LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

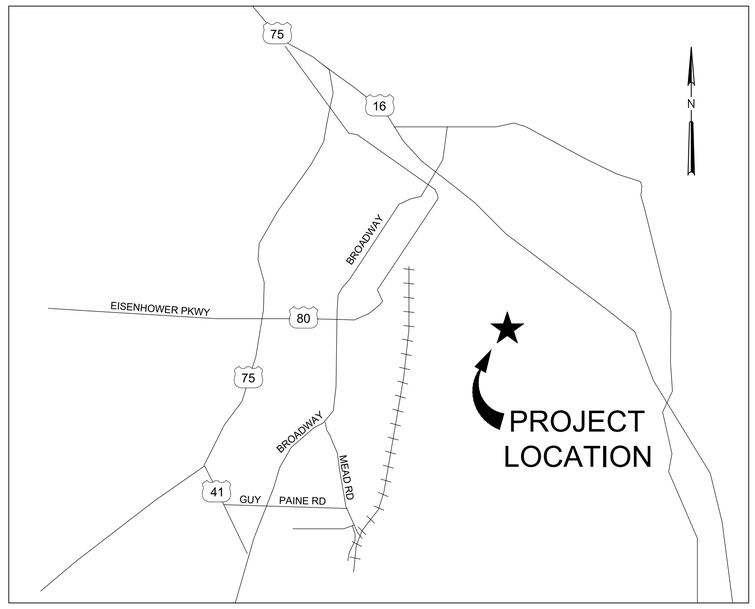
1101 LOWER POPLAR STREET
MACON, GEORGIA 31202

Macon Water Authority

BARGE
DESIGN SOLUTIONS

6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

CONFORMED DRAWINGS
REVISED SEPTEMBER 2024
(TO INCORPORATE ADDENDA ITEMS)



LOCATION MAP
NOT TO SCALE

BARGE
DESIGN SOLUTIONS

PROJECT No.
36181-21

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY
CONFORMED DRAWINGS

PROJECT NO. 36181-21

SHEET NO.	SHEET DESCRIPTION
00-G000	COVER SHEET
00-G001	INDEX OF DRAWINGS
01-CD101	PARTIAL DEMOLITION PLAN (1)
01-C100	GENERAL SITE PLAN
01-C101	PARTIAL SITE PLAN
01-CU101	UTILITIES PLAN
01-CG101	GRADING PLAN (1)
01-CG102	GRADING PLAN (2)
01-CG103	EROSION CONTROL PLAN (1)
01-C501	CIVIL SITE DETAILS
01-C511	EROSION CONTROL DETAILS
01-C512	EROSION CONTROL DETAILS
02-D103	INFLUENT FORCE MAIN ISOLATION VALVES - PLAN
02-D104	INFLUENT FORCE MAIN ISOLATION VALVES - SECTION
02-D105	INFLUENT FORCE MAIN METER VAULT - PLAN
02-D106	INFLUENT FORCE MAIN METER VAULT - SECTION
02-E000	GENERAL ELECTRICAL SITE PLAN
02-E001	ABBREVIATIONS & LEGEND
02-E002	NOTES
02-E101	ELECTRICAL SITE PLAN
02-E102	ELECTRICAL SITE PLAN
02-E103	LIGHTING SITE PLAN
02-ED101	TEMPORARY ELECTRICAL SITE PLAN
04-DI001	P&ID - PROCESS SYMBOLS LEGEND
04-DI002	P&ID - INSTRUMENTATION LEGEND & ABBREVIATIONS
04-DI003	P&ID - ABBREVIATIONS
04-DI801	P&ID - INFLUENT SCREENS
04-DI901	P&ID - INFLUENT PUMP STATION WET WELL A
04-DI902	P&ID - INFLUENT PUMP STATION WET WELL B
04-DI903	P&ID - INFLUENT FORCE MAIN
08-D101	EXISTING INFLUENT SCREEN STRUCTURE - PLAN VIEW
08-D301	EXISTING INFLUENT SCREEN STRUCTURE - SECTIONS
09-DD101	DEMOLITION - LOWER LEVEL PLAN
09-DD102	DEMOLITION - SECTION
09-D101	PUMP STATION - LOWER LEVEL PLAN
09-D102	PUMP STATION - ELEVATION 273.7
09-D103	PUMP STATION - UPPER LEVEL PLAN
09-D301	PUMP STATION SECTION
09-D302	PUMP STATION SECTION
09-D303	PUMP STATION SECTIONS
09-D304	PUMP STATION SECTION
09-D501	PUMP STATION - SEQUENCING PLAN - PHASE 1A
09-D502	PUMP STATION - SEQUENCING PLAN - PHASE 1B
09-D503	PUMP STATION - SEQUENCING PLAN - PHASE 2A
09-D504	PUMP STATION - SEQUENCING PLAN - PHASE 2B
09-S001	GENERAL NOTES
09-S002	SPECIAL INSPECTIONS
09-SD101	PUMP STATION - LOWER DEMOLITION PLAN
09-SD102	PUMP STATION - INTERMEDIATE DEMOLITION PLAN
09-SD103	PUMP STATION - UPPER DEMOLITION PLAN
09-S100	OVERALL SITE PLAN
09-S101	PUMP STATION - LOWER LEVEL PLAN
09-S102	ELECTRICAL E-HOUSE - FOUNDATION PLAN
09-S103	PUMP STATION - UPPER LEVEL PLAN
09-S104	VAULT PLAN
09-S301	SECTIONS
09-S302	SECTIONS
09-S401	ENLARGED PLANS
09-S501	DETAILS
09-S502	DETAILS
09-SF101	PEMB ROOF FRAMING PLAN
09-MD101	PUMP STATION - UPPER LEVEL MECHANICAL HVAC DEMO PLAN
09-M001	MECHANICAL HVAC LEGEND AND GENERAL NOTES
09-M101	PUMP STATION - UPPER LEVEL MECHANICAL HVAC PLAN
09-M102	ENLARGED ELECTRICAL ROOM HVAC PLAN
09-M301	HVAC SECTIONS
09-M501	HVAC DETAILS AND SCHEDULES
09-E101	ENLARGED POWER PLAN
09-E102	ELECTRICAL GROUNDING PLAN & DETAILS
09-E103	ENLARGED LIGHTING PLAN
09-E301	ENLARGED POWER PLAN
09-E302	PUMP STATION ELECTRICAL SECTION
09-E601	ELECTRICAL ONE-LINE DIAGRAM
09-E602	ELECTRICAL ONE-LINE DIAGRAM
09-E603	ELECTRICAL ONE-LINE DIAGRAM
09-E604	ELECTRICAL ONE-LINE DIAGRAM
09-E605	ELECTRICAL RISER DIAGRAM
09-E606	ELECTRICAL WIRING DIAGRAM
09-E607	ELECTRICAL VFD PANEL ELEVATIONS
09-E701	ENLARGED POWER PLAN
09-ED301	ENLARGED POWER PLAN - TEMP ELEC BLDG
09-ED601	ELECTRICAL ONE-LINE DIAGRAM
09-ED602	TEMPORARY ELECTRICAL ONE-LINE DIAGRAM
99-G001	GENERAL LEGEND
99-G002	GENERAL NOTES
99-G003	STANDARD ABBREVIATIONS
99-D501	PROCESS DETAILS
99-D502	PROCESS DETAILS
99-E701	ELECTRICAL DETAILS
99-E702	ELECTRICAL DETAILS
99-E703	ELECTRICAL DETAILS
99-E704	ELECTRICAL DETAILS
99-E801	ELECTRICAL SCHEDULES
99-E802	ELECTRICAL SCHEDULES
99-E851	CONTROL PANEL WIRING DIAGRAM OVERVIEW
99-E852	RTU - 1 WIRING DIAGRAM
99-E853	RTU-2 WIRING DIAGRAM
99-E854	EXISTING GRIT RTU WIRING DIAGRAM
99-E855	TEMPORARY RTU WIRING DIAGRAM
99-ED801	ELECTRICAL SCHEDULES

VALVE SCHEDULE

TAG NUMBER	DESCRIPTION	TYPE	SERVICE	NOMINAL SIZE (IN.)	OPERATOR	POSITION
09 - Influent Pump Station						
PV-1	PLUG VALVE, FLANGED	Type V203	SCREENED SEWAGE	24	ELECTRIC	OPEN/CLOSE
PV-2	PLUG VALVE, FLANGED	Type V203	SCREENED SEWAGE	24	ELECTRIC	OPEN/CLOSE
PV-3	PLUG VALVE, FLANGED	Type V202	SCREENED SEWAGE	16	ELECTRIC	OPEN/CLOSE
PV-4	PLUG VALVE, FLANGED	Type V203	SCREENED SEWAGE	24	ELECTRIC	OPEN/CLOSE
PV-5	PLUG VALVE, FLANGED	Type V203	SCREENED SEWAGE	24	ELECTRIC	OPEN/CLOSE
PV-6	PLUG VALVE, FLANGED	Type V202	SCREENED SEWAGE	16	ELECTRIC	OPEN/CLOSE
CV-1	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	24	MANUAL	OPEN/CLOSE
CV-2	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	24	MANUAL	OPEN/CLOSE
CV-3	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	16	MANUAL	OPEN/CLOSE
CV-4	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	24	MANUAL	OPEN/CLOSE
CV-5	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	24	MANUAL	OPEN/CLOSE
CV-6	CHECK VALVE, FLANGED	Type V801	FORCE MAIN	16	MANUAL	OPEN/CLOSE
ARV-1	AIR RELEASE VALVE	-	FORCE MAIN	4	NOT APPLICABLE	OPEN/CLOSE
ARV-2	AIR RELEASE VALVE	-	FORCE MAIN	4	NOT APPLICABLE	OPEN/CLOSE
ARV-3	AIR RELEASE VALVE	-	FORCE MAIN	3	NOT APPLICABLE	OPEN/CLOSE
ARV-4	AIR RELEASE VALVE	-	FORCE MAIN	4	NOT APPLICABLE	OPEN/CLOSE
ARV-5	AIR RELEASE VALVE	-	FORCE MAIN	4	NOT APPLICABLE	OPEN/CLOSE
ARV-6	AIR RELEASE VALVE	-	FORCE MAIN	3	NOT APPLICABLE	OPEN/CLOSE
ARV-7	AIR RELEASE VALVE	-	FORCE MAIN	2	NOT APPLICABLE	OPEN/CLOSE
ARV-8	AIR RELEASE VALVE	-	FORCE MAIN	2	NOT APPLICABLE	OPEN/CLOSE
02 - Site						
PV-7	PLUG VALVE, MECHANICAL JOINT	Type V203	SCREENED SEWAGE	36	ELECTRIC	OPEN/CLOSE
PV-8	PLUG VALVE, MECHANICAL JOINT	Type V203	SCREENED SEWAGE	36	ELECTRIC	OPEN/CLOSE
PV-9	PLUG VALVE, MECHANICAL JOINT	Type V203	SCREENED SEWAGE	30	ELECTRIC	OPEN/CLOSE
PV-10	PLUG VALVE, MECHANICAL JOINT	Type V203	SCREENED SEWAGE	30	ELECTRIC	OPEN/CLOSE
PV-11	PLUG VALVE, MECHANICAL JOINT	Type V203	SCREENED SEWAGE	36	ELECTRIC	OPEN/CLOSE
ARV-9	AIR RELEASE VALVE	-	FORCE MAIN	2	NOT APPLICABLE	OPEN/CLOSE
ARV-10	AIR RELEASE VALVE	-	FORCE MAIN	2	NOT APPLICABLE	OPEN/CLOSE

METER SCHEDULE

TAG NUMBER	DESCRIPTION	SERVICE	NOMINAL SIZE (IN.)
02 - Site			
FE-9100	MAGNETIC FLOW METER, FLANGED	FORCE MAIN	16
FE-9200	MAGNETIC FLOW METER, FLANGED	FORCE MAIN	16
FE-9003	MAGNETIC FLOW METER, FLANGED	FORCE MAIN	30
* FE-9004	MAGNETIC FLOW METER, FLANGED	FORCE MAIN	30

* SHELF SPARE SUPPLIED FROM OWNERS INVENTORY

BARGE DESIGN SOLUTIONS
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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.17 16:00:50-04'00'

INDEX OF DRAWINGS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID
1	BM	MA	08/09/2024	ADDENDUM NO. 2

00-G001

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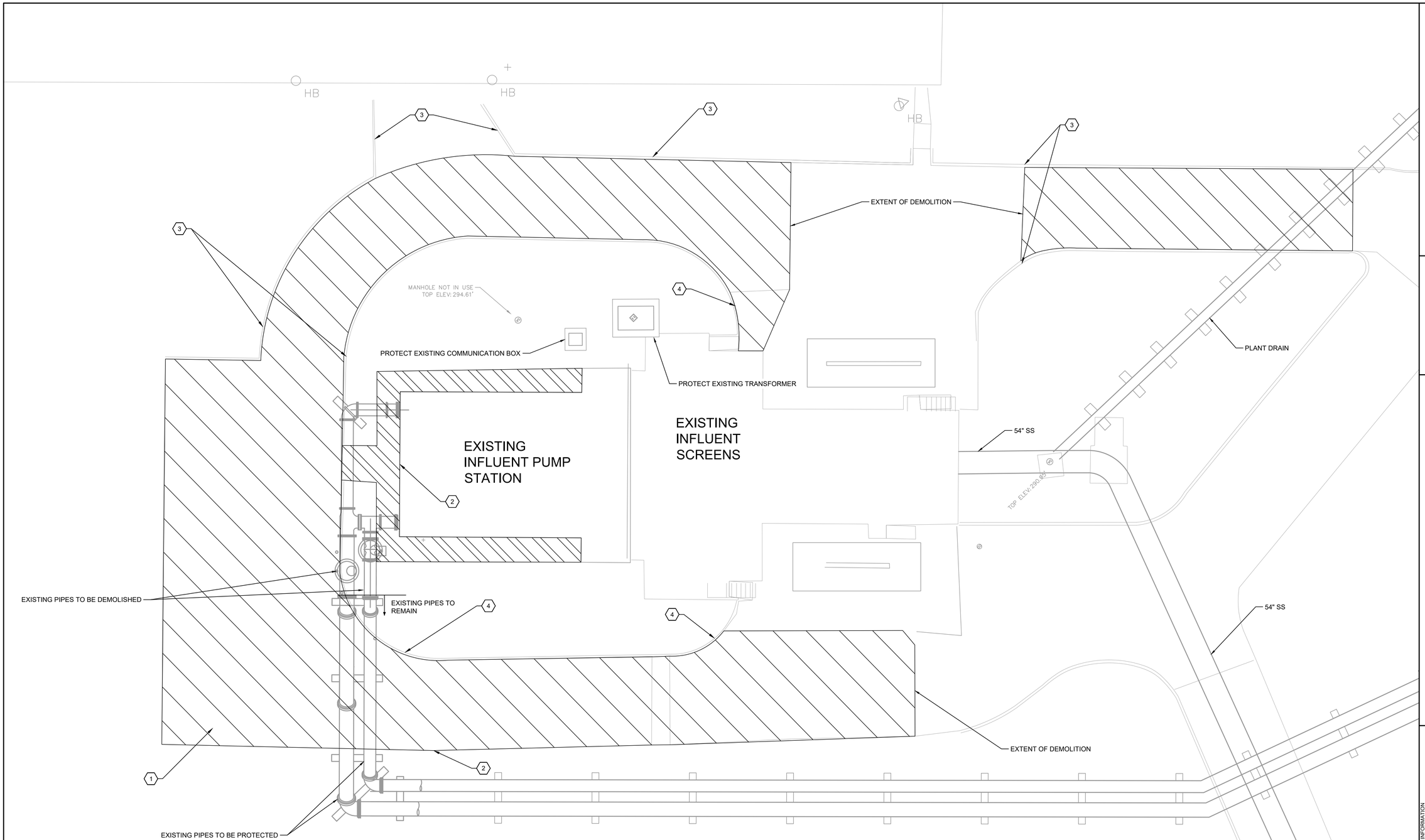

LEGEND

DEMOLISH ASPHALT

DEMOLISH CONCRETE

SITE KEYNOTES

1	DEMOLISH EXISTING ASPHALT
2	DEMOLISH EXISTING CONCRETE
3	DEMOLISH CURB AND GUTTER
4	DEMOLISH EXISTING RETAINING WALL

N

10' 5' 0' 10' 20'

SCALE: 1 INCH = 10 FEET

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GEORGIA REGISTERED NO. 44025 PROFESSIONAL ENGINEER JAMES BRIAN HART, JR. 7-10-24

PARTIAL DEMOLITION PLAN (1)

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

01-CD101

FILE NO. 3618121

EXISTING LAKE

37 EXISTING SECONDARY CLARIFIER SPLITTER BOX

EXISTING SECONDARY CLARIFIER NO. 2 (40)

EXISTING FILTER TOWER NO.2

EXISTING FILTER TOWER PUMPING STATION

EXISTING SLUDGE DRYING BEDS

EXISTING AERATION BASINS (33)

EXISTING RETURN SLUDGE PUMPING STATION (28)

EXISTING DEWATERING & CHLORINE BUILDING

EXISTING SECONDARY CLARIFIER NO. 3 (40)

EXISTING SECONDARY CLARIFIER NO. 1 (40)

LIQUID LIME STORAGE AND FEED (55)

EXISTING FILTER TOWER NO. 1

EXISTING INTERIM PRESS BUILDING

EXISTING BLOWER BUILDING

EXISTING CHLORINE CONTACT CHAMBER EFFLUENT CHANNEL

75

EXISTING GRAVITY THICKENER NO. 1

SANITARY SEWAGE PUMPING STATION

EXISTING SLUDGE HOLDING TANK

ACCESS ROAD

80

EXISTING GRAVITY THICKENER NO. 2

EXISTING PRIMARY DIGESTER NO. 5

EXIST CHLORINE CONTACT CHAMBERS

EXIST CHLORINE CONTACT CHAMBERS

EXISTING PRIMARY DIGESTER MIX PUMP ROOM

EXISTING PRIMARY CLARIFIERS NO. 1

EXISTING PRIMARY CLARIFIERS NO. 2

EXISTING PRIMARY SLUDGE PUMPING STATION

65

70

FUTURE CHLORINE CONTACT CHAMBERS

FUTURE CHLORINE CONTACT CHAMBERS

50 EXISTING RIVER PUMPING STATION

65

EXISTING PRIMARY DIGESTER NO. 6

60

EXISTING HEADHOUSE II

EXISTING AIR METER VAULT

EXISTING EFFLUENT PUMPING STATION

EXISTING SECONDARY DIGESTER NO. 1

61

EXISTING WETWELL

FOG AND SEPTAGE RECEIVING (57)

GRIT CLASSIFIERS (20)

EXISTING SECONDARY DIGESTER HEADHOUSE NO. 1

60

60

EXISTING SECONDARY DIGESTER NO. 4

EXISTING GRIT CHAMBER (20)

EXISTING FILTER

EXISTING FILTER

EXISTING SECONDARY DIGESTER NO. 2

GARAGE

NEW METERS AND ISOLATION VALVES

EXISTING BAR SCREEN (10)

01-CG102
02-E102

SWITCH GEAR BUILDING

EXISTING SUB-STATION

EXISTING PRIMARY SETTLING TANKS

EXISTING ADMIN BUILDING

SAMPLE MANHOLE (90)

EXISTING INFLUENT PUMPING STATION (09)

EXISTING INFLUENT SCREENS (08)

01-C101
02-E101

N

100' 50' 0' 100' 200'

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GEORGIA REGISTERED No. 44025 PROFESSIONAL ENGINEER JAMES BRIAN HART, JR. 10-24

GENERAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
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01-C100

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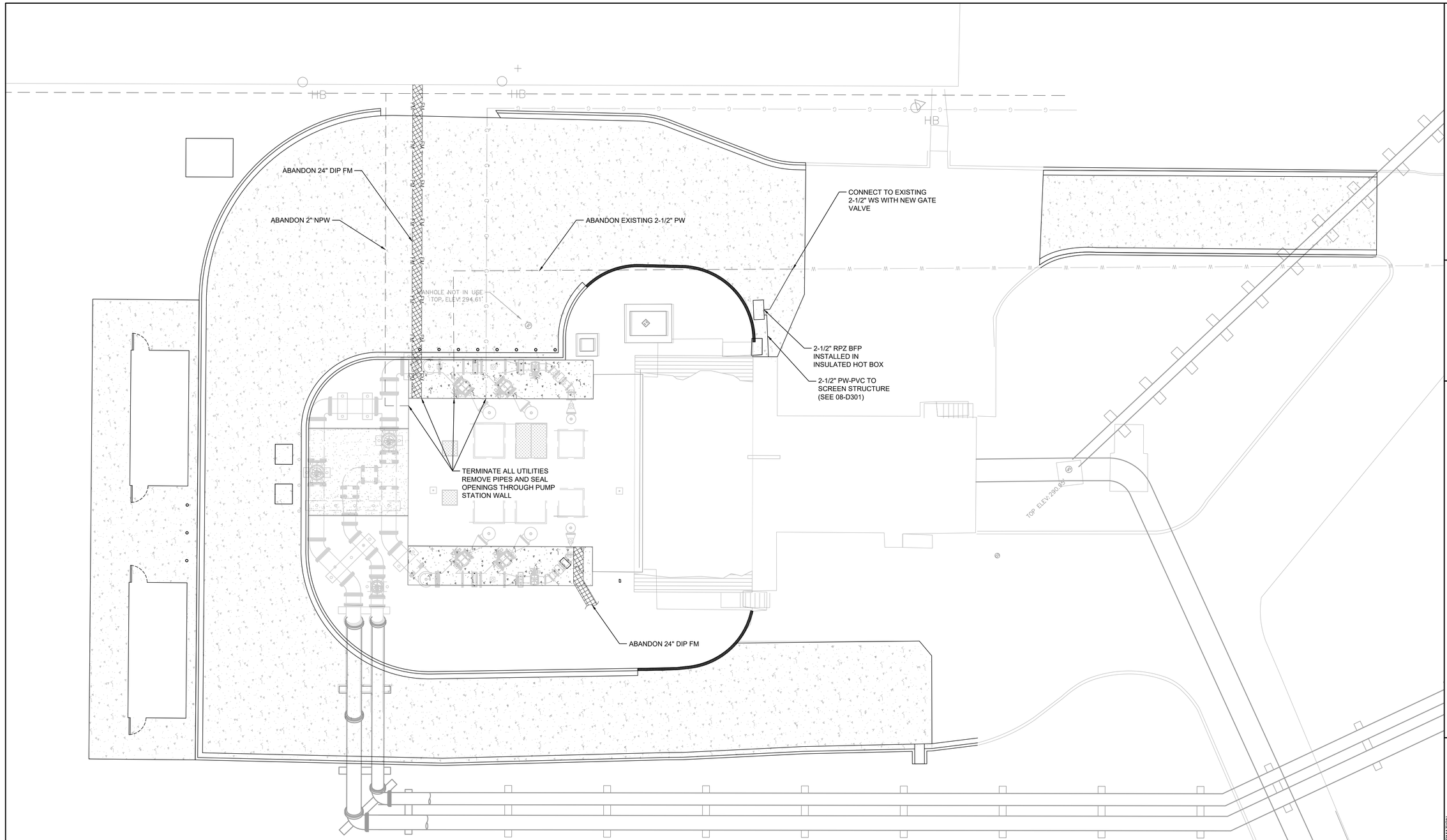

LEGEND

- W — EXISTING WATER LINE
- WATER LINE TO BE REMOVED/ABANDONED
- FM — FM LINE
- G — GAS LINE
- NEW WATER LINE

N

10' 5' 0' 10' 20'

SCALE: 1 INCH = 10 FEET

BARGE DESIGN SOLUTIONS
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UTILITIES PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DRS.	CHK.	DATE	DESCRIPTION
0	BMI	MA	07/10/2024	ISSUED FOR BID

01-CU101

FILE NO. 3618121

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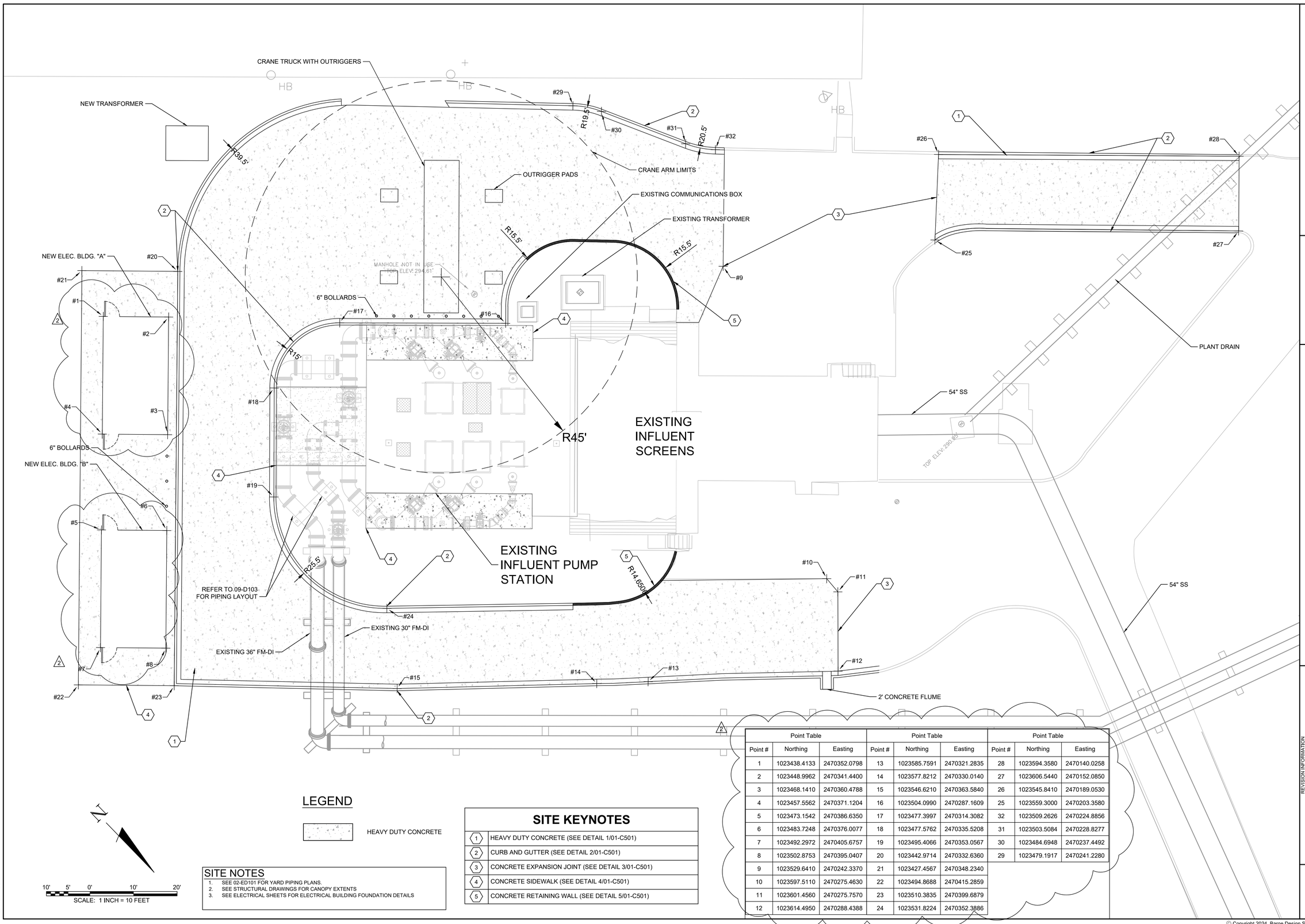

LEGEND

HEAVY DUTY CONCRETE

SITE KEYNOTES

1	HEAVY DUTY CONCRETE (SEE DETAIL 1/01-C501)
2	CURB AND GUTTER (SEE DETAIL 2/01-C501)
3	CONCRETE EXPANSION JOINT (SEE DETAIL 3/01-C501)
4	CONCRETE SIDEWALK (SEE DETAIL 4/01-C501)
5	CONCRETE RETAINING WALL (SEE DETAIL 5/01-C501)

SITE NOTES

1. SEE 02-ED101 FOR YARD PIPING PLANS.
2. SEE STRUCTURAL DRAWINGS FOR CANOPY EXTENTS
3. SEE ELECTRICAL SHEETS FOR ELECTRICAL BUILDING FOUNDATION DETAILS

10' 5' 0' 10' 20'
SCALE: 1 INCH = 10 FEET

Point Table			Point Table			Point Table		
Point #	Northing	Easting	Point #	Northing	Easting	Point #	Northing	Easting
1	1023438.4133	2470352.0798	13	1023585.7591	2470321.2835	28	1023594.3580	2470140.0258
2	1023448.9962	2470341.4400	14	1023577.8212	2470330.0140	27	1023606.5440	2470152.0850
3	1023468.1410	2470360.4788	15	1023546.6210	2470363.5840	26	1023545.8410	2470189.0530
4	1023457.5562	2470371.1204	16	1023504.0990	2470287.1609	25	1023559.3000	2470203.3580
5	1023473.1542	2470386.6350	17	1023477.3997	2470314.3082	32	1023509.2626	2470224.8856
6	1023483.7248	2470376.0077	18	1023477.5762	2470335.5208	31	1023503.5084	2470228.8277
7	1023492.2972	2470405.6757	19	1023495.4066	2470353.0567	30	1023484.6948	2470237.4492
8	1023502.8753	2470395.0407	20	1023442.9714	2470332.6360	29	1023479.1917	2470241.2280
9	1023529.6410	2470242.3370	21	1023427.4567	2470348.2340			
10	1023597.5110	2470275.4630	22	1023494.8688	2470415.2859			
11	1023601.4560	2470275.7570	23	1023510.3835	2470399.6879			
12	1023614.4950	2470288.4388	24	1023531.8224	2470352.3886			

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PARTIAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MH	07/05/2024	ISSUED FOR BID
1	BM	BH	09/24/2024	ADDENDUM NO. 5
2	BM	BH	03/03/2025	ADDENDUM NO. 6

01-C101

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PLOTTED:3/3/2025

PAD ELEVATION: 294

T:293.77
B:293.27

T:292.70
B:292.20

T:292.96
B:292.46

T:292.45
B:291.95

T:292.31
B:291.81

T:292.10
B:291.60

T:293.97
B:293.47

BW 292.39

BW 292.17

BW 291.58

BW 293.47

TW 294.57

TW 294.56

TW 293.98

294.89

TW 293.52

TW 291.89

BW 291.71

TIE INTO EXISTING STAIRCASE

MANHOLE NOT IN USE
TOP. ELEV. 294.61'

T:294.53
B:294.03

T:294.38
B:293.88

T:293.79
B:293.29

T:294.22
B:293.72

294.93

T:293.97
B:293.47

FFE: 294.20

T:294.22
B:293.72

2.0%

T:294.34
B:293.84

294.75

PROPOSED FFE: 295.25

2.0%

294.75

T:294.40
B:293.90

T:294.05
B:293.55

T:294.19
B:293.69

7.9%

T:293.66
B:293.16

TW 294.07

TW 294.11

TW 294.10

BW 291.42

291.35

291.10

291.07

TW 293.44

TW 291.98

BW 291.74

BW 291.68

BW 291.40

BW 291.63

FFE: 294.20

T:293.78
B:293.28

T:293.14
B:292.64

T:292.47
B:291.97

290.61

290.34

290.48

290.16

290.13

T:293.63
B:293.13

T:293.33
B:292.83

T:292.95
B:292.45

T:291.80
B:291.30

TOP ELEV:290.45'

285 286 287 288 289 290 291 292 293 294 295

N

10' 5' 0' 10' 20'
SCALE: 1 INCH = 10 FEET

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GRADING PLAN (1)

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

01-CG101

FILE NO. 3618121

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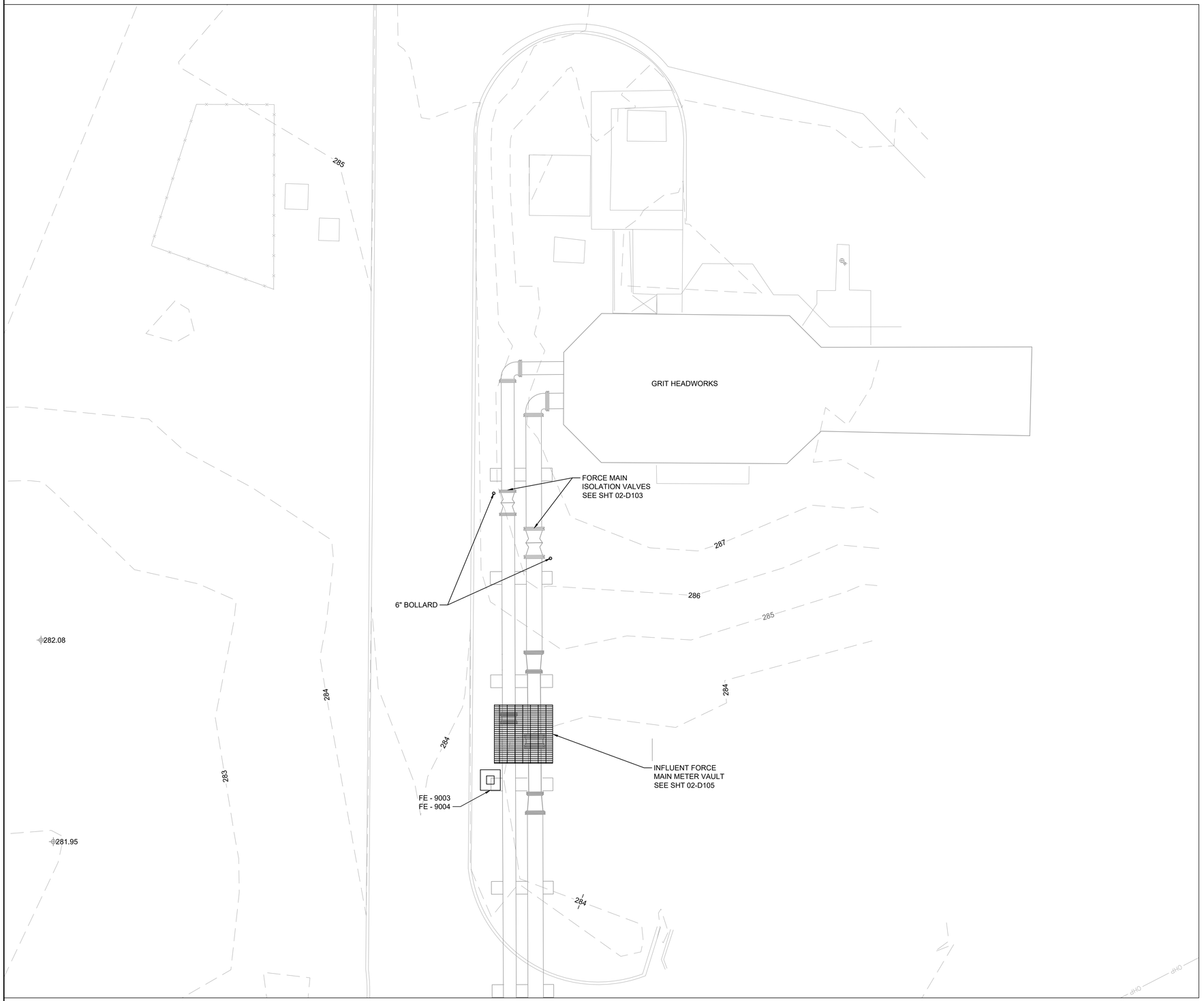

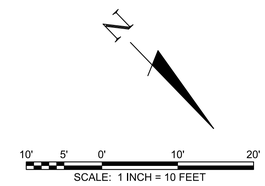

10' 5' 0' 10' 20'

SCALE: 1 INCH = 10 FEET

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PLOTTED:7/8/2024

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DESIGN SOLUTIONS
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GEORGIA REGISTERED NO. 44025 PROFESSIONAL ENGINEER JAMES BRIAN HART, JR. 7-10-24

GRADING PLAN (2)

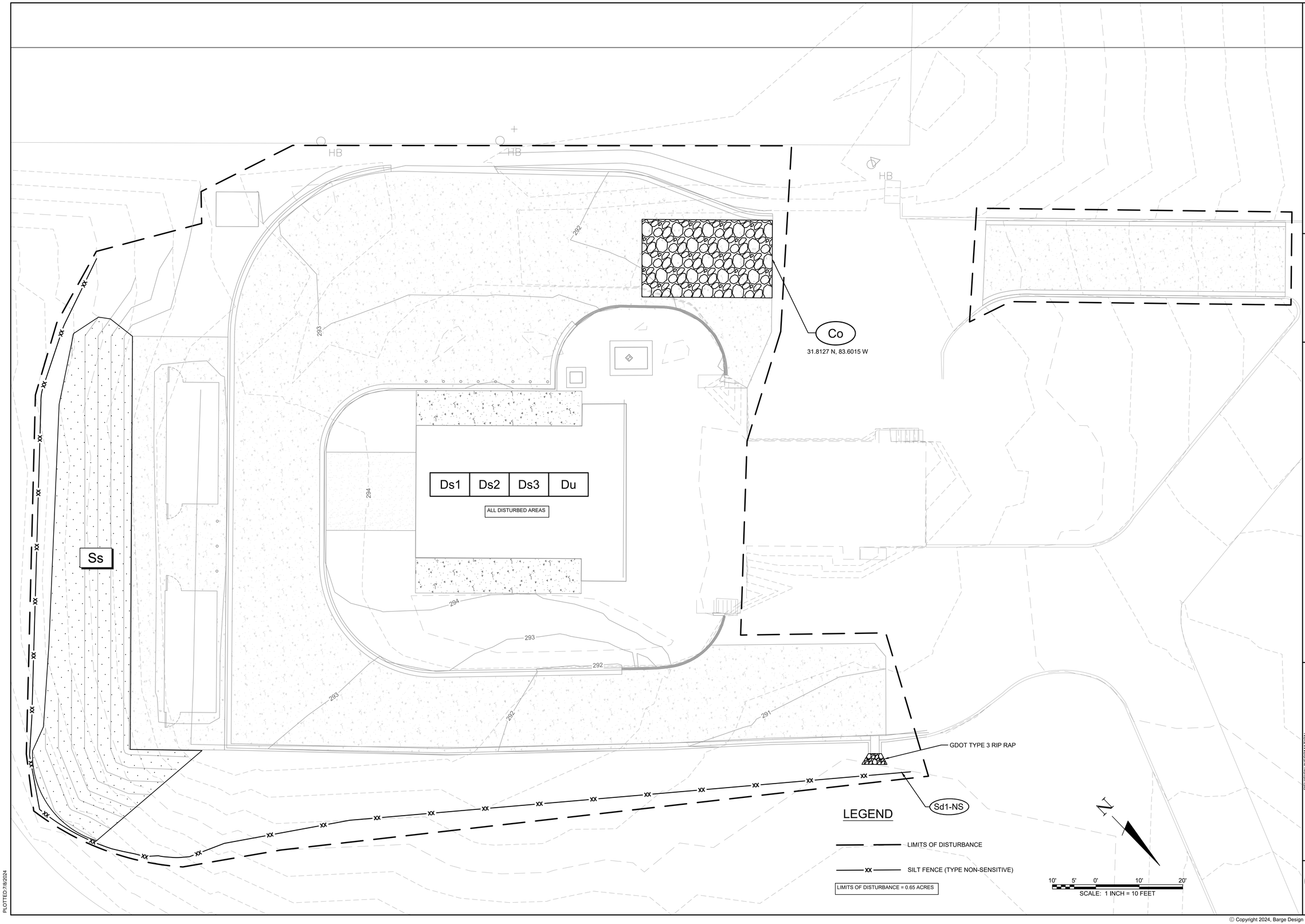
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

01-CG102

FILE NO. 3618121



BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 44025 PROFESSIONAL ENGINEER JAMES BRIAN HART, JR. 10-24

EROSION CONTROL PLAN (1)

LOWER POPLAR WATER RECLAMATION FACILITY INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION			
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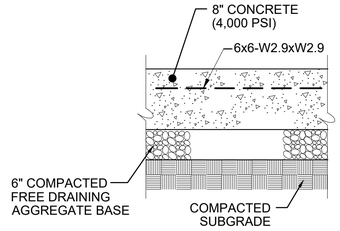
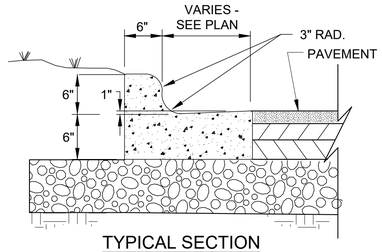


NOTE:
1. EXTEND AGGREGATE BASE 12" PAST EDGE OF CONCRETE SLAB

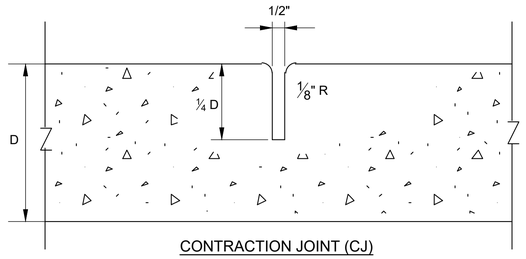
2. CONCRETE SHALL CONTAIN 6% AIR-ENTRAINMENT

1 HEAVY DUTY CONCRETE PAVING
N.T.S.

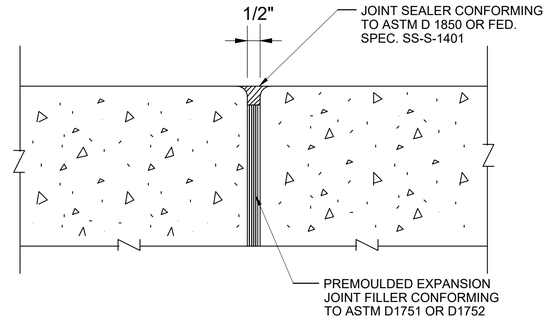


TYPICAL SECTION

2 CURB AND GUTTER
N.T.S.

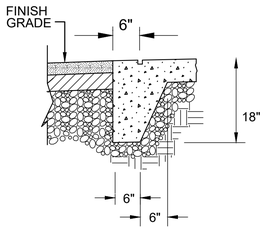


CONTRACTION JOINT (CJ)

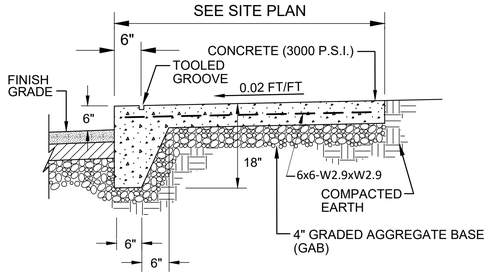


EXPANSION JOINT (EJ)

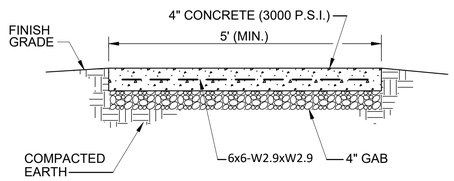
3 CONTRACTION/ EXPANSION JOINTS
N.T.S.



ZERO-FACED



INTEGRAL CURB AND SIDEWALK



TYPICAL SECTION

4 SIDEWALK
N.T.S.

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GEORGIA REGISTERED NO. 44025 PROFESSIONAL ENGINEER JAMES BRIAN HART, JR. 10-24

CIVIL SITE DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

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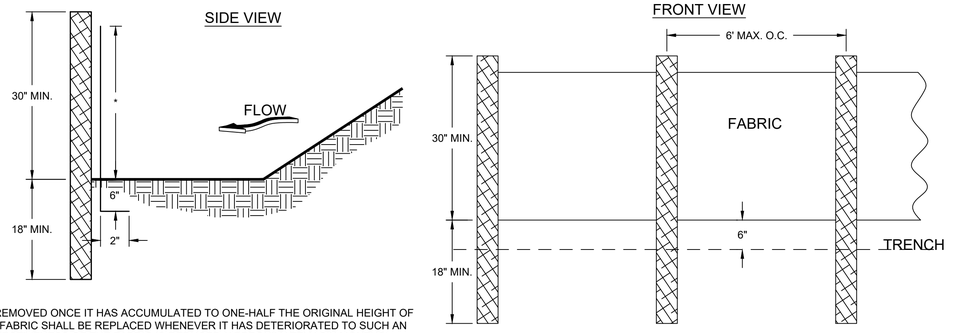

MAINTENANCE:

SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

NOTES:

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

Sd1-NS 1 SILT FENCE TYPE 'NS'
NTS

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCE. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO SIX MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH, DEPENDING ON THE MATERIAL USED, ANCHORED, AND HAVE CONTINUOUS 90% COVER OR GREATER OF THE SOIL SURFACE. MAINTENANCE SHALL BE REQUIRED TO MAINTAIN APPROPRIATE DEPTH AND 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN SIX MONTHS. IF AN AREA WILL REMAIN UNDISTURBED FOR GREATER THAN SIX MONTHS, PERMANENT VEGETATION TECHNIQUES SHALL BE EMPLOYED. REFER TO Ds2 - DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING), Ds3 - DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING), AND Ds4 - DISTURBED AREA STABILIZATION (WITH SODDING).

