 #12 & 1 #12 GND IN 3/4" C. FROM DISCONNECT TO PANEL HC-25,27,29.
7. ALL FREESTANDING EQUIPMENT (TRANSFORMERS, CONTROL PANELS, ETC.) SHALL BE INSTALLED ON A 4" HOUSE KEEPING PAD.
8. PROVIDE ASCO 918 LIGHTING CONTACTOR WITH 4 – 20A, 1 POLES FOR EXTERIOR LIGHTS, NEMA 1 ENCLOSURE WITH H-O-A SWITCH. ROUTE 2 #14 IN 3/4" C. BETWEEN SCADA LCP-C FOR AUTO CONTROL. ROUTE EXTERIOR LIGHTING CIRCUITS THROUGH CONTACTORS.
9. PROVIDE A NEMA 4X SS, 30A, 3P, 480V DISCONNECT SWITCH FOR EACH OF THE SIX MOTORIZED GATES. GROUP MOUNT ON WALL AND ROUTE 4 #12's IN 3/4" C. FROM GATE TO DISCONNECT AND THEN TO THE DEWATERING CONTROL PANEL.
10. CONTRACTOR SHALL ROUTE AS MUCH CONDUIT IN FLOOR. COORDINATE EXACT STUBUP LOCATIONS WITH PW TECH SHOP DRAWINGS.

ESAD PROJECT #22014

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Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

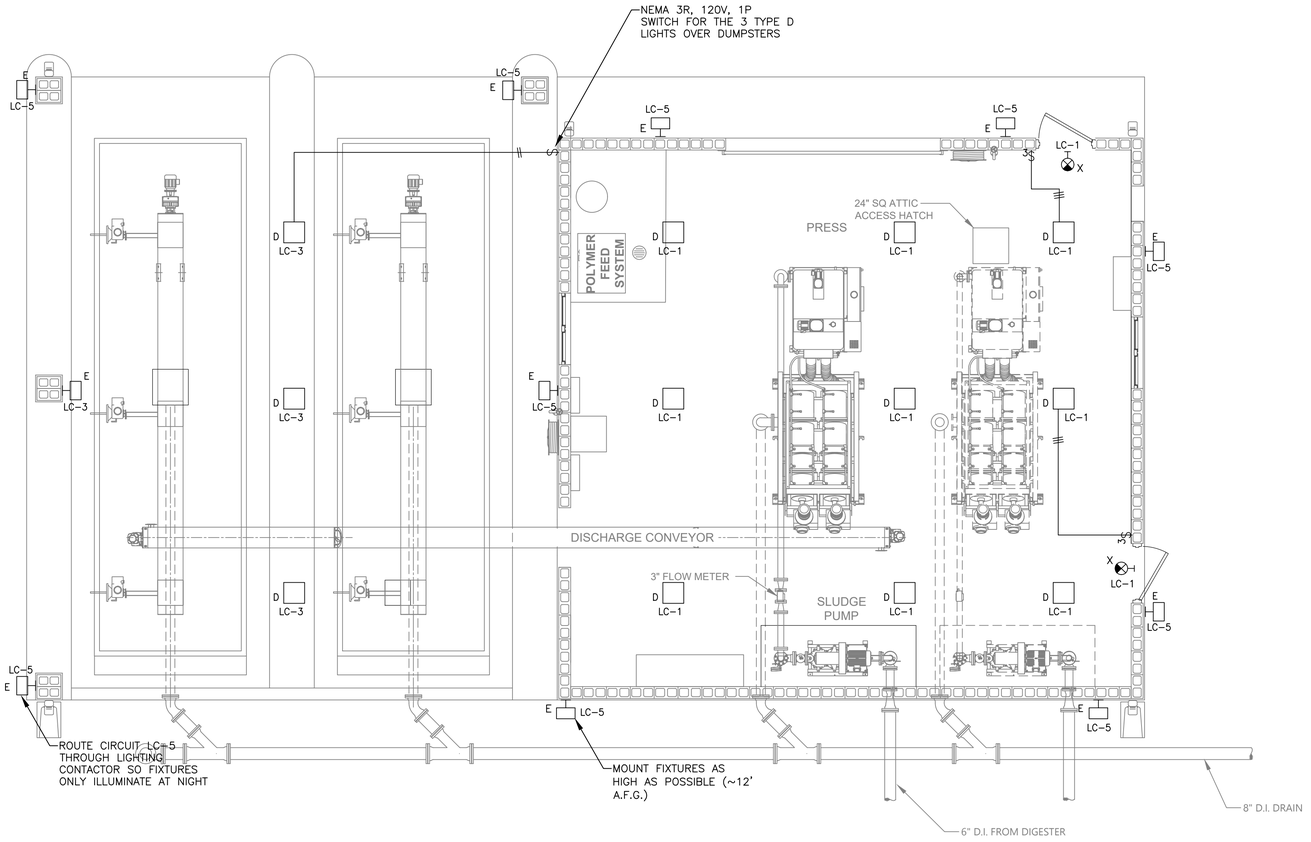
SCREW PRESS BUILDING POWER AND GROUNDING

DRAWING NUMBER

14-E-1
OF
214

NOTES:

1. ALL CONDUIT SHALL BE ROUTED INSIDE BUILDING. DO NOT ROUTE EXPOSED EXCEPT IN DUMPSTER AREA.



1 SCREW PRESS BUILDING LIGHTING FLOOR PLAN

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

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
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REVISIONS

No	Date	Description
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Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

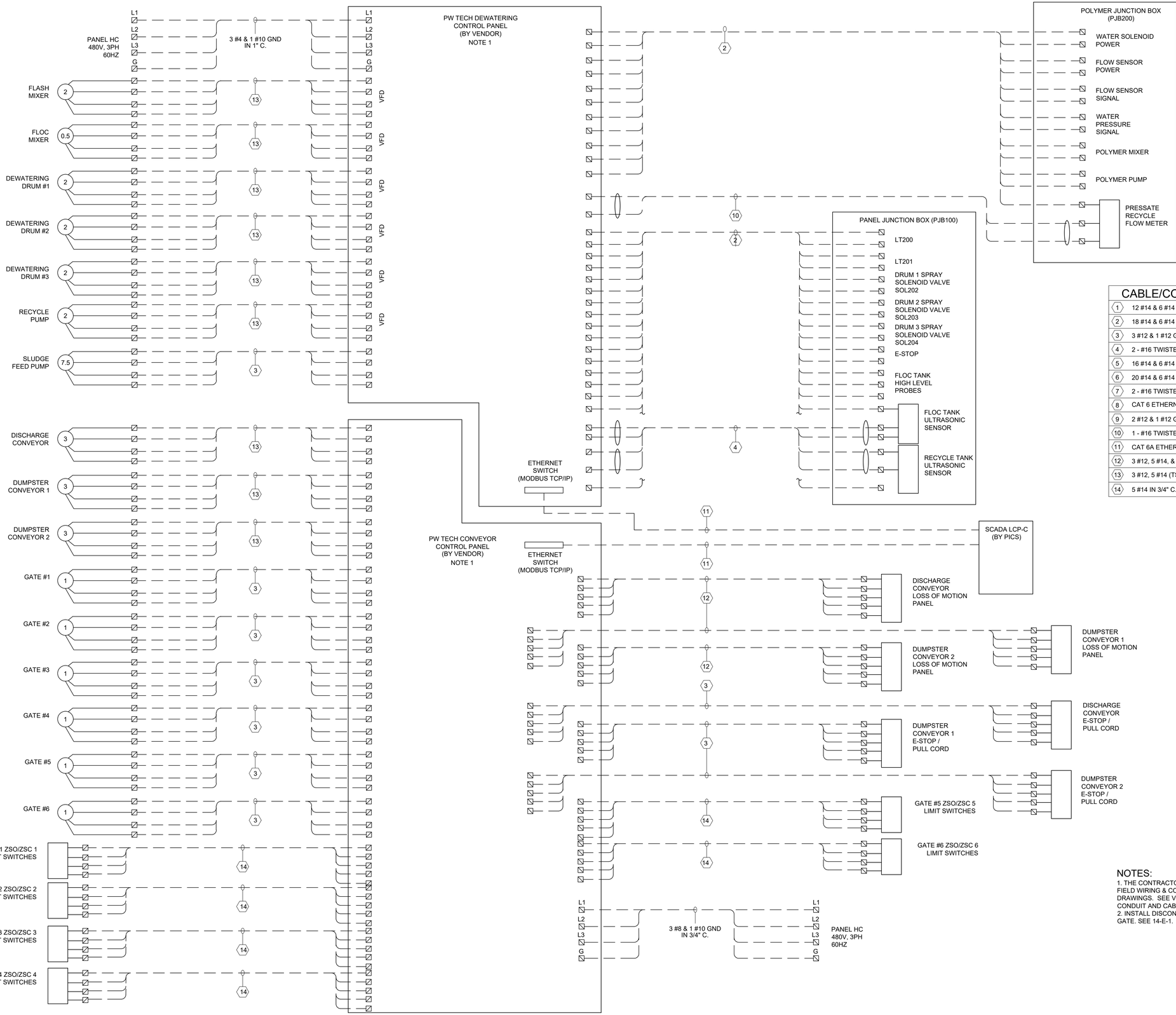
SCREW PRESS BUILDING LIGHTING PLAN

DRAWING NUMBER

14-E-2
OF
214

ESAD PROJECT #22014

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



CABLE/CONDUIT SCHEDULE

1	12 #14 & 6 #14 SPARE IN 1" C.
2	18 #14 & 6 #14 SPARE IN 1" C.
3	3 #12 & 1 #12 GND IN 3/4" C.
4	2 - #16 TWISTED SHIELDED PAIRS IN 1" C.
5	16 #14 & 6 #14 SPARE IN 1" C.
6	20 #14 & 6 #14 SPARE IN 1 "C.
7	2 - #16 TWISTED SHIELDED PAIRS IN 1" C.
8	CAT 6 ETHERNET CABLE IN 1" C.
9	2 #12 & 1 #12 GND IN 3/4" C.
10	1 - #16 TWISTED SHIELDED PAIR IN 3/4" C.
11	CAT 6A ETHERNET IN 3/4" C.
12	3 #12, 5 #14, & 1 #12 GND IN 3/4" C.
13	3 #12, 5 #14 (TSH/SPHTR)), & 1 #12 GND IN 3/4" C.
14	5 #14 IN 3/4" C.

NOTES:
1. THE CONTRACTOR IS RESPONSIBLE FOR ALL INTERCONNECTING FIELD WIRING & CONDUIT AS SHOWN ON THE VENDOR SHOP DRAWINGS. SEE VENDOR SHOP DRAWINGS PRIOR TO INSTALLING CONDUIT AND CABLES.
2. INSTALL DISCONNECTS (NOT SHOWN ON SCHEMATIC) FOR EACH GATE. SEE 14-E-1.

ESAD PROJECT #22014

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Designed By : DMZ

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Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

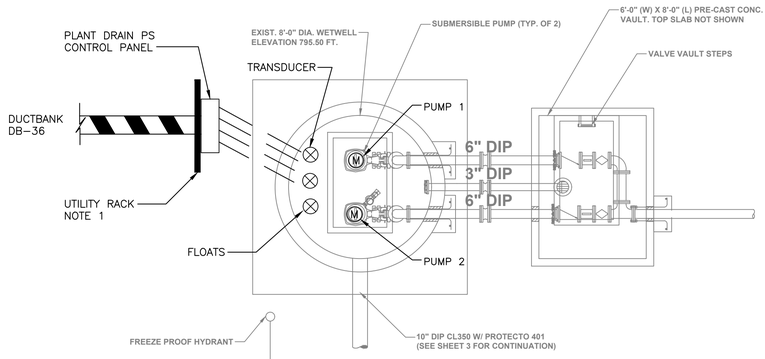
10/05/2021

SHEET TITLE

SCREW PRESS BUILDING SCHEMATICS

DRAWING NUMBER

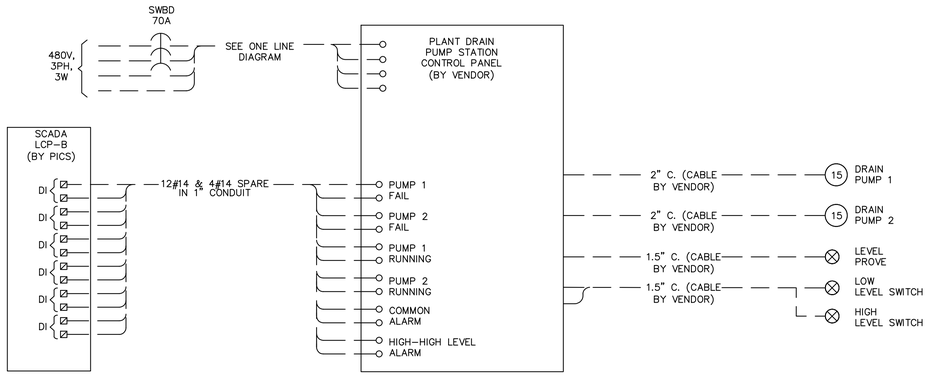
14-E-3
OF
214



NOTES:
1. INSTALL CONTROL PANEL ON AN ALUMINUM UTILITY RACK CONSISTING OF 6" C-CHANNELS AND ALUMINUM UNISTRUT. FIELD COORDINATE EXACT LOCATION SUCH THAT RACK DOES NOT INTERFERE WITH REMOVAL OF EQUIPMENT.
2. ROUTE 7 #2's TO JUNCTION BOX AND THEN #12s TO EQUIPMENT BEING SERVED. USE WATERTIGHT POLARIS TYPE CONNECTORS IN JUNCTION BOX FOR SPLICING THE #2s TO #12's.
3. INSTALL GROUND ROD ADJACENT TO UTILITY RACK AND GROUND RACK.

1 PLANT DRAIN PUMP STATION - ELECTRICAL

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

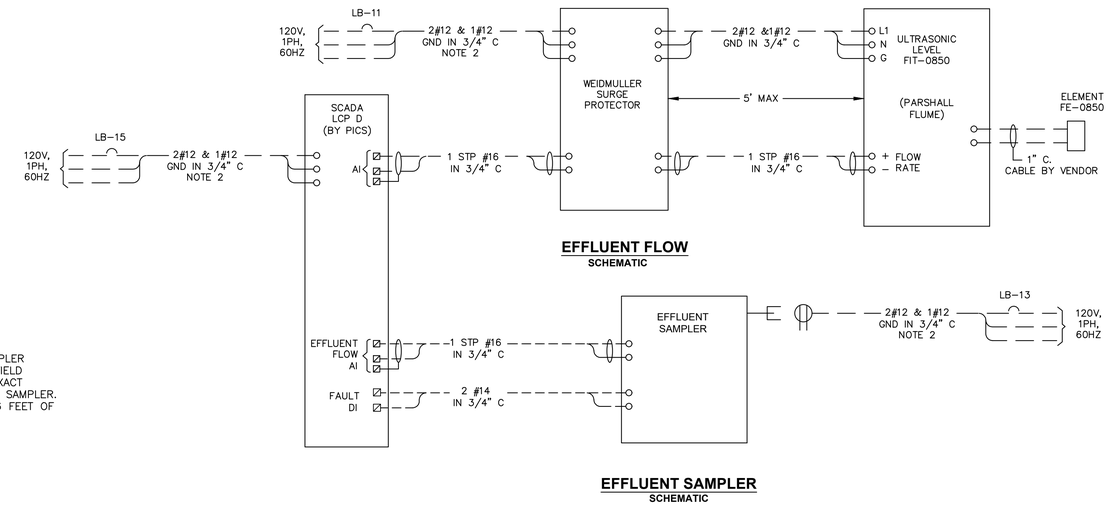


PLANT DRAIN PUMP STATION CONTROL PANEL

SCHEMATIC

2 PARSHALL FLUME - ELECTRICAL PLAN

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



EFFLUENT FLOW

SCHEMATIC

EFFLUENT SAMPLER

SCHEMATIC

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

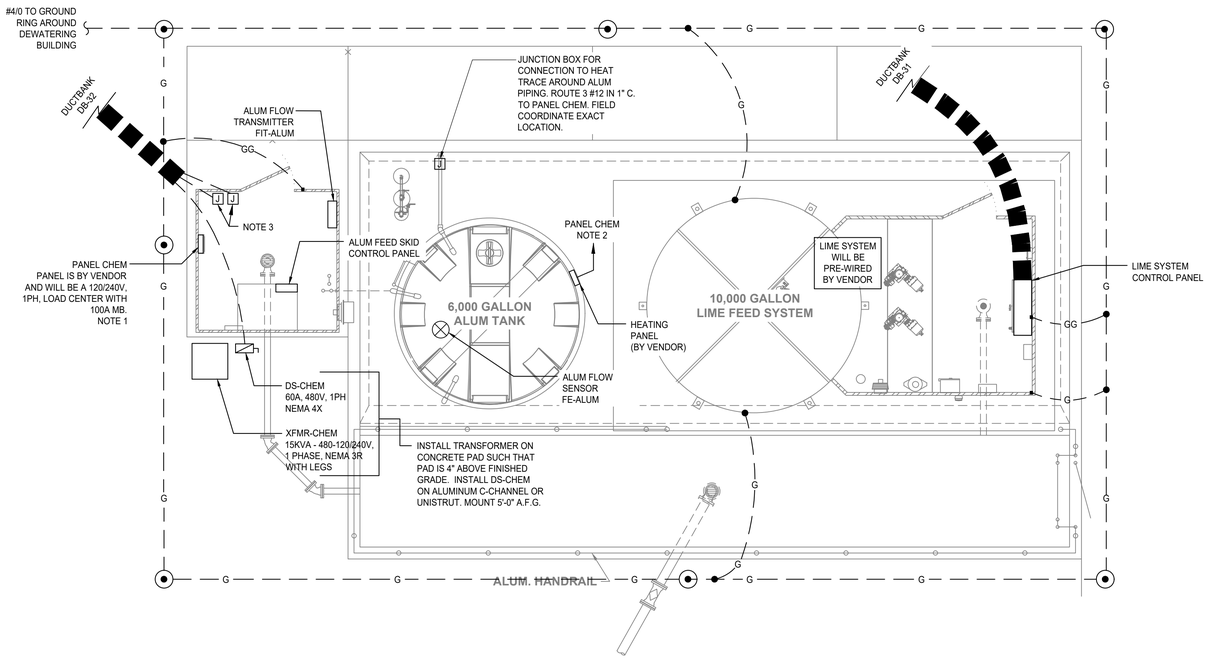
PLANT DRAIN PS AND PARSHALL FLUME ELECTRICAL PLANS

DRAWING NUMBER

15-E-1
OF
214

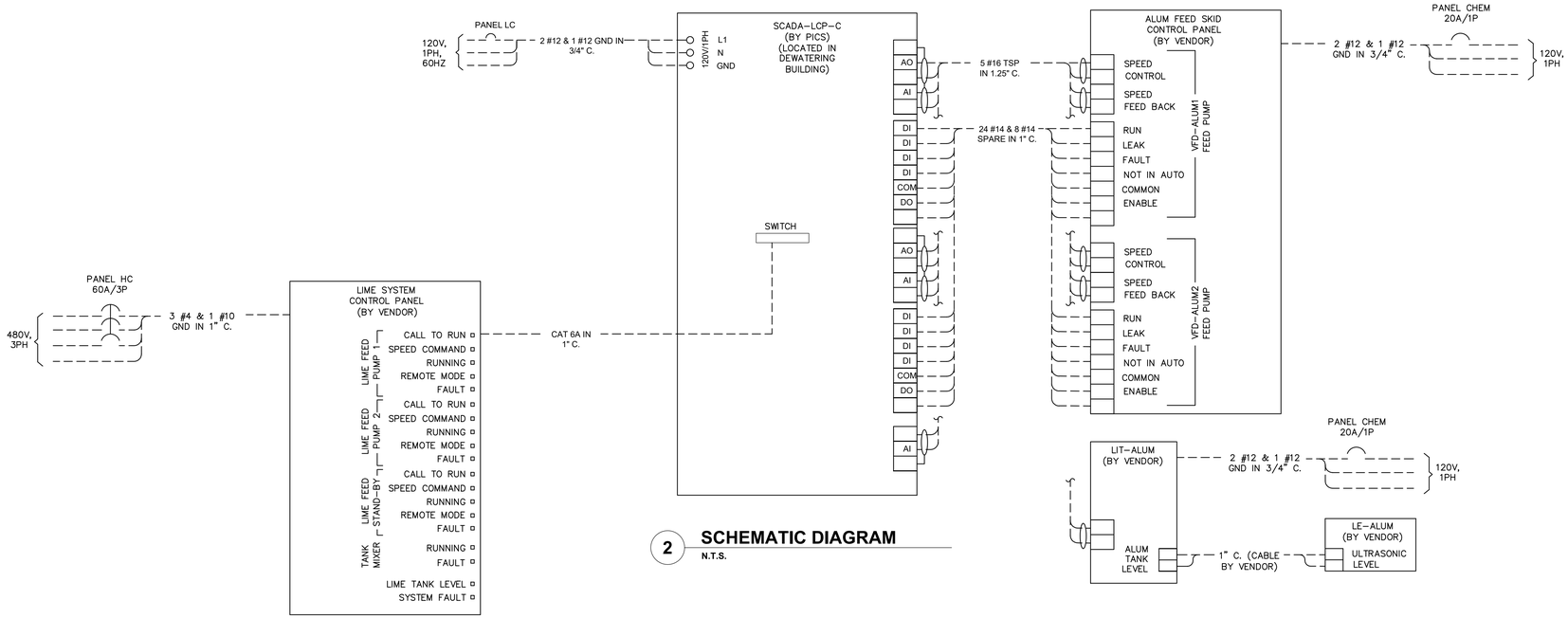
ESAD PROJECT #22014

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



1 BULK CHEMICAL STORAGE

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



2 SCHEMATIC DIAGRAM

N.T.S.

NOTES:

1. CONTRACTOR SHALL INSTALL 2 - 20A, 1P, GFI (25mA) CIRCUIT BREAKERS AND 2 - 20A, 1P CIRCUIT BREAKERS IN VENDOR LOAD CENTER (PANEL CHEM) TO POWER:
   - A) ALUM TANK HEAT PANEL (GFI)
   - B) HEAT TRACE JUNCTION BOX (GFI)
   - C) ALUM TANK FLOW TRANSMITTER (FIT-ALUM)
   - D) ALUM FEED SKID CONTROL PANEL

   PROVIDE TYPE WRITTEN DIRECTORY WHEN DONE
2. ROUTE 3 #12 IN 1" C. FROM PANEL TO PANEL CHEM.
3. PROVIDE TWO COMMON JUNCTION BOXES - ONE FOR #14 CONTROL WIRES AND A SECOND FOR #16 SIGNAL WIRES.

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APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

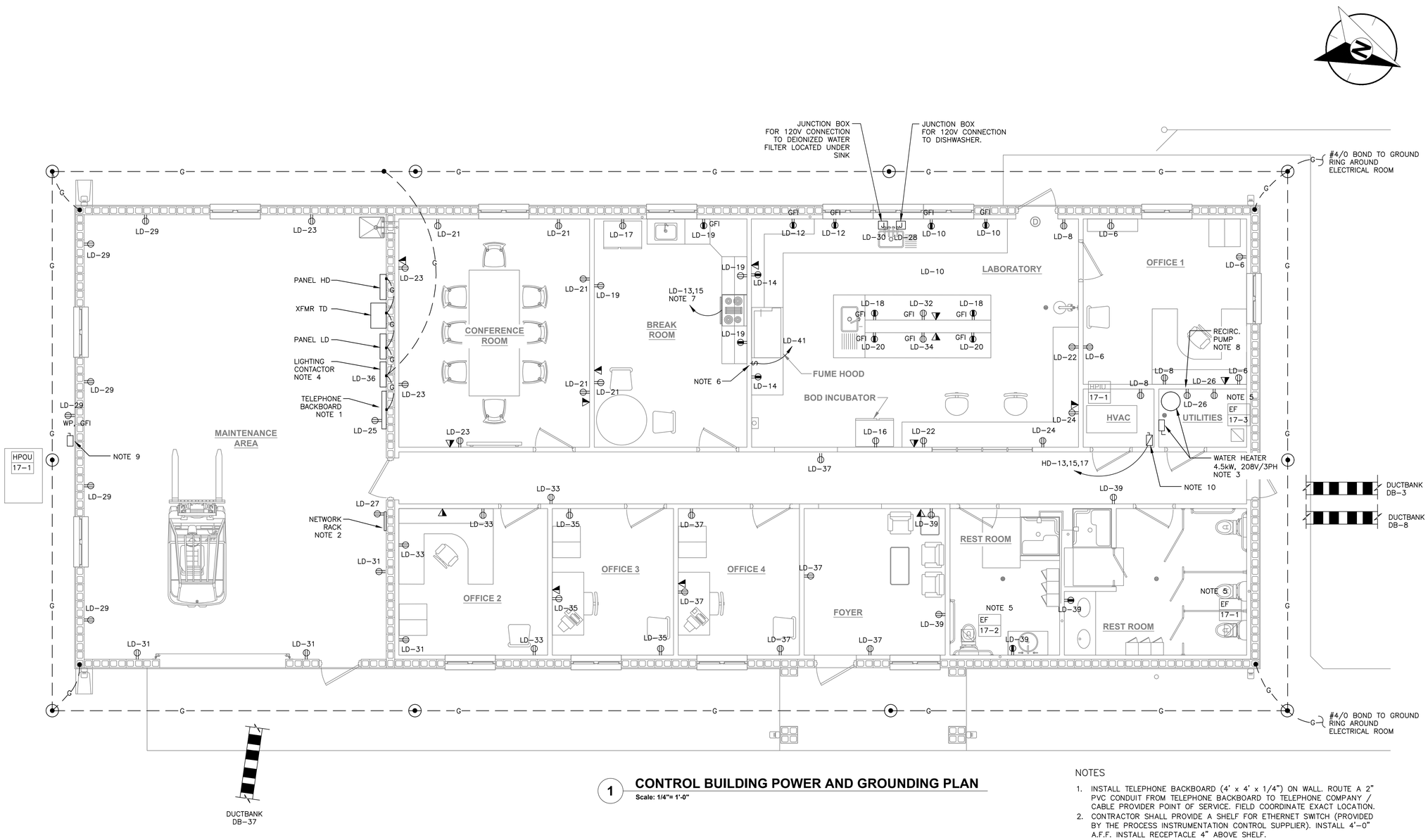
BULK CHEMICAL STORAGE ELECTRICAL

DRAWING NUMBER

16-E-1
OF
214

ESAD PROJECT #22014

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



1 CONTROL BUILDING POWER AND GROUNDING PLAN

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

NOTES

1. INSTALL TELEPHONE BACKBOARD (4' x 4' x 1/4") ON WALL. ROUTE A 2" PVC CONDUIT FROM TELEPHONE BACKBOARD TO TELEPHONE COMPANY / CABLE PROVIDER POINT OF SERVICE. FIELD COORDINATE EXACT LOCATION.
2. CONTRACTOR SHALL PROVIDE A SHELF FOR ETHERNET SWITCH (PROVIDED BY THE PROCESS INSTRUMENTATION CONTROL SUPPLIER). INSTALL 4'-0" A.F.F. INSTALL RECEPTACLE 4" ABOVE SHELF.
3. INSTALL A 208V, 3PH, 60A DISCONNECT ADJACENT TO WATER HEATER AND ROUTE 4 #6 & 1 #10 GND IN 1" C. FROM WATER HEATER TO DISCONNECT AND THEN TO 50A/3P BREAKER LOCATED IN PANEL LD.
4. PROVIDE ASCO 918 LIGHTING CONTACTOR WITH 6 – 20A, 1 POLES FOR EXTERIOR LIGHTS, PHOTOCELL, NEMA 1 ENCLOSURE WITH H-O-A SWITCH. INSTALL PHOTOCELL ON WALL FACING NORTH. ROUTE 3 #14 IN 3/4" C. FROM PHOTOCELL TO CONTACTOR. ROUTE EXTERIOR LIGHTING CIRCUITS THROUGH CONTACTORS.
5. INTERLOCK FAN WITH LIGHT SWITCH WITH 3 #12's IN 3/4" C.
6. INSTALL A 120V, 1P, MOTOR RATED TOGGLE SWITCH AND CONNECT TO FUME HOOD.
7. ROUTE 3 #6 & 1 #10 GND IN 1" C. FROM RANGE TO BREAKER LOCATED IN PANEL LD. PRIOR TO INSTALLATION, FIELD VERIFY BREAKER SIZE WITH RANGE SHOP DRAWING.
8. INSTALL RECEPTACLE ADJACENT TO WATER RECIRCULATION PUMP. FIELD COORDINATE EXACT LOCATION IN FIELD WITH PLUMBING CONTRACTOR.
9. INSTALL A 30A/3P/480V/4X FUSED DISCONNECT UNIT ADJACENT TO OUTDOOR UNIT. ROUTE 4 #10 IN 3/4" C. FROM UNIT TO DISCONNECT AND THEN TO PANEL HD. FUSE PER MANUFACTURER'S RECOMMENDATION.
10. INSTALL A 30A/3P/480V/1 FUSED DISCONNECT UNIT ADJACENT TO INDOOR UNIT. ROUTE 4 #10 IN 3/4" C. FROM UNIT TO DISCONNECT AND THEN TO PANEL HD. FUSE PER MANUFACTURER'S RECOMMENDATIONS.

ESAD PROJECT #22014

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

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APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

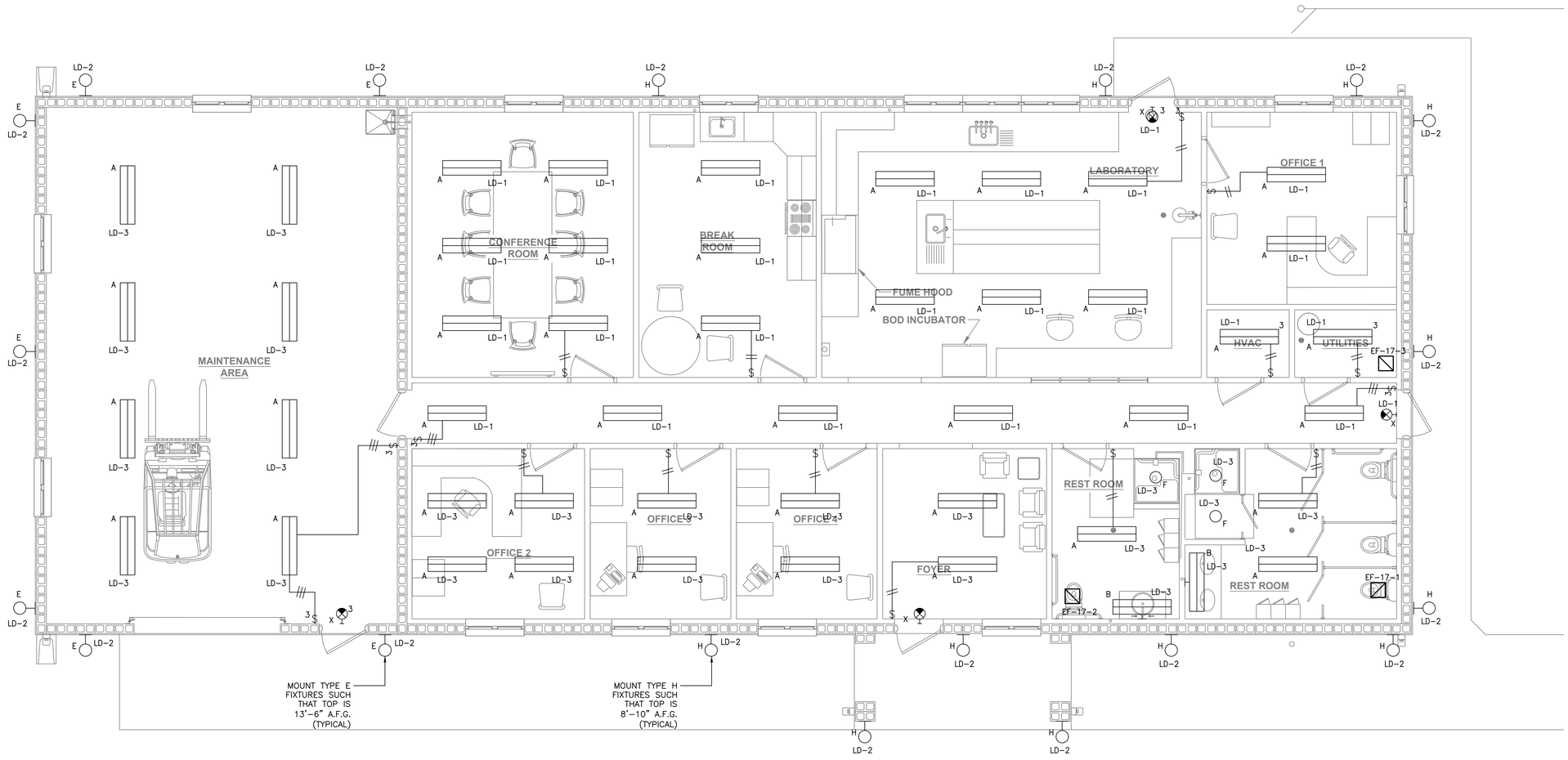
10/05/2021

SHEET TITLE

CONTROL BUILDING POWER AND GROUNDING FLOOR PLAN

DRAWING NUMBER

17-E-1
OF
214



NOTES:
1. ALL CONDUIT SHALL BE ROUTED INSIDE BUILDING. EXPOSED CONDUIT NOT ALLOWED WITHOUT ENGINEER APPROVAL.
2. ROUTE EXTERIOR WALL PACK CIRCUIT THROUGH LIGHTING CONTACTOR.

1 CONTROL BUILDING LIGHTING PLAN

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

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

CONTROL BUILDING LIGHTING FLOOR PLAN

DRAWING NUMBER

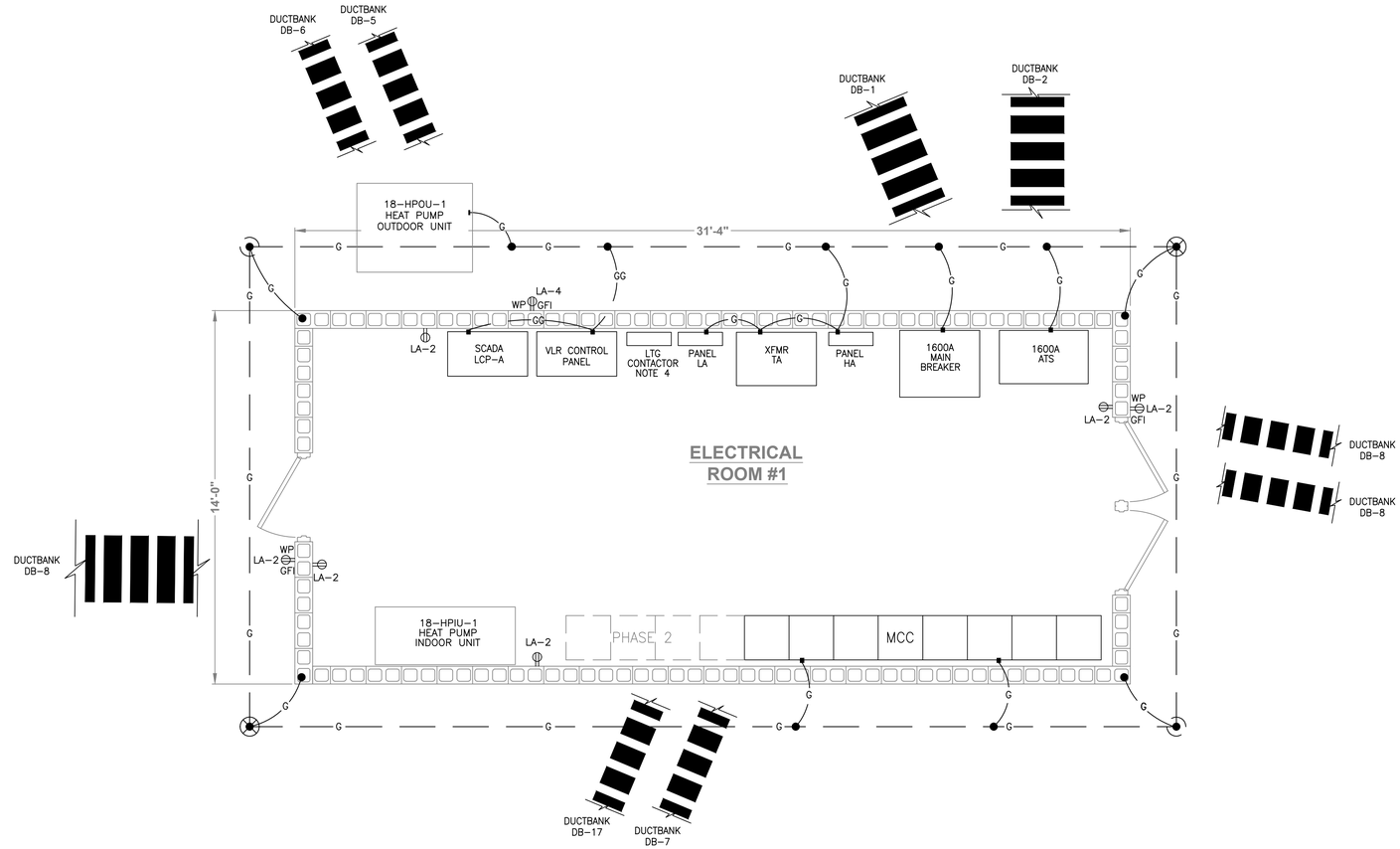
17-E-2
OF
214

ESAD PROJECT #22014

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

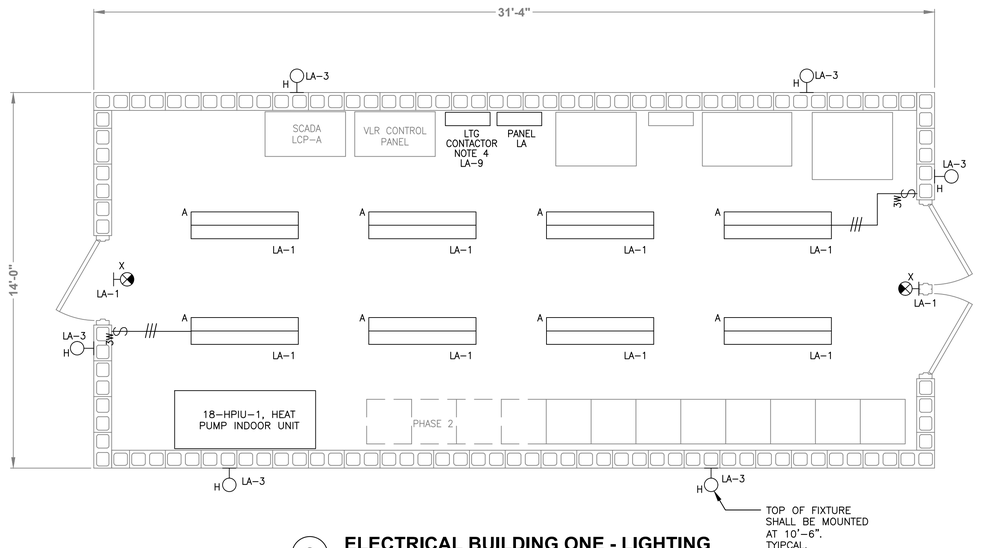
NOTES:

1. ALL CONDUIT SHALL BE ROUTED INSIDE BUILDING. DO NOT ROUTE EXPOSED.
2. RUN #4/0 BARE CU, GROUND RING AROUND THE BUILDING, 3' FROM THE BUILDING & 30" BELOW GRADE. EXTEND GROUND RING TO DUCTBANKS AND TO GROUND RING AROUND OTHER BUILDINGS.
3. ALL FREESTANDING EQUIPMENT (MCC, CONTROL PANELS, ATS, MAIN BREAKER, TRANSFORMER, ETC.) SHALL BE INSTALLED ON A 4" HOUSE KEEPING PAD.
4. PROVIDE ASCO 918 LIGHTING CONTACTOR WITH 6 – 20A, 1 POLES FOR EXTERIOR LIGHTS, PHOTOCELL, NEMA 1 ENCLOSURE WITH H–O–A SWITCH. INSTALL PHOTOCELL ON WALL FACING NORTH. ROUTE 3 #14 IN 3/4" C. FROM PHOTOCELL TO CONTACTOR. ROUTE EXTERIOR LIGHTING CIRCUITS THROUGH CONTACTORS. ROUTE 2 #14 BETWEEN ONE OF THE SPARE CONTACTORS TO A DISCRETE INPUT OF SCADA–LCP–A TO CONTROL THE REST OF THE SITE LIGHTS.



1 ELECTRICAL BUILDING ONE - POWER AND GROUNDING

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



2 ELECTRICAL BUILDING ONE - LIGHTING

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

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GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ELECTRICAL BUILDING ONE ELECTRICAL

DRAWING NUMBER

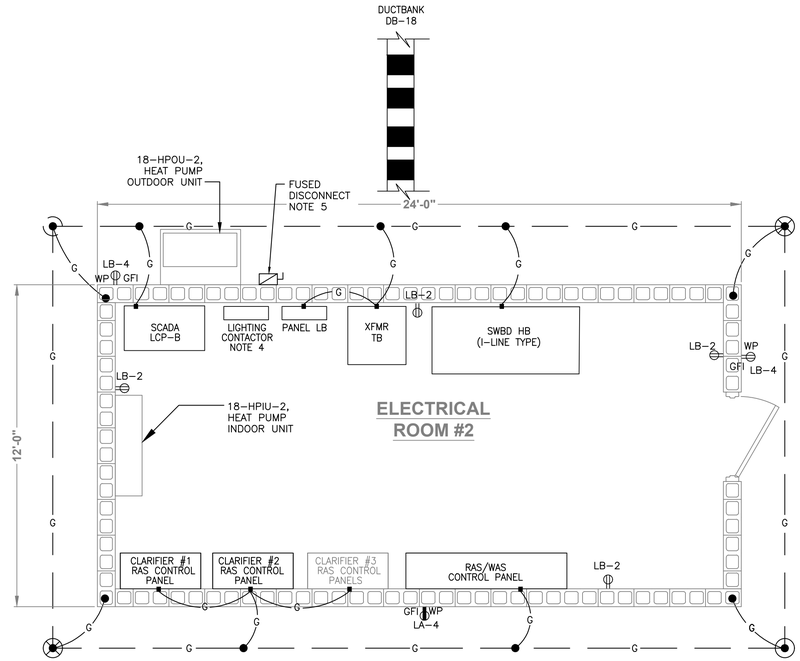
18-E-1
OF
214

ESAD PROJECT #22014

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

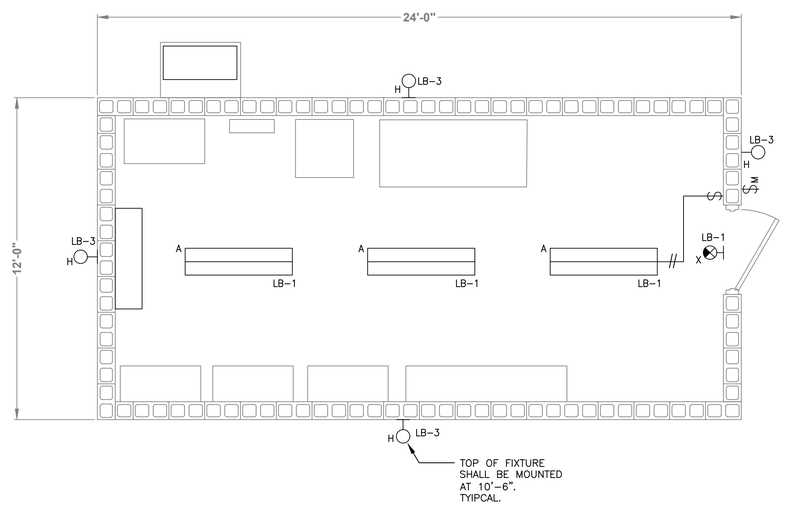
NOTES:

1. ALL CONDUIT SHALL BE ROUTED INSIDE BUILDING. DO NOT ROUTE EXPOSED.
2. RUN #4/0 BARE CU, GROUND RING AROUND THE BUILDING, 3' FROM THE BUILDING & 30" BELOW GRADE. EXTEND GROUND RING TO DUCTBANKS AND TO GROUND RING AROUND OTHER BUILDINGS.
3. ALL FREESTANDING EQUIPMENT (SWITCHBOARD, TRANSFORMER, CONTROL PANELS, ETC.) SHALL BE INSTALLED ON A 4" HOUSE KEEPING PAD.
4. PROVIDE ASCO 918 LIGHTING CONTACTOR WITH 6 – 20A, 1 POLES FOR EXTERIOR LIGHTS, NEMA 1 ENCLOSURE WITH H–O–A SWITCH. ROUTE 2 #14 IN 3/4" C. BETWEEN SCADA LCP–B FOR AUTO CONTROL. ROUTE EXTERIOR LIGHTING CIRCUITS THROUGH CONTACTORS.
5. FURNISH AND INSTALL A 30A, 2P, 240V, NEMA 4X FUSED DISCONNECT SWITCH. FUSE PER MANUFACTURER'S RECOMMENDATIONS. ROUTE 4 #12 IN 3/4" C. FROM UNIT TO DISCONNECT AND THEN TO PANEL LB. INDOOR UNIT WILL BE PRE–WIRED BY MANUFACTURER TO OUTDOOR UNIT.



1 ELECTRICAL BUILDING TWO - POWER & GROUNDING

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



2 ELECTRICAL BUILDING TWO - LIGHTING

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

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APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ELECTRICAL BUILDING TWO ELECTRICAL

DRAWING NUMBER

18-E-2
OF
214

ESAD PROJECT #22014

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

CONTROL AND ONE LINE DIAGRAMS

CONDUCTORS CONNECTED

CONDUCTORS NOT CONNECTED

CONNECTION POINT

XX — TERMINAL POINT FOR OUTGOING CONDUCTORS, WITH IDENTIFICATION. "XX" DENOTES CONTRACTOR ASSIGNED.

MCP/3 — MAGNETIC-ONLY CIRCUIT BREAKER (MCP), WITH CURRENT RATING

100/30 — CIRCUIT BREAKER, THERMAL-MAGNETIC UNLESS OTHERWISE NOTED, WITH FRAME SIZE AND TRIP RATING

FU# / SIZE — FUSE WITH SIZE AND OPTIONAL IDENTIFICATION.

30 AMP — DISCONNECT SWITCH. RATING OPTIONAL. 30 AMP 600V MINIMUM UNLESS OTHERWISE NOTED.

M — MOTOR (PHASES AS REQUIRED)

WATTS — SPACE HEATER, WATTAGE AS INDICATED.

PRI-V / SEC-V / VA — CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGE SHOWN. SIZE AS SHOWN OR SPECIFIED.

P/S — CURRENT TRANSFORMER. PRIMARY/SECONDARY TURNS RATIO SHOWN.

