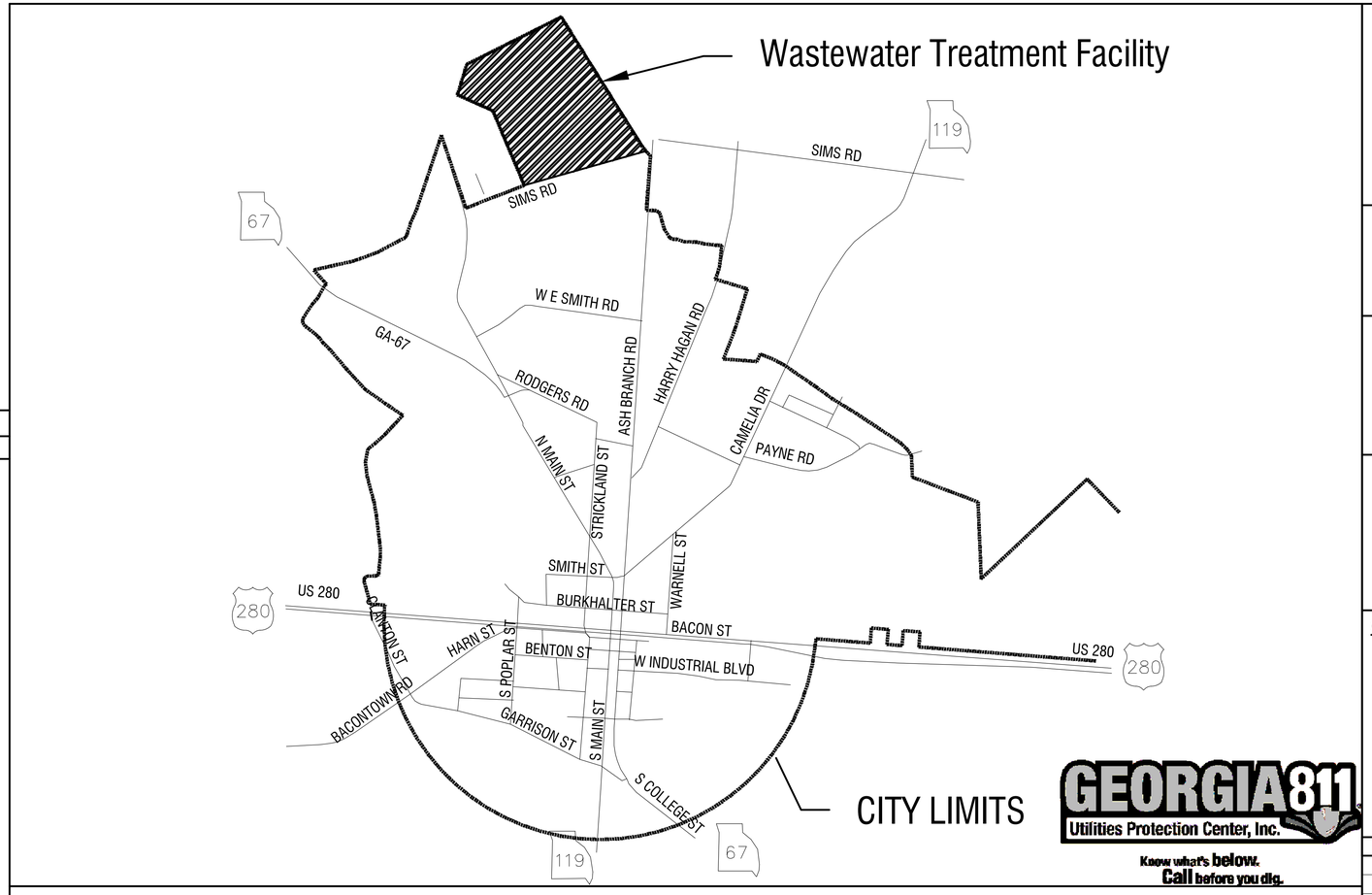
MECHANICAL WASTEWATER TREATMENT PLANT
FOR CITY OF PEMBROKE
BRYAN COUNTY, GEORGIA
DATE: JUNE 2, 2024



VICINITY MAP
Not To Scale

DRAWING LEGEND

DESCRIPTION	PROPOSED	EXISTING
SANITARY SEWER		SS
UNDERGROUND WATER LINE	W	W
FORCE MAIN	FM	FM
STORM DRAINAGE PIPE		
UNDERGROUND TELEPHONE LINE	T	T
UNDERGROUND TELEPHONE CONDUIT	TC	TC
UNDERGROUND GAS LINE	12"G	12"G
DITCH CENTERLINE		
SPOT ELEVATION	X=90.00	X=90.00
TOP OF CURB ELEVATION	TC=90.00	TC=90.00
FIRE HYDRANT	circular block ref ""	
SEWER MANHOLE		S
WATER VALVE		W
TELEPHONE MANHOLE		T
LIGHT POLE		
SIGN		
WATER METER		
BENCHMARK		
CONCRETE MONUMENT FOUND		
GUY POLE		
IRON PIN FOUND		
IRON PIN SET		
TELEPHONE PEDESTAL		
POWER POLE		
HANDICAP SPACE		
SEDIMENT BASIN MARKER W/NOTCH	SM	SM

MINIMUM PROJECT SPECIFICATIONS

ANY JOB DESIGNED BY M.E. SACK ENGINEERING SHALL BE CONSTRUCTED IN ACCORDANCE WITH M.E. SACK ENGINEERING MINIMUM SPECIFICATIONS. IN MUNICIPALITIES WITH THEIR OWN SPECIFICATIONS, THEIR SPECIFICATIONS SHALL SUPERSEDE THE MINIMUM SPECIFICATIONS. LIKEWISE, PROJECTS THAT ARE BID SHALL BE HELD TO THE SPECIFICATIONS WITHIN THE BID DOCUMENT WHICH MAY DIFFER FROM THE MINIMUM SPECIFICATION REQUIREMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THEY HAVE THE APPROPRIATE SPECIFICATIONS FOR EACH PROJECT. OBTAIN THE MINIMUM STANDARDS BY SCANNING THE QR CODE OR CLICKING THIS LINK: https://www.mesack.com/technical-specification/

CONTACT ADMIN@MESACK.COM TO REQUEST CONFIRMATION OF CORRECT SPECIFICATIONS AT ANYTIME.

OWNER:
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160 N. Main St
Pembroke, GA 31321
(912) 653-4413
streets@pembrokega.net

GPS COORDINATES OF CO:
E: 32.171667°
N: -81.623611°

DATUM: NAVD88

24 HOUR CONTACT:
Keith Cook
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DESIGN PROFESSIONAL:

GEORGIA REGISTERED No. 033014 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: 6/5/2025

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10375 FORD AVENUE
UNIT A-2
RICHMOND HILL, GA 31324

GENERAL NOTES

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

GEORGIA 811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

JOB NO. 2020-48 PRJ

REVISION NO.	DATE	DESCRIPTION
1	10/02/2024	SBR TANK SIZE ADJUSTMENT
2	11/03/2024	GSWCC EROSION CONTROL REVISIONS
3	05/19/2024	ADDENDUM 1
4	06/05/2024	ADDENDUM 2

COVER SHEET

PLOT DATE: June 5, 2025

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REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

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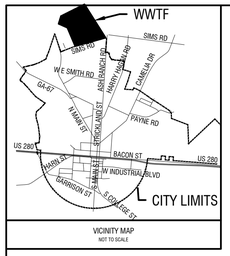
WASTEWATER TREATMENT PLANT EXPANSION

INDEX OF DRAWINGS

G1

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

PROPERTY LINE
150' BUFFER ZONE BOUNDARY
WETLANDS (0.52 AC)
WETLANDS (4.70 AC)
WETLANDS (3.06 AC)
EXISTING DITCH
EX 6" UNDERDRAIN
EXISTING ROAD
EXISTING POND
EX UPGRADIENT MONITORING WELL "U1"
EX MH-14
EX MH-16
EX MH-17
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EX MH-13
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EXISTING DITCH
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EX WETTED AREA MONITORING WELL "M6"
EX WETTED AREA MONITORING WELL "M10"
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WETLANDS (5.18 AC)
EX WETTED AREA MONITORING WELL "M1"
150' BUFFER ZONE BOUNDARY
EX UPGRADIENT MONITORING WELL "U2"
SIMS ROAD
EX DOWN GRADIENT MONITORING WELL "D2"
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EXISTING CREEK
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EXISTING WATER MAIN
EXISTING INFLUENT DUAL FORCE MAIN
EXISTING 8" LAS FORCE MAIN
150' BUFFER ZONE BOUNDARY
EXISTING HEADWORKS
EXISTING CARPORT AND STORAGE BUILDING
EXISTING LAS PUMP STATION
4'X8' CONSTRUCTION SIGN MUST INCLUDE:
1. CONSTRUCTION SITE NAME
2. PERMITTEE
3. CONTACT PERSONS W/ TELEPHONE #
4. PERMITTEE-HOSTED WEBSITE WHERE PLANS CAN BE VIEWED. (SEE DETAILS)

SPRAY FIELD ONE
SPRAY FIELD TWO
SPRAY FIELD THREE
SPRAY FIELD FOUR
SPRAY FIELD FIVE
SPRAY FIELD SIX

TREATMENT PONDS
FC-1
FC-2
FC-3
FC-4
FC-5
FC-6
FC-7

STORAGE POND
BOTTOM ELEV. = 93.67'
WATER SURFACE WHEN FULL ELEV. = 99.0'
CAPACITY = 6.8 MILLION GAL. PLUS 3' FREEBOARD

EX. RETENTION POND
BOTTOM ELEV. = 82.0'
WATER SURFACE WHEN FULL ELEV. = 94.0'
CAPACITY = 12.5 MILLION GAL. PLUS 3' FREEBOARD

SCALE BAR: 1"= 150'
150 0 75 150 300 600

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

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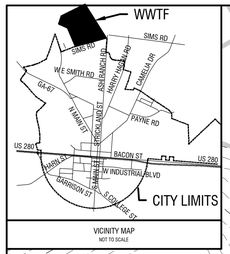
WASTEWATER TREATMENT PLANT EXPANSION

OVERALL EXISTING CONDITIONS

G2

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

EX. TREATMENT POND 1

FC-1

EX. HEADWORKS

EX. HEADWORKS CONTROL PANEL

EX. DIRT ROAD

DR-RUN-15

EX. FIRE HYDRANT ASSEMBLY

EXISTING 10" FORCE MAIN

EX. WATER LINE

EX. OPERATIONS BUILDING

EXISTING 15 HP AERATOR

FC-2

EX. GENERATOR

EXISTING 4" WELL

EXISTING CARPORT AND STORAGE BUILDING

EXISTING INFLUENT FORCE MAIN

EXISTING DRAINAGE DITCH

EXISTING 150' BUFFER ZONE BOUNDARY FOR LAS FIELDS

EXISTING DRAINAGE DITCH

EXISTING INFLUENT FORCE MAIN

EXISTING LAS FORCE MAIN

EXISTING 15 HP AERATOR

EX. DIRT ROAD

EX. TREATMENT POND 3

EX STORM DRAINAGE

EX. LIFT STATION CONTROL PANEL

EX. GATE VALVE TO SPRAY FIELDS 2,3,4 & 5

EX. GATE VALVE TO SPRAY FIELDS 1 & 6

EX. WATER METER CONTROL PANEL

EX. VALVE BOX (SEE DETAIL SHEET)

EXISTING 15 HP AERATOR

EX. LIFT STATION

EX. REDUCED PRESSURE BACKFLOW DEVICE

EXISTING FORCE MAIN

EX. 1" WATER METER

EX. 4" GATE VALVE

EX. 4" WATER MAIN

EXISTING LAS EFFLUENT STORAGE LINE

EXISTING LAS EFFLUENT STORAGE LINE

EXISTING STORM DRAINAGE

DR-RUN-13

SCALE BAR: 1"= 20'
20 0 10 20 40 80

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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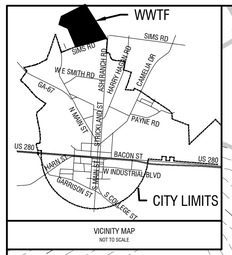
WASTEWATER TREATMENT PLANT EXPANSION

SITE EXISTING CONDITIONS

G3

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

EX. TREATMENT POND 1

EX. TREATMENT POND 3

FC-1

FC-2

FC-7

DEMOLISH EXISTING HEADWORKS

EX. HEADWORKS

EX. HEADWORKS CONTROL PANEL

REMOVE HEADWORKS CONTROL PANEL

REMOVE EXISTING MANHOLE AND BACKFILL HOLE

REMOVE FORCE MAIN FROM EXISTING MANHOLE (CAP & FILL FOR REMOVAL

EXISTING 10" FORCE MAIN

EX. FIRE HYDRANT ASSEMBLY

REMOVE FIRE HYDRANT

EX. WATER LINE

215 LF 10" PVC @ 0.19%

135 LF 10" PVC @ 0.04%

CUT AND REMOVE FORCE MAIN FROM OPERATIONS BUILDING

EX. OPERATIONS BUILDING

EX. GENERATOR

EXISTING 15 HP AERATOR

EXISTING 15 HP AERATOR

EXISTING 15 HP AERATOR

REMOVE GRAVEL ROAD

REMOVE GRAVEL ROAD

PLUG AND SEAL THE WELL. FILL WITH SAND AND GRAVEL AND 2 FT OF CONCRETE ON TOP

EXISTING 4" WELL

DEMOLISH EXISTING CARPORT AND STORAGE BUILDING INCLUDING WATER AND SEWER LINES

EXISTING INFLUENT FORCE MAIN

EXISTING INFLUENT FORCE MAIN

CUT AND REMOVE EXISTING 8" LAS FORCE MAIN

EXISTING LAS FORCE MAIN

REMOVE WATER LINE

192 LF 10" PVC @ 0.50%

EX. DIRT ROAD

EX. DIRT ROAD

EX. DIRT ROAD

REMOVE DRAINAGE PIPE

19LF 10" @ 0.98%

DEMOLISH EXISTING CONCRETE PAD

REMOVE GRAVEL ROAD

EXISTING 150' BUFFER ZONE BOUNDARY FOR LAS FIELDS

EXISTING DRAINAGE DITCH

EXISTING DRAINAGE DITCH

REMOVE EXISTING 18" DRAINAGE PIPE

EX. GATE VALVE TO SPRAY FIELDS 2,3,4 & 5

EX. GATE VALVE TO SPRAY FIELDS 1 & 6

EX. VALVE BOX (SEE DETAIL SHEET)

EX. LIFT STATION CONTROL PANEL

EX. WATER METER CONTROL PANEL

EX. LIFT STATION

EX. REDUCED PRESSURE BACKFLOW DEVICE

EX. 6" WATER METER

EX. 4" GATE VALVE

EX. 4" WATER MAIN

REMOVE EXISTING DRAINAGE DITCH

EXISTING FORCE MAIN

EXISTING LAS EFFLUENT STORAGE LINE

EXISTING LAS EFFLUENT STORAGE LINE

EXISTING STORM DRAINAGE

CUT EXISTING 8" INFLUENT FORCE MAIN AND TIE INTO PROPOSED FM

183 LF 10" PVC @ 1.31%

WIDEN ROAD AND INCREASE TURN RADIUS

120 LF 24" REINFORCED CONCRETE PIPE @ 0.48%

DR-RUN-13

NOTES:

1. ALL EROSION AND SEDIMENT CONTROL ON THE PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL MANUAL FOR GEORGIA.
2. THE WASTEWATER TREATMENT PLANT MUST CONTINUE OPERATION FOR THE DURATION OF THE PROJECT. CLOSE COORDINATION WITH OPERATIONS PERSONNEL IS REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES OR EXPENSE CAUSED BY INTERRUPTION, OR BY FAILING TO MAINTAIN INTEGRITY OF THE TREATMENT PROCESS. INTERRUPTION OF THE PLANT OPERATIONS WILL NOT BE TOLERATED.
3. EXCEPT IN AN EMERGENCY, OPERATION OF ANY ISOLATION OR PROCESS VALVES OR EQUIPMENT CAN ONLY BE PERFORMED BY OPERATIONS PERSONNEL.
4. RELOCATION AND REMOVAL OF EQUIPMENT WILL REQUIRE COORDINATION WITH OPERATIONS PERSONNEL. COORDINATE DEMOLITION WORK WITH OPERATIONS MANAGER.
4. THE EXISTING HEADWORKS & EXISTING INFLUENT FORCEMAINS SHALL BE REMOVED ONLY AFTER THE BYPASS 10" DUAL INFLUENT FORCEMAINS ARE CONNECTED AND OPERATIONAL.
5. THE EXISTING WATERLINE AND 8" LAS FORCEMAIN SHALL BE REMOVED ONLY AFTER THE 4" WATERLINE AND 10" LAS FORCEMAIN SHOWN IN THE PHASE I SITE PLAN ARE CONNECTED AND OPERATIONAL.
6. REMOVE EXISTING HEADWORKS AND MANHOLE AFTER THE INFLUENT FORCE MAIN IS REROUTED TO THE PROPOSED VALVES. THE 8" LAS FORCEMAIN (PROPOSED 10"), INFLUENT FORCEMAIN, AND 4" WATERLINE SHALL BE REROUTED PRIOR TO CONSTRUCTION OF TREATMENT FACILITY.
7. THE EXISTING CARPORT AND STORAGE AREA SHALL BE DEMOLISHED AND REMOVED FROM SITE PRIOR TO CONSTRUCTION.
8. THE CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THE RELOCATION OF THE FIBER LINE PRIOR TO CONSTRUCTION.

SCALE BAR: 1"= 20'
20 0 10 20 40 80

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035581 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 18 00

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
BRYAN

OWNER:
City of Pembroke
353 N Main St
Pembroke, GA 31321
(912) 653-4413
streets@pembrokega.net

24 HOUR CONTACT:
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streets@pembrokega.net

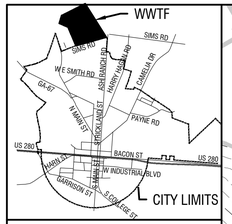
WASTEWATER TREATMENT PLANT EXPANSION

DEMOLITION PLAN

G4

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

215 LF 10" PVC @ 0.19%

135 LF 10" PVC @ 0.04%

192 LF 10" PVC @ 0.50%

183 LF 10" PVC @ 1.31%

PLUG VALVE FOR PHASE II CONNECTION TO HEADWORKS

FREEZE PROOF HYDRANT

4" WATER LINE

1" WL LATERAL

HYDRANT ASSEMBLY

DUAL BYPASS INFLUENT FORCEMAIN

10" LAS FORCEMAIN

2-EA. 10" PLUG VALVE FOR PHASE II CONNECTION TO HEADWORKS

EX. TREATMENT POND 3

FC-7

NOTES:

1. ALL EROSION AND SEDIMENT CONTROL ON THE PROJECT SHALL BE IN STRICT ACCORDANCE WITH THE EROSION AND SEDIMENT CONTROL MANUAL FOR GEORGIA.
2. THE WASTEWATER TREATMENT PLANT MUST CONTINUE OPERATION FOR THE DURATION OF THE PROJECT. CLOSE COORDINATION WITH OPERATIONS PERSONNEL IS REQUIRED. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY FINES OR EXPENSE CAUSED BY INTERRUPTION, OR BY FAILING TO MAINTAIN INTEGRITY OF THE TREATMENT PROCESS. INTERRUPTION OF THE PLANT OPERATIONS WILL NOT BE TOLERATED.
3. EXCEPT IN AN EMERGENCY, OPERATION OF ANY ISOLATION OR PROCESS VALVES OR EQUIPMENT CAN ONLY BE PERFORMED BY OPERATIONS PERSONNEL.
4. THE EXISTING HEADWORKS & EXISTING 8" FORCEMAINS SHALL BE REMOVED ONLY AFTER THE BYPASS 10" DUAL INFLUENT FORCEMAINS ARE CONNECTED AND OPERATIONAL.
5. THE BYPASS INFLUENT FORCEMAIN SHALL BE ABANDONED AFTER NEW HEADWORKS SYSTEM IS BUILT AND OPERATIONAL. THE 10" LAS FORCEMAIN, INFLUENT FORCEMAIN, AND 4" WATERLINE SHOWN IN THE PHASE 1 SITE PLAN SHALL BE CONNECTED AND OPERATIONAL PRIOR TO CONSTRUCTION OF TREATMENT FACILITY.

SCALE BAR: 1"= 20'
20 0 10 20 40 80

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33556 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 18 80

MUNICIPALITY:
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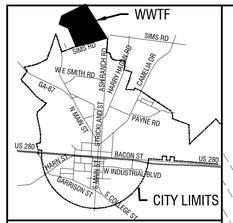
WASTEWATER TREATMENT PLANT EXPANSION

SITE PLAN PHASE I

G5

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

TREATMENT POND #1
TREATMENT POND #3
OPERATIONS BUILDING
MCC ROOM
BACKUP POWER GENERATOR
MAINTENANCE SHOP
YARD SPIGOT
2" LATERAL
4" DRAIN LINE
6" AIR LINE
10" SBR INFLUENT
8" DRAIN LINE
4" WATER LINE
6" NPRL
FUTURE EXPANSION
BELT PRESS BUILDING
CHEMICAL BUILDING
SBR BASIN #2
SBR BASIN #1
DIGESTER
POST EQ BASIN
FUTURE EXPANSION AREA
8" TREATMENT POND INFLUENT
EXISTING 10" LAS FM
10" LAS FM
10" SBR INFLUENT
42" BOLLARDS
INFLUENT PUMP STATION
GRIT SEPARATION SYSTEM
50' UNDISTURBED BUFFER ZONE BOUNDARY FOR MECHANICAL WWTP
HEADWORKS
2" DRAIN LINE
BLOWER BUILDING
FUTURE EXPANSION
12" FILTER REJECT
REJECT PUMP STATION
TRUCK DUMP STATION
TERTIARY FILTRATION
10" INFLUENT FM
4" UNDERDRAIN FM
UV DISINFECTION
RECLAIMED WATER PUMP STATION
12" EFFLUENT DISCHARGE
EXISTING LAS VALVE VAULT
EXISTING LAS PUMP STATION
12" GRAVITY DISCHARGE
10" PVC PIPE
TREATMENT POND EFFLUENT STORAGE

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33611 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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COUNTY:
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OWNER:
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WASTEWATER TREATMENT PLANT EXPANSION

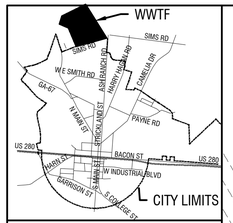
SITE PLAN
PHASE II

G6

SCALE BAR: 1"=15'
15 0 7.5 15 30 60

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

TREATMENT POND #1
TREATMENT POND #3
OPERATIONS BUILDING
MCC ROOM
BACKUP POWER GENERATOR
MAINTENANCE SHOP
YARD SPIGOT
2" LATERAL
SBR BASIN #1
SBR BASIN #2
DIGESTER
POST EQ BASIN
FUTURE EXPANSION AREA
BELT PRESS BUILDING
FUTURE EXPANSION
CHEMICAL BUILDING
BLOWER BUILDING
FUTURE EXPANSION
TERTIARY FILTRATION
FUTURE EXPANSION
UV DISINFECTION
FUTURE EXPANSION
RECLAIMED WATER PUMP STATION
EXISTING LAS VALVE VAULT
EXISTING LAS PUMP STATION
INFLUENT PUMP STATION
GRIT SEPARATION SYSTEM
HEADWORKS
REJECT PUMP STATION
TRUCK DUMP STATION
8" TREATMENT POND INFLUENT
EXISTING 10" LAS FM
10" LAS FM
10" SBR INFLUENT
4" DRAIN LINE
6" NPRL
4" WATER LINE
8" DRAIN LINE
4" DRAIN LINE
6" AIR LINE
10" SBR INFLUENT
8" AIR LINE
4" NPRL
10" LAS FM
10" LAS FM
10" PVC PIPE
TREATMENT POND EFFLUENT STORAGE
8" DRAIN LINE
2" DRAIN LINE
4" WATER LINE
4" DRAIN LINE
12" FILTER REJECT
42" BOLLARDS
10" LAS FM
10" INFLUENT FM
10" INFLUENT FM
4" UNDERDRAIN FM
4" WATER LINE
12" EFFLUENT DISCHARGE
12" GRAVITY DISCHARGE
10" INFLUENT FM
10" INFLUENT FM
50' UNDISTURBED BUFFER ZONE
BOUNDARY FOR MECHANICAL WWTP

SCALE BAR: 1"=15'
15 0 7.5 15 30 60

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33013 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 18 00

MUNICIPALITY:
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OWNER:
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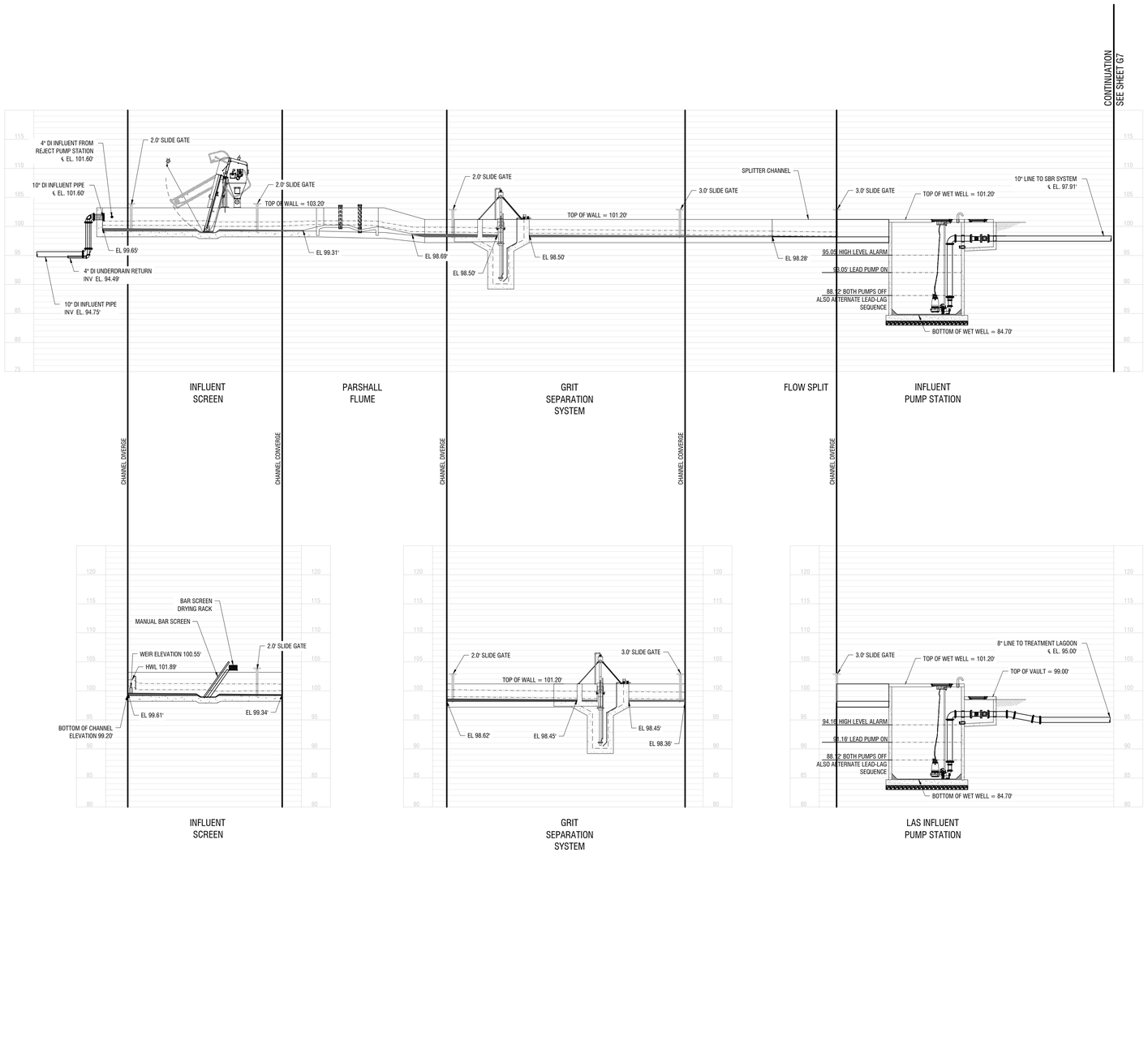
WASTEWATER TREATMENT PLANT EXPANSION

FUTURE EXPANSION PLAN

G7

FILE NO: 2020-48

PLOT DATE: June 5, 2025



INFLUENT
SCREEN

GRIT
SEPARATION
SYSTEM

LAS INFLUENT
PUMP STATION

SCALE BAR: 1"= 10 '
10 0 5 10 20 40

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33058 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK 19 ENGINEERING 00

MUNICIPALITY:
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COUNTY:
BRYAN

OWNER:
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streets@pembrokega.net

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streets@pembrokega.net

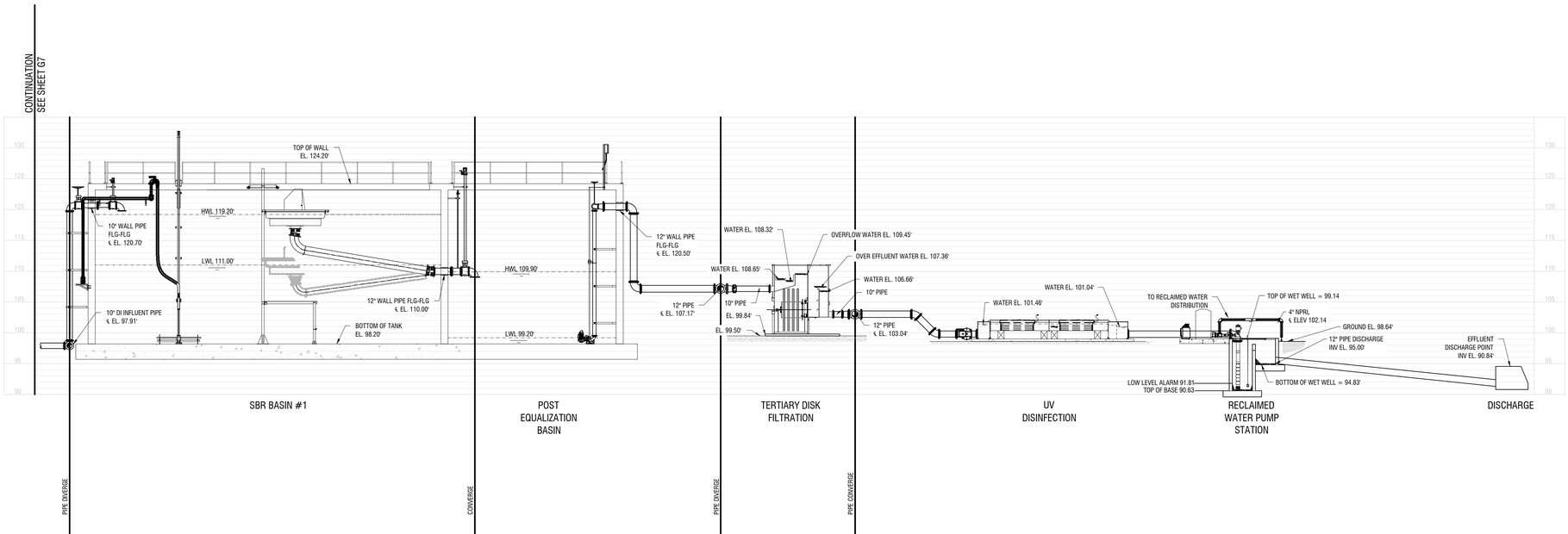
WASTEWATER TREATMENT PLANT EXPANSION

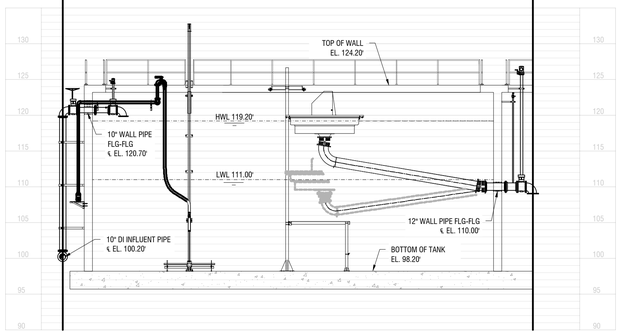
HYDRAULIC PROFILE

G8

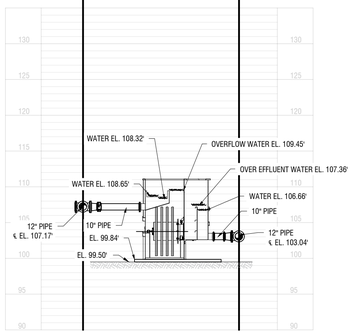
FILE NO: 2020-48

PLOT DATE: June 5, 2025





SBR BASIN #2



TERTIARY DISK
FILTRATION

SCALE BAR: 1"= 10 '
10 0 5 10 20 40

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 35551 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 90

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
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OWNER:
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(912) 653-4413
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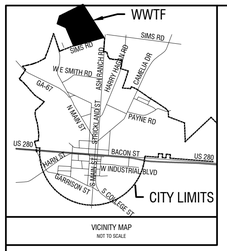
WASTEWATER TREATMENT PLANT EXPANSION

HYDRAULIC PROFILE

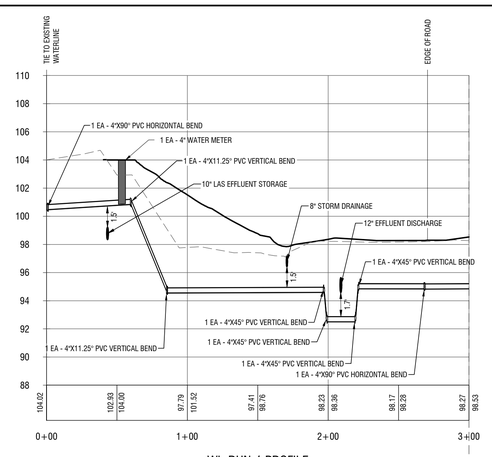
G9

FILE NO: 2020-48

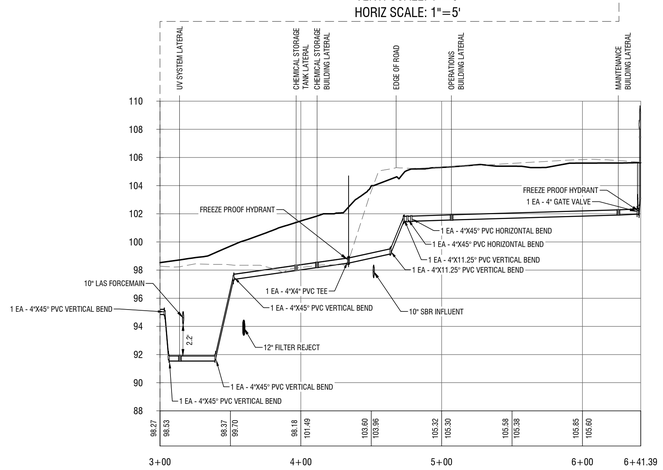
PLOT DATE: June 5, 2025



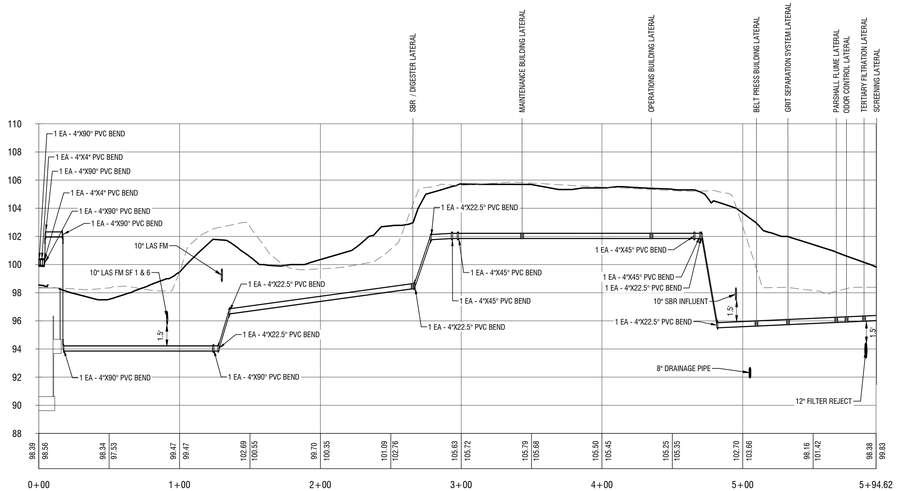
VICINITY MAP
NOT TO SCALE



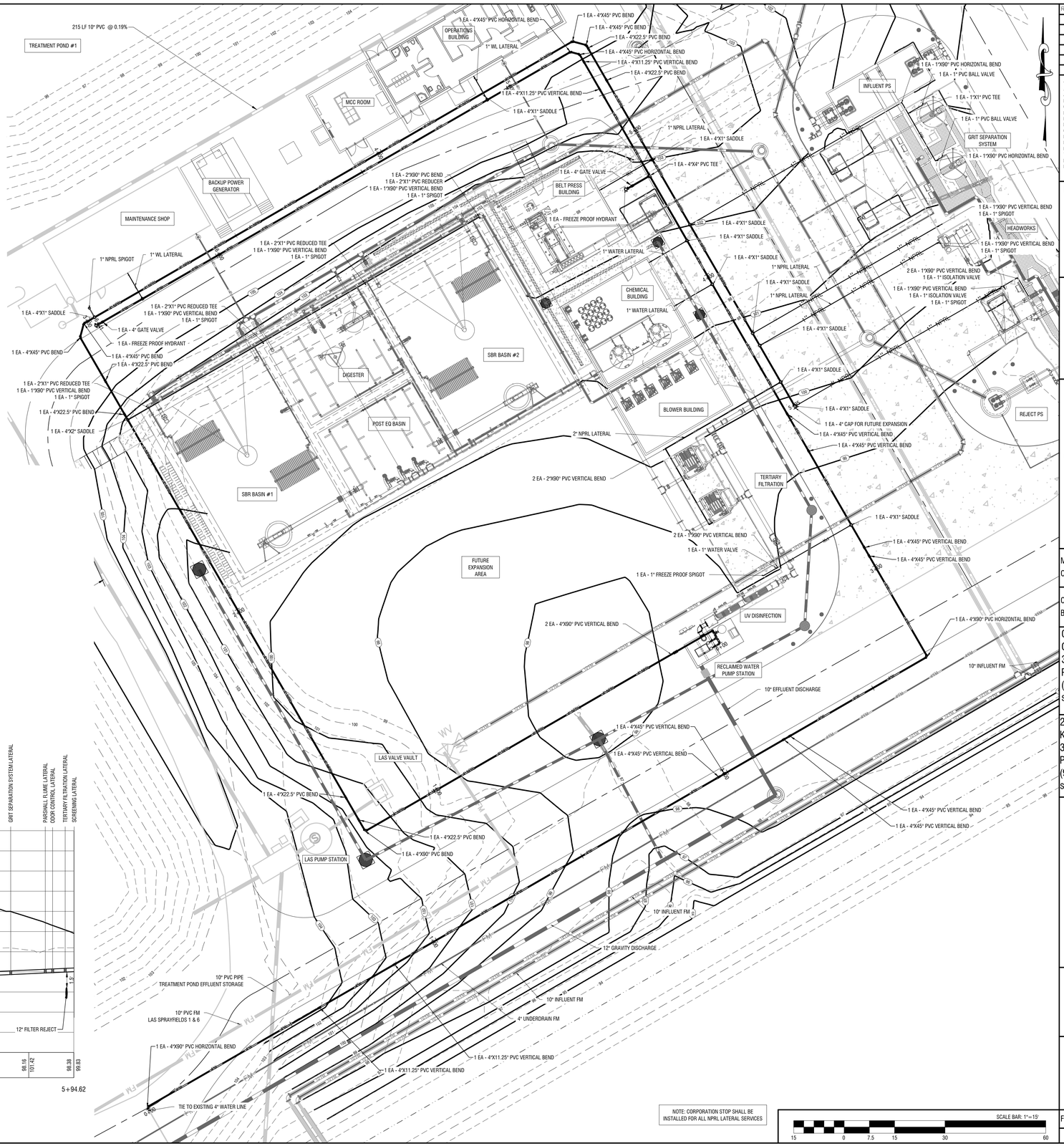
WL-RUN-1 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



WL-RUN-1 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



NPRL PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



REVISIONS:		
1	SBR TANK SIZE	
2	GSWCC ESP&C	
3	ADDENDUM 1	
4	ADDENDUM 2	

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GEORGIA REGISTERED No. 33 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 1980

MUNICIPALITY:
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24 HOUR CONTACT:
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streets@pembrokega.net

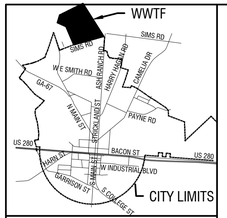
WASTEWATER TREATMENT PLANT EXPANSION

WATER PLAN

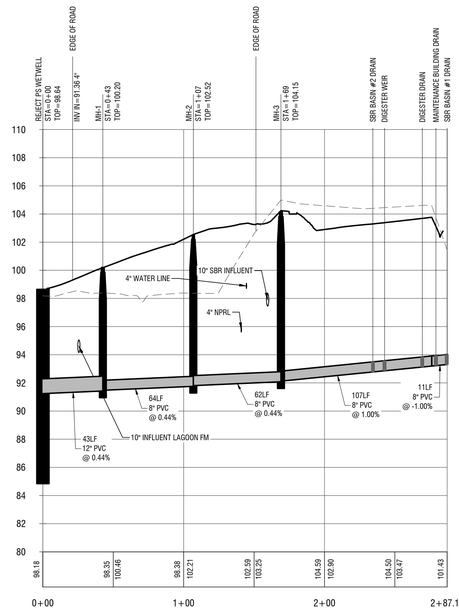
C1

FILE NO: 2020-48

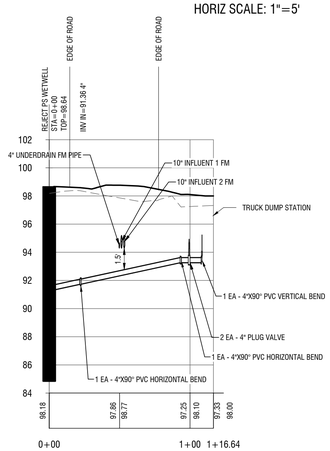
PLOT DATE: June 5, 2025



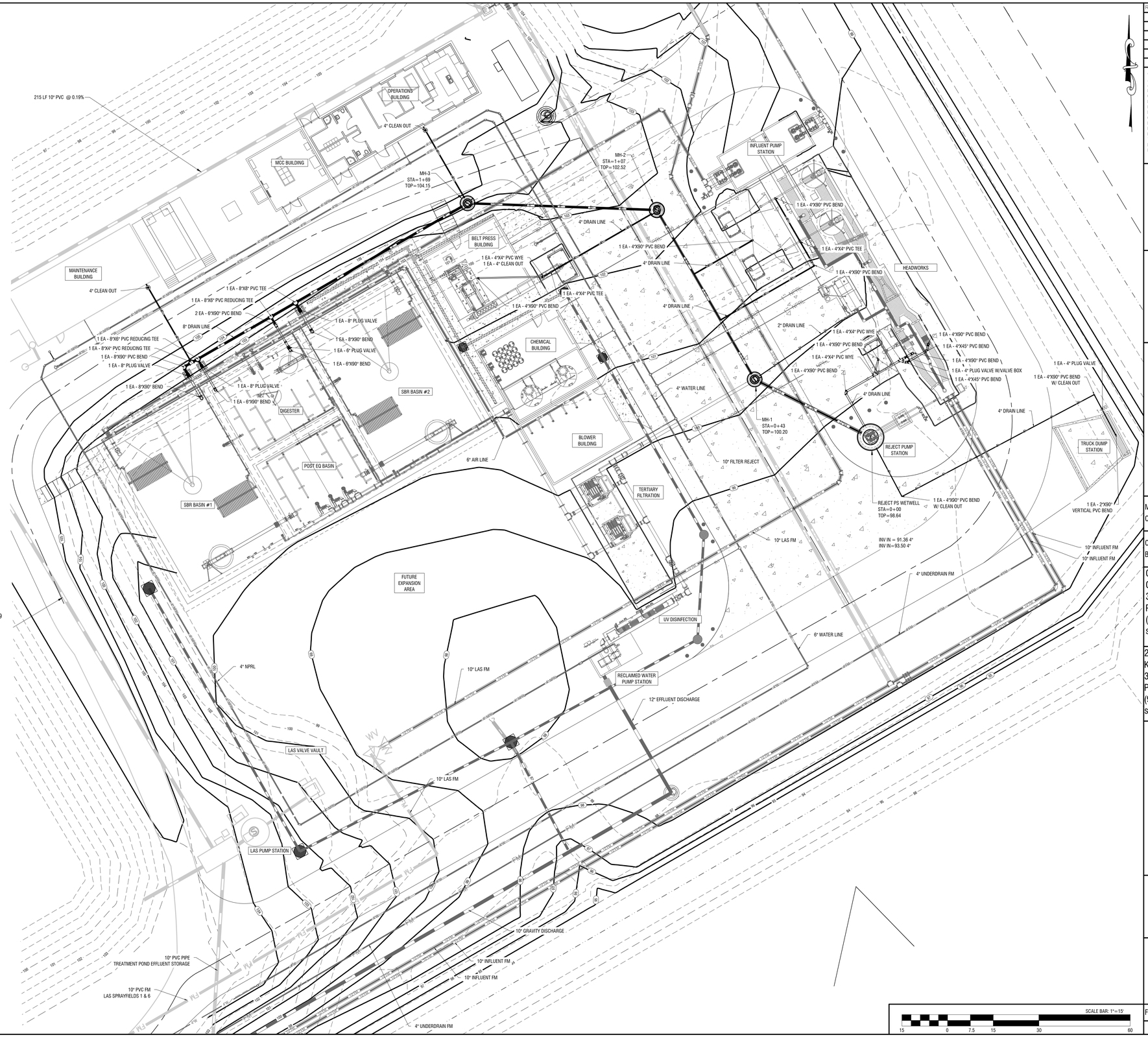
VICINITY MAP
NOT TO SCALE



DRAINAGE-RUN-1 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



WASTE DRAINAGE-RUN-2 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



SCALE BAR: 1"=15'
15 0 7.5 15 30 60

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

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WASTEWATER TREATMENT PLANT EXPANSION

WASTE DRAINAGE PLAN

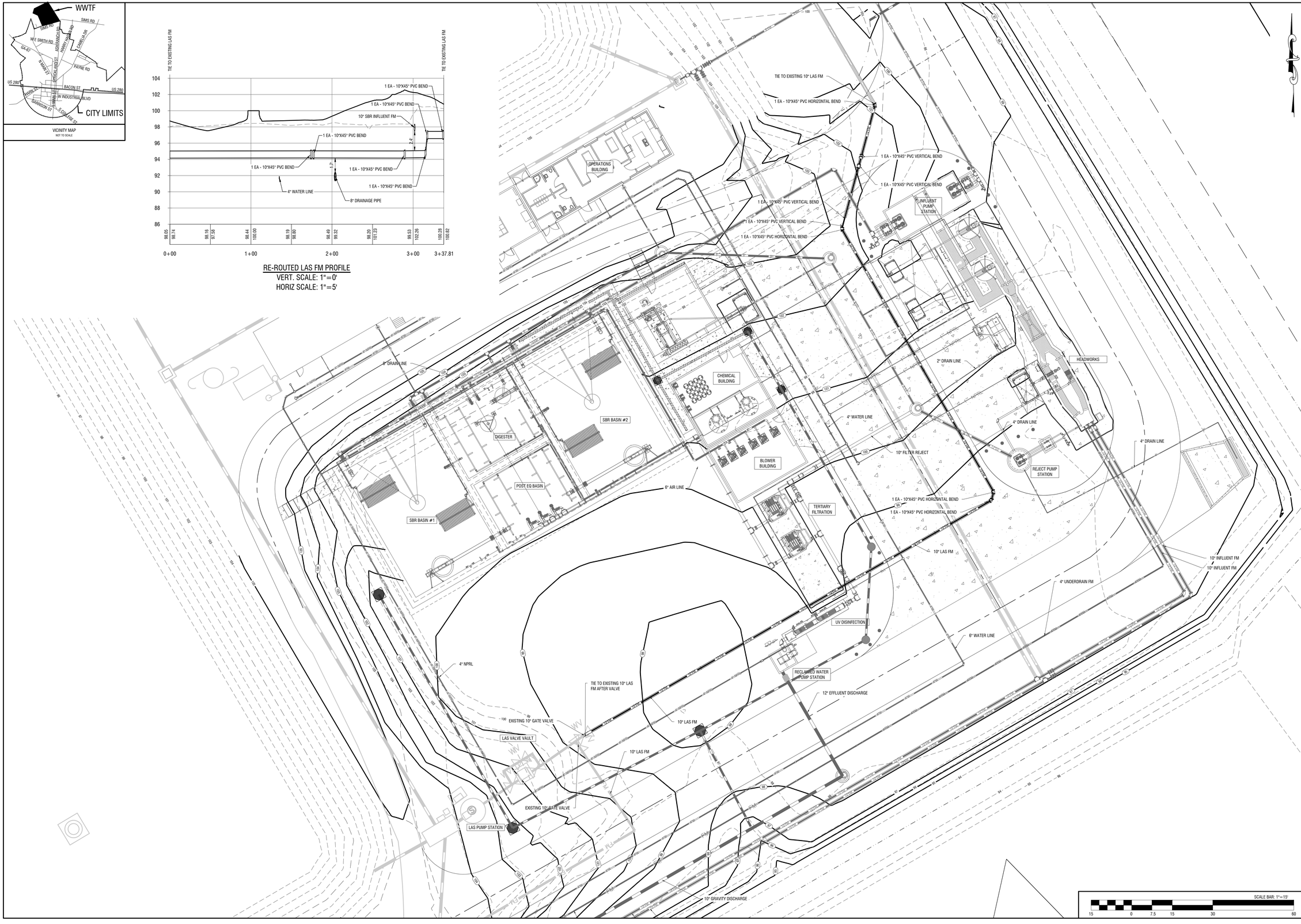
C2

FILE NO: 2020-48

PLOT DATE: June 5, 2025

VICINITY MAP
NOT TO SCALE

RE-ROUTED LAS FM PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



REVISIONS:		
1	SBR TANK SIZE	
2	GSWCC ESP&C	
3	ADDENDUM 1	
4	ADDENDUM 2	

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DATE: June 5, 2025

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WASTEWATER TREATMENT PLANT EXPANSION

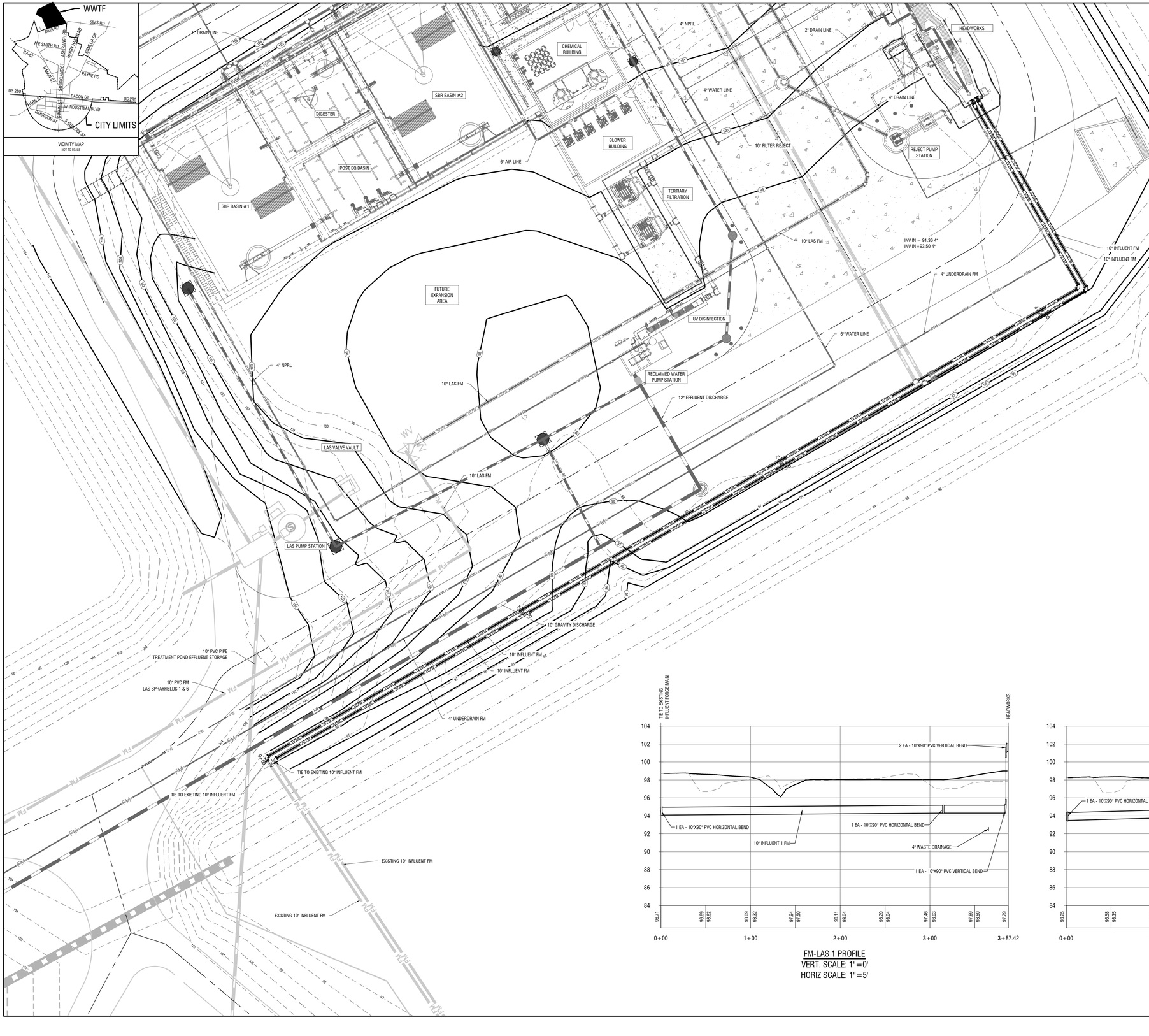
LAS FORCEMAIN

C3

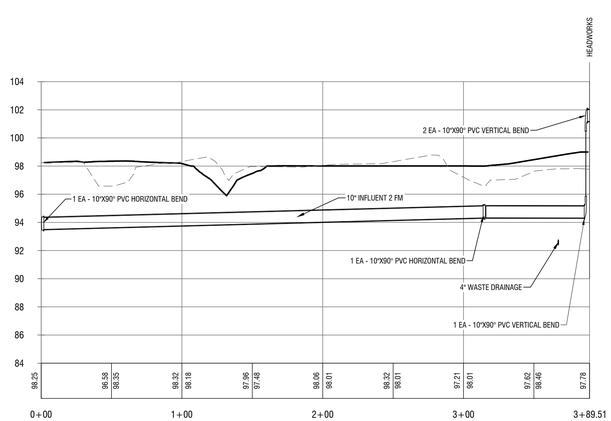
FILE NO: 2020-48

PLOT DATE: June 5, 2025

VICINITY MAP
NOT TO SCALE



FM-LAS 1 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



FM-LAS 2 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'

SCALE BAR: 1"=15'
15 0 7.5 15 30 60

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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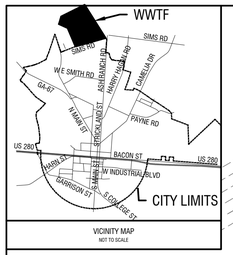
WASTEWATER TREATMENT PLANT EXPANSION

INFLUENT FORCEMAIN

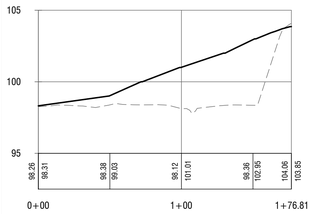
C4

FILE NO: 2020-48

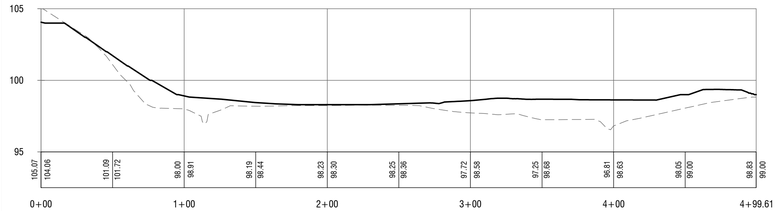
PLOT DATE: June 5, 2025



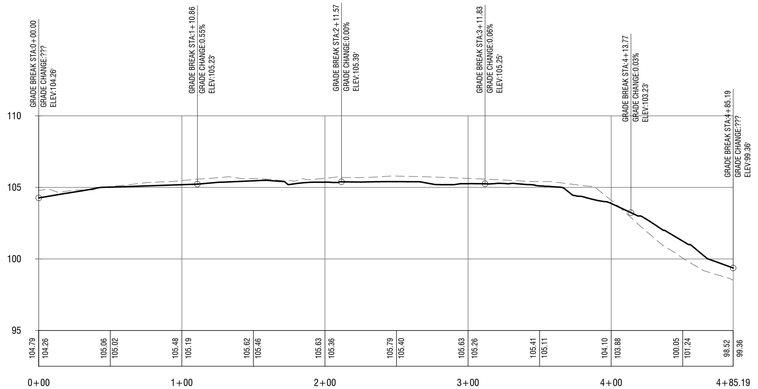
VICINITY MAP
NOT TO SCALE



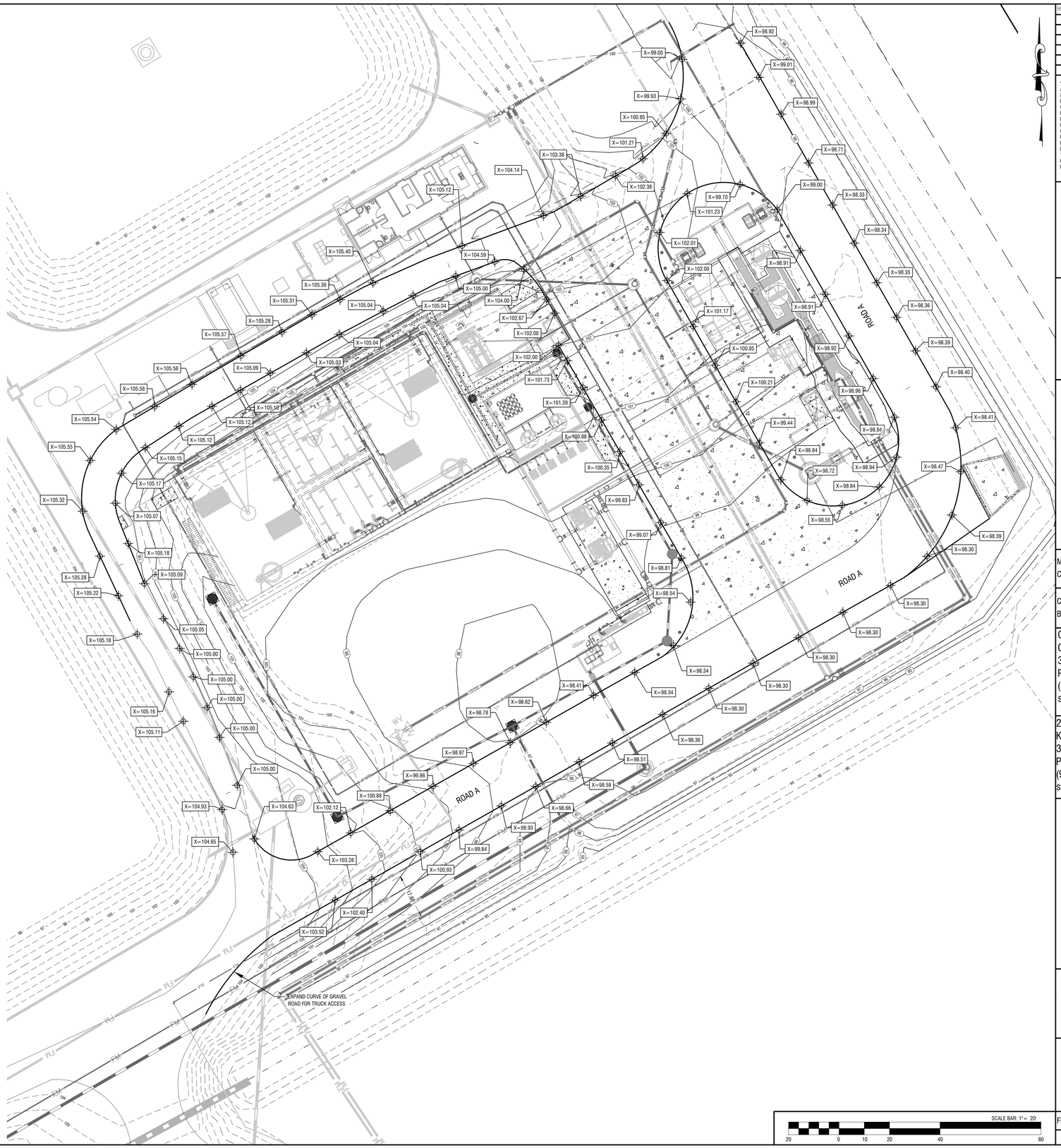
ROAD B PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



ROAD A PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



ROAD C PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33556 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

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streets@pembrokega.net

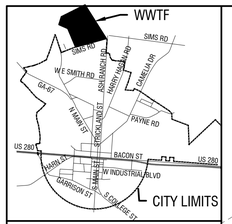
WASTEWATER TREATMENT PLANT EXPANSION

ACCESS ROAD PLAN

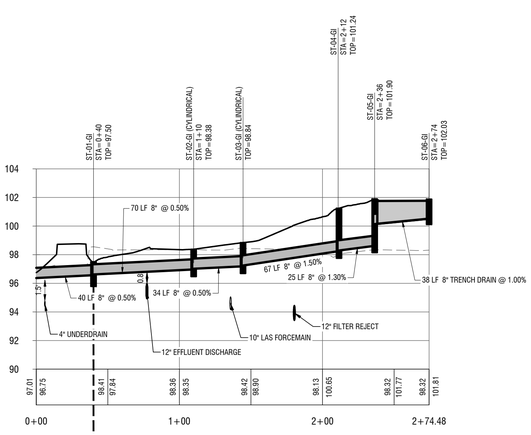
C5

FILE NO: 2020-48

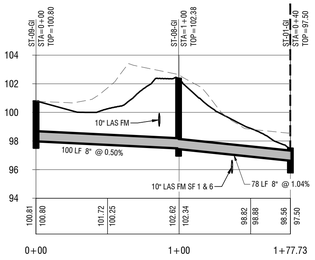
PLOT DATE: June 5, 2025



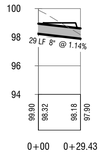
VICINITY MAP
NOT TO SCALE



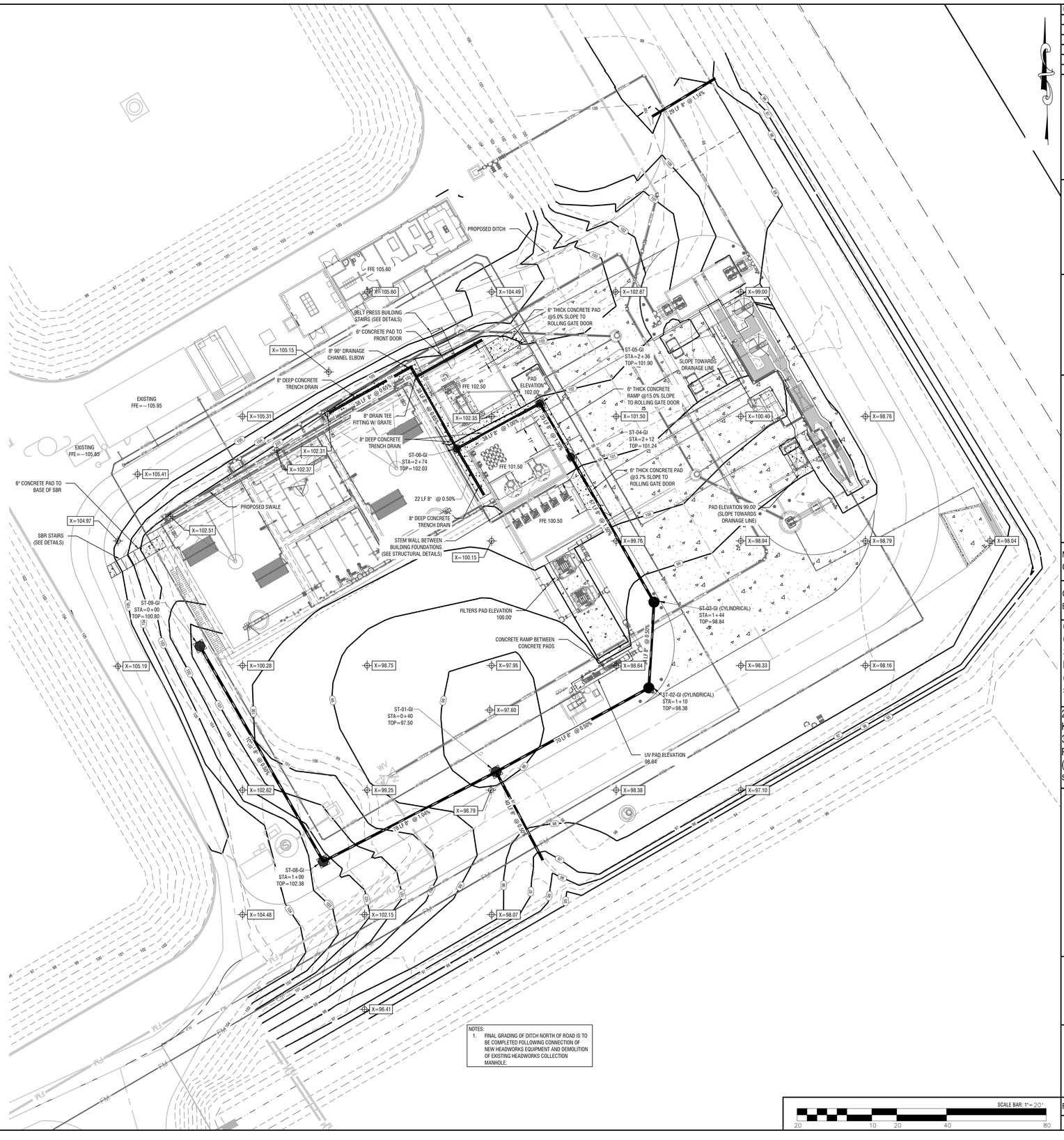
DR-RUN-01 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



DR-RUN-01B PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



DR-RUN-02 PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



NOTES:
1. FINAL GRADING OF DITCH NORTH OF ROAD IS TO BE COMPLETED FOLLOWING CONNECTION OF NEW HEADWORKS EQUIPMENT AND DEMOLITION OF EXISTING HEADWORKS COLLECTION MANHOLE.

SCALE BAR: 1"=20'
20 10 20 40 80

REVISIONS:

1	SBR TANK SIZE	
2	GSWCC ESP&C	
3	ADDENDUM 1	
4	ADDENDUM 2	

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DATE: June 5, 2025

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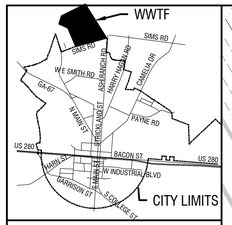
WASTEWATER TREATMENT PLANT EXPANSION

GRADING PLAN

C6

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

END DOUBLE ROW TYPE-S SILT FENCE

Sd4-B #1
TOP = 98.00
BOTTOM = 95.50
3' SPILLWAY @
ELEVATION 97.00

Bf-U

Cd-Fs#1

EMERGENCY SPILLWAY LOCATION W/ STRAW BALE AND SILT FENCE BARRIER

EMERGENCY SPILLWAY LOCATION

Sd4-C #2
TOP = 97.50
BOTTOM = 95.00
4' SPILLWAY @
ELEVATION 96.50

Sd4-C #2
TOP = 97.50
BOTTOM = 95.00
4' SPILLWAY @
ELEVATION 96.50

EX. TREATMENT POND 3

CONCRETE WASHOUT

SEE SHEET C8 FOR CONTINUATION

NOTE:
1. THE EXISTING SLOPES DO NOT EXCEED 3:1. IF AT ANY POINT IN THE CONSTRUCTION PROCESS THE SLOPE IS STEEPER THAN OR EQUAL TO 3:1, SURFACE ROUGHENING USING TRACKING WILL BE REQUIRED IN DISTURBED AREAS.
2. BUILDING MATERIALS AND PRODUCTS SHALL MAINTAIN COVERAGE WHEN NOT IN USE WITH PLASTIC SHEETING WITHIN THE LIMITS OF DISTURBANCE.
3. AFTER NEW HEADWORKS AREA IS GRADED AND THE HEADWORKS EQUIPMENT IS OPERATIONAL, PERMANENT VEGETATION SHALL BE IN PLACE WHILE THE REST OF THE FACILITY CONSTRUCTION IS UNDERWAY.
4. DUST CONTROL MEASURES SHALL BE IN PLACE FOR ANY PERIODS OF INACTIVITY LONGER THAN 14 DAYS.
5. SLOPE STABILIZATION SHALL BE USED IN LIEU ON CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES.
6. THE STORM DRAIN OUTLETS AND SEDIMENT BARRIERS SHALL REMAIN UNTIL GROUND SURFACE IS STABLE FOLLOWING CONSTRUCTION.
7. Sd4 TEMPORARY SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION.
8. Sd4-B #1 SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL FINAL STABILIZATION OF THE SOIL IS COMPLETE.
9. Sd4-C #2 SHALL BE REDUCED FOLLOWING INSTALLATION OF THE DRAINAGE BASINS AND EXCAVATED INLET TRAPS TO ALLOW FOR CONSTRUCTION OF THE ACCESS ROAD AND REQUIRED PIPING.
10. TRENCH DRAINS SHALL BE INSTALLED FOLLOWING FINAL GRADING AND EQUIPMENT INSTALLATION WHERE POSSIBLE.

SCALE BAR: 1"= 20'
20 10 20 40 80

DESIGN PROFESSIONAL

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REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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WASTEWATER TREATMENT PLANT EXPANSION

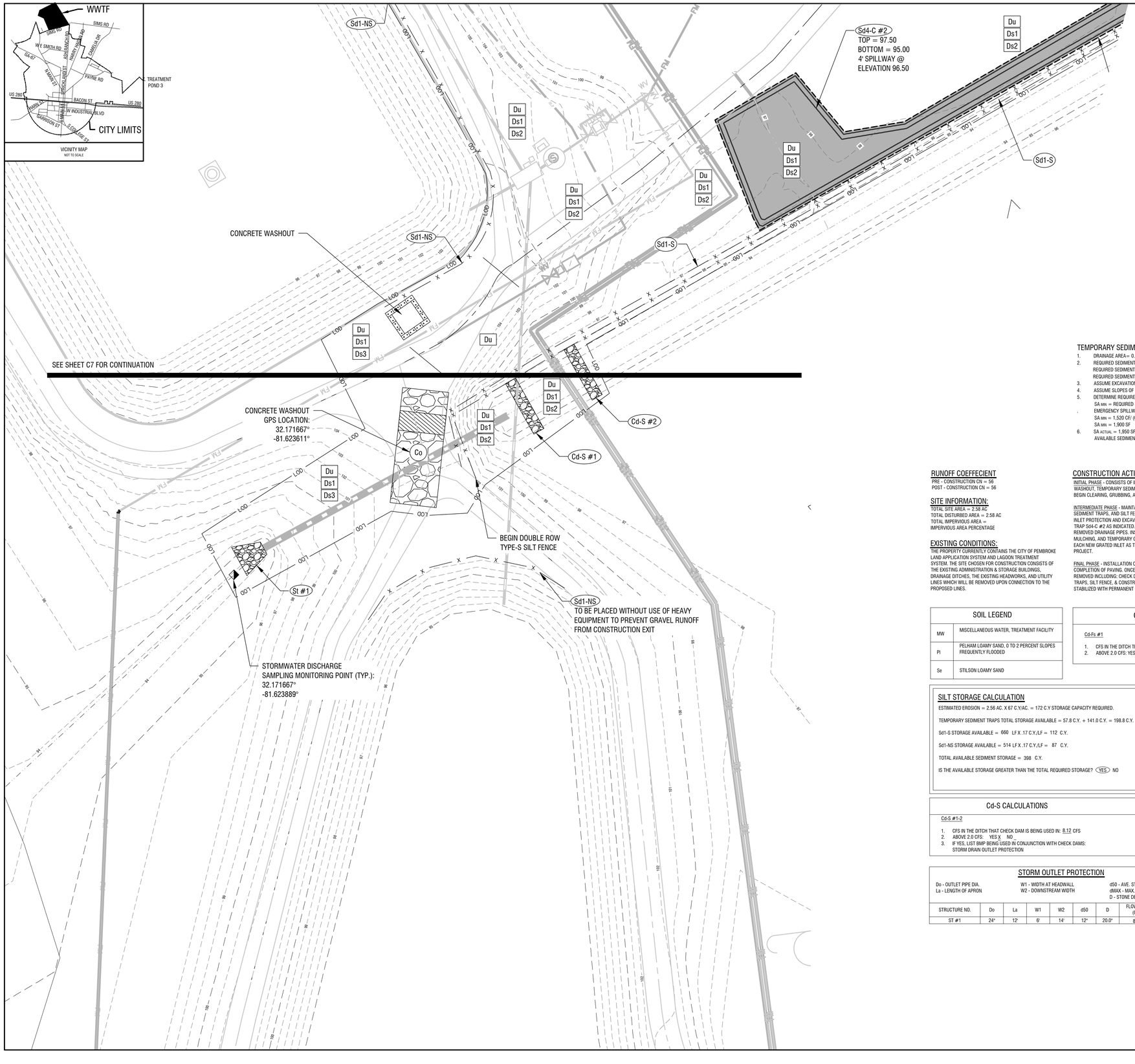
INITIAL EROSION & SEDIMENTATION CONTROL PLAN

C7

FILE NO: 2020-48

PLOT DATE: June 5, 2025

VICINITY MAP
NOT TO SCALE



DESIGN PROFESSIONAL

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GSWCC LEVEL II
CERTIFICATION #: 70248
EXPIRES: 06-14-2026

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TEMPORARY SEDIMENT TRAP Sd4-B #1 CALCULATIONS

1. DRAINAGE AREA= 0.84 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.84 AC
   REQUIRED SEDIMENT STORAGE = 56.28 CY = 1,520 CF
3. ASSUME EXCAVATION DEPTH (MAX 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA MIN = 1,520 CF/ (0.4 X 2 FT)
   SA MIN = 1,900 SF
6. SA ACTUAL = 1,950 SF
   AVAILABLE SEDIMENT STORAGE = 1,560 CF = 57.8 CY

TEMPORARY SEDIMENT TRAP Sd4-C #2 CALCULATIONS

1. DRAINAGE AREA= 1.72 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 1.72 AC
   REQUIRED SEDIMENT STORAGE = 115.24 CY = 3,112 CF
3. ASSUME EXCAVATION DEPTH (MIN 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA MIN = 3,112 CF/ (0.4 X 2 FT)
   SA MIN = 3,890 SF
6. SA ACTUAL = 4,760 SF
   AVAILABLE SEDIMENT STORAGE = 3,808 CF = 141.0 CY

RUNOFF COEFFECIENT

PRE - CONSTRUCTION CN = 56
POST - CONSTRUCTION CN = 56

SITE INFORMATION:

TOTAL SITE AREA = 2.58 AC
TOTAL DISTURBED AREA = 2.58 AC
TOTAL IMPERVIOUS AREA =
IMPERVIOUS AREA PERCENTAGE

EXISTING CONDITIONS:

THE PROPERTY CURRENTLY CONTAINS THE CITY OF PEMBROKE LAND APPLICATION SYSTEM AND LAGOON TREATMENT SYSTEM. THE SITE CHOSEN FOR CONSTRUCTION CONSISTS OF THE EXISTING ADMINISTRATION & STORAGE BUILDINGS, DRAINAGE DITCHES, THE EXISTING HEADWORKS, AND UTILITY LINES WHICH WILL BE REMOVED UPON CONNECTION TO THE PROPOSED LINES.

CONSTRUCTION ACTIVITY DESCRIPTION

INITIAL PHASE - CONSISTS OF INSTALLING CONSTRUCTION EXIT, PERIMETER BMPS, DUST CONTROL, CONCRETE WASHOUT, TEMPORARY SEDIMENT TRAPS, AND TEMPORARY FILTER SOCK CHECK DAMS ON EXISTING SWALES. BEGIN CLEARING, GRUBBING, AND GRADING. BEGIN DIRT ROAD CONSTRUCTION WITH DRAINAGE PIPES.

INTERMEDIATE PHASE - MAINTAIN CONCRETE WASHOUT, CONSTRUCTION EXIST, INDICATED TEMPORARY SEDIMENT TRAPS, AND SILT FENCING. FOLLOWING CONSTRUCTION OF DRAINAGE BASINS AND PIPES, INSTALL INLET PROTECTION AND EXCAVATED INLET TRAPS, THEN REDUCE THE SIDE OF THE TEMPORARY SEDIMENT TRAP Sd4-C #2 AS INDICATED. REMOVE FILTER SOCK CHECK DAMS WHICH WERE INSTALLED FOR THE REMOVED DRAINAGE PIPES. INSTALL STONE CHECK DAMS AND OUTLET CONTROL. USE DUST CONTROL, MULCHING, AND TEMPORARY GRASSING WHERE INDICATED. INLET PROTECTION SHALL BE INSTALLED AROUND EACH NEW GRATED INLET AS THEY ARE CONSTRUCTED AND MAINTAINED THROUGHOUT THE LIFT OF THE PROJECT.

FINAL PHASE - INSTALLATION OF PAVING AND FINAL GRADING. REMOVE CONCRETE WASHOUT AFTER COMPLETION OF PAVING. ONCE PERMANENT GRASSING IS ESTABLISHED TEMPORARY MEASURES CAN BE REMOVED INCLUDING: CHECK DAMS, INLET PROTECTION, EXCAVATED INLET TRAPS, TEMPORARY SEDIMENT TRAPS, SILT FENCE, & CONSTRUCTION EXITS. SEDIMENT TRAPS SHALL BE FILLED TO FINAL GRADE AND STABILIZED WITH PERMANENT GRASSING.

SOIL LEGEND

MW	MISCELLANEOUS WATER, TREATMENT FACILITY
PI	PELHAM LOAMY SAND, 0 TO 2 PERCENT SLOPES FREQUENTLY FLOODED
Se	STILSON LOAMY SAND

Cd-Fs CALCULATIONS

Cd-Fs #1

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: 1.66 CFS
2. ABOVE 2.0 CFS: YES _ NO X

SILT STORAGE CALCULATION

ESTIMATED EROSION = 2.56 AC. X 67 C.Y./AC. = 172 C.Y STORAGE CAPACITY REQUIRED.

TEMPORARY SEDIMENT TRAPS TOTAL STORAGE AVAILABLE = 57.8 C.Y. + 141.0 C.Y. = 198.8 C.Y.

Sd1-S STORAGE AVAILABLE = 660 LF X .17 C.Y./LF = 112 C.Y.

Sd1-NS STORAGE AVAILABLE = 514 LF X .17 C.Y./LF = 87 C.Y.

TOTAL AVAILABLE SEDIMENT STORAGE = 398 C.Y.

IS THE AVAILABLE STORAGE GREATER THAN THE TOTAL REQUIRED STORAGE? (YES) NO

Cd-S CALCULATIONS

Cd-S #1-2

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: 8.12 CFS
2. ABOVE 2.0 CFS: YES X NO _
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS:
   STORM DRAIN OUTLET PROTECTION

STORM OUTLET PROTECTION

Do - OUTLET PIPE DIA.
La - LENGTH OF APRON
W1 - WIDTH AT HEADWALL
W2 - DOWNSTREAM WIDTH
d50 - AVE. STONE SIZE
dMAX - MAX. STONE SIZE
D - STONE DEPTH

STRUCTURE NO.	Do	La	W1	W2	d50	D	FLOW RATE (CFS)	VELOCITY (FPS)
ST #1	24"	12'	6'	14'	12"	20.0"	8.12	2.58

APPENDIX 1 BMPS:

1. (D) A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING:
   1.a. CONSTRUCTION SITE
   1.b. THE PERMITTEE(S)
   1.c. THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S)
   1.d. THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED N.O.I. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A N.O.T. HAS BEEN SUBMITTED.
2. (H) REDUCT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATION). ALL CALCULATIONS MUST BE INCLUDED ON THE PLANS.
3. (M) USE APPROPRIATE EROSION CONTROL SLOPE STABILIZATION INSTEAD OF CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES AND STORM DRAINAGE DESIGN FOR A 25 YEAR, 24 HOUR RAINFALL EVENT.
4. (U) CONDUCT INSPECTIONS DURING THE INTERMEDIATE GRADING AND DRAINAGE BMP PHASE AND DURING THE FINAL BMP PHASE OF THE PROJECT BY THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN IN ACCORDANCE WITH SECTION IV.A.5 OF THE PERMIT.

NOTES:
1. SEE OVERALL EXISTING CONDITIONS ON SHEET G2 FOR LOCATION OF CONSTRUCTION SIGN.
2. HYDROSEED AND TRACKING SHALL BE USED FOR SLOPE STABILIZATION ALONG STORMWATER DITCHES WHERE APPROPRIATE.

SCALE BAR: 1"= 20'
20 10 20 40 80

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 70248 PROFESSIONAL ENGINEER MARCUS E SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
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OWNER:
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24 HOUR CONTACT:
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WASTEWATER TREATMENT PLANT EXPANSION

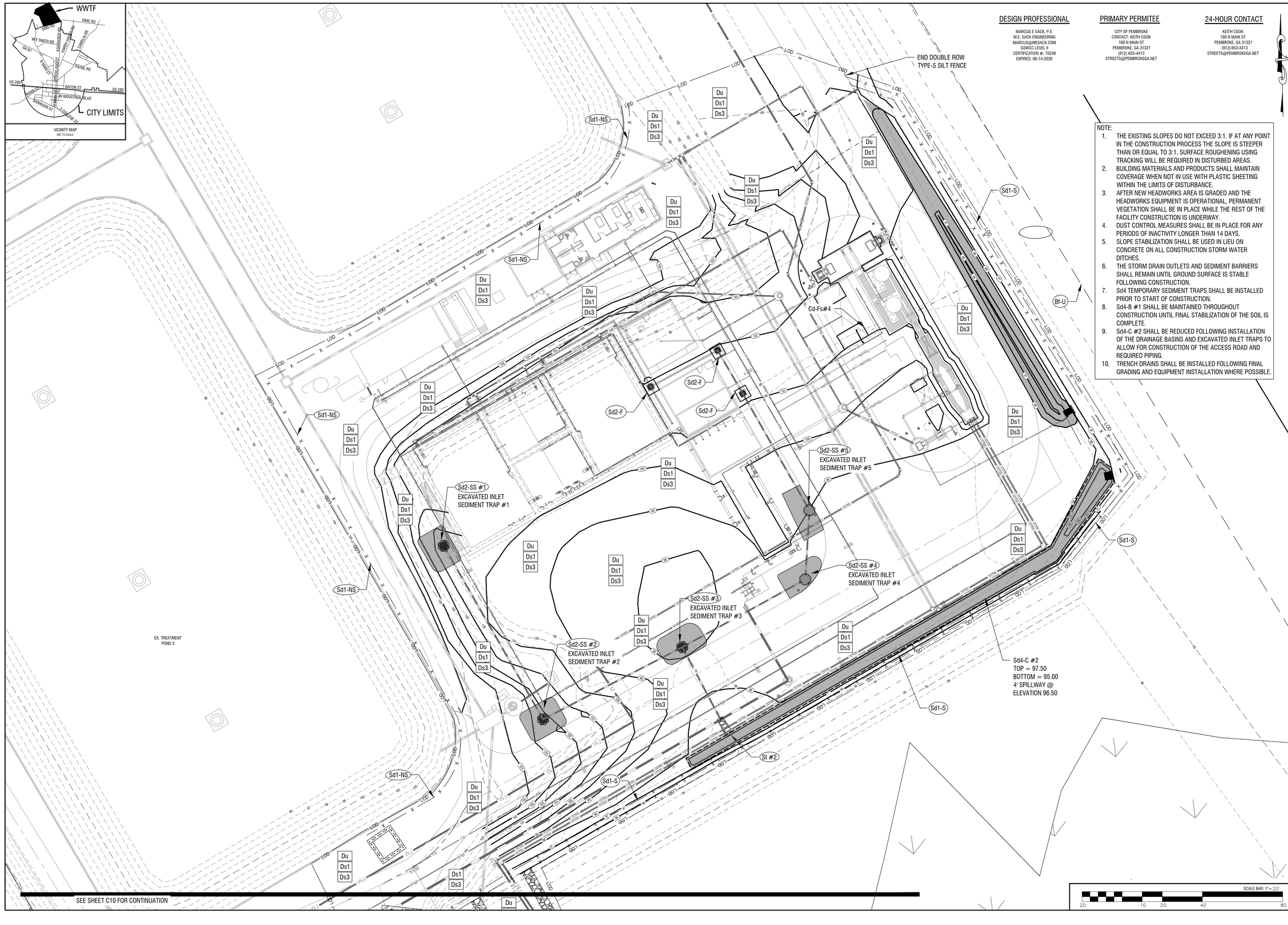
INITIAL EROSION & SEDIMENTATION CONTROL PLAN

C8

FILE NO: 2020-48

PLOT DATE: June 5, 2025

VICINITY MAP
NOT TO SCALE



SCALE BAR: 1"= 20'
20 10 20 40 80

DESIGN PROFESSIONAL

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24-HOUR CONTACT

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NOTE:
1. THE EXISTING SLOPES DO NOT EXCEED 3:1. IF AT ANY POINT IN THE CONSTRUCTION PROCESS THE SLOPE IS STEEPER THAN OR EQUAL TO 3:1, SURFACE ROUGHENING USING TRACKING WILL BE REQUIRED IN DISTURBED AREAS.
2. BUILDING MATERIALS AND PRODUCTS SHALL MAINTAIN COVERAGE WHEN NOT IN USE WITH PLASTIC SHEETING WITHIN THE LIMITS OF DISTURBANCE.
3. AFTER NEW HEADWORKS AREA IS GRADED AND THE HEADWORKS EQUIPMENT IS OPERATIONAL, PERMANENT VEGETATION SHALL BE IN PLACE WHILE THE REST OF THE FACILITY CONSTRUCTION IS UNDERWAY.
4. DUST CONTROL MEASURES SHALL BE IN PLACE FOR ANY PERIODS OF INACTIVITY LONGER THAN 14 DAYS.
5. SLOPE STABILIZATION SHALL BE USED IN LIEU ON CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES.
6. THE STORM DRAIN OUTLETS AND SEDIMENT BARRIERS SHALL REMAIN UNTIL GROUND SURFACE IS STABLE FOLLOWING CONSTRUCTION.
7. Sd4 TEMPORARY SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION.
8. Sd4-B #1 SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL FINAL STABILIZATION OF THE SOIL IS COMPLETE.
9. Sd4-C #2 SHALL BE REDUCED FOLLOWING INSTALLATION OF THE DRAINAGE BASINS AND EXCAVATED INLET TRAPS TO ALLOW FOR CONSTRUCTION OF THE ACCESS ROAD AND REQUIRED PIPING.
10. TRENCH DRAINS SHALL BE INSTALLED FOLLOWING FINAL GRADING AND EQUIPMENT INSTALLATION WHERE POSSIBLE.

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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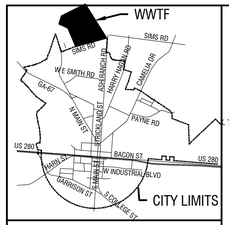
WASTEWATER TREATMENT PLANT EXPANSION

INTERMEDIATE EROSION & SEDIMENTATION CONTROL PLAN

C9

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

SEE SHEET C9 FOR CONTINUATION

Sd1-NS

Sd2-SS #2
EXCAVATED INLET SEDIMENT TRAP #2

Sd2-SS #3
EXCAVATED INLET SEDIMENT TRAP #3

EXCAVATED INLET SEDIMENT TRAP #4

Sd1-S

St #2

Cd-S #2

Cd-S #1

St #1

BEGIN DOUBLE ROW TYPE-S SILT FENCE

Sd1-NS
TO BE PLACED WITHOUT USE OF HEAVY EQUIPMENT TO PREVENT GRAVEL RUNOFF FROM CONSTRUCTION EXIT

EXCAVATED INLET SEDIMENT TRAP #1 CALCULATIONS

1. DRAINAGE AREA= 0.275 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.275 AC
   REQUIRED SEDIMENT STORAGE = 18.5 CY = 500 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA MIN = 500 CF/ 2 FT
   SA MIN = 250 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 20 FT WIDTH=15 FT
7. SA ACTUAL = 300 SF
   AVAILABLE SEDIMENT STORAGE = 600 CF = 22.2 CY

TEMPORARY SEDIMENT TRAP Sd4-B #1 CALCULATIONS

1. DRAINAGE AREA= 0.84 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.84 AC
   REQUIRED SEDIMENT STORAGE = 56.28 CY = 1,520 CF
3. ASSUME EXCAVATION DEPTH (MAX 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA MIN = 1,520 CF/ (0.4 X 2 FT)
   SA MIN = 1,900 SF
6. SA ACTUAL = 1,950 SF
   AVAILABLE SEDIMENT STORAGE = 1,560 CF = 57.8 CY

TEMPORARY SEDIMENT TRAP Sd4-C #2 (REDUCED) CALCULATIONS

1. DRAINAGE AREA= 0.35 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.35 AC
   REQUIRED SEDIMENT STORAGE = 23.45 CY = 633 CF
3. ASSUME EXCAVATION DEPTH (MIN 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA MIN = 633 CF/ (0.4 X 2 FT)
   SA MIN = 791 SF
6. SA ACTUAL = 1,970 SF
   AVAILABLE SEDIMENT STORAGE = 1,575 CF = 58.3 CY

EXCAVATED INLET SEDIMENT TRAP #2 CALCULATIONS

1. DRAINAGE AREA= 0.26 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.26 AC
   REQUIRED SEDIMENT STORAGE = 17.4 CY = 470 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA MIN = 470 CF/ 2 FT
   SA MIN = 235 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 20 FT WIDTH=16 FT
7. SA ACTUAL = 320 SF
   AVAILABLE SEDIMENT STORAGE = 640 CF = 23.7 CY

EXCAVATED INLET SEDIMENT TRAP #3 CALCULATIONS

1. DRAINAGE AREA= 0.39 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.39 AC
   REQUIRED SEDIMENT STORAGE = 26.13 CY = 705 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA MIN = 705 CF/ 2 FT
   SA MIN = 353 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 24 FT WIDTH=15 FT
7. SA ACTUAL = 360 SF
   AVAILABLE SEDIMENT STORAGE = 720 CF = 26.7 CY

EXCAVATED INLET SEDIMENT TRAP #4 CALCULATIONS

1. DRAINAGE AREA= 0.14 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.14 AC
   REQUIRED SEDIMENT STORAGE = 9.38 CY = 253 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA MIN = 253 CF/ 2 FT
   SA MIN = 126.5 SF
6. ASSUME SHAPE OF EXCAVATION
   SHAPE: IRREGULAR (SEE SHEET C11)
7. SA ACTUAL = 250 SF
   AVAILABLE SEDIMENT STORAGE = 500 CF = 18.5 CY

RUNOFF COEFFECIENT

PRE - CONSTRUCTION CN = 56
POST - CONSTRUCTION CN = 56

SITE INFORMATION:

TOTAL SITE AREA = 2.58 AC
TOTAL DISTURBED AREA = 2.58 AC
TOTAL IMPERVIOUS AREA =
IMPERVIOUS AREA PERCENTAGE

EXISTING CONDITIONS:

THE PROPERTY CURRENTLY CONTAINS THE CITY OF PEMBROKE LAND APPLICATION SYSTEM AND LAGOON TREATMENT SYSTEM. THE SITE CHOSEN FOR CONSTRUCTION CONSISTS OF THE EXISTING ADMINISTRATION & STORAGE BUILDINGS, DRAINAGE DITCHES, THE EXISTING HEADWORKS, AND UTILITY LINES WHICH WILL BE REMOVED UPON CONNECTION TO THE PROPOSED LINES.

CONSTRUCTION ACTIVITY DESCRIPTION

INITIAL PHASE - CONSISTS OF INSTALLING CONSTRUCTION EXIT, PERIMETER BMPS, DUST CONTROL, CONCRETE WASHOUT, TEMPORARY SEDIMENT TRAPS, AND TEMPORARY FILTER SOCK CHECK DAMS ON EXISTING SWALES. BEGIN CLEARING, GRUBBING, AND GRADING. BEGIN DIRT ROAD CONSTRUCTION WITH DRAINAGE PIPES.

INTERMEDIATE PHASE - MAINTAIN CONCRETE WASHOUT, CONSTRUCTION EXIST, INDICATED TEMPORARY SEDIMENT TRAPS, AND SILT FENCING. FOLLOWING CONSTRUCTION OF DRAINAGE BASINS AND PIPES, INSTALL INLET PROTECTION AND EXCAVATED INLET TRAPS, THEN REDUCE THE SIDE OF THE TEMPORARY SEDIMENT TRAP Sd4-C #2 AS INDICATED. REMOVE FILTER SOCK CHECK DAMS WHICH WERE INSTALLED FOR THE REMOVED DRAINAGE PIPES. INSTALL STONE CHECK DAMS AND OUTLET CONTROL. USE DUST CONTROL, MULCHING, AND TEMPORARY GRASSING WHERE INDICATED. INLET PROTECTION SHALL BE INSTALLED AROUND EACH NEW GRATED INLET AS THEY ARE CONSTRUCTED AND MAINTAINED THROUGHOUT THE LIFT OF THE PROJECT.

FINAL PHASE - INSTALLATION OF PAVING AND FINAL GRADING. REMOVE CONCRETE WASHOUT AFTER COMPLETION OF PAVING. ONCE PERMANENT GRASSING IS ESTABLISHED TEMPORARY MEASURES CAN BE REMOVED INCLUDING: CHECK DAMS, INLET PROTECTION, EXCAVATED INLET TRAPS, TEMPORARY SEDIMENT TRAPS, SILT FENCE, & CONSTRUCTION EXITS. SEDIMENT TRAPS SHALL BE FILLED TO FINAL GRADE AND STABILIZED WITH PERMANENT GRASSING.

EXCAVATED INLET SEDIMENT TRAP #1 CALCULATIONS

1. DRAINAGE AREA= 0.305 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.305 AC
   REQUIRED SEDIMENT STORAGE = 20.4 CY = 550 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA MIN = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA MIN = 550 CF/ 2 FT
   SA MIN = 275 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 26 FT WIDTH=11 FT
7. SA ACTUAL = 286 SF
   AVAILABLE SEDIMENT STORAGE = 572 CF = 21.2 CY

SOIL LEGEND

MW	MISCELLANEOUS WATER, TREATMENT FACILITY
Pl	PELHAM LOAMY SAND, 0 TO 2 PERCENT SLOPES FREQUENTLY FLOODED
Se	STILSON LOAMY SAND

SILT STORAGE CALCULATION

ESTIMATED EROSION = 2.56 AC. X 67 C.Y/AC. = 172 C.Y STORAGE CAPACITY REQUIRED.

EXCAVATED INLET TRAPS TOTAL STORAGE AVAILABLE = 109.6 C.Y.

TEMPORARY SEDIMENT TRAPS TOTAL STORAGE AVAILABLE = 57.8 C.Y. + 58.3 C.Y. = 116.1 C.Y.

Sd1-S STORAGE AVAILABLE = 660 LF X .17 C.Y./LF = 112 C.Y.

Sd1-NS STORAGE AVAILABLE = 514 LF X .17 C.Y./LF = 87 C.Y.

TOTAL AVAILABLE SEDIMENT STORAGE = 425 C.Y.

IS THE AVAILABLE STORAGE GREATER THAN THE TOTAL REQUIRED STORAGE? (YES) NO

Cd-S CALCULATIONS

Cd-S #1-2 — YES

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: CFS
2. ABOVE 2.0 CFS: YES NO
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS: STORM DRAIN OUTLET PROTECTION

Cd-S #3

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: 2.73 CFS
2. ABOVE 2.0 CFS: YES X NO
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS: STORM DRAIN OUTLET PROTECTION

STORM OUTLET PROTECTION

Do – OUTLET PIPE DIA. W1 – WIDTH AT HEADWALL d50 – AVE. STONE SIZE
Lo – LENGTH OF APRON W2 – DOWNSTREAM WIDTH dMAX – MAX. STONE SIZE
D – STONE DEPTH

STRUCTURE NO.	Do	Lo	W1	W2	d50	D	FLOW RATE (CFS)	VELOCITY (FPS)
ST #1	24"	12'	6'	14'	12"	20.0"	7.88	2.51
ST #2	8"	10'	3'	4'	12"	12.0"	2.73	0.95

APPENDIX 1 BMPS:

1. (D) A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING:
   1.a. CONSTRUCTION SITE
   1.b. THE PERMITTEE(S)
   1.c. THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S)
   1.d. THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED N.O.I. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A N.O.T. HAS BEEN SUBMITTED.
2. (H) REDUCT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATION). ALL CALCULATIONS MUST BE INCLUDED ON THE PLANS.
3. (M) USE APPROPRIATE EROSION CONTROL SLOPE STABILIZATION INSTEAD OF CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES AND STORM DRAINAGE DESIGN FOR A 25 YEAR, 24 HOUR RAINFALL EVENT.
4. (U) CONDUCT INSPECTIONS DURING THE INTERMEDIATE GRADING AND DRAINAGE BMP PHASE AND DURING THE FINAL BMP PHASE OF THE PROJECT BY THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN IN ACCORDANCE WITH SECTION IV.A.5 OF THE PERMIT.

NOTES:
1. SEE OVERALL EXISTING CONDITIONS ON SHEET G2 FOR LOCATION OF CONSTRUCTION SIGN.
2. HYDROSEED AND TRACKING SHALL BE USED FOR SLOPE STABILIZATION ALONG STORMWATER DITCHES WHERE APPROPRIATE.

SCALE BAR: 1"= 20'
20 10 20 40 80

DESIGN PROFESSIONAL

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REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 70248 PROFESSIONAL ENGINEER MARCUS E SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

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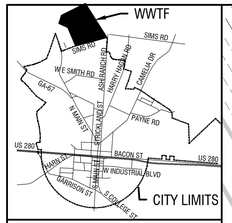
WASTEWATER TREATMENT PLANT EXPANSION

INTERMEDIATE EROSION & SEDIMENTATION CONTROL PLAN

C10

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

END DOUBLE ROW
TYPE-S SILT FENCE

EX. TREATMENT
POND 3

SEE SHEET C12 FOR CONTINUATION

SCALE BAR: 1"= 20'
20 10 20 40 80

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NOTE:
1. THE EXISTING SLOPES DO NOT EXCEED 3:1. IF AT ANY POINT IN THE CONSTRUCTION PROCESS THE SLOPE IS STEEPER THAN OR EQUAL TO 3:1, SURFACE ROUGHENING USING TRACKING WILL BE REQUIRED IN DISTURBED AREAS.
2. BUILDING MATERIALS AND PRODUCTS SHALL MAINTAIN COVERAGE WHEN NOT IN USE WITH PLASTIC SHEETING WITHIN THE LIMITS OF DISTURBANCE.
3. AFTER NEW HEADWORKS AREA IS GRADED AND THE HEADWORKS EQUIPMENT IS OPERATIONAL, PERMANENT VEGETATION SHALL BE IN PLACE WHILE THE REST OF THE FACILITY CONSTRUCTION IS UNDERWAY.
4. DUST CONTROL MEASURES SHALL BE IN PLACE FOR ANY PERIODS OF INACTIVITY LONGER THAN 14 DAYS.
5. SLOPE STABILIZATION SHALL BE USED IN LIEU ON CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES.
6. THE STORM DRAIN OUTLETS AND SEDIMENT BARRIERS SHALL REMAIN UNTIL GROUND SURFACE IS STABLE FOLLOWING CONSTRUCTION.
7. Sd4 TEMPORARY SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO START OF CONSTRUCTION.
8. Sd4-B #1 SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL FINAL STABILIZATION OF THE SOIL IS COMPLETE.
9. Sd4-C #2 SHALL BE REDUCED FOLLOWING INSTALLATION OF THE DRAINAGE BASINS AND EXCAVATED INLET TRAPS TO ALLOW FOR CONSTRUCTION OF THE ACCESS ROAD AND REQUIRED PIPING.
10. TRENCH DRAINS SHALL BE INSTALLED FOLLOWING FINAL GRADING AND EQUIPMENT INSTALLATION WHERE POSSIBLE.

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WASTEWATER TREATMENT PLANT EXPANSION

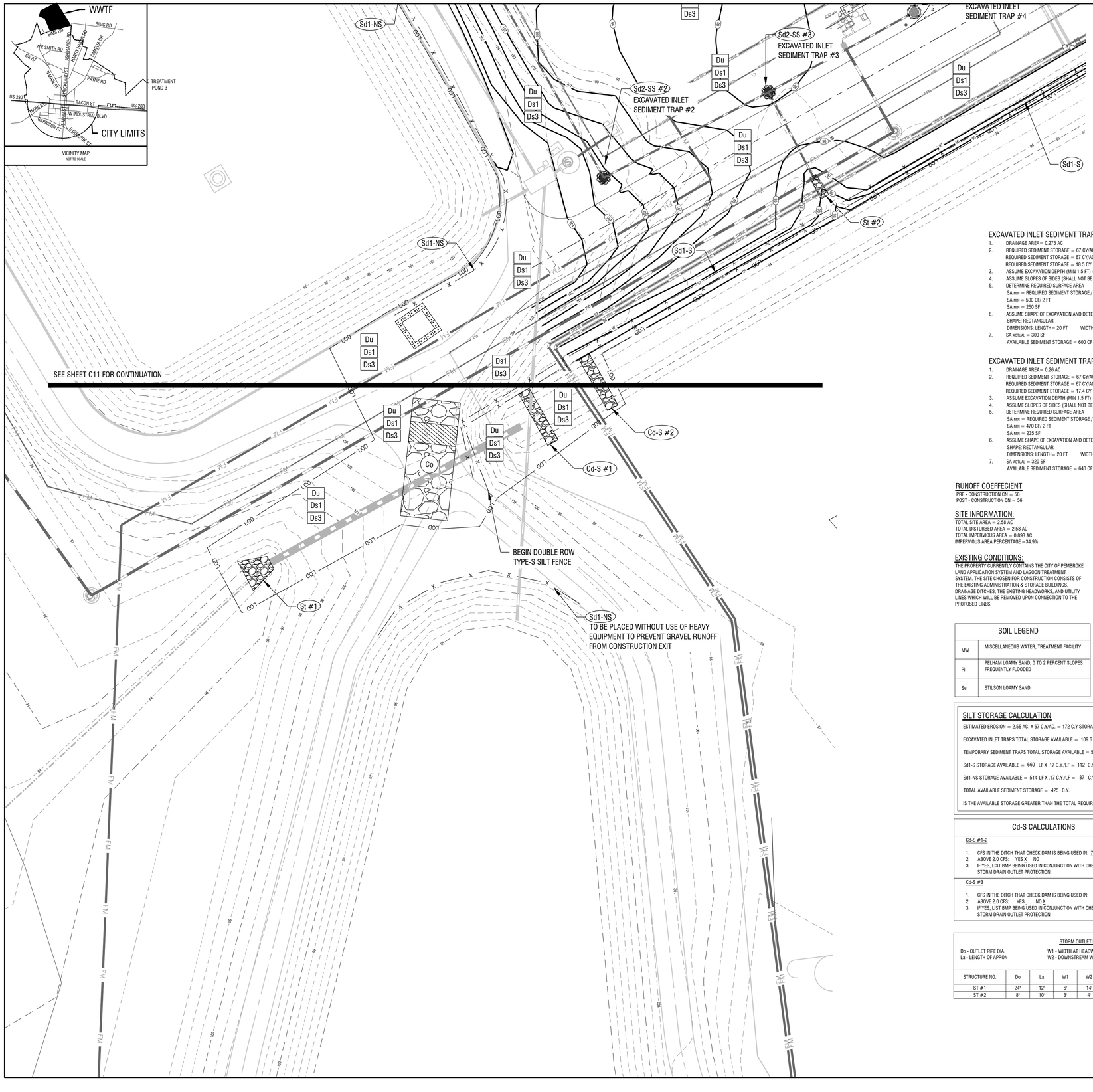
FINAL EROSION & SEDIMENTATION CONTROL PLAN

C11

FILE NO: 2020-48

PLOT DATE: June 5, 2025

VICINITY MAP
NOT TO SCALE



EXCAVATED INLET SEDIMENT TRAP #1 CALCULATIONS

1. DRAINAGE AREA= 0.275 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.275 AC
   REQUIRED SEDIMENT STORAGE = 18.5 CY = 500 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA_{MIN} = 500 CF/ 2 FT
   SA_{MIN} = 250 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 20 FT WIDTH=15 FT
7. SA_{ACTUAL} = 300 SF
   AVAILABLE SEDIMENT STORAGE = 600 CF = 22.2 CY

TEMPORARY SEDIMENT TRAP Sd4-B #1 CALCULATIONS

1. DRAINAGE AREA= 0.84 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.84 AC
   REQUIRED SEDIMENT STORAGE = 56.28 CY = 1,520 CF
3. ASSUME EXCAVATION DEPTH (MAX 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA_{MIN} = 1,520 CF/ (0.4 X 2 FT)
   SA_{MIN} = 1,900 SF
6. SA_{ACTUAL} = 1,950 SF
   AVAILABLE SEDIMENT STORAGE = 1,560 CF = 57.8 CY

TEMPORARY SEDIMENT TRAP Sd4-C #2 (REDUCED) CALCULATIONS

1. DRAINAGE AREA= 0.35 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.35 AC
   REQUIRED SEDIMENT STORAGE = 23.45 CY = 633 CF
3. ASSUME EXCAVATION DEPTH (MIN 4.0 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 3:1)= 3:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / (0.4 X MAXIMUM DEPTH FROM EMERGENCY SPILLWAY INVERT)
   SA_{MIN} = 633 CF/ (0.4 X 2 FT)
   SA_{MIN} = 791 SF
6. SA_{ACTUAL} = 1,970 SF
   AVAILABLE SEDIMENT STORAGE = 1,575 CF = 58.3 CY

EXCAVATED INLET SEDIMENT TRAP #2 CALCULATIONS

1. DRAINAGE AREA= 0.26 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.26 AC
   REQUIRED SEDIMENT STORAGE = 17.4 CY = 470 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA_{MIN} = 470 CF/ 2 FT
   SA_{MIN} = 235 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 20 FT WIDTH=16 FT
7. SA_{ACTUAL} = 320 SF
   AVAILABLE SEDIMENT STORAGE = 640 CF = 23.7 CY

EXCAVATED INLET SEDIMENT TRAP #3 CALCULATIONS

1. DRAINAGE AREA= 0.39 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.39 AC
   REQUIRED SEDIMENT STORAGE = 26.13 CY = 705 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA_{MIN} = 705 CF/ 2 FT
   SA_{MIN} = 353 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 24 FT WIDTH=15 FT
7. SA_{ACTUAL} = 360 SF
   AVAILABLE SEDIMENT STORAGE = 720 CF = 26.7 CY

EXCAVATED INLET SEDIMENT TRAP #4 CALCULATIONS

1. DRAINAGE AREA= 0.14 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.14 AC
   REQUIRED SEDIMENT STORAGE = 9.38 CY = 253 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA_{MIN} = 253 CF/ 2 FT
   SA_{MIN} = 126.5 SF
6. ASSUME SHAPE OF EXCAVATION
   SHAPE: IRREGULAR (SEE SHEET C11)
7. SA_{ACTUAL} = 250 SF
   AVAILABLE SEDIMENT STORAGE = 500 CF = 18.5 CY

RUNOFF COEFFECIENT

PRE - CONSTRUCTION CN = 56
POST - CONSTRUCTION CN = 56

SITE INFORMATION:

TOTAL SITE AREA = 2.58 AC
TOTAL DISTURBED AREA = 2.58 AC
TOTAL IMPERVIOUS AREA = 0.893 AC
IMPERVIOUS AREA PERCENTAGE =34.9%

EXISTING CONDITIONS:

THE PROPERTY CURRENTLY CONTAINS THE CITY OF PEMBROKE LAND APPLICATION SYSTEM AND LAGOON TREATMENT SYSTEM. THE SITE CHOSEN FOR CONSTRUCTION CONSISTS OF THE EXISTING ADMINISTRATION & STORAGE BUILDINGS, DRAINAGE DITCHES, THE EXISTING HEADWORKS, AND UTILITY LINES WHICH WILL BE REMOVED UPON CONNECTION TO THE PROPOSED LINES.

CONSTRUCTION ACTIVITY DESCRIPTION

INITIAL PHASE - CONSISTS OF INSTALLING CONSTRUCTION EXIT, PERIMETER BMPS, DUST CONTROL, CONCRETE WASHOUT, TEMPORARY SEDIMENT TRAPS, AND TEMPORARY FILTER SOCK CHECK DAMS ON EXISTING SWALES. BEGIN CLEARING, GRUBBING, AND GRADING. BEGIN DIRT ROAD CONSTRUCTION WITH DRAINAGE PIPES.

INTERMEDIATE PHASE - MAINTAIN CONCRETE WASHOUT, CONSTRUCTION EXIST, INDICATED TEMPORARY SEDIMENT TRAPS, AND SILT FENCING. FOLLOWING CONSTRUCTION OF DRAINAGE BASINS AND PIPES, INSTALL INLET PROTECTION AND EXCAVATED INLET TRAPS, THEN REDUCE THE SIDE OF THE TEMPORARY SEDIMENT TRAP Sd4-C #2 AS INDICATED. REMOVE FILTER SOCK CHECK DAMS WHICH WERE INSTALLED FOR THE REMOVED DRAINAGE PIPES. INSTALL STONE CHECK DAMS AND OUTLET CONTROL. USE DUST CONTROL, MULCHING, AND TEMPORARY GRASSING WHERE INDICATED. INLET PROTECTION SHALL BE INSTALLED AROUND EACH NEW GRATED INLET AS THEY ARE CONSTRUCTED AND MAINTAINED THROUGHOUT THE LIFT OF THE PROJECT.

FINAL PHASE - INSTALLATION OF PAVING AND FINAL GRADING. REMOVE CONCRETE WASHOUT AFTER COMPLETION OF PAVING. ONCE PERMANENT GRASSING IS ESTABLISHED TEMPORARY MEASURES CAN BE REMOVED INCLUDING: CHECK DAMS, INLET PROTECTION, EXCAVATED INLET TRAPS, TEMPORARY SEDIMENT TRAPS, SILT FENCE, & CONSTRUCTION EXITS. SEDIMENT TRAPS SHALL BE FILLED TO FINAL GRADE AND STABILIZED WITH PERMANENT GRASSING.

EXCAVATED INLET SEDIMENT TRAP #1 CALCULATIONS

1. DRAINAGE AREA= 0.305 AC
2. REQUIRED SEDIMENT STORAGE = 67 CY/AC X DRAINAGE AREA
   REQUIRED SEDIMENT STORAGE = 67 CY/AC X 0.305 AC
   REQUIRED SEDIMENT STORAGE = 20.4 CY = 550 CF
3. ASSUME EXCAVATION DEPTH (MIN 1.5 FT) = 2.0 FT
4. ASSUME SLOPES OF SIDES (SHALL NOT BE STEEPER THAN 2:1)= 2:1
5. DETERMINE REQUIRED SURFACE AREA
   SA_{MIN} = REQUIRED SEDIMENT STORAGE / EXCAVATION DEPTH
   SA_{MIN} = 550 CF/ 2 FT
   SA_{MIN} = 275 SF
6. ASSUME SHAPE OF EXCAVATION AND DETERMINE DIMENSIONS
   SHAPE: RECTANGULAR
   DIMENSIONS: LENGTH= 26 FT WIDTH=11 FT
7. SA_{ACTUAL} = 286 SF
   AVAILABLE SEDIMENT STORAGE = 572 CF = 21.2 CY

SOIL LEGEND

MW	MISCELLANEOUS WATER, TREATMENT FACILITY
Pl	PELHAM LOAMY SAND, 0 TO 2 PERCENT SLOPES FREQUENTLY FLOODED
Se	STILSON LOAMY SAND

SILT STORAGE CALCULATION

ESTIMATED EROSION = 2.56 AC. X 67 C.Y/AC. = 172 C.Y STORAGE CAPACITY REQUIRED.

EXCAVATED INLET TRAPS TOTAL STORAGE AVAILABLE = 109.6 C.Y.

TEMPORARY SEDIMENT TRAPS TOTAL STORAGE AVAILABLE = 57.8 C.Y. + 58.3 C.Y. = 116.1 C.Y.

Sd1-S STORAGE AVAILABLE = 660 LF X .17 C.Y./LF = 112 C.Y.

Sd1-NS STORAGE AVAILABLE = 514 LF X .17 C.Y./LF = 87 C.Y.

TOTAL AVAILABLE SEDIMENT STORAGE = 425 C.Y.

IS THE AVAILABLE STORAGE GREATER THAN THE TOTAL REQUIRED STORAGE? (YES) NO

Cd-S CALCULATIONS

Cd-S #1-2

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: 7.88 CFS
2. ABOVE 2.0 CFS: YES X NO
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS: STORM DRAIN OUTLET PROTECTION

Cd-S #3

1. CFS IN THE DITCH THAT CHECK DAM IS BEING USED IN: 2.73 CFS
2. ABOVE 2.0 CFS: YES NO X
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAMS: STORM DRAIN OUTLET PROTECTION

STORM OUTLET PROTECTION

Do - OUTLET PIPE DIA.
La - LENGTH OF APRON
W1 - WIDTH AT HEADWALL
W2 - DOWNSTREAM WIDTH
d50 - AVE. STONE SIZE
dMAX - MAX. STONE SIZE
D - STONE DEPTH

STRUCTURE NO.	Do	La	W1	W2	d50	D	FLOW RATE (CFS)	VELOCITY (FPS)
ST #1	24"	12'	8'	14'	12"	20.0"	7.88	2.51
ST #2	8"	10'	3'	4'	12"	12.0"	2.73	0.95

APPENDIX 1 BMPS:

1. (D) A LARGE SIGN (MINIMUM 4 FEET X 8 FEET) MUST BE POSTED ON SITE BY THE ACTUAL START DATE OF CONSTRUCTION. THE SIGN MUST BE VISIBLE FROM A PUBLIC ROADWAY. THE SIGN MUST IDENTIFY THE FOLLOWING:
   1.a. CONSTRUCTION SITE
   1.b. THE PERMITTEE(S)
   1.c. THE CONTACT PERSON(S) AND TELEPHONE NUMBER(S)
   1.d. THE PERMITTEE-HOSTED WEBSITE WHERE THE PLAN CAN BE VIEWED MUST BE PROVIDED ON THE SUBMITTED N.O.I. THE SIGN MUST REMAIN ON SITE AND THE PLAN MUST BE AVAILABLE ON THE PROVIDED WEBSITE UNTIL A N.O.T. HAS BEEN SUBMITTED.
2. (H) REDUCT THE TOTAL PLANNED SITE DISTURBANCE TO LESS THAN 50% IMPERVIOUS (EXCLUDING ANY STATE-MANDATED BUFFER AREAS FROM SUCH CALCULATION). ALL CALCULATIONS MUST BE INCLUDED ON THE PLANS.
3. (M) USE APPROPRIATE EROSION CONTROL SLOPE STABILIZATION INSTEAD OF CONCRETE ON ALL CONSTRUCTION STORM WATER DITCHES AND STORM DRAINAGE DESIGN FOR A 25 YEAR, 24 HOUR RAINFALL EVENT.
4. (U) CONDUCT INSPECTIONS DURING THE INTERMEDIATE GRADING AND DRAINAGE BMP PHASE AND DURING THE FINAL BMP PHASE OF THE PROJECT BY THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN IN ACCORDANCE WITH SECTION IV.A.5 OF THE PERMIT.