MULCHING WITHOUT SEEDING:
THIS STANDARD APPLIES TO GRADED OR CLEARED AREAS WHERE SEEDINGS MAY NOT HAVE SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDANT COVER, BUT CAN BE STABILIZED WITH A MULCH COVER.

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

APPLYING MULCH:
MULCHING RATE: MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. WHEN MULCH IS USED WITHOUT SEEDING, MULCH SHALL BE APPLIED TO PROVIDE FULL COVERAGE OF THE EXPOSED AREA.
1. DRY STRAW OR HAY MULCH AND WOOD CHIPS SHALL BE APPLIED UNIFORMLY BY HAND OR BY MECHANICAL EQUIPMENT.
2. IF THE AREA WILL EVENTUALLY BE COVERED WITH PERENNIAL VEGETATION, 20-30 POUNDS OF NITROGEN PER ACRE IN ADDITION TO THE NORMAL AMOUNT SHALL BE APPLIED TO OFFSET THE UPTAKE OF NITROGEN CAUSED BY THE DECOMPOSITION OF THE ORGANIC MULCHES.
3. APPLY POLYETHYLENE FILM ON EXPOSED AREAS.

ANCHORING MULCH:
1. STRAW OR HAY MULCH CAN BE PRESSED INTO THE SOIL WITH A DISK HARROW WITH THE DISK SET STRAIGHT OR WITH A SPECIAL "PACKER DISK". DISKS MAY BE SMOOTH OR SERRATED AND SHOULD BE 20 INCHES OR MORE IN DIAMETER AND 8 TO 12 INCHES APART. THE EDGES OF THE DISK SHOULD BE DULL ENOUGH NOT TO CUT THE MULCH BUT TO PRESS IT INTO THE SOIL LEAVING MUCH OF IT IN AN ERECT POSITION. STRAW OR HAY MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION. STRAW OR HAY MULCH SPREAD WITH SPECIAL BLOWER-TYPE EQUIPMENT MAY BE ANCHORED. TACKIFIERS, BINDERS, AND HYDRAULIC MULCH WITH TACKIFIER SPECIFICALLY DESIGNED FOR TACKING STRAW CAN BE SUBSTITUTED FOR EMULSIFIED ASPHALT. PLEASE REFER TO SPECIFICATION Tac - TACKIFIERS. PLASTIC MESH OR NETTING WITH MESH NO LARGER THAN ONE INCH BY ONE INCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
2. NETTING OF THE APPROPRIATE SIZE SHALL BE USED TO ANCHOR WOOD WASTE. OPENINGS OF THE NETTING SHALL NOT BE LARGER THAN THE AVERAGE SIZE OF THE WOOD WASTE CHIPS.
3. POLYETHYLENE FILM SHALL BE ANCHOR TRENCHED AT THE TOP AS WELL AS INCREMENTALLY AS NECESSARY.

Ds1 4 DISTURBED AREA STABILIZATION (MULCHING ONLY)
N.T.S.

SPECIFICATIONS:

TEMPORARY METHODS

1. MULCHES - SEE STANDARD Ds1 - DISTURBED AREA STABILIZATION (WITH MULCHING ONLY). SYNTHETIC RESINS MAY BE USED INSTEAD OF ASPHALT TO BIND MULCH MATERIALS. REFER TO SPECIFICATION Tac - TACKIFIERS. RESINS SUCH AS CURASOL OR TERRATACK SHOULD BE USED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
2. VEGETATIVE COVER - SEE SPECIFICATION Ds2 - DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
3. SPRAY-ON ADHESIVES - USE ON MINERAL SOILS (NOT EFFECTIVE ON MUCK SOILS). KEEP TRAFFIC OFF THESE AREAS. REFER TO SPECIFICATION Tac - TACKIFIERS.
4. TILLAGE - USE AS AN EMERGENCY METHOD BEFORE WIND EROSION BEGINS. BEGIN PLOWING ON WINDWARD SIDE OF SITE. CHISEL TYPE PLOWS SPACED ABOUT 12 INCHES APART, SPRING-TOOTHED HARROWS, AND SIMILAR PLOWS ARE APPROPRIATE EQUIPMENT TO PRODUCE DESIRED EFFECT.
5. IRRIGATION - USE AS AN EMERGENXY TREATMENT. SPRINKLE SITE WITH WATER UNTIL SURFACE IS WET. REPEAT AS NEEDED.
6. BARRIERS - SOLID BOARD FENCES, SNOWFENCES, BURLAP FENCES, CRATE WALLS, BALES OF HAY, AND SIMILAR MATERIALS MAY BE USED TO CONTROL AIR CURRENTS AND SOIL BLOWING. BARRIERS PLACED AT RIGHT ANGLES TO PREVAILING CURRENTS AT INTERVALS OF APPROXIMATELY 15 TIMES THEIR HEIGHT ARE EFFECTIVE IN CONTROLLING WIND EROSION.
7. CALCIUM CHLORIDE - APPLY AT RATE WHICH KEEPS SURFACE MOIST. MAY NEED RETREATMENT.

PERMANENT METHODS

1. PERMANENT VEGETATION - SEE SPECIFICATION Ds3 - DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION). EXISTING TREES AND LARGE SHRUBS MAY AFFORD VALUABLE PROTECTION IF LEFT IN PLACE.
2. TOPSOILING - COVER SURFACE WITH LESS EROSIVE SOIL MATERIAL. SEE SPECIFICATION - Tp TOPSOILING.
3. STONE - COVER SURFACE WITH CRUSHED STONE OR COARSE GRAVEL. SEE SPECIFICATION Cr - CONSTRUCTION ROAD STABILIZATION.

Du 2 DUST CONTROL
N.T.S.

TEMPORARY SEEDING TABLE

SPECIES	BROADCAST RATES (2) - PLS (3) PER ACRE	BROADCAST RATES (2) - PLS (3) PER 1000 SF	RESOURCE AREA	PLANTING RATES BY RESOURCE AREA PLANTING DATES ▬OPTIMUM –PERMISSIBLE BUT MARGINAL J F M A M J J A S O N D
MILLETT, PEARL (PENNESETUM GLAUCUM)			M-L	
			P	
ALONE	50 LBS	1.1 LB	C	
RYEGRASS, ANNUAL (LOLIUM TEMULENTUM)			M-L	
			P	
ALONE	40 LBS	0.9 LB	C	
SUDANGRASS SORGHUM SUDANESE)			M-L	
			P	
ALONE	60 LBS	1.4 LB	C	
MILLETT, BROWNTOP (PANICUM FASCICULATUM)			M-L	
			P	
ALONE	40 LBS	0.9 LB	C	
IN MIXTURES	10 LBS	0.2 LB		

TEMPORARY SEEDING GUIDELINES

SPECIES	REMARKS
MILLETT, PEARL (PENNESETUM GLAUCUM)	88,000 SEED PER POUND. QUICK DENSE COVER. MAY REACH 5 FEET IN HEIGHT. NOT RECOMMENDED FOR MIXTURES.
RYEGRASS, ANNUAL (LOLIUM TEMULENTUM)	227,000 SEED PER POUND. DENSE COVER. VERY COMPETITIVE AND IS NOT TO BE USED IN MIXTURES
SUDANGRASS (SORGHUM SUDANESE)	55,000 SEED PER POUND. GOOD ON DROUGHTY SITES. NOT RECOMMENDED FOR MIXTURES.
MILLETT, BROWNTOP (PANICUM FASCICULATUM)	137,000 SEED PER POUND. QUICK DENSE COVER. WILL PROVIDE TOO MUCH COMPETITION IN MIXTURES IF SEEDED AT HIGH RATES.

PERMANENT SEEDING TABLE

SPECIES	BROADCAST RATES (2) - PLS (3) PER ACRE	BROADCAST RATES (2) - PLS (3) PER 1000 SF	RESOURCE AREA	PLANTING RATES BY RESOURCE AREA PLANTING DATES ▬OPTIMUM –PERMISSIBLE BUT MARGINAL J F M A M J J A S O N D
BERMUDA, COMMON (CYNODON DACTYLON) HULLED SEED			P	
			C	
ALONE	10 LBS	0.2 LB		
WITH OTHER PERENNIALS	6 LBS	0.1 LB		
BERMUDA, COMMON (CYNODON DACTYLON) UNHULLED SEED			P	
			C	
WITH TEMPORARY COVER	10 LBS	0.2 LB		
WITH OTHER PERENNIALS	6 LBS	0.1 LB		
CENTIPEDE (EREMOCHLOA OPHIUROIDES)	BLOCK SOD ONLY		P	
			C	
FESCUE, TALL (FESTUCA ARUNDINACEA)			M-L	
			P	
ALONE	50 LBS	1.1 LB		
WITH OTHER PERENNIALS	30 LBS	0.7 LB		
LESPEDEZA, SERICEA (LESPEDEZA CUNEATA)				
SCARIFIED	60 LBS	1.4 LB	M-L	
			P	
			C	
UNSCARIFIED	75 LBS	1.7 LB	M-L	
			P	
			C	
SEED-BEARING HAY	3 TONS	138 LB	M-L	
			P	
			C	
LOVEGRASS, WEEPING (ERAGROSTIS CURVULA)			M-L	
			P	
ALONE	4 LBS	0.1 LB	C	
WITH OTHER PERENNIALS	2 LBS	0.05 LB		

PERMANENT SEEDING GUIDELINES

SPECIES	REMARKS
BERMUDA, COMMON (CYNODON DACTYLON) HULLED SEED	1,787,000 SEED PER POUND. QUICK COVER. LOW GROWING AND SOD FORMING. FULL SUN. GOOD FOR ATHLETIC FIELDS.
BERMUDA, COMMON (CYNODON DACTYLON) UNHULLED SEED	PLANT WITH WINTER ANNUALS. PLANT WITH TALL FESCUE.
CENTIPEDE (EREMOCHLOA OPHIUROIDES)	DROUGHT TOLERANT. FULL SUN OR PARTIAL SHADE. EFFECTIVE ADJACENTTO CONCRETE AND IN CONCENTRATED FLOW AREAS. IRRIGATION AS NEEDED UNTIL FULLY ESTABLISHED. DO NOT PLANT NEAR PASTURES. WINTERHARDY AS FAR NORTH AS ATHENS AND ATLANTA.
FESCUE, TALL (FESTUCA ARUNDINACEA)	227,000 SEED PER POUND. USE ALONE ONLY ON BETTER SITES. NOT FOR DROUGHTY SOILS. MIX WITH PERENNIAL LESPEDEZAS OR CROWNVETCH. APPLY TOPDRESSING IN SPRING FOLLOWING FALL PLANTINGS. NOT FOR HEAVY USE AREAS OR ATHLETIC FIELDS.
LESPEDEZA, SERICEA (LESPEDEZA CUNEATA)	
SCARIFIED	350,000 SEED PER POUND. WIDELY ADAPTED. LOW MAINTENANCE. MIX WITH WEEPING LOVEGRASS, COMMON BERMUDA, BAHIA, OR TALL FESCUE. TAKES 2 TO 3 YEARS TO BECOME FULLY ESTABLISHED. EXCELLENT ON ROAD BANKS. INOCULATE SEED WITH EL INOCULANT.
UNSCARIFIED	MIX WITH TALL FESCUE OR WINTER ANNUALS.
SEED-BEARING HAY	CUT WHEN SEED IS MATURE. BUT BEFORE IT SHATTERS. TALL FESCUE OR WINTER ANNUALS.
LOVEGRASS, WEEPING (ERAGROSTIS CURVULA)	1,500,000 SEED PER POUND. QUICK COVER. DROUGHT TOLERANT. GROWS WELL WITH SERICEA LESPEDEZA ON ROADBANKS.

FERTILIZING REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 LBS./AC. 1000 LBS./AC. 400 LBS./AC.	50-100 LBS./AC. (1)(2) - 30 LBS./AC.
COOL SEASON GRASSES & 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) - -
GROUND COVERS	FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300 LBS./AC. (3) 1300 LBS./AC. (3) 1100 LBS./AC.	- - -
PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700 LBS./AC. 700 LBS./AC. (4)	- -
TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500 LBS./AC.	30 LBS./AC. (5)
WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500 LBS./AC. 800 LBS./AC. 400 LBS./AC.	50-100 LBS./AC. (2)(6) 50-100 LBS./AC. (2) 30 LBS./AC.
WARM 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.	50 LBS./AC. (6) - -

(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 A HEIGHT OF 2 TO 4 INCHES.

Ds2 Ds3 5 TEMPORARY AND PERMANENT VEGETATION
N.T.S.

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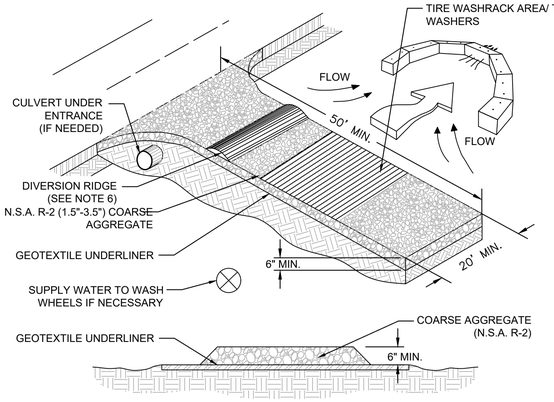

ENTRANCE ELEVATION

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1 CONSTRUCTION EXIT

N.T.S.

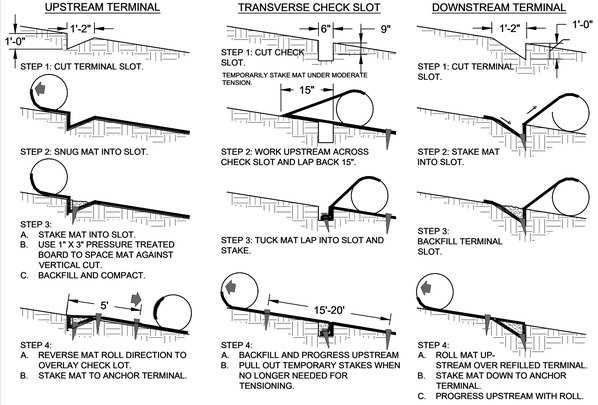
NOTES:

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 REMOVES 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.

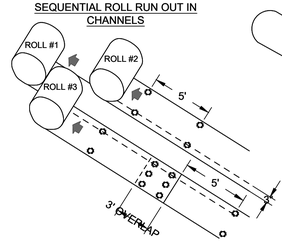
Ss

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

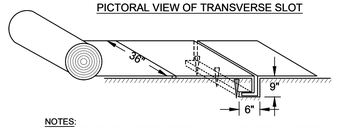
BLANKET AND MATTING CROSS-SECTIONS



SEQUENTIAL ROLL RUN OUT IN CHANNELS



PICTORAL VIEW OF TRANSVERSE SLOT



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

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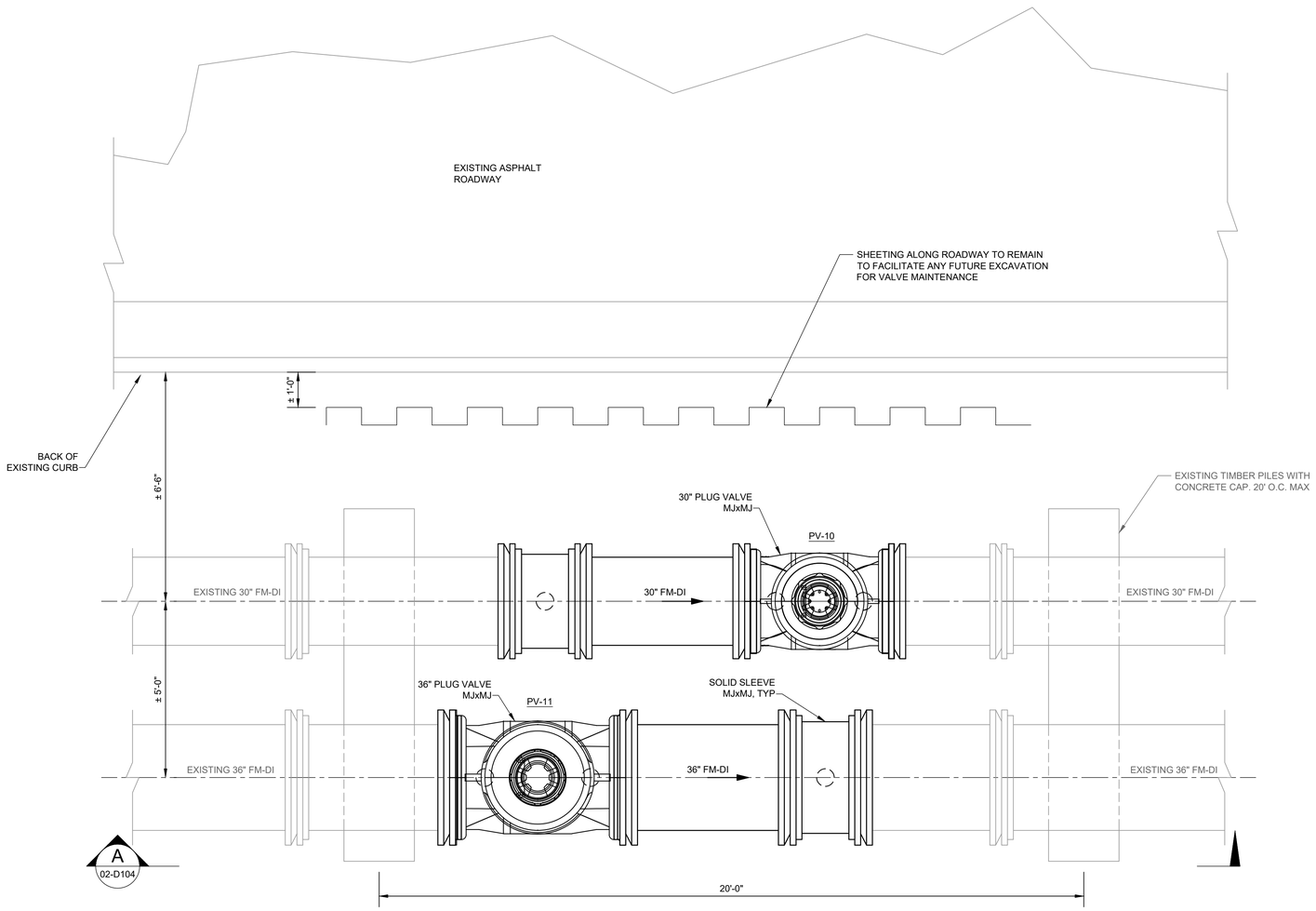
PLOTTED:7/8/2024

NOTES:

1. SHEETING SHALL BE DESIGNED BY QUALIFIED SUBCONTRACTOR TO MEET ALL APPLICABLE OSHA EXCAVATIONS SAFETY STANDARDS PER 29 CFR 1926.
2. SHEETING SHALL BE DESIGNED AS PERMANENT STRUCTURE TO BE LEFT IN PLACE AFTER CONSTRUCTION. TOP OF SHEETING SHALL BE 12 INCHES BELOW FINAL GRADE.
3. SHEETING SHALL BE CORROSION RESISTANT COR-TEN WEATHERING STEEL.



N

INFLUENT FORCE MAIN ISOLATION VALVES - PLAN

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

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.09 09:37:50-04'00'

INFLUENT FORCE MAIN ISOLATION VALVES - PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BMI	MA	07/10/2024	ISSUED FOR BID

02-D103

FILE NO. 3618121

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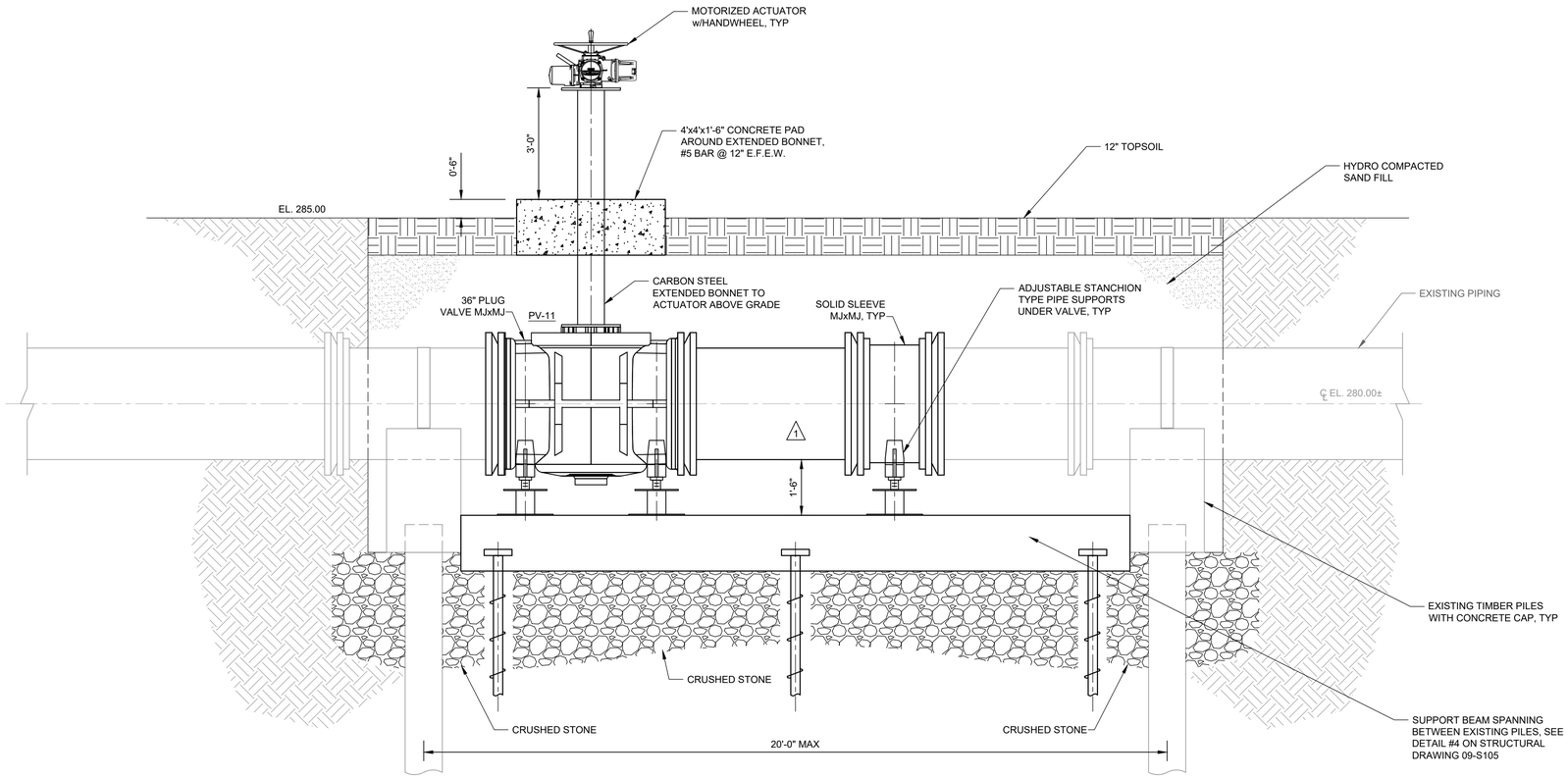
FILE:F:\3603\18\13618121\04_CAD\WATR\PLOT\3618121D_02103.dwg
SAVED:5/29/2024
PLOTTED:7/8/2024



A
02-D103

INFLUENT FORCE MAIN ISOLATION VALVES - SECTION

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

0 6" 1' 2' 4'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.17 16:03:34-04'00'

INFLUENT FORCE MAIN ISOLATION VALVES - SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/01/2024	ISSUED FOR BID
1	BM	MA	08/09/2024	ADDENDUM NO. 2

02-D104

FILE NO. 3618121

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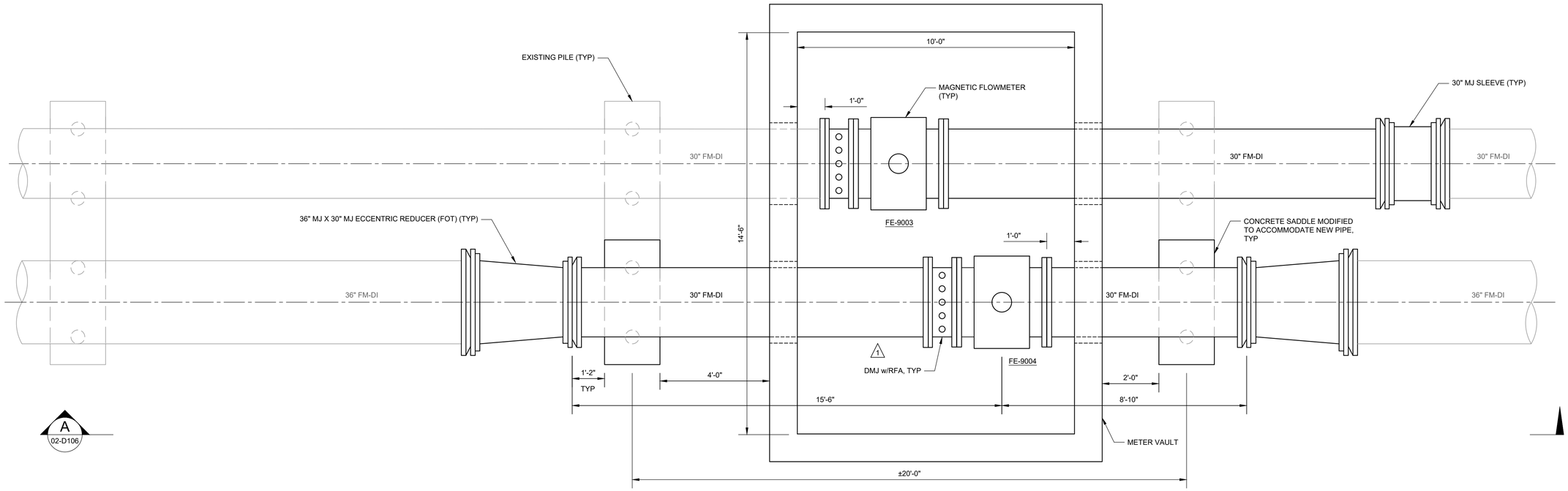
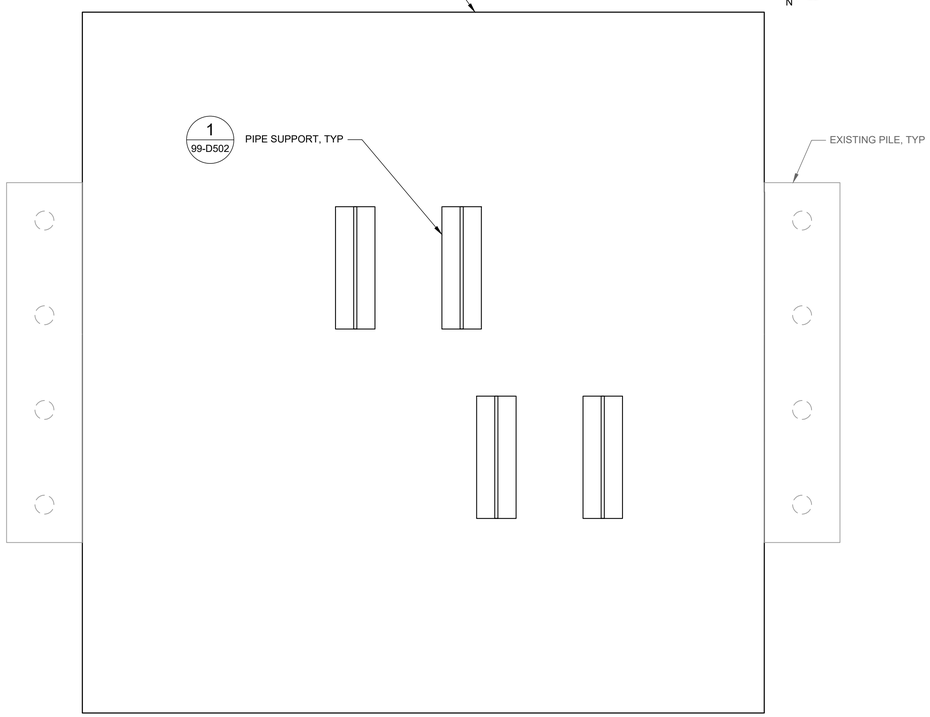
SAVED:9/17/2024
PLOTTED:9/17/2024



INFLUENT FORCE MAIN METER VAULT - EQUIPMENT PLAN

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

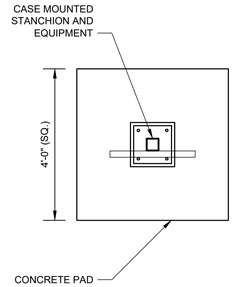
0 6" 1' 2' 4'

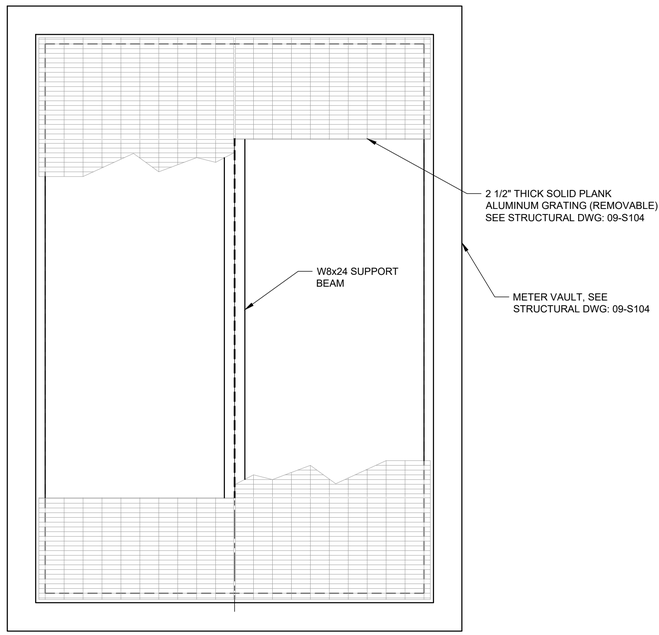


INFLUENT FORCE MAIN METER VAULT - FOUNDATION PLAN

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

0 6" 1' 2' 4'





INFLUENT FORCE MAIN METER VAULT - TOP PLAN

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

0 6" 1' 2' 4'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.17 16:05:00-04'00'

INFLUENT FORCE MAIN METER VAULT - PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION				
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/05/2024	ISSUED FOR BID
1	BM	MA	08/29/2024	ADDENDUM NO. 5

02-D105

FILE NO. 3618121

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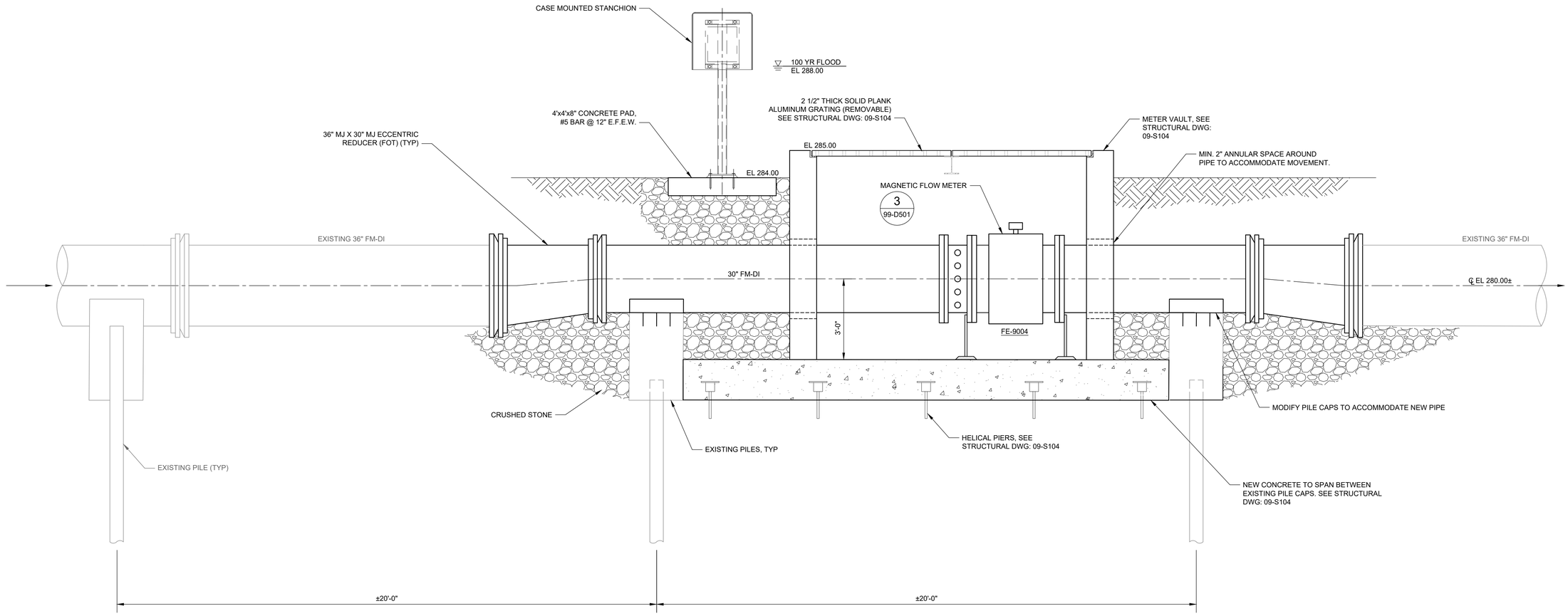
SAVED:9/17/2024
PLOTTED:9/17/2024



A
02-D105

INFLUENT FORCE MAIN METER VAULT - SECTION

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

0 6" 1' 2' 4'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-5411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.09 09:52:04 00

INFLUENT FORCE MAIN METER VAULT - SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

02-D106

FILE NO. 3618121

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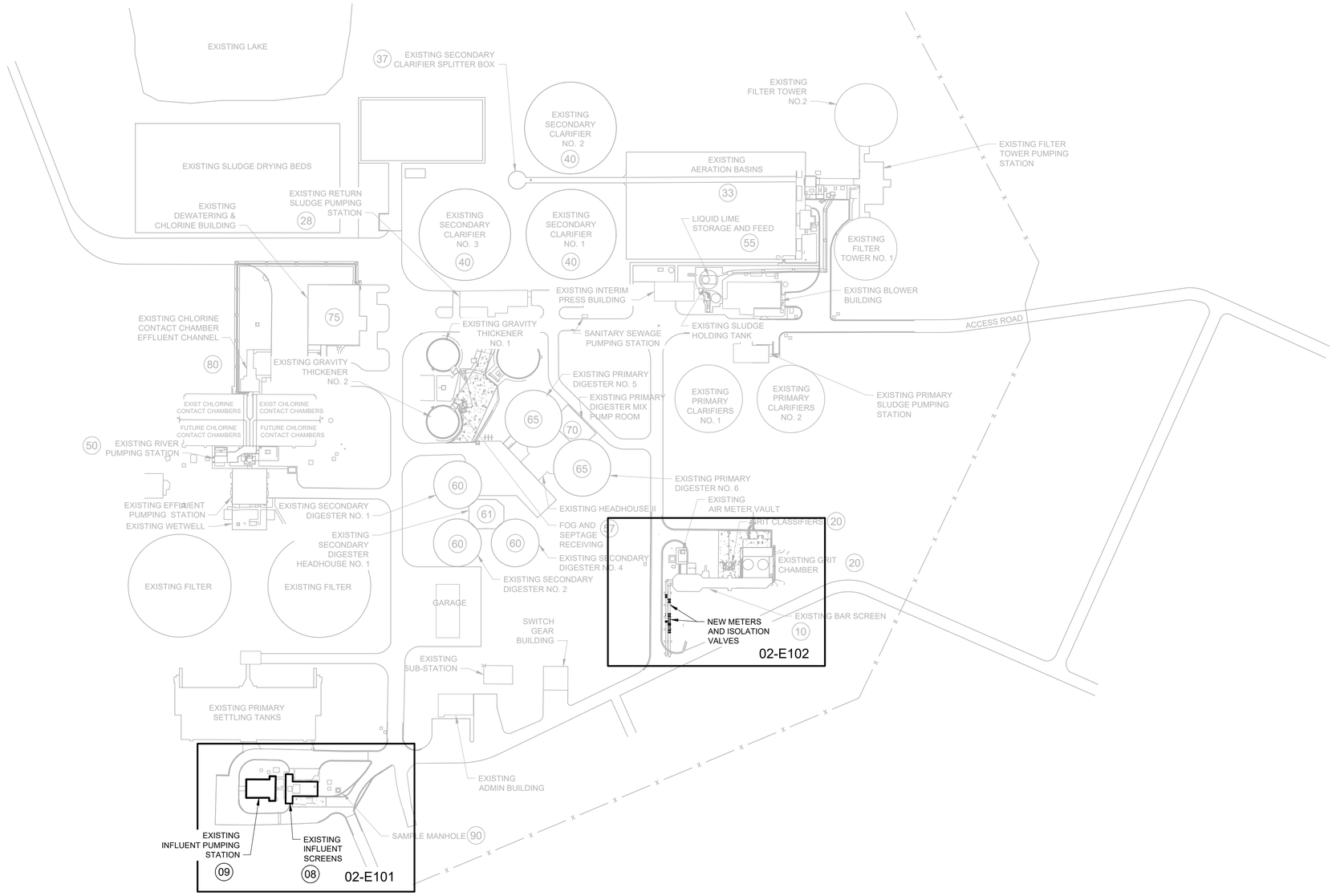
PLOTTED:7/8/2024



1 GENERAL ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

20' 10' 0' 20' 40'

SCALE: 1 INCH = 20 FEET

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway / Suite 450 / Peachtree Corners, Georgia 30092
PHONE (678) 513-4411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

GENERAL ELECTRICAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

02-E000

FILE NO. 3618121

USER:JLKITTRELL
FILE:\\corp.bwsc.net\data\Projects\36\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_02-E000.dwg
SAVED:7/10/2024
PLOTTED:7/10/2024

POWER

SURFACE MOUNTED FLOOR BOX W/ NEMA 5-20 DUPLEX RECEPTACLE UNLESS NOTED OTHERWISE

SURFACE MOUNTED FLOOR BOX W/ NEMA 5-20 QUAD RECEPTACLE UNLESS NOTED OTHERWISE

AV — SURFACE MOUNTED FLOOR BOX WITH NEMA 5-20 QUAD RECEPTACLE, COMBINATION TELEPHONE/DATA, AND A/V JACKS. REFER TO KEYED NOTE FOR SIZING AND ACCESSORIES.

AC GFI WP — NEMA 5-20 DUPLEX RECEPTACLE (FLUSH) MOUNTED 18" AFF UNLESS NOTED OTHERWISE. (AC INDICATES ABOVE COUNTER, GFI INDICATES GROUND FAULT CIRCUIT INTERRUPTER, WP INDICATES WEATHERPROOF IN-USE COVER.)

AC GFI WP — NEMA 5-20 DUPLEX RECEPTACLE (SURFACE) MOUNTED 18" AFF UNLESS NOTED OTHERWISE. (AC INDICATES ABOVE COUNTER, GFI INDICATES GROUND FAULT CIRCUIT INTERRUPTER, WP INDICATES WEATHERPROOF IN-USE COVER.)

AC GFI WP AC GFI WP — NEMA 5-20 QUAD RECEPTACLE (FLUSH/SURFACE) MOUNTED 18" AFF UNLESS NOTED OTHERWISE. (AC INDICATES ABOVE COUNTER, GFI INDICATES GROUND FAULT CIRCUIT INTERRUPTER, WP INDICATES WEATHERPROOF IN-USE COVER.)

SPECIALTY RECEPTACLE. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.

NEMA 5-20 SIMPLEX RECEPTACLE (FLUSH OR SURFACE) MOUNTED 18" AFF UNLESS NOTED OTHERWISE.

J — JUNCTION BOX

PP — POWER POLE

M — MOTOR RATED, 20 AMP, 125 VOLT TOGGLE SWITCH

SURFACE MOUNTED PANELBOARD. REFER TO PANEL SCHEDULES FOR VOLTAGE CONFIGURATION. CROSS HATCHED AREA IN FRONT OF PANELBOARD INDICATES EXTENT OF WORKING CLEARANCE.

RECESSED MOUNTED PANELBOARD. LINE INDICATES WALL FACE. REFER TO PANEL SCHEDULES FOR VOLTAGE CONFIGURATION. CROSS HATCHED AREA IN FRONT OF PANELBOARD INDICATES EXTENT OF WORKING CLEARANCE.

G — GENERATOR.

M — MOTOR, HP NOT INDICATED.

— MOTOR, # INDICATES MOTOR HP, F INDICATES FRACTIONAL HORSEPOWER.

UNFUSED DISCONNECT SWITCH. SIZE AS INDICATED ON DRAWINGS

FUSED DISCONNECT SWITCH. SIZE FUSES FOR EQUIPMENT BASED ON MANUFACTURERS RECOMMENDATIONS

COMBINATION STARTER / DISCONNECT SWITCH. SIZE FOR EQUIPMENT BASED ON MANUFACTURERS RECOMMENDATIONS

BREAKER

DRAWOUT BREAKER

TRIP / FRAME / LSI — CIRCUIT BREAKER WITH ADJUSTABLE ELECTRONIC TRIP OVER BREAKER
FRAME SIZE. SOLID STATE TRIP FEATURES SHOWN:
L = LONG DELAY
S = SHORT DELAY
I = INSTANTANEOUS

TRIP / FRAME / LSIG — CIRCUIT BREAKER WITH ADJUSTABLE ELECTRONIC TRIP OVER BREAKER
FRAME SIZE. SOLID STATE TRIP FEATURES SHOWN:
L = LONG DELAY
S = SHORT DELAY
I = INSTANTANEOUS
G = GROUND FAULT

MINI POWER ZONE PANELBOARD

TRANSFORMER (PLAN VIEWS)

3000/5 — CURRENT TRANSFORMER (SHOWN AROUND FEEDER)

POTENTIAL TRANSFORMER (NUMBER INDICATES QUANTITY)

TX
XX kVA — TRANSFORMER. "V1" INDICATES PRIMARY VOLTAGE, "V2" INDICATES SECONDARY VOLTAGE, "TX" INDICATES THE TRANSFORMER NAME, "XX kVA" IS THE TRANSFORMER RATING.

DPM / A — DIGITAL POWER METER. "A" INDICATES AMMETER ON CT'S FOR FEEDER BREAKER

M — METER

A — AMMETER

V — VOLTMETER

KW — KILOWATT METER

FUSE

SPD — SURGE PROTECTION DEVICE

PB — C,F,P,L — PULL BOX. SUPERSCRIPT DENOTES TYPE OF PULL BOX: C - COMMUNICATION; P - POWER; F - FIBER OPTIC; L - LIGHTING CIRCUIT.