HORN

OHMS — RESISTOR: OPTIONAL VALUE SHOWN

RECTIFIER

TRIAD

SURGE SUPPRESSOR

10mF — CAPACITOR: OPTION VALUE SHOWN

INDICATORS — X = LENS COLOR; A = AMBER, B = BLUE, G = GREEN, R = RED, W = WHITE

STATUS — DIRECT CONNECTION

STATUS — PUSH TO TEST TEST VOLTAGE TERMINAL SHOWN

TEST / C / DESCPTN — REMOTE TEST TEST BUS TERMINAL SHOWN

THERMAL / OL — RELAY COIL WITH OPTIONAL PREFIX. OL = THERMAL OVERLOAD RELAY

METER / ETM — METER WITH ALPHA IDENTIFIERS: ETM = ELAPSED TIME METER

INTERLOCK CONTACTS

12 CR / 9 CR — CONTROL RELAY CONTACTS WITH NUMERIC PREFIX.

5 TR INST / 6 TR INST — TIME DELAY RELAY INSTANTANEOUS CONTACTS WITH NUMERIC PREFIX.

CB# / SIZE — 800AF / 600AT — LOW VOLTAGE POWER CIRCUIT AND BREAKER DRAWOUT TYPE, FRAME TRIP SHOWN

CB# / SIZE — 50AF / 40AT — MOULDED CASE CIRCUIT BREAKER, FRAME AND TRIP ID SHOWN

LIGHTNING ARRESTOR AND GROUND

300A — DISCONNECT OR ISOLATING SWITCH: CONTINUOUS RATING SHOWN

CB# / SIZE — MCP / 7A — MAGNETIC-ONLY CIRCUIT BREAKER (MCP), DRAWOUT TYPE, WITH CURRENT RATING

FUSE SWITCH — FUSED SWITCH: FUSE AND SWITCH CONTINUOUS RATINGS SHOWN

KVA / Z% / PRI-V / SEC-V — POWER TRANSFORMER: PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN

KVA / Z% / PRI-V TO SEC-V — ISOLATION TRANSFORMER PRIMARY & SECONDARY VOLTAGES, %Z, SIZE SHOWN

[N] / PRI PWDG / SEC SWDG — POTENTIAL TRANSFORMER PRIMARY & SECONDARY VOLTAGES & WINDINGS SHOWN. (x) UNITS

250/5 / 3 — CURRENT TRANSFORMER: RATIO SHOWN (3 INDICATES NO. OF CT'S)

SW — METER SWITCH, xS: AS - AMMETER SWITCH; VS - VOLTMERE SWITCH; FS - FREQUENCY SWITCH

DEV / SPAN UNIT — METER: A - AMMETER; W - WATTMETER; KWH - WATT-HOUR METER; F - FREQUENCY METER; VAR - VAR METER V - VOLTMETER

#M # / [N] — ANSI C37.2 DEVICE

WINDING CONFIGURATION: PER ANSI
DELTA

WYE (GROUNDED)

I/A OR PLC ANALOG INPUT OR OUTPUT

1 FVNR — FULL VOLTAGE, NON-REVERSING MAGNETIC MOTOR STARTER. NEMA SIZE INDICATED

LIGHTING FIXTURE SCHEDULE

TYPE	SYMBOL	DESCRIPTION	MANUFACTURER	MOUNTING	VOLT/PHASE	LAMP
A		1'x4' SURFACE MOUNTED LED FIXTURE 4,226 LUMENS	METALUX 14FP EDGE LIT PANEL CAT#14FP4240C W/ SURFACE MOUNT KIT	CEILING SURFACE	120V/1PH	LED 40W
B		1'x4' WALL MOUNTED LED FIXTURE 3,990 LUMENS	METALUX BCLED CAT#4BCLED-LD4-40SL-F-UNV-L840-CD1-U	WALL	120V/1PH	LED 42W
C		LED CANOPY 11" x 14" FIXTURE 11,494 LUMENS	COOPER CAT#CLCSLED-86-SM-UNV	CANOPY	120V/1PH	LED 92 WATTS
D		LED AREA LIGHT MOUNTED ON 20 FT. SQUARE STRAIGHT STEEL POLE, DARK BRONZE	FIXTURE: COOPER LIGHTING/INVUE VXM F06 7LED E1 5XQ BK DIRECT MOUNT 20 FT TALL SQUARE STEEL POLE DARK BRONZE (NO PHOTOCELL)	POLE SEE DETAIL	120V/1PH	LED 175 WATTS
D1			SAME AS ABOVE EXCEPT WITH PHOTOCELL			
E		LED WALL PACK. DARK BRONZE LOCATED OUTDOORS (250W EQUIVALENT)	LITHONIA CAT #TWX2 54W/6950 LUMENS LED ALO 40K MVOLT DDBTXD (NO PHOTOCELL)	WALL	120V/1PH	LED 56 WATTS
F		6" LED ROUND LENSED DOWNLIGHT FOR SHOWERS	LITHONIA - ACUITY GOTHAM CAT#EVO6SH-30/25/DFFBR-SOL	AS REQUIRED	120V/1PH	LED 10 WATTS
G		10 FT. STANCHION MOUNT, 10,935 LUMENS LED FIXTURE RATED FOR WET LOCATIONS, POLYCARBONATE LENS	CROUSE HINDS CAT#PVM-11L-J-R1-UNV1-S890-S903-D2S20 (NO PHOTOCELL). DARK BRONZE.	RAIL, SEE DETAIL	120V/1PH	LED 89 WATTS
H		LED WALL PACK. DARK BRONZE LOCATED INDOORS (EQUAL TO 100W MH).	LITHONIA CAT #TWX1 22W (2950 LUMENS) LED ALO 40K MVOLT DDBTXD (NO PHOTOCELL)	WALL	120V/1PH	LED 22 WATTS
I		1'x4' INDUSTRIAL LED / VAPOR TIGHT / RUGGED AND WET LOCATION FIXTURE	CREE C-VT-A-LIN4-52L-40K	CEILING	120V/1PH	LED
X		LED EXIT SIGN WITH INTEGRAL BATTERY PACK AND REMOTE LED HEAD	LITHONIA CAT #LHQM LED RED M6 LED W/ 2 HEADS AND BATTERY BACKUP	WALL OR CEILING	120V/1PH	LED

GENERAL ABBREVIATIONS

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

CIRCUIT AND RACEWAY SYMBOLS

RACEWAY OR WIRING SYSTEM ABOVE FLOOR LEVEL BELOW CEILING, EXPOSED UON.

HOME RUN - SEE PANELBOARD SCHEDULE FOR CIRCUIT INFORMATION

PBD A-1,3,5 — EXAMPLE: HOME TO PANELBOARD PBD A, CIRCUITS 1, 3, AND 5

LIGHTING, RECEPTACLE, AND MISCELLANEOUS BRANCH CIRCUITING NOT SPECIFIED IN RACEWAY SCHEDULE: RUNS WITHOUT HATCH LINES SHALL CONTAIN TWO WIRES OF MINIMUM SIZE (#12) REQUIRED BY THE SPECS FOR THAT SYSTEM. OTHER CONDUCTOR QUANTITY SPECIFIED WITH HATCH LINES:

NEUTRAL CONDUCTOR (#12), IF USED--HALF STROKE

PHASE CONDUCTORS #12, AS APPLICABLE--FULL STROKE

#12 MINIMUM EQUIPMENT GROUNDING CONDUCTOR ALWAYS REQUIRED. FOR MINIMUM SIZE PERMITTED REFER TO NEC TABLE 250-95. CONDUIT FILL PER NEC OR MINIMUM SIZE OF 3/4 INCH EXPOSED, 1 INCH ALL OTHER INSTALLATIONS, EXCEPT FLEX - 3/4 INCH.

GENERAL NOTES:

1. SCOPE:
A. FURNISH ALL LABOR, MATERIAL, EQUIPMENT AND TOOLS REQUIRED TO COMPLETE INSTALLATION OF THE ELECTRICAL SYSTEM INCLUDING BUT NOT LIMITED TO WIRING, BOXES, LIGHT FIXTURES, PANELS, SWITCHES, RECEPTACLES, DISCONNECTS, STARTERS, AND ALL OTHER WORK INDICATED ON THE DRAWINGS OR AS SPECIFIED HEREIN.

B. OBTAIN ALL PERMITS, INSPECTIONS, AND APPROVALS AS REQUIRED BY THE LOCAL AUTHORITIES HAVING JURISDICTION AND DELIVER CERTIFICATE OF APPROVAL TO THE GENERAL CONTRACTOR. ALL ASSOCIATED FEES SHALL BE PAID BY THE CONTRACTOR.

C. ALL MATERIALS AND EQUIPMENT OF THE ELECTRICAL SYSTEM NECESSARY FOR ITS PROPER OPERATION, BUT NOT SPECIFICALLY MENTIONED OR SHOWN ON THE DRAWINGS, SHALL BE FURNISHED AND INSTALLED WITHOUT ADDITIONAL CHARGE.

D. WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE 2020 NATIONAL ELECTRICAL CODE, THE LATEST STANDARD BUILDING CODE, NFPA 820, AND LOCAL AUTHORITIES HAVING JURISDICTION.

2. ALL SUBSTITUTIONS FOR EQUIPMENT AND MATERIAL SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

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

4. UNLESS OTHERWISE NOTED ON THE DRAWINGS, CONTRACTOR SHALL ROUTE 3 #12 IN 3/4" CONDUIT TO ALL 120V, 20A, 1P LOADS (LIGHTS, RECEPTACLES, ETC) AS SHOWN IN THE PANELBOARD SCHEDULES.

5. DO NOT INSTALL CONDUITS ON EXTERIOR OF BUILDING WALLS, UNLESS APPROVED BY THE ENGINEER.

6. ALL EXTERIOR CONNECTIONS TO PANELS, INSTRUMENTS, BOXES, ETC. SHALL USE WATER TIGHT, MYERS TYPE HUBS. ALL CONNECTIONS SHALL ENTER FROM BOTTOM.

8. ALL EXTERIOR CONDUIT SHALL BE ALUMINUM RIGID. ALL UNDERGROUND CONDUIT SHALL BE PVC-40 WITH RIGID GALVANIZED STEEL ELBOWS.

9. FLEXIBLE CONDUIT SHALL NOT EXCEED 3 FEET.

10. UTILITY RACKS SHALL CONSIST OF 6" ALUMINUM C-CHANNEL (OR 8" IF WEIGHT REQUIRES) AND ALUMINUM UNISTRUT. MOUNT BASE OF C-CHANNEL IN CONCRETE FOR SUPPORT, ATTACHED TO BASIN WALLS, OR PROVIDE BASE PLATES AND ANCHOR TO CONCRETE. SEE DETAILS C AND D ON 20-E-7.

11. ALL DUCTBANKS SHALL EXTEND TO UNDER EQUIPMENT BEING SERVED. ON DRAWINGS, DUCTBANKS STOP AT BUILDING WALL OR EQUIPMENT PERIMETERS FOR CLARITY PURPOSES ONLY.

12. CONTRACTOR SHALL INSTALL ALL PROCESS INSTRUMENTATION AND CONTROL SUPPLIER (PICS) CONTROL PANELS AND INSTRUMENTS.

13. CONTRACTOR SHALL PROVIDE ALL FIBER OPTIC AND ETHERNET CABLES. MAINTAIN FIBER BENDING RADIUS REQUIREMENTS WHEN LAYING OUT CONDUITS / DUCTBANKS. ALL FIBER TERMINATIONS SHALL BE BY CONTRACTOR. SEE DRAWING 19-PID-12 FOR REQUIRED FIBER OPTIC (AND ETHERNET) CABLES.

14. CONTRACTOR SHALL LABEL ALL CONDUCTORS AND PROVIDE TERMINATIONS TO PICS CONTROL PANELS, INSTRUMENTS, ETC.

15. CONTRACTOR SHALL FURNISH AND INSTALL A 4-WIRE SURGE SUPPRESSOR UNDER OR ADJACENT TO ALL TRANSMITTERS (LEVEL, FLOW, DO, AND TSS). SEE DETAIL F/20-E-8.

16. CONTRACTOR SHALL FURNISH AND INSTALL A SUNSHIELD FOR ALL TRANSMITTERS (LEVEL, FLOW, DO, AND TSS). SEE DETAIL D/20-E-8.

17. CONTRACTOR SHALL COORDINATE SERVICE TO EACH SITE (RAW SEWAGE PUMP STATION AND WATER RECLAMATION FACILITY) WITH THE LOCAL UTILITY COMPANY. ALL FEES ASSOCIATED WITH THE UTILITY COMPANY WILL BE PAID FOR BY THE CITY UNDER AN ALLOWANCE.

GROUNDING SYMBOLS

GROUND ROD, 3/4" x 10'-0", COPPERCLAD (UNLESS OTHERWISE NOTED)

GROUND ROD AND WELL

COMPRESSION TYPE GROUNDING BOND TO MOTOR CASING OR EQUIPMENT

GG — BARE COPPER GROUNDING CONDUCTOR - #4 UNLESS OTHERWISE NOTED OR REQUIRED BY VENDOR. IF BURIED, MINIMUM 2'-6" BELOW GRADE.

G — BURIED BARE COPPER GROUNDING CONDUCTOR - #4/0 UNLESS OTHERWISE NOTED. MINIMUM 2'-6" BELOW GRADE.

EXOTHERMIC (CADWELD) CONNECTION TO GROUND RING

MOTOR AND EQUIPMENT SYMBOLS

M — MOTOR CONNECTION

MOTOR STARTER, INDIVIDUAL--NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

COMBINATION MOTOR STARTER--NOT LOCATED IN AN MCC OR SIMILAR GROUP ASSEMBLY

UNLESS OTHERWISE NOTED, DISCONNECT SWITCHES ARE HEAVY DUTY, SINGLE THROW, WITH NEMA 4X ENCLOSURE. MOUNT AT 4'-8" TO CENTER UON.

DISCONNECT, NON-FUSED.

DISCONNECT, FUSED. PROVISION FOR CLASS R FUSES.

FIELD INSTRUMENT CONNECTION

NEMA 4X START/STOP HAND STATION MOUNTED TO HANDRAIL

$ — 120V, 20A, 1P TOGGLE SWITCH. "3" INDICATES 3-WAY SWITCH.

DUPLEX 120V RECEPTACLE, 120V, 20A, 1P

DUPLEX 120V RECEPTACLE, 120V, 20A, 1P. MOUNTE 6" ABOVE COUNTER, DESK, OR CABINET.

TELEPHONE DATA BOX MOUNTED 18" A.F.F., INSTALLL A 1/2" CONDUIT FROM BOX TO 6" ABOVE CEILING. PROVIDE PULL CORD FOR FUTURE CONNECTION.

J — JUNCTION BOX

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

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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4		
5		

REVISIONS

No	Date	Description
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Designed By : DMZ

Drawn By : AK

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

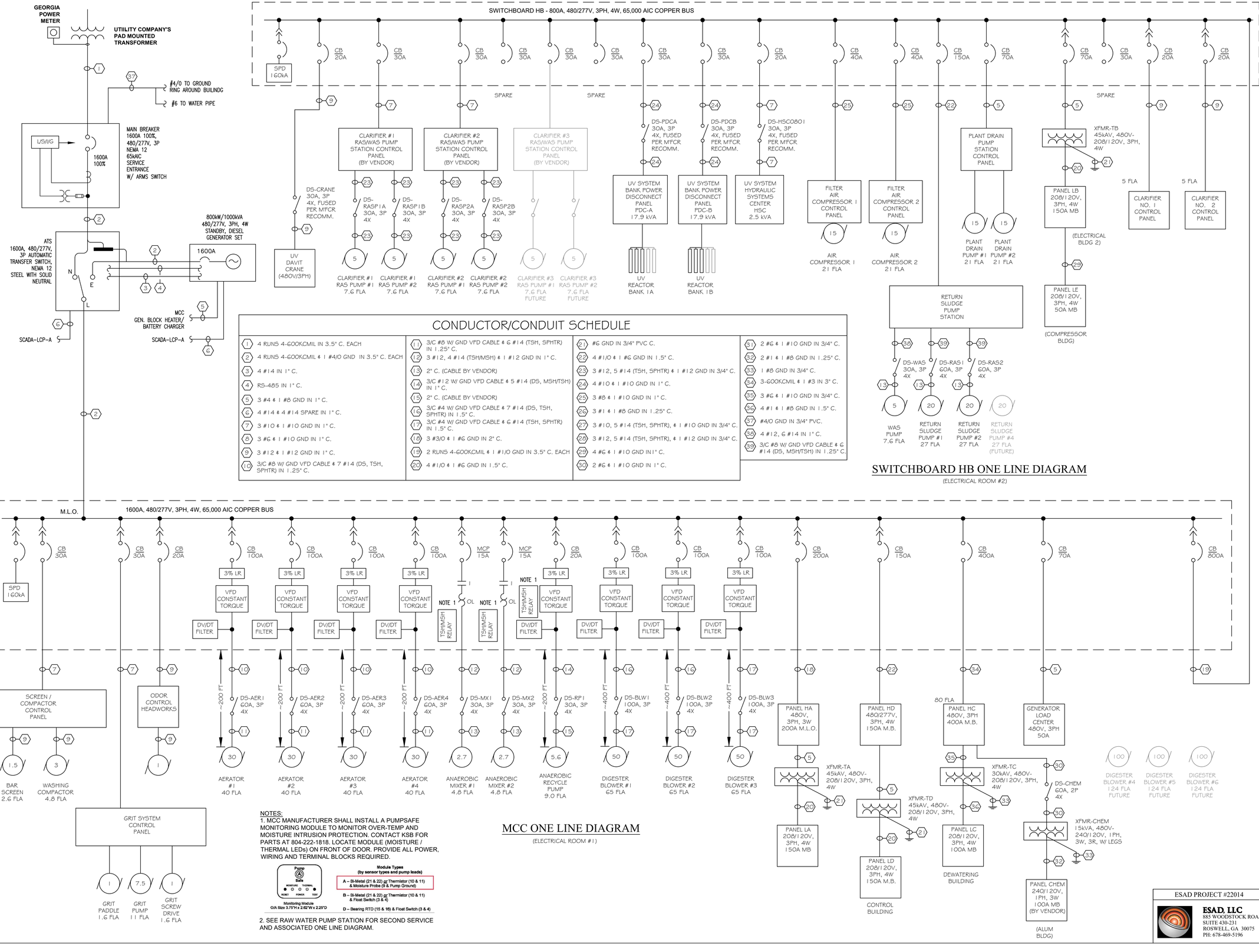
10/05/2021

SHEET TITLE

ELECTRICAL GENERAL NOTES, LEGEND & ABBREVIATOINS

DRAWING NUMBER

20-E-1
OF
214



SWITCHBOARD HB ONE LINE DIAGRAM

(ELECTRICAL ROOM #2)

CONDUCTOR/CONDUIT SCHEDULE

1. 4 RUNS 4-600KCMIL IN 3.5" C. EACH
2. 4 RUNS 4-600KCMIL & 1 #4/0 GND IN 3.5" C. EACH
3. 4 #14 IN 1" C.
4. RS-485 IN 1" C.
5. 3 #4 & 1 #8 GND IN 1" C.
6. 4 #14 & 4 #14 SPARE IN 1" C.
7. 3 #10 & 1 #10 GND IN 1" C.
8. 3 #6 & 1 #10 GND IN 1" C.
9. 3 #12 & 1 #12 GND IN 1" C.
10. 3/C #8 W/ GND VFD CABLE & 7 #14 (DS, TSH, SPHTR) IN 1.25" C.
11. 3/C #8 W/ GND VFD CABLE & 6 #14 (TSH, SPHTR) IN 1.25" C.
12. 3 #12, 4 #14 (TSH/MSH) & 1 #12 GND IN 1" C.
13. 2" C. (CABLE BY VENDOR)
14. 3/C #12 W/ GND VFD CABLE & 5 #14 (DS, MSH/TSH) IN 1" C.
15. 2" C. (CABLE BY VENDOR)
16. 3/C #4 W/ GND VFD CABLE & 7 #14 (DS, TSH, SPHTR) IN 1.5" C.
17. 3/C #4 W/ GND VFD CABLE & 6 #14 (TSH, SPHTR) IN 1.5" C.
18. 3 #3/0 & 1 #6 GND IN 2" C.
19. 2 RUNS 4-600KCMIL & 1 #1/0 GND IN 3.5" C. EACH
20. 4 #1/0 & 1 #6 GND IN 1.5" C.
21. #6 GND IN 3/4" PVC C.
22. 4 #1/0 & 1 #6 GND IN 1.5" C.
23. 3 #12, 5 #14 (TSH, SPHTR) & 1 #12 GND IN 3/4" C.
24. 4 #10 & 1 #10 GND IN 1" C.
25. 3 #8 & 1 #10 GND IN 1" C.
26. 3 #1 & 1 #6 GND IN 1.25" C.
27. 3 #10, 5 #14 (TSH, SPHTR), & 1 #10 GND IN 3/4" C.
28. 3 #12, 5 #14 (TSH, SPHTR), & 1 #12 GND IN 3/4" C.
29. 4 #6 & 1 #10 GND IN1" C.
30. 2 #6 & 1 #10 GND IN 1" C.
31. 2 #6 & 1 #10 GND IN 3/4" C.
32. 2 #1 & 1 #8 GND IN 1.25" C.
33. 1 #8 GND IN 3/4" C.
34. 3-600KCMIL & 1 #3 IN 3" C.
35. 3 #6 & 1 #10 GND IN 3/4" C.
36. 4 #1 & 1 #8 GND IN 1.5" C.
37. #4/0 GND IN 3/4" PVC.
38. 4 #12, 6 #14 IN 1" C.
39. 3/C #8 W/ GND VFD CABLE & 6 #14 (DS, MSH/TSH) IN 1.25" C.

MCC ONE LINE DIAGRAM

(ELECTRICAL ROOM #1)

NOTES:

1. MCC MANUFACTURER SHALL INSTALL A PUMPSAFE MONITORING MODULE TO MONITOR OVER-TEMP AND MOISTURE INTRUSION PROTECTION. CONTACT KSB FOR PARTS AT 804-222-1818. LOCATE MODULE (MOISTURE / THERMAL LEDs) ON FRONT OF DOOR. PROVIDE ALL POWER, WIRING AND TERMINAL BLOCKS REQUIRED.

Module Types (by sensor types and pump leads)

- A – Bi-Metal (21 & 22) or Thermistor (10 & 11) & Moisture Probe (9 & Pump Ground)
- B – Bi-Metal (21 & 22) or Thermistor (10 & 11) & Float Switch (3 & 4)
- D – Bearing RTD (15 & 16) & Float Switch (3 & 4)

2. SEE RAW WATER PUMP STATION FOR SECOND SERVICE AND ASSOCIATED ONE LINE DIAGRAM.

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

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 38080
PROFESSIONAL
05/02/22
ENGINEER
DAVID M. ZIMMER

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Drawn By : AK

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

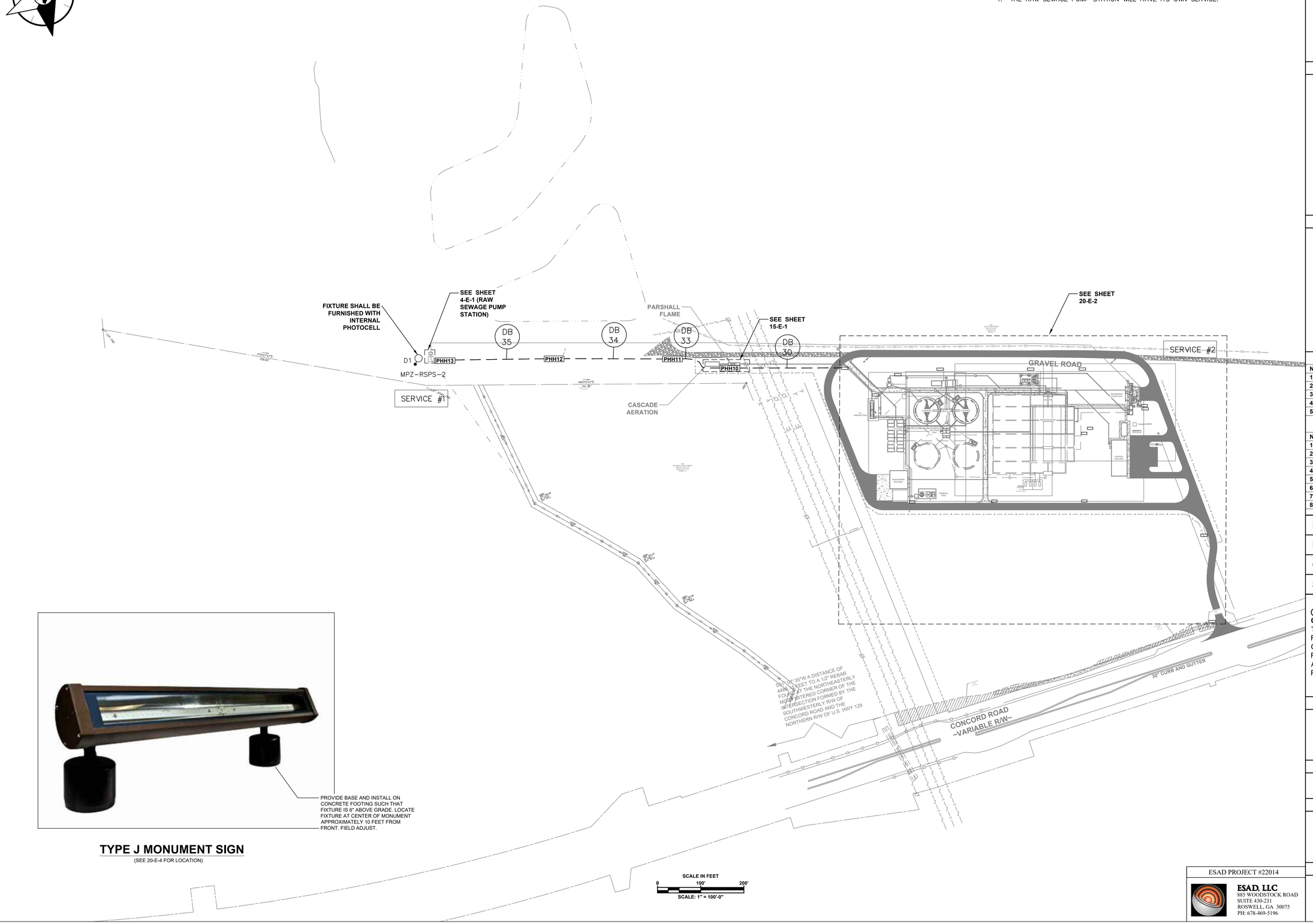
SHEET TITLE

ONE LINE DIAGRAM

DRAWING NUMBER

20-E-2
OF
214

NOTES:
1. THE RAW SEWAGE PUMP STATION WILL HAVE ITS OWN SERVICE.



PROVIDE BASE AND INSTALL ON CONCRETE FOOTING SUCH THAT FIXTURE IS 6" ABOVE GRADE. LOCATE FIXTURE AT CENTER OF MONUMENT APPROXIMATELY 10 FEET FROM FRONT. FIELD ADJUST.

TYPE J MONUMENT SIGN

(SEE 20-E-4 FOR LOCATION)

SCALE IN FEET
0 100' 200'
SCALE: 1" = 100'-0"

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

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Civil & Environmental Engineering

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Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : AS SHOWN

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

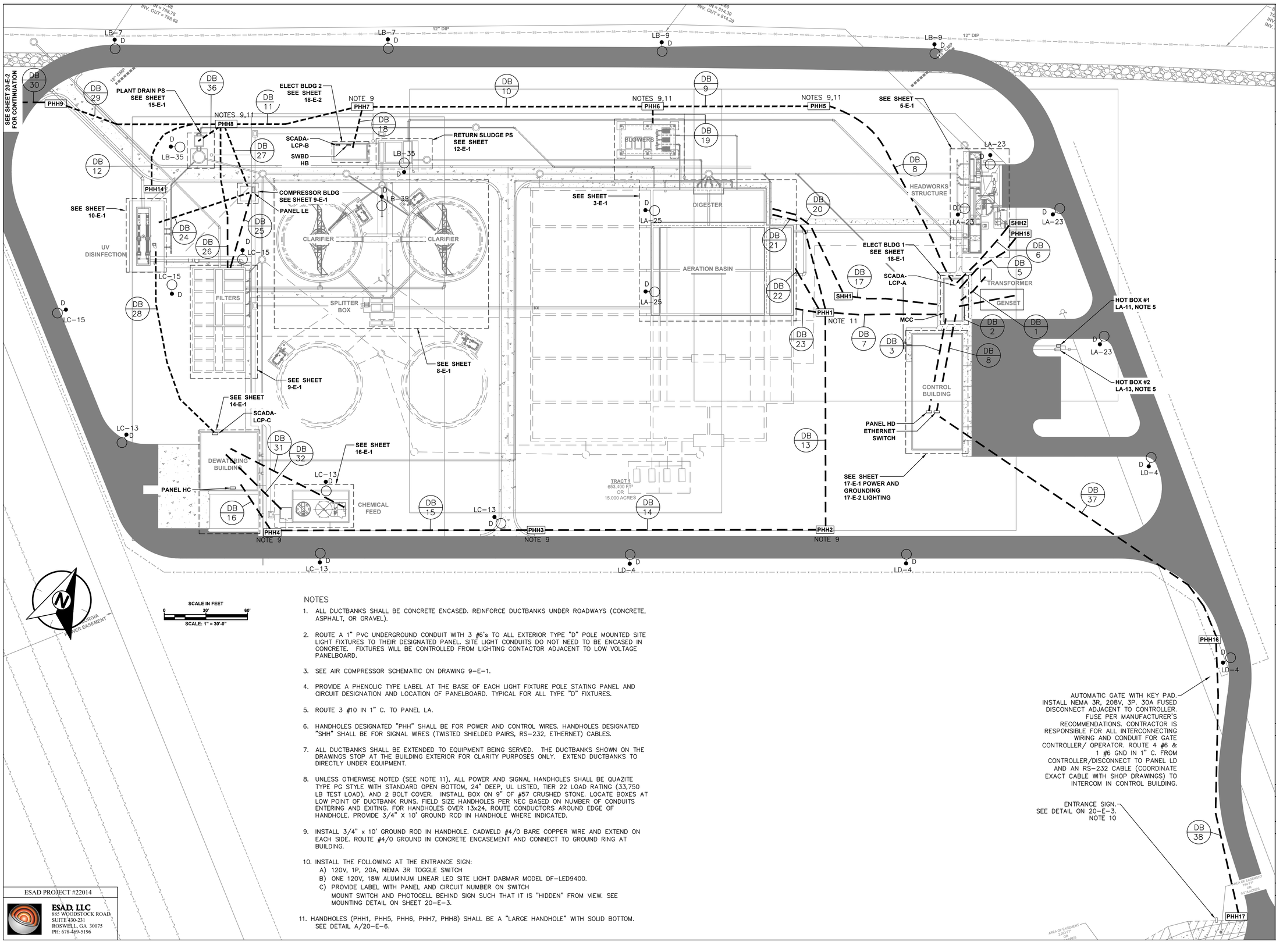
10/05/2021

SHEET TITLE

OVERALL ELECTRICAL SITE PLAN

DRAWING NUMBER

20-E-3
OF
214



NOTES

1. ALL DUCTBANKS SHALL BE CONCRETE ENCASED. REINFORCE DUCTBANKS UNDER ROADWAYS (CONCRETE, ASPHALT, OR GRAVEL).
2. ROUTE A 1" PVC UNDERGROUND CONDUIT WITH 3 #6's TO ALL EXTERIOR TYPE "D" POLE MOUNTED SITE LIGHT FIXTURES TO THEIR DESIGNATED PANEL. SITE LIGHT CONDUITS DO NOT NEED TO BE ENCASED IN CONCRETE. FIXTURES WILL BE CONTROLLED FROM LIGHTING CONTACTOR ADJACENT TO LOW VOLTAGE PANELBOARD.
3. SEE AIR COMPRESSOR SCHEMATIC ON DRAWING 9–E–1.
4. PROVIDE A PHENOLIC TYPE LABEL AT THE BASE OF EACH LIGHT FIXTURE POLE STATING PANEL AND CIRCUIT DESIGNATION AND LOCATION OF PANELBOARD. TYPICAL FOR ALL TYPE "D" FIXTURES.
5. ROUTE 3 #10 IN 1" C. TO PANEL LA.
6. HANDHOLES DESIGNATED "PHH" SHALL BE FOR POWER AND CONTROL WIRES. HANDHOLES DESIGNATED "SHH" SHALL BE FOR SIGNAL WIRES (TWISTED SHIELDED PAIRS, RS–232, ETHERNET) CABLES.
7. ALL DUCTBANKS SHALL BE EXTENDED TO EQUIPMENT BEING SERVED. THE DUCTBANKS SHOWN ON THE DRAWINGS STOP AT THE BUILDING EXTERIOR FOR CLARITY PURPOSES ONLY. EXTEND DUCTBANKS TO DIRECTLY UNDER EQUIPMENT.
8. UNLESS OTHERWISE NOTED (SEE NOTE 11), ALL POWER AND SIGNAL HANDHOLES SHALL BE QUAZITE TYPE PG STYLE WITH STANDARD OPEN BOTTOM, 24" DEEP, UL LISTED, TIER 22 LOAD RATING (33,750 LB TEST LOAD), AND 2 BOLT COVER. INSTALL BOX ON 9" OF #57 CRUSHED STONE. LOCATE BOXES AT LOW POINT OF DUCTBANK RUNS. FIELD SIZE HANDHOLES PER NEC BASED ON NUMBER OF CONDUITS ENTERING AND EXITING. FOR HANDHOLES OVER 13x24, ROUTE CONDUCTORS AROUND EDGE OF HANDHOLE. PROVIDE 3/4" X 10' GROUND ROD IN HANDHOLE WHERE INDICATED.
9. INSTALL 3/4" x 10' GROUND ROD IN HANDHOLE. CADWELD #4/0 BARE COPPER WIRE AND EXTEND ON EACH SIDE. ROUTE #4/0 GROUND IN CONCRETE ENCASEMENT AND CONNECT TO GROUND RING AT BUILDING.
10. INSTALL THE FOLLOWING AT THE ENTRANCE SIGN:
    A) 120V, 1P, 20A, NEMA 3R TOGGLE SWITCH
    B) ONE 120V, 18W ALUMINUM LINEAR LED SITE LIGHT DABMAR MODEL DF–LED9400.
    C) PROVIDE LABEL WITH PANEL AND CIRCUIT NUMBER ON SWITCH
    MOUNT SWITCH AND PHOTOCELL BEHIND SIGN SUCH THAT IT IS "HIDDEN" FROM VIEW. SEE MOUNTING DETAIL ON SHEET 20–E–3.
11. HANDHOLES (PHH1, PHH5, PHH6, PHH7, PHH8) SHALL BE A "LARGE HANDHOLE" WITH SOLID BOTTOM. SEE DETAIL A/20–E–6.

ESAD PROJECT #22014

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

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ENLARGED ELECTRICAL SITE PLAN

DRAWING NUMBER

20-E-4
OF
214

DB-1

1-3.5" PVC (480V)
2-3.5" PVC (480V)
3-3.5" PVC (480V)
4-3.5" PVC (480V)

DB-2

1-3.5" PVC (480V TO ATS)
2-3.5" PVC (480V TO ATS)
3-3.5" PVC (480V TO ATS)
4-3.5" PVC (480V TO ATS)
5-1" PVC (480V TO MCC FOR GEN LOAD CENTER)
6-1" PVC (GEN CONTROLS TO ATS)
7-1" PVC (SPARE)
8-1" PVC (CONTROLS TO SCADA-LCP-A)

DB-3

1-1.5" PVC (480V TO PANEL HD)
2-1" PVC (SPARE

DB-4

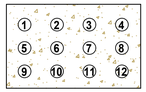
1-1" RGS (CAT 7A TO ETHERNET SWITCH)
2-1" RGS (SPARE)

DB-5

1-1" PVC (480V TO SCREEN C.P.)
2-1" PVC (480V TO GRIT SYS C.P.)
3-1" PVC (480V TO ODOR CONTROL C.P.)
4-2" PVC (SCADA LCP A CONTROLS)
5-2" PVC (PANEL LA 120V POWER)
6-2" PVC (SPARE)
7-2" PVC (SPARE)
8-2" PVC (SPARE)

DB-6

1-1.25" RGS (SIGNALS TO SCADA-LCP-A)
2-1.25" RGS (SPARE)



DB-7

1-1" PVC (MX1 TO MCC)
2-1" PVC (MX2 TO MCC)
3-3" PVC (480V TO PANEL HC)
4-1.25" PVC (AER1 TO MCC)
5-1.25" PVC (AER2 TO MCC)
6-1.25" PVC (AER3 TO MCC)
7-1.25" PVC (AER4 TO MCC)
8-1" PVC (RP TO MCC)
9-2" PVC (FIBER 2 TO SCADA LCP-C)
10-2" PVC (120V POWER)
11-2" PVC (SPARE)
12-2" PVC (SPARE)

DB-8

1-2.5" PVC (FUTURE BLW4 TO MCC)
2-2.5" PVC (FUTURE BLW5 TO MCC)
3-2.5" PVC (FUTURE BLW6 TO MCC)
4-1.5" PVC (BLW1 TO MCC)
5-1.5" PVC (BLW2 TO MCC)
6-1.5" PVC (BLW3 TO MCC)
7-1.25" PVC (120V TO PANEL LA)
8-1.25" PVC (SPARE TO PANEL LA)
9-3.5" PVC (480V TO SWBD HB)
10-3.5" PVC (480V TO SWBD HB)
11-2" PVC (FIBER 1 TO SCADA LCP-B)
12-2" PVC (120V POWER)
13-2 PVC (SPARE)
14-1" PVC (SPARE)
15-1" PVC (SPARE)

DB-9

1-2.5" PVC (FUTURE BLW4 TO MCC)
2-2.5" PVC (FUTURE BLW5 TO MCC)
3-2.5" PVC (FUTURE BLW6 TO MCC)
4-1.5" PVC (BLW1 TO MCC)
5-1.5" PVC (BLW2 TO MCC)
6-1.5" PVC (BLW3 TO MCC)
7-1.25" PVC (120V TO PANEL LA)
8-1.25" PVC (SPARE TO PANEL LA)
9-3.5" PVC (480V TO SWBD HB)
10-3.5" PVC (480V TO SWBD HB)
11-2" PVC (FIBER 1 TO SCADA LCP-B)
12-2" PVC (120V POWER)
13-2 PVC (SPARE)
14-1" PVC (SPARE)
15-1" PVC (SPARE)

DB-10

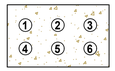
1-3.5" PVC (480V TO SWBD HB)
2-3.5" PVC (480V TO SWBD HB)
3-2" PVC (FIBER 1 TO SCADA LCP-B)
4-2" PVC (120V POWER)
5-2" PVC (SPARE)
6-2" PVC (SPARE)

DB-11

1-1" PVC (480V TO U.V. PDCA)
2-1" PVC (480V TO UV PDCB)
3-1" PVC (480V TO UV HSC)
4-1" PVC (480V TO UV CRANE)
5-1" PVC (480V TO PLANT PS)
6-2" PVC (FIBER3 TO SCADA-LCP-E)
7-3" PVC (120V POWER TO LC)
8-1" PVC (CONTROLS TO SCADA-LCP-B)
9-2" PVC (SPARE)
10-2" PVC (SPARE)

DB-12

1-1" PVC (480V TO U.V. PDCA)
2-1" PVC (480V TO UV PDCB)
3-1" PVC (480V TO UV HSC)
4-1" PVC (480V TO UV CRANE)
5-1" PVC (SPARE)
6-1" PVC (SPARE)



DB-13

1-3" PVC (480V TO PANEL HD)
2-2" PVC (SPARE)
3-2" PVC (120V POWER)
4-2" PVC (SPARE)
5-2" PVC (SPARE)
6-2" PVC (FIBER 2 TO SCADA LCP-C)

DB-14

1-3" PVC (480V TO PANEL HD)
2-2" PVC (SPARE)
3-2" PVC (120V POWER)
4-2" PVC (SPARE)
5-2" PVC (SPARE)
6-2" PVC (FIBER 2 TO SCADA LCP-C)

DB-15

1-3" PVC (480V TO PANEL HD)
2-2" PVC (SPARE)
3-2" PVC (120V POWER)
4-2" PVC (SPARE)
5-2" PVC (SPARE)
6-2" PVC (FIBER 2 TO SCADA LCP-C)

DB-16

1-3" PVC (480V TO PANEL HD)
2-2" PVC (SPARE)
3-2" PVC (120V POWER)
4-2" PVC (SPARE)
5-2" PVC (SPARE)
6-2" PVC (FIBER 2 TO SCADA LCP-C)

DB-17

1-1" PVC (SIGNALS TO SCADA-LCP-A)
2-1" PVC (SIGNALS TO VLR C.P)
3-1" PVC (SPARE TO SCADA-LCP-A)

DB-18

1-3.5" PVC (480V TO SWBD HB)
2-3.5" PVC (480V TO SWBD HB)
3-2" PVC (FIBER 1 TO SCADA LCP-B)
4-2" PVC (120V POWER)
5-1" PVC (CONTROLS TO SCADA LCP-B)
6-2" PVC (SPARE)
7-1" PVC (480V TO U.V. PDCA)
8-1" PVC (480V TO UV PDCB)
9-1" PVC (480V TO UV HSC)
10-1" PVC (480V TO UV CRANE)
11-1" PVC (480V TO PLANT PS)
12-2" PVC (FIBER3 TO SCADA-LCP-E)
13-3" PVC (120V POWER TO LC)
14-2" PVC (SPARE)
15-2" PVC (SPARE)

DB-19

1-2.5" PVC (FUTURE BLW4 TO MCC)
2-2.5" PVC (FUTURE BLW5 TO MCC)
3-2.5" PVC (FUTURE BLW6 TO MCC)
4-1.5" PVC (BLW1 TO MCC)
5-1.5" PVC (BLW2 TO MCC)
6-1.5" PVC (BLW3 TO MCC)
7-1.25" PVC (120V TO PANEL LA)
8-1.25" PVC (SPARE TO PANEL LA)

DB-20

1-1" PVC (SIGNALS TO SCADA-LCP-A)
2-1" PVC (SIGNALS TO VLR C.P)
3-1" PVC (SPARE TO SCADA-LCP-A)

DB-21

1-1" PVC (CONTROLS TO SCADA-LCP-A)
2-1" PVC (CONTROLS TO VLR C.P)
3-1" PVC (SPARE TO SCADA LCP-A)
4-2" PVC (120V TO PANEL LA)

DB-22

1-1.25" PVC (AER1 TO MCC)
2-1.25" PVC (AER2 TO MCC)
3-1' PVC (MX1 TO MCC)

DB-23

1-1.25" PVC (AER3 TO MCC)
2-1.25" PVC (AER4 TO MCC)
3-1' PVC (MX2 TO MCC)
4-1' PVC (RP TO MCC)

DB-24

1-1" PVC (120V TO PANEL LE)
2-1" PVC (SPARE TO PANEL LE)

DB-25

1-1" PVC (120V TO PANEL LE)
2-1" PVC (120V TO PANEL LE)
3-1" PVC (SPARE TO PANEL LE)

DB-26

1-1" PVC (CONTROLS TO SCADA-LCP-B)
2-1" PVC (SPARE TO SCADA-LCP-B)

DB-27

1-1" PVC (CONTROLS TO SCADA-LCP-B)
2-1" PVC (480V TO PANEL HC)
3-1" PVC (SPARE)

DB-28

1-1" RGS (CAT 7A TO SCADA LCP-C)
2-1" RGS (SPARE TO SCADA-LCP-C)

DB-29

1-2" PVC (FIBER3 TO SCADA-LCP-E)
2-2" PVC (120V POWER TO LB)
3-1" PVC (SPARE)

DB-30

1-2" PVC (FIBER3 TO SCADA-LCP-E)
2-2" PVC (120V POWER TO LB)
3-1" PVC (SPARE)

DB-31

1-2" PVC (480V TO LIME C.P.)
2-1" RGS (CAT 7A TO SCADA-LCP-C)

DB-32

1-1" PVC (480V TO PANEL HC)
2-1" PVC (CONTROLS TO SCADA-LCP-C)
3-1.5" RGS (SIGNALS TO SCADA-LCP-C)

DB-33, DB-34, DB-35

1-2" PVC (FIBER4 TO SCADA-LCP-F)
2-2" PVC (SPARE)

DB-36

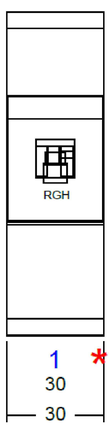
1-1" PVC (480V TO PLANT PS)
2-1" PVC (CONTROLS TO SCADA-LCP-B)

DB-37

1-1" PVC (208V/3PH POWER TO GATE)
2-1" PVC (CONTROLS TO GATE)
3-1" PVC (120V POWER TO PANEL LA)
4-1" PVC (120V TO PANEL LA)
5-1" PVC (SPARE)
6-1" PVC (SPARE)
7-4" PVC (TELEPHONE / CABLET TV)
8 - 1" PVC (SPARE)

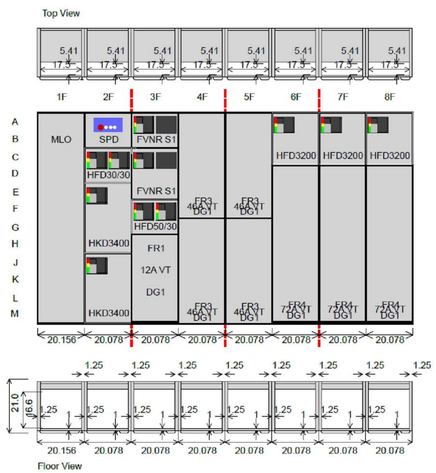
DB-38

1-1" PVC (120V FOR SIGN)
2-4" PVC (TELEPHONE/CABLE TV)



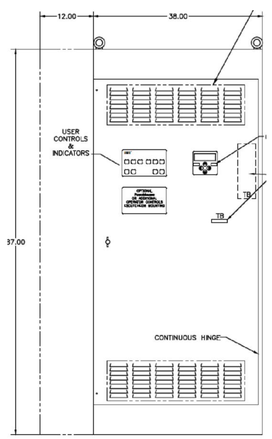
1600A MAIN BREAKER

(PRELIMINARY - 30"W x 35"D x 90"H)



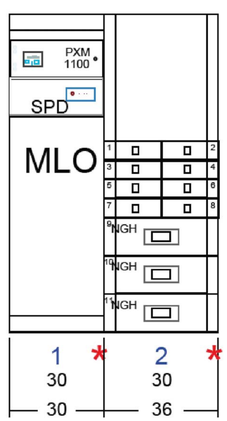
1600A MLO MCC ELEVATION

(PRELIMINARY - 162"W x 21"D x 90"H)



1600A ATS

(PRELIMINARY - 38"W x 24"D x 90"H)



SWITCHBOARD HB

(PRELIMINARY - 66"x30"x90")

NOTES:

1. ALL DUCTBANKS SHALL BE CONCRETE ENCASED. REINFORCE DUCTBANKS UNDER ROADWAYS (CONCRETE, ASPHALT, OR GRAVEL).
2. INSTALL A 120V, 1P, 20A, GFI, WP RECEPTACLE IN RAS AND WAS VAULTS. MOUNT RECEPTACLE 4" FROM TOP. FIELD COORDINATE EXACT LOCATION SUCH THAT SUMP PUMP CORD CAN REACH RECEPTACLE WITHOUT SPLICING. ROUTE 3 #10s TO PANEL LPE.
3. ROUTE A 1" PVC UNDERGROUND CONDUIT WITH 3 #8's TO ALL EXTERIOR TYPE "B" POLE MOUNTED LIGHT FIXTURES. SEE DRAWING E-4 FOR ADDITIONAL FIXTURES. FIXTURES WILL BE CONTROLLED FROM NEW LIGHTING CONTACTOR ON UTILITY RACK A. SEE SECURITY LIGHT DETAIL E / E-6. TYPICAL FOR 9 FIXTURES.