NOTES:
1. SEE OVERALL EXISTING CONDITIONS ON SHEET G2 FOR LOCATION OF CONSTRUCTION SIGN.
2. HYDROSEED AND TRACKING SHALL BE USED FOR SLOPE STABILIZATION ALONG STORMWATER DITCHES WHERE APPROPRIATE.

SCALE BAR: 1"= 20'
20 10 20 40 80

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WASTEWATER TREATMENT PLANT EXPANSION

FINAL EROSION & SEDIMENTATION CONTROL PLAN

C12

FILE NO: 2020-48

PLOT DATE: June 5, 2025

NPDES PERMIT REQUIREMENTS GAR 100002

PART IV. EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN

4. 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 SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (A) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE; (B) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; AND (C) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.F.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 HAS BEEN SUBMITTED) 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 INDICATES 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 ON THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF 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 PAR V.G.2. OF THIS PERMIT.

5. MAINTENANCE. THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION AND SEDIMENT CONTROL MEASURES AND OTHER PROTECTIVE MEASURES IDENTIFIED IN THE SITE PLAN.

6. 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 SITE OR 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 STORM WATER 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-DRAW ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(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, HANDLE 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.

B. *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 NOT 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 COLLECTING 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.

C. *SAMPLING POINTS.*

(1). FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGC 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 REPRESENTATION OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER 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 STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

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

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

(D). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER 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 SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION STABILIZED SHALL MEAN; FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPE 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 STORM WATER 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 AN 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 MANUAL OR OTHER EVIDENCE OF OR 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. GAR 100002, 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).

D. SAMPLING FREQUENCY.

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

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

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

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

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

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

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

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

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

7. NON-STORM WATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORM WATER LISTED IN PART III.A.2. OF THIS PERMIT THAT ARE COMBINED WITH STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR THE NON-STORM WATER COMPONENT(S) OF THE DISCHARGE.

E. REPORTING.

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C. BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS. SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD 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 SAMPLING AND MEASUREMENTS;

c. THE DATE(S) ANALYSES WERE PERFORMED;

d. THE TIME(S) ANALYSES WERE INITIATED;

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

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

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

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

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

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

F. 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 III.D.2. OF THIS PERMIT;

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.

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 ENFORCE

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		Co (LINE)	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		Cr (LINE)	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		Dn1 (LINE)	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		Dn2 (LINE)	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		Gr	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		Re (LINE)	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		Rt (LINE)	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		(SINGLE LINE)	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		Sd3 (LINE)	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		Sk (LINE)	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		Spb (LINE)	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		Sr (LINE)	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION		St	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		Su (LINE)	A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN		Tc	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		(OVER STRIPPED OR STABLE AREAS)	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		(ABOVE THE DRIPLINE)	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		Bf (LINE)	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 seedlings 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.

GaSWCC (Amended – 2013)

Du DUST CONTROL ON DISTURBED AREAS

PURPOSE
A. To prevent surface and air movement of dust from exposed surfaces.
B. To reduce the presence of airborne substances which may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

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

Permanent Methods
1. Permanent Vegetation - See Ds3 - Disturbed Area Stabilization (with Permanent Vegetation)

Ds1 DISTURBED AREA STABILIZATION (W/MULCHING ONLY)

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

Site Preparation
1. Grade, as needed and feasible, 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. As needed and feasible, loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
1. Dry straw or hay - spread at a rate of 2 1/2 tons per acre.
2. Wood waste, chips, sawdust or bark - spread 2 to 3 inches deep (about 6 to 9 tons per acre).
3. Erosion control matting or netting, such as excelsior, jute, textile and plastic matting and netting - applied in accordance with manufacturers recommendations.
4. Polyethylene film - secured over banks or stockpiled soil material for temporary protection.

Applying and Anchoring Mulch
1. Apply straw or hay mulch uniformly by hand or mechanically. Anchor as appropriate and feasible. It may be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." The disk may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. the edges of the disk should be dull enough not to cut the mulch but press it into the soil leaving much of it in an erect position.
2. Spread wood waste uniformly on slopes that are 3:1 and flatter. No anchoring is needed.
3. Commercial matting and netting. Follow manufacturer's specification included with the material.
4. Apply asphalt so area has uniform appearance. (Note: Use in areas of pedestrian traffic could cause problems or "tracking in" or damage to shoes, clothing, etc.)

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

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

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

5. Completely cover area with black polyethylene film and hold in place by placing soil on the outer edge.

When using organic mulches, apply 20-30 pounds of nitrogen in addition to the normal amount needed for plant growth to offset the tie up of N by decomposition of mulch.

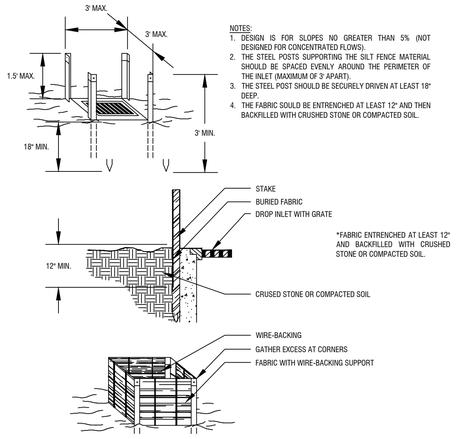
Ds4 DISTURBED AREA STABILIZATION (W/SODDING)

SPECIFICATIONS
Establishing permanent vegetative using sods on highly erodible or critically eroded lands.

Site Preparation
1. Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils. Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants.
2. Mix fertilizer into surface. Fertilizer based on soil tests. Agriculture lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

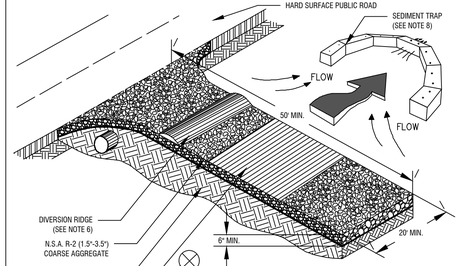
Applying Sods
1. Sod should be machine cut and contain 3/4" (+ or - 1/4") of soil, not including shoots or thatch.
2. Sod should be cut to the desired size within + or - 5%. Torn or uneven pads should be rejected.
3. Sod should be cut and installed within 36 hours of digging.
4. Avoid planting when subject to frost heave or hot weather if irrigation is not available.

STEEL FRAME AND SILT FENCE INSTALLATION (Sd2-F)

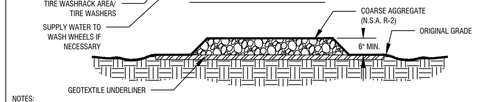


NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POST SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC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

EXIT DIAGRAM (Co)

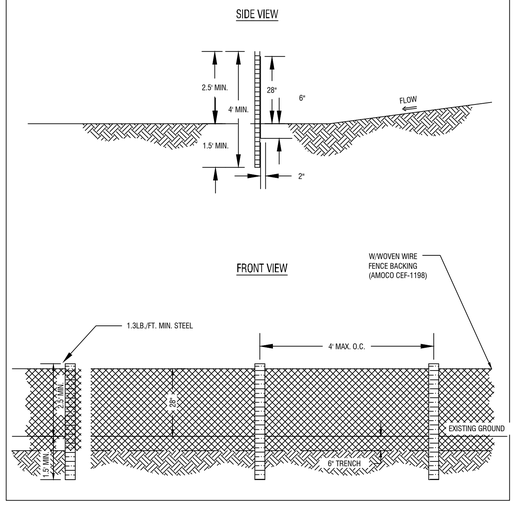


ENTRANCE ELEVATION

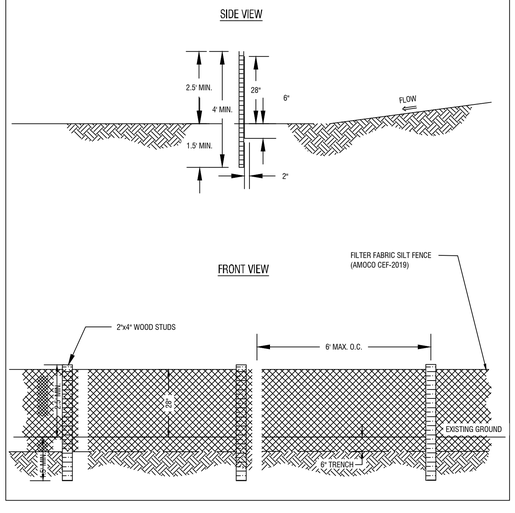


NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD 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.

SEDIMENT BARRIER- SENSITIVE (Sd1-S)



SEDIMENT BARRIER- NON-SENSITIVE (Sd1-NS)



Ds2 SPECIES AND PLANTING SCHEDULE

SPECIES	BROADCAST RATES 1* PER ACRE	BROADCAST RATES 1* PLS 2* PER 1000 SF	PLANTING DATES BY RESOURCE AREA 3*	AREAS*	REMARKS
RYEGRASS, ANNUAL ALONE	40 lbs	0.9 lbs	M - L P C	J F M A M J J A S O N D	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT BE USED IN MIXTURES.

Ds3 SPECIES AND PLANTING SCHEDULE

SPECIES	BROADCAST RATES 1* PER ACRE	BROADCAST RATES 1* PLS 2* PER 1000 SF	PLANTING DATES BY RESOURCE AREA 3*	AREAS*	REMARKS
BERMUDA, COMMON HULLED SEED ALONE WITH OTHER PERENNIALS	10 lbs 6 lbs	0.2 lbs 0.1 lbs	P C	J F M A M J J A S O N D	1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON UNHULLED SEED ALONE WITH OTHER PERENNIALS			P C	J F M A M J J A S O N D	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
BERMUDA, SPRIGS COASTAL, COMMON, MIDLAND, OR TIFT 44 COASTAL, COMMON, TIFT 44 TIFT 78	40 CU FT OR SOD PLUGS 3' X 3'	0.9 CU FT	M-L P C C	J F M A M J J A S O N D	A CUBIC FT. CONTAINS APPROXIMATLY 650 SPRIGS. A BUSHEL CONTAINS 1.25 C.F. OR APPROXIMATLY 800 SPRIGS. SAME AS ABOVE. SOUTHERN COASTAL PLAIN ONLY

FERTILIZER REQUIREMENTS

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

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

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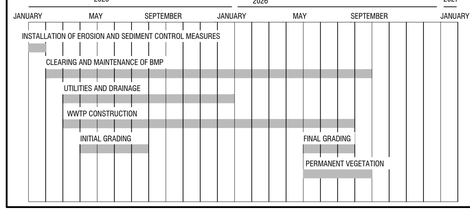
CONSTRUCTION SCHEDULE
PEMBROKE WWTP



MULCHING RATES FOR PERMANENT COVER

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

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

FERTILIZER REQUIREMENTS FOR SOD

TYPES OF SPECIES	PLANTING YEAR	FERTILIZER (N-P-K)	RATE (LBS./ACRE)	NIRTOGEN TOP DRESSING RATE (LBS./ACRE)
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 1000 400	50-1000 --- 30
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 800400	50-1000 50-100 30

SOD PLANTING REQUIREMENTS

GRASS	VARIETIES	RESOURCE AREA	GROWING SEASON
1. BERMUDAGRASS	Common Tifway Tifgreen Tiflawn	M-L,P,C P,C P,C P,C	Warm Weather
2. TALL FESCUE	Kentucky 31	M-L, P	Cool Weather

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33550 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK 19 ENGINEERING 30

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WASTEWATER TREATMENT PLANT EXPANSION

EROSION AND SEDIMENTATION CONTROL DETAILS

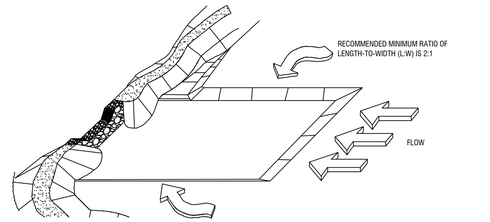
C14

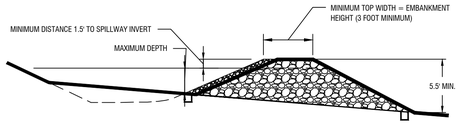
FILE NO: 2020-48

PLOT DATE: June 5, 2025

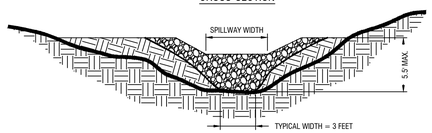
TEMPORARY SEDIMENT TRAP
ROCK OUTLET
Sd4–C

COURTESY OF CITY OF KNOXVILLE BMP EROSION AND SEDIMENT





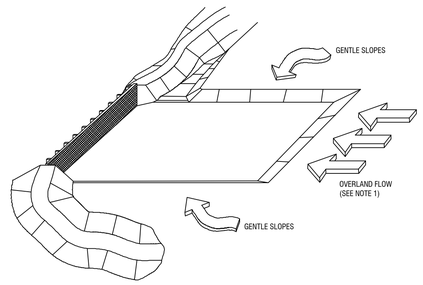
CROSS-SECTION

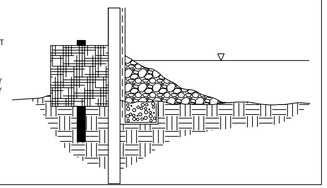


PROFILE THROUGH EMBANKMENT

TEMPORARY SEDIMENT TRAP
COMBINATION OUTLET
Sd4–B

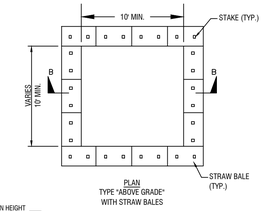
COURTESY OF CITY OF KNOXVILLE BMP EROSION AND SEDIMENT



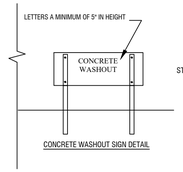


NOTES:
1. MAXIMUM AREA FOR SEDIMENT TRAP WITH A SILT FENCE/STRAW BALE COMBINATION OUTLET IS USUALLY 1 ACRE WITH GENTLE SLOPES AND PREDOMINANTLY OVERLAND SHEET FLOW.
2. MAXIMUM DEPTH OF PONDED WATER IS USUALLY 12" OR LESS. PROVIDE EMERGENCY SPILLWAY BY CONSTRUCTING RIPRAP CHANNEL AS NECESSARY.

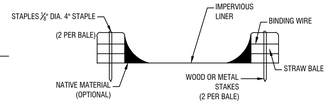
CONCRETE WASHOUT



PLAN
TYPE "ABOVE GRADE" WITH STRAW BALES



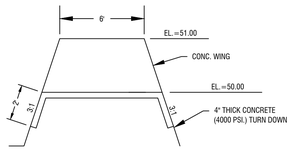
CONCRETE WASHOUT SIGN DETAIL



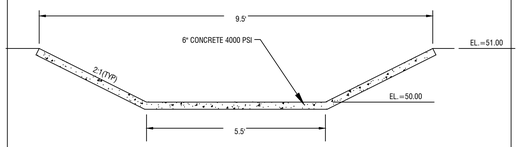
SECTION B-B

NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL..
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

OUTLET CONTROL STRUCTURE



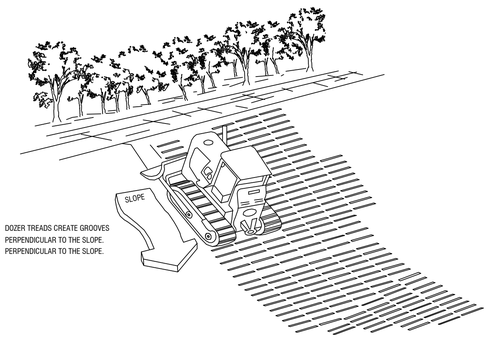
SECTION B-B



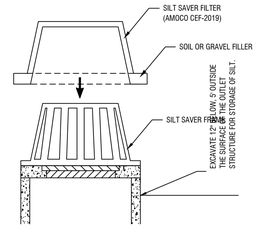
SECTION A-A

SURFACE ROUGHENING
Su

TRACKING



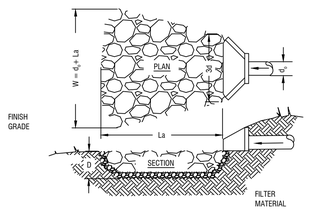
INLET SEDIMENT TRAP
DOMED SILT SAVER FILTER
Sd2–SS



SECTION

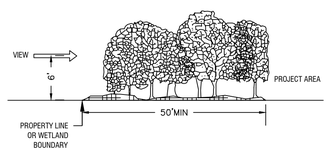
STORM DRAIN OUTLET PROTECTION
St

MINIMUM TAILWATER

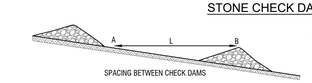


NOTES:
1. REFER TO STORM DRAIN OUTLET PROTECTION CHART FOR DIMENSIONING INFORMATION.
2. d_o = DIAMETER OF OUTLET PIPE
3. d50 = MIN. STONE DIAMETER
4. d_{max} = MAX. STONE DIA. = (1.5 x d50)
5. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6".
6. EXTEND THE RIPRAP APRON UP THE CHANNEL BANK TO THE TOP OF THE CHANNEL BANK.
7. A FILTER BLANKET OR FILTER FABRIC SHALL BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION. FILTER BLANKET SHALL CONSIST OF A GRADED GRAVEL LAYER OR SYNTHETIC FILTER CLOTH. FILTER BLANKET IS INTENDED TO PREVENT SOIL MOVEMENT THROUGH THE OPENINGS IN RIPRAP.
8. RIPRAP APRON AND FILTER MATERIAL SHALL BE WELL GRADED, LEVEL, AND EXTENDED TO ACHIEVE MAX. STABILITY.

PLANTED/NATURAL UNDISTURBED BUFFER
Bf–U

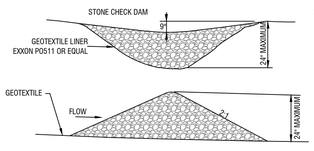


STONE CHECK DAM
Cd–S



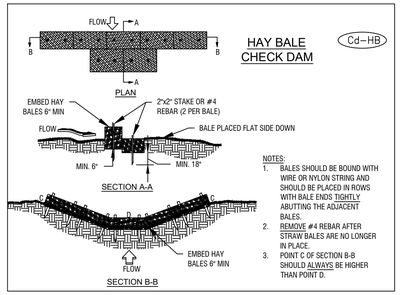
L = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

STONE CHECK DAMS SHOULD BE CONSTRUCTED OF GRADED SIZE 2-10" STONE. MECHANICAL OR HAND PLACEMENT SHALL BE REQUIRED TO INSURE COMPLETE COVERAGE OF ENTIRE WIDTH OF DITCH OR SWALE, AND THAT CENTER OF DAM IS LOWER THAN EDGES.



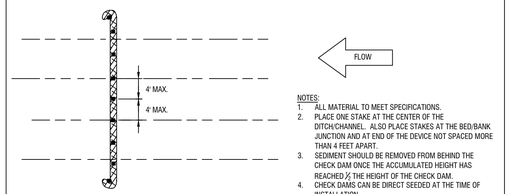
MAINTENANCE
PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED. SEDIMENT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF ONE-HALF THE ORIGINAL DAM HEIGHT OR BEFORE. IF THE AREA IS TO BE MOWED, CHECK DAMS SHALL BE REMOVED ONCE FINAL STABILIZATION HAS OCCURRED. OTHERWISE, CHECK DAMS MAY REMAIN IN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

HAY BALE CHECK DAM
Cd–HB



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.

COMPOST SOCKS FOR CHECK DAMS
Cd–Fs



NOTES:
1. ALL MATERIAL TO MEET SPECIFICATIONS.
2. PLACE ONE STAKE AT THE CENTER OF THE DITCH/CHANNEL. ALSO PLACE STAKES AT THE BED/BANK JUNCTION AND AT END OF THE DEVICE NOT SPACED MORE THAN 4 FEET APART.
3. SEDIMENT SHOULD BE REMOVED FROM BEHIND THE CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS REACHED ½ THE HEIGHT OF THE CHECK DAM.
4. CHECK DAMS CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.
5. MINIMUM STAKING DEPTH FOR SAND, SILT, AND CLAY SHALL BE 18".

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

M.E. SACK ENGINEERING 19 30

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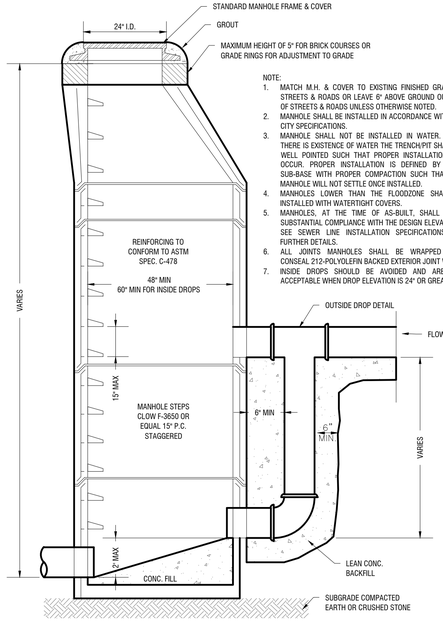
WASTEWATER TREATMENT PLANT EXPANSION

EROSION AND SEDIMENTATION CONTROL DETAILS

C15

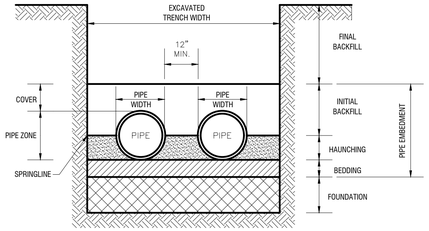
FILE NO: 2020-48

PLOT DATE: June 5, 2025

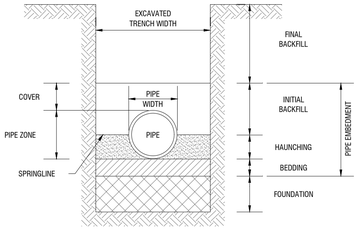


NOTE:
1. MATCH M.H. & COVER TO EXISTING FINISHED GRADE IN STREETS & ROADS OR LEAVE 6" ABOVE GROUND OUTSIDE OF STREETS & ROADS UNLESS OTHERWISE NOTED.
2. MANHOLE SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY SPECIFICATIONS.
3. MANHOLE SHALL NOT BE INSTALLED IN WATER. WHEN THERE IS EXISTENCE OF WATER THE TRENCH/PIT SHALL BE WELL POINTED SUCH THAT PROPER INSTALLATION CAN OCCUR. PROPER INSTALLATION IS DEFINED BY ROCK SUB-BASE WITH PROPER COMPACTION SUCH THAT THE MANHOLE WILL NOT SETTLE ONCE INSTALLED.
4. MANHOLES LOWER THAN THE FLOODZONE SHALL BE INSTALLED WITH WATERTIGHT COVERS.
5. MANHOLES, AT THE TIME OF AS-BUILT, SHALL BE IN SUBSTANTIAL COMPLIANCE WITH THE DESIGN ELEVATIONS. SEE SEWER LINE INSTALLATION SPECIFICATIONS FOR FURTHER DETAILS.
6. ALL JOINTS MANHOLES SHALL BE WRAPPED WITH CONSEAL 212-POLYOLEFIN BACKED EXTERIOR JOINT WRAP.
7. INSIDE DROPS SHOULD BE AVOIDED AND ARE NOT ACCEPTABLE WHEN DROP ELEVATION IS 24" OR GREATER.

PRECAST CONCRETE MANHOLE
N.T.S.

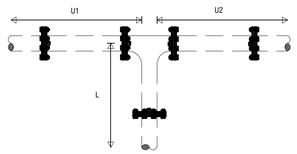


PARALLEL FORCEMAIN PIPE BEDDING DETAIL
N.T.S.



PIPE BEDDING DETAIL
N.T.S.

TEE Ur	DUCTILE IRON LINE 5'-10'	11'-20'	21'-35'	36'-50'	PVC LINE 5'-10'	11'-20'	21'-35'	> 35'
4X4	23	15	2	*	43	28	4	*
6X4	21	9	*	*	38	17	*	*
6X6	35	27	14	*	64	49	25	*
8X4	18	3	*	*	34	6	*	*
8X6	33	23	5	*	61	42	10	*
8X8	47	39	26	6	87	72	48	12
10X4	16	*	*	*	29	*	*	*
10X6	31	18	*	*	58	34	*	*
10X8	46	36	19	*	84	66	35	*
10X10	57	49	36	17	106	91	67	31
12X4	13	*	*	*	24	*	*	*
12X6	30	14	*	*	54	26	*	*
12X8	44	32	13	*	82	60	23	*
12X10	56	47	31	7	104	86	57	13
12X12	68	60	47	28	126	112	87	51

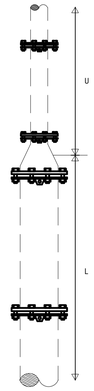


NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERRUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 AND U2
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH.
6. WHERE Ur IS LESS THAN 5', RESTRAINT TEE AS A 90° HORIZONTAL BEND.

MINIMUM RESTRAINED LENGHT (L)
* RESTRAINT AT TEE ONLY

TEE RESTRAINT

REDUCER	DUCTILE IRON U	DUCTILE IRON L	PVC LINE U	PVC LINE L
6X4	30	21	56	38
8X4	72	38	134	69
8X6	29	22	53	40
10X4	123	51	227	94
10X6	63	38	117	71
10X8	26	21	49	39
12X4	186	64	343	118
12X6	106	53	196	99
12X8	59	39	109	72
12X10	26	21	48	40



U = MINIMUM UNINTERRUPTED STRAIGHT RUN PIPE ON SMALL SIDE OF REDUCER.

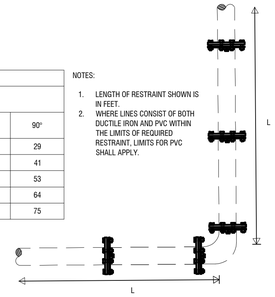
L = MINIMUM RESTRAINED LENGTH.

* WHERE "U" IS NOT MET, PIPE ON LARGE SIDE OF REDUCER SHALL BE RESTRAINED FOR A MINIMUM OF "L" FEET.

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

REDUCER RESTRAINT

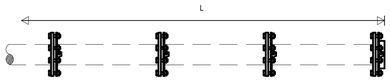
	DUCTILE IRON BEND ANGLE 11 1/4°	22 1/2°	45°	90°	PVC LINE BEND ANGLE 11 1/4°	22 1/2°	45°	90°
PIPE DIAMETER 4	2	4	8	20	3	6	12	29
6	3	6	12	28	4	8	17	41
8	4	7	15	36	5	11	22	53
10	4	9	18	43	6	13	26	64
12	5	10	21	51	7	15	31	75



NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

HORIZONTAL BEND RESTRAINT

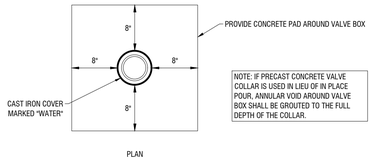
RESTRAINED JOINTS DETAILS
N.T.S.



PIPE DIA.	DUCTILE IRON L	PVC LINE L
4	28	52
6	40	74
8	52	96
10	62	115
12	73	136

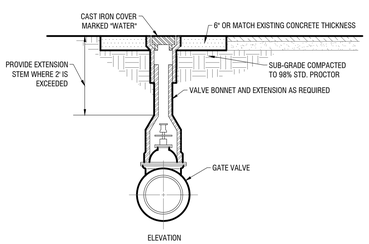
NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

DEAD END RESTRAINT



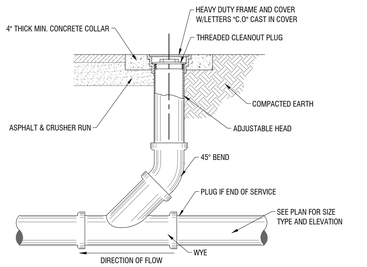
NOTE: IF PRECAST CONCRETE VALVE COLLAR IS USED IN LIEU OF IN PLACE POUR, ANNULAR VOID AROUND VALVE BOX SHALL BE GROUTED TO THE FULL DEPTH OF THE COLLAR.

PLAN

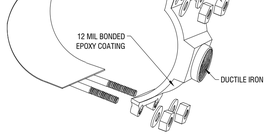


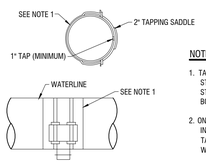
ELEVATION

VALVE BOX DETAIL
N.T.S.



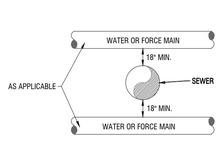
CLEANOUT DETAIL
N.T.S.

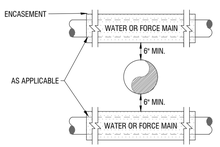




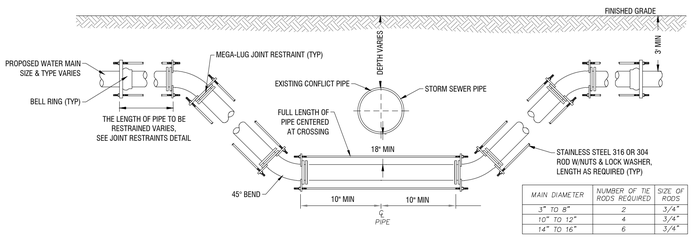
NOTES:
1. TAPPING SADDLE TO BE DUCTILE IRON WITH TYPE 304 STAINLESS STEEL FORGED DOUBLE STRAPS; STAINLESS STEEL BOLTS, NUTS, AND WASHERS. FINISH IS FUSION BONDED EPOXY TO AVERAGE THICKNESS OF 12-MILS.
2. ONE INCH (1") TAPS ON WATER LINES SMALLER THAN SIX INCHES (6") REQUIRE A TAPPING SADDLE. TWO INCH (2") TAPS REQUIRE A TAPPING SADDLE, REGARDLESS OF WATER MAIN SIZE.

1" & 2" WATER TAPPING SADDLE
N.T.S.





NOTE:
1. ENCASEMENT TO EXTEND A MINIMUM OF 10' ON BOTH SIDES OF CROSSING.
2. FOR ELEVATION OF PIPES, SEE PLANS.
3. ALL PIPING MUST HAVE A MIN. VERTICAL SEPERATION OF 18".
4. ENCASEMENT REQUIRED IF 18" VERTICAL SEPARATION IS NOT MAINTAINED.



MAIN DIAMETER	NUMBER OF TIE RODS REQUIRED	SIZE OF RODS
3" TO 8"	2	3/4"
10" TO 12"	4	3/4"
14" TO 16"	6	3/4"

GENERAL NOTES

WATER MAINS AND WATER SERVICE LINES CROSSING HOUSE SEWERS, STORM SEWERS OR SANITARY SEWER SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL SEPARATION OF AT LEAST 24" BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. AT CROSSINGS, ONE FULL LENGTH OF WATER PIPE SHALL BE LOCATED SO BOTH JOINTS WILL BE AS FAR AS POSSIBLE.

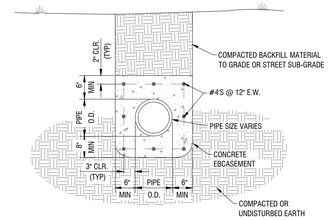
WHEN LOCAL CONDITIONS PREVENT A VERTICAL SEPARATION OF 24", THE SEWER PASSING OVER OR UNDER WATER MAINS SHALL BE CONSTRUCTED OF MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS OF CONSTRUCTION EXTENDING ON EACH SIDE OF THE CROSSING UNTIL AT LEAST 10' SEPARATES THE TWO PIPES AND SHALL BE PRESSURE TESTED TO ASSURE WATER-TIGHTNESS PRIOR TO BACKFILLING. THE LENGTH OF WATER PIPE MUST BE CENTERED AT THE POINT OF CROSSING SO THAT THE JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER.

ADEQUATE STRUCTURAL SUPPORT FOR THE SEWERS TO PREVENT EXCESSIVE DEFLECTION OF JOINTS AND SETTLING ON AND BREAKING THE WATER MAINS.

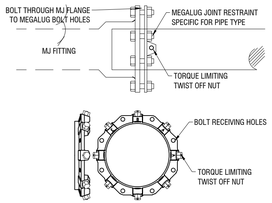
IN CASE THAT A SEWER LATERAL PASSES ABOVE WATER MAIN, THE SEWER LATERAL MUST BE ENCASED IN A CARRIER PIPE CONSTRUCTED OF WATER MAIN MATERIALS, EXTENDING EACH SIDE OF THE CROSSING UNTIL AT LEAST 10 FEET SEPARATES THE TWO PIPES.

WATER SERVICE LINES SHOULD GO OVER ANY SANITARY SEWER LINE AND MAINTAIN THE 24" VERTICAL SEPARATION

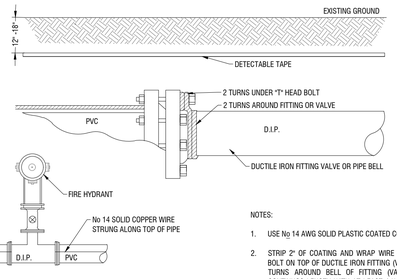
UTILITY VERTICAL SEPERATION DETAIL
N.T.S.

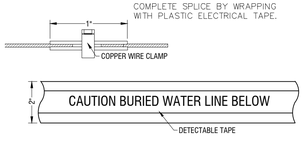


CONCRETE ENCASEMENT DETAIL
N.T.S.



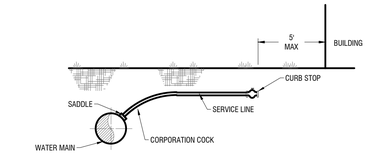
TYPICAL JOINT RESTRAINT DETAIL
N.T.S.



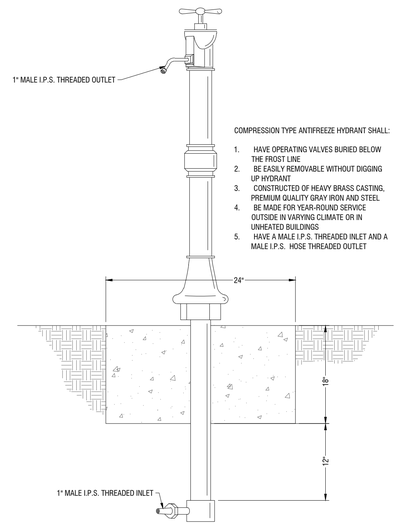


NOTES:
1. USE No 14 AWG SOLID PLASTIC COATED COPPER WIRE.
2. STRIP 2" OF COATING AND WRAP WIRE 2 TURNS UNDER "T" HEAD BOLT ON TOP OF DUCTILE IRON FITTING (VALVE). NEXT WRAP WIRE 2 TURNS AROUND BELL OF FITTING (VALVE) AND WIND WITH A CONTINUOS LENGTH WITH AT LEAST 4 WRAPS PER LENGTH OF PVC PIPE TO NEXT DUCTILE IRON FITTING. TERMINATE AT FITTING IN SIMILAR MANNER AS NOTED ABOVE.
3. ALL SPLICES MUST BE MADE BY USING COPPER WIRE SPLICE "U" BOLT ASSEMBLIES AND THEN WRAPPING WITH ELECTRICAL TAPE.
4. IN LIEU OF "WRAPPING" TRACER WIRE AROUND PVC PIPE, WIRE MAY BE STRUNG ALONG TOP OF PIPE PROVIDED IT IS TAPED TO THE PIPE EVERY 5 FEET TO INSURE POSITION USING BACKFILL.
5. DETECTION TAPE SHALL BE PLACED ALONG ALL PVC WATER MAINS. THIS MUST BE 2" WIDE DETECTABLE ALUMINUM FOIL PLASTIC BACKED TAPE.

TRACER WIRE AND DETECTABLE TAPE INSTALLATION DETAIL FOR PVC PIPE
N.T.S.



WATER SERVICE DETAIL
N.T.S.



COMPRESSION TYPE ANTIFREEZE HYDRANT SHALL:
1. HAVE OPERATING VALVES BURIED BELOW THE FROST LINE
2. BE EASILY REMOVABLE WITHOUT DIGGING UP HYDRANT
3. CONSTRUCTED OF HEAVY BRASS CASTING, PREMIUM QUALITY GRAY IRON AND STEEL.
4. BE MADE FOR YEAR-ROUND SERVICE OUTSIDE IN VARYING CLIMATE OR IN UNHEATED BUILDINGS
5. HAVE A MALE I.P.S. THREADED INLET AND A MALE I.P.S. HOSE THREADED OUTLET

COMPRESSION TYPE ANTIFREEZE HYDRANT DETAIL
N.T.S.

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 35567 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING

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OWNER:
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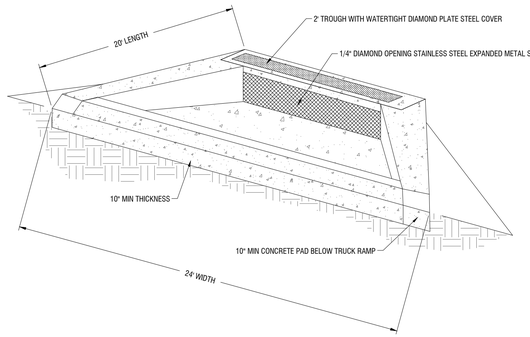
WASTEWATER TREATMENT PLANT EXPANSION

GENERAL DETAILS

C16

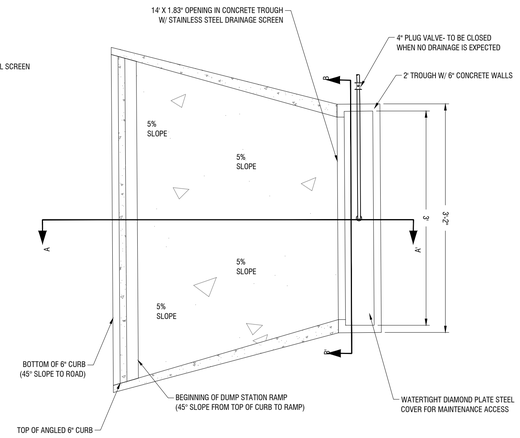
FILE NO: 2020-48

PLOT DATE: June 5, 2025



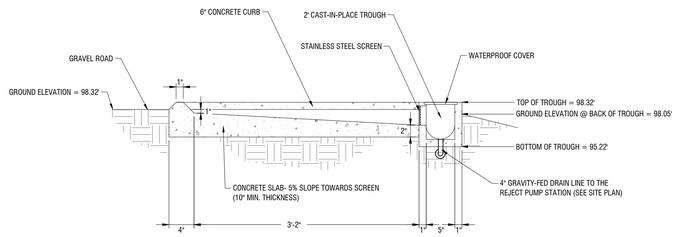
TRUCK DUMP STATION DETAIL

N.T.S.



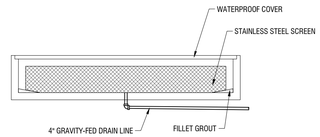
TRUCK DUMP STATION PLAN VIEW

SCALE: 1" = 5'



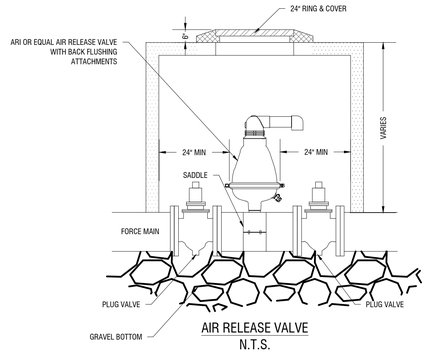
TRUCK DUMP STATION
SECTION A-A'

SCALE: 1" = 5'



TRUCK DUMP STATION
SECTION B-B'

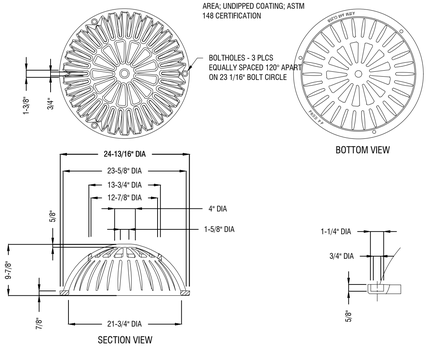
NTS



AIR RELEASE VALVE

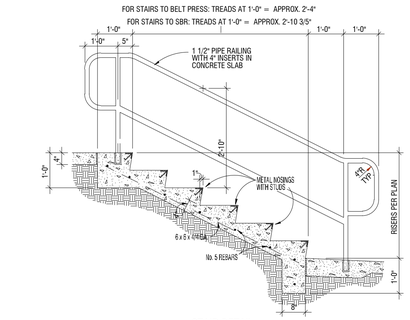
N.T.S.

NOTES:
1. GRAY IRON MATERIAL NON-TRAFFIC LOAD RATING; 163 SQIN OPEN AREA; UNDIPPED COATING; ASTM 148 CERTIFICATION



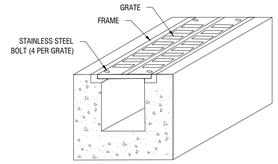
BEEHIVE CIRCULAR GRATE

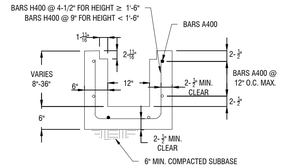
N.T.S.



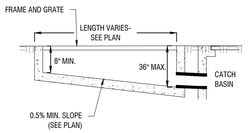
STAIR DETAIL

N.T.S.





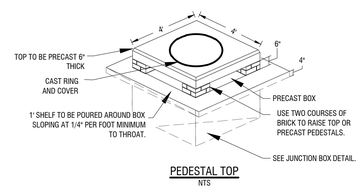
TRENCH CROSS SECTION



TRENCH PROFILE

CONCRETE CHANNEL TRENCH DRAIN

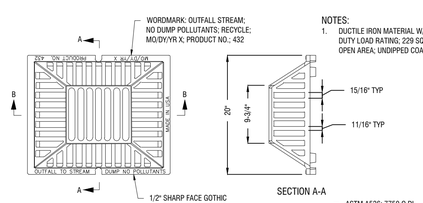
N.T.S.



PEDESTAL TOP

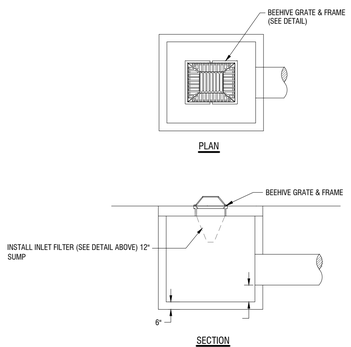
NTS

NOTES:
1. DUCTILE IRON MATERIAL W/ LIGHT DUTY LOAD RATING; 229 SQIN OPEN AREA; UNDIPPED COATING



BEEHIVE GRATE

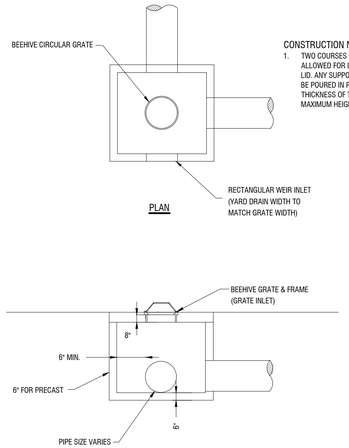
N.T.S.



CONSTRUCTION NOTES:
1. TWO COURSES OF BRICK MAX SHALL BE ALLOWED FOR LEVELING AND ADJUSTMENT OF LID. ANY SUPPORT OTHER THAN BRICK SHALL BE POURED IN PLACE MATCHING THE THICKNESS OF THE PRECAST WALL TO A MAXIMUM HEIGHT OF 24 INCHES.

GRATE INLET

N.T.S.



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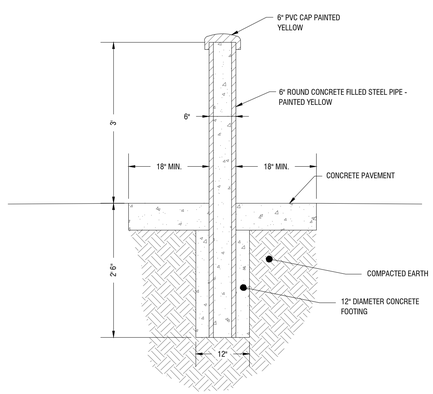
JUNCTION BOX / GRATE INLET

N.T.S.



PIPE BOLLARD DETAIL

NTS

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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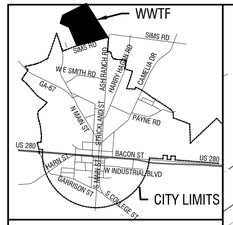
WASTEWATER TREATMENT PLANT EXPANSION

GENERAL DETAILS

C17

FILE NO: 2020-48

PLOT DATE: June 5, 2025



VICINITY MAP
NOT TO SCALE

PRE-DEVELOPMENT
BASIN 1
6.96 AC.

PRE-DEVELOPMENT
BASIN 2
0.51 AC.

PRE-DEVELOPMENT
BASIN 3
0.53 AC.

PRE-DEVELOPMENT
BASIN 4
0.61 AC.

PRE-DEVELOPMENT
BASIN 5
0.37 AC.

LAGOON 3
1.32 AC.

DR-RUN-01EX

DR-RUN-02EX

PRE-DEVELOPMENT
BASIN 1
6.96 AC.

Se

Pl

Se

SCALE BAR: 1"= 50'
50 0 25 50 100 200

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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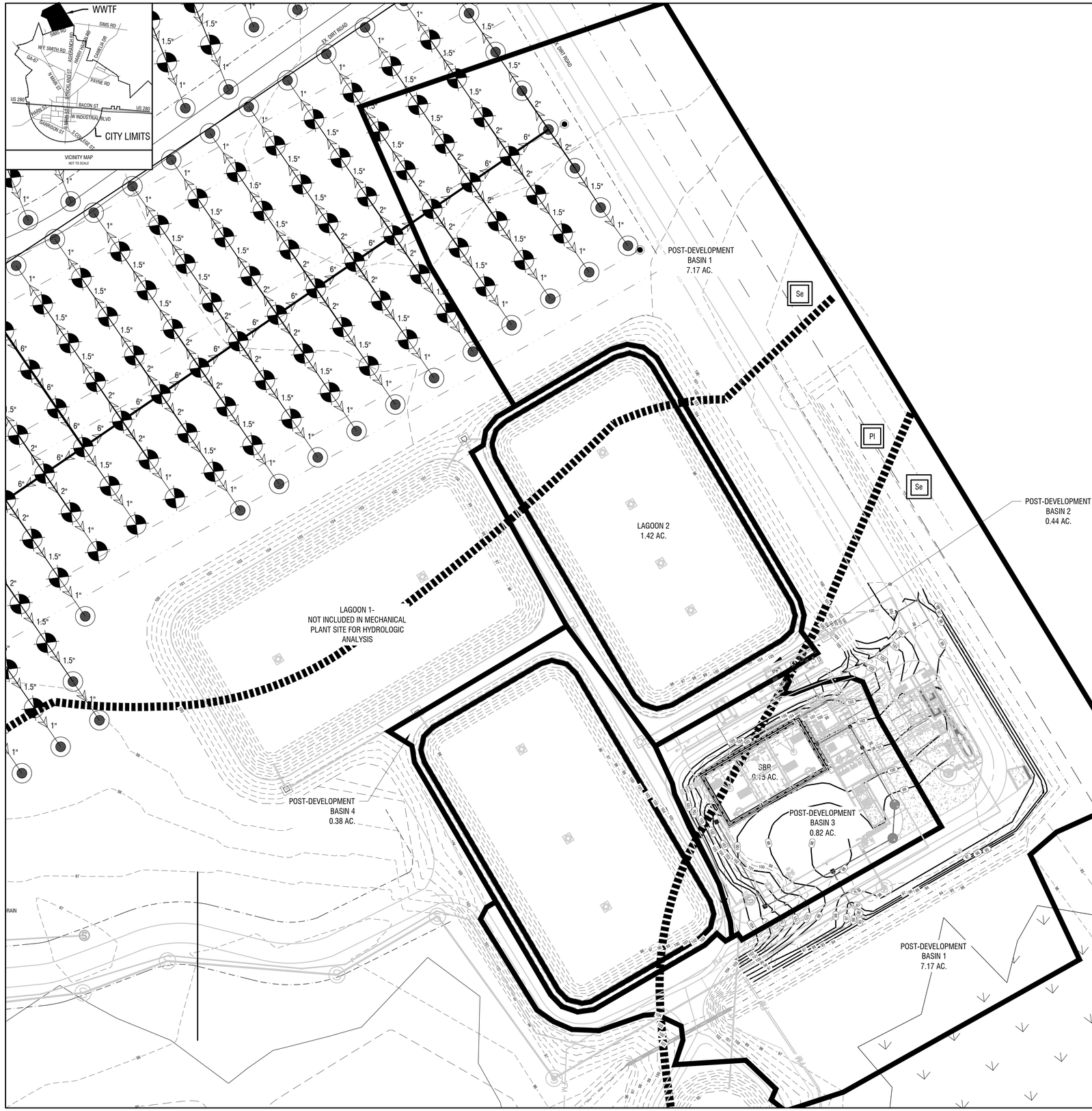
WASTEWATER TREATMENT PLANT EXPANSION

PRE DEVELOPMENT BASIN

C18

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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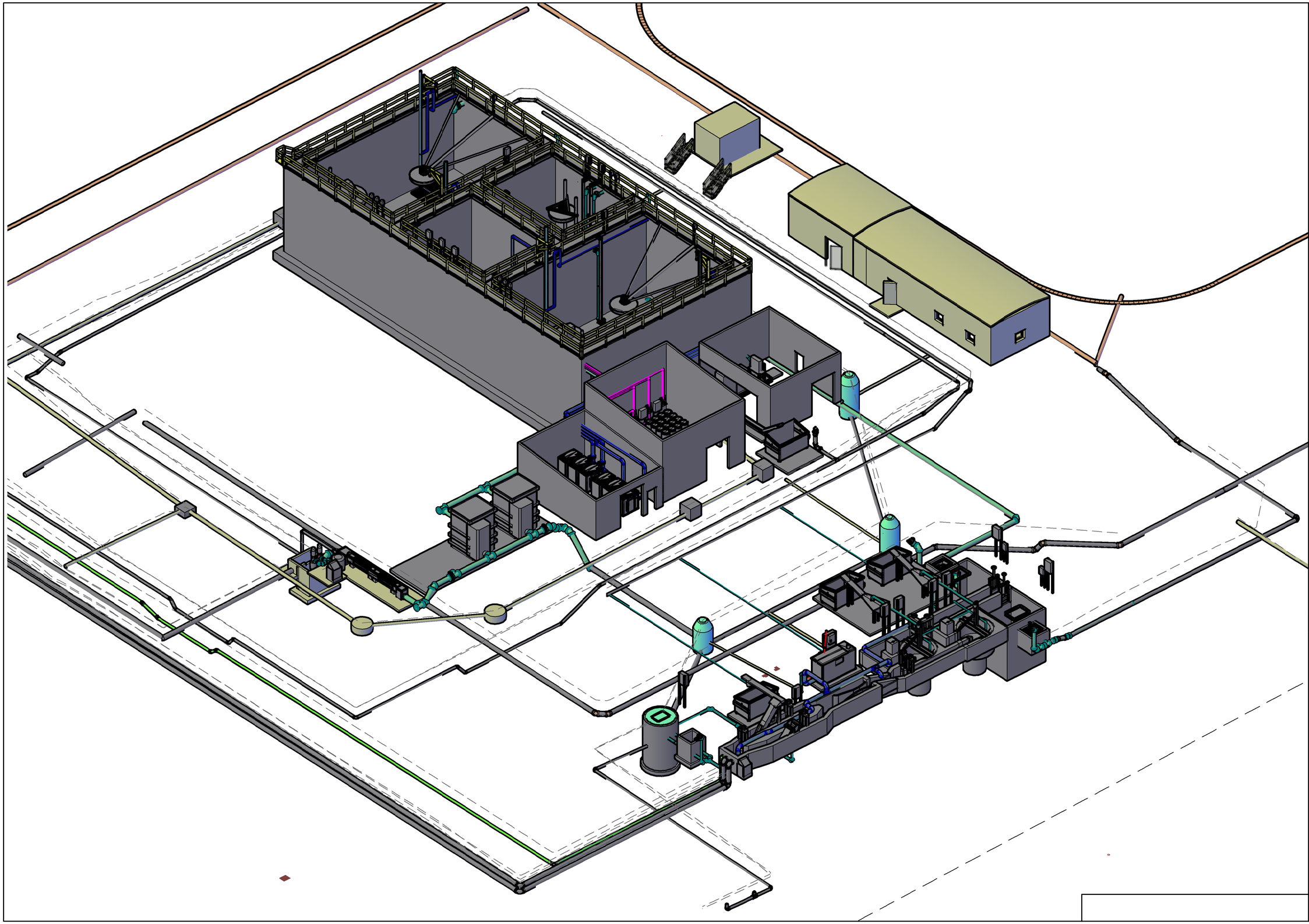
WASTEWATER TREATMENT PLANT EXPANSION

POST DEVELOPMENT BASIN

C19

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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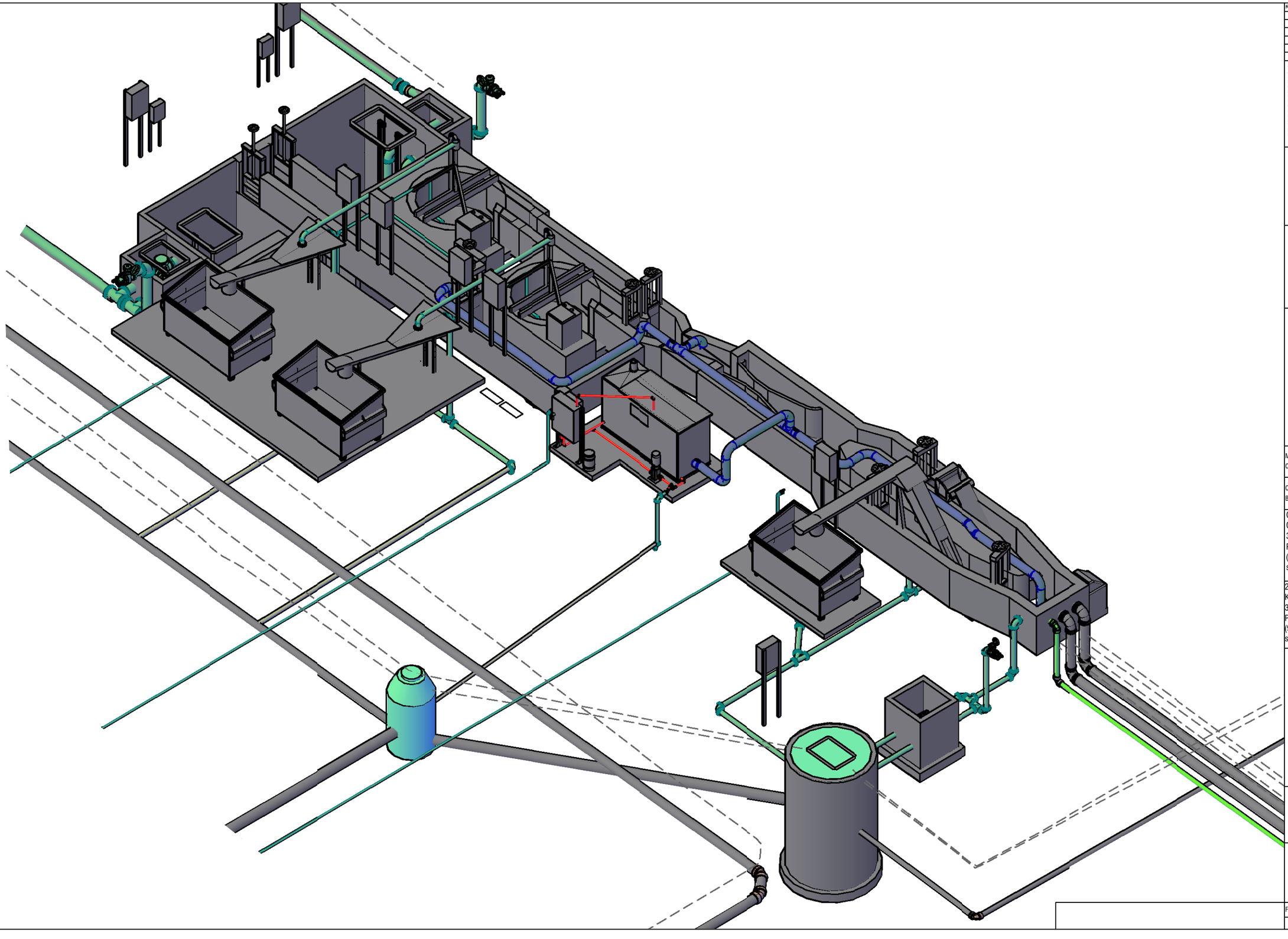
WASTEWATER TREATMENT PLANT EXPANSION

OVERALL ISOMETRIC VIEW

M1

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
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2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035644 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 00

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COUNTY:
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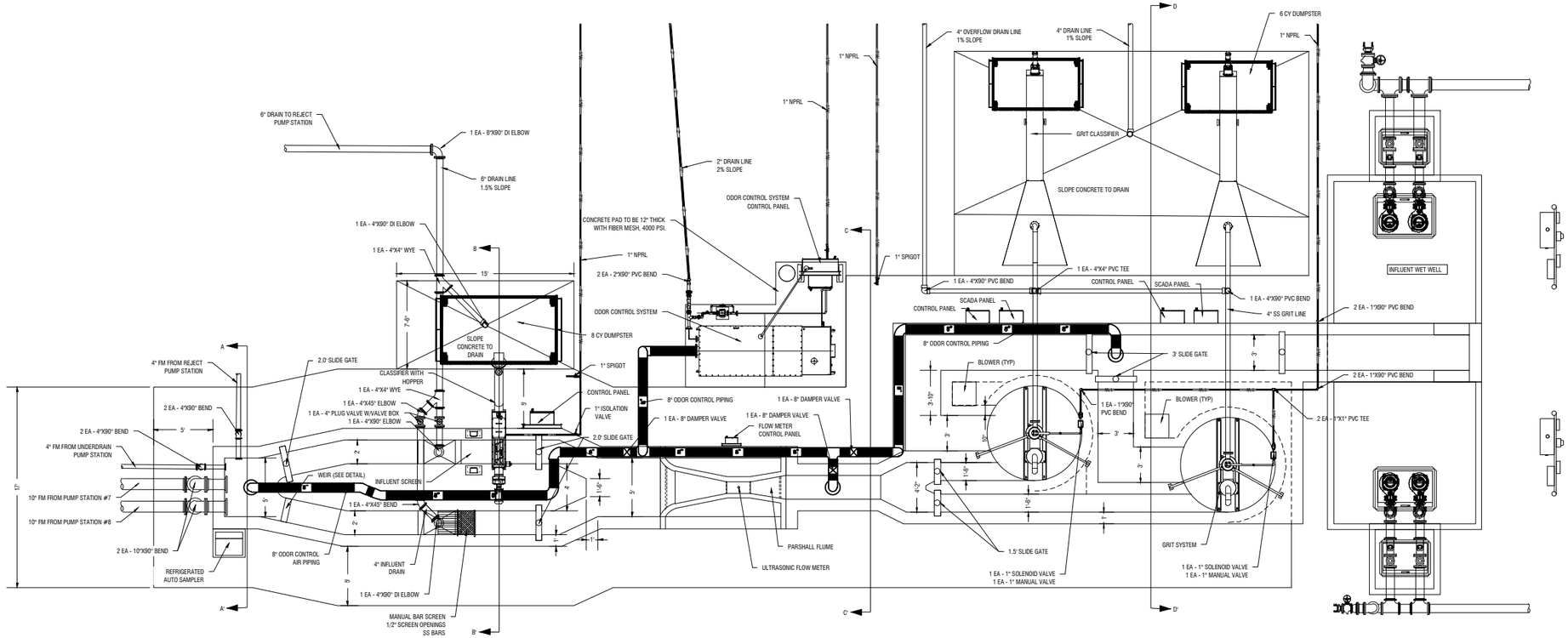
WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS ISOMETRIC VIEW

M2

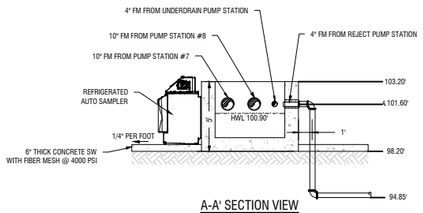
FILE NO: 2020-48

PLOT DATE: June 5, 2025



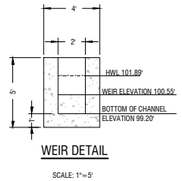
PLAN VIEW

SCALE: 1"=5'



A-A' SECTION VIEW

SCALE: 1"=5'



WEIR DETAIL

SCALE: 1"=5'

NOTES:

1.ALL CONCRETE SURFACES IN THE HEADWORKS ABOVE THE LOW WATER LEVEL WILL BE COATED WITH AN EPOXY IN ACCORDANCE WITH THE SPECIFICATIONS.

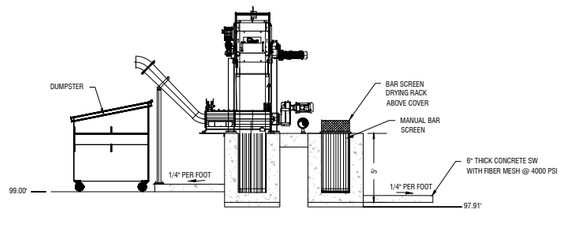
2.THE HEADWORKS WILL BE COVERED WITH ALUMINUM DIAMOND PLATE TO CREATE AN AIR AND WATER TIGHT COVER CAPABLE OF MEETING NEGATIVE PRESSURE REQUIREMENTS OF THE ODOR CONTROL SYSTEM. ANGLE FOR DIAMOND PLATE SHALL BE RUN FOR ENTIRE LENGTH OF CHANNEL. LEAVE 3/8" GAP FOR EXPANSION. IMPERMEABLE GASKET REQUIRED WITH DIAMOND PLATE.

CONTRACTOR SHALL AIR TEST HEAD WORKS AND PROVIDE SUCTION VENT NEEDED FOR BALANCED AIRFLOW TO ODOR CONTROL

3.PARSHALL FLUMES WILL BE PRECAST FIBERGLASS UNIT AND INSTALLED WITH SPECIFIC ATTENTION TO THE ELEVATION OF OTHER COMPONENTS IN THE HEADWORKS.

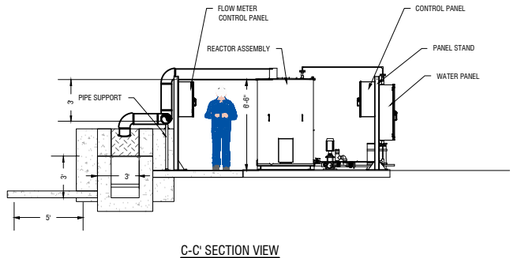
PROVIDE TELEDYNE ISCO FLOW METER SYSTEM AT FLUME

4.SEE STRUCTURAL DRAWINGS FOR CONCRETE DETAILS AND INSTALLATION.



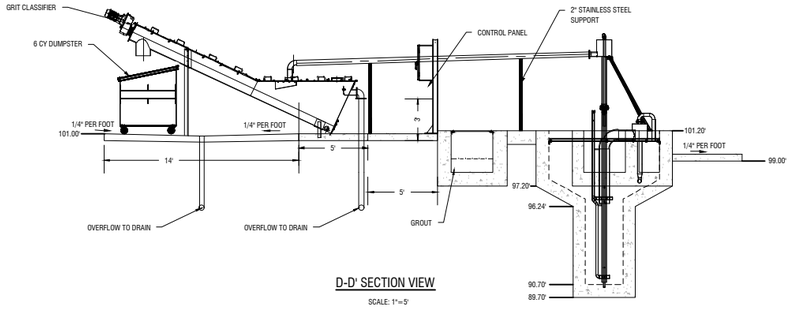
B-B' SECTION VIEW

SCALE: 1"=5'



C-C' SECTION VIEW

SCALE: 1"=5'



D-D' SECTION VIEW

SCALE: 1"=5'

SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035624 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 00

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OWNER:
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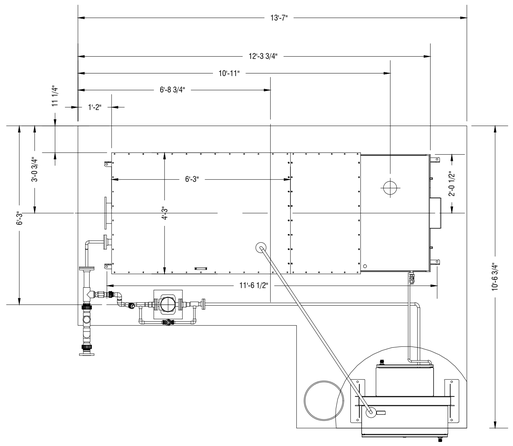
WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS

M3

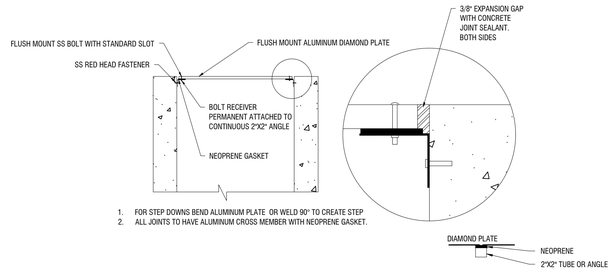
FILE NO: 2020-48

PLOT DATE: June 5, 2025



PLAN VIEW

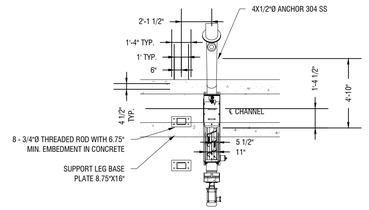
SCALE: 1"=5'



1. FOR STEP DOWNS BEND ALUMINUM PLATE OR WELD 90° TO CREATE STEP
2. ALL JOINTS TO HAVE ALUMINUM CROSS MEMBER WITH NEOPRENE GASKET.

GENERAL DIAMOND PLATE DETAIL

N.T.S.

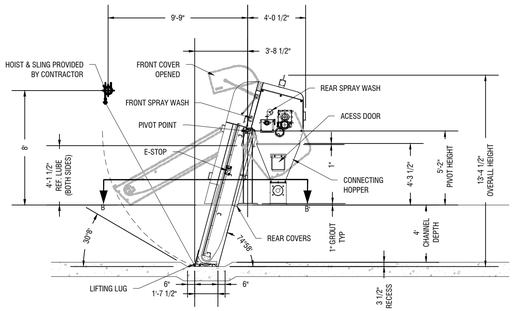


PLAN VIEW B-B'

SCALE: 1"=5'

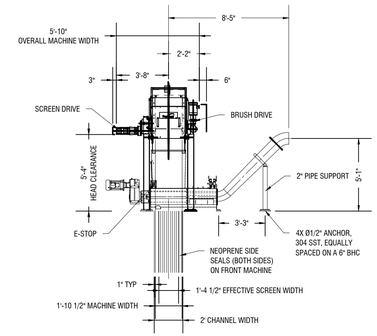
AGUC SCREEN NOTES:

1. SCREEN SPEED 7 FPM.
2. OVERLOAD PROTECTION - SSAC CURRENT MONITOR.
3. MOUNT LEVEL SENSOR TO SUIT. LEVEL SENSORS SUPPLIED WITH CONTROL PANEL.
4. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION.
5. LOCAL E-STOP SUPPLIED MOUNTED TO DRIVE END SUPPORT BRACKET
6. WATER REQUIREMENT.
   WASH SPRAY - 10 GPM @ 60 PSI
   FLUSH SPRAY - 15 GPM @ 60 PSI



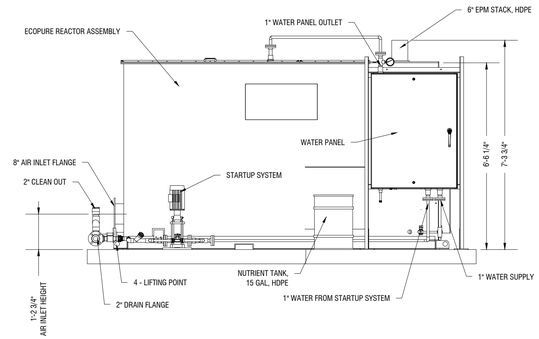
SIDE ELEVATION

SCALE: 1"=5'



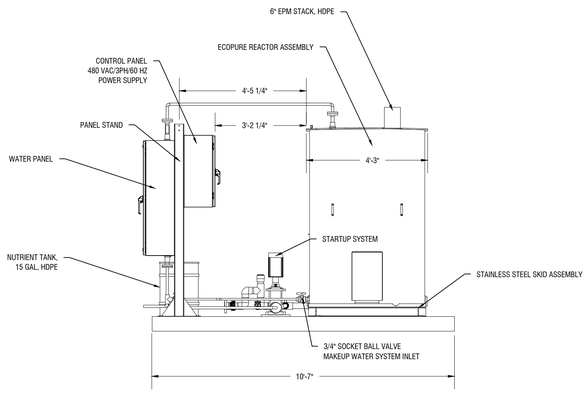
REAR ELEVATION

SCALE: 1"=5'



FRONT VIEW

SCALE: 1"=30"



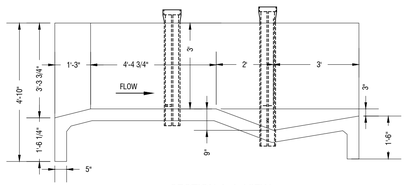
SIDE VIEW

SCALE: 1"=30"

ODOR CONTROL SYSTEM DETAIL

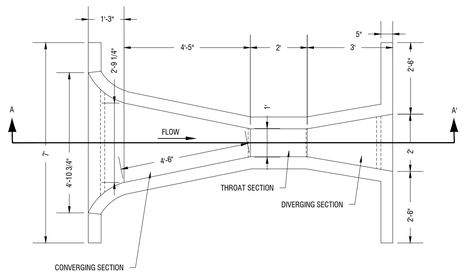
FREE-FLOW CAPACITY		QUANTITIES		
MIN.	MAX.	CONC.	REINF. STEEL	ANGLE LENGTH
SEC.-FT.	SEC.-FT.	CU. YDS.	LBS.	FT.-IN.
0.11	16.1	2.64	321	6-10

FLUME TO BE PREFABRICATED AND GROUTED IN PLACE PER MANUFACTURERS RECOMMENDATIONS.



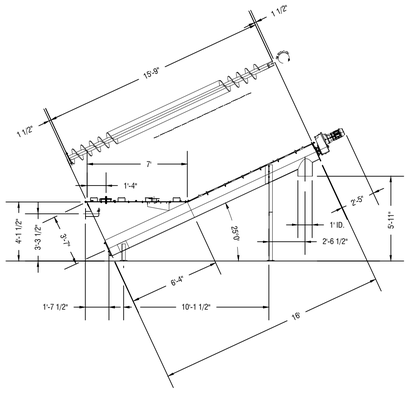
SECTION A-A' VIEW

SCALE: 1"=30"



PLAN VIEW

SCALE: 1"=30"



GRIT CLASSIFIER DETAIL

SCALE: 1"=5'

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

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OWNER:
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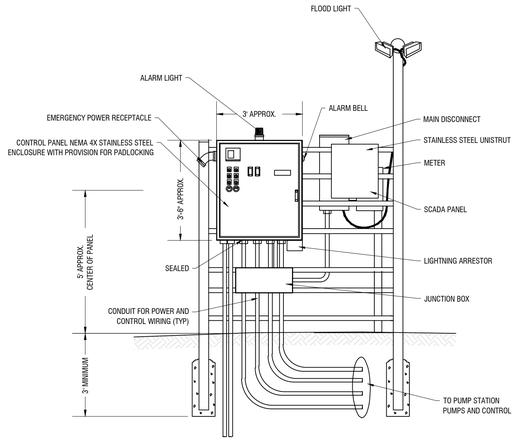
WASTEWATER TREATMENT PLANT EXPANSION

HEADWORKS DETAILS

M4

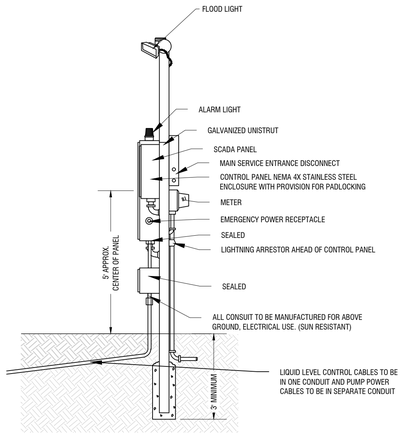
FILE NO: 2020-48

PLOT DATE: June 5, 2025



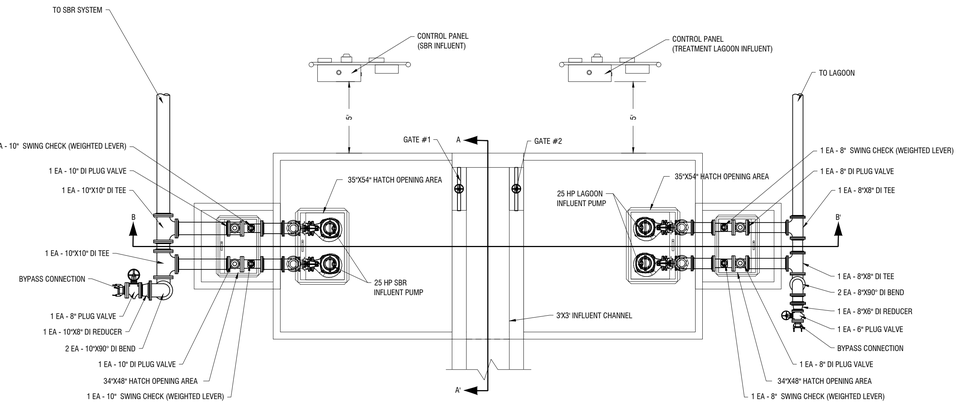
CONTROL PANEL ELEVATION VIEW

NTS



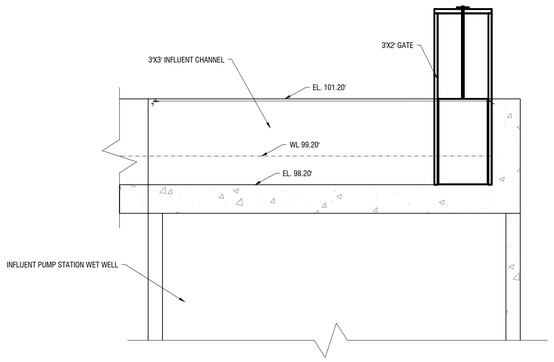
CONTROL PANEL SIDE VIEW

NTS



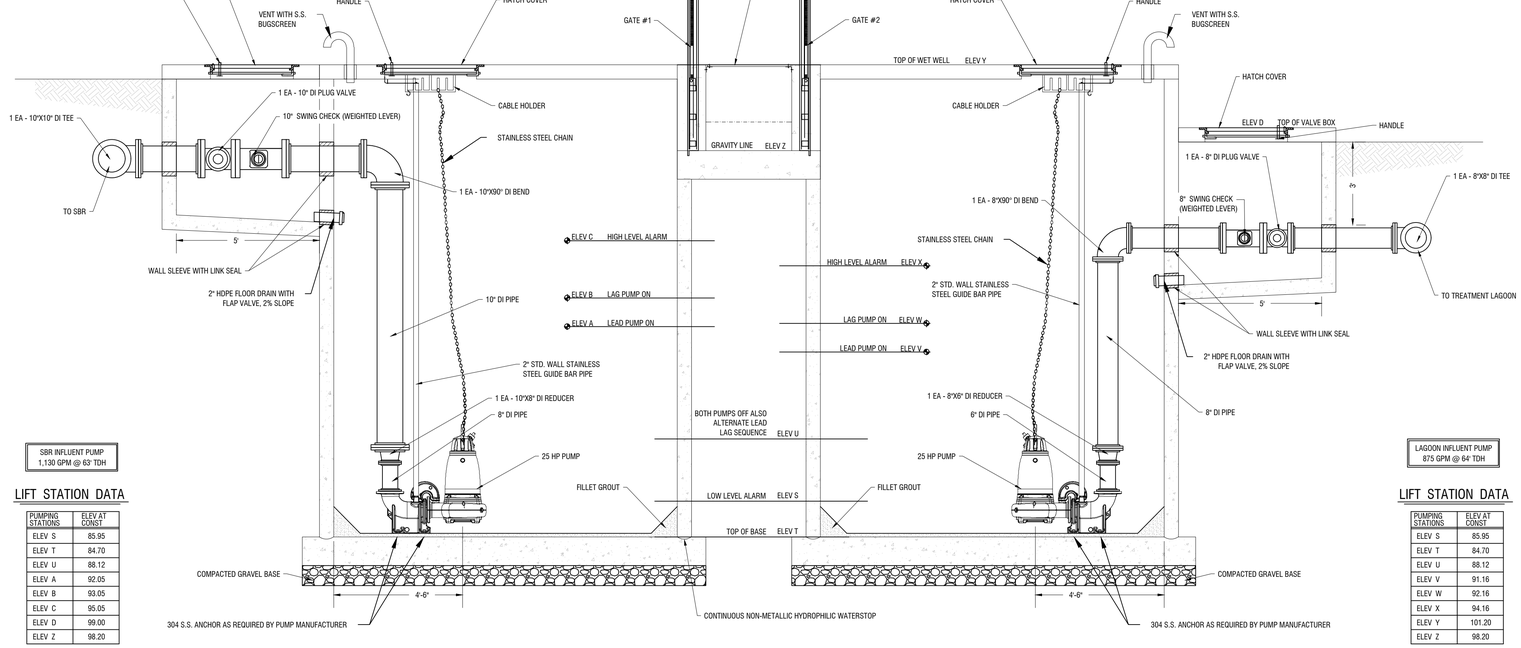
PLAN VIEW

SCALE: 1"=5'



ELEVATION VIEW SECTION A-A'

SCALE: 1"=30"



ELEVATION VIEW SECTION B-B'

SCALE: 1"=30"

SBR INFLUENT PUMP
1,130 GPM @ 63' TDH

LIFT STATION DATA

PUMPING STATIONS	ELEV AT CONST
ELEV S	85.95
ELEV T	84.70
ELEV U	88.12
ELEV A	92.05
ELEV B	93.05
ELEV C	95.05
ELEV D	99.00
ELEV Z	98.20

LAGOON INFLUENT PUMP
875 GPM @ 64' TDH

LIFT STATION DATA

PUMPING STATIONS	ELEV AT CONST
ELEV S	85.95
ELEV T	84.70
ELEV U	88.12
ELEV V	91.16
ELEV W	92.16
ELEV X	94.16
ELEV Y	101.20
ELEV Z	98.20

GENERAL NOTES:

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK.

SBR INFLUENT PUMPS SHALL BE FLYGT NP 3171 MT3-435 OR APPROVED EQUAL, 30 HP, 3 PHASE, 460 VOLTS, 1750 RPM, 60 HERTZ, PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN.

TREATMENT LAGOON INFLUENT PUMPS SHALL BE FLYGT NP 3171 MT3-455 OR APPROVED EQUAL, 25 HP, 3 PHASE, 460 VOLTS, 1750 RPM, 60 HERTZ, PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN.

ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE WATERTIGHT AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.

WET WELL SHALL BE COATED INSIDE WITH PVC LINER OR LINED IN PLACE IN ACCORDANCE WITH THE SPECIFICATIONS.

WET WELL SHALL BE HEAVY DUTY ALUMINUM WITH TORSION BAR ASSIST, POSITIVE LOCK AT 90 AND SAFETY GRATE®, COVERS SHALL ALSO HAVE PADLOCKING CAPABILITIES (LOADING 300 PSF)

VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE.

VALVE VAULT SHALL HAVE SEALED FLOOR W/DRAIN TO WET WELL.

REFERENCE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL DIMENSIONS AND DETAILS.

PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN

CABLE HANGERS SHALL BE STAINLESS STEEL.

ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF ELECTRICAL CABLES.

ALL CONDUITS INTO THE CONTROL PANEL MUST BE SEALED.

CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, PROGRAMING, COMMISSIONING AND ENGINEERING ALL COMPONENTS OF THE PUMP CONTROLLER/SCADA SYSTEM.

NOTE:
FLOOR AND INTERIOR WALLS OF LIQUID CONTAMINATED TANKS / STRUCTURES SHALL BE COATED WITH SHERWIN WILLIAMS DURA-PLATE 6100 OR PPG RAVEN 405 ABOVE THE HIGH WATERLINE

REVISIONS:	
1.	SBR TANK SIZE
2.	GSWCC ESP&C
3.	ADDENDUM 1
4.	ADDENDUM 2

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GEORGIA REGISTERED No. 000000 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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COUNTY:
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OWNER:
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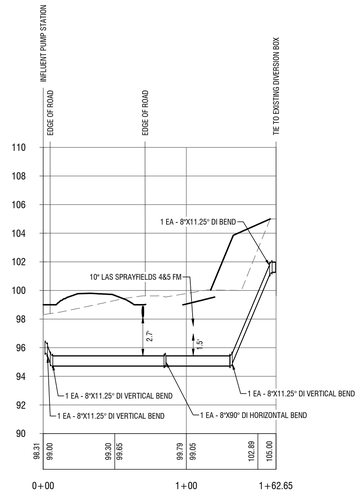
WASTEWATER TREATMENT PLANT EXPANSION

INFLUENT PUMP STATION

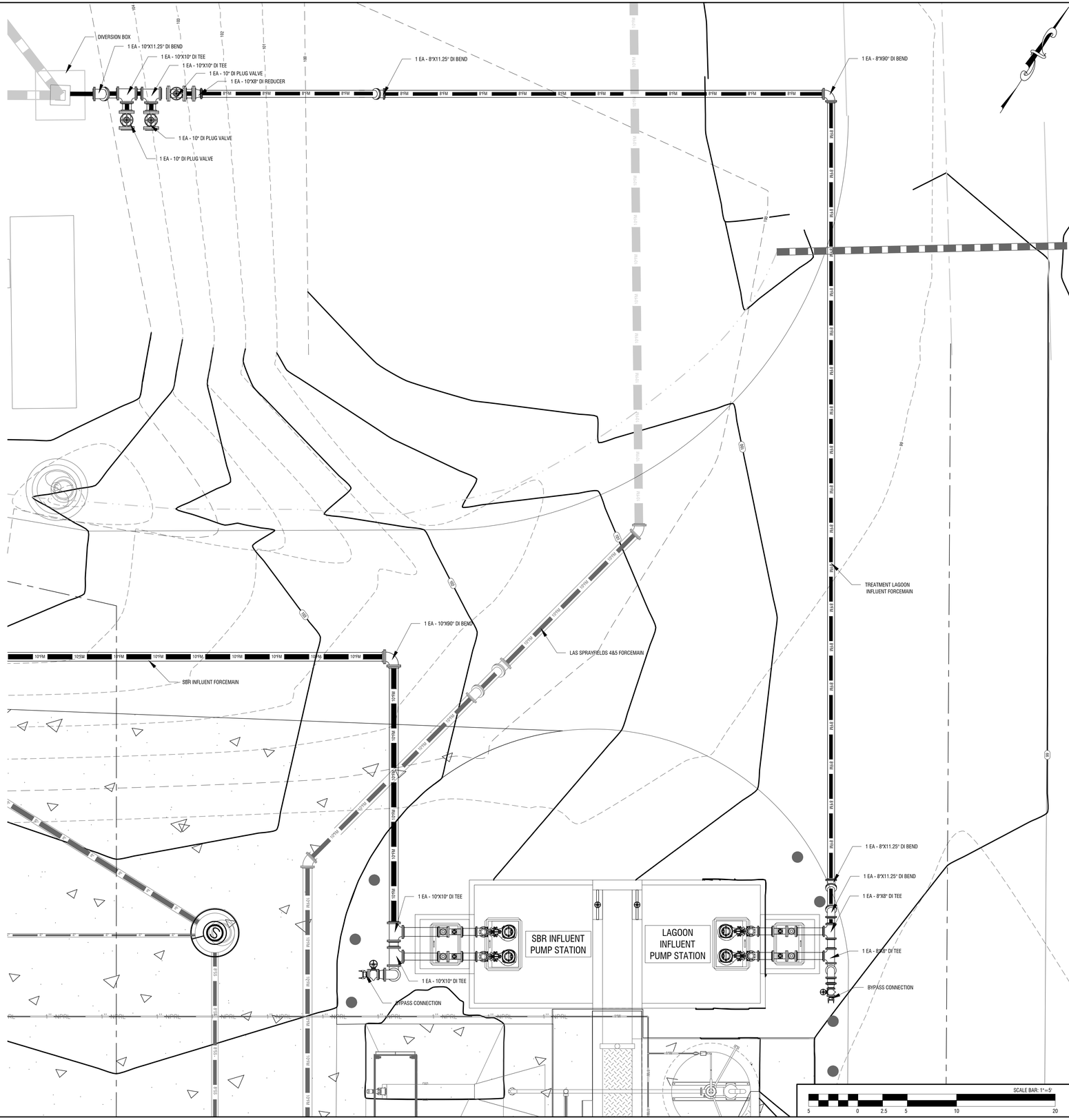
M5

FILE NO: 2020-48

PLOT DATE: June 5, 2025



LAGOON INFLUENT PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'



REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035474 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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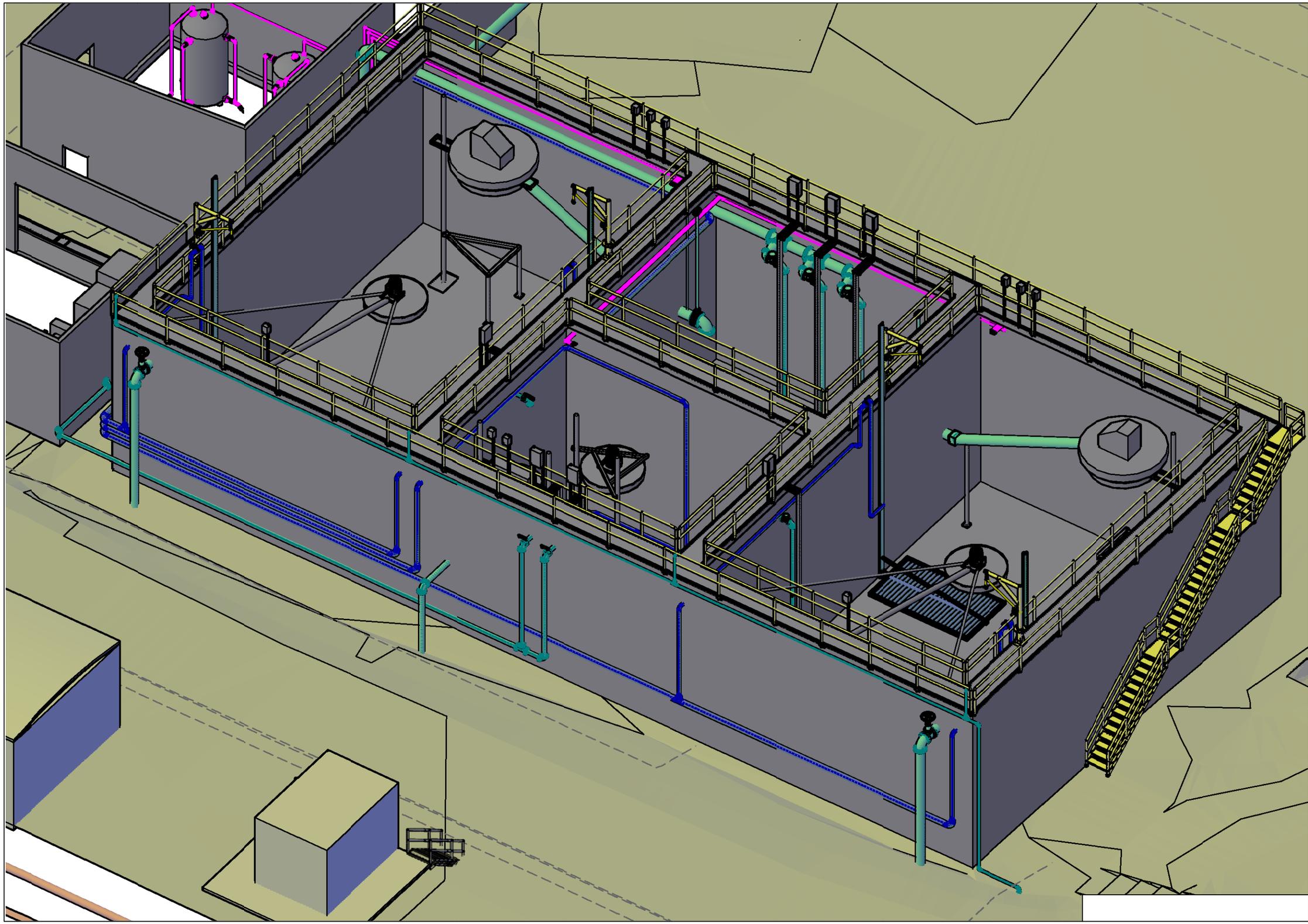
WASTEWATER TREATMENT PLANT EXPANSION

TREATMENT LAGOON INFLUENT FM

M6

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

M.E. SACK ENGINEERING 00

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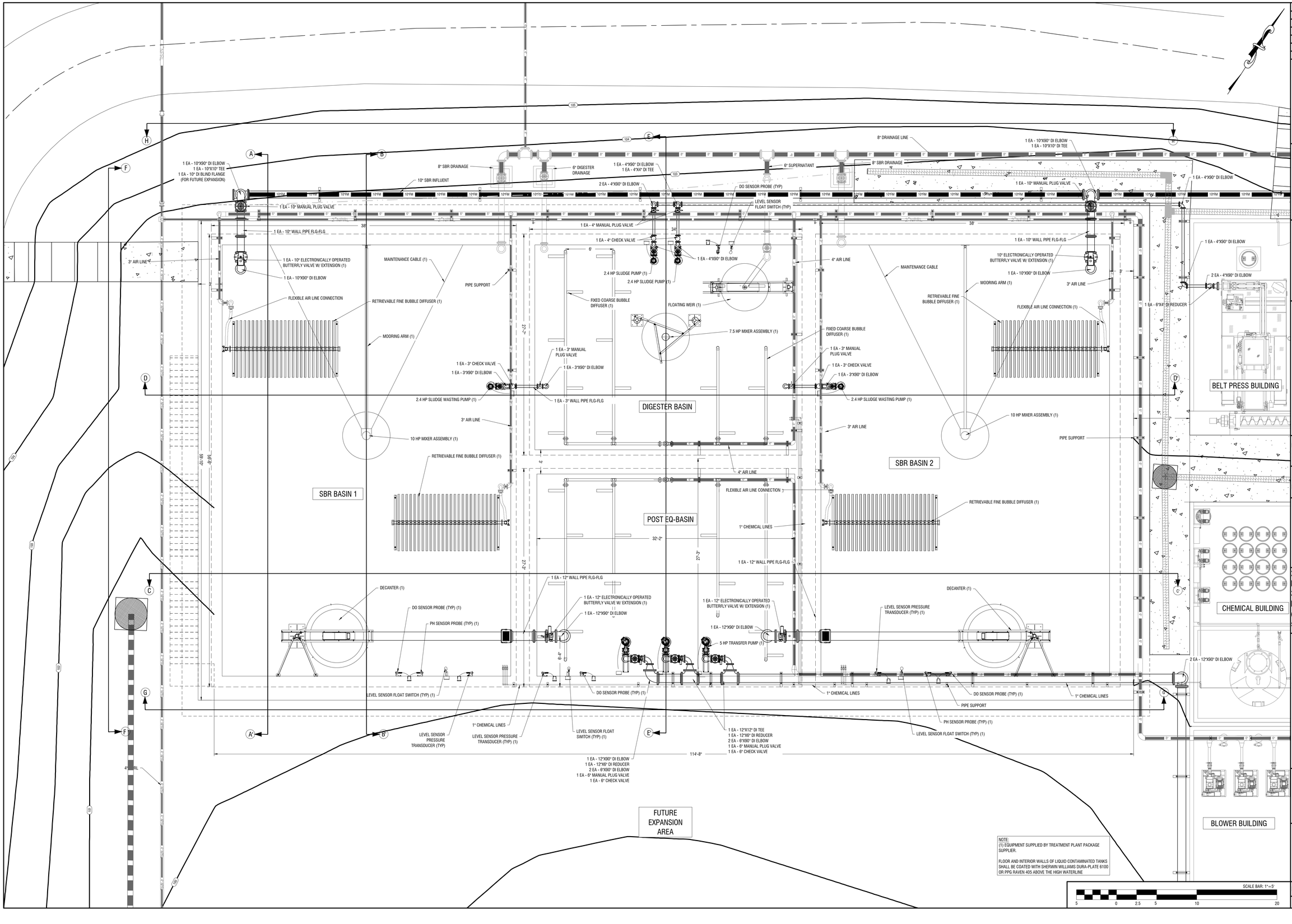
WASTEWATER TREATMENT PLANT EXPANSION

SBR ISOMETRIC VIEW

M7

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 70248 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

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COUNTY:
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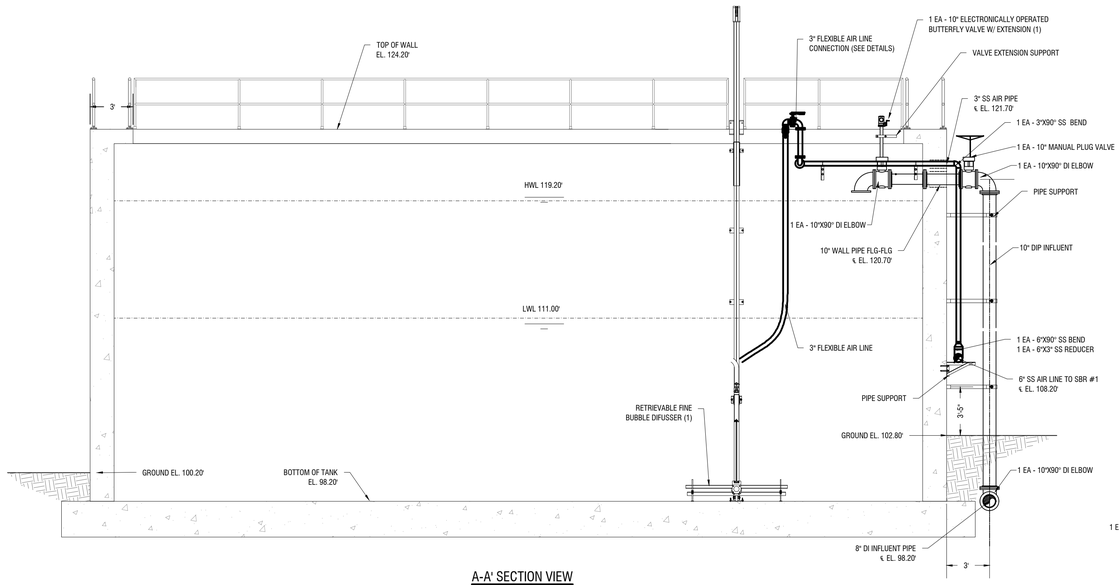
WASTEWATER TREATMENT PLANT EXPANSION

SBR PLAN VIEW

M8

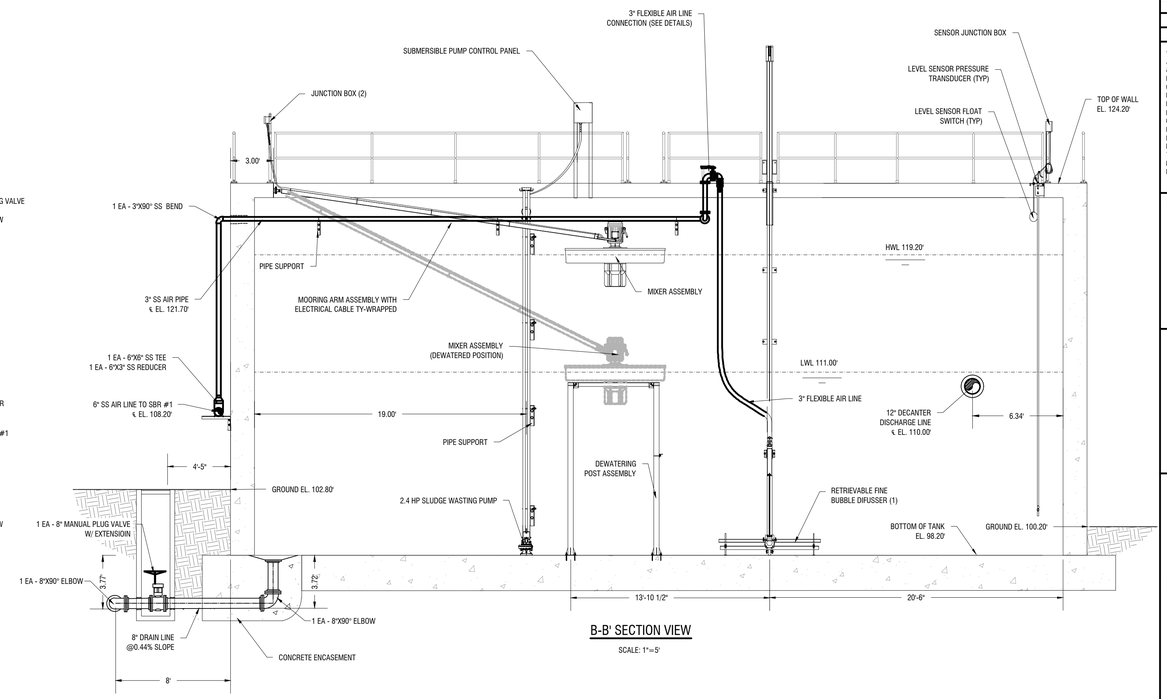
FILE NO: 2020-48

PLOT DATE: June 5, 2025



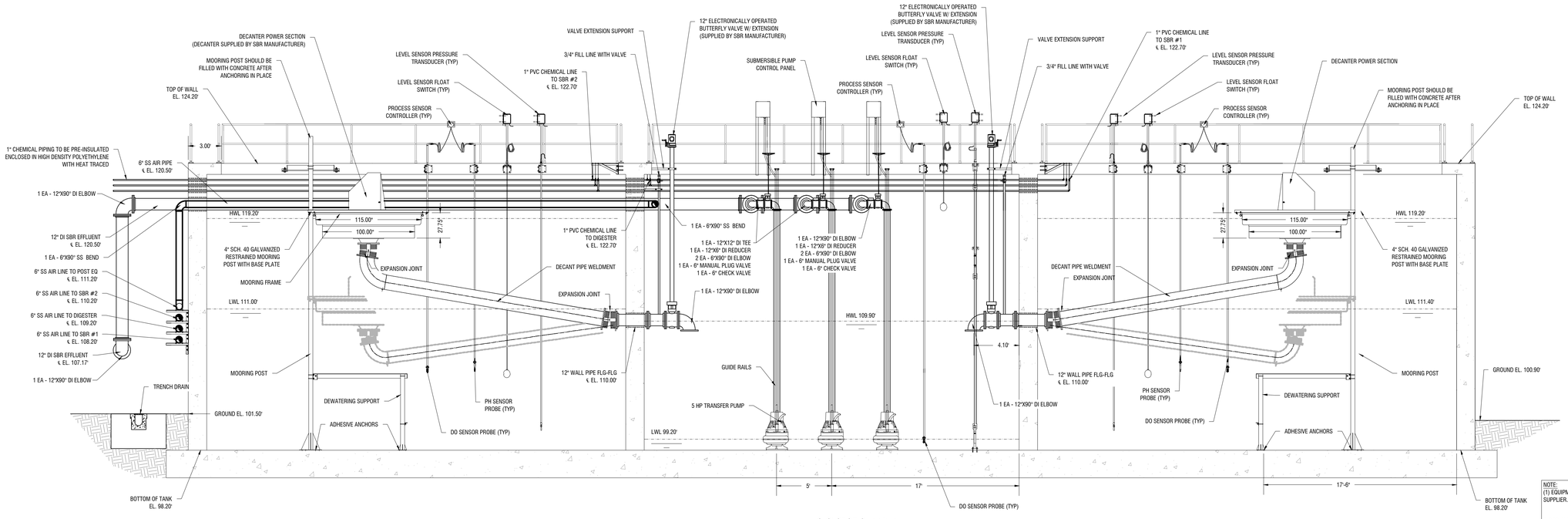
A-A' SECTION VIEW

SCALE: 1"=5'



B-B' SECTION VIEW

SCALE: 1"=5'



C-C' SECTION VIEW

SCALE: 1"=5'

NOTE:
(1) EQUIPMENT SUPPLIED BY TREATMENT PLANT PACKAGE SUPPLIER.

FLOOR AND INTERIOR WALLS OF LIQUID CONTAMINATED TANKS SHALL BE COATED WITH SHERWIN WILLIAMS DURA-PLATE 6100 OR PPG RAVEN 405 ABOVE THE HIGH WATERLINE

SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33558 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK 19 80 ENGINEERING

MUNICIPALITY:
CITY OF PEMBROKE

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OWNER:
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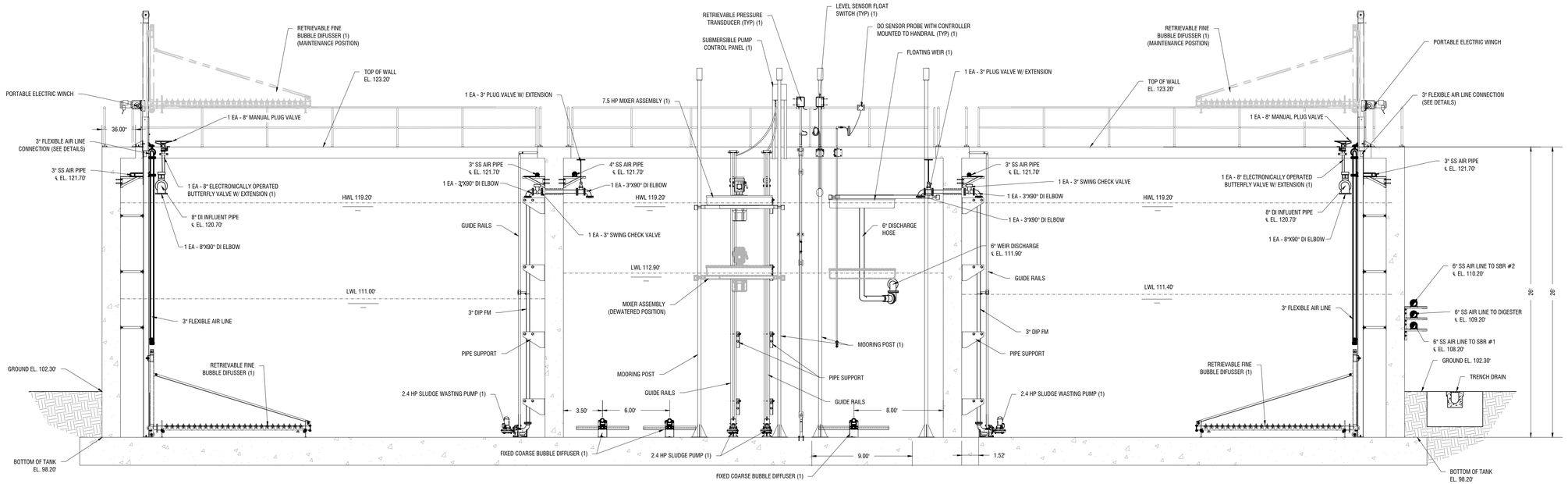
WASTEWATER TREATMENT PLANT EXPANSION

SBR SECTION VIEW 1

M9

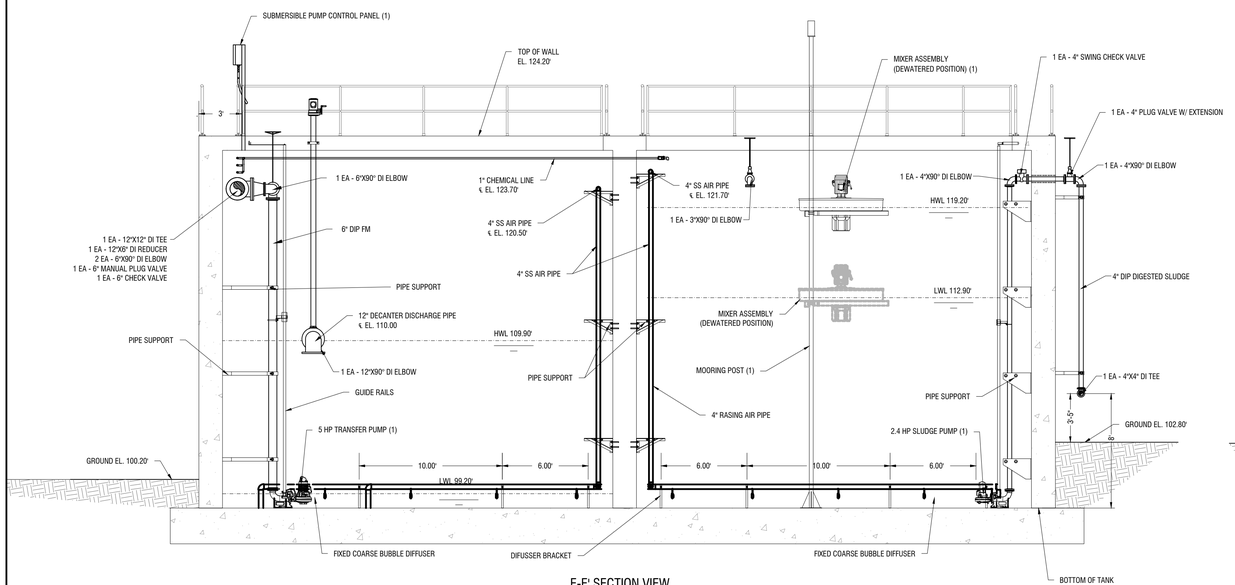
FILE NO: 2020-48

PLOT DATE: June 5, 2025



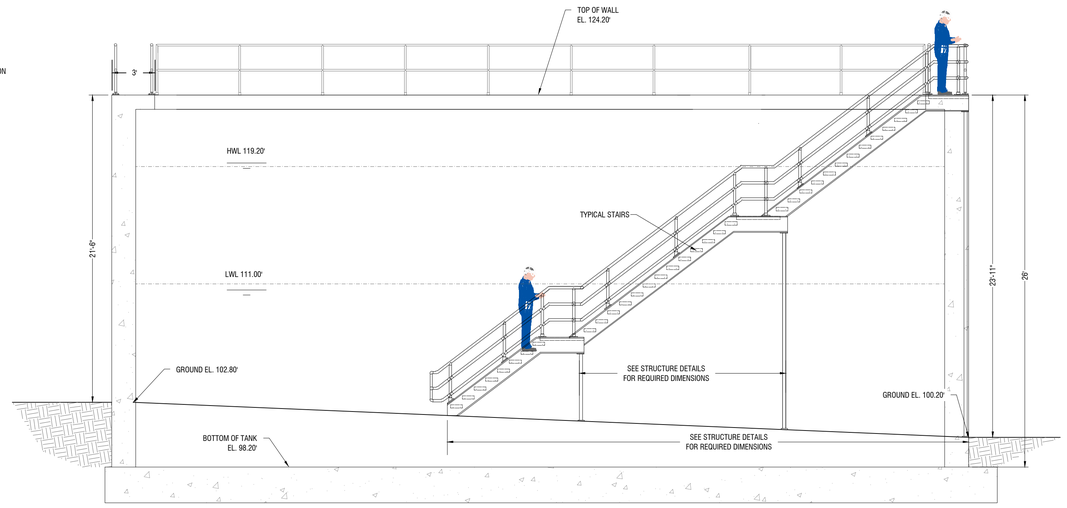
D-D' SECTION VIEW

SCALE: 1"=5'



E-E' SECTION VIEW

SCALE: 1"=5'



F-F' SECTION VIEW

SCALE: 1"=5'

NOTE:
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SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:

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2	GSWCC ESP&C
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DATE: June 5, 2025

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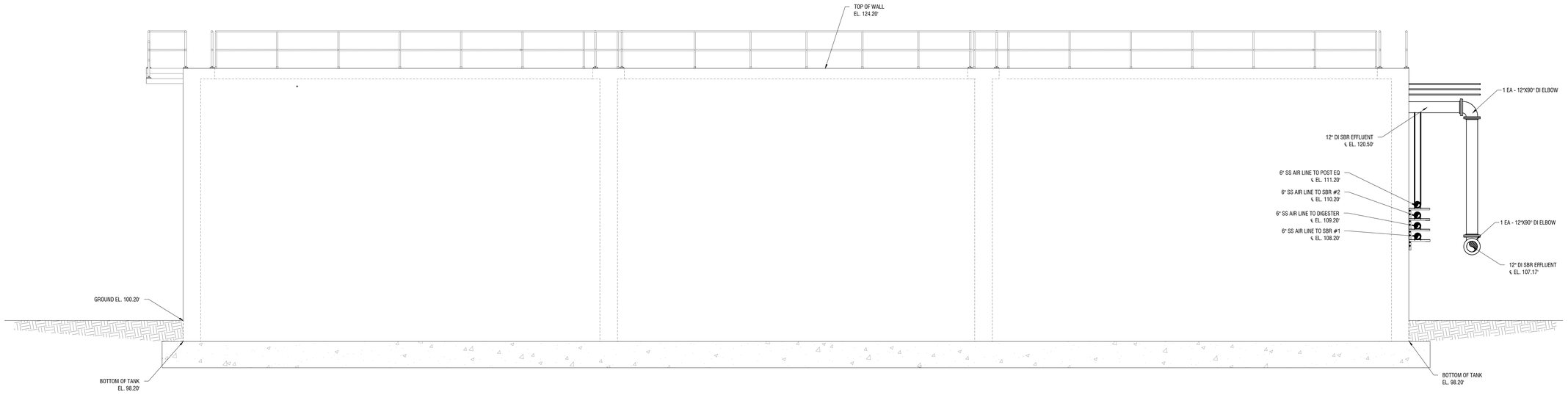
WASTEWATER TREATMENT PLANT EXPANSION

SBR SECTION VIEW 2

M10

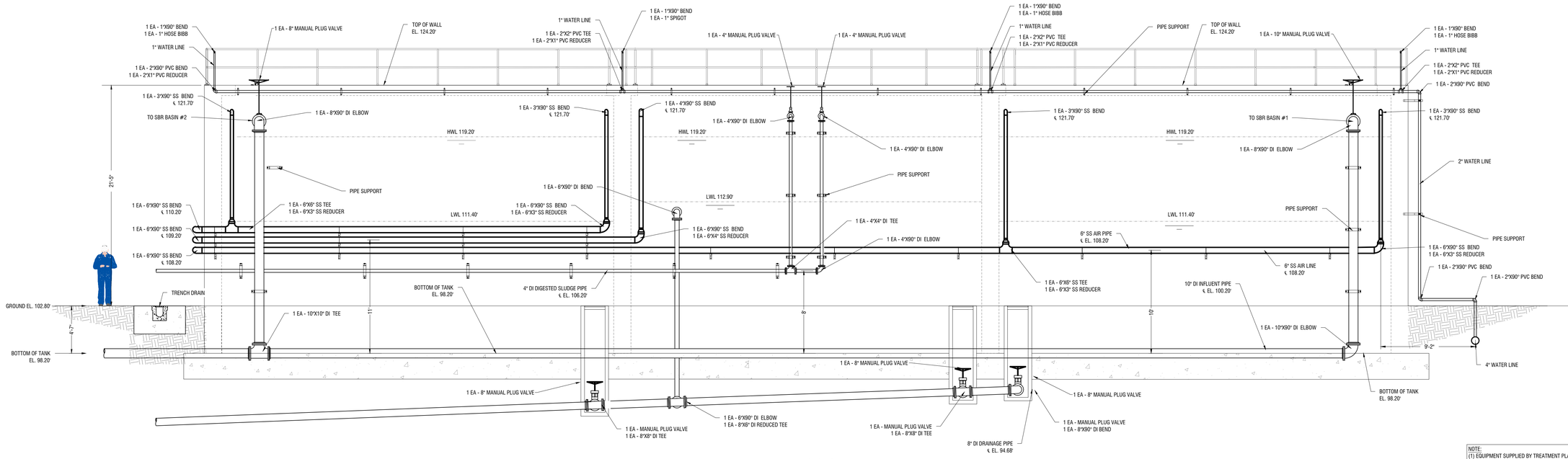
FILE NO: 2020-48

PLOT DATE: June 5, 2025



G-G' SECTION VIEW

SCALE: 1"=5'



H-H' SECTION VIEW

SCALE: 1"=5'

NOTE:
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SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:

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2	GSWCC ESP&C
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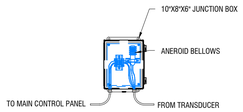
WASTEWATER TREATMENT PLANT EXPANSION

SBR SECTION VIEW 3

M11

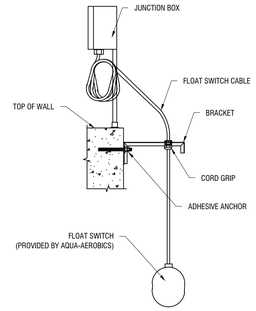
FILE NO: 2020-48

PLOT DATE: June 5, 2025



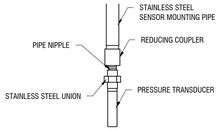
JUNCTION BOX DETAIL

NTS



FLOAT SWITCH DETAIL

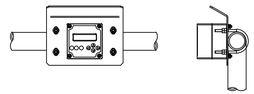
NTS



ENLARGED SENSOR ASSEMBLY

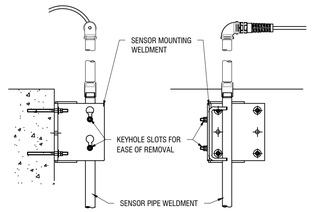
NTS

* 120 VOLT, 1PH., 60Hz. POWER SUPPLY
REQUIRED AT CONTROLLER.