VS — VOLTMETER SWITCH

AS — AMMETER SWITCH

K — KIRK KEY

X / VFD — VARIABLE FREQUENCY DRIVE

PNL / XX — PANEL BOARD

SINGLE POLE SWITCH

CP — CONTROL PANEL

OVERLOAD SWITCH

MCC

CR — CONTROL RELAY

TD — TIME DELAY RELAY

E-STOP — E-STOP

MOTOR HEATER

G — PILOT LIGHT

PUSH BUTTON

H O A / X O O / O O X — HOA SELECTOR SWITCH

STARTER. REFER TO SCHEDULE FOR ADDITIONAL STARTER OPTIONS

TERMINAL BLOCK

GROUND ROD/CONNECTION

POLE BASE 20" DIAMETER

ENCLOSED CIRCUIT BREAKER

N E L — TRANSFER SWITCH

BATTERY

NORMALLY OPEN CONTACT IN FIELD

NORMALLY CLOSED CONTACT IN FIELD

NORMALLY CLOSED CONTACT

NORMALLY OPEN CONTACT

PROTECTIVE RELAY, SOLENOID COIL

THERMAL OVERLOAD

CONNECTION

CROSS, NO CONNECTION

SURGE ARRESTOR

T — THERMOSTAT

EQUIPMENT CALLOUT

DP-XX	DISTRIBUTION PANEL. XX INDICATES UNIQUE PANEL NAME.
T-RP-XX	TRANSFORMER. RP-XX INDICATES SECONDARY PANEL NAME.
RP-XX	RECEPTACLE PANEL. XX INDICATES UNIQUE PANEL NAME.
LP-XX	LIGHTING PANEL. XX INDICATES UNIQUE PANEL NAME.
LC-XX	LIGHTING CONTROL PANEL. XX INDICATES UNIQUE PANEL NAME.
FD-XX	FUSED DISCONNECT. XX INDICATES UNIQUE DISCONNECT NAME.
NF-XX	NON-FUSED DISCONNECT. XX INDICATES UNIQUE DISCONNECT NAME.
CS-XX	COMBINATION STARTER. XX INDICATES UNIQUE DISCONNECT NAME.
CP-XX	CONTROL PANEL. XX INDICATES UNIQUE CONTROL PANEL NAME.
VFD-XX	VARIABLE FREQUENCY DRIVE. XX INDICATES UNIQUE CONTROL PANEL NAME.
MP-XX	MINI-POWER ZONE. XX INDICATED UNIQUE PANEL NAME
STR-XX	STARTER. XX INDICATED UNIQUE STARTER NAME
MRS-XX	MOTOR RATED SWITCH. XX INDICATED UNIQUE STARTER NAME
TC-XX	TERMINAL CABINET. XX INDICATED UNIQUE STARTER NAME
PBC-XX	CONTROLS PULLBOX. XX INDICATED UNIQUE STARTER NAME
PBP-XX	POWER PULLBOX. XX INDICATED UNIQUE STARTER NAME

DRAWING

X — KEYED NOTE

X / XX — ELEVATION IDENTIFIER

CONDUIT EXPOSED ON CEILING OR WALL

CONDUIT CONCEALED IN CEILING, WALL, OR FLOOR

FLEXIBLE CONDUIT

LINE BREAK

ABBREVIATIONS

#/C	# OF CONDUCTOR(S)	LCP	LIGHTING CONTROL PANEL
1PH	SINGLE PHASE	LED	LIGHT EMITTING DIODE
3PH	THREE PHASE	LEV	LEVEL
3W	THREE WIRE	LIM	LIMIT
4W	FOUR WIRE	LP	LIGHTING PANEL
		L-R	LOCAL-REMOTE
A	AMPERE	LS	LEVEL SWITCH
A/V	AUDIO/VISUAL	LT	LIGHT
AC	ABOVE COUNTER / ALTERNATING CURRENT	LTG	LIGHTING
ACS	ACCESS CONTROL SYSTEM	LV	LOW VOLTAGE
ADA	AMERICANS WITH DISABILITIES ACT		
AF	AMPS FRAME	MCB	MAIN CIRCUIT BREAKER
AFC	ABOVE FINISHED CONCRETE	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MFR	MANUFACTURER
AFG	ABOVE FINISHED GRADE	MIN	MINIMUM
AIM	ADRESSABLE INPUT MODULE	MLO	MAIN LUGS ONLY
AL	ALUMINUM	MOV	MOTOR OPERATED VALVE OR GATE
AOM	ADDRESSABLE OUTPUT MODULE	MTD	MOUNTED
AT	AMPS TRIP	MTS	MANUAL TRANSFER SWITCH
ATS	AUTO TRANSFER SWITCH	MVOLT	MULTI-VOLT 120-227V
AUTO	AUTOMATIC	MPR	MOTOR PROTECTION RELAY
AUX	AUXILIARY		
AWG	AMERICAN WIRE GAUGE	N/A	NOT APPLICABLE
		NC	NORMALLY CLOSED
BLDG	BUILDING	NCTC	NORMALLY CLOSED TIME CLOSE
BOD	BASIS OF DESIGN	NCTO	NORMALLY CLOSED TIME OPEN
BRK	BREAKER	NEC	NATIONAL ELECTRIC CODE
		NF	NON-FUSED
C	CONDUIT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CCTV	CLOSED CAPTION TELEVISION CAMERA	NO	NORMALLY OPEN
CKT	CIRCUIT	NO. OR #	NUMBER
COMM	COMMUNICATIONS	NOTC	NORMALLY OPEN TIME CLOSE
CPT	CONTROL POWER TRANSFORMER	NOTO	NORMALLY OPEN TIME OPEN
CR	CARD READER / CONTROL RELAY	NTS	NOT TO SCALE
CT	CURRENT TRANSFORMER		
CU	COPPER	OIT	OPERATOR INTERFACE TERMINAL
DC	DIRECT CURRENT	OL	OVERLOAD RELAY
DI	DISCRETE INPUT	OS	OCCUPANCY SENSOR
DIM	DIMENSION		
DISC	DISCONNECT	PH	PHASE
DO	DISCRETE OUTPUT	PIR	PASSIVE INFRARED
DP	DISTRIBUTION PANEL	PIV	PRESSURE INDICATING VALVE
DWG	DRAWING	POS	POSITION
		PR	PAIR
(E)	EXISTING	PRI	PRIMARY
EDB	ELECTRICAL DUCT BANK	PS	PRESSURE SWITCH
EF	EXHAUST FAN	PT	POTENTIAL TRANSFORMER
EL, ELEV	ELEVATION	PVC	POLYVINYL CHLORIDE
EMT	ELECTRICAL METALLIC TUBING		
ENCL	ENCLOSURE	REC	RECEPTACLE
ETM	ELAPSED TIME METER	REQ	REQUIRED
EWC	ELECTRICAL WATER COOLER	RGS	RIGID GALVANIZED STEEL
		RP	RECEPTACLE PANEL
F	PULL STATION	RSFACU	RELEASING SYSTEM FIRE ALARM CONTROL UNIT
FE	FURNISHED EQUIPMENT	RTA	RADIO TRANSMITTER
FACP/FCP	FIRE ALARM CONTROL PANEL		
FD	FUSED DISCONNECT	(S)(SH)	SHEILDED CABLE
FDR	FEEDER	SEC	SECONDARY
FAA	FIRE ALARM ANNUNCIATOR	SNAC	SUPERVISED NOTIFICATION APPLIANCE CIRCUIT
FAR	FUSED AS REQUIRED	SPD	SURGE PROTECTION DEVICE
FM	FREQUENCY MODULATION	SPEC	SPECIFICATION
FS	FLOW SWITCH	SS	STAINLESS STEEL
FT	FEET OR FOOT	STP	SHIELDED TWISTED PAIR
FVR	FULL VOLTAGE REVERSING	STR	STARTER
FVRN	FULL VOLTAGE NON-REVERSING	SV	SOLENOID VALVE
GFI	GROUND FAULT CIRCUIT INTERRUPTER	SW	SWITCH
GFP	GROUND FAULT PROTECTION	SWBD	SWITCHBOARD
GND	GROUND	SWGR	SWITCH GEAR
H/A	HAND/AUTO	T	TRIP
HDPE	HIGH-DENSITY POLYETHYLENE	TB	TERMINAL BOX
HOA	HAND/OFF/AUTO	TDR	TIME DELAY RELAY
HP	HORSEPOWER	TEMP	TEMPERATURE
HS	HORN STROBE	TERM	TERMINAL
HT	HEIGHT	TS	TEMPERATURE SWITCH/TAMPER SWITCH
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING	TSP	TWISTED PAIR CABLING
HZ	HERTZ	TV	TELEVISION/MONITOR
		TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
IC	INTERRUPTING CURRENT	TYP	TYPICAL
IMT	INTERMEDIATE METAL GALVANIZED AMPERE		
IN	INCHES OR INCH ABOVE COUNTER / ALTERNATING	UG	UNDERGROUND
IND	INDICATING ACCESS CONTROL SYSTEM	UNV	UNIVERSAL WIDE VOLTAGE
INSTR	INSTRUMENT AMERICANS WITH DISABILITIES ACT	UON	UNLESS OTHERWISE NOTED
J	JUNCTION BOX	V	VOLT
		VA	VOLTAMPERE
KAIC	KILOAMPS INTERRUPTING CAPACITY	VAC	VOLTS ALTERNATING CURRENT
KVA	KILO-VOLT AMPERES	VDC	VOLTS DIRECT CURRENT
KW	KILOWATT	VFD	VARIABLE FREQUENCY DRIVE
KWH	KILOWATT HOUR		
		W	WATTS
		W/	WITH
		W/O	WITHOUT
		WP	WEATHERPROOF IN USE COVER
		XFMR	TRANSFORMER
		XP	EXPLOSION PROOF

SYSTEMS

CR — CARD READER (PROVIDED BY OWNER) FOR SECURITY SYSTEM MOUNTED AT 52" AFF - PROVIDE BACKBOX, TEMPORARY COVER AND WIRING / RACEWAYS TO SECURITY SYSTEM

xD — DATA OUTLET MOUNTED 18" AFF UNLESS NOTED OTHERWISE. "xD" INDICATES NUMBER OF CABLES/PORTS. IF NOT INDICATED, STANDARD CONFIGURATION IS 2 CABLE/PORTS.

WAP — WI-FI ACCESS LOCATION - PROVIDE 20' OF SLACK CAT6E CABLE COILED UP AT LOCATION FOR CONNECTION BY OWNER

AV — AUDIO/VIDEO RACK

C — CEILING MOUNTED CLOSED CIRCUIT TELEVISION

FACP — FIRE ALARM CONTROL PANEL - FLUSH/SURFACE MOUNTED

FAA — FIRE ALARM ANNUNCIATOR - FLUSH/SURFACE MOUNTED

F — FIRE ALARM PULL STATION

CEILING MOUNTED SMOKE DETECTOR

CEILING MOUNTED HEAT DETECTOR

DSD — DUCT SMOKE DETECTOR

WALL MOUNTED FIRE ALARM COMBINATION SPEAKER/STROBE

WALL MOUNTED FIRE ALARM STROBE

AIM — ADDRESSABLE INPUT MODULE

AOM — ADDRESSABLE OUTPUT MODULE

PS — PRE-ACTION SPRINKLER SYSTEM PRESSURE DETECTOR / SWITCH

TS — SPRINKLER SYSTEM TAMPER SWITCH

FS — SPRINKLER SYSTEM FLOW SWITCH

PIV — SPRINKLER SYSTEM POST INDICATOR VALVE SUPERVISORY SWITCH

EYE-WASH STATION (ESEW-XXXXX)

TYPE / ELEV / SIZE — CABLE TRAY DESIGNATION TAG. TYPE INDICATES SERVICE TYPE, ELEV INDICATES ELEVATION OF BOTTOM OF CABLE TRAY, SIZE INDICATES WIDTH OF CABLE TRAY.

LIGHTING

PNL:XX a A / PNL:XX a AE — 2' x 2' "LED" FIXTURE RECESS OR SURFACE. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

PNL:XX a A / PNL:XX a AE — 1' x 4' "LED" FIXTURE RECESS OR SURFACE MOUNTED. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

PNL:XX a A / PNL:XX a AE — 2' x 4' "LED" FIXTURE RECESS OR SURFACE MOUNTED. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

PNL:XX a A / PNL:XX a AE — SURFACE OR PENDENT MOUNTED LED STRIP FIXTURE. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

PNL:XX a A / PNL:XX a AE — LED INDUSTRIAL FIXTURE SUSPENDED FROM CEILING. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

PNL:XX A — WALL MOUNTED LED FIXTURE. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE. PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

A PNL:XX / AE PNL:XX — WALL MOUNTED LED EMERGENY FIXTURE. THE LETTER "A" INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER. THE LETTER "a" INDICATES ZONE, AND "PNL:XX" INDICATES PANEL NAME AND CIRCUIT NUMBER.

A / AE — RECESSED LED DOWNLIGHT. LETTER INDICATES TYPE PER FIXTURE SCHEDULE, "E" INDICATES CONNECT TO EMERGENCY POWER SOURCE, BATTERY BACK-UP, OR INVERTER.

AE — POLE MOUNTED LED SITE LIGHTING FIXTURE, LETTER INDICATES TYPE PER FIXTURE SCHEDULE.

X — EXIT SIGN WITH DIRECTIONAL ARROWS AS INDICATED, SHADED AREA REPRESENTS FACE OF SIGNAGE, CEILING MOUNTED.

X — EXIT SIGN WITH DIRECTIONAL ARROWS AS INDICATED, SHADED AREA REPRESENTS FACE OF SIGNAGE, WALL MOUNTED.

BATTERY OPERATED EMERGENCY LIGHT FIXTURE/ ASSOCIATED REMOTE EMERGENCY LIGHT FIXTURE

COMBINED BATTERY-POWERED EMERGENCY LIGHT AND ILLUMINATED EXIT SIGN

a — 20 AMP, 125 VOLT TOGGLE SWITCH MOUNTED 42" AFF. LETTER INDICATES SWITCHING CIRCUIT AS REQUIRED.

a 3 — 3-WAY, 20 AMP, 125 VOLT TOGGLE SWITCH MOUNTED 42" AFF. LETTER INDICATES SWITCHING CIRCUIT AS REQUIRED.

a OS — LOW VOLTAGE TOGGLE SWITCH WITH OCCUPANCY/ VACANCY SENSOR. LETTER INDICATES SWITCHING CIRCUIT AS REQUIRED.

a — LOW VOLTAGE TOGGLE SWITCH CONTROLLED BY CEILING MOUNTED OCCUPANCY/VACANCY SENSOR. LETTER INDICATES SWITCHING CIRCUIT AS REQUIRED.

OS — LOW VOLTAGE CEILING MOUNTED OCCUPANCY/ VACANCY SENSOR. COORDINATE SENSOR TYPE WITH ROOM GEOMETRY AND CEILING HEIGHT

OS PC — LOW VOLTAGE CEILING MOUNTED OCCUPANCY/ VACANCY SENSOR WITH INTEGRATED DAYLIGHT HARVESTING PHOTOCELL IN SPACES NEAR EXTERIOR WALLS. COORDINATE SENSOR TYPE WITH ROOM GEOMETRY AND CEILING HEIGHT

WIRING

A-21 / A-21 — BRANCH CIRCUIT. PROVIDE CONDUIT AND WIRING AS REQUIRED. ARROW INDICATES HOMERUN TO PANEL A CIRCUIT 21, BY WAY OF EXAMPLE.

FLEXIBLE CONDUIT CONNECTION
XXX = UGP - UNDERGOUND POWER
UGS - UG SECONDARY
UGE - UG ELEC
UGC - UG COMMUNICATIONS
P - POWER
S - SIGNAL
E - ETHERNET
D - DIGITAL I/O
A - ANALOG I/O
COMM - COMMUNICATIONS
OH - OVERHEAD

G — GROUNDING

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07/10/2024

ABBREVIATIONS, & LEGEND

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	AJK	MIC	07/10/2024	ISSUED FOR BIDS

02-E001

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3636181\3618121\04_CAD\ELEC\03_PLOT\3618121_02-E001.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

ELECTRICAL GENERAL NOTES

1. ALL SYMBOLS SHOWN ON SHEET 00-EG001 MAY NOT BE USED ON THIS PROJECT.
2. INSTALLATION SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE LOCALLY ADOPTED NFPA 70 (NEC) CODE ALONG WITH APPLICABLE STATE AND LOCAL CODES.
3. CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES DURING CONSTRUCTION.
4. THE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INCLUDE EVERY DETAIL OF REQUIRED CONSTRUCTION EQUIPMENT AND MATERIALS. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NOT SPECIFICALLY SHOWN ON THE DRAWINGS BUT WHICH ARE NECESSARY TO COMPLETE THE WORK. INSTALLATION SHALL BE COORDINATED WITH PIPING, DUCTWORK, STRUCTURAL STEEL ALONG WITH ROOM FINISHES.
5. CONDUIT ROUTING IS DIAGRAMMATIC. ROUTE PARALLEL AND PERPENDICULAR TO LINES OF BUILDING STRUCTURE. FIELD VERIFY EXACT ROUTING PER ACTUAL CONDITIONS. MINIMUM ACCEPTABLE CONDUIT SIZE IS ¾" ABOVE GRADE AND 1" UNDERGROUND.
6. BOND ALL INTERIOR METALLIC PIPING SYSTEMS, INCLUDING NATURAL GAS, IN ACCORDANCE WITH NFPA 70-250 REQUIREMENTS.
7. PROVIDE A GREEN-INSULATED GROUNDING CONDUCTOR, SIZED PER NEC ARTICLE 250, IN ALL FEEDER AND BRANCH CIRCUIT RACEWAYS.
8. PROVIDE A PULL WIRE IN EACH EMPTY CONDUIT.
9. FIRE SEAL ALL CONDUIT PENETRATIONS OF FIRE RATED WALLS.
10. DO NOT USE ANY LIGHT FIXTURE AS A RACEWAY FOR CONDUCTORS NOT SERVING FIXTURE, UNLESS FIXTURE IS DESIGNATED AND UL-LISTED FOR USE AS A RACEWAY.
11. REFER TO ELECTRICAL LIGHTING PLAN FOR EXACT LOCATION OF OVERHEAD LIGHT FIXTURES.
12. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ELECTRICAL OUTLETS WITH CASEWORK, FURNITURE AND MILLWORK.
13. DO NOT ATTACH STARTERS AND DISCONNECTS FURNISHED FOR HVAC EQUIPMENT DIRECTLY TO EQUIPMENT. PROVIDE WALL-MOUNT SUPPORT OR INDEPENDENTLY SUPPORT ON STEEL ANGLE OR UNISTRUT RACK CONSTRUCTED FOR THAT PURPOSE. LOCAL DISCONNECTS FOR HVAC EQUIPMENT SHALL BE FURNISHED SEPARATELY FROM THE HVAC EQUIPMENT.
14. VERIFY EXACT MECHANICAL OR OTHER EQUIPMENT TO BE INSTALLED. ADJUST CONDUIT, WIRING, DISCONNECT SIZE AND FUSING PER MANUFACTURER FINAL REQUIREMENTS FOR ACTUAL EQUIPMENT INSTALLED.
15. BASIS OF DESIGN MANUFACTURERS AND MODELS ARE SHOWN ON THE PLANS. THESE PROVIDE ONLY A MINIMUM LEVEL OF QUALITY AND ARE NOT INTENDED AS PROPRIETARY SPECIFICATIONS. REFER TO SPECIFICATIONS FOR SUBSTITUTION REQUIREMENTS AND PROCEDURES.
16. CONTRACTOR SHALL VISIT THE PROJECT SITE AND CAREFULLY EXAMINE THOSE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.
17. "PROVIDE" IS AN ALL-INCLUSIVE TERM REQUIRING THE CONTRACTOR TO FURNISH, INSTALL, WIRE AND CONNECT ALL SPECIFIED EQUIPMENT AS WELL AS COMPONENTS, ACCESSORIES, AND MOUNTING HARDWARE TO MEET SYSTEM REQUIREMENTS.
18. "INSTALL" SPECIFIES THAT THE CONTRACTOR SHALL INSTALL EQUIPMENT PROVIDED BY OTHERS. THE CONTRACTOR SHALL PROVIDE ALL ANCILLARY EQUIPMENT FOR A COMPLETE INSTALLATION.
19. MATCH AIC RATINGS AND ALL OTHER CHARACTERSITICS OF EXISTING DEVICES IN MCC'S, PANELBOARDS, SWITCHBOARDS, ETC. WHEN ADDING DEVICES TO THE EXISTING GEAR.
20. ALL LIGHTING SHOWN AS EMERGNECY SHALL BE PROVIDED WITH A MINIMUM OF 90 MINUTE BATTERY BACKUP. EMERGENCY LIGHTING SHALL BE INSTALLED TO MEET NFPA 101 - LIFE SAFETY CODE AND IBC 2018 MINIMUM EGRESS LIGHTING REQUIREMENTS.
21. MAINTAIN A CURRENT SET OF AS-BUILT RECORD DRAWINGS WHICH SHALL BE AVAILABLE FOR REVIEW DURING ENGINEER'S SITE OBSERVATIONS. UPON COMPLETION, PROVIDE RECORD DRAWINGS TO OWNER.
22. CONTRACTOR SHALL PROVIDE ARC-FLASH CALCULATIONS AND STUDY FROM A REGISTERED ELECTRICAL ENGINEER. THE CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL REQUIRED ELECTRICAL EQUIPMENT. SEE SPECIFICATIONS FOR ARC-FLASH LABEL REQUIREMENTS.
23. AREAS INDICATED AS HAZARDOUS CLASSIFIED AREAS WILL BE SHOWN AS HATCHED AREAS ON PLANS AND SHALL CONFIRM TO NEC 500, NFPA 820, AND OTHER APPLICABLE CODES AND LOCAL JURISDICTIONS. ALL ELECTRICAL / MECH EQUIPMENT, ENCLOSURES, DISCONNECTS, CONDUITS / RACEWAYS, AND CABLING LOCATED OUTSIDE THE CLASSIFED AREA MUST MAINTAIN MINIMUM CLEARANCES AS INDICATED ON THE PLANS. ELECTRICAL / MECH EQUIPMENT, ENCLOSURES, DISCONNECTS, CONDUITS / RACEWAYS, CABLING , AND ALL CONNECTIONS WITHIN THE HAZARDOUS AREA MUST CONFIRM TO ALL CODES RELATED TO THE HAZARDOUS CLASSIFICATION WITH ALL APPROVED EQUIPMENT RATINGS / TYPES, ENCLOSURES, FITTINGS, CONNECTIONS, SEALINGS, ETC., PER NEC AND NFPA.

ELECTRICAL DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID TO DETERMINE THE EXTENT OF WORK INVOLVED IN REGARDS TO THE EXISTING CONDITIONS AND UPGRADE OF EQUIPMENT. MAKE NECESSARY ADJUSTMENTS AND ALLOWANCES, ADVISE ARCHITECT/ENGINEER OF ANY DISCREPANCIES PRIOR TO BID OR DISTURBING EXISTING CONDITIONS.
2. REMOVE ALL EXISTING ELECTRICAL ITEMS SUCH AS DEVICES, PLATES, BOXES, CONDUIT, FITTINGS, WIRE, DISCONNECTS, ETC., FROM THE AREA INDICATED ON THE ELECTRICAL AND EQUIPMENT DEMOLITION DRAWINGS.
3. ADDITIONAL EQUIPMENT, DEVICES, RACEWAYS, AND WIRING, ETC.,MAY BE REQUIRED AND NOT SHOWN WITHIN THESE PLANS.
4. ANY EXISTING ELECTRICAL SERVICES PASSING THROUGH THE DEMOLITION AREA BUT SERVING OTHER AREAS SHALL BE MAINTAINED AT ALL TIMES BUT RE-ROUTED AS REQUIRED.
5. ALL MATERIAL NOT INDICATED TO BE SALVAGED SHALL BE REMOVED FROM THE JOB SITE AND DISPOSED OF BY THE CONTRACTOR.
6. DEMOLITION WORK SHALL BE CONDUCTED SUCH THAT OPERATIONS AND REMOVAL OF DEBRIS WILL CREATE MINIMUM INTERFERENCE WITH OTHER ADJACENT OCCUPIED AREAS IN USE AND PREVENT INJURY TO OTHER AREAS, FACILITIES AND PERSONS.
7. ANY DAMAGE CAUSED TO ADJACENT AREAS OR FACILITIES SHALL BE PROMPTLY REPORTED AND REPAIRED WITHOUT ADDITIONAL COSTS.
8. LIGHTING AND POWER CIRCUITS BEING RECONNECTED TO EXISTING CIRUITS SHALL NOT EXCEED 1440 WATTS FOR 15 AMP, 1-POLE CIRCUITS AND 1920 WATTS FOR 20 AMP, 1-POLE CIRCUITS, WHETHER OR NOT SPECIFICALLY ILLUSTRATED.
9. EXISTING CONDUIT, WIRING AND BOXES SHALL BE RETAINED WHERE APPLICABLE TO CONTINUE TO EXISTING CIRCUITRY. CONTRACTOR SHALL BE RESPONSIBLE FOR INDENTIFYING CIRCUIT FEEDERS TO EXISTING PANELBOARDS AND MAINTAINING THOSE FEEDS FOR CONNECTION OF NEW EQUIPMENT AND/OR RETAINING POWER FOR NEW AND EXISTING EQUIPMENT.
10. EXISTING INTERIOR CONDUIT, WIRING AND BOXES MAY BE REUSED WHERE APPLICABLE AND WHERE DETERMINED TO BE IN OPERATING AND ACCEPTABLE CONDITION. PRIOR TO START OF WORK, SCHEDULE A WALK-THROUGH WITH THE OWNER TO IDENTIFY ALL AREAS WHERE EXISTING CONDUIT AND CONDUCTORS ARE TO BE REMOVED.
11. EXISTING JUNCTION BOXES AND WIRING REUSED SHALL BE ACCESSIBLE AND PROVIDED WITH APPROVED COVERED PLATES.
12. WHERE NEW WORK IS ILLUSTRATED OR REQUIRED, ALL EXISTING WIRING NOT BEING REUSED FOR CONNECTION OF NEW EQUIPMENT AND/OR CONTINUING CIRCUITRY SHALL BE REMOVED AND THE CONDUIT AND BOXES ABANDONED AND BLANK COVER PLATES PROVIDED FOR DEVICES.
13. CONTRACTOR SHALL COORDINATE WITH AND REVIEW MECHANICAL EQUIPMENT TO BE REMOVED. ALL ELECTRICAL DEVICES AND ASSOCIATED WIRING SHALL BE REMOVED BY THIS CONTRACTOR AS NOTED ABOVE.
14. GENERALLY, ALL EXISTING LIGHT FIXTURES, WALL SWITCHES, RECEPTACLES, OR OTHER ELECTRIC EQUIPMENT SHOWN WITH DASHED LINES OR IN HATCHED AREAS OF THE DRAWINGS, INDICATES THAT EQUIPMENT AND THE ASSOCIATED WIRING TO BE REMOVED, EXCEPT AS MAY BE NOTED ELSEWHERE. ALL EQUIPMENT DEVICES, CONDUIT, ETC. SHOWN LIGHTLY, GENERALLY INDICATES THAT EQUIPMENT TO REMAIN IN PLACE.
15. EQUIPMENT SHOWN WITH DASHED OR LIGHT LINES IS FOR CLARIFICATION ONLY, NOT TO LIMIT CONTRACTOR'S RESPONSIBILITY FOR REMOVING ASSOCIATED WIRING. ADDITIONALLY, ALL EXISTING ELECTRICAL TO REMAIN HAS NOT BEEN ILLUSTRATED. UNLESS SPECIFICALLY NOTED ON THE DRAWINGS OR REQUIRED WITHIN THESE SPECIFICATIONS OR OTHERWISE, THE EXISTING ELECTRICAL SHALL REMAIN.
16. CONFORM TO ALL STATE, LOCAL, AND NATIONAL CODES AND AUTHORITIES HAVING JURISDICTION.
17. SECURE AND PAY ALL NECESSARY FEES AND PERMITS.
18. CONTRACTOR IS RESPONSIBLE FOR REMOVING EXISTING CONDUCTORS TO BE DEMOLISHED FROM CONDUIT ENCASED IN CONCRETE. SEAL CONDUIT AT EACH END.
19. CONTRACTOR TO PATCH ALL HOLES IN WALLS AND SLABS CAUSED BY THE REMOVAL OF ELECTRICAL EQUIPMENT OR CONDUIT.
20. CONTRACTOR IS RESPONSIBLE FOR ROOF REPAIR WHERE ROOF DAMAGE IS CAUSED BY THE REMOVAL OF ELECTRICAL EQUIPMENT, SUPPORTS OR CONDUIT.
21. SEAL ANY CONDUIT PENETRATIONS THAT ARE ABANDONED IN PLACE.
22. CONTRACTOR IS RESPONSIBLE FOR MINOR RELOCATION AND RECONNECTION OF EXISTING LIGHTING, FIRE ALARM SYSTEMS OR OTHER SYSTEMS AS REQUIRED BY DEMOLITION WORK OR THE INSTALLATION OF NEW EQUIPMENT.
23. THE CONTRACTOR IS TO REMOVE ALL EXISTING SURFACE METAL RACEWAY AND DEVICES IN AREAS DESIGNATED FOR DEMOLITION.

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07/10/2024

NOTES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

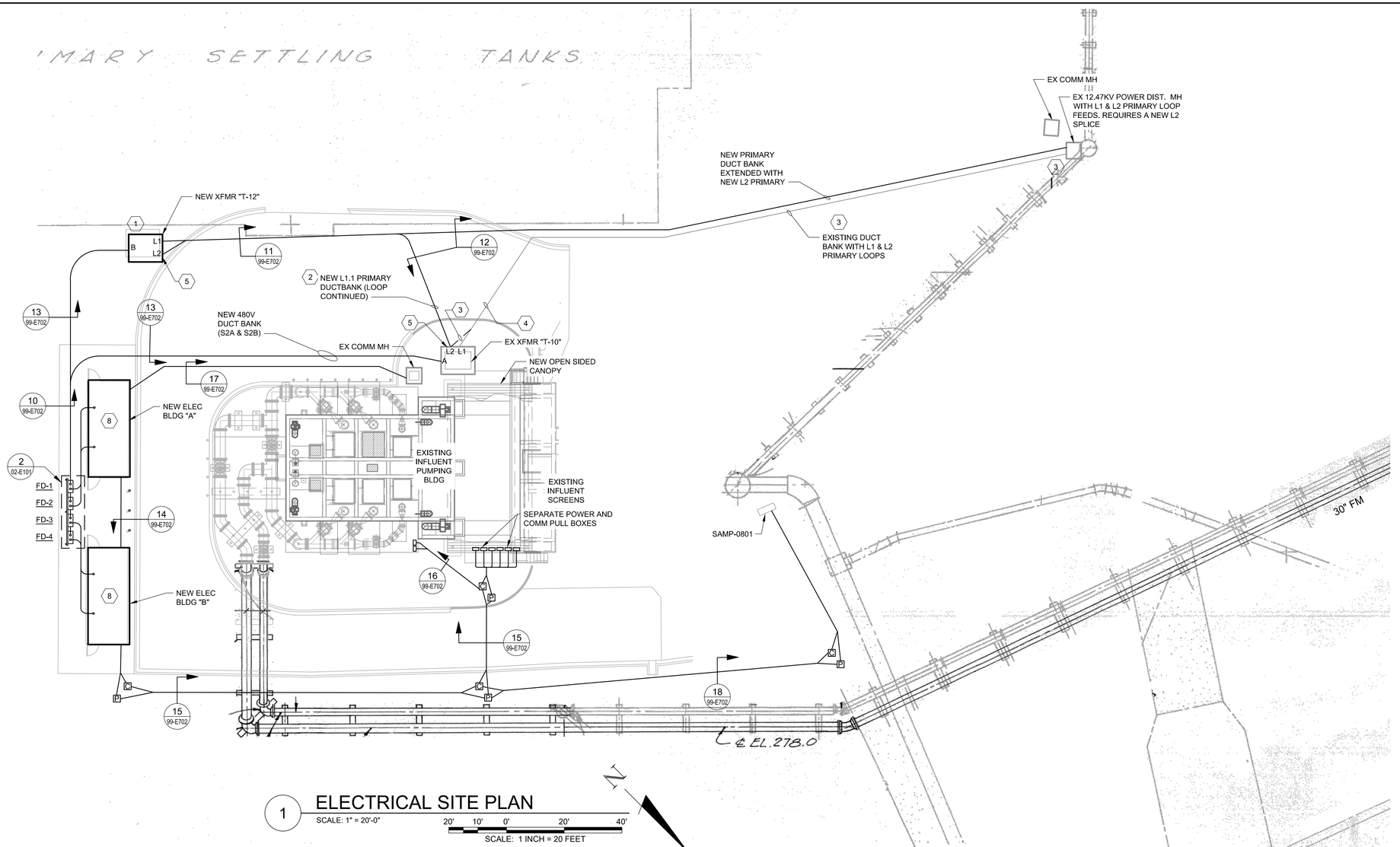
REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

02-E002

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3653618113618121\04_CAD\ELEC\03_PLOT\3618121_02-E002.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

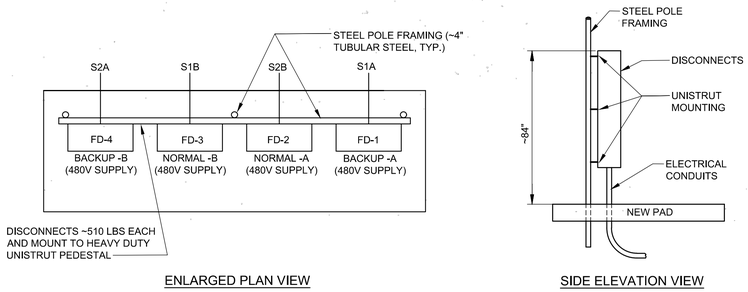


1 ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

20' 10' 0' 20' 40'

SCALE: 1 INCH = 20 FEET



ENLARGED PLAN VIEW

SIDE ELEVATION VIEW

2 DETAIL - ELECTRICAL DISCONNECT DETAIL

02-E101 NOT TO SCALE

GENERAL NOTES:

A. CONSTRUCTION CONTRACTOR SHALL WALK DOWN THE SITE CAREFULLY AND EXAMINE THE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.

B. THE NEW CONDUIT ROUTING SHOWN ON THIS DRAWING IS DIAGRAMMATIC. CONSTRUCTION AND FIELD PERSONNEL ARE TO VERIFY EXACT ROUTING PER ACTUAL ON-SITE CONDITIONS.

C. ALL NEW CONDUIT ROUTING REQUIRES EMBEDDED CONCRETE DUCT BANK. COORDINATE ALL EXACT DUCTBANK ROUTING WITH OWNER. SEE REFERENCED DUCTBANK DETAILS.

D. SEE RISER DIAGRAM, EQUIPMENT CONNECTION SCHEDULES, AND ENLARGED POWER PLANS FOR MORE DETAILS ON CONDUIT AND CABLE ROUTING FOR ALL EQUIPMENT.

E. SEE ELECTRICAL BUILDING ENLARGED POWER PLANS FOR STUB UP LOCATIONS.

KEY NOTES:

1. PROVIDE A NEW PAD MOUNTED 12.47KV / 480V (1500KVA, DELTA-WYE) XFMR AS SHOWN PER MANUFACTURER'S SPECIFICATIONS. THE NEW XFMR SHALL BE LABELED AS "T-12" AND SHALL BE EQUIPPED TO ALLOW TWO SEPARATE PRIMARY 12.47KV LOOP SUPPLY FEEDS ALONG WITH TWO SEPARATE 480V SECONDARY RADIAL FEEDS. ELECTRICAL CONTRACTOR IS TO VERIFY THE SITE AND PROPOSED LOCATION FOR THE NEW XFMR T-12 AND TO VERIFY NO UNDERGROUND OBSTRUCTIONS BEFORE INSTALLING XFMR, DUCTBANKS, CONDUITS, ETC. COORDINATE EXACT XFMR LOCATION WITH OWNER.
2. PROVIDE A NEW PRIMARY 12.47KV DUCTBANK BETWEEN NEW XFMR T-12 AND EXISTING XFMR T-10 AS SHOWN FOR LOOP L1.1.
3. DISCONNECT THE EXISTING L2 PRIMARY 12.47KV LOOP FEED (B-SIDE, BACKUP FEED) FROM EXISTING XFMR T-10 AND PULL BACK L2 CABLING TO NEAREST MANHOLE LOCATION AS SHOWN IN ORDER TO REUSE FOR NEW PRIMARY FEED TO NEW XFMR T-12. SPLICE A NEW L2 CABLE SECTION IN EXISTING MANHOLE ACCORDING TO CABLE MANUFACTURING SPECIFICATIONS AND PER EXISTING MANHOLE REQUIREMENTS. ROUTE NEW L2 CABLE SECTION FROM EXISTING MANHOLE VIA NEW EXTENDED DUCTBANK TO XFMR T-12 PRIMARY SUPPLY CABINET (B-SIDE) AS SHOWN. SEE RISER DIAGRAM FOR MORE DETAILS.
4. THE EXISTING L1 PRIMARY LOOP FEED TO XFMR T-10 (A-SIDE, NORMAL) WILL REMAIN CONNECTED.
5. A NEW 12.47KV PRIMARY FEED (L1.1) SHALL BE PROVIDED FROM EXISTING XFMR T-10 (B-SIDE) PRIMARY TO THE NEW XFMR T-12 PRIMARY (B-SIDE) AS SHOWN. SEE RISER DIAGRAM FOR MORE DETAILS.
6. NOT USED.
7. NOT USED.
8. THE NEW ELECTRICAL BUILDINGS A & B SHALL BE SHIPPED BY E-HOUSE MANUFACTURER. CONTRACTOR TO RECEIVE, STORE, AND INSTALL E-HOUSES ON PAD AREA.

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Brian W Landry 2024.09.25 11:16:30-05'00'

ELECTRICAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

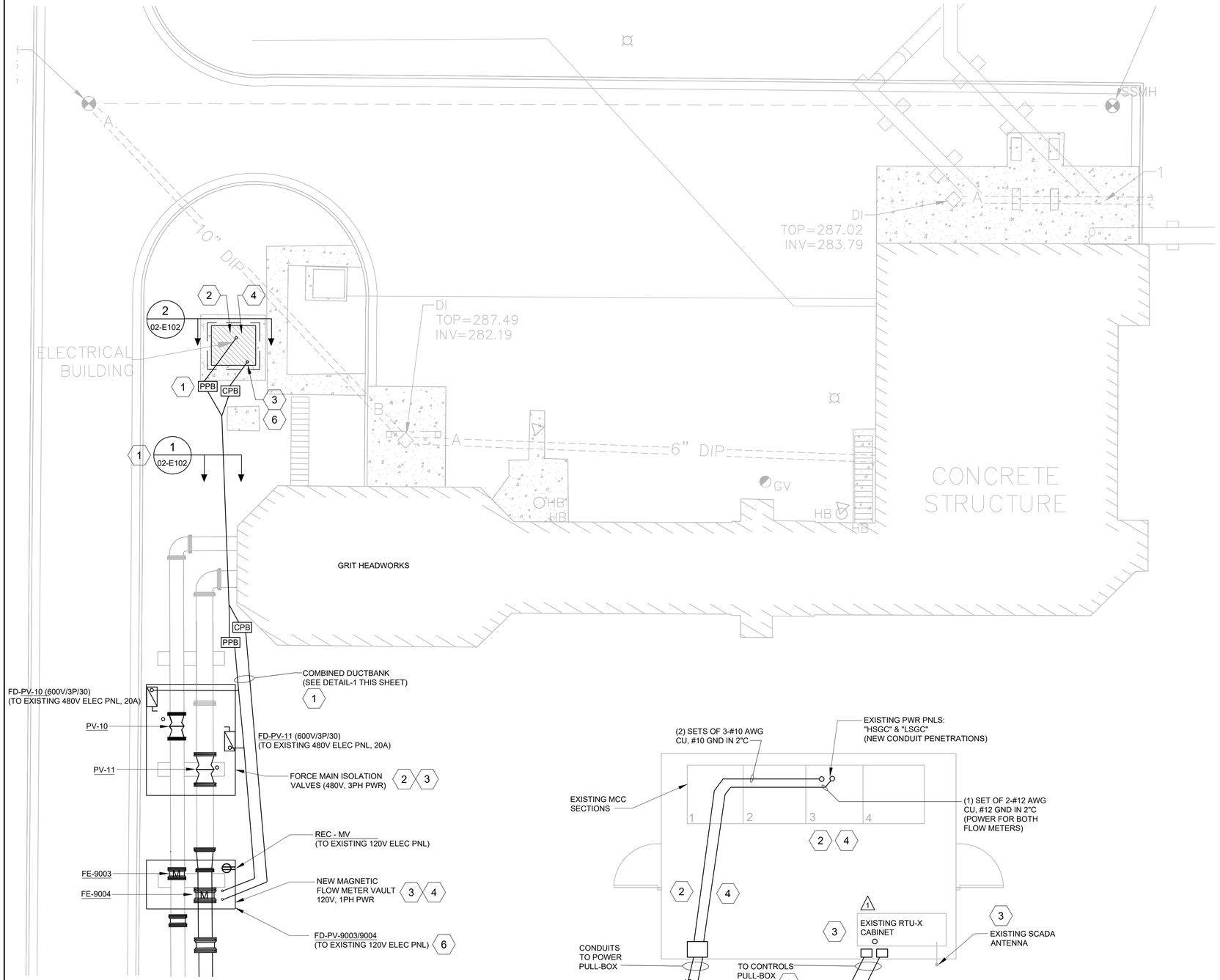
REVISION INFORMATION

REV	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/05/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

02-E101

FILE NO. 3618121

USER:JLKITTRELL
FILE:\\corp.bwsc.net\data\Projects\36\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_02-E101.dwg
SAVED:9/17/2024
PLOTTED:9/25/2024



1 ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0"

10' 5' 0' 10' 20'

SCALE: 1 INCH = 10 FEET

N

2 ENLARGED POWER PLAN - EXISTING ELECTRICAL BLDG

02-E102 SCALE: NTS

GENERAL NOTES:

A. CONSTRUCTION CONTRACTOR SHALL WALK DOWN THE SITE CAREFULLY AND EXAMINE THE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.

B. THE NEW CONDUIT ROUTING SHOWN ON THIS DRAWING IS DIAGRAMMATIC, CONSTRUCTION AND FIELD PERSONNEL ARE TO VERIFY EXACT ROUTING PER ACTUAL ON-SITE CONDITIONS.

C. ALL NEW CONDUIT ROUTING REQUIRES EMBEDDED CONCRETE DUCT BANK. USE PULL-BOXES AS REQUIRED.

D. COORDINATE ALL PULL-BOX INSTALLATIONS AND EXACT LOCATIONS WITH OWNER AND OTHER DISCIPLINES.

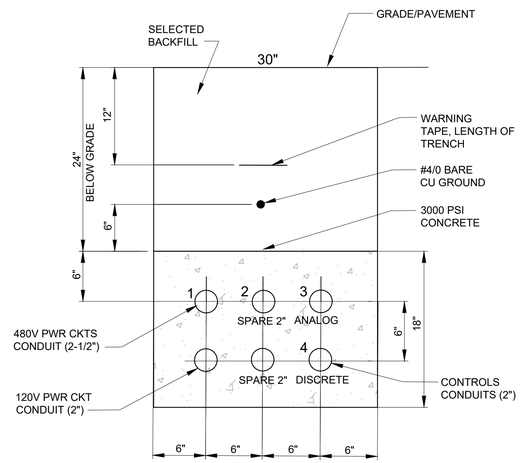
E. ALL EXTERIOR EQUIPMENT, CABINETS, ENCLOSURES, DISCONNECTS, ETC., TO BE NEMA-3R (GASKETED) OR EQUIVALENT.

KEY NOTES:

1. PROVIDE NEW CONDUIT DUCTBANK FOR POWER & CONTROLS AS SHOWN FROM EXISTING ELECTRICAL BLDG TO NEW CONTROL VALVES AND FLOW METERS. SEE DUCTBANK DETAIL ON THIS SHEET. USE PULL-BOXES AS REQUIRED.
2. THE NEW ISOLATION VALVES ARE TO BE POWERED FROM THE EXISTING 480V POWER PNL (LABELED "HSGC"), LOCATED WITHIN THE EXISTING MCC CABINET AND IN THE EXISTING ELECTRICAL BLDG.
3. THE NEW EQUIPMENT CONTROLS CIRCUITS SHALL ROUTE TO THE EXISTING SCADA RTU CABINET IN THE ELECTRICAL BLDG. EXISTING SCADA IS 900MHz WIRELESS BACK TO MASTER SCADA AT IPS.
4. THE NEW FLOW METERS ARE TO BE POWERED FROM THE EXISTING 120V POWER PNL (LABELED "LSGC"), LOCATED WITHIN THE EXISTING MCC CABINET AND IN THE EXISTING ELECTRICAL BLDG. PROVIDE MOTOR RATED SWITCH AT FLOW METERS.
5. PROVIDE OUTDOOR PEDESTAL FOR REQUIRED FUSED DISCONNECTS AND CONTROLS INTERFACE CABINET FOR SCADA. SEE CONTROLS WIRING DIAGRAMS FOR MORE DETAILS.
6. PROVIDE SCADA ANALOG AND DISCRETE STATUS WIRING FROM EACH FLOW METER AND EACH VALVE. THESE ARE TO TRAVEL BACK TO THE EXISTING SCADA SYSTEM LOCATED IN THE EXISTING ELECTRICAL BLDG. SEE CONTROLS WIRING DIAGRAMS FOR MORE DETAILS.