ESAD PROJECT #22014

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

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
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APPROVAL STAMP

GEORGIA REGISTERED No. 38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

No	Date	Description
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Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ELECTRICAL DUCT BANKS AND EQUIPMENT ELEVATIONS

DRAWING NUMBER

20-E-5
OF
214

PANEL HA

VOLTAGE: 480V | AMPS: 200 MLO | MOUNTING: SURFACE | NOTES: NEMA 1
3 PHASE, 3 WIRE | TOTAL LOAD: 69.0 KVA | AIC: 65,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1					5.00					20.00					15.00							2
3	18-HIOU-1 (OUTDOOR)				5.00			25	3		20.00		3	70	15.00						TRANSFORMER XFMR-TA	4
5					5.00							20.00			15.00							6
7					3.00					3.00												8
9	18-HIPU-1 (INDOOR)				3.00			15	3		3.00										SPACE	10
11					3.00							3.00										12
13										0.00												14
15	SPARE							15	3		0.00										SPACE	16
17												0.00										18
19										0.00												20
21	SPACE										0.00										SPACE	22
23												0.00										24
25										0.00											SPACE	26
27	SPACE										0.00										SPACE	28
29												0.00									SPACE	30
31										0.00											SPACE	32
33	SPACE										0.00										SPACE	34
35												0.00									SPACE	36
37	SPACE									0.00											SPACE	38
39	SPACE										0.00										SPACE	40
41	SPACE											0.00									SPACE	42
	PRVOIDE WITH INTEGAL SURGE PROTECTION DEVICE									23.00	23.00	23.00			45.00	0.00	24.00	0.00	0.00	0.00	CONNECTED KVA 69	

PANEL LA

VOLTAGE: 208Y/120V | AMPS: 150 MB | MOUNTING: SURFACE | NOTES: NEMA 1
3 PHASE, 4 WIRE | TOTAL LOAD: 13.0 KVA | AIC: 10,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	LIGHTS (8)	0.32						20	1	1.40			1	20					1.08		RECEPTACLES (6)	2
3	EXTERIOR WALL LIGHTS (6)	0.15						20	1		0.55		1	20						0.40	A.B. LIGHTS (4)	4
5	VLR CONTROL PANEL						0.30	20	1			1.02	1	20					0.72		A.B. RECEPTS (4)	6
7	SCADA LCP-A						0.30	20	1	0.48			1	20					0.18		A.B. RACK RECEPT.	8
9	LIGHTING CONTACTOR						0.10	20	1		1.10		1	20	1.00						BLOWER 1, 2, 3 120V	10
11	** HOT BOX #1						1.50	20	1			1.90	1	20					0.40		BLOWER LGTS (4)	12
13	** HOT BOX #2						1.50	20	1	1.68			1	20					0.18		BLOWER RACK RECEPT.	14
15	INFLUENT FLOW METER						0.10	20	1		0.10		1	20							SPARE	16
17	INFLUENT SAMPLER						1.50	20	1			1.60	1	20	0.10						DIGESTER AIT-401	18
19	HEADWORKS RECEPT		0.18					20	1	0.18			1	20							SPARE	20
21	SPARE							20	1		0.00		1	20							SPARE	22
23	SITE LIGHTS (4)	0.80						20	1			0.80	1								SPARE	24
25	SITE LIGHTS (2)	0.20						20	1	0.20											SPACE	26
27	HEADWORKS HEAT TRACE						1.00	20	1		1.00										SPACE	28
29	HEADWORKS HEAT TRACE						1.00	20	1			1.00									SPACE	30
31	SPARE							20	1	0.00											SPACE	32
33	SPARE							20	1		0.00										SPACE	34
35	SPARE							20	1			0.00									SPACE	36
37	SPARE							20	1	0.00											SPACE	38
39	SPARE							20	1		0.00										SPACE	40
41	SPARE							20	1			0.00									SPACE	42
	BREAKERS 11, 13, 27, 29 SHALL BE GFI RATED FOR HEAT TRACE									3.94	2.75	6.32			8.40	0.00	0.00	0.00	2.34	2.27	CONNECTED KVA 13.01	

PANEL LB

VOLTAGE: 208Y/120V | AMPS: 150 MB | MOUNTING: SURFACE | NOTES: NEMA 1
3 PHASE, 4 WIRE | TOTAL LOAD: 17.7 KVA | AIC: 10,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	LIGHTS (3)	0.12						20	1	0.84			1	20					0.72		RECEPT (4)	2
3	WALL PACKS (4)	0.10						20	1		0.28		1	20					0.18		RECEPT (1)	4
5	LIGHTING CONTACTOR	0.10						20	1			1.10	2	20			1.00				MINI-SPLIT A/C	6
7	SITE LIGHTS (2)	0.40						20	1	1.40							1.00					8
9	SITE LIGHTS (2)	0.40						20	1		3.40				3.00						PANEL LF (COMPRESSOR BLDG)	10
11	EFF. FLOW METER						0.10	20	1			3.10	3	50	3.00							12
13	EFFLUENT SAMPLER		1.00					20	1	4.00					3.00							14
15	SCADA-LCP-D						0.50	20	1		0.50		1	20							SPARE	16
17	SCADA-LCP-B						0.50	20	1			0.50	1	20							SPARE	18
19	MONTANA FLUME						0.10	20	1	0.10			1	20							SPARE	20
21	WAS FLOW						0.10	20	1		0.10		1	20							SPARE	22
23	CLARIFIER 1 RAS TSS						0.10	20	1			0.10	1	20							SPARE	24
25	CLARIFIER 2 RAS TSS						0.10	20	1	0.10			1	20							SPARE	26
27	CLARIFIER 1 LGTS (2)	0.20						20	1		0.20		1	20							SPARE	28
29	CLARIFIER 1 RECEPT		0.36					20	1			0.36									SPACE	30
31	CLARIFER 2 LGTS (2)	0.20						20	1	0.20											SPACE	32
33	CLARIFIER 2 RECEPT		0.36					20	1		0.36										SPACE	34
35	SITE LIGHTS (3)	0.60						20	1			0.60									SPACE	36
37	HEAT TRACE SPLITTER BOX						0.50	20	1	0.50											SPACE	38
39	SPARE							20	1		0.00										SPACE	40
41	SPARE							20	1			0.00									SPACE	42
	** BREAKERS 37 SHALL BE GFI RATED FOR HEAT TRACE									7.14	4.84	5.76			11.00	0.00	2.00	0.00	2.62	2.12	CONNECTED KVA 17.74	

PANEL HC

VOLTAGE: 480V | AMPS: 400 MB | MOUNTING: SURFACE | ENCLOSURE: NEMA 4X SS
3 PHASE, 3 WIRE | TOTAL LOAD: 140.0 KVA | AIC: 42,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	DS-CHEM (15kVA)						7.50	50	2	9.17							1.67					2
3							7.50				9.17		3	15			1.67				14-UH-1 (5kW)	4
5	NOT USED											1.67					1.67					6
7	PW TECH DEWATERING CONTROL PANEL			10.00						11.67							1.67					8
9				10.00				60	3		11.67		3	15			1.67				14-UH-2 (5kW)	10
11				10.00								11.67					1.67					12
13	LIME SYSTEM CONTROL PANEL			9.50						11.17							1.67					14
15				9.50				60	3		11.17		3	15			1.67				14-UH-3 (5kW)	16
17				9.50								11.17					1.67					18
19	TRANSFORMER XFMR-TC (30kVA)						10.00			11.67							1.67					20
21							10.00	50	3		11.67		3	15			1.67				14-UH-4 (5kW)	22
23							10.00					11.67					1.67					24
25	OVERHEAD DOOR			0.50						5.50							5.00					26
27				0.50				20	3		5.50		3	40			5.00				PW TECH CONVEYOR CONTROL PANEL	28
29				0.50								5.50					5.00					30
31	SPARE									0.00											SPACE	32
33								20	3		0.00										SPACE	34
35												0.00									SPACE	36
37	SPACE									0.00											SPACE	38
39	SPACE										0.00										SPACE	40
41	SPACE											0.00									SPACE	42
	PRVOIDE WITH INTEGAL SURGE PROTECTION DEVICE									49.18	49.18	41.68			45.00	0.00	35.04	60.00	0.00	0.00	CONNECTED KVA 140.04	

PANEL LC

VOLTAGE: 208Y/120V | AMPS: 100 MB | MOUNTING: SURFACE | NOTES: NEMA 4X SS
3 PHASE, 4 WIRE | TOTAL LOAD: 5.0 KVA | AIC: 10,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	INTERIOR LIGHTS (9)	0.90						20	1	2.60			1	20				1.70			14-EF-1 (3/4HP)	2
3	DUMPSTER LIGHTS (3)	0.30						20	1		0.30		1	20							SCADA-LCP-C	4
5	WALL PACKS (11)	0.70						20	1			0.70									SPACE	6
7	RECEPTS (5)							20	1	0.00											SPACE	8
9	RECEPTS (5)							20	1		0.00										SPACE	10
11	RECEPT (1)							20	1			0.00									SPACE	12
13	LIGHTING CONTACTOR							20	1	0.00											SPACE	14
15	SITE LIGHTS (4)	0.80						30	1		0.80										SPACE	16
17	SITE LIGHTS (3)	0.60						20	1			0.60									SPACE	18
19	SPARE							20	1	0.00											SPACE	20
21	SPARE							20	1		0.00										SPACE	22
23	SPARE							20	1			0.00									SPACE	24
25	SPARE							20	1	0.00											SPACE	26
27	SPARE							20	1		0.00										SPACE	28
29	SPARE							20	1			0.00									SPACE	30
31	SPARE							20	1	0.00											SPACE	32
33	SPARE							20	1		0.00										SPACE	34
35	SPARE							20	1			0.00									SPACE	36
37	SPARE							20	1	0.00											SPACE	38
39	SPARE							20	1		0.00										SPACE	40
41	SPARE							20	1			0.00									SPACE	42
										2.60	1.10	1.30			0.00	0.00	0.00	1.70	0.00	3.30	CONNECTED KVA 5	

PANEL HD

VOLTAGE: 480/277V | AMPS: 150 MB | MOUNTING: SURFACE | NOTES: NEMA 1
3 PHASE, 4 WIRE | TOTAL LOAD: 78.0 KVA | AIC: 65,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1										15.00					15.00							2
3	SPARE							20	3		15.00		3	70	15.00						TRANSFORMER HD	4
5												15.00			15.00							6
7	HOPU 17-1 OUTDOOR UNIT				5.00					5.00												8
9					5.00			30	3		5.00										SPACE	10
11					5.00							5.00										12
13					6.00					6.00												14
15	HIPU 17-1 INDOOR UNIT				6.00			30	3		6.00										SPACE	16
17					6.00							6.00										18
19										0.00												20
21	SPARE							15	3		0.00										SPACE	22
23												0.00										24
25										0.00											SPACE	26
27	SPARE							30	3		0.00										SPACE	28
29												0.00									SPACE	30
31										0.00											SPACE	32
33	SPACE										0.00										SPACE	34
35												0.00									SPACE	36
37	SPACE									0.00											SPACE	38
39	SPACE										0.00										SPACE	40
41	SPACE											0.00									SPACE	42
	PRVOIDE WITH INTEGAL SURGE PROTECTION DEVICE									26.00	26.00	26.00			45.00	0.00	33.00	0.00	0.00	0.00	CONNECTED KVA 78	

PANEL LD

VOLTAGE: 208Y/120V | AMPS: 150 MB | MOUNTING: SURFACE | NOTES: NEMA 1
3 PHASE, 4 WIRE | TOTAL LOAD: 30.6 KVA | AIC: 10,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	LIGHTS (25)	1.00						20	1	1.70			1	20						0.70	WALL PACKS	2
3	LIGHTS (26)	1.10						20	1		1.90		1	20						0.80	SITE LIGHTS (4)	4
5	ENTRANCE GATE			1.00								1.90	1	20					0.90		RECEPT (5)	6
7				1.00				20	3	1.72			1	20					0.72		RECEPT (4)	8
9				1.00							1.36		1	20					0.36		LAB RECEPT (2)	10
11	STREET SIGN	0.20						20	1			0.56	1	20					0.36		LAB RECEPT (2)	12
13	RANGE					2.00		50	2	2.36			1	20					0.36		LAB RECEPT (2)	14
15						2.00					3.00		1	20					1.00		BOD INC. RECEPT	16
17	REFRIGERATOR					1.00		20	1			1.36	1	20					0.36		LAB RECEPT (2)	18
19	BREAK ROOM RECEPT (4)		0.72					20	1	1.08			1	20					0.36		LAB RECEPT (2)	20
21	CONF. ROOM RECEPT (5)		0.90					20	1		1.26		1	20					0.36		LAB RECEPT (2)	22
23	MAINT. RECEPT (5)		0.90					20	1			1.26	1	20					0.36		LAB RECEPT (2)	24
25	TELE BACKBOARD RECEPT		0.50					20	1	1.00			1	20			0.50				RECIRC PUMP	26
27	NETWORK RACK RECEPT		0.50					20	1		1.50		1	20		1.00					DISHWASHER	28
29	MAINT. RECEPT (6)		1.08					20	1			2.08	1	20		1.00					DEION. WATER FILTER	30
31	MAINT. RECEPT (4)		0.72					20	1	1.72			1	20		1.00					AUTOCLAVE RECEPT.	32
33	OFFICE RECEPT (4)		0.72					20	1		1.72		1	20		1.00					OVEN RECEPT.	34
35	OFFICE RECEPT (3)		0.54					20	1			0.64	1	20	0.10						LIGHTING CONTACTOR	36
37	OFFICE RECEPT (6)		1.08					20	1	1.08			1	20							SPARE	38
39	RESTROOM RECEPT (5)		0.90					20	1		0.90		1	20							SPARE	40
41	FUME HOOD					0.50		20	1			0.50	1	20							SPARE	42
	NOTES: PROVIDE WITH FEED THRU LUGS FOR FUTURE PANEL									10.66	11.64	8.30			0.10	9.50	0.50	3.00	13.70	3.80	CONNECTED KVA 30.6	

PANEL LE

VOLTAGE: 208Y/120V | AMPS: 50 MB | MOUNTING: SURFACE | NOTES: NEMA 12
3 PHASE, 4 WIRE | TOTAL LOAD: 6.1 KVA | AIC: 10,000

No.	SERVES	LOAD (KVA) LTG	RCPT	MTR	A/C	KITCH	MISC	BRKR TRIP	P	PH A	B	C	BRKR P	TRIP	LOAD (KVA) MISC	KITCH	A/C	MTR	RCPT	LTG	SERVES	No.
1	LIGHTS (4)	0.40						20	1	0.50			1	20	0.10						FILTER 1	2
3	EX. LIGHTS (4)	0.50						20	1		0.60		1	20	0.10						FILTER 2	4
5	RECEPT (4)		0.72					20	1			0.82	1	20	0.10						FILTER 3	6
7	RECEPT (1)		0.18					20	1	0.28			1	20	0.10						FILTER 4	8
9	EX. FAN 9-EF-1 (0.25HP)				1.00			20	1		1.10		1	20	0.10						FILTER 5	10
11	WALL HEATER, 1kW				1.00			20	1			1.18	1	20					0.18		FILTER RECEPT.	12
13	U.V. CANOPY LGTS (6)	0.60						20	1	0.60			1	20							FILTER 6 (FUTURE)	14
15	U.V. RECEPTS		0.04					20	1		0.04		1	20							FILTER 7 (FUTURE)	16
17	UV SYSTEM CONTROL CENTER						1.00	20	1			1.00	1	20							FILTER 8 (FUTURE)	18
19	SPARE							20	1	0.00			1	20							FILTER 9 (FUTURE)	20
21	SPARE							20	1		0.00		1	20							FILTER 10 (FUTURE)	22
23	SPARE							20	1			0.00									SPACE	24
25	SPARE							20	1	0.00											SPACE	26
27	SPARE							20	1		0.00										SPACE	28
29	SPARE							20	1			0.00									SPACE	30
31	SPARE							20	1	0.00											SPACE	32
33	SPARE							20	1		0.00										SPACE	34
35	SPARE							20	1			0.00									SPACE	36
37	SPARE							20	1	0.00											SPACE	38
39	SPARE							20	1		0.00										SPACE	40
41	SPARE							20	1			0.00									SPACE	42
										1.38	1.74	3.00			1.50	0.00	2.00	0.00	1.12	1.50	CONNECTED KVA 6.116	

ESAD PROJECT #22014

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

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No. 38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : DMZ

Drawn By : AP

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

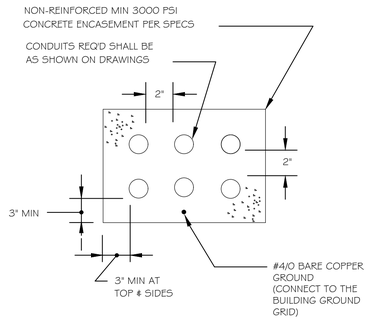
10/05/2021

SHEET TITLE

PANELBOARD SCHEDULES

DRAWING NUMBER

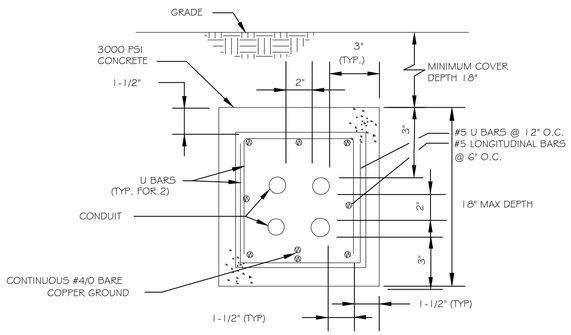
20-E-6
OF
214



NON-REINFORCED DUCT BANK SECTION

DETAIL A / 20-E-7

SCALE: NONE



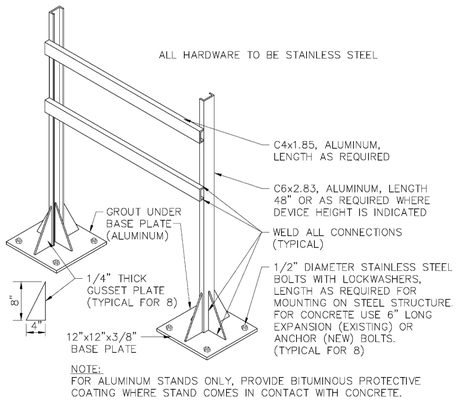
(DIMENSIONS ARE MINIMUM)

NOTES:
1. PROVIDE REINFORCED DUCT BANK TO 2-FEET BEYOND STRUCTURE, BUILDING, OR ROAD.
2. PROVIDE REINFORCED DUCTS UNDER ROADS, BUILDINGS, AND STRUCTURES. AT BUILDINGS, INSTALL ABOVE OR BELOW THICKENED FOOTING AS REQUIRED. DO NOT PASS THROUGH THICKENED FOOTING. DUCTBANKS AT BUILDINGS AND STRUCTURES SHALL NOT BE LOW POINTS (SLOPE DUCTBANKS DOWN AND AWAY FROM BUILDING AND STRUCTURES).
3. SPLICE LONGITUDINAL BARS 24", MINIMUM, WHERE REQUIRED.

REINFORCED DUCT BANK SECTION

DETAIL B / 20-E-7

SCALE: NONE

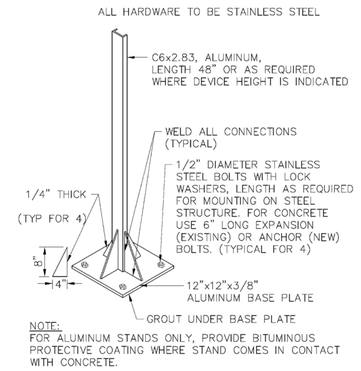


NOTE:
FOR ALUMINUM STANDS ONLY, PROVIDE BITUMINOUS PROTECTIVE COATING WHERE STAND COMES IN CONTACT WITH CONCRETE.

DUAL SUPPORT STAND / UTILITY RACK

DETAIL C / 20-E-7

SCALE: NONE

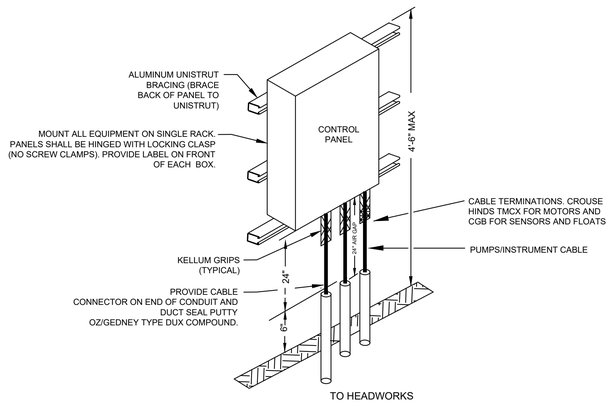


NOTE:
FOR ALUMINUM STANDS ONLY, PROVIDE BITUMINOUS PROTECTIVE COATING WHERE STAND COMES IN CONTACT WITH CONCRETE.

SINGLE SUPPORT STAND / UTILITY RACK

DETAIL D / 20-E-7

SCALE: NONE

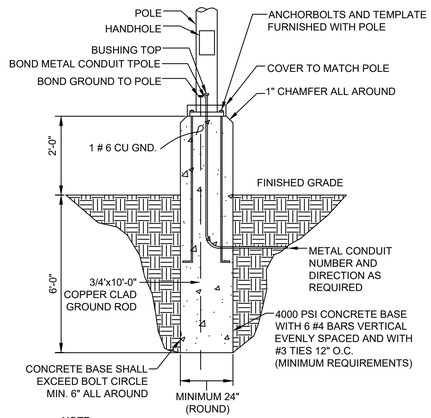


NOTES:
1. SEE SCHEMATIC DIAGRAM FOR CONDUIT SIZE AND QUANTITY.
2. USE RAINTIGHT MYERS HUBS FOR ALL CONDUIT PENETRATIONS.
3. INSTALL ON ALUMINUM CHANNEL. PROVIDE CONCRETE ANCHOR FOR EACH CHANNEL. ALL ALUMINUM IN CONTACT WITH CONCRETE SHALL BE COATED IN BLACK ASPHALTUM TYPE PAINT.

HEADWORKS CONDUIT INSTALLATIONS

DETAIL E / 20-E-7

SCALE: NONE

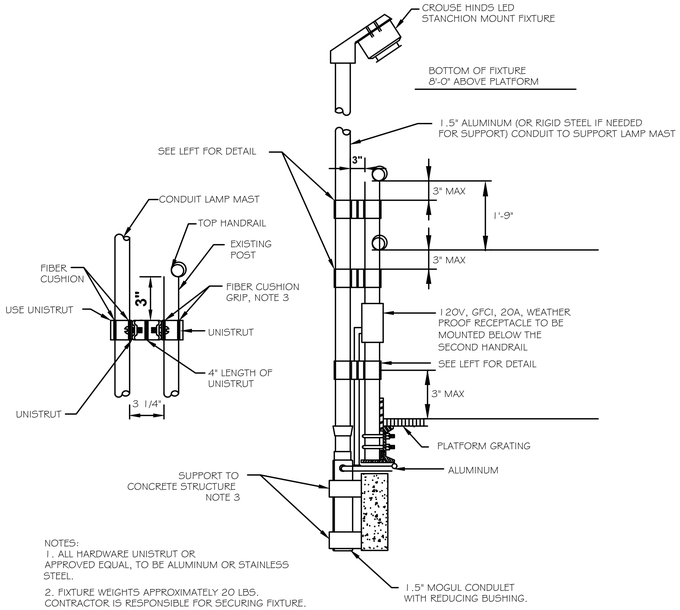


NOTE:
1. POLE AND BASE WITH LUMINARES SHALL BE RATED FOR 80 MPH WIND LOADING WITH 1.3 GUST FACTOR.

POLE BASE DETAIL

DETAIL F / 20-E-7

SCALE: NONE



NOTES:
1. ALL HARDWARE UNISTRUT OR APPROVED EQUAL, TO BE ALUMINUM OR STAINLESS STEEL.
2. FIXTURE WEIGHTS APPROXIMATELY 20 LBS. CONTRACTOR IS RESPONSIBLE FOR SECURING FIXTURE. PROVIDE ADDITIONAL SUPPORTS AS REQUIRED TO SECURE FIXTURE AND PREVENT FROM MOVING.
3. CONTRACTOR SHALL FASTEN/SECURTE FIXTURE TO CONCRETE BELOW AND / OR HANDRAIL. CONTRACTOR IS RESPONSIBLE FOR FULLY SECURING FIXTURE SUCH THAT IT DOESN'T SWAY.
4. CONTRACTOR SHALL INSTALL ONE TYPE G FIXTURE AND GET INSTALLATION APPROVAL FROM OWNER / ENGINEER PRIOR TO INSTALLING REMAINING FIXTURES.

TYPE G LIGHT FIXTURE MOUNTED TO HANDRAIL DETAIL

DETAIL G / 20-E-7

SCALE: NO SCALE

ESAD PROJECT #22014

ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
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Designed By : DMZ

Drawn By : AK

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

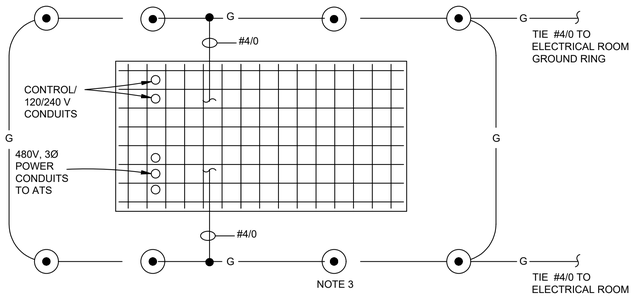
10/05/2021

SHEET TITLE

ELECTRICAL DETAILS 1

DRAWING NUMBER

20-E-7
OF
214



NOTES:
1. THE PAD SHALL BE 0-8" LARGER ON ALL SIDES THAN THE GENERATOR BASE AND ENCLOSURE.

2. VERIFY CONDUIT PENETRATIONS WITH GENERATOR MANUFACTURER.

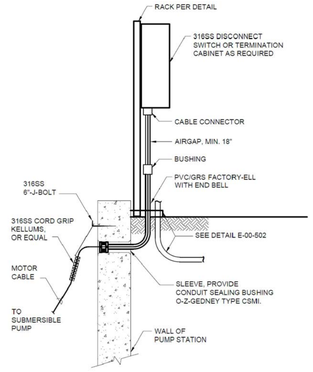
3. PROVIDE FOUR (8) 10'X3/4" COPPER CLAD STEEL GROUND RODS AS SHOWN WITH #4/0 BARE COPPER GROUND WIRE AROUND THE GENERATOR PAD. CONNECT GROUND WIRE TO THE GENERATOR ENCLOSURE AND Xo TERMINAL.

4. THE EXACT GENERATOR PAD SIZE SHALL BE DETERMINED BY THE GENERATOR MANUFACTURER'S SHOP DRAWING PRIOR TO INSTALLATION.

GENERATOR PAD DETAIL

DETAIL A / 20-E-8

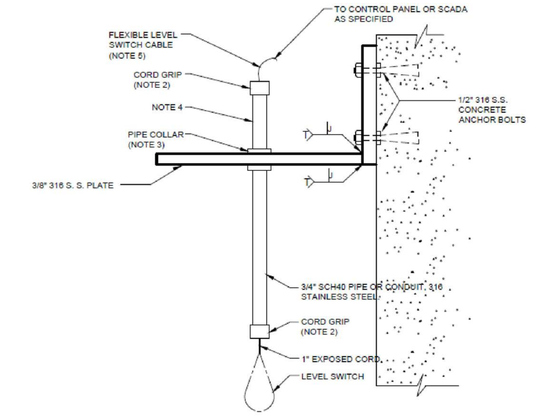
SCALE: NONE



SUBMERSIBLE PUMP INSTALLATOIN

DETAIL B / 20-E-8

SCALE: NONE

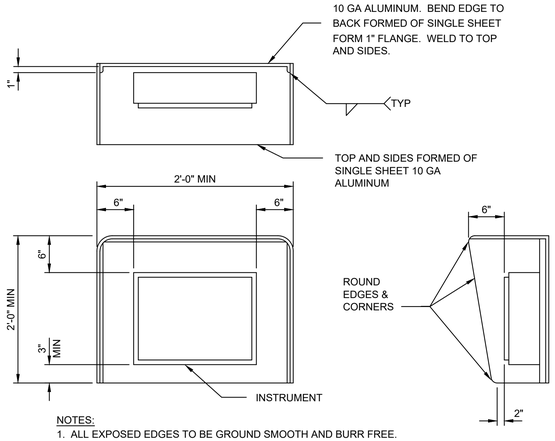


NOTES:
1. DISTANCE REQUIRED FOR SWITCH TO ACTUATE AT SPECIFIED LEVEL (d) .
2. PROVIDE NON-METALIC CORD GRIP SIZED FOR CORD ON SWITCH, T&B 2672 SERIES OR EQUAL. CONNECT TO CONDUIT WITH 316 STAINLESS STEEL COUPLING. PROVIDE SIMILAR GRIP FOR CONDUIT STUB-UP (NOT SHOWN) ALSO.
3. TWO-PIECE CLAMP-TYPE PIPE COLLAR, 316 STAINLESS STEEL, STAFFORD 190101PST, OR EQUAL. PROVIDE ONE ON EACH SIDE OF COVER TO SECURE PIPE. PROVIDE ONE WRAP OF VINYL TAPE UNDER CLAMP (SCOTCH 33, OR EQUAL) IF NECESSARY TO BUILD UP PIPE DIAMETER. BORE 1.05" HOLE IN END CAP FOR PIPE.
4. PROVIDE MINIMUM 6" OF PIPE BETWEEN TOP COLLAR AND GRIP TO ALLOW FOR ADJUSTMENT OF SWITCH ACTUATION LEVEL.
5. PROVIDE SLACK IN CABLE TO ALLOW WITHDRAWAL OF SWITCH WITHOUT DISCONNECTION.

FLOAT SWITCH - OPEN CHANNEL / TANK

DETAIL C / 20-E-8

SCALE: NONE

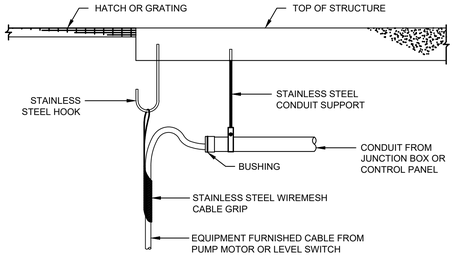


NOTES:
1. ALL EXPOSED EDGES TO BE GROUND SMOOTH AND BURR FREE.
2. MOUNT SUN SHIELD BETWEEN INSTRUMENT AND STANCHION. USE STAINLESS STEEL BOLTS AND INSULATING WASHERS AND SLEEVES.
3. PROVIDE SUNSHIELD FOR ALL INSTRUMENTS, INCLUDING: LEVEL TRANSMITTERS, FLOW TRANSMITTERS, DO CONTROLLERS, ORP CONTROLLERS, TSS CONTROLLERS, ETC.

SUN SHIELD

DETAIL D / 20-E-8

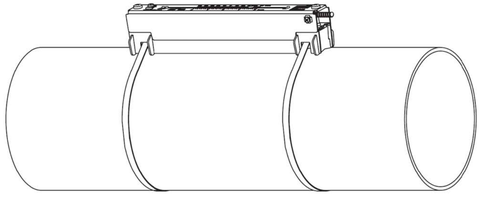
SCALE: NONE



LIFT STATION - CONDUIT INSTALLATION DETAIL

DETAIL E / 20-E-8

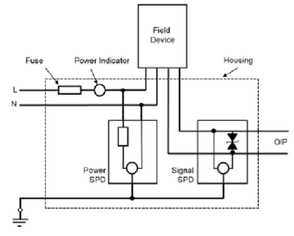
SCALE: NONE



TRANSIT-TIME FLOW METER (FE-0201)

DETAIL G / 20-E-8

SCALE: NONE



NOTES:
1. CONTRACTOR SHALL FURNISH A LOCAL SURGE SUPPRESS FOR ALL 2-WIRE AND 4-WIRE FIELD MOUNTED TRANSMITTERS INCLUDING MAGMETER TRANSMITTERS, DO TRANSMITTERS, LEVEL TRANSMITTERS, ORP TRANSMITTERS, TRANSIT-TIME TRANSMITTERS, ETC.

2. SURGE SUPPRESSOR SHALL BE EMERSON EDCO SLAC-22036 FIELD INSTRUMENT IN A NEMA 4X STAINLESS STEEL ENCLOSURE OR APPROVED EQUAL.

LOCAL 4-WIRE SURGE SUPPRESSOR

DETAIL F / 20-E-8

SCALE: NONE

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Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
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Designed By : DMZ

Drawn By : AK

Checked By : DMZ

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

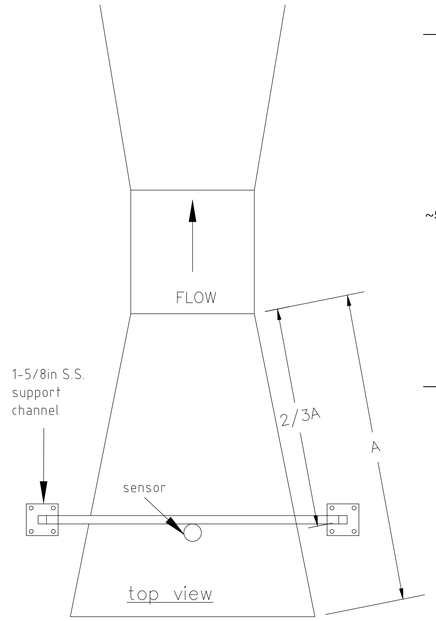
ELECTRICAL DETAILS 2

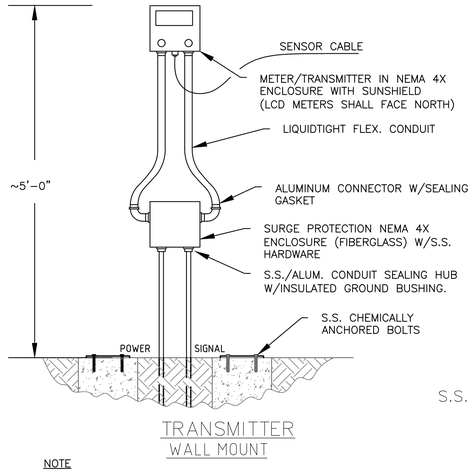
DRAWING NUMBER

20-E-8
OF
214

ESAD PROJECT #22014

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

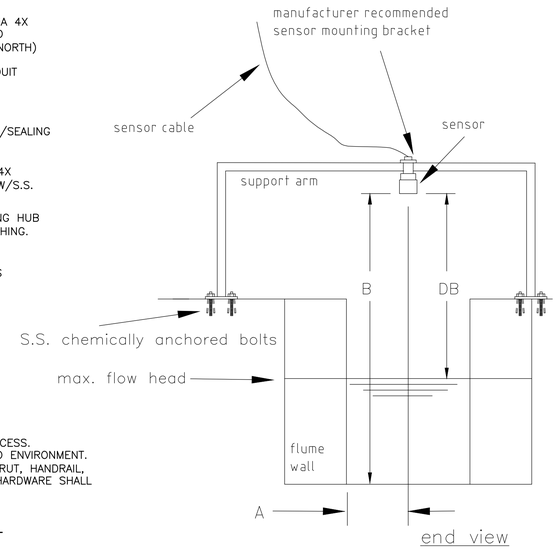




TRANSMITTER
WALL MOUNT

NOTE

1. WIRING AS INDICATED.
2. DEVICES SHALL BE MOUNTED FOR BEST VIEWING AND SERVICE ACCESS.
3. CONDUIT AND STAND MATERIALS AS INDICATED FOR THE INSTALLED ENVIRONMENT.
4. SUPPORT DEVICES AS REQUIRED BY CONDITIONS, i.e. 2" PIPE, STRUT, HANDRAIL, ETC. SUPPORTS SHALL BE ALUMINUM OR STAINLESS STEEL. ALL HARDWARE SHALL BE STAINLESS STEEL.

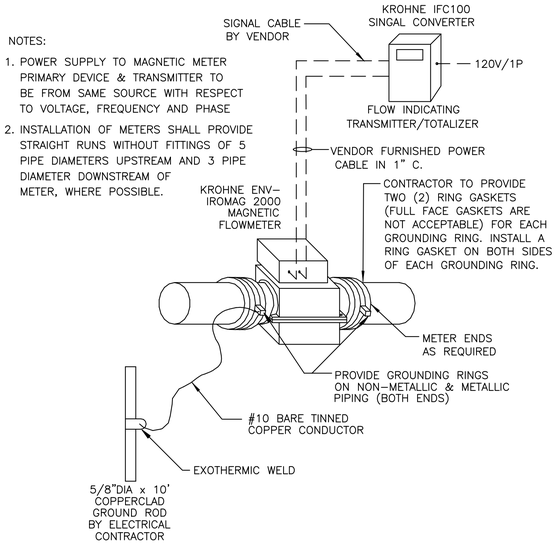


PARSHALL & MONTANA FLUME DETAIL

DETAIL A / 20-E-9

SCALE: NONE

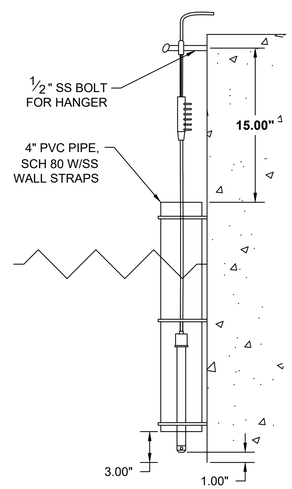
NOTES:
1) Install as close to Indicated as possible without violating manufacturer's recommendations. Minimum A = SIN(X) * B, where X = sensor's beam divergence angle.
2) Mounting hardware and supports shall be 316 S.S. Add support as needed to keep equipment from moving during operation. When available, handrails may be used for equipment mounting.
3) Install sensor at a height greater than the calibrated maximum flow head plus the meter's minimum deadband (DB), parallel to the flowing surface. Secure sensor cable to support channel without making sharp bends, but as needed for proper strain relief. If not subject to submergence and easily removed for maintenance, sensors may be mounted below gratings. However, the sonic path must be free of all obstructions. Cutouts in obstructions are acceptable if they do not compromise structural integrity and have smooth, sealed edges.

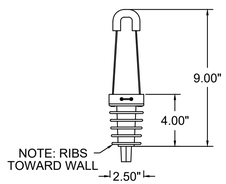


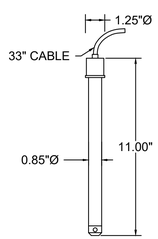
MAGNETIC FLOWMETER INSTALLATION

DETAIL B / 20-E-9

SCALE: NONE



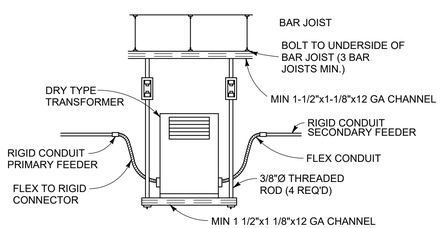




PRESSURE TRANSDUCER

DETAIL C / 20-E-9

SCALE: NONE

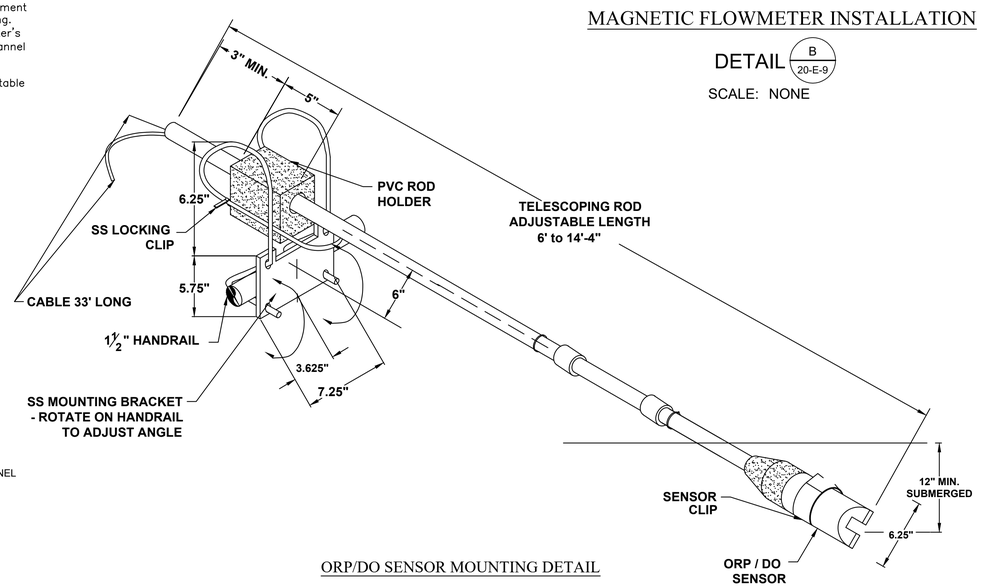


TRANSFORMER SUSPENDED FROM STRUCTURE

SCALE: N.T.S.

DETAIL D / 20-E-9

SCALE: NONE



ORP/DO SENSOR MOUNTING DETAIL

DETAIL E / 20-E-9

SCALE: NONE

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ESAD, LLC
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ROSWELL, GA 30075
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SHEET TITLE

ELECTRICAL DETAILS 3

DRAWING NUMBER

20-E-9
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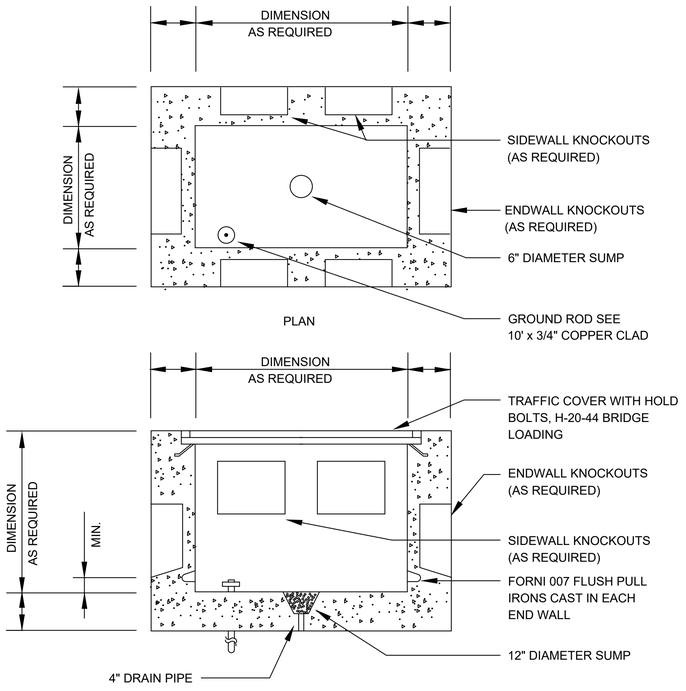
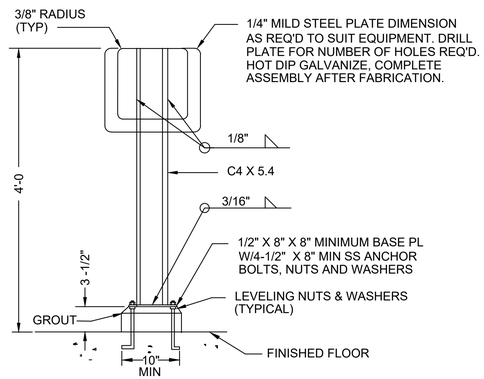
214



TYPICAL LARGE HAND-HOLE DETAIL

DETAIL A / 20-E-6

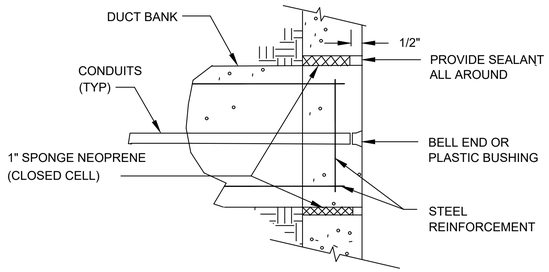
SCALE: NONE



CONTROL STATION MOUNTING STAND

DETAIL E / 20-E-6

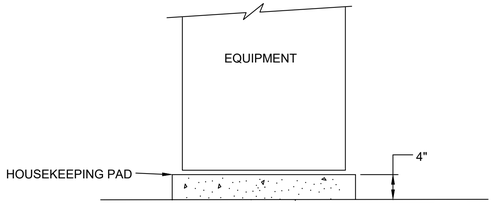
SCALE: NONE



DUCT BANK AT STRUCTURES

DETAIL B / 20-E-6

SCALE: NONE

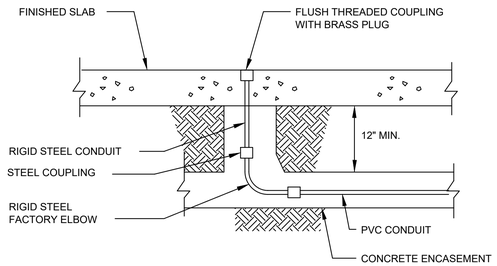


NOTES:
1. EQUIPMENT MUST BE LEVEL.
2. CHAMFER EDGES.

TYPICAL FLOOR MOUNTING FOR MOTOR CONTROL CENTERS, CONTROL PANELS, SWITCHGEARS, AND FREE STANDING EQUIPMENT

DETAIL C / 20-E-6

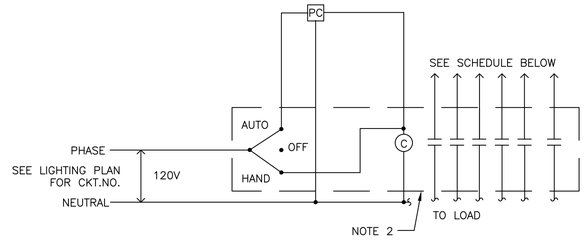
SCALE: NONE



CONDUIT FLOOR TERMINATION

DETAIL F / 20-E-6

SCALE: NONE



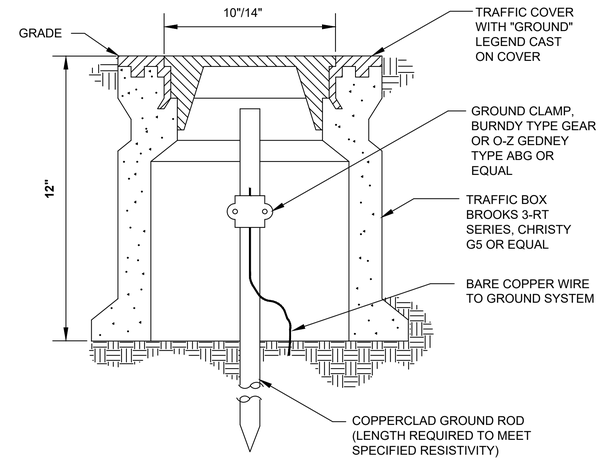
PHOTOCELL/TIME SWITCH LIGHTING CONTROL SCHEMATIC

DETAIL D / 20-E-6

SCALE: NONE

NOTES:
1. "PC" - PHOTOCELL, 120V. LOCATE ON THE ROOF FACING NORTH.
2. PROVIDE 4 LIGHTING CONTACTORS. PROVIDE ASCO 918 WITH 6-20A, 1 POLES IN NEMA 1 ENCLOSURE WITH H-O-A SWITCH.
3. THE LIGHTING CONTACTOR IN ELECTRICAL BUILDING 1 IS THE MASTER AND ONLY CONTACTOR THAT REQUIRES A PHOTOCELL. ALL OTHERS WILL BE INITIATED (IN AUTO MODE) FROM A DISCRETE OUTPUT FORM THE SCADA-LCP.