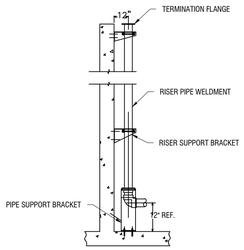
PROCESS SENSOR CONTROLLER DETAIL

NTS

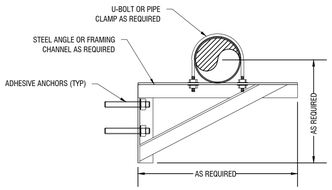


PROCESS SENSOR
ENLARGED MOUNTING DETAILS

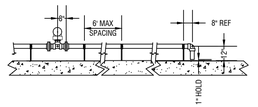
NTS



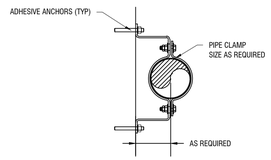
AIR MANIFOLD RISER PIPE DETAIL



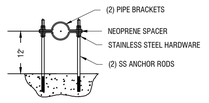
HORIZONTAL PIPE SUPPORT BRACKET



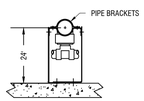
DIFFUSER BRACKET LAYOUT



VERTICAL PIPE SUPPORT



DIFFUSER BRACKET DETAIL

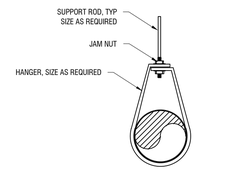


MANIFOLD BRACKET DETAIL

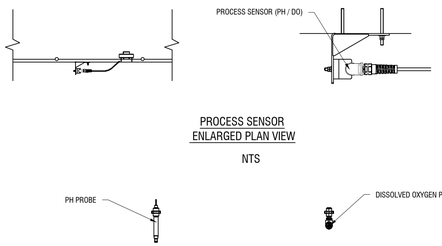
FIXED COARSE BUBBLE DIFUSSER

NTS

NOTE:
1) DIFFUSER ASSEMBLY MUST BE MOUNTED SUCH THAT THE DIFFUSER'S HOLES POINT STRAIGHT UP FROM TRUE VERTICAL
2) ALL DIFFUSERS MUST BE ON THE SAME ELEVATION



SINGLE ROD PIPE HANGER

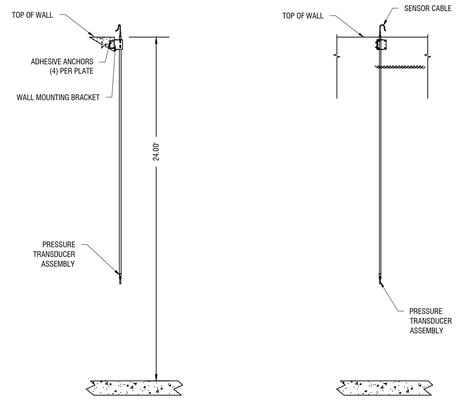


PROCESS SENSOR
ENLARGED PLAN VIEW

NTS

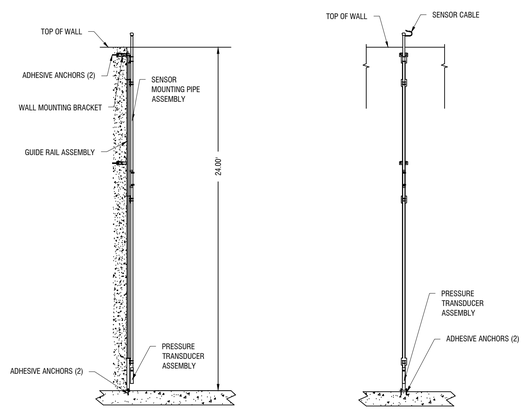
SENSOR PROBE

NTS



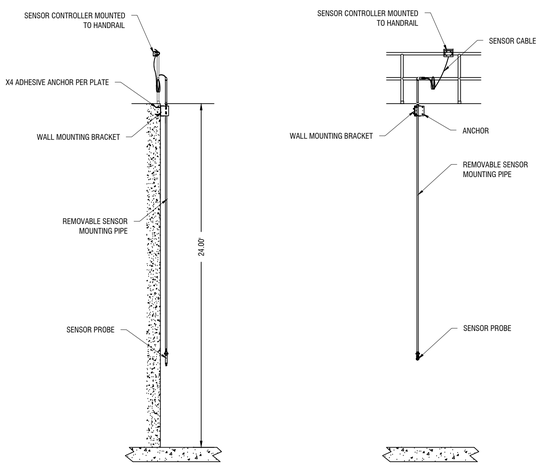
REMOVABLE PRESSURE TRANSDUCER FOR SBR

NTS



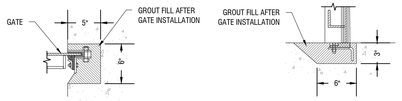
RETRIEVABLE PRESSURE TRANSDUCER FOR POST-EQ BASIN

NTS



PROCESS SENSOR DETAILS

NTS

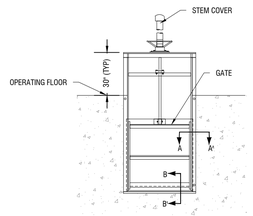


A-A' SECTION VIEW

NTS

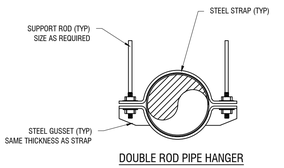
B-B' SECTION VIEW

NTS



UPWARD OPENING
SLIDE GATE

NTS



DOUBLE ROD PIPE HANGER

PIPE SUPPORT

NTS

NOTE:
1) UNLESS OTHERWISE SPECIFIES, EXPANSION ANCHORS SHALL NOT BE USED.
2) CONCRETE INSERTS IN AREA BELOW WATER SURFACE OR NORMALLY SUBJECT TO SUBMERGING SHALL BE EMBEDDED ANCHOR BOLTS OR EQUAL.
3) PIPE SHALL NOT HAVE POCKETS FORMED IN THE SPAN DUE TO SAGGING OF THE PIPE BETWEEN SUPPORTS CAUSED BY THE WEIGHT OF THE PIPE, MEDIUM IN THE PIPE, INSULATION, VALVE, AND FITTINGS.

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
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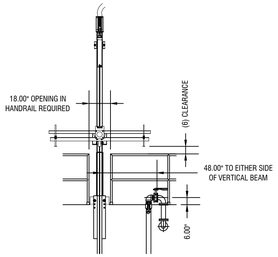
WASTEWATER TREATMENT PLANT EXPANSION

SBR DETAILS

M12

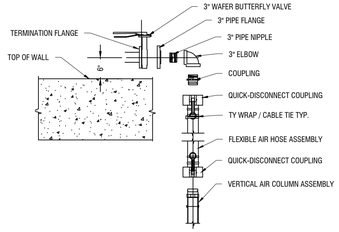
FILE NO: 2020-48

PLOT DATE: June 5, 2025



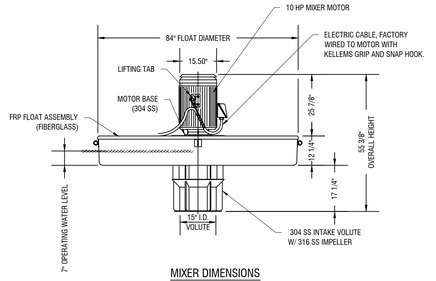
RETRIEVABLE FINE BUBBLE DIFUSSER

NTS



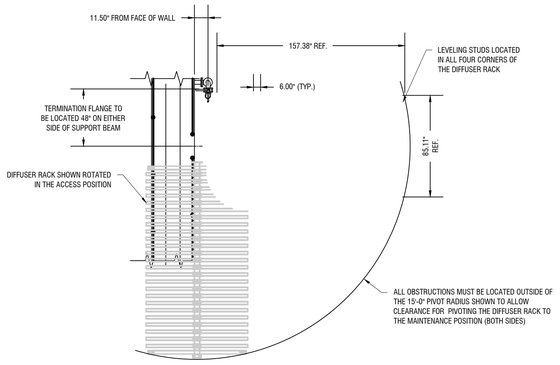
FLEXIBLE AIR LINE DETAIL

NTS



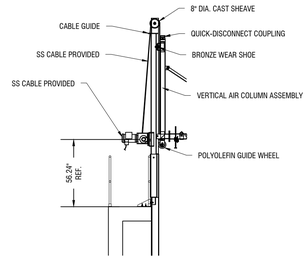
MIXER DIMENSIONS

NTS



PLAN VIEW

NTS

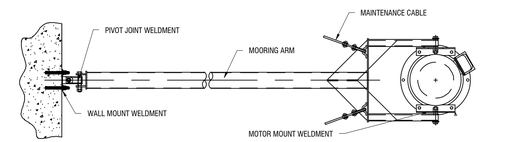


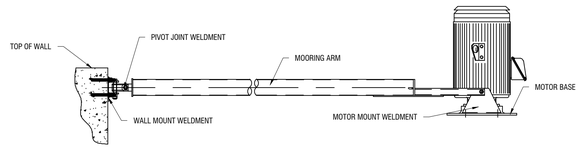
NOTE:
PORTABLE ELECTRIC WINCH ASSEMBLY AN ELECTRICAL OUTLET IS REQUIRED WITHIN (5) FEET OF EACH VERTICAL SUPPORT BEAM TO PROVIDE POWER TO ELECTRIC WINCH, 115V, 1PH., 60HZ., ELECTRICAL POWER SUPPLY, WIRING, NEMA 5-20R 20 AMP RECEPTACLE, AND JUNCTION BOX FOR WINCH SHALL BE THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.

PLAN VIEW

RETRIEVABLE FINE BUBBLE DIFUSSER

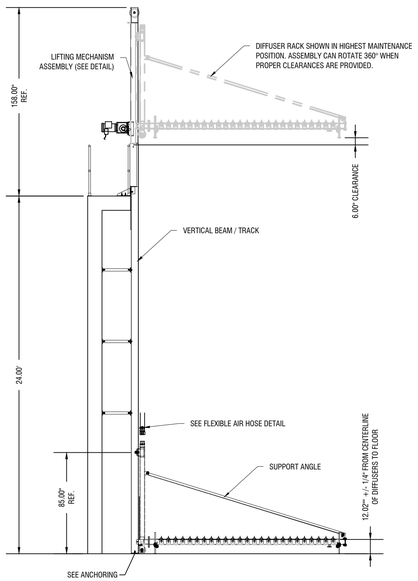
NTS





TYPICAL MIXER MOORING ARM DETAIL

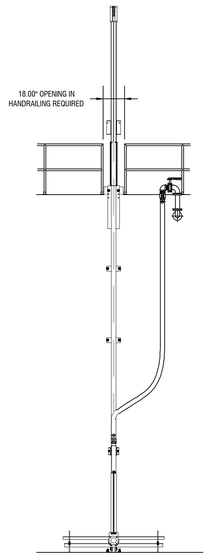
NTS



ELEVATION VIEW

RETRIEVABLE FINE BUBBLE DIFUSSER

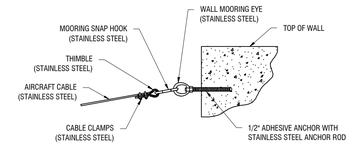
NTS



FRONT VIEW

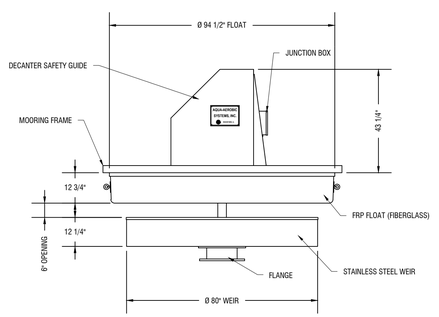
RETRIEVABLE FINE BUBBLE DIFUSSER

NTS



MAINTENANCE CABLE DETAIL

NTS



DECANTER DETAIL

NTS

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33558 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 1983 80

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
BRYAN

OWNER:
City of Pembroke
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(912) 653-4413
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24 HOUR CONTACT:
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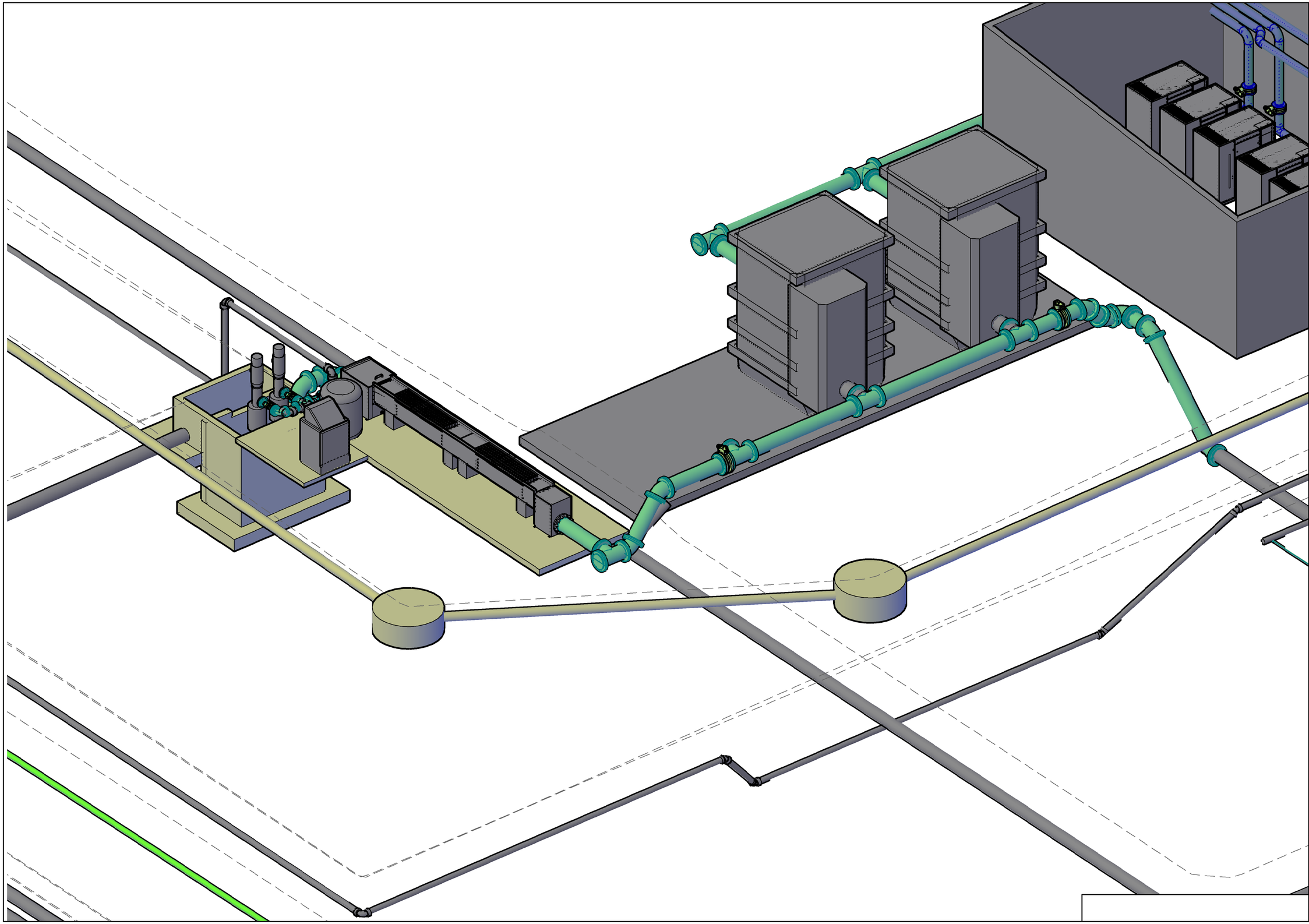
WASTEWATER TREATMENT PLANT EXPANSION

SBR DETAILS

M13

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 35564 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

MUNICIPALITY:
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COUNTY:
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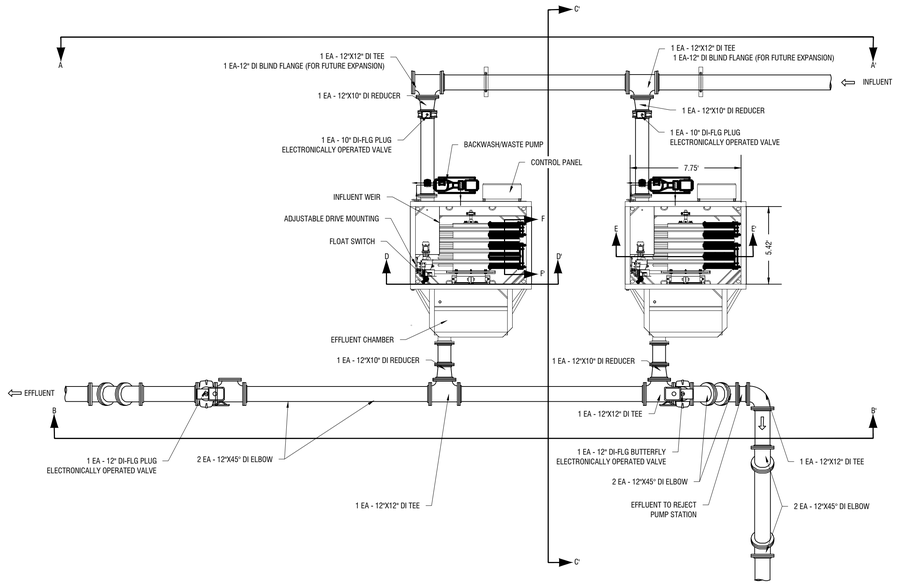
WASTEWATER TREATMENT PLANT EXPANSION

FILTRATION ISOMETRIC VIEW

M14

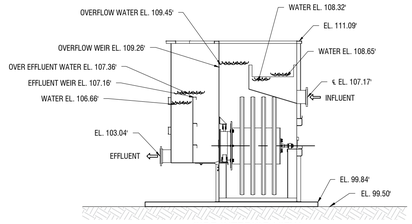
FILE NO: 2020-48

PLOT DATE: June 5, 2025



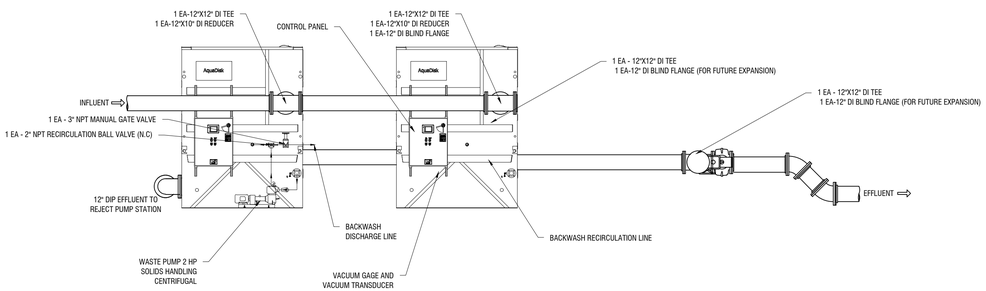
PLAN VIEW

SCALE: 1"=5'



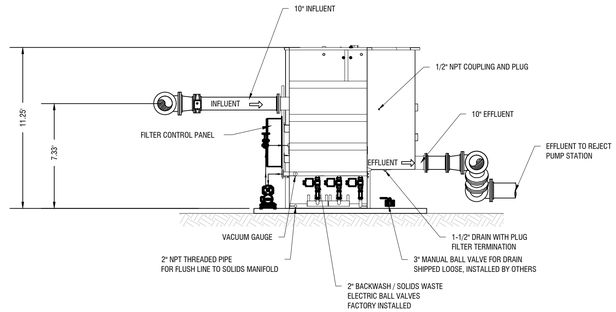
SIDE INTERIOR VIEW

SCALE: 1"=5'



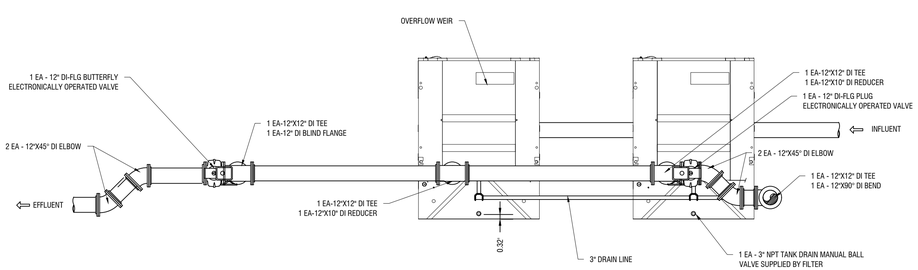
A-A' SECTION VIEW

SCALE: 1"=5'



C-C' SECTION VIEW

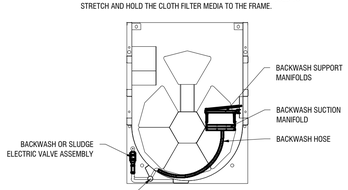
SCALE: 1"=5'



B-B' SECTION VIEW

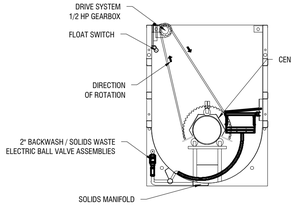
SCALE: 1"=5'

NOTE: THE FILTER DISK IS COMPOSED OF (6) IDENTICAL REMOVABLE SECTIONS, EACH ONE HELD TO THE CENTERTUBE BY (2) 5/8" DIAMETER STAINLESS STEEL RODS. EACH DISK SECTION HAS A RIGID PLASTIC FRAME TO SUPPORT THE CLOTH FILTER MEDIA. THREE PLASTIC "TACK" STRIPS ARE USED TO STRETCH AND HOLD THE CLOTH FILTER MEDIA TO THE FRAME.



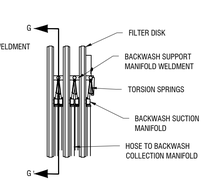
SECTION D-D'

NTS



SECTION E-E'

NTS



SECTION F-F'

NTS

SECTION G-G'

NTS

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

M.E. SACK 19 ENGINEERING 80

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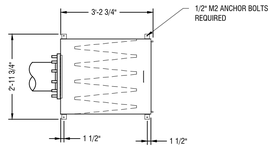
WASTEWATER TREATMENT PLANT EXPANSION

TERTIARY FILTRATION

M15

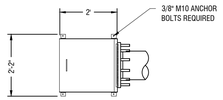
FILE NO: 2020-48

PLOT DATE: June 5, 2025



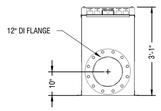
DOWNSTREAM WEIR BOX
D3600K

SCALE: 1"=30"



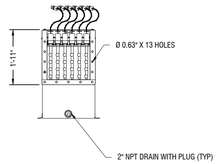
TRANSITION BOX

SCALE: 1"=30"



END VIEW

SCALE: 1"=30"

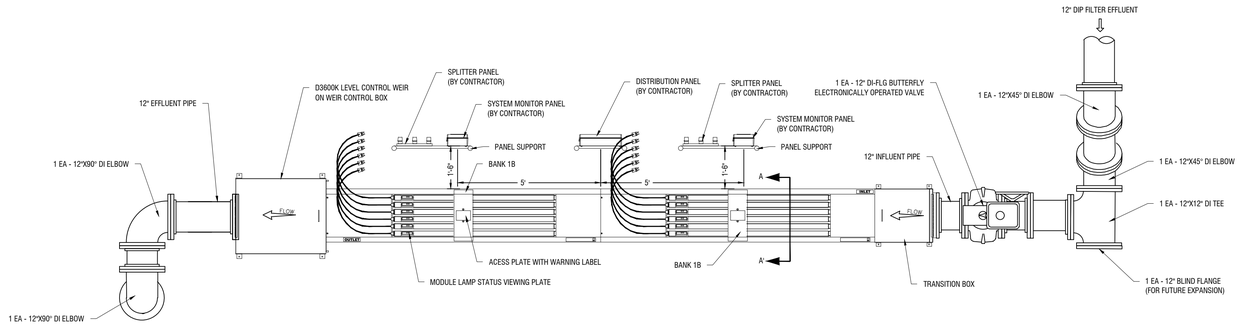


A-A' SECTION VIEW

SCALE: 1"=30"

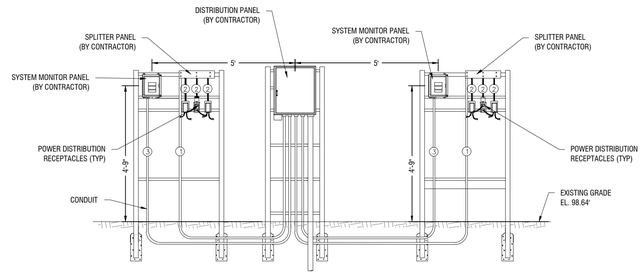
EQUIPMENT INTERCONNECTIONS

No.	DESCRIPTION	FROM	TO
1	SPLITTER PANEL POWER SUPPLY 120V, 1 PHASE, 2 WIRE, ACTUAL DRAW 19.1 AMPS / SPLITTER PANEL	DISTRIBUTION PANEL (BY CONTRACTOR)	SPLITTER PANEL (BY CONTRACTOR)
2	POWER DISTRIBUTION RECEPTACLE POWER SUPPLY 120V, 1 PHASE, 2 WIRE ACTUAL DRAW 6.3 AMPS / PDR	SPLITTER PANEL (BY CONTRACTOR)	POWER DISTRIBUTION RECEPTACLE
3	SYSTEM MONITOR POWER SUPPLY 120 V, 1 PHASE, 2 WIRE, 5 AMPS	DISTRIBUTION PANEL (BY CONTRACTOR)	SYSTEM MONITOR



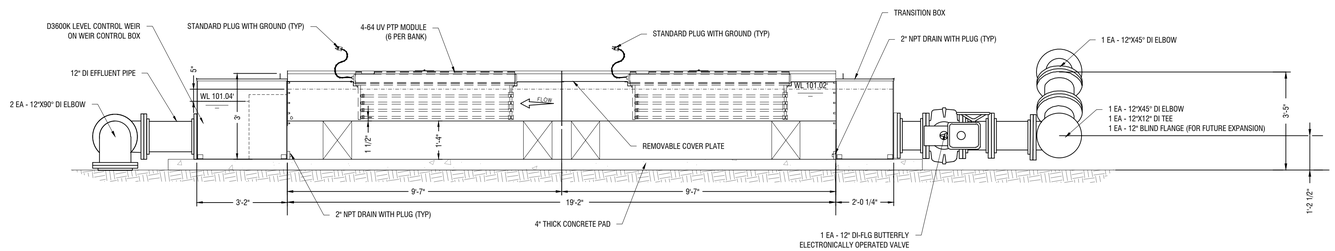
UV PLAN VIEW

SCALE: 1"=30"



CONTROL PANEL
PROFILE VIEW

NTS



PROFILE VIEW

SCALE: 1"=30"

NOTES:

1. ANCHOR BOLTS ARE NOT SUPPLIED BY TROJAN TECHNOLOGIES, SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS, & INTERCONNECTIONS.
2. BOLTS, WASHERS AND NUTS FOR CONNECTIONS OF CHANNELS AND TRANSITION BOXES TO CHANNELS ARE PROVIDED BY TROJAN OR APPROVED SIMILAR.
3. SYSTEM CONDUIT, WIRING, DISTRIBUTION PANELS & INTERCONNECTIONS BY CONTRACTORS.
4. DO NOT SLOPE CHANNEL FLOOR.
5. ELECTRICAL REQUIREMENTS SHOWN ARE TO SUPPLY TROJAN UV EQUIPMENT ONLY- ELECTRICAL INRUSH FACTOR TO BE ADDED AS PER LOCAL CODE.
6. CONTRACTOR TO REVIEW ALL TROJAN TECHNOLOGIES INSTALLATION INSTRUCTIONS PRIOR TO EQUIPMENT INSTALLATION.
7. ACCESS IS REQUIRED FOR MODULE REMOVAL.
8. EFFLUENT LEVELS SHOWN REFLECT HYDRAULICS ASSOCIATE WITH THE TROJAN EQUIPMENT ONLY. EFFLUENT LEVELS MAY CHANGE DUE TO CHANNEL DEBRIS.
9. POWER AND LOW VOLTAGE CONDUITS MUST ENTER LABELED LOCATION ON LEFT SIDE OF PDR.

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035248 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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COUNTY:
BRYAN

OWNER:
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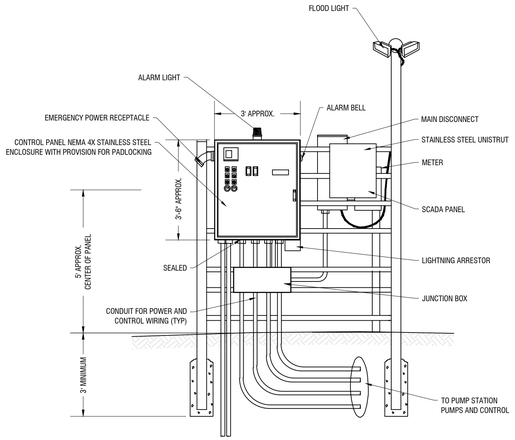
WASTEWATER TREATMENT PLANT EXPANSION

UV DISINFECTION

M16

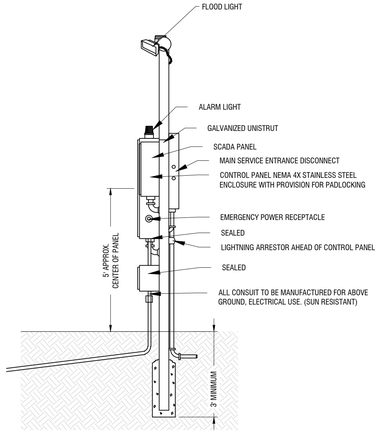
FILE NO: 2020-48

PLOT DATE: June 5, 2025



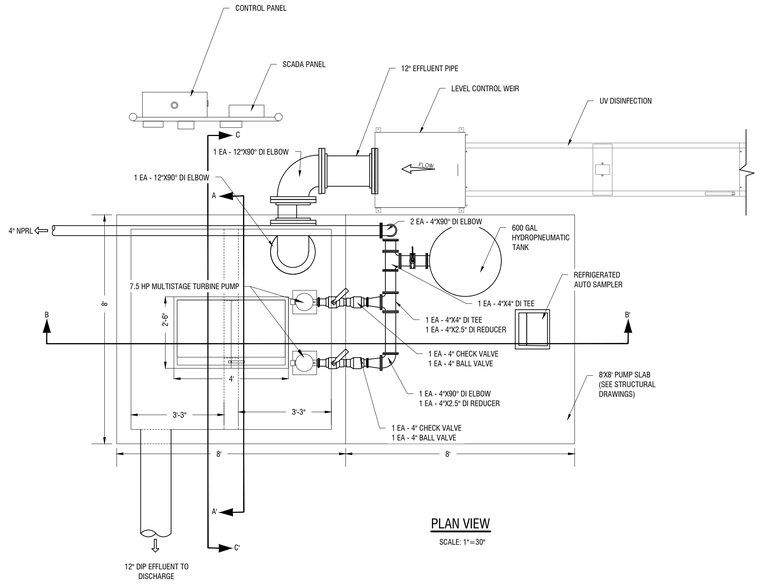
CONTROL PANEL
ELEVATION VIEW

NTS



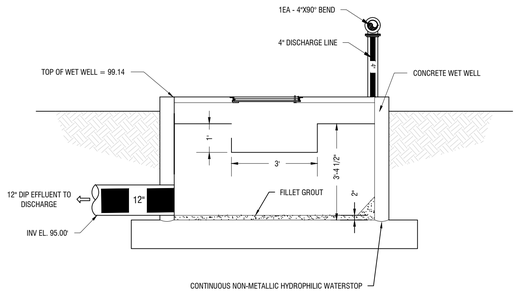
CONTROL PANEL
SIDE VIEW

NTS



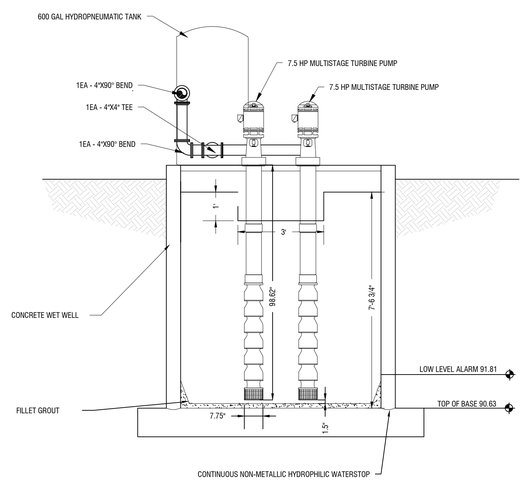
PLAN VIEW

SCALE: 1"=30"



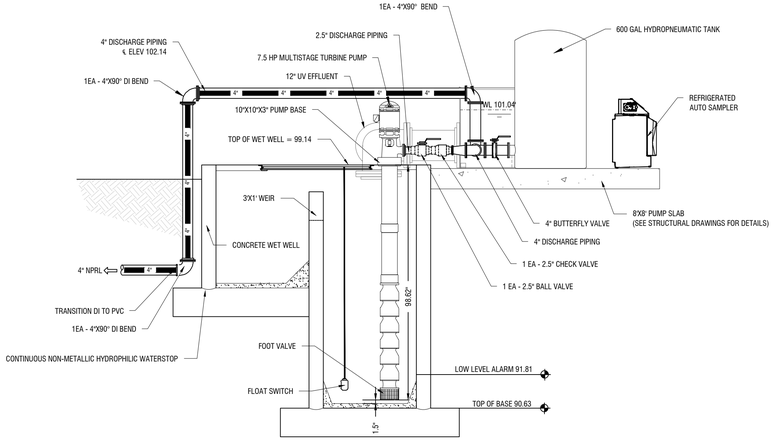
SECTION A-A'

SCALE: 1"=30"



SECTION C-C'

SCALE: 1"=30"



SECTION B-B'

SCALE: 1"=30"

RECLAIMED WATER PUMP STATION GENERAL NOTES:

1. PUMPS SHALL MEET ALL REQUIREMENTS IN ACCORDANCE WITH THE SPECIFICATIONS.
2. WET WELL SHALL BE COATED INSIDE WITH PVC LINER OR LINED IN PLACE IN ACCORDANCE WITH THE SPECIFICATIONS.
3. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATER AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
4. WET WELL SHALL BE HEAVY DUTY ALUMINUM WITH TORSION BAR ASSIST, POSITIVE LOCK AT 90 AND SAFETY GRATE', COVERS SHALL ALSO HAVE PADLOCKING CAPABILITIES (LOADING 300 PSF)
5. ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF CABLES.
6. CABLE HANGERS SHALL BE STAINLESS STEEL.
7. REFERENCE STRUCTURAL DRAWINGS FOR ALL STRUCTURAL DIMENSIONS AND DETAILS.

DUTY POINT
- 60 GPM @ 240' TDH

NOTE:
FLOOR AND INTERIOR WALLS OF LIQUID CONTAMINATED TANKS / STRUCTURES SHALL BE COATED WITH SHERWIN WILLIAMS DURA-PLATE 6100 OR PPG RAVEN 405 ABOVE THE HIGH WATERLINE

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035248 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
BRYAN

OWNER:
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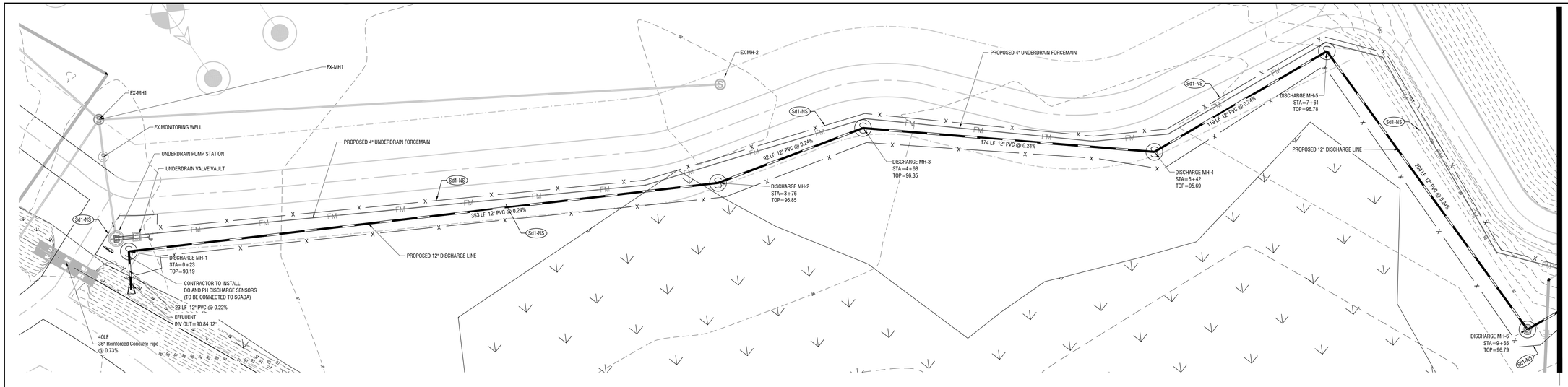
WASTEWATER TREATMENT PLANT EXPANSION

RECLAIMED WATER PUMP STATION

M17

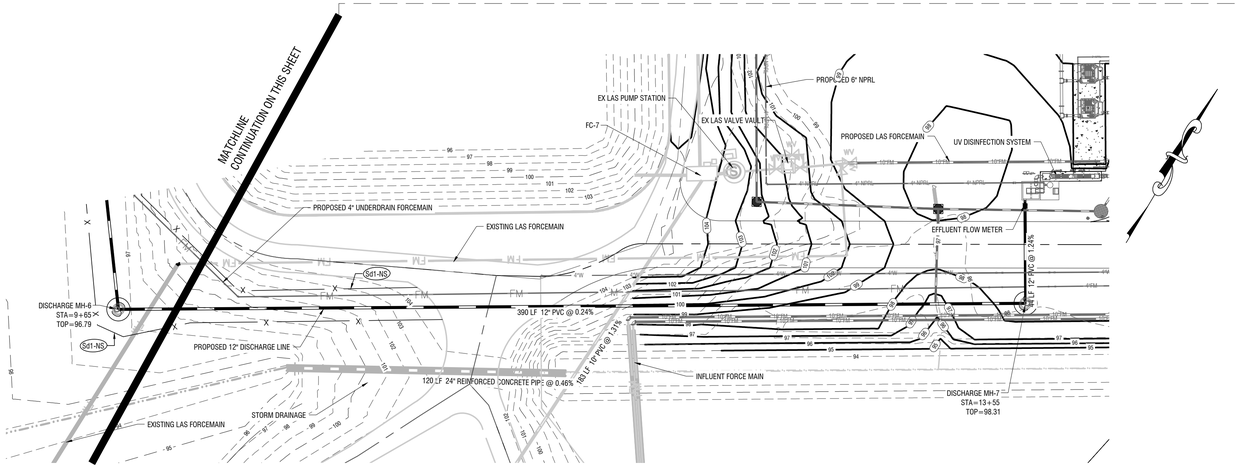
FILE NO: 2020-48

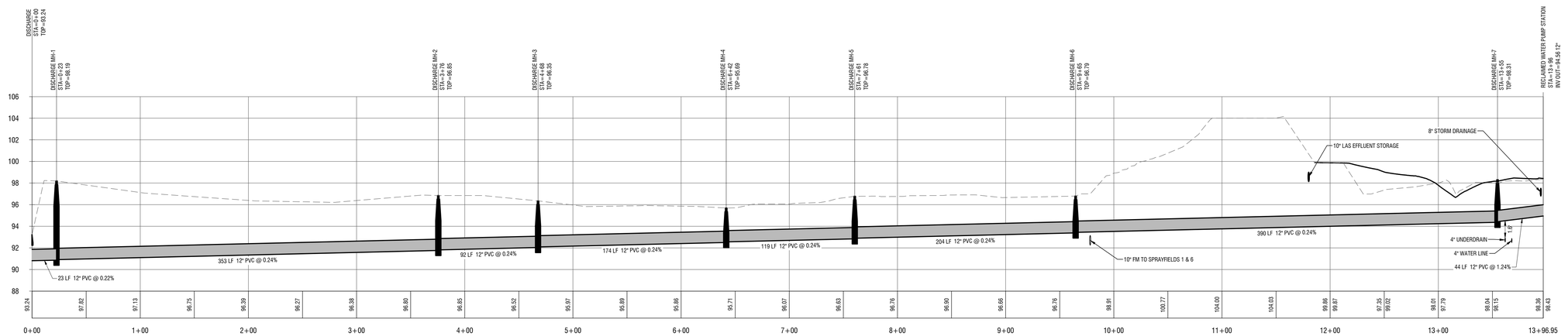
PLOT DATE: June 5, 2025



NOTES:

1. SILT FENCE SHALL BE INSTALLED AROUND THE DISCHARGE MANHOLES AND DISCHARGE PIPING TRENCHES.
2. Du, Ds1, & Ds2 DUST CONTROL SHALL BE APPLIED ALONG THE DISCHARGE PIPING INSTALLATION THROUGHOUT THE PROJECT PER THE EROSION CONTROL DETAILS ON SHEET C14.
3. FOLLOWING THE INSTALLATION OF THE DISCHARGE MANHOLES AND PIPING, SOIL STABILIZATION SHALL BE COMPLETED THROUGH USE OF Du, Ds1, & Ds3 DUST CONTROL AND PERMANENT GRASSING.





EFFLUENT PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'

SCALE BAR: 1"=30'
30 0 15 30 60 120

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 3552 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK 19 ENGINEERING 00

MUNICIPALITY:
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OWNER:
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353 N Main St
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(912) 653-4413
streets@pembrokega.net

24 HOUR CONTACT:
Keith Cook
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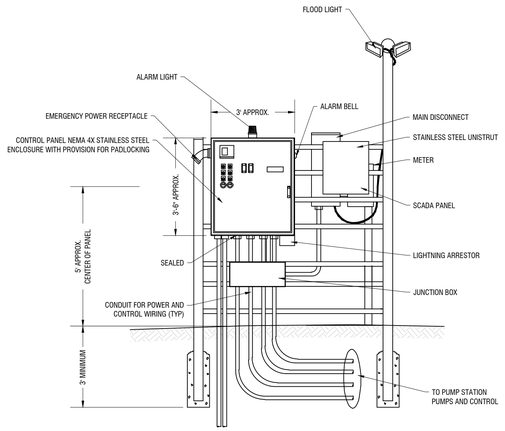
WASTEWATER TREATMENT PLANT EXPANSION

DISCHARGE PLAN & PROFILE

M18

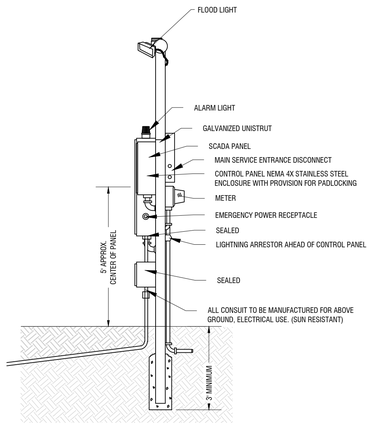
FILE NO: 2020-48

PLOT DATE: June 5, 2025



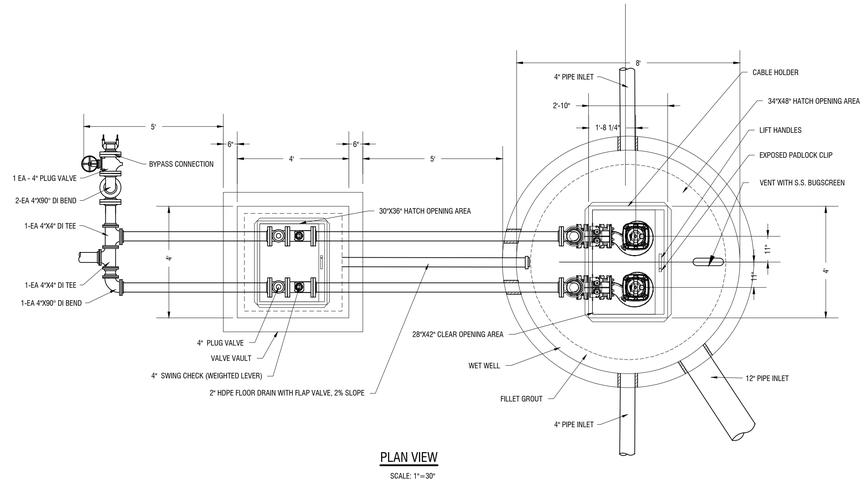
CONTROL PANEL ELEVATION VIEW

NTS



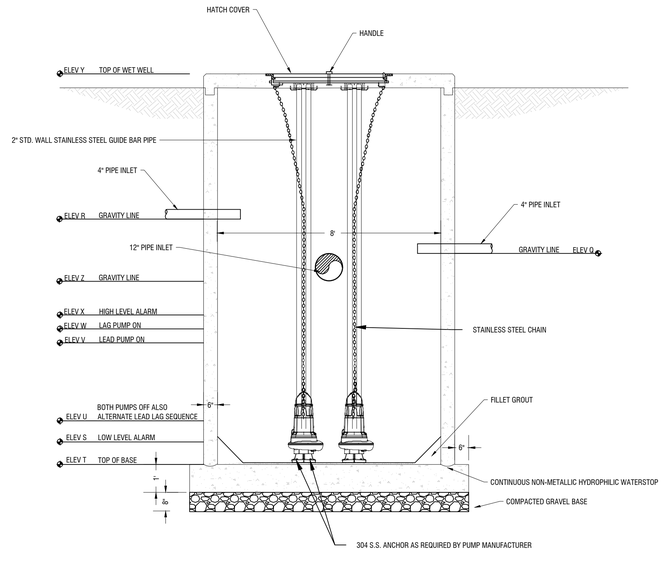
CONTROL PANEL ELEVATION VIEW

NTS



PLAN VIEW

SCALE: 1"=30"

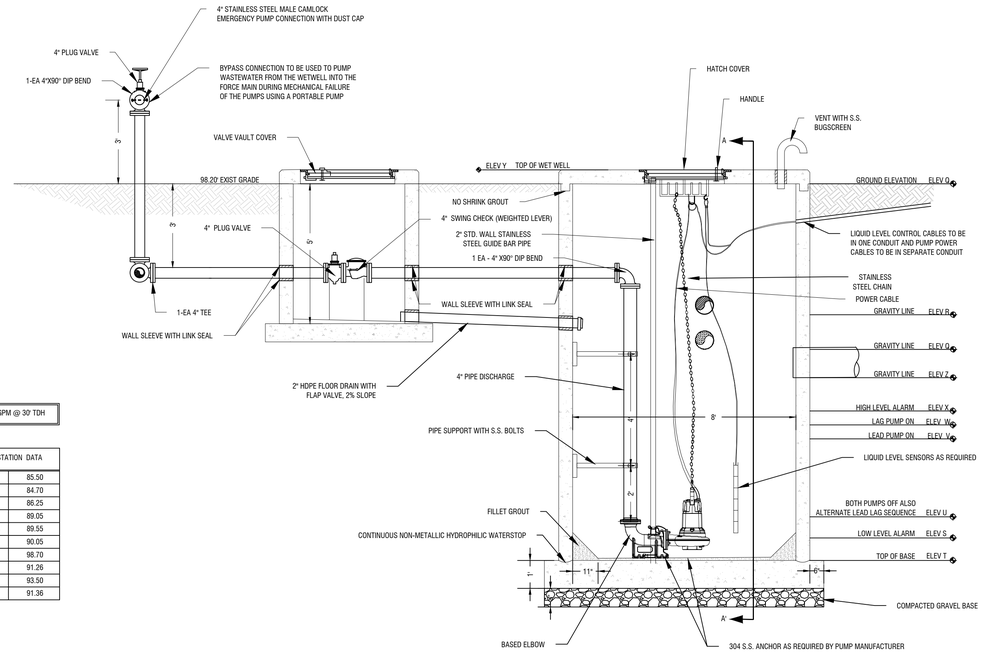


A-A' SECTION VIEW

SCALE: 1"=30"

278 GPM @ 30' TDH

LIFT STATION DATA	
ELEV S	85.50
ELEV T	84.70
ELEV U	86.25
ELEV V	89.05
ELEV W	89.55
ELEV X	90.05
ELEV Y	98.70
ELEV Z	91.26
ELEV R	93.50
ELEV Q	91.36



ELEVATION VIEW

SCALE: 1"=30"

GENERAL NOTES:

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK.

PUMPS SHALL BE FLYGT CONCERTOR N100-3050 OR APPROVED EQUAL, 5.5 HP, 3 PHASE, 480 VOLTS, 1750 RPM, 60 HERTZ, PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN.

CABLE HANGERS SHALL BE STAINLESS STEEL.

ELECTRICAL CONDUIT SIZE SHALL BE LARGE ENOUGH TO ALLOW FOR PERIODIC REMOVAL AND REPLACEMENT OF ELECTRICAL CABLES.

ALL CONDUITS INTO THE CONTROL PANEL MUST BE SEALED.

ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE WATERTIGHT AND GAS TIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.

CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING, INSTALLING, PROGRAMING, COMMISSIONING AND ENGINEERING ALL COMPONENTS OF THE PUMP CONTROLLER/SCADA SYSTEM.

VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE.

VALVE VAULT SHALL HAVE SEALED FLOOR W/DRAIN TO WET WELL.

THE CONTRACTOR SHALL PROVIDE AND INSTALL A PUMP CONTROLLER EQUIVALENT TO THE MULTISTART PUMP STATION MANAGEMENT SYSTEM MANUFACTURED BY FLYGT

NOTE:
FLOOR AND INTERIOR WALLS OF LIQUID CONTAMINATED TANKS / STRUCTURES SHALL BE COATED WITH SHERWIN WILLIAMS DURA-PLATE 6100 OR PPG RAVEN 405 ABOVE THE HIGH WATERLINE

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

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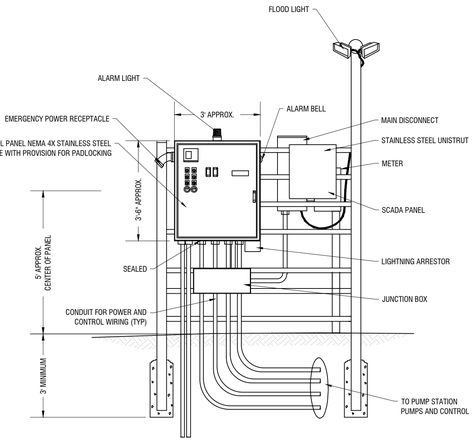
WASTEWATER TREATMENT PLANT EXPANSION

REJECT PUMP STATION

M19

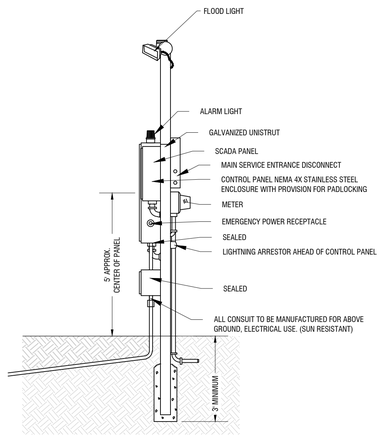
FILE NO: 2020-48

PLOT DATE: June 5, 2025



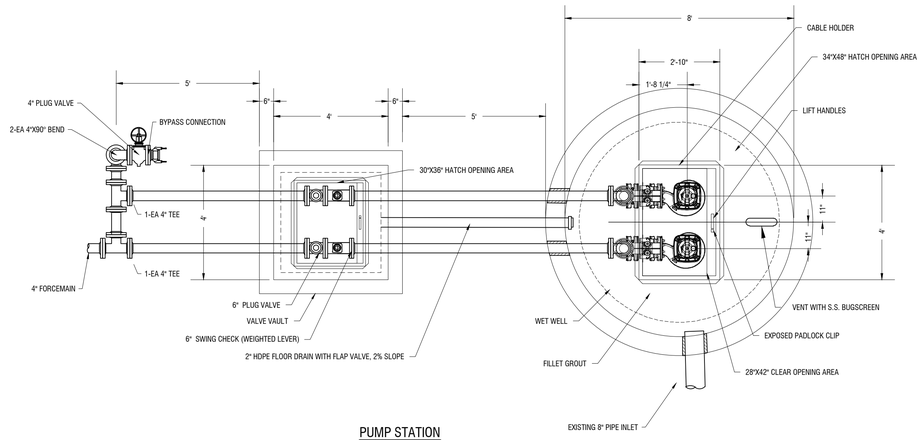
CONTROL PANEL
ELEVATION VIEW

NTS



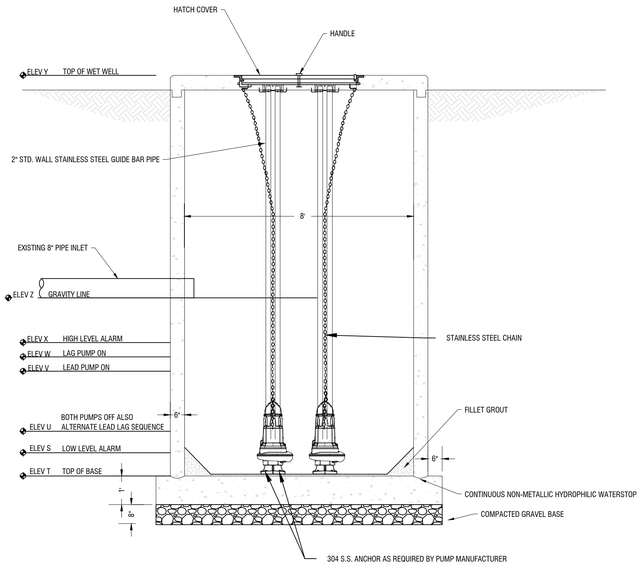
CONTROL PANEL
SIDE VIEW

NTS



PUMP STATION
PLAN VIEW

SCALE: 1"=30"

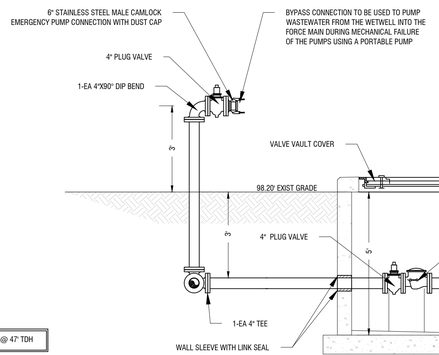


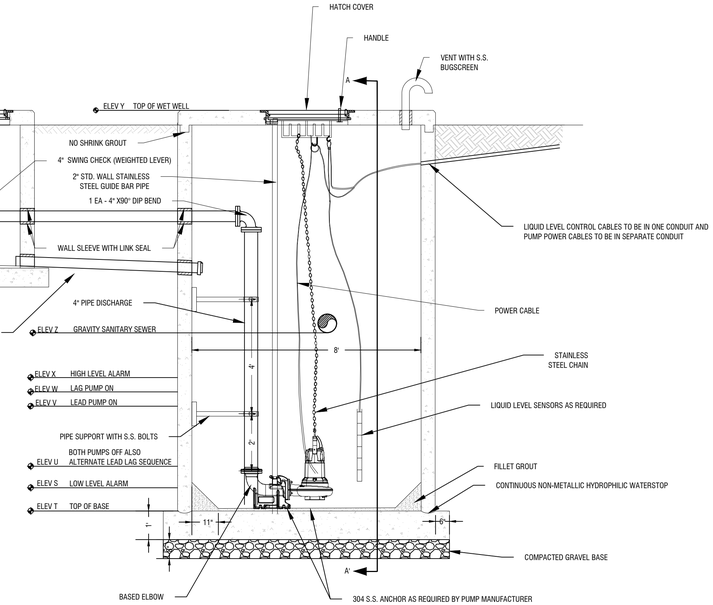
PUMP STATION
SECTION A-A' VIEW

SCALE: 1"=30"

208 GPM @ 47' TDH

LIFT STATION DATA	
EG ELEV	98.20
ELEV S	85.51
ELEV T	84.70
ELEV U	86.26
ELEV V	88.36
ELEV W	88.86
ELEV X	89.36
ELEV Y	98.70
ELEV Z	90.92





PUMP STATION
ELEVATION VIEW

SCALE: 1"=30"

GENERAL NOTES:
CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS BEFORE STARTING WORK.

PUMPS SHALL BE FLYGT CONCERTOR N100-4950 OR APPROVED EQUAL, 7.5 HP, 3 PHASE, 480 VOLTS, 1750 RPM, 60 HERTZ, PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN.

CABLE HANGERS SHALL BE STAINLESS STEEL.

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NOTE:
FLOOR AND INTERIOR WALLS OF LIQUID CONTAMINATED TANKS / STRUCTURES SHALL BE COATED WITH SHERWIN WILLIAMS DURA-PLATE 6100 OR PPG RAVEN 405 ABOVE THE HIGH WATERLINE

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035248 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

MUNICIPALITY:
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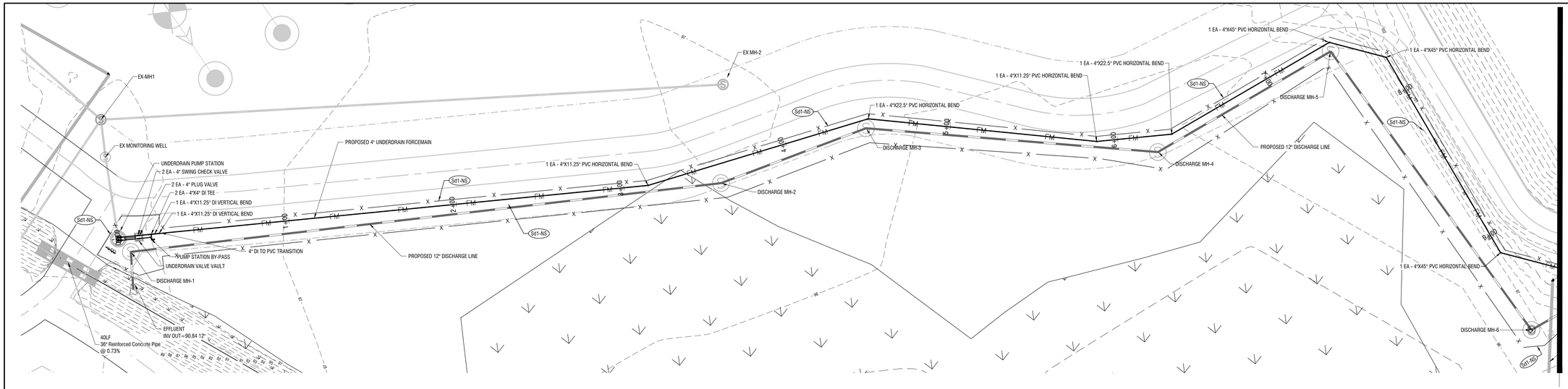
WASTEWATER TREATMENT PLANT EXPANSION

UNDERDRAIN PUMP STATION

M20

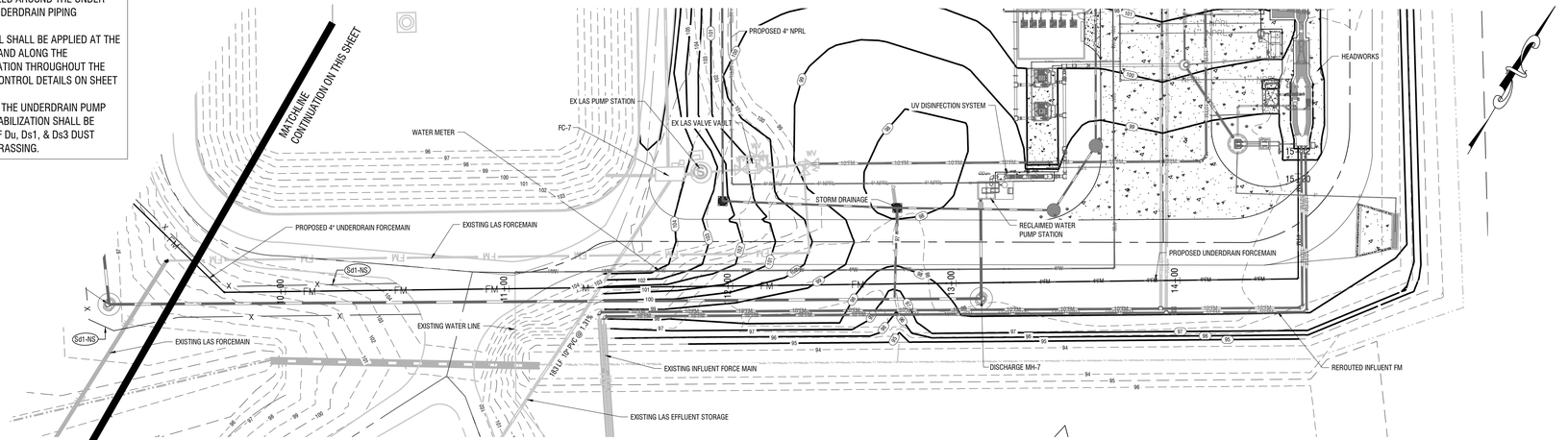
FILE NO: 2020-48

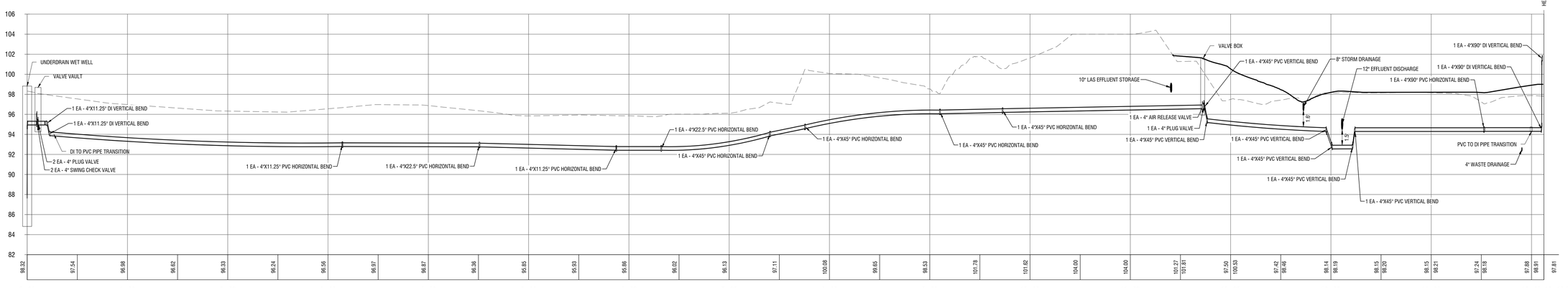
PLOT DATE: June 5, 2025



NOTES:

1. SILT FENCE SHALL BE INSTALLED AROUND THE UNDER DRAIN PUMP STATION AND UNDERDRAIN PIPING TRENCHES.
2. Du, Ds1, & Ds2 DUST CONTROL SHALL BE APPLIED AT THE UNDERDRAIN PUMP STATION AND ALONG THE UNDERDRAIN PIPING INSTALLATION THROUGHOUT THE PROJECT PER THE EROSION CONTROL DETAILS ON SHEET C14.
3. FOLLOWING INSTALLATION OF THE UNDERDRAIN PUMP STATION AND PIPING, SOIL STABILIZATION SHALL BE COMPLETED THROUGH USE OF Du, Ds1, & Ds3 DUST CONTROL AND PERMANENT GRASSING.





UNDERDRAIN PROFILE
VERT. SCALE: 1"=0'
HORIZ SCALE: 1"=5'

SCALE BAR: 1"= 30'
30 0 15 30 60 120

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33552 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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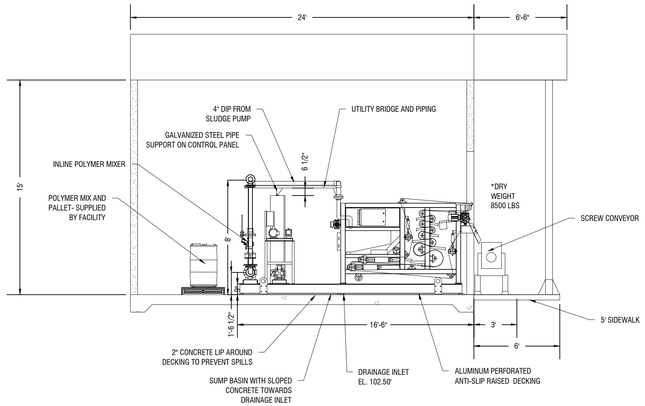
WASTEWATER TREATMENT PLANT EXPANSION

UNDERDRAIN FORCEMAIN PROFILE

M21

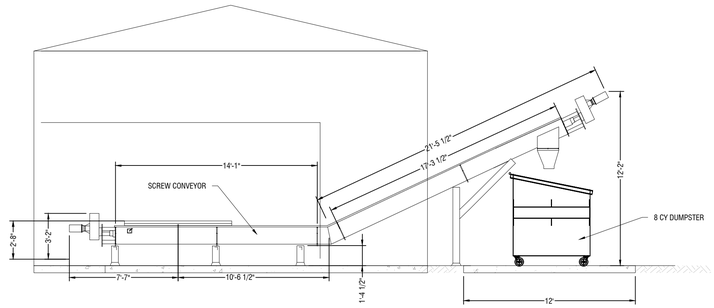
FILE NO: 2020-48

PLOT DATE: June 5, 2025



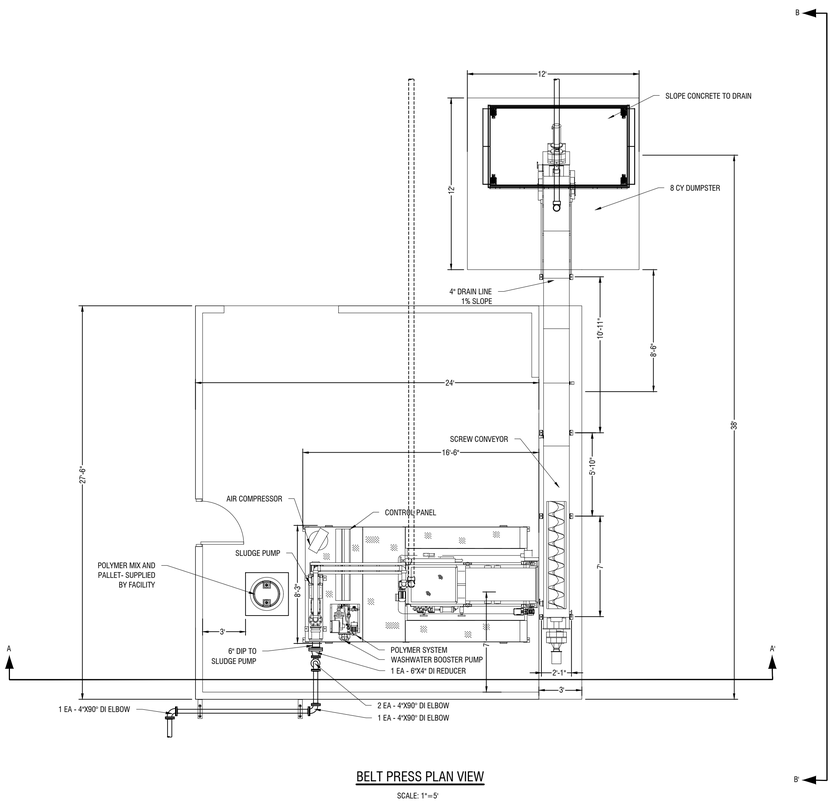
A-A' SECTION VIEW
BELT PRESS PROFILE VIEW

SCALE: 1"=5'



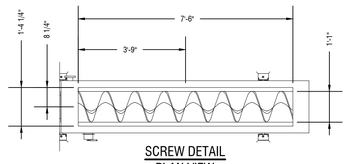
B-B' SECTION VIEW
CONVEYOR PROFILE VIEW

SCALE: 1"=5'



BELT PRESS PLAN VIEW

SCALE: 1"=5'



SCREW DETAIL
PLAN VIEW

SCALE: 1"=30"

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33554 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

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WASTEWATER TREATMENT PLANT EXPANSION

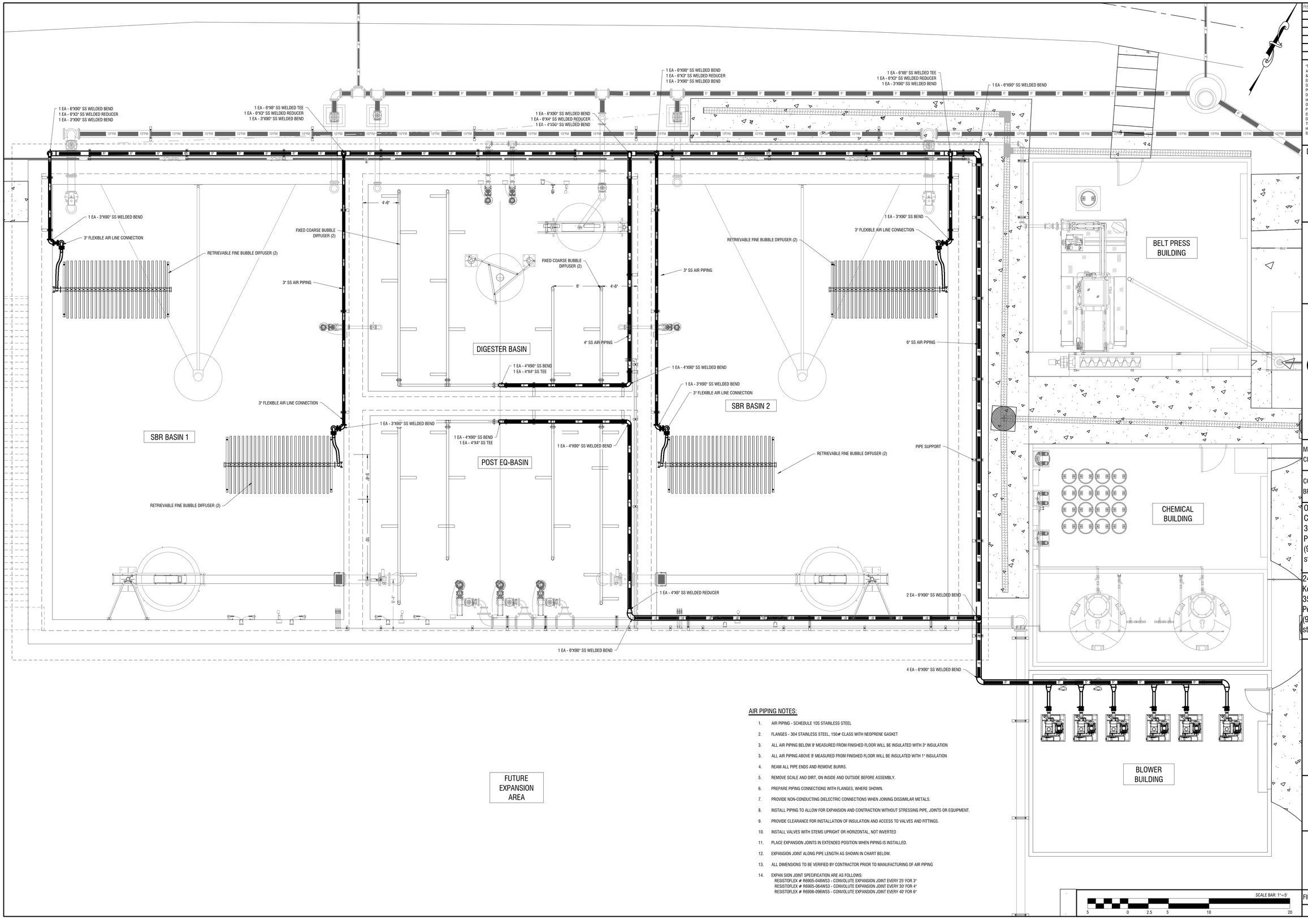
BELT PRESS

M22

SCALE BAR: 1"=5'
5 0 2.5 5 10 20

FILE NO: 2020-48

PLOT DATE: June 5, 2025



AIR PIPING NOTES:

1. AIR PIPING - SCHEDULE 10S STAINLESS STEEL
2. FLANGES - 304 STAINLESS STEEL, 150# CLASS WITH NEOPRENE GASKET
3. ALL AIR PIPING BELOW 8' MEASURED FROM FINISHED FLOOR WILL BE INSULATED WITH 3" INSULATION
3. ALL AIR PIPING ABOVE 8' MEASURED FROM FINISHED FLOOR WILL BE INSULATED WITH 1" INSULATION
4. REAM ALL PIPE ENDS AND REMOVE BURRS.
5. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.
6. PREPARE PIPING CONNECTIONS WITH FLANGES, WHERE SHOWN.
7. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEN JOINING DISSIMILAR METALS.
8. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR EQUIPMENT.
9. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
10. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED
11. PLACE EXPANSION JOINTS IN EXTENDED POSITION WHEN PIPING IS INSTALLED.
12. EXPANSION JOINT ALONG PIPE LENGTH AS SHOWN IN CHART BELOW.
13. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO MANUFACTURING OF AIR PIPING
14. EXPAN SION JOINT SPECIFICATION ARE AS FOLLOWS:
    RESISTOFLEX # R6905-048WS3 - CONVOLUTE EXPANSION JOINT EVERY 25' FOR 3"
    RESISTOFLEX # R6905-064WS3 - CONVOLUTE EXPANSION JOINT EVERY 30' FOR 4"
    RESISTOFLEX # R6906-096WS5 - CONVOLUTE EXPANSION JOINT EVERY 40' FOR 6"

SCALE BAR: 1"=5'
5 0 2.5 5 10 20

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 29524 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 80

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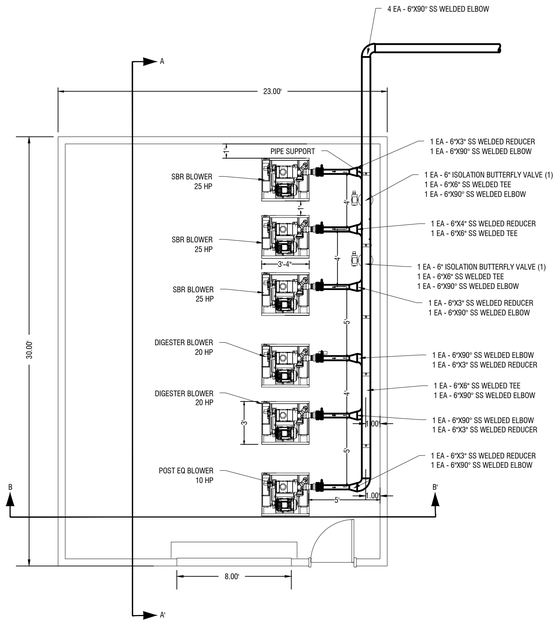
WASTEWATER TREATMENT PLANT EXPANSION

AIR LINES PLAN VIEW

M23

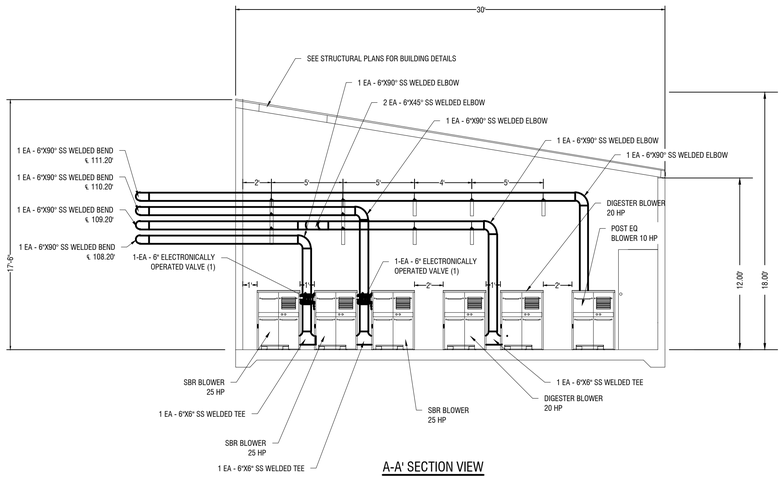
FILE NO: 2020-48

PLOT DATE: June 5, 2025



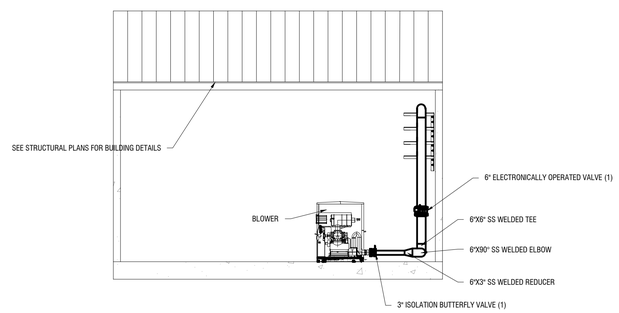
PLAN VIEW

SCALE: 1"=5'



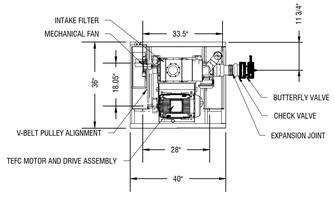
A-A' SECTION VIEW

SCALE: 1"=5'



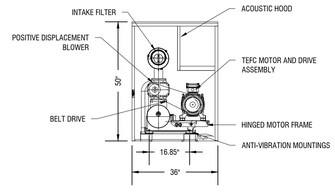
B-B' SECTION VIEW

SCALE: 1"=5'



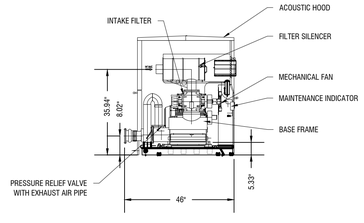
PLAN VIEW

SCALE: 1"=30"



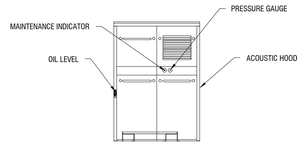
FRONT VIEW

SCALE: 1"=30"



PROFILE VIEW

SCALE: 1"=30"



ACOUSTIC HOOD
FRONT VIEW

SCALE: 1"=30"

(1) PROVIDED BY TREATMENT PLANT PACKAGE SUPPLIER

AIR PIPING NOTES:

1. AIR PIPING - SCHEDULE 10S STAINLESS STEEL
2. FLANGES - 304 STAINLESS STEEL, 150# CLASS WITH NEOPRENE GASKET
3. ALL AIR PIPING BELOW 8' MEASURED FROM FINISHED FLOOR WILL BE INSULATED WITH 3" INSULATION
3. ALL AIR PIPING ABOVE 8' MEASURED FROM FINISHED FLOOR WILL BE INSULATED WITH 1" INSULATION
4. REAM ALL PIPE ENDS AND REMOVE BURRS.
5. REMOVE SCALE AND DIRT, ON INSIDE AND OUTSIDE BEFORE ASSEMBLY.
6. PREPARE PIPING CONNECTIONS WITH FLANGES, WHERE SHOWN.
7. PROVIDE NON-CONDUCTING DIELECTRIC CONNECTIONS WHEN JOINING DISSIMILAR METALS.
8. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR EQUIPMENT.
9. PROVIDE CLEARANCE FOR INSTALLATION OF INSULATION AND ACCESS TO VALVES AND FITTINGS.
10. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED
11. PLACE EXPANSION JOINTS IN EXTENDED POSITION WHEN PIPING IS INSTALLED.
12. EXPANSION JOINT ALONG PIPE LENGTH AS SHOWN IN CHART BELOW.
13. ALL DIMENSIONS TO BE VERIFIED BY CONTRACTOR PRIOR TO MANUFACTURING OF AIR PIPING
14. EXPANSION JOINT SPECIFICATION ARE AS FOLLOWS:
    RESISTOFLEX # R6905-048WS3 - CONVOLUTE EXPANSION JOINT EVERY 25' FOR 3"
    RESISTOFLEX # R6906-096WS5 - CONVOLUTE EXPANSION JOINT EVERY 40' FOR 6"

SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 035247 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 90

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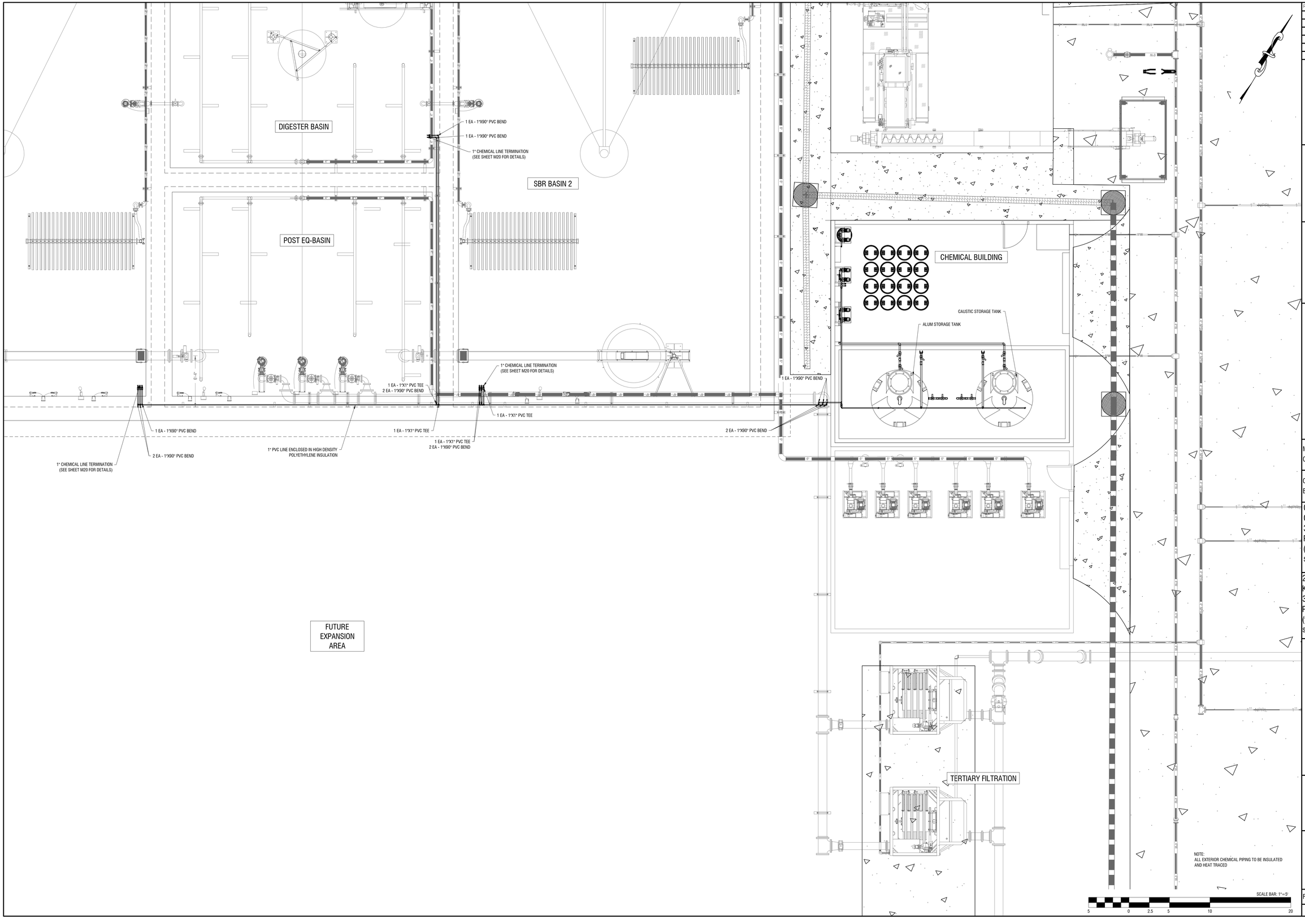
WASTEWATER TREATMENT PLANT EXPANSION

BLOWER BUILDING

M24

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 33658 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING

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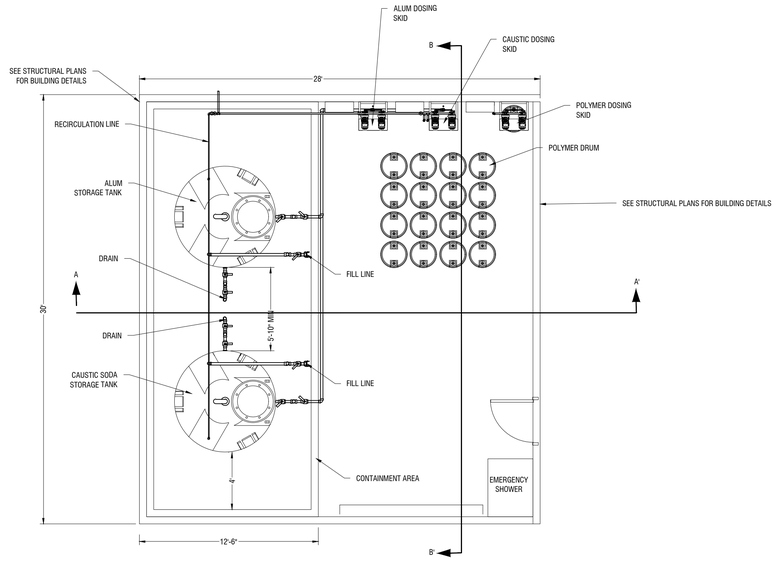
WASTEWATER TREATMENT PLANT EXPANSION

CHEMICAL LINES PLAN VIEW

M25

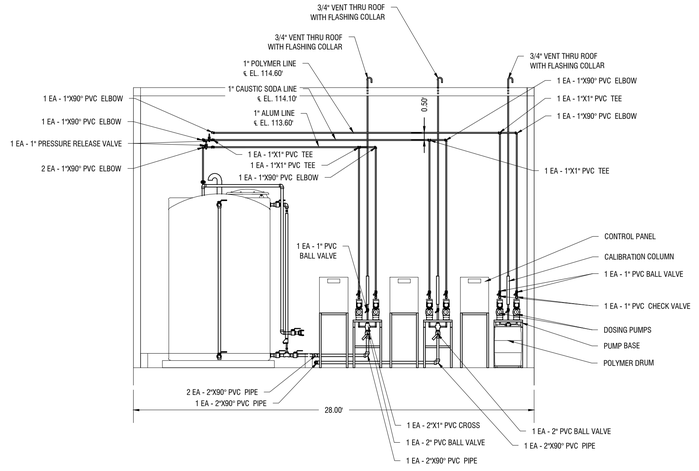
FILE NO: 2020-48

PLOT DATE: June 5, 2025



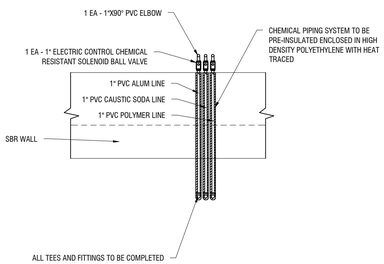
PLAN VIEW

SCALE: 1"=5'



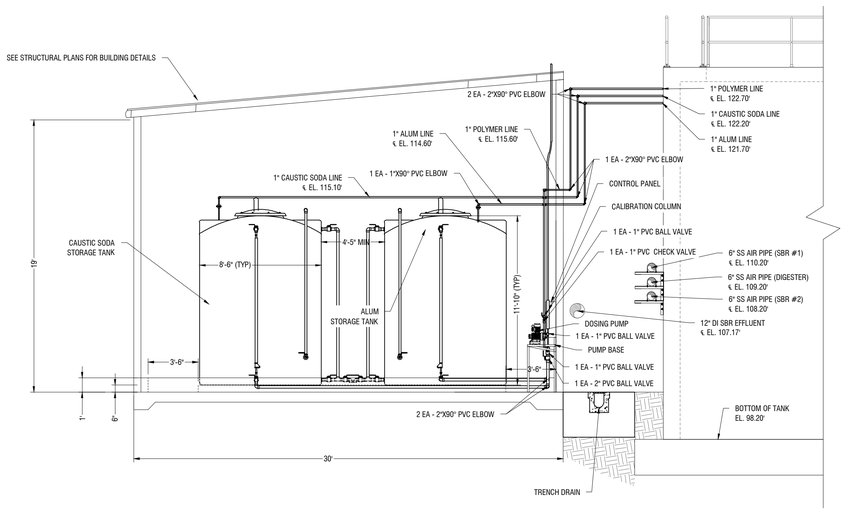
A-A' SECTION VIEW

SCALE: 1"=5'



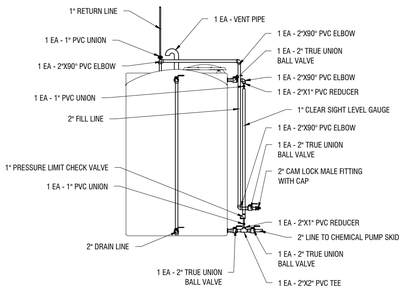
SBR CHEMICAL LINE DETAIL

NTS



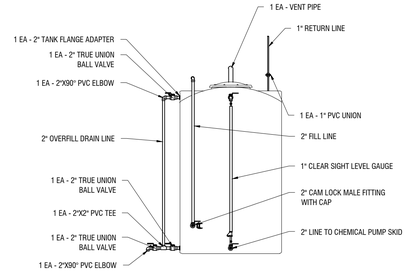
B-B' SECTION VIEW

SCALE: 1"=5'



CHEMICAL TANK PIPING DETAIL
PROFILE VIEW

NTS



CHEMICAL TANK PIPING DETAIL
FRONT VIEW

NTS

4,500 GAL TANK
8'-6" ID X 11'-10" H
FRP TANK TO BE INSULATED AND HEAT TRACED

CONTRACTOR TO CONFIRM TANK DIMENSION AND CLEARANCE UNDER STRUCTURE & REQUIRED CONSTRUCTION SEQUENCING PRIOR TO BEGINNING CONSTRUCTION

NOTE:
ALL EXTERIOR CHEMICAL PIPING TO BE INSULATED AND HEAT TRACED

SCALE BAR: 1"=5'

5 0 2.5 5 10 20

REVISIONS:

1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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DATE: June 5, 2025

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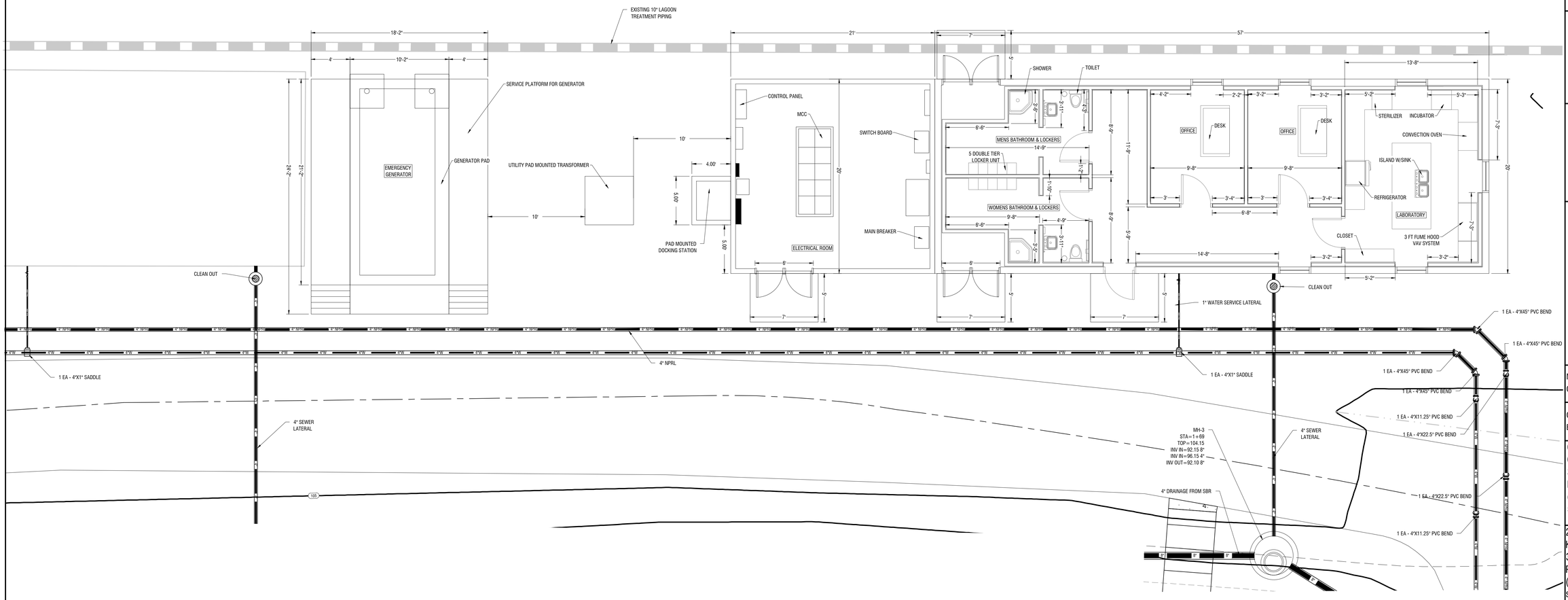
WASTEWATER TREATMENT PLANT EXPANSION

CHEMICAL BUILDING

M26

FILE NO: 2020-48

PLOT DATE: June 5, 2025



REVISIONS:	
1	SBR TANK SIZE
2	GSWCC ESP&C
3	ADDENDUM 1
4	ADDENDUM 2

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GEORGIA REGISTERED No. 35558 PROFESSIONAL ENGINEER MARCUS E. SACK

DATE: June 5, 2025

M.E. SACK ENGINEERING 19 00

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WASTEWATER TREATMENT PLANT EXPANSION

OPERATIONS & ELECTRICAL BUILDINGS

M27

SCALE BAR: 1"=5'
5 0 2.5 5 10 20

FILE NO: 2020-48

PLOT DATE: June 5, 2025

STRUCTURAL DESIGN CRITERIA

BUILDING CODE

2018 INTERNATIONAL BUILDING CODE (IBC)

DEAD LOAD

DESIGN DEAD LOAD TABLE	
CONSTRUCTION	DEAD LOAD
ROOF	15 PSF
STEEL PLATFORM AREAS	10 PSF

EQUIPMENT LOAD TABLE	
CONSTRUCTION	DEAD LOAD
SKID SYSTEM BELT PRESS	8,500 LB (DRY)
BLOWER	800 LB
ALUM STORAGE TANK (4500 GAL)	60,000 LB
CAUSTIC SODA TANK (4500 GAL)	82,000 LB
BACKUP POWER GENERATOR	7,500 LB
TERTIARY DISK FILTRATION SYSTEM	10,750 LB (DRY) 49,350 LB (IN USE)
ODOR CONTROL EPM1 SYSTEM	1,950 LB
UV DISINFECTION UNIT UV3000PTP	1,400 LB (DRY)

EQUIPMENT WEIGHTS MUST BE VERIFIED BY OWNER.

FLOOR LIVE LOAD

FLOOR LIVE LOAD TABLE		
FLOOR USE	UNIFORM LIVE LOADING	CONCENTRATED LIVE LOADING
CATWALKS FOR MAINTENANCE ACCESS	100 PSF	300 LBS
STAIRS	100 PSF	300 LBS

ROOF LIVE LOAD

ROOF LIVE LOAD TABLE		
ROOF TYPE	UNIFORM LIVE LOADING	CONCENTRATED LIVE LOADING
ORDINARY FLAT AND PITCHED ROOF	20 PSF	300 LBS

ROOF SNOW LOAD DATA

GROUND SNOW LOAD, p_g = 0 PSF

WIND DESIGN DATA

ULTIMATE DESIGN WIND SPEED, V_{ult} = 136 MPH
NOMINAL DESIGN WIND SPEED, V_{asd} = 105 MPH
RISK CATEGORY = III
WIND EXPOSURE = B
INTERNAL PRESSURE COEFFICIENT, (GCpi) = 0.18 (ENCLOSED)
COMPONENTS AND CLADDING ULTIMATE WIND PRESSURES = (SEE TABLE BELOW)

COMPONENTS & CLADDING ULTIMATE WIND PRESSURES				
ELEMENT	ZONE	AREA (SQ. FT.)	p_{net} (PSF)	
			POSITIVE	NEGATIVE
ROOF	1	10	16.9	-75.3
		50	16.0	-51.6
		100	16.0	-41.4
		200	16.0	-31.2
	2	10	16.9	-51.6
		20	16.0	-31.4
		100	16.0	-16.1
		200	16.0	-16.1
	3	10	16.9	-51.6
		50	16.0	-31.4
		100	16.0	-16.1
		200	16.0	-16.1
WALL	4	10	27.9	-30.3
		20	26.7	-29.1
		50	25.0	-27.4
		100	23.8	-26.1
		500	20.8	-23.2
	5	10	27.9	-37.4
		20	26.7	-34.9
		50	25.0	-31.6
		100	23.8	-29.1
		500	20.8	-23.2

STRUCTURAL DESIGN CRITERIA (CONT.)

EARTHQUAKE DESIGN DATA

RISK CATEGORY = III
SEISMIC IMPORTANCE FACTOR, I_e = 1.00
SITE CLASS = D (DEFAULT)
S_S = 0.244g
S_1 = 0.097g
S_{DS} = 0.261g
S_{D1} = 0.155
T_L = 8 sec
SEISMIC DESIGN CATEGORY = C

SEISMIC FORCE RESISTING SYSTEM					
SEISMIC FORCE RESISTING SYSTEM	DETAILING SECTION	R	Ω_0	C_d	h_n LIMIT
A9. ORDINARY REINFORCED MASONRY SHEAR WALLS	14.4	2	2 ½	1 ¾	SDC C = 160
A4. ORDINARY REINFORCED CONCRETE SHEAR WALLS	14.2	4	2 ½	4	SDC C = NL

RESPONSE MODIFICATION COEFFICIENT, R = 2
ANALYSIS PROCEDURE UTILIZED = EQUIVALENT LATERAL FORCE PROCEDURE (ASCE 7-16 12.8)
SEISMIC RESPONSE COEFFICIENT, C_s = 0.082
SEISMIC BASE SHEAR: TERTIARY FILTRATION SYSTEM, V = 4.1 KIPS
BELT PRESS BUILDING, V = 7.8 KIPS
CHEMICAL & BLOWER BUILDING, V = 18.8 KIPS
SBR TANK, V = 122 KIPS
OPERATIONS/ELECTRICAL MCC, V = 13.0 KIPS
BACKUP GENERATOR PLATFORM, V = 1.1 KIPS

GEOTECHNICAL INFORMATION

PROJECT GEOTECHNICAL REPORT = PRESUMPTIVE VALUES PER IBC 2018 TABLE 1806.2
ALLOWABLE VERTICAL BEARING PRESSURE = 2,000 PSF
ALLOWABLE LATERAL BEARING PRESSURE = 150 PSF/FT BELOW NATURAL GRADE
FOOTING-SOIL COEFFICIENT OF FRICTION = 0.25

FLOOD DESIGN DATA

FLOOD ZONE = X

GENERAL REQUIREMENTS

1. THE INTENT OF THESE DRAWINGS IS TO SHOW ALL ITEMS NECESSARY TO COMPLETE THE STRUCTURES. FOR ITEMS, METHODS AND/OR MATERIALS NOT SHOWN; THE MINIMUM REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE SHALL GOVERN, AS AMENDED BY THE STATE AND LOCAL GOVERNING AGENCIES OF THE PROJECT LOCATION.
2. ALL DRAWINGS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO START OF CONSTRUCTION SO THAT A CLARIFICATION CAN BE PROVIDED.
3. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ENGINEER.
4. DRAWINGS ARE NOT TO BE SCALED. WRITTEN DIMENSIONS SHALL GOVERN CONSTRUCTION. THE CONTRACTOR SHALL VERIFY DIMENSIONS WITH THE OWNER DRAWINGS AND THE SITE CONDITIONS PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER SO THAT CLARIFICATION CAN BE PROVIDED.
5. THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OR SEQUENCE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES AND SEQUENCES FOR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO (NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS). THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL SCAFFOLDING, BRACING AND SHORING.
6. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
7. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
8. ANY DELEGATED ENGINEERING DESIGN TO BE PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL MEET THE CRITERIA HEREIN, AND SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE OF THE PROJECT.
9. ALTERNATE PRODUCTS OF SIMILAR STRENGTH, NATURE AND FORM FOR SPECIFIED ITEMS MAY BE SUBMITTED WITH ADEQUATE TECHNICAL DOCUMENTATION TO THE ENGINEER FOR REVIEW. ALTERNATE MATERIALS THAT ARE SUBMITTED WITHOUT ADEQUATE TECHNICAL DOCUMENTATION OR THAT SIGNIFICANTLY DEVIATE FROM THE DESIGN INTENT OF MATERIALS SPECIFIED MAY BE RETURNED WITHOUT REVIEW.
10. NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED OR OTHERWISE REDUCED IN STRENGTH UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
11. DISSIMILAR METALS MUST BE SEPARATED BY A COATING SUCH AS ECK CORROSION COATING OR APPROVED EQUIVALENT OR NEOPRENE GASKET MATERIAL TO PREVENT GALVANIC ACTION.
12. REVIEW OF SUBMITTALS OR SHOP DRAWINGS BY THE DESIGN PROFESSIONAL DOES NOT RELIEVE THE CONTRACTOR OF THE SOLE RESPONSIBILITY TO REVIEW AND CHECK ALL SUBMITTALS AND SHOP DRAWINGS BEFORE SUBMITTING TO THE DESIGN PROFESSIONAL. CONTRACTOR REMAINS SOLELY RESPONSIBLE FOR ERRORS AND OMISSIONS ASSOCIATED WITH THE PREPARATIONS OF SHOP DRAWINGS AS THEY PERTAIN TO MEMBER SIZES, DETAILS, AND DIMENSIONS SPECIFIED IN THE CONTRACTOR DOCUMENTS.
13. STANDARDS REFERENCED HEREIN SHALL BE TAKEN FROM THE BUILDING CODE INDICATED ON THE STRUCTURAL NOTES.

REQUIRED SUBMITTALS		
SECTION	SUBMITTAL TYPE	SUBMITTAL DESCRIPTION
03 - CONCRETE		
033000: CAST-IN-PLACE CONCRETE	ACTION	a. PRODUCT DATA
		b. DESIGN MIXTURES
		c. STEEL REINFORCEMENT SHOP DRAWINGS
	INFORMATIONAL	a. MATERIAL CERTIFICATES
		b. MATERIAL TEST REPORTS
		c. FORMWORK SHOP DRAWINGS
		d. FLOOR SURFACE FLATNESS/LEVELNESS MEASUREMENTS
034100: PRECAST STRUCTURAL CONCRETE	ACTION	a. PRODUCT DATA
		b. DESIGN MIXTURES
		c. SHOP DRAWINGS
		d. DELEGATED-DESIGN SUBMITTAL
	INFORMATIONAL	a. QUALIFICATION DATA
		b. WELDING CERTIFICATES
		c. MATERIAL CERTIFICATES
		d. MATERIAL TEST REPORTS
		e. SOURCE QUALITY-CONTROL REPORTS
		f. FIELD QUALITY-CONTROL REPORTS
04 - MASONRY		
042200: CONCRETE UNIT MASONRY	ACTION	a. PRODUCT DATA
		b. SHOP DRAWINGS
	INFORMATIONAL	a. MATERIAL CERTIFICATES
		b. MIX DESIGNS

GENERAL REQUIREMENTS (CONT.)

REQUIRED SUBMITTALS		
SECTION	SUBMITTAL TYPE	SUBMITTAL DESCRIPTION
05 - METALS		
051200: STRUCTURAL STEEL FRAMING	ACTION	a. PRODUCT DATA
		b. SHOP DRAWINGS
	INFORMATIONAL	a. QUALIFICATION DATA
		b. WELDING CERTIFICATES
		c. MILL TEST REPORTS
		d. SOURCE QUALITY-CONTROL REPORTS
		e. FIELD QUALITY-CONTROL REPORTS
054000: COLD-FORMED METAL FRAMING	ACTION	a. PRODUCT DATA
		b. SHOP DRAWINGS
		c. DELEGATED-DESIGN SUBMITTAL
	INFORMATIONAL	a. QUALIFICATION DATA
		b. WELDING CERTIFICATES
		c. PRODUCT CERTIFICATES
		d. RESEARCH REPORTS
054400: COLD-FORMED METAL TRUSSES	ACTION	a. PRODUCT DATA
		b. SHOP DRAWINGS
		c. DELEGATED-DESIGN SUBMITTAL
	INFORMATIONAL	a. QUALIFICATION DATA
		b. WELDING CERTIFICATES
		c. PRODUCT TEST REPORTS
		d. FIELD QUALITY CONTROL REPORTS
055313: BAR GRATINGS	ACTION	a. PRODUCT DATA
		b. SHOP DRAWINGS
		c. DELEGATED-DESIGN SUBMITTAL
06 - WOOD, PLASTICS, COMPOSITES		
061600: SHEATHING	ACTION	a. PRODUCT DATA
	INFORMATIONAL	a. EVALUATION REPORTS

STRUCTURAL SPECIAL INSPECTIONS

1. SPECIAL STRUCTURAL TESTS AND INSPECTIONS SHALL BE PERFORMED ON THIS PROJECT IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE (IBC). THE FOLLOWING DOCUMENTS HAVE BEEN PREPARED FOR THIS PROJECT AS A PART OF THESE CONSTRUCTION DOCUMENTS:
   a. STATEMENT OF SPECIAL INSPECTIONS
   b. SCHEDULE OF SPECIAL INSPECTIONS
   c. STATEMENT OF SPECIAL INSPECTIONS REQUIREMENTS FOR WIND RESISTANCE
   d. STATEMENT OF SPECIAL INSPECTIONS REQUIREMENTS FOR SEISMIC RESISTANCE
2. SPECIAL STRUCTURAL TESTS AND INSPECTIONS SHALL BE PERFORMED BY AN AGENCY SELECTED BY THE OWNER AND APPROVED BY THE ENGINEER OF RECORD. THE AGENCY SHALL MEET ALL OF THE REQUIREMENTS FOR APPROVAL INDICATED IN IBC SECTION 1703.1. SPECIAL INSPECTORS SHALL BE QUALIFIED PERSONS WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.
3. THE CONTRACTOR SHALL COORDINATE THE INSPECTION SERVICES IN ACCORDANCE WITH THE PROGRESS OF THE WORK. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO THE INSPECTOR TO ALLOW PROPER SCHEDULING OF PERSONNEL.
4. ALL REPORTS AND SHOP CERTIFICATION OF SPECIAL INSPECTIONS TO BE PERFORMED ON THE PREMISES OF A FABRICATOR'S SHOP SHALL BE SUBMITTED TO THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISTRIBUTING THESE REPORTS TO THE SPECIAL INSPECTOR AND THE ENGINEER OF RECORD IN A TIMELY MANNER.
5. THE COSTS OF THE SPECIAL INSPECTOR'S SERVICES SHALL BE PAID FOR BY THE OWNER.SPECIAL INSPECTIONS REPORTS AND A FINAL REPORT IN ACCORDANCE WITH IBC SECTION 1704.2.4 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL PRIOR TO THE TIME THAT PHASE OF THE WORK IS APPROVED FOR OCCUPANCY.
6. REPORTS SHALL INDICATE THAT THE WORK WAS PERFORMED AND CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. WORK NOT IN CONFORMANCE SHALL BE IDENTIFIED IN THE REPORT AND SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR.
7. A FINAL REPORT OF INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS, INCLUDING ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED TO THE BUILDING OFFICIAL, THE OWNER, AND THE ENGINEER OF RECORD PRIOR TO COMPLETION OF THE STRUCTURAL SYSTEMS BUT AT A FREQUENCY NOT TO EXCEED 60 DAYS.

GROUND IMPROVEMENTS

1. PER THE GEOTECHNICAL REPORT BY WSP USA ENVIRONMENT AND INFRASTRUCTURE, INC. DATED SEPTEMBER 26, 2024, GROUND IMPROVEMENTS ARE REQUIRED FOR THE SITE. GENERALLY APPROVED METHODS ARE LISTED BELOW WITH MORE SPECIFICS FOLLOWING:
   - PRE-LOADING WITH OR WITHOUT WICK DRAINS
   - RIGID INCLUSIONS
   - AGGREGATE PIERS
2. FOR BUILDING AND OTHER NON-TANK SLABS, THE GROUND IMPROVEMENT METHODS CAN BE ANY OF THE APPROVED METHODS LISTED IN THE GEOTECHNICAL REPORT. PER THE GEOTECHNICAL REPORT, THE BUILDING AND OTHER STRUCTURES CAN ACHIEVE A 2,000 PSF ALLOWABLE BEARING PRESSURE WITH AN EXPECTED SETTLEMENT OF LESS THAN 1 INCH.
3. FOR TANK STRUCTURES, RIGID INCLUDES OR AGGREGATE PIERS SHALL BE USED FOR GROUND IMPROVEMENTS; PRE-LOADING ALONE IS INSUFFICIENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENGAGING A DESIGN-BUILD GROUND IMPROVEMENT SPECIALTY GEOTECHNICAL CONTRACTOR TO IMPROVE THE SOIL SYSTEMS TO THE FOLLOWING BEARING PRESSURE AND EXPECTED SETTLEMENT REQUIREMENTS:
   - SBR SYSTEM: 2,500 PSF ALLOWABLE BEARING PRESSURE; EXPECTED SETTLEMENT LESS THAN 1 INCH
   - OTHER TANKS: 1,500 PSF ALLOWABLE BEARING PRESSURE; EXPECTED SETTLEMENT LESS THAN 1 INCH

SUBGRADE PREPARATION

1. FOLLOWING COMPLETION OF THE GROUND IMPROVEMENTS, THE CONTRACTOR SHALL FOLLOW RECOMMENDATIONS FROM THE GEOTECHNICAL REPORT BY WSP USA ENVIRONMENT AND INFRASTRUCTURE, INC. DATED SEPTEMBER 26, 2024 FOR THE SITE PREPARATION, INCLUDING CLEARING, STRIPPING, AND PROOFROLLING.

FOUNDATIONS

1. THE FOUNDATION IS DESIGNED BASED UPON THE RECOMMENDATIONS AND DESIGN PARAMETERS INCLUDED IN THE PROJECT GEOTECHNICAL REPORT PREPARED BY WSP USA ENVIRONMENTAL AND INFRASTRUCTURE, INC. AND DATED SEPTEMBER 26, 2024.
2. SOIL PRESSURES USED FOR FOUNDATION DESIGN AFTER REQUIRED GROUND IMPROVEMENT AND PREPARATION HAS BEEN COMPLETED:
   a. ALLOWABLE BEARING PRESSURE = 2000 PSF (BUILDINGS); 1500 PSF (TANKS); 2500 PSF (SBR SYSTEM)
   b. ALLOWABLE PASSIVE PRESSURE = 200 PCF
3. ALL FOUNDATIONS SHALL BE PLACED ON COMPACTED SUBGRADE. SEE SUBGRADE PREPARATION NOTES.
4. THE BOTTOM OF ALL EXTERIOR FOUNDATIONS SHALL BE A MINIMUM OF 12 INCHES BELOW FINISHED GRADE UNLESS NOTED OTHERWISE.
5. REMOVE ALL WATER SOFTENED SOILS FROM FOUNDATION EXCAVATIONS PRIOR TO PLACING CONCRETE. FILL REMAINING VOIDS WITH ADDITIONAL CONCRETE.
6. ALL FOUNDATION REINFORCEMENT SHALL BE PROPERLY TIED IN PLACE PRIOR TO PLACEMENT OF CONCRETE.
7. WHERE FINISHED GRADES DIFFER ON OPPOSITE SIDES OF FOUNDATION WALLS, PROVIDE TEMPORARY BRACING TO PREVENT LATERAL MOVEMENT UNTIL ALL ADJACENT FILL, COMPACTION, FLOOR SLABS, AND FRAMING AT NEXT LEVEL HAS BEEN COMPLETED.

SLABS ON GRADE

1. ALL SLABS ON GRADE SHALL BE ON COMPACTED SUBGRADE WITH 4 INCHES MINIMUM OF POROUS FILL MATERIAL. SEE SUBGRADE PREPARATION NOTES.
2. THE USE OF POLYPROPYLENE FIBERS IN LIEU OF WELDED WIRE FABRIC IS PROHIBITED WITHOUT THE WRITTEN AUTHORIZATION OF THE ENGINEER
3. THE FINISH TOLERANCE OF ALL SLABS SHALL BE IN ACCORDANCE WITH ACI 301, TYPE A.
4. WALKWAYS AND OTHER EXTERIOR SLABS ARE NOT INDICATED ON THE STRUCTURAL DRAWINGS SHALL FOLLOW TYPICAL DETAILS.
5. SAW-CUT CONTRACTION JOINTS SHALL BE CUT AS SOON AS THE CONCRETE CAN BE CUT WITHOUT RAVELING. CONVENTIONAL CAW-CUT JOINTS SHOULD BE RUN WITHIN 4-12 HOURS AFTER THE CONCRETE HAS BEEN FINISHED. JOINTS PLACED WITH AN EARLY ENTRY SAW MAY BE CUT 1-4 HOURS AFTER THE SLAB HAS BEEN FINISHED.
6. SLAB JOINTS SHALL BE FILLED WITH APPROVED MATERIAL. THIS SHOULD TAKE PLACE AS LATE AS POSSIBLE PRIOR TO FILLING, REMOVE ALL DEBRIS FROM THE SLAB JOINTS, THEN FILL IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AS FOLLOWS:
   a. CONTROL JOINT SEALANT = EUCLID CHEMICAL DURAL 340 SL OR APPROVED EQUAL
   b. EXPANSION/ISOLATION JOINT SEALANT = EUCLID CHEMICAL EUCOLASTIC 1 SL OR APPROVED EQUAL
11. PROVIDE 1/2" PREMOLDED EXPANSION JOINT (P.E.J.) FILLER AROUND PERIMETER OF SLABS WHERE THEY ABUT VERTICAL SURFACES AND AT COLUMN ISOLATION JOINTS AS DETAILED.