LEGEND

PPB	POWER PULL-BOX
CPB	CONTROLS PULL-BOX



1 DUCT BANK DETAIL - GRIT AREA

02-E102 SCALE: NTS

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Brian W Landry 2024.09.25 11:16:43-05'00'

ELECTRICAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/01/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

02-E102

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SAVED:9/17/2024
PLOTTED:9/25/2024

GENERAL NOTES:

A. CONSTRUCTION CONTRACTOR SHALL WALK DOWN THE SITE CAREFULLY AND EXAMINE THE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.

B. THE NEW CONDUIT ROUTING SHOWN ON THIS DRAWING IS DIAGRAMMATIC, CONSTRUCTION AND FIELD PERSONNEL ARE TO VERIFY EXACT ROUTING PER ACTUAL ON-SITE CONDITIONS.

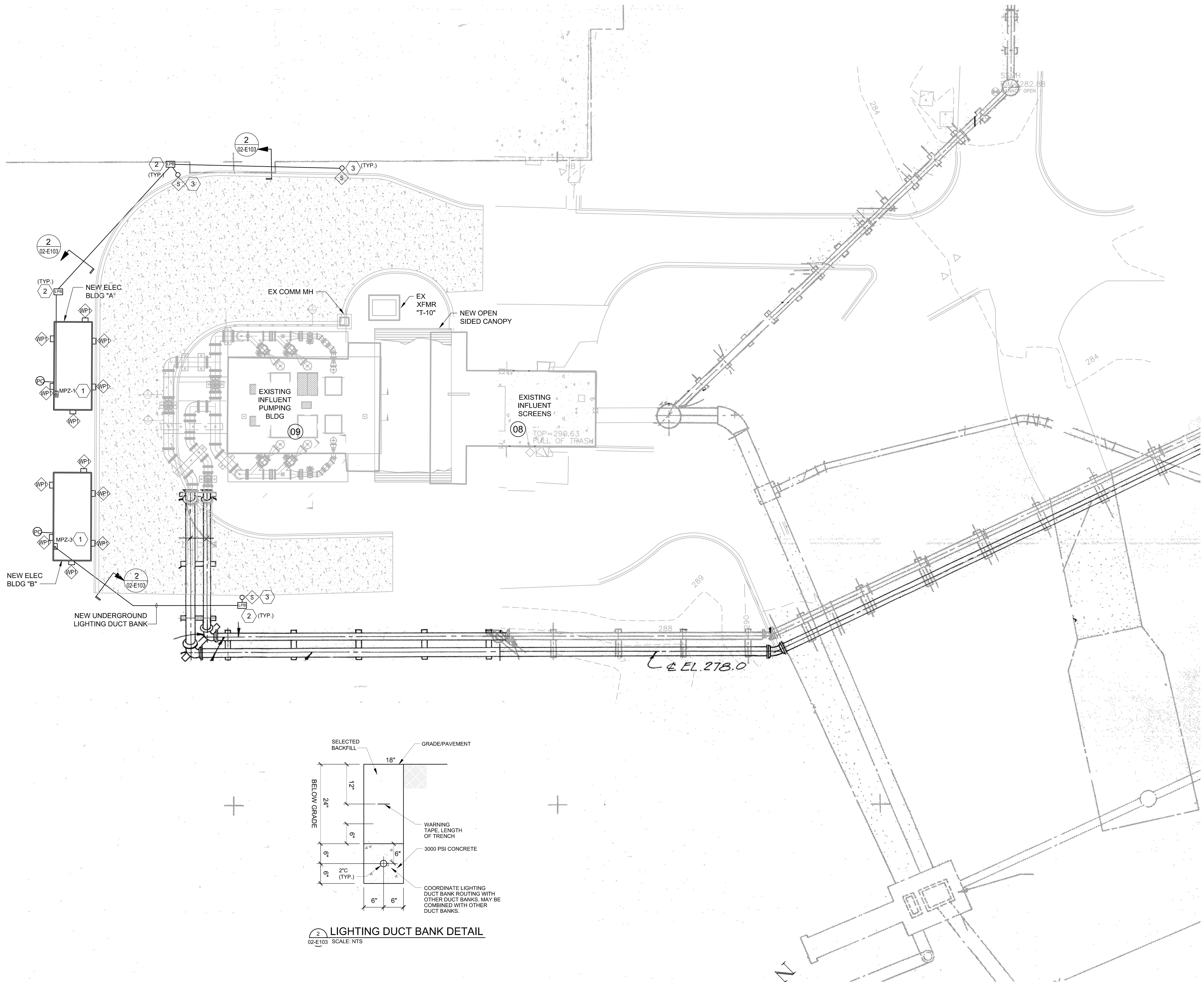
C. ALL NEW CONDUIT ROUTING REQUIRES EMBEDDED CONCRETE DUCT BANK. COORDINATE ALL EXACT DUCT BANK ROUTING WITH OWNER. SEE REFERENCED DUCT BANK DETAIL ON THIS SHEET.

KEY NOTES:

1. NEW SITE LIGHTING SHALL BE FED FROM THE NEW 208V/120V DISTRIBUTION PANELS MPZ-1 (BLDG-A) AND MPZ-3 (BLDG-B) AS SHOWN. ADD PHOTOCELL(S) FOR CONTROLLING ALL EXTERIOR LIGHTING.

2. LIGHTING PULL BOXES (LPB's) TO BE PROVIDED AS REQUIRED. COORDINATE INSTALLATION OF LPB's WITH OTHER DISCIPLINES AND WITH OTHER UNDERGROUND DUCT BANKS.

3. PROVIDE NEW POLE TOP MOUNTED LED LIGHTING FIXTURES AS SHOWN. COORDINATE EXACT INSTALLATION LOCATIONS WITH OTHER DISCIPLINES AND AVOID ANY UNDERGROUND OBSTACLES.



2 / 02-E103 LIGHTING DUCT BANK DETAIL
SCALE: NTS

1 LIGHTING SITE PLAN
SCALE: 1" = 20'-0"
20' 10' 0' 20' 40'
SCALE: 1 INCH = 20 FEET

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LIGHTING SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

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0	JLK	MC	07/10/2024	ISSUED FOR BIDS

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FILE:P:\36\36181\3618121\04_CAD\ELEC\03_PLOT\3618121_02-E103.dwg
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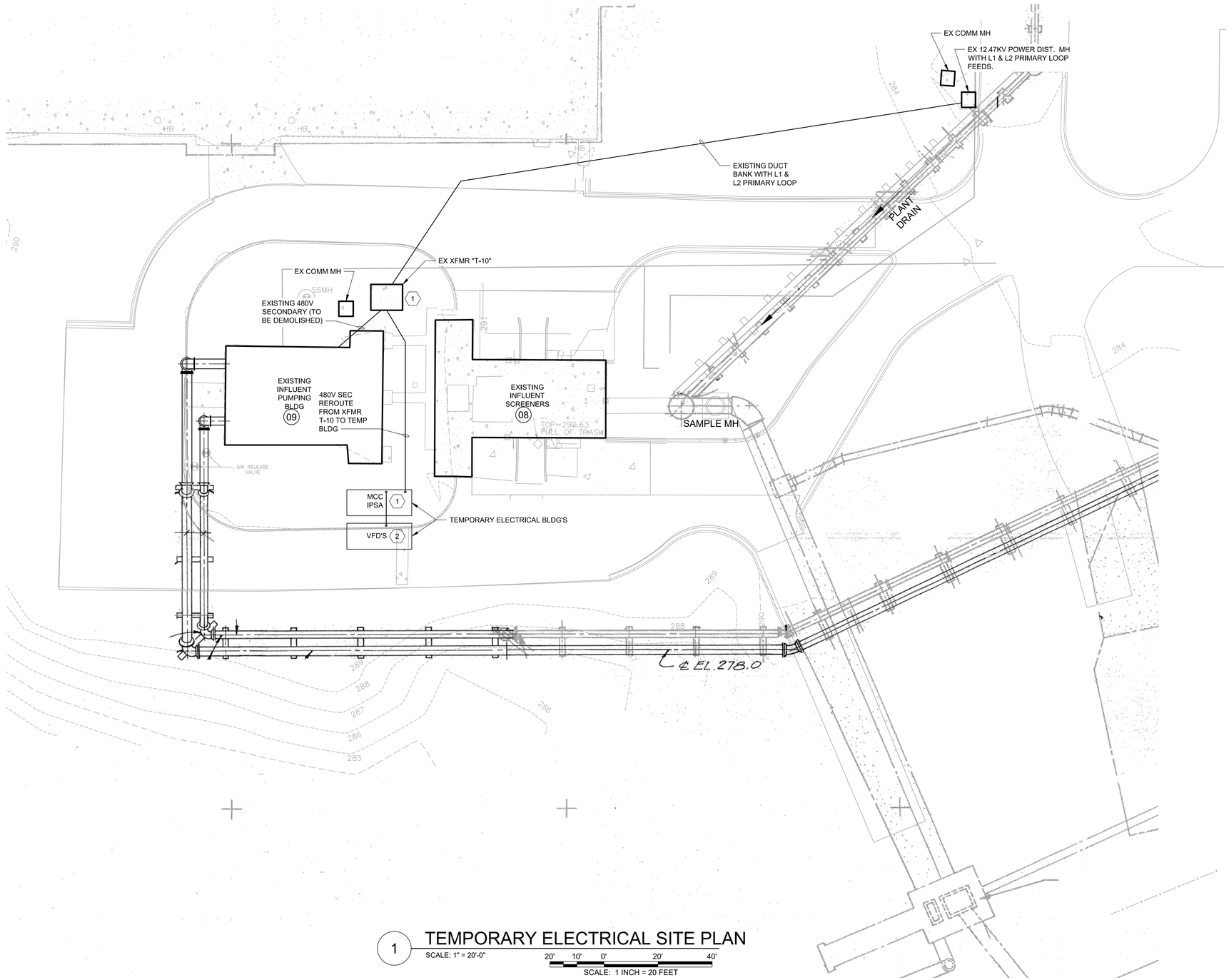
PLOTTED:7/10/2024



1 TEMPORARY ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

20' 10' 0' 20' 40'

SCALE: 1 INCH = 20 FEET

GENERAL NOTES:

A. TEMPORARY ELECTRICAL BUILDINGS SHOWN SHALL BE REQUIRED FOR RELOCATING THE MCC IPSA, VFDS 2, 4 ,6, 8 AND OTHER EQUIPMENT AS SHOWN FROM THE IPS BUILDING. THESE SHALL BE TEMPORARILY POWERED FROM THE EXISTING 12.47KV / 480V (1500KVA) T-10 XFMR 480V SECONDARY. SEE THE TEMPORARY ONE-LINE FOR MORE DETAILS ON TEMPORARY CONNECTIONS AND MCC EQUIPMENT ELEVATIONS. SEE THE TEMPORARY DEMOLITION FLOORPLAN & ELEVATION FOR THE TEMPORARY ELECTRICAL BUILDINGS.

KEY NOTES:

1. REROUTE THE EXISTING XFMR T-10 480V SECONDARY TO THE NEW TEMPORARY BUILDING'S EXISTING MCC IPSA MCB SUPPLY CABINET. CONDUITS TO PENETRATE THE TEMPORARY BUILDING'S FLOOR INTO BOTTOM OF THE MCC CABINET.
2. ROUTE NEW TEMPORARY 480V POWER FROM TEMP BUILDING MCC SECTIONS TO THE EXISTING CORRESPONDING VFD CABINETS (VFD's #2, 4, 6 & 8) IN 2ND TEMP BUILDING AS SHOWN. CONDUITS TO PENETRATE TEMPORARY BUILDING'S FLOOR INTO BOTTOM OF MCC AND VFD CABINETS. SEE OTHER TEMPORARY DEMOLITION DRAWINGS FOR MORE DETAILS.

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07/10/2024

TEMPORARY ELECTRICAL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR	CHK	DATE	DESCRIPTION
0	JLK	MIC	07/10/2024	ISSUED FOR BIDS

02-ED101

FILE NO. 3618121

USER:JLKITTRELL
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SAVED:6/27/2024
PLOTTED:7/10/2024

VALVES

- GATE VALVE OR OTHER IN-LINE TYPE NOT OTHERWISE IDENTIFIED
- BALL
- BUTTERFLY
- PLUG
- CHECK
- WAFER CHECK
- NEEDLE
- DIAPHRAGM
- GLOBE
- PINCH
- ANGLE
- THREE WAY
- FOUR WAY
- BACKFLOW PREVENTER
- KNIFE
- MUD
- PRESSURE REDUCING VALVE
- PRESSURE RELEASE VALVE
- VACUUM RELIEF VALVE
- AIR RELEASE VALVE
- AIR/VACUUM VALVE
- BACKPRESSURE VALVE
- TELESCOPING
- FLEXIBLE CHECK VALVE

GATES

- OR SLIDE
- WEIR
- FLAP
- SHEAR

FITTING SYMBOLS

- REDUCER - CONCENTRIC
- REDUCER - ECCENTRIC
- PIPE CLEANOUT PORT
- UNION
- FLANGE
- PIPE BREAK
- CAP
- PLUG
- DRAIN - BELL UP
- DRAIN - FUNNEL
- FLEXIBLE TUBING
- EXPANSION JOINT
- QUICK CONNECT
- STRAINER - WYE TYPE
- STRAINER - BASKET TYPE
- DIAPHRAGM SEAL
- ISOLATION RING
- FLOW ARROW
- HEATER

VALVE & GATE ACTUATOR SYMBOLS

- MOTOR OPERATOR
- SOLENOID OPERATOR (XX)
- PNEUMATIC OPERATOR (XX)

THE FOLLOWING ADDITIONAL DESIGNATIONS MAY BE UTILIZED ADJACENT TO SOME VALVE OR GATE SYMBOLS.

XX:
- NC NORMALLY CLOSED
- NO NORMALLY OPEN
- FC FAILS CLOSED
- FO FAILS OPEN
- FIP FAILS IN LAST POSITION

PRIMARY ELEMENT

- ELECTROMAGNETIC FLOWMETER
- PARSHALL FLUME
- PROPELLER OR TURBINE FLOW METER
- ULTRASONIC FLOW METER (CLAMP-ON)
- VENTURI TUBE
- VORTEX FLOWMETER
- ROTAMETER
- FLOAT SWITCH
- BUBBLER TUBE
- ULTRASONIC LEVEL INDICATOR
- TRANSDUCER

MISCELLANEOUS SYMBOLS

- FILTER
- SILENCER
- PARTICULATE FILTER
- DESSICANT DRYER
- BELT WEIGH SCALE
- WEIGH SCALE

WASTEWATER PROCESS SYMBOLS

- MIXER OR SURFACE ASPIRATOR
- DIFFUSER
- UV BANK

CHEMICAL FEED EQUIPMENT SYMBOLS

- EDUCTOR
- INJECTOR
- CALIBRATION COLUMN
- STATIC IN-LINE MIXER
- PULSATION DAMPENER

PUMP & BLOWER SYMBOLS

- CENTRIFUGAL PUMP OR OTHER TYPE NOT SPECIFIED (XX)
- PISTON PUMP (XX)
- VERTICAL PUMP (XX)
- METERING PUMP (XX)
- SUBMERSIBLE PUMP (XX)
- PERISTALTIC METERING PUMP
- SUBMERSIBLE AXIAL FLOW PUMP (XX)
- PROGRESSIVE CAVITY PUMP (XX)
- GEAR OR ROTARY PUMP OR BLOWER (POSITIVE DISPLACEMENT) (XX)
- AIR COMPRESSOR (2 STAGE SHOWN)
- CENTRIFUGAL BLOWER OR FAN (XX)
- SCREW PUMP (XX)

XX:
- AS ADJUSTABLE SPEED
- CS-1 CONSTANT SPEED (SINGLE)
- CS-2 CONSTANT SPEED (TWO)

SOLIDS HANDLING EQUIPMENT SYMBOLS

- ROTARY SCREEN
- CYCLONE CONCENTRATOR
- GRIT SEPARATOR: HYDRAULIC TYPE
- GRIT SEPARATOR: VORTEX TYPE
- GRIT CLASSIFIER
- ROTARY PRESS
- SCREW CONVEYOR OR SCREW PRESS
- BELT CONVEYOR
- INLINE GRINDER
- CHANNEL MTD GRINDER
- BAR SCREEN: MANUAL
- BAR SCREEN: MECHANICAL

NOTES:

1. THIS IS A GENERAL LEGEND SHEET. SOME SYMBOLS AND ABBREVIATIONS MAY NOT BE UTILIZED ON THIS SPECIFIC PROJECT.
2. PIPING AND EQUIPMENT LEGEND APPLIES TO PROCESS AND INSTRUMENTATION SHEETS ONLY AND MAY DIFFER FROM LEGENDS ON OTHER SHEETS.
3. SEE P&ID PROCESS AND ABBREVIATION SHEET FOR LINE SYMBOL AND DESCRIPTION.

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P&ID - PROCESS SYMBOLS LEGEND

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
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0	BMI	MA	07/10/2024	ISSUED FOR BID

04-DI001

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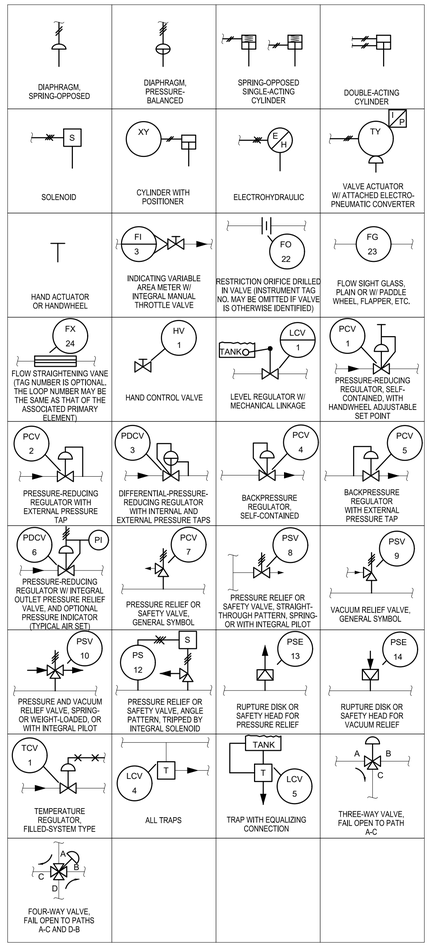
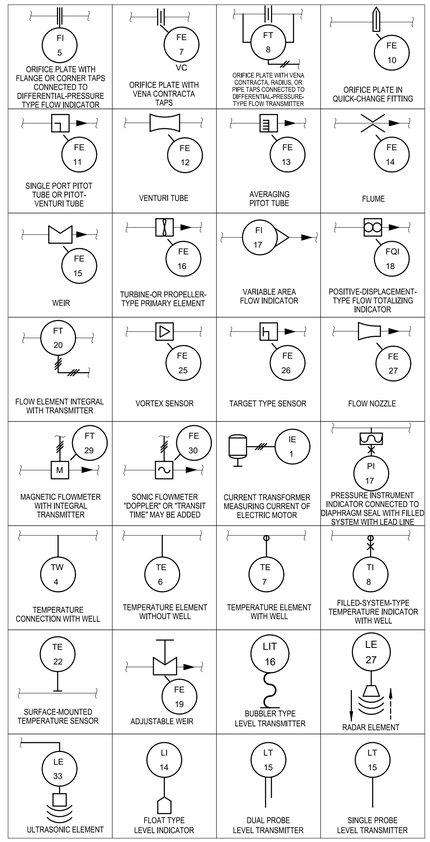
	PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (NOTE 1)	FIELD MOUNTED (NOTE 2)	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR (NOTE 1)
DISCRETE INSTRUMENTS			
SHARED DISPLAY, SHARED CONTROL (SCADA)			
COMPUTER FUNCTION			
PROGRAMMABLE LOGIC CONTROL (PLC)			

INSTRUMENT WITH LONG TAG NUMBER	INSTRUMENT SHARING COMMON HOUSING	PILOT LIGHT	PURGE OR FLUSHING DEVICE
RESET FOR LATCH-TYPE ACTUATOR	DIAPHRAGM SEAL	NOTE 4 NOTE 3 UNDEFINED INTERLOCK LOGIC	TOTAL

NOTES

1. NORMALLY INACCESSIBLE TO BEHIND-THE-PANEL DEVICES OR FUNCTIONS ARE DEPICTED BY USING THE SAME SYMBOLS BUT WITH DASHED HORIZONTAL BARS, I.E.:
2. SUPERSCRIPT DENOTES ADDITIONAL FUNCTIONAL DESCRIPTION OF INSTRUMENT. SEE INSTRUMENT DESIGNATIONS FOR DEFINITIONS.
3. SUBSCRIPT DENOTES PANEL OR CABINET I.D.
4. SUPERSCRIPT REFERS TO INTERLOCK SPECIFICATION.



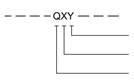


SYMBOL	LINE DESCRIPTION
	FURNISHED BY OTHERS, INSTALLED BY CONTRACTOR
	INSTRUMENT SUPPLY OR CONNECTION TO PROCESS
	UNDEFINED SIGNAL
	PNEUMATIC SIGNAL
	ELECTRIC SIGNAL
	ELECTRONIC SIGNAL
A A	ANALOG SIGNAL
L L	HYDRAULIC SIGNAL
X X	CAPILLARY TUBE
	ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED)
	ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED)
	INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK)
	MECHANICAL LINK
	PNEUMATIC BINARY SIGNAL
	ELECTRIC BINARY SIGNAL
	PRIMARY PROCESS LINE
	PROCESS OR MECHANICAL EQUIPMENT
	LIMITS OF EQUIPMENT SUPPLIED BY MANUFACTURE
	PROCESS SECONDARY LINE
	EXISTING LINE OR DEVICE

INSTRUMENT DESIGNATIONS

*	PACKAGED WITH VENDOR PROVIDED EQUIPMENT
CLR	CHLORINE RESIDUAL
CO2	CARBON DIOXIDE
DO	DISSOLVED OXYGEN
EOT	END OF TRAVEL
LEL	LOWER EXPLOSIVE LIMIT
LOS	LO (LOCK-OUT) / STOP
LOR	LOCAL - OFF - REMOTE
LORA	LOCAL - OFF - REMOTE - AUTOMATIC
MCC	MOTOR CONTROL CENTER
MLSS	MIXED LIQUOR SUSPENDED SOLIDS
O2	OXYGEN (PURITY)
ORP	OXIDATION REDUCTION POTENTIAL
OVLD	OVERLOAD
pH	pH CELL
RM	REVERSE MOTION
SD	SLUDGE DENSITY
TURB	TURBIDITY
UV	UV TRANSMITTANCE

ELECTRICAL LINE FUNCTIONS



WIRING STATUS

—	- CONDUIT AND CONDUCTORS BY CONTRACTOR
E	- EXISTING CONDUCTORS IN EXISTING CONDUIT
F	- CONDUIT BY CONTRACTOR, CONDUCTORS FURNISHED WITH EQUIP
S	- CONDUIT AND CONDUCTORS FURNISHED WITH EQUIPMENT

SIGNAL TYPE

A	- ANALOG - #16 TWISTED SHIELDED PAIR
A1	- ANALOG - #16 3 CONDUCTOR TWISTED SHIELDED
AS	- ANALOG - SPECIAL (EIA-432, EIA-485...)
D	- #14 2 CONDUCTOR
DS	- DISCRETE - SPECIAL (24 VOLT ...)
M	- WIRING BY MANUFACTURER
P	- POWER - NUMBER OF CONDUCTORS AND SIZE BY ELECTRICAL
C6	- COMMUNICATIONS - CAT 6 ETHERNET
P(V)	- POWER & SHIELDED VFD CABLE - NUMBER OF CONDUCTORS AND SIZE BY ELECTRICAL

INSTRUMENT IDENTIFICATION LETTERS

	FIRST-LETTER		SUCCEEDING-LETTERS		
	PROCESS VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	CONDUCTIVITY			CONTROL	CLOSED
D	DENSITY	DIFFERENTIAL			
E	VOLTAGE		SENSOR PRIMARY ELEMENT		
F	FLOW RATE	RATIO			
G	USER'S CHOICE		GLASS		
H	HAND (MANUAL)				HIGH
I	CURRENT		INDICATE		
J	POWER	SCAN			
K	TIME / SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	MOISTURE	MOMENTARY			MIDDLE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE (RESTRICTION)		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	TOTALIZE			
R	RADIATION		RECORD		
S	SPEED / FREQ.	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER	
W	WEIGHT / FORCE		WELL		
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE, PRESENCE	Y-AXIS		RELAY/COMPUTE	
Z	POSITION	Z-AXIS		DRIVER/ACTUATOR	

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P&ID - INSTRUMENTATION LEGEND & ABBREVIATIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BMI	MAA	07/10/2024	ISSUED FOR BID

04-DI002

FILE NO. 3618121

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FILE:F:\36\3618113618121\04_CAD\WATRPLOT\3618121DI_04002.dwg
SAVED:5/28/2024
PLOTTED:7/8/2024

EQUIPMENT IDENTIFICATION DESCRIPTION

SSS-FFF- ## # #

- SEQUENCE CODE - SEQUENTIAL NUMBER
- SEQUENCE CODE - SEQUENTIAL NUMBER
- SEQUENCE CODE - STRUCTURE IDENTIFIER
- FUNCTION CODE - DENOTES ASSOCIATED EQUIPMENT ABBREVIATION
- SERVICE CODE - DENOTES ASSOCIATED SERVICE ABBREVIATION (SEE NOTE 1)

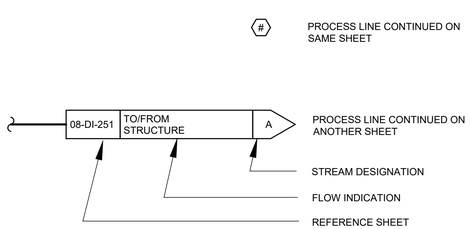
GENERAL NOTES:

1. THIS TAG CODE MAY NOT BE USED WITH EVERY EQUIPMENT OR VALVE.

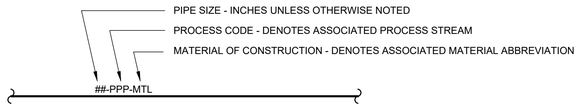
EQUIPMENT ABBREVIATIONS

AER	AERATOR / AERATION
ASP	SURFACE ASPIRATOR
BCNV	BELT CONVEYOR
BLR	BLOWER
BSN	BASIN
CLR	CLARIFIER
CLS	CLASSIFIER
CMP	COMPRESSOR
CNV	CONVEYOR
CRN	CRANE
DEC	DECANTER
DIF	DIFFUSER
DWB	DEWATERING BOX
EDC	EDUCTOR
EJ	INJECTOR
FE	FLOW ELEMENT
FIL	FILTER
FLOC	FLOCCULATOR
GF	GAS FEEDER
GNDR	GRINDER
GRT	GRIT
HST	HOIST
MXR	MIXER
P	PUMP
PI	PRESSURE INDICATOR
PMX	POLYMER MIX SKID
RP	ROTARY PRESS
SAMP	SAMPLE PUMP
SB	SPLITTER BOX
SC	SCUM COLLECTOR
SCL	SCALE
SCNV	SCREW CONVEYOR
SCR	SCREEN
SG	SLIDE GATE
SL	SLUDGE
SLC	SLUDGE COLLECTOR
SRS	SEPTAGE RECEIVING STATION
T	TANK
UV	ULTRAVIOLET
V	VALVE
WCMP	WASHER/COMPACTOR
WG	WEIR GATE

SHEET CONTINUATION DESCRIPTION



PIPELINE IDENTIFICATION DESCRIPTION



PROCESS FLUID ABBREVIATIONS

ACS	CARBON SLURRY
AER	AERATION
AHP	HIGH PRESSURE AIR
ALP	LOW PRESSURE AIR
ALUM	ALUM
ANE	ANAEROBIC EFFLUENT
ANI	ANAEROBIC INFLUENT
ARCY	ANOXIC RECYCLE
ARE	AERATION EFFLUENT
ARI	AERATION INFLUENT
ASH	INCINERATOR ASH
ASR	AERATED SUPERNATANT RETURN
AWR	ACID WASH RETURN
AWS	ACID WASH SUPPLY
AXE	ANOXIC EFFLUENT
AXI	ANOXIC INFLUENT
BISULFITE	SODIUM BISULFITE
BISULFITE SOL	SODIUM BISULFITE SOLUTION
BWS	BACKWASH SUPPLY
BWW	BACKWASH WASTE
CA	COMPRESSED AIR
CAUS	CAUSTIC
CCK	CENTRIFUGE BIOSOLIDS CAKE
CEN	CENTRATE
CFS	CENTRIFUGE FEED SOLIDS
CIP	CLEAN-IN PIPE
CL2	CHLORINE GAS
CLO2	CHLORINE DIOXIDE
CLS	CHLORINE SOLUTION
CN SCUM	CONCENTRATED SCUM
CNFS	CONDITIONING TANK FEED SOLIDS
CNT	CONTAINMENT PIPE
CON	CONCENTRATE
CRW	CLARIFIED RAW WATER
CS	CONDITIONED SLUDGE
CTE	DISINFECTION CONTACT TANK EFFLUENT
CTS	CENTRIFUGE THICKENED BIOSOLIDS
CW	COLD WATER (POTABLE)
CYCL INF	CYCLONE INFLUENT
CYCL RCY	CYCLONE RECYCLE
D AL	DISSOLVED ALUM
DA	POLYMER DRY AIR
DEC	DECANT
DF	DIESEL FUEL
DFR	DIESEL FUEL RETURN
DFS	DIESEL FUEL SUPPLY
DG	DIGESTER GAS
DGR	DEWATERED GRIT
DPOLY	DRY POLYMER
DPSD	DRAINAGE PUMP STATION DISCHARGE
DR	DRAIN
DRS	DIGESTER RECIRCULATION SOLIDS
DS	DIGESTED SLUDGE
DSR	DECANT SUPERNATANT RETURN
DW FL	DEWATERING FLOCCULATION
DWS	DEWATERED SLUDGE
EFF	EFFLUENT
EI	EQUALIZATION INFLUENT
ER	EQUALIZATION RETURN
F	FILTRATE
FD	FLOOR DRAIN
FD SCUM	FEED SCUM
FE	FINAL EFFLUENT
FECL	FERRIC CHLORIDE
FES	FERROUS SULFATE
FIRE	FIRE PROTECTION
FLS	FOREIGN BIOSOLIDS LOADING
FM	FORCE MAIN
FO	FUEL OIL
FOGS	FATS, OILS, GREASE AND SEPTAGE
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FSB	FLOTATION THICKENER SUBNATANT
FTFS	FLOTATION THICKENER FEED SOLIDS
FTRCY	FLOTATION THICKENER RECYCLE
FTS	FLOTATION THICKENED SOLIDS
FUS	FOREIGN BIOSOLIDS UNLOADING
FW	FILTERED WASTEWATER
GBFL	GRAVITY BELT THICKENER FILTRATE
GBFS	GRAVITY BELT THICKENER FEED SOLIDS
GBTS	GRAVITY BELT THICKENED SOLIDS
GRT	GRIT
GSP	GRAVITY THICKENER OVERFLOW/SUPERNATANT
GTFS	GRAVITY THICKENER FEED SOLIDS
GTS	GRAVITY THICKENED SOLIDS
H2O2	PEROXIDE
HCL	HYDROCHLORIC ACID
HDO	HYDRAULIC OIL
HT/INS	HEAT TRACE AND INSULATE
HF	FLUORIDE
HPSA	SERVICE AIR (HIGH PRESSURE)
HPW	HOT POTABLE WATER
HTFS	HOLDING TANK FEED SOLIDS
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HW	HOT WATER (POTABLE)
HW REV RET	HOT WATER REVERSE RETURN
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HYPO	SODIUM HYPOCHLORITE
HYPO SOL	SODIUM HYPOCHLORITE SOLUTION
IA	INSTRUMENT AIR
ICE	INTERMEDIATE CLARIFIER EFFLUENT
ICI	INTERMEDIATE CLARIFIER INFLUENT
IFC	INCINERATOR FEED CAKE
INS	INTERMEDIATE BIOSOLIDS
ISE	INCINERATOR SCRUBBER WATER EFFLUENT
LO	LUBE OIL
LP	PROPANE
LPOL	LIQUID POLYMER
LPSA	SERVICE AIR (LOW PRESSURE)
LS	LIME SLURRY
ML	MIXED LIQUOR
NAOH	CAUSTIC
NAOH SOL	CAUSTIC SOLUTION
NG	NATURAL GAS
NH4	AMMONIA
NPW	NON POTABLE WATER
NPWW	NOT POTABLE WELL WATER
NRCY	NITRIFIED RECYCLE
O3	OZONE
OA	ODOROUS AIR
OTE	OXIDATION TOWER EFFLUENT
OTI	OXIDATION TOWER INFLUENT
PCE	PRIMARY CLARIFIER EFFLUENT
PCI	PRIMARY CLARIFIER INFLUENT
PCS	PRIMARY CLARIFIER SOLIDS
PDFS	PRIMARY DIGESTER FEED SOLIDS
PDS	PRIMARY DIGESTED SOLIDS
PDSP	PRIMARY DIGESTER SUPERNATANT
PDXS	PRIMARY DIGESTER TRANSFER SOLIDS
PE	PRIMARY EFFLUENT
PL	PROCESS LIQUID
PI	PRIMARY INFLUENT
PO4	PHOSPHATE COMPOUNDS
PY	POLYMER
PP	POTASSIUM PERMANGANATE
PS	PRIMARY SLUDGE
PW	POTABLE WATER
RAS	RETURN ACTIVATED SLUDGE
RCS	RECIRULATED SLUDGE
RCYW	RECYCLE WATER
RD	ROOF DRAIN
RW	RAW WATER
RWW	RAW WASTEWATER
S	SAMPLE
SBD	SCRUBBER BLOWDOWN
SBS	SODIUM BISULFITE
SCB	SCUM CONCENTRATOR SUBNATANT
SCE	SECONDARY CLARIFIER EFFLUENT
SCF	SCRUBBER CHEMICAL FEED
SCI	SECONDARY CLARIFIER INFLUENT
SCRUB EXH	SCRUBBER EXHAUST
SCRUB INTK	SCRUBBER INTAKE
SC	SCUM
SD	STORM DRAIN
SDS	SECONDARY DIGESTED SOLIDS
SDSP	SECONDARY DIGESTER SUPERNATANT
SDX	SULFUR DIOXIDE
SDXS	SULFUR DIOXIDE SOLUTION
SE	SCREENED EFFLUENT
SE	SCRUBBER EXHAUST
SEP	SEPTAGE
SEPT UNLDG	SEPTIC TANK UNLOADING
SNT	SUPERNATANT
SOA	SULFURIC ACID
SPD	SUMP PUMP DISCHARGE
SPRAY	SPRAY WATER
SRC	SCRUBBER RECIRCULATION CLEANING
SRD	SCRUBBER RECIRCULATION DISCHARGE
SRS	SCRUBBER RECIRCULATION SUCTION
SS	SANITARY SEWER
SSFM	SANITARY SEWER FORCE MAIN
STM	STEAM
STORM	STORM DRAIN
SW	SEAL WATER
TDS	THICKENED DIGESTED SLUDGE
TWAS	THICKENED WASTE ACTIVATED SLUDGE
UW	UTILITY WATER
V	VENT
VAC	VACUUM
WAS	WASTE ACTIVATED SLUDGE
WW	WASTE WATER

PIPE MATERIAL ABBREVIATIONS

ACP	ASBESTOS CEMENT PIPE
BSP	BLACK STEEL PIPE
CIP	CAST IRON
CISP	CAST IRON SOIL PIPE
CMP	CORRUGATED METAL PIPE
CPP	CONCRETE PRESSURE PIPE
CPVC	CHLORINATED POLY (VINYL CHLORIDE) PIPE
CU	COPPER PIPE
DI	DUCTILE IRON PIPE
DW	DOUBLE WALL
FRH	FLEXIBLE RUBBER HOSE
FRP	FIBERGLASS REINFORCED PIPE
FT	FLEXIBLE TUBING
GSP	GALVANIZED STEEL PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
PE	POLYETHYLENE
PP	POLYPROPYLENE
PVC	POLY (VINYL CHLORIDE) PIPE
RCP	REINFORCED CONCRETE PIPE
SSTL	STEEL PIPE
SST	STAINLESS STEEL PIPE
VCP	VITRIFIED CLAY PIPE

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Date: 2024.07.09 09:46:54-04'00'

P&ID - ABBREVIATIONS

LOWER POPLAR WATER RECLAMATION FACILITY
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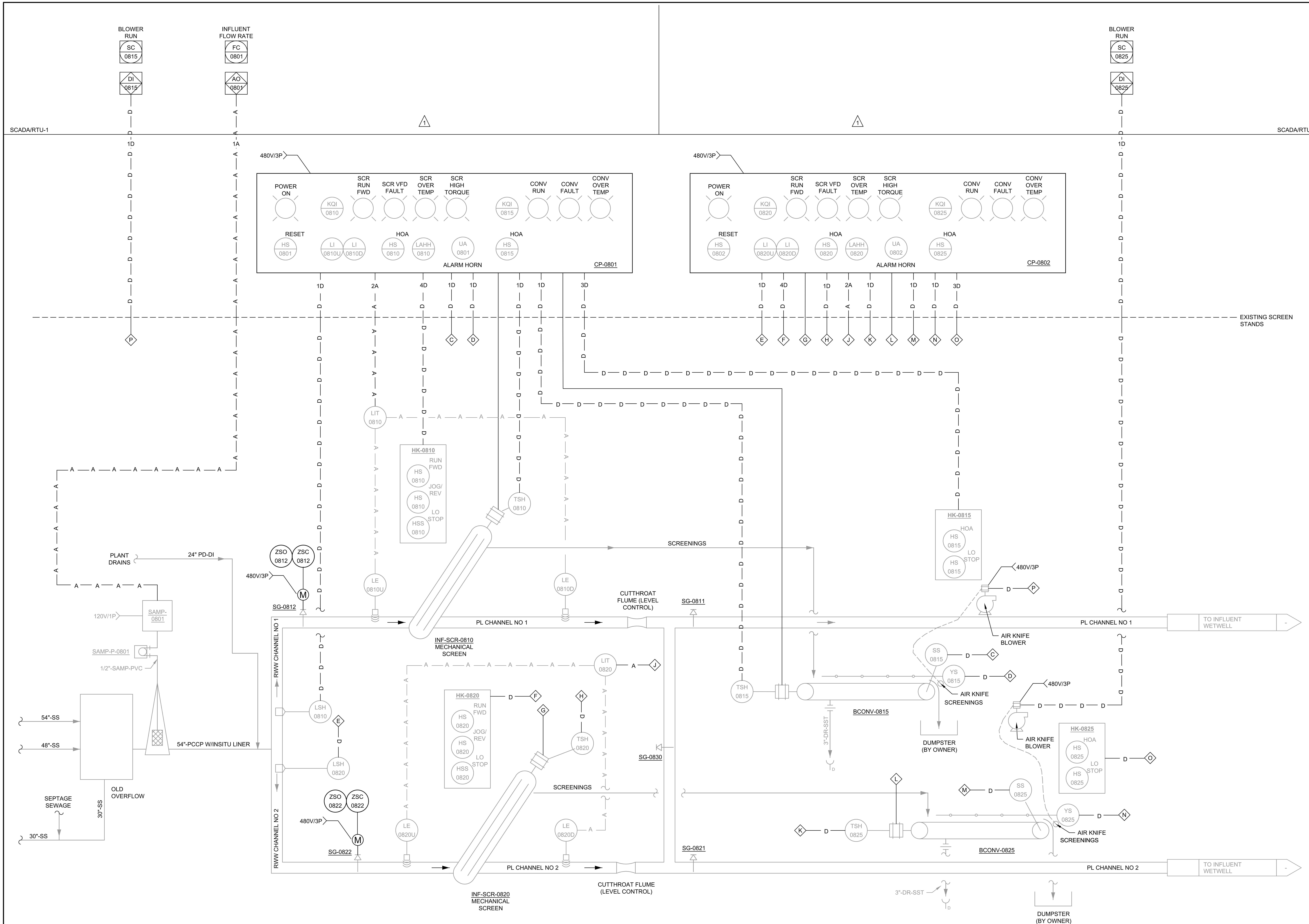
BLOWER RUN
SC 0815
DI 0815
INFLUENT FLOW RATE
FC 0801
AO 0801
BLOWER RUN
SC 0825
DI 0825
SCADA/RTU-1
SCADA/RTU-2
480V/3P
POWER ON
SCR RUN FWD
SCR VFD FAULT
SCR OVER TEMP
SCR HIGH TORQUE
CONV RUN
CONV FAULT
CONV OVER TEMP
KQI 0810
KQI 0815
RESET
HS 0801
LI 0810U
LI 0810D
HOA
HS 0810
LAHH 0810
UA 0801
HS 0815
ALARM HORN
CP-0801
KQI 0820
KQI 0825
HS 0802
LI 0820U
LI 0820D
HS 0820
LAHH 0820
UA 0802
HS 0825
CP-0802
EXISTING SCREEN STANDS
LIT 0810
HK-0810
RUN FWD
JOG/REV
LO STOP
HSS 0810
TSH 0810
SCREENINGS
PLANT DRAINS
24" PD-DI
ZSO 0812
ZSC 0812
SG-0812
LE 0810U
LE 0810D
CUTTHROAT FLUME (LEVEL CONTROL)
SG-0811
PL CHANNEL NO 1
TO INFLUENT WETWELL
120V/1P
SAMP-0801
SAMP-P-0801
1/2"-SAMP-PVC
INF-SCR-0810 MECHANICAL SCREEN
RWW CHANNEL NO 1
LIT 0820
HK-0820
HSS 0820
TSH 0820
LSH 0810
LSH 0820
54"-SS
48"-SS
54"-PCCP W/INSITU LINER
SG-0830
OLD OVERFLOW
SEPTAGE SEWAGE
30"-SS
ZSO 0822
ZSC 0822
SG-0822
LE 0820U
LE 0820D
RWW CHANNEL NO 2
PL CHANNEL NO 2
INF-SCR-0820 MECHANICAL SCREEN
CUTTHROAT FLUME (LEVEL CONTROL)
SG-0821
HK-0815
AIR KNIFE BLOWER
SS 0815
YS 0815
TSH 0815
BCONV-0815
AIR KNIFE SCREENINGS
3"-DR-SST
DUMPSTER (BY OWNER)
HK-0825
SS 0825
YS 0825
TSH 0825
BCONV-0825

BARGE DESIGN SOLUTIONS
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PHONE (678) 515-9411

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 24385 MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.25 08:36:36-04'00'

P&ID - INFLUENT SCREENS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID
1	BM	MA	08/20/2024	ADDENDUM NO. 5