LIGHTING CONTACTOR SCHEDULE	
PANELBOARD	CIRCUITS
LA	CKTS. 3,23,25
LB	CKTS. 3,7,9,35
LC	CKTS. 5,15,17
LD	CKTS. 11,2,4



GROUND WELL AND ROD

DETAIL G / 20-E-6

SCALE: NONE

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SHEET TITLE

ELECTRICAL DETAILS 4

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20-E-10
OF
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PIPING AND TUBING MATERIALS

ABS	–	ACRYLONTRILE BUTADIENE STYRENE TRUSS PIPE
ALM	–	ALUMINUM PIPE OR TUBING
ARP	–	ALUMINUM REINFORCED PLASTIC PIPE
BL	–	BLACK IRON PIPE
BPT	–	BRAIDED PLASTIC TUBING–PVC
CI	–	CAST IRON PIPE
CISP	–	CAST IRON SOIL PIPE
CMCP	–	CORRUGATED METAL CULVERT PIPE
CMH	–	CHEMICAL HOSE
CMP	–	CORRUGATED METAL PIPE
COP	–	COPPER PIPE
CPVC	–	CHLORINATED POLYVINYL CHLORIDE PIPE
CS	–	CARBON STEEL PIPE
DI	–	DUCTILE CAST IRON PIPE
ERP	–	EPOXY RESIN PIPE
FRP	–	FIBERGLASS REINFORCED PLASTIC PIPE
GS	–	GALVANIZED STEEL PIPE
HOSE	–	FLEXIBLE HOSE
HSI	–	HIGH SILICON IRON PIPE
KLS	–	PVDF LINED STEEL PIPE (KYNAR LINED TYPICAL)
KYN	–	PVDF (KYNAR TYPICAL)
MI	–	CARBON STEEL PIPE W/MALLEABLE IRON FITTINGS
NEO	–	NEOPRENE HOSE
NI	–	NICKEL ALLOY PIPE
NLS	–	NEOPRENE LINED STEEL PIPE
PEP	–	POLYETHYLENE PIPE
PETB	–	POLYETHYLENE TUBING
PLS	–	POLYPROPYLENE LINED STEEL PIPE
POP	–	POLYPROPYLENE PIPE
PRP	–	PHENOLIC RESIN PIPE
PVC	–	POLYVINYL CHLORIDE PIPE
PVC HOSE	–	POLYVINYL CHLORIDE HOSE
PVFD	–	POLYVINYLIDENE FLUORIDE PIPE
RBR	–	POTABLE WATER PW – RUBBER HOSE
RCCP	–	REINFORCED CONCRETE CULVERT PIPE
RCP	–	REINFORCED CONCRETE PIPE
SAR	–	SARAN TUBING
SLH	–	SLUDGE HOSE
SLS	–	SARAN LINED STEEL PIPE
SS	–	STAINLESS STEEL PIPE OR TUBING
TEF	–	TEFLON TUBING
TI	–	TITANIUM ALLOY PIPE
TLS	–	TEFLON LINED STEEL PIPE
TYB	–	TYGON TUBING–BRAIDED
TYG	–	TYGON TUBING–UNBRAIDED

ABBREVIATIONS

A TO C	–	AIR TO CLOSE
A TO O	–	AIR TO OPEN
AVG	–	AVERAGE
B/EL	–	BOTTOM ELEVATION
B	–	BLOWER
CC	–	CALIBRATION COLUMN
CL	–	CENTER LINE
CFM	–	CUBIC FEET PER MINUTE
CV	–	CONTROL VALVE
CW	–	CITY WATER (POTABLE)
DIA	–	DIAMETER
DWG	–	DRAWING
ED	–	EDUCTOR
EL	–	ELEVATION
F.C.	–	FAIL CLOSED
F.O.	–	FAIL OPEN
FRL	–	FILTER\REGULATOR LUBRICATOR
FTR	–	FAIL TO RESPOND OR FAIL TO RUN
GAL	–	GALLONS
GPD	–	GALLONS PER DAY
GPH	–	GALLONS PER HOUR
GPM	–	GALLONS PER MINUTE
HB	–	HOSE BIB
HG	–	INCHES OF MERCURY
HI	–	HIGH
HOA	–	HAND/OFF/AUTO
HP	–	HORSEPOWER
IA	–	INSTRUMENT AIR
ID	–	INSIDE DIAMETER
INV	–	INVERT
IQ	–	INJECTION QUILL ASSEMBLY
LO	–	LOW
M	–	MECHANICAL EQUIPMENT
MH	–	MANHOLE
MV	–	MODULATING VALVE
MW	–	MANWAY
N.C.	–	NORMALLY CLOSED
N.O.	–	NORMALLY OPEN
OAL	–	OVERALL LENGTH
O.D.	–	OUTSIDE DIAMETER
P	–	PUMP
PA	–	PLANT AIR
PD	–	PULSATION DAMPENER
PSIG	–	POUNDS PER SQUARE INCH – GAUGE
PW	–	PLANT WATER
RED	–	REDUCER
RPM	–	REVOLUTIONS PER MINUTE
SCFM	–	STANDARD CUBIC FEET PER MINUTE
SCH	–	SCHEDULE
SG	–	SPECIFIC GRAVITY
SP	–	SETPOINT
SSH	–	STRAIGHT SIDE HEIGHT
STD	–	STANDARD
STR	–	STRAINER
SW	–	SEAL WATER
SWD	–	SIDE WATER DEPTH
T/EL	–	TOP ELEVATION
TDH	–	TOTAL DYNAMIC HEAD(FT OF FLUID)
TK	–	TANK
TYP	–	TYPICAL
VAC	–	VACUUM
VSD	–	VARIABLE SPEED DRIVE
VTP	–	VERTICAL TURBINE PUMP
WC	–	WATER COLUMN
WD	–	WATER DEPTH
WL	–	WATER LEVEL
WV	–	WORKING VOLUME (DOES NOT – INCLUDE FREEBOARD OR HEEL)
WSF	–	WATER STORAGE FACILITY
WTP	–	WATER TREATMENT PLANT
( )	–	AVERAGE FLOW
[ ]	–	PEAK FLOW

PROCESS LINES

- PROCESS FLOW LINE
- DRAIN/WASTE LINE
- OVERFLOW LINE
- BLOWER AIR LINE
- BACKWASH LINE
- SAMPLE LINE
- CHEMICAL INJECTION POINT

VALVE SYMBOLS

- ANGLE
- BALL
- BUTTERFLY
- CHECK
- DIAPHRAGM
- GATE
- GLOBE
- KNIFE
- NEEDLE
- PINCH
- PLUG
- PRESSURE SUSTAINING
- PRESSURE REDUCING
- AIR RELIEF
- SQUEEZE
- THREE WAY
- FOUR WAY
- VACUUM BREAKER
- AIR RELEASE
- HOSE BIBB
- INTEGRAL BLOCK & BLEED
- RUPTURE DISK
- MUD VALVE
- BACKFLOW PREVENTER
- SURGE ANTICIPATOR VALVE
- SLIDE GATE

ACTUATORS

- CYLINDER
- DIAPHRAGM–SPRING
- ELECTRO HYDRAULIC
- ELECTRO PNEUMATIC
- SOLENOID
- POSITIONER * – TYPE
- MOTOR
- MODULATING VALVE ACTUATOR
- OPEN/CLOSE VALVE ACTUATOR

INSTRUMENTATION LINES

- CAPILLARY TUBING
- ELECTRICAL
- HYDRAULIC
- PNEUMATIC
- DATA LINK

PIPING ACCESSORIES

- DIAPHRAGM SEAL
- DRESSER COUPLING
- EJECTOR/EDUCTOR
- EXPANSION JOINT
- FLANGED CONNECTION
- FLEXIBLE HOSE
- HOSE CONNECTION
- INSULATION
- INSULATED PIPE WITH ELECTRIC HEAT TRACE
- INSULATED PIPE WITH STEAM HEAT TRACE
- PIPE TO TUBING ADAPTER
- PULSATION DAMPENER
- QUICK DISCONNECT
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- SILENCER/MUFFLER
- CONCENTRIC REDUCER
- SIGHT FLOW INDICATOR
- STRAINER
- UNION
- STEAM TRAP
- AIR FILTER
- AIR REGULATOR
- COMB. AIR FILTER/ REGULATOR W/GAUGE
- FLOW ORIFICE
- SIGHT FLOW STRAINER
- SPECTACLE BLIND (OPEN)
- SPECTACLE BLIND (CLOSE)
- PIGTAIL SIPHON
- BASKET STRAINER
- COURSE BUBBLE AIR DIFFUSER
- FINE BUBBLE AIR DIFFUSER

PUMPS AND EQUIPMENT

- STATIC MIXER
- MECHANICAL FLOCCULATOR
- CENTRIFUGAL PUMP
- SAMPLE PUMP
- BLOWER
- PUMP, ROTARY LOBE
- PUMP, SUBMERSIBLE TURBINE
- HOSE PUMP
- VENDOR SUPPLIED CONTROL PANEL
- PUMP, DIAPHRAGM
- PUMP, GEAR
- PUMP, METERING
- PUMP, PROGRESSING CAVITY
- PUMP, VERTICAL TURBINE
- PUMP, SUBMERSIBLE
- VACUUM PUMP

INSTRUMENTATION AND RELATED ITEMS

- FLUME
- MAGNETIC FLOW METER
- ROTAMETER
- SONIC FLOW METER
- TURBINE FLOW METER
- VENTURI
- WEIR
- VORTEX SENSOR
- ANNUBAR
- ORIFICE PLATE
- POSITIVE DISPLACEMENT METER
- SAMPLE POINT
- LEVEL FLOAT SWITCH
- SUBMERSIBLE PRESSURE TRANSDUCER
- ULTRASONIC LEVEL SENSOR
- RADAR LEVEL SENSOR

ISA INSTRUMENT IDENTIFICATION TABLE

	FIRST LETTER		SUCCEEDING LETTERS	
	PROCESS VARIABLE	MODIFIER (IF NEEDED)	READOUT OR COMPUTER FUNCTION	MODIFIER (IF NEEDED)
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		CONTROL	
D	USER'S CHOICE	DIFFERENTIAL		
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)	
F	FLOW RATE	RATIO (FRACTION)		
G	USER'S CHOICE		GLASS, VIEWING DEVICE	
H	HAND			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE	CONTROL STATION	
L	LEVEL		LIGHT	LOW
M	USER'S CHOICE	MOMENTARY		MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)	
P	PRESSURE, VACUUM		POINT (TEST CONNECTION)	
Q	QUANTITY	INTEGRATE, TOTALIZE		
R	RADIATION		RECORD	
S	SPEED, FREQUENCY	SAFETY	SWITCH	
T	TEMPERATURE		TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS		VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL	
X	UNCLASSIFIED	X–AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y–AXIS	RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z–AXIS	DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

LEGEND BASED ON ISA STANDARD S 5.1

INSTRUMENT SYMBOLS * INSTRUMENT PROVIDED BY EQUIPMENT VENDOR	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR	AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	*			
SHARED DISPLAY, SHARED CONTROL				
COMPUTER FUNCTION				
PROGRAMMABLE LOGIC CONTROL				

ELECTRICAL AND RELATED ITEMS

- SELECTOR SWITCHES
- VFD – VARIABLE FREQUENCY DRIVE
- EM – EMERGENCY POWER
- I – INTERLOCK
- PILOT LIGHT R – LENS COLOR XX – EQUIPMENT REFERENCE

I/O SIGNALS:

- E – ETHERNET (CAT6)
- DI – DISCRETE INPUT
- DO – DISCRETE OUTPUT
- AI – ANALOG INPUT
- AO – ANALOG OUTPUT

LINE NUMBER IDENTIFICATION

1"– PA– CS

- MATERIAL CLASS
- FLOW STREAM IDENTIFICATION
- LINE SIZE

EQUIPMENT / VALVE TAG

P – 6 – 15 – 1A

- EQUIPMENT NO. NUMBER DENOTES MULTIPLE DEVICES USED IN IDENTICAL DUPLICATE SYSTEMS. LETTER DISTINGUISHES MULTIPLE SIMILAR DEVICES IN THE SAME INSTRUMENT LOOP.
- LOOP NO.
- PROCESS I.D.
- EQUIPMENT / VALVE IDENTIFICATION

LINE CONTINUATIONS

INDICATES A LINE GOING TO OR COMING FROM BATTERY LIMITS (CONTRACT LIMITS)

PID–5 | A / 2

INDICATES CONTINUATION OF LINE IS ON SHEET NUMBER 5 (SAME DRAWING NUMBER) IN ZONE A 2

SHT 5 – INDICATES CONTINUATION OF A SIGNAL IS ON SHEET NUMBER 5

INSTRUMENT TAG NUMBERS

TIC 103 – INSTRUMENTATION IDENTIFICATION OR TAG NUMBER

103 – LOOP NUMBER

TIC – FUNCTIONAL IDENTIFICATION

NOTE: HYPHENS ARE OPTIONAL AS SEPARATORS

PICS = FURNISHED BY THE PROCESS INSTRUMENTATION CONTROL SUPPLIER. SEE SPECIFICATIONS

NOTES:

1. P&IDs ARE GENERIC IN NATURE. FOR A COMPLETE LIST OF SCADA SIGNALS INTERFACE, SEE SCHEMATIC WIRING DIAGRAM DRAWINGS.
2. ALL OUTDOOR INSTRUMENTS SHALL BE INSTALLED WITH SUN/RAIN HOOD.
3. THE PROCESS INSTRUMENTATION CONTROL SUPPLIER (PICS) SHALL FURNISH THE FOLLOWING INSTRUMENTS:
   - A) INFLUENT FLOW METER (FIT–0201, FE–0201) / CLAMP ON
   - B) DIGESTER 1 LEVEL TRANSMITTER (PE–0441) / PRESSURE TRANSDUCER
   - C) DIGESTER 2 LEVEL TRANSMITTER (PE–0442) / PRESSURE TRANSDUCER
   - D) DIGESTER 1 HIGH LEVEL (LSH–0441) / FLOAT
   - E) DIGESTER 2 HIGH LEVEL (LSH–0442) / FLOAT
   - F) DIGESTER 1 / 2 DO CONTROLLER (AIT–0441)
   - G) DIGESTER 1 DO PROBE (AE–0441)
   - H) DIGESTER 2 DO PROBE (AE–0442)
   - I) RAS FLOW METER FROM CLARIFIERS (FIT–7000, FE–7000) / ULTRASONIC (MONTANA FLUME)
   - J) WAS FLOW TO DIGESTER (FIT–0750, FE–0750) / MAGNETIC FLOW METER
   - K) EFFLUENT FLOW (FIT–0850, FE–0750) / ULTRASONIC (PARSHALL FLUME)

SEE SPECIFICATIONS FOR REQUIREMENTS. SEE MECHANICAL DRAWINGS FOR PIPE SIZES, FLOW RATES, AND MOUNTING ELEVATIONS.

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

RELEASES

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Designed By : DZ

Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

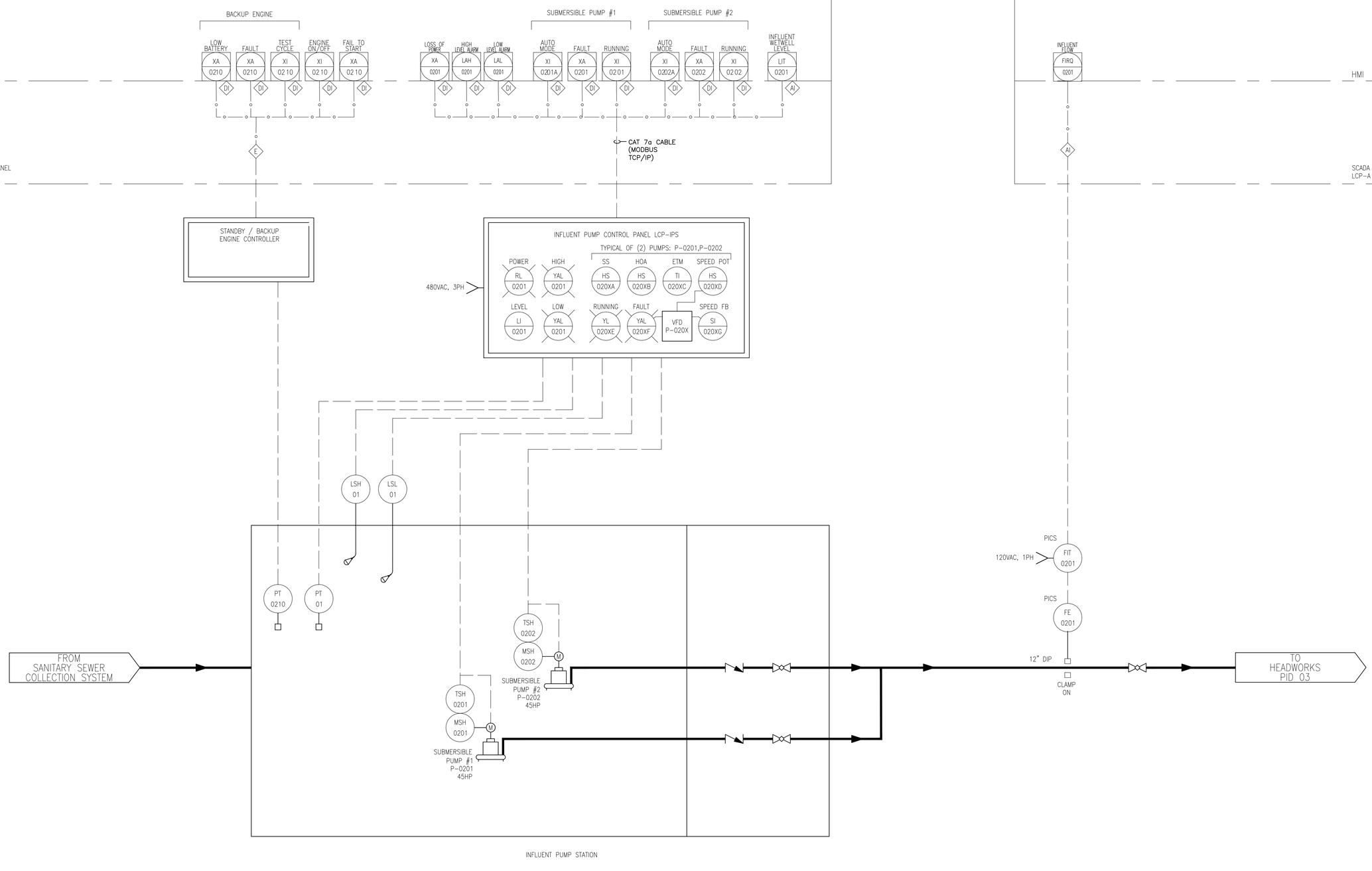
P&ID LEGEND

DRAWING NUMBER

19-PID-1
OF
214

ESAD PROJECT #22014

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



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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID INFLUENT PUMP STATION

DRAWING NUMBER

19-PID-2
OF
211

ESAD PROJECT #22014

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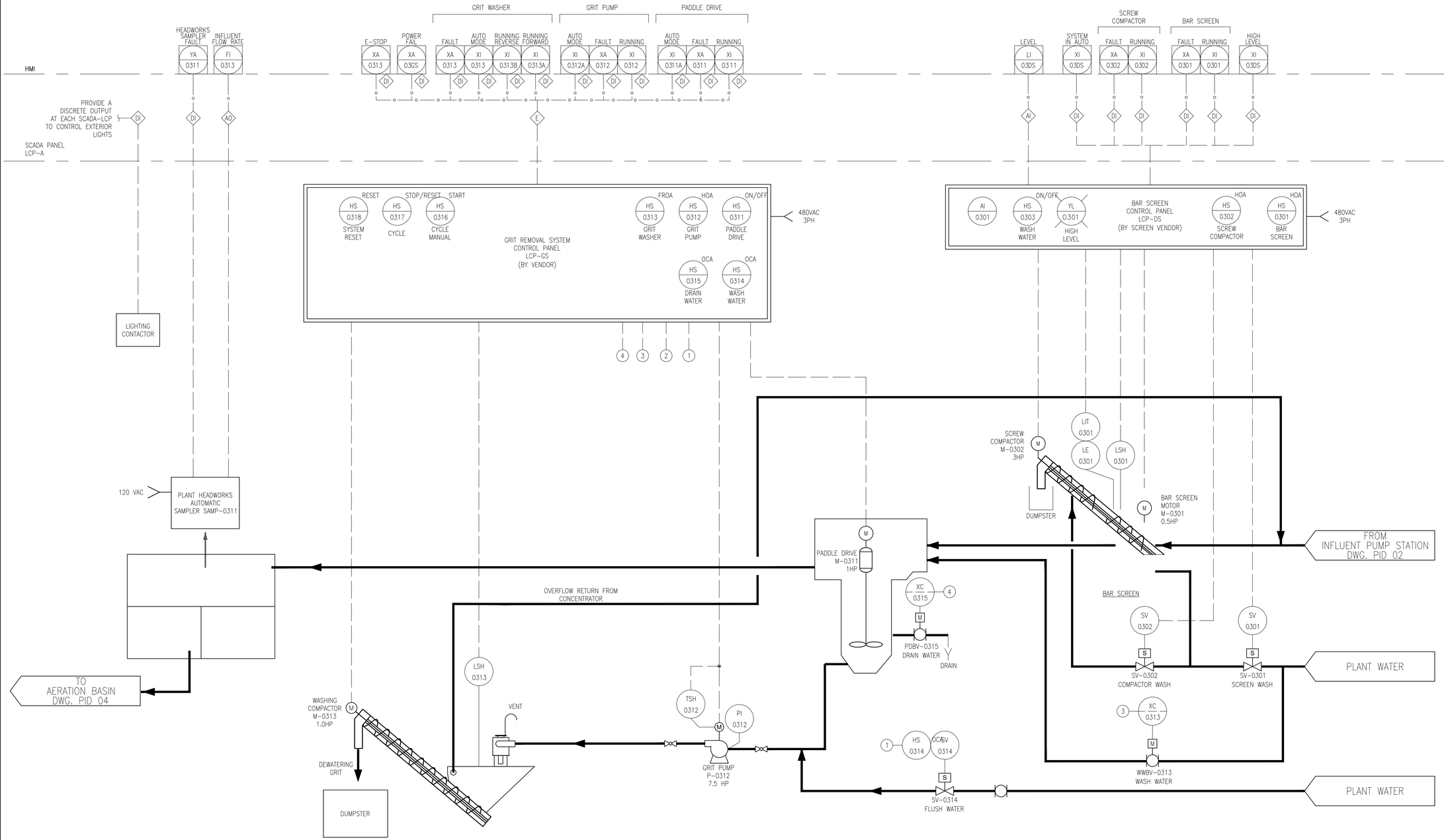
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
PH: 678-469-5196



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SUITE 430-231
ROSWELL, GA 30075
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Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

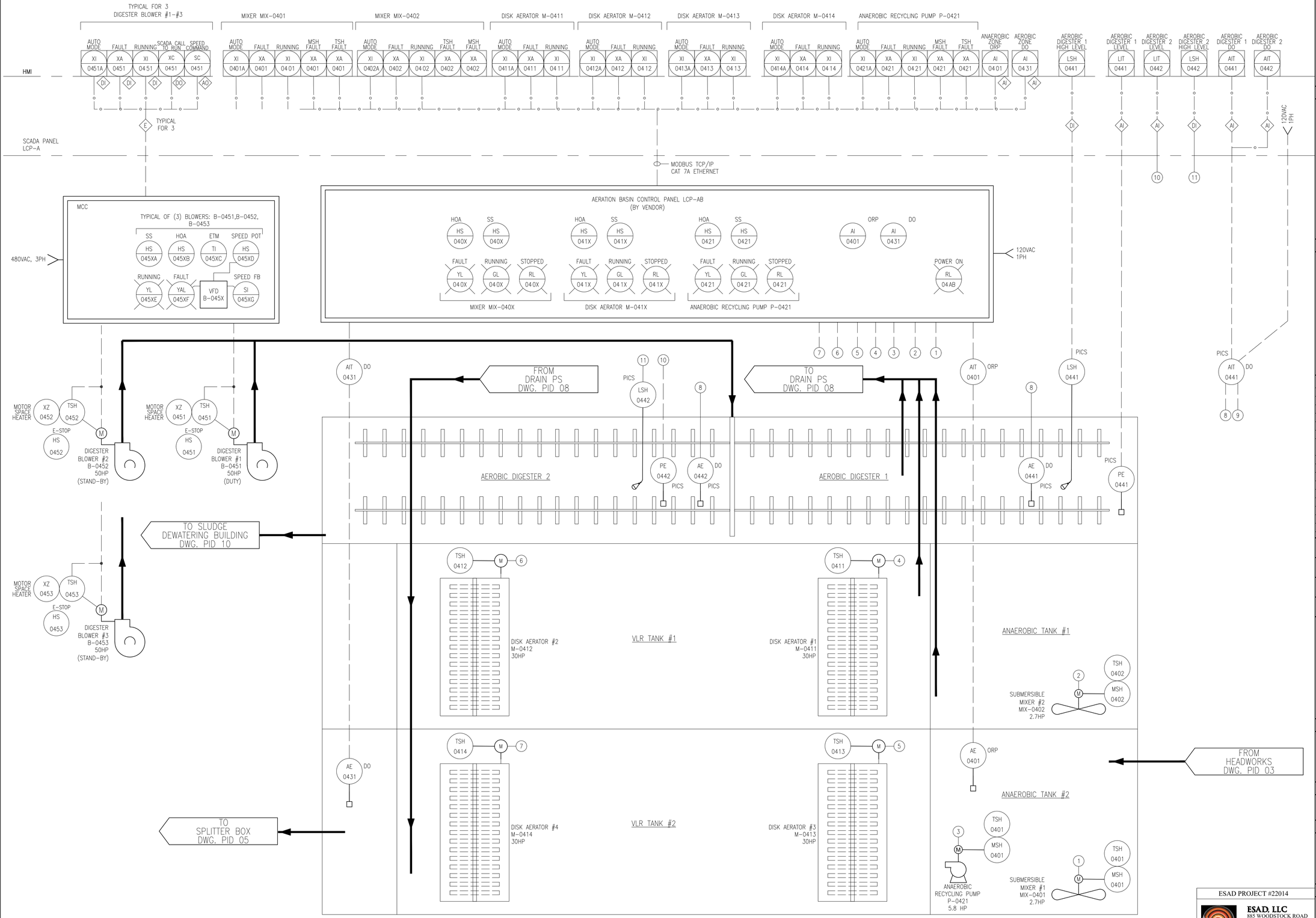
10/05/2021

SHEET TITLE

P&ID HEADWORKS

DRAWING NUMBER

19-PID-3
OF
214



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Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID AERATION BASIN

DRAWING NUMBER

19-PID-4
OF
214

ESAD PROJECT #22014

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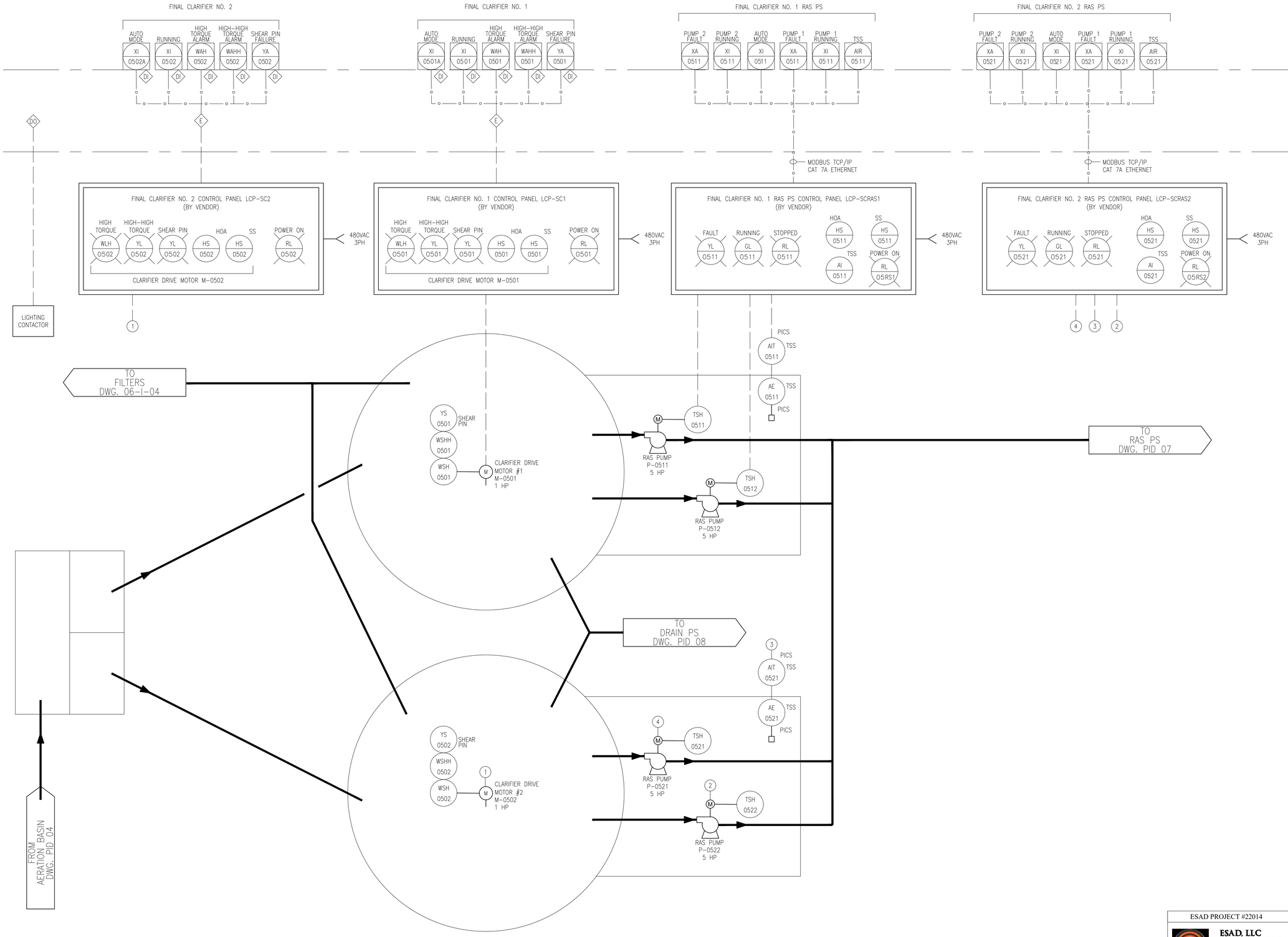

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Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID CLARIFIERS

DRAWING NUMBER

19-PID-5
OF
214

ESAD PROJECT #22014

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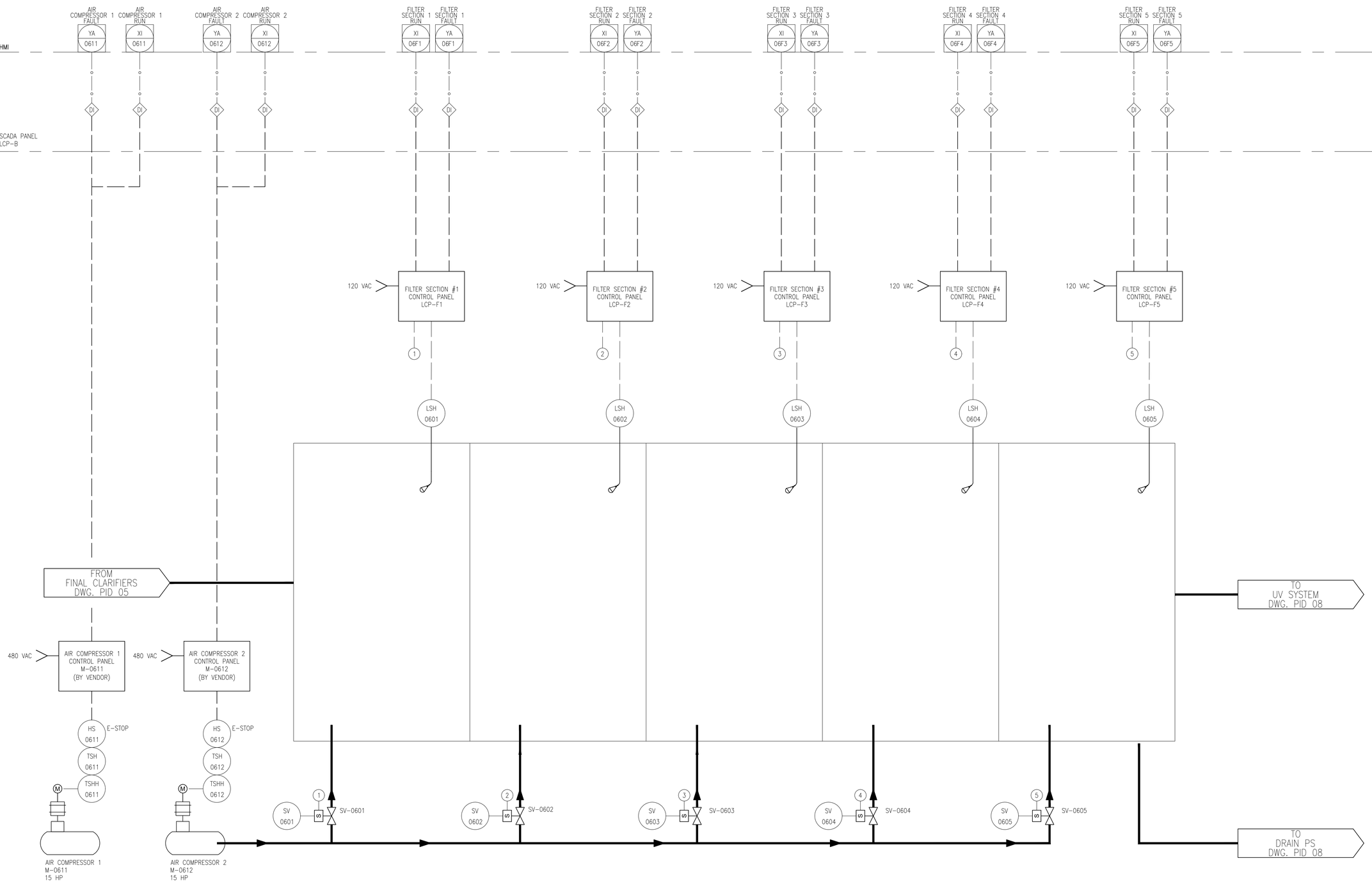

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Drawn By : DZ

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PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID FILTERS

DRAWING NUMBER

19-PID-6
OF
214

ESAD PROJECT #22014

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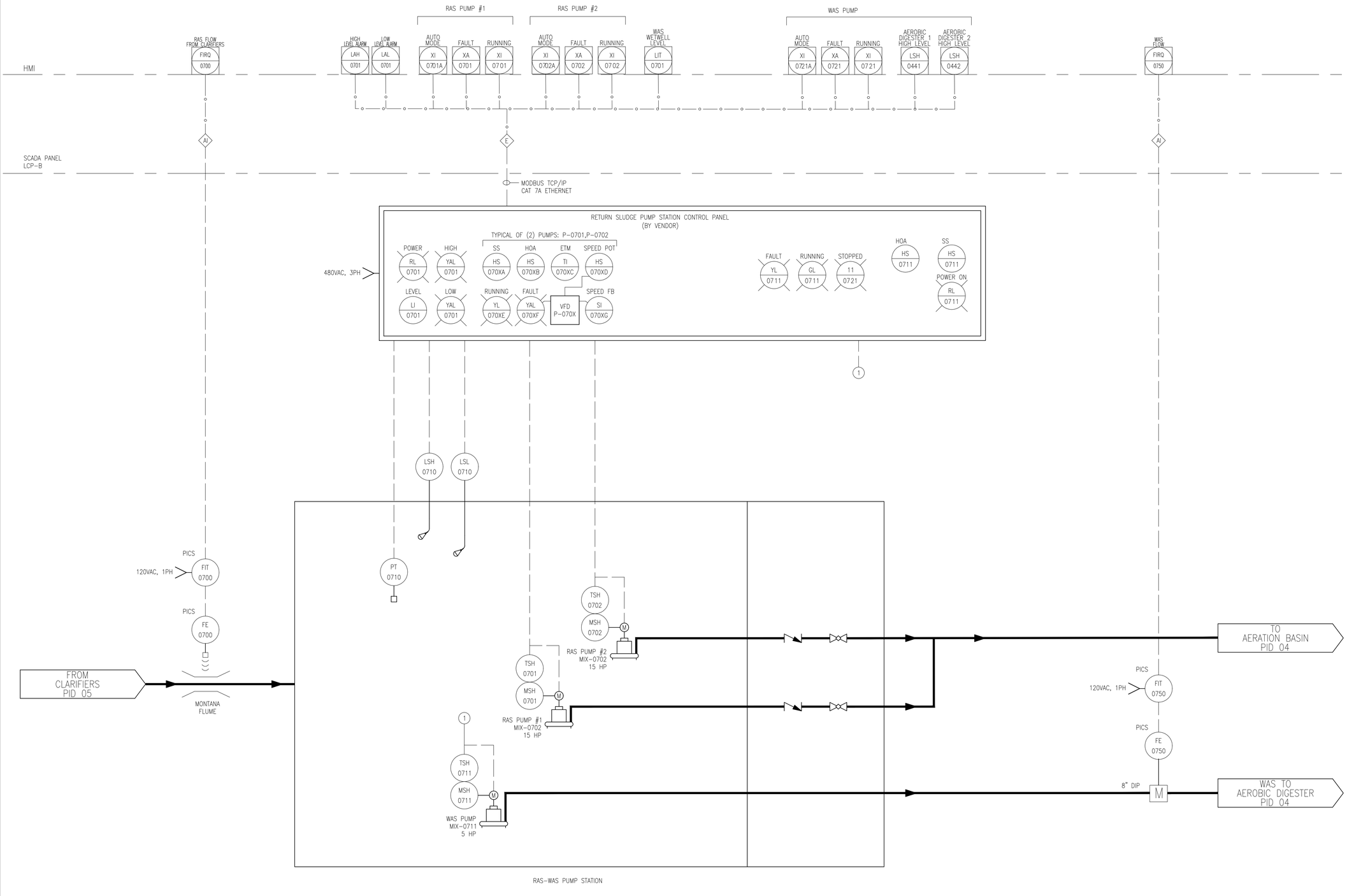

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Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID RAS-WAS PUMP STATION

DRAWING NUMBER

19-PID-7
OF
214

ESAD PROJECT #22014

ESAD, LLC
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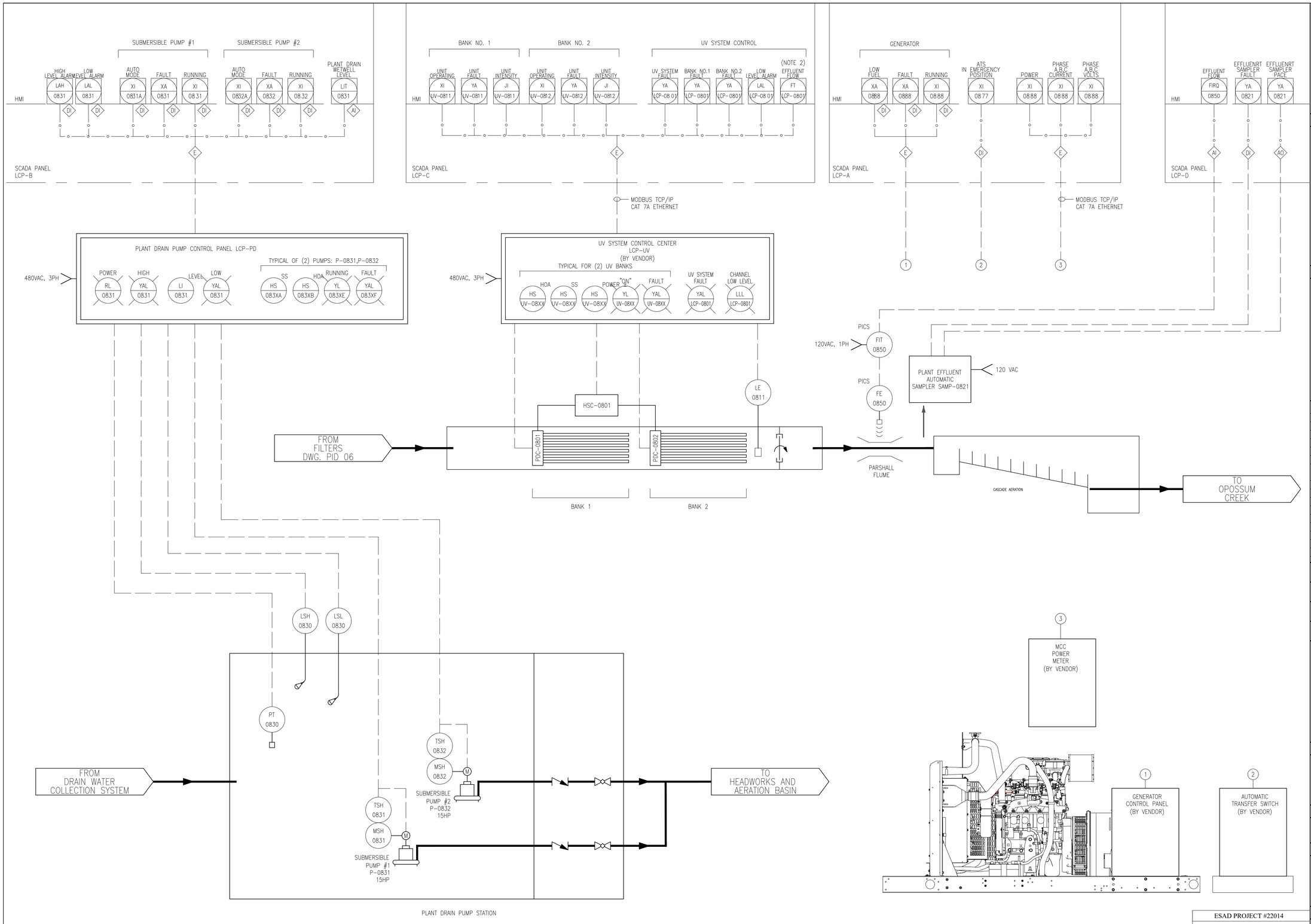

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Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

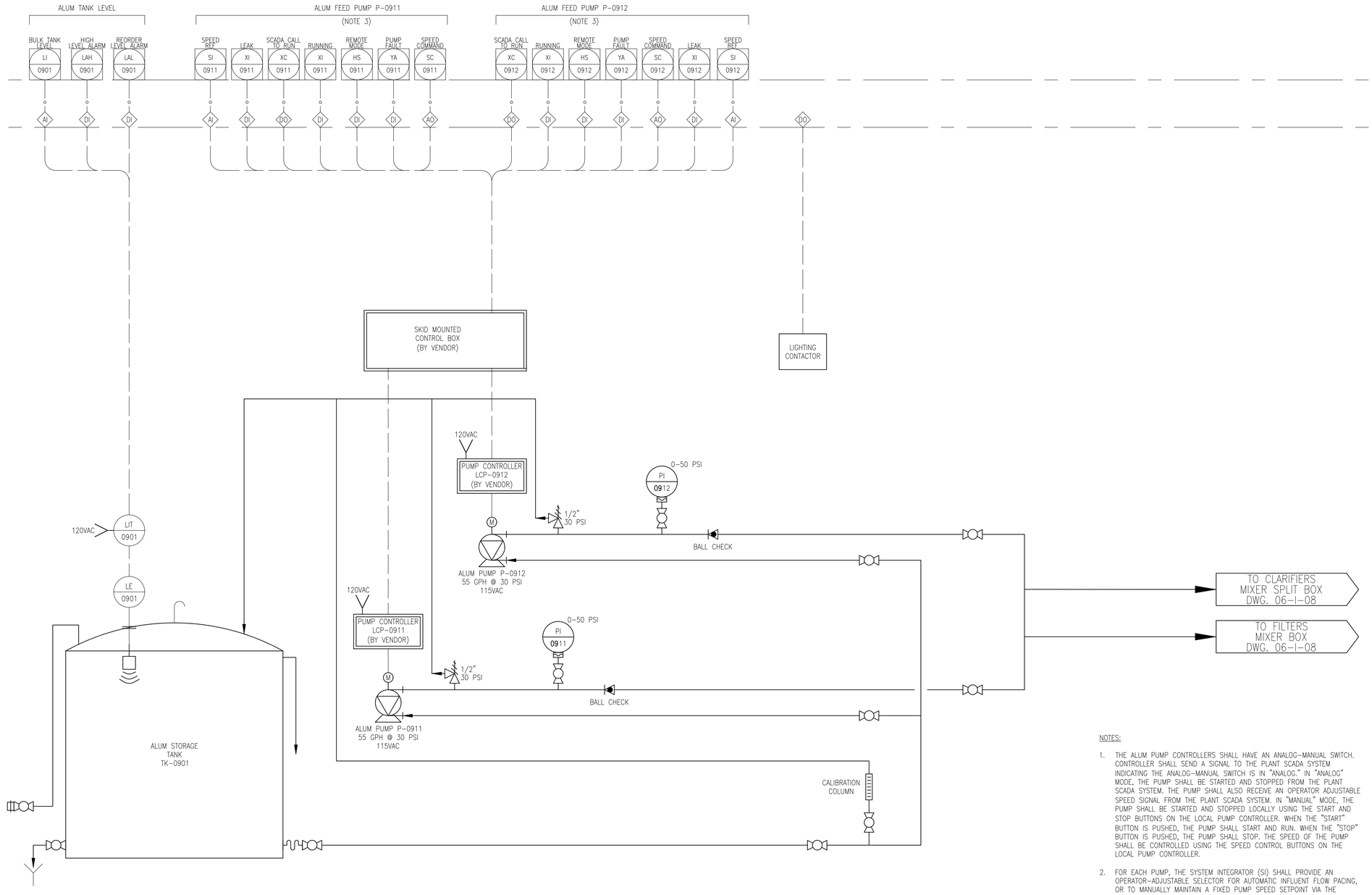
10/05/2021

SHEET TITLE

P&ID UV DISINFECTION

DRAWING NUMBER

19-PID-8
OF
214



NOTES:

1. THE ALUM PUMP CONTROLLERS SHALL HAVE AN ANALOG-MANUAL SWITCH. CONTROLLER SHALL SEND A SIGNAL TO THE PLANT SCADA SYSTEM INDICATING THE ANALOG-MANUAL SWITCH IS IN "ANALOG." IN "ANALOG" MODE, THE PUMP SHALL BE STARTED AND STOPPED FROM THE PLANT SCADA SYSTEM. THE PUMP SHALL ALSO RECEIVE AN OPERATOR ADJUSTABLE SPEED SIGNAL FROM THE PLANT SCADA SYSTEM. IN "MANUAL" MODE, THE PUMP SHALL BE STARTED AND STOPPED LOCALLY USING THE START AND STOP BUTTONS ON THE LOCAL PUMP CONTROLLER. WHEN THE "START" BUTTON IS PUSHED, THE PUMP SHALL START AND RUN. WHEN THE "STOP" BUTTON IS PUSHED, THE PUMP SHALL STOP. THE SPEED OF THE PUMP SHALL BE CONTROLLED USING THE SPEED CONTROL BUTTONS ON THE LOCAL PUMP CONTROLLER.
2. FOR EACH PUMP, THE SYSTEM INTEGRATOR (SI) SHALL PROVIDE AN OPERATOR-ADJUSTABLE SELECTOR FOR AUTOMATIC INFLUENT FLOW PACING, OR TO MANUALLY MAINTAIN A FIXED PUMP SPEED SETPOINT VIA THE PLANT'S SCADA PC HMI APPLICATION. WHEN THE PUMP(S) ARE SET FOR AUTOMATIC FLOW PACING, THE PACING OUTPUT TO THE PUMP(S) SHALL BE DIRECTLY PROPORTIONAL TO THE INFLUENT FLOW AND TRIMMED BY THE pH SIGNAL. THE SI SHALL PROVIDE OPERATOR ADJUSTABLE SETPOINTS FOR FLOW PACING GAIN AND pH TRIM.
3. CONTRACTOR SHALL INSTALL HEAT-TAPE TO ALL CHEMICAL PIPING AND VESSELS LOCATED OUTDOORS AND IN UNHEATED SPACES.
4. THE CONTRACTOR SHALL SUPPLY AND INSTALL A FILL-STATION ALARM ENUNCIATOR PANEL LOCATED WITHIN 10' OF THE BULK TANK'S FILL FITTING. THIS PANEL SHALL HAVE A BULK TANK LEVEL DISPLAY, HIGH AND LOW/RE-ORDER LIGHTS, AND A HIGH-LEVEL ALARM HORN WITH SILENCE PUSHBUTTON.