REINFORCING STEEL

1. FABRICATING, PLACING, AND SUPPORTING REINFORCEMENT SHALL COMPLY WITH CRSI'S "MANUAL OF STANDARD PRACTICE."
2. REINFORCING BARS SHALL BE ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE.
3. REINFORCING BARS IN WELDED CONDITIONS, WHERE PERMITTED, SHALL BE ASTM A 706, DEFORMED.
4. STEEL WELDED-WIRE REINFORCEMENTS SHALL BE ASTM A 1064 WITH 70 KSI MINIMUM YIELD STRENGTH.
5. NO REINFORCEMENT SHALL BE FLAME-CUT OR BENT IN FIELD WITHOUT GUIDANCE FROM STRUCTURAL ENGINEER.
6. REINFORCING STEEL SHALL HAVE COVER PROTECTION AS FOLLOWS:

CONCRETE COVER PROTECTION TABLE	
CONDITION	MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3 INCHES
OTHER MEMBERS	1½ INCHES

CAST-IN-PLACE CONCRETE

1. ALL CAST-IN-PLACE CONCRETE CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING ACI PUBLICATIONS:
   a. ACI 301-14 - GENERAL CONSTRUCTION REQUIREMENTS
   b. ACI 117-10 - TOLERANCES FOR CONCRETE CONSTRUCTION
2. CONCRETE SHALL BE NORMAL-WEIGHT CONCRETE (145 PCF) WITH MIXES MEETING THE FOLLOWING CRITERIA:
   a. FOUNDATION ELEMENTS AND RETAINING WALLS
      - TYPE = NORMAL-WEIGHT (145 PCF)
      - EXPOSURE CLASS = ACI 318 F1, S0, W1, C1
      - MINIMUM 28-DAY COMPRESSIVE STRENGTH = 4000 PSI
      - COARSE AGGREGATE SIZE = #57 STONE (NOMINAL MAXIMUM AGGREGATE = 1-1/2 INCH)
      - MAXIMUM WATER-TO-CEMENTITOUS MATERIALS RATIO = 0.50
      - SLUMP LIMIT = 5 INCHES (±1 INCH)
      - AIR CONTENT = 4.5% (+/-1.5%)
      - LIMIT WATER-SOLUBLE, CHLORIDE-ION CONTENT = 0.30% BY WEIGHT OF CEMENT
   b. INTERIOR SLABS-ON-GROUND
      - TYPE = NORMAL-WEIGHT (145 PCF)
      - EXPOSURE CLASS = ACI 318 F0, S0, W0, C0
      - MINIMUM 28-DAY COMPRESSIVE STRENGTH = 3500 PSI
      - COARSE AGGREGATE SIZE = #67 STONE (NOMINAL MAXIMUM AGGREGATE = 1 INCH)
      - MAXIMUM WATER-TO-CEMENTITOUS MATERIALS RATIO = 0.55
      - SLUMP LIMIT = 5 INCHES (±1 INCH)
      - AIR CONTENT = 0.0% (+/-1.5%)
      - LIMIT WATER-SOLUBLE, CHLORIDE-ION CONTENT = 1.00% BY WEIGHT OF CEMENT
3. ACCEPTABLE CEMENTIOUS MATERIALS:
   a. PORTLAND CEMENT - ASTM C 150, TYPE II
   b. FLY ASH - ASTM C 618
   c. SLAG CEMENT - ASTM C989
   d. BLENDED HYDRAULIC CEMENT - ASTM C 595, TYPE IS OR TYPE IP
4. ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4-INCH CHAMFER.
5. OPENINGS, POCKETS, ETC., LARGER THAN 6" SHALL NOT BE PLACED IN CONCRETE SLABS, DECKS, WALLS, UNLESS SPECIALLY DETAILED ON THE STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER WHEN DRAWINGS BY OTHERS SHOW OPENINGS, POCKETS, ETC., LARGER THAN 6" NOT SHOWN ON THE STRUCTURAL DRAWINGS, BUT WHICH ARE LOCATED IN STRUCTURAL MEMBERS. FOR ANY FURTHER RESTRICTIONS ON OPENINGS IN STRUCTURAL ELEMENTS, SEE APPLICABLE SECTIONS BELOW.
6. PIPES LARGER THAN 1 ½" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHEN WHERE SPECIFICALLY APPROVED. NO CONDUITS SHALL BE PLACED IN CONCRETE FILL OVER METAL DECKING.
7. REQUIRED CAST-IN-PLACE CONCRETE SUBMITTALS TO ENGINEER:
   a. PRODUCT DATA - SUBMIT TECHNICAL PRODUCT DATA FOR ANY ADMIXTURES OR CONCRETE-RELATED CONSTRUCTION PRODUCTS.
   b. DESIGN MIXTURES - THE FOLLOWING ITEMS ARE REQUIRED:
      - MIX IDENTIFICATION BY MEANS OF CLASS OR LOCATION WHERE MIX WILL BE USED.
      - STRENGTH OF CONCRETE.
      - TARGET SLUMP, WATER-TO-CEMENT RATIO, DENSITY, AND AIR CONTENT.
      - LIST OF ALL MATERIALS, ADMIXTURES, AND ADDITIVES ALONG WITH THEIR PROPORTIONS.
      - NOMINAL MAXIMUM AGGREGATE SIZE AND COMBINED AGGREGATE GRADATION.
      - CALCULATIONS AND TEST RESULTS REQUIRED BY ACI 318-14 CHAPTER 26
      - TEST RESULTS OF TOTAL CHLORIDE CONTENT.
      - INFORMATION ON CONCRETE MATERIALS AS PER ACI 301-14 SECTION 26.4
      - TEST RESULTS PER ASTM C33, INCLUDING THE CLEANNESS VALUE, SAND EQUIVALENT, AND ALKALI-SILICA REACTIVITY (ASR) POTENTIAL AND MITIGATION, IF REQUIRED.
      - MILL CERTIFICATE FOR THE CEMENT INDICATING THE SOURCE OF THE CEMENT AND COMPLIANCE WITH THE PROJECT SPECIFICATION.
      - MILL ANALYSIS FOR SUPPLEMENTARY CEMENTITIOUS MATERIALS (INCLUDING FLY ASH AND SLAG CEMENT) AND AGGREGATES FROM THE MANUFACTURER.
      - CERTIFICATION BY THE MANUFACTURERS THAT THE ADMIXTURES CONFORM TO THE SPECIFIED STANDARDS.
      - WHETHER MIX IS APPROPRIATE FOR PUMPING.
      - THERMAL CONTROL PLAN, INCLUDING HOT WEATHER AND COLD WEATHER PLACEMENT.
   c. STEEL REINFORCEMENT SHOP DRAWINGS - PLACING DRAWINGS THAT DETAIL FABRICATION, BENDING, AND PLACEMENT OF REINFORCEMENT.
   d. 28-DAY CONCRETE ACCEPTANCE TEST REPORT AS REQUIRED BY ACI 318-14 SECTION 26.13.2

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GEORGIA REGISTERED 10/11/24 No. SE0000802 STRUCTURAL ENGINEER BRIAN K. SAPP

REVISIONS

#	DATE	DESCRIPTION

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M.E. SACK ENGINEERING

CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	MAB
CHECKED BY	BKS

STRUCTURAL NOTES

0S-1

CONCRETE UNIT MASONRY

1. ALL CONCRETE UNIT MASONRY CONSTRUCTION SHALL COMPLY WITH THE FOLLOWING TMS PUBLICATIONS:
   a. TMS 402-16 - BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
   b. TMS 602-16 - SPECIFICATION FOR MASONRY STRUCTURES
2. CONCRETE MASONRY UNITS SHALL BE ASTM C 90 AND MEET THE FOLLOWING THE FOLLOWING CRITERIA:
   a. UNIT COMPRESSIVE STRENGTH = 1900 PSI
   b. DENSITY CLASSIFICATION = LIGHTWEIGHT
   c. RUNNING BOND PLACEMENT
3. MORTAR SHALL COMPLY WITH ASTM C 270 AND THE FOLLOWING CRITERIA:
   a. TYPE = S
   b. ACCEPTABLE MORTAR CEMENT:
      - PORTLAND CEMENT - ASTM C 150, TYPE II
      - HYDRATED LIME - ASTM C 207, TYPE S
      - PORTLAND CEMENT-LIME MIX
      - MASONRY CEMENT - ASTM C 91
   c. BEDDING = FULL
   d. MORTAR AGGREGATE, ASTM C 144
4. GROUT FOR UNIT MASONRY SHALL COMPLY WITH ASTM C 476 AND THE FOLLOWING CRITERIA:
   a. GROUT TYPE = COARSE
   b. GROUT DENSITY = 140 PCF
   c. COMPRESSIVE STRENGTH = 3000 PSI
   d. GROUT AGGREGATE = 1/2-INCH MAX COARSE AGGREGATE, ASTM C 404
   e. TARGET SLUMP = 9 INCHES (1 INCH)
   f. NO ADMIXTURES UNLESS APPROVED BY ENGINEER
5. MASONRY-JOINT REINFORCEMENT, WHERE INDICATED, SHALL COMPLY WITH ASTM A 951 AND WITH THE FOLLOWING CRITERIA:
   a. HOT-DIP GALVANIZED STEEL
   b. WIRE SIZE FOR SIDE RODS = 0.148 INCHES
   c. WIRE SIZE RODS FOR CROSS RODS = 0.148 INCHES
   d. SPACING OF CROSS RODS = 16 INCHES
   e. PROVIDE IN LENGTHS OF NOT LESS THAN 10 FEET WITH PREFABRICATED CORNER AND TEE UNITS
   f. CONTINUOUS THROUGH VERTICALLY-REINFORCED CELLS
6. ALL CELLS BELOW GROUND FLOOR SLAB SHALL BE FILLED SOLID WITH GROUT.
7. CONCRETE MASONRY UNITS SHALL BE FILLED IN 4-FEET LIFTS MAXIMUM.
8. PLAIN END TWO CELL UNITS SHALL BE USED FOR BLOCKS THAT ARE TO HAVE CELLS REINFORCED OR FILLED.
9. PROVIDE A 4-INCH BY 4-INCH CLEAN-OUT OPENING AT BOTTOM COURSE OF EACH LIFT AT EACH REINFORCED CELL EXCEPT WHERE HOLE OR PATCH CANNOT BE CONCEALED BY BRICK OR WALL FINISH.
10. ALL MASONRY WALLS SHOWN HEREIN HAVE BEEN DESIGNED TO RESIST THE REQUIRED VERTICAL AND LATERAL FORCES IN THE FINAL CONFIGURATION ONLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ADEQUATELY BRACE THE WALLS FOR VERTICAL AND LATERAL LOADS THAT COULD POSSIBLY BE APPLIED PRIOR TO COMPLETION OF LATERAL SUPPORT BY CONNECTIONS AT FLOOR OR ROOF FRAMING LOCATIONS.
11. REQUIRED CONCRETE UNIT MASONRY SUBMITTALS TO ENGINEER:
   a. PRODUCT DATA - SUBMIT TECHNICAL PRODUCT DATA FOR ANY CONCRETE MASONRY-RELATED CONSTRUCTION PRODUCTS.
   b. MATERIAL CERTIFICATES - FOR EACH TYPE AND SIZE OF UNIT, SUBMIT DATA ON MATERIAL PROPERTIES AND MATERIAL TEST REPORTS TO SUBSTANTIATE COMPLIANCE WITH REQUIREMENTS.
   c. DESIGN MIXTURES - THE FOLLOWING ITEMS ARE REQUIRED:
      - TEST REPORTS FOR MORTAR MIXES REQUIRED TO COMPLY WITH PROPERTY SPECIFICATION. TEST ACCORDING TO ASTM C 109 FOR COMPRESSIVE STRENGTH, ASTM C 1506 FOR WATER RETENTION, AND ASTM C 91 FOR AIR CONTENT.
      - TEST REPORTS FOR GROUT MIXES REQUIRED TO COMPLY WITH COMPRESSIVE STRENGTH REQUIREMENT ACCORDING TO ASTM C 1019.
   d. STEEL REINFORCEMENT SHOP DRAWINGS - PLACING DRAWINGS THAT DETAIL FABRICATION, BENDING, AND PLACEMENT OF REINFORCEMENT.
   e. CONTROL JOINT LOCATION PLAN AND DETAIL

SHOP FABRICATED COLD-FORMED STEEL TRUSSES

1. TRUSSES SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT STATE TO BE IN ACCORDANCE WITH THE AMERICAN IRON AND STEEL INSTITUTE NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS (AISI S100) AND STANDARD FOR COLD-FORMED STEEL FRAMING - TRUSS DESIGN (AISI S214).
2. TRUSSES SHALL BE DESIGNED, FABRICATED, AND ERECTED TO SUPPORT THE FOLLOWING:
   a. TYPICAL GRAVITY LOADS
      - TOP CHORD DEAD LOAD = 10 PSF
      - TOP CHORD LIVE LOAD = 20 PSF
      - BOTTOM CHORD DEAD LOAD = 10 PSF
      - BOTTOM CHORD LIVE LOAD = 10 PSF
   b. ENVIRONMENTAL LOADS AS DEFINED IN THE STRUCTURAL DESIGN CRITERIA
   c. SPECIAL LOADS AS DEPICTED ON THE PLAN DRAWINGS
   d. DRAG STRUT LOADS AS DEPICTED ON THE PLAN DRAWINGS
3. TRUSSES SHALL BE DESIGNED, FABRICATED, AND ERECTED TO PERFORM WITH THE FOLLOWING DEFLECTION LIMITS:
   a. ROOF TRUSSES: VERTICAL DEFLECTION LESS THAN OR EQUAL TO L/240.
   b. FLOOR TRUSSES: VERTICAL DEFLECTION LESS THAN OR EQUAL TO L/480.
4. ALL CHORD AND WEB MEMBERS SHALL BE FABRICATED COMPONENTS OF STRUCTURAL QUALITY STEEL SHEET PER ASTM A653 WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI.
5. ALL BRACING, BRIDGING AND BLOCKING MEMBERS SHALL BE FABRICATED COMPONENTS OF COMMERCIAL QUALITY STEEL SHEET PER ASTM A653 WITH A MINIMUM YIELD STRENGTH OF 33,000 PSI.
6. ALL TRUSS MEMBERS SHALL INCLUDE A PROTECTIVE ZINC COATING COMPLYING WITH ASTM A653 MINIMUM G60 COATING.
7. MECHANICAL FASTENERS SHALL BE SELF-DRILLING SCREWS WITH CORROSION-RESISTANCED PLATED FINISH.
8. SPECIALTY ENGINEER SHALL DESIGN AND DETAIL THE SUPPORT CONDITIONS AND THE TRUSS-TO-TRUSS CONNECTIONS FOR THE MAXIMUM REACTION FORCES.
9. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY AND PERMANENT BRACING AS REQUIRED FOR SAFE ERECTION AND PERFORMANCE OF THE TRUSSES. THE GUIDELINES SET FORTH BY STRUCTURAL BUILDING COMPONENTS ASSOCIATION'S COLD-FORMED STEEL BUILDING COMPONENT SAFETY INFORMATION BOOK.
10. THE TRUSS MANUFACTURER SHALL SUBMIT PRODUCT DATA, SHOP DRAWINGS, AND DESIGN CALCULATIONS INCLUDING THE FOLLOWING:
   a. PRODUCT DATA: FOR EACH TYPE OF CONNECTOR AND FASTENERS UTILIZED FOR THE TRUSS INSTALLATION.
   b. SHOP DRAWINGS INCLUDING THE FOLLOWING:
      - MEMBER LAYOUT, SLOPE, DEPTH, SPAN, NUMBER OF PLIES, AND SPACING
      - TRUSS MEMBER SIZES AND SPECIFICATIONS
      - REQUIRED BEARING WIDTHS
      - DESIGN LOADS AND MAXIMUM REACTIONS
      - SUPPORT CONNECTIONS AND TRUSS-TO-TRUSS CONNECTIONS
   c. DESIGN CALCULATIONS SEALED BY A PROFESSIONAL ENGINEER OF THE PROJECT STATE INCLUDING THE FOLLOWING:
      - REFERENCE CODES AND STANDARDS
      - DESIGN LOADS
      - UTILIZATION RATIOS
      - DEFLECTIONS
      - MAXIMUM REACTIONS

WOOD STRUCTURAL PANELS

1. ALL WOOD STRUCTURAL PANELS SHALL BE APA TRADEMARKED STRUCTURAL-USE PANELS QUALIFIED AND MANUFACTURED IN ACCORDANCE WITH APA PRP-108 (PERFORMANCE STANDARDS AND QUALIFICATION POLICY FOR STRUCTURAL-USE PANELS) AND U.S. DEPARTMENT OF COMMERCE VOLUNTARY PRODUCT STANDARDS PS 1-09 (STRUCTURAL PLYWOOD) AND PS 2-04 (PERFORMANCE STANDARD FOR WOOD-BASED STRUCTURAL-USE PANELS) AND SHALL BE IDENTIFIED BY THE MARK OF AN APPROVED TESTING AND GRADING AGENCY.

WOOD STRUCTURAL PANELS					
USAGE	THICKNESS	CONSTRUCTION	BOND CLASSIFICATION	PANEL GRADE	SPAN RATING
ROOF	½ IN.	OSB/PLYWOOD	EXP. 1	SHEATHING	32/16

2. INSTALL ALL PANELS AT ROOF WITH THE LONG DIMENSIONS OF THE PANEL ACROSS SUPPORTS AND WITH PANEL CONTINUOUS OVER TWO OR MORE SPANS. STAGGER PANEL END JOINTS. ALLOW 1/8" SPACING AT PANEL ENDS AND EDGES UNLESS OTHERWISE RECOMMENDED BY THE PANEL MANUFACTURER
3. PROVIDE BLOCKING AT UNSUPPORTED PANEL EDGES AS FOLLOWS:
   a. ROOFS - UNBLOCKED
5. ALL NAILS FOR PANEL ATTACHMENT SHALL NOT BE OVERDRIVEN.
6. WHERE EITHER 2" OR 2 1/2" FASTENER SPACINGS ARE USED FOR WOOD STRUCTURAL PANELS USED AT ROOF, THE FRAMING MEMBER AT THE ADJOINING PANEL SHALL BE 3" NOMINAL WIDTH AND THE NAILS AT PANEL EDGES SHALL BE STAGGERED IN TWO LINES.
7. NAILS AT ABUTTING PANEL EDGES MUST PENETRATE THE SAME PIECE OF FRAMING OR BLOCKING.

COLD-FORMED METAL FRAMING

1. THE STRUCTURAL FRAMING, FABRICATION, AND ITS INSTALLATION SHALL MEET THE FOLLOWING SPECIFICATIONS AND STANDARDS UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED:
   a. AISI S200: NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL FRAMING - GENERAL PROVISIONS
2. THE FRAMING PROVIDER SHALL BE A SSMA CERTIFIED MANUFACTURER SPECIALIZING IN FABRICATION OF STRUCTURAL FRAMING COMPONENTS.
3. THE CHEMICAL COMPOSITION, COATING, AND PROPERTIES OF THE SHEET STEEL USED TO FORM STEEL FRAMING MEMBERS AND ACCESSORIES SHALL MEET THE FOLLOWING STANDARDS:
   a. ASTM A1003: STANDARD SPECIFICATION FOR STEEL SHEET, CARBON, METALLIC- AND NONMETALLIC-COATED FOR COLD-FORMED FRAMING MEMBERS

SHEET MATERIAL			
SHEET THICKNESS		GRADE	COATING
MILS	GAUGE		
33	20	STRUCTURAL GRADE 33 TYPE H (ST33H)	G60 (Z180) METALLIC
43	18	STRUCTURAL GRADE 33 TYPE H (ST33H)	G60 (Z180) METALLIC
54	16	STRUCTURAL GRADE 50 TYPE H (ST50H)	G60 (Z180) METALLIC
68	14	STRUCTURAL GRADE 50 TYPE H (ST50H)	G60 (Z180) METALLIC
97	12	STRUCTURAL GRADE 50 TYPE H (ST50H)	G60 (Z180) METALLIC
118	10	STRUCTURAL GRADE 50 TYPE H (ST50H)	G60 (Z180) METALLIC

4. THE FRAMING MEMBERS AND MANUFACTURING TOLERANCES SHALL MEET THE FOLLOWING STANDARDS:
   a. ASTM C955: STANDARD SPECIFICATION FOR LOAD-BEARING (TRANSVERSE AND AXIAL) STEEL STUDS, RUNNERS (TRACKS), AND BRACING OR BRIDGING FOR SCREW APPLICATION OF GYPSUM PANEL PRODUCTS AND METAL PLASTER BASES
5. THE FRAMING MEMBERS SHALL CONFORM TO THE FOLLOWING GEOMETRICAL REQUIREMENTS:

FRAMING GEOMETRICAL REQUIREMENTS				
FRAMING TYPE	SHAPE	WEBS	FLANGES	NOTES
STUDS	STANDARD C-SHAPE	PUNCHED	STIFFENED	--
TRACKS	STANDARD U-SHAPE	UNPUNCHED	STRAIGHT	STEEL THICKNESS TO MATCH MINIMUM BASE-METAL THICKNESS OF STEEL STUDS
BOX OR BACK-TO-BACK HEADERS	STANDARD C-SHAPES	UNPUNCHED	STIFFENED	

6. THE FRAMING MEMBERS SHALL HAVE A LEGIBLE LABEL, STAMP, STENCIL, OR EMBOSSMENT AT A MINIMUM OF 48 INCHES ON CENTER INCLUDING THE FOLLOWING INFORMATION:
   a. MANUFACTURER IDENTIFICATION
   b. MINIMUM UNCOATED STEEL THICKNESS
   c. MINIMUM YIELD STRENGTH
   d. GRADE
   e. COATING
7. THE FRAMING MEMBERS SHALL BE IN ONE-PIECE LENGTHS. SPLICING OF FRAMING COMPONENTS, OTHER THAN THE CONTINUOUS TRACK AT THE TOP AND BOTTOM OF WALLS, IS NOT PERMITTED. SPLICING OF TRACK USED FOR THE JAMB, HEAD, OR SILL ASSEMBLIES OF FRAMED WALL OPENINGS IS NOT PERMITTED.
8. THE INSTALLATION OF MEMBERS SHALL MEET THE FOLLOWING STANDARDS:
   a. ASTM C1007: SPECIFICATION FOR INSTALLATION OF LOAD BEARING (TRANSVERSE AND AXIAL) STEEL STUDS AND RELATED ACCESSORIES
9. THE INSTALLER SHALL INSTALL TEMPORARY BRACING AND SUPPORTS TO SECURE FRAMING AND SUPPORT LOADS COMPARABLE IN INTENSITY TO THOSE FOR WHICH STRUCTURE WAS DESIGNED. MAINTAIN BRACES AND SUPPORTS IN PLACE, UNDISTURBED, UNTIL ENTIRE INTEGRATED SUPPORTING STRUCTURE HAS BEEN COMPLETED AND PERMANENT CONNECTIONS TO FRAMING ARE SECURED.
10. PUNCHOUTS, CUTTING, OR NOTCHING OF JOISTS, STUDS, HEADERS, AND OTHER STRUCTURAL MEMBERS SHALL NOT BE PERFORMED WITHOUT AN APPROVED DESIGN.
11. THE FRAMING MEMBERS SHALL HAVE ENDS SQUARELY CUT BY SHEARING OR SAWING, BE INSTALLED PLUMB, SQUARE, TRUE TO LINE AND SECURELY FASTENED PER THE CONTRACT DOCUMENTS OR APPROVED CONNECTION DETAILS.
12. INSTALL HORIZONTAL BRIDGING IN STUD SYSTEM, SPACED VERTICALLY 48 INCHES AND FASTENED AT EACH STUD INTERSECTION USING ONE OF THE METHODS BELOW:
   a. COLD-ROLLED CHANNEL, WELDED OR MECHANICALLY FASTENED TO WEBS OF PUNCHED STUD WITH A MINIMUM OF TWO SCREWS INTO EACH FLANGE OF THE CLIP ANGLE FOR FRAMING MEMBERS UP TO 6 INCHES DEEP.
   b. COMBINATION OF FLAT, TAUT, STEEL SHEET TRAPS OF WIDTH AND THICKNESS INDICATED AND STUD-TRACK SOLID BLOCKING OF WIDTH AND THICKNESS TO MATCH STUDS. FASTEN FLAT STRAPS TO STUD FLANGES AND SECURE SOLID BLOCKING TO STUD WEBS OR FLANGES.
   c. PROPRIETARY BRIDGING BARS INSTALLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
13. THE SCREWS USED FOR ATTACHING FRAMING MEMBERS AND FOR ATTACHING SHEATHING TO FRAMING SHALL MEET THE FOLLOWING STANDARDS:
   a. ASTM C1513: STANDARD SPECIFICATION FOR STEEL TAPPING SCREWS FOR COLD-FORMED STEEL FRAMING CONNECTIONS
   b. ASTM C954: STANDARD SPECIFICATION FOR STEEL DRILL SCREWS FOR THE APPLICATION OF GYPSUM PANEL PRODUCTS OR METAL PLASTER BASES TO STEEL STUDS FROM 0.033 INCH (0.084 MM) TO 0.112 INCH (2.84 MM) IN THICKNESS
   c. ASTM C1002: STANDARD SPECIFICATION FOR STEEL SELF-PIERCING TAPPING SCREWS FOR THE APPLICATION OF GYPSUM PANEL PRODUCTS OR METAL PLASTER BASES TO WOOD STUDS OR STEEL STUDS
14. WELDING PROCEDURE AND PERSONNEL QUALIFICATIONS FOR ATTACHING FRAMING MEMBERS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
   a. AWS D1.3: STRUCTURAL WELDING CODE - SHEET STEEL
15. ANY WELDING OR ABRASION OF THE GALVANIZED COATING SHALL BE PAINT REPAIRED IN ACCORDANCE WITH ASTM A780: STANDARD PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS.
16. THE MANUFACTURER SHALL SUBMIT PRODUCT DATA AND SHOP DRAWINGS INCLUDING THE FOLLOWING:
   a. PRODUCT DATA: FOR EACH TYPE OF COLD-FORMED STEEL FRAMING PRODUCT AND ACCESSORY UTILIZED FOR THE PROJECT
   b. SHOP DRAWINGS INCLUDING THE FOLLOWING:
      - MEMBER LAYOUT, SPACINGS, SIZES, THICKNESSES, AND TYPES OF COLD-FORMED STEEL FRAMING; FABRICATION; AND FASTENING AND ANCHORAGE DETAILS, INCLUDING MECHANICAL FASTENERS.
      - INDICATE REINFORCING CHANNELS, OPENING FRAMING, SUPPLEMENTAL FRAMING, STRAPPING, BRACING, BRIDGING, SPLICES, ACCESSORIES, CONNECTION DETAILS, AND ATTACHMENT TO ADJOINING WORK.

STRUCTURAL STEEL FRAMING

1. ALL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM TO THE APPLICABLE STRUCTURAL STEEL CODES AND STANDARDS:
   a. AISC 303-16 - AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
   b. AISC 341-16 - SEISMIC PROVISIONS FOR STRUCTURAL STEEL BUILDINGS
   c. AISC 360-16 - SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
2. ALL STEEL FABRICATION AND ERECTION SHALL BE PERFORMED BY AN APPROVED FABRICATOR AND ERECTOR SUCH THAT QUALITY ASSURANCE INSPECTIONS MAY BE WAIVED AS STATED IN AISC 360 CHAPTER N7.
3. MATERIAL REQUIREMENTS FOR STRUCTURAL SHAPES AND PLATES:

STRUCTURAL SHAPES AND PLATES	
SHAPE SERIES	ASTM DESIGNATION
W & WT	ASTM A992
M & MT	ASTM A36
S & ST	ASTM A36
HP	ASTM A572, GR. 50
C & MC	ASTM A36
L	ASTM A36
HSS RECTANGULAR	ASTM A500, GR. B
HSS ROUND	ASTM A500, GR. B
PIPE	ASTM A53, GR. B
PLATES & BARS	ASTM A36

4. MATERIAL REQUIREMENTS FOR STRUCTURAL FASTENERS AND WELDING:

STRUCTURAL FASTENERS AND WELDING	
FASTNER TYPE	ASTM DESIGNATION
HIGH-STRENGTH BOLTS	ASTM A325
COMMON BOLTS	ASTM A307, GR. A
NUTS	ASTM A563
WASHERS	ASTM F436
DIRECT-TENSION-INDICATOR WASHERS	ASTM F959
THREADED RODS	ASTM A36
HEADED STUD ANCHORS	ASTM A108
ANCHOR RODS	ASTM F1554, GR. 36
WELDING ELECTRODES	AWS D1.1, E70 SERIES

5. STEEL COATING REQUIREMENTS:
   a. SHOP PAINT ALL STEEL SURFACES WITH FABRICATOR'S STANDARD RUST-INHIBITING PRIMER, EXCEPT AT SURFACES ENCASED IN CONCRETE, SURFACES TO RECEIVE FIREPROOFING, TOP FLANGES OF BEAMS TO RECEIVE HEADED STUDS, AND FAYING SURFACES OF BOLTED CONNECTIONS.
   b. AFTER INSTALLATION, PROMPTLY CLEAN, PREPARE, AND REPRIME FIELD CONNECTIONS, RUST SPOTS, AND ABRADED SURFACES WITH A PRIMER OF SAME TYPE AS SHOP PRIMER AFTER SURFACE PREPARATION PER SSPC-SP2 (HAND-TOOL CLEANING) OR SSPC-SP3 (POWER-TOOL CLEANING).
   c. ALL EXTERIOR ELEMENTS AND THOSE ELEMENTS NOTED TO BE GALVANIZED SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123 AFTER SANDBLAST CLEANING PER SSPC-SP10. USE HOT-DIPPED GALVANIZED BOLTS, GALVANIZED HARDENED WASHERS, AND GALVANIZED HEAVY HEX NUTS FOR BOLTING OF GALVANIZED ITEMS.
   d. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
6. ALL BOLTS SHALL BE ¾-INCH DIAMETER MINIMUM HIGH-STRENGTH BOLTS TO BE SNUG TIGHTENED UNLESS NOTED OTHERWISE. IF BOLTS ARE REQUIRED TO BE PRETENSIONED, DESIGN TORQUE SHALL BE DEVELOPED USING DIRECT-TENSION-INDICATOR WASHERS.
7. TEMPORARY BRACING OF STEEL STRUCTURAL ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURAL STABILITY SHALL BE MAINTAINED AT ALL TIMES DURING THE ERECTION PROCESS.
8. STEEL FRAMING ERECTION INCLUDING ALL BOLTED AND WELDED CONNECTIONS, BRACING, AND ANCHORAGES SHALL BE COMPLETED AND PLUMB PRIOR TO PLACEMENT OF DECK.
9. NON-SHRINK, NON-METALLIC GROUT WITH A 28 DAY COMPRESSIVE STRENGTH OF 5000 PSI SHALL BE USED UNDER BASE PLATES.
10. STEEL COLUMNS, BASE PLATES, AND ALL STEEL BELOW GRADE SHALL HAVE A MINIMUM 3" CONCRETE COVER PROTECTION.
11. ENGINEER SHALL BE CONTACTED FOR APPROVAL OF ANY FIELD MODIFICATIONS OF ANCHOR BOLTS OR RODS AND COLUMN BASE PLATES.
12. NO WORK OR FABRICATION SHALL BE COMMENCED OR MATERIAL DELIVERED TO THE PROJECT SITE UNTIL THE ENGINEER HAS REVIEWED AND APPROVED THE SHOP DRAWINGS.
13. REQUIRED STRUCTURAL STEEL SUBMITTALS TO THE ENGINEER:
   a. PRODUCT DATA - SUBMIT TECHNICAL DATA FOR ANY STEEL-RELATED CONSTRUCTION PRODUCTS.
   b. SHOP DRAWINGS - SHOWING FABRICATION OF STRUCTURAL-STEEL COMPONENTS WITH THE FOLLOWING ITEMS REQUIRED:
      - DIMENSIONED LAYOUT PLAN, INCLUDING PIECE MARK LABELS, AT A DRAWING SCALE NOT LESS THAN THE REFERENCED PLAN ON THE CONTRACT DOCUMENTS.
      - DIMENSIONED ANCHOR ROD LAYOUT.
      - SECTIONS AND DETAILS TO ADEQUATELY DEPICT CONNECTIONS.
      - PIECE MARK DETAILS SHALL INCLUDE CUTS, CONNECTIONS, SPLICES, CAMBER, HOLES, AND OTHER PERTINENT DATA.
      - INCLUDE EMBEDMENT DRAWINGS
      - INDICATE WELDS BY STANDARD AWS SYMBOLS, DISTINGUISHING BETWEEN SHOP AND FIELD WELDS, AND SHOW SIZE, LENGTH, AND TYPE OF EACH WELD.
      - INDICATE TYPE, SIZE, AND LENGTH OF BOLTS, DISTINGUISHING BETWEEN SHOP AND FIELD BOLTS. IDENTIFY PRETENSIONED AND SLIP-CRITICAL HIGH-STRENGTH BOLTED CONNECTIONS.
   c. WELDING CERTIFICATES
   d. QUALIFICATION DATA - SHOWING FABRICATOR AND ERECTOR QUALIFICATIONS SUCH THAT QUALITY ASSURANCE INSPECTIONS MAY BE WAIVED AS STATED IN AISC 360 CHAPTER N7.
   e. MILL TEST REPORTS - SIGNED BY MANUFACTURERS CERTIFYING THAT THE FOLLOWING PRODUCTS COMPLY WITH THE REQUIREMENTS:
      - STRUCTURAL STEEL, INCLUDING CHEMICAL AND PHYSICAL PROPERTIES
      - BOLTS, NUTS, AND WASHERS; INCLUDING MECHANICAL PROPERTIES AND CHEMICAL ANALYSIS.
      - DIRECT-TENSION INDICATORS
      - SHEAR STUD CONNECTORS
      - SHOP PRIMERS
      - NONSHRINK GROUT

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M.E. SACK ENGINEERING

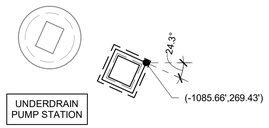
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

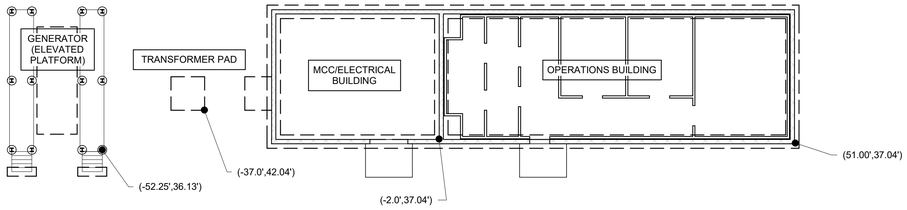
160 N MAIN ST,
PEMBROKE, GA 31321

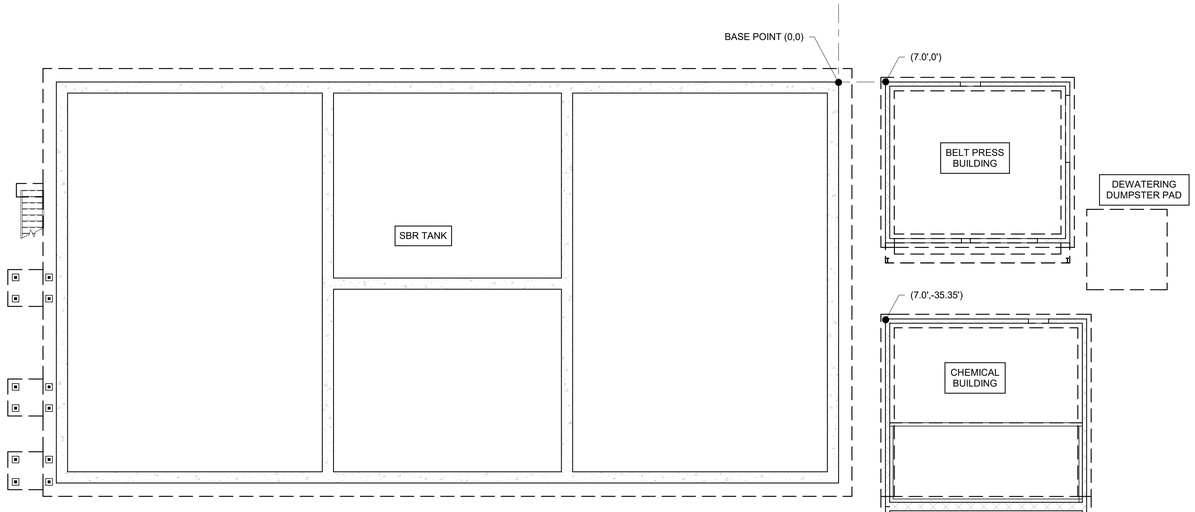
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	MAB
CHECKED BY	BKS

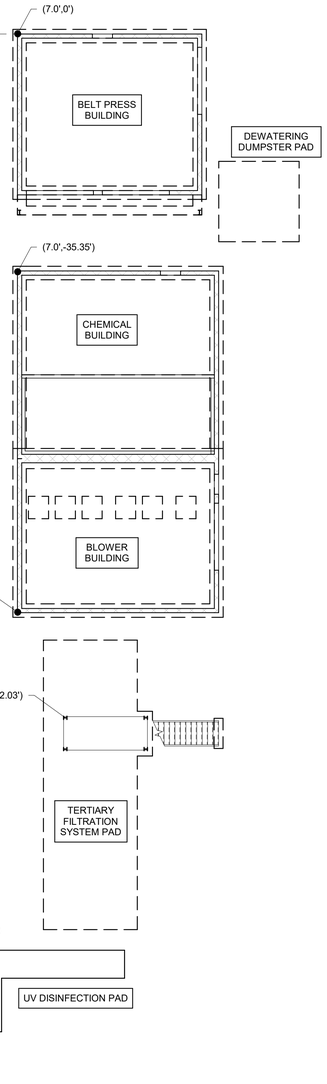
STRUCTURAL NOTES

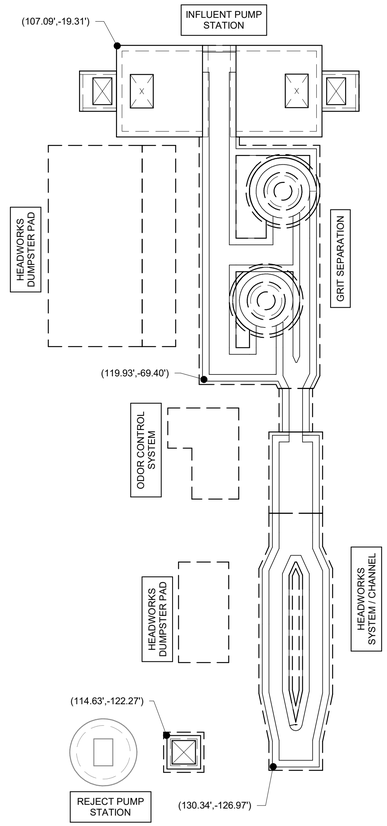
0S-2

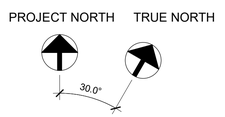


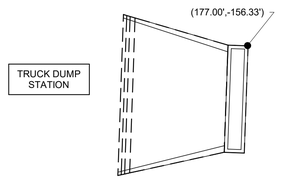












STRUCTURAL DRAWING LIST

SHEET NO.	SHEET NAME
0S-1	STRUCTURAL NOTES
0S-2	STRUCTURAL NOTES
0S-3	OVERALL PLAN AND DRAWING LIST
1S-1	HEADWORKS AND GRIT SEPARATION PLANS
1S-2	HEADWORKS AND GRIT SEPARATION SECTIONS
1S-3	HEADWORKS AND GRIT SEPARATION DETAILS
1S-4	HEADWORKS AND GRIT SEPARATION DETAILS
2S-1	INFLUENT PUMP STATION PLANS
2S-2	INFLUENT PUMP STATION DETAILS
2S-3	INFLUENT PUMP STATION DETAILS
3S-1	REJECT AND UNDERDRAIN PUMP STATION PLANS AND SECTIONS
3S-2	REJECT AND UNDERDRAIN PUMP STATION DETAILS
4S-1	SBR TANK FOUNDATION AND WALL PLAN
4S-2	SBR TANK - STRUCTURAL SECTIONS
4S-3	SBR TANK - STRUCTURAL SECTIONS
4S-4	SBR TANK - STRUCTURAL DETAILS
4S-5	SBR TANK - STRUCTURAL DETAILS
4S-6	SBR TANK STEEL STAIR PLANS
4S-7	SBR TANK STEEL STAIR SECTIONS
4S-8	SBR TANK STEEL STAIR DETAILS
4S-9	SBR TANK STEEL STAIR DETAILS
5S-1	BELTPRESS/ DEWATERING BUILDING, SCREW CONVEYER AND DUMPSTER PAD PLAN
5S-2	BELT PRESS/ DEWATERING BUILDING - STRUCTURAL SECTION
5S-3	CHEMICAL BUILDING - FOUNDATION AND ROOF FRAMING PLAN
5S-4	CHEMICAL BUILDING - STRUCTURAL SECTION
5S-5	BLOWER BUILDING - FOUNDATION AND ROOF FRAMING PLAN
5S-6	BLOWER BUILDING - STRUCTURAL SECTION
5S-7	BUILDING STRUCTURAL DETAILS
5S-8	BUILDING STRUCTURAL DETAILS

STRUCTURAL DRAWING LIST

SHEET NO.	SHEET NAME
5S-9	BUILDING STRUCTURAL DETAILS
5S-10	BUILDING STRUCTURAL DETAILS
5S-11	ARCHITECTURAL DETAILS
5S-12	ARCHITECTURAL DETAILS
6S-1	OPERATION/ ELECTRICAL BUILDING - FOUNDATION AND FRAMING PLAN
6S-2	OPERATION/ ELECTRICAL BUILDING - STRUCTURAL SECTION
6S-3	OPERATION/ ELECTRICAL BUILDING- STRUCTURAL DETAILS
6S-4	OPERATION/ ELECTRICAL BUILDING- STRUCTURAL DETAILS
6S-5	OPERATION/ ELECTRICAL BUILDING- STRUCTURAL DETAILS
6S-6	ARCHITECTURAL DETAILS
6S-7	ARCHITECTURAL DETAILS
7S-1	POWER GENERATOR PLATFORM PLANS, SECTION AND DETAILS
7S-2	POWER GENERATOR PLATFORM - SECTION DETAILS
8S-1	TERTIARY FILTRATION PLATFORM, RECLAIMED WATER PUMP STATION, UV DISINFECTION PAD
8S-2	TERTIARY AND RECLAIMED PUMP STATION DETAILS
8S-3	TERTIARY AND RECLAIMED PUMP STATION DETAILS
9S-1	TRUCK DUMP STATION PLAN, SECTION AND DETAILS
9S-2	TRUCK DUMP STATION DETAILS

1
3/32" = 1'-0"
OVERALL PLAN

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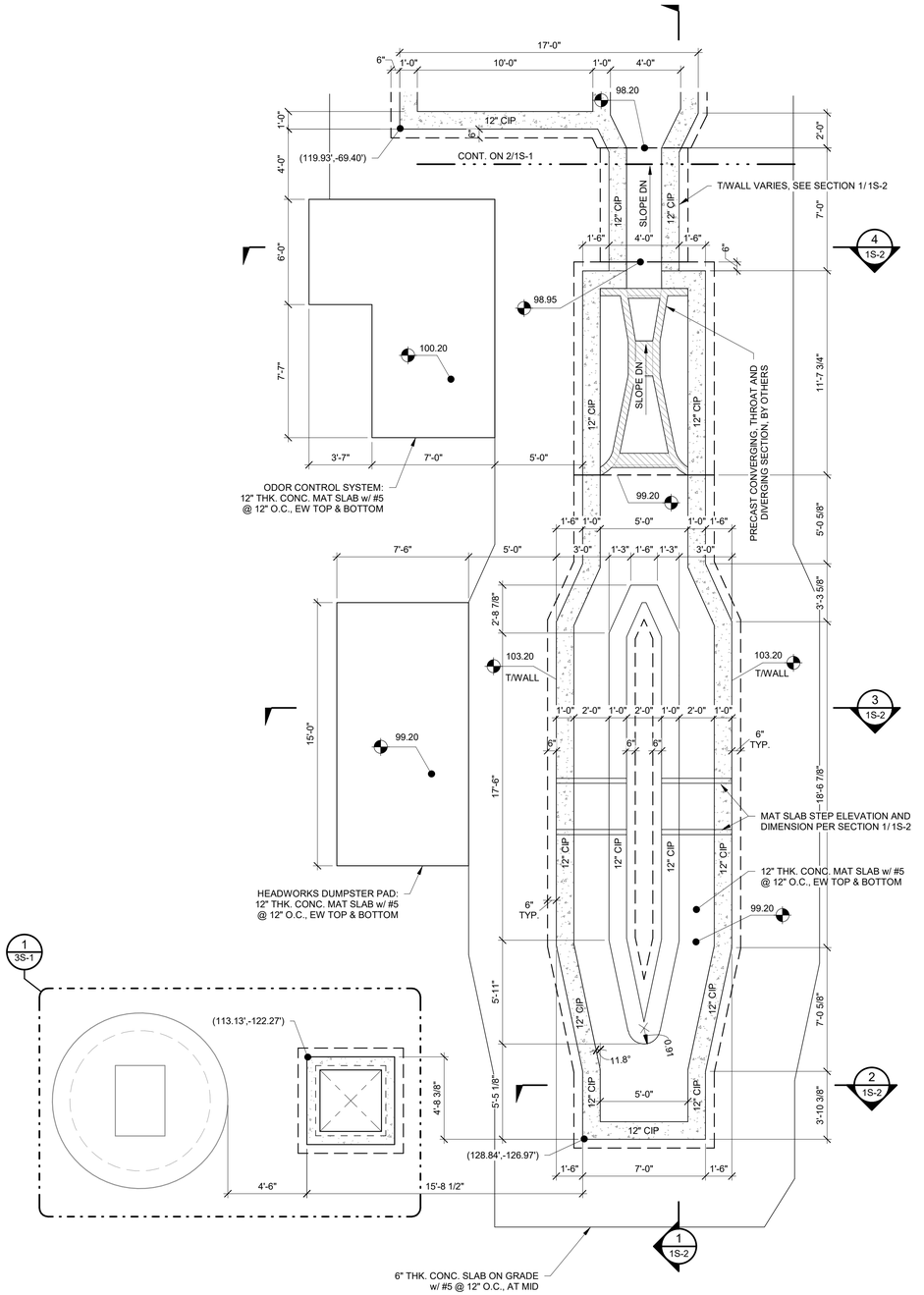
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

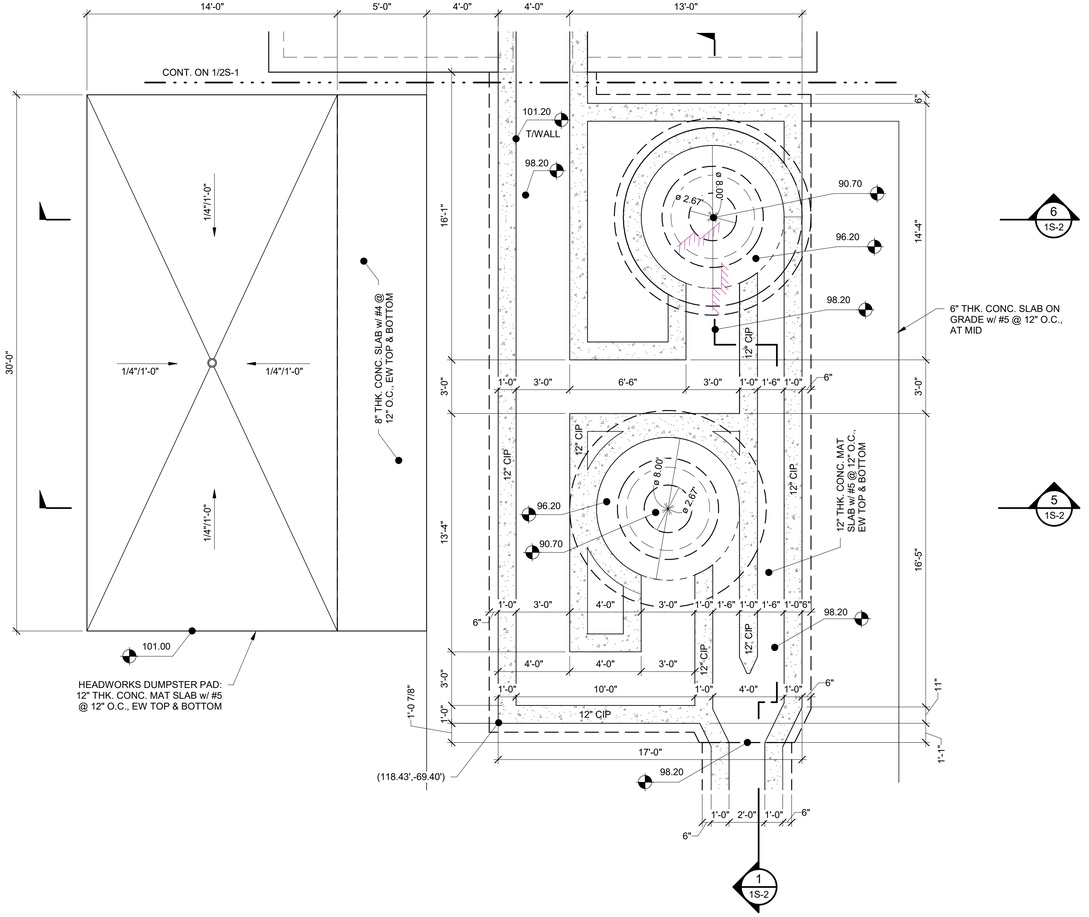
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

OVERALL PLAN AND DRAWING LIST

0S-3



1 HEADWORKS SLAB AND WALL PLAN
1/4" = 1'-0"

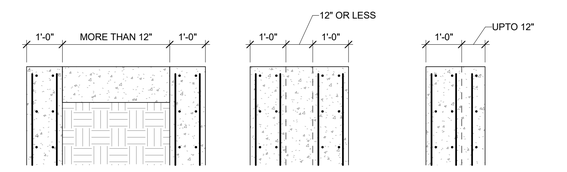


2 GRIT SEPARATION SLAB AND WALL PLAN
1/4" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

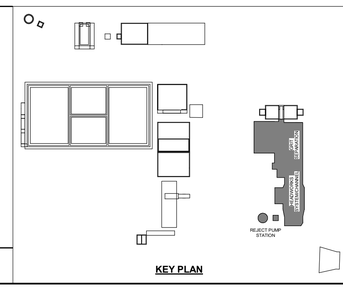
PLAN LEGEND	
	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED
	PRECAST CONC. WALL - BY OTHERS

CONCRETE WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
12" CIP	12"	#5	12" O.C., EF	#4	12" O.C., EF



NOTES:
1. TYPE 1 - TWO CONC. WALLS w/ SLAB IN THE MIDDLE
2. TYPE 2 - TWO CONC. WALLS CAST AS MASS CONC. WALL w/ SEPARATE WALL REINF.
3. TYPE 3 - ONE CONC. WALL w/ EXTRA LAYER OF REINF. FOR ADDITIONAL WALL

3 COMBINING WALL GUIDELINES
1/2" = 1'-0"



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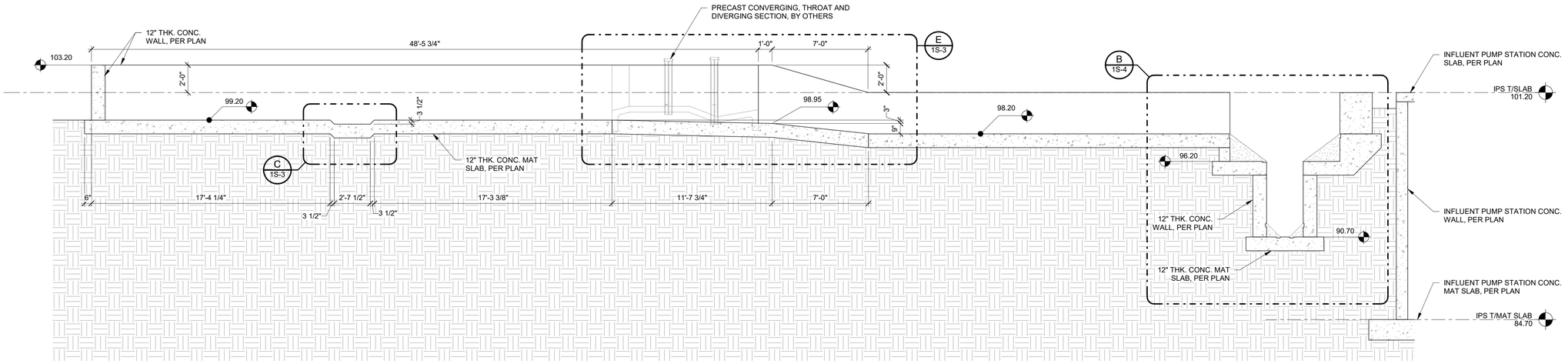
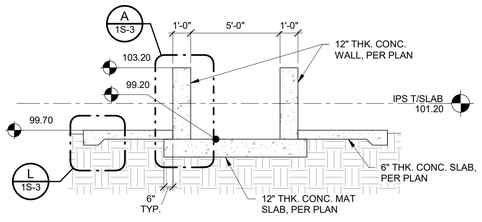
HEADWORKS AND GRIT SEPARATION PLANS

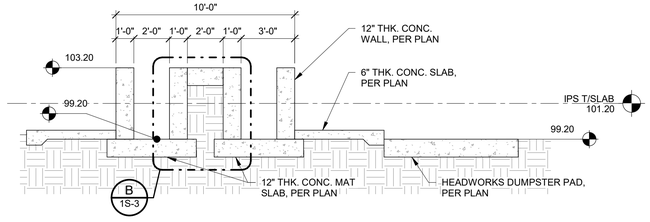
1S-1



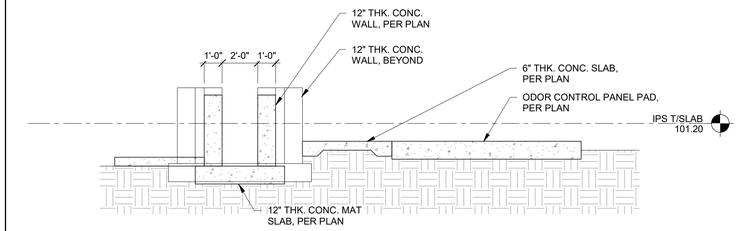
1 1/4" = 1'-0" HEADWORKS AND GRIT SEPARATION SECTION 1



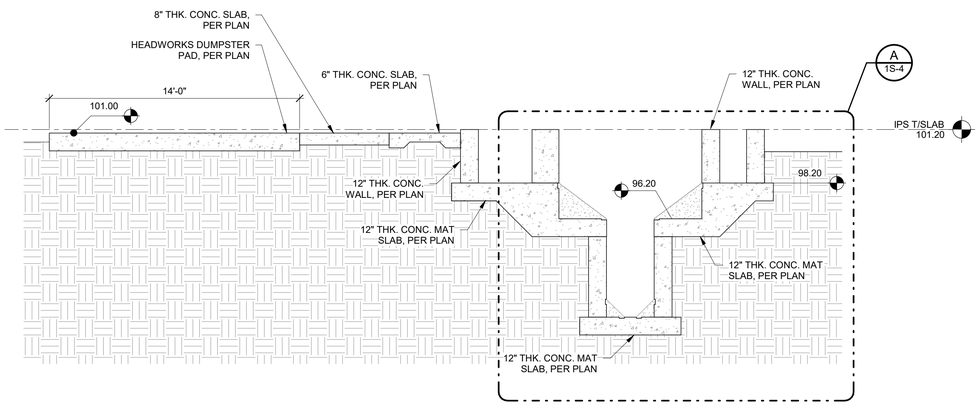
2 1/4" = 1'-0" HEADWORKS SECTION 2



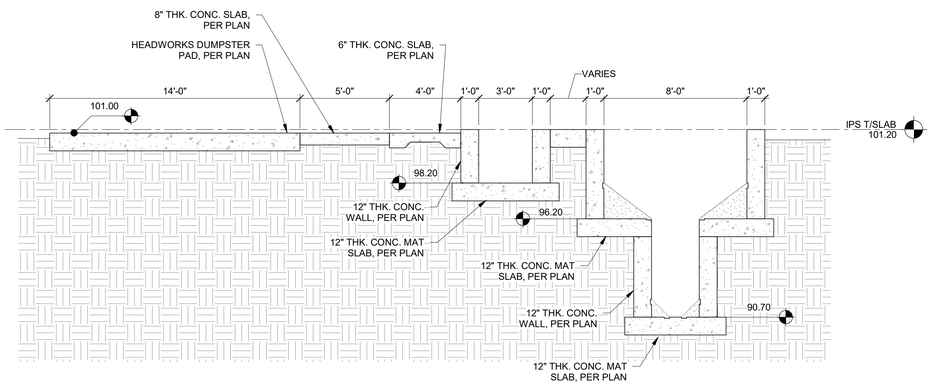
3 1/4" = 1'-0" HEADWORKS SECTION 3



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



5 1/4" = 1'-0" GRIT SEPARATION SECTION 5



6 1/4" = 1'-0" GRIT SEPARATION SECTION 6

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(912) 590-0542
SAPPSTRUCTURAL.COM

GEORGIA REGISTERED 10/11/24 No. SE0000802 STRUCTURAL ENGINEER BRIAN K. SKIPP

REVISIONS

#	DATE	DESCRIPTION

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M.E. SACK ENGINEERING

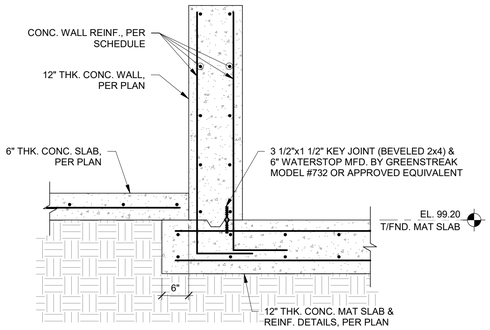
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

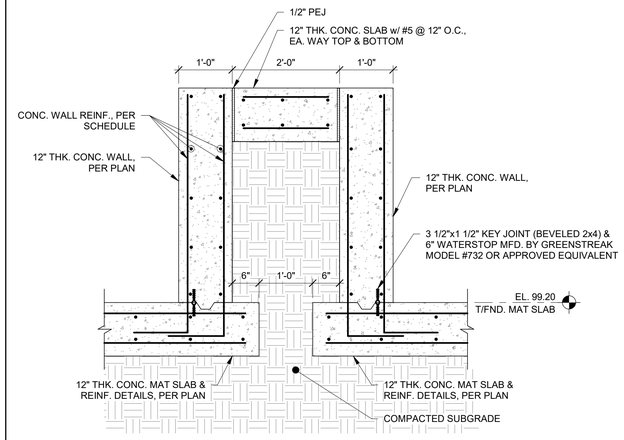
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

HEADWORKS AND GRIT SEPARATION SECTIONS

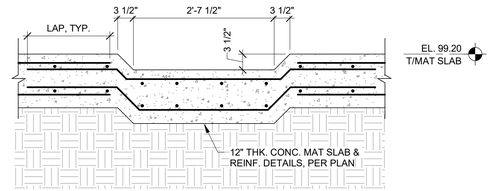
1S-2



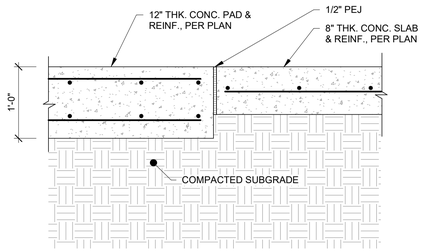
A
3/4" = 1'-0"
CONCRETE PIT SECTION



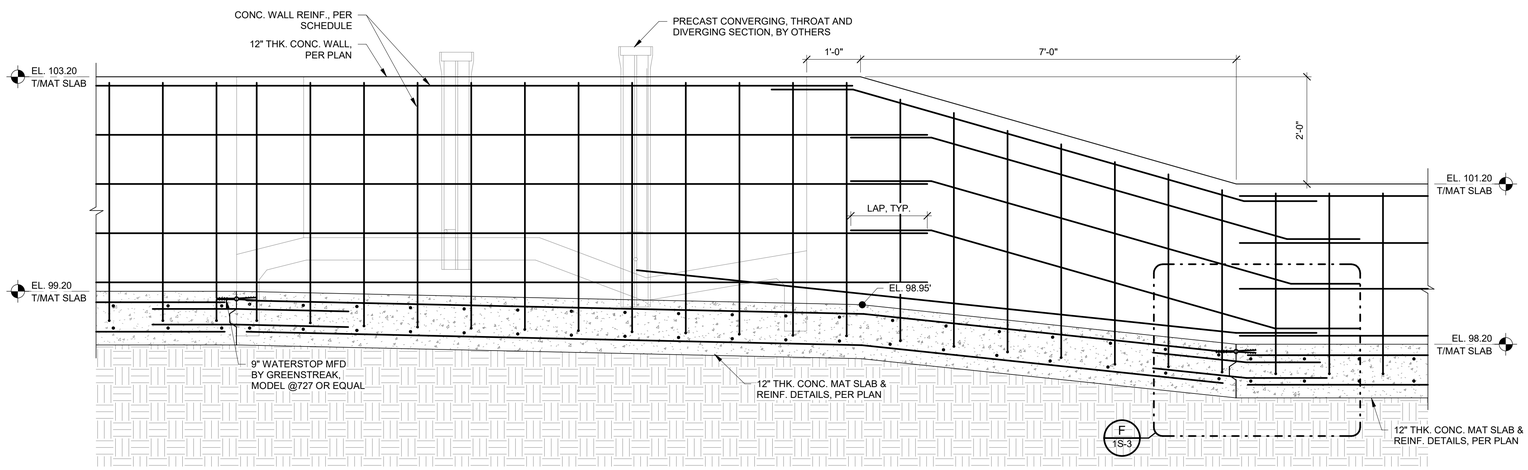
B
3/4" = 1'-0"
CONCRETE PIT BETWEEN SLAB



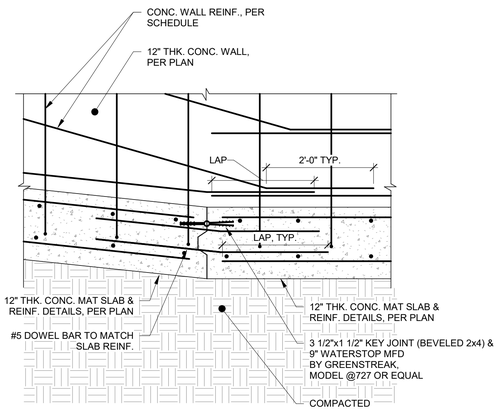
C
3/4" = 1'-0"
MAT CONC. SLAB STEP SECTION



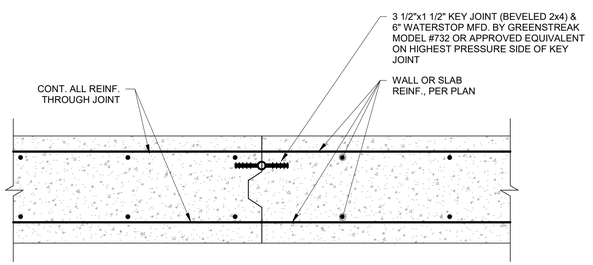
D
1" = 1'-0"
HEADWORKS DUMPSTER PAD SECTION



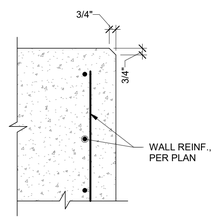
E
3/4" = 1'-0"
CONC. SLAB SLOPE SECTION AT PRECAST SECTION



F
1" = 1'-0"
HEADWORKS MAT SLAB JOINT DETAIL

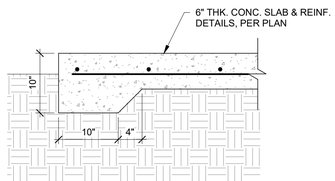


J
1 1/2" = 1'-0"
HEADWORKS CONC. MAT SLAB AND WALL CONSTRUCTION JOINT DETAIL



NOTE:
PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE WIITHOUT EMBED ANGLES

K
1 1/2" = 1'-0"
CONCRETE CHAMFER DETAIL



L
1" = 1'-0"
CONC. SLAB SECTION

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160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
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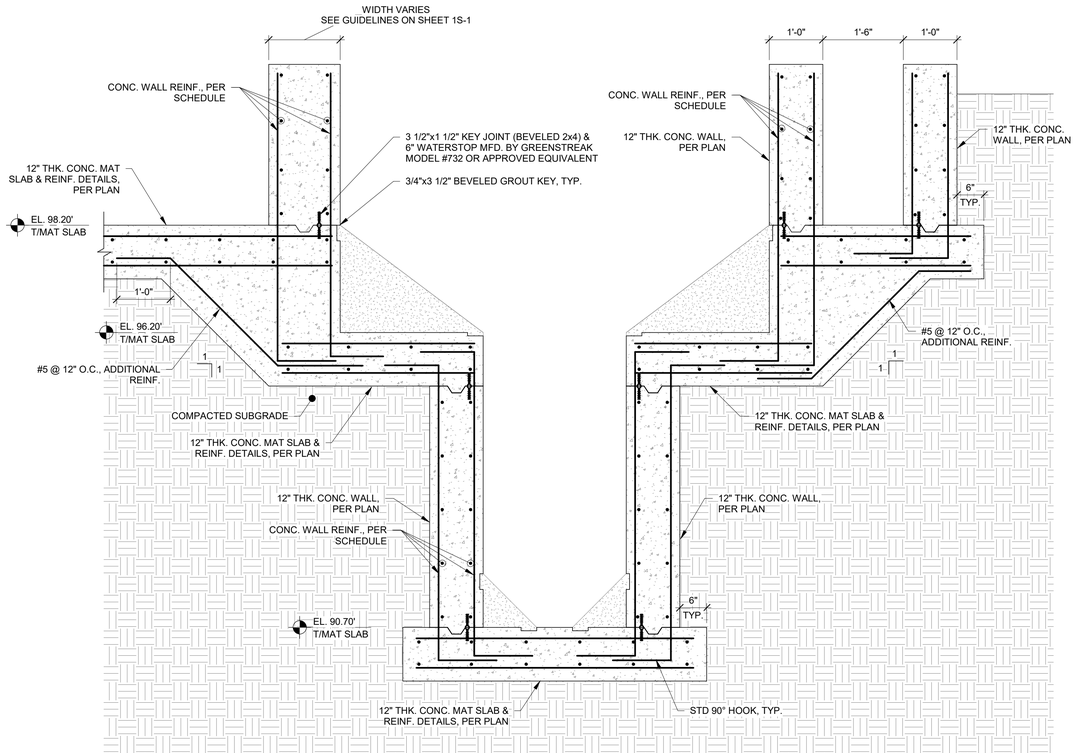
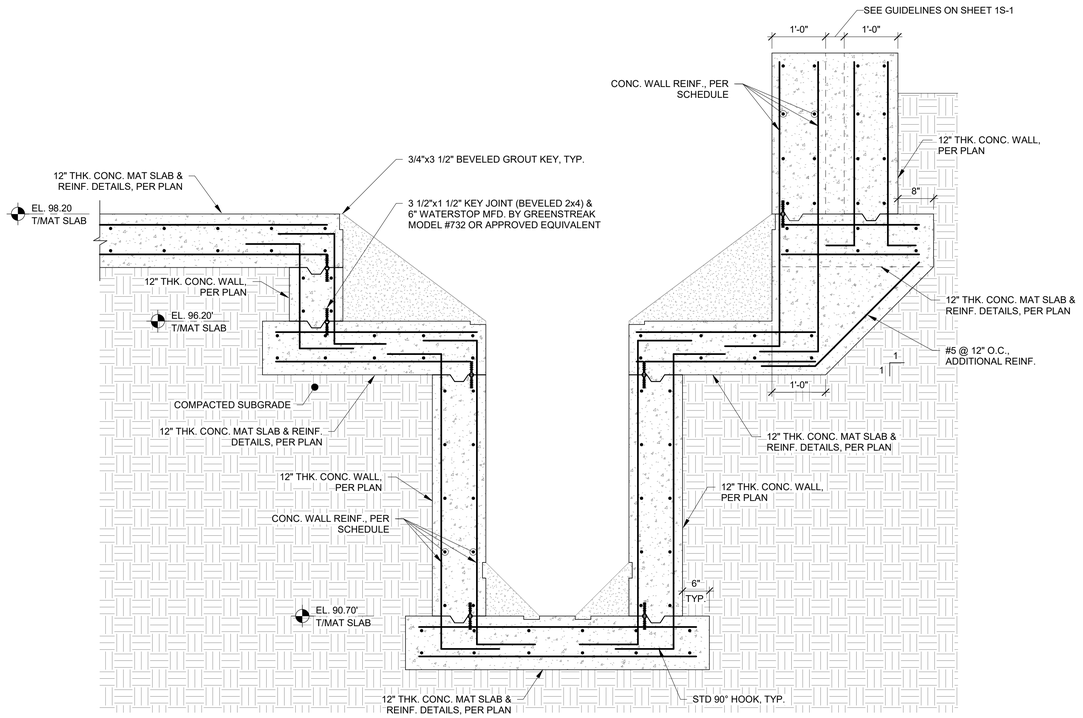
HEADWORKS AND GRIT SEPARATION DETAILS

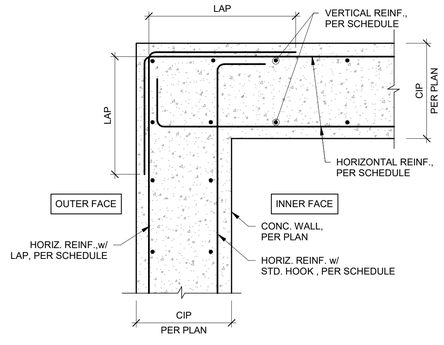
1S-3



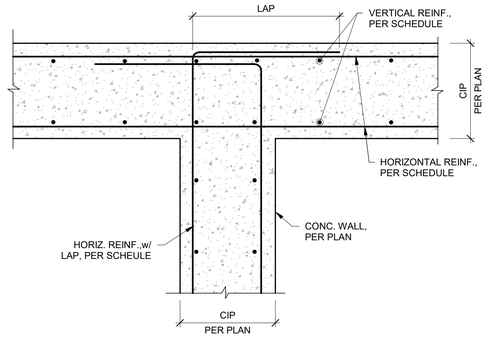
A
3/4" = 1'-0"
CONC. SLAB SECTION AT GRIT SEPARATION



B
3/4" = 1'-0"
CONC. SLAB SECTION AT GRIT SEPARATION

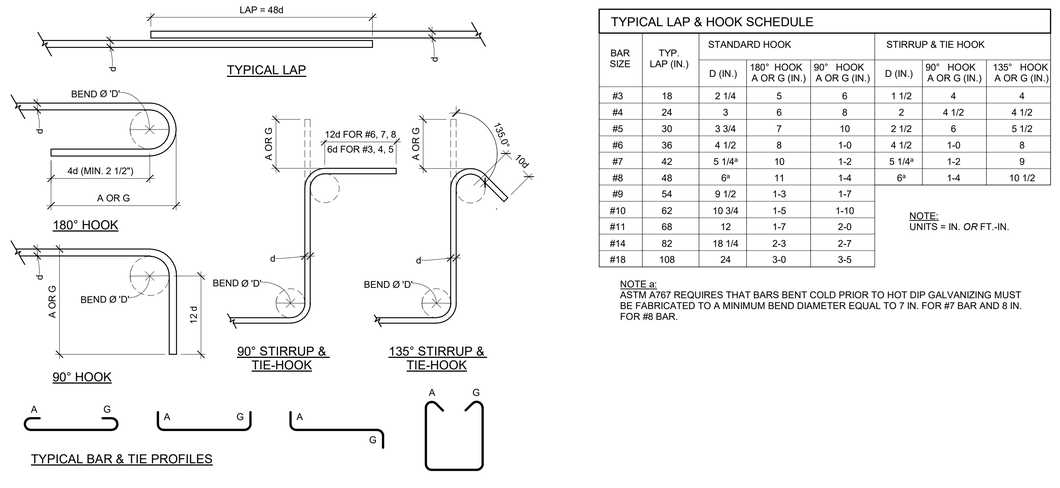


PLAN VIEW - CORNER REINFORCING



PLAN VIEW - INTERSECTION REINFORCING

C
1" = 1'-0"
REINFORCEMENT AT CONC. WALL CORNERS AND INTERSECTIONS



TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

D
1" = 1'-0"
REINFORCING LAP AND HOOK LENGTHS

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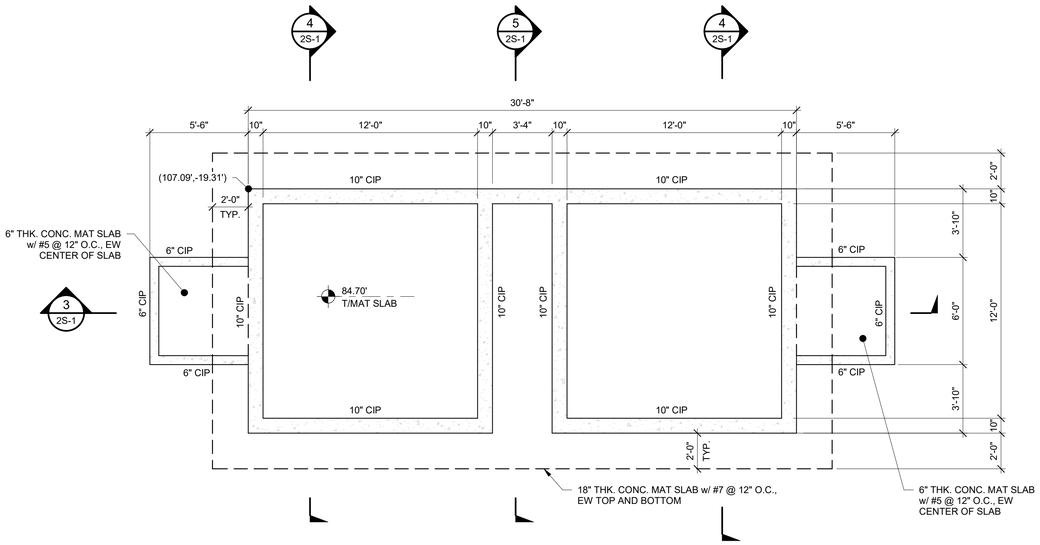
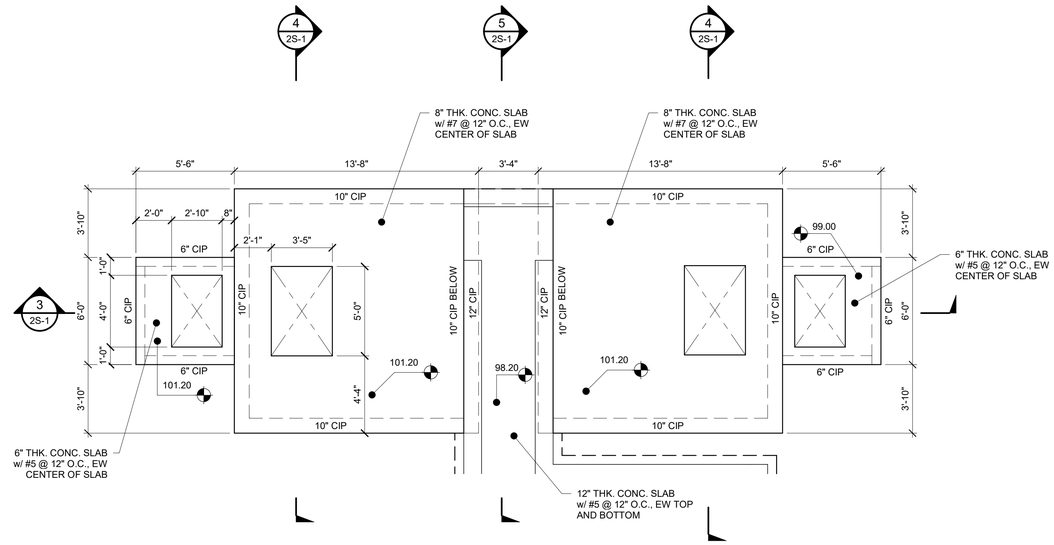
HEADWORKS AND GRIT SEPARATION DETAILS

1S-4



1 INFLUENT PUMP STATION MAT SLAB PLAN
1/4" = 1'-0"



2 INFLUENT PUMP STATION TOP SLAB PLAN
1/4" = 1'-0"

3 INFLUENT PUMP STATION LONGITUDINAL SECTION
1/4" = 1'-0"

4 INFLUENT PUMP STATION TRANSVERSE SECTION AT WET WELL
1/4" = 1'-0"

5 INFLUENT PUMP STATION SECTION AT INLET
1/4" = 1'-0"

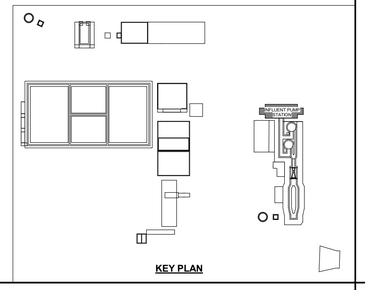
PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

PLAN LEGEND	
— — —	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED

CONCRETE WALL SCHEDULE

WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
12" CIP	12"	#5	12" O.C., EF	#4	12" O.C., EF
10" CIP	10"	#7	12" O.C., EF	#4	12" O.C., EF
6" CIP	6"	#4	12" O.C., MID	#4	12" O.C., MID

NOTE:
SINGLE LAYER OF REINFORCEMENTS IS TO BE @ CENTERLINE OF WALL, UNO



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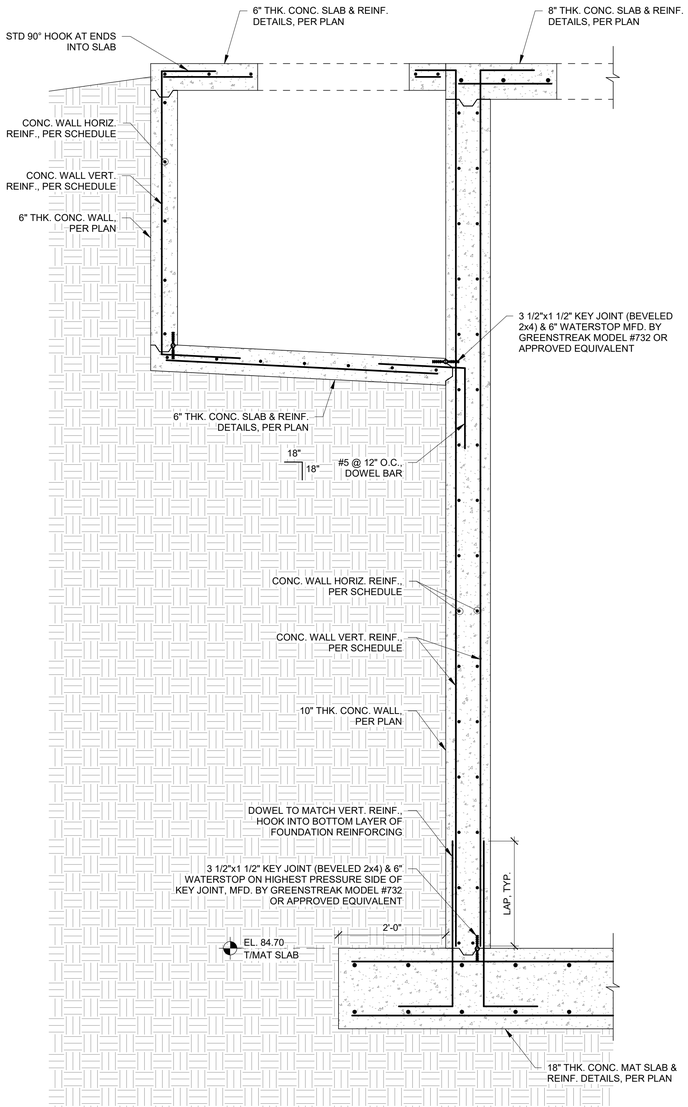
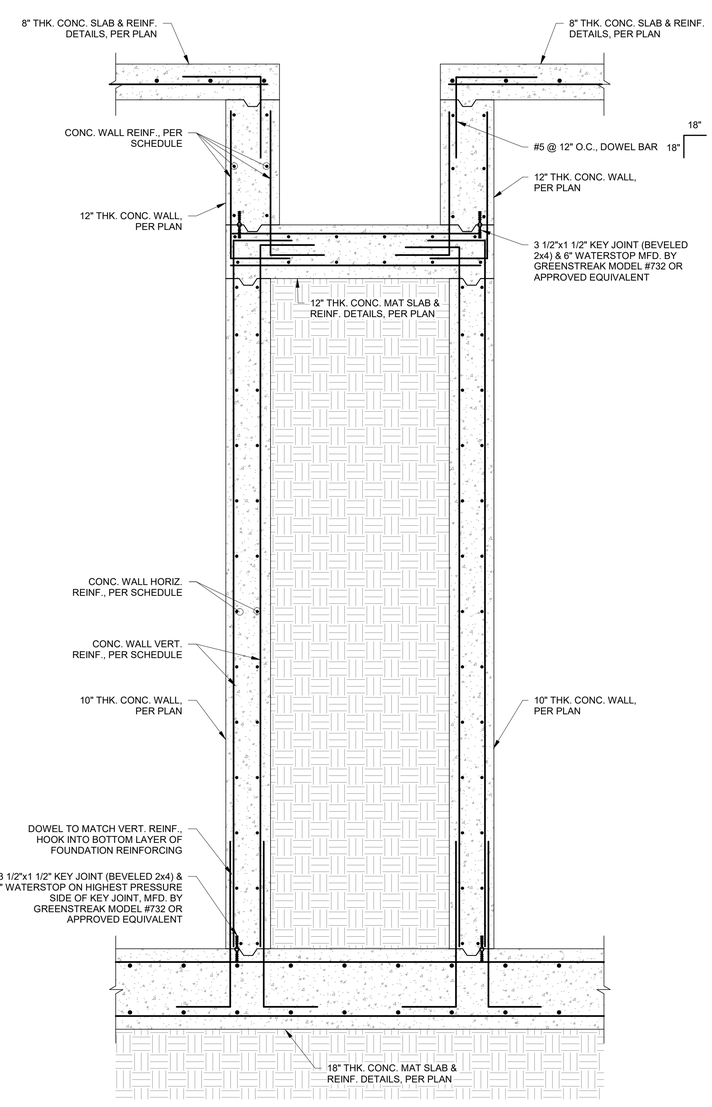
INFLUENT PUMP STATION PLANS

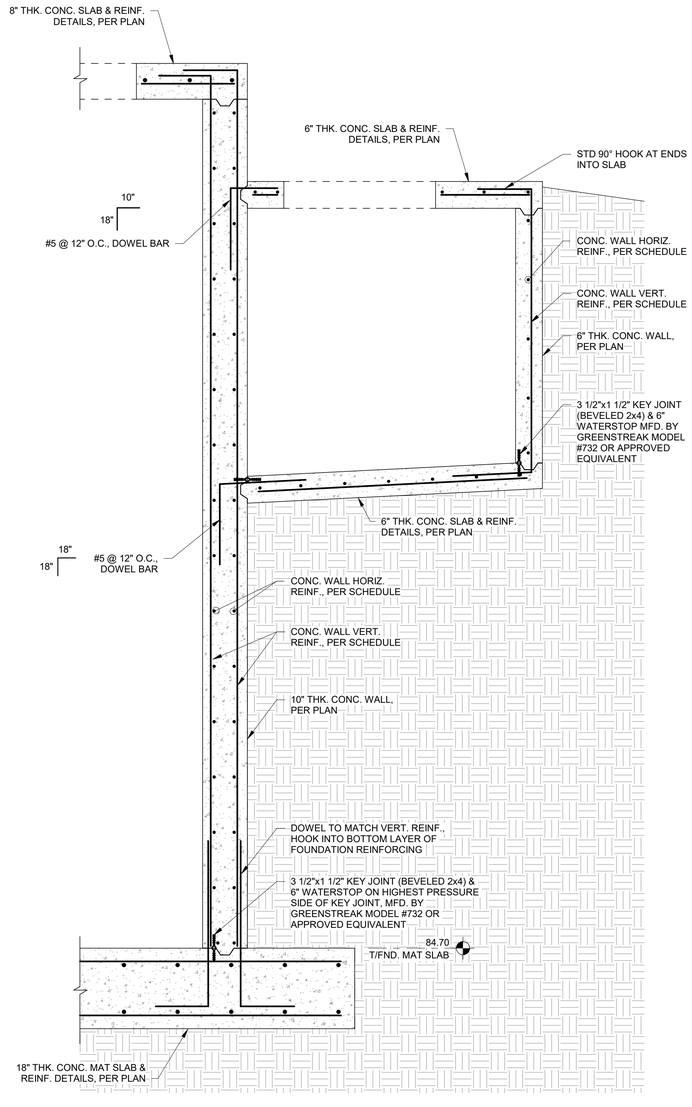
2S-1



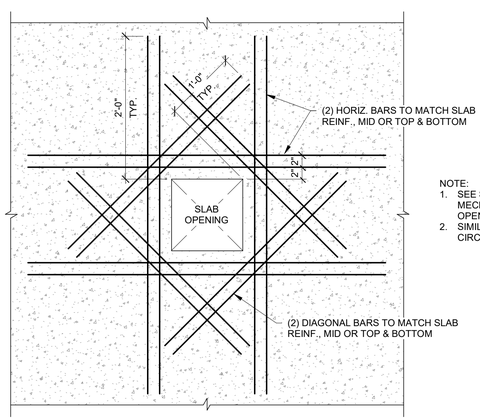
A
3/4" = 1'-0"
IPS CONC. WALL SECTION DETAIL 1



B
3/4" = 1'-0"
IPS CONC. WALL SECTION DETAIL 2



C
3/4" = 1'-0"
IPS CONC. WALL SECTION DETAIL 3



NOTE:
1. SEE STRUCTURAL PLANS AND MECHANICAL DRAWINGS FOR SLAB OPENING DIMENSIONS.
2. SIMILAR OPENING REINF. FOR CIRCULAR OPENING.

D
1" = 1'-0"
TYPICAL SLAB OPENING REINF. DETAIL

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PEMBROKE, GA 31321

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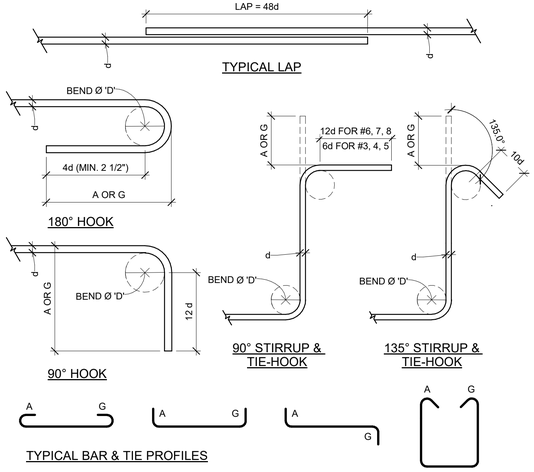
INFLUENT PUMP STATION DETAILS

2S-2



TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
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#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

NOTE a:
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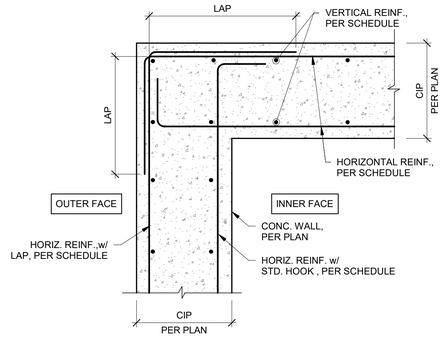
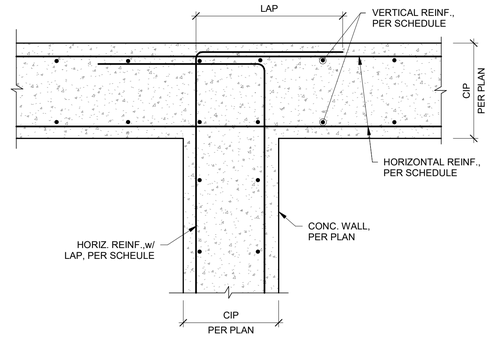
A
1" = 1'-0"
REINFORCING LAP AND HOOK LENGTHS



PLAN VIEW - CORNER REINFORCING



PLAN VIEW - INTERSECTION REINFORCING

B
1" = 1'-0"
REINFORCEMENT AT CONC. WALL CORNERS AND INTERSECTION

NOTE:
PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES
OF CONCRETE WIITHOUT EMBED ANGLES

C
1 1/2" = 1'-0"
CONCRETE CHAMFER DETAIL

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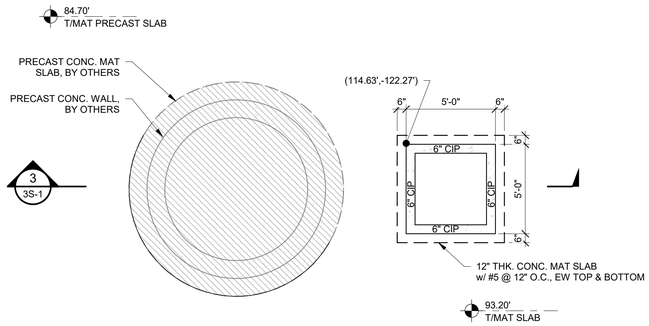
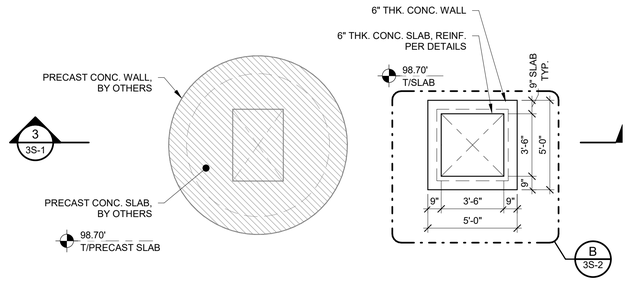
INFLUENT PUMP STATION DETAILS

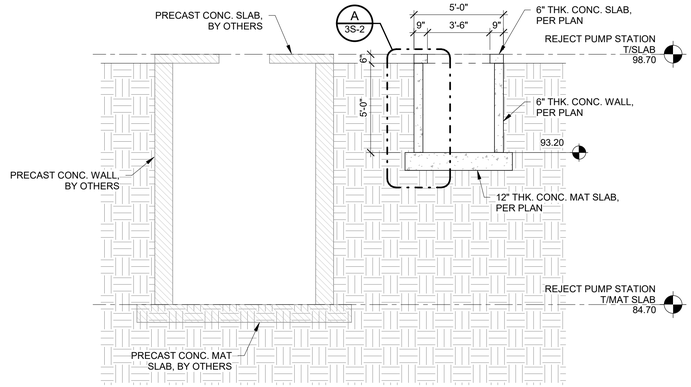
2S-3



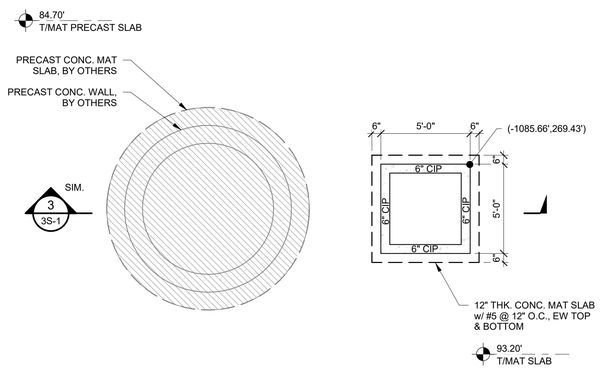
1 1/4" = 1'-0" REJECT PUMP STATION T/MAT SLAB



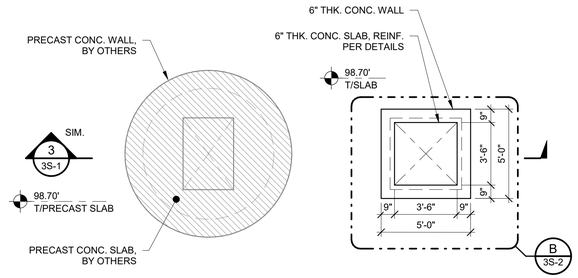
2 1/4" = 1'-0" REJECT PUMP STATION T/SLAB



3 1/4" = 1'-0" REJECT PUMP STATION SECTION 1



4 1/4" = 1'-0" UNDERDRAIN PUMP STATION T/MAT SLAB

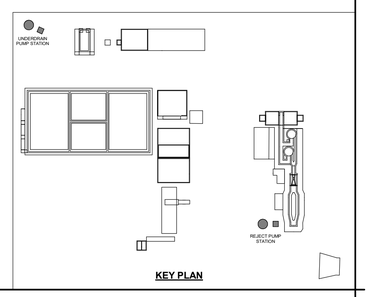


5 1/4" = 1'-0" UNDERDRAIN PUMP STATION T/SLAB

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

PLAN LEGEND	
	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED
	PRECAST CONC. WALL AND SLAB - BY OTHERS

CONCRETE WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
6" CIP	6"	#4	12" O.C., MID	#4	12" O.C., MID
NOTE: SINGLE LAYER OF REINFORCEMENTS IS TO BE @ CENTERLINE OF WALL, UNO					



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M.E. SACK ENGINEERING

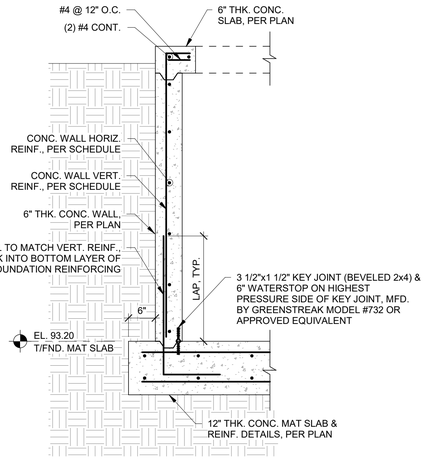
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

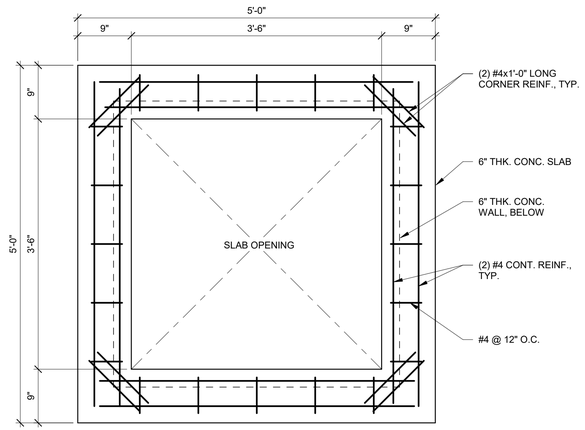
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

REJECT AND UNDERDRAIN PUMP STATION PLANS AND SECTIONS

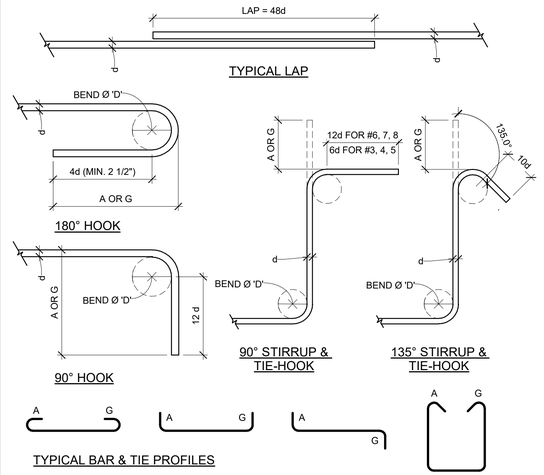
3S-1



A
3/4" = 1'-0"
REJECT PUMP STATION CONC. WALL SECTION



B
1" = 1'-0"
REJECT PUMP STATION TOP SLAB OPENING REINF. DETAIL



C
1" = 1'-0"
REINFORCING LAP AND HOOK LENGTHS

BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

NOTE:
UNITS = IN. *OR* FT.-IN.

PLAN VIEW - CORNER REINFORCING

D
1" = 1'-0"
REINFORCEMENT AT CONC. WALL CORNERS

NOTE:
PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE WIITHOUT EMBED ANGLES

E
1 1/2" = 1'-0"
CONCRETE CHAMFER DETAIL

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M.E. SACK ENGINEERING

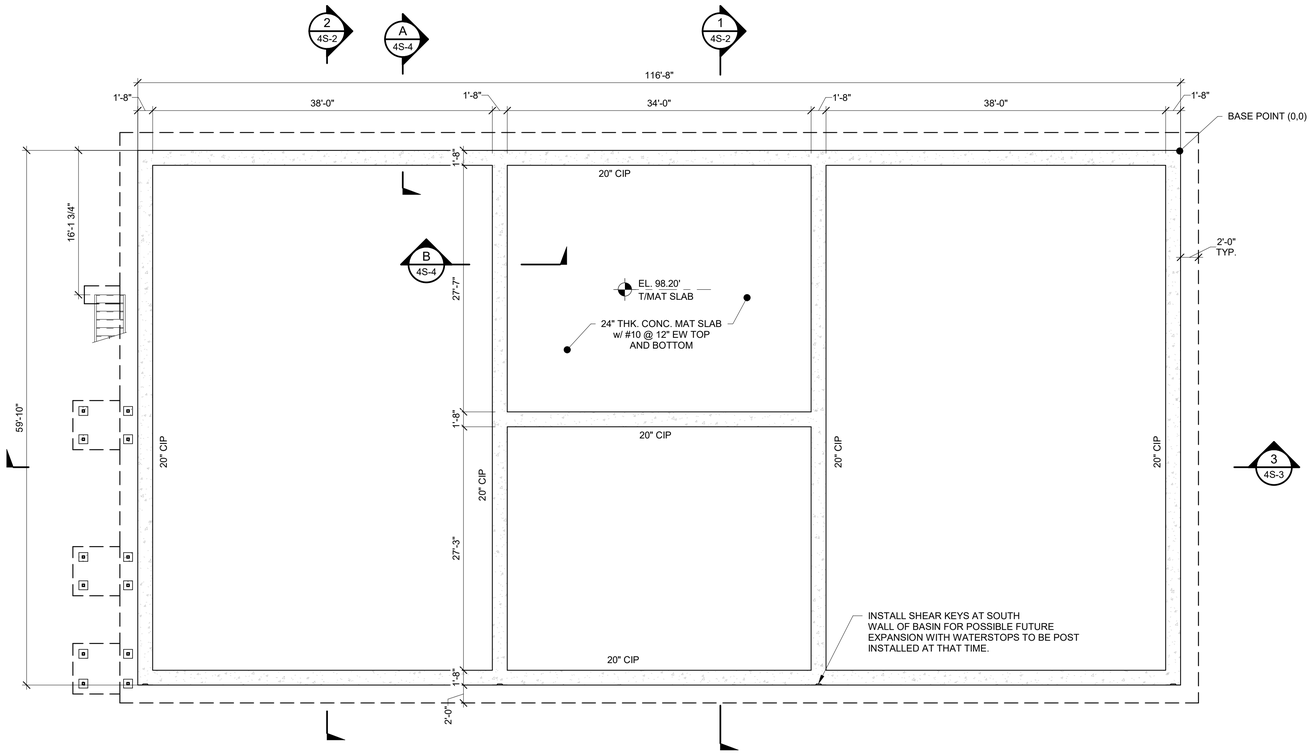
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

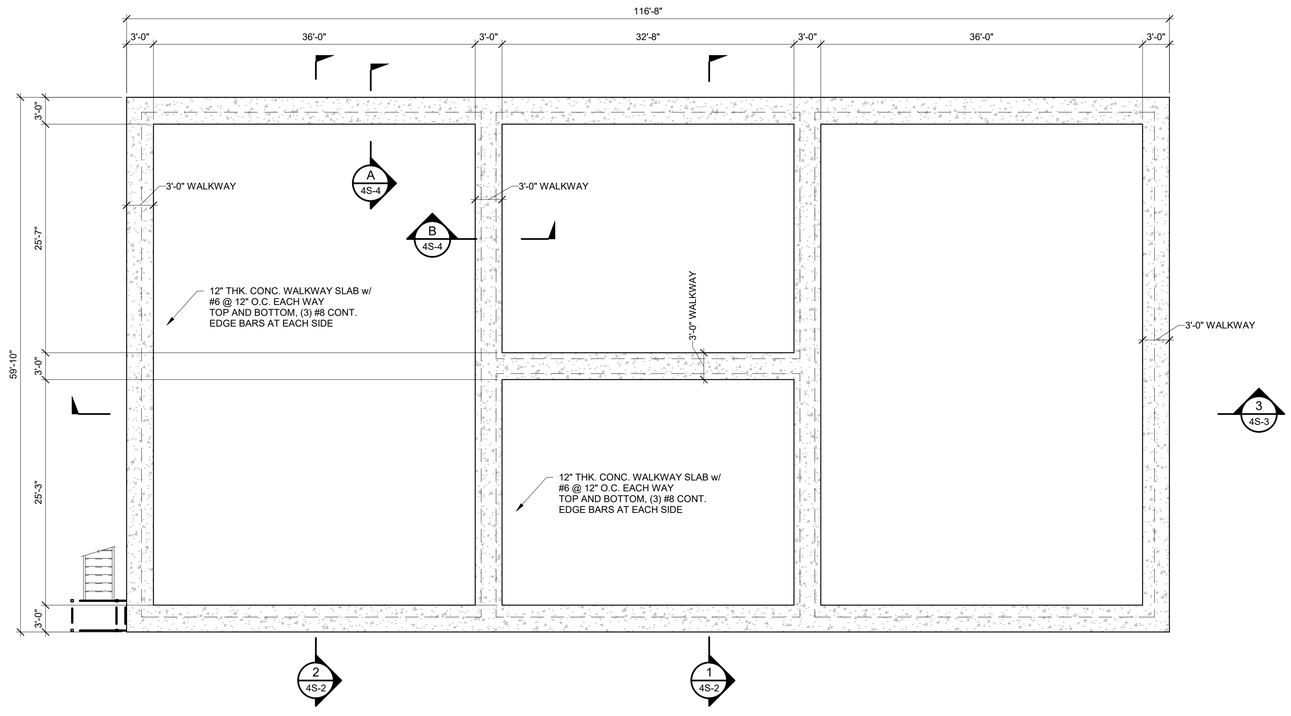
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

REJECT AND UNDERDRAIN PUMP STATION DETAILS

3S-2



1
1/8" = 1'-0"
SBR TANK FOUNDATION PLAN



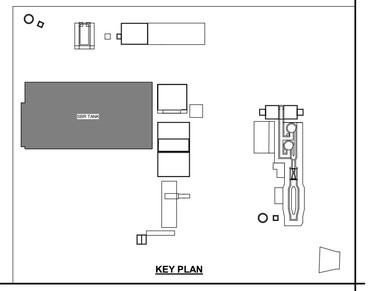
2
1/8" = 1'-0"
SBR TANK SLAB AND WALL PLAN

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.
2. FLOOR AND INTERIOR WALLS OF LIQUID CONTAINMENT TANKS SHALL BE COATED WITH SPECTRASHIELD OR APPROVED EQUAL TO ABOVE THE HIGH WATER LINE.

SLAB FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
TS1.3	1'-4" x CONT. x 12" THICK.	BOT: (2) #5 CONT. U-BAR: #5 @ 18" O.C.

CONCRETE WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
20" CIP	20"	#8	6" O.C., EF	#5	12" O.C., EF

PLAN LEGEND	
	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED
	HSS COLUMN - SIZE AS MARKED ON OTHER PLANS



KEY PLAN

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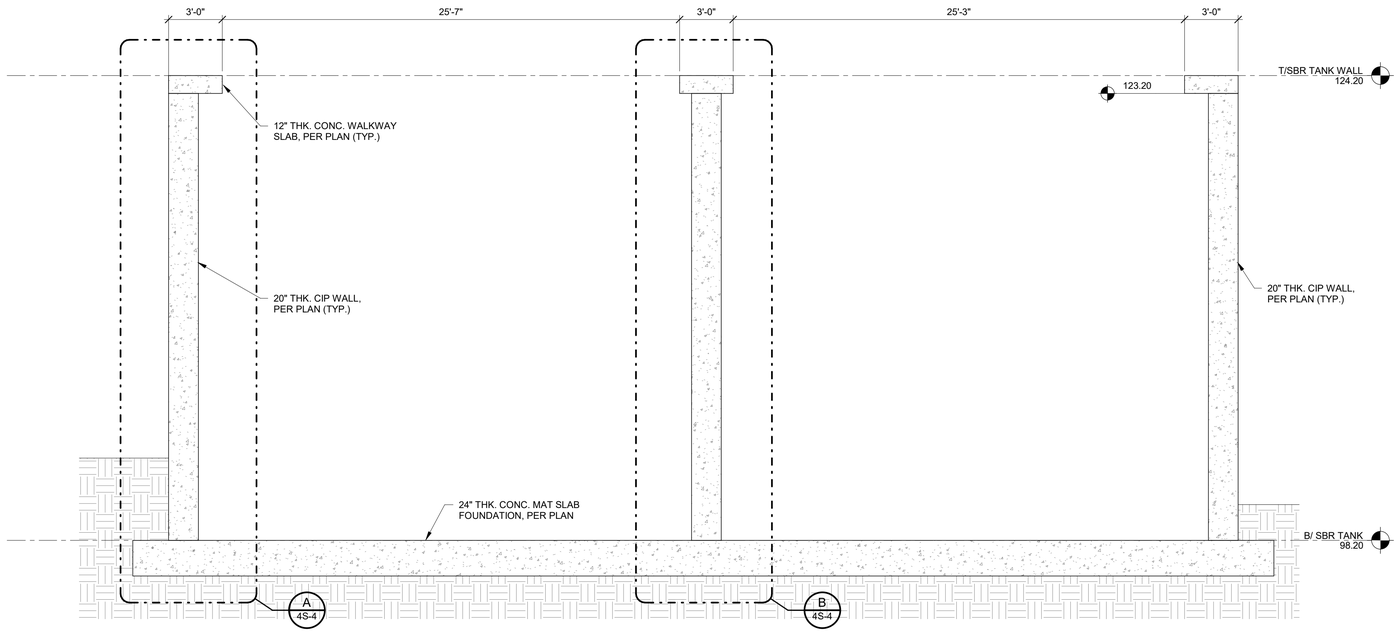
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

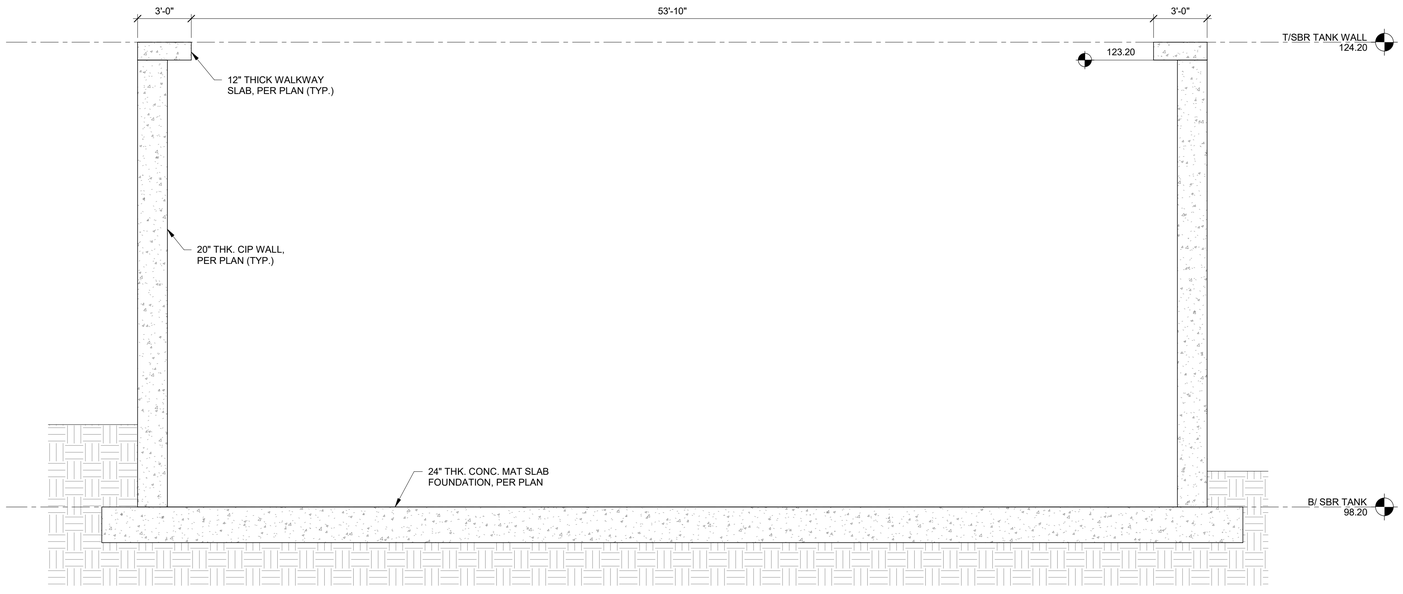
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

SBR TANK FOUNDATION AND WALL PLAN

4S-1



1
1/4" = 1'-0"
SBR TANK - SECTION 1



2
1/4" = 1'-0"
SBR TANK - SECTION 2

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CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

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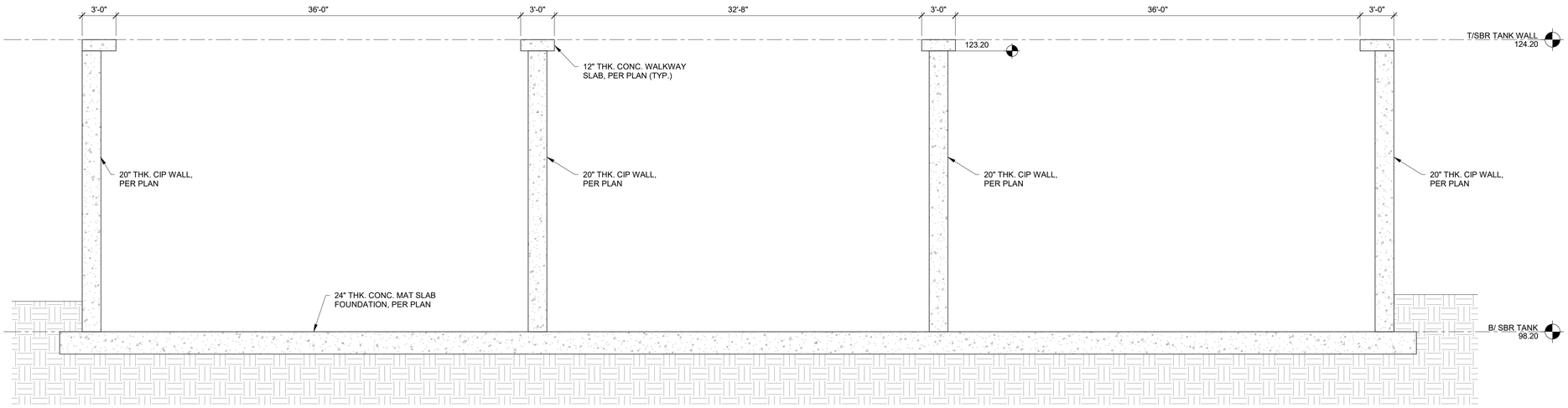
SBR TANK - STRUCTURAL SECTIONS

4S-2



3
3/16" = 1'-0"
SBR TANK - SECTION 3

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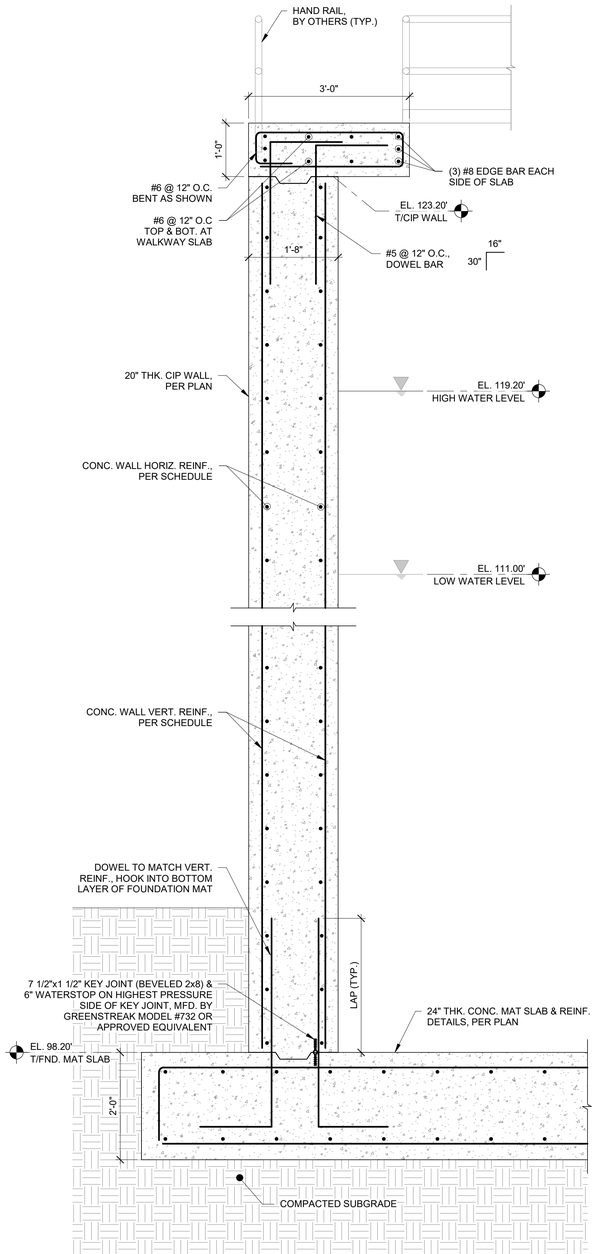
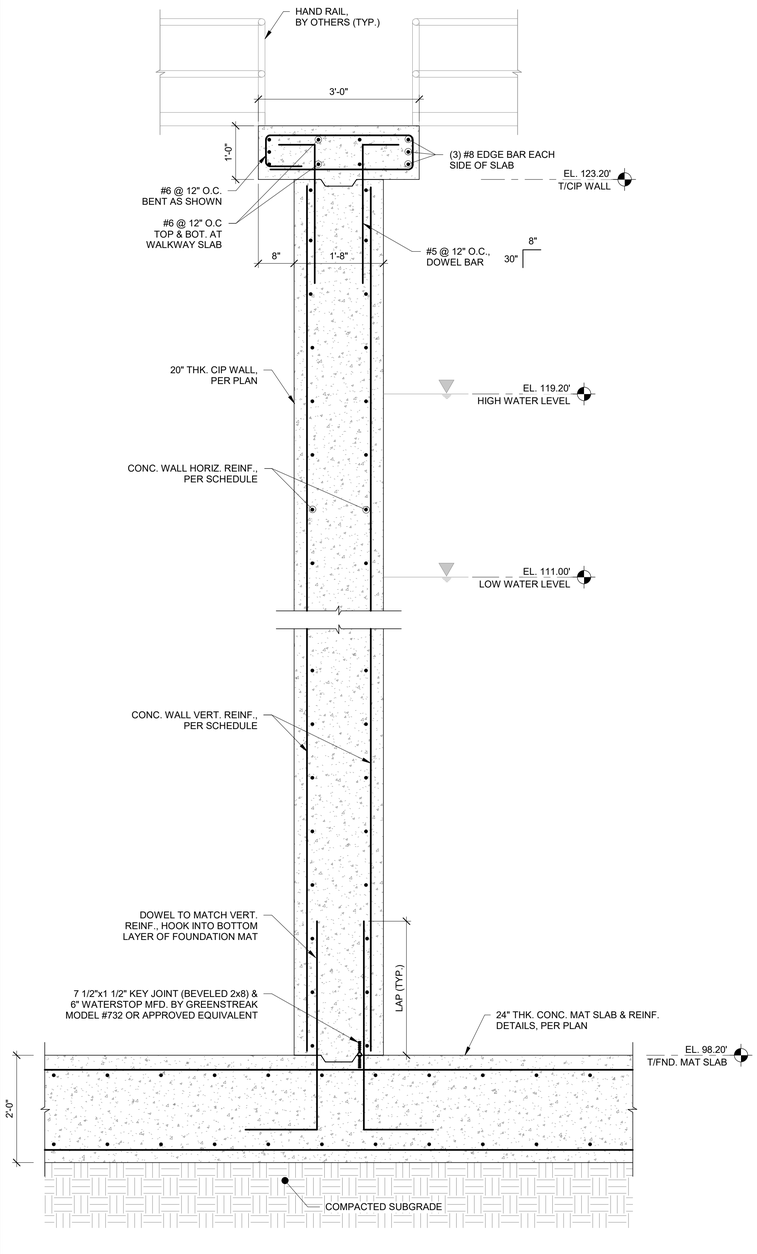
SBR TANK - STRUCTURAL SECTIONS

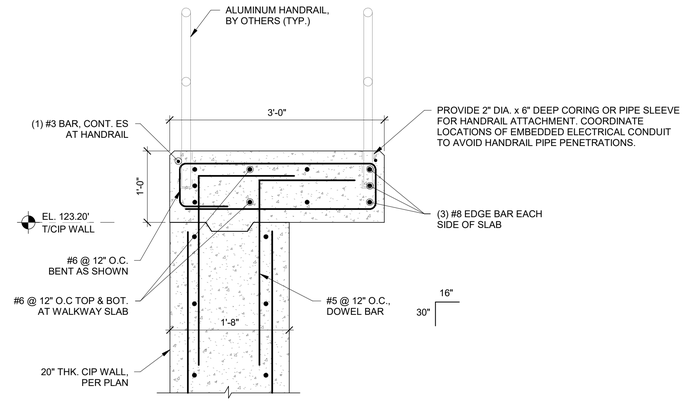
4S-3



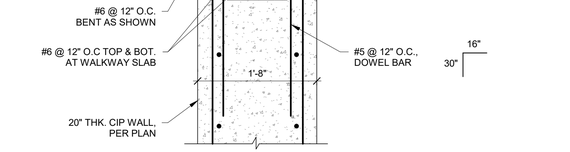
A
3/4" = 1'-0"
SBR TANK - EDGE WALL DETAIL



B
3/4" = 1'-0"
SBR TANK-INTERIOR WALL DETAIL



C
1" = 1'-0"
HANDRAIL CONNECTION DETAIL



D
1" = 1'-0"
DAVIT CRANE CONNECTION DETAIL

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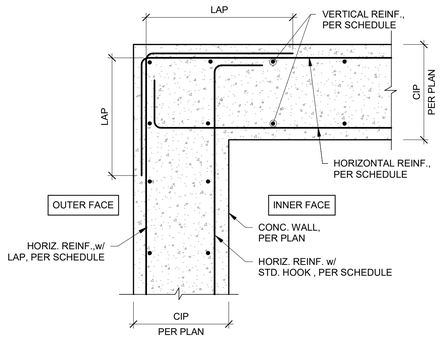
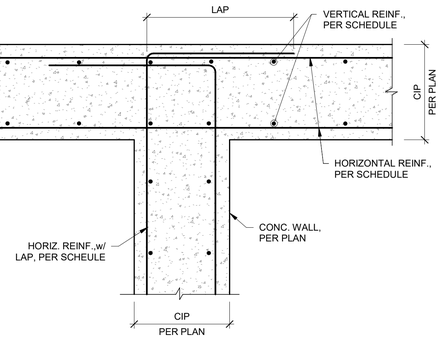
SBR TANK - STRUCTURAL DETAILS

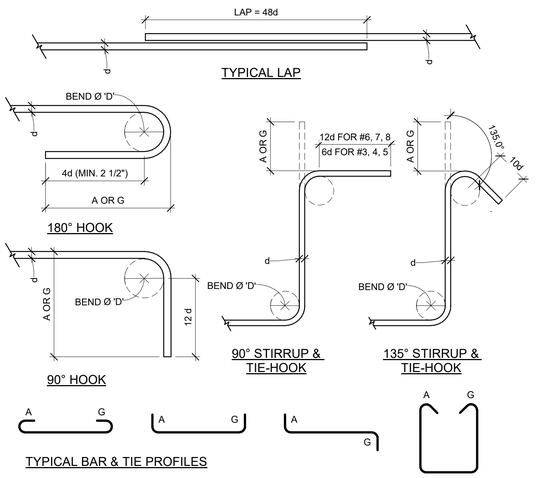
4S-4



PLAN VIEW - CORNER REINFORCING



PLAN VIEW - INTERSECTION REINFORCING

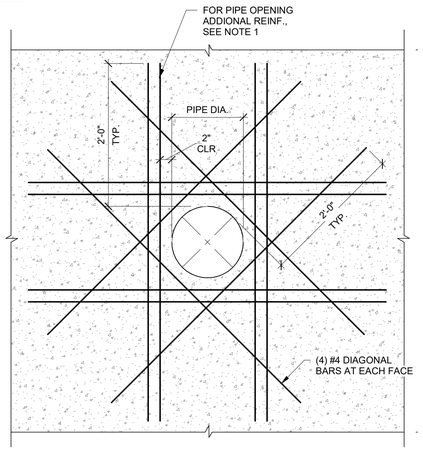


TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

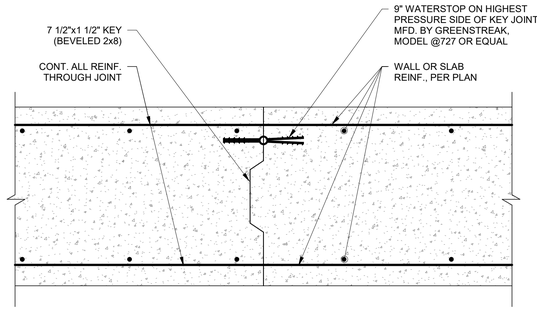
NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

A — REINFORCEMENT AT CONC. WALL CORNERS AND INTERSECTION
1" = 1'-0"

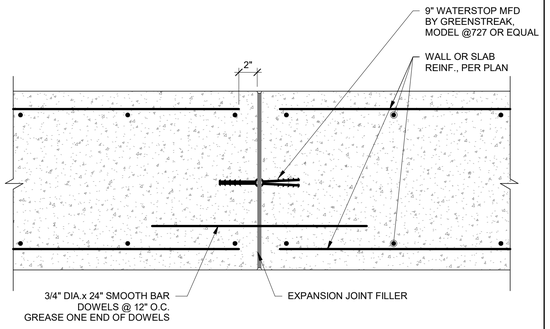


NOTE:
1. THE EQUIVALENT NUMBER OF VERT AND HORIZ. BARS INTERRUPTED BY OPENING SHALL BE PROVIDED BY PLACING 1/2 OF THE BARS ON EACH SIDE OF THE OPENINGS @ 3" O.C.
2. MAINTAIN NOT LESS THAN 1 1/4" CLEAR DISTANCE BETWEEN ADJACENT PARALLEL BARS.