04-DI801

FILE NO. 3618121

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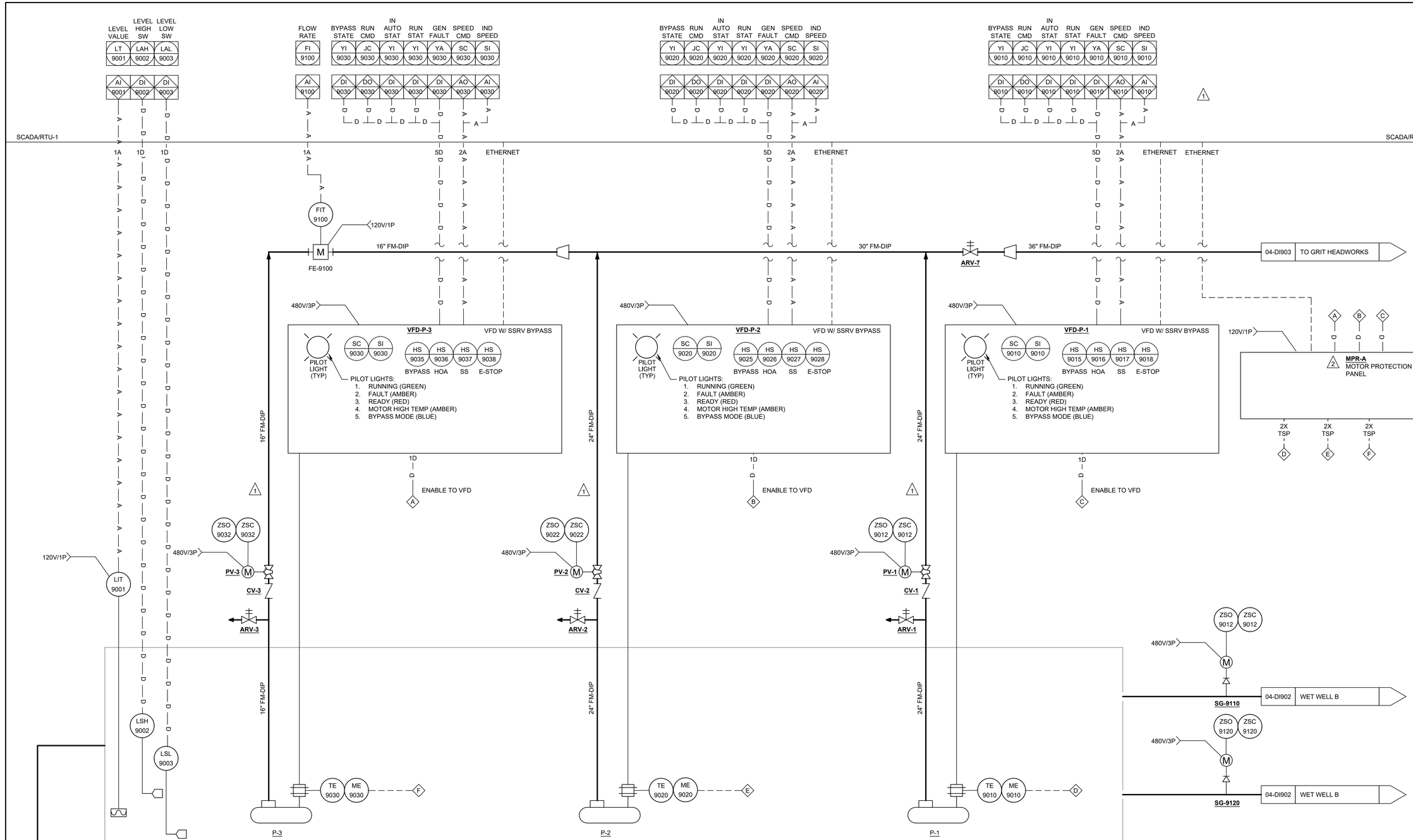
SAVED:9/24/2024
PLOTTED:9/25/2024



BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.09.18 15:42:45-04'00'

P&ID - INFLUENT PUMP STATION WET WELL A

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/01/2024	ISSUED FOR BID
1	BM	MA	08/09/2024	ADDENDUM NO. 2
2	BM	MA	08/21/2024	ADDENDUM NO. 5

04-DI901

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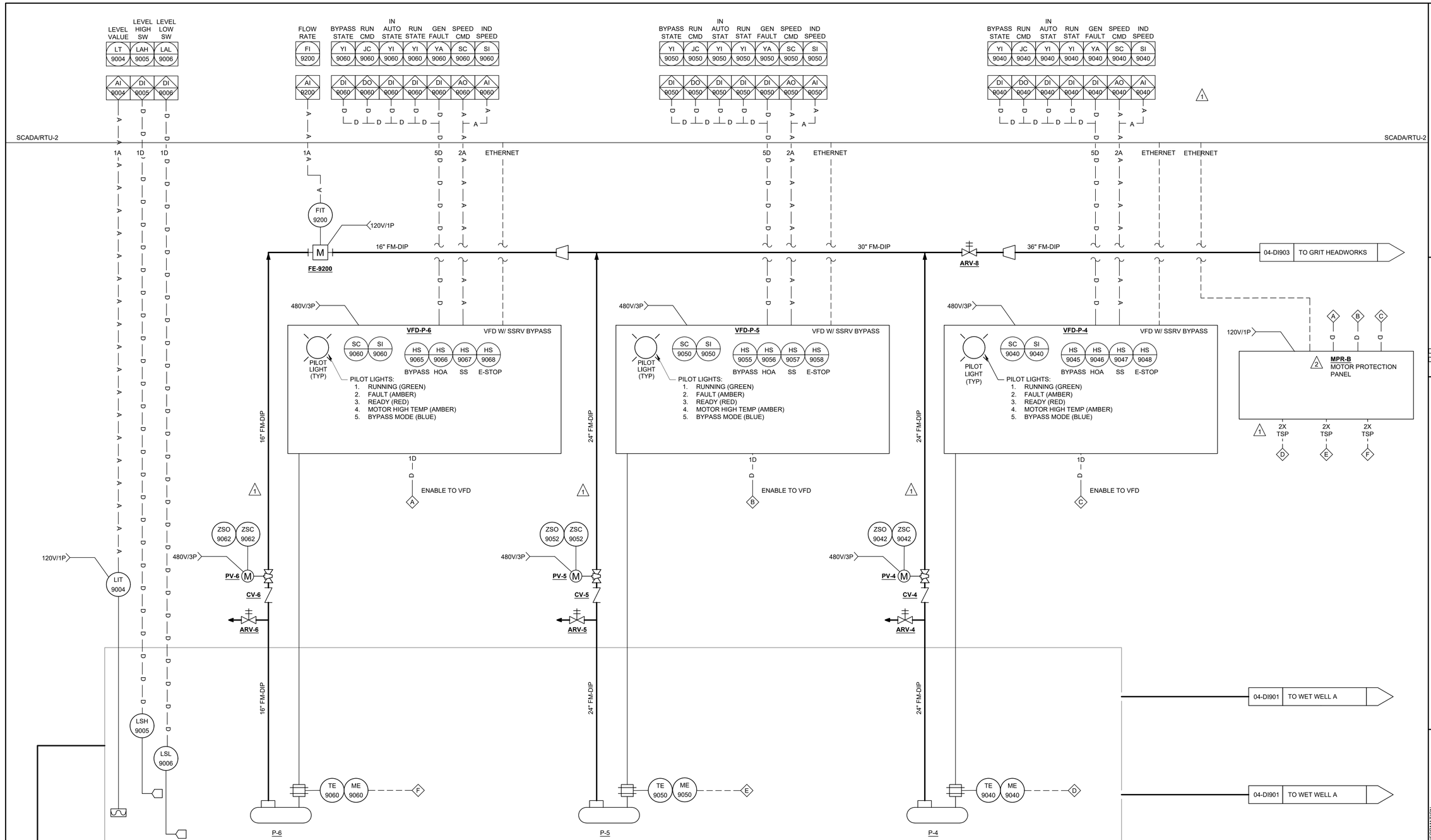

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.09.18 15:43:42-04'00'

P&ID - INFLUENT PUMP STATION WET WELL B

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/01/2024	ISSUED FOR BID
1	BM	MA	08/09/2024	ADDENDUM NO. 2
2	BM	MA	08/21/2024	ADDENDUM NO. 5

04-DI902

FILE NO. 3618121

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SAVED:9/17/2024
PLOTTED:9/18/2024

SCADA/RTU-X

SCADA/RTU-X

FLOW RATE FI 9004 — AI 9004

FLOW RATE FI 9003 — AI 9003

1

1A

1A

GRIT HEADWORKS

ZSO 9081 / ZSC 9081 — 480V/3P — M

04-DI902 FROM PUMPS P-4, P-5, P-6

36" FM-DIP

36" FM-DIP

ARV-10

30" FM-DIP

PV-9

30" FM-DIP

480V/3P — ZSO 9071 / ZSC 9071 — M — PV-7

36" FM-DIP

ZSO 9091 / ZSC 9091 — 480V/3P — M

04-DI901 FROM PUMPS P-1, P-2, P-3

36" FM-DIP

36" FM-DIP

PV-8

ARV-9

36" FM-DIP

FIT 9003 — 120V/1P — M — FE-9003

A

FIT 9004 — 120V/1P — M — FE-9004

INFLUENT FORCE MAIN METER VAULT

SUPPLIED BY OWNER 1

ZSO 9101 / ZSC 9101 — 480V/3P — M — PV-10

30" FM-DIP

ZSO 9111 / ZSC 9111 — 480V/3P — M — PV-11

36" FM-DIP

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.09.17 16:36:28-04'00'

P&ID - INFLUENT FORCE MAIN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/09/2024	ISSUED FOR BID
1	BM	MA	08/09/2024	ADDENDUM NO. 2

04-DI903

FILE NO. 3618121

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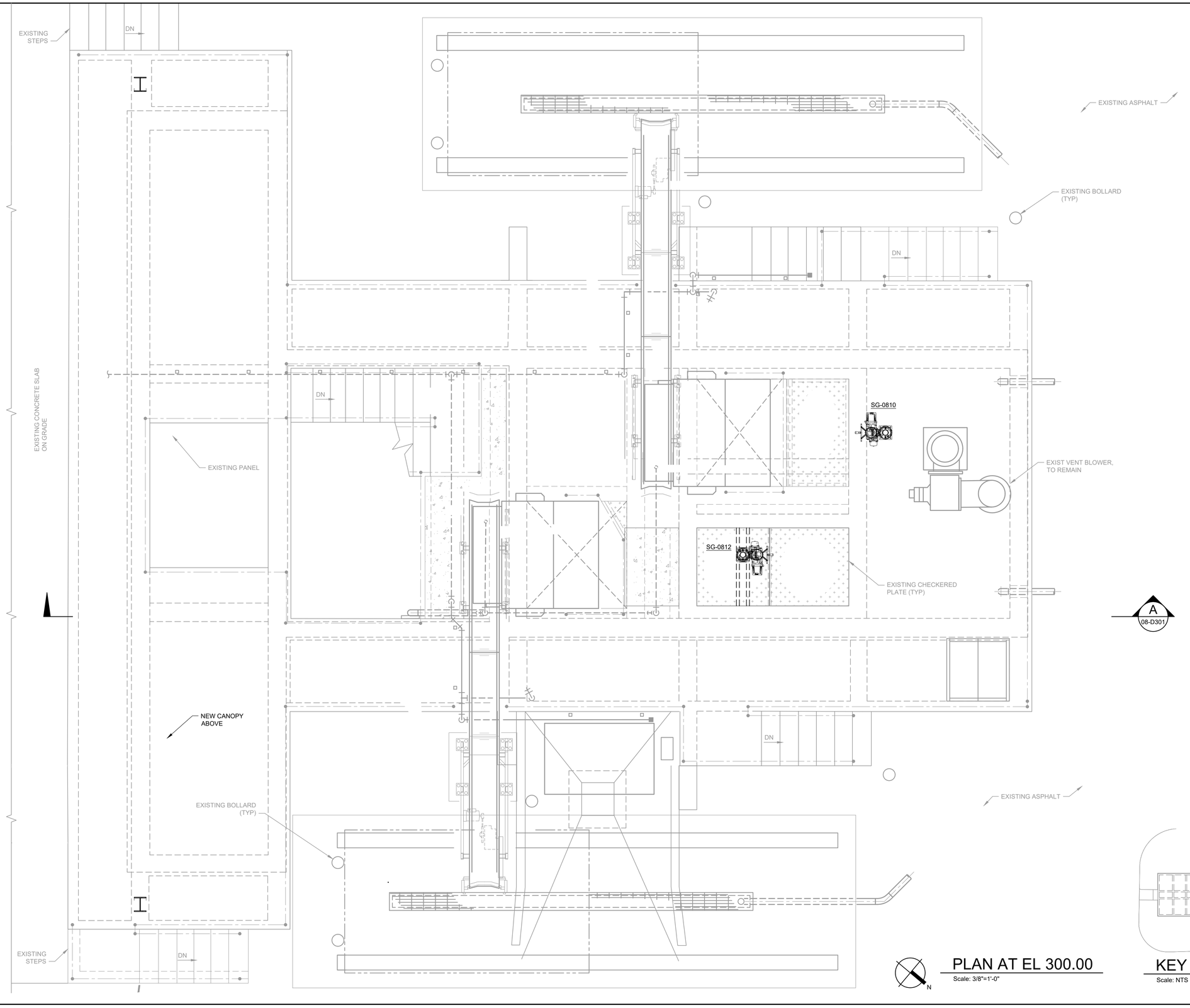
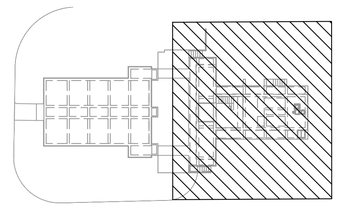


PLAN AT EL 300.00

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



KEY PLAN

Scale: NTS

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.07.09 10:59:16-04'00'

EXISTING INFLUENT SCREEN STRUCTURE - PLAN VIEW

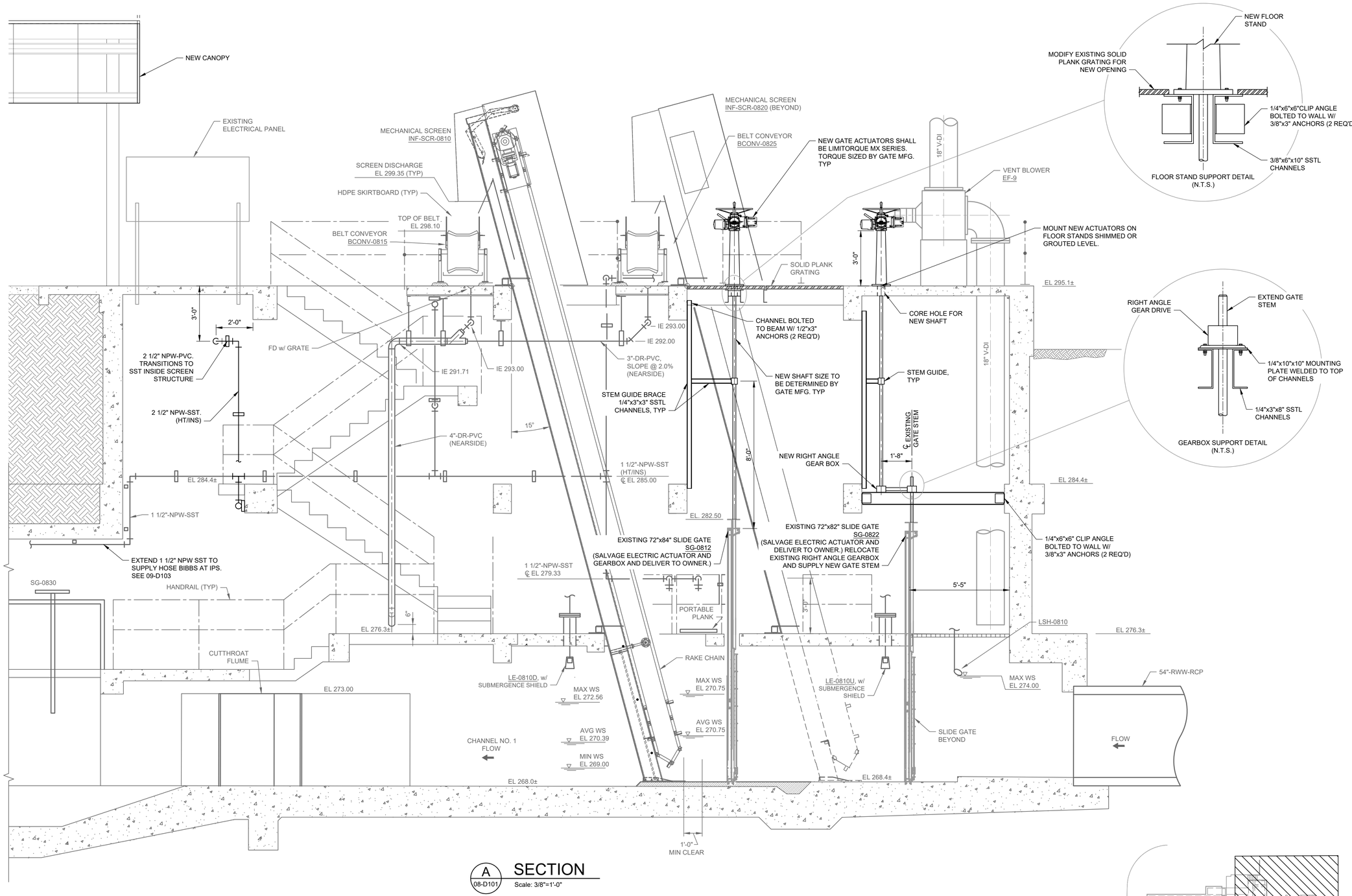
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV	DR.	CHK.	DATE	DESCRIPTION
0	BMI	MIA	07/10/2024	ISSUED FOR BID

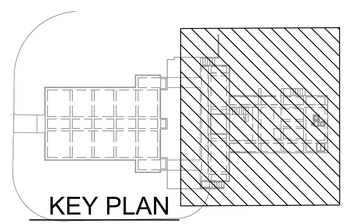
08-D101

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\36\3618\3618121\04_CAD\WATR\PLOT\3618121D_08101.dwg
SAVED:5/29/2024
PLOTTED:7/8/2024



A 08-D101 **SECTION**
Scale: 3/8"=1'-0"



KEY PLAN
Scale: NTS

BARGE DESIGN SOLUTIONS
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PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.07.09 11:01:35-04'00'

EXISTING INFLUENT SCREEN STRUCTURE - SECTIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BMI	MA	07/10/2024	ISSUED FOR BID

08-D301

FILE NO. 3618121

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FILE:F:\3803618\3618121\04_CAD\WATR\PLOT\3618121D_08301.dwg
SAVED:6/5/2024
PLOTTED:7/8/2024

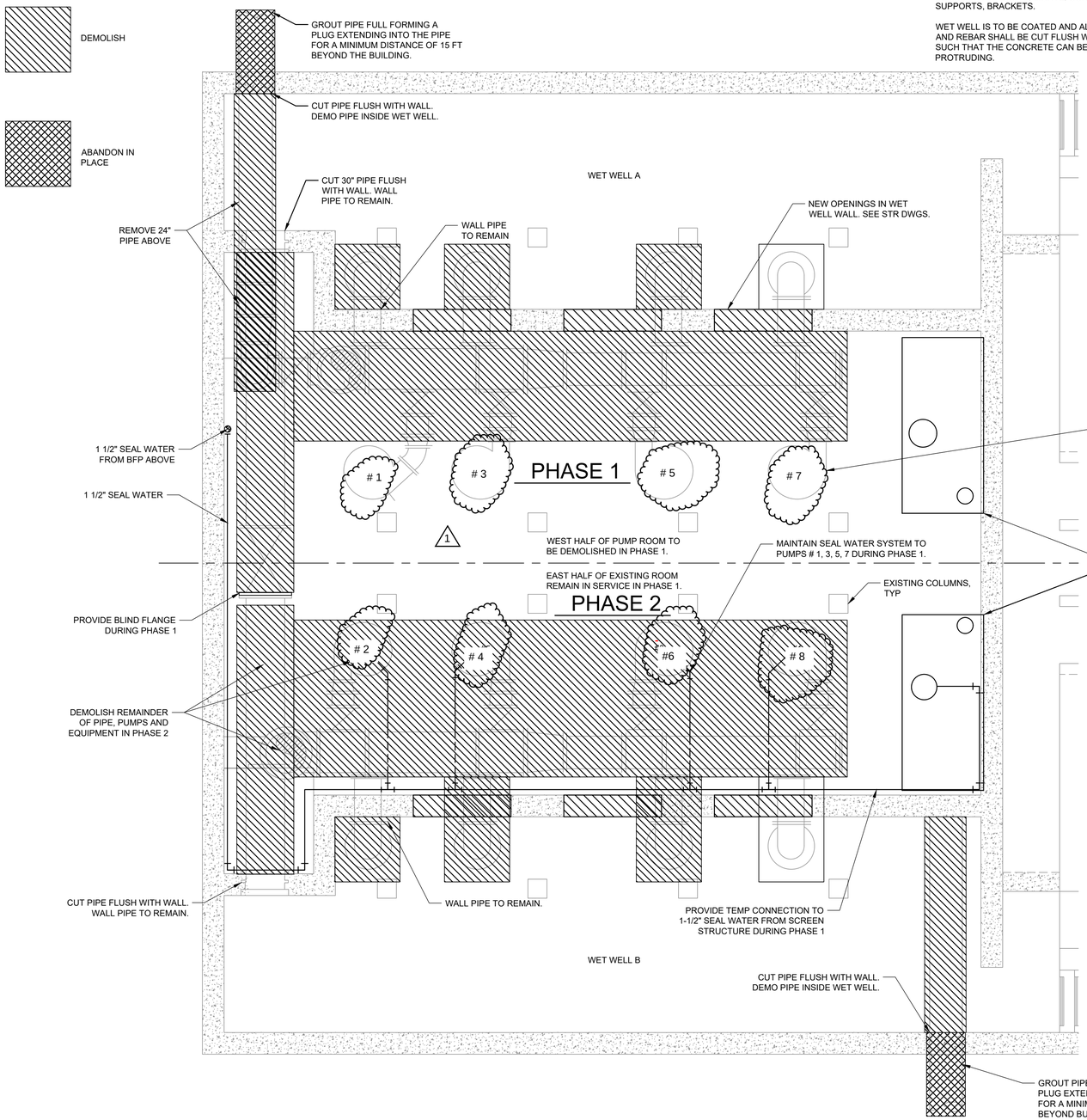
DEMOLITION NOTES:

ALL ITEMS TO BE DEMOLISHED ARE NOT SHOWN

DEMOLISH ALL PIPING AND EQUIPMENT EXCEPT FOR ITEMS SPECIFICALLY IDENTIFIED TO REMAIN OR BE REMOVED AS SALVAGE.

DEMOLISH ALL DUCTS, LIGHTS, CONDUITS, WIRES, CABLES, PANELS, SUPPORTS, BRACKETS.

WET WELL IS TO BE COATED AND ALL BOLTS, ANCHORS, BRACKETS AND REBAR SHALL BE CUT FLUSH WITH THE FACE OF THE CONCRETE SUCH THAT THE CONCRETE CAN BE COATED WITHOUT ANY METAL PROTRUDING.



1 DEMOLITION - LOWER LEVEL PLAN

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

0 1' 2' 4' 8'

N

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PHONE (678) 515-5411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

DEMOLITION - LOWER LEVEL PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	05/07/2024	ISSUED FOR BID
1	MA	MA	02/13/2025	REVISE EXISTING PUMP NUMBERING

09-DD101

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\36\3618\13618121\04_CAD\WATR\PLOT\3618121DD_09101.dwg
SAVED:5/31/2024
PLOTTED:7/8/2024

DEMOLISH

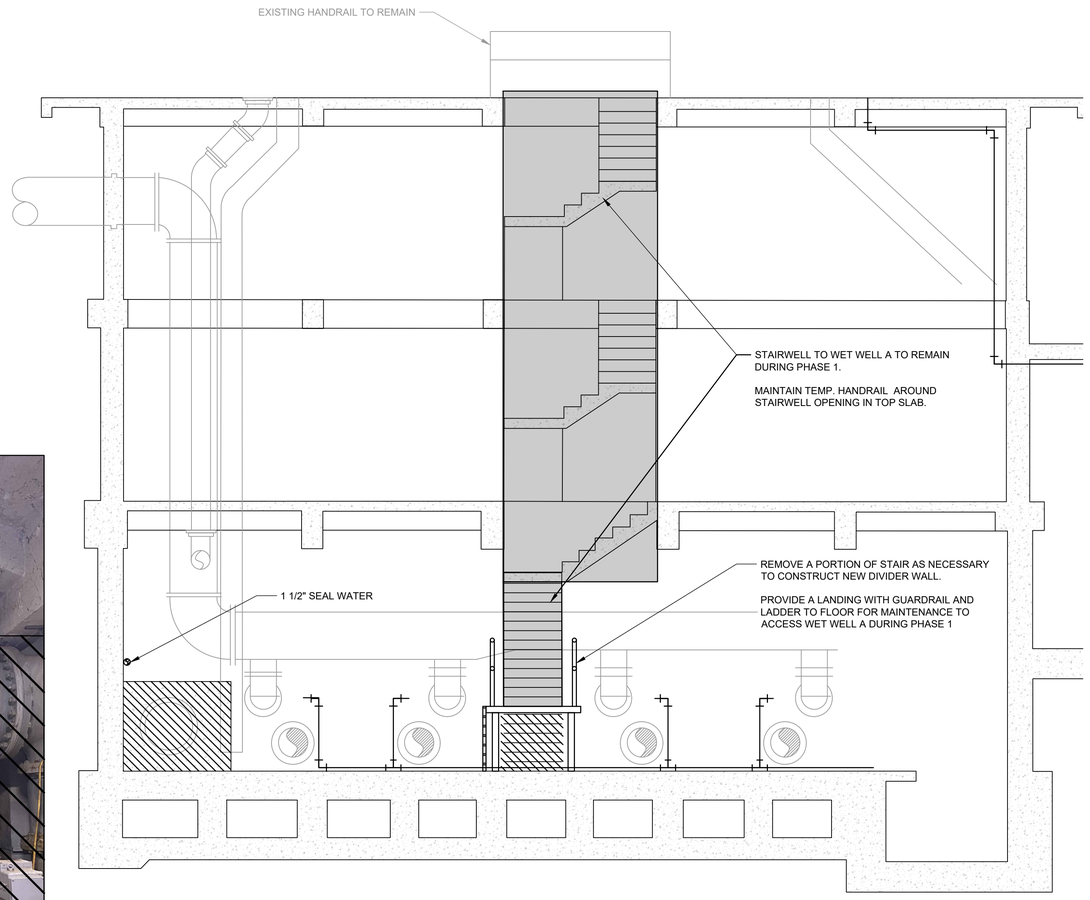
ABANDON IN PLACE

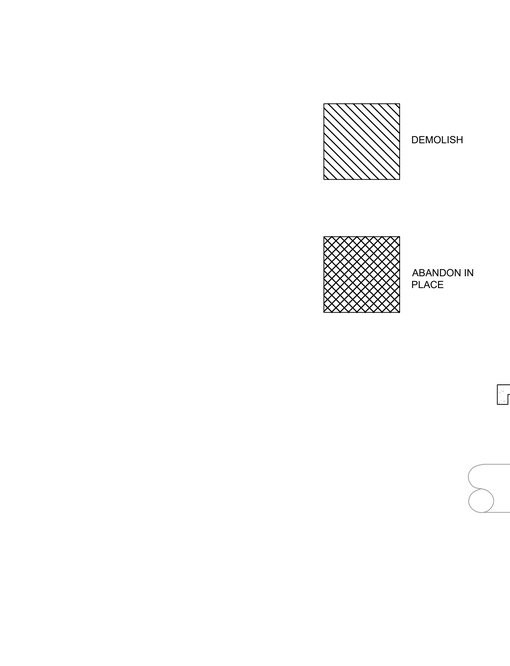
DEMOLITION NOTES:

DEMOLISH ALL PIPING AND EQUIPMENT EXCEPT ITEMS SPECIFICALLY IDENTIFIED TO REMAIN OR BE REMOVED AS SALVAGE.

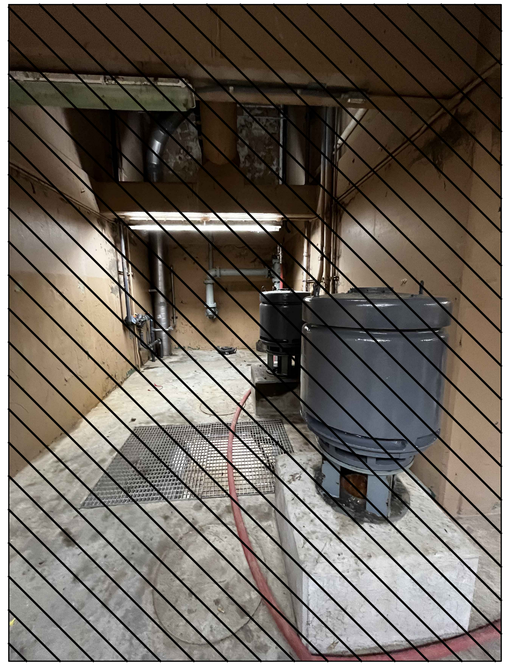
STAIRWELL PROVIDING ACCESS TO THE EAST HALF OF THE PUMP ROOM SHALL BE MAINTAINED DURING PHASE 1. STAIR FROM LOWEST LANDING WILL BE TEMPORARILY REPLACED BY A LADDER.

VENTILATION TO EAST HALF OF THE PUMP ROOM SHALL BE MAINTAINED DURING PHASE 1.





DEMOLISH ALL PIPING, VALVES, EQUIPMENT, AND EQUIPMENT SUPPORTS INCLUDING CONCRETE BASES AND THRUST BLOCKS.



1 DEMOLITION - SECTION

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

0 1' 2' 4' 8'

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:22:36 04'00'

DEMOLITION - SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

09-DD102

FILE NO. 3618121

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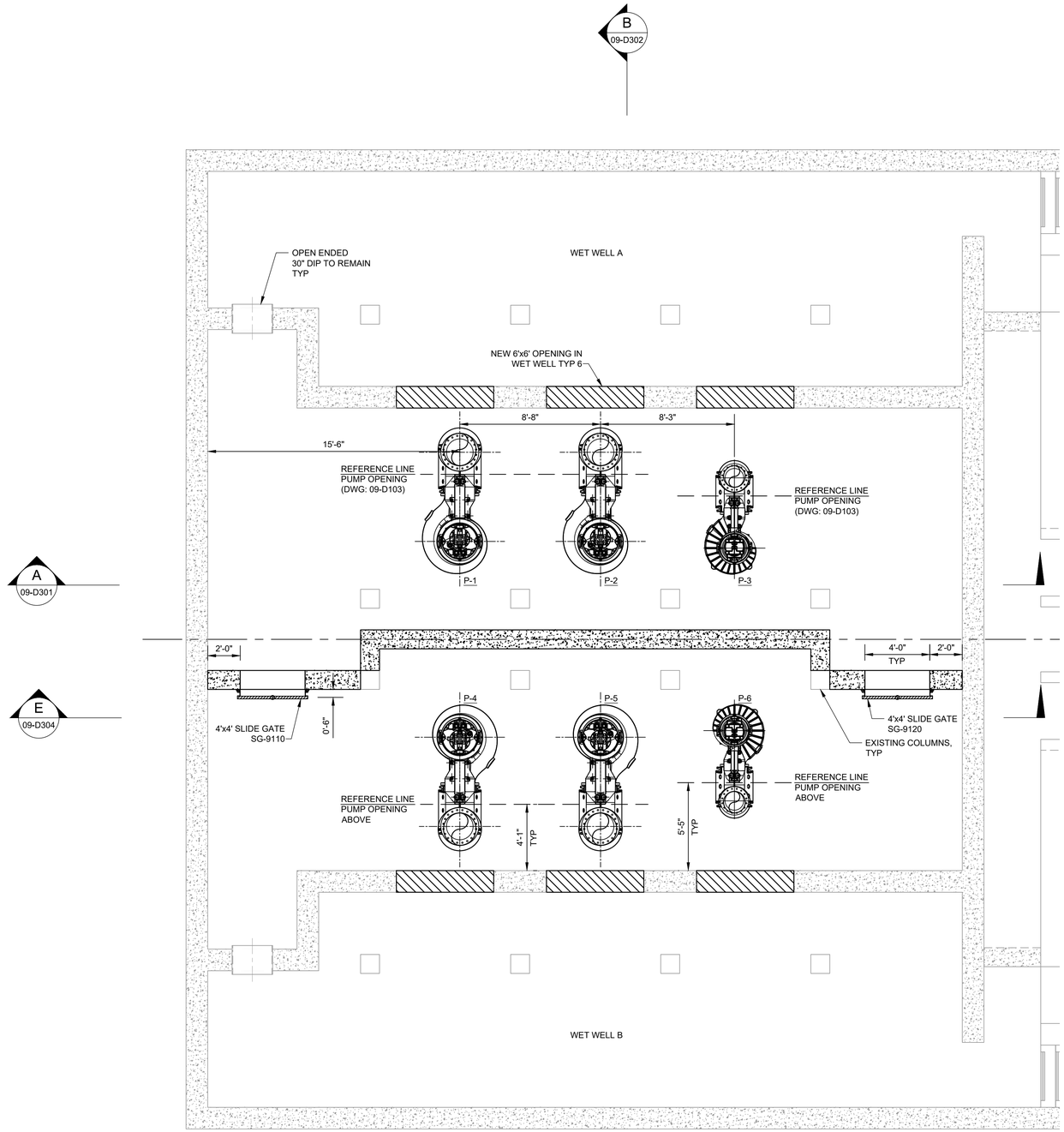
SAVED:5/31/2024
PLOTTED:7/8/2024



N

PUMP STATION - LOWER LEVEL PLAN - ELEVATION 260.6

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

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
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PHONE (678) 515-5411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:34:05-04'00'

PUMP STATION - LOWER LEVEL PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BMI	MA	07/10/2024	ISSUED FOR BID

09-D101

FILE NO. 3618121

USER:BEMATHIS
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SAVED:7/10/2024
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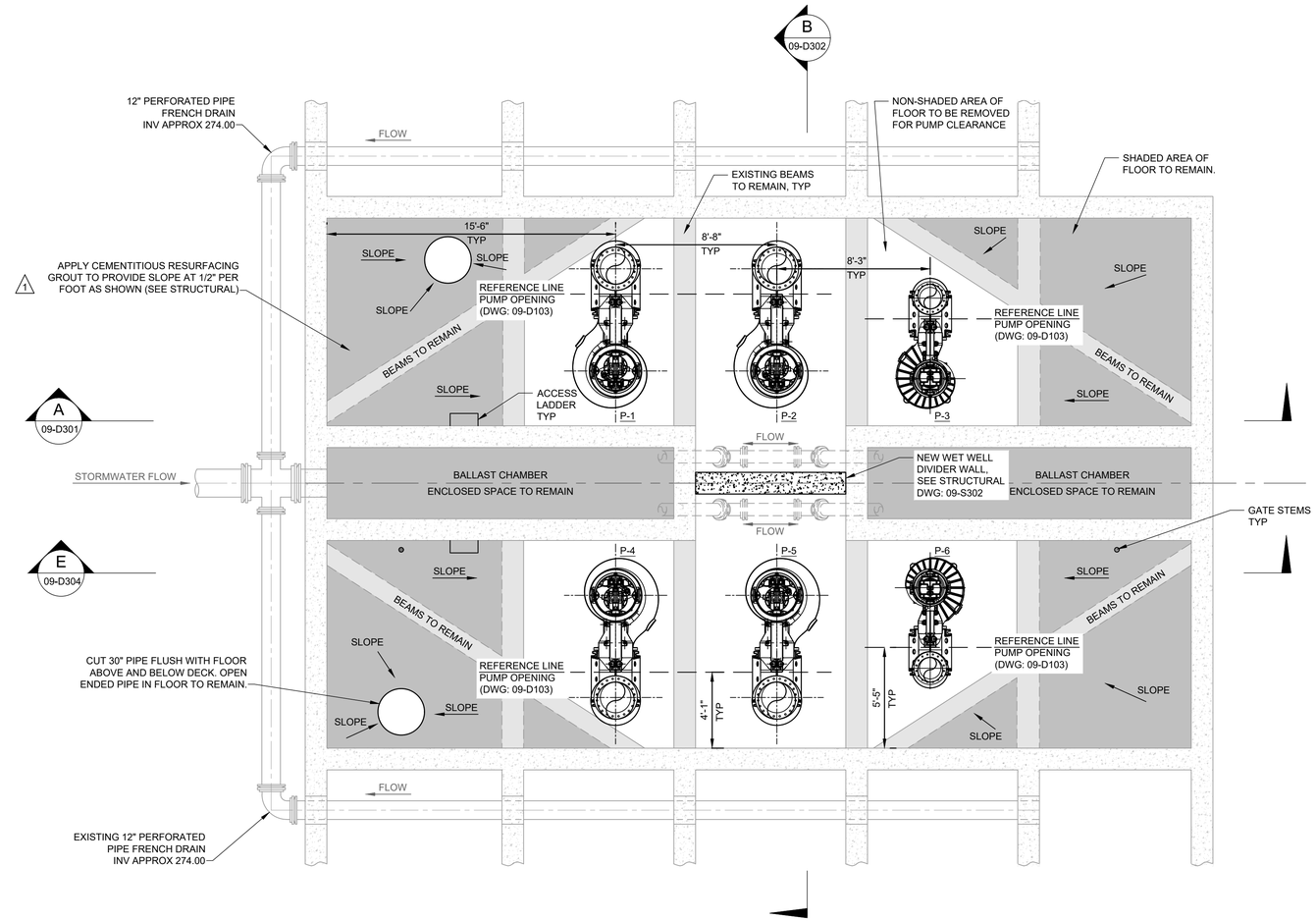

PUMP STATION - ELEVATION 273.7

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

0 1' 2' 4' 8'

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.17 16:46:41-04'00'

PUMP STATION - ELEVATION 273.7

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/31/2024	ISSUED FOR BID
1	BM	MA	09/21/2024	ADDENDUM NO. 5

09-D102

FILE NO. 3618121

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FILE:F:\3638181\3618121\04_CAD\WATR\PLOT\3618121D_09102.dwg
SAVED:9/17/2024
PLOTTED:9/17/2024

1 NOTES:

1. ARV-9 AND ARV-10 SHALL BE CONNECTED TO THE FM UTILIZING A TRIPLE STRAP DUCTILE IRON SADDLE EQUAL TO SMITH BLAIR MODEL 366. THREADED 2" BST SHALL EXTEND TO THE SURFACE WHERE 2" PV AND ARV SHALL BE MOUNTED. PROVIDE A REINFORCED CONCRETE PAD AT GRADE MEASURING 2FT SQ. x 8" THICK.