ESAD PROJECT #22014

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

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Civil & Environmental Engineering
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APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL ENGINEER 05/02/22 DAVID M. ZIMMER

RELEASES

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Designed By : DZ

Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

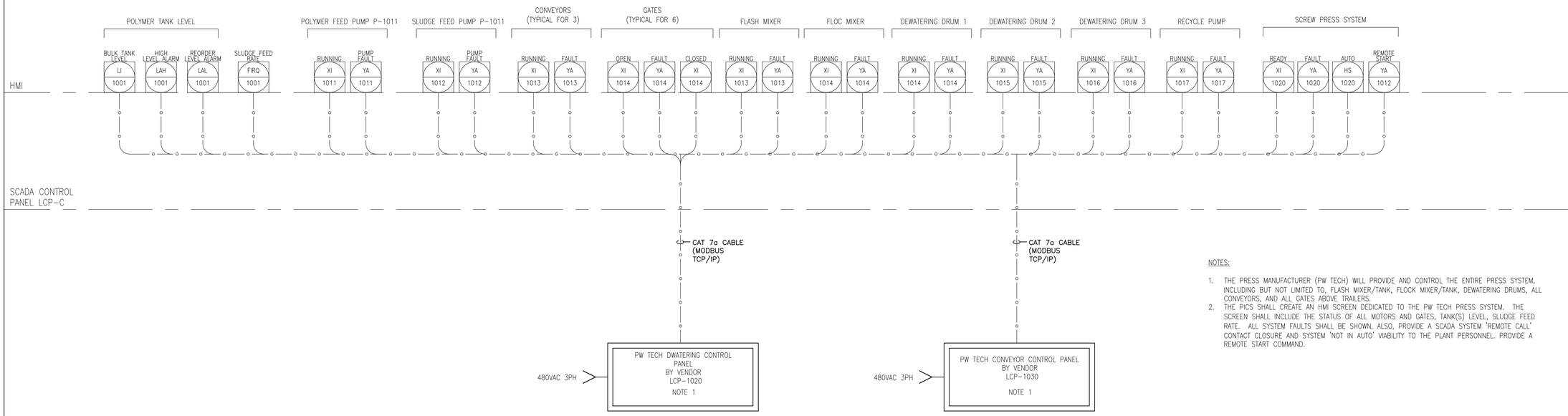
10/05/2021

SHEET TITLE

P&ID ALUM FEED

DRAWING NUMBER

19-PID-9
OF
214



NOTES:

1. THE PRESS MANUFACTURER (PW TECH) WILL PROVIDE AND CONTROL THE ENTIRE PRESS SYSTEM, INCLUDING BUT NOT LIMITED TO, FLASH MIXER/TANK, FLOCK MIXER/TANK, DEWATERING DRUMS, ALL CONVEYORS, AND ALL GATES ABOVE TRAILERS.
2. THE PICS SHALL CREATE AN HMI SCREEN DEDICATED TO THE PW TECH PRESS SYSTEM. THE SCREEN SHALL INCLUDE THE STATUS OF ALL MOTORS AND GATES, TANK(S) LEVEL, SLUDGE FEED RATE. ALL SYSTEM FAULTS SHALL BE SHOWN. ALSO, PROVIDE A SCADA SYSTEM 'REMOTE CALL' CONTACT CLOSURE AND SYSTEM 'NOT IN AUTO' VIABILITY TO THE PLANT PERSONNEL. PROVIDE A REMOTE START COMMAND.

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APPROVAL STAMP

GEORGIA REGISTERED No.38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

P&ID DEWATERING

DRAWING NUMBER

19-PID-10
OF
214

ESAD PROJECT #22014

ESAD, LLC
885 WOODSTOCK ROAD
SUITE 430-231
ROSWELL, GA 30075
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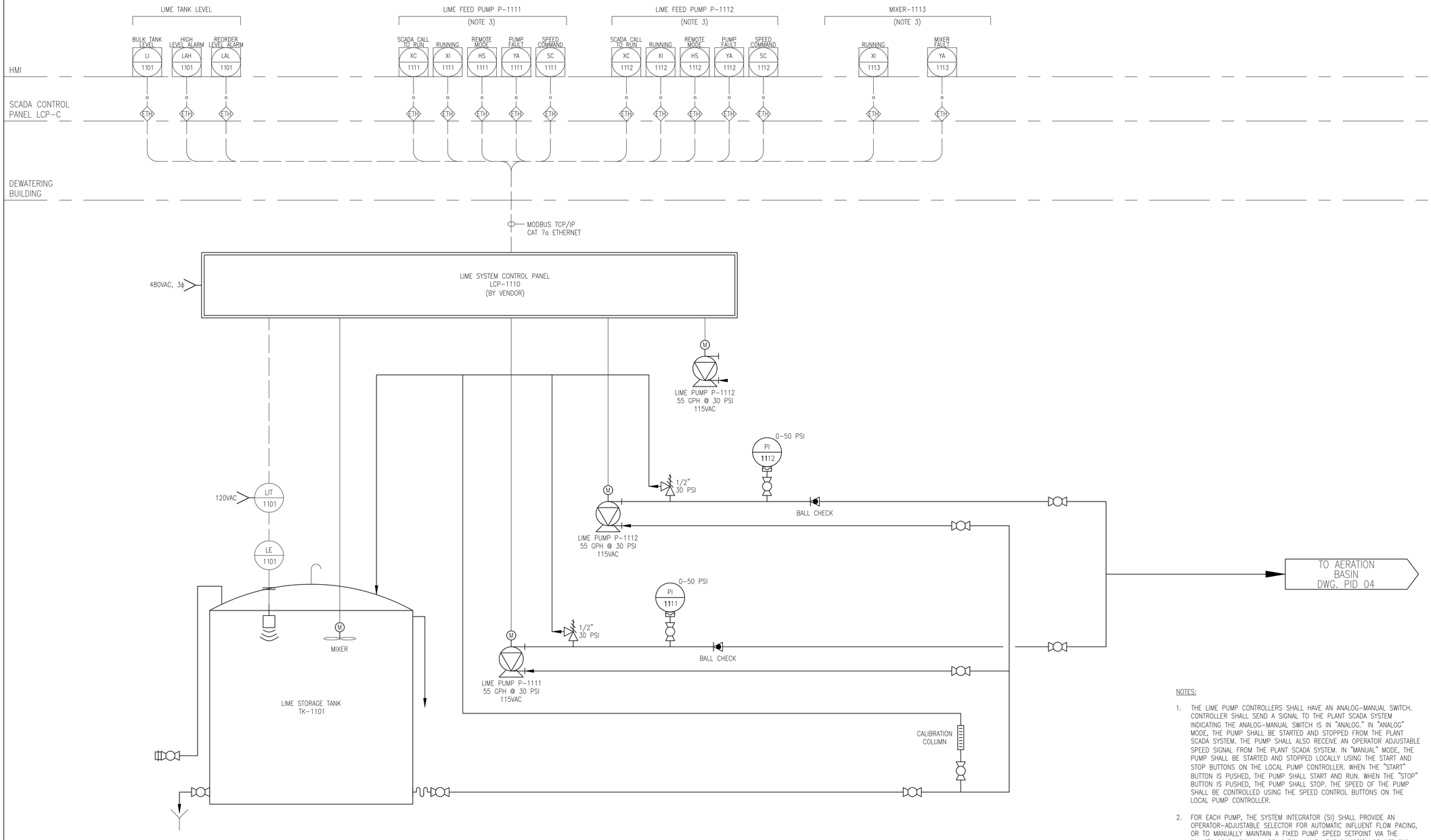

NOTES:

1. THE LIME PUMP CONTROLLERS SHALL HAVE AN ANALOG-MANUAL SWITCH. CONTROLLER SHALL SEND A SIGNAL TO THE PLANT SCADA SYSTEM INDICATING THE ANALOG-MANUAL SWITCH IS IN "ANALOG," IN "ANALOG" MODE, THE PUMP SHALL BE STARTED AND STOPPED FROM THE PLANT SCADA SYSTEM. THE PUMP SHALL ALSO RECEIVE AN OPERATOR ADJUSTABLE SPEED SIGNAL FROM THE PLANT SCADA SYSTEM. IN "MANUAL" MODE, THE PUMP SHALL BE STARTED AND STOPPED LOCALLY USING THE START AND STOP BUTTONS ON THE LOCAL PUMP CONTROLLER. WHEN THE "START" BUTTON IS PUSHED, THE PUMP SHALL START AND RUN. WHEN THE "STOP" BUTTON IS PUSHED, THE PUMP SHALL STOP. THE SPEED OF THE PUMP SHALL BE CONTROLLED USING THE SPEED CONTROL BUTTONS ON THE LOCAL PUMP CONTROLLER.
2. FOR EACH PUMP, THE SYSTEM INTEGRATOR (SI) SHALL PROVIDE AN OPERATOR-ADJUSTABLE SELECTOR FOR AUTOMATIC INFLUENT FLOW PACING, OR TO MANUALLY MAINTAIN A FIXED PUMP SPEED SETPOINT VIA THE PLANT'S SCADA PC HMI APPLICATION. WHEN THE PUMP(S) ARE SET FOR AUTOMATIC FLOW PACING, THE PACING OUTPUT TO THE PUMP(S) SHALL BE DIRECTLY PROPORTIONAL TO THE INFLUENT FLOW AND TRIMMED BY THE pH SIGNAL. THE SI SHALL PROVIDE OPERATOR ADJUSTABLE SETPOINTS FOR FLOW PACING GAIN AND pH TRIM.
3. CONTRACTOR SHALL INSTALL HEAT-TAPE TO ALL CHEMICAL PIPING AND VESSELS LOCATED OUTDOORS AND IN UNHEATED SPACES.
4. THE CONTRACTOR SHALL SUPPLY AND INSTALL A FILL-STATION ALARM ENUNCIATOR PANEL LOCATED WITHIN 10' OF THE BULK TANK'S FILL FITTING. THIS PANEL SHALL HAVE A BULK TANK LEVEL DISPLAY, HIGH AND LOW/RE-ORDER LIGHTS, AND A HIGH-LEVEL ALARM HORN WITH SILENCE PUSHBUTTON.

ESAD PROJECT #22014

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885 WOODSTOCK ROAD
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APPROVAL STAMP

GEORGIA REGISTERED No. 38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

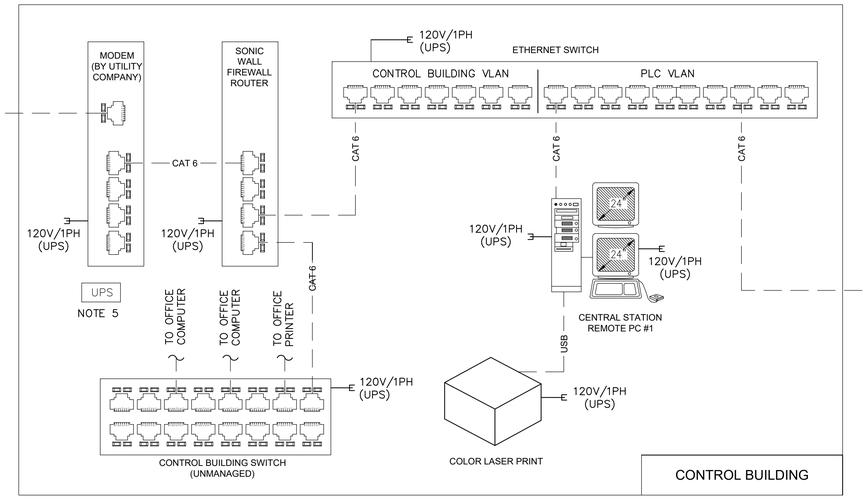
10/05/2021

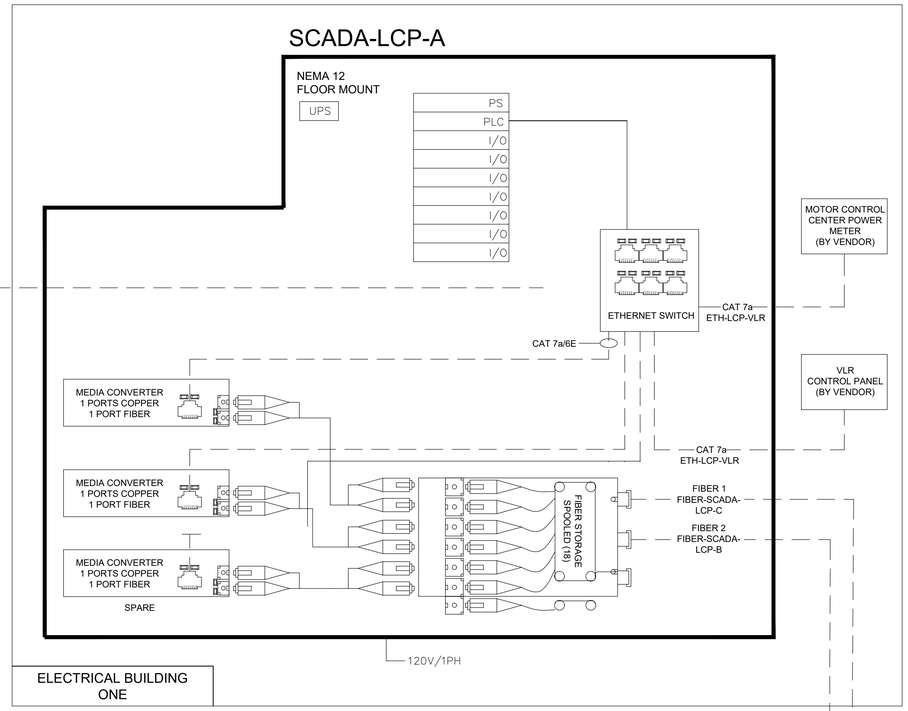
SHEET TITLE

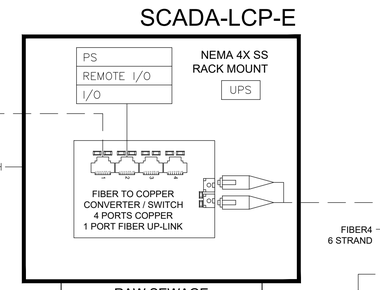
P&ID LIME FEED

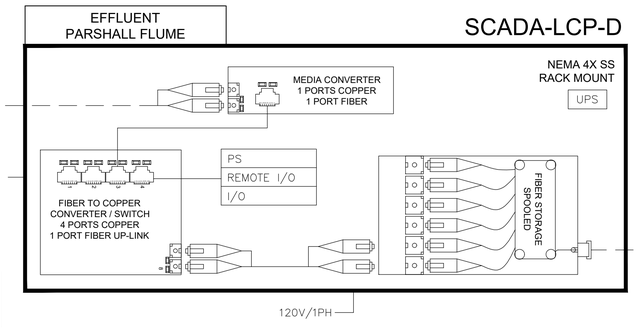
DRAWING NUMBER

19-PID-11
OF
214

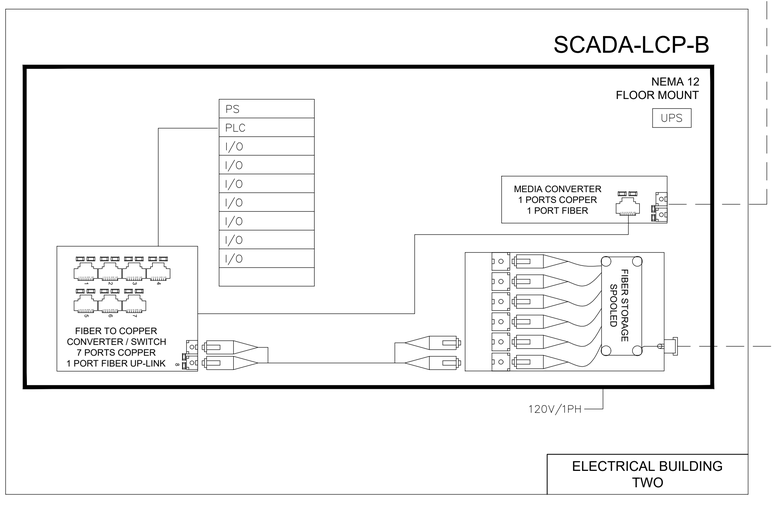


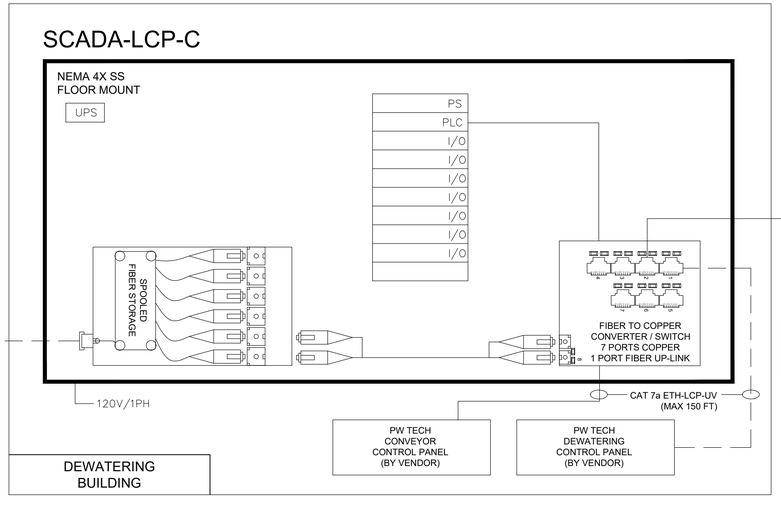






NOTES:
1. ALL FIBER CABLES AND TERMINATIONS SHALL BE BY THE ELECTRICAL CONTRACTOR.
2. FIBER SHALL BE AN INDOOR / OUTDOOR RATED, LOOSE TUBE, 50 uM, MULTIMODE - EQUAL TO CORNING FREEDM LST #006TUF-T4190D20.
3. ALL FIBER CONNECTIONS SHALL UTILIZE "SC" TYPE CONNECTORS.
4. CAT 7a CABLES SHALL BE RATED FOR INDOOR/OUTDOOR/DUCTBANK USE. INSTALL IN RIGID CONDUIT, ABOVE AND BELOW GRADE. DO NOT INSTALL IN PVC.
5. PICS SHALL FURNISH AND INSTALL THE FOLLOWING EQUIPMENT ON NETWORK SHELF. PROVIDE 10 MINUTE UPS ON SHELF TO POWER ALL DEVICES:
   - ETHERNET SWITCH
   - INTERNET PROVIDER MODEM
   - SONIC WALL
   - CONTROL BUILDING SWITCH
6. HMI SOFTWARE SHALL BE IGNITION (INDUCTIVE AUTOMATION), OR ENGINEER APPROVED EQUAL.
7. PICS SHALL PROVIDE ALLEN-BRADLEY COMPACTLOGIX 5380 OR AUTOMATION DIRECT DL205 PLCs WITH 20% ADDITIONAL SPARES OF EACH I/O TYPE.
8. PICS SHALL PROVIDE LASER PRINTER, CENTRAL STATION REMOTE PC #1, PC UPS (FLOOR MOUNT), AND TWO 24" MONITORS.





FIBER2 6 STRAND

FIBER1 6 STRAND

ESAD PROJECT #22014

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

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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GEORGIA REGISTERED No. 38080 PROFESSIONAL 05/02/22 ENGINEER DAVID M. ZIMMER

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Drawn By : DZ

Checked By : DZ

Scale : NTS

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

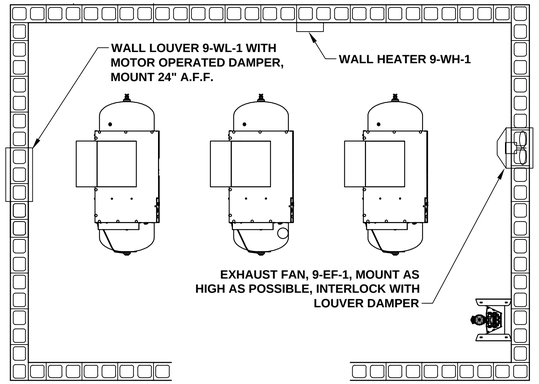
10/05/2021

SHEET TITLE

SCADA SYSTEM TOPOLOGY

DRAWING NUMBER

19-PID-12
OF
214



1 FILTER COMPRESSOR BUILDING HVAC FLOOR PLAN

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

WALL LOUVER SCHEDULE

MARK	CFM	MAX. PRESS. DROP (IN W.C.)	UNIT WIDTH (IN.)	UNIT HEIGHT (IN.)	UNIT DEPTH (IN.)	MIN. FREE AREA (SQ. FT.)
9-WL-1	1000	0.10	24	24	8	2.0

1. INSTALL LOUVERS PER MANUFACTURERS INSTRUCTIONS CORRESPONDING TO THE WALL CONSTRUCTION TYPE.
2. PROVIDE WITH HEAVY DUTY MOTORIZED DAMPER WITH EPOXY COATING AMD 120V MOTOR OPERATOR INTERLOCKED TO OPEN WHEN THE FAN IS ENERGIZED. PROVIDE SLEEVES AS REQUIRED TO ACCOMMODATE WALL THICKNESS FOR PROPER LOUVER AND DAMPER CONNECTION.

ELECTRIC WALL HEATER SCHEDULE

MARK	BASIS OF DESIGN	MODEL	CFM	FAN (HP)	HEATER KW	ELECTRICAL	REMARKS
9-WH-1	DAYTON	3ENC7	65	1/100	1.0	120/1/60	1

1. PROVIDE UNIT MOUNTED THERMOSTAT, CONTACTOR, AND INTEGRAL FAN CONTROL POWER TRANSFORMER.
2. PROVIDE WITH WALL MOUNTING BRACKET.

FAN SCHEDULE

MARK	BASIS OF DESIGN	MODEL	SUMMER CFM	WINTER CFM	POWER (HP)	ELECTRICAL	SONES	TYPE	DRIVE	ESP IN. WC	REMARKS
9-EF-1	GREENHECK	SE1-12-432	1,000	1,000	.26	120/1/60	14.8	PROPELLER	DIRECT	0.35	1, 2, 3

1. FAN SHALL BE PROVIDED WITH A GREENHECK VARIGREEN MOTOR OR EQUAL.
2. FAN TO BE PROVIDED WITH WALL HOUSING, MOTOR GUARD, MOTORIZED OUTLET SHUTTER AND BIRD SCREEN.
3. INTERLOCK FAN WITH WALL LOUVERS AS DESCRIBED IN THE WALL LOUVER SCHEDULE. LOUVERS TO OPEN WHEN FAN IS ENERGIZED.
4. FAN SHALL BE PROVIDED WITH HI-PRO POLYESTER COATING.

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No. 20949 PROFESSIONAL ENGINEER JAY BARTLEY COBB

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

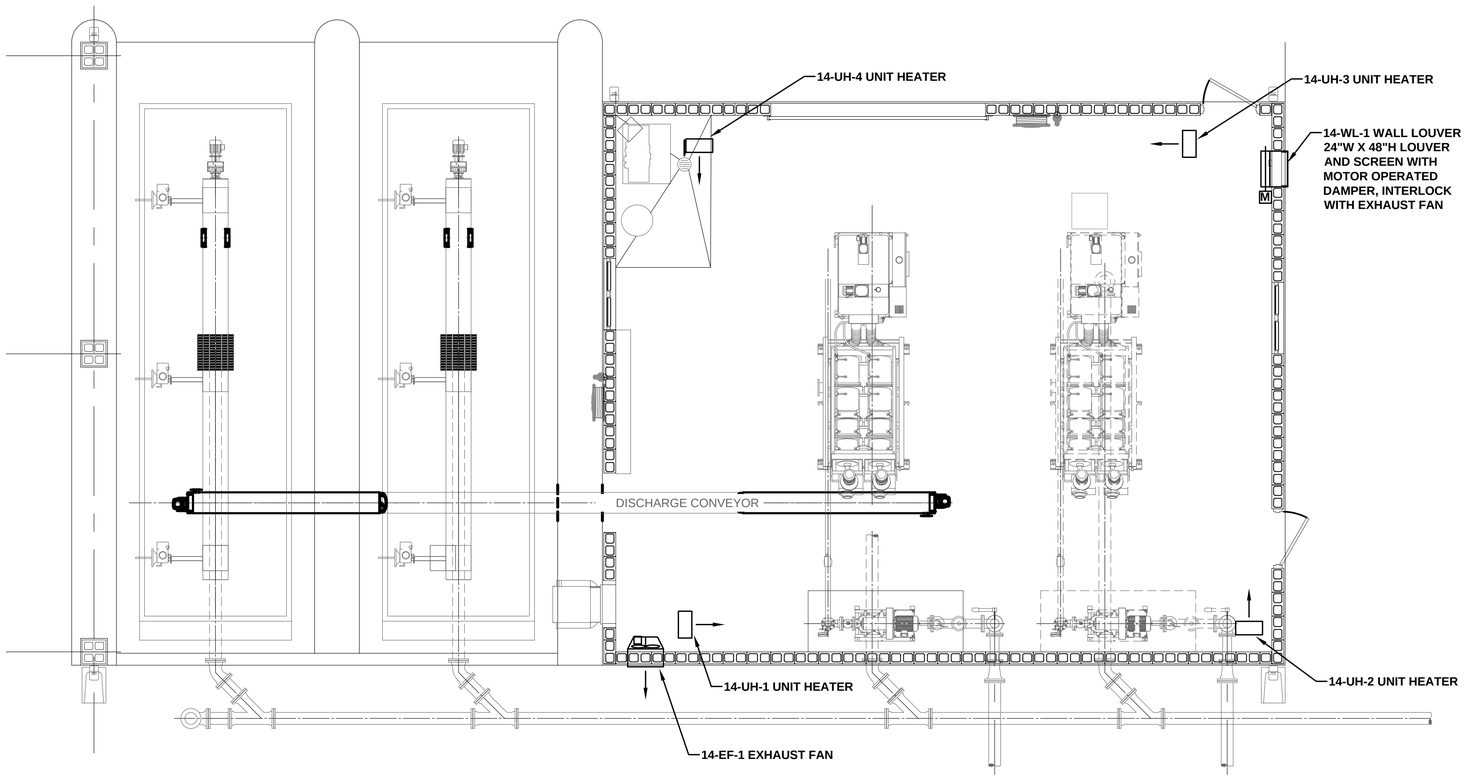
10/05/2021

SHEET TITLE

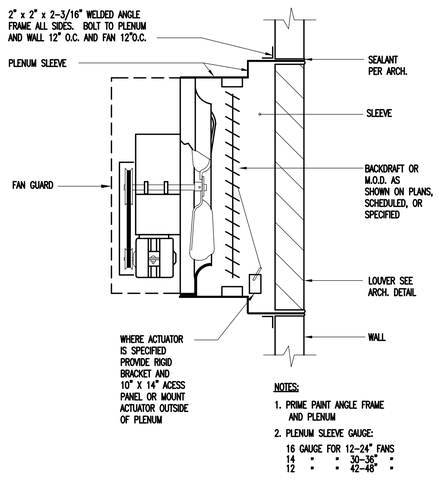
FILTER COMPRESSOR BUILDING HVAC PLAN

DRAWING NUMBER

9-H-1
OF
214



HVAC FLOOR PLAN



WALL FAN INSULATION

WALL LOUVER SCHEDULE

MARK	CFM	MAX. PRESS. DROP (IN W.C.)	UNIT WIDTH (IN.)	UNIT HEIGHT (IN.)	UNIT DEPTH (IN.)	MIN. FREE AREA (SQ. FT.)
14-WL-1	3000	0.10	24	48	4	3.45

1. INSTALL LOUVERS PER MANUFACTURERS INSTRUCTIONS CORRESPONDING TO THE WALL CONSTRUCTION TYPE.
2. PROVIDE WITH HEAVY DUTY MOTORIZED DAMPER WITH EPOXY COATING AMD 120V MOTOR OPERATOR INTERLOCKED TO OPEN WHEN THE FAN IS ENERGIZED. PROVIDE SLEEVES AS REQUIRED TO ACCOMMODATE WALL THICKNESS FOR PROPER LOUVER AND DAMPER CONNECTION.

ELECTRIC UNIT HEATER SCHEDULE

MARK	BASIS OF DESIGN	MODEL	CFM	FAN (HP)	HEATER KW	ELECTRICAL	REMARKS
14-UH-1	DAYTON	2YU63	350	1/100	5	460/3/60	1, 2
14-UH-2	DAYTON	2YU63	350	1/100	5	460/3/60	1, 2
14-UH-3	DAYTON	2YU63	350	1/100	5	460/3/60	1, 2
14-UH-4	DAYTON	2YU63	350	1/100	5	460/3/60	1, 2

1. PROVIDE UNIT MOUNTED THERMOSTAT, CONTACTOR, AND INTEGRAL FAN CONTROL POWER TRANSFORMER.
2. PROVIDE WITH WALL MOUNTING BRACKET.

FAN SCHEDULE

MARK	BASIS OF DESIGN	MODEL	SUMMER CFM	WINTER CFM	POWER (HP)	ELECTRICAL	SONES	TYPE	DRIVE	ESP IN. WC	REMARKS
14-EF-1	GREENHECK	SBE-2L24-7	3,000	3,000	3/4	460/3/60	25	PROPELLER	BELT	0.50	1, 2, 3, 4

1. FAN SHALL BE PROVIDED WITH A VFD EQUAL TO EMERSON SK COMMANDER IN A NEMA 4X ENCLOSURE. VFD SHALL BE CAPABLE OF TWO PRESET SPEEDS. PROVIDE WALL SWITCH WITH " OFF-SUMMER-WINTER" POSITIONS. RELAY CONTROL SHALL BE COMPATIBLE WITH SUPPLIED VFD.
2. FAN TO BE PROVIDED WITH WALL HOUSING, MOTOR GUARD, MOTORIZED OUTLET SHUTTER AND BIRD SCREEN.
3. INTERLOCK FAN WITH WALL LOUVERS AS DESCRIBED IN THE WALL LOUVER SCHEDULE. LOUVERS TO OPEN WHEN FAN IS ENERGIZED.
4. FAN SHALL BE PROVIDED WITH HI-PRO POLYESTER COATING.
5. PROVIDE 30 KW DUCT HEATER INSTALLED INSIDE THE DUCTWORK BELOW THE ROOF OPENING.
6. PROVIDE 50 KW DUCT HEATER INSTALLED INSIDE THE DUCTWORK BELOW THE ROOF OPENING

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
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4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

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Drawn By : JBC

Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

SCREW PRESS BUILDING HVAC

DRAWING NUMBER

14-H-1
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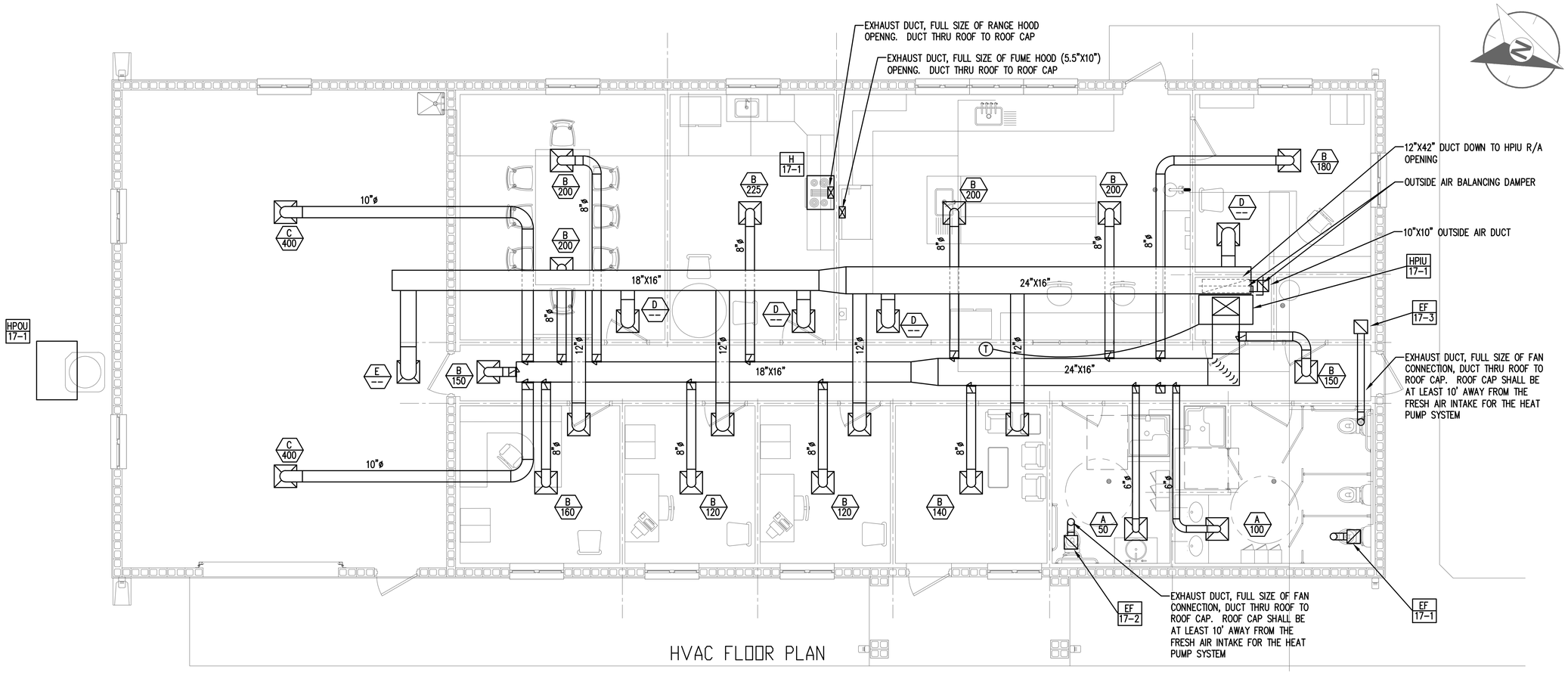
214



HVAC FLOOR PLAN

HVAC – GENERAL NOTES

1. ALL WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE WITH LOCAL AMENDMENTS, NFPA 90A, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES
.
2. FIELD LOCATE EQUIPMENT AND ROUTE DUCTWORK AND CONDUIT, ETC. AS REQUIRED SO NOT TO OBSTRUCT OTHER EQUIPMENT OR ACCESS. COORDINATE ROUTING WITH ROOF STRUCTURE.
3. IT SHALL BE UNDERSTOOD THAT THE DRAWINGS SHOW THE GENERAL ROUTING OF PIPES, DUCTS, ETC. AND THE APPROXIMATE LOCATION OF APPARATUS. CONTRACTOR TO FIELD VERIFY ALL FIELD DIMENSIONS AND INVESTIGATE EXISTING CONDITIONS PRIOR TO FABRICATING DUCTWORK OR PIPING AND LOCATING EQUIPMENT. PENETRATIONS THROUGH WALLS AND FLOORS SHALL BE COORDINATED WITH EXIST. UTILITIES AND OBSTRUCTIONS. UTILITIES SHALL BE RELOCATED BY THE CONTRACTOR AS REQUIRED. COORDINATE ALL ROUTING WITH LIGHTING AND STRUCTURAL FEATURES. CONTRACTOR SHALL NOTE THAT THE DRAWINGS REPRESENT WORK TO BE INSTALLED BY A KNOWLEDGEABLE, LICENSED MECHANICAL CONTRACTOR FAMILIAR WITH THE TYPES OF SYSTEMS INDICATED AND DO NOT NECESSARILY SHOW ALL DETAILS FOR SYSTEM INSTALLATION.
4. CONTROLS AND CONTROL WIRING REQUIRED FOR ALL MECHANICAL SYSTEMS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR. SEE ELECTRICAL FOR CONDUCTOR AND CONDUIT TYPE.
5. COORDINATE THERMOSTAT LOCATIONS AS APPLICABLE WITH LIGHTS, CEILING GRID, ETC. AND ARCHITECTS REFLECTED CEILING PLAN.
6. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY LAYOUT DRAWINGS AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBER IS NOT PERMITTED.
7. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. MECHANICAL CONTRACTOR SHALL PROVIDE OWNER WITH ONE (1) YEAR WARRANTY ON EQUIPMENT AND INSTALLATION.
9. CONTRACTOR SHALL TEST ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CERTIFY TO OWNER IN WRITING THAT ALL SYSTEMS ARE FULLY AND PROPERLY OPERATIONAL UPON COMPLETION OF WORK. CONTRACTOR SHALL PROVIDE THREE COPIES OF TEST AND BALANCE REPORT TO OWNER.
10. CONTRACTOR SHALL ENSURE THAT ADEQUATE CLEARANCE IS MAINTAINED IN FRONT OF ELECTRICAL PANELS AND AROUND ALL EQUIPMENT FOR MAINTENANCE.
11. ALL WALL PENETRATIONS SHALL BE PATCHED TO LIKE NEW CONDITIONS.

EXHAUST FAN SCHEDULE

EF TAG	SERVICE	MANUF. & MODEL	CFM	HP	S.P.	VOLTS – PH	REMARKS
EF–17–1	RESTROOM EXHAUST	GREENHECK SP–A200	225	49 W	.25	120/1	2, 9, INTERLOCK WITH LIGHTS
EF–17–2	RESTROOM EXHAUST	GREENHECK SP–A110	75	49 W	.25	120/1	2, 9, INTERLOCK WITH LIGHTS
EF–17–3	JANITOR'S CLOSET EXHAUST	GREENHECK SP–A110	75	49 W	.25	120/1	2, 9, INTERLOCK WITH LIGHTS
H–17–1	RANGE HOOD	PROLINE PLJW 185	600	N/A	N/A	120/1	2, 9, 10

ACCESSORIES:
1. ROOF CURB
2. BACKDRAFT DAMPER
3. BIRDSCREEN
4. SPEED CONTROL
5. EXPL. PROOF MOTOR
6. ROOF CAP
7. CHEMICAL RESTANT COATING
8. WEATHER HOOD
9. DUCT TO EXTERIOR WALL FULL SIZE OF FAN CONNECTION TO WALL CAP
10. PROVIDE GUARDIAN G300B SERIES RANGE HOOD FIRE SUPPRESSION SYSTEM

AIR DISTRIBUTION DEVICE

TAG CFM	TYPE	SIZE NECK	SIZE FACE	FRAME	THROW	DAMPER	REMARKS
A	DIFFUSER	6"ø	20"X20"	SURFACE MTD.	4–WAY	YES	TITUS TMS
B	DIFFUSER	8"ø	20"X20"	SURFACE MTD.	4–WAY	YES	TITUS TMS
C	DIFFUSER	10"ø	20"X20"	SURFACE MTD.	4–WAY	YES	TITUS TMS
D	RETURN	12"ø	20"X20"	SURFACE MTD.	––	NO	TITUS PAR
E	RETURN	12"ø	20"X20"	SURFACE MTD.	––	NO	TITUS PAR

SPLIT SYSTEM HEAT PUMP SYSTEM

HPIU TAG	HPOU TAG	SUPPLY AIR CFM	SUPPLY AIR E.S.P.	MIN. O.A. CFM	COOLING CAPACITY (MIN.) TOTAL MBH	SENS. MBH	EAT	LAT	HEATING MBH	ELECTRICAL VOLTS	PHASE	MFG. & MODEL	REMARKS
17–1	17–1	3000	.1	300	95	75	80/67	N/A	88	480	3	TRANE TWA 090 43D TWE 090 43D	PROVIDE 15 KW ELECTRIC HEAT

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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APPROVAL STAMP

GEORGIA REGISTERED No. 20040 PROFESSIONAL ENGINEER JAY BARTLEY COBB

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Drawn By : JBC

Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

CONTROL BUILDING HVAC

DRAWING NUMBER

17-H-1
OF
214

TRANE

Product Catalog

Split System Air Conditioners Odyssey™ with Symbio™ Controls

Heat Pump Condenser, 6 to 20 Tons, 60 Hz

Air Handler, 5 to 20 Tons, 60 Hz

April 2021 **SSP-PRC023Q-EN**

TRANE TECHNOLOGIES

TRANE

Model Number Description

Heat Pump Condenser

Digit 1, 2, 3— Unit Function

TWA = Split System Heat Pump

Digit 4, 5, 6 — Tonnage

072 = 6 Tons (60 Hz)
090 = 7.5 Tons (60 Hz)
120 = 10 Tons (60 Hz)
180 = 15 Tons (60 Hz)
240 = 20 Tons (60 Hz)

Digit 7 — Refrigerant

4 = R-410A

Digit 8 — Voltage

3 = 208-230 Vac - 3 PH (60Hz)
4 = 460 Vac - 3 PH (60Hz)
W = 575 Vac - 3 PH (60Hz)
K = 380 Vac - 3 PH (60Hz)

Digit 9 — Refrigeration Circuit/Stage

A = 1 Compressor/1 Line/1 Stage (Single)
D = 2 Compressors/2 Line/2 Stage (Dual)

Digit 10 — Major Design Sequence

A = Rev A

Digit 11 — Minor Design Sequence

A = Rev A

Digit 12, 13 — Service Digits

**

Digit 14 — Efficiency Generation

A = Generation A

Digit 15 — Controls

S = Symbio™

Digit 16 — None

0 = None

Digit 17 — Coil Protection

0 = Standard Coil
1 = Standard Coil w/ Hail Guard
2 = Black Epoxy Pre-Coated Condenser Coil (FIN/TUBE)
3 = Black Epoxy Pre-Coated Condenser Coil with Hail Guard (FIN/TUBE)

Digit 18, 19, 20 — None

0 = None

Digit 21 — Communications Options

0 = No Option
1 = Advanced Diagnostics and BACnet® BAS
2 = Advanced Diagnostics and LonTalk® Communications Interface (LCI)

Digit 22 to 40 — None

0 = None

TRANE

Model Number Description

Air Handler

Digit 1, 2, 3 — Unit Function

TWE = Air Handler

Digit 4, 5, 6— Tonnage

060 = 5 Tons (60 Hz)
072 = 6 Tons (60Hz)
090 = 7.5 Tons (60 Hz)
120 = 10 Tons (60 Hz)
180 = 15 Tons (60 Hz)
240 = 20 Tons (60 Hz)

Digit 7 — Refrigerant

4 = R-410A

Digit 8 — Voltage

1 = 208-230 Vac - 1 PH (60 Hz)
3 = 208-230 Vac - 3 PH (60 Hz)
4 = 460 Vac - 3 PH (60 Hz)
W = 575 Vac - 3 PH (60 Hz)
K = 380 Vac - 3 PH (60Hz)

Digit 9 — Refrigeration Circuit/Stage

A = Single Circuit
B = Dual Circuit

Digit 10 — Major Design Sequence

A = Rev A

Digit 11 — Minor Design Sequence

A = Rev A

Digit 12, 13 — Service Digits

**

Digit 14 — Efficiency Generation

A = Generation A (2018 DOE)

Digit 15 — Controls

1 = Constant Volume
C = 2 Stage Airflow (Electromechanical Cond Only)
D = 2 Stage Airflow/Single Zone VAV (Symbio Cond Only)

Digit 16 — Indoor Fan Sizes

0 = Standard Motor
4 = High Static – (Oversized Motor for VFD Units)

Digit 17 to 40 — None

0 = None

TRANE

General Data

Table 6. General data for 6 - 7.5 ton (TWA0724*A*-TWA0904*D*) heat pump units, 60 Hz

	6 Tons Single Comp TWA0724*A*	6 Tons Dual Comp TWA0724*D*	7.5 Tons Single Comp TWA0904*A*	7.5 Tons Dual Comp TWA0904*D*
Cooling Performance - Gross Cooling Capacity				
Matched Air Handler	TWE0904*A*	TWE0724*B*	TWE0904*A*	TWE0904*B*
AHRI Rated Airflow	2,400	2,400	3,000	3,000
Gross Cooling Capacity - System	82,000	78,000	95,000	96,000
Condensing Unit Only	76,000	71,000	88,000	88,000
AHRI Net Cooling Capacity	80,000	77,000	92,000	93,000
Efficiency				
Matched Air Handler (EER)	11.3	11.2	11.3	11.2
Condensing Unit Only (EER)	13.0	12.7	11.0	12.8
System (IEER)	12.4	12.2	12.4	12.2
System kW/Condensing Unit kW	6.4 / 5.9	6.1 / 5.6	8.0 / 7.3	7.6 / 6.8
Heating Performance - AHRI Htg/Matched AH				
High Temperature Capacity	72,000	64,000	87,000	82,000
System kW/COP	5.79 / 3.3	5.08 / 3.3	6.49 / 3.3	6.36 / 3.3
Low Temperature Capacity	46,000	38,000	45500	51,500
System kW/COP	5.38 / 2.25	4.69 / 2.25	6.32 / 2.2	6.04 / 2.25
Compressor				
Type	Scroll	Scroll	Scroll	Scroll
No./Tons	1/5.6	2/2.6	1/6.8	2/3.25
System Data				
No. Refrigerant Circuits[a]	1	2	1	2
Suction Line Connection (in.) OD[a]	1 3/8	7/8	1 3/8	1 1/8
Liquid Line Connection (in.) OD[a]	1/2	1/2	1/2	1/2
Outdoor Coil				
Type / Tube Size (in.) OD	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375
Face Area (sq ft)	19.24	19.24	19.24	23.96
Rows/FPI (Fins per inch)	2/18	2/18	2/18	2/18
Outdoor Fan				
Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	1/26	1/26	1/26	1/26
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM	6,530	6,530	6,530	6,530
No. Motor/HP	1/0.5	1/0.5	1/0.5	1/0.5
Motor RPM	1,100	1,100	1,100	1,100
Refrigerant Charge (Field Supplied)				
lbs of R-410A	20.4	11.0/11.0	19.0	11.8/11.8
Shipping Dimensions				
HxWxD (in.)	45" x 45" x 38"	45" x 55" x 42"	45" x 45" x 38"	45" x 55" x 42"

[a] Refer to refrigerant piping applications manual for line sizing and line length.