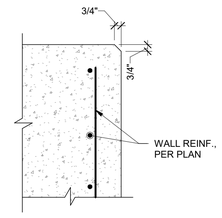
C — TYPICAL WALL REINFORCEMENT AT PIPE OPENING
1" = 1'-0"



D — CONCRETE MAT SLAB AND WALL CONSTRUCTION JOINT DETAIL
1 1/2" = 1'-0"



E — CONCRETE MAT SLAB AND WALL EXPANSION JOINT DETAIL
1 1/2" = 1'-0"



NOTE:
PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE WIITHOUT EMBED ANGLES

F — CONCRETE CHAMFER DETAIL
1 1/2" = 1'-0"

B — REINFORCING LAP AND HOOK LENGTHS
1" = 1'-0"

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160 N MAIN ST,
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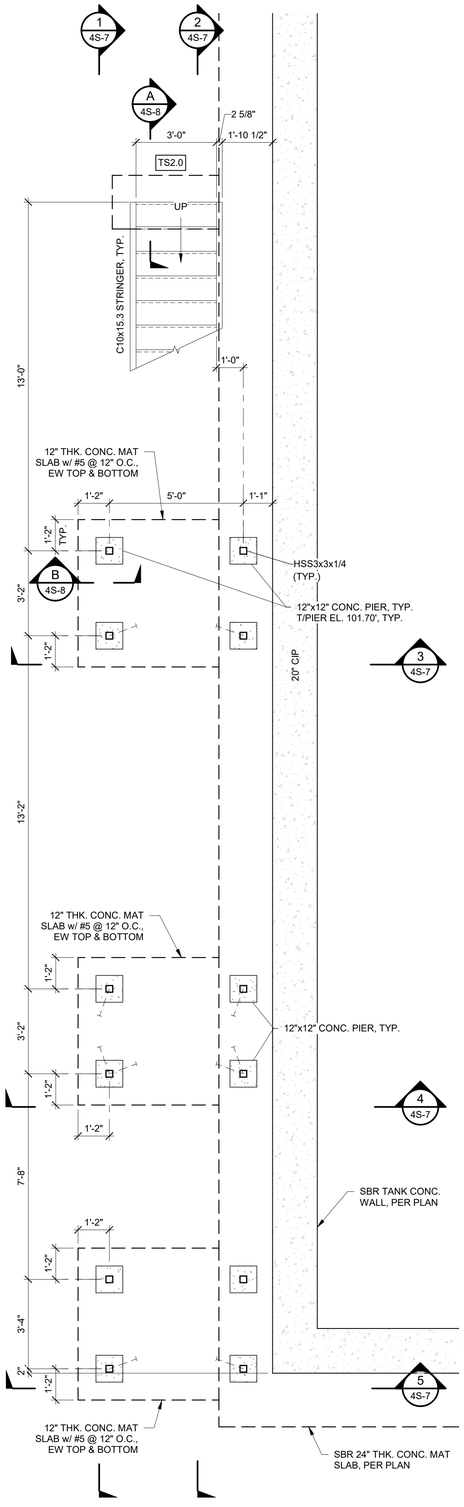
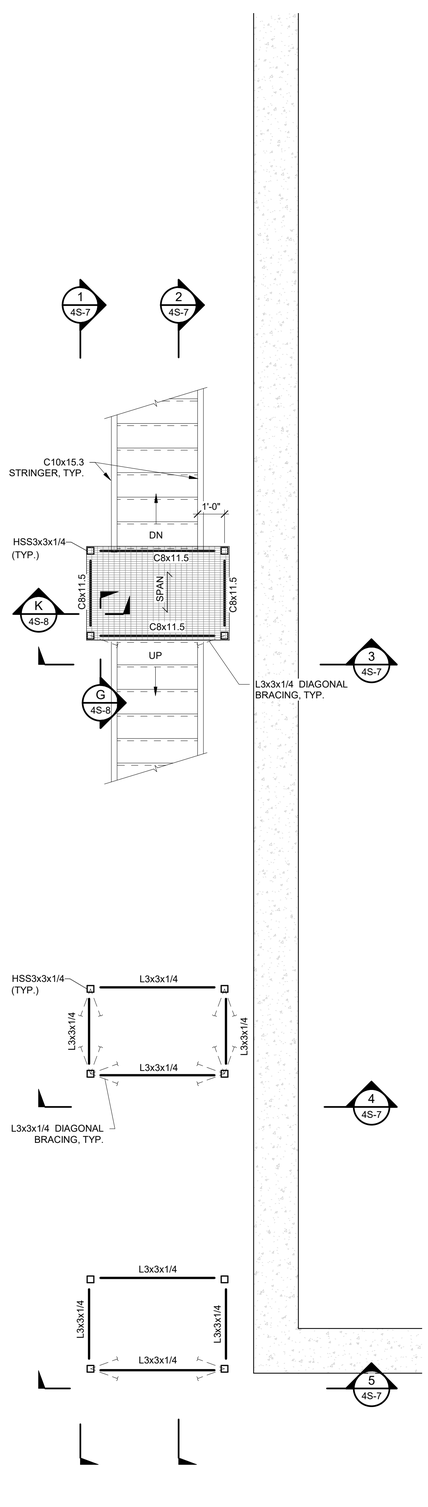
SBR TANK - STRUCTURAL DETAILS

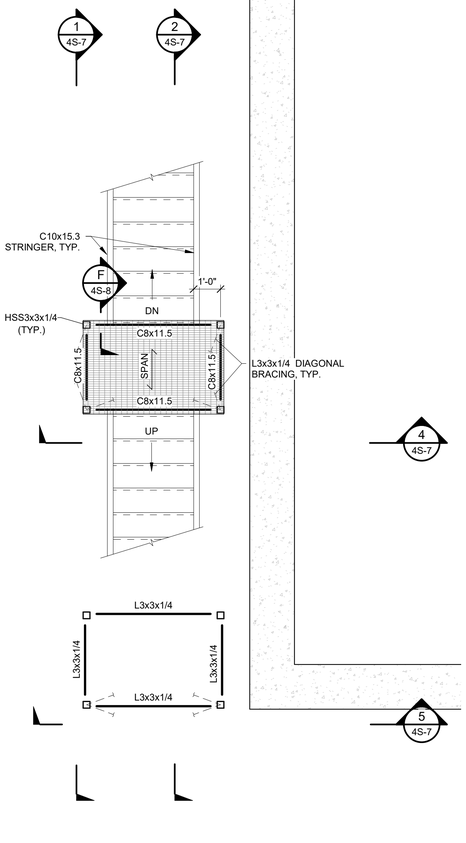
4S-5



1 SBR TANK STAIR BASE LEVEL PLAN
3/8" = 1'-0"



2 SBR TANK STAIR LEVEL 1 FRAMING PLAN
3/8" = 1'-0"



3 SBR TANK STAIR LEVEL 2 FRAMING PLAN
3/8" = 1'-0"

4 SBR TANK STAIR TOP LEVEL FRAMING PLAN
3/8" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

PLAN LEGEND

	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED
	LANDING BEAM - SIZE AS MARKED ON PLANS
	HSS COLUMN - SIZE AS MARKED ON PLANS
	HSS COLUMN w/ DIAGONAL BRACE - SIZE AS MARKED ON PLANS
	STAIR LANDING SHALL HAVE 1 1/4" (GW-125) STEEL GRATING, STANDARD DUTY WELDED BAR GRATING WITH 1 1/4" x 3/16" BEARING BARS AT 1 3/16" SPACING, CROSS BARS AT 4" SPACING. GRATING PRODUCTS SHALL BE BY MCNICHOLS CO. OR APPROVED EQUAL.

SLAB FOUNDATION SCHEDULE

TAG	FOOTING SIZE	REINFORCEMENT
TS2.0	2'-0" x CONT. x 12" THICK.	BOT: (3) #5 CONT. U-BAR: #5 @ 18" O.C.

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M.E. SACK ENGINEERING

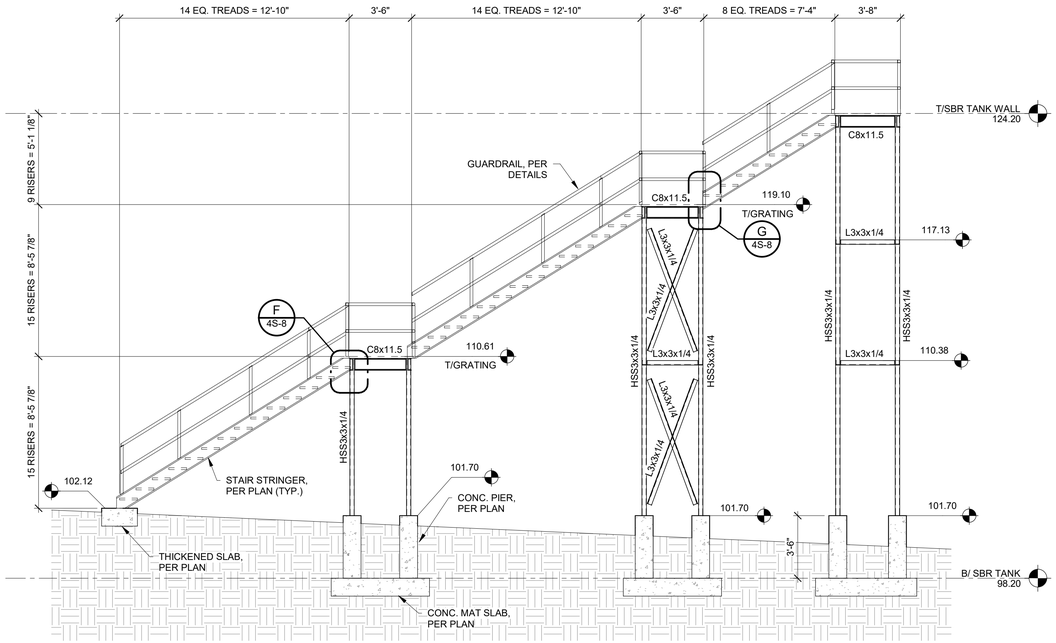
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

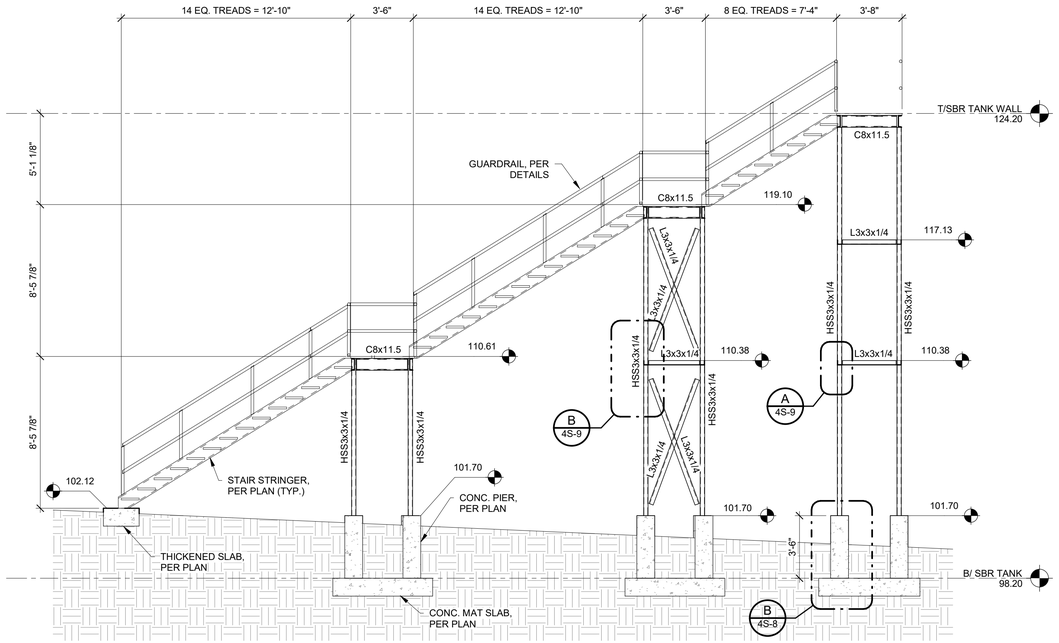
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

SBR TANK STEEL STAIR PLANS

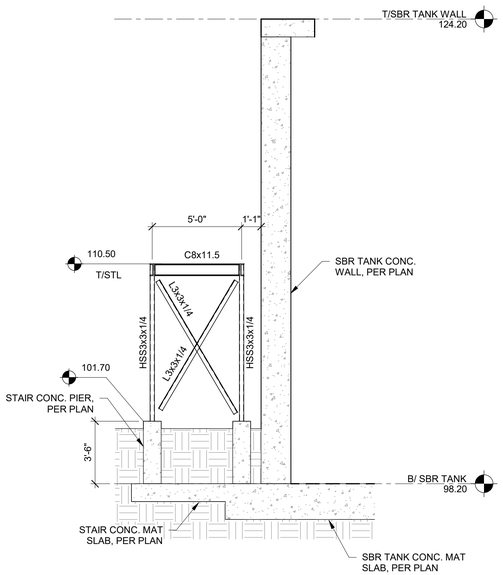
4S-6



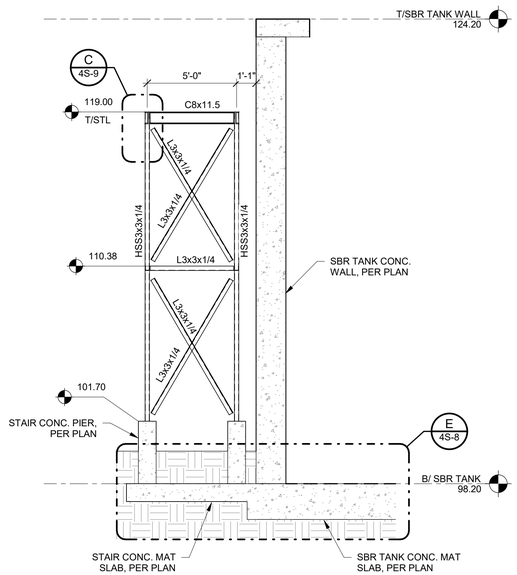
1 SBR TANK STEEL STAIR SECTION 1
1/4" = 1'-0"



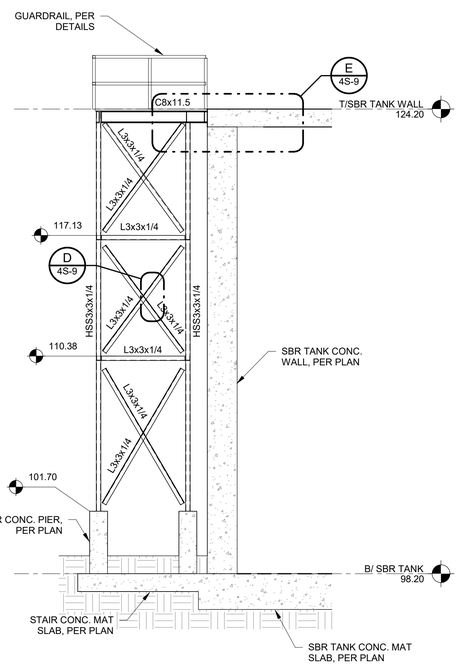
2 SBR TANK STEEL STAIR SECTION 2
1/4" = 1'-0"



3 SBR TANK STEEL STAIR SECTION 3
1/4" = 1'-0"



4 SBR TANK STEEL STAIR SECTION 4
1/4" = 1'-0"



5 SBR TANK STEEL STAIR SECTION 5
1/4" = 1'-0"

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GEORGIA REGISTERED 10/11/24 No. SE000802 STRUCTURAL ENGINEER BRIAN K. SAPP

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CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
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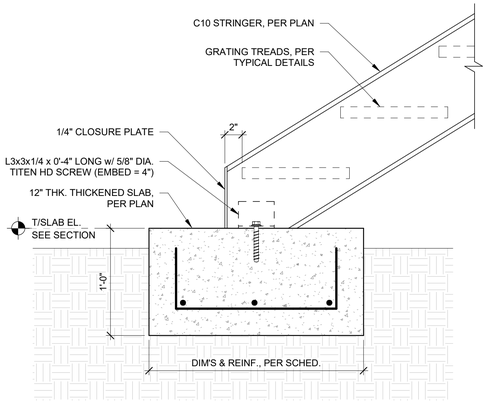
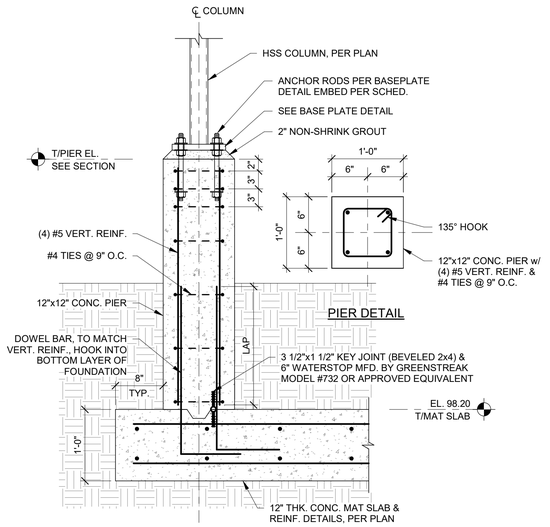
SBR TANK STEEL STAIR SECTIONS

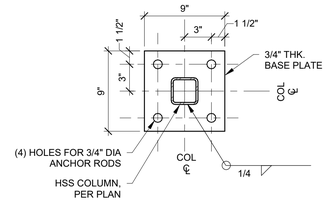
4S-7



A
1 1/2" = 1'-0"
SBR STAIR STRINGER BASE CONNECTION

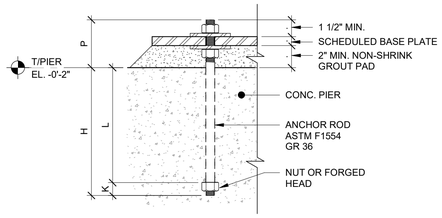


B
1" = 1'-0"
SBR STAIR HSS COLUMN BASE CONNECTION AT CONC. PIER



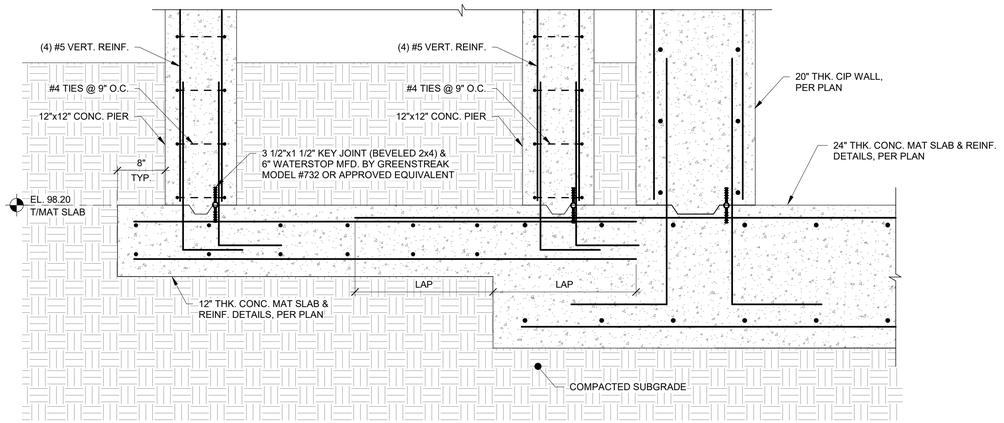
HSS3x3 BASEPLATE

C
1 1/2" = 1'-0"
SBR STAIR BASEPLATE DETAIL

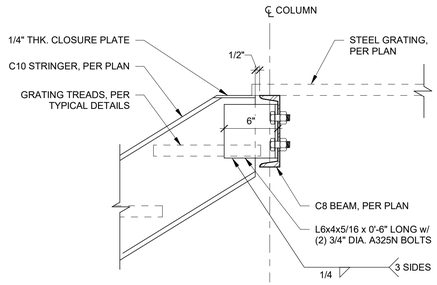


TYPICAL ANCHOR ROD SCHEDULE	
DIMENSIONS	TYP.
BASEPLATE THICKNESS	3/4" THK.
BOLT Ø, d	3/4"
L	8"
H	10"
K	2"
P (MIN)	4 1/4"

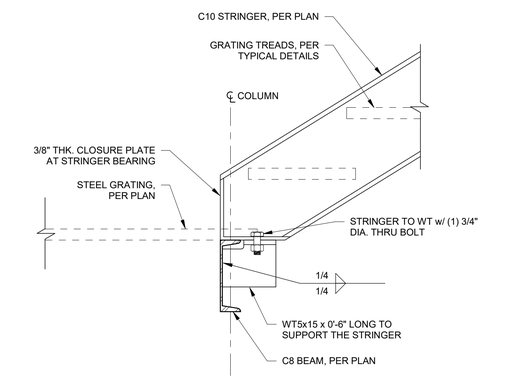
D
3" = 1'-0"
SBR STAIR ANCHOR ROD DETAIL



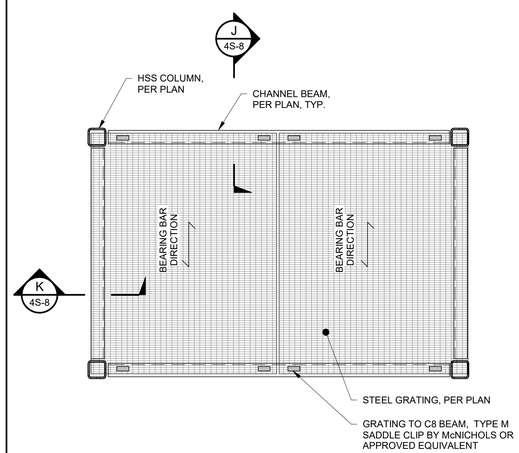
E
1" = 1'-0"
CONC. PIER BASE AT MAT SLAB TRANSITION



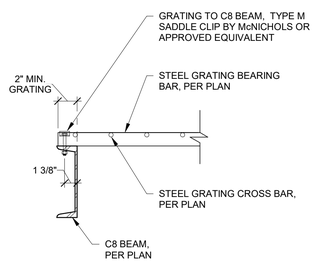
F
1 1/2" = 1'-0"
SBR STAIR STRINGER TO CHANNEL BEAM CONNECTION DETAIL



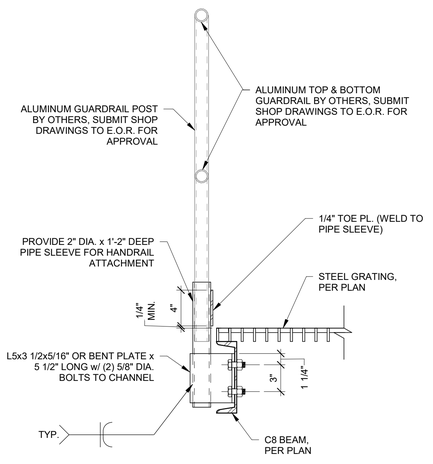
G
1 1/2" = 1'-0"
SBR STAIR STRINGER GOING UP TO CHANNEL BEAM CONNECTION DETAIL



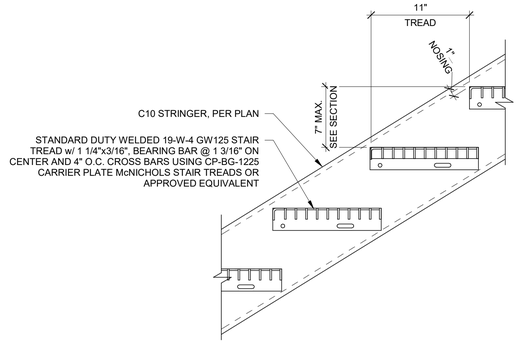
H
1" = 1'-0"
TYPICAL LANDING GRATING CONNECTION PLAN VIEW



J
1 1/2" = 1'-0"
STAIR LANDING GRATING BEARING ON BEAM SECTION



K
1 1/2" = 1'-0"
STAIR LANDING GRATING PARALLEL TO BEAM



L
1 1/2" = 1'-0"
TYPICAL TREAD DETAIL

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GEORGIA REGISTERED 10/1/24 No. SE000802 STRUCTURAL ENGINEER
ANTHONY BRIAN K. SKIPPER

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CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
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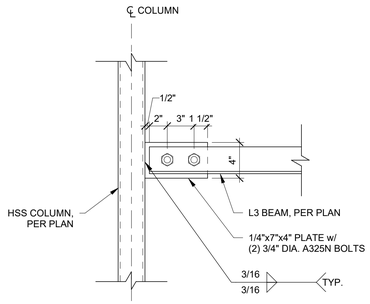
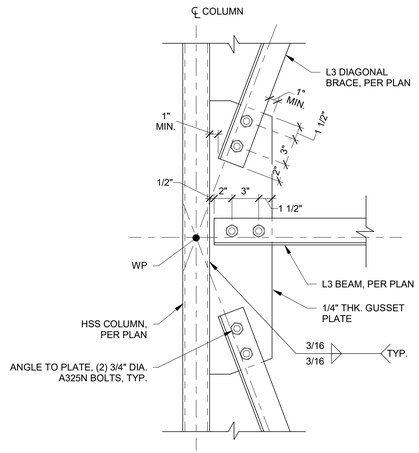
SBR TANK STEEL STAIR DETAILS

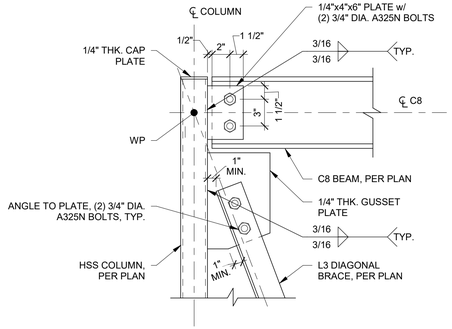
4S-8



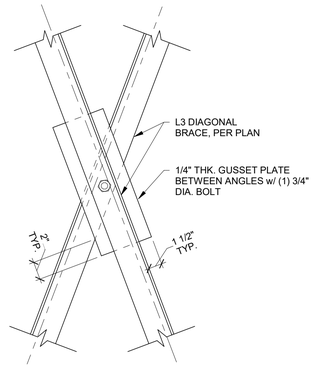
A
1 1/2" = 1'-0"
L ANGLE TO HSS COLUMN CONNECTION



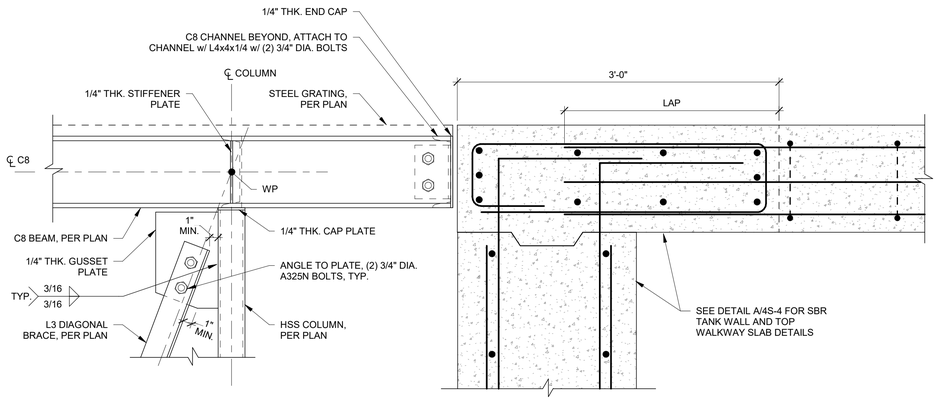
B
1 1/2" = 1'-0"
DIAGONAL BRACE TO HSS COLUMN CONNECTION AT MID



C
1 1/2" = 1'-0"
DIAGONAL BRACE TO HSS COLUMN CONNECTION AT TOP



D
1 1/2" = 1'-0"
SBR STAIR ANGLE BRACING CONN. DETAIL



E
1 1/2" = 1'-0"
CHANNEL BEAM OVER HSS COLUMN CONN. DETAIL

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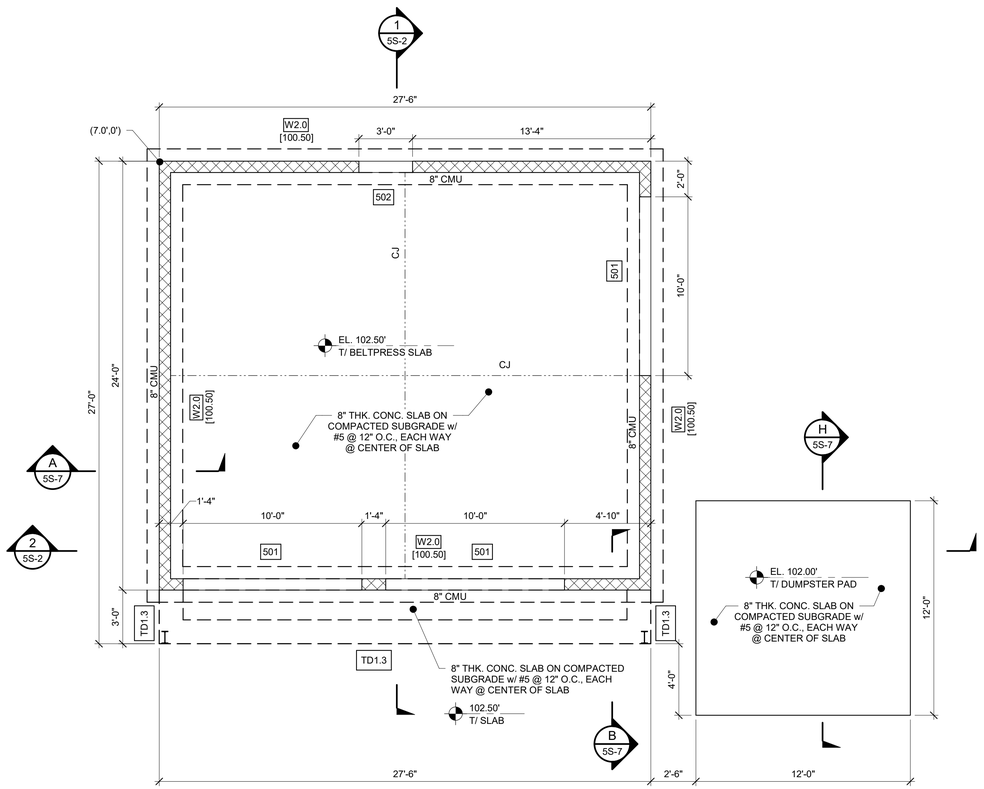
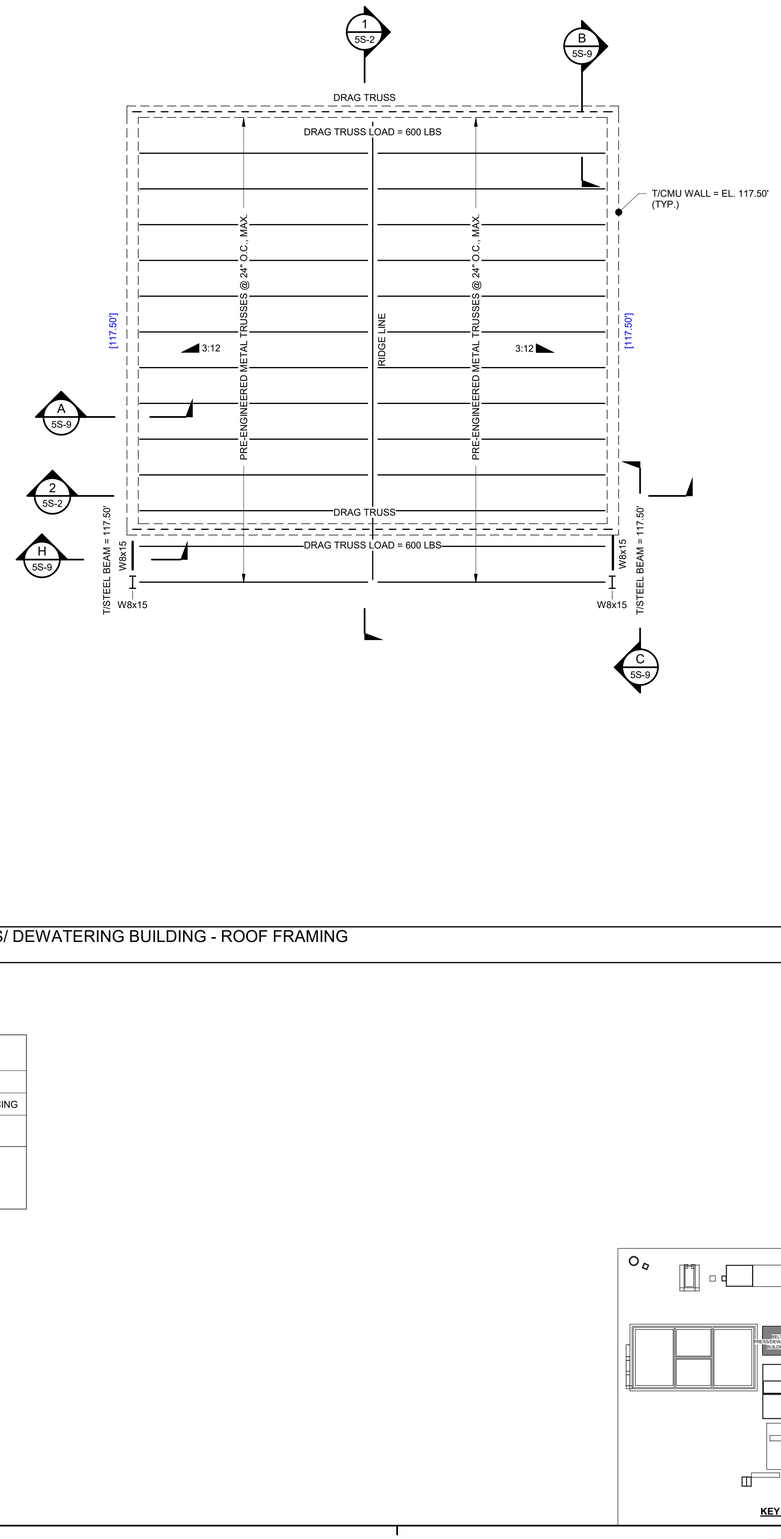
SBR TANK STEEL STAIR DETAILS

4S-9



1 BELT PRESS/ DEWATERING BUILDING - FOUNDATION, SCREW CONVEYOR AND DUMPSTER PAD
1/4" = 1'-0"



2 BELT PRESS/ DEWATERING BUILDING - ROOF FRAMING PLAN
1/4" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

WALL FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
W2.0	2'-0" x CONT. x 12" THICK.	(3) #5 CONT. & #5 @ 12" O.C., BOTTOM

SLAB FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
TD1.3	1'-4" x CONT. x 24" THICK.	BOT: (2) #5 CONT. SIDE: (1) #5 CONT. TOP : (1) #5 CONT. BENT DOWEL: #5 @ 18" O.C.

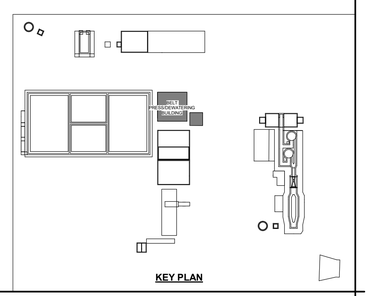
PLAN LEGEND

	FOUNDATION EXTENTS
F#.# [±FT-IN]	INDICATES SHALLOW COLUMN FOUNDATION - SEE FOUNDATION SCHEDULE
W#.# [±FT-IN]	INDICATES SHALLOW WALL STRIP FOUNDATION - SEE FOUNDATION SCHEDULE
CJ	SLAB CONTROL JOINT
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CMU SIZE	CMU WALL - THICKNESS AS MARKED
	PRE-ENGINEERED METAL ROOF TRUSSES BY TRUSS MANUFACTURER
	BEAM/GIRDER - SIZE AS MARKED
I	WF COLUMN - SIZE AS MARKED ON PLANS
#:# #:#	ROOF SLOPE AND APPROXIMATE SPRING POINT ELEVATION
5##	DOOR LEGEND - SEE SHEET 5S-11 FOR DOOR SIZE AND DETAILS

MASONRY WALL SCHEDULE

WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. JOINT REINF.	
		SIZE	SPACING	TYPE	VERT. SPACING
8" CMU	8"	#5	48" O.C	LADDER	48" O.C

NOTE:
1. SINGLE LAYER VERT. REINFORCING TO BE @ CENTERLINE OF WALL, UNO.
2. PROVIDE (1) #5 VERT. IN GROUTED CELLS EACH SIDE OF WALL OPENING.
3. FULLY GROUTED CMU WALLS BELOW GRADE, TYP.



KEY PLAN

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160 N MAIN ST,
PEMBROKE, GA 31321

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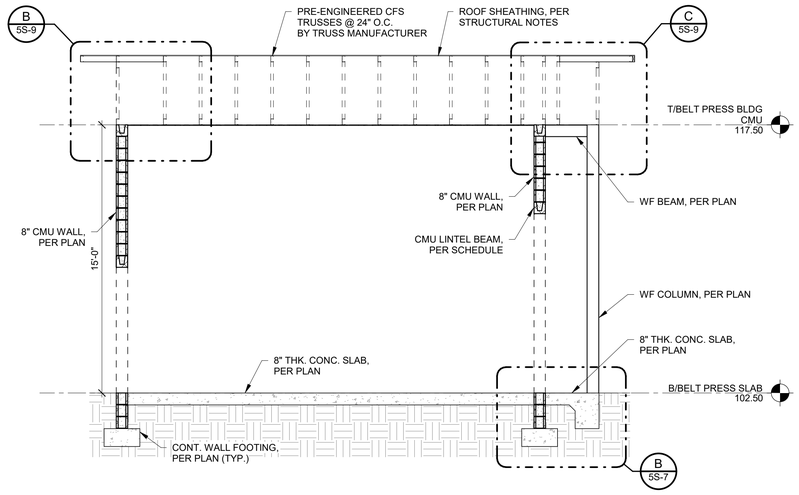
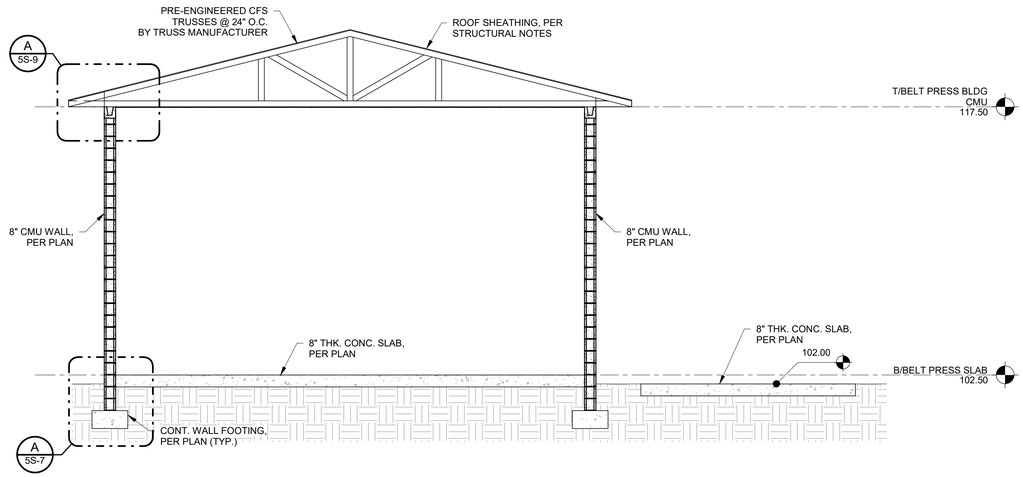
CHECKED BY	BKS

BELTPRESS/ DEWATERING BUILDING, SCREW CONVEYER AND DUMPSTER PAD PLAN

5S-1



1 1/4" = 1'-0" BELT PRESS/ DEWATERING BLDG - SECTION 1



2 1/4" = 1'-0" BELT PRESS/ DEWATERING BLDG - SECTION 2

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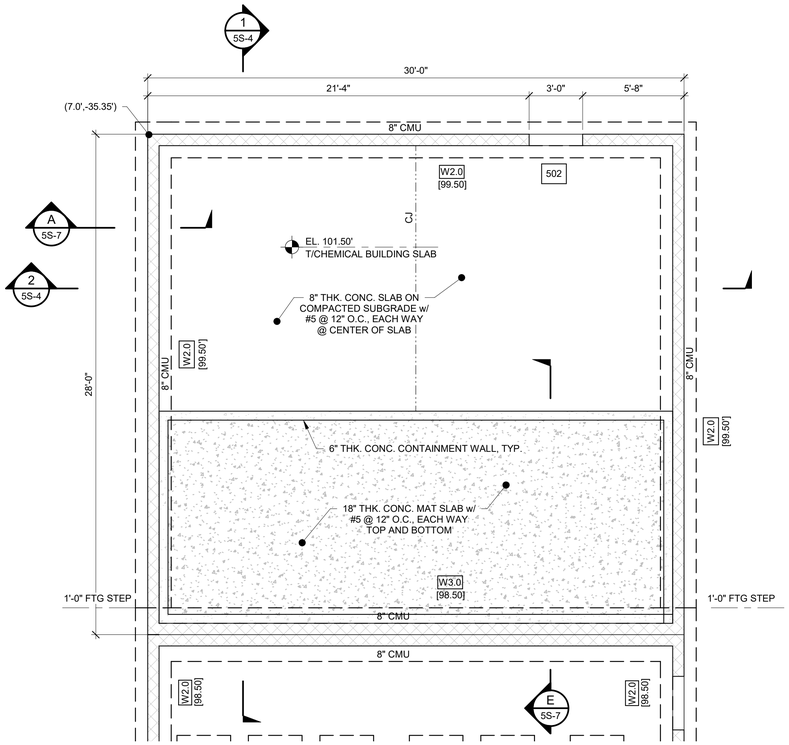
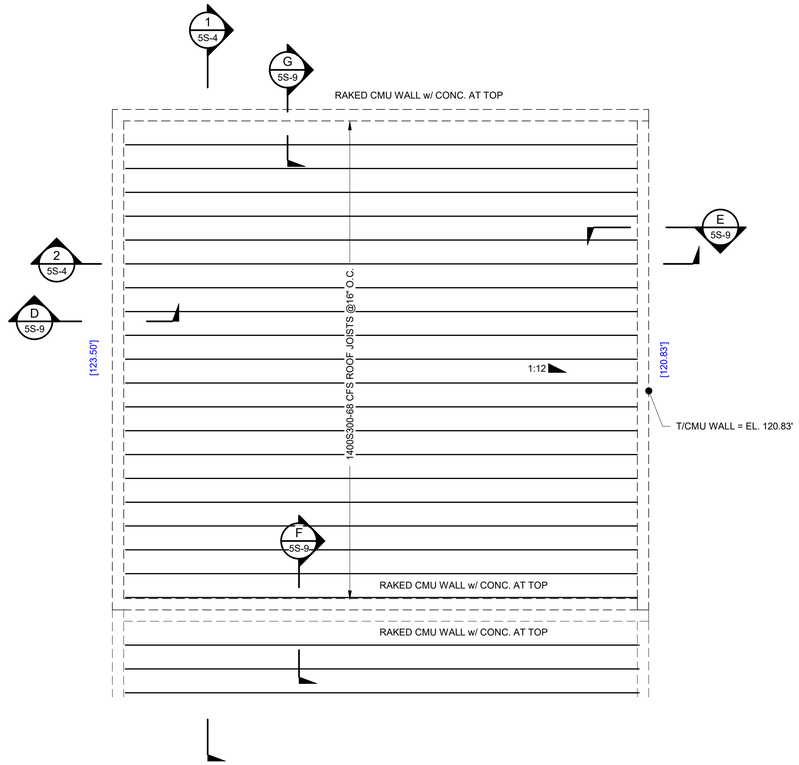
BELT PRESS/ DEWATERING BUILDING - STRUCTURAL SECTION

5S-2



1 CHEMICAL BUILDING - FOUNDATION AND SLAB PLAN
1/4" = 1'-0"



2 CHEMICAL BUILDING - ROOF FRAMING PLAN
1/4" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

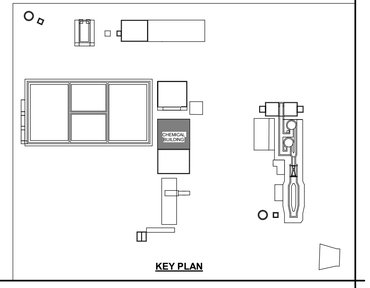
WALL FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
W2.0	2'-0" x CONT. x 12" THICK.	(3) #5 CONT. & #5 @ 12" O.C., BOTTOM
W3.0	3'-0" x CONT. x 12" THICK.	(3) #5 CONT. & #5 @ 12" O.C., BOTTOM

MASONRY WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. JOINT REINF.	
		SIZE	SPACING	TYPE	VERT. SPACING
8" CMU	8"	#5	48" O.C	LADDER	48" O.C

NOTE:
1. SINGLE LAYER VERT. REINFORCING TO BE @ CENTERLINE OF WALL, UNO.
2. PROVIDE (1) #5 VERT. IN GROUTED CELLS EACH SIDE OF WALL OPENING.
3. FULLY GROUTED CMU WALLS BELOW GRADE, TYP.

PLAN LEGEND

— — —	FOUNDATION EXTENTS
F#.# [±FT-IN]	INDICATES SHALLOW COLUMN FOUNDATION - SEE FOUNDATION SCHEDULE
W#.# [±FT-IN]	INDICATES SHALLOW WALL STRIP FOUNDATION - SEE FOUNDATION SCHEDULE
CJ	SLAB CONTROL JOINT
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CMU SIZE	CMU WALL - THICKNESS AS MARKED
	CFS ROOF JOIST - SIZE AS MARKED
	BEAM/GIRDER - SIZE AS MARKED
#:#	ROOF SLOPE AND APPROXIMATE SPRING POINT ELEVATION
5##	DOOR LEGEND - SEE SHEET 5S-11 FOR DOOR SIZE AND DETAILS



KEY PLAN

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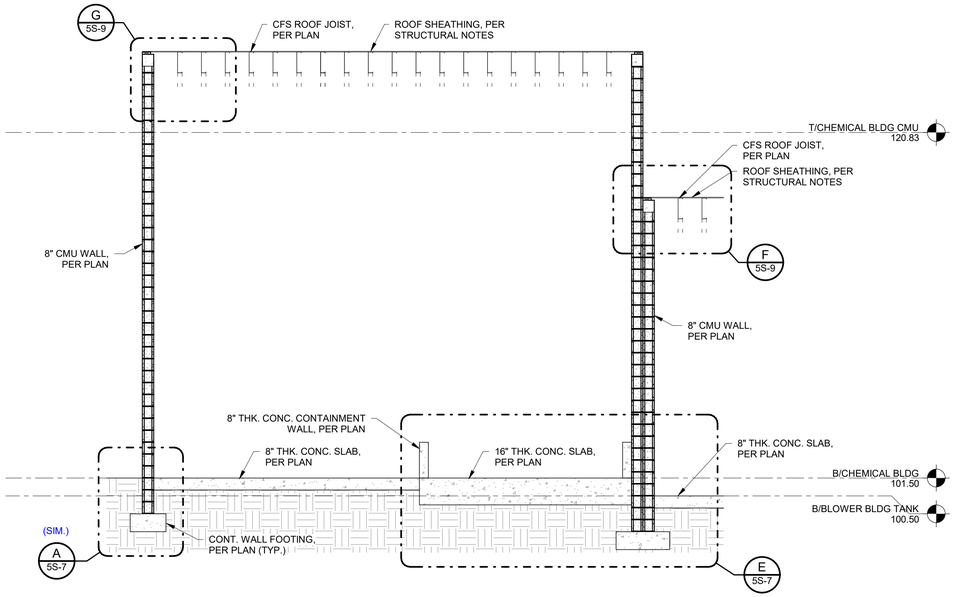
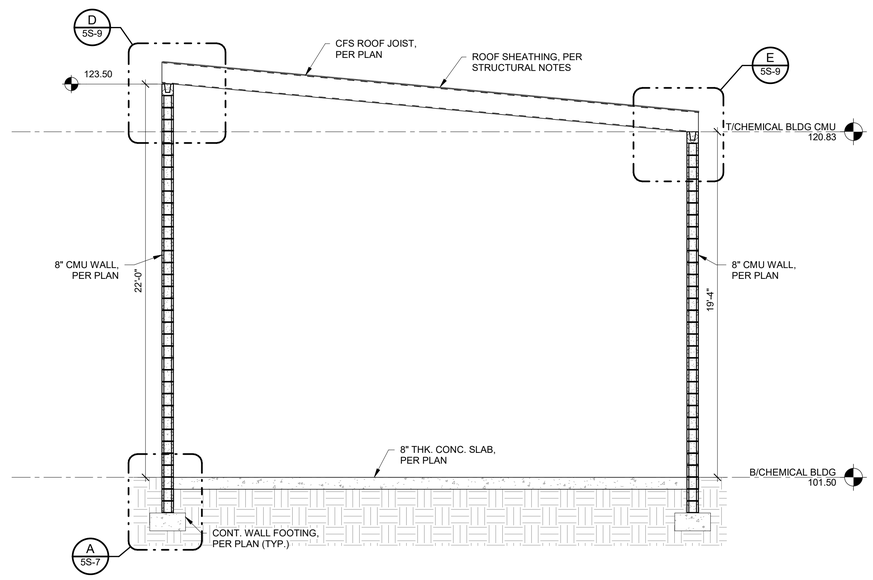
CHEMICAL BUILDING - FOUNDATION AND ROOF FRAMING PLAN

5S-3



1 1/4" = 1'-0" CHEMICAL BUILDING - SECTION 1



2 1/4" = 1'-0" CHEMICAL BUILDING - SECTION 2

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M.E. SACK ENGINEERING

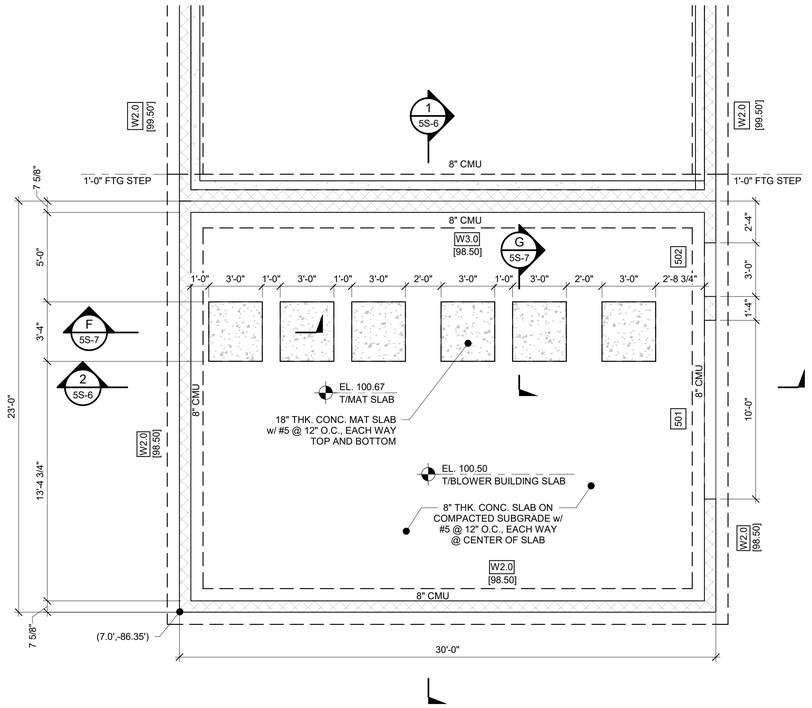
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

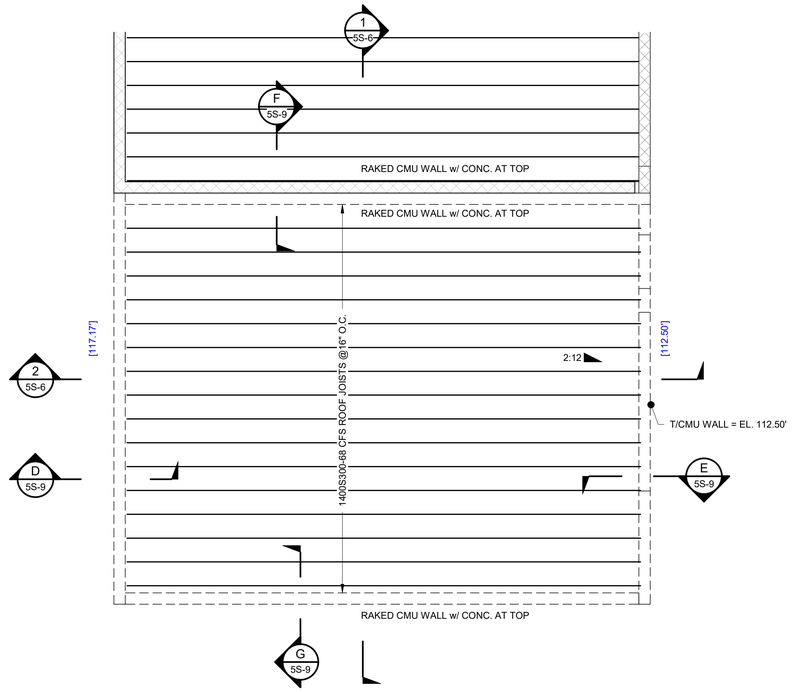
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

CHEMICAL BUILDING - STRUCTURAL SECTION

5S-4



1 1/4" = 1'-0" BLOWER BUILDING - FOUNDATION AND SLAB PLAN



2 1/4" = 1'-0" BLOWER BUILDING - ROOF FRAMING PLAN

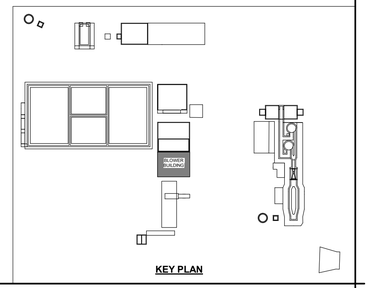
PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

WALL FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
W2.0	2'-0" x CONT. x 12" THICK.	(3) #5 CONT. & #5 @ 12" O.C., BOTTOM
W3.0	3'-0" x CONT. x 12" THICK.	(4) #5 CONT. & #5 @ 12" O.C., BOTTOM

MASONRY WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. JOINT REINF.	
		SIZE	SPACING	TYPE	VERT. SPACING
8" CMU	8"	#5	48" O.C	LADDER	48" O.C

NOTE:
1. SINGLE LAYER VERT. REINFORCING TO BE @ CENTERLINE OF WALL, UNO.
2. PROVIDE (1) #5 VERT. IN GROUTED CELLS EACH SIDE OF WALL OPENING.
3. FULLY GROUTED CMU WALLS BELOW GRADE, TYP.

PLAN LEGEND	
	FOUNDATION EXTENTS
F#.# [±FT-IN]	INDICATES SHALLOW COLUMN FOUNDATION - SEE FOUNDATION SCHEDULE
W#.# [±FT-IN]	INDICATES SHALLOW WALL STRIP FOUNDATION - SEE FOUNDATION SCHEDULE
CJ	SLAB CONTROL JOINT
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CMU SIZE	CMU WALL - THICKNESS AS MARKED
	CMU WALL BELOW
	CFS ROOF JOISTS - SIZE AS MARKED
	BEAM/GIRDER - SIZE AS MARKED
#:# #:#	ROOF SLOPE AND APPROXIMATE SPRING POINT ELEVATION
5##	DOOR LEGEND - SEE SHEET 5S-11 FOR DOOR SIZE AND DETAILS



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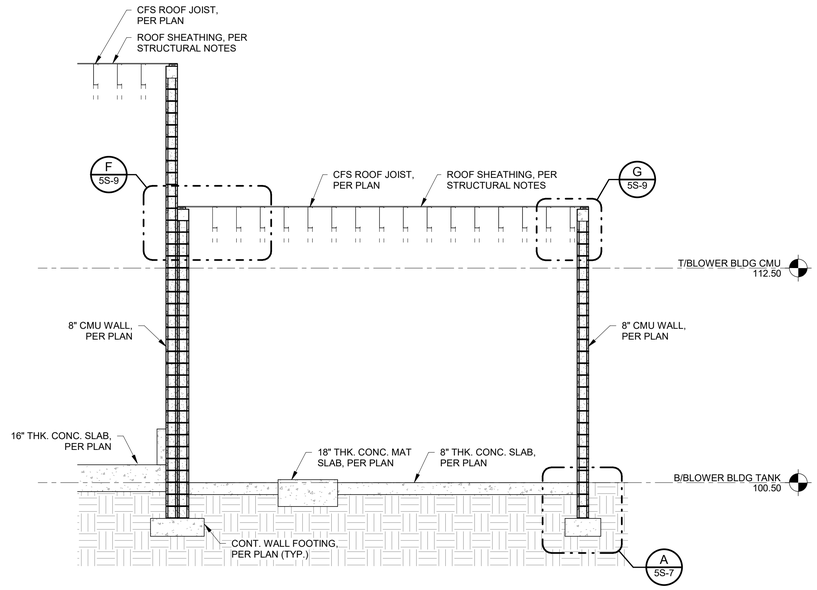
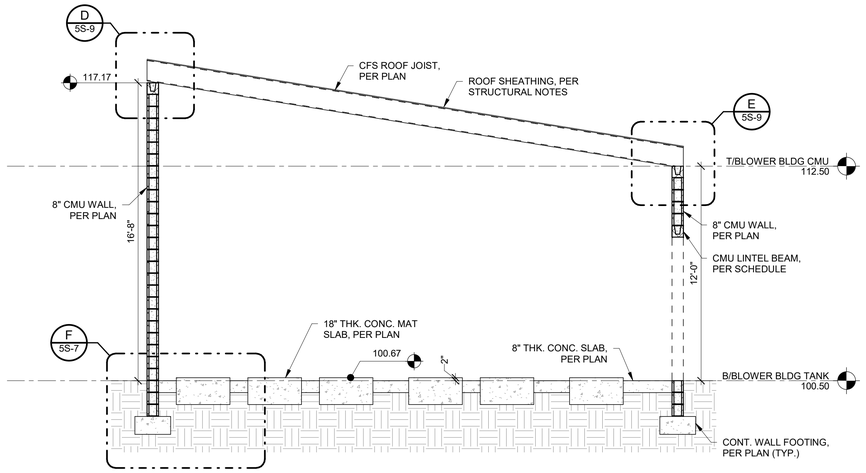
BLOWER BUILDING - FOUNDATION AND ROOF FRAMING PLAN

5S-5



1 1/4" = 1'-0" BLOWER BUILDING-SECTION 1



2 1/4" = 1'-0" BLOWER BUILDING - SECTION 2

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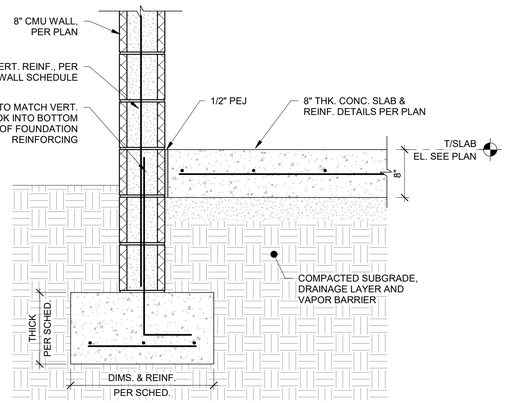
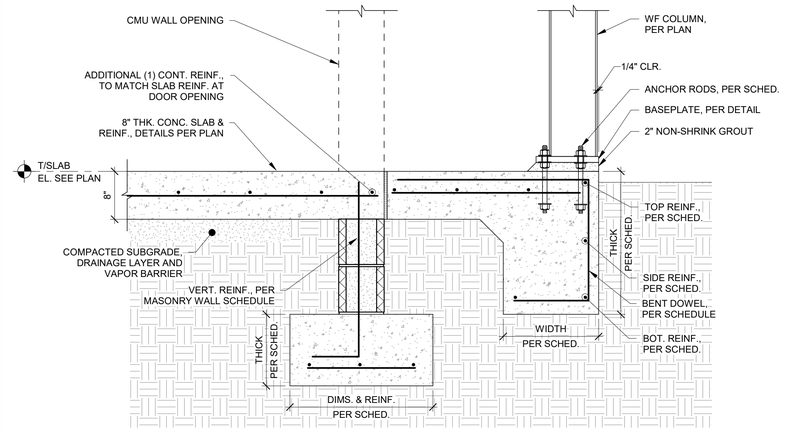
BLOWER BUILDING - STRUCTURAL SECTION

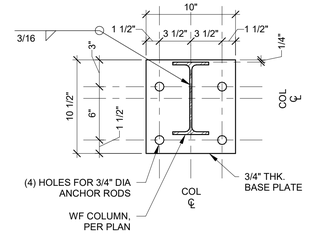
5S-6



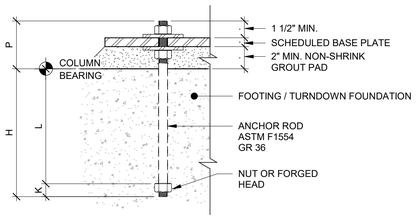
A
1" = 1'-0"
EXTERIOR CMU WALL FOUNDATION DETAIL



B
1" = 1'-0"
EXTERIOR STEEL COLUMN FOOTING

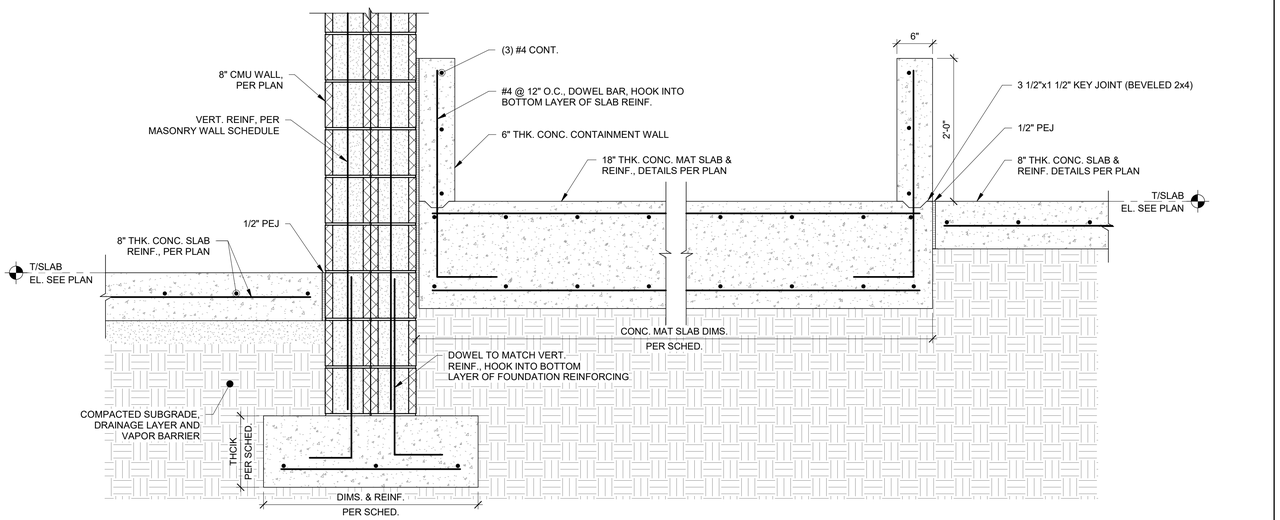


C
1 1/2" = 1'-0"
BASEPLATE DETAILS

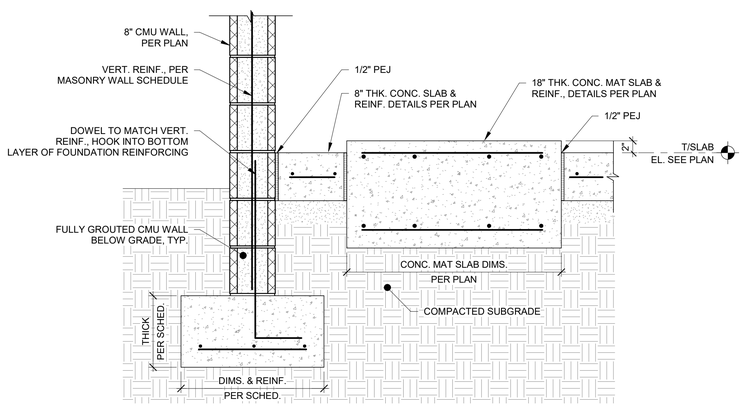


TYPICAL ANCHOR ROD SCHEDULE	
DIMENSIONS	TYPICAL
BASEPLATE THICKNESS	3/4"
BOLT Ø, d	3/4"
L	8"
H	10"
K	2"
P (MIN)	4 1/4"

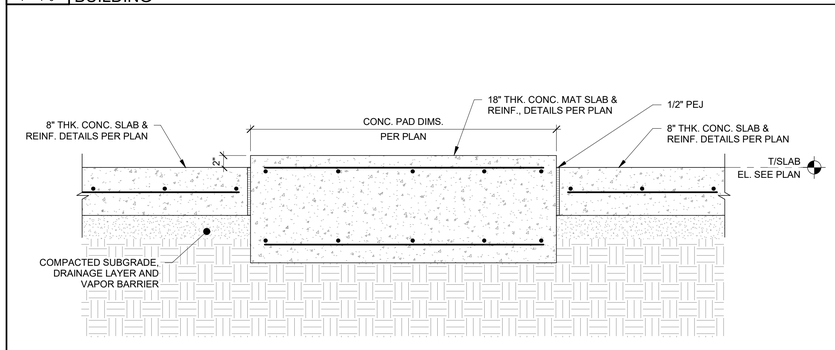
D
3" = 1'-0"
TYPICAL ANCHOR ROD DETAIL



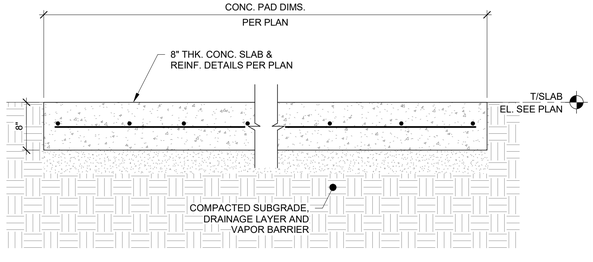
E
1" = 1'-0"
EXTERIOR CMU WALL FOUDATION DETAIL AT CHEMICAL BUILDING



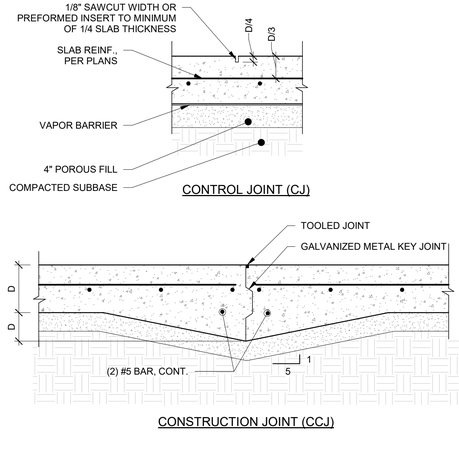
F
1" = 1'-0"
EXTERIOR CMU WALL FOUNDATION AT BLOWER BUILDING



G
1" = 1'-0"
BLOWER PAD DETAIL



H
1" = 1'-0"
DUMPSTER PAD DETAIL



J
1" = 1'-0"
TYPICAL SLAB ON GRADE DETAILS

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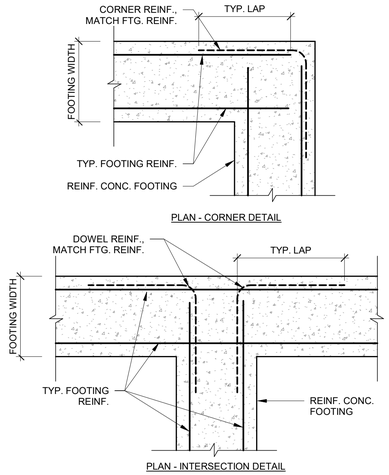
CHECKED BY	BKS

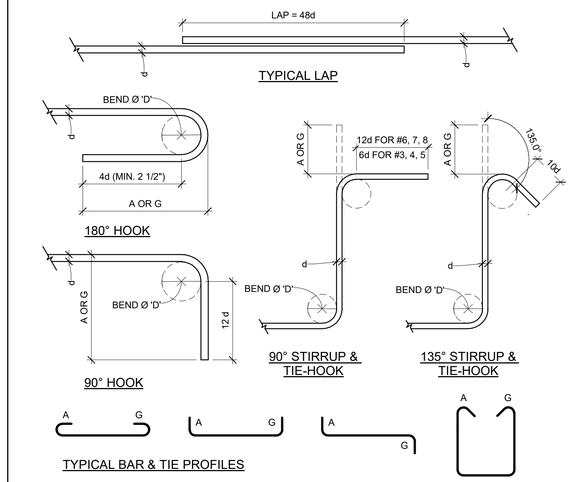
BUILDING STRUCTURAL DETAILS

5S-7



A — REINFORCEMENT AT INTERSECTIONS

3/4" = 1'-0"



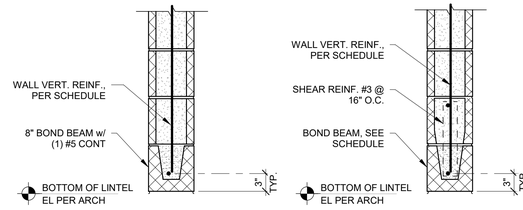
B — REINFORCING LAP AND HOOK LENGTHS

1" = 1'-0"

TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

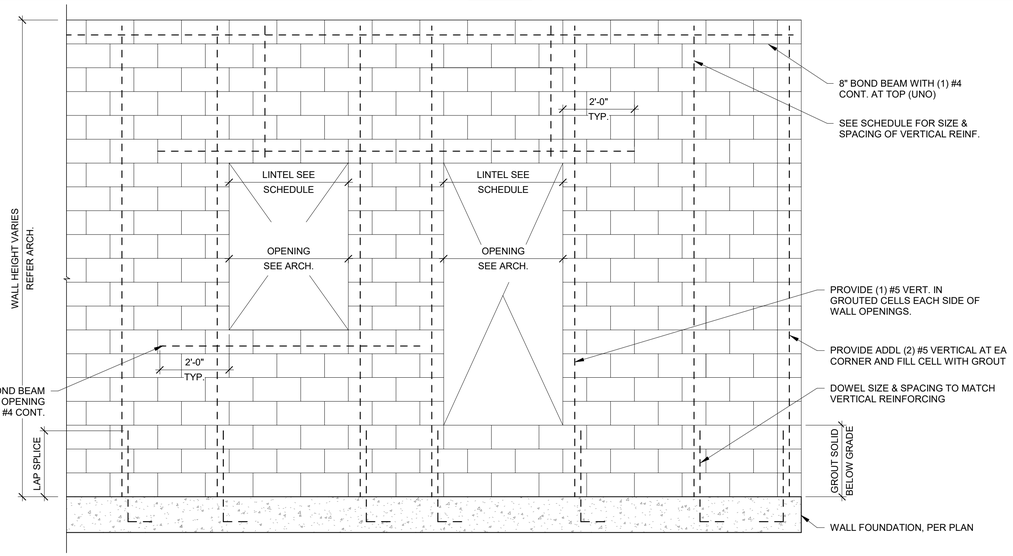
NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.



MASONRY LINTEL SCHEDULE		
LINTEL SECTION (NOM.)	MASONRY OPENING	HORIZ. REINF.
8" W. x 8" DEEP	UP TO 6'-0"	(1) #5
8" W. x 16" DEEP	6'-0" TO 12'-0"	(1) #5 TOP (1) #5 BOT.
8" W. x 16" DEEP	> 12'-0"	(1) #8 TOP (1) #8 BOT.

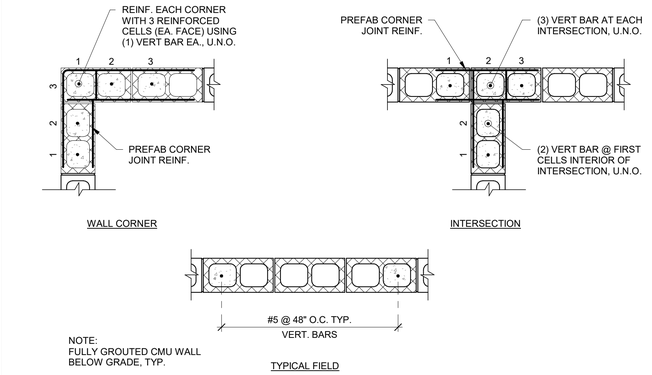
C — LINTEL SCHEDULE AND DETAIL

1" = 1'-0"



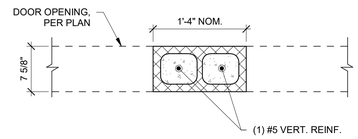
D — TYPICAL CMU WALL OPENING ELEVATION

1/2" = 1'-0"



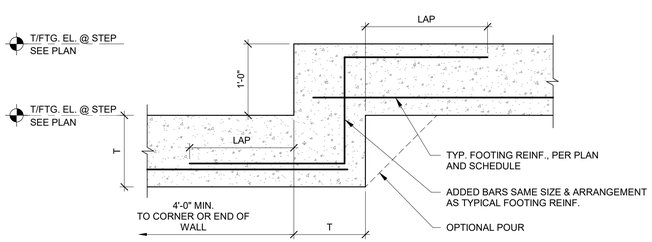
E — TYPICAL CMU WALL REINFORCEMENT DETAILS

3/4" = 1'-0"



F — CMU JAMB OPENING DETAIL

1" = 1'-0"



G — TYPICAL STEP FOOTING DETAIL

1" = 1'-0"

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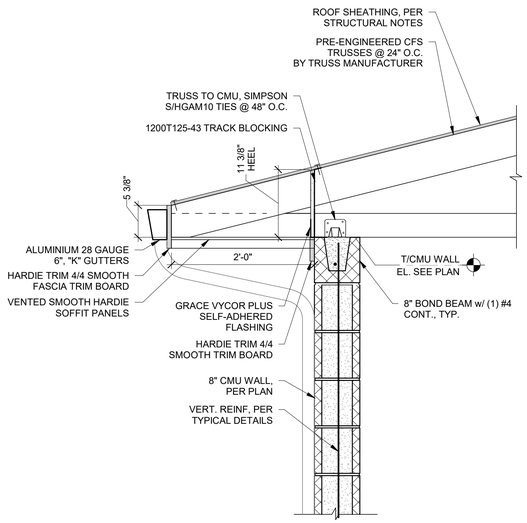
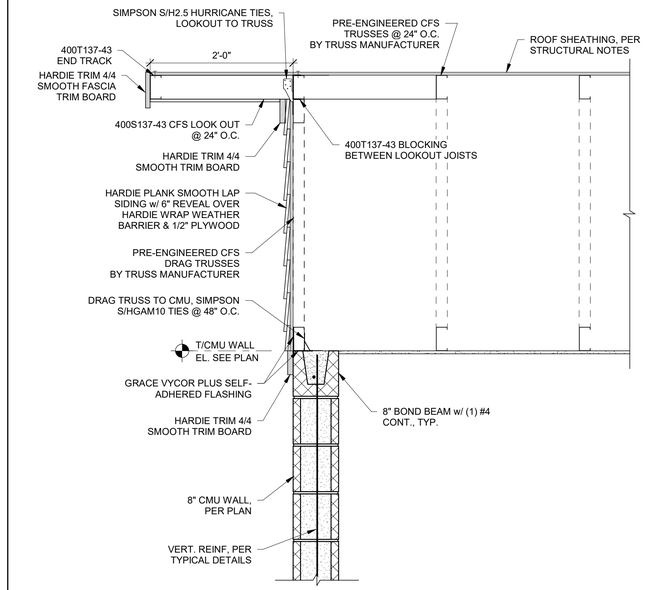
BUILDING STRUCTURAL DETAILS

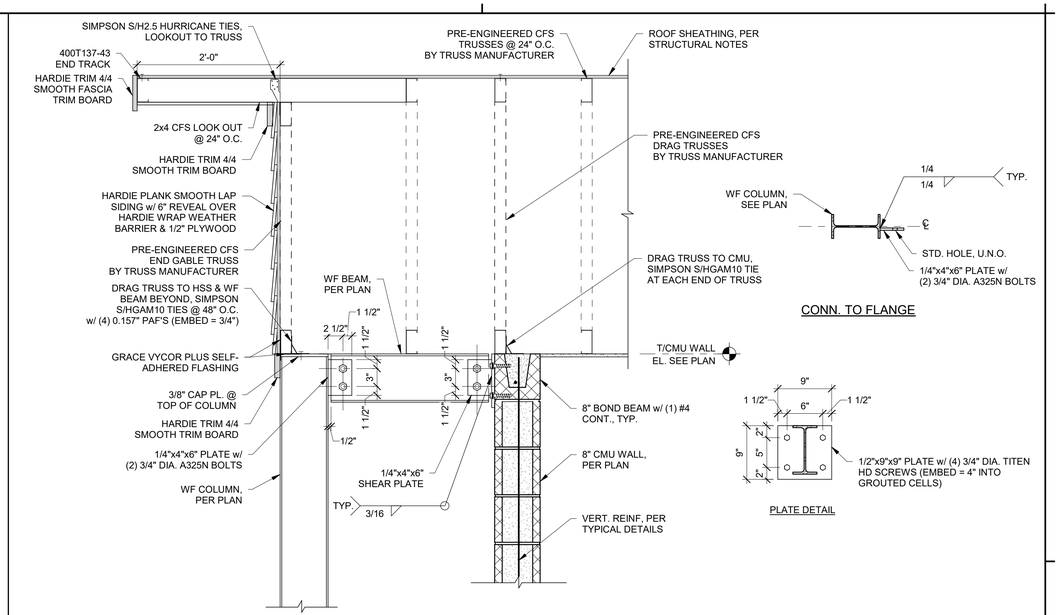
5S-8



A
1" = 1'-0"
ROOF TRUSS BEARING ON CMU WALL



B
1" = 1'-0"
GABLE WALL TRUSS DETAIL (LOOKOUT GREATER THAN 1'-0")



C
1" = 1'-0"
GABLE ROOF TRUSS AND STEEL BEAM CONNECTION DETAIL

D
1" = 1'-0"
CFS ROOF JOIST BEARING ON CMU WALL @ HIGH

E
1" = 1'-0"
CFS ROOF JOIST BEARING ON CMU WALL @ LOW

F
1" = 1'-0"
CFS ROOF JOIST DETAIL

G
1" = 1'-0"
CFS ROOF JOISTS PARALLEL TO CMU WALL

H
1" = 1'-0"
ROOF TRUSS BEARING ON WF BEAM

J
3/4" = 1'-0"
TYPICAL CMU RAKED WALL SECTION

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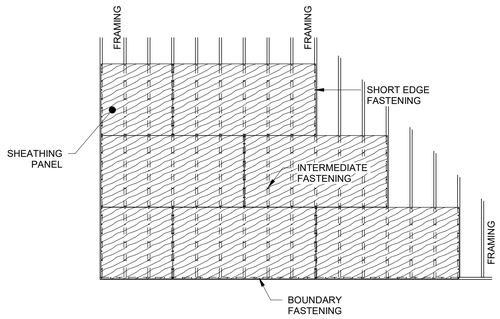
BUILDING STRUCTURAL DETAILS

5S-9

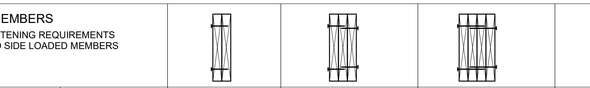
ROOF SHEATHING SCHEDULE	
USAGE:	ROOF
THICKNESS:	1/2 IN.
TYPE:	PLYWOOD
BOND CLASSIFICATION:	EXP. 1
PANEL GRADE:	SHEATHING
SPAN RATING:	32/16
BLOCKED/UNBLOCKED:	UNBLOCKED
FASTENER TYPE:	#10 TEK SCREWS
BOUNDARY FASTENER SPACING:	6 IN.
SHORT EDGE FASTENER SPACING:	6 IN.
LONG EDGE FASTENER SPACING:	N/A
INTERMEDIATE FASTENER SPACING:	12 IN.



UNBLOCKED

A
1/4" = 1'-0"
ROOF SHEATHING

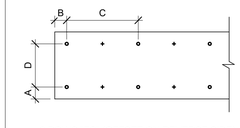
2x & LVL MEMBERS
MINIMUM FASTENING REQUIREMENTS
FOR TOP AND SIDE LOADED MEMBERS



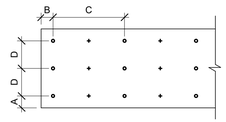
	MEMBER DEPTH	2 PLY	3 PLY	4 PLY	5 PLY
10d (0.128"x3") NAILS	7 1/4" ≤ d < 14"	3 ROWS @ 12" O.C.	3 ROWS @ 12" O.C. (ES)	--	--
	d ≥ 14"	4 ROWS @ 12" O.C.	4 ROWS @ 12" O.C. (ES)	--	--
16d (0.162"x3 1/2") NAILS	7 1/4" ≤ d < 14"	2 ROWS @ 12" O.C.	2 ROWS @ 12" O.C. (ES)	--	--
	d ≥ 14"	3 ROWS @ 12" O.C.	3 ROWS @ 12" O.C. (ES)	--	--
1/2" THROUGH BOLTS	d ≥ 7 1/4"	2 ROWS @ 24" O.C.	2 ROWS @ 24" O.C.	2 ROWS @ 24" O.C.	2 ROWS @ 24" O.C.
SDS 1/4"x 3 1/2" SCREWS	d ≥ 7 1/4"	2 ROWS @ 24" O.C.	2 ROWS @ 24" O.C. (ES)	--	--
SDS 1/4"x 6" SCREWS	d ≥ 7 1/4"	--	--	2 ROWS @ 24" O.C. (ES)	--
SDS 1/4"x 8" SCREWS	d ≥ 7 1/4"	--	--	--	2 ROWS @ 24" O.C. (ES)

FASTENER CLEARANCES FOR
MULTI-PLY MEMBERS

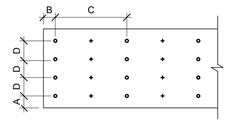
FASTENER	A	B		C		D
	MIN.	MIN.	MAX.	MIN.	MAX.	MIN.
10d & 16d NAILS	2"	2"	6"	4"	12"	3"
BOLTS AND SCREWS	2"	4"	12"	4"	24"	3"



2 ROWS "ES" (OFFSET ON REVERSE SIDE)



3 ROWS "ES" (OFFSET ON REVERSE SIDE)



4 ROWS "ES" (OFFSET ON REVERSE SIDE)

NOTES:
1. ALL FASTENERS MUST HAVE THE LENGTH FULLY EMBEDDED, BUT MUST NOT BE OVERDRIVEN, COUNTERSUNK, OR OVER- TIGHTENED.
2. BOLT HOLES ARE TO BE 1/16" MAX. DIAMETER LARGER THAN THE BOLTS. BOLTS MUST MEET OR EXCEED ASTM A 307. EVERY BOLT MUST EXTEND THROUGH THE FULL THICKNESS OF THE MEMBER. USE WASHERS NOT LESS THAN A STANDARD CUT WASHER UNDER THE HEAD AND NUT MEETING ANSI B 18.22.1.

B
1" = 1'-0"
MULTI-PLY FASTENING REQUIREMENTS

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M.E. SACK ENGINEERING

CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

BUILDING STRUCTURAL DETAILS

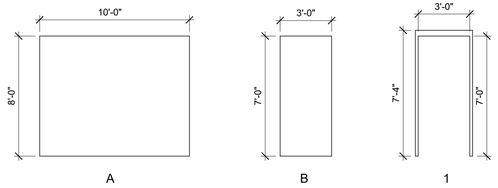
5S-10

DOOR SCHEDULE

DOOR NUMBER	DOOR LOCATION	DOORS						FRAME							LABEL	HDW. SET (NOTE 1)
		TYPE	SIZE			MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB	THR.		
			WIDTH	HEIGHT	THICK											
501	BUILDINGS	A	10'-0"	8'-0"	-	STL	PREFINISHED	-	-	-	-	A/5S-11	_	_	501	_
502	BUILDINGS	B	3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	H-1/5S-11	J-1/5S-11	_	45 MIN.	1"

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

DOOR FRAME TYPES:



A
Not To Scale

DOOR AND WINDOW SCHEDULES

ROOM FINISH SCHEDULE

KEY		FLOOR					BASE				WALLS				CEILING				NOTES
X		SEALED CONCRETE					NONE				PAINTED CMU -P1				PAINTED GYPSUM BD			HEIGHT	
NO.	NAME																		
	BELT PRESS BUILDING	X					X				X				X			15'-0"	
	CHEMICAL BUILDING	X					X				X				X			19'-4"	
	BLOWER ROOM	X					X				X				X			12'-0"	

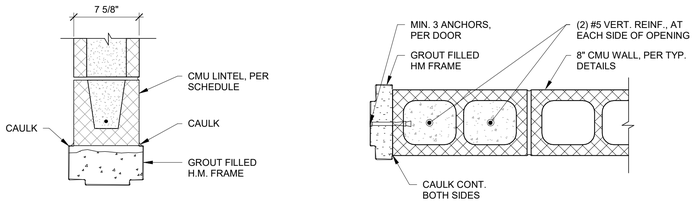
ROOM FINISH SCHEDULE

INTERIOR PAINT

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

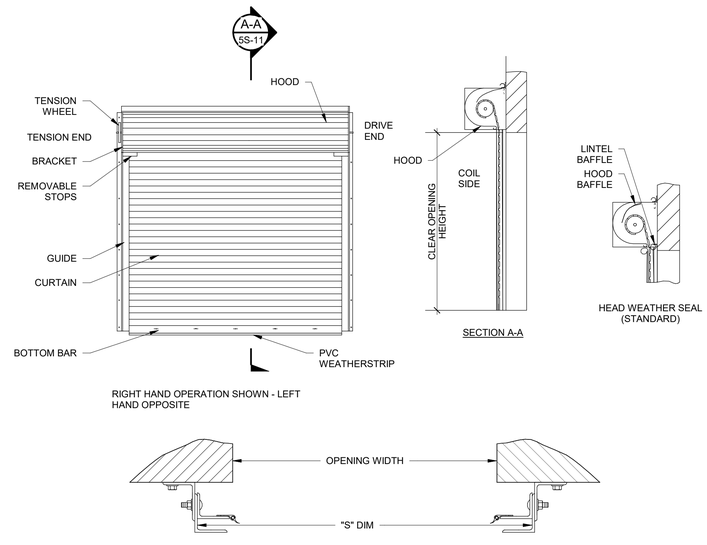
B
1" = 1'-0"

ROOM FINISH SCHEDULE



C
Not To Scale

DOOR AND LOUVER DETAILS



D
Not To Scale

ROLL UP DOOR DETAIL

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M.E. SACK ENGINEERING

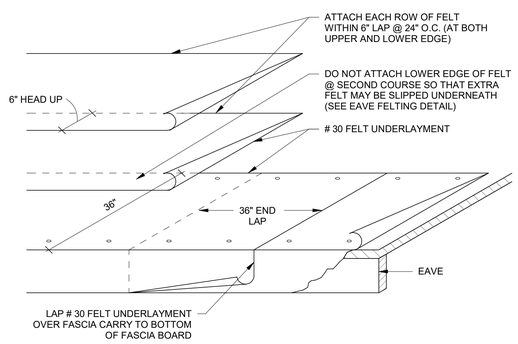
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

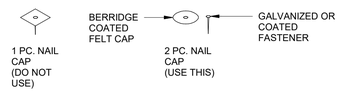
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

ARCHITECTURAL DETAILS

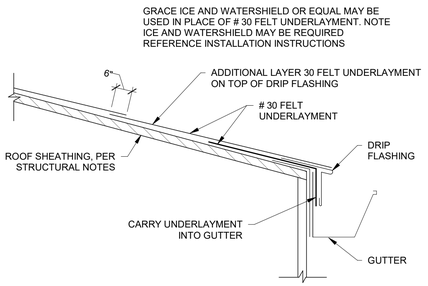
5S-11



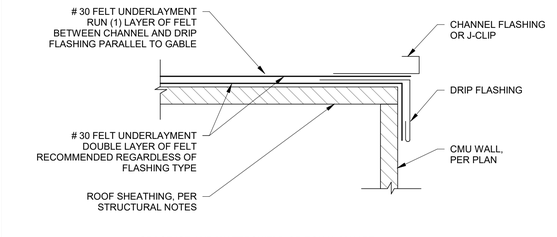
1. CLEAN ROOF SURFACE OF ALL OBJECTS WHICH MAY PUNCTURE OR TEAR FELT UNDERLAYMENT.
2. ATTACH FELT UNDERLAYMENT TO DECK BELOW USING COATED FELT CAPS. FASTENERS MUST BE TOTALLY FLUSH WITH SUBSTRATE. DO NOT USE ONE PIECE NAIL CAPS, AS THESE WILL "READ THROUGH" THE SURFACE.
3. DO NOT FASTEN LOWER EDGE OF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



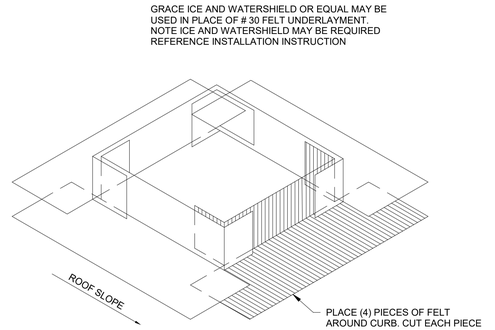
A Not To Scale — EAVE DETAIL



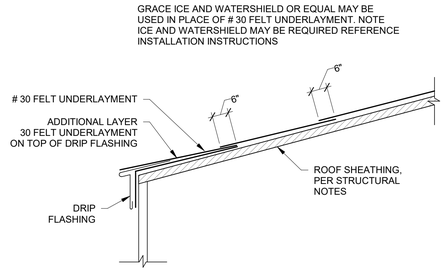
B Not To Scale — EAVE WITH GUTTER



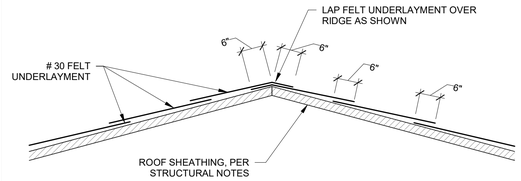
C Not To Scale — GABLE UNDERLAYMENT



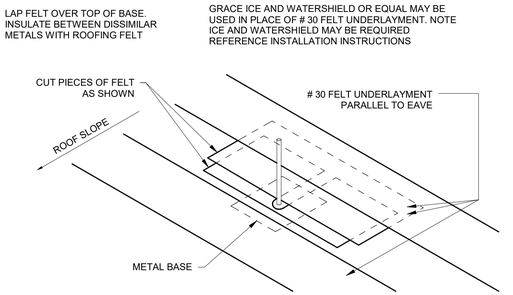
D Not To Scale — ROOF PENETRATION



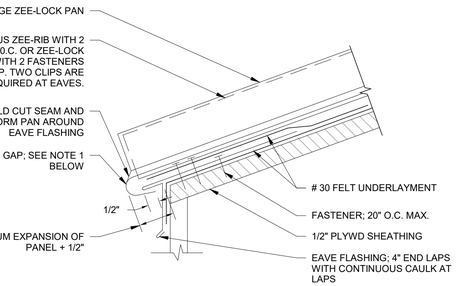
E Not To Scale — EAVE WITH GUTTER EAVE UNDERLAYMENT



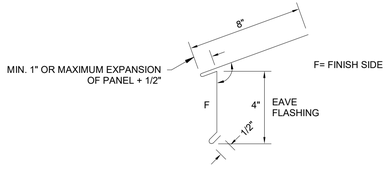
F Not To Scale — RIDGE UNDERLAYMENT



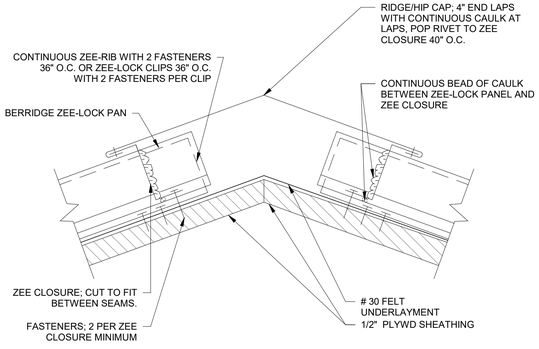
G Not To Scale — ROOF PENETRATION ROOF JACK UNDERLAYMENT



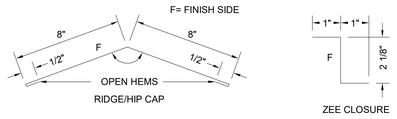
1. THE "GAP" BETWEEN EAVE FLASHING AND PANEL (SEE DETAIL ABOVE) CAN BE INCREASED TO ALLOW FOR LINEAR EXPANSION AND CONTRACTION OF PANELS. NOTE 1/2" OF PAN MUST BE ENGAGED WITH EAVE FLASHING WHEN PANEL HAS EXPANDED TO ITS MAXIMUM LENGTH.
2. GAP BETWEEN EAVE FLASHING AND PANEL MUST BE ADJUSTED TO SUIT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



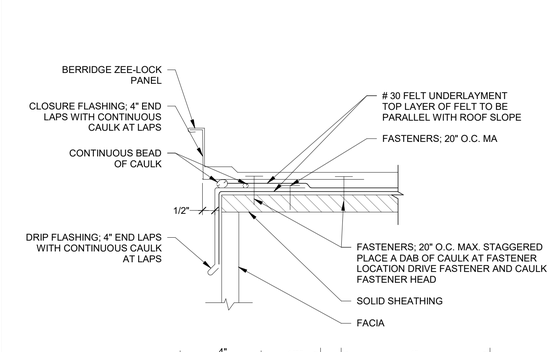
H Not To Scale — EAVE DETAIL

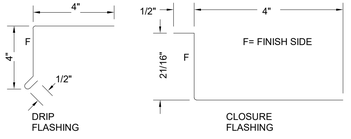


1.FIELD CUT ZEE CLOSURE TO FIT BETWEEN PANEL SEAMS FOR RIDGE

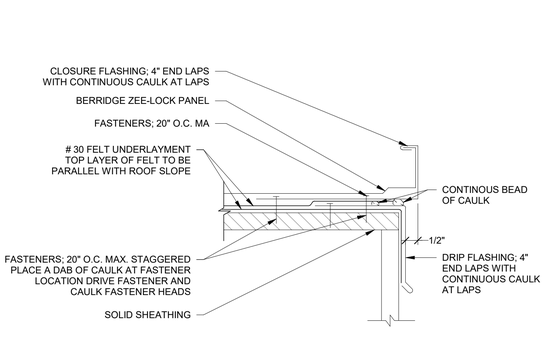


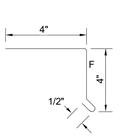
J Not To Scale — .EAVE WITH GUTTER EAVE UNDERLAYMENT

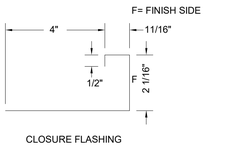




K Not To Scale — GABLE DETAIL RIGHT SIDE CLOSURE FLASHING







L Not To Scale — GABLE DETAIL RIGHT SIDE CLOSURE FLASHING

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M.E. SACK ENGINEERING

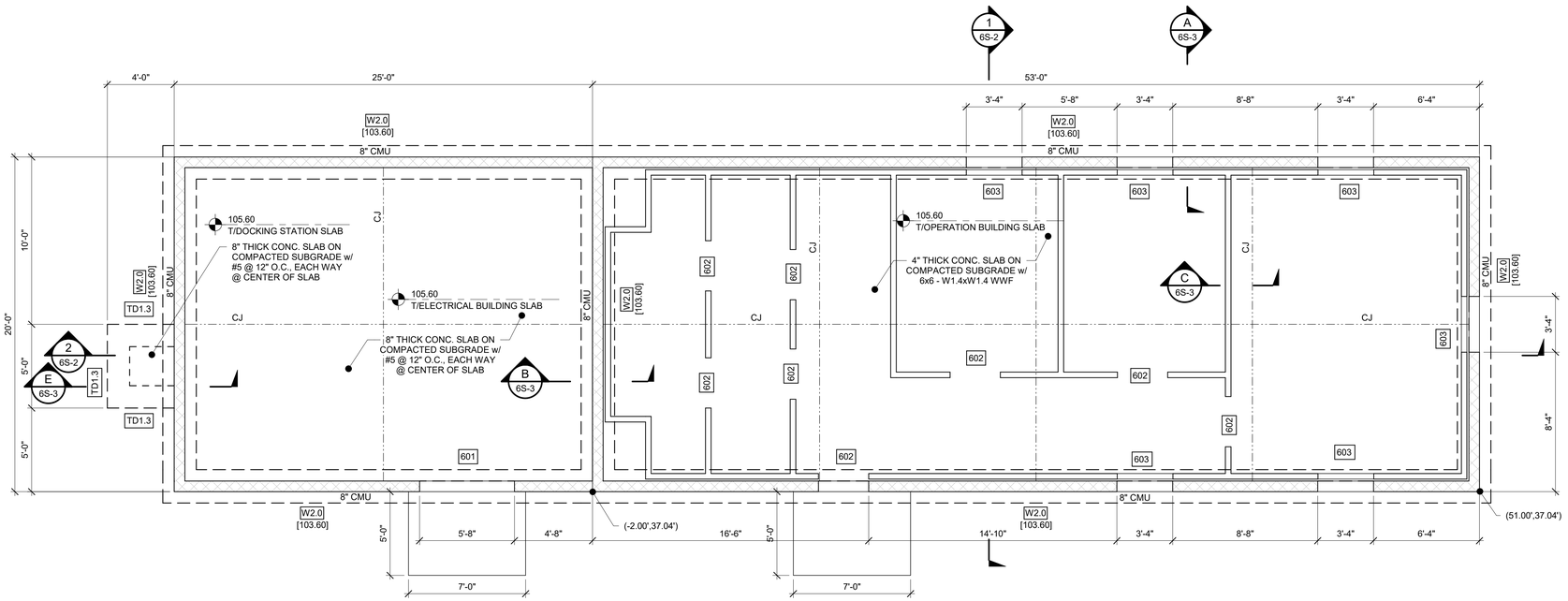
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

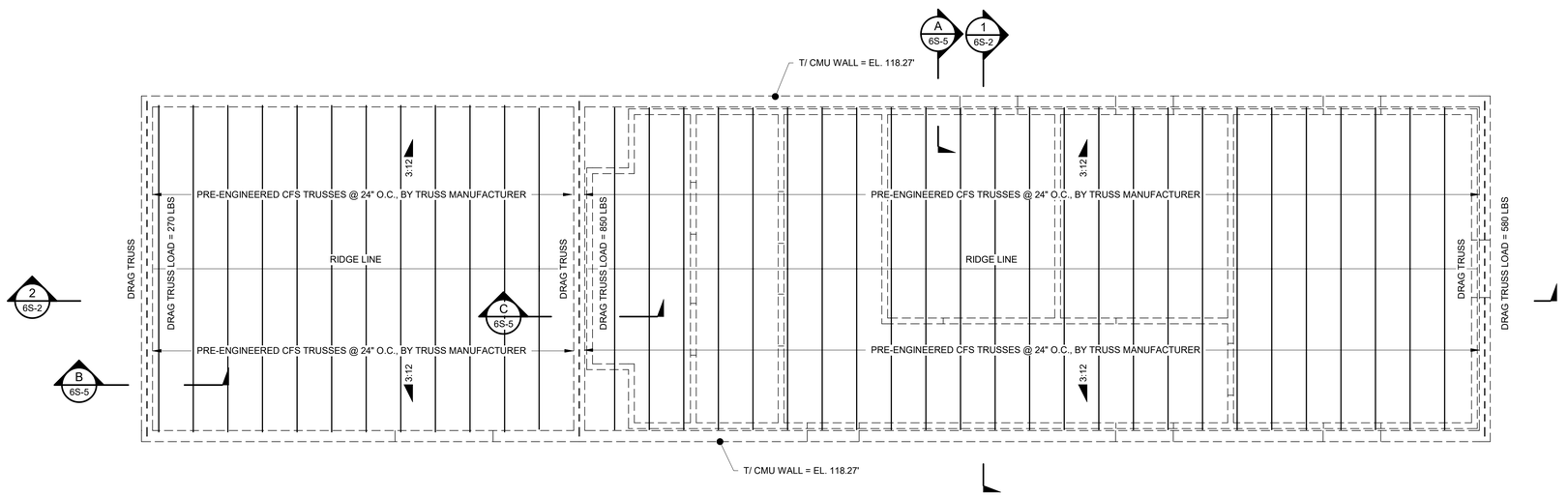
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

ARCHITECTURAL DETAILS

5S-12



1 OPERATION/ ELECTRICAL BUILDING- FOUNDATION AND SLAB PLAN
1/4" = 1'-0"



2 OPERATION/ ELECTRICAL BUILDING - ROOF FRAMING PLAN
1/4" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

WALL FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
W2.0	2'-0" x CONT. x 12" THICK.	(3) #5 CONT. & #5 @ 12" O.C., BOTTOM

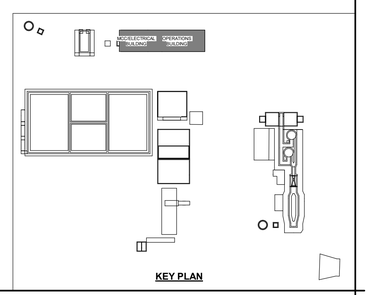
SLAB FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
TD1.3	1'-4" x CONT. x 24" THICK.	BOT: (2)#5 SIDE: (1)#5 CONT. TOP : (1)#5 CONT. BENT DOWEL: #5 @ 18" O.C.

MASONRY WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. JOINT REINF.	
		SIZE	SPACING	TYPE	VERT. SPACING
8" CMU	8"	#5	16" O.C	LADDER	48" O.C

NOTE:
1. SINGLE LAYER VERT. REINFORCING TO BE @ CENTERLINE OF WALL, UNO.
2. PROVIDE (2) #4 VERT. IN GROUTED CELLS EACH SIDE OF WALL OPENING.
3. FULLY GROUTED CMU WALLS BELOW GRADE, TYP.

PLAN LEGEND

	FOUNDATION EXTENTS
F#.# [±FT-IN]	INDICATES SHALLOW COLUMN FOUNDATION - SEE FOUNDATION SCHEDULE
W#.# [±FT-IN]	INDICATES SHALLOW WALL STRIP FOUNDATION - SEE FOUNDATION SCHEDULE
CJ	SLAB CONTROL JOINT
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CMU SIZE	CMU WALL - THICKNESS AS MARKED
	COLD FORMED WALL ABOVE- SIZE AS INDICATED
	INTERIOR WALL STUDS: 400S13743 @ 16" O.C.
	ROOF JOIST - SIZE AS NOTED
	BEAM/GIRDER - SIZE AS MARKED
#:12	ROOF SLOPE AND APPROXIMATE SPRING POINT ELEVATION



KEY PLAN

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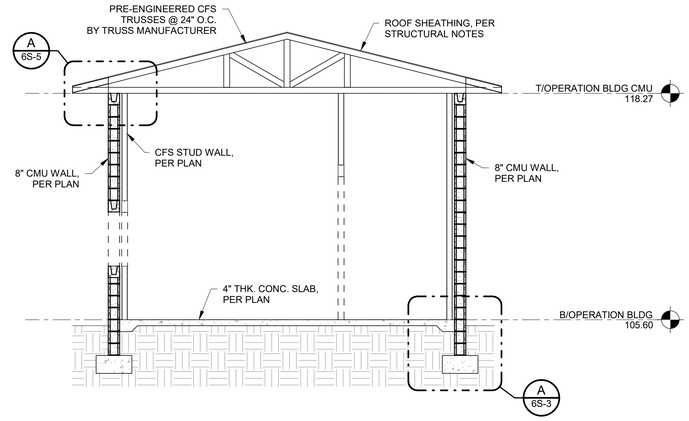
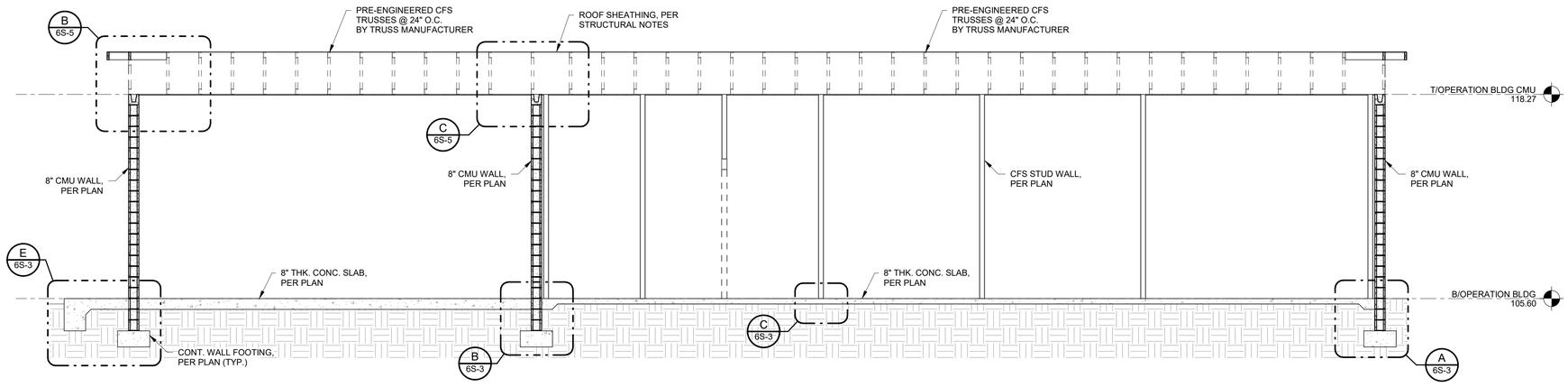
OPERATION/ ELECTRICAL BUILDING - FOUNDATION AND FRAMING PLAN

6S-1



1 | 1/4" = 1'-0" | OPERATION / ELECTRICAL BUILDING- SECTION 1



2 | 1/4" = 1'-0" | OPERATION / ELECTRICAL BUILDING- SECTION 2

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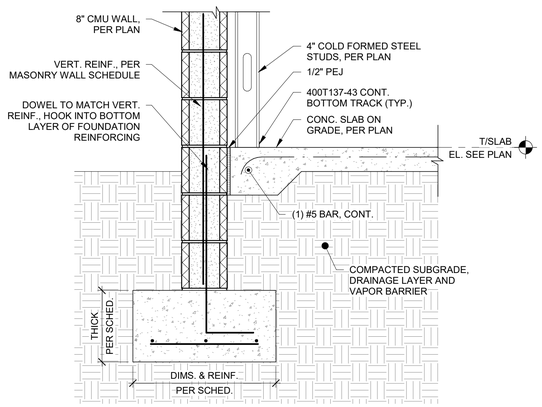
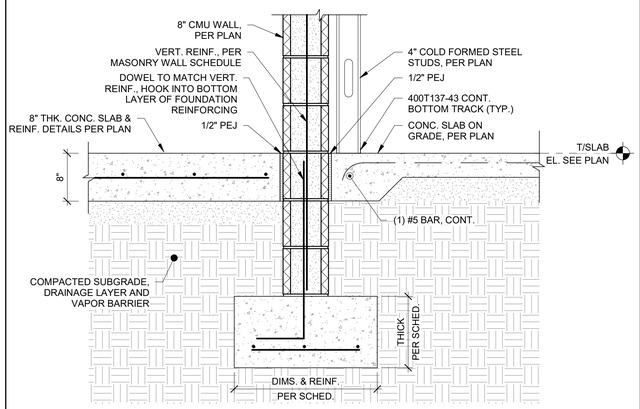
CHECKED BY	BKS

OPERATION/ ELECTRICAL BUILDING - STRUCTURAL SECTION

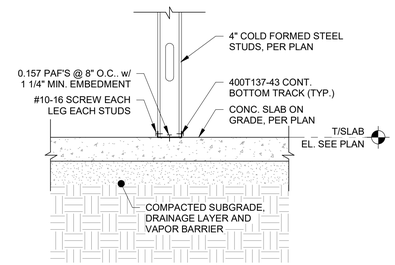
6S-2



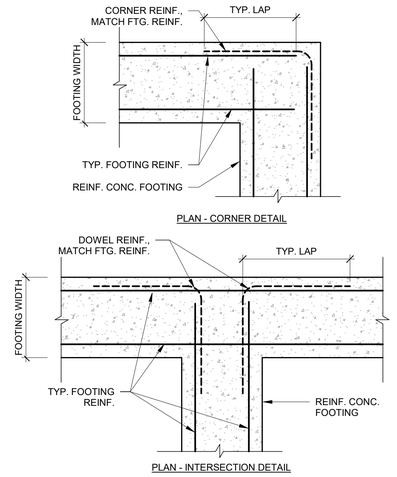
A
1" = 1'-0"
EXTERIOR CMU WALL FOUNDATION DETAIL



B
1" = 1'-0"
INTERIOR CMU WALL FOUNDATION DETAIL



C
1" = 1'-0"
INTERIOR CFS WALL DETAIL



D
3/4" = 1'-0"
REINFORCEMENT AT INTERSECTIONS

E
1" = 1'-0"
EXTERIOR WALL FOUNDATION AND DOCKING TURNDOWN SLAB DETAIL

F
1" = 1'-0"
REINFORCING LAP AND HOOK LENGTHS

TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

CONTROL JOINT (CJ)

CONSTRUCTION JOINT (CCJ)

G
1" = 1'-0"
TYPICAL SLAB ON GRADE DETAILS

H
3/4" = 1'-0"
COLD-FORMED STEEL SILL ANCHOR DETAIL

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M.E. SACK ENGINEERING

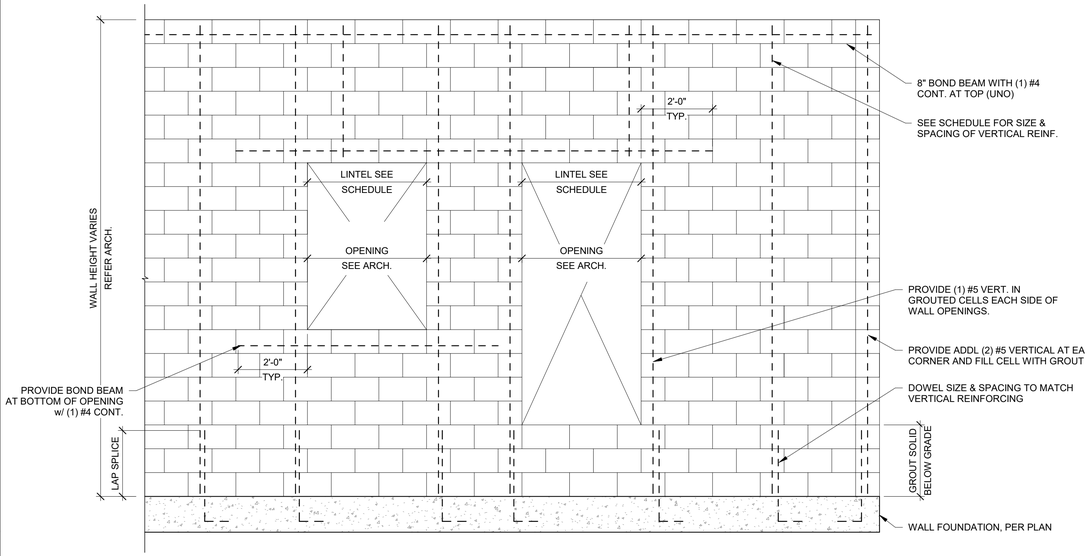
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

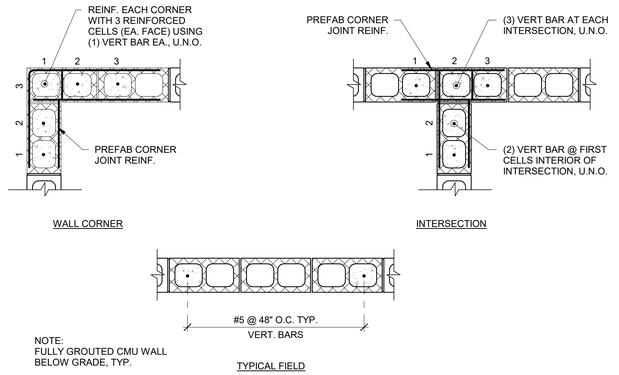
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

OPERATION/ ELECTRICAL BUILDING-STRUCTURAL DETAILS

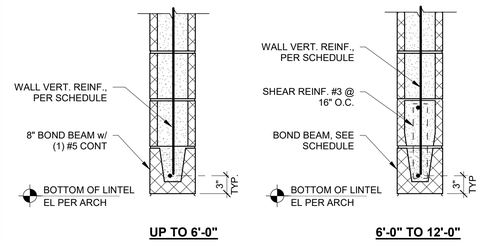
6S-3



A
1/2" = 1'-0"
TYPICAL CMU WALL OPENING ELEVATION



B
3/4" = 1'-0"
TYPICAL CMU WALL REINFORCEMENT DETAILS



MASONRY LINTEL SCHEDULE		
LINTEL SECTION (NOM.)	MASONRY OPENING	HORIZ. REINF.
8" W. x 8" DEEP	UP TO 6'-0"	(1) #5
8" W. x 16" DEEP	6'-0" TO 12'-0"	(1) #5 TOP (1) #5 BOT.