NEW CONCRETE DRIVEWAY AREA
NEW 24" CURB & GUTTER
36"x30" DI / SSTL REDUCING 90° BEND
30"x24" WYE, TYP
6" BOLLARD, TYP
4 / 99-D501
B / 09-D302
PIPE SUPPORT CONCRETE SADDLE, TYP
1 / 99-S501
PIPE SUPPORT SADDLE ADJUSTABLE PEDESTAL, TYP
6 / 99-D501
GRASS AREA
EXISTING TRANSFORMER CONCRETE SLAB
T-10
EXISTING CONCRETE SLAB
EXISTING COMMUNICATIONS ENCLOSURE CONCRETE SLAB
2 1/2" RPZ BFP INSTALLED IN INSULATED HOT BOX (NO POWER REQ'D)
ARV-7
36" DI 90° BEND
36" FM-DI
30" FM-DI / SSTL
24" FM-DI / SSTL
PV-1
PV-2
PV-3
16" FM-DI / SSTL
METER
FE-9100
3 / 99-D501
16" DI 45° BEND, TYP
1 / 99-D501
HELICAL PIER, TYP
36" DI 90° BEND
1 1/2" YARD HYDRANT
36" DI TEE TYP
PIPE SUPPORTS, TYP
1 / 99-D502
CV-1
CV-2
ARV-2
(E) EF-10
CORE THROUGH CONCRETE WALL AND TURN DOWN
2 / 99-D502
ELECTRICAL CONNECTION PANEL
2 1/2" NPW-SST
(E) EF-3
2 / 99-D501
ARV-1
4'-1" TYP
5'-5"
CV-3
PIPE SUPPORTS, TYP
6 / 99-D501
REFERENCE LINE PUMP OPENING
3'x3' ACCESS HATCH TYP
0'-6" MIN.
6'-0"
6'-10"
P-1
P-2
16" DISCHARGE TYP 2
P-3
REFERENCE LINE PUMP OPENING
ARV-3
PV-7
NEW CONCRETE
36" FM-DI
A / 09-D301
36" DI 90° BEND
PV-8
0'-6" MIN.
ELECTRIC PUMP DISCONNECT PANELS, TYP
NEW HATCH
PUMP ACCESS HATCHES (TYP 6)
GATE ACTUATOR TYP
ELECTRICAL CONNECTIONS SEE DWG: 09-E301
1 1/2" NPW-SST.
CONNECT TO EXISTING 1 1/2" NPW-SST INSIDE SCREEN STRUCTURE
EXISTING PANEL
3'-0"
SG-9110
3'-0"
P-4
P-5
24" DISCHARGE TYP 4
P-6
5'-0"
5'-6"
SG-9120
REFERENCE LINE PUMP OPENING
4'-1" TYP
5'-5"
E / 09-D304
6'-10"
8'-1"
4'-0"
36"x30" REDUCER
36" DI 45° BEND
30" FM-DI
ARV-4
24" DI / SSTL TEE, TYP 4
CV-4
CV-5
ARV-6
CV-6
16" DI / SSTL TEE, TYP 2
EXISTING CONCRETE SLAB
ELECTRICAL CONNECTION PANEL
ARV-10
36" DI 45° BEND, TYP
36"x30" DI / SSTL REDUCING 90° BEND
ARV-5
ELECTRICAL CONNECTION PANEL
30" DI 45° BEND, TYP
ARV-9
ARV-8
24" FM-DI / SSTL
PV-4
PV-5
PV-6
3 / 99-D501
FE-9200
30" FM-DI / SSTL
16" FM-DI / SSTL
1 1/2" NPW-SST
PV-9
(E) EF-11
SECTION BREAK LINE
36" DI 90° BEND
1 1/2" NPW-PVC
NEW CONCRETE, TYP
PIPE SUPPORT CONCRETE SADDLE, TYP
1 / 99-S501
30"X16" DI REDUCER, TYP
1 1/2" YARD HYDRANT
3 / 99-D502
CORE THROUGH CONCRETE WALL AND TURN DOWN
2 / 99-D502
NEW CANOPY, SEE STRUCTURAL DWG
UP
EXISTING STAIRS, TYP
FLANGE FILLERS AS REQUIRED TO ADJUST LENGTH
C / 09-D303
D / 09-D303
GATE VALVE AND VALVE BOX, TYP
EXISTING CONCRETE SLAB
CONNECT TO EXISTING 11 1/4" BEND ON EXISTING PILE CAP
PIPE SUPPORT SADDLE ADJUSTABLE PEDESTAL, TYP
6 / 99-D501
GRASS AREA
36" FM-DI
30" FM-DI

N

PUMP STATION - UPPER LEVEL PLAN

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

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-5411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER
Digitally signed by Mike Alexander
Date: 2024.09.17 16:51:22-04'00'

PUMP STATION - UPPER LEVEL PLAN
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK	DATE	DESCRIPTION
0	BM	MA	08/27/2024	ISSUED FOR BID
1	BM	MA	09/12/2024	ADDENDUM NO. 5

09-D103
FILE NO. 3618121

USER:BEMATHIS
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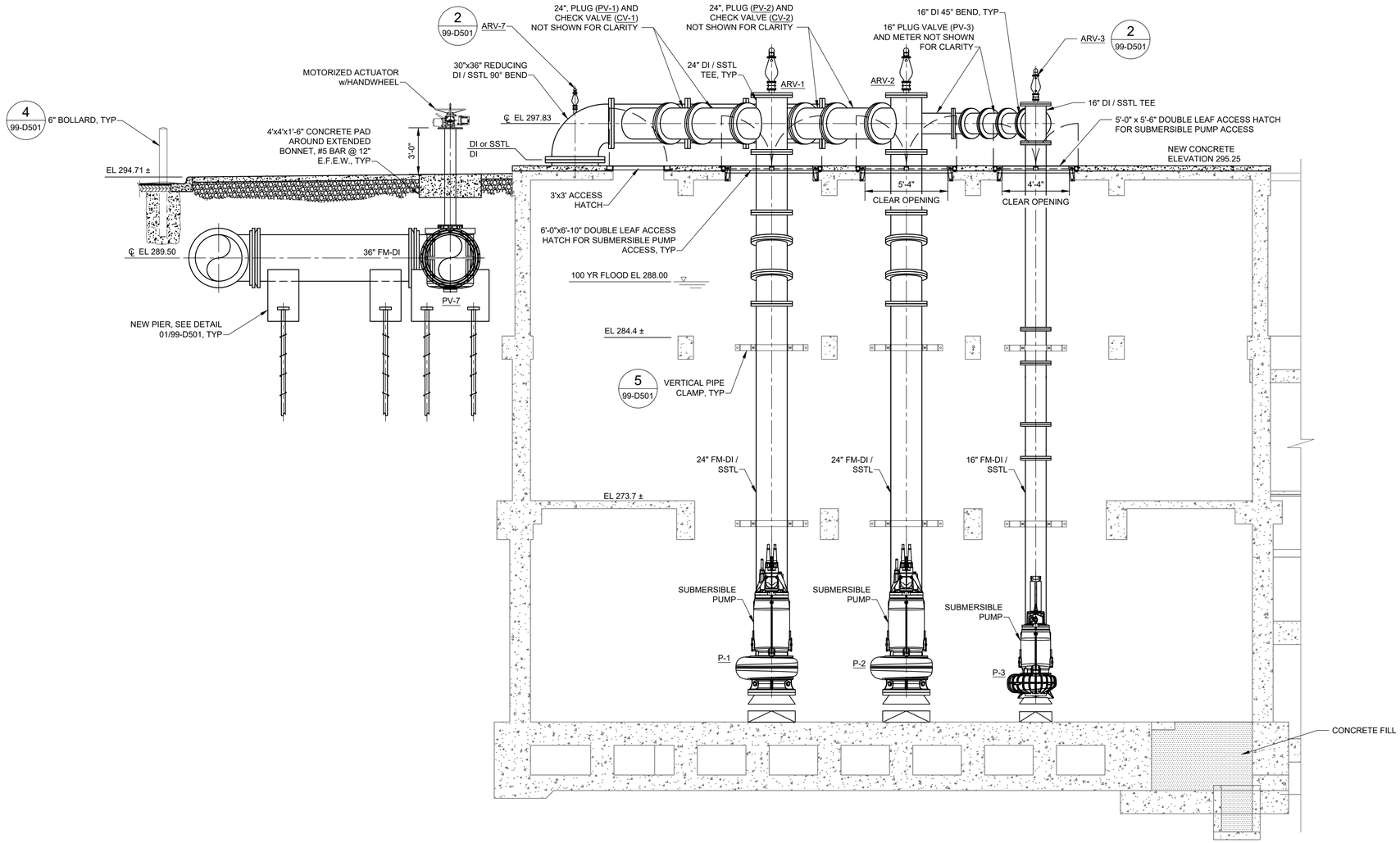
SAVED:9/17/2024
PLOTTED:9/17/2024



A
09-D103

PUMP STATION SECTION

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

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.07.09 11:17:08-04'00'

PUMP STATION SECTION

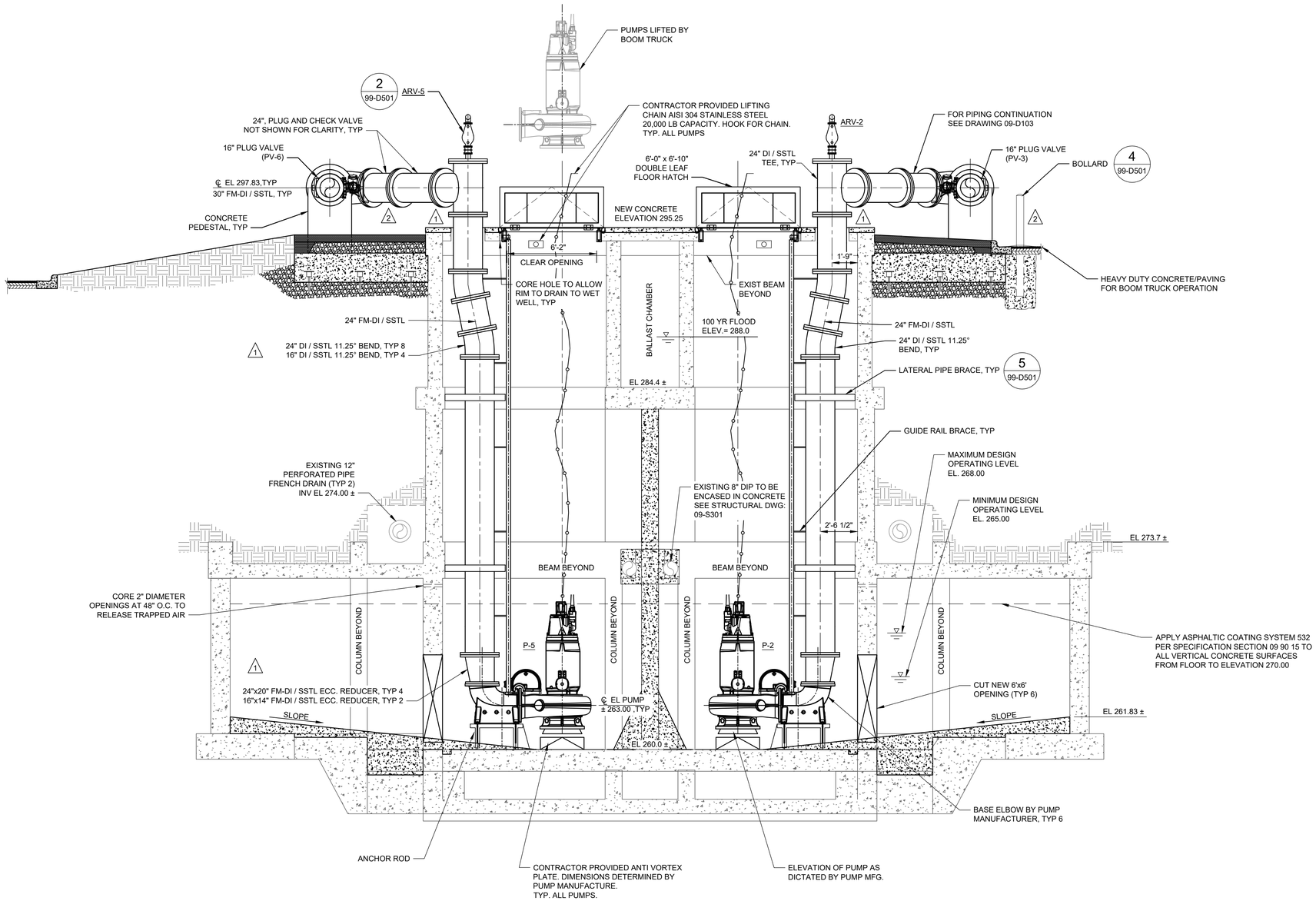
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

09-D301

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\36\3618\13\3618121\04_CAD\WATRPLOT\3618121D_09301.dwg
SAVED:5/30/2024
PLOTTED:7/9/2024



B
09-D103
PUMP STATION SECTION
Scale: 1/4"=1'-0"

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.09.17 16:54:16-04'00'

PUMP STATION SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/05/2024	ISSUED FOR BID
1	BM	MA	08/05/2024	ADDENDUM NO. 1
2	BM	MA	08/09/2024	ADDENDUM NO. 2

09-D302

FILE NO. 3618121

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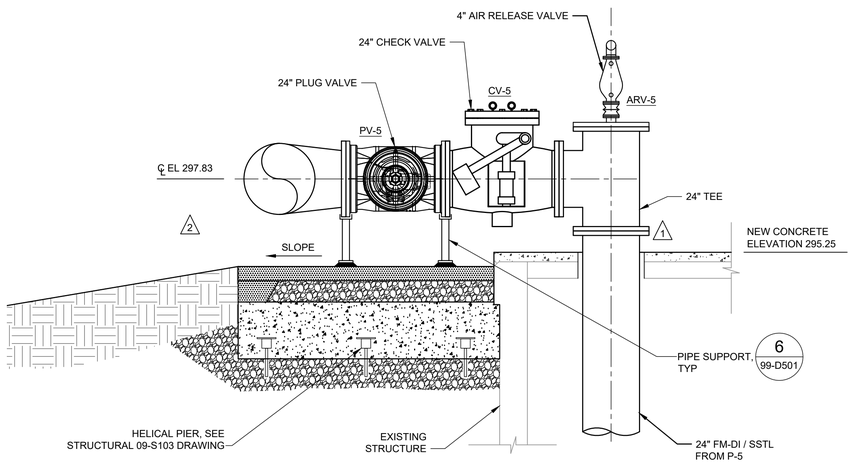
SAVED:9/17/2024
PLOTTED:9/17/2024



C 09-D103 PUMP STATION SECTION 1

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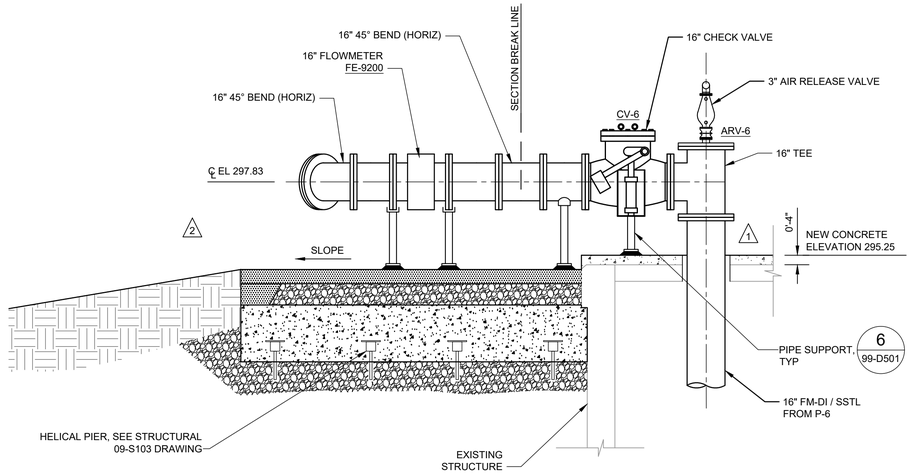

D 09-D103 PUMP STATION SECTION 1

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

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.09.17 16:56:12-04'00'

PUMP STATION SECTIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	08/07/2024	ISSUED FOR BID
1	BM	MA	09/09/2024	ADDENDUM NO. 1
2	BM	MA	09/09/2024	ADDENDUM NO. 2

09-D303

FILE NO. 3618121

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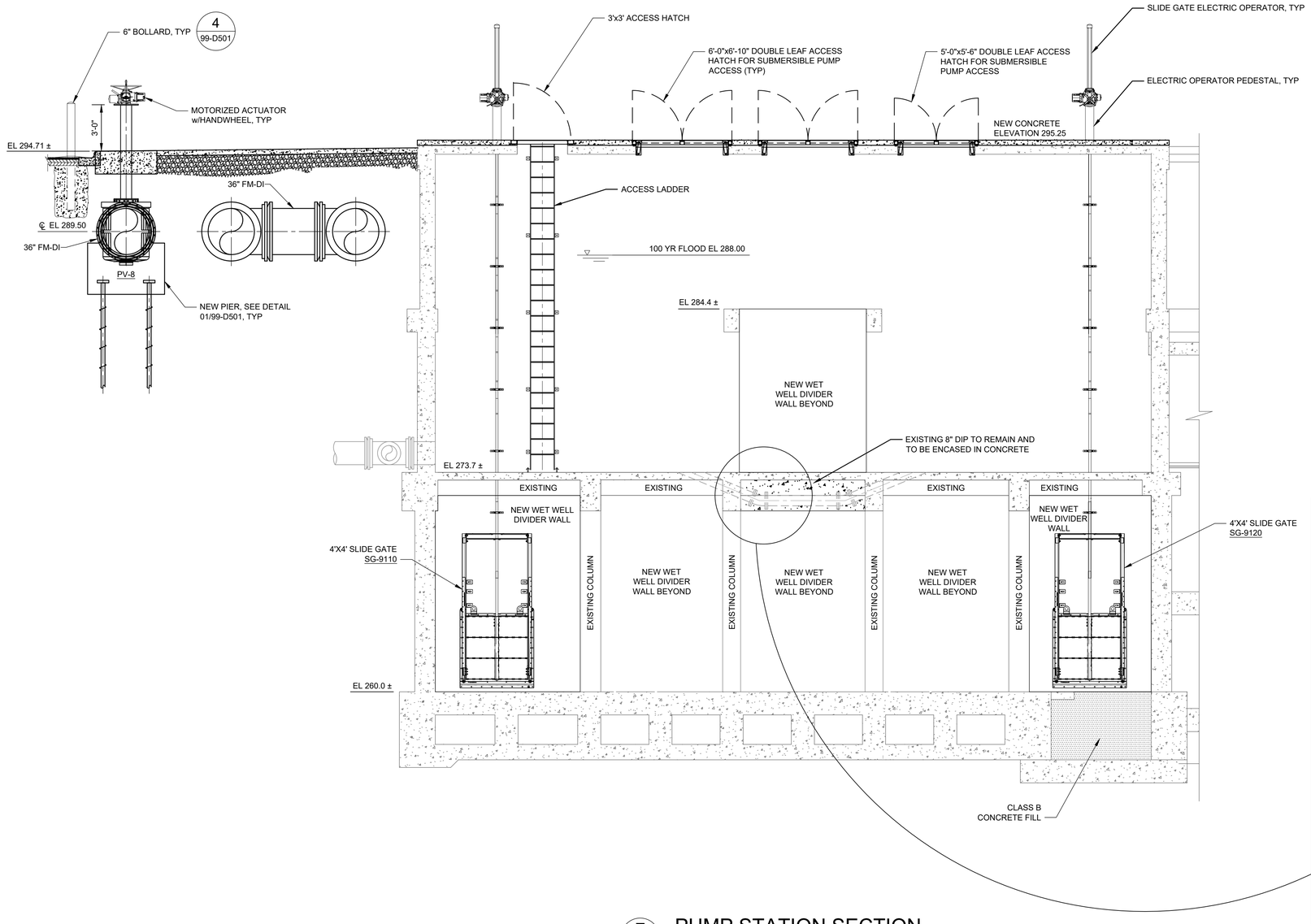
SAVED:9/17/2024
PLOTTED:9/17/2024

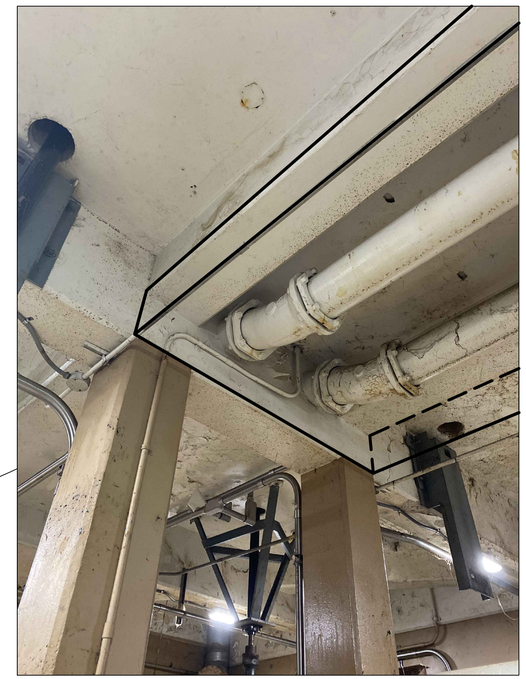


E
09-D103

PUMP STATION SECTION

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

0 1' 2' 4' 8'



TWO EXISTING DI PIPES CONNECTING BALLAST
CHAMBERS TO BE ENCASED IN CONCRETE

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

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Date: 2024.07.10 08:17:10-04'00'

PUMP STATION SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

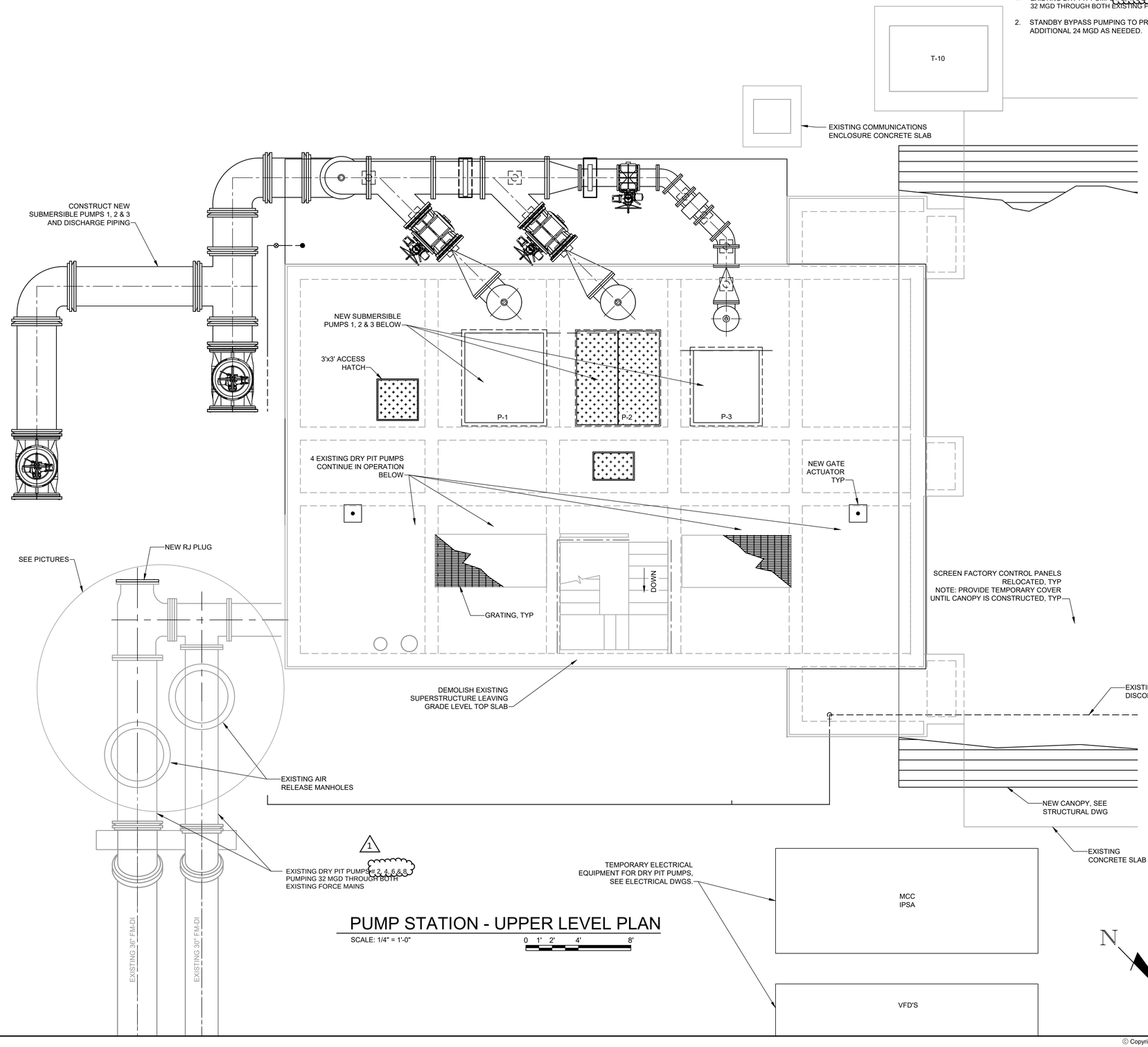
09-D304

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\365\3618\3618121\04_CAD\WATR\PLOT\3618121D_09304.dwg
SAVED:5/31/2024
PLOTTED:7/8/2024

PHASE 1A:

1. EXISTING DRY PIT PUMPS 1, 2, 4, 6 & 8 PUMPING 32 MGD THROUGH BOTH EXISTING FORCE MAINS
2. STANDBY BYPASS PUMPING TO PROVIDE AN ADDITIONAL 24 MGD AS NEEDED.



PUMP STATION - UPPER LEVEL PLAN

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

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

PUMP STATION - SEQUENCING PLAN - PHASE 1A

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR	CHK	DATE	DESCRIPTION
0	BM	MA	07/08/2024	ISSUED FOR BID
1	MA	MA	02/13/2025	REVISE EXISTING PUMP NUMBERING

09-D501

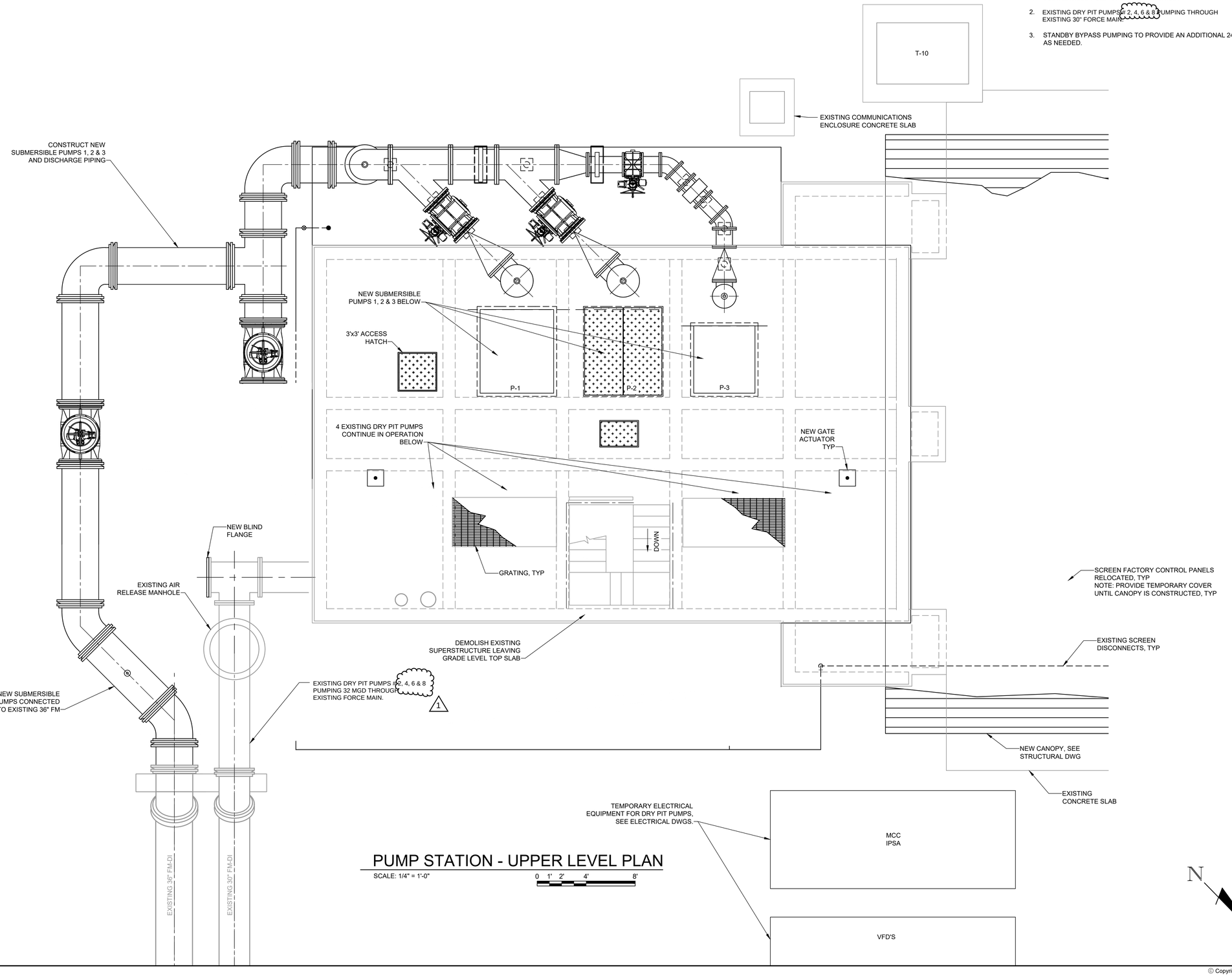
FILE NO. 3618121

USER:BEMATHIS
FILE:F:\3618\18113618121\04_CAD\WATR\PLOT\3618121D_09501.dwg
SAVED:7/8/2024
PLOTTED:7/8/2024

PHASE 1B:

1. SUBMERSIBLE PUMP 14 DAY TEST PERIOD.
2. EXISTING DRY PIT PUMPS 2, 4, 6 & 8 PUMPING THROUGH EXISTING 30" FORCE MAIN.
3. STANDBY BYPASS PUMPING TO PROVIDE AN ADDITIONAL 24 MGD AS NEEDED.

1



PUMP STATION - UPPER LEVEL PLAN

SCALE: 1/4" = 1'-0" 0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-5411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

PUMP STATION - SEQUENCING PLAN - PHASE 1B

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

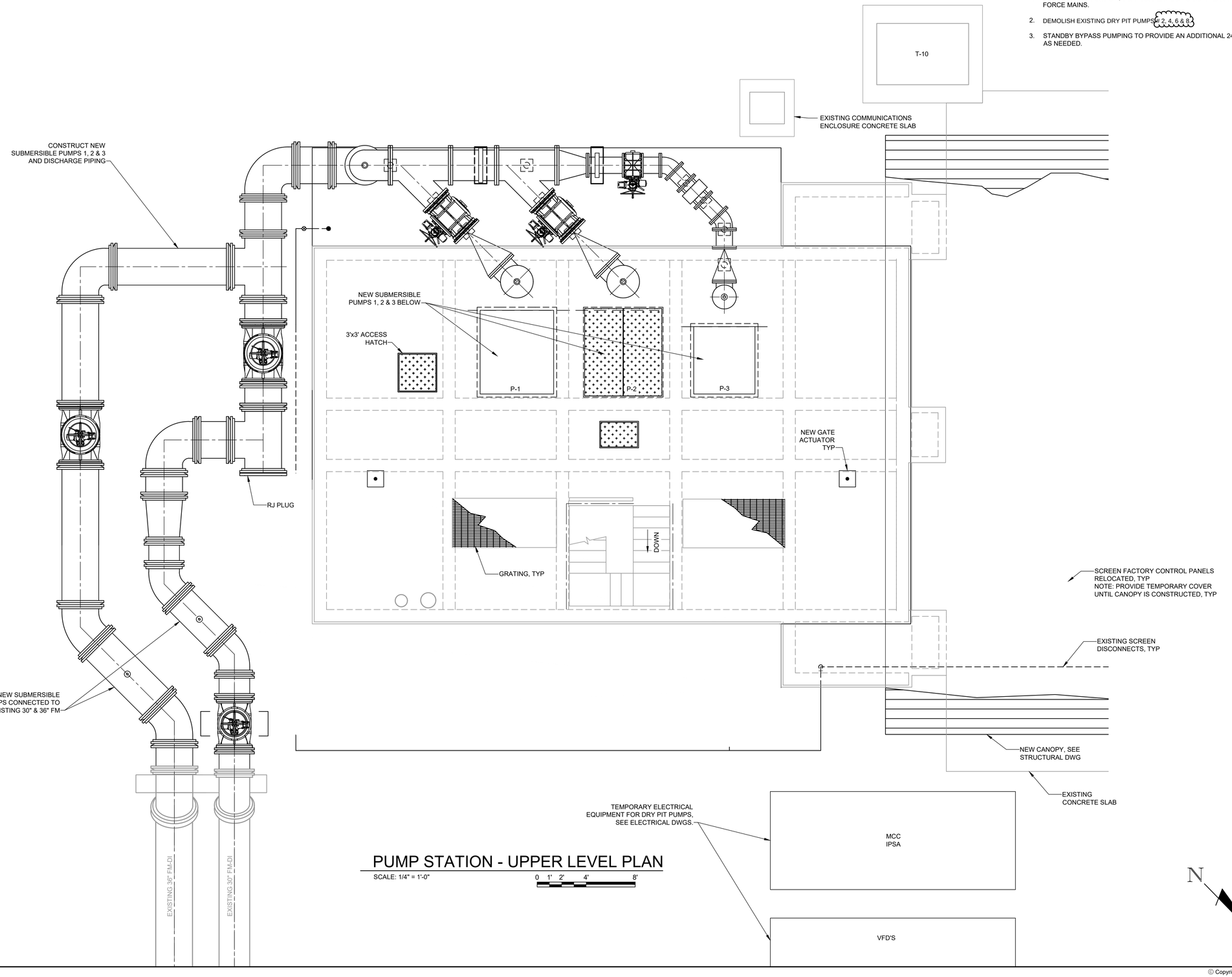
REV.	DR.	CHK.	DATE	REVISION INFORMATION DESCRIPTION
0	MA	MA	07/08/2024	ISSUED FOR BID
1	MA	MA	02/13/2025	REVISE EXISTING PUMP NUMBERING

09-D502

FILE NO. 3618121

PHASE 2A:

1. SUBMERSIBLE PUMPS 1, 2 & 3 CONNECTED TO BOTH EXISTING FORCE MAINS.
2. DEMOLISH EXISTING DRY PIT PUMPS 2, 4, 6 & 8. 1
3. STANDBY BYPASS PUMPING TO PROVIDE AN ADDITIONAL 24 MGD AS NEEDED.



PUMP STATION - UPPER LEVEL PLAN

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

0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

PUMP STATION - SEQUENCING PLAN - PHASE 2A

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR	CHK	DATE	DESCRIPTION
0	MA	MA	07/01/2024	ISSUED FOR BID
1	MA	MA	02/13/2025	REVISE EXISTING PUMP NUMBERING

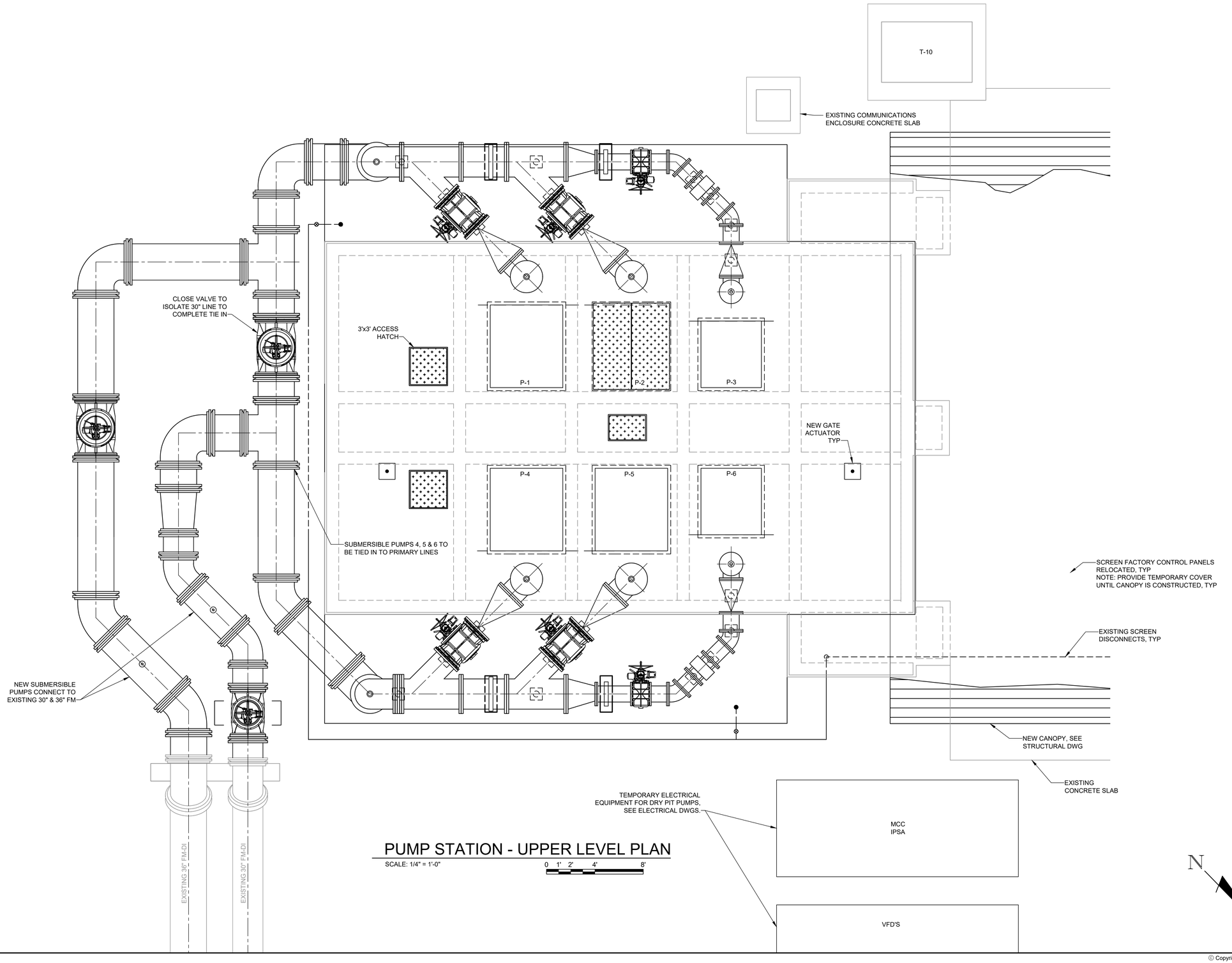
09-D503

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\36\38181\36181211\04_CAD\WATR\PLOT\3618121D_09503.dwg
SAVED:5/30/2024
PLOTTED:7/8/2024

PHASE 2B:

1. INSTALL AND CONNECT SUBMERSIBLE PUMPS 4, 5 & 6.



PUMP STATION - UPPER LEVEL PLAN

SCALE: 1/4" = 1'-0" 0 1' 2' 4' 8'

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:20:41-04'00'

PUMP STATION - SEQUENCING PLAN - PHASE 2B

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE	REVISION INFORMATION DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

09-D504

FILE NO. 3618121

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SAVED:7/8/2024
PLOTTED:7/8/2024

CODES AND STANDARDS

THE FOLLOWING CODES AND STANDARDS HAVE BEEN USED AS THE BASIS FOR DESIGN AND/OR SHALL BE UTILIZED BY THE CONTRACTOR TO ESTABLISH MINIMUM LEVELS OF QUALITY AND CONSTRUCTION TECHNIQUES.

1. GENERAL
   A. INTERNATIONAL BUILDING CODE (IBC 2018) WITH GEORGIA STATE AMENDMENTS.
   B. AMERICAN SOCIETY OF CIVIL ENGINEERS, "MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES," (ASCE 7-16).
2. CONCRETE
   A. AMERICAN CONCRETE INSTITUTE, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318-14).
   B. AMERICAN CONCRETE INSTITUTE, "SPECIFICATIONS FOR STRUCTURAL CONCRETE," (ACI 301-16).
   C. AMERICAN CONCRETE INSTITUTE, "GUIDE TO CONCRETE FLOOR AND SLAB CONSTRUCTION" (ACI 302.1R-15).
   D. AMERICAN CONCRETE INSTITUTE, "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES" (ACI 350-06).
3. STRUCTURAL STEEL
   A. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "STEEL CONSTRUCTION MANUAL," FIFTEENTH EDITION.
   B. AMERICAN INSTITUTE OF STEEL CONSTRUCTION, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS," (ANSI/AISC 360-16).
   C. AMERICAN WELDING SOCIETY, "STRUCTURAL WELDING CODE-STEEL" (AWS D1.1-2018).

DESIGN CRITERIA

THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADS.

1. DEAD LOADS: ACTUAL WEIGHTS OF BUILDING MATERIALS, STRUCTURAL COMPONENTS, AND EQUIPMENT.
   A. ROOF DEAD LOADS (PEMB CANOPY)
      1. PEMB SUPERSTRUCTURE — ACTUAL
      2. MPE UTILITIES / COLLATERAL — 8 PSF
   B. PUMP STATION SLAB LOAD
      1. EXISTING — CONCRETE SELF-WEIGHT
      2. NEW 4" LW TOPPING — 32 PSF
2. LIVE LOADS
   A. ROOF LIVE LOADS (PEMB CANOPY) — 20 PSF (REDUCIBLE)
   B. FLOOR LIVE LOADS
      1. PUMP STATION SLAB LOAD (ALL LEVELS) — 60 PSF
   C. MISCELLANEOUS LIVE LOADS
      1. GUARDRAILS/HANDRAILS
         a. 50 PLF FOR AREAS W/OCCUPANT LOAD GREATER THAN OR EQUAL TO 50.
         b. OR 20 PLF FOR AREAS W/OCCUPANT LOAD LESS THAN 50.
         c. OR 200 LB CONCENTRATED LOAD APPLIED IN ANY DIRECTION AT ANY POINT.
      2. LADDERS (FIXED): 300 LB CONCENTRATED LOAD FOR EVERY 10 FT OF HEIGHT.
3. SNOW LOADS
   A. GROUND SNOW LOAD (P_g) — 10 PSF
   B. THERMAL FACTOR (Ct) — 1.2
   C. EXPOSURE FACTOR (Ce) — 0.9
   D. IMPORTANCE FACTOR (Is) — 1.1
   E. SLOPE FACTOR (Cs) — 1.0
   F. BALANCED SNOW LOAD — 8.3 PSF
   G. RAIN-ON-SNOW SURCHARGE — 0.0 PSF
   H. DESIGN UNIFORM SNOW LOAD (Pd) — 11.0 PSF
4. WIND LOADS
   A. BUILDING
      1. ULTIMATE DESIGN WIND SPEED (V_{ult}) — 120 MPH
      2. ALLOWABLE STRESS DESIGN WIND SPEED (V_{asd}) — 93 MPH
      3. RISK CATEGORY — III
      4. EXPOSURE CATEGORY — C
      5. INTERNAL PRESSURE COEFF. (GC_{pi}) — +/- 0.18
5. SEISMIC LOADS
   A. BUILDING
      1. RISK CATEGORY — III
      2. SEISMIC IMPORTANCE FACTOR (I_e) — 1.25
      3. 0.2 SEC MAPPED SPECTRAL ACCELERATION (S_S) — 0.185
      4. 1.0 SEC MAPPED SPECTRAL ACCELERATION (S_1) — 0.077
      5. SITE CLASS — E
      6. 0.2 SEC DESIGN SPECTRAL ACCELERATION (S_{DS}) — 0.297
      7. 1.0 SEC DESIGN SPECTRAL ACCELERATION (S_{D1}) — 0.216
      8. SEISMIC DESIGN CATEGORY — D
      9. BASIC SEISMIC FORCE RESISTING SYSTEM — INTERMEDIATE STEEL MOMENT FRAMES (CANOPY)
      10. DESIGN BASE SHEAR — 0.01xW
      11. SEISMIC RESPONSE COEFFICIENT (C_s) — 0.01
      12. RESPONSE MODIFICATION COEFFICIENT (R) — 4.5
      13. ANALYSIS PROCEDURE USED — EQUIVALENT LATERAL FORCE PROCEDURE
6. RAIN LOADS
   A. RAINFALL INTENSITY RATE (100-YEAR) — 3.9 IN/HR

FOUNDATIONS

1. DEEP FOUNDATION AND SPECIALTY FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS REPORTED IN THE SITE SPECIFIC GEOTECHNICAL EXPLORATION REPORT PREPARED BY TERRACON, DATED OCTOVER 4, 2023. THE CONTRACTOR SHALL OBTAIN A COPY OF THE REPORT FOR REVIEW AND REFERENCE.

2. PER THE GEOTECHNICAL REPORT, ESTIMATED HELICAL ANCHOR DEPTH ASSUMED TO BE 25 FEET BELOW GRADE. GROUT FILLED PULL-DOWN PILES MAY BE REQUIRED FOR THE PIPE VALVE SUPPORT FOUNDATIONS DIRECTLY ADJACENT TO THE EXISTING PUMP STATION (15 FEET MAX DEPTH BELOW GRADE). SEE DETAIL 5/09-S501. FINAL ANCHOR LENGTHS TO BE DETERMINED BY THE HELICAL ANCHOR INSTALLER'S ENGINEER OF RECORD.

3. A MINIMUM OF SIX (6) COMPRESSION LOAD TESTS SHALL BE CONDUCTED PER ASTM D1143 SPECIFICATIONS. CONTRACTOR TO PROVIDE A LOAD TEST PLAN PRIOR TO CONSTRUCTION FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD. TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER OF RECORD.

4. CONTRACTOR SHALL KEEP ALL FREE STANDING WATER OUT OF EXCAVATION. CONTRACTOR SHALL PROVIDE DEWATERING MEASURES AS NECESSARY PRIOR TO PLACING CONCRETE.

5. EXISTING SOIL WHICH IS DEEMED NON-USABLE BY THE GEOTECHNICAL ENGINEER DUE TO FAILURE OF THE CONTRACTOR TO PROMPTLY DE-WATER THE SITE SHALL BE REMOVED AND REPLACED WITH SUITABLE FILL AT THE CONTRACTOR'S EXPENSE.
6. DESIGN OF TEMPORARY AND PERMANENT SHORING FOR EXCAVATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

7. FOR WALLS OR GRADE WALLS HAVING FILL ON EACH SIDE, PROCEED WITH BACKFILLING OPERATIONS SIMULTANEOUSLY IN UNIFORM LIFTS. DIFFERENTIAL ELEVATION OF TOP OF LIFTS BETWEEN EACH SIDE SHALL NOT EXCEED 18 INCHES.

CONCRETE

1. MINIMUM 28 DAY CONCRETE COMPRESSIVE STRENGTH SHALL BE AS FOLLOWS:
   A. MAT FOUNDATIONS — 4,500 PSI
   B. PIPE SUPPORTS — 4,500 PSI
   C. ELECTRICAL ROOM FLOOR SLABS — 4,500 PSI
   D. PUMPHOUSE TOPPING SLAB & WALLS — 4,500 PSI
2. CONCRETE SHALL BE PROPORTIONED, BATCHED, MIXED, PLACED, CONSOLIDATED, AND CURED IN ACCORDANCE WITH ACI 301, 304, 308, 309 AND 318.
3. ALL CONCRETE EXPOSED TO WEATHER SHALL BE AIR ENTRAINED.
4. PUMPHOUSE TOPPING SLAB SHALL MEET THE FOLLOWING SPECIFICATIONS:
   A. TYPE K CEMENT
   B. FORTA MACRO SYNTHETHIC FIBERS AT A DOSAGE RATE OF 7.5 POUNDS PER CUBIC YARD. COORDINATE WITH FIBER MANUFACTUER PRIOR TO PLACEMENT OF CONCRETE
5. WHERE STRIP/GRADE FOOTINGS OR WALLS INTERSECT COLUMN FOUNDATIONS, LONGITUDINAL REINFORCEMENT SHALL BE CONTINUOUS THROUGH THE COLUMN FOUNDATION.
6. UNLESS OTHERWISE SHOWN, THE CONCRETE CLEAR COVER AT ALL REINFORCING STEEL SHALL BE:
   A. CONCRETE CAST AGAINST EARTH — 3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER — 2"
   C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER — 2"
7. ALL CONCRETE SHALL BE MECHANICALLY VIBRATED IN ACCORDANCE WITH ACI 304 AND ACI 309.
8. PROVIDE 3/4"x3/4"x 45 DEGREE CHAMFERED CORNERS AT ALL EXPOSED CONCRETE CORNERS UNO.

SLAB ON GRADE

1. THE GEOTECHNICAL ENGINEER SHALL REVIEW THE AGGREGATE BASE AND VERIFY A MINIMUM MODULUS OF SUBGRADE REACTION OF 100 PCI HAS BEEN ACHIEVED.
2. FLOOR SLABS TO BE SUPPORTED BY A MINIMUM OF 12 INCHES OF APPROVED ON-SITE OR IMPORTED SOILS PLACED AND COMPACTED AS SPECIFIED IN THE GEOTECHNICAL EXPLORATION REPORT.
3. PROVIDE A 6" COMPACTED GRANULAR SUB-BASE ON TOP OF COMPACTED FILL.
4. EXCAVATED / STRIPPED AREAS SHALL BE PROOF-ROLLED WITH APPROPRIATE EQUIPMENT AS APPROVED BY THE GEOTECHNICAL ENGINEER. SOFT AREAS SHALL BE REMOVED AND REPLACED WITH APPROVED BACKFILL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
5. SAWED CONTROL JOINTS SHALL BE CUT AS SOON AS SLAB CAN BE WALKED ON, BUT STARTED NO LATER THAN 8 HOURS AFTER POURING. CONTROL JOINTS SHALL BE COMPLETED NO LATER THAN 16 HOURS AFTER POURING. THESE TIME LIMITS SHALL APPLY REGARDLESS OF THE TIME OF DAY. AN EARLY ENTRY DRY CUT SAW SUCH AS THE SOFF-CUT SYSTEM SHALL BE USED.
6. PROVIDE ADDITIONAL REINFORCING IN TOP FACE OF SLAB AT ALL RE-ENTRANT CORNERS AND DOOR OPENINGS.
7. ADEQUATE MEASURE TO PREVENT PLASTIC SHRINKAGE OF SLAB SHALL BE TAKEN BY THE CONTRACTOR AS OUTLINED IN ACI 302.1R.