TRANE

Electrical Data

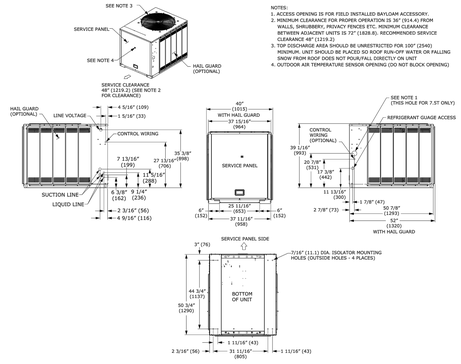
Table 63. Unit wiring with electric heat (single point connection) — 5-20 ton constant volume air handlers — 60 Hz (continued)

Tons	Used With	Heater Model Number	Heater kW Rating	Unit Power Supply	Control Stages	Standard Evap Motor		High Static Evap Motor		Ultra High Static Evap Motor		Low Static Evap Motor	
						MCA	MOP	MCA	MOP	MCA	MOP	MCA	MOP
6	TWE0724WB	BAYHTRNW05*	5.00	575/3/60	1	8	15	9	15	10	15	N/A	N/A
		BAYHTRRW10*	9.96		1	14	15	15	15	16	20	N/A	N/A
		BAYHTRRW15*	14.96		1	20	25	21	25	22	25	N/A	N/A
		BAYHTRNW25*	24.92		2	32	35	33	35	34	35	N/A	N/A
7.5	TWE09041A/B	BAYHTRN106*	4.33	208/1/60	1	34	35	37	40	N/A	N/A	N/A	N/A
		BAYHTRR112*	8.65		1	60	70	63	70	N/A	N/A	N/A	N/A
		BAYHTRS117*	12.98		1	86	90	89	90	N/A	N/A	N/A	N/A
		BAYHTRR123*	17.31		2	112	125	115	125	N/A	N/A	N/A	N/A
		BAYHTRN129*	21.63		2	138	150	141	150	N/A	N/A	N/A	N/A
7.5	TWE09041A/B	BAYHTRN106*	5.76	230/1/60	1	38	40	41	45	N/A	N/A	N/A	N/A
		BAYHTRR112*	11.52		1	68	70	71	80	N/A	N/A	N/A	N/A
		BAYHTRS117*	17.28		1	98	100	101	110	N/A	N/A	N/A	N/A
		BAYHTRR123*	23.04		2	128	150	131	150	N/A	N/A	N/A	N/A
		BAYHTRN129*	28.8		2	158	175	161	175	N/A	N/A	N/A	N/A
7.5	TWE09043A/B	BAYHTRN305*	3.76	208/3/60	1	20	20	21	25	25	30	N/A	N/A
		BAYHTR310*	7.48		1	33	35	34	35	38	40	N/A	N/A
		BAYHTRS315*	11.24		1	46	50	47	50	51	60	N/A	N/A
		BAYHTR325*	18.72		2	72	80	73	80	77	80	N/A	N/A
		BAYHTRN335*	26.2		2	98	100	99	100	103	110	N/A	N/A
7.5	TWE09043A/B	BAYHTRN305*	5.00	230/3/60	1	22	25	23	25	27	30	N/A	N/A
		BAYHTR310*	9.96		1	37	40	38	40	42	45	N/A	N/A
		BAYHTRS315*	14.96		1	52	60	53	60	57	60	N/A	N/A
		BAYHTR325*	24.92		2	82	90	83	90	87	90	N/A	N/A
		BAYHTRN335*	34.88		2	112	125	113	125	117	125	N/A	N/A
7.5	TWE09044A/B	BAYHTRN405*	5.00	460/3/60	1	11	15	11	15	13	15	N/A	N/A
		BAYHTRR410*	9.96		1	18	20	19	20	21	25	N/A	N/A
		BAYHTRR415*	14.96		1	26	30	26	30	28	30	N/A	N/A
		BAYHTRN425*	24.92		2	41	45	41	45	43	45	N/A	N/A
		BAYHTRN435*	34.88		2	56	60	56	60	58	60	N/A	N/A
7.5	TWE0904WA/B	BAYHTRNW05*	5.00	575/3/60	1	8	15	9	15	10	15	N/A	N/A
		BAYHTRRW10*	9.96		1	14	15	15	15	16	20	N/A	N/A
		BAYHTRRW15*	14.96		1	20	25	21	25	22	25	N/A	N/A
		BAYHTRNW25*	24.92		2	32	35	33	35	34	35	N/A	N/A
		BAYHTRNW35*	34.88		2	44	45	45	45	46	50	N/A	N/A
10	TWE12041A/B	BAYHTRN106*	4.33	208/1/60	1	37	40	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRR112*	8.65		1	63	70	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRS117*	12.98		1	89	90	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRR123*	17.31		2	115	125	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRN129*	21.63		2	141	150	N/A	N/A	N/A	N/A	N/A	N/A
10	TWE12041A/B	BAYHTRN106*	5.76	230/1/60	1	41	45	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRR112*	11.52		1	71	80	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRS117*	17.28		1	101	110	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRR123*	23.04		2	131	150	N/A	N/A	N/A	N/A	N/A	N/A
		BAYHTRN129*	28.8		2	161	175	N/A	N/A	N/A	N/A	N/A	N/A

TRANE

Dimensional Data

Figure 17. 6-7.5 ton heat pump, dual compressor – in (mm)



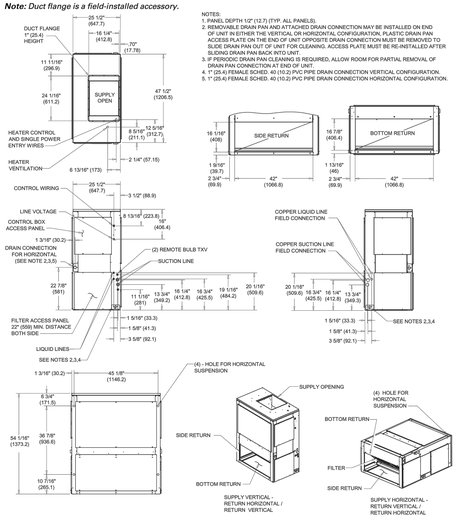
NOTES:
1. ACCESS OPENING IS FOR FIELD INSTALLED BAYLOAM ACCESSORY.
2. MINIMUM CLEARANCE FOR PROPER OPERATION IS 36" (914.4) FROM WALLS, SHRUBBERY, PRIVACY FENCES ETC. MINIMUM CLEARANCE BETWEEN UNITS IS 72" (1828.8). RECOMMENDED SERVICE CLEARANCE 48" (1219.2)
3. TOP DISCHARGE AREA SHOULD BE UNRESTRICTED FOR 150" (3540) MINIMUM. UNIT SHOULD BE PLACED SO ROOF RUN-OFF WATER OR FALLING SNOW FROM ROOF DOES NOT POUR/FALL DIRECTLY ON UNIT
4. OUTDOOR AIR TEMPERATURE SENSOR OPENING (DO NOT BLOCK OPENING)

TRANE

Dimensional Data

Figure 24. 6, 7.5 ton air handler, dual circuit – in (mm)

Note: *Duct flange is a field-installed accessory.*



NOTES:
1. PANEL DEPTH 1/2" (12.7) (TYP. ALL PANELS).
2. REMOVABLE DRAIN PAN AND ATTACHED DRAIN CONNECTION MAY BE INSTALLED ON END OF UNIT OPPOSITE ELECTRICAL CONNECTION FOR HORIZONTAL CONFIGURATION. PLASTIC DRAIN PAN PLUG MUST BE USED IN THE END OF UNIT OPPOSITE DRAIN CONNECTION MUST BE REMOVED TO SLIDE DRAIN PAN OUT OF UNIT FOR COIL CLEANING. ACCESS PLATE MUST BE RE-INSTALLED AFTER SLIDING DRAIN PAN BACK INTO UNIT.
3. IF PERIODIC DRAIN PAN CLEANING IS REQUIRED, ALLOW ROOM FOR PARTIAL REMOVAL OF DRAIN PAN CONNECTION AT END OF UNIT.
4. 1" (25.4) FEMALE SCHED. 40 (10.2) PVC PIPE DRAIN CONNECTION VERTICAL CONFIGURATION.
5. 1" (25.4) FEMALE SCHED. 40 (10.2) PVC PIPE DRAIN CONNECTION HORIZONTAL CONFIGURATION.

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

RELEASES

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3		
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5		

REVISIONS

No	Date	Description
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7		
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Designed By : JBC

Drawn By : JBC

Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

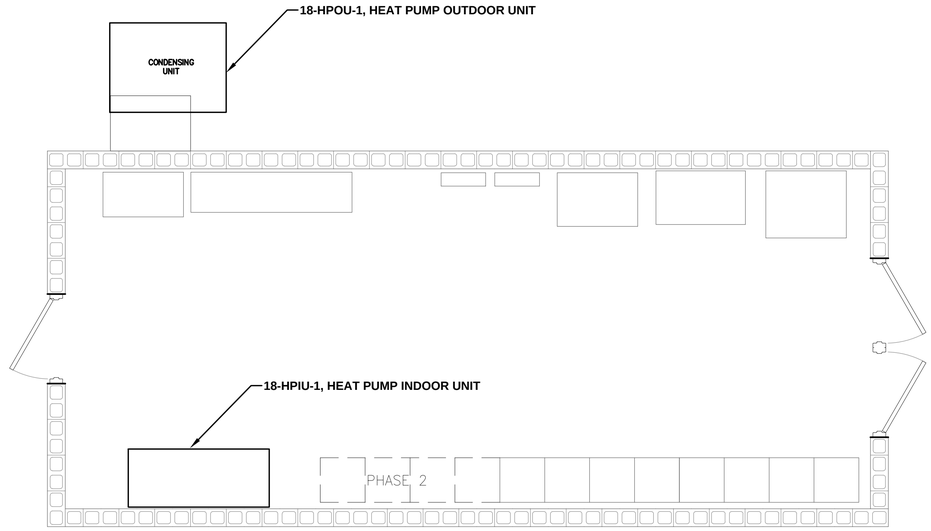
SHEET TITLE

CONTROL BUILDING HEAT PUMP SYSTEM

DRAWING NUMBER

17-H-2
OF
214

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net



ELECTRICAL BUILDING ONE HVAC

SPLIT SYSTEM HEAT PUMP SYSTEM

HPIU TAG	HPOU TAG	SUPPLY AIR		MIN. O.A.	COOLING CAPACITY (MIN.)				HEATING	ELECTRICAL		MFG. & MODEL	REMARKS
		CFM	E.S.P.	CFM	TOTAL MBH	SENS. MBH	EAT	LAT	MBH	VOLTS	PHASE		
18–1	18–1	4000	.1	–	127	99.4	80/67	N/A	112	480	3	TRANE TWA 120 AND TWE 120	PROVIDE DISCHARGE PLENUM AND R/A PLENUM

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
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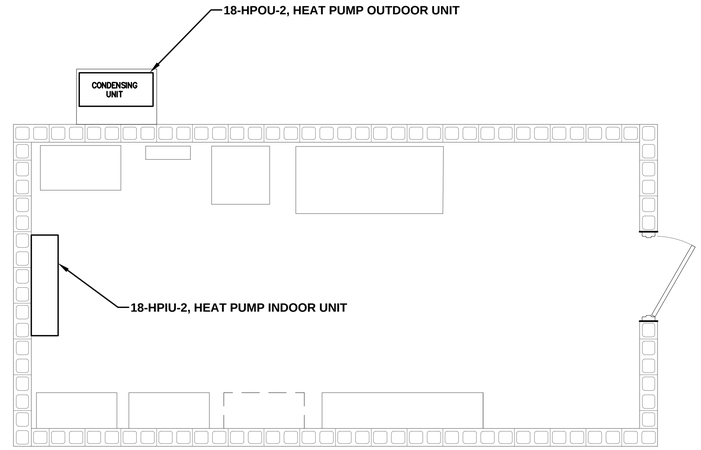

ELECTRICAL BUILDING TWO HVAC

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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JEFFERSON I-85 WATER RECLAMATION FACILITY

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SHEET TITLE

ELECTRICAL BUILDING TWO HVAC

DRAWING NUMBER

18-H-2
OF
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TRANE

Product Catalog

Split System Air Conditioners Odyssey™ with Symbio™ Controls

Heat Pump Condenser, 6 to 20 Tons, 60 Hz
Air Handler, 5 to 20 Tons, 60 Hz

April 2021 SSP-PRC023Q-EN

TRANE TECHNOLOGIES

TRANE

General Data

Table 7. General data for 10 - 20 ton (TWA1204*A*-TWA2404*D*) heat pump units, 60 Hz

	10 Tons Single Comp TWA1204*A*	10 Tons Dual Comp TWA1204*D*	15 Tons Dual Comp TWA1804*D*	20 Tons Dual Comp TWA2404*D*
Cooling Performance - Gross Cooling Capacity				
Matched Air Handler	TWE1204*A*	TWE1204*B*	TWE1804*B*	TWE2404*B*
AHRI Rated Airflow	4,000	3,500	6,000	8,000
Gross Cooling Capacity - System	127,000	120,000	194,000	258,000
Condensing Unit Only	117,000	115,000	176,000	276,000
AHRI Net Cooling Capacity	123,000	118,000	188,000	248,000
Efficiency				
Matched Air Handler (EER)	11.3	11.2	10.8	10.0
Condensing Unit Only (EER)	12.5	12.6	11.9	12.8
System (IEER)	12.4	12.2	11.6	10.6
System kW/Condensing Unit kW	10.6 / 9.4	9.9 / 9.1	17 / 14.8	24 / 21.6
Heating Performance - AHRI Htg/Matched AH				
High Temperature Capacity	120,000	112,000	178,000	238,000
System kW/COP	9.92 / 3.3	8.98 / 3.3	15.67 / 3.2	21.5 / 3.2
Low Temperature Capacity	76,000	71,000	117,000	148,000
System kW/COP	9.30 / 2.25	8.29 / 2.25	14.21 / 2.05	19.1 / 2.05
Compressor				
Type	Scroll	Scroll	Scroll	Scroll
No./Tons	1/8.6	2/4.3	2/6.9	2/10.1
System Data				
No. Refrigerant Circuits(a)	1	2	2	2
Suction Line Connection (in.) OD(a)	1 3/8	1 1/8	1 1/8	1 3/8
Liquid Line Connection (in.) OD(a)	1/2	1/2	1/2	5/8
Outdoor Coil				
Type / Tube Size (in.) OD	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375	Lanced / 0.375
Face Area (sq ft)	29.02	29.02	52.60	52.60
Rows/FPI (Fins per inch)	2/18	2/18	2/18	2/18
Outdoor Fan				
Type	Propeller	Propeller	Propeller	Propeller
No. Used/Diameter (in.)	1/28	1/28	2/28	2/28
Drive Type/No. Speeds	Direct/1	Direct/1	Direct/1	Direct/1
CFM	9,800	9,800	19,500	19,500
No. Motor/HP	1/1	1/1	2/1	2/1
Motor RPM	1,125	1,125	1,125	1,125
Refrigerant Charge (Field Supplied)				
lbs of R-410A	34.7	14.0/14.0	27.2/24.5	23.5/23.5
Shipping Dimensions				
HxWxD (in.)	52.1″ x 55″ x 42″	52.1″ x 55″ x 42″	51.1″ x 96″ x 48″	51.1″ x 96″ x 48″

(a) Refer to refrigerant piping applications manual for line sizing and line length.

TRANE

General Data

Table 9. General data — 10-20 tons (TWE1204*A*-TWE2404*B*) standard air handler — 60 Hz

	10 Tons Single Circuit TWE1204*A*	10 Tons Dual Circuit TWE1204*B*	15 Tons Dual Circuit TWE1804*B*	20 Tons Dual Circuit TWE2404*B*
System Data				
No. Refrigerant Circuits	1	2	2	2
Suction Line Connection (in.) OD	1-3/8	1-1/8	1-3/8	1-3/8
Liquid Line Connection (in.) OD	1/2	1/2	1/2	1/2
Indoor Coil				
Type	Lanced/Intertwined	Lanced/Intertwined	Lanced/Intertwined	Lanced/Intertwined
Tube Size (in.)	0.375	0.375	0.375	0.375
Face Area (sq. ft.)	11.2	11.2	16.3	21.7
Rows/FPI (Fins per inch)	4/14	4/14	4/14	3/14
Refrigerant Control	Expansion Valve	Expansion Valve	Expansion Valve	Expansion Valve
Drain Connection Size (in.)	1 PVC	1 PVC	1 PVC	1 PVC
Indoor Fan				
Type	Centrifugal	Centrifugal	Centrifugal	Centrifugal
No. Used/Diameter x Width (in.)	1/15 x 15	1/15 x 15	2/15 x 15	2/15 x 15
Drive Type/No. Speeds	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable	Belt/Adjustable
CFM (Nominal)	4,000	4,000	6,000	8,000
No. Motors	1	1	1	1
Motor HP - Standard/Oversized	2.0/3.0	2.0/3.0	3.0/5.0	3.0/5.0/7.5
Motor RPM	1725	1725	1,728/1,750	1,750/3,470
Motor Frame Size	56 Hz	56 Hz	56 Hz	184T
Filters(a)				
Type/Furnished	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes	Throwaway/Yes
(No.)/Size Recommended	(4) 16 X 25 X 1	(4) 16 X 25 X 1	(8) 15 X 20 X 2	(4) 16 X 25 X 2 (4) 16 X 20 X 2
MERV 13 (No.)/Size Recommended	(4) 16 x 25 x 2	(4) 16 x 25 x 2	(8) 15 x 20 x 2	(4) 16 x 25 x 2 (4) 16 x 20 x 2
Shipping Dimensions				
HxWxD (in.)	61.2'' x 30.5'' x 69''	61.2'' x 30.5'' x 69''	76.3'' x 33.3'' x 85''	79.1'' x 35.8'' x 95''

Notes:
1. Constant volume 6-15 ton ships wired for 208/230V, field convertible 460V.
2. Oversized motor not available on 41A/B and 4KA/B models.

(a) One inch, throw-away filters shall be standard on TWE060, TWE072, TWE090, TWE120 model air handlers from the factory. The filter rack can be field converted to two inch capability. Two inch, throw-away filters shall be standard on TWE1804*B and TWE2404*B models.

TRANE

Electrical Data

Heat Pump Condenser

Table 57. Electrical characteristics — compressor and condenser fan motors — heat pumps — 60Hz

Tons	Unit Model Number	Compressor Motors: Volts	Phase	Compressor 1 Amps RLA	Compressor 1 Amps LRA	Compressor 2 Amps RLA	Compressor 2 Amps LRA	Condenser Fan Motor: No.	Volts	Phase	Amps FLA (Ea.)	Amps LRA (Ea.)
6	TWA07243A	208-230	3	22.4	149	N/A	N/A	1	208-230	3	2.2	8.4
	TWA07244A	460	3	10.6	75	N/A	N/A	1	460	3	1.3	4.2
	TWA0724WA	575	3	7.7	54	N/A	N/A	1	575	3	1.1	3.6
	TWA0724KA	380	3	11.3	88	N/A	N/A	1	380	3	1.5	5.2
6	TWA07243D	208-230	3	10.4	73	10.4	73	1	208-230	3	2.2	8.4
	TWA07244D	460	3	5.8	38	5.8	38	1	460	3	1.3	4.2
	TWA0724WD	575	3	3.8	37	3.8	37	1	575	3	1.1	3.6
7.5	TWA09043A	208-230	3	28.6	208	N/A	N/A	1	208-230	3	2.2	8.4
	TWA09044A	460	3	12.9	98	N/A	N/A	1	460	3	1.3	4.2
	TWA0904WA	575	3	10.7	75	N/A	N/A	1	575	3	1.1	3.6
	TWA0904KA	380	3	15.7	117	N/A	N/A	1	380	3	1.5	5.2
7.5	TWA09043D	208-230	3	13.1	83	13.1	83	1	208-230	3	2.2	8.4
	TWA09044D	460	3	6.1	41	6.1	41	1	460	3	1.3	4.2
	TWA0904WD	575	3	4.4	33	4.4	33	1	575	3	1.1	3.6
	TWA0904KD	380	3	7.6	52	7.6	52	1	380	3	1.5	5.2
10	TWA12043A	208-230	3	33.0	267	N/A	N/A	1	208-230	3	4.8	20.0
	TWA12044A	460	3	17.8	142	N/A	N/A	1	460	3	2.5	10.1
	TWA1204WA	575	3	15.8	103	N/A	N/A	1	575	3	1.9	8.0
	TWA1204KA	380	3	25.1	160	N/A	N/A	1	380	3	3.1	12.6
10	TWA12043D	208-230	3	16.0	110	16.0	110	1	208-230	3	4.8	20.0
	TWA12044D	460	3	7.8	52	7.8	52	1	460	3	2.5	10.1
	TWA1204WD	575	3	5.7	39	5.7	39	1	575	3	1.9	8.0
	TWA1204KD	380	3	8.5	66	8.5	66	1	380	3	3.1	12.6
15	TWA18043D	208-230	3	25.0	164	25.0	164	2	208-230	3	4.8	20.0
	TWA18044D	460	3	12.2	100	12.2	100	2	460	3	2.5	10.1
	TWA1804WD	575	3	9.2	78	9.2	78	2	575	3	1.9	8.0
	TWA1804KD	380	3	13.9	94	13.9	94	2	380	3	3.1	12.6
20	TWA24043D	208-230	3	33.8	239	33.8	239	2	208-230	3	4.8	20.0
	TWA24044D	460	3	18.0	125	18.0	125	2	460	3	2.5	10.1
	TWA2404WD	575	3	13.7	80	13.7	80	2	575	3	1.9	8.0
	TWA2404KD	380	3	24.4	145	24.4	145	2	380	3	3.1	12.6

Note: Electrical characteristics reflect nameplate values and are calculated in accordance with cULus specifications.

Table 58. Unit wiring — heat pumps — 60Hz

Tons	Unit Model Number	Volts	Minimum Circuit Ampacity	Maximum Fuse or Circuit Breaker Size
6	TWA07243A	187-253	30	50
	TWA07244A	414-506	15	25
	TWA0724WA	518-632	11	15
	TWA0724KA	342-618	16	25
6	TWA07243D	187-253	26	35
	TWA07244D	414-506	14	20
	TWA0724WD	518-632	10	15

TRANE

Electrical Data

Table 58. Unit wiring — heat pumps — 60Hz (continued)

Tons	Unit Model Number	Volts	Minimum Circuit Ampacity	Maximum Fuse or Circuit Breaker Size
7.5	TWA09043A	187-253	38	60
	TWA09044A	414-506	17	30
	TWA0904WA	518-632	14	25
	TWA0904KA	342-618	21	35
7.5	TWA09043D	187-253	32	40
	TWA09044D	414-506	15	20
	TWA0904WD	518-632	11	15
	TWA0904KD	342-618	19	25
10	TWA12043A	187-253	46	70
	TWA12044A	414-506	25	40
	TWA1204WA	518-632	22	35
	TWA1204KA	342-618	34	50
10	TWA12043D	187-253	41	50
	TWA12044D	414-506	20	25
	TWA1204WD	518-632	15	20
	TWA1204KD	342-618	22	30
15	TWA18043D	187-253	66	90
	TWA18044D	414-506	32	40
	TWA1804WD	518-632	25	30
	TWA1804KD	342-618	37	50
20	TWA24043D	187-253	86	110
	TWA24044D	414-506	46	60
	TWA2404WD	518-632	35	45
	TWA2404KD	342-618	61	80

Air Handler

Table 59. Voltage operating range (all air handlers)

Model Number: Digit 8	Electrical Characteristics	Unit Operating Voltage Range
1	208-230/60/1	187-253
3	208-230/60/3	187-253
4	460/60/3	414-506
K	380/60/3	342-418
W	575/60/3	518-632

Table 60. Electrical characteristics — 5–20 ton standard and low static motors — 60 Hz constant volume air handler

Tons	Unit Model Number	Std: No.	Volts	Phase	HP	Amps FLA	Amps LRA	MCA	MOP	Low Static: No.	Volts	Phase	HP	Amps FLA	Amps LRA	MCA	MOP
5	TWE06041A/B	1	208-230	1	0.75	6.0	41.0	8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE06043A/B	1	208-230	3	0.75	2.6	16.0	3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0604KA	1	380	3	0.75	2.9	8.0	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE06044A/B	1	460	3	0.75	1.3	8.0	2	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0604WA	1	575	3	0.75	1.3	6.0	2	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	TWE07243B	1	208-230	3	1.5	5.3	34.0	7	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0724KB	1	380	3	1.5	3.0	20.0	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE07243B	1	460	3	1.5	2.5	17.0	3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0724WB	1	575	3	1.5	1.7	14.0	2	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TRANE

Electrical Data

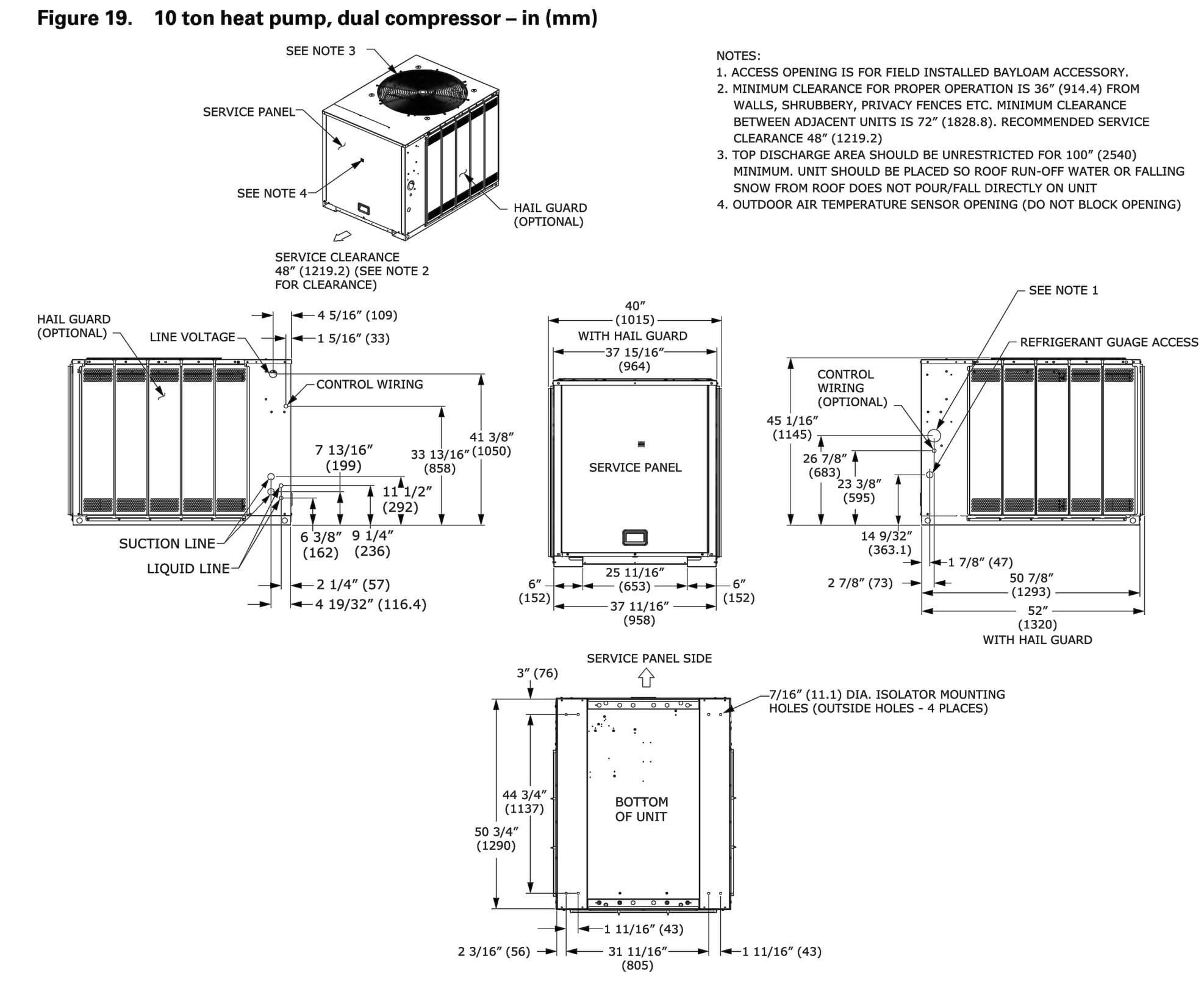
Table 60. Electrical characteristics — 5–20 ton standard and low static motors — 60 Hz constant volume air handler (continued)

Tons	Unit Model Number	Std: No.	Volts	Phase	HP	Amps FLA	Amps LRA	MCA	MOP	Low Static: No.	Volts	Phase	HP	Amps FLA	Amps LRA	MCA	MOP
7.5	TWE09041A/B	1	208-230	1	1.5	6.7	31.0	8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE09043A/B	1	208-230	3	1.5	5.3	34.0	7	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0904KA/B	1	380	3	1.5	3.0	20.0	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE09043A/B	1	460	3	1.5	2.5	17.0	3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE0904WA/B	1	575	3	1.5	1.7	14.0	2	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	TWE12041A/B	1	208-230	1	2	8.5	64.1	11	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE12043A/B	1	208-230	3	2	6.1	53.6	8	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE1204KA/B	1	380	3	2	3.3	28.0	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE12044A/B	1	460	3	2	3.1	27.2	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE1204WA/B	1	575	3	2	2.3	15.6	3	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
15	TWE18043B	1	208-230	3	3	9.4	74.9	12	20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE1804KB	1	380	3	3	5.6	47.7	7	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE18043B	1	460	3	3	4.6	39.3	6	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE1804WB	1	575	3	3	3.4	24.6	4	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
20	TWE24043B	1	208-230	3	5	14.0	90.8	18	30	1	208-230	3	3	9.4	75.0	12	20
	TWE2404KB	1	380	3	5	8.1	63.5	10	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	TWE24044B	1	460	3	5	6.3	44.8	8	15	1	460	3	3	4.6	39.0	6	15
	TWE2404WB	1	575	3	5	5.3	36.2	7	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TRANE

Dimensional Data

Figure 19. 10 ton heat pump, dual compressor – in (mm)

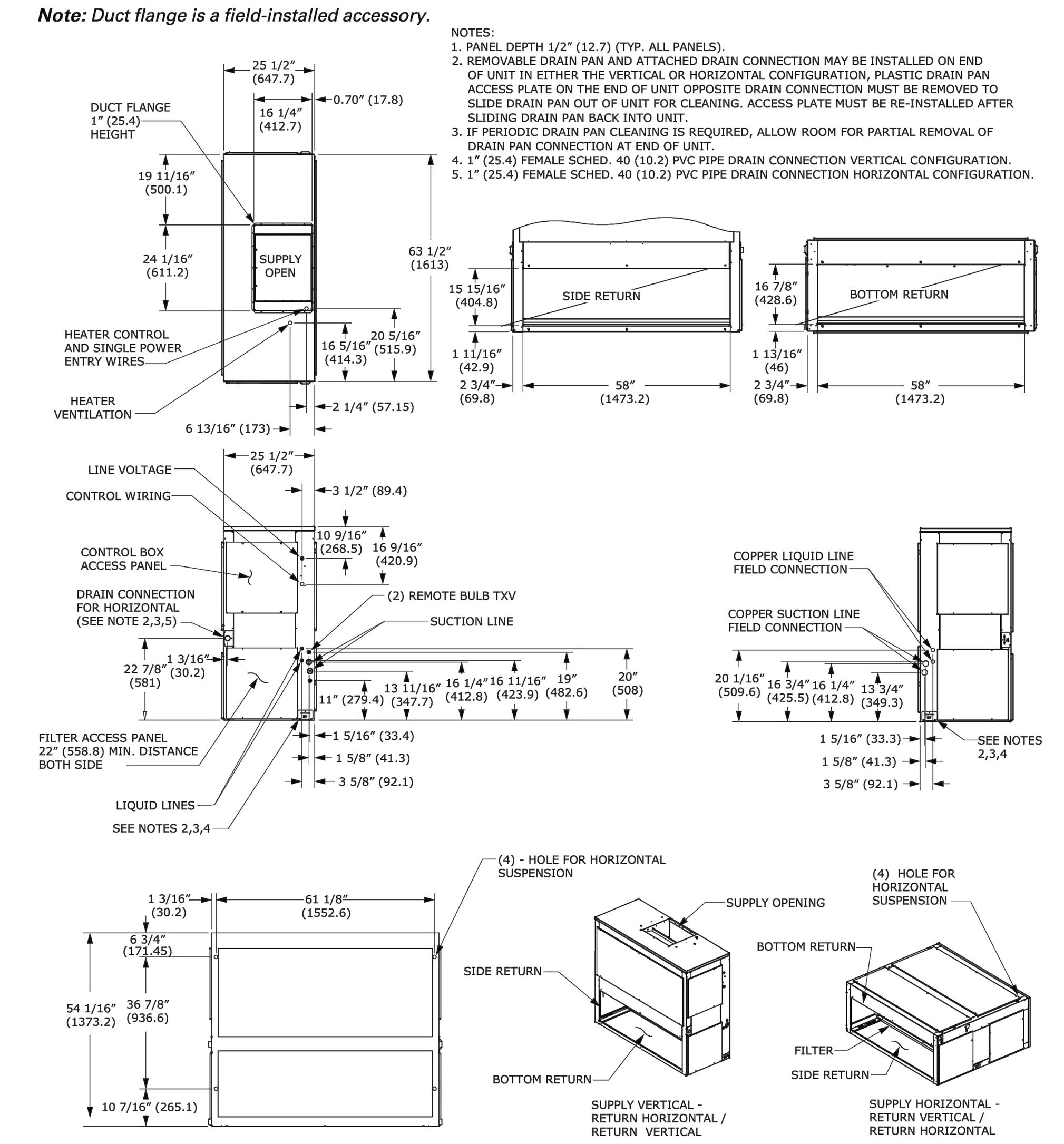


TRANE

Dimensional Data

Figure 26. 10 ton air handler, dual circuit – in (mm)

Note: Duct flange is a field-installed accessory.



NOTE: PROVIDE FACTORY INSTALLED VARIABLE FREQUENCY DRIVE (VFD) FOR SINGLE ZONE VARIABLE AIR VOLUME (SZVAV) OPTION

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Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
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REVISIONS

No	Date	Description
1		
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Designed By : JBC

Drawn By : JBC

Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ELECTRICAL BUILDING ONE HVAC EQUIPMENT

DRAWING NUMBER

18-H-3
OF
214

MSZ-GS36NA & MUZ-GS36NA
36,000 BTU/H WALL-MOUNTED INDOOR UNIT
36,000 BTU/H HEAT PUMP OUTDOOR UNIT

MITSUBISHI ELECTRIC

Job Name:

System Reference: Date:

Indoor Unit MSZ-GS36NA

Outdoor Unit MUZ-GS36NA

INDOOR UNIT FEATURES
- Dual Barrier Coating
- Slim wall-mounted indoor units provide zone comfort control
- The outdoor unit powers the indoor unit, and should a power outage occur, the system is automatically restarted when power returns
- Multiple fan speed options: Low, Medium, High, Super High
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after defrost cycle
- Powerful Operation: quickly cools or heats the room by automatically adjusting fan speed and set temperature for 15 minutes
- Smart Set: recalls a preferred preset temperature setting at the touch of a button
- Wide Vane mode provides 150° of airflow

*Auto and Powerful modes available in addition to the four fan speeds

OUTDOOR UNIT FEATURES
- Dual Barrier Coating
- Slim wall-mounted indoor units provide zone comfort control
- The outdoor unit powers the indoor unit, and should a power outage occur, the system is automatically restarted when power returns
- Multiple fan speed options: Low, Medium, High, Super High
- Multiple control options available:
  - Hand-held Remote Controller (provided with unit)
  - kumo cloud® smart device app for remote access
  - Third-party interface options
  - Wired or wireless controllers
- Hot-Start Technology: no cold air rush at equipment startup or when restarting after defrost cycle
- Powerful Operation: quickly cools or heats the room by automatically adjusting fan speed and set temperature for 15 minutes
- Smart Set: recalls a preferred preset temperature setting at the touch of a button
- Wide Vane mode provides 150° of airflow

*Auto and Powerful modes available in addition to the four fan speeds

SPECIFICATIONS: MSZ-GS36NA & MUZ-GS36NA

Cooling at 95°F	Maximum Capacity	BTU/H	33,200
	Rated Capacity	BTU/H	33,200
	Minimum Capacity	BTU/H	10,300
	Maximum Power Input	W	3,770
	Rated Power Input	W	3,770
	Moisture Removal	Pints/h	9.3
	Sensible Heat Factor		0.69
	Power Factor	%	98.0/99.0
Heating at 47°F[2]	Maximum Capacity	BTU/H	36,000
	Rated Capacity	BTU/H	35,200
	Minimum Capacity	BTU/H	9,800
	Maximum Power Input	W	4,000
	Rated Power Input	W	3,740
	Power Factor	%	99.0/99.0
Heating at 17°F[3]	Maximum Capacity	BTU/H	22,800
	Rated Capacity	BTU/H	22,400
	Maximum Power Input	W	2,920
	Rated Power Input	W	2,770
Heating at 5°F[1]	Maximum Capacity	BTU/H	20,500
	Maximum Power Input	W	2,500
Heating at -4°F[1]	Maximum Capacity	BTU/H	15,900
Efficiency	SEER		16.2
	EER*		8.8
	HSPF [IV]		10.0
	COP at 47°F[2]		2.76
	COP at 17°F at Maximum Capacity[3]		2.29
	COP at 5°F at Maximum Capacity*		2.4
	COP at -4°F at Maximum Capacity*		2.2
	ENERGY STAR® Certified		No
Electrical	Voltage, Phase, Frequency		208/230, 1, 60
	Guaranteed Voltage Range	V AC	187 - 253
	Voltage: Indoor - Outdoor, S1-S2	V AC	208/230
	Voltage: Indoor - Outdoor, S2-S3	V DC	24
	Short-circuit Current Rating [SCCR]	kA	5
	Recommended Fuse/Breaker Size (Outdoor)	A	20
	Recommended Wire Size [Indoor - Outdoor]	AWG	14
	Power Supply		Indoor unit is powered by the outdoor unit
Indoor Unit	MCA	A	1.0
	Fan Motor Full Load Amperage	A	0.76
	Fan Motor Output	W	56
	Fan Motor Type		DC Motor
	Airflow Rate at Cooling, Dry	CFM	374-602-699-915
	Airflow Rate at Cooling, Wet	CFM	374-602-699-915
	Airflow Rate at Heating, Dry	CFM	374-602-699-803
	Sound Pressure Level [Cooling]	dB[A]	32-42-49-53
	Sound Pressure Level [Heating]	dB[A]	34-42-49-50
	Drain Pipe Size	In. [mm]	5/8 [15.88]
	Coating on Heat Exchanger		Dual Barrier Coating
	External Finish Color		Munsell 1.0Y 9.2/0.2 White
	Unit Dimensions	W x D x Ht. In. [mm]	46-1/16 x 11-5/8 x 14-3/8 [1170 x 295 x 365]
	Package Dimensions	W x D x Ht. In. [mm]	51 x 16-1/2 x 14-1/4 [1300 x 470 x 360]
	Unit Weight	Lbs. [kg]	45 [20]
	Package Weight	Lbs. [kg]	51 [22.9]
Indoor Unit Operating Temperature Range	Cooling Intake Air Temp [Maximum / Minimum]**	°F	90 DB, 73 WB / 67 DB, 57 WB
	Heating Intake Air Temp [Maximum / Minimum]	°F	80 DB / 70 DB

NOTES:
AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)
- [1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
- [2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
- [3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions
- *Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 5 DB, 4 WB
- *Heating at -4°F (Indoor // Outdoor) °F 70 DB, 60 WB // -4 DB, -5 WB
- *Heating at -5°F (Indoor // Outdoor) °F 70 DB, 60 WB // -5 DB, -6 WB
- *Heating at -13°F (Indoor // Outdoor) °F 70 DB, 60 WB // -13 DB, -14 WB

*Outdoor Unit Operating Temperature Range (Cooling Air Temp (Maximum / Minimum)):
- Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
- System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

SPECIFICATIONS: MSZ-GS36NA & MUZ-GS36NA

Outdoor Unit	MCA	A	19.0
	MOCP	A	20
	Fan Motor Full Load Amperage	A	0.93
	Airflow Rate	CFM	2191/1950
	Refrigerant Control		LEV
	Defrost Method		Reverse Cycle
	Coating on Heat Exchanger		Blue Fin Coating
	Sound Pressure Level, Cooling*	dB(A)	56
	Sound Pressure Level, Heating[2]	dB(A)	57
	Compressor Type		Twin Rotary
	Compressor Model		SNB220FQAM1T
	Compressor Rated Loop Amps	A	13.8
	Compressor Locked Rotor Amps	A	17.3
	External Finish Color		Munsell 3Y 7.8/1/1
	Unit Dimensions	W x D x Ht. In. [mm]	33-1/16 x 13 x 34-5/8 [840 x 330 x 880]
	Package Dimensions	W x D x Ht. In. [mm]	38-3/4 x 16-3/4 x 39 [980 x 420 x 990]
	Unit Weight	Lbs. [kg]	121 [55.0]
	Package Weight	Lbs. [kg]	138 [62.5]
Outdoor Unit Operating Temperature Range	Cooling Air Temp [Maximum / Minimum]**	°F	115 DB / 14 DB
	Cooling Thermal Lock-out / Re-start Temperatures**	°F	4 / 0
	Heating Air Temp [Maximum / Minimum]	°F	75 DB, 65 WB / -4 DB, -5 WB
	Heating Thermal Lock-out / Re-start Temperatures**	°F	0 / -4
Refrigerant	Type		R410A
	Charge	Lbs, oz	4, 15.0
	Chargeless Piping Length	Ft. [m]	25.0 [7.5]
	Additional Refrigerant Charge Per Additional Piping Length	oz./Ft. [g/m]	1.06 [20]
Piping	Gas Pipe Size O.D. [Flared]	In.[mm]	5/8 [15.88]
	Liquid Pipe Size O.D. [Flared]	In.[mm]	1/4 [6.35]
	Maximum Piping Length	Ft. [m]	100 [30]
	Maximum Height Difference	Ft. [m]	50 [15]
	Maximum Number of Bends		10

NOTES:
AHRI Rated Conditions (Rated data is determined at a fixed compressor speed)
- [1]Cooling (Indoor // Outdoor) °F 80 DB, 67 WB // 95 DB, 75 WB
- [2]Heating at 47°F (Indoor // Outdoor) °F 70 DB, 60 WB // 47 DB, 43 WB
- [3]Heating at 17°F (Indoor // Outdoor) °F 70 DB, 60 WB // 17 DB, 15 WB

Conditions
- *Heating at 5°F (Indoor // Outdoor) °F 70 DB, 60 WB // 5 DB, 4 WB
- *Heating at -4°F (Indoor // Outdoor) °F 70 DB, 60 WB // -4 DB, -5 WB
- *Heating at -5°F (Indoor // Outdoor) °F 70 DB, 60 WB // -5 DB, -6 WB
- *Heating at -13°F (Indoor // Outdoor) °F 70 DB, 60 WB // -13 DB, -14 WB

*Outdoor Unit Operating Temperature Range (Cooling Air Temp (Maximum / Minimum)):
- Applications should be restricted to comfort cooling only; equipment cooling applications are not recommended for low ambient temperature conditions.

**Outdoor Unit Operating Temperature Range (Cooling Thermal Lock-out / Re-start Temperatures; Heating Thermal Lock-out / Re-start Temperatures):
- System cuts out in heating mode to avoid thermistor error and automatically restarts at these temperatures.