C
1" = 1'-0"
LINTEL SCHEDULE AND DETAIL

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M.E. SACK ENGINEERING

CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
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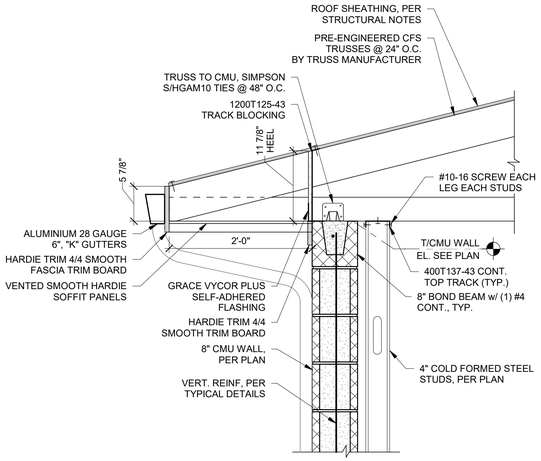
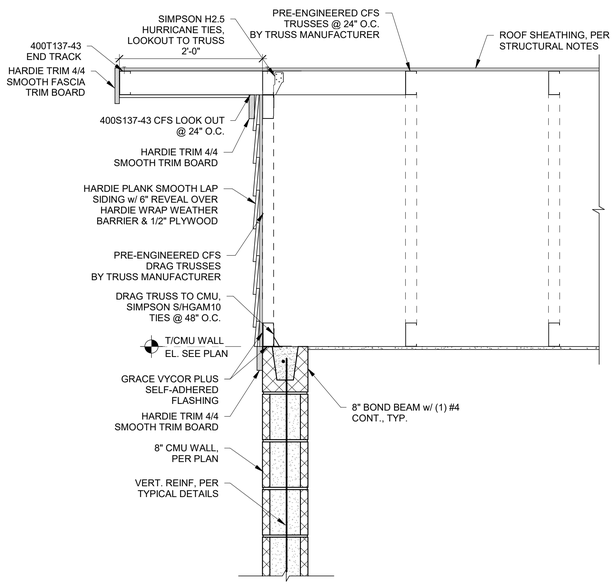
OPERATION/ ELECTRICAL BUILDING- STRUCTURAL DETAILS

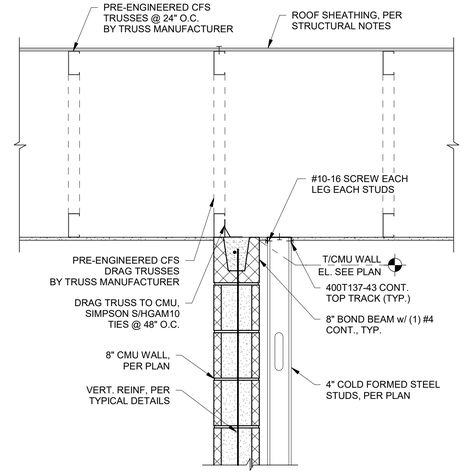
6S-4



A
1" = 1'-0"
ROOF TRUSS BEARING ON CMU WALL

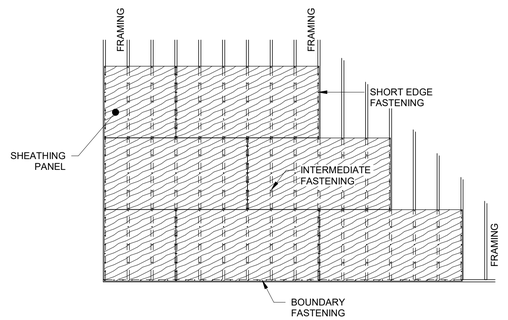


B
1" = 1'-0"
GABLE WALL TRUSS DETAIL (LOOKOUT GREATER THAN 1'-0")



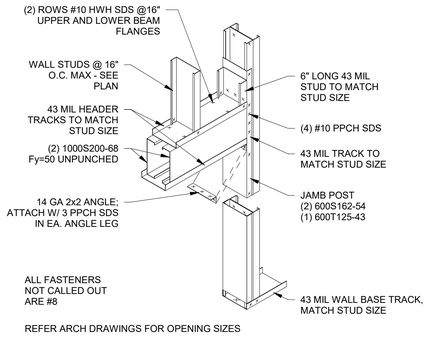
C
1" = 1'-0"
ROOF TRUSS BEARING AT INTERIOR CMU WALL

ROOF SHEATHING SCHEDULE	
USAGE:	ROOF
THICKNESS:	1/2 IN.
TYPE:	PLYWOOD
BOND CLASSIFICATION:	EXP. 1
PANEL GRADE:	SHEATHING
SPAN RATING:	32/16
BLOCKED/UNBLOCKED:	UNBLOCKED
FASTENER TYPE:	#10 TEK SCREWS
BOUNDARY FASTENER SPACING:	6 IN.
SHORT EDGE FASTENER SPACING:	6 IN.
LONG EDGE FASTENER SPACING:	N/A
INTERMEDIATE FASTENER SPACING:	12 IN.

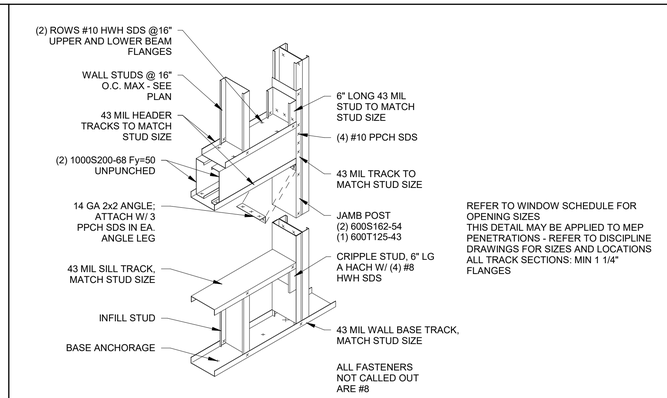


UNBLOCKED

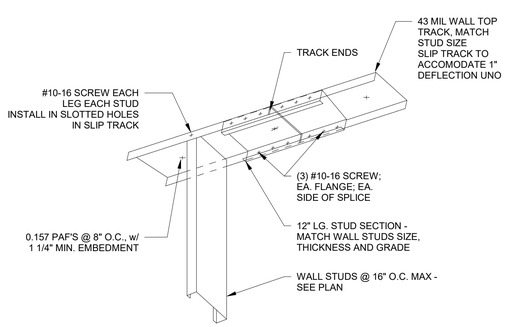
D
1/4" = 1'-0"
ROOF SHEATHING



E
3/4" = 1'-0"
TYPICAL DOOR OPENING - HEADER



F
3/4" = 1'-0"
TYPICAL WINDOW OPENING



G
3/4" = 1'-0"
TOP TRACK SPLICE/ STUD DETAIL

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M.E. SACK ENGINEERING

CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

OPERATION/ ELECTRICAL BUILDING- STRUCTURAL DETAILS

6S-5

DOOR SCHEDULE

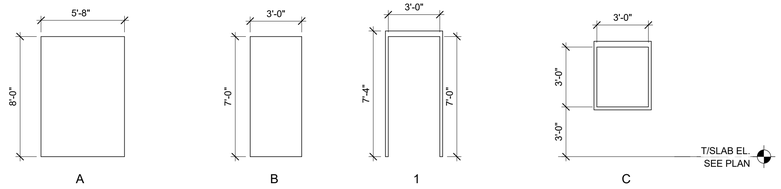
DOOR NUMBER	DOOR LOCATION	DOORS						FRAME							LABEL	HDW. SET (NOTE 1)
		TYPE	SIZE WIDTH	SIZE HEIGHT	SIZE THICK	MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB	THR.		
601	OPERATION BUILDING	A	5'-8"	8'-0"	-	STL	PREFINISHED	-	-	-	-	A/6S-6	"	"	501	"
602	OPERATION BUILDING	B	3'-0"	7'-0"	1-3/4"	FIBERGLASS	PAINT	7-1/4"	1	H.M.	PAINT	H-1/6S-6	J-1/6S-6	"	45 MIN.	1"

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

WINDOW SCHEDULE

DOOR NUMBER	DOOR LOCATION	DOORS						FRAME							LABEL
		TYPE	SIZE WIDTH	SIZE HEIGHT	SIZE THICK	MAT'L	FINISH	SIZE	TYPE	MATERIAL	FINISH	HEAD	JAMB	THR.	
603	OPERATION BUILDING	C	3'-0"	3'-0"	1 3/4"	FIBREGLASS	PAINT	7 1/4"	C	H.M.	PAINT	H-1/6S-6	J-1/6S-6		603

DOOR AND WINDOW FRAME TYPES:



A Not To Scale — DOOR AND WINDOW SCHEDULES

ROOM FINISH SCHEDULE

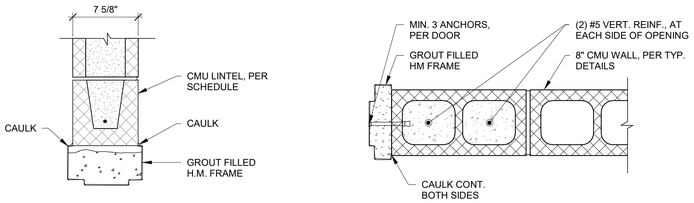
KEY	FLOOR					BASE					WALLS					CEILING					NOTES
X																					
	SEALED CONCRETE					NONE					PAINTED CMU -P1					PAINTED GYPSUM BD				HEIGHT	
NO. NAME																					
OPERATION BUILDING	X					X					X					X				12'-8"	

ROOM FINISH SCHEDULE

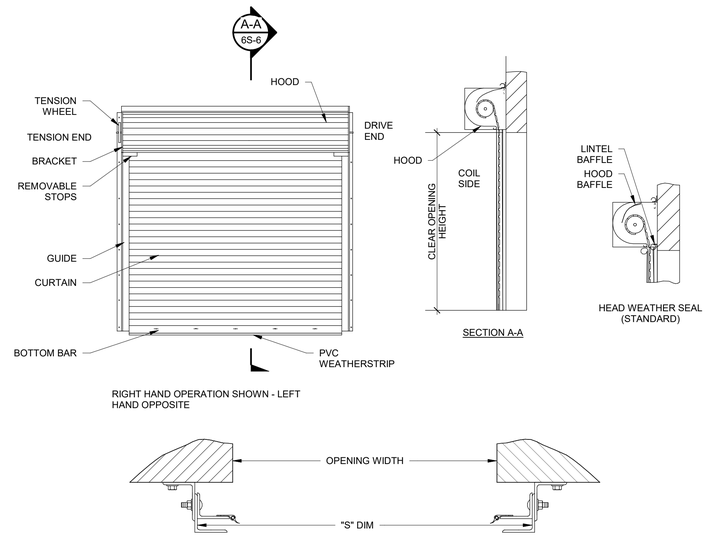
INTERIOR PAINT

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

B 1" = 1'-0" — ROOM FINISH SCHEDULE



C Not To Scale — DOOR AND LOUVER DETAILS



MASONRY/CONCRETE/WOOD JAMB DETAILS

D Not To Scale — ROLL UP DOOR DETAIL

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PROJECT NO.	24.206
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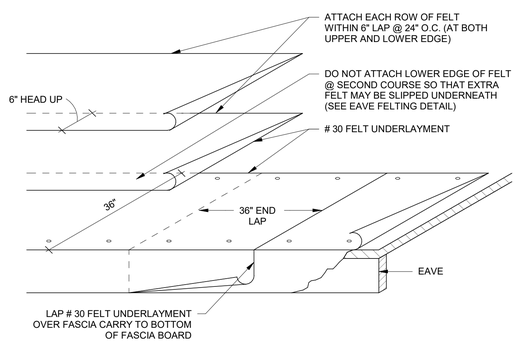
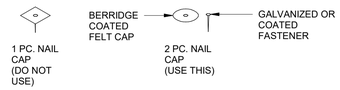
CHECKED BY	BKS

ARCHITECTURAL DETAILS

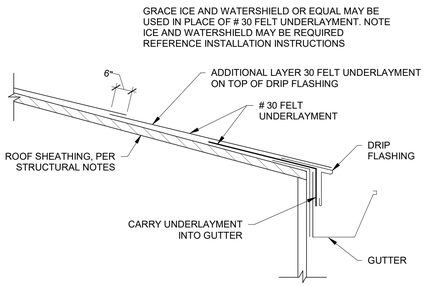
6S-6



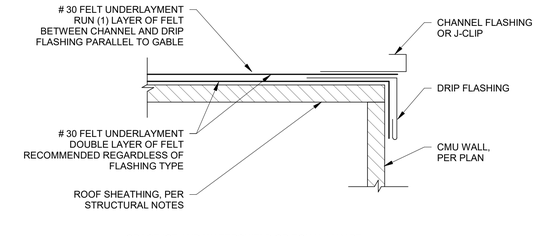
1. CLEAN ROOF SURFACE OF ALL OBJECTS WHICH MAY PUNCTURE OR TEAR FELT UNDERLAYMENT.
2. ATTACH FELT UNDERLAYMENT TO DECK BELOW USING COATED FELT CAPS. FASTENERS MUST BE TOTALLY FLUSH WITH SUBSTRATE. DO NOT USE ONE PIECE NAIL CAPS, AS THESE WILL "READ THROUGH" THE SURFACE.
3. DO NOT FASTEN LOWER EDGE OF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



A Not To Scale — EAVE DETAIL

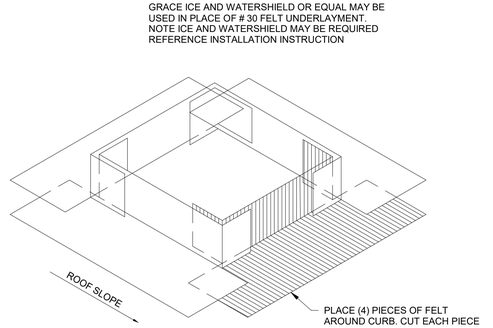


B Not To Scale — EAVE WITH GUTTER

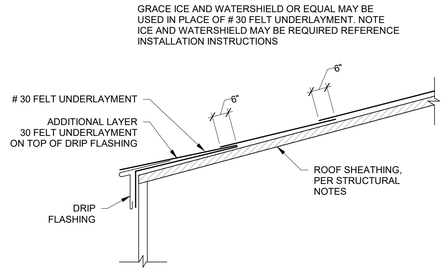


GRACE ICE AND WATERSHIELD OR EQUAL MAY BE USED IN PLACE OF # 30 FELT UNDERLAYMENT. NOTE ICE AND WATERSHIELD MAY BE REQUIRED REFERENCE INSTALLATION INSTRUCTIONS

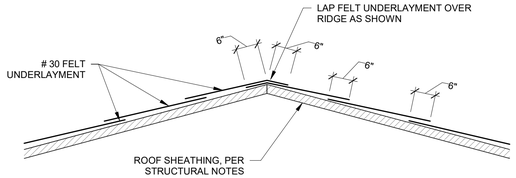
C Not To Scale — GABLE UNDERLAYMENT



D Not To Scale — ROOF PENETRATION



E Not To Scale — EAVE WITH GUTTER EAVE UNDERLAYMENT



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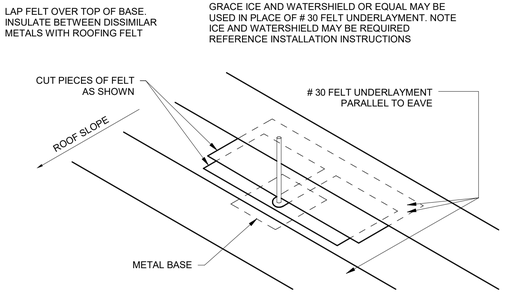
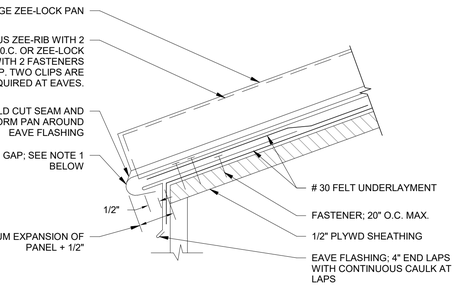
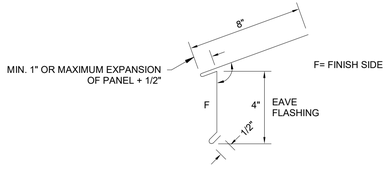
F Not To Scale — RIDGE UNDERLAYMENT



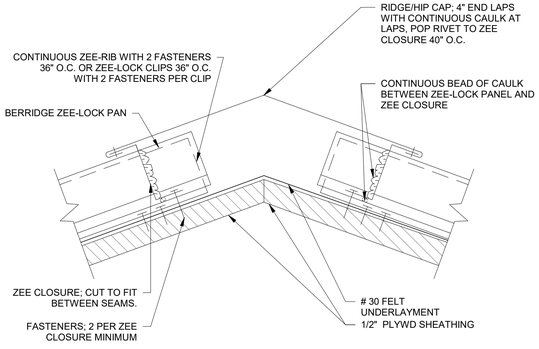
G Not To Scale — ROOF PENETRATION ROOF JACK UNDERLAYMENT



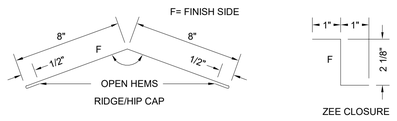
1. THE "GAP" BETWEEN EAVE FLASHING AND PANEL (SEE DETAIL ABOVE) CAN BE INCREASED TO ALLOW FOR LINEAR EXPANSION AND CONTRACTION OF PANELS. NOTE 1/2" OF PAN MUST BE ENGAGED WITH EAVE FLASHING WHEN PANEL HAS EXPANDED TO ITS MAXIMUM LENGTH.
2. GAP BETWEEN EAVE FLASHING AND PANEL MUST BE ADJUSTED TO SUIT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



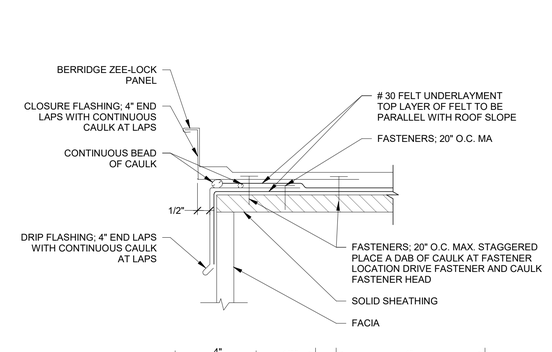
H Not To Scale — EAVE DETAIL

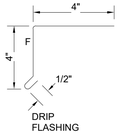


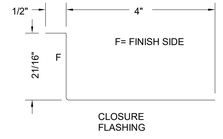
1.FIELD CUT ZEE CLOSURE TO FIT BETWEEN PANEL SEAMS FOR RIDGE



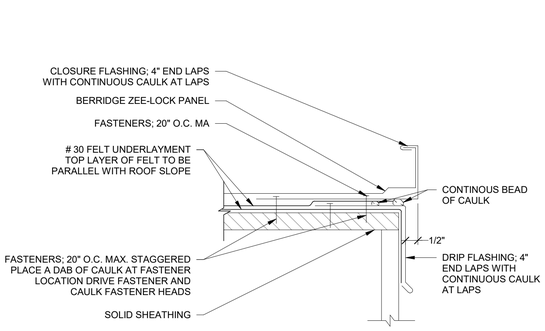
J Not To Scale — .EAVE WITH GUTTER EAVE UNDERLAYMENT

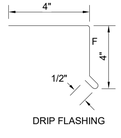


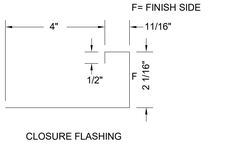




K Not To Scale — GABLE DETAIL RIGHT SIDE CLOSURE FLASHING







L Not To Scale — GABLE DETAIL RIGHT SIDE CLOSURE FLASHING

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(912) 590-0542
SAPPSTRUCTURAL.COM

GEORGIA REGISTERED 10/11/24 No. SE000802 STRUCTURAL ENGINEER M. BRIAN K. SAPP

REVISIONS

#	DATE	DESCRIPTION

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M.E. SACK ENGINEERING

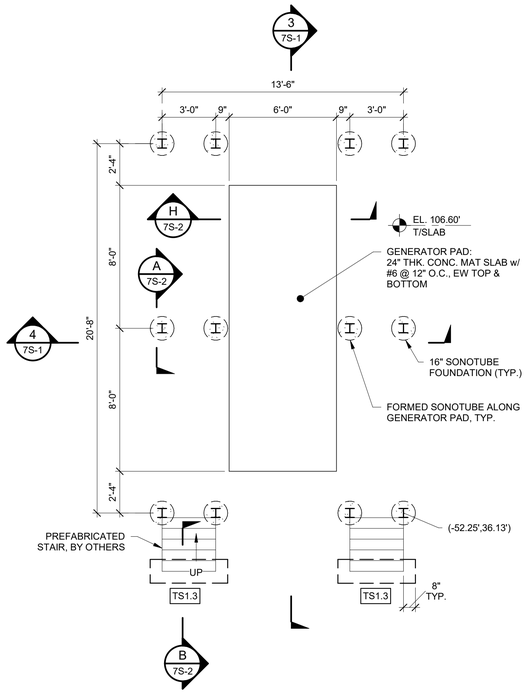
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST, PEMBROKE, GA 31321

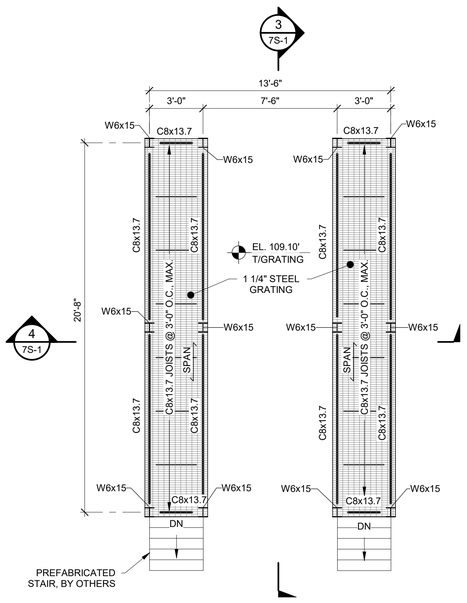
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

ARCHITECTURAL DETAILS

6S-7



1 1/4" = 1'-0" POWER GENERATOR PLATFORM FOUNDATION PLAN



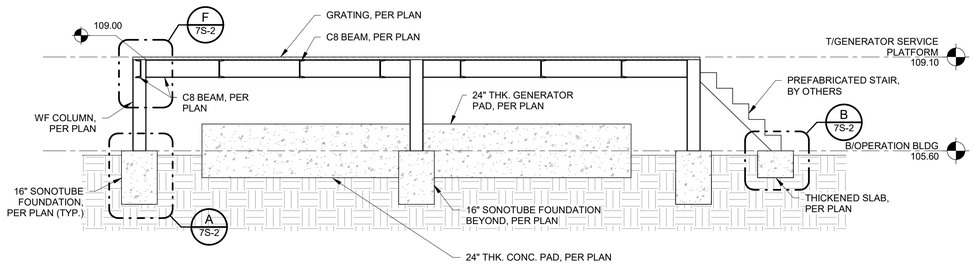
2 1/4" = 1'-0" POWER GENERATOR PLATFORM FRAMING PLAN

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

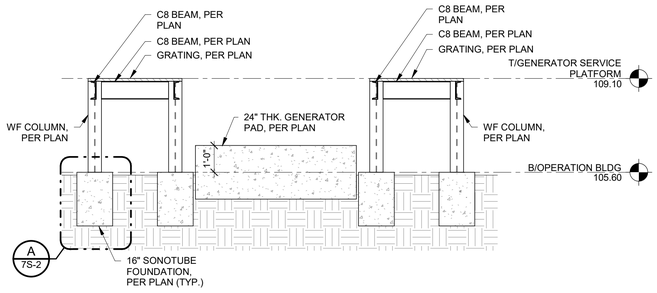
SLAB FOUNDATION SCHEDULE		
TAG	FOOTING SIZE	REINFORCEMENT
TS1.3	1'-4" x CONT. x 12" THICK.	BOT: (2) #5 CONT. U-BAR: #5 @ 18" O.C.

PLAN LEGEND

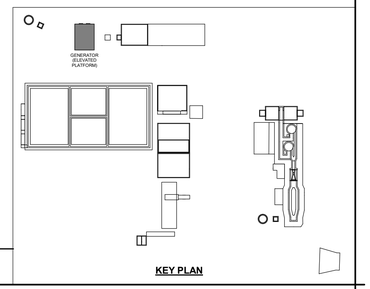
	FOUNDATION EXTENTS
F## [±FT-IN]	INDICATES SHALLOW COLUMN FOUNDATION - SEE FOUNDATION SCHEDULE
T##	INDICATES THICKENED SLAB FOUNDATION - SEE SCHEDULE
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
	STEEL JOIST - SIZE AS MARKED ON PLANS
	BEAM/GIRDER - SIZE AS MARKED
I	WF COLUMN - SIZE AS MARKED ON PLANS
	PLATFORM SHALL HAVE 1 1/4" (GW-125) STEEL GRATING, STANDARD DUTY WELDED BAR GRATING WITH 1 1/4" x 3/16" BEARING BARS AT 1 3/16" SPACING, CROSS BARS AT 4" SPACING. GRATING PRODUCTS SHALL BE BY MCNICHOLS CO. OR APPROVED EQUAL.
	16" SONOTUBE FOUNATION x 24" DEEP



3 3/8" = 1'-0" BACKUP POWER GENERATOR PLATFORM - SECTION 1



4 3/8" = 1'-0" BACKUP POWER GENERATOR PLATFORM - SECTION 2



KEY PLAN

SAPP STRUCTURAL
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601 EAST 69th STREET
SAVANNAH, GA 31405
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GEORGIA REGISTERED 10/11/24 No. SE000802 STRUCTURAL ENGINEER BRIAN K. SKPP

REVISIONS

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M.E. SACK ENGINEERING

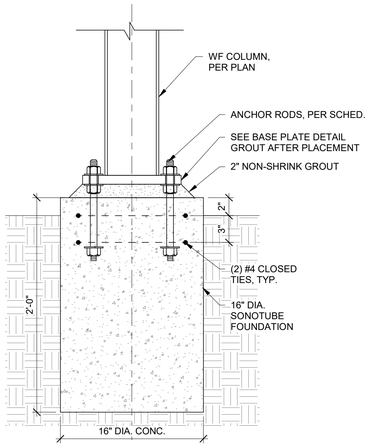
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

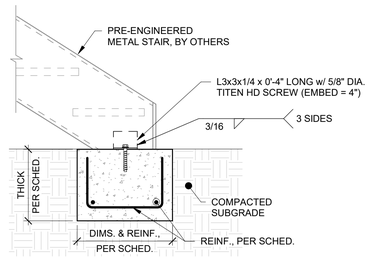
PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	RP
CHECKED BY	BKS

POWER GENERATOR PLATFORM PLANS, SECTION AND DETAILS

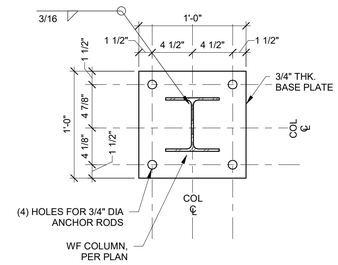
7S-1



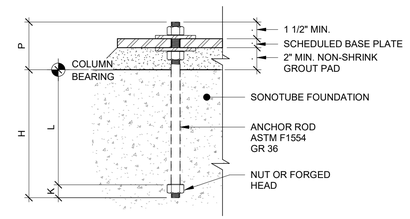
A — 1 1/2" = 1'-0" — WF COLUMN FOOTING DETAIL



B — 1" = 1'-0" — EXISTING STAIR FOUNDATION DETAIL

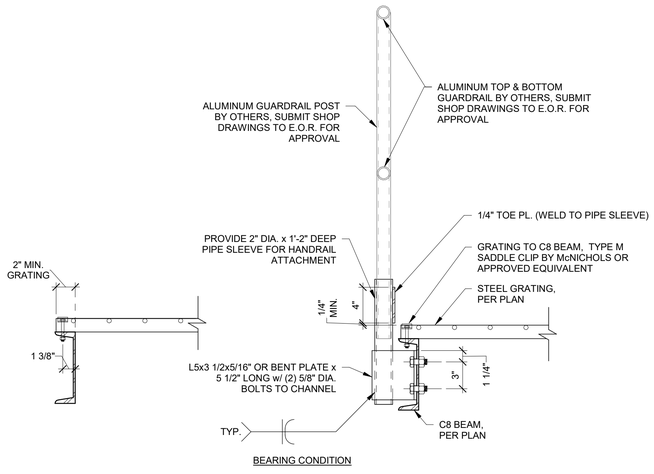


C — 1 1/2" = 1'-0" — BASEPLATE DETAILS

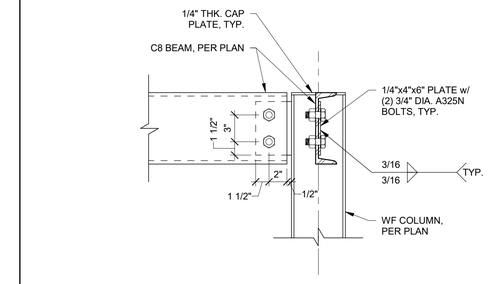


TYPICAL ANCHOR ROD SCHEDULE	
DIMENSIONS	TYPICAL
BASEPLATE THICKNESS	3/4"
BOLT Ø, d	3/4"
L	8"
H	10"
K	2"
P (MIN)	4 1/4"

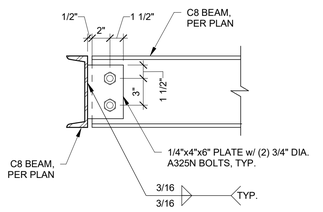
D — 3" = 1'-0" — TYPICAL ANCHOR ROD DETAIL



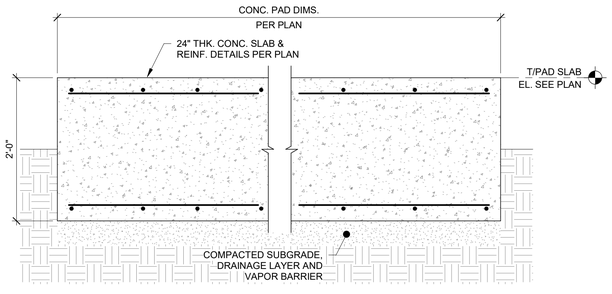
E — 1 1/2" = 1'-0" — GRATING DETAILS



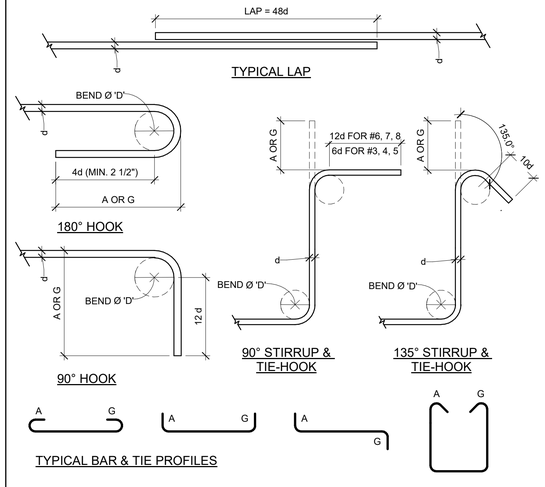
F — 1 1/2" = 1'-0" — CHANNEL BEAM TO WF COLUMN CONN.



G — 1 1/2" = 1'-0" — C8 BEAM TO C8 BEAM CONNECTION DETAIL



H — 1" = 1'-0" — CONCRETE GENERATOR PAD DETAIL



J — 1" = 1'-0" — REINFORCING LAP AND HOOK LENGTHS

TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

NOTE:
UNITS = IN. *OR* FT.-IN.

NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

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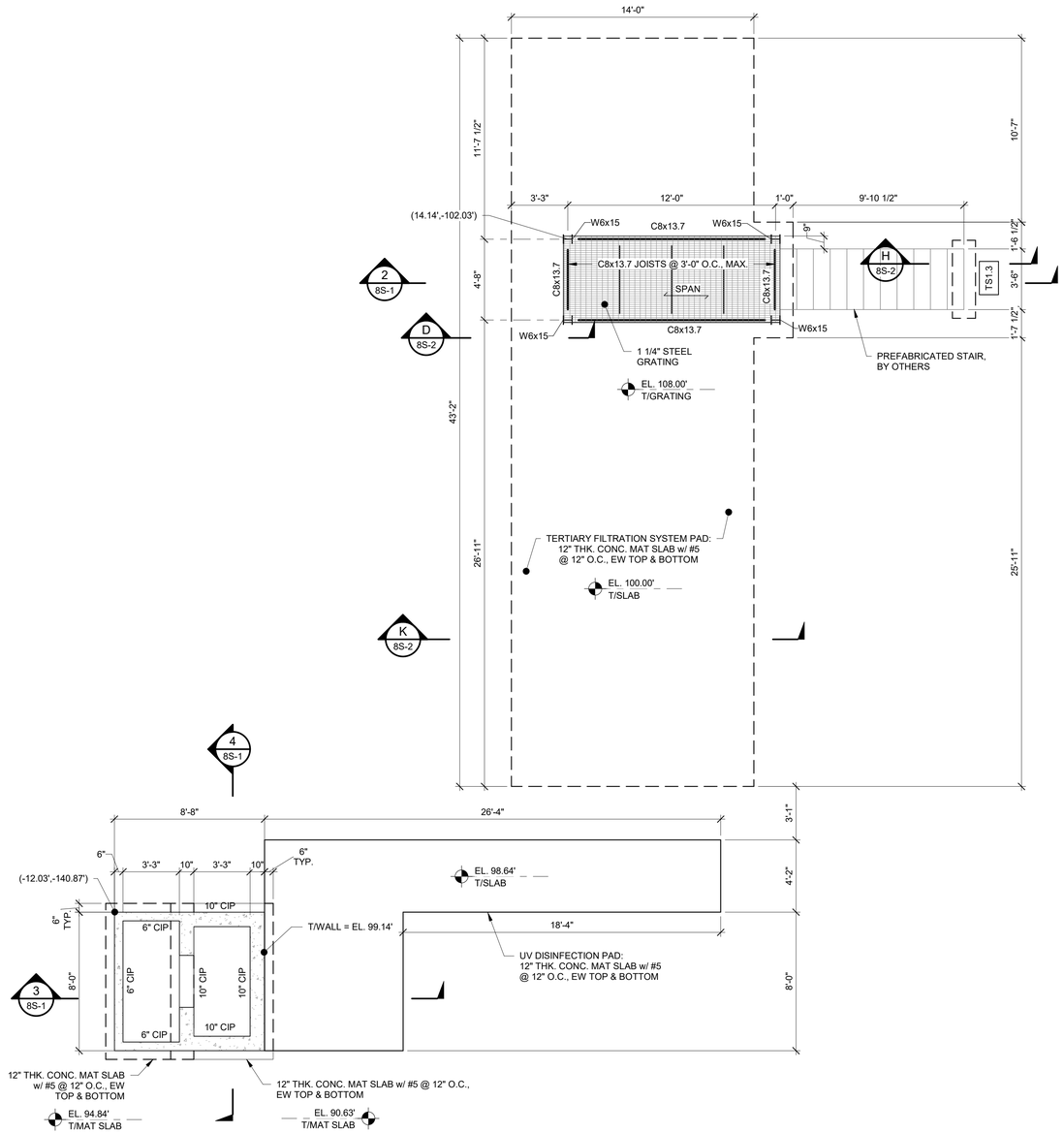
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

POWER GENERATOR PLATFORM - SECTION DETAILS

7S-2



1 1/4" = 1'-0"

TERTIARY FILTRATION SYSTEM PLATFORM, RECLAIMED WATER PUMP STATION AND UV DISINFECTION PAD PLAN

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

PLAN LEGEND

	FOUNDATION EXTENTS
T#.#	INDICATES TURNDOWN EDGE OR THICKENED SLAB FOUNDATION - SEE SCHEDULE
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED
I	STEEL COLUMN - SIZE AS MARKED
	PLATFORM SHALL HAVE 1 1/4" (GW-125) STEEL GRATING, STANDARD DUTY WELDED BAR GRATING WITH 1 1/4" x 3/16" BEARING BARS AT 1 3/16" SPACING, CROSS BARS AT 4" SPACING. GRATING PRODUCTS SHALL BE BY MCNICHOLS CO. OR APPROVED EQUAL.

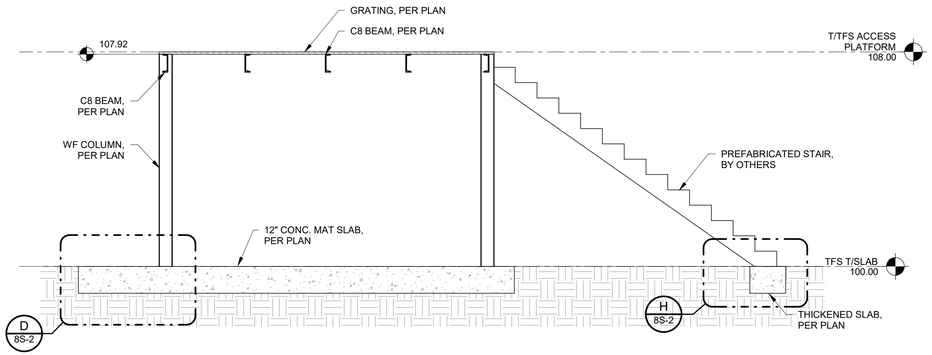
SLAB FOUNDATION SCHEDULE

TAG	FOOTING SIZE	REINFORCEMENT
TS1.3	1'-4" x CONT. x 12" THICK.	BOT: (2) #5 CONT. U-BAR: #5 @ 18" O.C.

CONCRETE WALL SCHEDULE

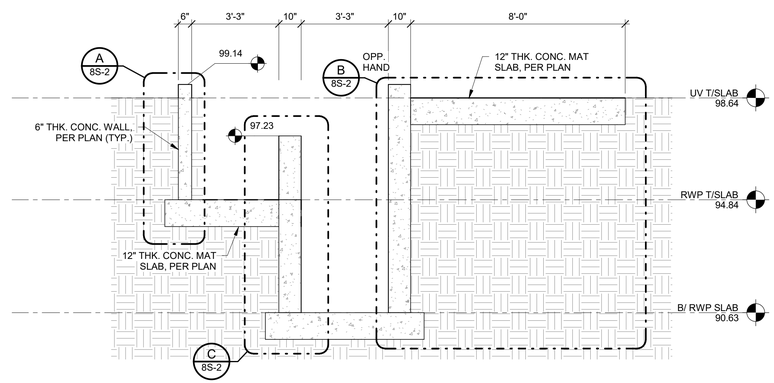
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
6" CIP	6"	#5	12" O.C	#4	12" O.C
10" CIP	10"	#5	12" O.C EF	#4	12" O.C EF

NOTE:
SINGLE LAYER OF REINFORCEMENTS IS TO BE @ CENTERLINE OF WALL, UNO



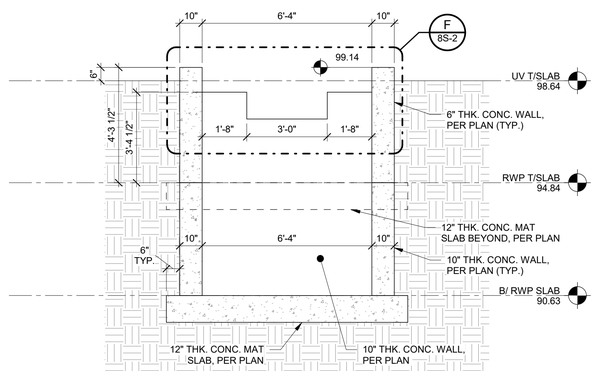
3/8" = 1'-0"

TFS PLATFORM - SECTION 1



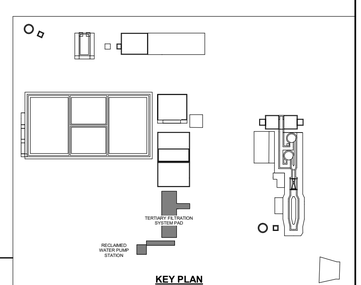
3/8" = 1'-0"

RWP STATION - SECTION 2



3/8" = 1'-0"

RWP STATION - SECTION 3



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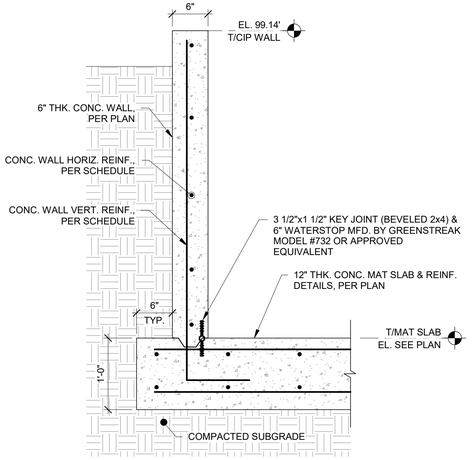
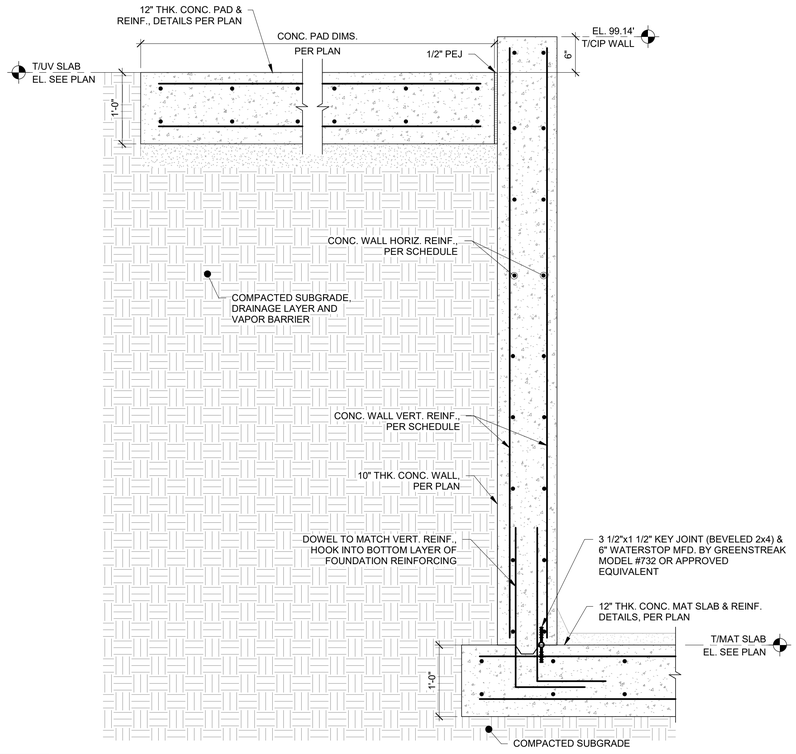
TERTIARY FILTRATION PLATFORM, RECLAIMED WATER PUMP STATION, UV DISINFECTION PAD

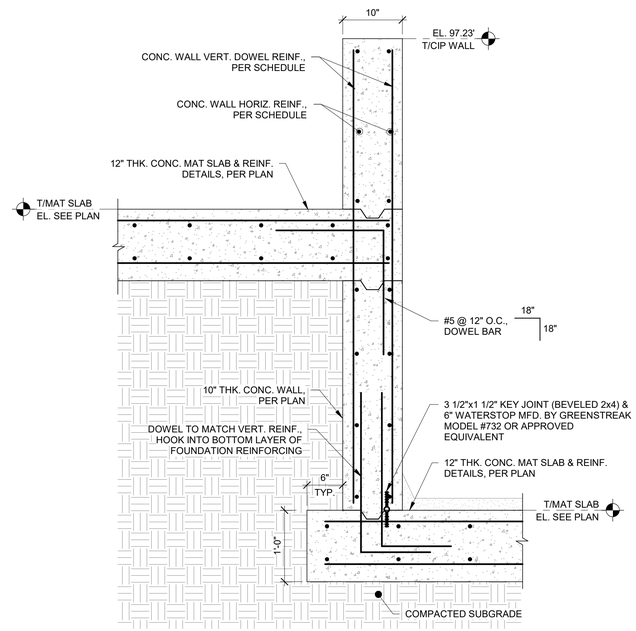
8S-1



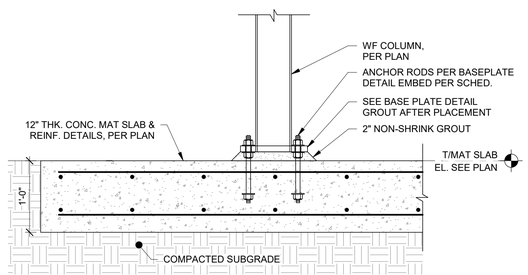
A
1" = 1'-0"
RWP- CONCRETE WALL FOUNDATION DETAIL



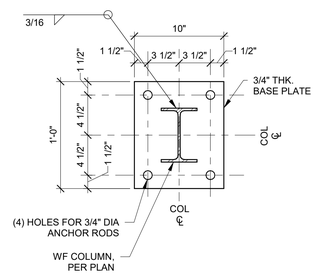
B
1" = 1'-0"
RWP - CONCRETE WALL AND CONCRETE PAD CONNECTION DETAIL



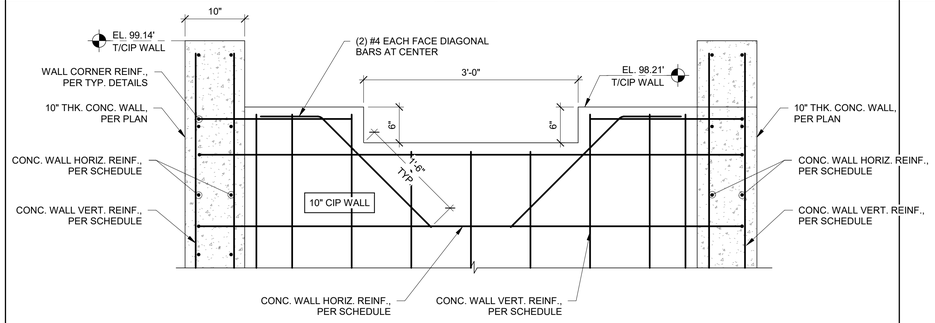
C
1" = 1'-0"
RWP- CONCRETE WALL FOUNDATION DETAIL



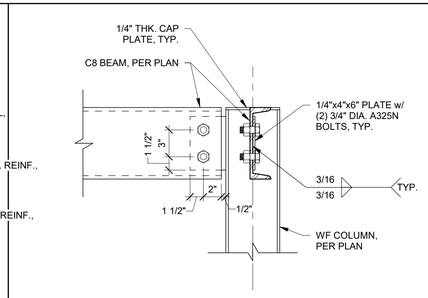
D
1" = 1'-0"
WF STEEL COLUMN FOUNDATION DETAIL



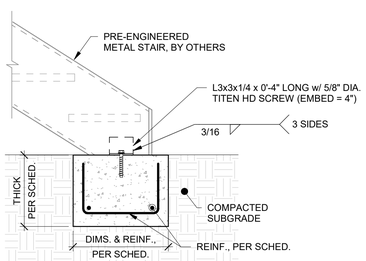
E
1 1/2" = 1'-0"
BASEPLATE DETAILS



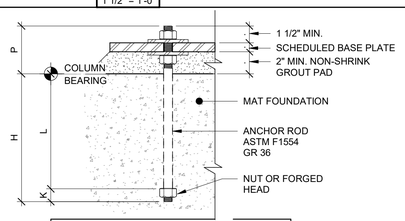
F
1" = 1'-0"
TYPICAL WALL REINFORCEMENT DETAILS AT WALL LEDGE



G
1 1/2" = 1'-0"
CHANNEL BEAM TO WF COLUMN CONN.

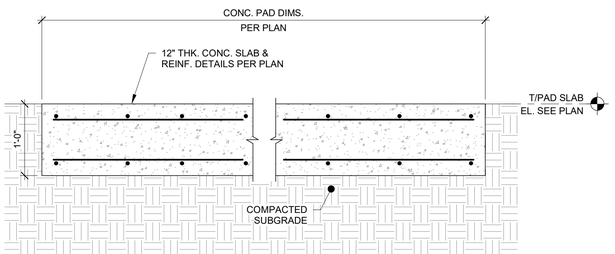


H
1" = 1'-0"
EXISTING STAIR FOUNDATION DETAIL

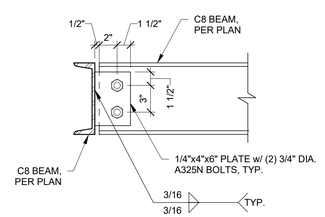


TYPICAL ANCHOR ROD SCHEDULE	
DIMENSIONS	TYPICAL
BASEPLATE THICKNESS	3/4"
BOLT Ø, d	3/4"
L	8"
H	10"
K	2"
P (MIN)	4 1/4"

J
3" = 1'-0"
TYPICAL ANCHOR ROD DETAIL



K
1" = 1'-0"
CONCRETE PAD DETAIL



L
1 1/2" = 1'-0"
C8 BEAM TO C8 BEAM CONNECTION DETAIL

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SAPPSTRUCTURAL.COM

GEORGIA REGISTERED 10/11/24 No. SE000802 STRUCTURAL ENGINEER BRIAN K. SAPP

REVISIONS

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M.E. SACK ENGINEERING

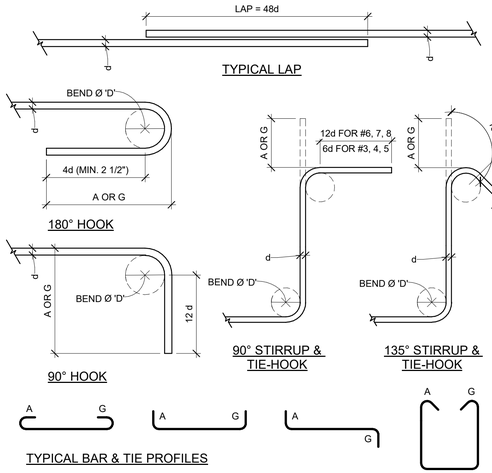
CITY OF PEMBROKE - WASTE WATER TREATMENT PLANT EXPANSION

160 N MAIN ST,
PEMBROKE, GA 31321

PROJECT NO.	24.206
DATE	10/11/24
DRAWN BY	SRS
CHECKED BY	BKS

TERTIARY AND RECLAIMED PUMP STATION DETAILS

8S-2

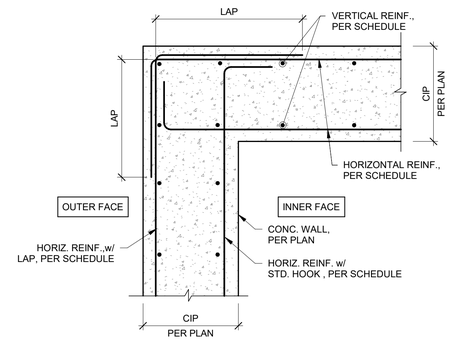


TYPICAL LAP & HOOK SCHEDULE							
BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
		D (IN.)	180° HOOK A OR G (IN.)	90° HOOK A OR G (IN.)	D (IN.)	90° HOOK A OR G (IN.)	135° HOOK A OR G (IN.)
#3	18	2 1/4	5	6	1 1/2	4	4
#4	24	3	6	8	2	4 1/2	4 1/2
#5	30	3 3/4	7	10	2 1/2	6	5 1/2
#6	36	4 1/2	8	1-0	4 1/2	1-0	8
#7	42	5 1/4[a]	10	1-2	5 1/4[a]	1-2	9
#8	48	6[a]	11	1-4	6[a]	1-4	10 1/2
#9	54	9 1/2	1-3	1-7			
#10	62	10 3/4	1-5	1-10			
#11	68	12	1-7	2-0			
#14	82	18 1/4	2-3	2-7			
#18	108	24	3-0	3-5			

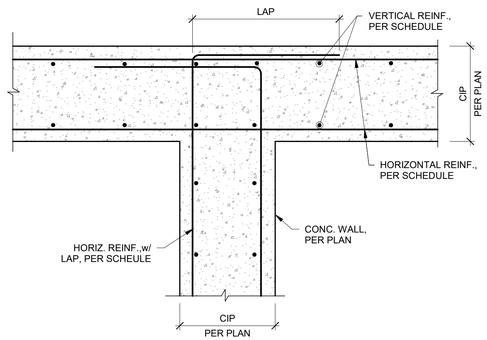
NOTE:
UNITS = IN. *OR* FT.-IN.

NOTE a:
ASTM A767 REQUIRES THAT BARS BENT COLD PRIOR TO HOT DIP GALVANIZING MUST BE FABRICATED TO A MINIMUM BEND DIAMETER EQUAL TO 7 IN. FOR #7 BAR AND 8 IN. FOR #8 BAR.

A — REINFORCING LAP AND HOOK LENGTHS
1" = 1'-0"

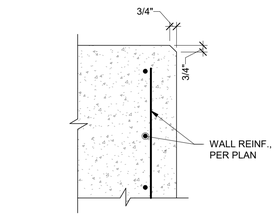


PLAN VIEW - CORNER REINFORCING

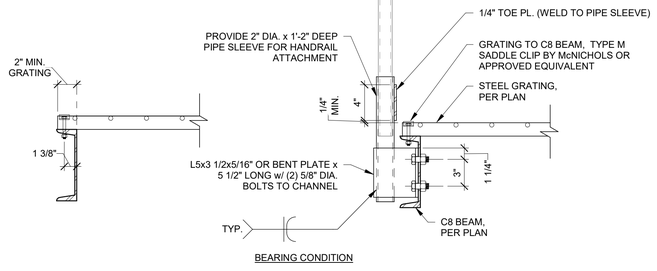


PLAN VIEW - INTERSECTION REINFORCING

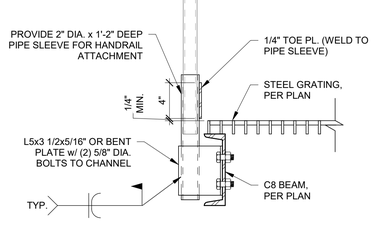
B — REINFORCEMENT AT CONC. WALL CORNERS AND INTERSECTION
1" = 1'-0"



NOTE:
PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE WIITHOUT EMBED ANGLES



BEARING CONDITION



PARALLEL CONDITION

C — GRATING DETAILS
1 1/2" = 1'-0"

D — CONCRETE CHAMFER DETAIL
1 1/2" = 1'-0"

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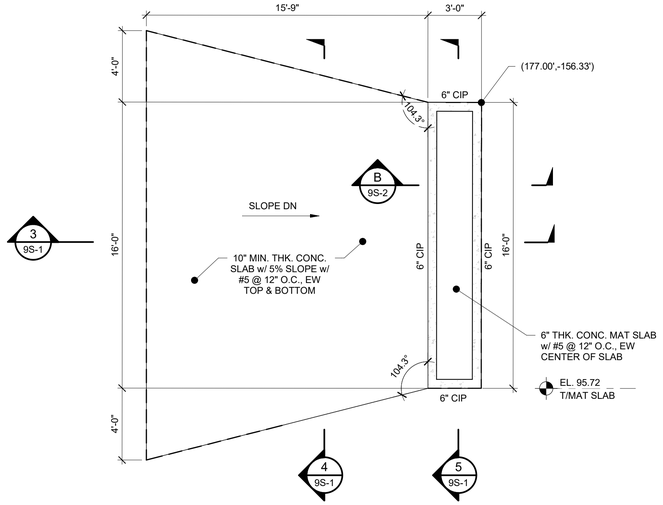
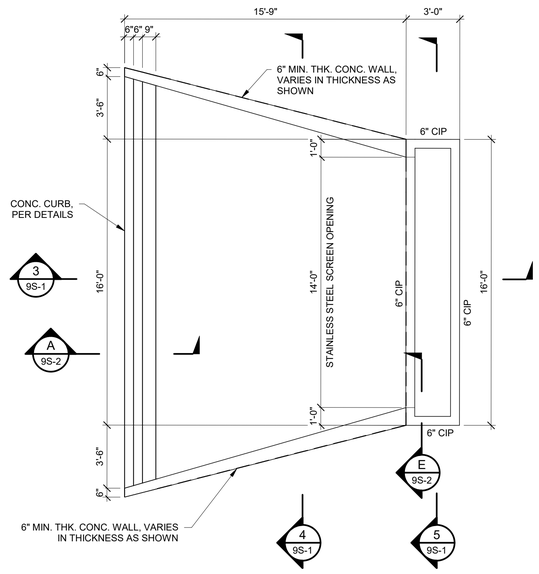
TERTIARY AND RECLAIMED PUMP STATION DETAILS

8S-3



1 TRUCK DUMP STATION MAT SLAB PLAN
1/4" = 1'-0"



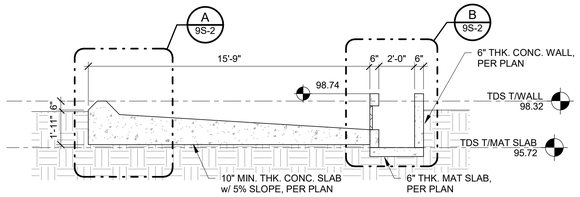
2 TRUCK DUMP STATION TOP WALL PLAN
1/4" = 1'-0"

PLAN NOTES:
1. T/SLAB ELEVATIONS AS SHOWN ON PLAN. COORDINATE ELEVATION DATUM WITH CIVIL DRAWINGS AND OWNER.

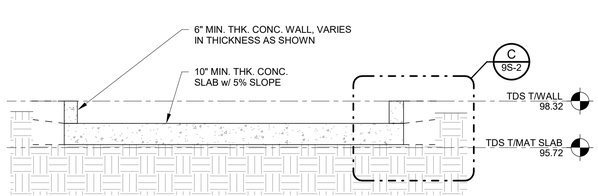
PLAN LEGEND	
	FOUNDATION EXTENTS
±FT-IN TARGET	ELEVATION INDICATOR RELATIVE TO REFERENCE ELEV.
CIP SIZE	CIP WALL - THICKNESS AS MARKED

CONCRETE WALL SCHEDULE					
WALL TYPE	WALL THICK	VERT. REINF.		HORIZ. REINF.	
		SIZE	SPACING	SIZE	SPACING
6" CIP	6"	#5	12" O.C	#4	12" O.C

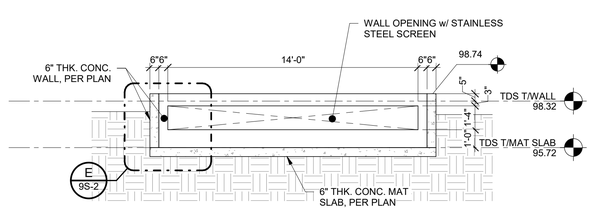
NOTE:
SINGLE LAYER OF REINFORCEMENTS IS TO BE @ CENTERLINE OF WALL, UNO



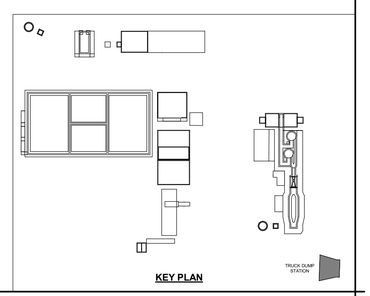
3 TRUCK DUMP STATION SECTION 1
1/4" = 1'-0"



4 TRUCK DUMP STATION SECTION 2
1/4" = 1'-0"



5 TRUCK DUMP STATION SECTION 3
1/4" = 1'-0"



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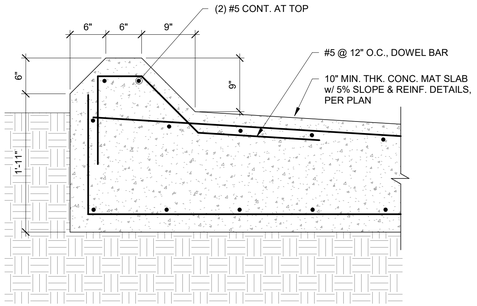
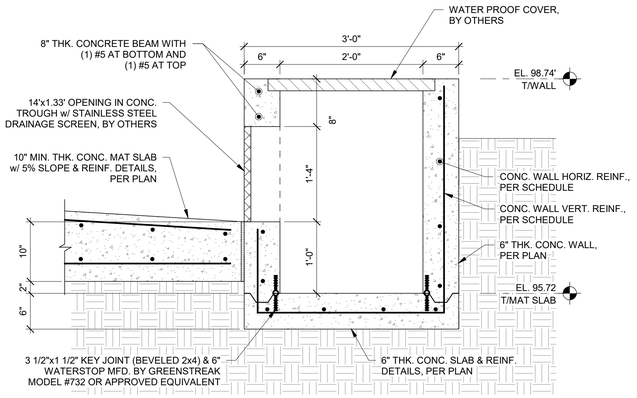
TRUCK DUMP STATION PLAN, SECTION AND DETAILS

9S-1



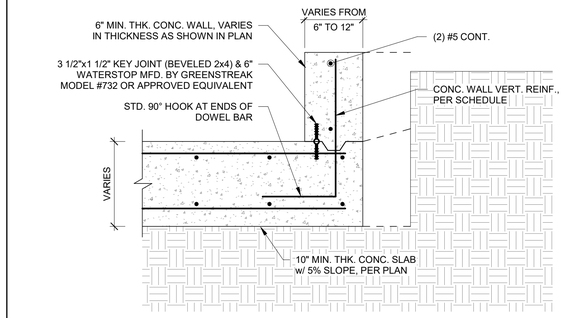
A
1" = 1'-0"

TRUCK DUMP STATION CURB SECTION



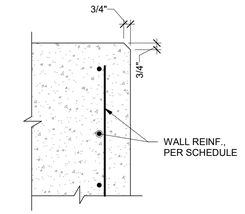
B
1" = 1'-0"

TRUCK DUMP STATION CONC. TROUGH SECTION



C
1" = 1'-0"

TRUCK DUMP STATION SIDE CONC. WALL SECTION



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PROVIDE 3/4" CHAMFER AT ALL EXPOSED EDGES OF CONCRETE WIITHOUT EMBED ANGLES

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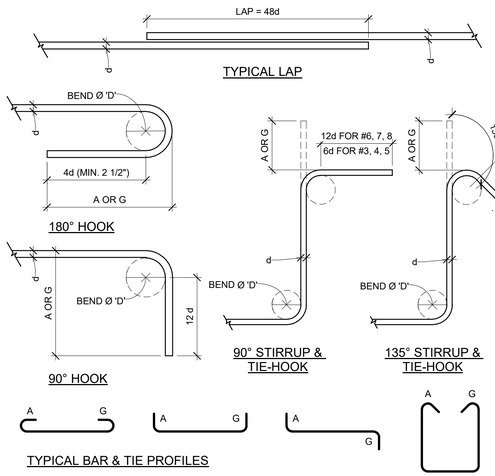
CONCRETE CHAMFER DETAIL

E
1" = 1'-0"

TRUCK DUMP STATION CONCRETE WALL ELEVATION



F
1" = 1'-0"

REINFORCING LAP AND HOOK LENGTHS

TYPICAL LAP & HOOK SCHEDULE

BAR SIZE	TYP. LAP (IN.)	STANDARD HOOK			STIRRUP & TIE HOOK		
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TRUCK DUMP STATION DETAILS

9S-2

LEGEND

	LIGHTING AND POWER
	CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALL CONTAINING 3 NUMBER 12 CONDUCTORS UNLESS SHOWN OTHERWISE. HASH MARKS, IF SHOWN, INDICATE QUANTITY OF NUMBER 12 CONDUCTORS. WHERE DRAWING SPACE PROHIBITS HASH MARKS BEING SHOWN REFER TO CIRCUIT NUMBERS AND PROVIDE REQUIRED NUMBER OF CONDUCTORS PER CIRCUIT TYPE.
	CONDUIT RUN CONCEALED IN OR BELOW FLOOR SLAB, OR UNDERGROUND.
A-2,4,6	HOMERUN TO PANELBOARD, LETTER OR LETTERS INDICATE PANELBOARDS, NUMBERS INDICATE CIRCUIT NUMBERS.
	EXPOSED CONDUIT RUN.
2-E	L.E.D. LIGHTING FIXTURE, "2" INDICATES THE CIRCUIT NUMBER AND "E" THE FIXTURE TYPE. SEE FIXTURE SCHEDULE FOR DIMENSIONS AND MOUNTING TYPE.
	EMERGENCY L.E.D. LIGHTING FIXTURE. SEE FIXTURE SCHEDULE FOR DIMENSIONS AND MOUNTING TYPE.
	L.E.D. FIXTURE, SURFACE OR STEM MOUNTED.
	L.E.D. TROFFER FIXTURE. SEE FIXTURE SCHEDULE FOR DIMENSIONS AND MOUNTING TYPE.
	EMERGENCY L.E.D. TROFFER. SEE FIXTURE SCHEDULE FOR DIMENSIONS AND MOUNTING TYPE.
	L.E.D. LIGHTING FIXTURE, SURFACE WALL BRACKET MOUNTED. MOUNTING HEIGHT AS NOTED.
	L.E.D. LIGHTING FIXTURE, SURFACE WALL BRACKET MOUNTED. MOUNTING HEIGHT AS NOTED.
	EXIT LIGHT.
	EMERGENCY PACK FIXTURE.
	JUNCTION BOX.
	DUPLEX CONVENIENCE OUTLET, +18" TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED. 5" INDICATES THE CIRCUIT NUMBER.
	DUPLEX CONVENIENCE OUTLET MOUNTED ABOVE COUNTER, AT +46" TO CENTERLINE OF OUTLET.
	DUPLEX CONVENIENCE OUTLET, GFI TYPE. +18" TO CENTER LINE UNLESS OTHERWISE NOTED. "WP" WHERE SHOWN INDICATES WEATHER-RESISTENT DEVICE WITH DIE-CAST IN-USE WEATHERPROOF COVER.
	DUPLEX CONVENIENCE OUTLET, GFI TYPE. MOUNTED ABOVE COUNTER AT +46" TO CENTERLINE OF RECEPTACLE UNLESS NOTED OTHERWISE.
	SPECIAL RECEPTACLE TO SUIT EQUIPMENT FURNISHED.
	QUADRUPLEX RECEPTACLE, +18" TO CENTER LINE OF OUTLET UNLESS OTHERWISE NOTED.
	SINGLE POLE TOGGLE SWITCH, +46" TO CENTER LINE MOUNTING HEIGHT.
	LED DECORA STYLE DIMMER WITH ROCKER ON/OFF SWITCH AND SLIDE DIMMER ON SIDE OF ROCKER. 0-10VDC CAPABLE DIMMER +46" MOUNTING HEIGHT. LUTRON "DIVA 0-10V" OR EQUAL BY LEVITON, WATTSTOPPER, HUBBELL, OR COOPER. (NO ADDITIONAL POWER PACK REQUIRED). DIVISION 26 SHALL PROVIDE ALL ADDITIONAL CONDUCTORS TO ALL FIXTURES CONNECTED FOR A PROPER 0-10VDC OPERATION. GRAY FINISH.
	PANELBOARD, SEE SCHEDULE.
	DISCONNECT SWITCH, SIZE AS NOTED ON DRAWINGS. FUSED PER MANUFACTURER'S NAME PLATE DATA OF EQUIPMENT SERVED.
GA	GENERATOR REMOTE ANNUNCIATOR.
	TELEPHONE / DATA SYSTEMS
TB	PLYWOOD BACKBOARD "T.B." INDICATES TELECOMMUNICATIONS BOARD.
	DATA RACK, 2 POST, WITH VERTICAL CABLE WIRE MANAGEMENT. SEE SPECIFICATIONS.
	DATA RACK, 4 POST, WITH VERTICAL CABLE WIRE MANAGEMENT. SEE SPECIFICATIONS.
	DATA OUTLET,, +18" TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE. STUB UP 1"C. TO CEILING SPACE ABOVE.
	DATA OUTLET., +46" TO CENTER LINE OF OUTLET UNLESS NOTED OTHERWISE. STUB UP 1"C. TO CEILING SPACE ABOVE.
W	DATA OUTLET. (WIRELESS ACCESS POINT), +6" ABOVE ACCESSIBLE CEILING UNLESS NOTED OTHERWISE. WHERE THERE IS NO CEILING OR HIGH CEILING, WALL MOUNT AT +11' A.F.F.
	EYS SEAL.
	FIRE ALARM SYSTEM
	SIGNAL, HORN AND STROBE LIGHT. +6'-10" MOUNTING HEIGHT TO CENTER OF DEVICE.
SL	STROBE LIGHT, 6'-10" MOUNTING HEIGHT TO CENTER OF DEVICE.
F	PULL STATION. WALL MOUNTED +46" TO CENTER LINE MOUNTING HEIGHT.
	HEAT DETECTOR, CEILING MOUNTED.
FACP	FIRE ALARM CONTROL PANEL. SURFACE WALL MOUNTED.
DOC	FIRE ALARM DOCUMENTATION BOX.
FAA	FIRE ALARM LCD REMOTE ALPHANUMERIC ANNUNCIATOR. FLUSH WALL MOUNTED.

GENERAL NOTES:

1. DO NOT SCALE DRAWINGS TO LOCATE EQUIPMENT OR OUTLETS.
2. MOUNTING HEIGHTS AS INDICATED ON THE DRAWINGS SHALL BE FROM THE FINISHED FLOOR TO THE CENTER LINE OF THE OUTLET BOX.
3. THE ELECTRICAL DRAWINGS ARE ONLY A PART OF THE CONTRACT DOCUMENTS. ALL OF THE DRAWINGS AND SPECIFICATIONS MUST BE REVIEWED FOR THEIR INTERRELATIONSHIP AND REQUIRED COORDINATION BETWEEN DISCIPLINES.
4. 112 SYMBOL INDICATING ROOM OR SPACE NUMBER.
5. IN AREAS WHERE COMPUTER OUTLETS AND TELEPHONE OUTLETS ARE LOCATED BENEATH A WINDOW, AND WINDOW PREVENTS THE ROUTING OF CONDUIT UP TO CEILING SPACE, CONDUIT SHALL BE ROUTED TO A WALL WHICH ALLOWS CONDUIT TO RISE UP TO CEILING SPACE.
6. ALL CONDUIT ROUTED FROM DISCONNECT TO EXTERIOR HVAC UNITS SHALL BE ROUTED UNDERGROUND. TURN UP ADJACENT TO UNIT AND MAKE TRANSITION TO SEALTITE TO SERVE UNIT. CONDUIT SHALL BE. ROUTED CONCEALED IN WALL.
7. ALL FLUSH RECESSED OUTLET BOXES SHALL BE INSTALLED SUCH THAT FRONT EDGE OF BOX WILL NOT BE SET BACK OF THE FINISHED SURFACE MORE THAN 1/4" IN ORDER TO COMPLY WITH N.E.C. 314-20. SUPPORT OF OUTLET BOX BY RECEPTACLE AND COVERPLATE IS NOT ACCEPTABLE.
8. ALL CONDUIT, OUTLET BOXES, AND LOW VOLTAGE CABLING SHALL BE APPROPRIATELY SUPPORTED THROUGHOUT THE PROJECT. SUPPORT OF THESE ITEMS BY CEILING GRID OR GRID SUPPORT WIRES IS NOT ACCEPTABLE.
9. ALL RECEPTACLES LOCATED WITHIN 6'-0"TO THE EDGE SINK OR OTHER WATER SOURCE SHALL BE GFCI TYPE DEVICE IN ACCORDANCE WITH N.E.C 210-8.A.7. COORDINATE LOCATIONS WITH ARCHITECTURAL AND PLUMBING DRAWINGS PRIOR TO ROUGH-IN.
10. COORDINATE EXACT LOCATION OF ALL MECHANICAL AND PLUMBING EQUIPMENT WITH DIVISION 23 PRIOR TO ROUGH IN. ADJUST LOCATION OF DISCONNECTING MEANS AND BRANCH CIRCUITRY AS REQUIRED.
11. ALL UNISTRUT MATERIAL SHALL BE MADE OF GRADE 304 OR 316 STAINLESS STEEL.
12. ALL FASTENERS USED IN THE CONSTRUCTION OF LIFT STATION SHALL BE 304 OR 316 STAINLESS STEEL (INSTALLED WITH ANTI-GALLING COMPOUND ON FASTENERS 5/6 OR 8MM AND LARGER).
13. ALL FIELD DEVICES WITH A VISIBLE DISPLAY SHALL BE MOUNTED IN A NEMA 4X LOCKABLE ENCLOSURE.
14. ALL FIELD ENCLOSURES AND JUNCTION BOXES SHALL BE SEALED WITH GROMMET TYPE REUSABLE SEALS.
15. ALL EXTERIOR JUNCTION BOXES SHALL BE NEMA 4X RATED.
16. ALL EXTERIOR ELECTRICAL PANELBOARDS, TRANSFORMERS, DISCONNECTS, RECEPTACLES, AND SWITCHES SHALL BE NEMA 4X RATED.
17. CONTRACTOR SHALL PROVIDE CONDUIT AND BACKBOXES FOR ALL DEVICES AND WIRING. COORDINATE ALL CONTROL CABLING CONNECTIONS AND REQUIREMENTS WITH C2I PRIOR TO ROUGH IN.
18. CONTRACTOR SHALL COORDINATE ALL CABLING REQUIREMENTS WITH C2I PRIOR TO ROUGH IN. CONTACT WES WOOD @ 404-351-1085 OR WWOOD@C2IINC.COM FOR FULL SCOPE OF WORK BEING PROVIDED BY C2I.
19. INSTALLATION OF ALL ELECTRICAL EQUIPMENT, RACEWAYS, INSTALLATION METHODS, AND DEVICES WITHIN 10' OF WASTEWATER TREATMENT PROCESS SHALL BE IN COMPLIANCE WITH NFPA 500 AND NFPA 820 FOR CLASS 1, DIVISION 2 HAZARDOUS LOCATIONS.
20. ALL EXPOSED EXTERIOR CONDUIT, RACEWAYS, AND SUPPORTS MEMBERS SHALL BE ALUMINUM.
21. ALL CONDUIT, RACEWAYS, AND SUPPORT MEMBERS WITHIN 10' OF WASTEWATER TREATMENT PROCESS OR LOCATED IN HIGHLY CORROSIVE AREAS SHALL BE ALUMINUM.
22. VERIFY ALL CONTROL CABLING REQUIREMENTS FOR EQUIPMENT AND DEVICES WITH INSTRUMENTATION AND CONTROLS CONTRACTOR PRIOR TO INSTALLATION.
23. COORDINATE EXACT LOCATION OF ALL DEVICES THAT REQUIRE CONTROL CABLING WITH MANUFACTURER PRIOR TO INSTALLATION.
24. ENSURE CONDUIT CONNECTIONS TO JUNCTION BOXES ARE MADE IN SUCH A WAY AS TO MAINTAIN THE 4X RATING OF THE JUNCTION BOX.
25. STAINLESS STEEL CONDUITS SHALL BE USED IN HIGHLY CORROSIVE AREAS WHERE THE CONDUIT IS SUBJECT TO DAMAGE, SPECIFICALLY IN THE HEADWORKS/BAR SCREEN, ODOR CONTROL, GRIT REMOVAL, INFLUENT PUMP STATIONS AND THE SBR TANKS.
26. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.
27. CONTRACTOR SHALL REFER TO DETAIL SHEETS FOR ALL MOUNTING REQUIREMENTS FOR ALL DEVICES AND EQUIPMENT. ALL EQUIPMENT LOCATED OUTDOORS SHALL BE PROVIDED WITH STAINLESS STEEL RACK AND ALL OTHER REQUIRED MOUNTING HARDWARE AS OUTLINED IN DETAILS AS REQUIRED FOR MOUNTING OF EQUIPMENT AND DEVICES.

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	WATTS	LUMENS	COLOR TEMP	MANUFACTURERS	NOTES
A	LED FIXTURE, 2' x 2' RECESSED CEILING GRID TYPE BACK-LIT FLAT PANEL FIXTURE WITH SINGLE PIECE INJECTION FRAME AND SMOOTH WHITE LENS.	30 W	4600	4000 K	LITHONIA "CPX" SERIES METALUX, COLUMBIA, ORACLE, ILP	
B	RECESSED COMMERCIAL GRADE DOWNLIGHT WITH 6" APERTURE WITH WHITE TRIM. FIXTURE SHALL BE CONSTRUCTED OUT OF 16 GAUGE GALVANIZED STEEL WITH OPEN DOWNLIGHT REFLECTOR AND PASSIVE COOLING.	20 W	1500	1500 K	LITHONIA "LBR6" SERIES PEACHTREE, PRESCOLITE, HALO COMMERCIAL, ELITE LIGHTING, LSI, ILP	
C	4' STRIP LIGHT FIXTURE SURFACE MOUNTED WITH WHITE ACRYLIC LENS AND WHITE FINISH. (SURFACE, STEM, OR CHAIN SUSPEND WHERE REQUIRED)	50 W	3800	4000 K	LITHONIA "CSS" SERIES METALUX, COLUMBIA, H.E. WILLIAMS, ILP	
D	LED LINEAR 1 x 4' FIXTURE WITH RIBBED FROSTED ACRYLIC LENS AND FIBER GLASS BODY, IP67 RATED. CLASS 1 DIV 3 RATED.	32 W	4169	4000 K	ILP "HZV" SERIES OR EQUAL	
E	LOW-PROFILE LED EMERGENCY BUG EYE FIXTURE WITH RECHARGEABLE BATTERY BACKUP WITH A MINIMUM OF 90 MINUTES OF EMERGENCY POWER. HOUSING WILL BE IMPACT RESISTANT, SCRATCH-RESISTANT AND CORROSION PROOF. FIXTURE SHALL HAVE A TEST SWITCH AND A STATUS INDICATOR. FIXTURE SHALL HAVE HAVE 2-TWIN HEADS WITH A WHITE FINISH. BATTERIES SHALL BE NI-CAD BATTERIES.	0 W		0 K	LITHONIA "ELM2L" SERIES SURE-LITE, DUAL-LITE, EMERGI-LITE, McPHILBEN, EVENLITE	
F	POLE MOUNTED L.E.D. COMPOSED OF ADC12 AND 6063 ALUMINUM ALLOY, WITH GLASS LENS AND WET LOCATION LISTED. FIXTURE SHALL BE MOUNTED ON 10' ROUND STAINLESS STEEL POLE. PROVIDE STANCHION 25 DEGREE MOUNT BRACKET. REFER TO DETAIL 3/E13.3 FOR MOUNTING REQUIREMENTS.	45 W	6750	5000 K	HLRS "CID2" SERIES OR APPROVED EQUAL	
G	L.E.D. AREA LIGHT FIXTURE SHALL HAVE TYPE 5 LIGHT DISTRIBUTION, FLAT GLASS LENS, AND INTEGRAL PHOTOCELL. FIXTURE SHALL BE MOUNTED AT 50' ABOVE FINISHED GRADE ON SQUARE TAPERED CONCRETE POLE (TOTAL LENGTH OF POLE 60'), RATED FOR 140MPH.	690 W	88915	5000 K	NLS LIGHTING "NV-3" SERIES OR EQUAL	
H	L.E.D. WALL MOUNTED FIXTURE, DIE-CAST WALL PACK, GLASS REFRACTOR, TYPE III DISTRIBUTION WITH FINISH TO BE SELECTED BY ARCHITECT. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.	50 W	4000	4000 K	LITHONIA "TWR LED" SERIES GARDCO, HUBBELL, LUMARK, CREE	
X	L.E.D. EXIT LIGHT, PROVIDE WITH DIE-CAST ALUMINUM HOUSING WITH WHITE FINISH AND RED FACED BACKGROUND. UNIVERSAL MOUNTING. PROVIDE BACK-UP BATTERY PACK W/ MAINTENANCE FREE NI-CAD BATTERIES IN ORDER TO PROVIDE MINIMUM 90 MINUTES OF ILLUMINATION. LAMPS: L.E.D. DRIVER: MULTI VOLT INPUT				LITHONIA "LQC" SERIES SURE-LITE "CX" SERIES CHLORIDE "46 LINE" SERIES DUAL-LITE "SEMPRA" SERIES ILP	

GENERAL NOTES:

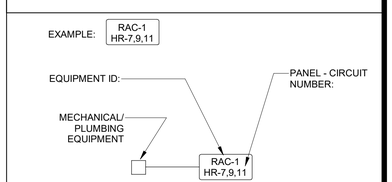
A. ALL LUMENS LISTED ARE DELIVERED LUMENS. ALL EQUALS TO SPECIFIED SHALL NOT BE ANY LOWER THAN 5% OF SPECIFIED LUMENS NOR WATTAGE BE HIGHER THAN 15% OF SPECIFIED WATTAGE.

B. LISTING OF MANUFACTURERS DOES NOT EQUAL AUTOMATIC APPROVAL. ALL CHARACTERISTICS NOTED IN DESCRIPTION SECTION MUST BE MET IN ORDER TO BE APPROVED. WHERE VENDOR / REP DOES NOT HAVE ONE OF MANUFACTURERS LISTED, PRIOR APPROVAL IS REQUIRED TO BE SUBMITTED TO ENGINEER TEN(10) DAYS PRIOR TO BID.

C. ALL FIXTURE VOLTAGES SHALL BE MULTIVOLT TYPE UNLESS OTHERWISE NOTED.

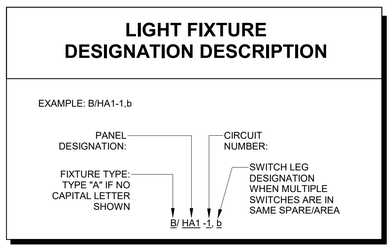
D. PROVIDE DIMMING DRIVER, 0-10VDC,10-100% FIXTURES TYPES A AND B.

MECHANICAL EQUIPMENT TAG DESCRIPTION



NOTE: REFER TO MECHANICAL CONNECTION SCHEDULES FOR CIRCUITING INFORMATION

LIGHT FIXTURE DESIGNATION DESCRIPTION



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DATE: 05/21/25

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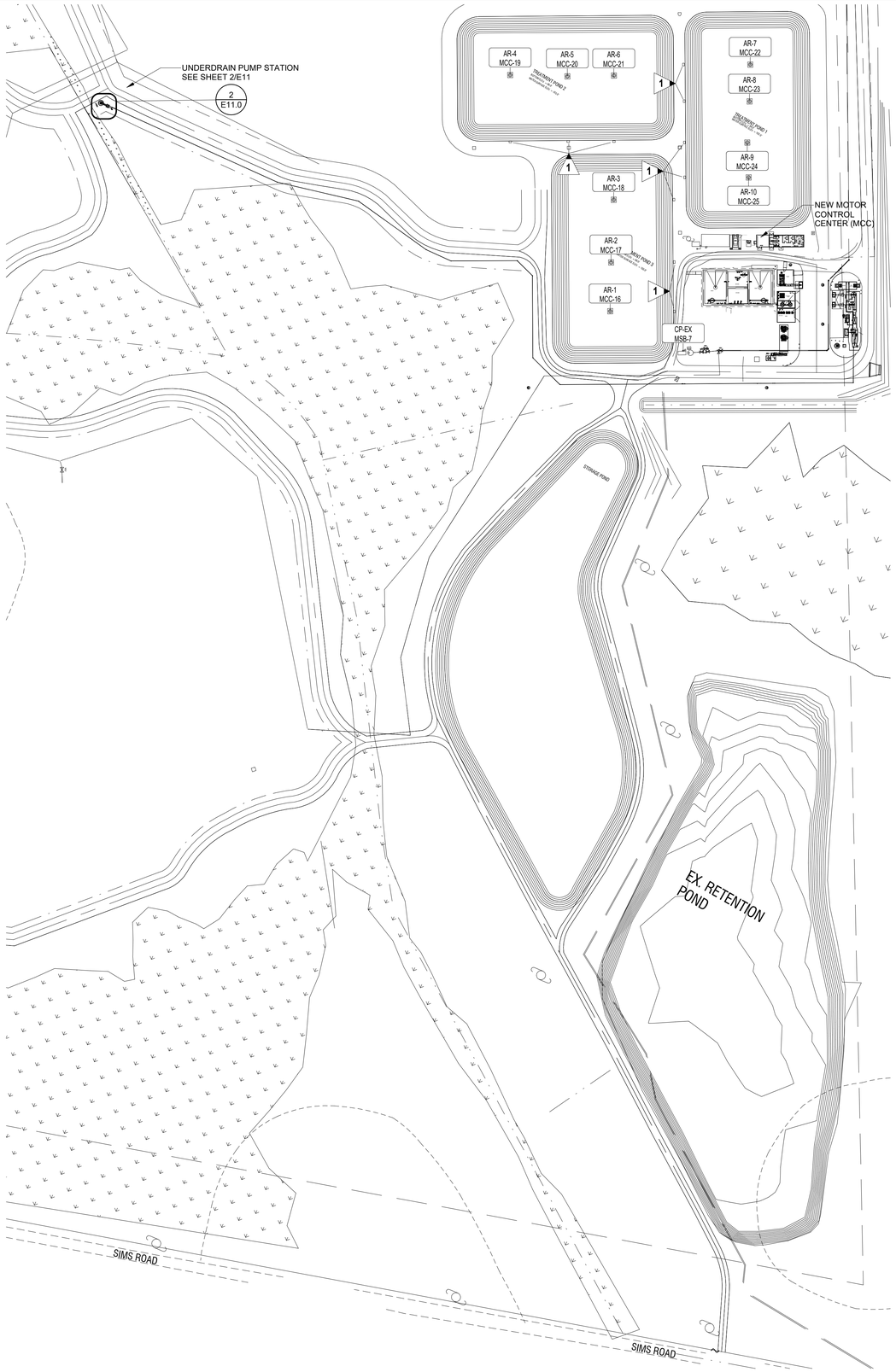
WASTEWATER TREATMENT PLANT EXPANSION

LEGEND, NOTES, DETAILS, AND FIXTURE SCHEDULE

E1.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 E2.0 ELECTRICAL COMPOSITE SITE PLAN
SCALE: 1" = 100'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.

KEYED NOTES:

1 ▶ EXISTING AERATOR TO REMAIN. PROVIDE NEW CONDUCTORS FROM EXISTING AERATOR JUNCTION BOX TO NEW MOTOR CONTROL CENTER. VERIFY ROUTING OF CONDUITS ON SITE PRIOR TO INSTALLATION.

2 ▶ SEE SHEET E12.0 FOR ALL OTHER CONNECTIONS TO NEW MOTOR CONTROL CENTER.

3 ▶ COORDINATE EXACT EQUIPMENT LOCATIONS AND NAMES PRIOR TO ROUGH IN.

3 ▶ 2 ▶

EXISTING EQUIPMENT SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
AERATOR											
AR-1	480 V	3	32.0 A	40.0 A	MCC	16	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-2	480 V	3	32.0 A	40.0 A	MCC	17	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-3	480 V	3	32.0 A	40.0 A	MCC	18	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-4	480 V	3	32.0 A	40.0 A	MCC	19	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-5	480 V	3	32.0 A	40.0 A	MCC	20	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-6	480 V	3	32.0 A	40.0 A	MCC	21	21283 VA	1"C,3#8,1#10G	A	(E)	-
AR-7	480 V	3	80.0 A	100.0 A	MCC	22	53209 VA	1 1/4"C,3#3,1#8G	A	(E)	-
AR-8	480 V	3	80.0 A	100.0 A	MCC	23	53209 VA	1 1/4"C,3#3,1#8G	A	(E)	-
AR-9	480 V	3	80.0 A	100.0 A	MCC	24	53209 VA	1 1/4"C,3#3,1#8G	A	(E)	-
AR-10	480 V	3	80.0 A	100.0 A	MCC	25	53209 VA	1 1/4"C,3#3,1#8G	A	(E)	-
EXISTING PUMP CONTROL PANEL											
CP-EX	480 V	3	160.0 A	200.0 A	MSB	7	106417 VA	2 1/2"C,3#4/0,1#6G	B	(E)	-

SCHEDULE NOTES:

A. ROUTE NEW CONDUCTORS FROM SERVICE PANEL TO EXISTING MECHANICAL UNIT DISCONNECT. COORDINATE ROUTING PRIOR TO ROUGH IN.

B. INTERCEPT EXISTING CONDUCTORS FOR CONTROL PANEL AT BASE OF PUMP CONCRETE PAD. ROUTE NEW CONDUCTORS FOR PAD TO NEW SERVICE PANEL. COORDINATE ROUTING PRIOR TO ROUGH IN.

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

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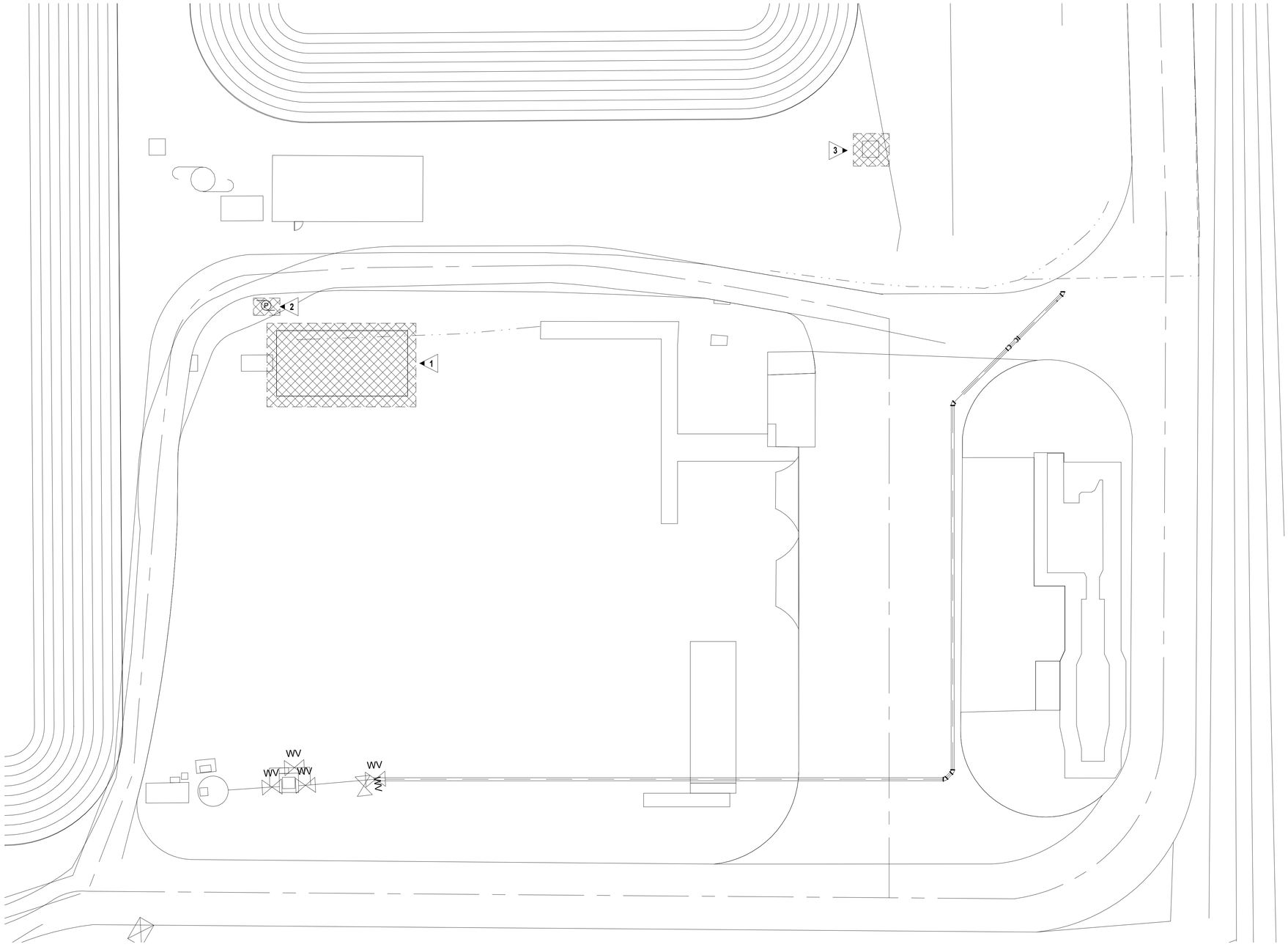
WASTEWATER TREATMENT PLANT EXPANSION

OVERALL COMPOSITE SITE PLAN

E2.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 E3.0 ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. ALL EXISTING EQUIPMENT REMOVED FROM SERVICE AND NOT INTENDED FOR REUSE SHALL REMAIN THE PROPERTY OF OWNER AND SHALL BE STORED OR DISPOSED OF AS DIRECTED BY THE OWNER.
3. MAINTAIN SERVICE TO ALL EXISTING CIRCUITS THAT ARE NOT SCHEDULED FOR REMOVAL.
4. EQUIPMENT LOCATIONS ARE APPROXIMATE LOCATIONS. FIELD VERIFY EXACT LOCATIONS OF ALL EXISTING EQUIPMENT. FIELD LOCATIONS SHALL GOVERN.

KEYED NOTES:

1 ▶ EXISTING UTILITY BUILDING TO BE DEMOLISHED. DISCONNECT AND REMOVE ELECTRICAL FEEDER TO BUILDING. PROPERLY DISPOSE OF ALL ELECTRICAL EQUIPMENT IN BUILDING. DISCONNECT AND REMOVE EXISTING FIRE ALARM SYSTEM.

2 ▶ EXISTING PUMP TO BE DEMOLISHED. DISCONNECT AND REMOVE ALL ASSOCIATED CIRCUITRY.

3 ▶ EXISTING SCREW CONVEYOR TO BE DEMOLISHED. DISCONNECT AND REMOVE ALL ASSOCIATED CIRCUITRY.

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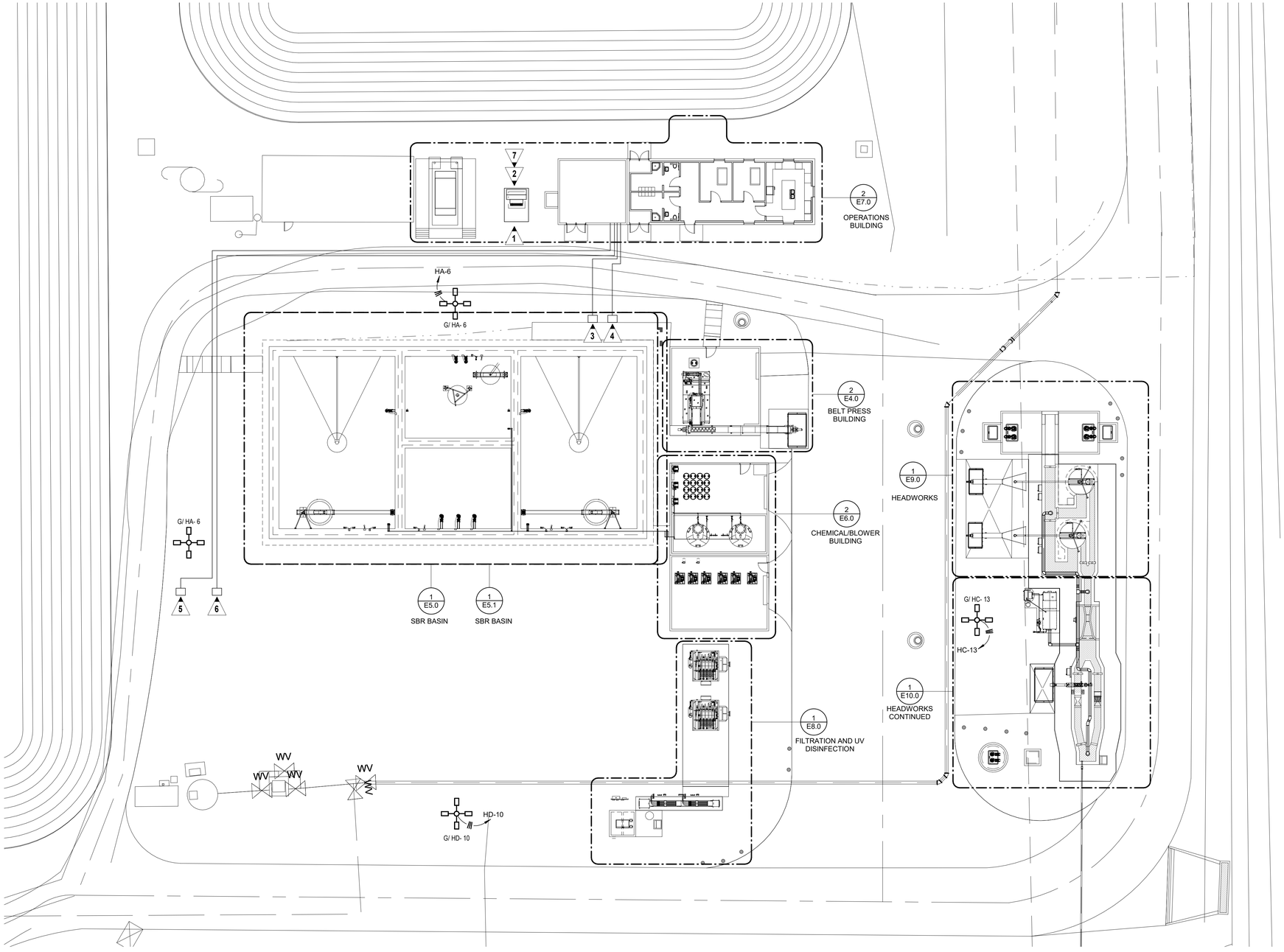
WASTEWATER TREATMENT PLANT EXPANSION

ELECTRICAL SITE PLAN - DEMOLITION PLAN

E3.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 / E3.1 ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.

KEYED NOTES:

1. COORDINATE EXACT LOCATION OF UTILITY COMPANY PAD MOUNT TRANSFORMER PRIOR TO ROUGH IN.
2. COORDINATE UTILITY COMPANY SERVICE REQUIREMENTS.
3. ROUTE (4) 1" AND (2) 2" EMPTY CONDUITS WITH PULLSTRING FROM THE ELECTRICAL ROOM TO QUAZITE BOX. QUAZITE BOX COVER TO READ "ELECTRICAL". SEE 4/E13.3 FOR QUAZITE BOX DETAIL.
4. ROUTE (4) 1" AND (2) 2" EMPTY CONDUITS WITH PULLSTRING FROM THE ELECTRICAL ROOM TO QUAZITE BOX. QUAZITE BOX COVER TO READ "COMMUNICATIONS". SEE 4/E13.3 FOR QUAZITE BOX DETAIL.
5. ROUTE (10) 3/4" AND (2) 2" EMPTY CONDUITS WITH PULLSTRING FROM THE ELECTRICAL ROOM TO QUAZITE BOX. QUAZITE BOX COVER TO READ "ELECTRICAL". SEE 4/E13.3 FOR QUAZITE BOX DETAIL.
6. ROUTE (8) 3/4" AND (1) 2" EMPTY CONDUITS WITH PULLSTRING FROM THE ELECTRICAL ROOM TO QUAZITE BOX. QUAZITE BOX COVER TO READ "COMMUNICATIONS". SEE 4/E13.3 FOR QUAZITE BOX DETAIL.
7. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL UTILITY REQUIREMENTS WITH CANOOCHEE EMC PRIOR TO ROUGH IN. CONTACT LUCAS BECKUM @ 912-581-1019 OR LBECKUM@CANOOCHEEEMC.COM.

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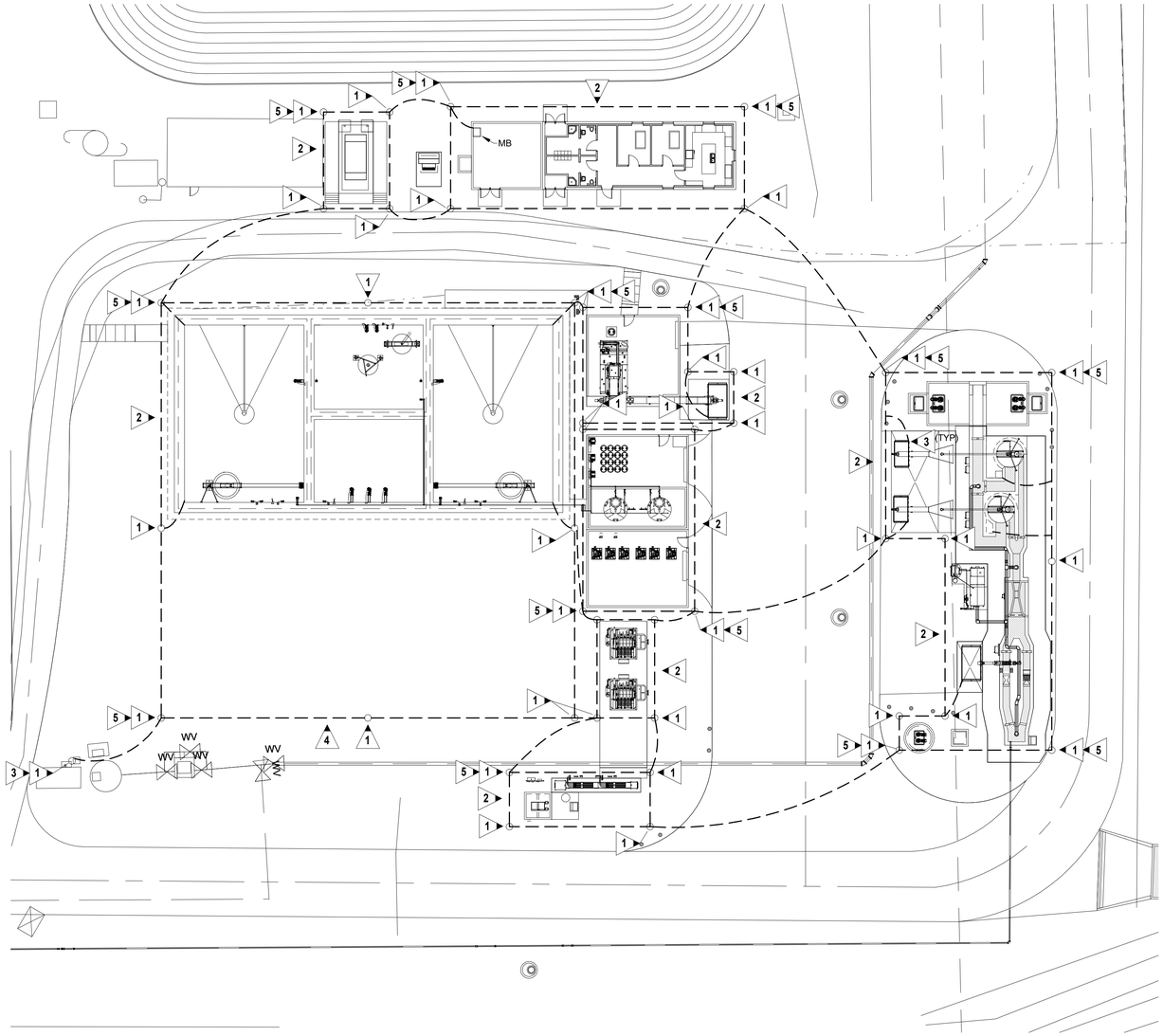
WASTEWATER TREATMENT PLANT EXPANSION

ELECTRICAL SITE PLAN

E3.1

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 E3.2 ELECTRICAL SITE PLAN
SCALE: 1" = 20'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. COORDINATE ALL PATHING OF GROUNDING RING WITH CIVIL PLANS PRIOR TO ROUGH IN.
3. MAKE GROUNDING CONNECTION TO ALL EQUIPMENT FROM GROUNDING RING.

KEYED NOTES:

1. PROVIDE GROUND ROD AT LOCATION SHOWN. CONNECT GROUND ROD TO BUILDING STEEL AT CORNER. NUMBER AS REQUIRED FOR TOTAL RESISTANCE OF 25 OHMS. GROUND RODS SHALL BE 3/4" X 10'-0" COPPER CLAD STEEL. CONNECTION TO ALL GROUND RODS SHALL BE BY EXOTHERMIC WELD.
2. PROVIDE GROUND RING 30' BELOW GRADE WITH WARNING TAPE LOCATE 12" BELOW GRADE. CONSTRUCT GROUND RING WITH 4/0 AWG BARE COPPER WIRE.
3. MAKE GROUNDING CONNECTION WITH 4/0 AWG COPPER WIRE TO EQUIPMENT AS SHOWN. TYPICAL FOR ALL GROUNDING CONNECTIONS SHOWN.
4. COORDINATE EXACT GROUND RING BURIAL PATHING WITH CIVIL AND LOCATION OF FUTURE SBR.
5. PROVIDE GROUND ROD ENCLOSURE WITH REMOVABLE CAP.

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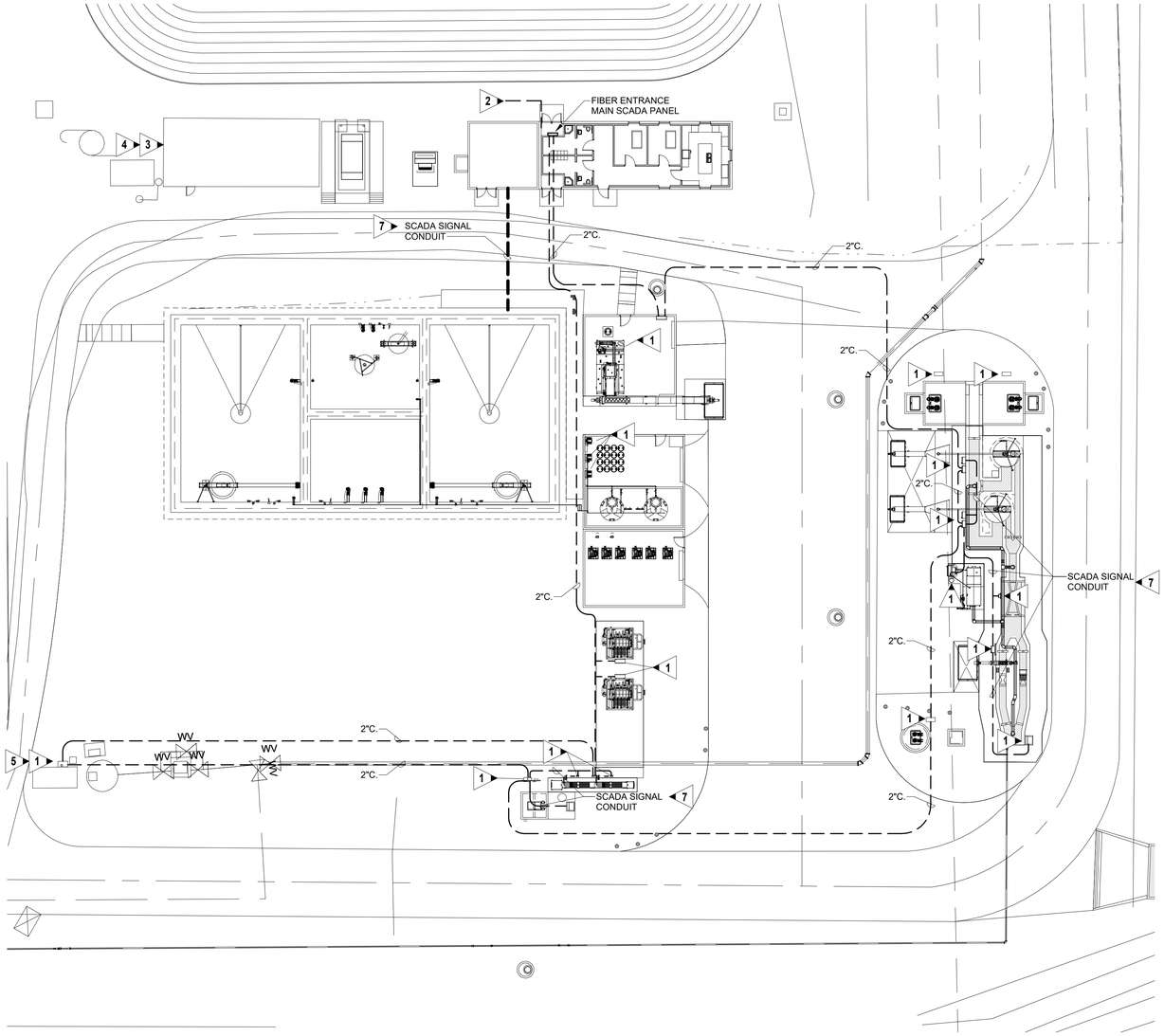
WASTEWATER TREATMENT PLANT EXPANSION

ELECTRICAL SITE PLAN - GROUNDING RING

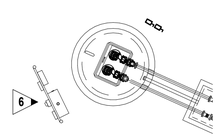
E3.2

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 SCADA CONDUIT AND CABLING SITE PLAN
E3.3 SCALE: 1" = 20'-0"



3 ELECTRICAL SITE PLAN - UNDERDRAIN DATA PLAN
E3.3 SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. FIBER CABLING SHALL BE PROVIDED, TESTED, LABELED AND TERMINATED BY C2I. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUITS AND BACK BOXES. C2I SHALL BE RESPONSIBLE FOR TESTING FIBER BEFORE AND AFTER INSTALLATION
3. CONTRACTOR SHALL COORDINATE ALL CABLING REQUIREMENTS WITH C2I PRIOR TO ROUGH IN. CONTACT WES WOOD @ 404-351-1085 OR WWOOD@C2IINC.COM FOR FULL SCOPE OF WORK BEING PROVIDED BY C2I.
4. WHERE CONDUIT SIZE FOR CONTROL CABLING IS NOT SPECIFICALLY NOTED PROVIDE (1) 3/4"C. PROVIDE EYS FITTINGS AS REQUIRED.
5. DO NOT USE ELECTRICAL DRAWINGS TO SCALE LOCATIONS OF ELECTRICAL EQUIPMENT.
6. ALL FIBER CONDUIT ROUTINGS SHOWN ARE FOR DIAGRAMMATIC PURPOSE ONLY. CONFIRM ALL ROUTING OF CONDUITS SHOWN WITH C2I AND CIVIL PLANS PRIOR TO INSTALLATION.
7. REFER TO SHEET E12.8 FOR SCADA NETWORK DIAGRAM FOR EXACT CONNECTION REQUIREMENTS.

KEYED NOTES:

1. PROVIDE 3/4"C. WITH CAT6 CABLE FROM CLOSEST SCADA PANEL. COORDINATE AND PLAN ROUTING OF CONDUIT WITH OTHER TRADES PRIOR TO ROUGH IN.
2. STUB OUT (2) 2" EMPTY CONDUITS WITH PULL STRINGS FOR FIBER PROVIDED BY PAC FIBER. PAC FIBER POINT OF CONTACT IS NOAH COVINGTON (NOAH.COVINGTON@PACFIBER.COM).
3. COORDINATE WITH PAC FIBER ON ROUTING OF NEW FIBER CONNECTION FOR EXISTING BUILDING.
4. CONNECT FIRE ALARM SYSTEM IN EXISTING BUILDING TO NEW FIRE ALARM SYSTEM IN OPERATIONS BUILDING. PROVIDE ALL NECESSARY CABLING, DEVICES, EQUIPMENT, ETC. TO INTERFACE EXISTING FIRE ALARM SYSTEM TO NEW FIRE ALARM SYSTEM. EXISTING FIRE ALARM SYSTEM IS BY HONEYWELL.
5. PROVIDE 3/4"C, WITH CAT6 CABLE FOR WIRELESS ETHERNET BRIDGE SERVING UNDERDRAIN PUMP STATION. COORDINATE EXACT REQUIREMENTS OF WIRELESS ETHERNET BRIDGE WITH C2I PRIOR TO INSTALLATION.
6. PROVIDE 3/4"C. FROM WIRELESS ETHERNET BRIDGE SERVING UNDERDRAIN PUMP STATION TO UNDERDRAIN PUMP CONTROL PANEL. COORDINATE EXACT REQUIREMENTS WITH C2I PRIOR TO ROUGH IN. SEE E2.0 FOR LOCATION OF UNDERDRAIN PUMP STATION.
7. REFER TO I/O SCHEDULES ON SHEET E12.4 THROUGH SHEET E12.7 FOR CONDUIT AND CABLING REQUIRMENTS.