CONCRETE/CMU ANCHORS

1. REFER TO SPEC SECTION 05 50 00 METAL FABICATIONS FOR ADDITIONAL REQUIREMENTS AND MATERIAL TYPE.
2. SUBSTITUTION OF EXPANSION OR DRILLED AND GROUTED-IN ANCHORS FOR EMBEDDED ANCHORS SHOWN ON THE DRAWINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE ENGINEER.
3. CARE SHALL BE TAKEN WHEN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH REINFORCING WHERE POSSIBLE. HOLES SHALL BE DRY, HAMMER DRILLED AND CLEANED PER THE MANUFACTURER'S INSTRUCTIONS. ALTERNATIVE DRILLING METHODS AND INSTALLATION CONDITIONS MAY BE ACCEPTABLE PROVIDED INSTALLER HAS RECEIVED WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER OR RECORD.
4. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AT NOT LESS THAN MINIMUM EDGE DISTANCES AND/OR SPACINGS INDICATED IN THE MANUFACTURER'S LITERATURE.
5. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL ARRANGE FOR A MANUFACTURER'S FIELD REPRESENTATIVE TO PROVIDE INSTALLATION TRAINING FOR ALL PRODUCTS TO BE USED. ONLY TRAINED INSTALLERS SHALL PERFORM POST INSTALLED ANCHOR INSTALLATION. A RECORD OF TRAINING SHALL BE KEPT ON SITE AND BE MADE AVAILABLE TO THE EOR AS REQUESTED.
6. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS SHALL CONSIST OF THE FOLLOWING ANCHOR TYPES AS PROVIDED BY HILTI, INC.
   A. ANCHORAGE TO CONCRETE
      a. ADHESIVE (EPOXY) ANCHORS FOR CRACKED AND UNCRACKED CONCRETE USE:
         1. HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HIT-Z-R 316 SS ROD.
         2. HILTI HIT-HY 200 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM WITH HAS-316 SS THREADED ROD PER ICC ESR-4868.
      b. MECHANICAL (EXPANSION) ANCHORS FOR CRACKED AND UNCRACKED CONCRETE
         1. HILTI KWIK BOLT-TZ2 SS 316 EXPANSION ANCHORS PER ICC ESR-4266
         2. HILTI KWIK HUS-EZ SS 316 SCREW ANCHORS PER ICC ESR-3027
   B. REBAR DOWELING INTO CONCRETE
      a. ADHESIVE FOR CRACKED AND UNCRACKED CONCRETE USE:
         1. HILTI HIT-HY 500 V3 SAFE SET SYSTEM WITH HILTI HOLLOW DRILL BIT SYSTEM.
   C. ANCHORAGE TO SOLID GROUTED MASONRY
      a. ADHESIVE (EPOXY) ANCHORS USE:
         1. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM WITH HAS 316 SS THREADED ROD.
         2. MECHANICAL (EXPANSION) ANCHORS USE:
         3. HILTI KWIK BOLT-TZ2 SS 316 EXPANSION ANCHORS PER ICC ESR-4561
         4. HILTI KWIK HUS-EZ SS 316 SCREW ANCHORS PER ICC ESR-3056
   D. ANCHORAGE TO HOLLOW / MULTI-WYTHE MASONRY
      a. ADHESIVE ANCHORS USE:
         1. HILTI HIT-HY 270 MASONRY ADHESIVE ANCHORING SYSTEM WITH HAS 316 SS THREADED ROD.
         2. THE APPROPRIATE SIZE SCREEN TUBE SHALL BE USED PER ADHESIVE MANUFACTURER'S RECOMMENDATION.
7. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR OTHER SUCH METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OR RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS THAT HAVE BEEN SEALED BY ANOTHER LICENSED ENGINEER DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE TO MEETING THE PERFORMANCE OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WITLL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE, INSTALLATION TEMPERATURE, MOISTURE CONDITION OF CONCRETE, AND DRILLING METHODS.

REINFORCING STEEL FOR CONCRETE

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60 (DEFORMED).
2. WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO ASTM A1064 AND SHALL BE PROVIDED IN FLAT SHEETS ONLY. FABRIC SHALL LAP TWO FULL MESHES AND BE SECURELY FASTENED AT EACH SIDE AND EACH END.
3. DETAILING, FABRICATION, AND ERECTION OF REINFORCING STEEL, UNLESS OTHERWISE NOTED, SHALL CONFORM TO ACI MNL-66, THE CRSI, "MANUAL OF STANDARD PRACTICE," AND ACI 318.
4. REINFORCING STEEL SHALL BE CONTINUOUS ACROSS ALL CONSTRUCTION JOINTS UNO.
5. REINFORCING STEEL SHALL NOT BE HEATED OR WELDED AND MUST BE DRY AND FREE OF CONTAMINANTS SUCH AS RUST, DIRT, GREASE, AND PROTECTIVE COATINGS.
6. ALL BAR SPLICES SHALL BE CLASS B TENSION SPLICES IN ACCORDANCE WITH ACI 318.

MISCELLANEOUS

1. GENERAL NOTES AND TYPICAL DETAILS DESCRIBE GENERAL CRITERIA APPLICABLE TO ALL SIMILAR CONDITIONS THROUGHOUT THE PROJECT REGARDLESS OF WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED IN THE PLANS OR DETAILS.
2. DO NOT SCALE DRAWINGS. IF DIMENSIONS ARE IN QUESTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE STRUCTURAL ENGINEER BEFORE CONTINUING WITH CONSTRUCTION.
3. CONTRACTOR SHALL COORDINATE THE STRUCTURAL DOCUMENTS WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION AND CIVIL DOCUMENTS. ARCHITECT/STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCY.
4. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS, FOR DIMENSIONS TO BE CONFIRMED AT THE JOBSITE, FOR FABRICATION PROCESSES, AND FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION.
5. NO SUBSTITUTIONS OF MATERIAL WILL BE ALLOWED WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, MILL CERTIFICATES, AND PRODUCT DATA FOR ALL MATERIALS AND PRODUCTS SHOWN IN THE CONSTRUCTION DOCUMENTS, INCLUDING BUT NOT LIMITED TO, CONCRETE MIX DESIGNS, STEEL REINFORCEMENT, AND CAST-IN-PLACE AND POST-INSTALLED ANCHORS. THE SHOP DRAWINGS SHALL INCLUDE BOTH FABRICATION AND ERECTION DRAWINGS AND SHALL CONTAIN PLANS, ELEVATIONS, AND DETAILS. REPRODUCTION OF THE CONSTRUCTION DRAWINGS IS NOT AN ACCEPTABLE SHOP DRAWING SUBMITTAL.
7. SHOP DRAWINGS SHALL NOT BE REVIEWED FOR APPROVAL UNLESS CHECKED BY THE FABRICATOR AND APPROVED BY THE CONTRACTOR. REVIEW OF THE SHOP DRAWINGS BY THE ENGINEER DOES NOT ELIMINATE THE CONTRACTOR'S RESPONSIBILITY TO COMPLY WITH ALL REQUIREMENTS SET FORTH IN THE CONSTRUCTION DOCUMENTS.
8. CONTRACTOR SHALL COMPLY WITH LOCAL, STATE, FEDERAL AND OWNER'S SAFETY REGULATIONS WHILE WORKING. STRUCTURAL ENGINEER DOES NOT ASSUME ANY RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.
9. CONTRACTOR SHALL REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
10. VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE STARTING WORK. NOTIFY STRUCTURAL ENGINEER OF ANY DISCREPANCY. NOTIFY STRUCTURAL ENGINEER IN WRITING OF EXISTING CONDITIONS ENCOUNTERED IN THE FIELD CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.

PRE-ENGINEERED METAL BUILDING

1. DESIGN OF STRUCTURE SHALL BE IN ACCORDANCE WITH THE "CODES AND STANDARDS" AND "DESIGN CRITERIA" AS LISTED ON THIS DRAWING.
2. THE METAL BUILDING MANUFACTURER SHALL BE SOLELY RESPONSIBLE FOR THE STRUCTURAL DESIGN OF THE SUPERSTRUCTURE INCLUDING PURLINS, RIGID FRAMES, COLUMNS, GIRTS, BASEPLATES, X-BRACES, AND ANCHOR BOLTS (EXCLUDING EMBEDMENT). A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF GEORGIA SHALL DESIGN THE MEMBERS OR DIRECTLY SUPERVISE THE DESIGN AND AFFIX HIS SEAL TO ALL DRAWINGS AND DESIGN CALCULATIONS.
3. THE METAL BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR THE ANCHOR BOLT DESIGN, INCLUDING QUANTITY, DIAMETER, AND MATERIAL TYPE TO ADEQUATELY TRANSFER BUILDING COLUMN REACTIONS TO THE FOUNDATION. MINIMUM EMBEDMENT LENGTHS SHALL BE AS SHOWN ON THE FOUNDATION DRAWINGS. THE GENERAL CONTRACTOR SHALL PROVIDE THE ANCHOR BOLTS SPECIFIED.
4. CONTRACTOR SHALL VERIFY QUANTITY AND PLACEMENT LOCATIONS OF ANCHOR BOLTS WITH METAL BUILDING MANUFACTURER. ANCHOR BOLTS MUST BE LOCATED BY MEANS OF A TEMPLATE. DO NOT HAND SET ANCHOR BOLTS. ANCHOR BOLT LAYOUT, DIAMETER, PROJECTION, AND MATERIAL SHALL BE AS SHOWN ON THE METAL BUILDING DRAWINGS.
5. ANCHOR BOLT EMBEDMENT SHALL BE AS INDICATED ON THE FOUNDATION DRAWINGS.
6. THE METAL BUILDING COLUMNS SHALL HAVE PINNED BASES AND SHALL TRANSFER NO MOMENTS TO THE FOUNDATIONS.
7. HORIZONTAL DEFLECTION OF THE RIGID FRAMES AND BRACED FRAMES SHALL NOT EXCEED H/120 UNDER ALL LOAD COMBINATIONS USING SERVICE LEVEL WIND LOADS.
8. REFER TO MECHANICAL DRAWINGS, ELECTRICAL DRAWINGS, AND EQUIPMENT VENDOR DRAWINGS FOR EQUIPMENT TO BE SUPPORTED BY PRE-ENGINEERED COMPONENTS AND OPENINGS WHICH REQUIRE SPECIAL FRAMING. PROVIDE ANY ADDITIONAL PURLINS, GIRTS, ETC. AS REQUIRED FOR THESE ITEMS.
9. ALL BOLTED CONNECTIONS SHALL HAVE AT LEAST TWO BOLTS.
10. NO FIELD MODIFICATIONS SHALL BE MADE TO ANY PRIMARY OR SECONDARY STRUCTURAL MEMBER EXCEPT AS AUTHORIZED IN WRITING BY BUILDING MANUFACTURER DESIGN ENGINEER AND APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
11. THE FOUNDATIONS HAVE BEEN DESIGNED FOR ESTIMATED COLUMN AND FRAME REACTIONS. PRIOR TO FABRICATION AND PRIOR TO ANY FOUNDATION WORK, THE ACTUAL COLUMN AND FRAME REACTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. IF, IN THE OPINION OF THE ENGINEER, THE ACTUAL REACTIONS DIFFER APPRECIABLY FROM THE ESTIMATED, THE ENGINEER SHALL REDESIGN THE FOUNDATION FOR THE ACTUAL REACTIONS.

STRUCTURAL STEEL

1. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING UNLESS OTHERWISE SHOWN:
   - WIDE FLANGE AND WT SHAPES — ASTM A992, UNO
   - S SHAPES, CHANNELS, ANGLES, & PLATES — ASTM A36, UNO
   - SMOOTH ROD — ASTM A36
   - THREADED ROD — ASTM A36
   - HSS, RECTANGULAR OR SQUARE — ASTM A500 GR. C, 50 KSI
   - STEEL PIPE — ASTM A53, GR. B
   - ANCHOR RODS — ASTM F1554, GR AS INDICATED
   - HIGH STRENGTH BOLTS — ASTM A325 OR ASTM 490
   - TWIST OFF TENSION CONTROL BOLTS — ASTM F1852 FOR A325 BOLTS AND F2280 FOR A490 BOLTS
   - HARDENED WASHERS — ASTM F436
   - DIRECT TENSION INDICATOR WASHERS — ASTM F959
   - HEAVY HEX NUTS — ASTM A563
   - ROLLED STEEL FLOOR PLATE — ASTM A786
   - STAINLESS STEEL SHAPES AND PLATE — ASTM A276
   - STAINLESS STEEL BOLTS — ASTM F593, TYPE 316
   - WELDING ELECTRODES — AWS A5.1 OR A5.5 E-70XX

   ELECTRODES WITH CHARPY V-NOTCH (CVN) TEST VALUES OF A MINIMUM 20 FOOT-POUNDS AT -20 DEGREES FAHRENHEIT ARE TO BE USED AT THE FOLLOWING LOCATIONS:
   i. COMPLETE JOINT PENETRATION WELDS
   ii. BEAM TO COLUMN MOMENT CONNECTIONS – INCLUDING FLANGE, WEB AND CONTINUITY PLATE FILLET AND PARTIAL JOINT PENETRATION WELDS
   iii. BRACE CONNECTIONS – INCLUDING BRACE, GUSSET, BASE PLATES, BEAM STIFFENER PLATES, AND CONTINUITY PLATE FILLET AND PARTIAL JOINT PENETRATION WELDS
   iv. WELD NOTED "CVN" ON THE DRAWINGS
2. STRUCTURAL STEEL DESIGN, DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO:
   1. AISC, "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
   2. AISC, "CODE OF STANDARD PRACTICE", INCLUDING COMMENTARY
   3. AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 AND A490 BOLTS"
3. WELDING SHALL CONFORM TO AWS D1.1 "STRUCTURAL WELDING CODE" AND BE PERFORMED BY CERTIFIED WELDERS USING E70XX WELDING ELECTRODES.
4. REMOVE RUST, DIRT, PAINT AND GALVANIZING FROM STEEL PRIOR TO WELDING.
5. WELDS SHOWN ON STRUCTURAL DRAWINGS ARE MINIMUM DESIGN REQUIREMENTS. USE THE MINIMUM WELD SIZE PER AISC WHERE WELD SIZE IS NOT INDICATED. THE FABRICATOR 'S SHOP DRAWINGS SHALL REFLECT WELDS IN ACCORDANCE WITH AWS / AISC REQUIREMENTS.
6. ALL GROOVE WELDS SHALL BE COMPLETE PENETRATION.
7. CONNECTIONS NOT SPECIFICALLY DETAILED IN THE CONTRACT DOCUMENTS SHALL BE DESIGNED, COORDINATED AND INSPECTED BY A PROFESSIONAL STRUCTURAL ENGINEER LICENSED IN THE PROJECT STATE. SUBMIT SIGNED AND SEALED CALCULATIONS AS A FORMAL SUBMITTAL TO THE STRUCTURAL ENGINEER OF RECORD. PER THE AISC CODE OF STANDARD PRACTICE, PROVIDE CORRELATION BETWEEN CALCULATIONS AND CONNECTIONS SHOWN ON THE STRUCTURAL STEEL SHOP DRAWINGS.
8. BOLTED CONNECTIONS SHALL BE BEARING TYPE WITH THREADS INCLUDED IN THE SHEAR PLANE.
9. UNLESS NOTED OTHERWISE, MINIMUM BOLT SIZE IS 3/4" DIAMETER STAINLESS STEEL GRADE F593, TYPE 316. INSTALL HIGH STRENGTH BEARING BOLTS TO A SNUG TIGHT CONDITION AS DEFINED BY AISC. LOCK WASHERS AND LOCK NUTS ARE STRICTLY PROHIBITED.
10. SEQUENCE DRIVEN SHARED CONNECTIONS WILL NOT BE PERMITTED AND MAY BE UNSAFE DURING THE CONNECTION PROCESS UNDER CERTAIN CONDITIONS. PROVIDE STAGGERED CLIP ANGLES, ERECTION SEATS ON BOTH SIDES OF COLUMN WEBS, OR SHEAR TAB TYPE CONNECTIONS IN COMPLIANCE WITH OSHA 1926 SUBPART R TO ALLOW FOR MEMBERS TO BE INSTALLED FROM EITHER DIRECTION REGARDLESS OF SEQUENCE.
11. BEAM CONNECTIONS SHALL BE STANDARD, SIMPLE SHEAR CONNECTIONS WITH DOUBLE FRAMING ANGLES UNO. IN NO CASE SHALL THE LENGTH OF THE FRAMED CONNECTION BE LESS THAN ONE-HALF OF THE "T" DIMENSION OF THE BEAM WEB.
12. CONNECTION ANGLES SHALL BE 5/16" MINIMUM THICKNESS.
13. MINIMUM BOLTED CONNECTION SHALL BE AS FOLLOWS:
    1. DEPTH:6" - 10" — USE 2 ROWS OF BOLTS
    2. DEPTH: 12" - 18" — USE 3 ROWS OF BOLTS
    3. DEPTH: 21" - 24" — USE 4 ROWS OF BOLTS
    4. DEPTH: 27" - 30" — USE 5 ROWS OF BOLTS
    5. DEPTH: 33" - 40" — USE 6 ROWS OF BOLTS
14. BEAM REACTIONS ARE SHOWN ON THE DRAWINGS IN LRFD FORMAT. IN CASES WHERE NO REACTIONS ARE PROVIDED, THE CONNECTION SHALL BE DESIGNED FOR A MINIMUM FORCE OF 15 KIPS, UNO.
15. ALL BOLTED CONNECTION HOLES ARE TO BE STANDARD HOLES. SHORT SLOTTED HOLES ARE PERMITTED AS LONG AS THERE IS NO FORCE IN THE DIRECTION OF THE SLOT (I.E. HOLE DIA. = BOLT DIA. + 1/16").
16. BRACING CONNECTIONS SHALL BE DESIGNED AND DETAILED SO THAT ALL FORCE COMPONENTS ARE DELIVERED DIRECTLY TO THE INTERSECTION OF THE WORKLINES OF THE MEMBERS. WHERE THIS IS NOT POSSIBLE OR PRACTICAL, CONNECTIONS SHALL BE DESIGNED TO ACCOUNT FOR THE RESULTING ECCENTRICITIES.
17. SWAY FRAMES, X-BRACING, LACING AND SIMILAR TYPE MEMBERS SHALL EITHER DEVELOP THE AXIAL FORCE INDICATED ON THE DRAWINGS OR THE ALLOWABLE TENSION FORCE IN THE MEMBER WHERE NO FORCES ARE SHOWN. THERE SHALL BE A MINIMUM OF TWO BOLTS PER CONNECTION.
18. AXIAL FORCES IN MEMBERS ARE SHOWN AS FOLLOWS:
    1. (+) INDICATES TENSION IN MEMBER.
    2. (-) INDICATES COMPRESSION IN MEMBER.
19. BUILT UP MEMBERS SHALL HAVE STITCH PLATES COMPLYING WITH AISC REQUIREMENTS. TENSION MEMBERS SHALL HAVE AT LEAST ONE STITCH PLATE LOCATED AT MID-LENGTH AND BUILT UP COMPRESSION MEMBERS SHALL HAVE AT LEAST TWO STITCH PLATES LOCATED AT THIRD POINTS OR A MAXIMUM OF 5'-0" OC SPACING, WHICHEVER IS LESS. ASSUME BUILT UP MEMBERS ARE COMPRESSION MEMBERS UNLESS NOTED OTHERWISE ON DRAWINGS.
20. STEEL SURFACES THAT ARE TO RECEIVE SPRAYED ON FIREPROOFING, SCHEDULED TO RECEIVE SHEAR STUDS OR WILL BE WELDED/BOLTED SHALL NOT BE PAINTED.
21. NO OPENINGS SHALL BE CUT IN STRUCTURAL MEMBERS UNLESS SPECIFICALLY DETAILED IN THE STRUCTURAL DRAWINGS.
22. THE STRUCTURE IS DESIGNED FOR A COMPLETED CONDITION ONLY AND THEREFORE MAY REQUIRE ADDITIONAL SUPPORT TO MAINTAIN STABILITY BEFORE COMPLETION.
23. ALL EXTERIOR STEEL FOR THE CANOPY STRUCTURE, INCLUDING BOLTS AND GUARDRAIL SHALL BE HOT-DIPPED GALVINIZED. ANCHOR BOLTS SHALL BE STAINLESS STEEL. REPAIR DAMAGED GALVANIZING AND FIELD WELDS WITH GALVANIZING REPAIR PAINT (ZRC GALVILITE, OR EQUAL).
24. STAIRS SHOWN ON PLAN AND ARCH SHALL BE A DELEGATED DESIGN WITH EXCEPTION OF LATERAL FORCE RESISTING SYSTEM AND POSTS. CALCULATIONS SEALED BY AN ENGINEER REGISTERED IN THE PROJECT STATE SHALL BE SUBMITTED WITH THE SHOP DRAWINGS.

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GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.09.19 13:50:22-05'00'

REVISION INFORMATION

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5

GENERAL NOTES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

SHEET
09-S001
FILE NO.: 3618121

Discipline Sort: 8.0
Drawing: 09-S001
Date / Time: 9/18/2024 3:32:49 PM

STATEMENT OF SPECIAL INSPECTIONS

THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTORS TO PERFORM INSPECTIONS DURING CONSTRUCTION IN ACCORDANCE WITH THE REQUIREMENTS GIVEN IN CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE AND THE FOLLOWING TABLES. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

CONTRACTOR RESPONSIBILITIES

THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE ENGINEER A WRITTEN STATEMENT OF RESPONSIBILITY THAT CONTAINS THE FOLLOWING:

1. ACKNOWLEDGMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED WITHIN THIS STRUCTURAL QUALITY ASSURANCE PLAN.
2. ACKNOWLEDGEMENT THAT CONTROL SHALL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR´S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

THE STRUCTURAL TESTING/INSPECTION AGENCY THAT IS TO ACT AS THE SPECIAL INSPECTOR WILL BE HIRED BY THE OWNER.

CONTRACTOR SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR WORK OR MATERIALS NOT COMPLYING WITH THE CONSTRUCTION DOCUMENTS DUE TO NEGLIGENCE OR NONCONFORMANCE AND SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR HIS CONVENIENCE.

CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SPECIAL INSPECTOR IS PRESENT FOR ALL WORK REQUIRING SPECIAL INSPECTION. ANY WORK THAT REQUIRES SPECIAL INSPECTION AND IS PERFORMED WITHOUT THE SPECIAL INSPECTOR BEING PRESENT IS SUBJECT TO BEING DEMOLISHED AND RECONSTRUCTED.

CONTRACTOR HAS THE FOLLOWING RESPONSIBILITIES TO THE SPECIAL INSPECTOR:

1. PROVIDE COPY OF CONSTRUCTION DOCUMENTS TO THE SPECIAL INSPECTOR.
2. NOTIFY THE SPECIAL INSPECTOR SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW ASSIGNMENT OF PERSONNEL AND SCHEDULING OF TESTS.
3. COOPERATE WITH SPECIAL INSPECTOR AND PROVIDE ACCESS TO WORK.
4. PROVIDE SAMPLES OF MATERIALS TO BE TESTED IN REQUIRED QUANTITIES.
5. PROVIDE STORAGE SPACE FOR THE SPECIAL INSPECTOR´S EXCLUSIVE USE, SUCH AS FOR STORING AND CURING CONCRETE TESTING SAMPLES.
6. PROVIDE LABOR TO ASSIST THE SPECIAL INSPECTOR IN PERFORMING TESTS/INSPECTIONS.

SPECIAL INSPECTOR RESPONSIBILITIES

SPECIAL INSPECTOR SHALL MAINTAIN RECORDS OF INSPECTIONS IN ACCORDANCE WITH CHAPTER 17 OF THE BUILDING CODE AND SHALL DISTRIBUTE THESE RECORDS TO THE BUILDING OFFICIAL, ARCHITECT, AND STRUCTURAL ENGINEER ON A WEEKLY BASIS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL. AT THE CONCLUSION OF THE PROJECT THE SPECIAL INSPECTOR SHALL SUBMIT A WRITTEN STATEMENT THAT THE SPECIAL INSPECTIONS DURING CONSTRUCTION HAVE COMPLIED WITH THIS STRUCTURAL QUALITY ASSURANCE PLAN AND THAT ANY DISCREPANCIES NOTED DURING CONSTRUCTION HAVE BEEN CORRECTED.

REQUIRED VERIFICATION AND INSPECTION OF STRUCTURAL STEEL

SPECIAL INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLES AND THE REQUIREMENTS GIVEN IN AISC 360-16 CHAPTER N. THESE REQUIREMENTS SHALL APPLY TO PRE-ENGINEERED METAL BUILDING STRUCTURES.

QC-QUALITY CONTROL (QC) INSPECTION TASKS SHALL BE PERFORMED BY THE FABRICATOR'S OR ERECTOR'S QUALITY CONTROL INSPECTOR (QCI). TASKS IN THE FOLLOWING TABLES LISTED FOR QC ARE THOSE INSPECTIONS PERFORMED BY THE QCI TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. FOR QC INSPECTION, THE APPLICABLE CONSTRUCTION DOCUMENTS ARE THE SHOP DRAWINGS AND ERECTION DRAWINGS, AND THE ERECTION DRAWINGS, AND THE APPLICABLE REFERENCED SPECIFICATIONS, CODES AND STANDARDS.

QA-QUALITY ASSURANCE (QA) INSPECTION OF FABRICATED ITEMS SHALL BE MADE AT THE FABRICATOR'S PLANT. THE QUALITY ASSURANCE INSPECTOR (QAI) SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE FABRICATOR. QA INSPECTION OF THE ERECTED STEEL SYSTEM SHALL BE MADE AT THE PROJECT SITE. THE QAI SHALL SCHEDULE THIS WORK TO MINIMIZE INTERRUPTION TO THE WORK OF THE ERECTOR. QA INSPECTION TASKS SHALL BE PERFORMED BY THE QAI, IN ACCORDANCE WITH AISC 360-16 SECTIONS N5.4, N5.6 AND N5.7. TASKS IN THE FOLLOWING TABLES LISTED FOR QA ARE THOSE INSPECTIONS PERFORMED BY THE QAI TO ENSURE THAT THE WORK IS PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS. CONCURRENT WITH THE SUBMITTAL OF SUCH REPORTS TO THE AUTHORITY HAVING JURISDICTION (AHJ), ENGINEER OF RECORD (EOR) OR OWNER, THE QA AGENCY SHALL SUBMIT TO THE FABRICATOR AND ERECTOR: (1) INSPECTION REPORTS, AND (2) NONDESTRUCTIVE TESTING REPORTS.

O- OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.

P- PERFORM THESE TASKS FOR EACH WELDED JOINT, MEMBER, BOLTED CONNECTION, OR STEEL ELEMENT.

NOTE: SPECIAL INSPECTIONS DURING FABRICATION ARE NOT REQUIRED WHERE THE FABRICATOR IS REGISTERED AND APPROVED IN ACCORDANCE WITH IBC SECTION 1704.2.5.1.

AISC TABLE N5.6-1 INSPECTION TASKS PRIOR TO BOLTING

Inspection Tasks Prior to Bolting	QC	QA
MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P
FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O
CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE	O	O
CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O
CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O
PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P	O
PROTECTED STORAGE FOR BOLTS, NUTS, WASHERS AND OTHER FASTENER COMPONENTS	O	O

AISC TABLE N5.6-2 INSPECTION TASKS DURING BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
FASTENER ASSEMBLIES PLACED IN ALL HOLES AND WASHERS AND NUTS ARE POSITIONED AS REQUIRED	O	O
JOINT BROUGHT TO THE SNUG-TIGHT CONDITION PRIOR TO THE PRETENSIONING OPERATION	O	O
FASTENER COMPONENT NOT TURNED BY THE WRENCH PREVENTED FROM ROTATING	O	O
FASTENERS ARE PRETENSIONED IN ACCORDANCE WITH THE RCSC SPECIFICATION, PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID POINT TOWARD THE FREE EDGES	O	O

AISC TABLE N5.6-3 INSPECTION TASKS AFTER BOLTING

INSPECTION TASKS PRIOR TO BOLTING	QC	QA
DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P

ABBREVIATIONS

AB	ANCHOR BOLT	FD	FLOOR DRAIN	PREFAB	PREFABRICATED
ADDL	ADDITIONAL	FDN	FOUNDATION	PSF	POUNDS PER SQUARE FOOT
AFF	ABOVE FINISH FLOOR	FIN FLR	FINISHED FLOOR	PSI	POUNDS PER SQUARE INCH
ALT	ALTERNATE	FTG	FOOTING	PSL	PARALLEL STRAND LUMBER
APPROX	APPROXIMATE, APPROXIMATELY	GA	GAUGE	PT	PRESERVATIVE TREATED
ARCH	ARCHITECT, ARCHITECTURAL	GALV	GALVANIZE, GALVANIZED	RD	ROOF DRAIN
B/	BOTTOM OF	HDD	HEADED	REF	REFER, REFERENCE
BLDG	BUILDING	HORIZ	HORIZONTAL	REINF	REINFORCING
BM	BEAM	INT	INTERIOR	REQD	REQUIRED
BO	BOTTOM OF	JT	JOINT	RET	RETAINING
BOD	BASIS OF DESIGN	K	KIPS	SCHED	SCHEDULE
BOT	BOTTOM	KSF	KIPS PER SQUARE FOOT	SECT	SECTION
BP	BASEPLATE	KSI	KIPS PER SQUARE INCH	SIM	SIMILAR
BRG	BEARING	L	ANGLE	SLV	SHORT LEG VERTICAL
CC	CENTER TO CENTER	LG	LONG	SOG	SLAB-ON-GRADE
CJ	CONTROL JOINT, CONSTRUCTION JOINT	LL	LIVE LOAD	SPEC	SPECIFICATIONS
CL	CENTER LINE	LLV	LONG LEG VERTICAL	STIFF	STIFFENER
CLR	CLEAR	LONG	LONGITUDINAL	SQ	SQUARE
CMU	CONCRETE MASONRY UNIT	LVL	LAMINATED VENEER LUMBER	SS	STAINLESS STEEL
COL	COLUMN	LW	LIGHT-WEIGHT	STD	STANDARD
CONC	CONCRETE	MANUF	MANUFACTURER	STL	STEEL
CONT	CONTINUOUS	MAS	MASONRY	SYM	SYMMETRICAL
CP	COMPLETE PENETRATION	MATL	MATERIAL	T&B	TOP AND BOTTOM
DIA	DIAMETER	MAX	MAXIMUM	T&G	TONGUE AND GROOVE
DIAG	DIAGONAL	MIN	MINIMUM	T/	TOP OF
DL	DEAD LOAD	MTL	METAL	THDD	THREADED
DO	DITTO	NIC	NOT IN CONTRACT	TO	TOP OF
DWG	DRAWING	NTS	NOT TO SCALE	TRANS	TRANSVERSE
EOS	EDGE OF SLAB	NW	NORMAL-WEIGHT	TYP	TYPICAL
EA	EACH	OC	ON CENTER	UNO	UNLESS NOTED OTHERWISE
EF	EACH FACE	OPNG	OPENING	VIF	VERIFY IN FIELD
EL	ELEVATION	OPP	OPPOSITE	VERT	VERTICAL
EOR	ENGINEER OF RECORD	PAF	POWDER ACTUATED FASTENER	W/	WITH
EW	EACH WAY	PC	PRECAST CONCRETE	W/O	WITHOUT
EXIST	EXISTING	PEJF	PRE-MOLDED EXPANSION JOINT FILLER	WP	WORKING POINT
EXP	EXPANSION	PEMB	PRE-ENGINEERED METAL BUILDING	WWR	WELDED WIRE REINFORCING
EXT	EXTERIOR	PL	PLATE		

AISC TABLE N5.4-1 INSPECTION TASKS PRIOR TO WELDING

INSPECTION TASKS PRIOR TO WELDING	QC	QA
WELDER QUALIFICATION RECORDS AND CONTINUITY RECORDS	P	P
WPS AVAILABLE	P	P
MANUFACTURER CERTIFICATIONS FOR WELDING CONSUMABLES AVAILABLE	P	P
MATERIAL IDENTIFICATION (TYPE/GRADE)	O	O
WELDER IDENTIFICATION SYSTEM [a]	O	O
FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY) • JOINT PREPARATIONS • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION) • BACKING TYPE AND FIT (IF APPLICABLE)	O	O
FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- AND K-JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY) • JOINT PREPARATIONS • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	P	O
CONFIGURATION AND FINISH OF ACCESS HOLES	O	O
FIT-UP OF FILLET WELDS • DIMENSIONS (ALIGNMENT, GAPS AT ROOT) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	O	O
CHECK WELDING EQUIPMENT	O	O

[a] THE FABRICATOR OR ERECTOR, AS APPLICABLE, SHALL MAINTAIN A SYSTEM BY WHICH A WELDER WHO HAS WELDED A JOINT OR MEMBER CAN BE IDENTIFIED. STAMPS, IF USED, SHALL BE THE LOW-STRESS TYPE.

AISC TABLE N5.4-2 INSPECTION TASKS DURING WELDING

INSPECTION TASKS DURING WELDING	QC	QA
CONTROL AND HANDLING OF WELDING CONSUMABLES • PACKAGING • EXPOSURE CONTROL	O	O
NO WELDING OVER CRACKED TACK WELDS	O	O
WPS FOLLOWED • SETTINGS ON WELDING EQUIPMENT • TRAVEL SPEED • SELECTED WELDING MATERIALS • SHIELDING GAS TYPE/FLOW RATE • PREHEAT APPLIED • INTERPASS TEMPERATURE MAINTAINED (MIN./MAX.) • PROPER POSITION (F, V, H, OH) • JOINT PREPARATIONS • DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL) • CLEANLINESS (CONDITION OF STEEL SURFACES) • TACKING (TACK WELD QUALITY AND LOCATION)	O	O
WELDING TECHNIQUES • INTERPASS AND FINAL CLEANING • EACH PASS WITHIN PROFILE LIMITATIONS • EACH PASS MEETS QUALITY REQUIREMENTS	O	O
CHECK WELDING EQUIPMENT	P	P
PLACEMENT AND INSTALLATION OF STEEL HEADED STUDS ANCHORS	P	P

AISC TABLE N5.4-3 INSPECTION TASKS AFTER WELDING

INSPECTION TASKS AFTER WELDING	QC	QA
WELDS CLEANED	O	O
SIZE, LENGTH AND LOCATION OF WELDS	P	P
WELDS MEET VISUAL ACCEPTANCE OF CRITERIA • CRACK PROHIBITION • WELD/BASE-METAL FUSION • CRATER CROSS SECTION • WELD PROFILES • WELD SIZE • UNDERCUT • POROSITY	P	P
ARC STRIKES	P	P
K-AREA [a]	P	P
WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES [b]	P	P
BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P	P
REPAIR ACTIVITIES	P	P
DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P
NO PROHIBITED WELDS HAVE BEEN ADDED WITHOUT THE APPROVAL OF THE EOR	O	O

[a] WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 IN. OF THE WELD.

[b] AFTER ROLLED HEAVY SHAPES (SEE SECTION A3.1C) AND BUILT-UP HEAVY SHAPES (SEE SECTION A3.1D) ARE WELDED, VISUALLY INSPECT THE WELD ACCESS HOLE FOR CRACKS.

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD[a]	IBC REFERENCE
1. INSPECT REINFORCEMENT AND VERIFY PLACEMENT.	-	X	ACI 318: Ch.20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-
3. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS[b]. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X	-	ACI 318: 17.8.2.4	-
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	-	X	ACI 318: 17.8.2	
4. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
5. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.5, 26.12	1908.10
6. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
7. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
8. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)	-

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODICALLY SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

TABLE 1705.7 REQUIRED VERIFICATION AND INSPECTION OF DRIVEN DEEP FOUNDATION ELEMENTS

VERIFICATION AND INSPECTION TASK	CONTINUOUS DURING TASK LISTED	PERIODICALLY DURING TASK LISTED
1. VERIFY ELEMENT MATERIALS, SIZES AND LENGTHS COMPLY WITH THE REQUIREMENTS.	X	-
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED.	X	-
3. OBSERVE DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	-
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	X	-
5. FOR STEEL ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.2.	-	-
6. FOR CONCRETE ELEMENTS AND CONCRETE-FILLED ELEMENTS, PERFORM ADDITIONAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	-	-
7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.	-	-

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GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

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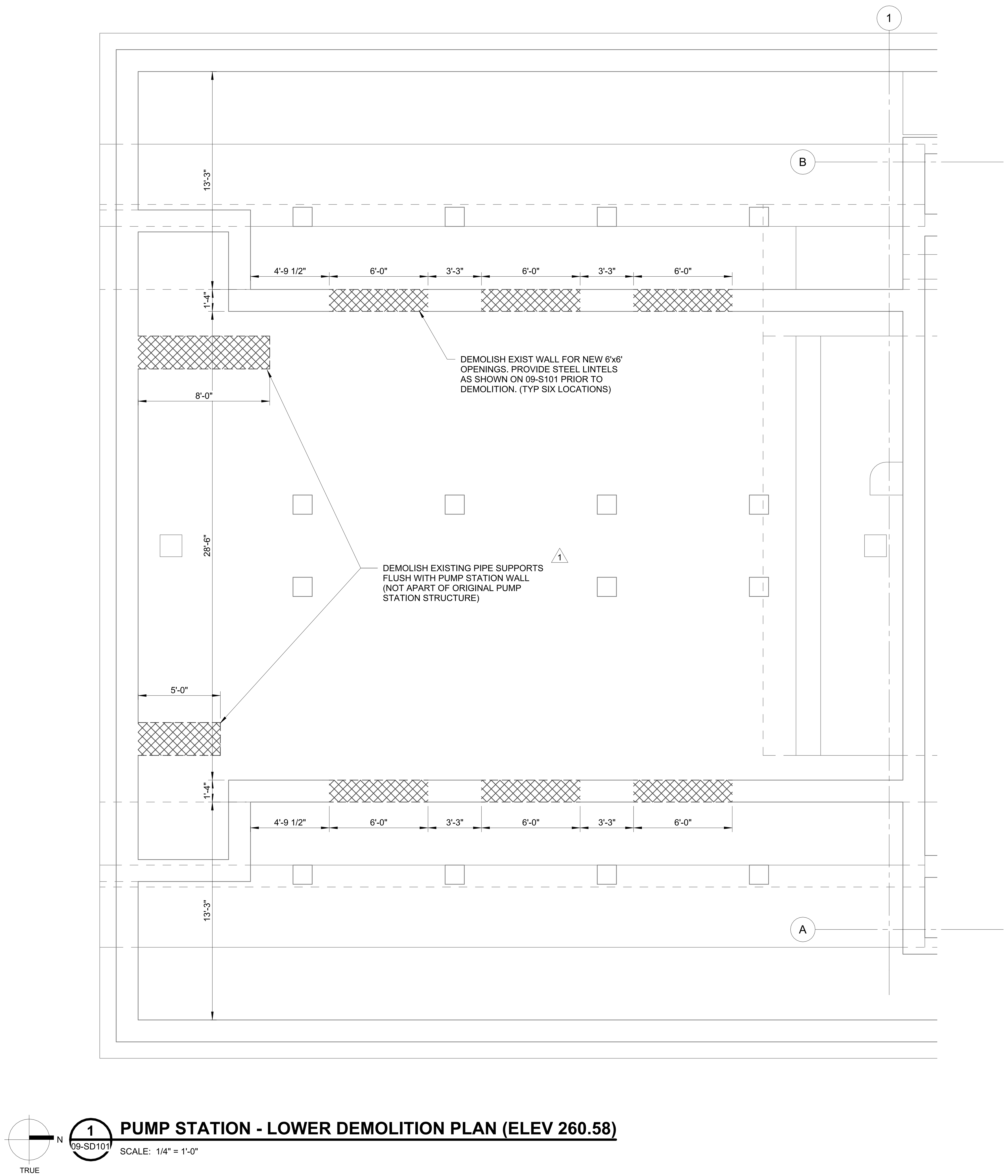
SPECIAL INSPECTIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION:

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET
09-S002
FILE NO.: 3618121



1 (09-SD101) PUMP STATION - LOWER DEMOLITION PLAN (ELEV 260.58)

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

PLAN NOTES

1. REF SHEET 09-S103. BEAMS MUST BE INSTALLED AND IN PLACE PRIOR TO SLAB DEMOLITION.
2. EXISTING HOUSEKEEPING PADS TO BE DEMOLISHED DOWN FLUSH WITH EXISTING TOP OF SLAB ELEVATION.
3. WHERE SAWCUTTING CONCRETE EXPOSES REBAR, CLEAN CONCRETE AND REBAR SURFACE IN ACCORDANCE WITH SIKA WRITTEN REQUIREMENTS FOR INSTALLATION OF SIKAGARD-62. INSTALL TWO COATS OF SIKAGARD-62 (GRAY) OVER EXPOSED REBAR EXTENDING 3" MINIMUM PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. EXISTING STRUCTURAL DRAWINGS WILL BE MADE AVAILABLE TO CONTRACTOR UPON REQUEST.
5. SUBMIT A DETAILED DEMOLITION PLAN FOR REVIEW BEFORE BEGINNING DEMOLTION. COORDINATE ALL OPENING SIZES WITH APPROVED HATCH SHOP DRAWINGS.

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PUMP STATION - LOWER DEMOLITION PLAN

LOWER POPLAR WATER RECLAMATION FACILITY

INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

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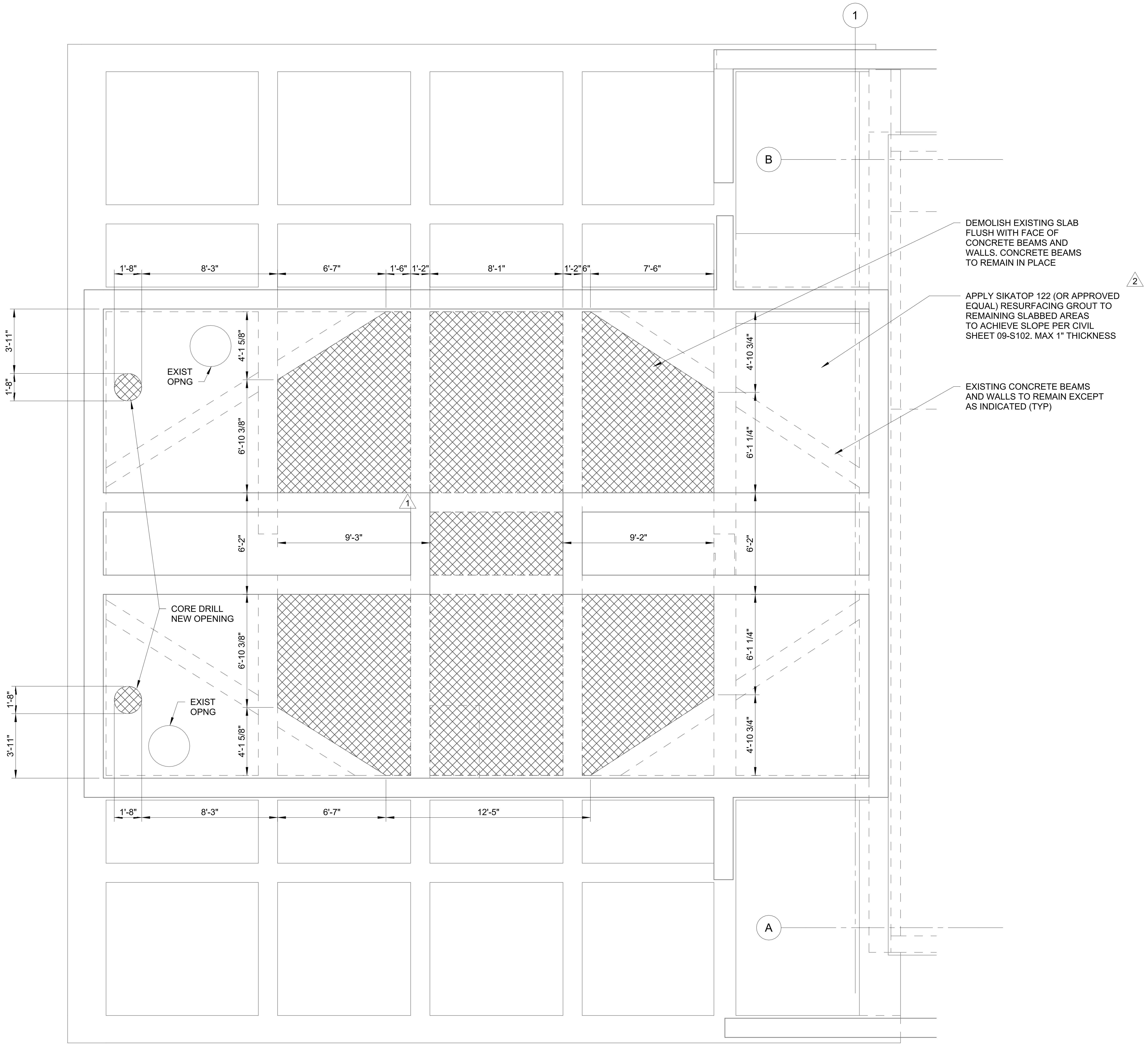
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3

SHEET
09-SD101
FILE NO.: 3618121



PUMP STATION - INTERMEDIATE DEMOLITION PLAN (ELEV 273.75)

1 / 09-SD102

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

TRUE NORTH

N

PLAN NOTES

1. REF SHEET 09-S103. BEAMS MUST BE INSTALLED AND IN PLACE PRIOR TO SLAB DEMOLITION.
2. EXISTING HOUSEKEEPING PADS TO BE DEMOLISHED DOWN FLUSH WITH EXISTING TOP OF SLAB ELEVATION.
3. WHERE SAWCUTTING CONCRETE EXPOSES REBAR, CLEAN CONCRETE AND REBAR SURFACE IN ACCORDANCE WITH SIKA WRITTEN REQUIREMENTS FOR INSTALLATION OF SIKAGARD-62. INSTALL TWO COATS OF SIKAGARD-62 (GRAY) OVER EXPOSED REBAR EXTENDING 3" MINIMUM PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. EXISTING STRUCTURAL DRAWINGS WILL BE MADE AVAILABLE TO CONTRACTOR UPON REQUEST.
5. SUBMIT A DETAILED DEMOLITION PLAN FOR REVIEW BEFORE BEGINNING DEMOLTION. COORDINATE ALL OPENING SIZES WITH APPROVED HATCH SHOP DRAWINGS.