INDOOR UNIT ACCESSORIES: MSZ-GS36NA

Control Interface	BACnet® and Modbus® Interface	☐ PAC-UKPRO001-CN-1
	IT Extender	☐ PAC-IWS01E-E
	kumo station® for kumo cloud®	☐ PAC-IWS01HC-E
	Lockdown bracket for remote controller	☐ RCMKP1CB
	System Control Interface	☐ MAC-334IF-E
	Thermostat Interface	☐ PAC-US444CN-1
	USNAP Adapter	☐ PAC-IWS01UP-E
	Wireless Interface for kumo cloud®	☐ PAC-USWHS002-WF-2
Remote Sensor	Wired Remote Sensor	☐ M21EAA307
	Wireless temperature and humidity sensor for kumo cloud®	☐ PAC-USWHS003-TH-1
Wired Remote Controller	Deluxe Wired MA Remote Controller*	☐ PAR-40MAAU
	Simple MA Remote Controller*	☐ PAC-YT52CRAU-J
	Touch MA Controller*	☐ PAR-CT01MAU-SB
Wireless Remote Controller	kumo touch™ RedLINK™ Wireless Controller	☐ MHK2
Condensate	Blue Diamond (Advanced) Mini Condensate Pump w/ Reservoir & Sensor (208/230V) [recommended]	☐ X87-721
	Blue Diamond (MegaBlue Advanced) Condensate Pump w/ Reservoir & Sensor	☐ X87-835
	Blue Diamond Alarm Extension Cable—6.5 Ft.	☐ C13-192
	Blue Diamond Multi'Tank — collection tank for use with multiple pumps	☐ C21-014
	Blue Diamond Sensor Extension Cable — 15 Ft.	☐ C13-103
	Drain Pan Level Sensor/Control	☐ SS610E
	Sauermann Condensate Pump	☐ S330-230
Disconnect Switch	(30A/600V/UL) [fits 2" X 4" utility box] - Black	☐ TAZ-MS303
	(30A/600V/UL) [fits 2" X 4" utility box] - White	☐ TAZ-MS303W
Lineset	100' x 1/4" x 100' x 5/8" Lineset (Twin-Tube Insulation)	☐ MLS1458127-100
	15' x 1/4" x 15' x 5/8" Lineset (Twin-Tube Insulation)	☐ MLS1458127-15
	30' x 1/4" x 30' x 5/8" Lineset (Twin-Tube Insulation)	☐ MLS1458127-30
	50' x 1/4" x 50' x 5/8" Lineset (Twin-Tube Insulation)	☐ MLS1458127-50
	65' x 1/4" x 65' x 5/8" Lineset (Twin-Tube Insulation)	☐ MLS1458127-65

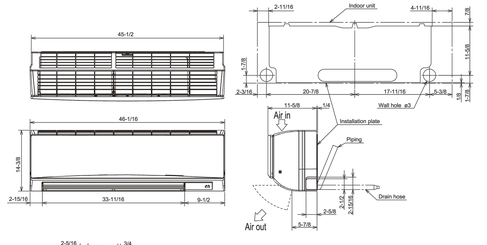
NOTES:
*Requires MAC-334IF-E
- MI-Series EZ FIT® Recessed Ceiling Cassette, Floor-mount and Wall-mount
  - Deluxe Wired MA Remote Controller connect to an MA Controller:
  - Deluxe MA Remote Controller
  - Simple MA Controller
  - Touch MA Controller

OUTDOOR UNIT ACCESSORIES: MUZ-GS36NA

Air Outlet Guide	Air Outlet Guide	☐ MAC-890SG-E
Control/Service Tool	M- & P-Series Maintenance Tool Cable Set	☐ M21EC0397
	USB/UART Conversion Cable (Required for all laptop connection)	☐ M21EC1397
Drain Socket	Drain Socket	☐ MAC-871DS
Hail Guards	Hail Guard	☐ HG-A7
Mini-Split Wire	14 Gauge, 4 wire MiniSplit Cable—250 ft. roll	☐ SW144-250
	14 Gauge, 4 wire MiniSplit Cable—50 ft. roll	☐ SW144-50
	16 Gauge, 4 wire MiniSplit Cable—250 ft. roll	☐ SW164-250
	16 Gauge, 4 wire MiniSplit Cable—50 ft. roll	☐ SW164-50
Mounting Pad	Condensing Unit Mounting Pad: 16" x 36" x 3"	☐ ULTRILITE1
	Outdoor Unit 3-1/4 inch Mounting Base (Pair) - Plastic	☐ DSO-400P
Stand	18" Single Fan Stand	☐ QSMS1801M
	24" Single Fan Stand	☐ QSMS2401M
	Condenser Wall Bracket	☐ QSWB2000M-1
	Condenser Wall Bracket - Stainless Steel Finish	☐ QSWBSS
	Outdoor Unit Stand — 12" High	☐ QSMS1201M

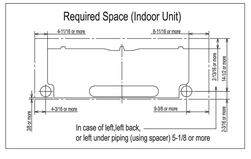
INDOOR UNIT DIMENSIONS: MSZ-GS36NA

Unit : inch



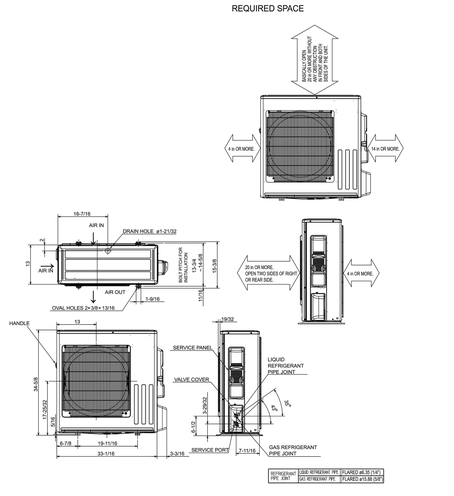
Wireless remote controller

	PIPING	INSULATION
LIQUID LINE	ø3/8 - 19-1/16 (FLARED CONNECTION ø1/4)	ø1-1/4 O.D ø9/16 I.D
GAS LINE	ø15/32 - 17-13/16 (FLARED CONNECTION ø5/8)	ø1-7/16 O.D ø13/16 I.D
DRAIN HOSE	INSULATION ø1-1/8 CONNECTED PART ø5/8 O.D	



OUTDOOR UNIT DIMENSIONS: MUZ-GS36NA

Unit: inch



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Toll Free: 800-433-4822 www.mehvac.com

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Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

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Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

ELECTRICAL BUILDING TWO HVAC EQUIPMENT

DRAWING NUMBER

18-H-4
OF
214

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

DUCTWORK SYMBOLS

DOUBLE LINE	SINGLE LINE	
		EXISTING DUCTWORK OR EQUIPMENT TO BE REMOVED
		EXISTING DUCTWORK TO REMAIN
		NEW DUCTWORK
MVD, M	MVD, M	MANUAL VOLUME DAMPER (MVD)
		MOTOR OPERATED DAMPER (MOD)
AD, AD	AD	ACCESS DOOR
		RADIUS ELBOW (R=1.5)
		VANED DAMPER
		BRANCH DUCT TAKE-OFF
D, R	D, R	RISE OR DROP IN THE DIRECTION OF AIR FLOW
		FLEXIBLE DUCT CONNECTION
		DIFFUSER
		DEILING RETURN OR EZHAUST REGISTER (R) OF GRILLE (G)
		SUPPLY AIR GRILLE (G) OR SUPPLY AIR REGISTER (R)
		RETURN AND/OR EXHAUST AIR GRILLE (G) OR REGISTER (R)

LEGEND

- CONTROL DAMPER - OPPOSED BLADE
- CONTROL DAMPER - PARALLEL BLADE
- BACK DRAFT DAMPER
- UC — UNDERCUT DOOR
- DL — DOOR LOUVER (FREE AREA INDICATED IN SQ. FT.)
- M — MOTOR OPERATED DAMPER
- EQUIPMENT SYMBOL
- AIR DEVICE TO BE REMOVED
- SUPPLY AIR
- RETURN OR EXHAUST AIR
- OUTSIDE AIR
- F — FIRE DAMPER WITH ACCESS DOOR
- T — THERMOSTAT
- S — SMOKE DETECTOR
- S — FAN CONTROL SWITCH

ABBREVIATIONS

AC	AIR CONDITIONING UNIT	FLR	FLOOR	MOD	MOTOR OPERATED DAMPER
AD	ACCESS DOOR	FOB	FLAT ON BOTTOM	OA	OUTSIDE AIR
AFF	ABOVE FINISHED FLOOR	FOT	FLAT ON TOP	OAI	OUTSIDE AIR INTAKE
AH	AIR HANDLER (SPLIT REFRIG.)	FOP	FUEL OIL PUMP	OAT	OUTSIDE AIR TEMPERATURE
AHU	AIR HANDLING UNIT	FP	FIRE PUMP	OC	ON CENTER
AL	ACOUSTICAL LINING	FPM	FEET PER MINUTE	OD	OUTSIDE DIAMETER
AP	ACCESS PANEL	FTR	FINNED TUBE RADIATION	OBD	OPPOSED BALDE DAMPER
BB	ELECTRIC BASEBOARD RADIATION	GC	GENERAL CONTRACTOR	PBD	PARALLEL BLADE DAMPER
B	BOILER	GPH	GALLONS PER HOUR	PRV	PRESSURE REDUCING VALVE
BDD	BACK DRAFT DAMPER	GPM	GALLONS PER MINUTE	SP	STATIC PRESSURE
BFC	BELOW FINISHED CEILING	HD	HAND DAMPER	TYP	TYPICAL
BOB	BOTTOM OF BEAM	HP	HEAT PUMP	UH	UNIT HEATER
BOD	BOTTOM OF DUCT	HV	HEATING AND VENTILATING UNIT	UON	UNLESS OTHERWISE NOTED
BOP	BOTTOM OF PIPE	HWC	HOT WATER CONVERTER		
EF	EXHAUST FAN	MC	MECHANICAL CONTRACTOR		
ESP	EXTERNAL STATIC PRESSURE	MTD	MOUNTED		

GENERAL NOTES - HVAC

1. ALL WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE INTERNATIONAL MECHANICAL CODE WITH GEORGIA AMENDMENTS, NFPA 90A, AND ALL APPLICABLE LOCAL CODES AND ORDINANCES.
2. IT SHALL BE UNDERSTOOD THAT THE DRAWINGS SHOW THE APPROXIMATE LOCATION OF APPARATUS. CONTRACTOR TO FIELD VERIFY ALL FIELD DIMENSIONS AND INVESTIGATE EXISTING CONDITIONS PRIOR TO FABRICATING AND LOCATING EQUIPMENT. PENETRATIONS THROUGH WALLS SHALL BE COORDINATED WITH EXIST. UTILITIES AND OBSTRUCTIONS. COORDINATE ALL ROUTING WITH LIGHTING AND ARCHITECTURAL FEATURES. NOTE THAT THE DRAWINGS REPRESENT WORK TO BE INSTALLED BY A KNOWLEDGABLE, LICENSED MECHANICAL CONTRACTOR FAMILIAR WITH THE TYPES OF SYSTEMS INDICATED AND DO NOT NECESSARILY SHOW ALL DETAILS FOR SYSTEM INSTALLATION.
3. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT WITH ELECTRICAL PLANS AND SHALL FURNISH EQUIPMENT WIRED FOR VOLTAGES AS REQUIRED. CONTRACTOR TO COORDINATE VOLTAGE AND PHASE OF EACH PIECE OF EQUIPMENT WITH ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT.
4. MOUNT THERMOSTATS AT 5'-0" UNLESS OTHERWISE NOTED.
5. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL MECHANICAL EQUIPMENT, DUCTWORK, ETC. TO FIT WITHIN THE SPACE ALLOWED BY ARCHITECTURAL AND STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBER SHALL NOT BE PERMITTED.
6. ALL MECHANICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
7. CONTRACTOR SHALL PROVIDE PERMANENT EQUIPMENT NAME TAGS ATTACHED TO ALL EQUIPMENT LISTED IN THE EQUIPMENT SCHEDULES. TAGS SHALL BE TWO LAYER LAMINATED HARD PLASTIC WITH CONTRASTING LETTERS AND BACKGROUND (WHITE LETTERS ON BLACK BACKGROUND)

J. B. Cobb Engineering, LLC
Mechanical/Industrial
Office: (678) 363-8754
Fax: (678) 363-8754
Cell Phone: (404) 403-2126
97 Lakeridge Drive
Dallas, GA 30132
jbcobbpe@bellsouth.net

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED No. 20349 PROFESSIONAL ENGINEER JAY BARTLEY COBB

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : JBC

Drawn By : JBC

Checked By : JBC

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

HVAC LEGEND AND NOTES

DRAWING NUMBER

20-H-1
OF
214

GENERAL STRUCTURAL NOTES:

VERIFICATION OF DIMENSIONS:

BEFORE COMMENCING WORK, CHECK ALL LINES AND LEVELS, AND VERIFY ALL DIMENSIONS INDICATED ON THE DRAWINGS, AND WITH SUCH OTHER WORK AS HAS BEEN COMPLETED. SHOULD THERE BE ANY DISCREPANCIES, IMMEDIATELY NOTIFY THE ENGINEER FOR CORRECTION OR ADJUSTMENT.

MATERIAL STRENGTHS AND DESIGN STRESSES

CONCRETE:	F'c = 4000 PSI
REINFORCING STEEL:	ASTM A615 (GRADE 60. Fy = 60 KSI)
WELDED WIRE FABRIC:	ASTM A185
WELDING:	E70 ELECTRODES
ANCHOR BOLTS:	ASTM A307 & ASTM F593 (UNLESS OTHERWISE INDICATED)
BOLTS:	ASTM A325

DESIGN AND CONSTRUCTION CRITERIA:

1. INTERNATIONAL BUILDING CODE WITH GEORGIA AMENDMENTS LATEST EDITION.
2. ACI 318 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE LATEST EDITION.
3. ACI 350 CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES LATEST EDITION.
4. AISC MANUAL OF STEEL CONSTRUCTION LATEST EDITION.
5. CRSI CONCRETE REINFORCING STEEL INSTITUTE MANUAL OF STANDARD PRACTICE LATEST EDITION.

STRUCTURAL STEEL:

1. ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION LATEST EDITION.
2. ALL CONNECTIONS SHALL BE AS SHOWN ON DRAWINGS.
3. BEARING ON BOLT THREADS SHALL NOT BE PERMITTED.
4. UNLESS OTHERWISE SHOWN, ALL CONNECTION BOLTS SHALL BE 3/4" DIAMETER ASTM A325.
5. UNLESS OTHERWISE SHOWN, ALL ANCHOR BOLTS SHALL BE 3/4" DIAMETER A307 BOLTS WITH MINIMUM EMBEDIMENT AS SHOWN IN STANDARD DETAILS.
6. ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER IN ACCORDANCE WITH THE AMERICAN WELDING SOCIETY STANDARDS.
7. FULL LENGTH MEMBERS SHALL BE FURNISHED UNLESS SPLICES ARE CALLED FOR ON THE PLAN OR OTHERWISE LOCATED AND APPROVED BY THE ENGINEER.
8. ALL SUSPENDED EQUIPMENT SHALL BE SUPPORTED AS SHOWN IN THE STANDARD DETAILS UNLESS SPECIAL SUPPORTS ARE INDICATED ON THE DRAWINGS.
9. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATIONS OF EQUIPMENT AND OPENINGS NOT SHOWN.

CONCRETE:

1. PROVIDE THE FOLLOWING COVER FOR REINFORCING STEEL UNLESS SHOW OTHERWISE ON THE DRAWINGS:
   - CONCRETE CAST AGAINST THE EARTH ..... 3"
   - FORMED CONCRETE EXPOSED TO EARTH OR WEATHER .....2"
   - CONCRETE NOT EXPOSED TO EARTH OR WEATHER .....1-1/2"
2. END BEARING SPLICES SHALL NOT BE PERMITTED.
3. SINGLE MAT REINFORCING IN SLABS ON GRADE AND WALLS SHALL BE PLACED AT MID-DEPTH UNLESS OTHERWISE NOTED. ANCHOR BOLTS, PIPE SLEEVES, AND OTHER INSERTS SHALL BE POSITIVELY SECURED IN PLACE BEFORE CONCRETE POUR IS COMMENDED.
4. SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR ADDITIONAL OPENINGS IN THE SLABS OR WALLS. ALL OPENINGS SHALL BE FORMED OR SLEEVED BEFORE THE CONCRETE IS POURED. ADDITIONAL REINFORCING IS NOT REQUIRED FOR OPENING WHOSE LONGER DIMENSION IS 12 INCHES OR LESS BUT INTERRUPTED BARS SHALL BE DEFLECTED AROUND THE OPENING. ALL OTHER OPENINGS SHALL HAVE ADDITIONAL REINFORCING BARS OF THE SAME SIZE, SPACING, AND LENGTH BEYOND OPENING TO REPLACE INTERRUPTED BARS AND TWO NO. 5 CORNER BARS AT EACH CORNER. MINIMUM ADDITIONAL REINFORCING SHALL CONSIST OF TWO NO. 5 EACH SIDE EXTENDING 2 FEET O INCH LONG AND AT 45 DEGREE TO MAIN REINFORCING, UNLESS OTHERWISE SHOWN ON THE PLANS.
5. CONTRACTOR SHALL PROVIDE ALL NECESSARY INSERTS, TIES, CLIPS, AND OTHER DEVICES. ALL FORM WORK SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE ACI MANUAL OF CONCRETE PRACTICE ACI 347 LATEST EDITION.
6. PIPES PASSING THROUGH FOUNDATION WALLS WHOSE DIAMETER IS LESS THAN 1/3 THICKNESS OF THE WALL AND ARE SPACED NOT CLOSER THAN 3 DIAMETERS ON CENTER NEED NOT HAVE SPECIAL REINFORCEMENT, OTHERWISE SPECIAL REINFORCEMENT EQUAL IN AREA TO 1.5 TIMES THE NUMBER OF INTERRUPTED BARS OR TWO NO. 5 (WHICHEVER IS GREATER) SHALL BE PROVIDED ON EACH SIDE OF THE PIPE.
7. ALUMINUM CONDUITS, SLEEVES OR PIPES SHALL NOT BE EMBEDDED IN CONCRETE UNLESS EFFECTIVELY COATED TO PREVENT CHEMICAL OR ELECTROLYTIC REACTION BETWEEN ALUMINUM AND CONCRETE OR REINFORCEMENT.
8. UNLESS NOTED OTHERWISE ALL CONCRETE SLABS SHALL SLOPE TO DRAIN OR SUMP.
9. CHAMFER ALL EXPOSED EDGES OF CONCRETE 3/4".
10. ALL CONCRETE JOINTS INCLUDING CONSTRUCTION, EXPANSION, CONTRACTION, AND COLD JOINTS SHALL BE CLEANED AND MOISTENED JUST PRIOR TO SECOND POUR.

MASONRY:

1. THE CONSTRUCTION OF MASONRY SHALL COMPLY WITH THE REQUIREMENTS OF ACI 530.1/ASCE 7/TMS 602 LATEST EDITION. SPECIAL ATTENTION SHALL BE GIVEN TO THE MOISTURE CONTENT AND WEATHER CONDITIONS DURING CONSTRUCTION. SEE STRUCTURAL DRAWINGS FOR LOCATIONS OF VERTICAL CONTROL/EXPANSION JOINTS.
2. CONCRETE MASONRY UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C90. UNITS ARE TO BE NORMAL WEIGHT UNLESS NOTED OTHERWISE.
3. REQUIRED COMPRESSIVE STRENGTH OF MASONRY ASSEMBLAGE, F'm = 2,250 PSI (AVERAGE), UNLESS NOTED OTHERWISE ON THE DRAWINGS.
4. MORTAR SHALL CONFORM TO THE REQUIREMENTS OF ASTM C270 AND SHALL BE TYPE "S" W/ PORTLAND CEMENT (ASTM C150), MASONRY SAND (ASTM C144) AND HYDRATED LIME (ASTM C207). CALCIUM CHLORIDE IS PROHIBITED.
5. GROUT/CONCRETE FILL FOR HOLLOW MASONRY UNITS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI & IF CONCRETE, SHALL BE NORMAL WEIGHT PEA-GRAVEL CONCRETE.
6. JOINT REINFORCING: "LADDER/TRUSS TYPE" PROVIDE HORIZONTAL JOINT REINFORCING AT 16" SPACED VERTICALLY. USE #9 TRUSS TYPE REINFORCING.
7. MASONRY UNITS SHALL BE LAID IN RUNNING BOD PATTERN, UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
8. ALL FACE SHELLS AND HEAD JOINTS SHALL HAVE FULL MORTAR COVERAGE AND SHALL BE SHOVED TIGHTLY SO THAT THE MORTAR BOND WELL TO BOTH UNITS. MORTAR JOINTS SHALL BE STRAIGHT, CLEAN, AND SHALL HAVE A UNIFORM THICKNESS OF 3/8".
9. USE OF OPEN END BLOCK IS OPTIONAL.
10. REINFORCING SHALL BE DEFORMED BILLET STEEL BARS MEETING THE REQUIREMENTS OF ASTM A615, GRADE 60, UNLESS OTHERWISE NOTED. BARS SHALL LAP 30 BAR DIAMETERS, BUT NOT LESS THAN 12" INCHES, SPLICES SHALL BE STAGGERED WHERE POSSIBLE, BAR BENDS AND HOOKS SHALL CONFORM TO ACI 318. REINFORCING BARS SHALL BE HELD IN POSITION AT EACH END AND AT INTERVALS NOT EXCEEDING 160 BAR DIAMETERS BY WIRE TIES OR REINFORCING POSITIONERS. REINFORCING SHALL BE SECURED IN POSITION BEFORE GROUT POUR IS COMMENCED.
11. GROUT POURS SHALL BE LIMITED TO 4 FEET 0 INCH MAXIMUM LIFTS. ONLY CELLS WITH REINFORCING BARS SHALL BE GROUTED.
12. PROVIDE ONE (1) NO. 5 BARS CENTERED IN THE CMU CELL FOR VERTICAL REINFORCING AT CORNERS, JAMBS, INTERSECTIONS, AND AT 4'-0" MAXIMUM SPACING UNLESS NOTED OTHERWISE ON PLANS OR STANDARD STRUCTURAL DETAILS.
13. PROVIDE HORIZONTAL REINFORCING IN BOND BEAMS AT THE TOP OF FOOTINGS OR FOUNDATION SLABS, AT THE BOTTOM AND TOP OF WALL OPENINGS (EXTEND 2'-0" PAST OPENING EACH SIDE), AT JOIST BEARING LEVELS (CONTINUOUS AROUND BUILDING) AND AT THE TOP OF PARAPET.
14. BOND BEAMS MAY BE CONSTRUCTED OF "U" SHAPED LINTEL BLOCKS OR "KNOCK-OUT" WEB BLOCKS. REINFORCING WITH 2-#5'S CONTINUOUS AND GROUT WITH 3,000 PSI COURSE (PEA GRAVEL) GROUT.
15. MASONRY CONSTRUCTION INCLUDING GROUT FILL, MORTAR AND HORIZONTAL & VERTICAL REINFORCING TO BE REVIEWED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE THROUGHOUT MASONRY & CONCRETE CONSTRUCTION OF THE PROJECT.

NON-SHRINK GROUT

1. PROVIDE NON-SHRINK GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES AND ELSEWHERE AS INDICATED ON DRAWINGS. NON-SHRINK GROUT SHALL CONFORM TO ASTM C1107.
2. GROUT SHALL BE NON-METALLIC AND NON-STAINING AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 7000 PSI.

ALUMINUM

1. ALUMINUM FABRICATION SHALL BE IN CONFORMANCE WITH THE ALUMINUM ASSOCIATION, INC. "SPECIFICATIONS FOR ALUMINUM STRUCTURES".

2. UNLESS NOTED OTHERWISE, MATERIALS SHALL BE:
a. PLATE & SHEET - ASTM B209; 6061-T6, 6061-T651 ALLOY.
b. EXTRUDED SHAPES - ASTM B221; 6061-T6, 6061-T651 ALLOY. PIPE SECTIONS ARE SCHEDULE 40 U.N.O..
c. CASTINGS - ASTM B108; 214 ALLOY.
d. BOLTS - ASTM 276; TYPE 316 STAINLESS STEEL.
e. NUTS - ASTM 276; TYPE 316 STAINLESS STEEL.

3. ALUMINUM SHALL BE SEPARATED FROM DIRECT CONTACT WITH OTHER MATERIALS (STEEL, CONCRETE, ETC.) BY PRESSURE SENSITIVE TAPE, BITUMASTIC COATING, OR OTHER PROTECTIVE METHOD SUBMITTED BY THE CONTRACTOR AND APPROVED BY THE OWNER'S CONSTRUCTION REPRESENTATIVE.

4. CONNECTIONS SHALL HAVE A MINIMUM OF TWO 3/4" DIAMETER STAINLESS STEEL BOLTS.

5. WELDING ALUMINUM SHALL CONFORM TO AWS D1.2 & AWS A5.10 AND THE REQUIREMENTS OF THE ALUMINUM ASSOCIATIONS "ALUMINUM DESIGN MANUAL" (LATEST EDITION)
TABLE 7.1-1 FOR WELD FILLERS FOR WROUGHT ALLOYS.

6. REFERENCE PROJECT SPECIFICATIONS FOR HANDRAIL & GUARDRAIL REQUIREMENTS.

POST INSTALLED ANCHORAGE SYSTEM

1. CONCRETE ADHESIVE ANCHORS: HILTI "HIT-RE500V3 OR APPROVED EQUAL W/ TYPE 316 STAINLESS STEEL THREADED ROD.
2. CONCRETE MASONRY ADHESIVE ANCHORS: HILTI "HIT-HY 70" OR APPROVED EQUAL W/ TYPE 316 STAINLESS STEEL THREADED ROD.
3. CONCRETE EXPANSION (WEDGE) ANCHORS *: HILTI "KWIK BOLT TZ" OR APPROVED EQUAL, TYPE 316 STAINLESS STEEL.
4. CONCRETE MASONRY EXPANSION (WEDGE) ANCHORS *: HILTI "KWIK BOLT 3" OR APPROVED EQUAL, TYPE 316 STAINLESS STEEL.

* POST INSTALLED ANCHOR SHALL ALWAYS BE AN ADHESIVE ANCHOR SYSTEM EXCEPT WHERE NOTED OTHERWISE OR WHEN SUPPLIER/SUBCONTRACTOR MAKES A REQUEST FOR A SPECIFIC APPLICATION AND APPROVED BY ENGINEER.

BASIC DEVELOPMENT LENGTH AND SPLICE LENGTH

FOR BARS IN TENSION

fy = 60,000 psi — fc' = 4,000 psi OR GREATER, NORMAL WEIGHT CONCRETE

BASIC DEVELOPMENT LENGTH ** ℓd				BAR SIZE	CLASS "B" SPLICE LENGTH ** 1.3 x ℓd			
CLEAR SPACING ≥ 2db		CLEAR SPACING < 2db			CLEAR SPACING ≥ 2db		CLEAR SPACING < 2db	
BASIC	TOP *	BASIC	TOP *		BASIC	TOP *	BASIC	TOP *
1'-3"	1'-7"	1'-10"	2'-4"	#3	1'-7"	2'-0"	2'-4"	3'-0"
1'-7"	2'-1"	2'-5"	3'-1"	#4	2'-1"	2'-8"	3'-1"	4'-0"
2'-0"	2'-7"	3'-0"	3'-10"	#5	2'-7"	3'-4"	3'-10"	5'-0"
2'-5"	3'-1"	3'-7"	4'-8"	#6	3'-1"	4'-0"	4'-8"	6'-0"
3'-6"	4'-6"	5'-2"	6'-9"	#7	4'-6"	5'-10"	6'-9"	8'-9"
4'-0"	5'-2"	6'-0"	7'-9"	#8	5'-2"	6'-8"	7'-9"	10'-0"
4'-6"	5'-9"	6'-8"	8'-8"	#9	5'-9"	7'-6"	8'-8"	11'-3"
4'-11"	6'-5"	7'-5"	9'-8"	#10	6'-5"	8'-4"	9'-8"	12'-6"
5'-5"	7'-1"	8'-2"	10'-8"	#11	7'-1"	9'-2"	10'-8"	13'-9"

ALL LAP SPLICES SHALL BE ACI 318, CLASS "B" LAP SPLICES UNLESS OTHERWISE SHOWN ON THE DRAWING

* TOP REINFORCEMENT IS HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT

** LENGTHS SHOWN IN CHART SHALL BE MODIFIED WHERE REQUIRED TO CONFORM TO THE PROVISIONS OF ACI 318, SECTION 12.2.

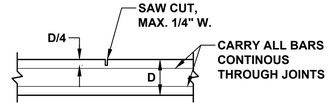
DEVELOPMENT LENGTH OF STANDARD HOOKS

FOR BARS IN TENSION

fy = 60,000 psi — fc' = 4,000 psi OR GREATER

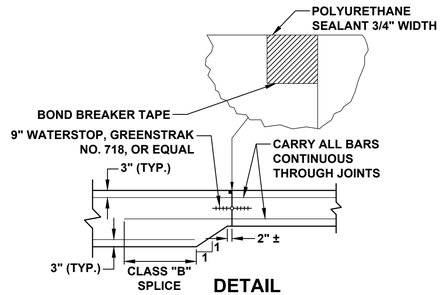
BAR SIZE	DEVELOPMENT OF STD. HOOKS LENGTH, ℓdh	
	BASIC	(0.7 x BASIC) W/ CONC. COVER FACTOR *
#3	8"	6"
#4	10"	7"
#5	1'-0"	9"
#6	1'-2"	10"
#7	1'-5"	1'-0"
#8	1'-7"	1'-1"
#9	1'-9"	1'-3"
#10	2'-0"	1'-5"
#11	2'-2"	1'-6"

* TOP BAR TERMINATING AT AN EXTERIOR COLUMN, PROVIDED THAT THE SIDE COVER IS AT LEAST 2.5" AND THE END COVER OVER THE HOOK EXTENSION IS AT LEAST 2".

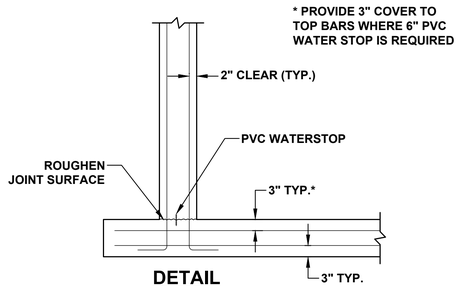


DETAIL
SAWED CONTROL JOINT
SCALE: N.T.S.

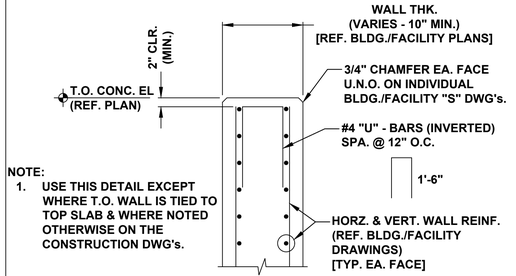
NOTE:
MUST BE PERFORMED WITHIN 12-HOURS AFTER PLACEMENT OF CONCRETE



DETAIL
CONSTRUCTION JOINT SLAB TO FOOTING
SCALE: N.T.S.

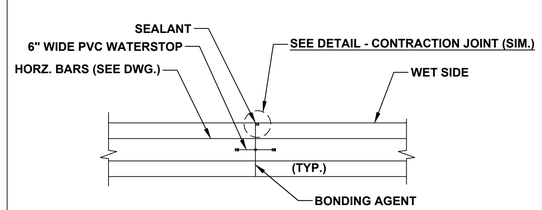


DETAIL
WALL BASE CONSTRUCTION JOINT
SCALE: N.T.S.



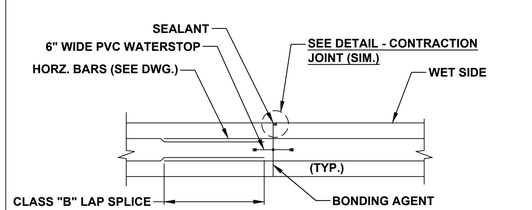
NOTE:
1. USE THIS DETAIL EXCEPT WHERE T.O. WALL IS TIED TO TOP SLAB & WHERE NOTED OTHERWISE ON THE CONSTRUCTION DWG's.

DETAIL
TYP. TOP OF WALL REINF.
SCALE: N.T.S.



NOTE: CARRY ALL BARS CONTINUOUS THROUGH JOINTS

DETAIL
WALL / SLAB CONSTRUCTION JOINT #1
SCALE: N.T.S.



NOTE: CARRY ALL BARS CONTINUOUS THROUGH JOINTS

DETAIL
WALL / SLAB CONSTRUCTION JOINT #2
SCALE: N.T.S.

CEC
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering
4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOY

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

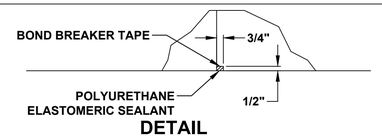
10/05/2021

SHEET TITLE

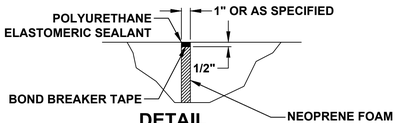
STRUCTURAL DETAILS 1

DRAWING NUMBER

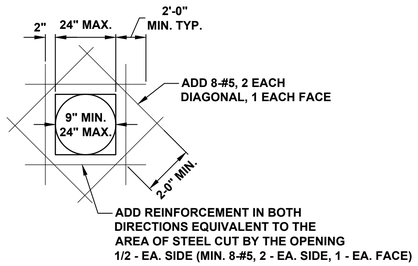
D-S-1
OF
214



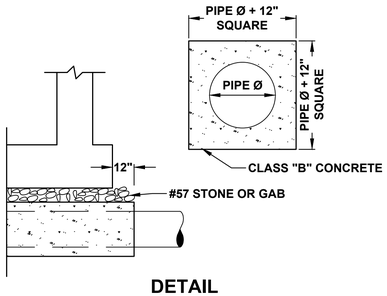
DETAIL
CONTRACTION JOINT
SCALE: N.T.S.



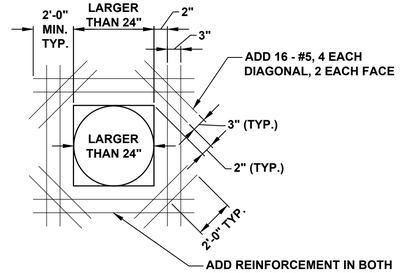
DETAIL
EXPANSION JOINT
SCALE: N.T.S.



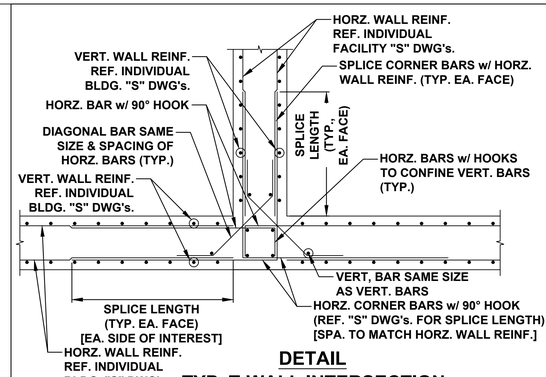
DETAIL
TYPICAL REINF. AT OPENINGS
BETWEEN 9" & 24"
SCALE: N.T.S.



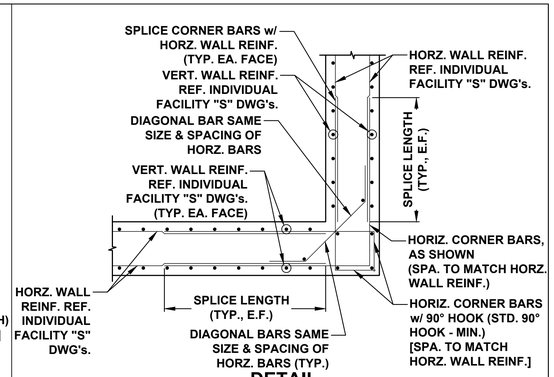
DETAIL
PIPE ENCASEMENT
SCALE: N.T.S.



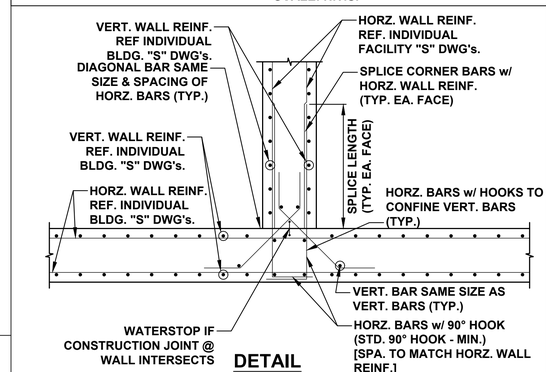
DETAIL
TYPICAL REINF. AT OPENINGS
LARGER THAN 24"
SCALE: N.T.S.



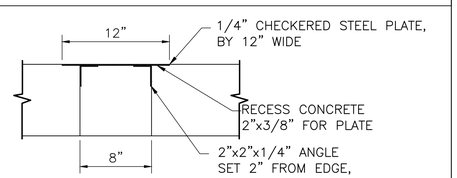
DETAIL
TYP. T-WALL INTERSECTION
BAR REINF. WITHOUT CONSTRUCTION JOINT
SCALE: N.T.S.



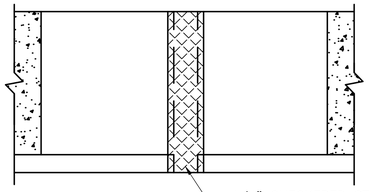
DETAIL
TYP. CORNER BAR REINF.
SCALE: N.T.S.



DETAIL
TYP. T-WALL INTERSECTION BAR
REINF. WITH CONSTRUCTION JOINT
SCALE: N.T.S.

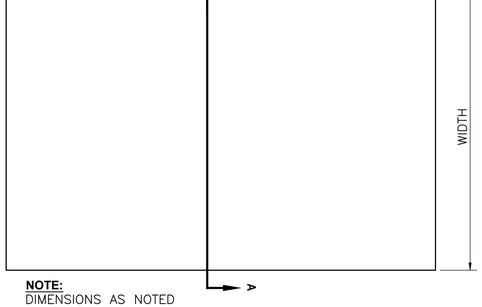


SECTION

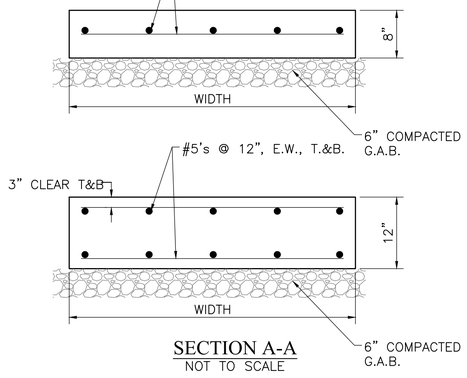


PLAN

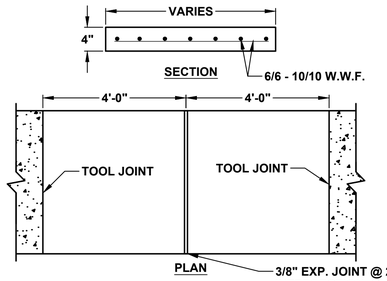
SIDEWALK PLATE
NOT TO SCALE



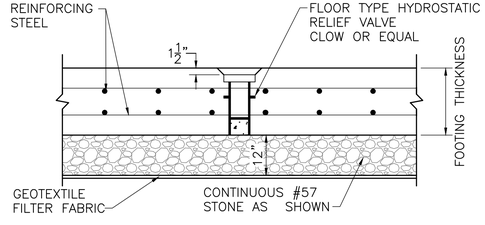
DETAIL
EXTERIOR CONCRETE EQUIPMENT PADS
NOT TO SCALE



SECTION A-A
NOT TO SCALE



DETAIL
SIDEWALK
SCALE: N.T.S.



DETAIL
HYDROSTATIC PRESSURE RELIEF VALVE
NOT TO SCALE

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

STRUCTURAL DETAILS 2

DRAWING NUMBER

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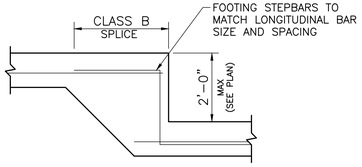
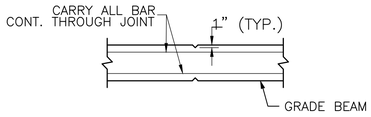
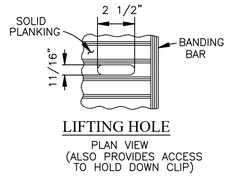
OF
214



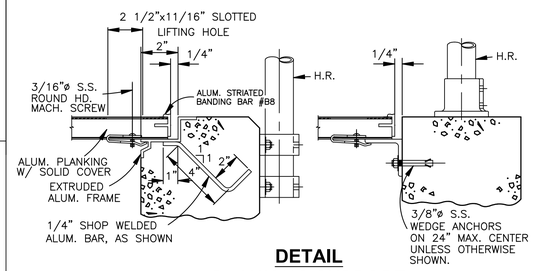
DETAIL
FOOTING STEP
SCALE: N.T.S.



DETAIL
GRADE BEAM CRACK CONTROL JOINT
SCALE: N.T.S.



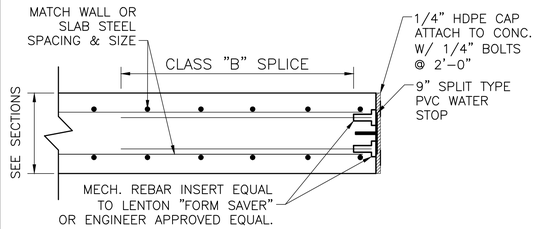
LIFTING HOLE
PLAN VIEW
(ALSO PROVIDES ACCESS
TO HOLD DOWN CLIP)



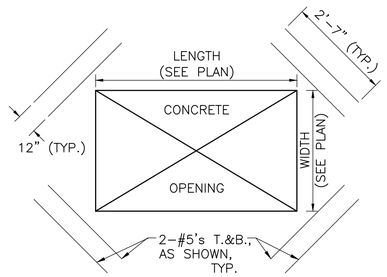
DETAIL
PLANKING SUPPORT
SCALE: N.T.S.

SPAN	GRATING DEPTH	SUPPORT ANGLE
0 – 3'–0"	1"	1–1/4"x1–1/2"x1/4"
3'–0" – 4'–0"	1–1/4"	1–1/2"x1–1/2"x1/4"
4'–0" – 5'–0"	1–1/2"	1–3/4"x1–1/2"x1/4"
5'–0" – 6'–0"	1–3/4"	2"x1–1/2"x1/4"
6'–0" – 7'–0"	2'–1/4"	2 1/4"x1–1/2"x1/4"
7'–0" – 8'–0"	2–1/2"	2 3/4"x1–1/2"x1/4"

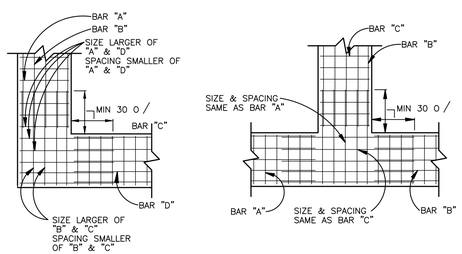
NOTES:
1. ALUMINUM EXPOSED TO CONCRETE SHALL BE COVERED WITH A PROTECTIVE BITUMASTIC COATING.



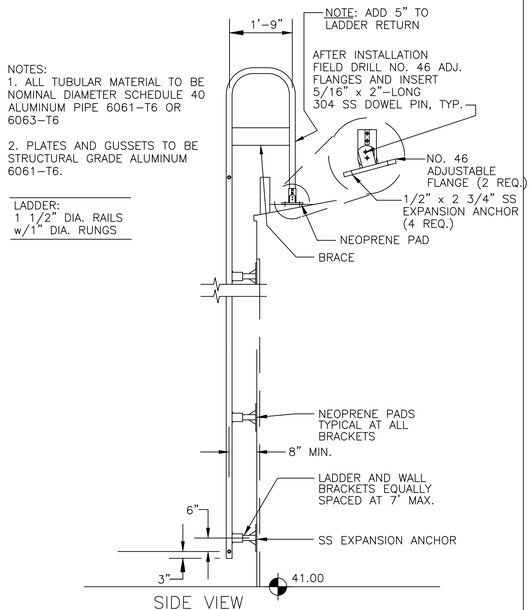
DETAIL
FUTURE CONNECTION
SCALE: N.T.S.



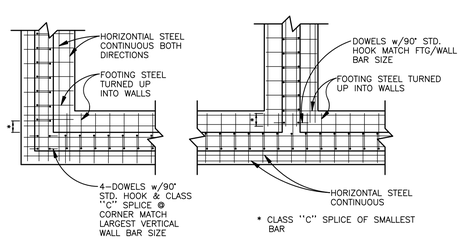
DETAIL
RECTANGULAR CONCRETE OPENING
SCALE: N.T.S.



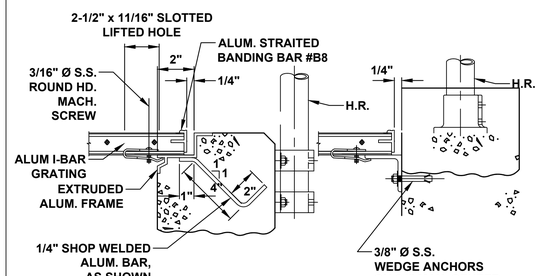
DETAIL
REINF. AT FOOTING INTERSECTIONS
TOP LAYER REINFORCING
SCALE: N.T.S.



DETAIL
EXTERIOR ALUMINUM LADDER WITH SAFETY RAIL
SCALE: N.T.S.



DETAIL
REINF. AT FOOTING INTERSECTIONS
BOTTOM LAYER REINFORCING
SCALE: N.T.S.



DETAIL
ALUM. GRATING SUPPORT
SCALE: N.T.S.

SPAN	GRATING DEPTH	SUPPORT ANGLE
0 - 3'-0"	1"	1-1/4" x 1-1/2" x 1/4"
3'-0" - 4'-0"	1-1/4"	1-1/2" x 1-1/2" x 1/4"
4'-0" - 5'-0"	1-1/2"	1-3/4" x 1-1/2" x 1/4"
5'-0" - 6'-0"	2"	2" x 1-1/2" x 1/4"
6'-0" - 7'-0"	2-1/2"	2-1/4" x 1-1/2" x 1/4"

NOTES:
1. **ALUMINUM EXPOSED TO CONCRETE SHALL BE COVERED WITH A PROTECTIVE BITUMASTIC COATING**

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

SHEET TITLE

STRUCTURAL DETAIL 3

DRAWING NUMBER

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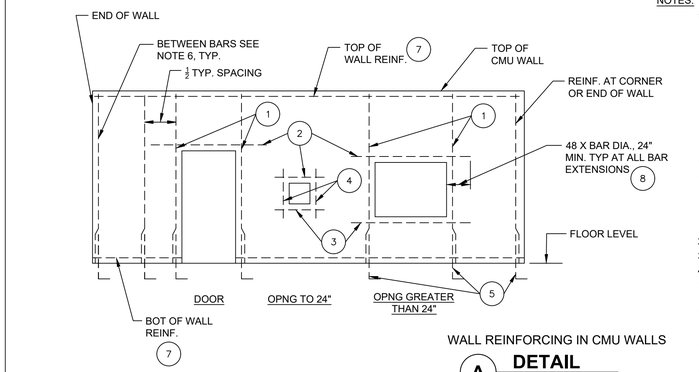
OF
214



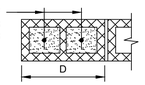
WALL REINFORCING IN CMU WALLS

A DETAIL Scale: N.T.S.

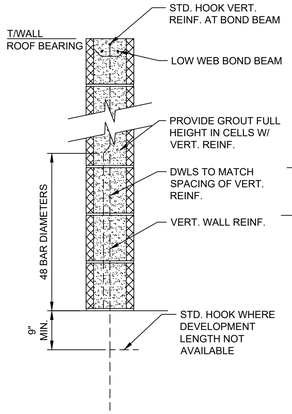
NOTES:

1. VERTICAL REINFORCEMENT AT OPENINGS:

OPNG \ CMU	8"		12"	
	D	REINF	D	REINF
TO 4'-3"	8"	1#5 CTR	8"	1#6 CTR
4'-4" TO 6'-3"	16	1#5 CTR	16	1#6 CTR
6-4" TO 12'-0"	24"	1#6 CTR	24"	1#6 CTR

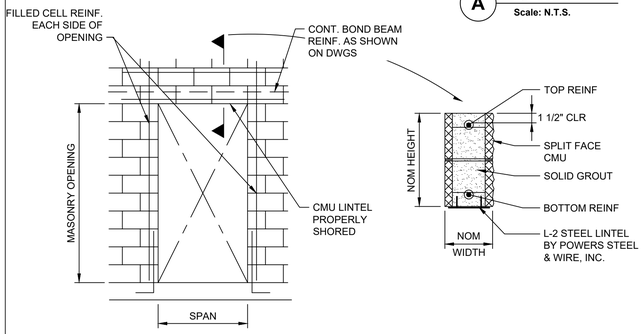


2. FOR LINTEL BARS SEE DETAIL C.
3. SILL BARS, 2 #5 IN BOND BEAM
4. 1-#5 EACH SIDE
5. DOWEL SIZE & QTY TO MATCH BARS BESIDE OPNG. SEE DETAIL B/- FOR DOWEL
6. BETWEEN BARS AT CORNERS & OPNGS, PROVIDE TYP WALL REINF PER DETAIL B/-
7. TOP AND BOTTOM OF WALL COURSE, UNO ON DWGS. PROVIDE 2 #5 IN BOND BEAM.
8. IF FULL LENGTH IS NOT AVAILABLE, PROVIDE STD HOOK AND EXTEND AS FAR AS POSSIBLE.



CMU DOWEL & TYP. FILLED CELL

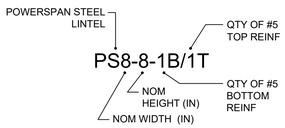
B DETAIL Scale: N.T.S.



SPAN	MARK	TYPE	STIRRUPS	NOTES
TO 4'-0"	L-1	PS8-8-2B	-	
> 4'-0" TO 9'-0"	L-2	PS8-16-2T/2B	-	
> 10'-0" TO 12'-0"	L-3	PS8-24-2T/2B	#3 @ 8"	USE #6 REBAR

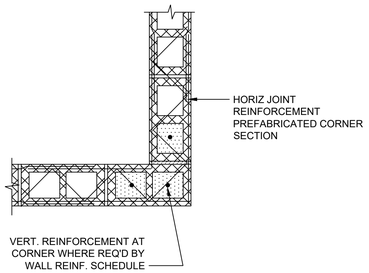
NOTES:
1. PROVIDE REINF AS INDICATED AT ALL OPENINGS BOTH INTERIOR & EXTERIOR WALLS
2. PROVIDE 3" MINIMUM BEARING AT EACH SIDE OF SPAN FOR STEEL LINTELS.
3. FULLY GROUT CMU OVER DEPTH "D" TO ENDS OF BEARING.

TYPE DESIGNATION



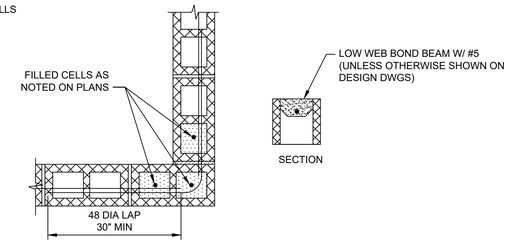
LINTEL SCHEDULE

C DETAIL Scale: N.T.S.