DATA/VOICE CABLING LEGEND

▷ WALL MOUNTED (UNLESS NOTED OTHERWISE ON DRAWINGS) DATA OUTLET. TWO (2) CATEGORY 6e CABLE DROPS, TWO (2) CATEGORY 6e JACKS. NUMBER DESIGNATES QUANTITY OF DROPS.

W ▷ "W" WHERE SHOWN, INDICATES TWO (2) CATEGORY 6A DATA DROPS LOCATE 6" ABOVE DROP TILE CEILING OR AT STRUCTURE TO SERVE OWNER PROVIDED WIRELESS ACCESS POINT, PROVIDE TWO(2) 20' - GREEN PATCH CORDS AT EACH "W" LOCATION SHOWN.

GENERAL NOTES: (DATA/VOICE CABLING)

1. ALL CABLING SHALL BE BUNDLED AND SUPPORTED BY STRUCTURE ABOVE OR BY WALL AT EVERY 4-5 FEET. SUPPORT OF CABLING BY CEILING GRID OR GRID SUPPORT WIRES IS NOT ACCEPTABLE. PROVIDE D-RINGS, J-HOOKS OR OTHER SUPPORT MEANS AS PER EIA/TIA STANDARDS.
2. ALL CABLING SHALL BE PLENUM RATED. OUTER JACKET ON ENHANCED CAT. 6e DATA CABLING SHALL BE BLUE, VOICE / VOIP SHALL BE BLUE, AND WIRELESS CABLING SHALL BE GREEN.
3. ALL DATA OUTLET JACKS SHALL BE PROVIDED WITH THE FOLLOWING LABELING NOMENCLATURE:

   X XXX
   - SEQUENTIAL NUMBER LEFT TO RIGHT BEGINNING WITH TOP PATCH PANEL TO LAST PATCH PANEL IN RACK. IE. 1-223, 1-224
   - "M" FOR MDF OR DESIGNATION FROM WHICH JACK IS SERVED "X" FOR IDF-X

   ALL PATCH PANELS AND 110 BLOCKS SHALL BE CORRESPONDINGLY LABELED.
4. PROVIDE METAL D-RING OR RING RUNS AS NECESSARY TO PROPERLY LACE AND SUPPORT ALL VOICE CABLING AT TELEPHONE BACKBOARDS.
5. PROVIDE BRUSHED STAINLESS STEEL, TYPE 302 COVER PLATES, WITH KEYSTONE JACKS, COLOR AS NOTED. DATA/VOICE = BLUE, WIRELESS DROPS = GREEN
6. GROUND ALL RACKS WITH #6 COPPER LOCATED AT EACH BACKBOARD. SEE DRAWINGS FOR PANEL DESIGNATIONS. LOCATE RACKS A MINIMUM OF 2.5' OFF OF WALL. PROVIDE 12" CABLE RUNWAY SPANNING FROM TOP OF RACK TO WALL AND TURNED UP TO ABOVE DROP TILE CEILING IN ORDER TO ROUTE CABLE TO RACK. AT EACH RACK LOCATION PROVIDE A 3/4"x4'x8' PLYWOOD BACKBOARD PAINTED WITH TWO COATS OF BLACK FIRE RETARDANT PAINT. LOCATE 110 BLOCKS ON BACKBOARD. "MDF" RACK AND ALL ELECTRONIC RACKS SHALL BE 4 POST, IDF RACKS SHALL BE 2 POST.
7. TY-WRAPS SHALL NOT BE CINCHED DOWN TIGHT ENOUGH TO DEFORM CABLES. MAINTAIN MINIMUM BEND RADIUS ON FIBER, TIE CABLES, STATION WIRES, AND PATCH CORDS.
8. ALL DATA / VOICE/CONTROLS CABLING SHALL BE ENHANCED CAT. 6e AS NOTED IN SPECIFICATIONS. (NO EXCEPTIONS). A WAP CABLING SHALL BE CAT 6A CABLING.
9. TIE CABLE SHALL BE CAT-3, UNDERGROUND DUCT RATED.
10. ALL DATA / VOICE / WAP CABLING SHALL BE LANDED ON DEDICATED PATCH PANELS IN DATA RACK INDICATED. SEE DETAILS ON THIS SHEET. ALLOW CLEARANCE FOR OWNER FURNISHED ELECTRONICS BETWEEN PATCH PANELS AS SHOWN. COORDINATE ELECTRONICS RACK REQUIREMENTS WITH OWNER.
11. ANY DATA DROPS ROUTED IN UNDERGROUND CONDUIT SHALL BE UNDERGROUND DUCT RATED.
12. PROVIDE PATCH CORDS AT STATION END AND RACK END. PATCH CORDS SHALL BE COLOR CODED TO MATCH CABLE. SEE SPECIFICATIONS FOR PATCH CORD INFORMATION. PROVIDE 3', 5', OR 7' PATCH CORDS AT RACK END. LENGTH AS REQUIRED FOR PROPER CORD LACING. PROVIDE 10' CORDS AT STATION END OR 25' AS REQUIRED FOR COMPUTER ROOMS.
13. ALL DATA ELECTRONICS, WAPS, AND VOIP SYSTEM COMPONENTS ARE NIC AND PROVIDE BY OWNER.
14. PRIOR TO ROUGH IN AND INSTALL OF ANY PATCH PANELS OR EQUIPMENT, COORDINATE AN ON-SITE MEETING WITH OWNER(IT DEPARTMENT). ADJUST SPACING OF EQUIPMENT AND MOUNTING AS DIRECTED BY OWNER.
15. DURING SUBMITTAL PHASE, DATA/VOICE CABLING CONTRACTOR SHALL SUBMIT A CABLE ROUTING PLAN SHOWING PROPOSED CABLE ROUTING AND NOTE CABLE DISTANCES (DISTANCE TO INCLUDE SERVICE LOOPS). CABLING DISTANCES SHALL NOT EXCEED 300 FEET. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION.

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

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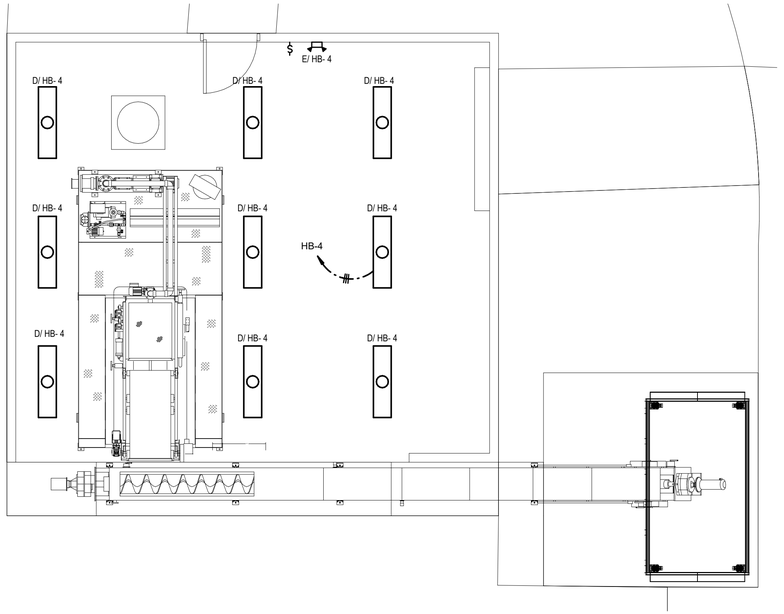
WASTEWATER TREATMENT PLANT EXPANSION

SCADA CONDUIT AND CABLING ELECTRICAL SITE PLAN

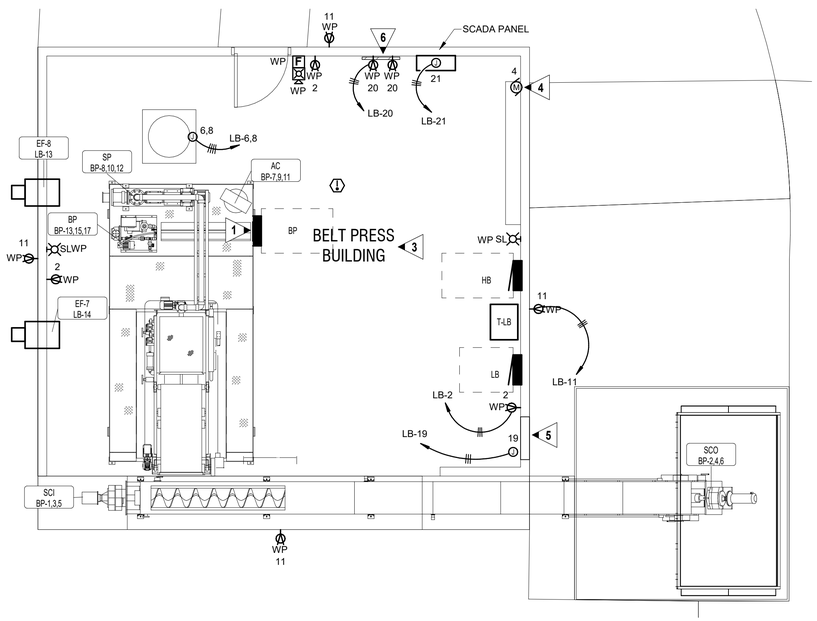
E3.3

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 E4.0 LIGHTING PLAN - BELT PRESS
SCALE: 1/4" = 1'-0"



2 E4.0 POWER PLAN - BELT PRESS
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. PROVIDE UN-SWITCHED EMERGENCY "HOT" CONDUCTOR TO EACH EXIT SIGN, EMERGENCY LIGHT FIXTURE, AND NIGHT LIGHT.
3. FOR ALL CONDUIT INSTALLATIONS, CONTRACTOR SHALL PULL #18 AWG TFN SOLID COPPER CONTROL WIRING IN SAME CONDUIT AS LINE-VOLTAGE CONDUCTORS SHALL BE PURPLE AND GRAY. FIXTURE WHIPS SHALL BE PROVIDED WITH CONTROL WIRING INSTALLED IN WHIPS TO MATCH INSTALLATION. FIXTURE WHIPS SHALL NOT EXCEED 6'-0" IN LENGTH. NO EXCEPTIONS.
4. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS/TRAVELERS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.
5. 'WP' INDICATES DEVICE SHALL BE WEATHER PROOF.
6. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES:

1. SEE RISER DIAGRAM 2/E4.0 FOR CONNECTION REQUIREMENTS.
2. REFER TO FEEDER SCHEDULE ON SHEET E12.0 FOR CONDUCTOR REQUIREMENTS.
3. ROUTE (2) 1"C. FROM BELT PRESS BUILDING TO FIRE ALARM CONTROL PANEL LOCATED IN OPERATIONS BUILDING. COORDINATE EXACT ROUTING WITH CIVIL PLANS PRIOR TO ROUGH IN.
4. COORDINATE EXACT REQUIREMENTS OF OVERHEAD DOOR WITH MANUFACTURER PRIOR TO ROUGH IN. SEE 1/E13.4 FOR TYPICAL OVERHEAD DOOR INSTALLATION. ALL RACEWAYS, JUNCTIONS BOXES, ETC PROVIDE SHALL BE SUITABLE FOR HIGHLY CORROSIVE ENVIRONMENT. COORDINATE LOCATION OF DOOR CONTROLS WITH MANUFACTURERS RECOMMENDATIONS.
5. INTERLOCK LOUVER WITH EXHAUST FAN. PROVIDE 120V CONNECTION TO MOTORIZED DAMPER.
6. ALL LOW VOLTAGE CONDUITS AND CABLING TO BE STUBBED UP IN BUILDING SHALL STUB UP AT TELEPHONE BACKBOARD.

BELT PRESS CONNECTION SCHEDULE

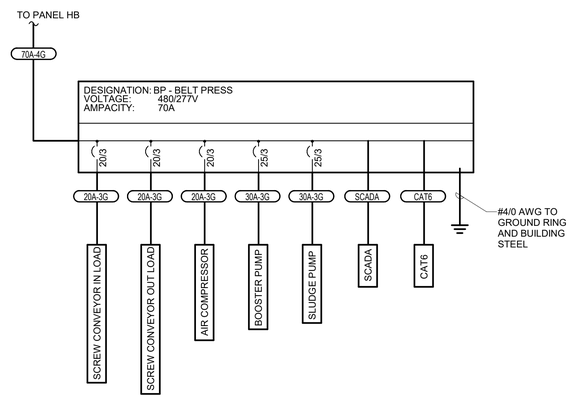
ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
AIR COMPRESSOR											
AC	480 V	3	5.0 A	20.0 A	BP	7,9,11	3326 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
BOOSTER PUMP											
BP	480 V	3	12.5 A	25.0 A	BP	13,15,17	8314 VA	3/4"C,3#10,1#10G		NFS	30/3/4X
FANS											
EF-7	120 V	1	6.3 A	20.0 A	LB	14	600 VA	3/4"C,2#12,1#12G		MRS	-
EF-8	120 V	1	6.3 A	20.0 A	LB	13	600 VA	3/4"C,2#12,1#12G		MRS	-
SCREW CONVYER											
SCI	480 V	3	6.0 A	15.0 A	BP	1,3,5	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SCO	480 V	3	6.0 A	15.0 A	BP	2,4,6	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SLUDGE PUMP											
SP	480 V	3	17.5 A	25.0 A	BP	8,10,12	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X

GENERAL NOTES:

1. CONTROL PANEL IS PROVIDED BY MANUFACTURER.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL CONNECTIONS TO ALL MOTORS AND CONTROL DEVICES
3. COORDINATE ALL CONNECTION REQUIREMENTS WITH SYSTEM MANUFACTURER'S CUTSHEETS AND SPECIFICATIONS.
4. COORDINATE CONDUIT AND CABLING REQUIRMENTS WITH I/O TABLE PRIOR TO ROUGH IN.

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER



2 E4.0 3 BELT PRESS RISER DIAGRAM
NO SCALE

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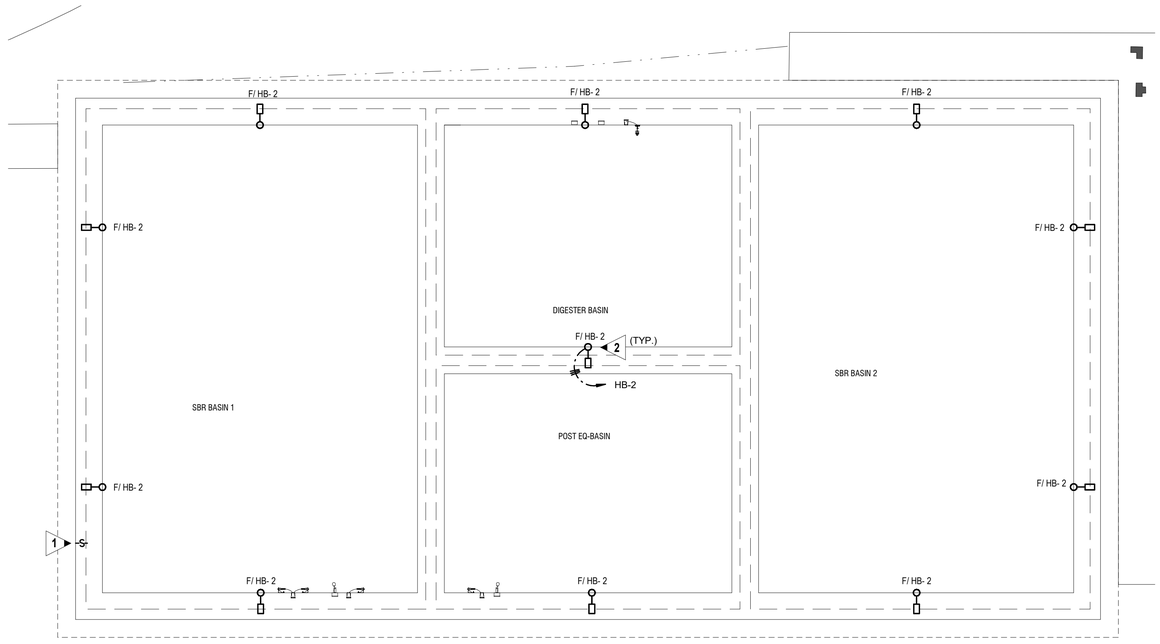
WASTEWATER TREATMENT PLANT EXPANSION

LIGHTING AND POWER PLAN - BELT PRESS

E4.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 LIGHTING PLAN -SBR TANKS
E5.0 SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.

KEYED NOTES:

1 ▶ PROVIDE SWITCH WITH WEATHERPROOF BUBBLE. COORDINATE EXACT MOUNTING LOCATION OF SWITCH WITH CATWALK STAIRS.

2 ▶ REFER TO DETAIL 3/E13.3 FOR CATWALK LIGHT FIXTURE MOUNTING DETAIL. TYPICAL FOR ALL FIXTURES SHOWN.

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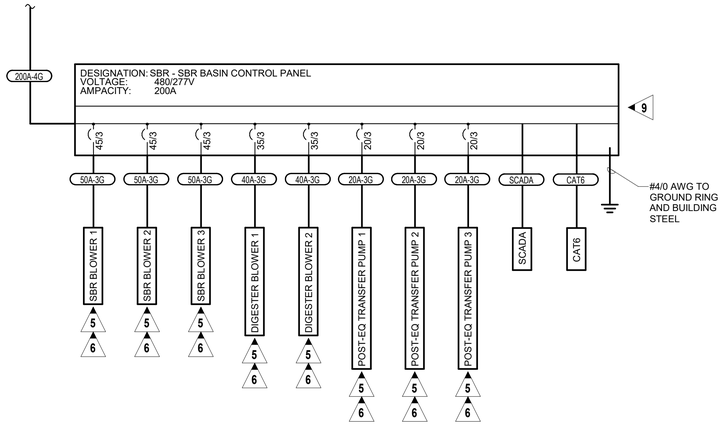
WASTEWATER TREATMENT PLANT EXPANSION

LIGHTING PLAN - SBR BASIN

E5.0

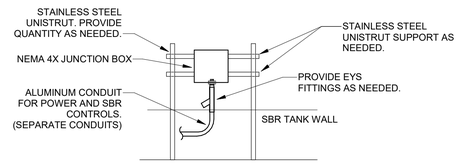
FILE NO: 2020-48

PLOT DATE: May 21, 2025



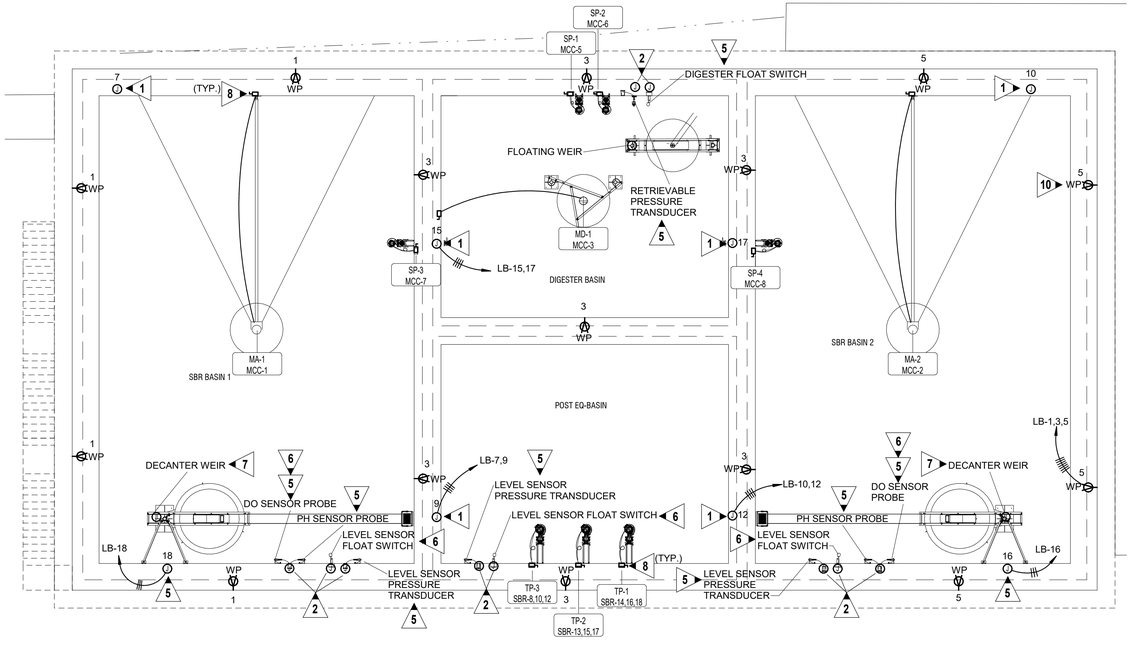
4 ▶ 2 / E5.1 SBR CONTROL PANEL RISER DIAGRAM
NO SCALE

FRONT ELEVATION



NOTES:
1. ALL ELECTRICAL ENCLOSURES SHALL BE NEMA 4X RATED.
2. ALL EXPOSED CONDUIT SHALL BE ALUMINUM.
3. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL.
4. ROUTE PVC WITHIN CONCRETE. FITTINGS 18" OR LESS ABOVE TANK WALL SHALL NOT BE ALLOWED.
5. ALL RECEPTACLES SHALL BE PROVIDED WITH WEATHER PROOF COVER.

3 / E5.1 DETAIL - SBR JUNCTION BOX MOUNTING DETAIL
NO SCALE



1 / E5.1 POWER PLAN -SBR TANKS
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.
3. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES:

1 ▶ PROVIDE JUNCTION BOX FOR ELECTRONICALLY OPERATED VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 9#14, 1#14G ROUTED TO SBR CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.

2 ▶ PROVIDE JUNCTION BOX FOR LOW VOLTAGE SENSOR COORDINATE EXACT JUNCTION BOX SIZES WITH LOW VOLTAGE WIRING DIAGRAMS PRIOR TO ROUGH-IN. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE SHIELDED CABLE FOR SENSOR CONNECTION TO SBR CONTROL PANEL SEE SHEET 2/E7.0 FOR LOCATION OF PANEL.

3 ▶ SEE AQUA-AEROBIC SYSTEMS, INC SBR SHOP DRAWINGS FOR CABLING REQUIREMENTS.

4 ▶ REFER TO FEEDER SCHEDULE ON SHEET E12.0 FOR CONDUCTOR REQUIREMENTS.

5 ▶ ROUTE 3/4"C. WITH 16 AWG T.S. PR TO SBR CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.

6 ▶ PROVIDE 3/4"C. 4#14, 1#14G TO SBR CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.

7 ▶ PROVIDE 3/4"C. 8#14, 1#14G TO SBR CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN. PROVIDE EYS FITTINGS AS REQUIRED.

8 ▶ PROVIDE NEMA 4X DISCONNECT ON STAINLESS STEEL UNISTRUT RACK AS SHOWN. COORDINATE EXACT DISCONNECT REQUIREMENTS WITH ASSOCIATED CONTROL PANEL SCHEDULE. REFER TO DETAIL 1/E13.3 FOR DISCONNECT MOUNTING DETAIL. TYPICAL FOR ALL DISCONNECTS SHOWN.

9 ▶ SBR CONTROL PANEL IS LOCATED IN MAIN ELECTRICAL ROOM. REFER TO SHEET E7.0 FOR LOCATION OF SBR CONTROL PANEL.

10 ▶ REFER TO DETAIL 3/E5.1 FOR RECEPTACLE MOUNTING REQUIREMENTS. TYPICAL FOR ALL RECEPTACLES AND JUNCTION BOXES SHOWN.

SBR CONNECTION SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
MIXER ASSEMBLY											
MA-1	480 V	3	17.5 A	20.0 A	MCC	1	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
MA-2	480 V	3	17.5 A	20.0 A	MCC	2	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
MD-1	480 V	3	13.8 A	20.0 A	MCC	3	9145 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SLUDGE PUMP											
SP-1	480 V	3	6.0 A	20.0 A	MCC	5	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SP-2	480 V	3	6.0 A	20.0 A	MCC	6	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SP-3	480 V	3	6.0 A	20.0 A	MCC	7	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SP-4	480 V	3	6.0 A	20.0 A	MCC	8	3991 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
TRANSFER PUMP											
TP-1	480 V	3	10.0 A	20.0 A	SBR	14,16,18	6319 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
TP-2	480 V	3	10.0 A	20.0 A	SBR	13,15,17	6319 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
TP-3	480 V	3	10.0 A	20.0 A	SBR	8,10,12	6319 VA	3/4"C,3#12,1#12G		NFS	30/3/4X

GENERAL NOTES:
1. CONTROL PANEL IS PROVIDED BY MANUFACTURER.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL CONNECTIONS TO ALL MOTORS AND CONTROL DEVICES
3. COORDINATE ALL CONNECTION REQUIREMENTS WITH SYSTEM MANUFACTURER'S CUTSHEETS AND SPECIFICATIONS.
4. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH I/O TABLE PRIOR TO ROUGH IN.

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

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WASTEWATER TREATMENT PLANT EXPANSION

POWER PLAN - SBR BASIN

E5.1

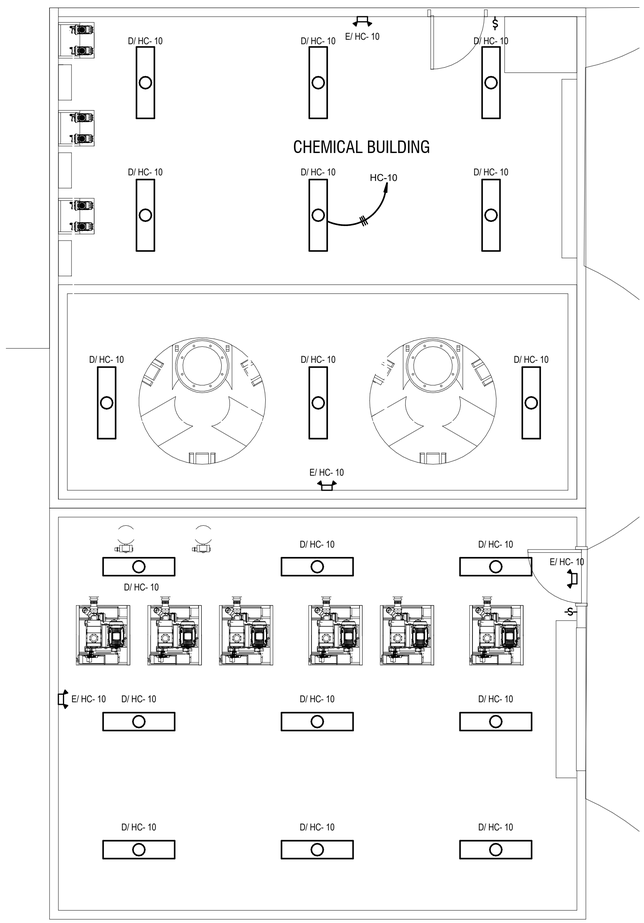
FILE NO: 2020-48
PLOT DATE: May 21, 2025

GENERAL NOTES:

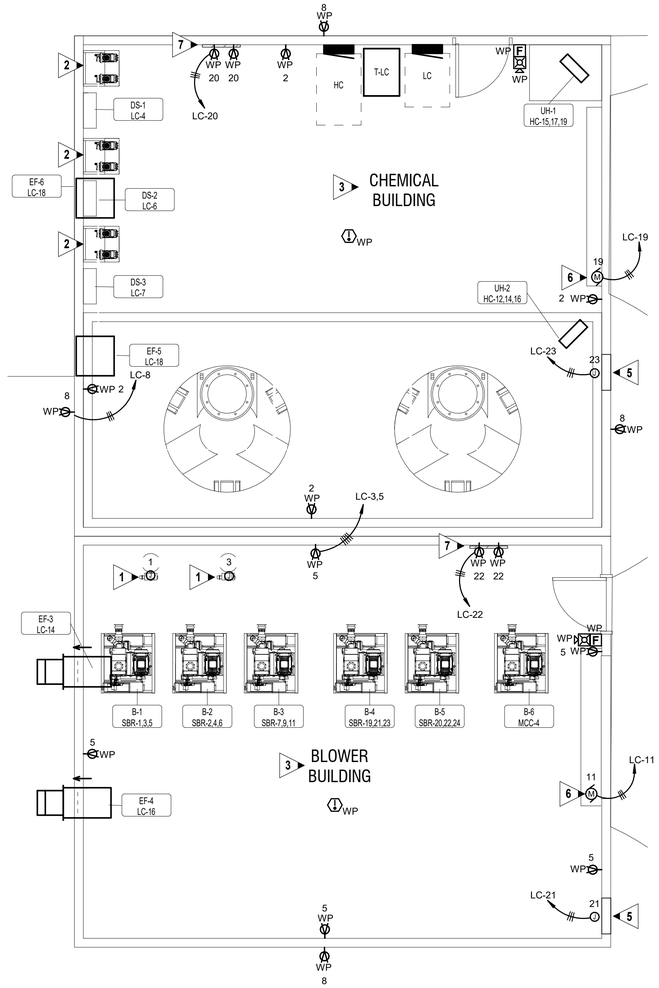
1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. PROVIDE UN-SWITCHED EMERGENCY "HOT" CONDUCTOR TO EACH EXIT SIGN, EMERGENCY LIGHT FIXTURE, AND NIGHT LIGHT.
3. PROVIDE NEUTRAL CONDUCTOR TO ALL WALL MOUNTED OCCUPANCY SENSORS. IF SENSOR DOES NOT REQUIRE NEUTRAL, CAP NEUTRAL IN BOX.
4. FOR ALL CONDUIT INSTALLATIONS, CONTRACTOR SHALL PULL #18 AWG TFN SOLID COPPER CONTROL WIRING IN SAME CONDUIT AS LINE-VOLTAGE CONDUCTORS SHALL BE PURPLE AND GRAY. FIXTURE WHIPS SHALL BE PROVIDED WITH CONTROL WIRING INSTALLED IN WHIPS TO MATCH INSTALLATION. FIXTURE WHIPS SHALL NOT EXCEED 6'-0" IN LENGTH. NO EXCEPTIONS.
5. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS/TRAVELERS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.
6. 'WP' INDICATES DEVICE SHALL BE WEATHER PROOF.
7. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES:

1. PROVIDE JUNCTION BOX FOR ELECTRONICALLY OPERATED VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 7#14, 1#14G. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
2. PROVIDE 1"C. FOR SCADA CABLING. ROUTE CONDUIT TO SCADA PANEL LOCATED IN BELT PRESS. COORDINATE EXACT CABLE REQUIREMENTS WITH C2I DRAWINGS PRIOR TO ROUGH IN.
3. ROUTE (2) 1"C. FROM CHEMICAL/BLOWER BUILDING TO FIRE ALARM CONTROL PANEL LOCATED IN OPERATIONS BUILDING. COORDINATE EXACT ROUTING WITH CIVIL PLANS PRIOR TO ROUGH IN.
4. ALL CONDUITS AND JUNCTION BOXES IN CHEMICAL BUILDING SHALL BE PVC. ALL SUPPORTS SHALL BE FIBERGLASS. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
5. INTERLOCK LOUVER WITH EXHAUST FAN. PROVIDE 120V CONNECTION TO MOTORIZED DAMPER.
6. COORDINATE EXACT REQUIREMENTS OF OVERHEAD DOOR WITH MANUFACTURER PRIOR TO ROUGH IN. SEE 1/E13.4 FOR TYPICAL OVERHEAD DOOR INSTALLATION. ALL RACEWAYS, JUNCTIONS BOXES, ETC PROVIDED SHALL BE SUITABLE FOR CLASS 1 DIVISION 2 HAZARDOUS LOCATIONS. COORDINATE LOCATION OF DOOR CONTROLS WITH MANUFACTURERS RECOMMENDATIONS.
7. ALL LOW VOLTAGE CONDUITS AND CABLING TO BE STUBBED UP IN BUILDING SHALL STUB UP AT TELEPHONE BACKBOARD.



1 LIGHTING PLAN - CHEMICAL/BLOWER BUILDING
E6.0 SCALE: 1/4" = 1'-0"



2 POWER PLAN - CHEMICAL/BLOWER BUILDING
E6.0 SCALE: 1/4" = 1'-0"

BLOWER/CHEM MECHANICAL CONNECTION SCHEDULE

ME	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
FANS											
EF-3	120 V	1	8.2 A	15.0 A	LC	14	787 VA	3/4"C,2#12,1#12G		MRS	-
EF-4	120 V	1	8.2 A	15.0 A	LC	16	787 VA	3/4"C,2#12,1#12G		MRS	-
EF-5	120 V	1	5.6 A	15.0 A	LC	18	540 VA	3/4"C,2#12,1#12G		MRS	-
EF-6	120 V	1	5.6 A	15.0 A	LC	18	540 VA	3/4"C,2#12,1#12G		MRS	-
UNIT HEATER											
UH-1	480 V	3	18.8 A	20.0 A	HC	15,17,19	12500 VA	3/4"C,3#12,1#12G		FS	30/3/4X
UH-2	480 V	3	18.8 A	20.0 A	HC	12,14,16	12500 VA	3/4"C,3#12,1#12G		FS	30/3/4X

GENERAL NOTES:
1. CONTROL PANEL IS PROVIDED BY MANUFACTURER.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL CONNECTIONS TO ALL MOTORS AND CONTROL DEVICES
3. COORDINATE ALL CONNECTION REQUIREMENTS WITH SYSTEM MANUFACTURER'S CUTSHEETS AND SPECIFICATIONS.
4. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH I/O TABLE PRIOR TO ROUGH IN.

BLOWER/CHEM CONNECTION SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
DIGESTER BLOWER											
B-4	480 V	3	33.8 A	35.0 A	SBR	19,21,23	22447 VA	1"C,3#8,1#10G	A,B	FS	60/3/4X
B-5	480 V	3	33.8 A	35.0 A	SBR	20,22,24	22447 VA	1"C,3#8,1#10G	A,B	FS	60/3/4X
DOSING SKID											
DS-1	120 V	1	0.0 A	15.0 A	LC	4	0 VA	3/4"C,2#12,1#12G		MRS	-
DS-2	120 V	1	0.0 A	15.0 A	LC	6	0 VA	3/4"C,2#12,1#12G		MRS	-
DS-3	120 V	1	0.0 A	15.0 A	LC	7	0 VA	3/4"C,2#12,1#12G		MRS	-
POST EQ BLOWER											
B-6	480 V	3	17.3 A	20.0 A	MCC	4	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SBR BLOWER											
B-1	480 V	3	42.5 A	45.0 A	SBR	1,3,5	26604 VA	1"C,3#6,1#10G	A,B	VFD(M)	-
B-2	480 V	3	42.5 A	45.0 A	SBR	2,4,6	26604 VA	1"C,3#6,1#10G	A,B	VFD(M)	-
B-3	480 V	3	42.5 A	45.0 A	SBR	7,9,11	26604 VA	1"C,3#6,1#10G	A,B	VFD(M)	-

SCHEDULE NOTES:
A. SEE SHEET 2/E7.0 FOR LOCATION OF VFD.
B. SEE SHEET 2/E5.1 FOR SBR BLOWER RISER DIAGRAM.

GENERAL NOTES:
1. CONTROL PANEL IS PROVIDED BY MANUFACTURER.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL CONNECTIONS TO ALL MOTORS AND CONTROL DEVICES
3. COORDINATE ALL CONNECTION REQUIREMENTS WITH SYSTEM MANUFACTURER'S CUTSHEETS AND SPECIFICATIONS.
4. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH I/O TABLE PRIOR TO ROUGH IN.

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND
DATE: 05/21/25

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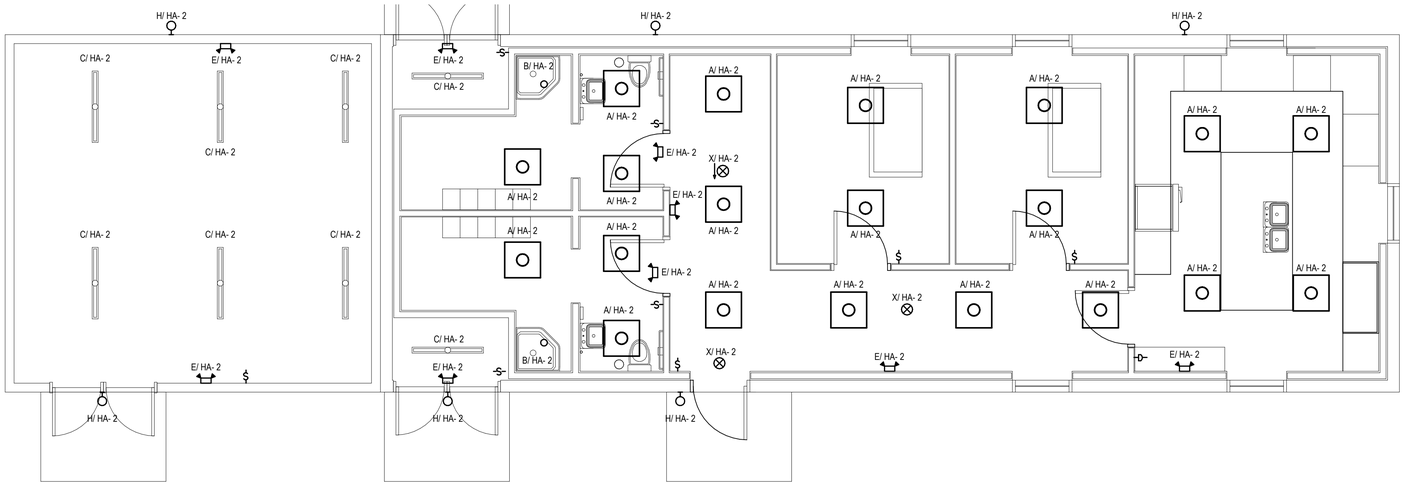
WASTEWATER TREATMENT PLANT EXPANSION

LIGHTING AND POWER PLAN - CHEMICAL/BLOWER BUILDING

E6.0

FILE NO: 2020-48
PLOT DATE: May 21, 2025



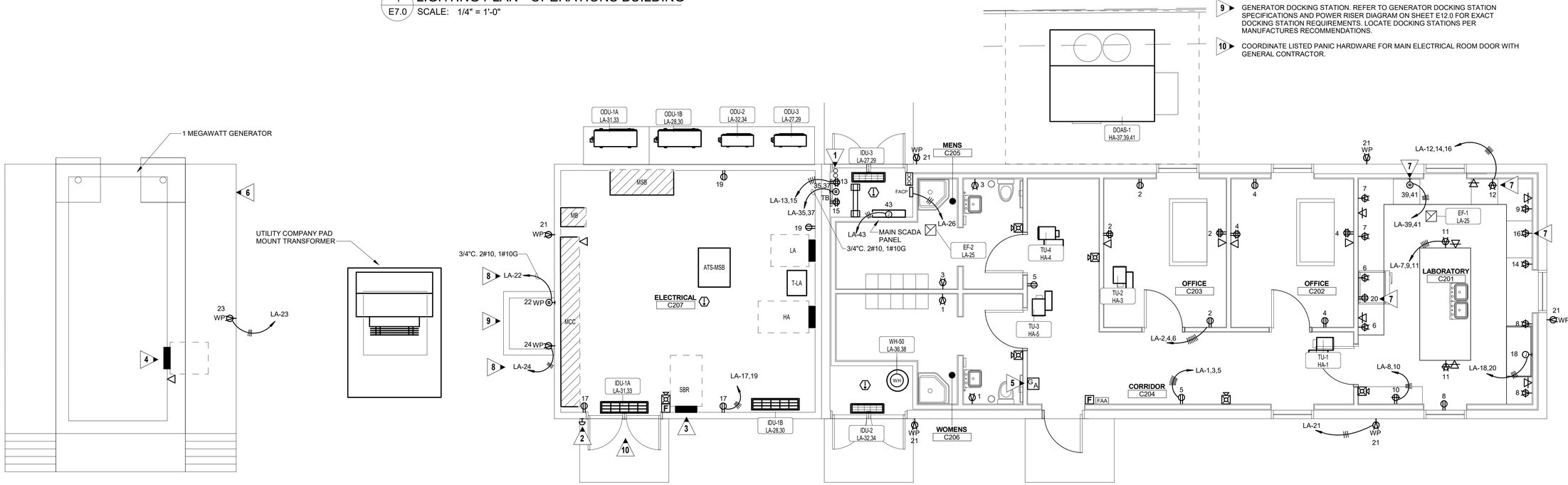
1 E7.0 LIGHTING PLAN - OPERATIONS BUILDING
SCALE: 1/4" = 1'-0"

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.

KEYED NOTES:

1. STUB OUT (2) 2" EMPTY CONDUITS WITH PULL STRINGS FOR FIBER PROVIDED BY PAC FIBER. PAC FIBER POINT OF CONTACT IS NOAH COVINGTON (NOAH.COVINGTON@PACFIBER.COM).
2. EMERGENCY SHUT OFF PUSH BUTTON FOR GENERATOR. PROVIDE NEMA 4X ENCLOSURE.
3. SBR CONTROL PANEL, SEE SHEET E5 FOR RISER DIAGRAM AND ALL CONNECTION REQUIREMENTS.
4. GENERATOR LOAD CENTER PANEL TO BE FURNISHED BY GENERATOR MANUFACTURER.
5. ROUTE 1"C. FROM GENERATOR TO GENERATOR REMOTE ANNUNCIATOR.
6. PROVIDE A 4' WIDE ALUMINUM SERVICE PLATFORM WITH GRATING AND ALUMINUM HANDRAILS ON THREE SIDES OF THE GENERATOR. THE ELEVATION OF THE PLATFORM SHALL BE AT THE SAME HEIGHT AS THE TOP OF THE FUEL TANK. PROVIDE ALUMINUM STEPS AND HANDRAILS. PROVIDE A CONCRETE FOUNDATION FOR THE SERVICE PLATFORM AND STEPS.
7. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF EQUIPMENT PRIOR TO INSTALLATION.
8. COORDINATE EXACT REQUIREMENTS FOR GENERATOR DOCKING STATION BLOCK HEATER AND BATTERY CHARGER WITH DOCKING STATION VENDOR PRIOR TO ROUGH IN.
9. GENERATOR DOCKING STATION. REFER TO GENERATOR DOCKING STATION SPECIFICATIONS AND POWER RISER DIAGRAM ON SHEET E12.0 FOR EXACT DOCKING STATION REQUIREMENTS. LOCATE DOCKING STATIONS PER MANUFACTURES RECOMMENDATIONS.
10. COORDINATE LISTED PANIC HARDWARE FOR MAIN ELECTRICAL ROOM DOOR WITH GENERAL CONTRACTOR.



2 E7.0 POWER PLAN - OPERATIONS BUILDING
SCALE: 1/4" = 1'-0"

OPERATIONS BUILDING CONNECTION SCHEDULE

	EQUIPMENT INFORMATION				CIRCUIT INFORMATION					DISC	
ME	VOLT	PH	MCA	MOCP	PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	TYPE	REMARKS
FANS											
EF-1	120 V	1	3.5 A	15.0 A	LA	25	336 VA	3/4"C,2#12,1#12G		MRS	-
EF-2	120 V	1	2.0 A	15.0 A	LA	25	192 VA	3/4"C,2#12,1#12G		MRS	-
OUTDOOR AIR UNITS											
DOAS-1	480 V	3	49.5 A	60.0 A	HA	37,39,41	32923 VA	1 1/4"C,3#4,1#8G		FS	60/3/4X
SPLIT SYSTEMS INDOOR UNITS											
IDU-1A	208 V	1	0.0 A	20.0 A	LA	31,33	0 VA	3/4"C,2#12,1#12G	A		-
IDU-1B	208 V	1	0.0 A	20.0 A	LA	28,30	0 VA	3/4"C,2#12,1#12G	A		-
IDU-2	208 V	1	0.0 A	20.0 A	LA	32,34	0 VA	3/4"C,2#12,1#12G	A		-
IDU-3	208 V	1	0.0 A	20.0 A	LA	27,29	0 VA	3/4"C,2#12,1#12G	A		-
SPLIT SYSTEMS OUTDOOR UNITS											
ODU-1A	208 V	1	24.0 A	25.0 A	LA	31,33	3994 VA	3/4"C,2#10,1#10G	B	FS	30/2/4X
ODU-1B	208 V	1	24.0 A	25.0 A	LA	28,30	3994 VA	3/4"C,2#10,1#10G	B	FS	30/2/4X
ODU-2	208 V	1	24.0 A	25.0 A	LA	32,34	3994 VA	3/4"C,2#10,1#10G	B	FS	30/2/4X
ODU-3	208 V	1	24.0 A	25.0 A	LA	27,29	3994 VA	3/4"C,2#10,1#10G	B	FS	30/2/4X
VAV TERMINAL UNITS											
TU-1	277 V	1	29.3 A	30.0 A	HA	1	6493 VA	3/4"C,2#10,1#10G		MRS	-
TU-2	277 V	1	18.1 A	20.0 A	HA	3	4011 VA	3/4"C,2#12,1#12G		MRS	-
TU-3	277 V	1	13.5 A	20.0 A	HA	5	2992 VA	3/4"C,2#12,1#12G		MRS	-
TU-4	277 V	1	9.0 A	15.0 A	HA	4	1994 VA	3/4"C,2#12,1#12G		MRS	-
WATER HEATERS											
WH-50	208 V	1	27.0 A	30.0 A	LA	36,38	4500 VA	3/4"C,2#10,1#10G		FS	30/2/N1

SCHEDULE NOTES:

A. "IDU" UNIT IS FED FROM "ODU" UNIT. PROVIDE 3/4"C., WITH PULLSTRING FROM "ODU" UNIT TO "IDU" UNIT FOR CONTROLS CABLING. COORDINATE WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH IN.

B. PROVIDE NEMA 3R DISCONNECT AT "ODU" UNIT.

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WASTEWATER TREATMENT PLANT EXPANSION

LIGHTING AND POWER PLAN - OPERATIONS BUILDING

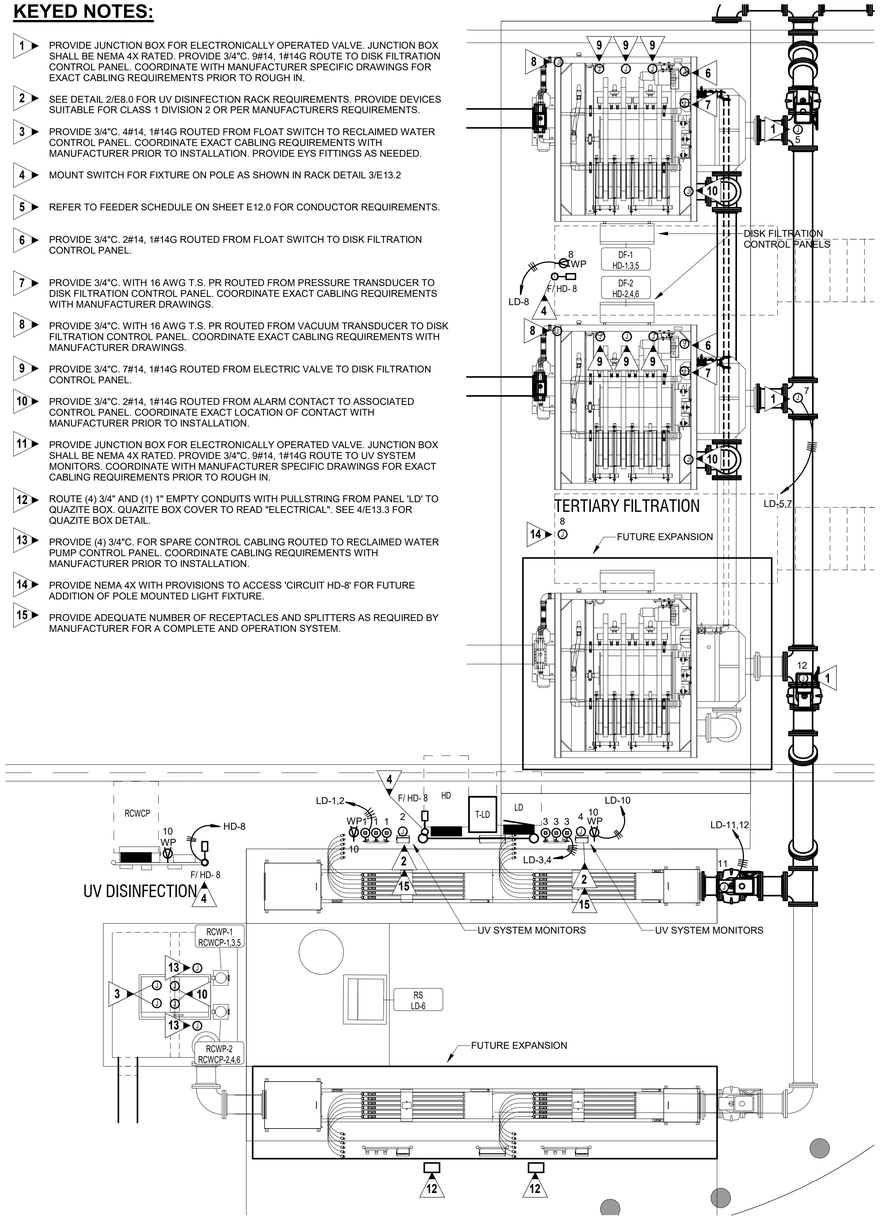
E7.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025

KEYED NOTES:

1. PROVIDE JUNCTION BOX FOR ELECTRONICALLY OPERATED VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 9#14, 1#14G ROUTE TO DISK FILTRATION CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
2. SEE DETAIL 2/E8.0 FOR UV DISINFECTION RACK REQUIREMENTS. PROVIDE DEVICES SUITABLE FOR CLASS 1 DIVISION 2 OR PER MANUFACTURERS REQUIREMENTS.
3. PROVIDE 3/4"C. 4#14, 1#14G ROUTED FROM FLOAT SWITCH TO RECLAIMED WATER CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE EYS FITTINGS AS NEEDED.
4. MOUNT SWITCH FOR FIXTURE ON POLE AS SHOWN IN RACK DETAIL 3/E13.2
5. REFER TO FEEDER SCHEDULE ON SHEET E12.0 FOR CONDUCTOR REQUIREMENTS.
6. PROVIDE 3/4"C. 2#14, 1#14G ROUTED FROM FLOAT SWITCH TO DISK FILTRATION CONTROL PANEL.
7. PROVIDE 3/4"C. WITH 16 AWG T.S. PR ROUTED FROM PRESSURE TRANSDUCER TO DISK FILTRATION CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER DRAWINGS.
8. PROVIDE 3/4"C. WITH 16 AWG T.S. PR ROUTED FROM VACUUM TRANSDUCER TO DISK FILTRATION CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER DRAWINGS.
9. PROVIDE 3/4"C. 7#14, 1#14G ROUTED FROM ELECTRIC VALVE TO DISK FILTRATION CONTROL PANEL.
10. PROVIDE 3/4"C. 2#14, 1#14G ROUTED FROM ALARM CONTACT TO ASSOCIATED CONTROL PANEL. COORDINATE EXACT LOCATION OF CONTACT WITH MANUFACTURER PRIOR TO INSTALLATION.
11. PROVIDE JUNCTION BOX FOR ELECTRONICALLY OPERATED VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 9#14, 1#14G ROUTE TO UV SYSTEM MONITORS. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
12. ROUTE (4) 3/4" AND (1) 1" EMPTY CONDUITS WITH PULLSTRING FROM PANEL 'LD' TO QUAZITE BOX. QUAZITE BOX COVER TO READ "ELECTRICAL". SEE 4/E13.3 FOR QUAZITE BOX DETAIL.
13. PROVIDE (4) 3/4"C. FOR SPARE CONTROL CABLING ROUTED TO RECLAIMED WATER PUMP CONTROL PANEL. COORDINATE CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
14. PROVIDE NEMA 4X WITH PROVISIONS TO ACCESS 'CIRCUIT HD-8' FOR FUTURE ADDITION OF POLE MOUNTED LIGHT FIXTURE.
15. PROVIDE ADEQUATE NUMBER OF RECEPTACLES AND SPLITTERS AS REQUIRED BY MANUFACTURER FOR A COMPLETE AND OPERATION SYSTEM.



1 E8.0 POWER PLAN - UV DISINFECTION
SCALE: 1/4" = 1'-0"

UV CONNECTION SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
DISK FILTRATION											
DF-1	480 V	3	16.0 A	20.0 A	HD	1,3,5	10642 VA	3/4"C,3#12,1#12G		VFD(M)	-
DF-2	480 V	3	16.0 A	20.0 A	HD	2,4,6	10642 VA	3/4"C,3#12,1#12G		VFD(M)	-
RECLAIMED WATER PUMP											
RCWP-1	480 V	3	17.5 A	20.0 A	RCWCP	1,3,5	11639 VA	3/4"C,3#12,1#12G		VFD(M)	-
RCWP-2	480 V	3	17.5 A	20.0 A	RCWCP	2,4,6	11639 VA	3/4"C,3#12,1#12G		VFD(M)	-
REFRIGERANTED AUTO SAMPLER											
RS	120 V	1	14.5 A	15.0 A	LD	6	1250 VA	3/4"C,2#12,1#12G		VFD(M)	-

GENERAL NOTES:

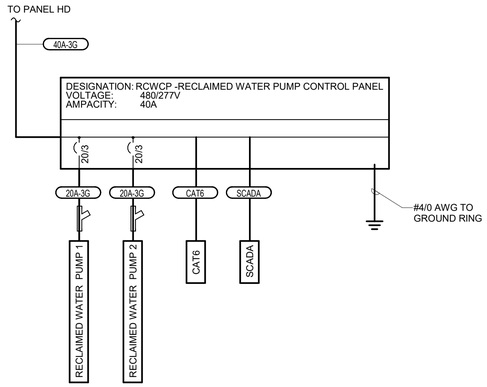
1. CONTROL PANEL IS PROVIDED BY MANUFACTURER.
2. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR MAKING FINAL CONNECTIONS TO ALL MOTORS AND CONTROL DEVICES
3. COORDINATE ALL CONNECTION REQUIREMENTS WITH SYSTEM MANUFACTURER'S CUTSHEETS AND SPECIFICATIONS.
4. COORDINATE CONDUIT AND CABLING REQUIREMENTS WITH I/O TABLE PRIOR TO ROUGH IN.

DISCONNECT TYPES

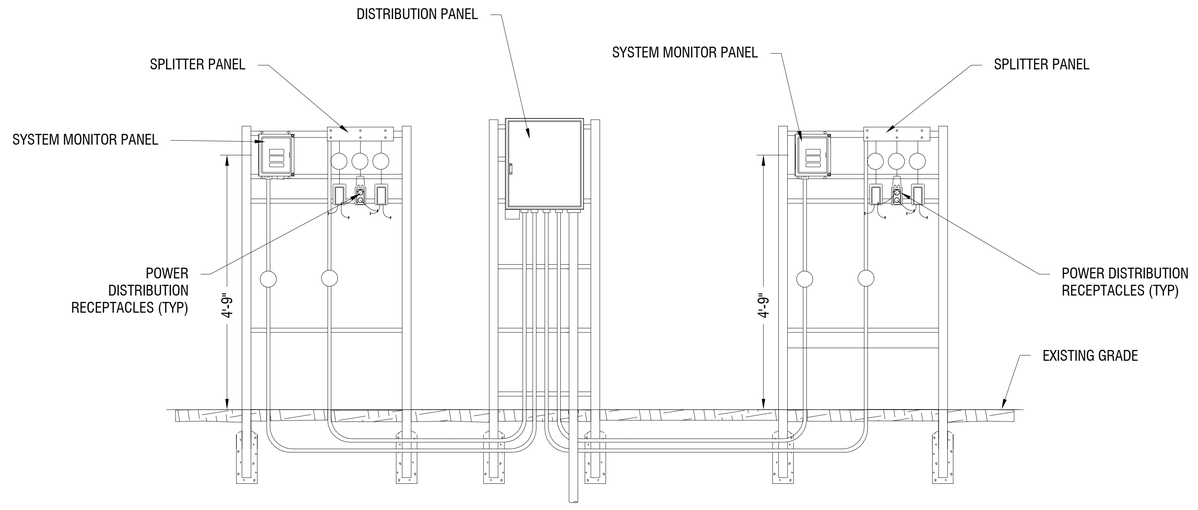
TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. HOMERUN CIRCUITS ARE SHOWN AS NOTED. PROVIDE ALL BRANCH CIRCUIT CONDUIT/CONDUCTORS/TRAVELERS AS NECESSARY TO CONNECT ALL DEVICES SHOWN ON THE CIRCUIT. PROVIDE DEDICATED NEUTRALS FOR ALL CIRCUITS.
3. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.



5 3 E8.0 RECLAIMED WATER PUMP CONTROL PANEL RISER DIAGRAM
SCALE: 6" = 1'-0"



2 E8.0 DETAIL - UV DISINFECTION CONTROL PANEL
NO SCALE

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND
DATE: 05/21/25

M.E. SACK ENGINEERING 19 90

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WASTEWATER TREATMENT PLANT EXPANSION

POWER PLAN - UV DISINFECTION

E8.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025

KEYED NOTES:

1. PROVIDE (2) 3/4" EMPTY CONDUITS WITH PULL STRINGS ROUTED TO ASSOCIATED CONTROL PANEL. COORDINATE CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
2. SEE DETAIL 3/E13.2 FOR TYPICAL RACK DETAIL.
3. PROVIDE JUNCTION BOX FOR SOLENOID VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 9#14, 1#14G ROUTED TO ASSOCIATED CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
4. SEE RISER DIAGRAM 2/E9.0 FOR CONNECTION REQUIREMENTS.
5. SEE RISER DIAGRAM 3/E9.0 FOR CONNECTION REQUIREMENTS.
6. PROVIDE NEMA 4X DISCONNECT ON STAINLESS STEEL UNISTRUT RACK AS SHOWN. COORDINATE EXACT DISCONNECT REQUIREMENTS WITH ASSOCIATED CONTROL PANEL SCHEDULE. REFER TO DETAIL 1/E13.3 FOR DISCONNECT MOUNDING DETAIL. TYPICAL FOR ALL DISCONNECTS SHOWN.
7. MOUNT SWITCH FOR FIXTURE ON POLE AS SHOWN IN RACK DETAIL 3/E13.2
8. REFER TO FEEDER SCHEDULE ON SHEET E12.0 FOR CONDUCTOR REQUIREMENTS.
9. PROVIDE 3/4"C. 4#14, 1#14G ROUTED FROM FLOAT CONTROLS TO ASSOCIATED CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE EYS FITTINGS AS NEEDED.
10. PROVIDE 3/4"C. 2#14, 1#14G ROUTED FROM ALARM CONTACT TO ASSOCIATED CONTROL PANEL. COORDINATE EXACT LOCATION OF CONTACT WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE EYS FITTINGS AS NEEDED.

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

SBR INFLUENT PUMP CONTROL PANEL SCHEDULE

	EQUIPMENT INFORMATION				CIRCUIT INFORMATION					DISC	
ID	VOLT	PH	MCA	MOCP	PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	TYPE	REMARKS
PUMPS											
SBRP-1	480 V	3	42.5 A	45.0 A	SBR IFP	1,3,5	28267 VA	1"C,3#6,1#10G		NFS	60/3/4X
SBRP-2	480 V	3	42.5 A	45.0 A	SBR IFP	2,4,6	28267 VA	1"C,3#6,1#10G		NFS	60/3/4X

LAGOON INFLUENT PUMP CONTROL PANEL SCHEDULE

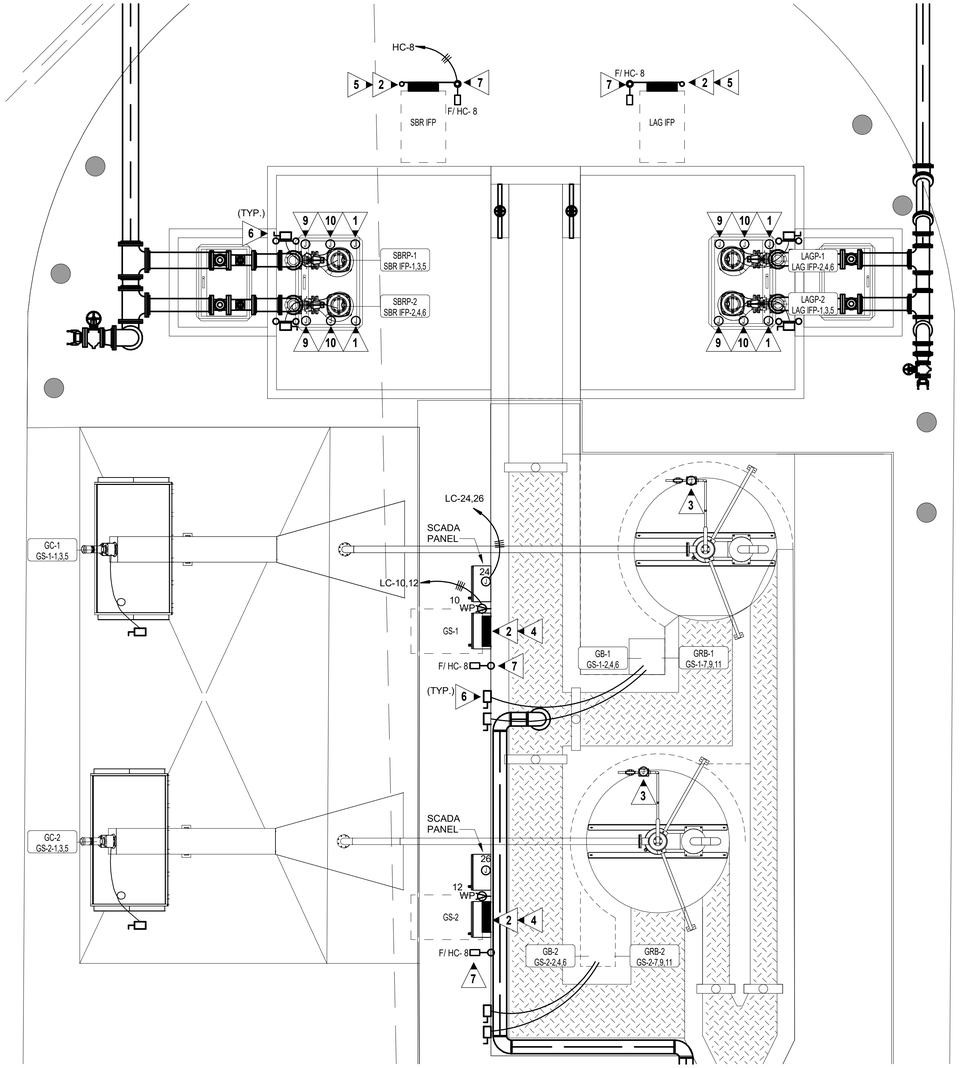
	EQUIPMENT INFORMATION				CIRCUIT INFORMATION					DISC	
ID	VOLT	PH	MCA	MOCP	PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	TYPE	REMARKS
PUMPS											
LAGP-1	480 V	3	42.5 A	45.0 A	LAG IFP	2,4,6	28267 VA	1"C,3#6,1#10G		NFS	60/3/4X
LAGP-2	480 V	3	42.5 A	45.0 A	LAG IFP	1,3,5	28267 VA	1"C,3#6,1#10G		NFS	60/3/4X

GRIT SIFTER 1 CONTROL PANEL SCHEDULE

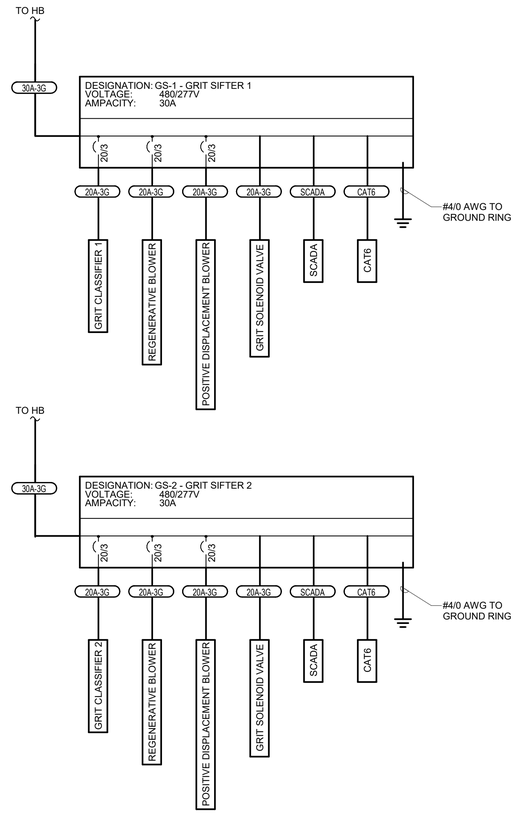
	EQUIPMENT INFORMATION				CIRCUIT INFORMATION					DISC	
ID	VOLT	PH	MCA	MOCP	PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	TYPE	REMARKS
GRIT CLASSIFIER											
GC-1	480 V	3	2.5 A	20.0 A	GS-1	1,3,5	1663 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
GRIT SIFTER BLOWERS											
GB-1	480 V	3	4.4 A	20.0 A	GS-1	2,4,6	2910 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
GRB-1	480 V	3	4.4 A	20.0 A	GS-1	7,9,11	2910 VA	3/4"C,3#12,1#12G		NFS	30/3/4X

GRIT SIFTER 2 CONTROL PANEL SCHEDULE

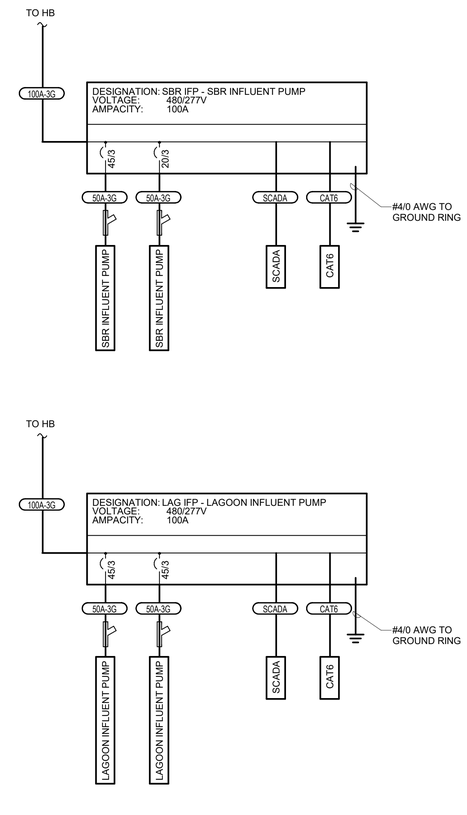
	EQUIPMENT INFORMATION				CIRCUIT INFORMATION					DISC	
ID	VOLT	PH	MCA	MOCP	PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	TYPE	REMARKS
GRIT CLASSIFIER											
GC-2	480 V	3	2.5 A	20.0 A	GS-2	1,3,5	1663 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
GRIT SIFTER BLOWERS											
GB-2	480 V	3	4.4 A	20.0 A	GS-2	2,4,6	2910 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
GRB-2	480 V	3	4.4 A	20.0 A	GS-2	7,9,11	2910 VA	3/4"C,3#12,1#12G		NFS	30/3/4X



1 E9.0 POWER PLAN - INFLUENT AND HEADWORKS
SCALE: 1/4" = 1'-0"



8 2 E9.0 GRIT SEPERATION RISER DIAGRAM
NO SCALE



3 E9.0 INFLUENT PUMP RISER DIAGRAM 8
NO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

POWER PLAN - INFLUENT AND HEADWORKS

E9.0

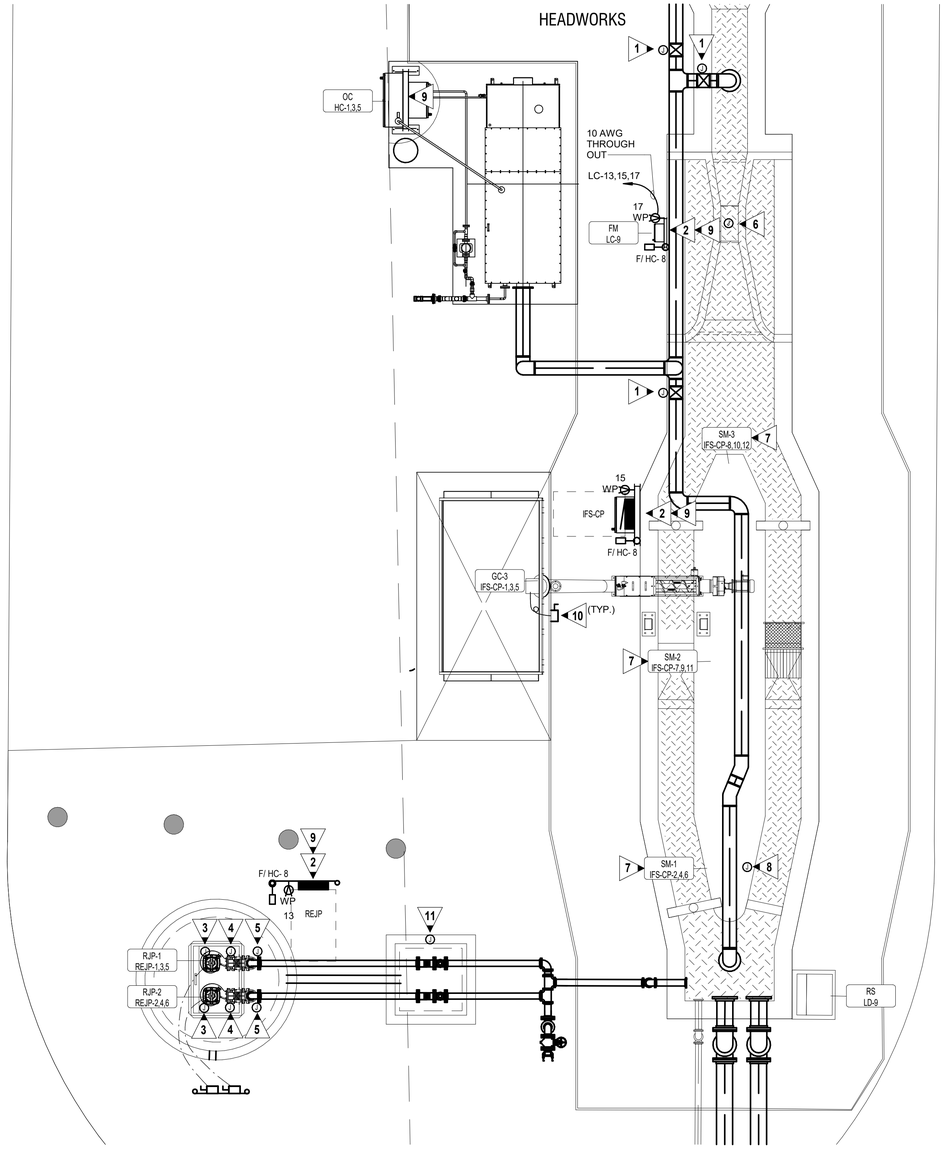
FILE NO: 2020-48
PLOT DATE: May 21, 2025

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. PROVIDE EYS FITTINGS FOR ALL CONDUITS AS REQUIRED.
3. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES:

1. PROVIDE JUNCTION BOX FOR ELECTRONICALLY OPERATED VALVE. JUNCTION BOX SHALL BE NEMA 4X RATED. PROVIDE 3/4"C. 9#14, 1#14G ROUTED TO ASSOCIATED CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
2. SEE DETAIL 3/E13.2 FOR TYPICAL RACK DETAIL.
3. PROVIDE 3/4"C. 4#14, 1#14G ROUTED FROM LIQUID LEVEL SENSOR TO REJECT WATER CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE EYS FITTINGS AS NEEDED.
4. PROVIDE 3/4"C. 2#14, 1#14G ROUTED FROM ALARM CONTACT TO ASSOCIATED CONTROL PANEL. COORDINATE EXACT LOCATION OF CONTACT WITH MANUFACTURER PRIOR TO INSTALLATION. PROVIDE EYS FITTINGS AS NEEDED.
5. PROVIDE (2) 3/4"C. FOR SPARE CONTROL CABLING ROUTED TO RECLAIMED WATER PUMP CONTROL PANEL. COORDINATE CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
6. PROVIDE 3/4"C. WITH 16 AWG T.S. PR ROUTED FROM ULTRASONIC FLOW METER TO FLOW METER CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER DRAWINGS.
7. COORDINATE EXACT LOCATION OF SCREEN MOTORS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH IN. PROVIDE 3/4"C. WITH 4#14, 1#14G ROUTED FROM SCREEN MOTOR TO ASSOCIATED CONTROL PANEL AS REQUIRED. COORDINATE CONTROL CABLING REQUIREMENTS AS NEEDED.
8. PROVIDE 3/4"C. 4#14, 1#14G FROM FLOAT SENSOR TO ASSOCIATED CONTROL PANEL. COORDINATE WITH MANUFACTURER SPECIFIC DRAWINGS FOR EXACT CABLING REQUIREMENTS PRIOR TO ROUGH IN.
9. PROVIDE 3/4"C. WITH CAT6 ROUTED TO CONTROL PANEL FROM SCADA PANEL. COORDINATE EXACT DATA REQUIREMENTS WITH MANUFACTURER DRAWINGS.
10. PROVIDE NEMA 4X DISCONNECT ON STAINLESS STEEL UNISTRUT RACK AS SHOWN. COORDINATE EXACT DISCONNECT REQUIREMENTS WITH ASSOCIATED CONTROL PANEL SCHEDULE. REFER TO DETAIL 1/E13.3 FOR DISCONNECT MOUNDING DETAIL. TYPICAL FOR ALL DISCONNECTS SHOWN.
11. PROVIDE 120VAC CONNECTION FOR MAGNETIC FLOWERMETER SYSTEM. COORDINATE EXACT LOCATION OF FLOWMETER SYSTEM WITH CIVIL PLANS PRIOR TO ROUGH IN.



1 E10.0 POWER PLAN - HEADWORKS CONTINUED
SCALE: 1/4" = 1'-0"

HEADWORKS CONTINUED CONNECTION SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
FLOW METER CONTROL PANEL											
FM	120 V	1	15.0 A	20.0 A	LC	9	840 VA	3/4"C,3#12,1#12G		CB	-
ODOR CONTROL PANEL											
OC	480 V	3	29.2 A	30.0 A	HC	1,3,5	17500 VA	3/4"C,3#10,1#10G		NFS	30/3/4X
REFRIGERATED AUTO SAMPLER											
RS	120 V	1	17.4 A	20.0 A	LD	9	1500 VA	3/4"C,3#12,1#12G		CB	-

REJECT PUMP CONTROL PANEL SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
REJECT PUMPS											
RJP-1	480 V	3	17.5 A	20.0 A	REJP	1,3,5	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
RJP-2	480 V	3	17.5 A	20.0 A	REJP	2,4,6	11639 VA	3/4"C,3#12,1#12G		NFS	30/3/4X

INFLUENT SIFTER CONTROL PANEL SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
GRIT CLASSIFIER											
GC-3	480 V	3	2.5 A	20.0 A	IFS-CP	1,3,5	1663 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
SCREEN MOTOR											
SM-1	480 V	3	2.5 A	20.0 A	IFS-CP	2,4,6	1663 VA	3/4"C,3#12,1#12G		NFS(M)	-
SM-2	480 V	3	2.5 A	20.0 A	IFS-CP	7,9,11	1663 VA	3/4"C,3#12,1#12G		NFS(M)	-
SM-3	480 V	3	2.5 A	20.0 A	IFS-CP	8,10,12	1663 VA	3/4"C,3#12,1#12G		NFS(M)	-

DISCONNECT TYPES

TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

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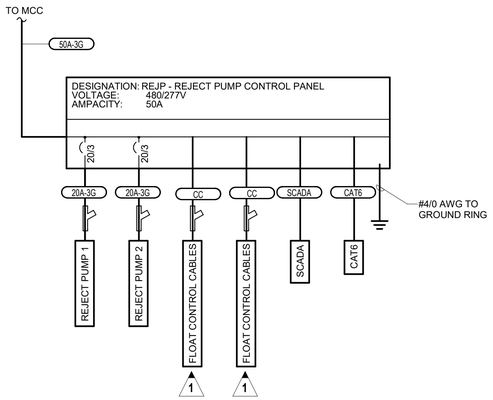
WASTEWATER TREATMENT PLANT EXPANSION

POWER PLAN - HEADWORKS CONTINUED

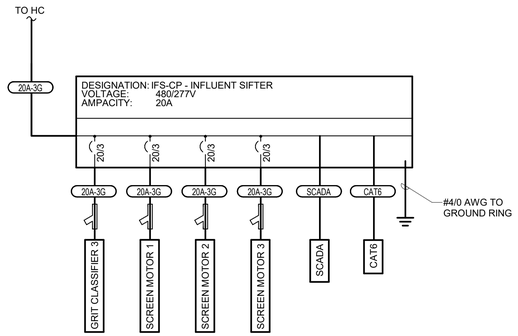
E10.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025



2 ▶ 1 E10.1 REJECT PUMP CONTROL PANEL RISER DIAGRAM
NO SCALE



2 ▶ 2 E10.1 INFLUENT SIFTER RISER DIAGRAM
NO SCALE

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

KEYED NOTES:

1 ▶ COORDINATE CABLING REQUIRMENTS OF LOW VOLTAGE CABLING WITH EQUIPMENT MANUFACTURER PRIOR TO INSTALLATION.

2 ▶ REFER TO FEEDER SCHEDULE ON SHEET E12.0 FOR CONDUCTOR REQUIRMENTS.

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WASTEWATER TREATMENT PLANT EXPANSION

POWER PLAN - HEADWORKS RISER DIAGRAMS

E10.1

FILE NO: 2020-48

PLOT DATE: May 21, 2025

KEYED NOTES:

1. PROVIDE EMERGENCY GENERATOR DOCKING STATION TO ALLOW CONNECTION OF PORTABLE GENERATOR TO CONTROL PANEL.
2. METER BASE MOUNTED ON STAINLESS STEEL UNISTRUT RACK.
3. PROVIDE 60A, 3 PHASE SERVICE ENTRANCE RATED DISTRIBUTION PANEL. PANEL SHALL HAVE A RATING OF 10,000 AIC.
4. PANEL SHALL HAVE A TRANSIENT VOLTAGE SURGE SUPPRESSOR AS INDICATED BY THE NUMBERED T.V.S.S. SYMBOL ON PANEL. SEE T.V.S.S. SCHEDULE ON SHEET E12.0 TO COORDINATE APPROPRIATELY RATED T.V.S.S.
5. NEW UTILITY POLE MOUNTED TRANSFORMERS TO BE PROVIDED AND INSTALLED BY UTILITY COMPANY.
6. NEW WEATHERHEAD TO BE PROVIDED AND INSTALLED BY DIVISION 26. 10' OF SLACK CONDUCTORS SHALL BE PROVIDED FOR UTILITY COMPANY TO CONNECT TO POLE MOUNTED UTILITY TRANSFORMER.
7. PROVIDE NEMA 4X DISCONNECT ON STAINLESS STEEL UNISTRUT RACK AS SHOWN. COORDINATE EXACT DISCONNECT REQUIREMENTS WITH ASSOCIATED CONTROL PANEL SCHEDULE. REFER TO DETAIL 1/E13.3 FOR DISCONNECT MOUNDING DETAIL. TYPICAL FOR ALL DISCONNECTS SHOWN.
8. PROVIDE DIE-CAST WEATHERPROOF JUNCTION BOX WITH LIGHT SWITCH AND WEATHERPROOF COVER TO CONTROL TYPE "F" LIGHT FIXTURE.

GENERAL NOTES:

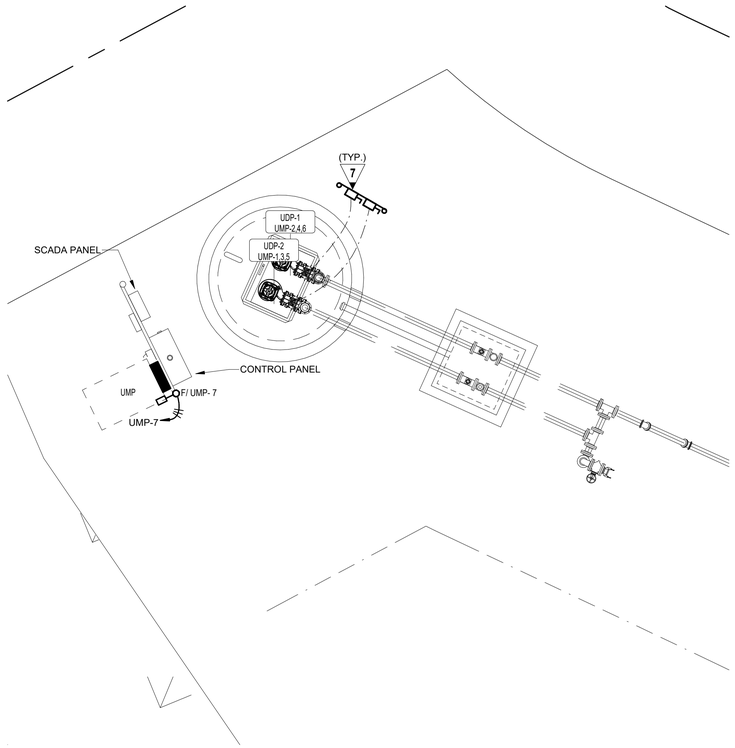
1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. COORDINATE ALL CONTROL CABLING REQUIREMENTS WITH I/O CONTROL TABLES AND MANUFACTURERS REQUIREMENTS PRIOR TO ROUGH IN.

DISCONNECT TYPES

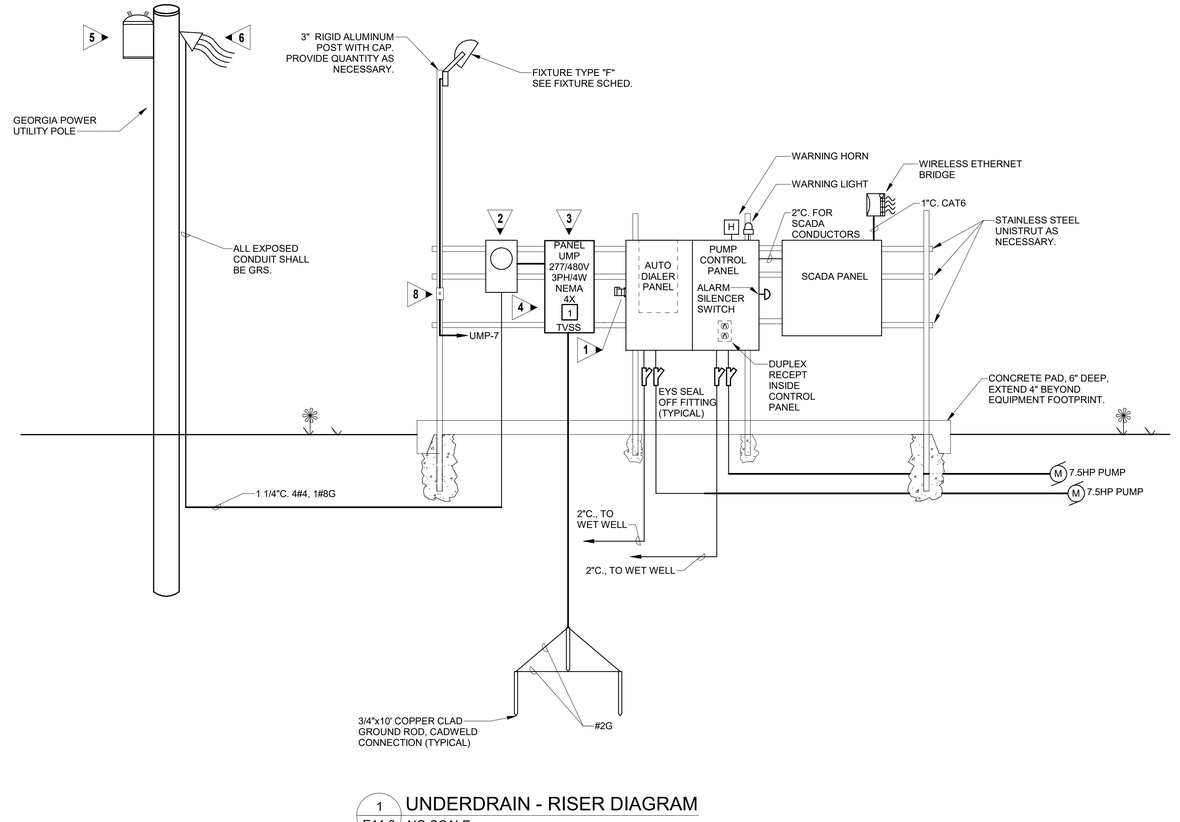
TYPE	FURNISH	DESCRIPTION
CB	DIV. 26	DIV. 26 - CIRCUIT BREAKER
FS	DIV. 26	DIV. 26 - FUSED SWITCH
MCP	DIV. 26	DIV. 26 - MOTOR CIRCUIT PROTECTOR
MRS	DIV. 26	DIV. 26 - MOTOR RATED SWITCH
NFS	DIV. 26	DIV. 26 - NON-FUSED SWITCH
(E)	-	EXISTING
CB (M)	MANUF.	MANUF - CIRCUIT BREAKER
NFS (M)	MANUF.	MANUF - NON-FUSED SWITCH
VFD(M)	MANUF.	MANUF - VARIABLE FREQUENCY DRIVER

UNDERDRAIN PUMP CONTROL PANEL SCHEDULE

ID	EQUIPMENT INFORMATION VOLT	PH	MCA	MOCP	CIRCUIT INFORMATION PANEL	NO.	APPARENT LOAD	CONDUIT & WIRE SIZE	NOTES	DISC TYPE	REMARKS
UNDERDRAIN PUMPS											
UDP-1	480 V	3	13.8 A	20.0 A	UMP	2,4,6	9145 VA	3/4"C,3#12,1#12G		NFS	30/3/4X
UDP-2	480 V	3	13.8 A	20.0 A	UMP	1,3,5	9145 VA	3/4"C,3#12,1#12G		NFS	30/3/4X



2 E11.0 POWER PLAN - UNDERDRAIN PUMP STATION
SCALE: 1/4" = 1'-0"



1 E11.0 UNDERDRAIN - RISER DIAGRAM
NO SCALE

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

M.E. SACK ENGINEERING

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
BRYAN

OWNER:
City of Pembroke
160 N
Main St
Pembroke, GA
31321
(912) 653-4413
streets@pembrokega.net

24 HOUR CONTACT:
Keith Cook
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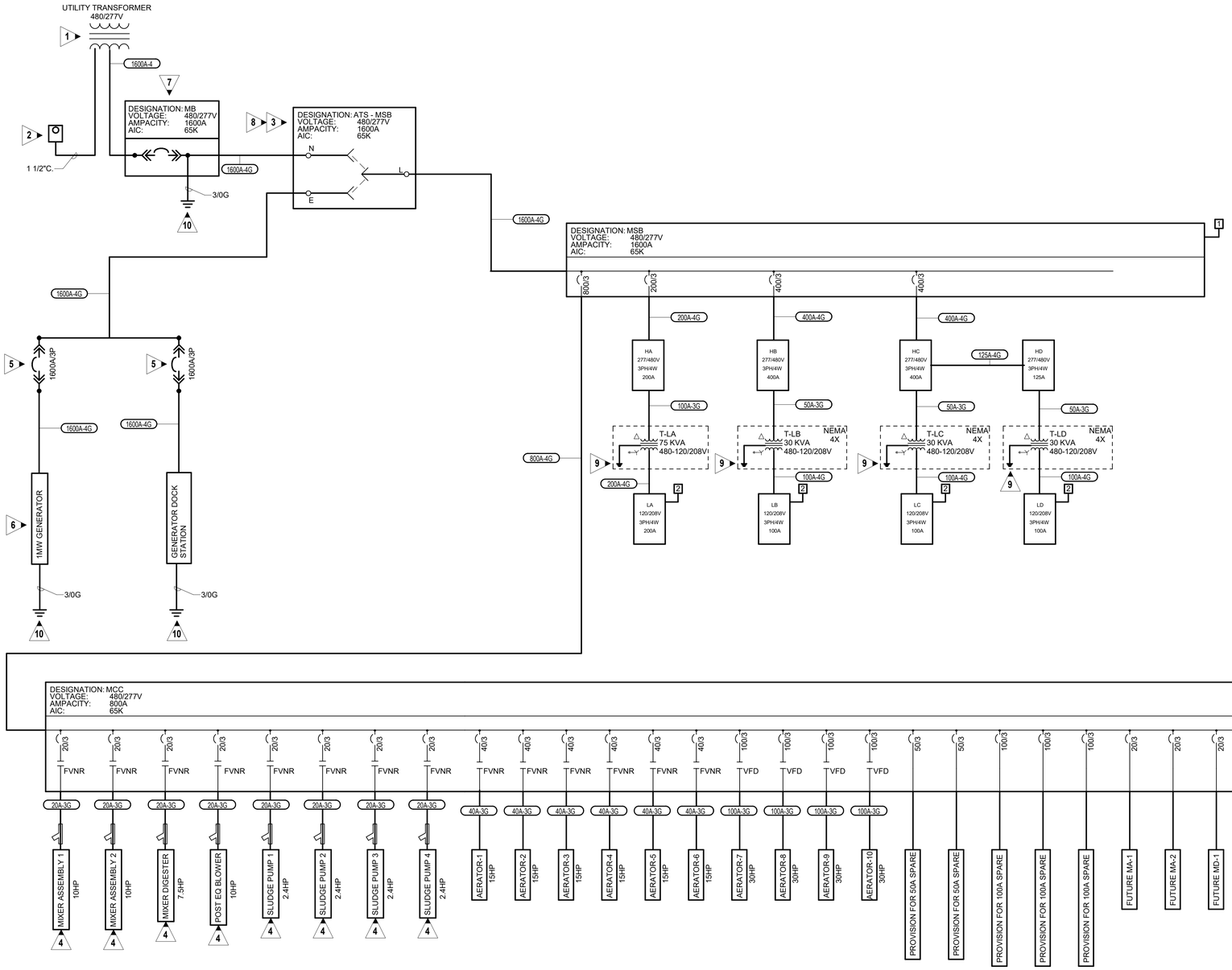
WASTEWATER TREATMENT PLANT EXPANSION

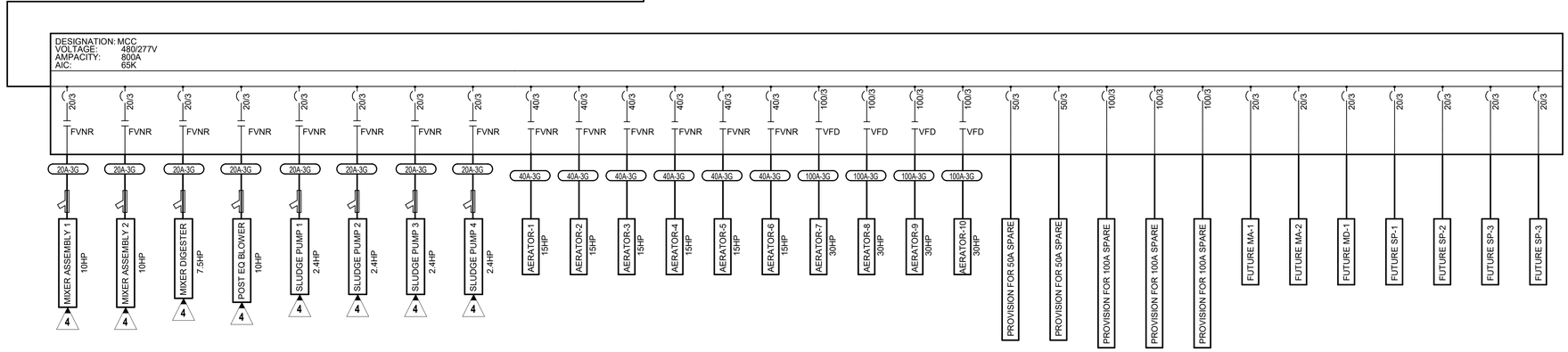
POWER PLAN - UNDERDRAIN

E11.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025





1 E12.0 POWER RISER DIAGRAM
NO SCALE

GENERAL NOTES:

1. ALL NOTES PER SHEET E1.0 SHALL APPLY TO THIS SHEET.
2. ALL FEEDER CONDUCTORS ARE BASED ON COPPER UNLESS OTHERWISE NOTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING LUGS ON ALL PANELS, BREAKERS, TRANSFORMERS, ETC. TO ACCOMMODATE CONDUCTOR SIZE SHOWN.
3. SEE PANEL SCHEDULES FOR QUANTITIES AND SIZES OF SPARE BREAKERS REQUIRED IN ADDITION TO BREAKERS SHOWN ON THIS RISER.
4. VFD SHALL BE PROVIDED WITH A MODBUS TCP/IP ETHERNET CONNECTION.
5. PROVIDE VFDS FOR CONSTANT TORQUE EQUIPMENT AS REQUIRED. COORDINATE WITH EQUIPMENT PROVIDED.
6. ALL VFD'S SERVING MOTORS OVER 100' FROM MCC SHALL BE PROVIDED WITH OUTPUT DV/DT FILTER.
7. PROVIDE CONNECTIONS FOR SUBMERGED PUMPS TO LEAK DETECTOR IN WINDINGS AND THERMAL MODULE AS REQUIRED. PROVIDE PILOT LAMPS FOR LEAK AND TEMP WARNINGS. SET MODULES TO LOCKOUT PUMPS WHEN TRIGGERED. PROVIDE MANUEL RESETS IN MCC COVER.
8. PROVIDE THERMAL MODULES WITH PILOT LAMP FOR HIGH TEMPERATURE WARNINGS FOR ALL MOTORS WITH INTEGRAL THERMAL PROTECTION. SET MODULES TO LOCKOUT MOTORS WHEN TRIGGERED. PROVIDE MANUEL RESETS IN MCC COVER.

KEYED NOTES:

1. UTILITY COMPANY PAD MOUNTED TRANSFORMER. COORDINATE WITH UTILITY COMPANY FOR EXACT LOCATION. PROVIDE CONCRETE PAD PER UTILITY REQUIREMENTS.
2. METER BY UTILITY COMPANY. INSTALLED BY CONTRACTOR ON A 6" STAINLESS STEEL UNI STRUT SET IN CONCRETE. ROUTE 1 1/2" GRS FROM METER TO TRANSFORMER.
3. CONTRACTOR SHALL FIELD MARK SERVICE EQUIPMENT IN ACCORDANCE WITH NEC 110.24 IN REGARD TO MAXIMUM AVAILABLE FAULT CURRENT. MARKING SHALL CLEARLY DENOTE MAXIMUM AVAILABLE FAULT CURRENT AND INCLUDE THE DATE THE FAULT CURRENT CALCULATION WAS PERFORMED. DIVISION 16 SHALL BE RESPONSIBLE FOR OBTAINING AVAILABLE FAULT CURRENT AT TRANSFORMER FROM LOCAL UTILITY. PERFORM CALCULATIONS BASED ON SUCH.
4. ROUTE 3/4"C. 4#14, 1#14G, CABLING TO SBR CONTROL PANEL. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURERS EXACT EQUIPMENT DRAWINGS PRIOR TO INSTALLATION.
5. PROVIDE DUAL BREAKER DOCKING STATION WITH KIRK KEY INTERLOCK BREAKERS AS SHOWN.
6. GENERATOR IN WEATHER PROOF PAINTED ALUMINUM SKIN TIGHT ENCLOSURE. PROVIDED WITH BELLY TANK. BELLY TANK SHALL BE SIZED FOR 48 HOUR RUN TIME. PROVIDE (2) 1" CONDUITS FROM GENERATOR TO ATS FOR CONTROL CABLING. COORDINATE EXACT CABLING REQUIREMENTS WITH MANUFACTURER PRIOR TO ROUGH IN. SEE SPECIFICATION SECTION 260190.
7. PROVIDE SERVICE ENTRANCE RATED MAIN BREAKER WITH ELECTRONIC TRIP AND GROUND FAULT FOR SERVICE FROM UTILITY COMPANY PAD MOUNT TRANSFORMER.
8. TRANSFER SWITCH (ATS), 4 POLE, 1600 AMPS, BYPASS ISOLATION OPEN-DELAYED TRANSITION WITH A POWER METER. ATS SHALL BE PROVIDED WITH REAR ACCESS.
9. REFER TO DETAIL 1/E13.0 FOR TRANSFORMER GROUNDING DETAIL.
10. SEE 1/E13.0 FOR SERVICE GROUNDING DETAIL.

FEEDER SCHEDULE

DESIGNATION	CONDUIT & CONDUCTORS
20A-3G	3/4" C 3#12, 1#12G
30A-3G	1" C - 3#10, 1#10G
40A-3G	1" C - 3#8, 1#10G
50A-3G	1" C - 3#8, 1#10G
70A-4G	1.25" C - 4#4, 1#8G
100A-3G	1.5" C - 3#2, 1#8G
100A-4G	1.5" C - 4#2, 1#8G
125A-4G	2" C - 4#1, 1#6G
150A-4BJ	2" C - 4#1/0, 1#6G
175A-3G	2" C - 3#2/0, 1#6G
200A-4G	2" C - 4#3/0, 1#6G
400A-4G	4"C - 4#500, 1#3G
800A-4G	2 [4" C - 4#500, 1#1/0G]
1600A-4	4 [4" C - 4#600]
1600A-4G	4 [5" C - 4#600, 1#4/0G]
CAT6	3/4" C - CAT6
CONTROL CABLE	3/4" C
SCADA	2"C.

200A - 4 G - N FEEDER DESIGNATION

- (N) - INDICATES 200% NEUTRAL CONDUCTOR
- GROUND CONDUCTORS:
  (0) - NO GROUND
  (G) - EQUIPMENT OR ISOLATED GND
  (BJ) - GROUNDING ELECTRODE
  (BJIG) - GROUNDING ELECTRODE AND ISOLATED GND
- SYSTEM DESCRIPTION:
  (3) - 1Ø 3W OR 3Ø 3W
  (4) - 3Ø, 4W
- CONDUCTOR AMPACITY:
  (AL) - INDICATES ALUMINUM CONDUCTORS

T.V.S.S. SCHEDULE

TYPE	DESCRIPTION	NOTES
1	MAIN DISTRIBUTION PANEL (277/480 VOLTS, 3 PHASE) - 300,000 AMP RATED	1
2	DISTRIBUTION PANEL (120/208 VOLTS, 3 PHASE) - 80,000 AMP RATED	1
3	DISTRIBUTION PANEL (277/480 VOLTS, 3 PHASE) - 100,000 AMP RATED	1

SCHEDULE NOTES:
1. SEE SPECIFICATIONS FOR DETAILS.

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WASTEWATER TREATMENT PLANT EXPANSION

POWER RISER DIAGRAM

E12.0

FILE NO: 2020-48

PLOT DATE: May 21, 2025

800 AMP MAIN LUG ONLY - MCC - (480V/3PH/ 3 WIRE)

DESCRIPTION	HP	NOTES	BREAKER AMPS	BREAKER P	STARTER (SIZE)	DESCRIPTION	HP	NOTES	BREAKER AMPS	BREAKER P	STARTER (SIZE)	DESCRIPTION	HP	NOTES	BREAKER AMPS	BREAKER P	STARTER (SIZE)	DESCRIPTION	HP	NOTES	BREAKER AMPS	BREAKER P	STARTER (SIZE)	DESCRIPTION	HP	NOTES	BREAKER AMPS	BREAKER P	STARTER (SIZE)
MIXER ASSEMBLY #1	10	A	20	3	1	POST EQ BLOWER	10	A	20	3	1	AERATOR #2	15	A	40	3	2	AERATOR #8	30	A	100	3	VFD	FUTURE SLUDGE PUMP #1	2.4	A	20	3	1	PROVISION FOR 100A SPARE	75		100	3	
MIXER ASSEMBLY #2	10	A	20	3	1	SLUDGE PUMP #1	2.4	A	20	3	1	AERATOR #3	15	A	40	3	2	AERATOR #9	30	A	100	3	VFD	FUTURE SLUDGE PUMP #2	2.4	A	20	3	1	PROVISION FOR 100A SPARE	75		100	3	
MIXER DISGESTER	7.5	A	20	3	1	SLUDGE PUMP #2	2.4	A	20	3	1	AERATOR #4	15	A	40	3	2	AERATOR #10	30	A	100	3	VFD	FUTURE SLUDGE PUMP #3	2.4	A	20	3	1	PROVISION FOR 100A SPARE	75		100	3	
SPACE						SLUDGE PUMP #3	2.4	A	20	3	1	AERATOR #5	15	A	40	3	2	FUTURE MIXER ASSEMBLY #1	10	A	20	3	1	FUTURE SLUDGE PUMP #4	2.4	A	20	3	1	SPACE					
						SLUDGE PUMP #4	2.4	A	20	3	1	AERATOR #6	15	A	40	3	2	FUTURE MIXER ASSEMBLY #2	10	A	20	3	1	PROVISION FOR 50A SPARE	30		50	3							
MAIN LUG ONLY 1200A						AERATOR #1	15	A	40	3	2	AERATOR #7	30	A	100	3	VFD	FUTURE MIXER DIGESTOR	7.5	A	20	3	1	PROVISION FOR 50A SPARE	30		50	3							

NOTES: "A" :
- BUCKETS WITH STARTERS SHALL BE FURNISHED WITH RESET BUTTON, SELECTOR SWITCH AUTO/MANUAL (AUTO RUNS THRU PLC, MANUAL ALLOWS TO START/STOP FROM PUSH BUTTON. START/STOP BUTTON ONLY WORKS WHEN MANUAL IS SELECTED ON SELECTOR SWITCH.
- LARGE BUCKETS SHALL BE 1 1/2 SPACE FACTOR.
- ALL BUCKETS SHALL HAVE 120V CONTROL TRANSFORMER.
- TRANSFORMER SHALL BE FUSED ON PRIMARY AND SECONDARY SIDES.
- SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

"B" :
- BUCKETS WITH VFDS SHALL BE FUNRISHED WITH START BUTTON, STOP BUTTON, AND PUSH TO TEST BUTTON.
- ALL BUCKETS SHALL HAVE #16 AWG MTW CONTROL WIRE.

NOTES:
1. FOOT PRINT OF MCC SHALL NOT EXCEED 90"h x 180"w x 20"d.
2. ALL STARTERS SHALL HAVE N.O. CONTACTS.

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SAVANNAH OFFICE - PROJECT #: S24014
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WASTEWATER TREATMENT PLANT EXPANSION

POWER RISER DIAGRAM

E12.1

FILE NO: 2020-48

PLOT DATE: May 21, 2025

DISTRIBUTION PANEL: MSB

LOCATION: ELECTRICAL C207 **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MAIN DEVICE: **A.I.C. RATING:** 65,000 AMPS SYMMETRICAL
BREAKER AMPS: 1600 A **SPECIAL:**
BUS AMPS: 1600 AMPS **FED FROM:** ATS-MSB

SECTION No. 1

CKT	DESCRIPTION/NAMEPLATE	POLES	RATING	Load	NOTES
1	MCC 1	3	800 A	448948 VA	
2	HA	3	200 A	101533 VA	
3	HB	3	400 A	206018 VA	
4	HC	3	400 A	129687 VA	
5	SBR	3	200 A	143663 VA	
6	FUTURE SBR	3	200 A	143663 VA	
7	CP-EX	3	200 A	106417 VA	
8	SPARE	3	400 A	0 VA	
9	SPARE	3	200 A	0 VA	
10	SPARE	3	100 A	0 VA	
11	T.V.S.S.	3	60 A	0 VA	
12	SPACE	1	--	--	
13	SPACE	1	--	--	
14	SPACE	1	--	--	
15	SPACE	1	--	--	
16	SPACE	1	--	--	
17	SPACE	1	--	--	
18	SPACE	1	--	--	

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HEAT	19990 VA	100.00%	19990 VA		
HVAC	48897 VA	100.00%	48897 VA		
LITES	6356 VA	125.00%	7945 VA	**CONN. LOAD:**	1272 kVA
MTR	821475 VA	103.65%	851496 VA	**EST. DEMAND LOAD:**	1244 kVA
RECEPTACLES	135655 VA	53.69%	72828 VA	**CONN. CURRENT:**	1530.0 A
Spare	251050 VA	100.00%	251050 VA	**EST. DEMAND CURRENT:**	1496.1 A

NOTES:

PANELBOARD: HA

LOCATION: ELECTRICAL C207 **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 42,000 AMPS SYMMETRICAL
MAIN DEVICE: 200.0 A MAIN CB **SPECIAL:**
BUS AMPS: 200 AMPS **FED FROM:** MSB

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
TU-1		30 A	1	1	6.5	1.0					2	1	20 A		LIGHTING
TU-2		20 A	1	3			4.0	2.0			4	1	15 A		TU-4
TU-3		20 A	1	5					3.0	1.7	6	1	20 A		SITE LIGHTING
SPARE		20 A	1	7	0.0	0.0					8	1	20 A		SPARE
SPARE		20 A	1	9			0.0	0.0			10	1	20 A		SPARE
SPARE		20 A	1	11					0.0	0.0	12	1	20 A		SPARE
SPARE		20 A	1	13	0.0	0.0					14	1	20 A		SPARE
SPARE		20 A	1	15			0.0	0.0			16	1	20 A		SPARE
SPARE		20 A	1	17					0.0	0.0	18	1	20 A		SPARE
				19	0.0	0.0					20				
SPARE		30 A	3	21			0.0	0.0			22	3	30 A		SPARE
				23					0.0	0.0	24				
				25	0.0	0.0					26				
SPARE		50 A	3	27			0.0	0.0			28	3	50 A		SPARE
				29					0.0	0.0	30				
				31	0.0	0.0					32				
SPARE		50 A	3	33			0.0	0.0			34	3	50 A		SPARE
				35					0.0	0.0	36				
				37	11.0	11.6					38				
DOAS-1		40 A	3	39			11.0	20.9			40	3	100 A		TRANSFORMER T-LA
				41					11.0	19.4	42				
		TOTAL LOAD:			30 kVA		37 kVA		35 kVA						
		TOTAL AMPS:			107 A		137.7 A		128 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	48897 VA	100.00%	48897 VA		
RECEPTACLES	14880 VA	83.60%	12440 VA	**CONNECTED LOAD:**	101533 VA
MTR	528 VA	115.91%	612 VA	**ESTIMATED DEMAND:**	99901 VA
HEAT	19990 VA	100.00%	19990 VA	**CONNECTED CURRENT:**	122.1 A
LITES	2721 VA	125.00%	3401 VA	**EST. DEMAND CURRENT:**	120.2 A

NOTES:

PANELBOARD: LA

LOCATION: ELECTRICAL C207 **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 1 **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 200.0 A MAIN CB **SPECIAL:**
BUS AMPS: 200 AMPS **FED FROM:** T-LA

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
RECEPTACLES		20 A	1	1	0.4	1.1					2	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	3			0.4	1.1			4	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	5					0.4	0.4	6	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	7	0.4	0.5					8	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	9			0.2	0.2			10	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	11					0.4	0.7	12	1	20 A		INCUBATOR
RECEPTACLES		20 A	1	13	0.2	0.7					14	1	20 A		FURNACE
RECEPTACLES		20 A	1	15			0.2	0.2			16	1	20 A		CONVECTION OVEN
RECEPTACLES		20 A	1	17					0.4	1.0	18	1	20 A		FUME HOOD
RECEPTACLES		20 A	1	19	0.4	1.2					20	1	20 A		REFRIGERATOR
RECEPTACLES		20 A	1	21			1.1	0.2			22	1	30 A		BLOCK HEATER
RECEPTACLES		20 A	1	23					0.2	0.2	24	1	20 A		BATTERY CHARGER
EF-(1&2)		20 A	1	25	0.5	0.2					26	1	20 A	A	FACP
				27			2.0	2.0			28				
ODU/IDU - 3B		25 A	2	29					2.0	2.0	30	2	25 A		ODU/IDU - 1
				31	2.0	2.0					32				
ODU/IDU - 3A		25 A	2	33			2.0	2.0			34	2	25 A		ODU/IDU - 2
				35					0.1	2.3	36				
DATA RECEPTACLE		30 A	2	37	0.1	2.3					38	2	20 A		WH-50
				39			1.5	8.5			40				
STERILIZER		20 A	2	41					1.5	8.5	42	2	60 A		GENERATOR LOAD...
MAIN SCADA PANEL		20 A	1	43	0.0	0.0					44	1	20 A		SPARE
SPARE		20 A	1	45			0.0	0.0			46	1	20 A		SPARE
				47					0.0	0.0	48				
SPARE		20 A	2	49	0.0	0.0					50	1	20 A		SPARE
				51			0.0	0.0			52				
SPARE		60 A	2	53					0.0	0.0	54	3	40 A		T.V.S.S.
		TOTAL LOAD:			12 kVA		21 kVA		19 kVA						
		TOTAL AMPS:			96 A		183.8 A		172 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
HVAC	15974 VA	100.00%	15974 VA		
RECEPTACLES	14880 VA	83.60%	12440 VA	**CONNECTED LOAD:**	51789 VA
MTR	528 VA	115.91%	612 VA	**ESTIMATED DEMAND:**	49447 VA
HEAT	4500 VA	100.00%	4500 VA	**CONNECTED CURRENT:**	143.8 A
				EST. DEMAND CURRENT:	137.3 A

NOTES:
A. INDICATES PROVIDE LOCKOUT DEVICE AND RED MARKING FOR BREAKER

PANELBOARD: HB

LOCATION: BELT PRESS BUILDING **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 42,000 AMPS SYMMETRICAL
MAIN DEVICE: 400.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 400 AMPS **FED FROM:** MSB

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
SPARE		20 A	1	1	0.0	0.6					2	1	20 A		LIGHTING
SPARE		20 A	1	3			0.0	0.3			4	1	20 A		LIGHTING - BELT...
SPARE		20 A	1	5					0.0	0.0	6	1	20 A		SPARE
SPARE		20 A	1	7	0.0	0.0					8	1	20 A		SPARE
SPARE		20 A	1	9			0.0	0.0			10	1	20 A		SPARE
SPARE		20 A	1	11					0.0	0.0	12	1	20 A		SPARE
				13	0.0	0.0					14	1	20 A		SPARE
SPARE		30 A	3	15			0.0	0.0			16	1	20 A		SPARE
				17					0.0	0.0	18	1	20 A		SPARE
				19	0.0	0.0					20				
SPARE		60 A	3	21			0.0	0.0			22	3	100 A		SPARE
				23					0.0	0.0	24				
				25	2.5	2.5					26				
GS-2		30 A	3	27			2.5	2.5			28	3	30 A		GS-1
				29					2.5	2.5	30				
				31	18.8	18.8					32				
LAG IFP CONTROL PANEL		100 A	3	33			18.8	18.8			34	3	100 A		SBR IFP CONTROL PANEL
				35					18.8	18.8	36				
				37	23.8	3.7					38				
BELT PRESS CONTROL PANEL		60 A	3	39			23.8	1.4			40	3	50 A		TRANSFORMER T-LB
				41					23.8	2.4	42				
		TOTAL LOAD:			70 kVA		68 kVA		68 kVA						
		TOTAL AMPS:			254 A		244.1 A		247 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	20938 VA	73.88%	15469 VA		
MTR	143163 VA	106.71%	152775 VA	**CONNECTED LOAD:**	206018 VA
LITES	838 VA	125.00%	1048 VA	**ESTIMATED DEMAND:**	210553 VA
				CONNECTED CURRENT:	247.8 A
				EST. DEMAND CURRENT:	253.3 A

NOTES:

PANELBOARD: LB

LOCATION: BELT PRESS BUILDING **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 100 AMPS **FED FROM:** T-LB

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
RECEPTACLES		20 A	1	1	0.7	0.5					2	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	3			1.3	0.2			4	1	20 A		OVERHEAD DOOR
RECEPTACLES		20 A	1	5					0.7	1.0	6	2	20 A		TANK HEATER
DECANT VALVE		20 A	1	7	0.0	1.0					8				
DECANT VALVE		20 A	1	9			0.0	0.0			10	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	11					0.7	0.0	12	1	20 A		RECEPTACLES
EF-7		20 A	1	13	0.6	0.6					14	1	20 A		EF-8
BUTTERFLY VALVE		20 A	1	15			0.0	0.0			16	1	20 A		INFLUENT VALVE
BUTTERFLY VALVE		20 A	1	17					0.0	0.0	18	1	20 A		INFLUENT VALVE
DAMPER		20 A	1	19	0.0	0.4					20	1	20 A		RECEPTACLES
SCADA PANEL		20 A	1	21			0.0	0.0			22	1	20 A		SPARE
SPARE		20 A	1	23					0.0	0.0	24	1	20 A		SPARE
SPARE		20 A	1	25	0.0	0.0					26	1	20 A		SPARE
SPARE		20 A	1	27			0.0	0.0			28	1	20 A		SPARE
SPARE		20 A	1	29					0.0	0.0	30	1	20 A		SPARE
SPARE		20 A	1	31	0.0	0.0					32	1	20 A		SPARE
SPARE		20 A	1	33			0.0	0.0			34	1	20 A		SPARE
SPARE		20 A	1	35					0.0	0.0	36	1	20 A		SPARE
SPARE		20 A	1	37	0.0	0.0					38				
SPARE		20 A	1	39			0.0	0.0			40	3	40 A		T.V.S.S.
SPARE		20 A	1	41					0.0	0.0	42				
		TOTAL LOAD:			4 kVA		1 kVA		2 kVA						
		TOTAL AMPS:			32 A		12.0 A		21 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	6182 VA	100.00%	6182 VA		
MTR	1364 VA	112.15%	1530 VA	**CONNECTED LOAD:**	7511 VA
				ESTIMATED DEMAND:	7673 VA
				CONNECTED CURRENT:	20.8 A
				EST. DEMAND CURRENT:	21.3 A

NOTES:

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

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WASTEWATER TREATMENT PLANT EXPANSION

PANEL SCHEDULES

E12.2

FILE NO: 2020-48

PLOT DATE: May 21, 2025

PANELBOARD: HC

LOCATION: CHEMICAL/BLOWER BUILDING **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 22,000 AMPS SYMMETRICAL
MAIN DEVICE: 400.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 400 AMPS **FED FROM:** MSB

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
				1	5.8	15.7					2				
ODOR CONTROL		30 A	3	3			5.8	18.1			4	3	125 A		HD
				5					5.8	16.1	6				
				7	2.2	0.4					8	1	20 A		LIGHTING
INFLUENT SIFTER CONTROL PANEL		20 A	3	9			2.2	0.6			10	1	20 A		LIGHTING
				11					2.2	4.2	12				
SITE LIGHTING		20 A	1	13	0.9	4.2					14	3	20 A		UH-2
				15			4.2	4.2			16				
UH-1		20 A	3	17					4.2	0.0	18	1	20 A		SPARE
				19	4.2	0.0					20	1	20 A		SPARE
				21			7.8	0.0			22	1	20 A		SPARE
REJ CP		50 A	3	23					7.8	0.0	24	1	20 A		SPARE
				25	7.8	0.0					26				
SPARE		20 A	1	27			0.0	0.0			28	3	30 A		SPARE
SPARE		20 A	1	29					0.0	0.0	30				
				31	0.0	0.0					32				
SPARE		20 A	3	33			0.0	0.0			34	3	50 A		SPARE
				35					0.0	0.0	36				
				37	0.0	2.9					38				
SPARE		100 A	3	39			0.0	2.3			40	3	50 A		TRANSFORMER T-LC
				41					0.0	2.5	42				
		TOTAL LOAD:			43 kVA		44 kVA		42 kVA						
		TOTAL AMPS:			157 A		161.3 A		152 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	100856 VA	54.96%	55428 VA		
MTR	27773 VA	112.12%	31139 VA	**CONNECTED LOAD:**	129687 VA
LITES	2816 VA	125.00%	3520 VA	**ESTIMATED DEMAND:**	88482 VA
				CONNECTED CURRENT:	156.0 A
				EST. DEMAND CURRENT:	106.4 A

NOTES:

PANELBOARD: LC

LOCATION: CHEMICAL/BLOWER BUILDING **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 100 AMPS **FED FROM:** T-LC

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
RECEPTACLES		20 A	1	1	0.0	0.7					2	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	3			0.0	0.0			4	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	5					0.9	0.0	6	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	7	0.0	0.7					8	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	9			0.8	0.2			10	1	20 A		RECEPTACLES
OVERHEAD DOOR		20 A	1	11					0.2	0.2	12	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	13	0.2	0.8					14	1	20 A		EF-3
RECEPTACLES		20 A	1	15			0.2	0.8			16	1	15 A		EF-4
RECEPTACLES		20 A	1	17					0.2	1.1	18	1	15 A		EF-(5&6)
OVERHEAD DOOR		20 A	1	19	0.2	0.4					20	1	20 A		RECEPTACLES
DAMPER		20 A	1	21			0.0	0.4			22	1	20 A		RECEPTACLES
DAMPER		20 A	1	23					0.0	0.0	24	1	20 A		SCADA PANEL
SPARE		20 A	1	25	0.0	0.0					26	1	20 A		SCADA PANEL
SPARE		20 A	1	27			0.0	0.0			28	1	20 A		SPARE
SPARE		20 A	1	29					0.0	0.0	30	1	20 A		SPARE
SPARE		20 A	1	31	0.0	0.0					32	1	20 A		SPARE
SPARE		20 A	1	33			0.0	0.0			34	1	20 A		SPARE
SPACE		--	1	35					--	--	36	1	--		SPACE
SPACE		--	1	37	--	0.0					38				
SPACE		--	1	39			--	0.0			40	3	40 A		T.V.S.S.
SPACE		--	1	41					--	0.0	42				
		TOTAL LOAD:			3 kVA		2 kVA		2 kVA						
		TOTAL AMPS:			24 A		19.1 A		21 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	4730 VA	100.00%	4730 VA		
MTR	2983 VA	107.67%	3211 VA	**CONNECTED LOAD:**	7619 VA
				ESTIMATED DEMAND:	7843 VA
				CONNECTED CURRENT:	21.1 A
				EST. DEMAND CURRENT:	21.8 A

NOTES:

PANELBOARD: HD

LOCATION: US SYSTEM **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 125.0 A MLO **SPECIAL:** NEMA 4X
BUS AMPS: 125 AMPS **FED FROM:** HC

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
				1	3.5	3.5					2				
DF-1		20 A	3	3			3.5	3.5			4	3	20 A		DF-2
				5					3.5	3.5	6				
				7	7.8	0.2					8	1	20 A		LIGHTING
RECLAIMED WATER PUMP CONTROL...		40 A	3	9			7.8	0.9			10	1	20 A		SITE LIGHTING
				11					7.8	0.0	12	1	20 A		SPARE
SPARE		20 A	1	13	0.0	0.0					14				
SPARE		20 A	1	15			0.0	0.0			16	3	20 A		SPARE
SPARE		20 A	1	17					0.0	0.0	18				
				19	0.0	0.8					20				
SPARE		40 A	3	21			0.0	2.5			22	3	50 A		TRANSFORMER T-LD
				23					0.0	1.3	24				
		TOTAL LOAD:			16 kVA		18 kVA		16 kVA						
		TOTAL AMPS:			57 A		65.7 A		58 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	48997 VA	60.20%	29499 VA		
LITES	1020 VA	125.00%	1275 VA	**CONNECTED LOAD:**	49924 VA
				ESTIMATED DEMAND:	30660 VA
				CONNECTED CURRENT:	60.0 A
				EST. DEMAND CURRENT:	36.9 A

NOTES:

PANELBOARD: LD

LOCATION: US SYSTEM **VOLTAGE:** 208Y/120 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 10,000 AMPS SYMMETRICAL
MAIN DEVICE: 100.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 100 AMPS **FED FROM:** T-LD

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
RECEPTACLES		20 A	1	1	0.6	0.0					2	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	3			0.5	0.0			4	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	5					0.0	1.3	6	1	15 A		RS
RECEPTACLES		20 A	1	7	0.0	0.2					8	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	9			1.5	0.5			10	1	20 A		RECEPTACLES
RECEPTACLES		20 A	1	11					0.0	0.0	12	1	20 A		RECEPTACLES
SPARE		20 A	1	13	0.0	0.0					14	1	20 A		SPARE
SPARE		20 A	1	15			0.0	0.0			16	1	20 A		SPARE
SPARE		20 A	1	17					0.0	0.0	18	1	20 A		SPARE
SPARE		20 A	1	19	0.0	0.0					20	1	20 A		SPARE
SPARE		20 A	1	21			0.0	0.0			22	1	20 A		SPARE
SPARE		20 A	1	23					0.0	0.0	24	1	20 A		SPARE
SPARE		20 A	1	25	0.0	0.0					26	1	20 A		SPARE
SPACE		--	1	27			--	--			28	1	--		SPACE
SPACE		--	1	29					--	--	30	1	--		SPACE
SPACE		--	1	31	--	--					32	1	--		SPACE
SPACE		--	1	33			--	--			34	1	--		SPACE
SPACE		--	1	35					--	--	36	1	--		SPACE
SPACE		--	1	37	--	0.0					38				
SPACE		--	1	39			--	0.0			40	3	40 A		T.V.S.S.
SPACE		--	1	41					--	0.0	42				
		TOTAL LOAD:			1 kVA		3 kVA		1 kVA						
		TOTAL AMPS:			7 A		21.6 A		11 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
RECEPTACLES	4502 VA	100.00%	4502 VA		
				CONNECTED LOAD:	4502 VA
				ESTIMATED DEMAND:	4502 VA
				CONNECTED CURRENT:	12.5 A
				EST. DEMAND CURRENT:	12.5 A

NOTES:

PANELBOARD: UMP

LOCATION: UNDERDRAIN STATION **VOLTAGE:** 480Y/277 V. 3 ø 4 W.
MOUNTING: SURFACE NEMA 4X **A.I.C. RATING:** 14,000 AMPS SYMMETRICAL
MAIN DEVICE: 125.0 A MAIN CB **SPECIAL:** NEMA 4X
BUS AMPS: 125 AMPS **FED FROM:** UTILITY POLE MOUNTED TRANSFORMER

LOAD NAME	NOTE	BKR	P	CKT	A		B		C		CKT	P	BKR	NOTE	LOAD NAME
				1	3.0	3.0					2				
UDP-2		20 A	3	3			3.0	3.0			4	3	20 A		UDP-1
				5					3.0	3.0	6				
LIGHTING		20 A	1	7	0.1	0.0					8	1	20 A		SPARE
SPARE		20 A	1	9			0.0	0.0			10	1	20 A		SPARE
SPARE		20 A	1	11					0.0	0.0	12	1	20 A		SPARE
SPARE		20 A	1	13	0.0	0.0					14	1	20 A		SPARE
SPARE		20 A	1	15			0.0	0.0			16	1	20 A		SPARE
				17					0.0	0.0	18	1	20 A		SPARE
SPARE		20 A	3	19	0.0	0.0					20				
				21			0.0	0.0			22	3	40 A		T.V.S.S.
SPARE		20 A	1	23					0.0	0.0	24				
		TOTAL LOAD:			6 kVA		6 kVA		6 kVA						
		TOTAL AMPS:			22 A		22.0 A		22 A						

LOAD CLASSIFICATION	CONNECTED	DEMAND	ESTIMATED	PANEL TOTALS	
MTR	18290 VA	112.50%	20577 VA		
LITES	50 VA	125.00%	63 VA	**CONNECTED LOAD:**	18340 VA
				ESTIMATED DEMAND:	20639 VA
				CONNECTED CURRENT:	22.1 A
				EST. DEMAND CURRENT:	24.8 A

NOTES:

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WASTEWATER TREATMENT PLANT EXPANSION

PANEL SCHEDULES

E12.3

FILE NO: 2020-48

PLOT DATE: May 21, 2025

GENERAL NOTES:

1. PROVIDE 1#12G IN EACH CONDUIT ALONG WITH ALL OTHER LSITED CONDUCTORS SHOWN IN I/O CONTROL SIGNAL SCHEDULE FOR EQUIPMENT GROUND.

CONTROL SIGNAL TABLE

Line	Location	Source	Destination	Point Description	Point Type	Wiring Requirment	Conduit Requirement	Comment
1	0.1 OPERATIONS BUILDING	SCADA Server Rack	SCADA Network Interface Panel (NIP)	SCADA Server to Plant LAN	P-LAN	(4) CAT 6		Cables only
2	0.1 OPERATIONS BUILDING	SCADA Server Rack	Office # 1	Workstation LAN Connection	P-LAN	(2) CAT 6		Wall Plate
3	0.1 OPERATIONS BUILDING	SCADA Server Rack	Office # 2	Workstation LAN Connection	P-LAN	(2) CAT 6		Wall Plate
4	0.1 OPERATIONS BUILDING	SCADA Server Rack	Laboratory	Workstation LAN Connection	P-LAN	(2) CAT 6		Wall Plate
5	0.1 OPERATIONS BUILDING	Operations (S-NIP)	SBR Control Panel	SBR to Plant LAN Connection	P-LAN	(2) CAT 6		Cables only
6	0.1 OPERATIONS BUILDING	SBR Control Panel	Electrical Room MCC VFDs	SBR to VFD Subnetwork	E-Subnet	(12) CAT 6		Cables only
6	0.1 OPERATIONS BUILDING	Operations (S-NIP)	Emergency Generator	SCADA Server to Generator	E-Subnet	(2) CAT 6		Cables only
7	0.2 - VARIOUS F.O. NETWORK	Operations (S-NIP)	Teritittary Filter (S-NIP)	Teritittary Filter - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
8	0.2 - VARIOUS F.O. NETWORK	Teritittary Filter (S-NIP)	LAS Pump Station (S-NIP)	LAS PS - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
9	0.2 - VARIOUS F.O. NETWORK	LAS Pump Station (S-NIP)	Reclaimed Water PS (S-PLC)	Reclaimed Water PS - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
10	0.2 - VARIOUS F.O. NETWORK	Reclaimed Water PS (S-PLC)	Reject Water PS (S-NIP)	Reject Water PS - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
11	0.2 - VARIOUS F.O. NETWORK	Reject Water PS (S-NIP)	GS2 (S-PLC)	Grit System - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
12	0.2 - VARIOUS F.O. NETWORK	GS2 (S-PLC)	Belt Filter Press (S-NIP)	Dewatering BFP - LAN Connection	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
13	0.2 - VARIOUS F.O. NETWORK	Belt Filter Press(S-NIP)	Operations (S-NIP)	Complete P-LAN Ring	P-LAN	12 Fiber MM OM3		EC Install, SI Term & Test
14	**1.0 - INFLUENT PUMP STATION**							
15	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS - LAN Connection	P-LAN	(1) CAT 6		Cables only
16	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Wetwell Level	VAI	n/a		
17	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Wetwell High Alarm	VDI	n/a		
18	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 1 - MODE	VDI	n/a		
19	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 1 - STATUS	VDI	n/a		
20	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 1 - CONDITION	VDI	n/a		
21	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 1 - CONTROL	VDO	n/a		
22	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 2 - MODE	VDI	n/a		
23	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 2 - STATUS	VDI	n/a		
24	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 2 - CONDITION	VDI	n/a		
25	1.1 - SBR IPS	SBR IPS - CP	LAG IPS (S-NIP)	SBR IPS Pump # 2 - CONTROL	VDO	n/a		
26	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS - LAN Connection	P-LAN	(1) CAT 6		Cables only
27	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Wetwell Level	VAI	n/a		
28	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Wetwell High Alarm	VDI	n/a		
29	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 1 - MODE	VDI	n/a		
30	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 1 - STATUS	VDI	n/a		
31	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 1 - CONDITION	VDI	n/a		
32	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 1 - CONTROL	VDO	n/a		
33	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 2 - MODE	VDI	n/a		
34	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 2 - STATUS	VDI	n/a		
35	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 2 - CONDITION	VDI	n/a		
36	1.2 - LAGOON IPS	LAGOON IPS - CP	LAG IPS (S-NIP)	LAG IPS Pump # 2 - CONTROL	VDO	n/a		
37	**2.0 - HEADWORKS**							
38	2.1 - GRIT SYSTEM	LAG IPS S-NIP	GS2 (S-PLC)	GRIT SYS - LAN Connection	P-LAN	(1) CAT 6		Cables only
39	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 1 - MODE	DI	2C / # 14		
40	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 1 - STATUS	DI	2C / # 14		
41	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 1 - CONDITION	DI	2C / # 14		
42	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 1 - MODE	DI	2C / # 14		
43	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 1 - STATUS	DI	2C / # 14		
44	2.1 - GRIT SYSTEM	GS1-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 1 - CONDITION	DI	2C / # 14		
45	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 2 - MODE	DI	2C / # 14		

1 / E12.4 I/O CONTROL SIGNAL SCHEDULE 1
NO SCALE

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

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WASTEWATER TREATMENT PLANT EXPANSION

I/O SCHEDULES

E12.4

FILE NO: 2020-48

PLOT DATE: May 21, 2025

GENERAL NOTES:

1. PROVIDE 1#12G IN EACH CONDUIT ALONG WITH ALL OTHER LSITED CONDUCTORS SHOWN IN I/O CONTROL SIGNAL SCHEDULE FOR EQUIPMENT GROUND.

CONTROL SIGNAL TABLE

Line	Location	Source	Destination	Point Description	Point Type	Wiring Requirment	Conduit Requirement	Comment
46	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 2 - STATUS	DI	2C / # 14		
47	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	VORTEX GRIT SEPARATOR # 2 - CONDITION	DI	2C / # 14		
48	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 2 - MODE	DI	2C / # 14		
49	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 2 - STATUS	DI	2C / # 14		
50	2.1 - GRIT SYSTEM	GS2-CP	GS2 (S-PLC)	GRIT CLASSIFIER # 2 - CONDITION	DI	2C / # 14		
51	2.2 - ODCS	ODCS - CP	GS2 (S-PLC)	ODCS -LAN Connection	P-LAN	(1) CAT 6		Cables only
52	2.2 - ODCS	ODCS - CP	GS2 (S-PLC)	ODOR CNTRL SYSTEM - COMMON ALARM	DI	2C / # 14		
53	2.3 - INFL FLUME	FLOWMETER CP	GS2 (S-PLC)	INFLUENT FLOW	AI	2/C TS # 18		Requires separate 120VAC power
54	2.3 - INFL FLUME	FLOWMETER CP	GS2 (S-PLC)	INFLUENT FLOW - ALARM	DI	2C / # 14		
55	2.4 - INFL SCREEN	SCREENING CP	GS2 (S-PLC)	INFL SCREEN - MODE	DI	2C / # 14		
56	2.4 - INFL SCREEN	SCREENING CP	GS2 (S-PLC)	INFL SCREEN - STATUS	DI	2C / # 14		
57	2.4 - INFL SCREEN	SCREENING CP	GS2 (S-PLC)	INFL SCREEN - CONDITION	DI	2C / # 14		
58	2.5 - AUTO SAMPLER	INFLUENT AUTO SAMPLER	GS2 (S-PLC)	INFLUENT SAMPLER - FLOW PACING SIGNAL	AO	2/C TS # 18		
59	2.5 - AUTO SAMPLER	INFLUENT AUTO SAMPLER	GS2 (S-PLC)	INFLUENT SAMPLER - TEMPERATURE	AI	2/C TS # 18		
60	2.5 - AUTO SAMPLER	INFLUENT AUTO SAMPLER	GS2 (S-PLC)	INFLUENT SAMPLER - STATUS	DI	2C / # 14		
61	2.5 - AUTO SAMPLER	INFLUENT AUTO SAMPLER	GS2 (S-PLC)	INFLUENT SAMPLER - CONDITION	DI	2C / # 14		
62	**3.0 SBR SYSTEM**							
63	3.1 - SBR BASIN 1	Dissolved Oxygen Transmitter	SBR PLC	SBR Basin 1 Dissolved Oxygen	AI	2/C TS # 18		Requires separate 120VAC power
64	3.1 - SBR BASIN 1	Pressure Transducer	SBR PLC	SBR Basin 1 Pressure	AI	2/C TS # 18		
65	3.1 - SBR BASIN 1	Level Sensor	SBR PLC	SBR Basin 1 Level	AI	2/C TS # 18		
66	3.1 - SBR BASIN 1	Common Alarm	SBR PLC	SBR Basin 1 Common Alarm	DI	2C / # 14		
67	3.1 - SBR BASIN 1	SBR PLC	OPERATIONS (S-NIP)	TBD	VAI	n/a		
68	3.1 - SBR BASIN 1	SBR PLC	OPERATIONS (S-NIP)	TBD	VAO	n/a		
69	3.1 - SBR BASIN 1	SBR PLC	OPERATIONS (S-NIP)	TBD	VDI	n/a		
70	3.1 - SBR BASIN 1	SBR PLC	OPERATIONS (S-NIP)	TBD	VDO	n/a		
71	3.2 - SBR BASIN 2	Dissolved Oxygen Transmitter	SBR PLC	SBR Basin 2 Dissolved Oxygen	AI	2/C TS # 18		Requires separate 120VAC power
72	3.2 - SBR BASIN 2	Pressure Transducer	SBR PLC	SBR Basin 2 Pressure	AI	2/C TS # 18		
73	3.2 - SBR BASIN 2	Level Sensor	SBR PLC	SBR Basin 2 Level	AI	2/C TS # 18		
74	3.2 - SBR BASIN 2	Common Alarm	SBR PLC	SBR Basin 2 Common Alarm	DI	2C / # 14		
75	3.2 - SBR BASIN 2	SBR PLC	OPERATIONS (S-NIP)	TBD	VAI	n/a		
76	3.2 - SBR BASIN 2	SBR PLC	OPERATIONS (S-NIP)	TBD	VAO	n/a		
77	3.2 - SBR BASIN 2	SBR PLC	OPERATIONS (S-NIP)	TBD	VDI	n/a		
78	3.2 - SBR BASIN 2	SBR PLC	OPERATIONS (S-NIP)	TBD	VDO	n/a		
79	3.3 - DIGESTER	Pressure Transducer	SBR PLC	Digester Pressure	AI	2/C TS # 18		
80	3.3 - DIGESTER	Level Sensor	SBR PLC	Digester Pressure	AI	2/C TS # 18		
81	3.4 - POST SBR	Pressure Transducer	SBR PLC	Post SBR Pressure	AI	2/C TS # 18		
82	3.4 - POST SBR	Level Sensor	SBR PLC	Post SBR Level	AI	2/C TS # 18		
83	**4.0 TERTIARY FILTERS**							
84	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 FILTER LEVEL	VAI	n/a		
85	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 HIGH LEVEL	VDI	n/a		
86	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 1 MODE	VDI	n/a		
87	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 1 OPEN	VDI	n/a		
88	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 1 CLOSED	VDI	n/a		
89	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 2 MODE	VDI	n/a		
90	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 2 OPEN	VDI	n/a		
91	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH VALVE # 2 CLOSED	VDI	n/a		
92	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 SLUDGE VALVE MODE	VDI	n/a		

1 E12.5 I/O CONTROL SIGNAL SCHEDULE 2
NO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

I/O SCHEDULES

E12.5

FILE NO: 2020-48

PLOT DATE: May 21, 2025

GENERAL NOTES:

1. PROVIDE 1#12G IN EACH CONDUIT ALONG WITH ALL OTHER LSITED CONDUCTORS SHOWN IN I/O CONTROL SIGNAL SCHEDULE FOR EQUIPMENT GROUND.

CONTROL SIGNAL TABLE

Line	Location	Source	Destination	Point Description	Point Type	Wiring Requirment	Conduit Requirement	Comment
93	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 SLUDGE VALVE OPEN	VDI	n/a		
94	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 SLUDGE VALVE CLOSED	VDI	n/a		
95	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH PUMP MODE	VDI	n/a		
96	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH PUMP STATUS	VDI	n/a		
97	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH PUMP CONDITION	VDI	n/a		
98	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 SLUDGE WASTE INITIATE	VDI	n/a		
99	4.1 - FILTER # 1	FILTER 1 CP	FILTERS (S-NIP)	F1 BACKWASH INITIATE	VDI	n/a		
100	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 FILTER LEVEL	VAI	n/a		
101	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 HIGH LEVEL	VDI	n/a		
102	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 1 MODE	VDI	n/a		
103	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 1 OPEN	VDI	n/a		
104	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 1 CLOSED	VDI	n/a		
105	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 2 MODE	VDI	n/a		
106	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 2 OPEN	VDI	n/a		
107	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH VALVE # 2 CLOSED	VDI	n/a		
108	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 SLUDGE VALVE MODE	VDI	n/a		
109	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 SLUDGE VALVE OPEN	VDI	n/a		
110	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 SLUDGE VALVE CLOSED	VDI	n/a		
111	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH PUMP MODE	VDI	n/a		
112	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH PUMP STATUS	VDI	n/a		
113	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH PUMP CONDITION	VDI	n/a		
114	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 SLUDGE WASTE INITIATE	VDI	n/a		
115	4.2 - FILTER # 2	FILTER 2 CP	FILTERS (S-NIP)	F2 BACKWASH INITIATE	VDI	n/a		
116	**5.0 UV DISINFECTION**							
117	5.1 UV SYSTEM	UV SYSTEM CP	RECLAIMED WATER PS (S-PLC)	UV System STATUS	DI	2C / # 14		
118	5.1 UV SYSTEM	UV SYSTEM CP	RECLAIMED WATER PS (S-PLC)	UV System CONDITION	DI	2C / # 14		
119	**6.0 RECLAIMED WATER PS**							
120	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	WET WELL LEVEL	VAI	n/a		
121	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	WET WELL HIGH LEVEL	VDI	n/a		
122	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 1 - MODE	VDI	n/a		
123	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 1 - STATUS	VDI	n/a		
124	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 1 - CONDITION	VDI	n/a		
125	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 1 - CONTROL	VDO	n/a		
126	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 2 - MODE	VDI	n/a		
127	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 2 - STATUS	VDI	n/a		
128	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 2 - CONDITION	VDI	n/a		
129	6.1 RECLAIMED WATER PS	RECLAIMED WATER PS CP	RECLAIMED WATER PS (S-PLC)	PUMP # 2 - CONTROL	VDO	n/a		
130	6.1 RECLAIMED WATER PS	EFFLUENT AUTO SAMPLER	RECLAIMED WATER PS (S-PLC)	EFFLUENT SAMPLER - FLOW PACING SIGNAL	AO	2/C TS # 18		
131	6.1 RECLAIMED WATER PS	EFFLUENT AUTO SAMPLER	RECLAIMED WATER PS (S-PLC)	EFFLUENT SAMPLER - TEMPERATURE	AI	2/C TS # 18		
132	6.1 RECLAIMED WATER PS	EFFLUENT AUTO SAMPLER	RECLAIMED WATER PS (S-PLC)	EFFLUENT SAMPLER - STATUS	DI	2C / # 14		
133	6.1 RECLAIMED WATER PS	EFFLUENT AUTO SAMPLER	RECLAIMED WATER PS (S-PLC)	EFFLUENT SAMPLER - CONDITION	DI	2C / # 14		
134	6.1 RECLAIMED WATER PS	EFFLUENT FLOWMETER	RECLAIMED WATER PS (S-PLC)	EFFLUENT FLOW	AI	2/C TS # 18		Requires separate 120VAC power
135	6.1 RECLAIMED WATER PS	EFFLUENT FLOWMETER	RECLAIMED WATER PS (S-PLC)	EFFLUENT FLOW - ALARM	DI	2C / # 14		
136	**7.0 REJECT PUMP STATION**							
137	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	WET WELL LEVEL	VAI	n/a		
138	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	WET WELL HIGH LEVEL	VDI	n/a		
139	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 1 - MODE	VDI	n/a		

1 / E12.6 I/O CONTROL SIGNAL SCHEDULE 3
NO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

I/O SCHEDULES

E12.6

FILE NO: 2020-48

PLOT DATE: May 21, 2025

GENERAL NOTES:

1. PROVIDE 1#12G IN EACH CONDUIT ALONG WITH ALL OTHER LSITED CONDUCTORS SHOWN IN I/O CONTROL SIGNAL SCHEDULE FOR EQUIPMENT GROUND.

CONTROL SIGNAL TABLE

Line	Location	Source	Destination	Point Description	Point Type	Wiring Requirment	Conduit Requirement	Comment
140	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 1 - STATUS	VDI	n/a		
141	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 1 - CONDITION	VDI	n/a		
142	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 1 - CONTROL	VDO	n/a		
143	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 2 - MODE	VDI	n/a		
144	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 2 - STATUS	VDI	n/a		
145	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 2 - CONDITION	VDI	n/a		
146	7.1 REJECT WATER PS	REJECT WATER PS CP	REJECT WATER PS (S-NIP)	PUMP # 2 - CONTROL	VDO	n/a		
147	**8.0 EXISTING LAS PUMP STATION**							
148	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	WET WELL LEVEL	VAI	n/a		
149	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	WET WELL HIGH LEVEL	VDI	n/a		
150	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 1 - MODE	VDI	n/a		
151	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 1 - STATUS	VDI	n/a		
152	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 1 - CONDITION	VDI	n/a		
153	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 1 - CONTROL	VDO	n/a		
154	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 2 - MODE	VDI	n/a		
155	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 2 - STATUS	VDI	n/a		
156	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 2 - CONDITION	VDI	n/a		
157	8.1 EXISTING LAS PS	EXISTING LAP PS CP	LAS PS (S-NIP)	PUMP # 2 - CONTROL	VDO	n/a		
158	**9.0 UNDERDRAIN PUMP STATION**							
159	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	WET WELL LEVEL	VAI	n/a		
160	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	WET WELL HIGH LEVEL	VDI	n/a		
161	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 1 - MODE	VDI	n/a		
162	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 1 - STATUS	VDI	n/a		
163	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 1 - CONDITION	VDI	n/a		
164	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 1 - CONTROL	VDO	n/a		
165	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 2 - MODE	VDI	n/a		
166	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 2 - STATUS	VDI	n/a		
167	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 2 - CONDITION	VDI	n/a		
168	9.1 UNDERDRAIN PS	UNDERDRAIN PS CP	UNDERDRAIN PS (S-NIP)	PUMP # 2 - CONTROL	VDO	n/a		
169	**10.0 BELT PRESS BLDG**							
170	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VAI	n/a		
171	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VAO	n/a		
172	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VDI	n/a		
173	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VDO	n/a		
174	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VAI	n/a		
175	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VAO	n/a		
176	10.1 - BELT PRESS BLDG	BELT PRESS CP	BELT PRESS (S-NIP)	TBD	VDI	n/a		

1 / E12.7 I/O CONTROL SIGNAL SCHEDULE 4
NO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

I/O SCHEDULES

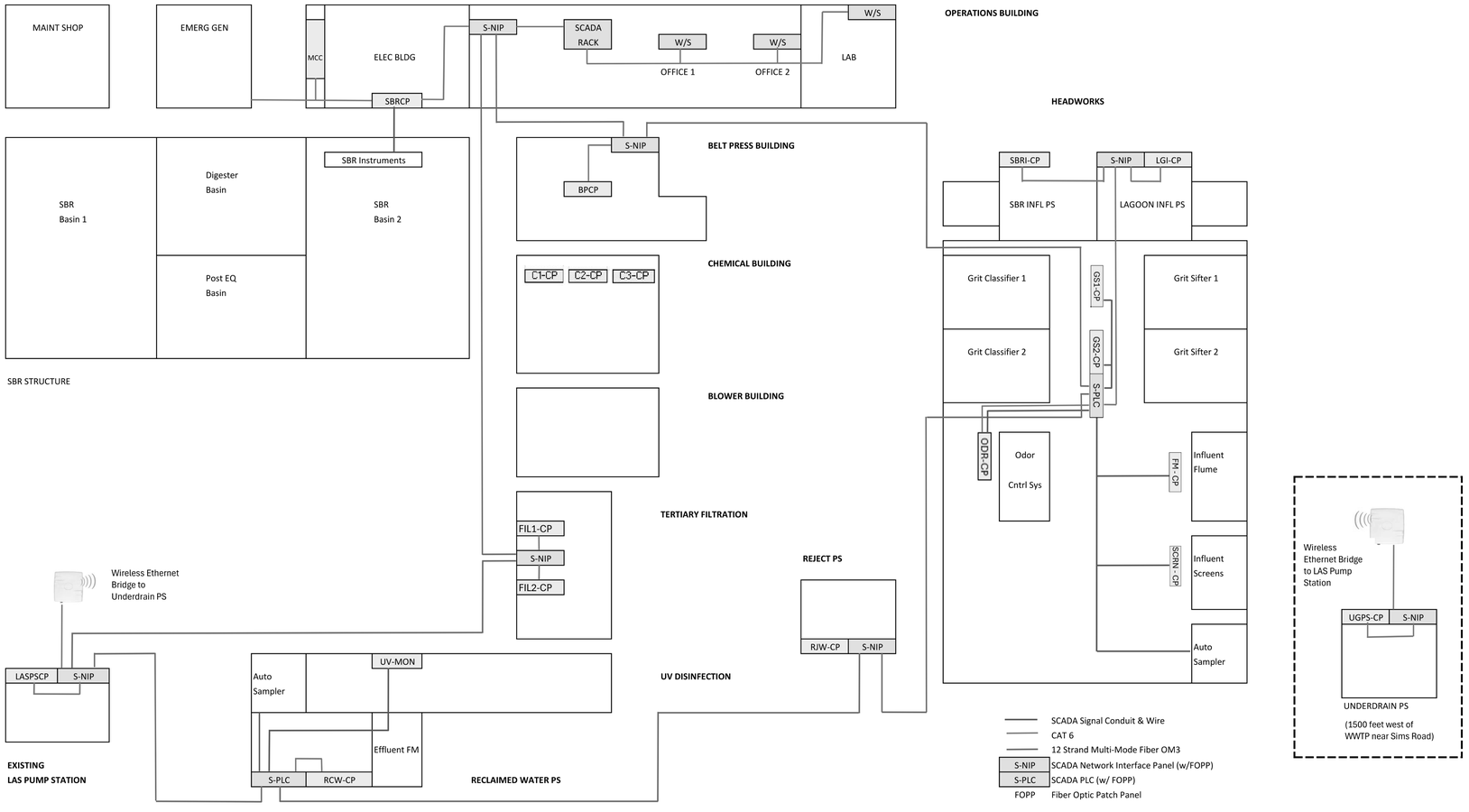
E12.7

FILE NO: 2020-48

PLOT DATE: May 21, 2025

Pembroke WWTP Expansion

SCADA NETWORK DIAGRAM



1 / E12.8 SCADA NETWORK DIAGRAM
NO SCALE

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

M.E. SACK ENGINEERING

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COUNTY:
BRYAN

OWNER:
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WASTEWATER TREATMENT PLANT EXPANSION

SCADA NETWORK DIAGRAM

E12.8

FILE NO: 2020-48

PLOT DATE: May 21, 2025

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ELECTRICAL DESIGN CONSULTANTS
ELECTRICAL ENGINEERS
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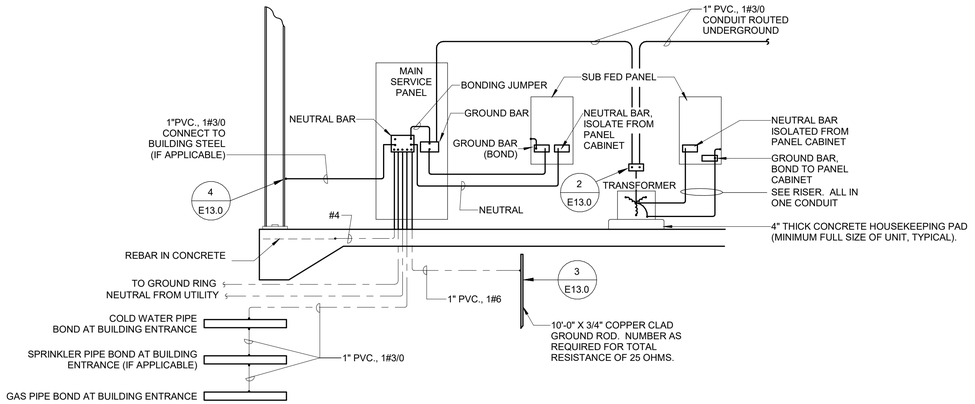
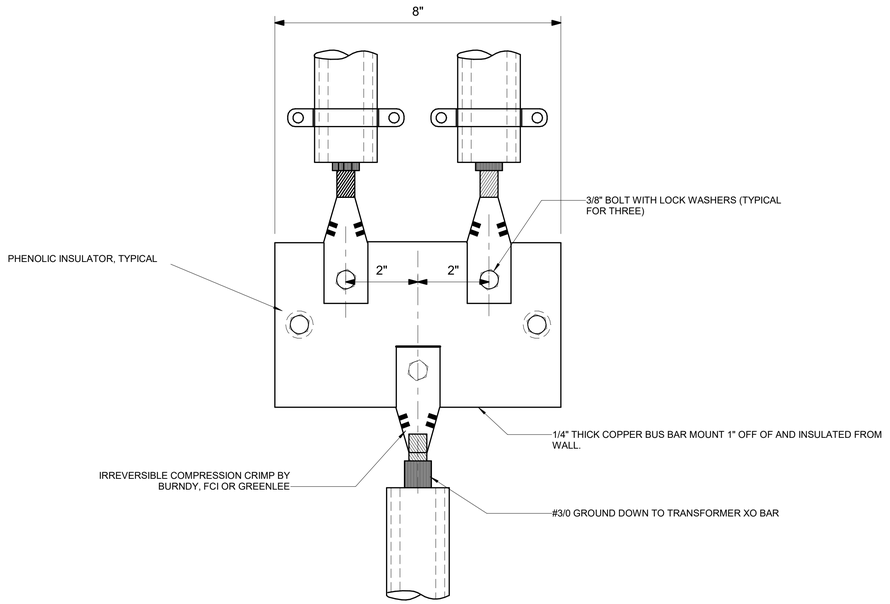
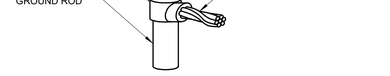


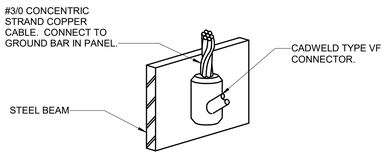
1 E13.0 DETAIL - SERVICE GROUNDING
NO SCALE



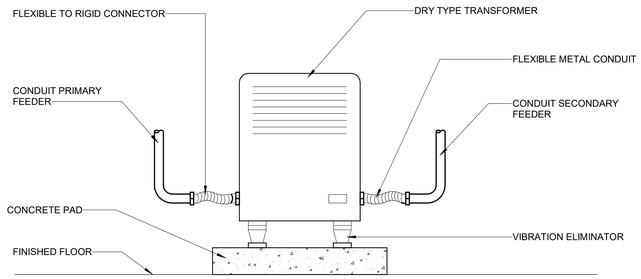
2 E13.0 DETAIL - GROUND CABLE TO BUS BAR
NO SCALE



3 E13.0 DETAIL - CABLE CONNECTION TO GROUND ROD
NO SCALE



4 E13.0 DETAIL - CABLE CONNECTION TO STEEL BEAM
NO SCALE



5 E13.0 DETAIL - FLOOR MOUNTED TRANSFORMER
NO SCALE

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ELECTRICAL DETAILS

E13.0

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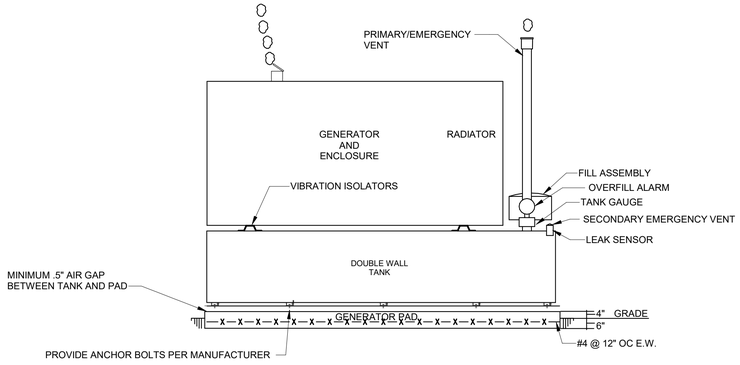


1 E13.1 DETAIL - GENERATOR CONCRETE PAD - SIDE VIEW
NO SCALE

TANK SPECIFICATIONS

PRIMARY TANK SHALL BE MINIMUM 10 GAUGE STEEL, UL142 LABEL AND HAVE THE FOLLOWING:

- FUEL SUPPLY AND FUEL RETURN OPENINGS (1" NPT MINIMUM EACH)
- *NORMAL (PRIMARY) TANK VENT OPENING ON PRIMARY TANK (2" NPT MINIMUM)
- *EMERGENCY PRESSURE RELIEF (SECONDARY) VENT OPENING SIZED PER NFPA 30
- OPENING FOR LOW LEVEL AND HIGH LEVEL FUEL ALARM SWITCHES (2"NPT MINIMUM)
- MECHANICAL FUEL GAUGE OPENING (1.5" NPT MINIMUM)
- STICK PORT OPENING (1.5" NPT MINIMUM)
- TANK FILL BUNG (2" NPT MINIMUM)

SECONDARY TANK SHALL HAVE THE FOLLOWING:

- MONITORING PORT ON INTERSTICE OF SECONDARY TANK (2" NPT MINIMUM)
- *EMERGENCY PRESSURE RELIEF (SECONDARY) VENT OPENING SIZED PER NFPA 30

* PRIMARY AND EMERGENCY SECONDARY TANK VENTS SHALL BE EXTENDED OUTSIDE OF THE GENERATOR ENCLOSURE AND TERMINATE AT A MINIMUM HEIGHT OF (12) FEET ABOVE GRADE

FILL ASSEMBLY:

- TANK FILL CONNECTION SHALL BE A CAM LOCK STYLE TIGHT FILL WITH AN OVERFILL PREVENTION VALVE (CLAY & BAILEY MINO #1228 OR APPROVED ALTERNATE) SET TO STOP FLOW OF FUEL WHEN THE TANK REACHES 95% OF TANK CAPACITY. THE FILL SHALL ALSO INCLUDE A SPILL CONTAINMENT BUCKET (EBW MODEL # 706-420-01) AND SHALL BE LOCATED SUCH THAT THE DELIVERY OPERATOR HAS DIRECT ACCESS TO THE TANK GAUGE

TANK GAUGING:

- A MECHANICAL DIRECT READING TYPE OF FUEL LEVEL GAUGE INDICATOR SHALL BE PROVIDED IN ADDITION TO ANY ELECTRONIC MONITORING SYSTEM. THE FUEL LEVEL INDICATOR SHALL BE A ROCHESTER GAUGES SERIES 6500 SENIOR GAUGE OR APPROVED ALTERNATE AND SHALL BE MOUNTED SO THAT THE DELIVERY OPERATOR HAS DIRECT ACCESS TO IT

LEAK AND OVERFILL ALARMS:

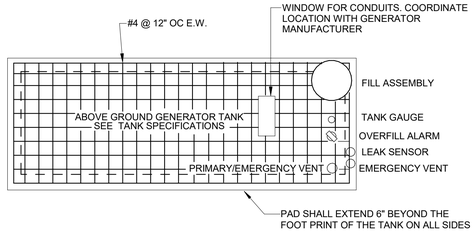
- A LIQUID SENSOR SHALL BE MOUNTED INSIDE THE SECONDARY TANK AND WIRED TO THE GENERATOR CONTROL PANEL. SENSOR SHALL BE INCON TSP-ULS OR APPROVED ALTERNATE
- A REMOTE OVERFILL BATTERY OPERATED ALARM HORN (MORRISON BROTHERS 918TCP OR APPROVED ALTERNATE) SHALL BE PROVIDED AND ALARM WHEN TANK REACHES 90% CAPACITY AND SHALL BE MOUNTED SO THAT THE DELIVERY OPERATOR HAS DIRECT ACCESS TO IT

SIGNAGE:

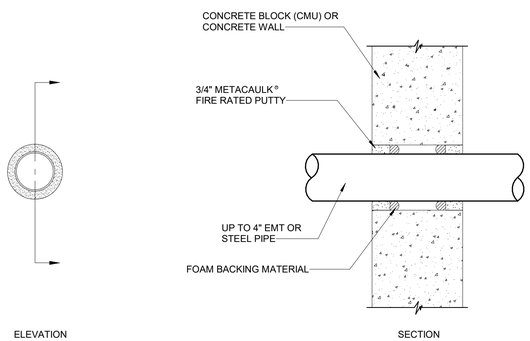
- TANK SHALL BE LABELED WITH FUEL TYPE AND CAPACITY. LABEL SHALL BE 2" WHITE LETTERS ON BLACK BACKGROUND AND ATTACHED TO THE TANK WITH ADHESIVE

ACCESSORIES:

- EMERGENCY VENT SHALL BE OPW 202 OR EQUAL SIZED BY TANK MANUFACTURER PER NFPA 30
- DIELECTRIC COUPLINGS AND/OR FLANGED KITS SHALL BE PROVIDED AT ALL COPPER TO STEEL CONNECTIONS AND AS REQUIRED TO ISOLATE THE PIPING FROM THE TANK.

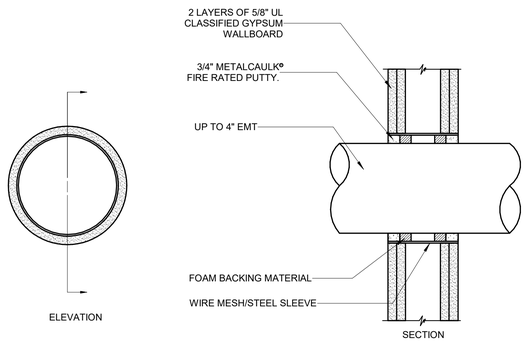


2 E13.1 DETAIL - GENERATOR CONCRETE PAD AND FUEL TANK - PLAN VIEW
NO SCALE



NOTE: WHERE CONDUIT IS USED AS A SLEEVE FOR ROUTING LOW VOLTAGE CABLES THROUGH A RATED WALL, LOCATE CONDUCTORS IN CENTER OF SLEEVE AND FILL OPENING WITH FIRE RATED PUTTY AT EACH END OF SLEEVE.

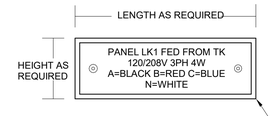
4 E13.1 DETAIL - CONCRETE WALL PENETRATION
NO SCALE



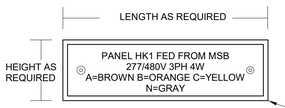
NOTE: WHERE CONDUIT IS USED AS A SLEEVE FOR ROUTING LOW VOLTAGE CABLES THROUGH A RATED WALL, LOCATE CONDUCTORS IN CENTER OF SLEEVE AND FILL OPENING WITH FIRE RATED PUTTY AT EACH END OF SLEEVE.

5 E13.1 DETAIL - GYPSUM WALLBOARD PENETRATION
NO SCALE

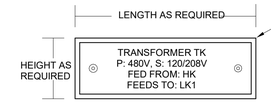
FOR 120/208V PANELS:



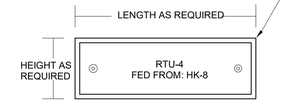
FOR 277/480V PANELS:



FOR TRANSFORMERS:



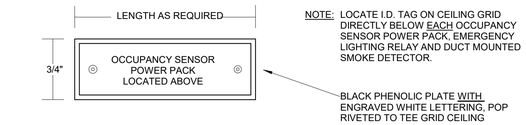
FOR DISCONNECTS:



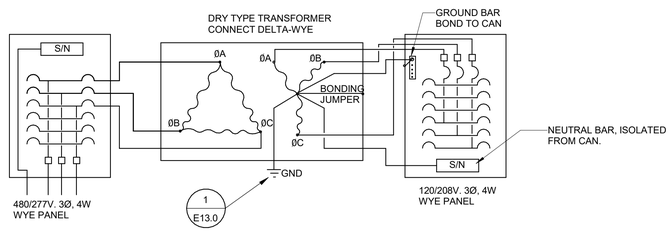
FOR NORMAL POWER LABEL SHALL BE: BLACK PHENOLIC PLATE WITH ENGRAVED WHITE LETTERING, POP RIVETED TO EQUIPMENT

FOR EMERGENCY POWER LABEL SHALL BE: RED PHENOLIC PLATE WITH ENGRAVED WHITE LETTERING, POP RIVETED TO EQUIPMENT

NOTE: DESIGNATIONS ARE FOR REFERENCE ONLY. LABELING SHALL BE OF EQUIPMENT BEING SERVED.



3 E13.1 IDENTIFICATION TAG DETAIL
NO SCALE



6 E13.1 DETAIL - DRY TYPE TRANSFORMER CONNECTION
NO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

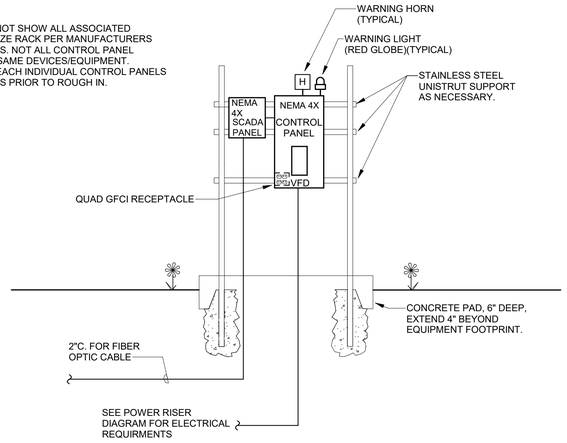
ELECTRICAL DETAILS

E13.1

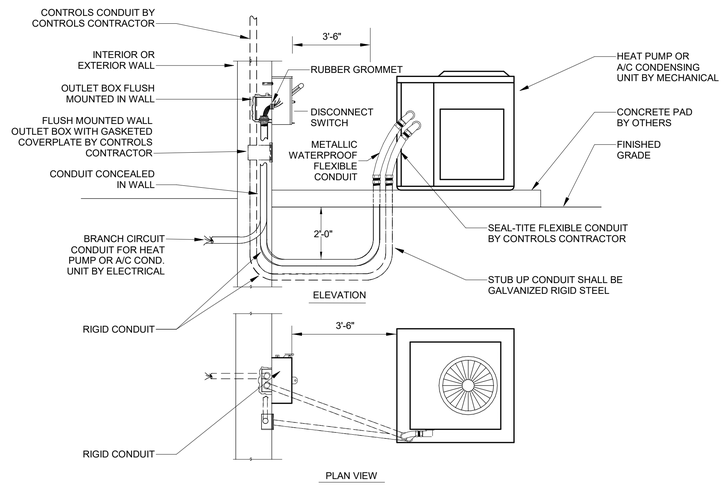
FILE NO: 2020-48

PLOT DATE: May 21, 2025

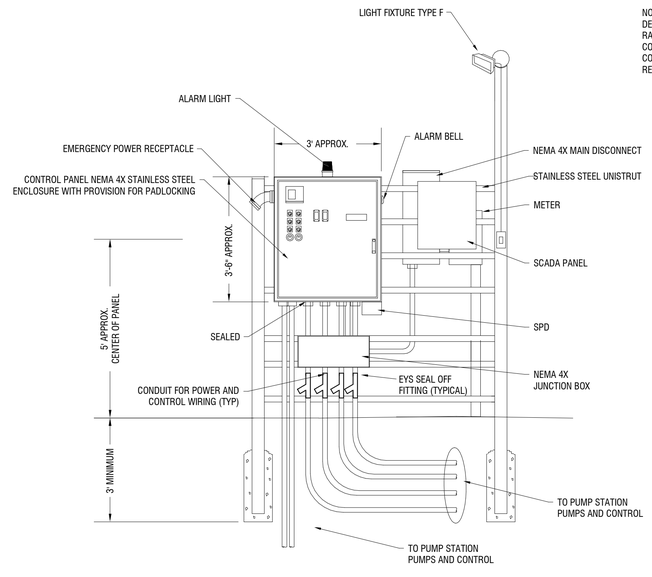
NOTE:
DETAIL DOES NOT SHOW ALL ASSOCIATED EQUIPMENT, SIZE RACK PER MANUFACTURERS REQUIREMENTS. NOT ALL CONTROL PANEL CONTAIN THE SAME DEVICES/EQUIPMENT. COORDINATE EACH INDIVIDUAL CONTROL PANELS REQUIREMENTS PRIOR TO ROUGH IN.



1 E13.2 DETAIL - TYPICAL RACK
SCALE: 6" = 1'-0"



2 E13.2 DETAIL - DISCONNECT SWITCH MOUNTING AT EXTERIOR H.V.A.C. UNIT
NO SCALE



NOTE:
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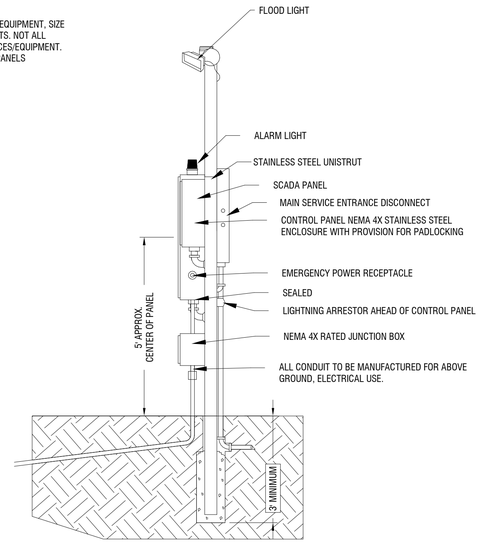

3 E13.2 DETAIL - TYPICAL CONTROL PANEL RACK DETAIL
NO SCALE

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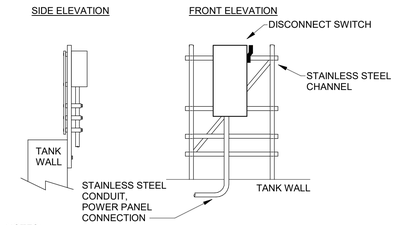
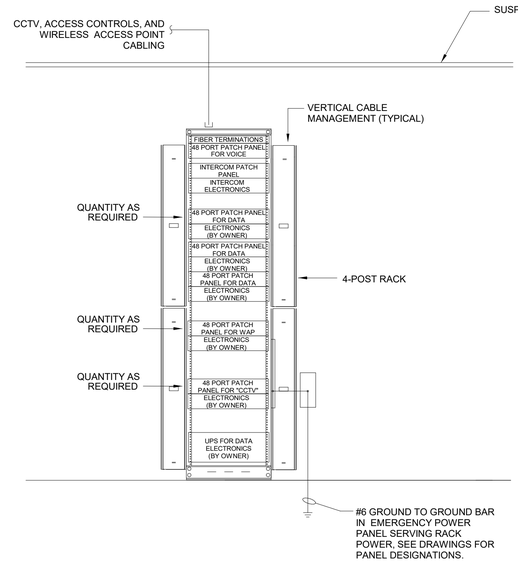


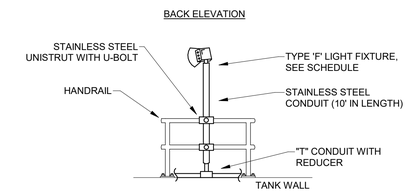
NOTES:

1. ALL CHANNELS, FASTENERS, ACCESSORIES, AND RELATED COMPONENTS MUST BE A MINIMUM OF 316 STAINLESS STEEL.
2. COORDINATE THE ATTACHMENT OF THE FRAME TO THE TANK WALL IN THE FIELD.
3. PANEL MUST BE MADE ACCESSIBLE FOR THE OPERATOR.

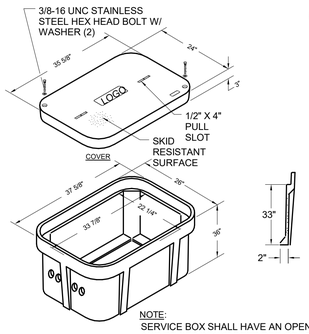
1 E13.3 DISCONNECT MOUNTING DETAIL
NO SCALE



2 E13.3 "IDF" DATA/VOICE AND INTEGRATED COMMUNICATIONS CABLING RISER
NO SCALE

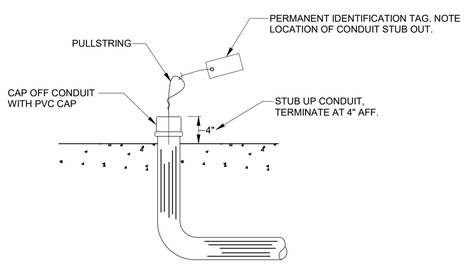


3 E13.3 DETAIL- FIXTURE 'F' INSTALLATION DETAIL
NO SCALE

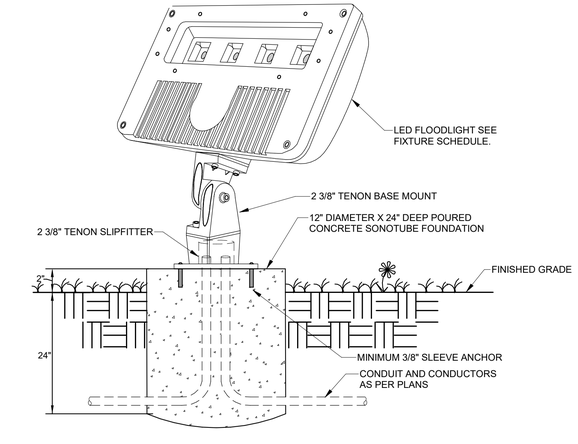


NOTE:
SERVICE BOX SHALL HAVE AN OPEN BOTTOM AND BE SET IN 1'-0" DEEP BED OF #57 GRAVEL.

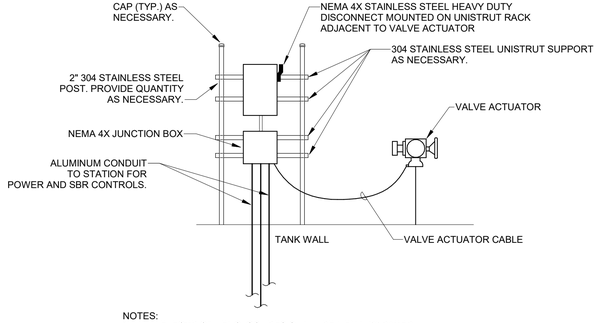
4 E13.3 SERVICE BOX
NO SCALE



5 E13.3 DETAIL - STUB UP CONDUIT DETAIL
NO SCALE

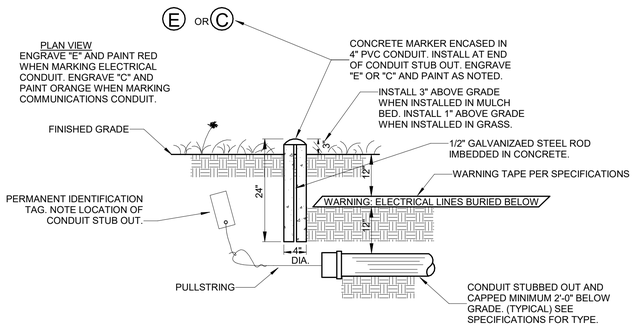


6 E13.3 DETAIL - STANCHION MOUNTED FLOODLIGHT
NO SCALE



NOTES:
1. ALL ELECTRICAL ENCLOSURES SHALL BE NEMA 4X RATED.
2. ALL EXPOSED CONDUIT SHALL BE ALUMINUM.
3. ALL CHANNEL, FASTENERS, ACCESSORIES, ETC. SHALL BE 304 STAINLESS STEEL.
4. 12GA. 304 STAINLESS STEEL CHANNEL.
5. JUNCTION BOX SHALL BE STAINLESS STEEL ENCLOSURE. POWER TERMINAL BLOCK AND TERMINAL STRIP SHALL BE REQUIRED FOR TERMINATION OF ACTUATOR CONDUCTORS. A MOTOR CABLE SHALL BE SUPPORTED BY A CORD GRIP AND KELLUM GRIP CABLE. COORDINATION IN FIELD SHALL BE REQUIRED FOR TERMINAL WITH EQUIPMENT PROVIDED AND CABLE FURNISHED BY OTHERS. PROVIDE SINGLE EYE AND CLOSED MESH KELLUM.
6. ROUTE PVC WITHIN CONCRETE. FITTINGS 18" OR LESS ABOVE TANK WALL SHALL NOT BE ALLOWED.

7 E13.3 DETAIL - VALVE ACTUATOR DISCONNECT DETAIL
NO SCALE



8 E13.3 DETAIL - CONCRETE MARKER DETAIL
NO SCALE

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GEORGIA REGISTERED NO. 038816 PROFESSIONAL ENGINEER BRYAN W. NEWLAND

DATE: 05/21/25

M.E. SACK ENGINEERING

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COUNTY:
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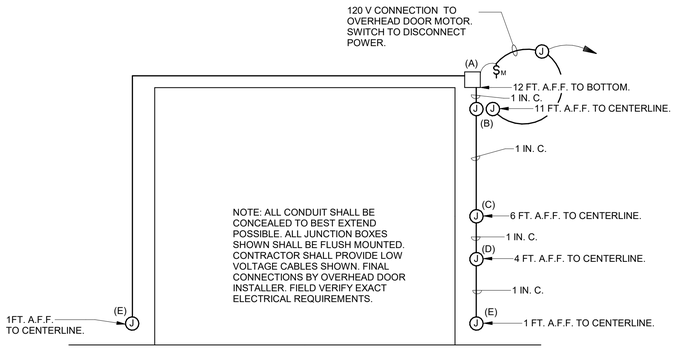
WASTEWATER TREATMENT PLANT EXPANSION

ELECTRICAL DETAILS

E13.3

FILE NO: 2020-48

PLOT DATE: May 21, 2025



OVERHEAD DOORS VARY IN SIZE. COORDINATE EXACT DIMENSIONS WITH ENGINEER PRIOR TO ROUGH-IN.

A. OVERHEAD DOOR MOTOR/MOTOR CONTROLLER FURNISHED AND INSTALLED BY OHD SUPPLIER.

B. LOOP DETECTOR FURNISHED AND INSTALLED BY OHD SUPPLIER. PROVIDE (2) #18 AWG FROM MOTOR CONTROLLER.

C. PNEUMATIC SAFETY EDGE FURNISHED AND INSTALLED BY OHD SUPPLIER. PROVIDE (2) #18 AWG FROM MOTOR CONTROLLER.

D. INTERIOR WALL CONTROL FURNISHED AND INSTALLED BY OHD SUPPLIER. PROVIDE (4) #18 AWG FROM MOTOR CONTROLLER.

E. ELECTRIC INFRARED SENSORS. FURNISHED AND INSTALLED BY OHD SUPPLIER.
F. PROVIDE (2) #18 AWG FROM MOTOR CONTROLLER.

1 / E13.4 DETAIL - TYPICAL OVERHEAD DOOR DETAIL
NO SCALE

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EDC
ELECTRICAL DESIGN CONSULTANTS
ELECTRICAL ENGINEERS
SAVANNAH OFFICE - PROJECT #: S24014
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AIR TERMINAL UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	MIN AIRFLOW (CFM)	MAX AIRFLOW (CFM)	HEATING AIRFOW (CFM)	HEATING (kW)	STAGES	VOLTAGE	PHASE	OPTIONS
TU-1	TITUS	DESV	500	500	500	6.5	3	277	1	ALL
TU-2	TITUS	DESV	300	300	300	4	2	277	1	ALL
TU-3	TITUS	DESV	240	240	240	3	1	277	1	ALL
TU-4	TITUS	DESV	160	160	160	2	1	277	1	ALL

OPTIONS:
1. ELECTRICAL DISCONNECT
2. DOUBLE WALL INSULATED CONSTRUCTION
3. 24V CONTROL TRANSFORMER
4. 7-DAY PROGRAMMABLE THERMOSTAT
5. HANGER BRACKETS
6. BOTTOM ACCESS DOOR
7. REMOVABLE AIRFLOW SENSOR

AIR DEVICE SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	BORDER TYPE	MODULE SIZE	OPTIONS
A	TITUS	OMNI	SQUARE PLAQUE DIFFUSER	LAY-IN	24 x 24	1, 2
B	TITUS	OMNI	SQUARE PLAQUE DIFFUSER	LAY-IN	12 x 12	1, 2
C	TITUS	50F	EGGCRATE GRILLE	LAY-IN	24 x 24	1
D	TITUS	50F	EGGCRATE GRILLE	LAY-IN	12 x 24	1
E	TITUS	TLF	LAMINAR FLOW DIFFUSER	LAY-IN	48 x 24	1

OPTIONS:
1. MANUFACTURER'S STANDARD WHITE FINISH
2. R-6 BACKPAN INSULATION

UNIT HEATER SCHEDULE

MARK	MANUFACTURER	MODEL	kW	AIRFLOW (CFM)	ELECTRICAL			WEIGHT (LBS)	OPTIONS
					VOLTAGE	PHASE	AMPS		
UH-1	MARLEY	MUH104-PRO-SSP	10	650	460	3	12	40	ALL
UH-1	MARLEY	MUH104-PRO-SSP	10	650	460	3	12	40	ALL

OPTIONS:
1. DISCONNECT BY ELECTRICAL
2. WALL MOUNTING BRACKET
3. SMARTSERIES PLUS THERMOSTAT FOR MULTI STAGE CONTROL

DEDICATED OUTDOOR AIR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	NOMINAL TONS	FAN PERFORMANCE					COOLING PERFORMANCE					HEATING PERFORMANCE		ELECTRICAL				ISMRE2	WEIGHT (LBS)	OPTIONS
				AIRFLOW (CFM)	ESP (IN. W.C.)	MOTOR HP	BHP	RPM	COOLING COIL			REHEAT		ELECTRIC KW	LAT DB (°F)	VOLTAGE	PHASE	MCA	MOCP			
									TOTAL (BTUh)	SENSIBLE (BTUh)	LAT DB (°F)	CAPACITY (BTUh)	LAT (°F)									
DOAS-1	GREENHECK	RV-25-10-1	10	1,200	1.5	1	0.54	1,150	115,000	60,000	48	49,000	87	15	60	460	3	49.4	60	8.5	2,500	ALL

OPTIONS:
1. MANUFACTURER'S NON-FUSED DISCONNECT SWITCH
2. 2" DOUBLE WALL INSULATED CONSTRUCTION WITH PERMATECTOR EXTERIOR COATING
3. SINGLE POINT POWER
4. HORIZONTAL DUCT CONNECTIONS
5. MULTI-ZONE VARIABLE AIR VOLUME CONTROLS
6. MERV 8 & 13 FILTRATION
7. BASE RAIL FOR EXTERIOR PAD MOUNTED INSTALLATION
8. ENTHALPY ECONOMIZER
9. STAINLESS STEEL DRAIN PAN
10. DIRECT DRIVE PLENUM FAN
11. NEMA PREMIUM EFFICIENT MOTOR WITH VFD
12. INVERTER COMPRESSOR
13. MODULATING HOT GAS REHEAT
14. LOW LEAKAGE OUTSIDE AIR DAMPER
15. DIRTY FILTER SENSOR
16. SERVICE LIGHTS AND RECEPTACLE
17. BACNET CAPABLE CONTROLLER FOR FUTURE USE

DUCTLESS INDOOR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	NOMINAL TONS	MOUNT	FAN CFM	ASSOCIATED OUTDOOR UNIT	COOLING CAPACITY (BTUh)	HEATING CAPACITY (BTUh)	VOLTAGE	PHASE	MCA	MOCP	WEIGHT (LBS)	OPTIONS
IDU-1A	CARRIER	45MAHAQ36XA3	3.0	HIGH WALL	636	ODU-1	36,000	36,000	230	1	-	POWERED FROM OUTDOOR UNIT	45	ALL
IDU-1B	CARRIER	45MAHAQ36XA3	3.0	HIGH WALL	636	ODU-1	36,000	36,000	230	1	-	POWERED FROM OUTDOOR UNIT	45	ALL
IDU-2	CARRIER	45MAHAQ12XA3	1.0	HIGH WALL	325	ODU-2	12,000	12,000	230	1	-	POWERED FROM OUTDOOR UNIT	25	ALL
IDU-3	CARRIER	45MAHAQ12XA3	1.0	HIGH WALL	325	ODU-3	12,000	12,000	230	1	-	POWERED FROM OUTDOOR UNIT	25	ALL

OPTIONS:
1. DISCONNECT BY ELECTRICAL
2. LOCAL, WIRED, PROGRAMMABLE THERMOSTAT

DUCTLESS OUTDOOR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	NOMINAL TONS	COOLING CAPACITY (BTUh)	HEATING CAPACITY (BTUh)	VOLTAGE	PHASE	MCA	MOCP	WEIGHT (LBS)	ASSOCIATED UNIT	SEER2	EER2	OPTIONS
ODU-1A	CARRIER	37MARAQ36AA3	3.0	36,000	36,000	230	1	33	35	150	IDU-1	19	8.7	ALL
ODU-1B	CARRIER	37MARAQ36AA3	3.0	36,000	36,000	230	1	33	35	150	IDU-1	19	8.7	ALL
ODU-2	CARRIER	37MARAQ12AA3	1.0	12,000	12,000	230	1	24	25	65	IDU-1	25.5	13.1	ALL
ODU-3	CARRIER	37MARAQ12AA3	1.0	12,000	12,000	230	1	24	25	65	IDU-1	25.5	13.1	ALL

OPTIONS:
1. DISCONNECT BY ELECTRICAL

LOUVER SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW (CFM)	FREE AREA (SQ.FT.)	FREE AREA %	VELOCITY (FPM)	MAX VELOCITY (FPM)	PRESSURE DROP (IN.WG.)	VOLTAGE	PHASE	MCA	MOCP	OPTIONS
LV-1	GREENHECK	ESD-435	2,000	3.1	50	654	989	0.069	115	1	-	-	ALL
LV-2	GREENHECK	ESD-435	2,000	3.1	50	654	989	0.069	115	1	-	-	ALL
LV-3	GREENHECK	ESD-435	2,000	3.1	50	654	989	0.069	115	1	-	-	ALL

OPTIONS:
1. PERMATECTOR FINISH. COLOR TO MATCH WALL.
2. DRAINABLE BLADES
3. ACTUATED DAMPER, CONTROL TRANSFORMER AS REQUIRED FOR ACTUATOR VOLTAGE

EXHAUST FAN SCHEDULE

MARK	MANUFACTURER	MODEL	MAX CFM	MIN CFM	ESP (IN.WG.)	RPM	MOTOR HP	BHP	ELECTRICAL				SONES	WEIGHT (LBS)	OPTIONS
									VOLTAGE	PHASE	MCA	MOCP			
EF-1	GREENHECK	G-095-VG	720	120	0.5	1645	1/6	0.14	115	1	3.5	15	9.8	50	1, 2, 3, 4, 5
EF-2	GREENHECK	G-080-VG	200	200	0.5	1504	1/10	0.05	115	1	1.9	15	7.6	50	1, 2, 3, 5
EF-3	GREENHECK	SE1-14-440-VG	1,000	1,000	0.5	1445	1/2	0.27	115	1	8.2	15	11.3	50	1, 3, 6
EF-4	GREENHECK	SE1-14-440-VG	1,000	1,000	0.5	1445	1/2	0.27	115	1	8.2	15	11.3	50	1, 3, 6
EF-5	AEROVENT	AHA-18	1,000	1,000	0.5	889	1/4	0.21	115	1	-	-	-	115	1, 7, 8
EF-6	AEROVENT	AHA-18	1,000	1,000	0.5	889	1/4	0.21	115	1	-	-	-	115	1, 7, 8
EF-7	GREENHECK	SE1-14-440-VG	1,000	1,000	0.5	1445	1/2	0.27	115	1	8.2	15	11.3	50	1, 3, 6
EF-8	GREENHECK	SE1-14-440-VG	1,000	1,000	0.5	1445	1/2	0.27	115	1	8.2	15	11.3	50	1, 3, 6

OPTIONS:
1. ELECTRICAL DISCONNECT
2. SLOPED, INSULATED ROOF CURB WITH BACKDRAFT DAMPER
3. VARI-GREEN MOTOR
4. VARI-GREEN CONSTANT PRESSURE CONTROLLER WITH PRESSURE TUBING AND WALL PLATES
5. MANUFACTURER'S STANDARD EPOXY OR BAKED ENAMEL FINISH.
6. WALL HOUSING, 45° WEATHERHOOD, BACKDRAFT DAMPER, OSHA MOTOR GUARD
7. DIRECT DRIVE MOTOR
8. FIBERGLASS, CORROSION RESISTANT COATING

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www.ingconsultinginc.com

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GEORGIA REGISTERED No. PE046005 PROFESSIONAL 05/01/2025 ENGINEER SPENCER C. CASHWELL

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WASTEWATER TREATMENT PLANT EXPANSION

MECHANICAL SCHEDULES

ME1

FILE NO: 2020-48

PLOT DATE: May 21, 2025

MECHANICAL LEGEND

DUCT TYPES
- 12"x12" — RECTANGULAR
- 12"ø — ROUND

DUCT SYSTEMS
- SA — SUPPLY AIR
- EA — EXHAUST AIR

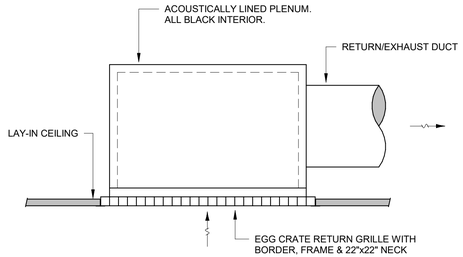
PIPING SYSTEMS
- C — CONDENSATE

SYMBOLS
- T — THERMOSTAT TAG
- # — KEYNOTE TAG
- AIRFLOW SYMBOL
- M — MOTOR

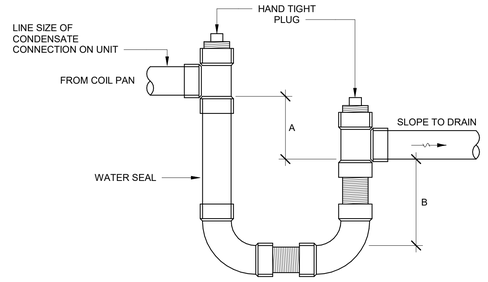
ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
CO	CLEANOUT
(ID)	INSIDE DIAMETER

AIR DEVICE TAGS
A 12"x12" 100 — TYPE, NECK SIZE, CFM



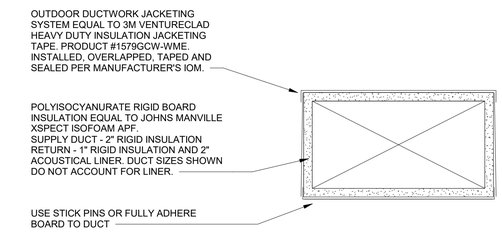
1 RETURN/EXHAUST GRILLE
ME2 NOT TO SCALE



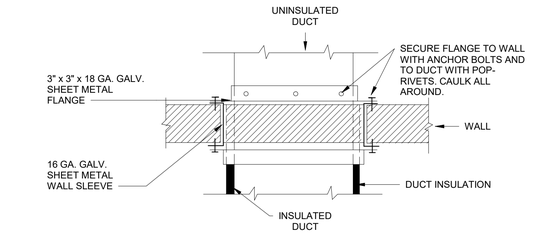
UNIT TYPE:	A	B
DRAW THRU	X + 1"	A/2
BLOW THRU	1"	X+1"

X = FAN STATIC PRESSURE (IN. W.C.)

2 CONDENSATE DRAIN TRAP
ME2 NOT TO SCALE



3 EXTERIOR DUCTWORK JACKET
ME2 NOT TO SCALE



4 DUCT-THRU-WALL
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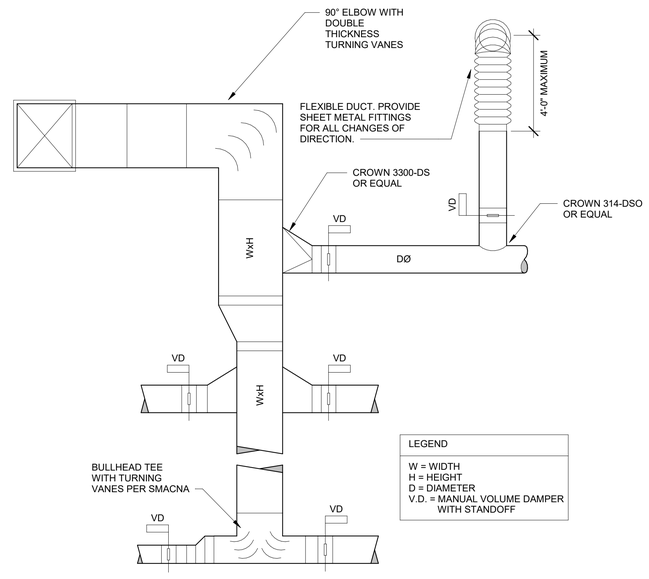
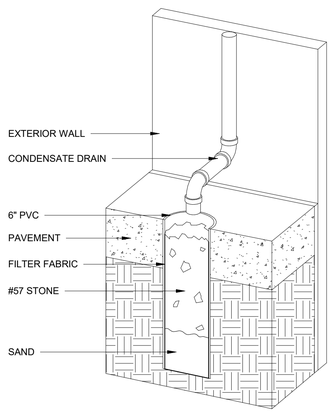
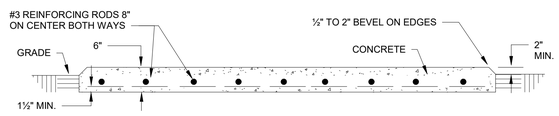


NOTE:
1. ALL INSULATION SEAMS AND JOINTS SHALL BE SEALED WITH GLASS FAB FIBERGLASS MESH TAPE AND MASTIC.
2. ALL BRANCH DUCTS SHALL HAVE VOLUME DAMPERS WITH STANDOFFS.

5 TYPICAL DUCTWORK DETAIL
ME2 NOT TO SCALE



6 CONDENSATE DRYWELL DETAIL
ME2 NOT TO SCALE



(PAD EXTENTS TO BE AS SHOWN AND/OR 6" MIN. LARGER THAN UNIT ON OPEN SIDES AND EXTENDED TO BUILDING EXTERIOR WALL, WHERE ADJACENT)

7 EXTERIOR CONCRETE PAD
ME2 NOT TO SCALE

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WASTEWATER TREATMENT PLANT EXPANSION

MECHANICAL DETAILS

ME2

FILE NO: 2020-48

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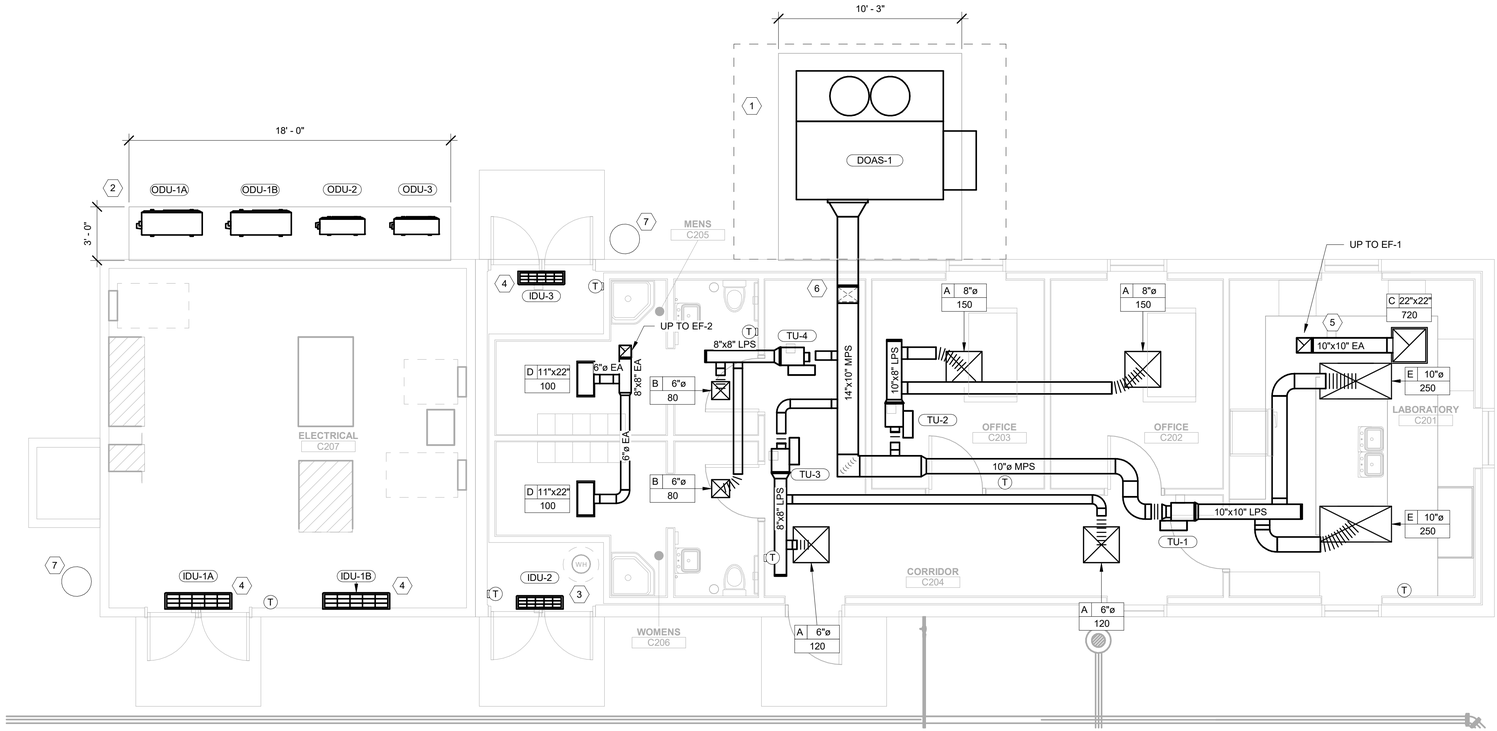

1 OPERATIONS BUILDING MECHANICAL

ME3 | 1/4" = 1'-0"

NORTH

GENERAL NOTES:

1. BRANCH DUCT SIZE IS EQUAL TO AIR DEVICE NECK SIZE UNLESS OTHERWISE NOTED.
2. COORDINATE ALL EQUIPMENT INSTALLATION FINAL LOCATIONS TO ALLOW FOR SUFFICIENT MAINTENANCE ACCESS
3. ALL DUCT DIMENSIONS REFER TO CLEAR INTERIOR CROSS SECTION AND DO NOT ACCOUNT FOR INSULATION.
4. LOCATE ALL EQUIPMENT, VALVES, DAMPERS, ETC. TO BE ACCESSIBLE ABOVE LAY-IN CEILINGS. PROVIDE ACCESS PANELS FOR ANY EQUIPMENT, ETC. LOCATED ABOVE GYP BOARD CEILINGS.
5. COORDINATE THE FINAL INSTALLATION LOCATION OF ALL MECHANICAL EQUIPMENT WITH WASTE WATER TREATMENT EQUIPMENT AND THE OTHER TRADES.

KEYNOTES: (THIS SHEET ONLY)

1. INSTALL DEDICATED OUTSIDE AIR UNIT ON NEW, POURED-IN-PLACE CONCRETE EQUIPMENT PAD. EQUIPMENT PAD TO EXTEND FROM FACE OF BUILDING TO 12" BEYOND THE FOOT PRINT OF THE UNIT. DIMENSIONS SHOWN ARE APPROXIMATE AND MAY CHANGE WITH A DIFFERENT EQUIPMENT MANUFACTURER.
2. INSTALL DUCTLESS SYSTEM OUTDOOR UNIT ON NEW, POURED-IN-PLACE CONCRETE EQUIPMENT PAD. EQUIPMENT PAD TO EXTEND FROM FACE OF BUILDING TO 4" BEYOND THE FOOT PRINT OF THE UNIT. DIMENSIONS SHOWN ARE APPROXIMATE AND MAY CHANGE WITH A DIFFERENT EQUIPMENT MANUFACTURER.
3. INSTALL DUCTLESS SYSTEM INDOOR UNIT ABOVE DOORWAY. ROUTE TYPE L COPPER CONDENSATE PIPING TO FLOOR DRAIN. SECURE CONDENSATE PIPING TO WALL WITH SPLIT RING PIPE SUPPORTS. SUPPORT OFF OF FLOOR WITH UNISTRUT AND PIPE CLAMPS.
4. INSTALL DUCTLESS SYSTEM INDOOR UNIT ABOVE DOORWAY. ROUTE TYPE L COPPER CONDENSATE PIPING TO EXTERIOR CONDENSATE DRYWELL. ROUTE PIPING DOWN INSIDE BUILDING, SECURED TO WALL. PENETRATE EXTERIOR WALL APPX. 8" ABOVE FINISHED GRADE AND TERMINATE OVER DRY WELL.
5. INSTALL LAB EXHAUST FAN ON ROOF CURB. INSTALL VARI-GREEN CONSTANT PRESSURE CONTROLLER ABOVE THE CEILING, BELOW THE EXHAUST FAN. THE PRESSURE CONTROLLER WILL VARY THE EF-1 FAN VOLUME TO CONTROL PRESSURE IN THE LAB. COMMISSION THE CONTROLLER AND BALANCE THE FAN MINIMUM AND MAXIMUM AIRFLOWS TO MAINTAIN A NEGATIVE PRESSURIZATION OF -0.015 IN.WG. IN THE LABORATORY RELATIVE TO THE CORRIDOR. WHEN LAB FUME HOOD IS OFF, OR THE SASH IS CLOSED, EF-1 WILL INCREASE AIRFLOW. WHEN THE FUME HOOD IS OPERATING, EF-1 WILL DECREASE AIRFLOW.
   A. LAB EXHAUST FAN MAY ALSO BE INSTALLED ON THE GABLE END SIDEWALL. FAN MUST BE INSTALLED AS HIGH AS POSSIBLE, MIN. 10' ABOVE FINISHED GRADE. FOR THIS TYPE OF INSTALLATION, WINDOWS MAY NOT BE OPERABLE. SELECT UPBLAST STYLE FAN FOR SIDEWALL INSTALLATION.
6. ROUTE 14"x10" MEDIUM PRESSURE DUCT UP IN WALL CHASE.
7. CONDENSATE DRYWELL. SEE DETAIL.

CONTROL NOTES:

1. THE BUILDING IS NOT EQUIPPED WITH A BUILDING MANAGEMENT SYSTEM. ALL CONTROLS ARE LOCAL.
2. THE DOAS UNIT SHALL BE PROVIDED WITH A FACTORY CONTROLLER PROGRAMMED FOR VARIABLE AIR VOLUME OPERATION. LOCATE DUCT PRESSURE SENSOR 3/4 OF THE WAY DOWN THE LONGEST MEDIUM PRESSURE DUCT.
3. AIR TERMINAL UNITS ARE CONSTANT VOLUME. REHEAT COILS CONTROL SPACE TEMPERATURE.
4. BATHROOM EXHAUST IS CONSTANT VOLUME.

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TEL: (912) 368-5212

GEORGIA REGISTERED No. PE046005 PROFESSIONAL 05/01/2025 ENGINEER SPENCER C. CASHWELL

DATE:_____

M.E. SACK ENGINEERING

MUNICIPALITY:
CITY OF PEMBROKE

COUNTY:
BRYAN

OWNER:
City of Pembroke
160 N
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Pembroke, GA
31321
(912) 653-4413
streets@pembrokega.net

24 HOUR CONTACT:
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WASTEWATER TREATMENT PLANT EXPANSION

MECHANICAL - OPERATIONS BUILDING

ME3

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HVAC| Plumbing| Fire Protection
550 11th Street
Augusta, Georgia 30901
(706) 774-1020
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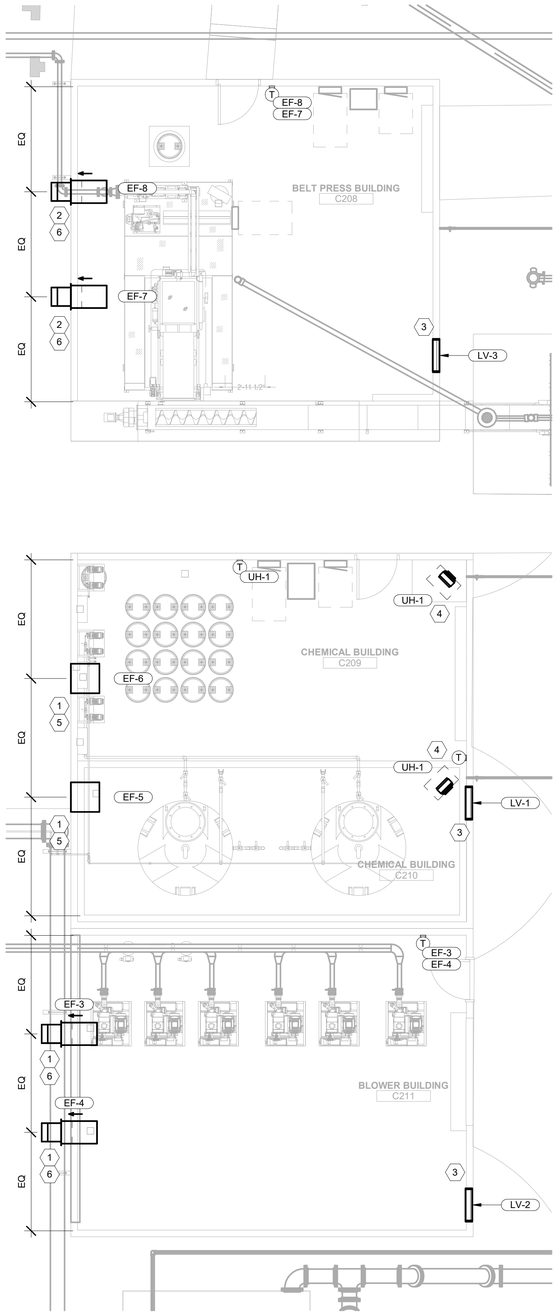
SCALE BAR: 1"=50'
50 0 25 50 100 200

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 CHEMICAL AND BLOWER BUILDING MECHANICAL

ME4 3/16" = 1'-0"

NORTH

KEYNOTES: (THIS SHEET ONLY)

1. INSTALL WALL MOUNTED EXHAUST FAN HIGH ON WALL. BOTTOM OF FAN ELEVATION APPX. 15' ABOVE FINISHED FLOOR.
2. INSTALL WALL MOUNTED EXHAUST FAN HIGH ON WALL. BOTTOM OF FAN ELEVATION APPX. 12'-6" ABOVE FINISHED FLOOR.
3. INSTALL LOUVERS AND ACTUATED DAMPERS LOW ON WALL, APPROXIMATELY 8" ABOVE FINISHED FLOOR. DAMPER ACTUATION TO BE TIED INTO FAN OPERATION. DAMPERS SHALL OPEN WHEN FANS ARE ON. DAMPERS SHALL CLOSE WHEN FANS ARE OFF.
4. USE WALL HANGER TO INSTALL UNIT HEATERS APPX. 9 FT ABOVE FINISHED FLOOR.
5. FAN TO OPERATE CONTINUOUSLY.
6. FAN TO OPERATE ON LOCAL THERMOSTAT.

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ME4

SCALE BAR: 1"=50'
50 0 25 50 100 200

FILE NO: 2020-48

PLOT DATE: May 21, 2025

PLUMBING LEGEND

VENT	VENT
S	SANITARY WASTE
AW	SANITARY ACID WASTE
CW	DOMESTIC COLD WATER
HW	DOMESTIC HOT WATER
HWR	DOM. HOT WATER RETURN
PW	PROCESS WATER
	1/4-TURN FULL PORT BALL VALVE
	NEW-EXISTING WORK
#	KEYNOTE

ABBREVIATIONS

F.M. -	FLOOR MOUNT
W.M. -	WALL MOUNT
R.M. -	RECESSED WALL MOUNT
C.M. -	COUNTER MOUNT
C.S. -	CARRIER SUPPORTED
U.S.M. -	UNDER SINK MOUNT
G.M. -	GROUND MOUNT
U.G.M. -	UNDER GROUND MOUNT
A.C.M. -	ABOVE CEILING MOUNT
A.F.G. -	ABOVE FINISHED GRADE
A.F.F. -	ABOVE FINISHED FLOOR
SP-LVL -	SPLIT LEVEL
U.N.O. -	UNLESS OTHERWISE NOTED
C.P. -	CHROME POLISHED
S.I.P -	SIZE INDICATED IN PLAN
B.T.B. -	BACK TO BACK FIXTURE

GENERAL PLUMBING NOTES

1. THE PLUMBING CONTRACTOR SHALL COORDINATE ALL PLUMBING WORK WITH ALL TRADES INCLUDING, BUT NOT LIMITED TO, ARCHITECTURAL, ELECTRICAL, HVAC, SPRINKLER AND STRUCTURAL.
2. ALL OPENINGS THRU FIRE RATED WALLS OR FLOORS SHALL BE SEALED WITH AN APPROVED FIREPROOFING MATERIAL TO MAINTAIN THE INTEGRITY OF THE WALL OR FLOORS.
3. UNIONS SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIR.
4. ALL PIPING OF DISSIMILAR MATERIAL SHALL HAVE DIELECTRIC FITTING INSTALLED AT JOINT.
5. CONTRACTOR SHALL VERIFY EXISTING ROUGH-IN AVAILABLE FOR NEW FIXTURES AND ADJUST FIXTURE SUBMITTAL AS REQUIRED FOR EXISTING CONDITIONS FOR ARCHITECTURAL ENGINEERING REVIEW.
6. MANUFACTURER'S AND MODEL NUMBERS SHOWN IN FIXTURE SCHEDULE ARE MINIMUM EQUIPMENT / FIXTURE REQUIREMENTS AND ARE THE BASIS OF DESIGN. CONTRACTOR SHALL REFERENCE SPECIFICATIONS FOR ADDITIONAL ACCEPTABLE MANUFACTURERS. PRODUCTS FROM OTHER LISTED MANUFACTURERS MUST MEET THE BASIS OF DESIGN. ALL EQUIPMENT AND INSTALL SHALL MEET PROJECT ISSUE DATE STATE'S ADOPTED IBC, IMC, IPC, NEC, IFGC, IECC AND ASHRAE 90.1.
7. SEE ARCHITECTURAL DRAWINGS FOR FIXTURE MOUNTING HEIGHTS. [ALL ACCESSIBLE FIXTURES SHALL COMPLY W/ AMERICAN DISABILITY ACT LATEST REVISION AS PUBLISHED BY DEPARTMENT OF JUSTICE ACCESS BOARD AND AMENDED BY THE STATE OF GEORGIA. NON ACCESSIBLE FIXTURES SHALL COMPLY WITH ARCHITECTURAL DRAWINGS AND MANUFACTURER RECOMMENDED INSTALLATION HEIGHTS. COORDINATE SINK DEPTH WITH FINAL MILLWORK DRAWINGS AND ADJUST SINK DRAIN OR DEPTH TO ACCOMMODATE.
8. ALL FIXTURES SHALL BE WHITE IN COLOR. FLUSHING LEVERS SHALL BE MOUNTED TO WIDE SIDE OF TOILET.
9. STRUCTURAL TRUSSES AND BEAMS SHALL NOT BE CUT TO FACILITATE THE PLUMBING INSTALLATION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF ALL TRUSSES AND BEAMS TO CONFIRM THERE ARE NO CONFLICTS WITH INSTALLATION. NOTIFY ARCHITECT IF ANY CONFLICTS OCCUR.
10. ALL ABOVE CEILING PIPING BRANCHES OFF THE MAIN, ALL FLUSH VALVE BRANCHES IN ACCESSIBLE CHASES, SUB-BRANCH PIPING TO GANG BATH LAVATORY SETS, WALL HYDRANTS, AND SINGLE TOILET ROOMS SHALL HAVE AN ACCESSIBLE, ABOVE CEILING 1/4-TURN FULL PORT, TWO-PIECE BALL VALVE PER SPECIFICATIONS.
11. COORDINATE FINAL FIXTURE COUNTS REFLECTED ON PLUMBING CALCULATION SCHEDULE WITH ARCHITECTURAL DRAWINGS.

PLUMBING FIXTURE SCHEDULE

TYPE MARK	FIXTURE	TYPE	ADA HGT & MOUNTING REQ'D	SANITARY BELOW SLAB | ABOVE SLAB	VENT	CW	HW	FIXTURE DESCRIPTION
P-1	TOILET - ADA FLUSH TANK	F.M.	YES	3"	2"	1/2"	-	AMERICAN STANDARD CHAMPION PRO #211AA.104 W/ BEMIS 2155SSCT TOILET SEAT, RIGID C.P. BRASS TUBE SUPPLY, C.P. 1/4-TURN SUPPLY ANGLE STOP
P-2	LAVATORY	C.S.	YES	2" | 1-1/4"	2"	1/2"	1/2"	KOHLER #K-2867, JR SMITH #0800 CARRIER, CHICAGO #420-E2805ABCP W/0.5GPM OUTLET, BRASSCRAFT C.P. CAST BRASS 17GA OFFSET GRID DRAIN TRAP WITH CLEANOUT, RIGID C.P. BRASS TUBE SUPPLIES, C.P. 1/4-TURN ANGLE STOPS W/ TRUEBRO #103 E-Z
P-3	LAB SINK	C.M.	NO	2" | 1-1/2"	2"	1/2"	1/2"	DROP-IN, DOUBLE BOWL, 3-HOLE, STAINLESS STEEL SINK, ELKAY #DLR332210 SWING GOOSENECK FAUCET WITH VACUUM BREAKER CHICAGO #1100-GN8BVBE2-2XKC WATTS STYLE #11 DILUTION TRAP CHAROLETTE CHEM-DRAIN PIPING FROM BASIN TO TRAP AND TO SAN-TEE IN WALL C.P. 1/4-TURN ANGLE STOPS AND RIGID BRASS TUBE SUPPLIES
P-ANT	ACID NEUTRALIZATION TANK	U.G.	-	3"	2"	-	-	WATTS ORION ES-OR-T5 NEUTRALIZATION TANK 55 EMPTY / 18 EFFECTIVE GALLON CAPACITY 3" INLET / 3" OUTLET / 2" VENT
P-DB	DRAIN BOX	R.M.	-	-	-	-	-	ACCUDOR #UF-5000-SS 12"X12" ACCESS PANEL W/ ALLEN HEAD CAM LATCH
P-ES	EMERGENCY DECON SHOWER	C.M.	-	-	-	3/4"	3/4"	BRADLEY #S19-130 SEMI-RECESSED EMERGENCY SHOWER WITH CEILING ESCUTCHEONS FOR SHOWER HEAD AND PULL HANDLE BRADLEY #S19224TPT WALL MOUNTED EYE WASH WITH STAINLESS STEEL BOWN, TAILPIECE AND P-TRAP BRADLEY #EFX20-R-0-N-RS-0 EMERGENCY SHOWER THERMOSTATIC MIXING VALVE ASSEMBLY
P-FCO-3	FLOOR CLEANOUT	F.M.	-	3"	-	-	-	J.R. SMITH 4052L-PB
P-FD-3	FLOOR DRAIN	F.M.	-	3"	-	-	-	J.R.SMITH #2005Y-A-06-PB STRAINER WITH QUAD-CLOSE TRAP PROTECTION
P-GCO-3	GROUND CLEANOUT	G.M.	-	3"	-	-	-	JR SMITH #4251S
P-GCO-4	GROUND CLEANOUT	G.M.	-	4"	-	-	-	JR SMITH #4251S W/ TWO-WAY CLEANOUT TEE
P-HD-3	3" HUB DRAIN	U.C.M.	-	2" | 3"	-	-	-	3x2 THREADED REDUCER WITH SURESEAL TRAP PROTECTION AND THREADED CAP FOR FUTURE. INSTALL W/ 1" REVEAL IN COUNTER BASE FLOOR FOR FUTURE
P-MFD-3	MECHANICAL FLOOR DRAIN	F.M.	-	3"	-	-	-	J.R. SMITH 2210L-H-NB WITH QUAD-CLOSE TRAP PROTECTION
P-SS	SHOWER SYSTEM	-	-	2"	-	1/2"	1/2"	STERLING #72500100-0 TRAVERSE SHOWER INSERT SYMMONS #C-96-300-B30-V-X-1.5-T748-CHKS TEMPTROL II SHOWER SYSTEM OATEY BRASS NO-CAULK SHOWER DRAIN WITH STAINLESS STEEL STRAINER
P-WH	WALL HYDRANT	R.M.	-	-	-	3/4"	-	WOODFORD #67-8-EP, AUTO DRAINING DOUBLE CHECK, FREEZELESS WALL HYDRANT
P-WH-50	ELECTRIC WATER HEATER	F.M.	-	-	-	1"	1"	RHEEM #ELD52-TB, 230V/1PH/60Hz @ 4.5KW, 125PSI P&T RELIEF VALVE, WATTS #PLT-EXPANSION TANK AND WATTS #LFN170-M3-1 1/2" THERMOSTATIC MIXING VALVE W/ B&G #PL55B RECIRCULATION PUMP @ 110°F SETPOINT

PLUMBING CALCULATION SCHEDULE

TYPE MARK	COUNT	FIXTURE	WASTE		COLD WATER		HOT WATER		TOTAL DOMESTIC SUPPLY	
			DFU EACH	DFU TOTAL	WSFU EACH	WSFU TOTAL	WSFU EACH	WSFU TOTAL	WSFU EACH	WSFU TOTAL
1st Floor										
P-1	2	TOILET - ADA FLUSH TANK	4	8	2.2	4.4	0	0	2.2	4.4
P-2	2	LAVATORY	1	2	1.5	3	1.5	3	2	4
P-3	1	LAB SINK	2	2	3	3	3	3	4.5	4.5
P-DB	1	DRAIN BOX	3	3	0	0	0	0	0	0
P-ES	1	EMERGENCY DECON SHOWER	0	0	0	0	0	0	0	0
P-FD-3	4	FLOOR DRAIN	5	20	0	0	0	0	0	0
P-HD-3	2	3" HUB DRAIN	3	6	0	0	0	0	0	0
P-MFD-3	1	MECHANICAL FLOOR DRAIN	5	5	0	0	0	0	0	0
P-SS	2	SHOWER SYSTEM	3	6	3	6	3	6	4	8
P-WH	2	WALL HYDRANT	0	0	1	2	0	0	1	2
				52		18.4		12		22.9
				52		18.4		12		22.9

HAMMER ARRESTOR SCHEDULE

PDI TYPE MARK	FIXTURE PIPING BRANCH SIZES		FIXTURES
	CW	HW	
A	1/2"	1/2"	P-2, P-3, P-SS
A	1/2" & 3/4"	-	P-1, P-WH
A	3/4"	3/4"	P-ES

ROUGH-IN FIXTURE NOTES:

1. PROVIDE PDI INSTITUTE COMPLIANT SEALED PISTON NO MAINTENANCE TYPE WATER HAMMER ARRESTORS EQUAL TO SIOUX CHIEF OR JR SMITH APPROVED FOR CONCEALED INSTALLATIONS.
2. PROVIDE ONE HAMMER ARRESTOR FOR EACH BRANCH AT FIXTURE PIPING DROP TO FIXTURE.

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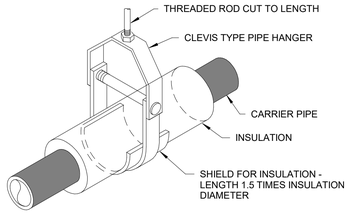
WASTEWATER TREATMENT PLANT EXPANSION

PLUMBING LEGEND & SCHEDULES

P1

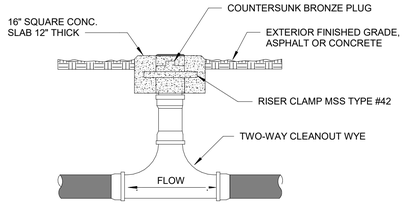
FILE NO: 2020-48

PLOT DATE: May 21, 2025



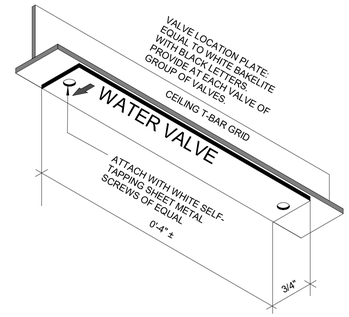
1 CLEVIS TYPE PIPE HANGER FOR INSULATED PIPE

P2 | NOT TO SCALE



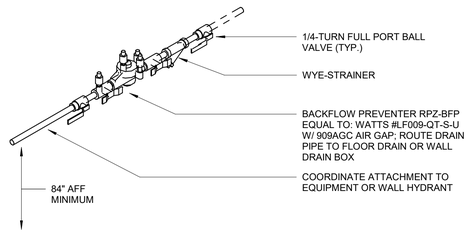
2 GROUND CLEANOUT

P2 | NOT TO SCALE



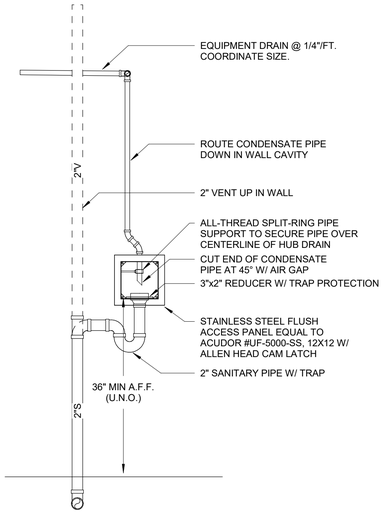
3 WATER VALVE LOCATION TAG

P2 | NOT TO SCALE



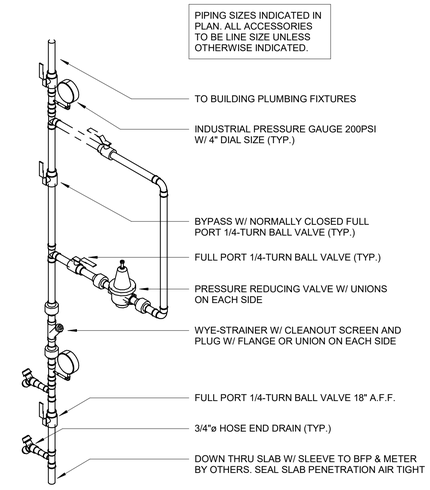
4 PROCESS WATER STATION W/O PRV

P2 | NOT TO SCALE



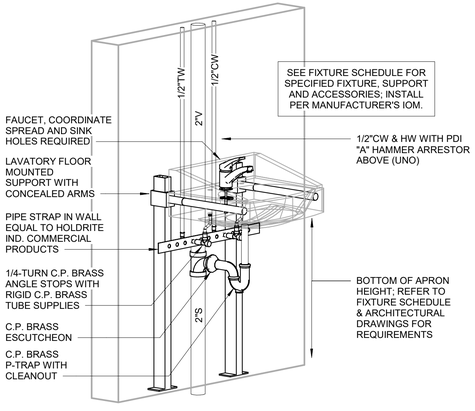
5 WALL DRAIN BOX

P2 | NOT TO SCALE



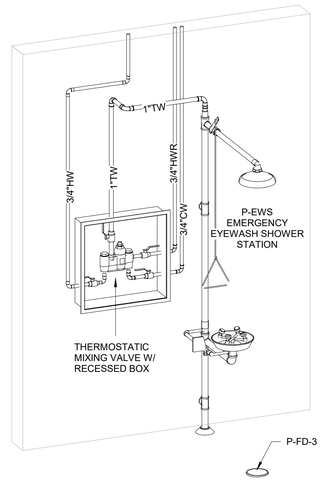
6 POTABLE WATER RISER

P2 | NOT TO SCALE



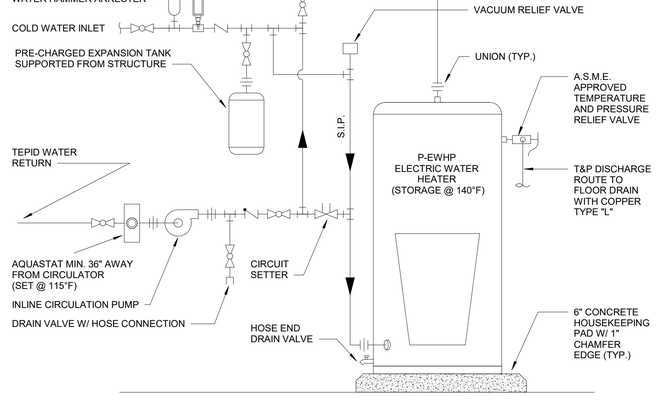
7 LAVATORY - WALL MOUNT CARRIER SUPPORTED

P2 | NOT TO SCALE



8 SAFETY SHOWER/EYEWASH STATION

P2 | NOT TO SCALE



9 ELECTRIC WATER HEATER W/ TMV & PUMP

P2 | NOT TO SCALE

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SPENCER C. CASHWELL
ENGINEER

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PLUMBING DETAILS

P2

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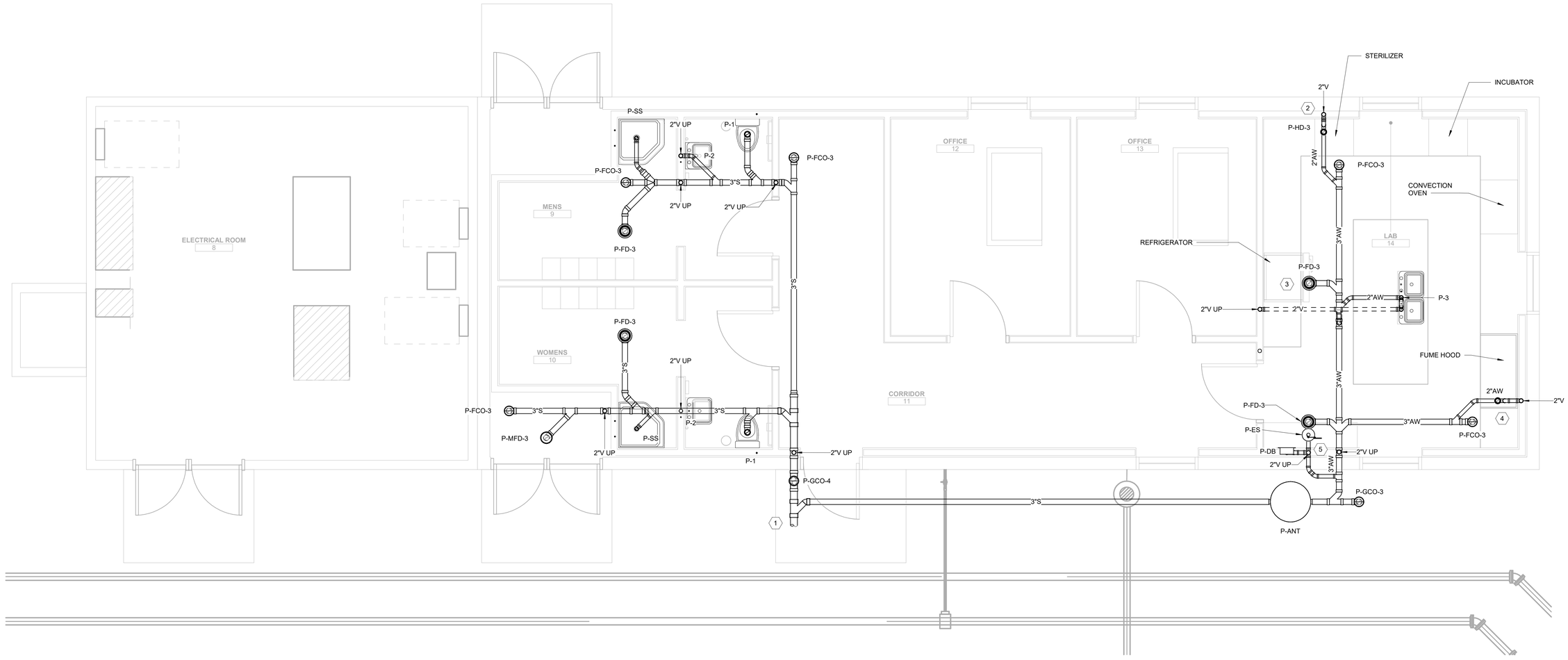

KEYNOTES

1. SANITARY OUTLET. COORDINATE WITH CIVIL.
2. HUB DRAIN ON COUNTERTOP FOR STERILIZER.
3. FLOOR DRAIN BENEATH REFRIGERATOR.
4. ROUGH IN FOR FUME HOOD DRAIN. COORDINATE WITH MANUFACTURER'S IOM FOR EXACT LOCATION AND CONNECTION DETAILS.
5. INSTALL FLOOR DRAIN DIRECTLY BELOW EMERGENCY SHOWER. EMERGENCY EYE WASH DRAIN IS WALL MOUNTED. PIPE DRAIN FROM EYE WASH TRAP INTO SANITARY STACK IN WALL.

1 SANITARY AND VENT PIPING

P3 | 3/8" = 1'-0"

NORTH

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50 0 25 50 100 200

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GEORGIA REGISTERED No. PE046005 PROFESSIONAL 05/01/2025 ENGINEER SPENCER C. CASHWELL

DATE:

M.E. SACK ENGINEERING

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COUNTY:
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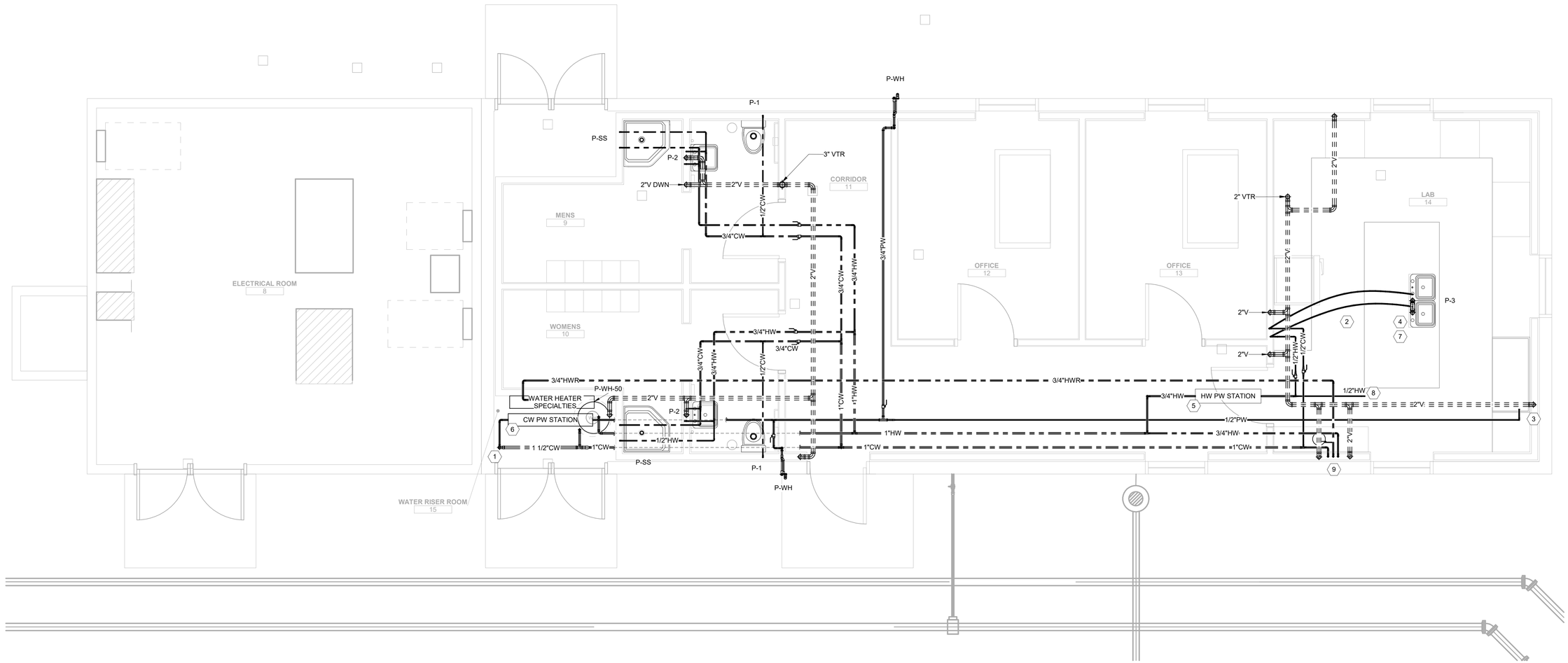
WASTEWATER TREATMENT PLANT EXPANSION

SANITARY & VENT PIPING

P3

FILE NO: 2020-48

PLOT DATE: May 21, 2025



1 DOMESTIC WATER AND VENT PIPING

P4 3/8" = 1'-0"

NORTH

KEYNOTES

1. 1-1/2" DOMESTIC WATER RISER. SEE DETAIL. INSTALL 3/4" TEE ABOVE RISER SPECIALTIES FOR COLD PROCESS WATER STATION.
2. 1/2"CW & 1/2" HW DOWN UNDERSLAB TO ISLAND LAB SINK. UNDERSLAB PIPING TO BE COPPER TYPE "K" CONTINUOUS TUBING WITH NO JOINTS UNDERSLAB. DOMESTIC WATER AND SANITARY PIPING TO BE SEPARATED UNDERSLAB 12" VERTICALLY PER 2018 IPC SECTION 603.2.
3. 1/2" CW ROUGH-IN FOR FUME HOOD. COORDINATE WITH MANUFACTURER'S IOM FOR CONNECTION DETAILS.
4. ISLAND VENT LOOP
5. 3/4" HOT WATER PROCESS WATER STATION. ROUTE DRAIN TO WALL DRAIN BOX NEAR EMERGENCY SHOWER.
6. 3/4" COLD WATER PROCESS WATER STATION. ROUTE DRAIN TO FLOOR DRIAN IN WATER RISER ROOM.
7. 1/2"CW & 1/2" HW UP, TRANSITIONED TO COPPER TYPE "L" ABOVE SLAB.
8. 1/2" HOT PROCESS WATER CAPPED FOR FUTURE USE.
9. 3/4" HW, 3/4" CW & 1/2" HWR DOWN TO EMERGENCY SHOWER VALVE BOX.

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Augusta, Georgia 30901
(706) 774-1020
www.ingconsultinginc.com

SCALE BAR: 1"= 50 '

50 0 25 50 100 200

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DOMESTIC WATER & VENT PIPING

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