CMU HORIZONTAL JOINT REINFORCING

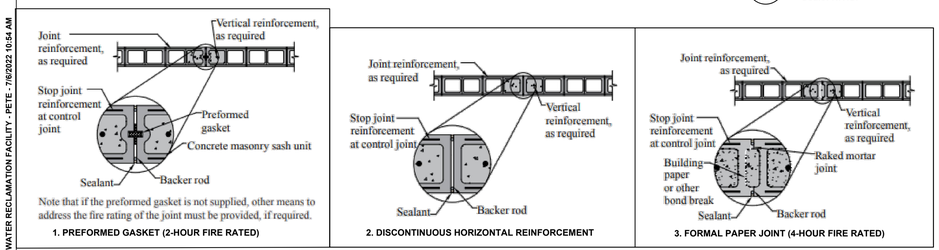
D DETAIL Scale: N.T.S.



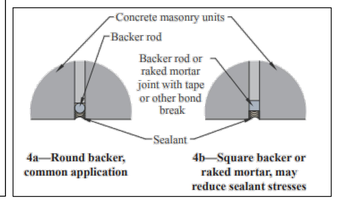
CMU WALL CORNER

CMU BOND BEAM REINFORCING

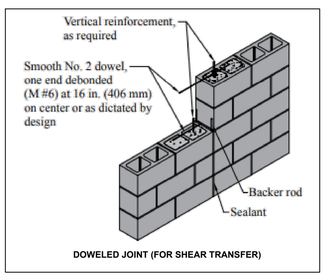
E DETAIL Scale: N.T.S.



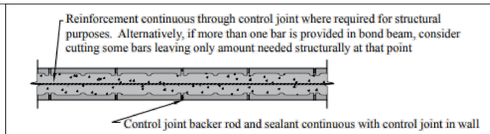
DETAIL
CONTROL JOINT (FIRE RATING OF CONCRETE MASONRY ASSEMBLIES)
SCALE: N.T.S.



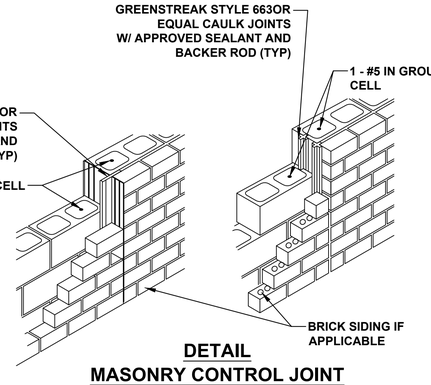
DETAIL
CONTROL JOINT SURFACE
SCALE: N.T.S.



DETAIL
CONTROL JOINT (FOR SHEAR TRANSFER)
SCALE: N.T.S.

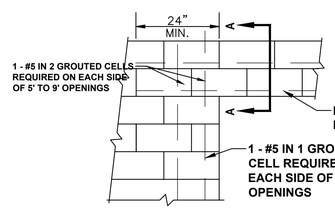


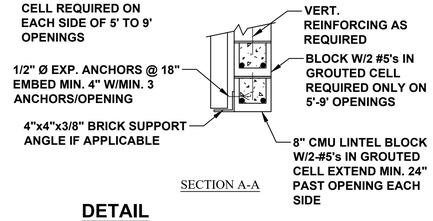
DETAIL
CONTROL JOINT (BOND BEAM SPLICING DETAIL)
SCALE: N.T.S.



DETAIL
MASONRY CONTROL JOINT
SCALE: N.T.S.

NOTE:
RUN BOND BEAM REINFORCEMENT THROUGH CONTROL JOINT





DETAIL
LINTEL 0 - 9' OPENINGS
SCALE: N.T.S.

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

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SHEET TITLE

STRUCTURAL DETAILS 4

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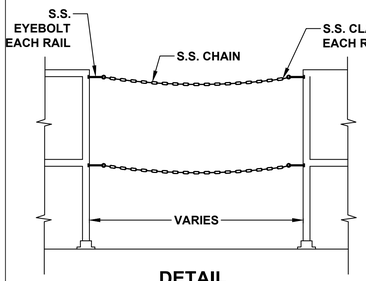
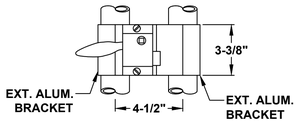
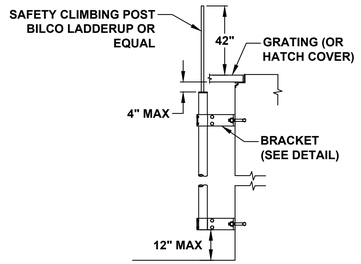


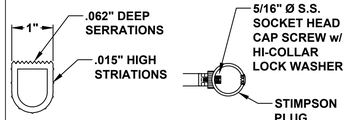
DETAIL
TYPICAL CHAINED OPENING
NOT TO SCALE

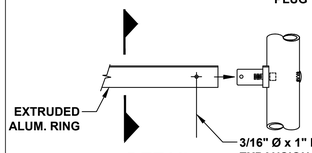


DETAIL
GATE LATCH
NOT TO SCALE



DETAIL
LADDER WITHOUT EXTENSION (TYPE B)
NOT TO SCALE

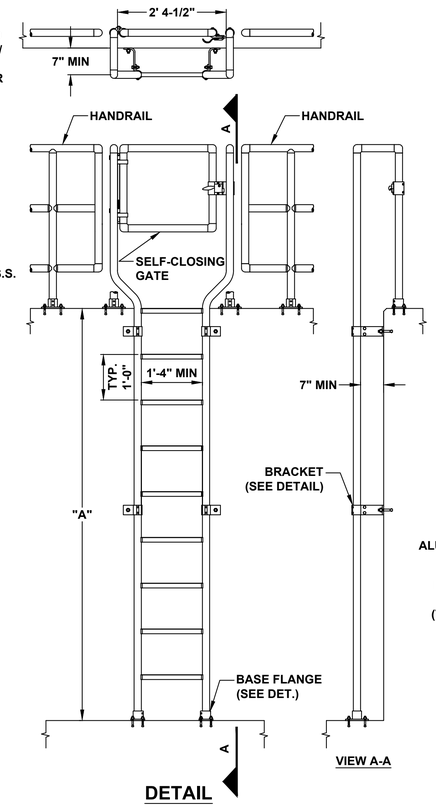




DETAIL
LADDER RUNG
NOT TO SCALE

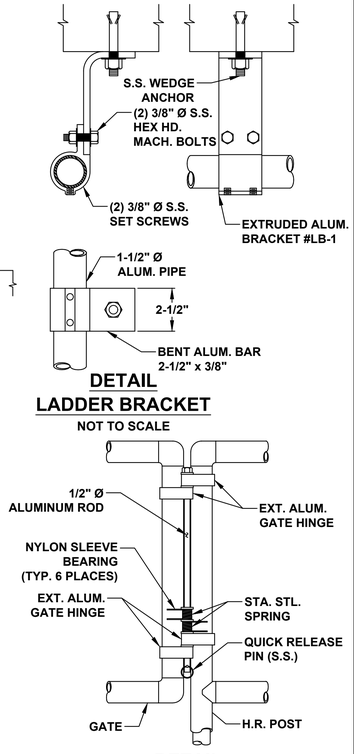
DETAIL
SPLICE
NOT TO SCALE

SPLICE TO BE USED WHEN PIPE LENGTH EXCEEDS 24 FT. FOR ANODIZED PIPE, 30 FT. FOR MILL FINISH. LOCATE SPLICE BELOW SECOND SET OF BRKTS. FROM TOP RUNG.

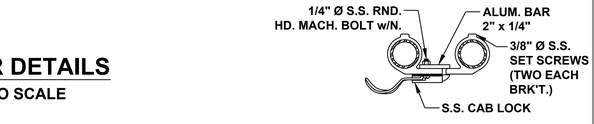


DETAIL
TYPICAL LADDER ELEVATION (TYPE A)
NOT TO SCALE

DETAIL
LADDER BRACKET
NOT TO SCALE



DETAIL
TYPICAL GATE HINGE
NOT TO SCALE

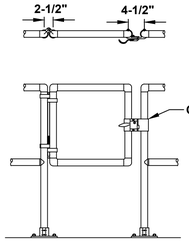


LADDER DETAILS
NOT TO SCALE

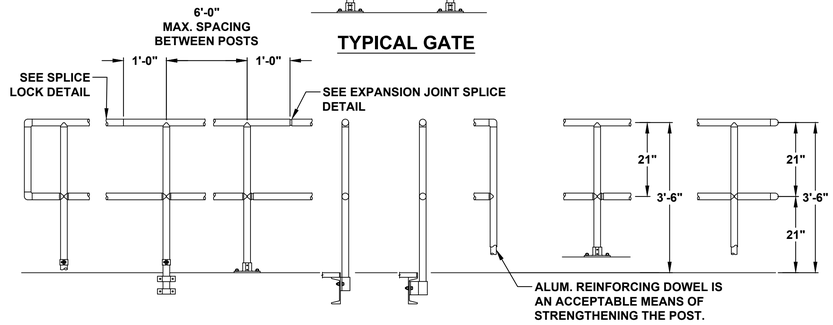
NOTE: CONTRACTOR SHALL VERIFY LADDER LENGTH BEFORE ORDERING.

BRACKET TO WALL LENGTH SHALL BE 12".

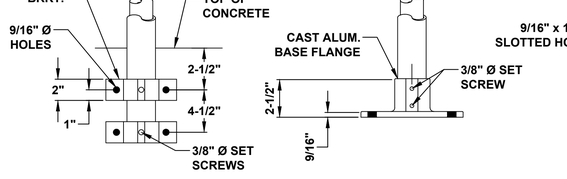
S.S. LADDER SHALL BE BRUSH BLAST FOR ADDITIONAL TEXTURE.

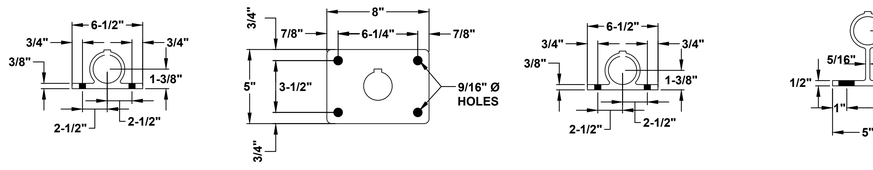


TYPICAL GATE

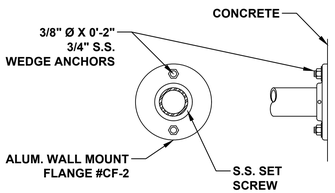


TYPICAL HANDRAIL

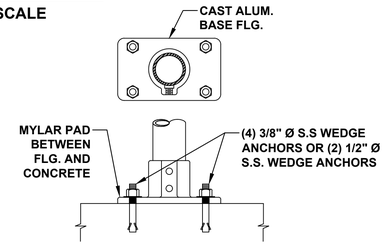




HANDRAIL DETAILS
NOT TO SCALE



DETAIL
WALL FLANGE
NOT TO SCALE



DETAIL
BASE FLANGE
NOT TO SCALE

cEc
CIVIL ENGINEERING CONSULTANTS, INC.
Civil & Environmental Engineering

4994 Lower Roswell Road, Suite 18
Marietta, GA 30068
(770) 977-5747
www.cecincga.com

CLIENT

CITY OF JEFFERSON

APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
1	07/05/2022	CONSTRUCTION READY DOCUMENTS
2		
3		
4		
5		

REVISIONS

No	Date	Description
1		
2		
3		
4		
5		
6		
7		
8		

Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

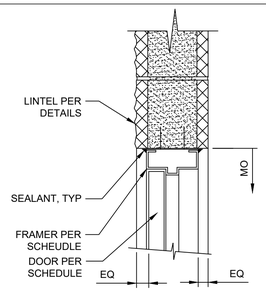
10/05/2021

SHEET TITLE

STRUCTURAL DETAILS 5

DRAWING NUMBER

D-S-5
OF
214



HEAD

A DETAIL

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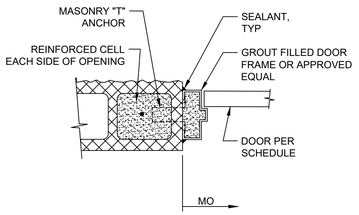
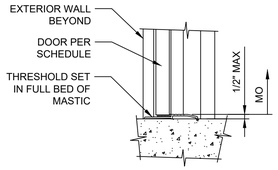


JAMB

B DETAIL

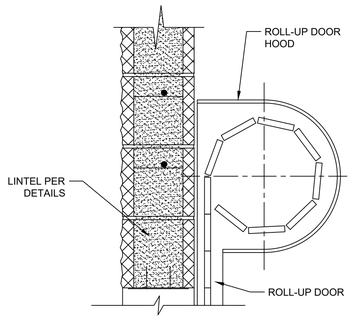
Scale: N.T.S.



THRESHOLD

C DETAIL

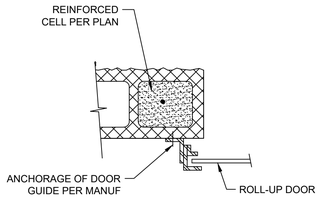
Scale: N.T.S.



HEAD

D DETAIL

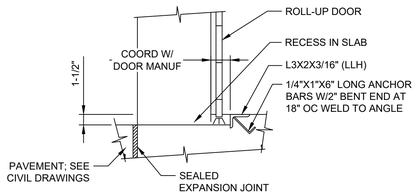
Scale: N.T.S.



JAMB

E DETAIL

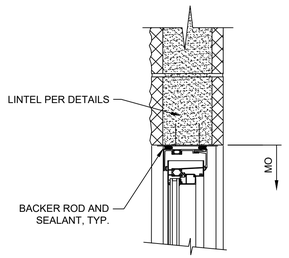
Scale: N.T.S.



THRESHOLD

F DETAIL

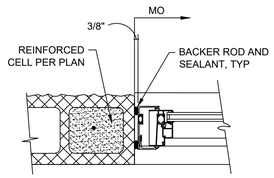
Scale: N.T.S.



HEAD

G DETAIL

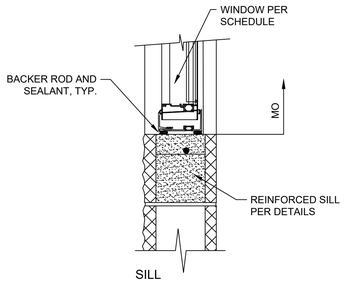
Scale: N.T.S.



JAMB

H DETAIL

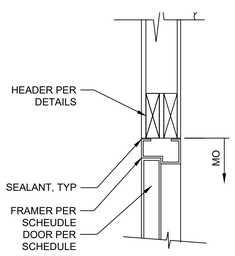
Scale: N.T.S.



SILL

I DETAIL

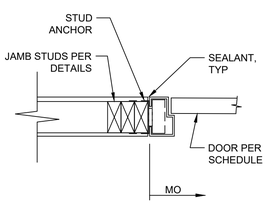
Scale: N.T.S.



HEAD

J DETAIL

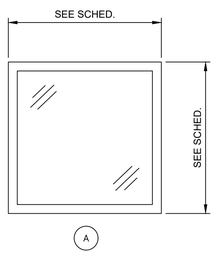
Scale: N.T.S.



JAMB

K DETAIL

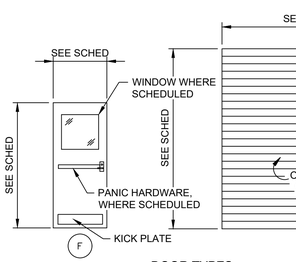
Scale: N.T.S.



WINDOWS TYPES

A ELEVATION

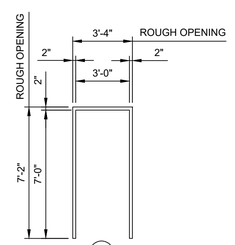
Scale: N.T.S.



DOOR TYPES

B ELEVATION

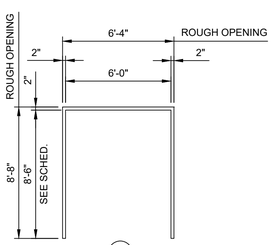
Scale: N.T.S.



DOOR FRAME TYPES

ELEVATIONS

N.T.S.



DOOR FRAME TYPES

C ELEVATION

Scale: N.T.S.

DOOR SCHEDULE

BUILDING	NUMBER	DOOR SIZE		DOOR			FRAME			DETAILS			FIRE RATING (HOURS)	HARD-WARE SET	DESIGN WIND PRESSURE	NOTE NO.
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	TYPE	MAT'L	FIN	HEAD	JAMB	THRES-HOLD				
FLT. COMP. BUILDING	D091	DBL 3'-0"	7'-0"	F	STL	P	B	STL	P	A	B	C	-	B	+25/-25	1
DEWATERING	D141	12'-0"	10'-0"	OH	STL	P	OH	STL	P	D	E	F	-	-	+17/-17	-
	D142	3'-0"	7'-0"	F	STL	P	A	STL	P	A	B	C	-	A	+25/-25	1
CONTROL BUILDING	D171	3'-0"	7'-0"	F	STL	P	A	STL	P	A	B	C	-	A	+25/-25	1
	D172	3'-0"	7'-0"	F	STL	P	A	STL	P	A	B	C	-	C	+25/-25	1
	D173	3'-0"	7'-0"	F	WD	P	A	STL	P	J	K	-	-	D	+25/-25	1
	D174	3'-0"	7'-0"	F	WD	P	A	STL	P	J	K	-	-	E	+25/-25	-
	D175	3'-0"	7'-0"	F	WD	P	A	STL	P	J	K	-	-	F	+25/-25	-
	D176	10'-0"	12'-0"	OH	STL	P	OH	STL	P	D	E	F	-	-	+17/-17	-
ELECTRICAL BUILDING #1	D181	DBL 3'-0"	8'-6"	F	STL	P	B	STL	P	A	B	C	-	B	+25/-25	1
	D182	3'-0"	7'-0"	F	STL	P	C	STL	P	A	B	C	-	A	+25/-25	1
ELECTRICAL BUILDING #2	D182	3'-0"	7'-0"	F	STL	P	C	STL	P	A	B	C	-	A	+25/-25	1

GENERAL NOTES

NOTES:
1 - PROVIDE 24"X34" VIEWING WINDOW
2 - FOR HARDWARE SET DESCRIPTION REFER TO SPECS
3 - PROVIDE HARDWARE SET PER SPECS WITH NON-KEYED PRIVACY BATHROOM FUNCTION.

LIST OF ABBREVIATIONS:
WD = WOOD
STL = GALVANIZED STEEL
FRP = FIBERGLASS REINFORCED PLASTIC
OH = OVERHEAD DOOR
AL = ALUMINUM
SST = STAINLESS STEEL
P = PAINTED

ROOM FINISH SCHEDULE

BUILDING	ROOM NUMBER	ROOM NAME	FLOOR		WALL						CEILING			REFERENCE DWG	
			TYPE	FLOORING	TYPE	NORTH	EAST	SOUTH	WEST	BASE	TYPE	FINISH	HEIGHT	FLOOR PLAN	INTERIOR ELEVATIONS
FLT. COMP. BUILDING	901	DEWATERING ROOM	CONC	SL	CMU	P	P	P	P	N	PLY	P	9'-4"	9-S-4	-
DEWATERING	1401	DEWATERING ROOM	CONC	SL	CMU	P	P	P	P	N	PLY	P	12'-0"	14-S-3	-
	1402	TRUCK BAY	CONC	SL	OPEN	-	-	-	-	N	PLY	P	15'-4"	14-S-3	-
CONTROL BUILDING	1701	OFFICES	CONC	RT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1702	FOYER	CONC	RT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1703	RESTROOMS	CONC	CT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1704	LABORATORY	CONC	RT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1705	BREAK ROOM	CONC	RT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1706	CONFERENCE ROOM	CONC	RT	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
	1707	MAINTENANCE ROOM	CONC	SL	CMU	P	P	P	P	N	GB	P	12'-0"	17-S-2	-
	1708	HVAC/ UTILITIES	CONC	SL	GB	P	P	P	P	N	GB	P	9'-4"	17-S-2	-
ELECTRICAL BUILDING #1	1801	ELECTRICAL ROOM	CONC	SL	CMU	P	P	P	P	N	PLY	P	12'-0"	18-S-1	-
ELECTRICAL BUILDING #2	1802	ELECTRICAL ROOM	CONC	SL	GB	P	P	P	P	N	PLY	P	12'-0"	18-S-3	-

LIST OF ABBREVIATIONS:
CONC = CONCRETE
CMU = EXPOSED CONC BLOCK
CT = THIN-SET CERAMIC TILE
VCT = VINYL COMPOSITION TILE
RT = RESILIENT FLOORING OR LUXURY VINYL TILE
CB = CEMENT BOARD
P = PAINTED OR PRE-FINISHED
AP = ACOUSTICAL PANELS
GB = DENS GLASS GYPSUM BOARD
TB = TILE BACKER BOARD
AT = SUSPENDED ACOUSTIC TILE
PF = EPOXY FLOOR
RB = RUBBER BASE
PLY = PRE-FINISHED BIRCH
VIN = 6" VINYL TRIM BASE
N = NONE
EX = EXPOSED
SL = CONCRETE SEALER
MTL = METAL WALL/ROOF PANEL W/ INSULATION PER PEMB MFR

NOTES:
1. CEMENT BOARD SHALL BE HARDIE PANELS WITH SMOOTH FACE PRIMED FOR PAINT AND ATTACHED W/ COUNTERSUNK GALVANIZED SCREWS AT 12" OC MAXIMUM IN FIELD AND EDGES. SEE MANUFACTURER FOR EDGE DISTANCE AND OTHER FASTENING REQUIREMENTS. LOCATE JOINTS TO HAVE EQUAL PANEL SIZES AT EDGES. SEAL ALL JOINTS WITH PAINTABLE CAULK AND WIPE SMMOTH WITH SURFACE.

WINDOW SCHEDULE

BUILDING	NUMBER	WINDOW SIZE		FRAME			DETAILS			FIRE RATING (HOURS)	DESIGN WIND PRESSURE	
		WIDTH	HEIGHT	TYPE	MAT'L	FIN	HEAD	JAMB	SILL			
DEWATERING	W141	4'-0"	4'-0"	A	AL	SPC	G	H	I	-	+20/-20	
CONTROL BUILDING	W171	4'-0"	4'-0"	A	AL	SPC	G	H	I	-	+20/-20	
	W172	12'-0"	4'-0"	A	AL	SPC	G	H	I	-	+20/-20	
	W173	8'-0"	3'-4"	A	AL	SPC	G	H	I	-	-	

GENERAL NOTES

NOTES:
1. ALL WINDOWS TO BE INSULATED.SEE SPECIFICATION FOR WINDOW REQUIREMENTS.

LIST OF ABBREVIATIONS:
STL = GALVANIZED STEEL
FRP = FIBERGLASS REINFORCED PLASTIC
AL = ALUMINUM
SST = STAINLESS STEEL
P = PAINTED/PRE-FINISHED
SPC = PER SPECS

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APPROVAL STAMP

GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELOCK

RELEASES

No	Date	Description
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REVISIONS

No	Date	Description
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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

10/05/2021

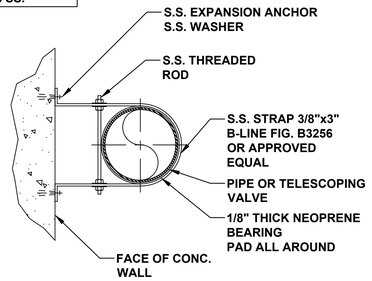
SHEET TITLE

STRUCTURAL DETAILS 6

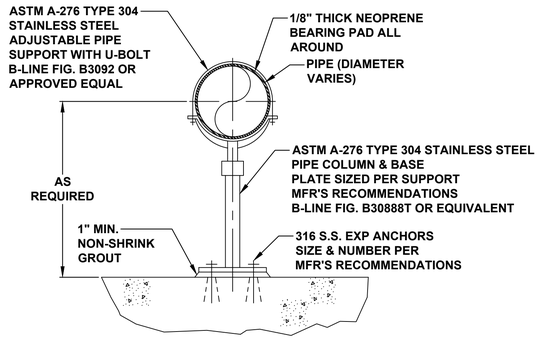
DRAWING NUMBER

D-S-6
OF
214

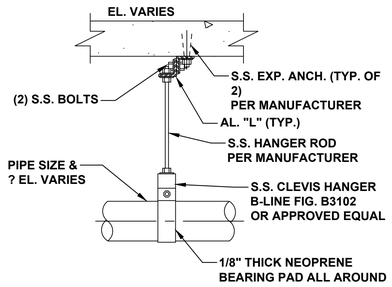
NOTE:
1. ALL PIPE SUPPORTS AND ASSOCIATED HARDWARE SHALL BE 316 SS.



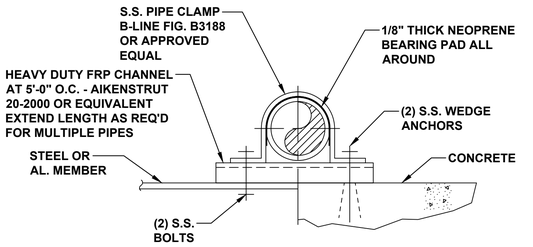
DETAIL
PIPE STAND-OFF BRACKET - TYPE 1
SCALE: N.T.S.



DETAIL
PIPE SUPPORT - TYPE 2
SCALE: N.T.S.

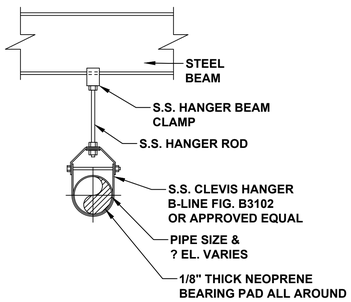


DETAIL
PIPE SUPPORT - TYPE 3
SCALE: N.T.S.

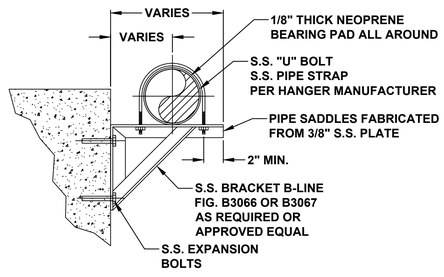


NOTE:
USE THIS DETAIL FOR SMALL DIA. PIPING OR CONDUIT ATTACHED TO CONCRETE SLAB, WALL, CEILING, METAL FRAMING MEMBERS OR EQUIPMENT MOUNTING BOARDS.

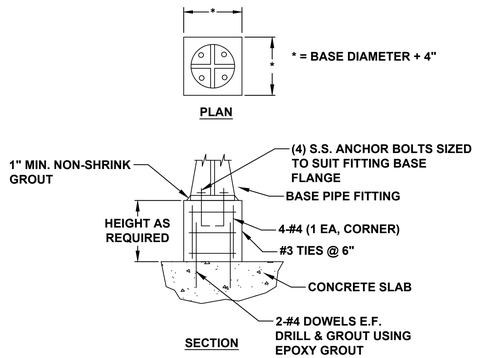
DETAIL
PIPE SUPPORT - TYPE 4
SCALE: N.T.S.



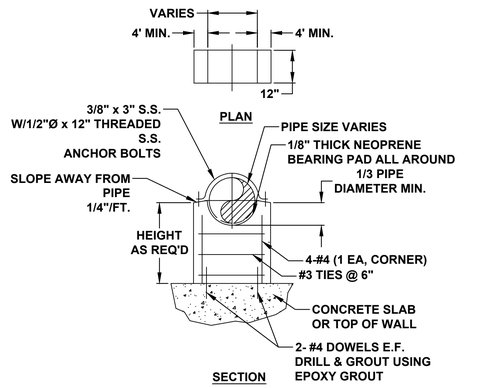
DETAIL
PIPE SUPPORT - TYPE 5
SCALE: N.T.S.



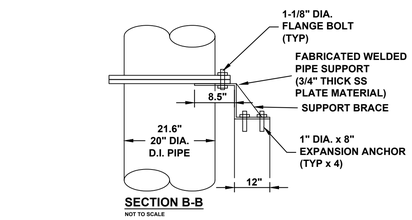
DETAIL
PIPE SUPPORT - TYPE 6
SCALE: N.T.S.

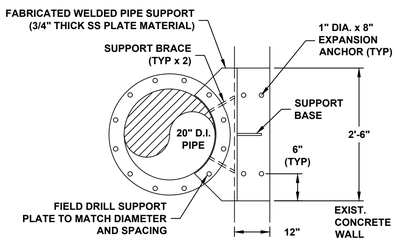


DETAIL
PIPE SUPPORT - TYPE 7
SCALE: N.T.S.

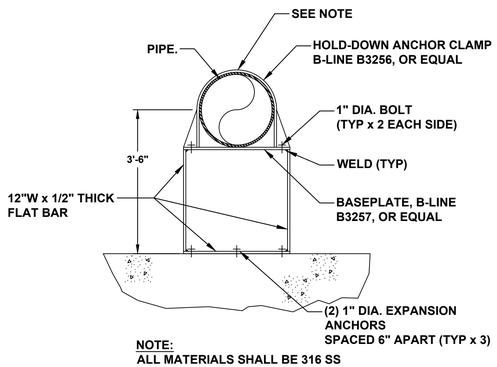


DETAIL
PIPE SUPPORT - TYPE 8
SCALE: N.T.S.



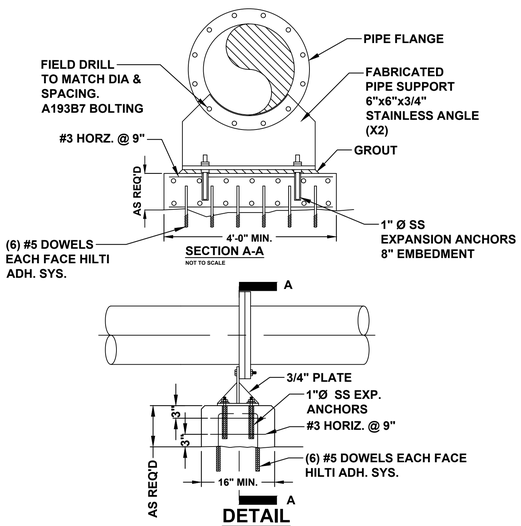


DETAIL
PIPE SUPPORT - TYPE 9
SCALE: N.T.S.

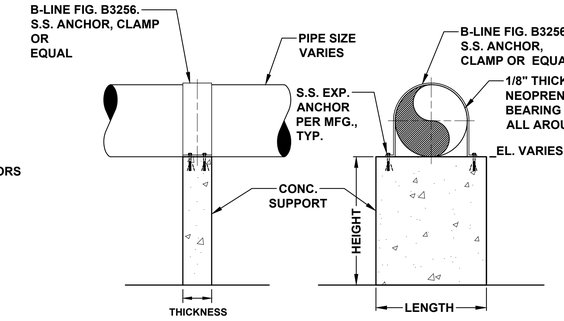


NOTE:
ALL MATERIALS SHALL BE 316 SS

DETAIL
PIPE SUPPORT - TYPE 10
SCALE: N.T.S.



DETAIL
PIPE SUPPORT - TYPE 11
SCALE: N.T.S.



NOTE: LOCATE STEEL IN CONCRETE SLABPRIOR DRILLING ANCHOR

DETAIL
PIPE SUPPORT - TYPE 12
SCALE: N.T.S.

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GEORGIA REGISTERED NO. 27817 PROFESSIONAL ENGINEER ANDREW ERIC LOVELESS

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Designed By : CKB

Drawn By : JWN

Checked By : CKB

Scale : SEE DETAIL

PROJECT NAME

JEFFERSON I-85 1.0 MGD WATER RECLAMATION FACILITY

PROJECT INCEPTION DATE

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SHEET TITLE

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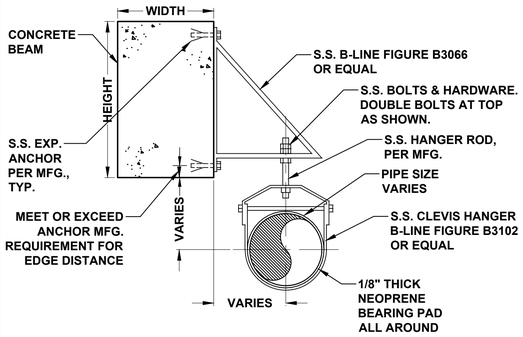
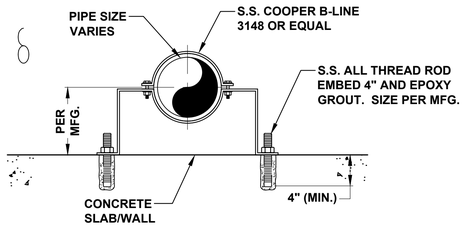
214

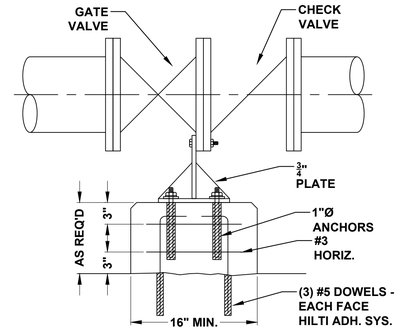
NOTE:
1. ALL PIPE SUPPORTS AND ASSOCIATED HARDWARE SHALL BE 316 SS.



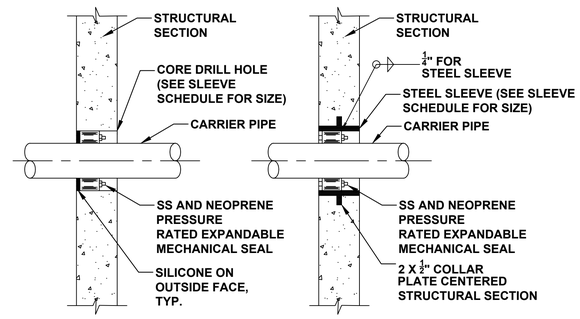
DETAIL
PIPE SUPPORT - TYPE 13
SCALE: N.T.S.



DETAIL
PIPE SUPPORT - TYPE 14
SCALE: N.T.S.



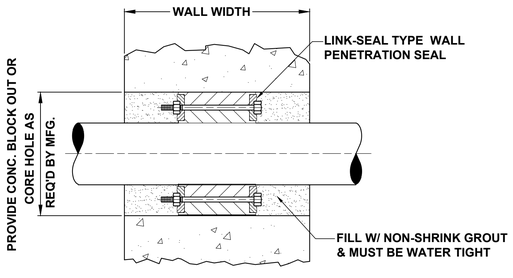
DETAIL
FLANGE TYPE PIPE SUPPORT
SCALE: N.T.S.



SLEEVE SCHEDULE				
CARRIER PIPE			STEEL SLEEVE INSIDE DIAMETER (INCHES)	CORE DRILLED HOLE INSIDE DIAMETER (INCHES)
NOMINAL DIAMETER INCHES	MATERIAL	OUTSIDE DIAMETER INCHES		
1/2	SCH. 80 PVC	0.84	2.067	2
3/4	SCH. 80 PVC	1.05	2.067	3.0
1	SCH. 80 PVC	1.315	2.469	2.5
1 1/2	SCH. 80 PVC	1.90	4.026	4
2	SCH. 80 PVC	2.38	4.026	4
3	SCH. 80 PVC	3.50	5.047	5
4	SCH. 80 PVC	4.5	6.065	6
6	D.I.	9.60	10.02	10
8	D.I.	9.05	12.0	12
10	D.I.	11.10	13.25	14
12	D.I.	13.20	15.25	16
16	D.I.	17.40	19.25	20
18	D.I.	19.50	23.25	24
24	D.I.	25.80	29.25	30
36	D.I.	38.30	43.25	43
42	D.I.	44.50	47.25	48

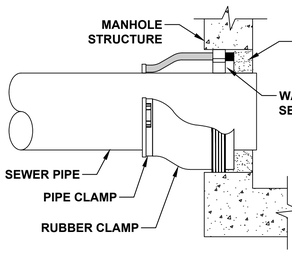
NOTES:
1. INSTALL SEALS FROM DRY SIDE OF PENETRATION. WET SIDE FILLED WITH WATERPROOF NON-SHRINK GROUT.

2. LINK SEAL SHALL HAVE EPDM SEAL ELEMENTS REINFORCED NYLON POLYMER PRESSURE PLATES AND 316 SS BOLTS AND NUTS AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC. (PSI).

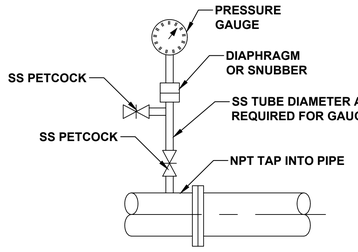


NOTE:
CONTRACTOR TO CORE WALL AND INSTALL LINK-SEAL (OR EQUAL) PER MANUFACTURER'S SPECIFICATIONS

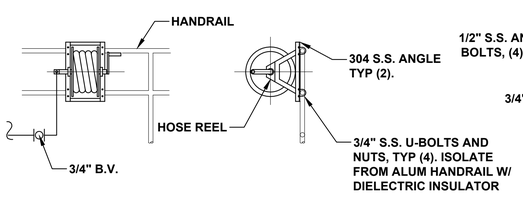
DETAIL
TYPICAL LINK-SEAL CONNECTION
SCALE: N.T.S.



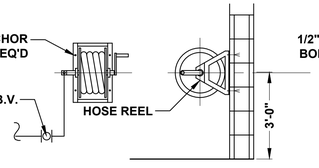
DETAIL
MANHOLE RUBBER BOOT CONNECTION DETAIL
SCALE: N.T.S.



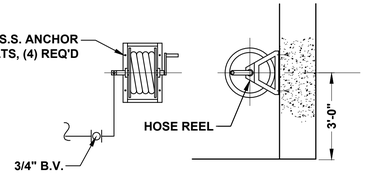
DETAIL
TYPICAL PRESSURE GAUGE INSTALLATION
SCALE: N.T.S.



HANDRAIL MOUNT
NOT TO SCALE



CMU WALL MOUNT
NOT TO SCALE

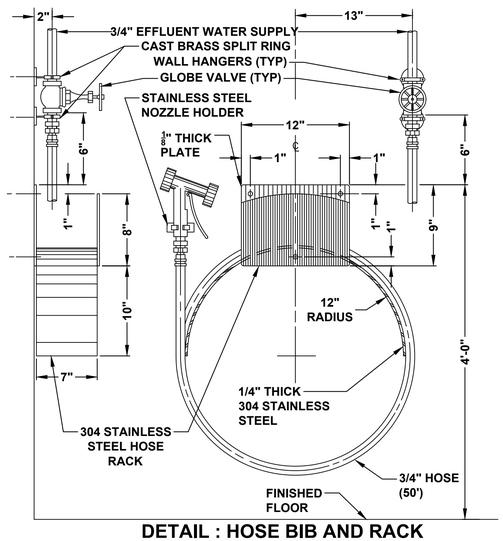


CONCRETE WALL MOUNT
NOT TO SCALE

NOTE:
HOSE REEL TO BE HANNAY REELS INC, MODEL SS1816-17-18, 304L STAINLESS STEEL, MILL FINISH, 300PSI MIN RATING, DIRECT CRANK REWIND, 90° S.S. SWIVEL JOINT WITH 1" FNPT INLET, 3/4" FNPT OUTLET. PROVIDE EACH REEL WITH 50' 3/4" INDUSTRIAL QUALITY HOSE RATED 300 PSI.

DETAIL
HOSE BIB AND RACK
SCALE: N.T.S.

DETAIL
LINK SEAL WALL PENETRATION
SCALE: N.T.S.



DETAIL : HOSE BIB AND RACK
SCALE: N.T.S.

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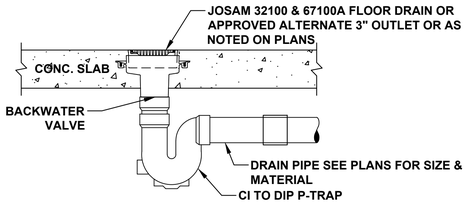
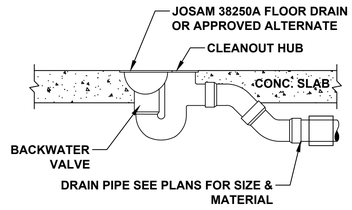


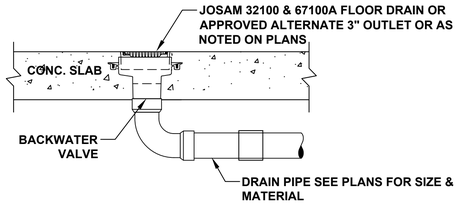
- NO HUB COUPLING SHALL BE CHARLOTTE NO.NH-1 OR EQUAL
-CI TO DIP TRANSITION ADAPTOR SHALL BE MISSION RUBBER MR51SERIES OR EQUAL

DETAIL
FLOOR DRAIN TYPE "A"
SCALE: N.T.S.



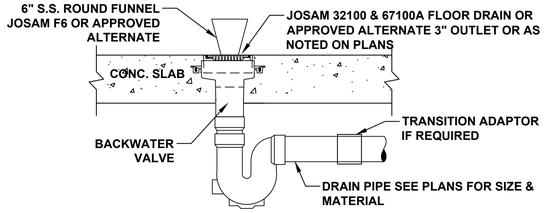
- NO HUB COUPLING SHALL BE CHARLOTTE NO.NH-1 OR EQUAL
-CI TO DIP TRANSITION ADAPTOR SHALL BE MISSION RUBBER MR51SERIES OR EQUAL

DETAIL
FLOOR DRAIN TYPE "B"
SCALE: N.T.S.



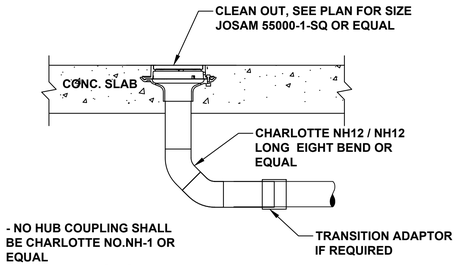
- NO HUB COUPLING SHALL BE CHARLOTTE NO.NH-1 OR EQUAL
-CI TO DIP TRANSITION ADAPTOR SHALL BE MISSION RUBBER MR51SERIES OR EQUAL

DETAIL
FLOOR DRAIN TYPE "C"
SCALE: N.T.S.



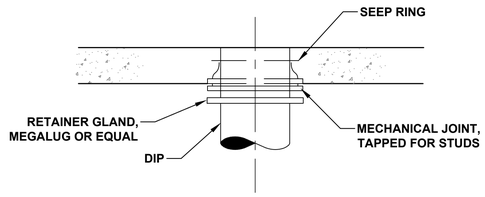
- NO HUB COUPLING SHALL BE CHARLOTTE NO.NH-1 OR EQUAL
-CI TO DIP TRANSITION ADAPTOR SHALL BE MISSION RUBBER MR51SERIES OR EQUAL

DETAIL
FLOOR DRAIN TYPE "D"
SCALE: N.T.S.

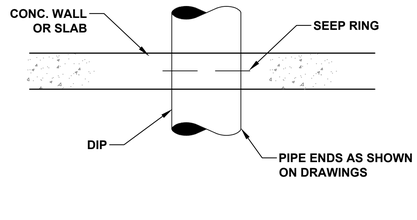


- NO HUB COUPLING SHALL BE CHARLOTTE NO.NH-1 OR EQUAL
-CI TO DIP TRANSITION ADAPTOR SHALL BE MISSION RUBBER MR51SERIES OR EQUAL

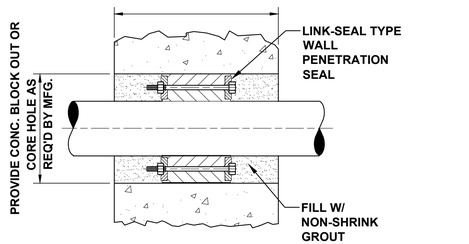
DETAIL
CLEAN OUT
SCALE: N.T.S.



DETAIL
WALL SLEEVE
SCALE: N.T.S.



DETAIL
WALL PIPE
SCALE: N.T.S.

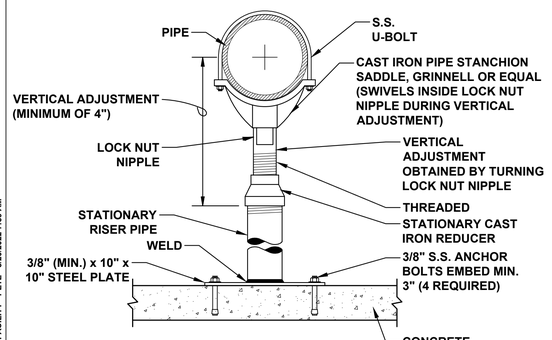


TYPICAL LINK-SEAL CONNECTION DETAIL

NOT TO SCALE

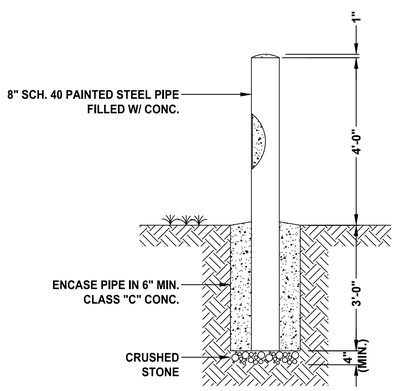
NOTE:
CONTRACTOR TO CORE WALL AND INSTALL LINK-SEAL (OR EQUAL) PER MANUFACTURER'S SPECIFICATIONS

DETAIL
LINK SEAL WALL PENETRATION
SCALE: N.T.S.

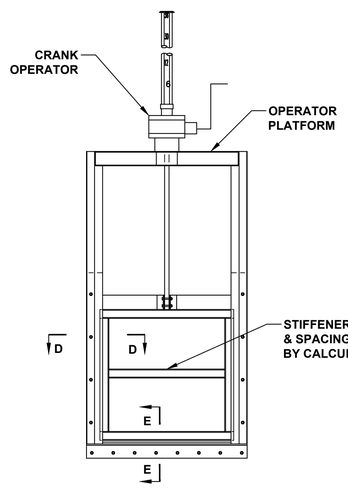


NOTES:
1. LOCK NUT NIPPLE AND RISER PIPE SIZES TO BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS FOR SIZE OF PIPE BEING SUPPORTED.
2. PIPE SUPPORTS SHALL BE SANDBLASTED, PRIMED AND PAINTED IN ACCORDANCE WITH THE SPECIFICATIONS.

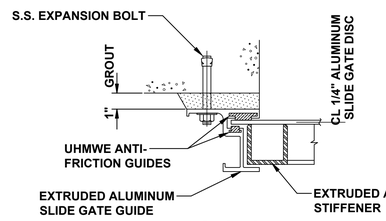
DETAIL
PIPE SUPPORT
SCALE: N.T.S.



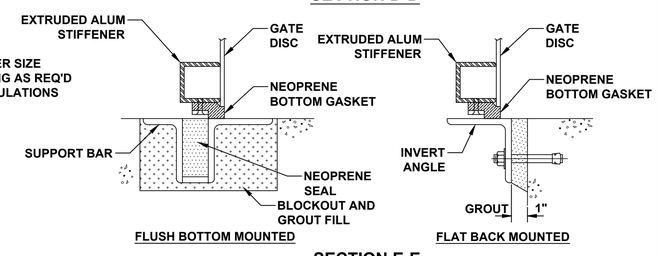
DETAIL
PIPE BOLLARD
SCALE: N.T.S.



SLIDE GATE
SELF CONTAINED



SECTION D-D



SECTION E-E

DETAIL: SLIDE GATE
SCALE: N.T.S.

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