1

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PUMP STATION - INTERMEDIATE DEMOLITION PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

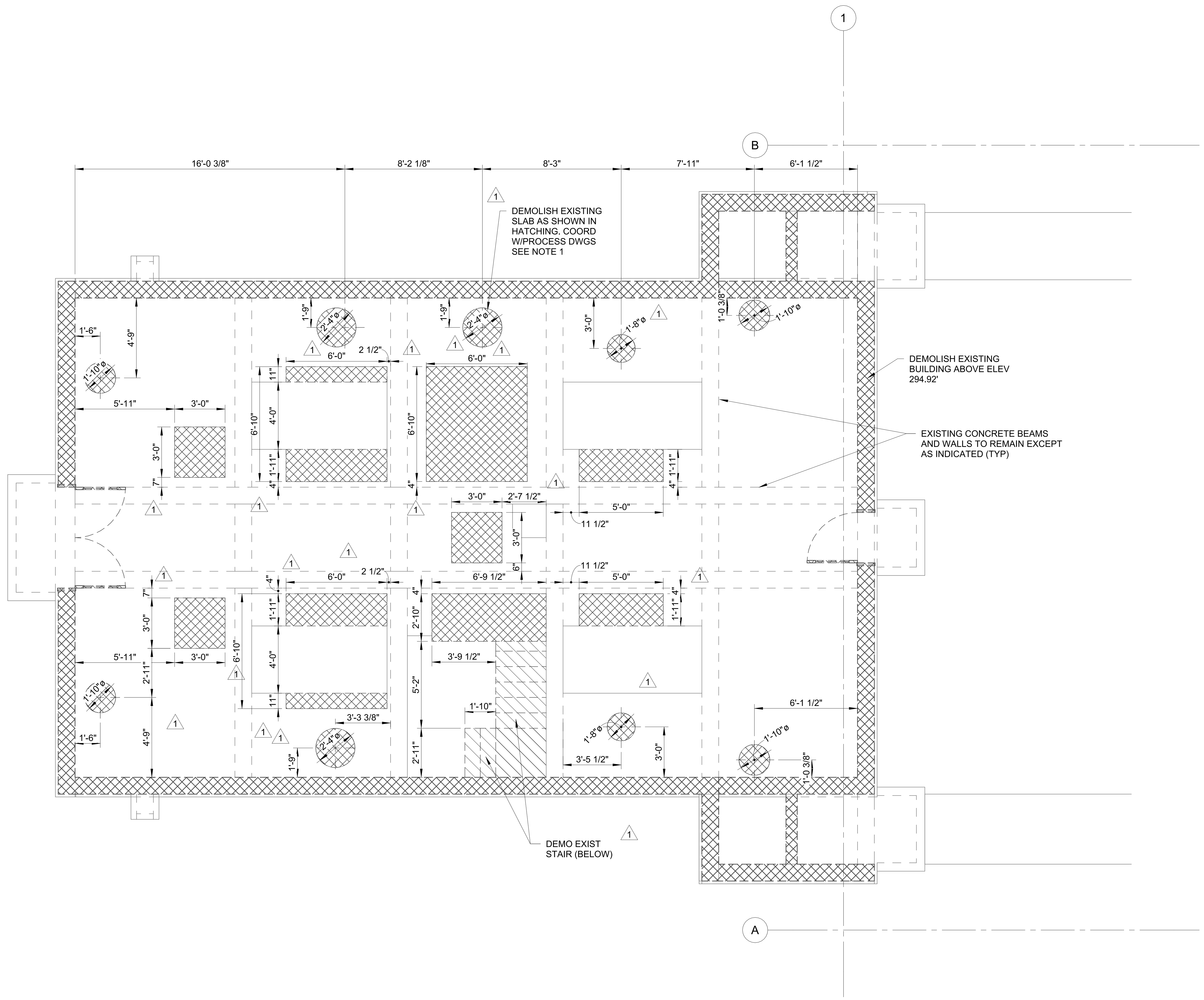
REVISION INFORMATION

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5

SHEET:

09-SD102

FILE NO.: 3618121



PUMP STATION - UPPER DEMOLITION PLAN (ELEV 294.92)

1 09-SD103

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

TRUE NORTH

PLAN NOTES

1. REF SHEET 09-S103. BEAMS MUST BE INSTALLED AND IN PLACE PRIOR TO SLAB DEMOLITION.
2. EXISTING HOUSEKEEPING PADS TO BE DEMOLISHED DOWN FLUSH WITH EXISTING TOP OF SLAB ELEVATION.
3. WHERE SAWCUTTING CONCRETE EXPOSES REBAR, CLEAN CONCRETE AND REBAR SURFACE IN ACCORDANCE WITH SIKA WRITTEN REQUIREMENTS FOR INSTALLATION OF SIKAGARD-62. INSTALL TWO COATS OF SIKAGARD-62 (GRAY) OVER EXPOSED REBAR EXTENDING 3" MINIMUM PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
4. EXISTING STRUCTURAL DRAWINGS WILL BE MADE AVAILABLE TO CONTRACTOR UPON REQUEST.
5. SUBMIT A DETAILED DEMOLITION PLAN FOR REVIEW BEFORE BEGINNING DEMOLTION. COORDINATE ALL OPENING SIZES WITH APPROVED HATCH SHOP DRAWINGS.

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PUMP STATION - UPPER DEMOLITION PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
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REVISION INFORMATION

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0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3

SHEET: 09-SD103

FILE NO.: 3618121

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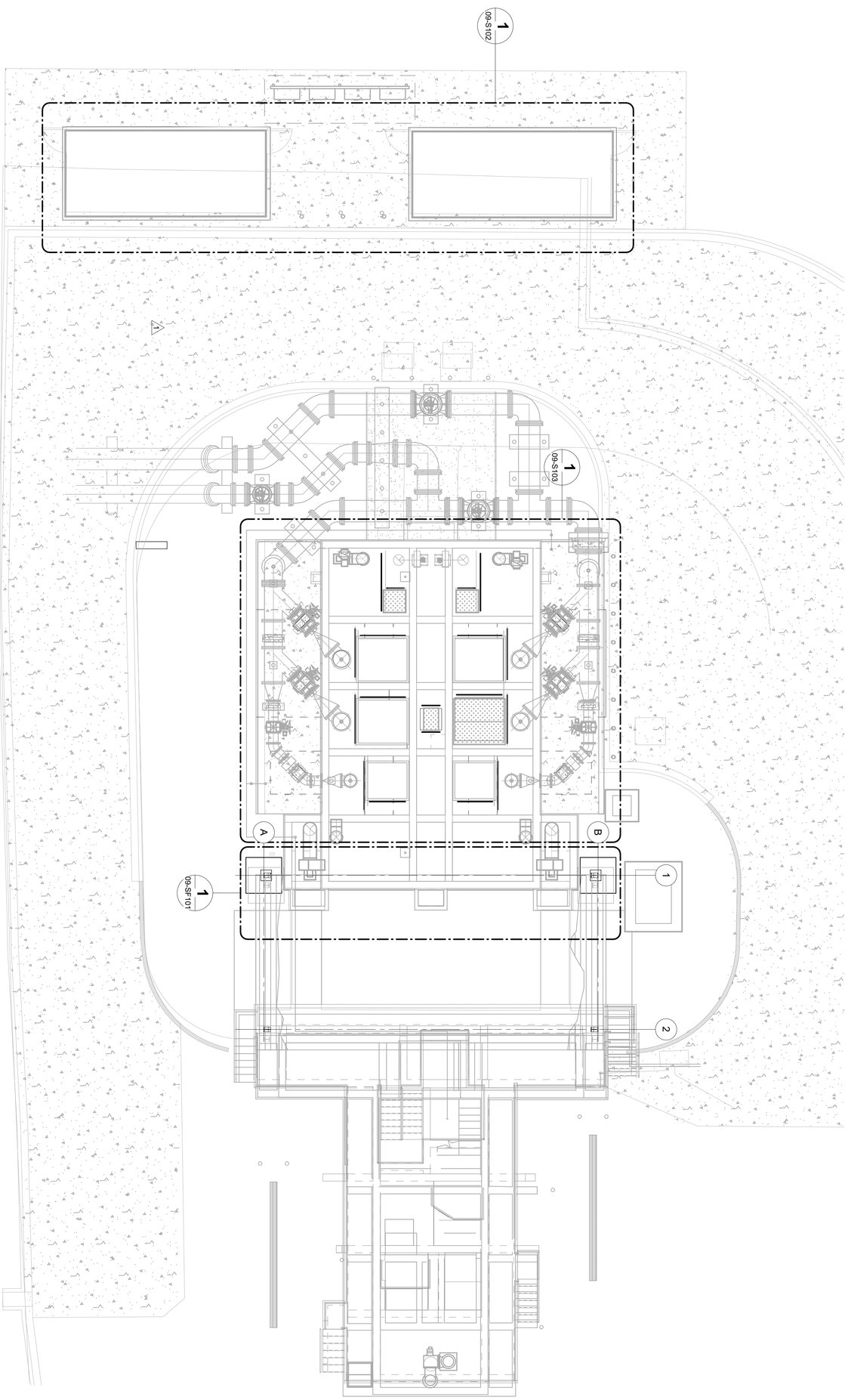

TRUE NORTH

1 / 09-S100 **OVERALL SITE PLAN**

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

REVISION INFORMATION				
REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/21/2024	ADDENDUM 5

OVERALL SITE PLAN

LOWER POPLAR WATER RECLAMATION FACILITY

INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

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09-S100

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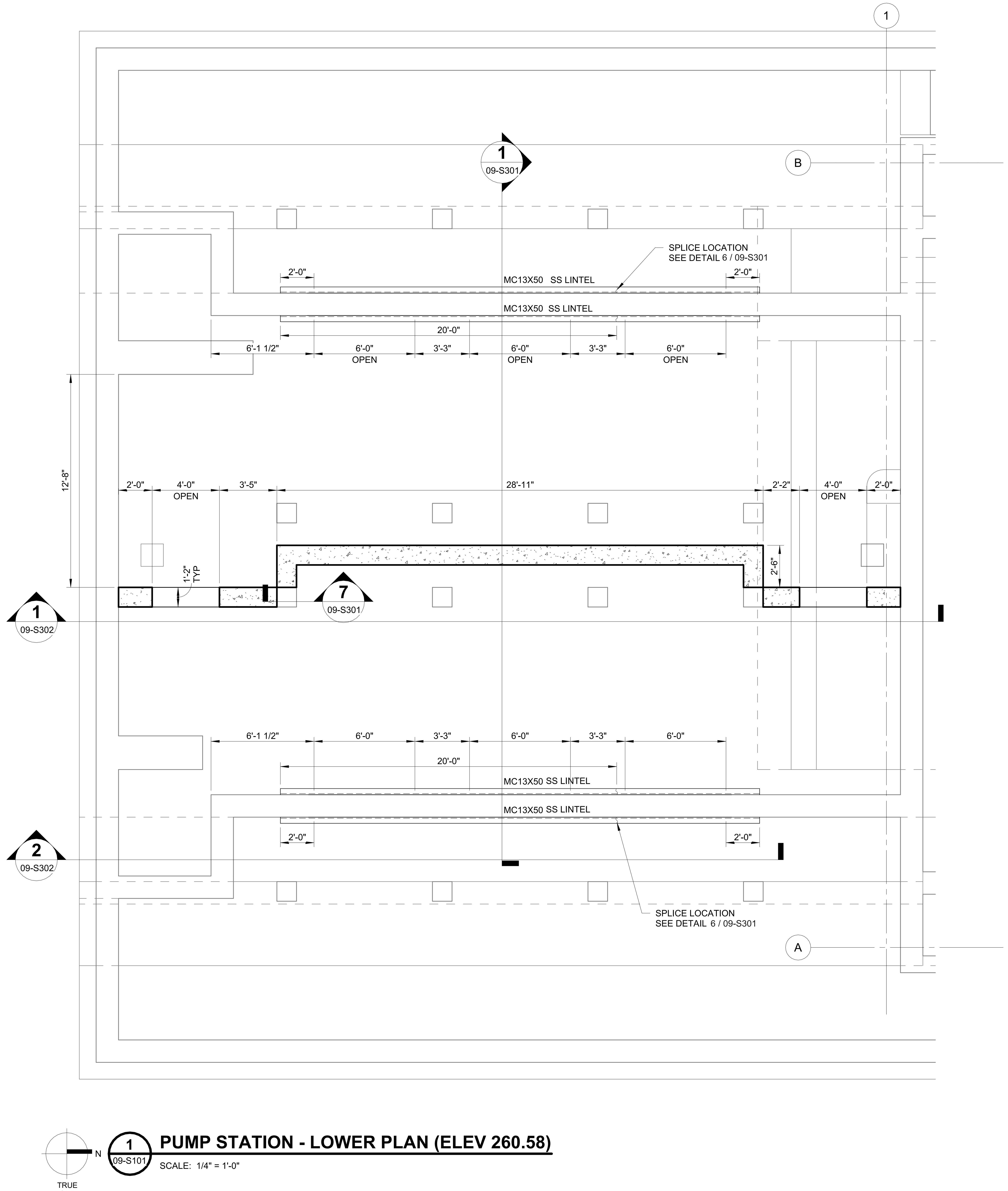

1 09-S101 **PUMP STATION - LOWER PLAN (ELEV 260.58)**

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

PLAN NOTES

1. FOR GENERAL NOTES SEE SHEET 09-S001
2. T/STL = 267.66

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PUMP STATION - LOWER LEVEL PLAN

LOWER POPLAR WATER RECLAMATION FACILITY

INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

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REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET

09-S101

FILE NO.: 3618121

Discipline Sort: 6.3
Drawing: 09-S101 PUMP STATION - LOWER LEVEL PLAN
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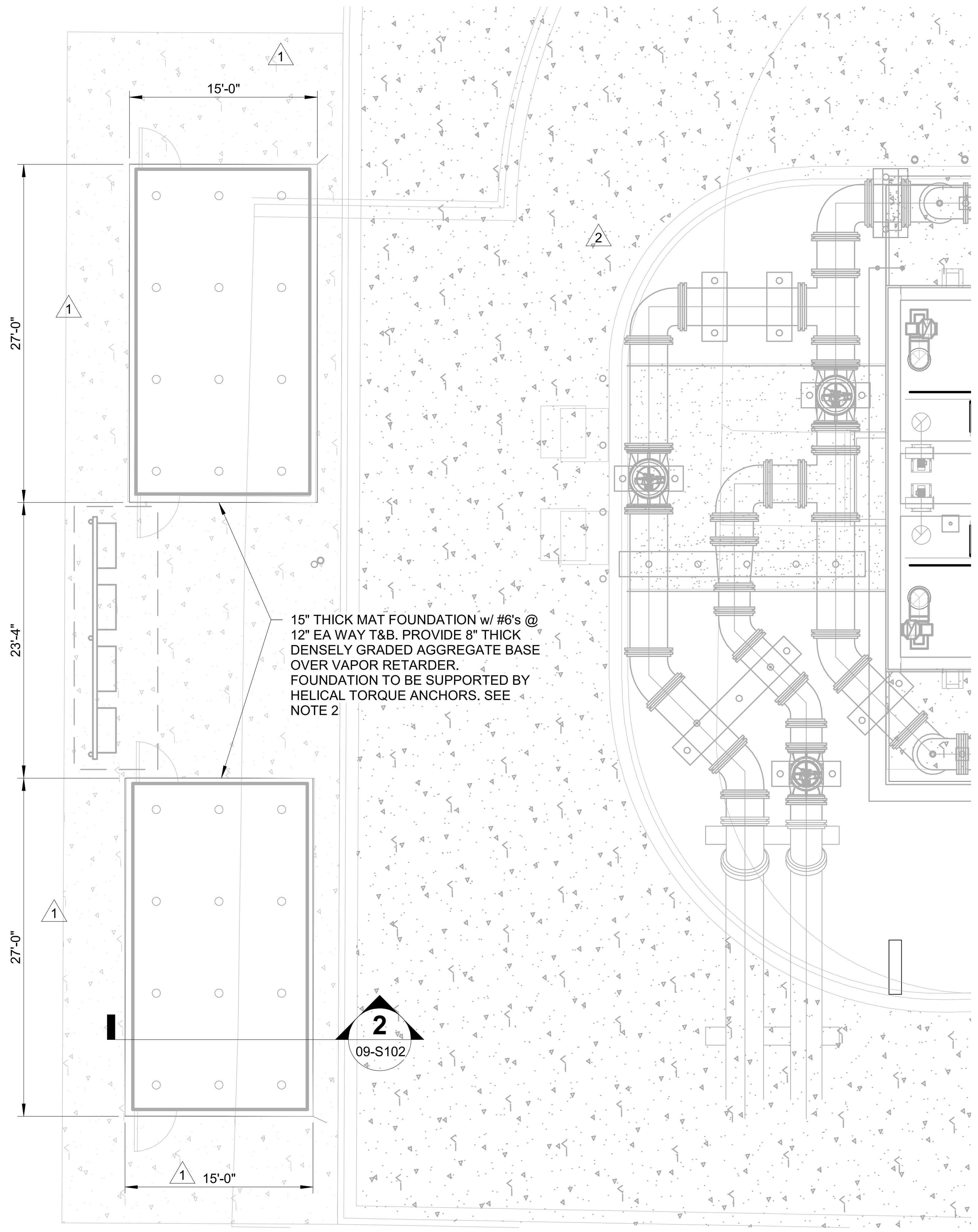
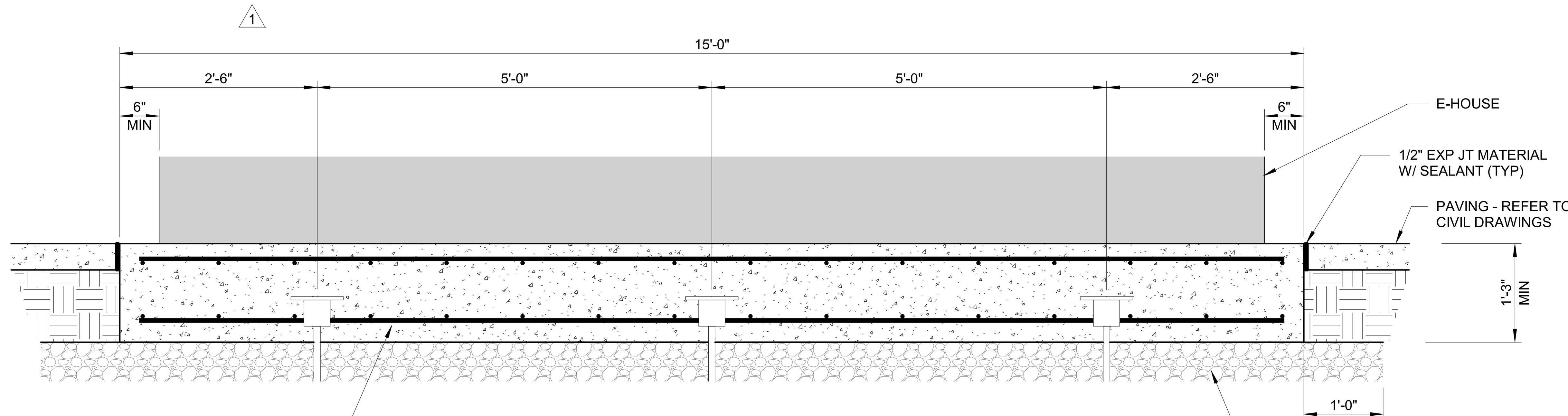


TRUE NORTH

1 09-S102 **ELECTRICAL E-HOUSE - FOUNDATION PLAN**

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



PROVIDE (12) 2.875" DIA ROUND SHAFT HELICAL TORQUE ANCHORS - MAX DOWNWARD AXIAL FORCE = 15K (ASD) TYP

8" DENSELY GRADED AGGREGATE BASE W/ VAPOR RETARDER TO EXTEND 1'-0" MIN BEYOND EXTENTS OF SLAB

2 09-S102 **ELEC E-HOUSE FOUNDATION**

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

PLAN NOTES

1. FOR GENERAL NOTES SEE SHEET 09-S001
2. COORDINATE LOCATION AND SIZE OF E-HOUSE FOUNDATIONS WITH ELECTRICAL AND PROCESS PRIOR TO CONSTRUCTION.
3. ELECTRICAL E-HOUSE BUILDING STRUCTURE TO BE DESIGNED PER THE DESIGN CRITERIA LISTED ON SHEET 09-S001

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ELECTRICAL E-HOUSE - FOUNDATION PLAN

LOWER POPLAR WATER RECLAMATION FACILITY

INFLUENT PUMP STATION IMPROVEMENTS

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REVISION INFORMATION

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5
3	ACM	JBA	02/28/2025	ADDENDUM 6

SHEET:

09-S102

FILE NO.: 3618121

Discipline Sort: 8.3
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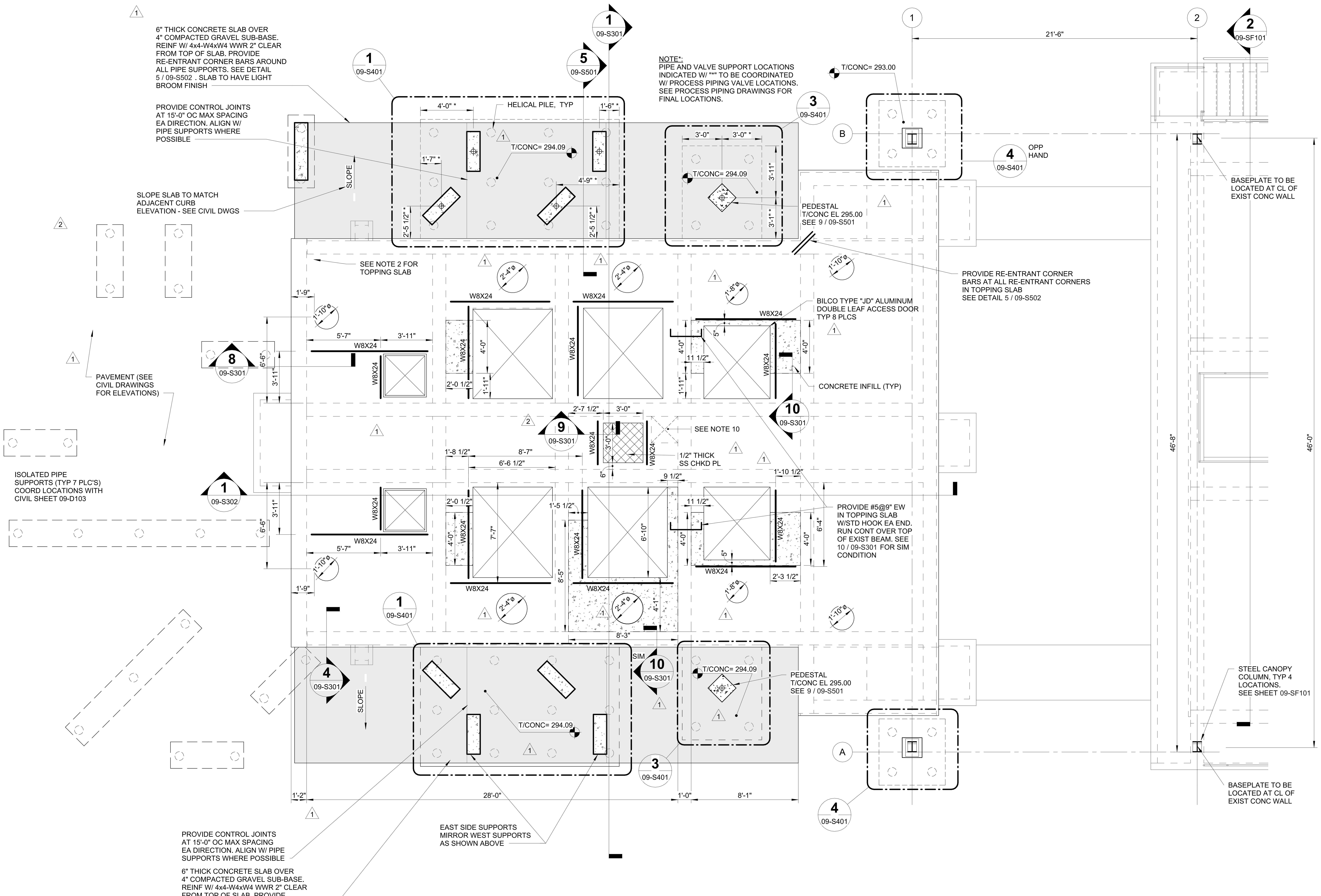

1 / 09-S103 PUMP STATION - UPPER PLAN (ELEV 294.92)

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

PLAN NOTES

1. FOR GENERAL NOTES SEE SHEET 09-S001
2. 4" THICK LW CONCRETE TOPPING SLAB SHALL ADHERE TO THE FOLLOWING SPECIFICATIONS
   a.) 4,500PSI COMPRESSIVE STRENGTH
   b.) FORTA MACRO-SYNTHEIC FIBERS (7.5 LB/CY DOSAGE)
   c.) LIGHT BROOM FINISH
3. COORDINATE SIZE AND LOCATIONS OF HATCHES AND OPENINGS PRIOR TO DEMOLITION OF CONCRETE OR FABRICATION OF STEEL.
4. ALL T/STL = 294.34' UNO.
5. INDICATES AREAS OF CONCRETE INFILL TO BE POURED MONOLITHICALLY WITH TOPPING SLAB. SEE DET 10/09-S301 FOR REINFORCING.
6. SEE SHEET 09-S501 FOR PILE CAP SECTIONS AND DETAILS.
7. TIGHTLY PACK 1" NON-SHRINK GROUT BETWEEN TOP OF BEAM AND BOTTOM OF SLAB.
8. ALL NEW BEAMS TO BE STAINLESS STEEL.
9. CONTRACTOR TO LOCATE ALL UNDERGROUND UTILITIES AND POTENTIAL INTERFERENCES PRIOR TO INSTALLING HELICAL ANCHORS.
10. EXISTING OPENING - CLEAN AS REQ'D TO WELD EXISTING LID CLOSED PRIOR TO POURING TOPPING SLAB.

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PUMP STATION - UPPER LEVEL PLAN

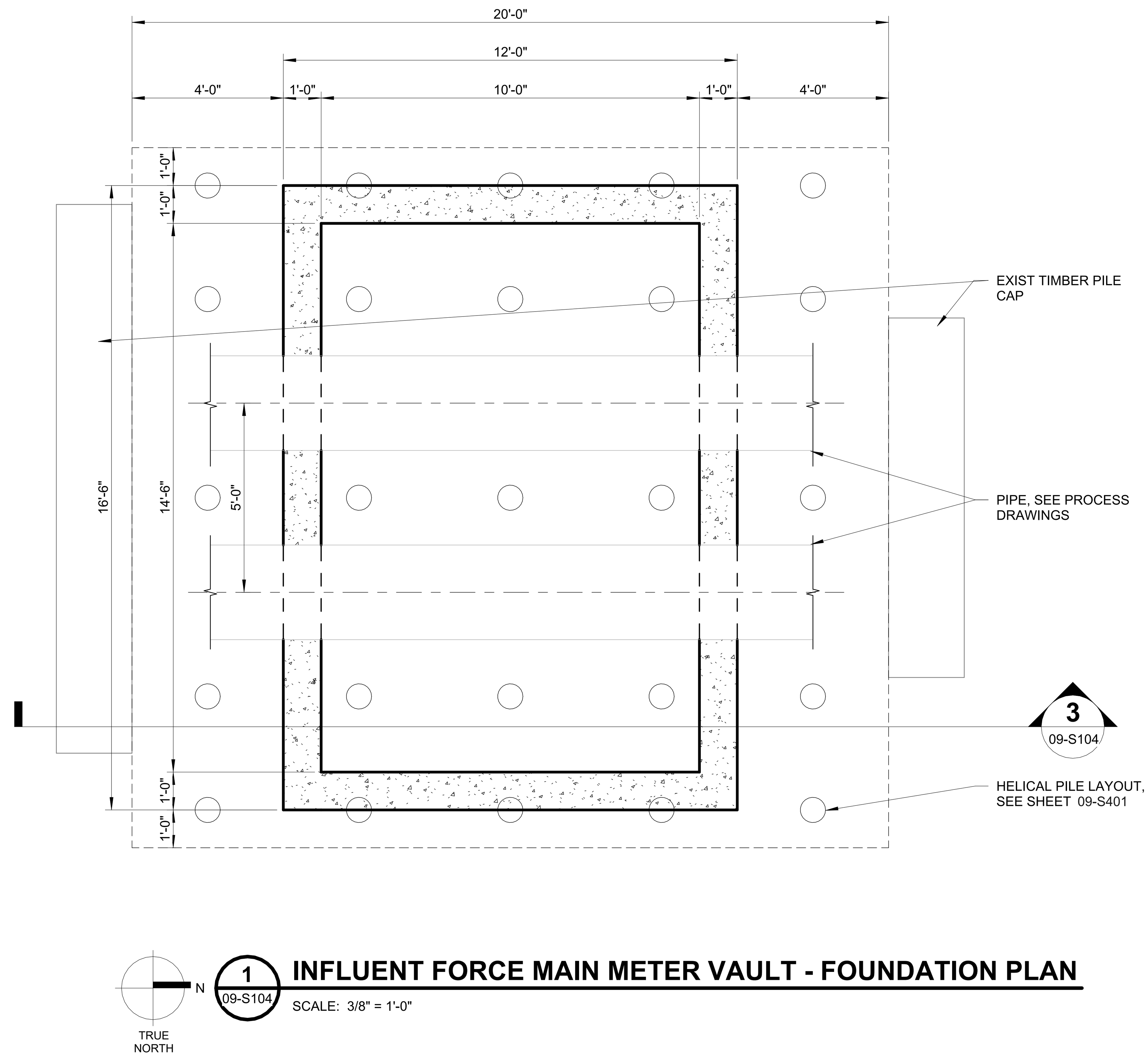
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5
3	MRD	JBA	09/18/2024	CONFORMED SET

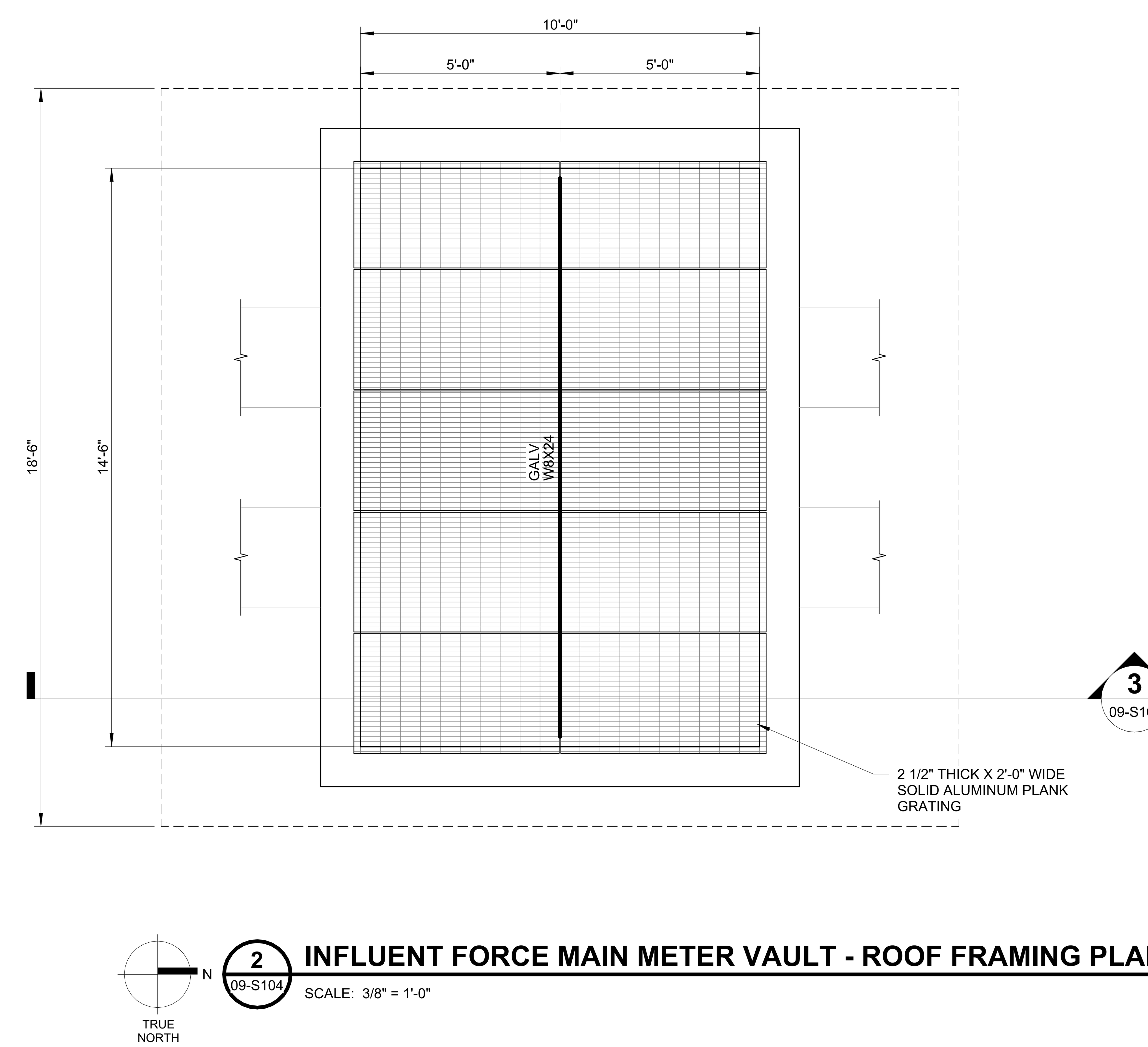
SHEET: 09-S103

FILE NO.: 3618121



1 (09-S104) INFLUENT FORCE MAIN METER VAULT - FOUNDATION PLAN

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

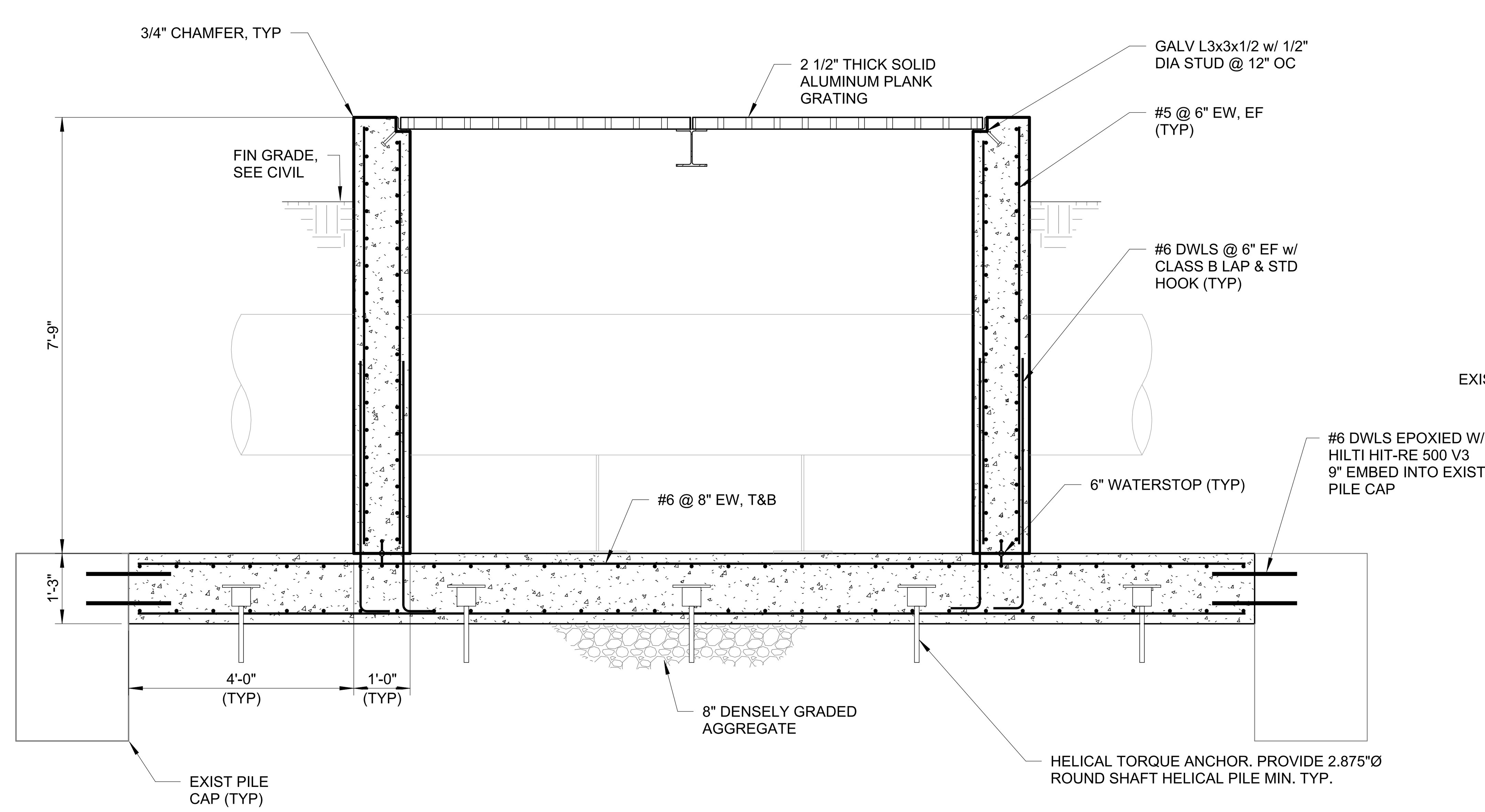


2 (09-S104) INFLUENT FORCE MAIN METER VAULT - ROOF FRAMING PLAN

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

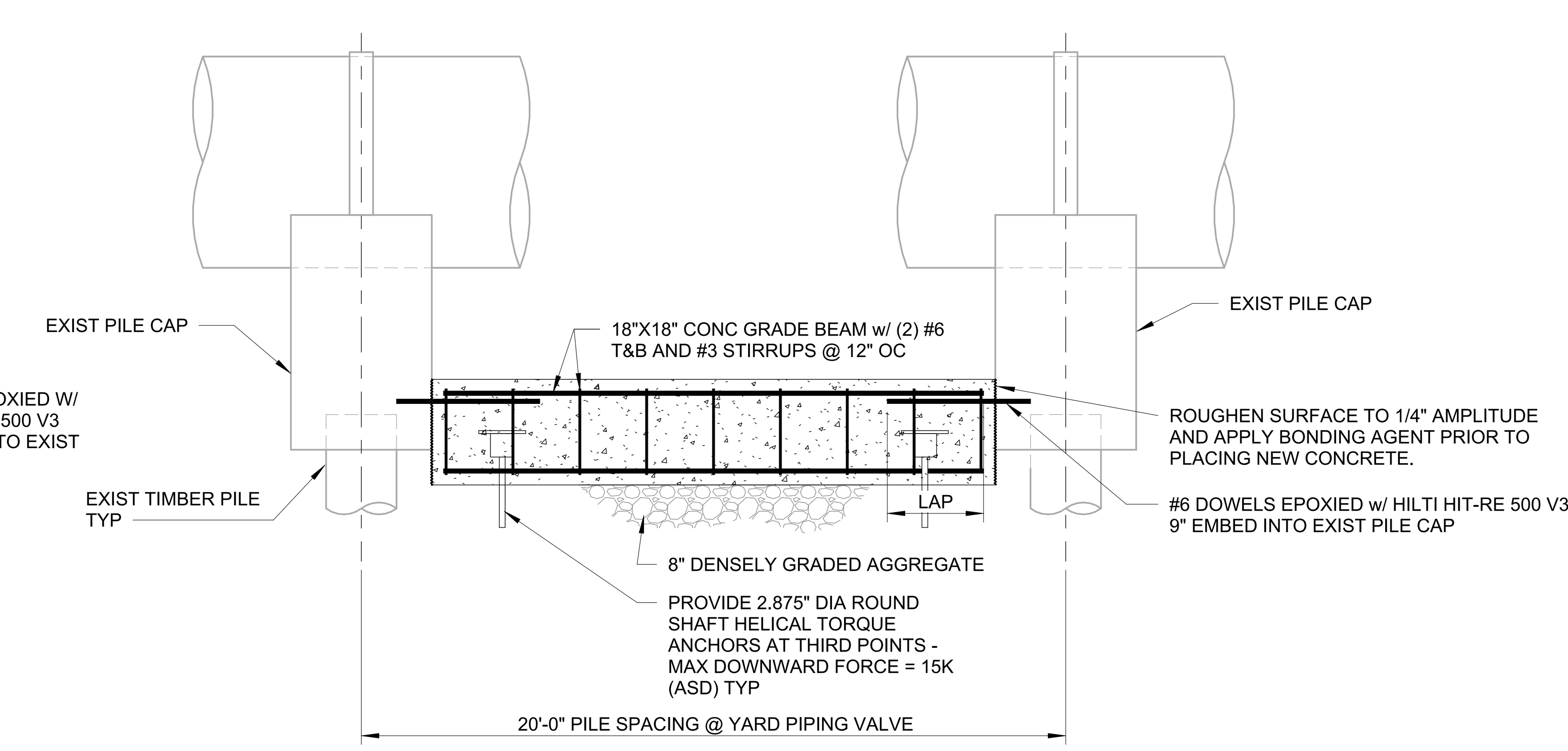
PLAN NOTES

1. REFER TO DWGS 09-S001 FOR GENERAL NOTES AND DESIGN CRITERIA.
2. CONTRACTOR TO PROVIDE SHORING FOR EXCAVATION IN ACCORDANCE WITH SPEC SECTION 31 50 00 EXCAVATION SUPPORT AND DESIGN CRITERIA IN THE GEOTECHNICAL REPORT.
3. ALL OPENINGS AND PENETRATIONS NOT SHOWN. REFER TO ARCH, PROCESS, MECHANICAL, AND ELECTRICAL DWGS FOR ADDITIONAL INFORMATION.
4. REFER TO 09-S502 FOR FOOTING/WALL CORNER AND INTERSECTION DETAILS.
5. PROVIDE ADDITIONAL REINFORCING AROUND ALL OPENINGS AND PENETRATIONS. REFER TO 2 / 09-S501
6. ALUMINUM BAR GRATING TO BE LOAD RATED FOR 100 PSF LIVE LOAD.



3 (09-S104) INFLUENT FORCE MAIN METER VAULT SECTION

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



4 (09-S104) ISOLATION VALVE SUPPORT

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

REF SHEET 02-D302 FOR YARD PIPING ISOLATION VALVE

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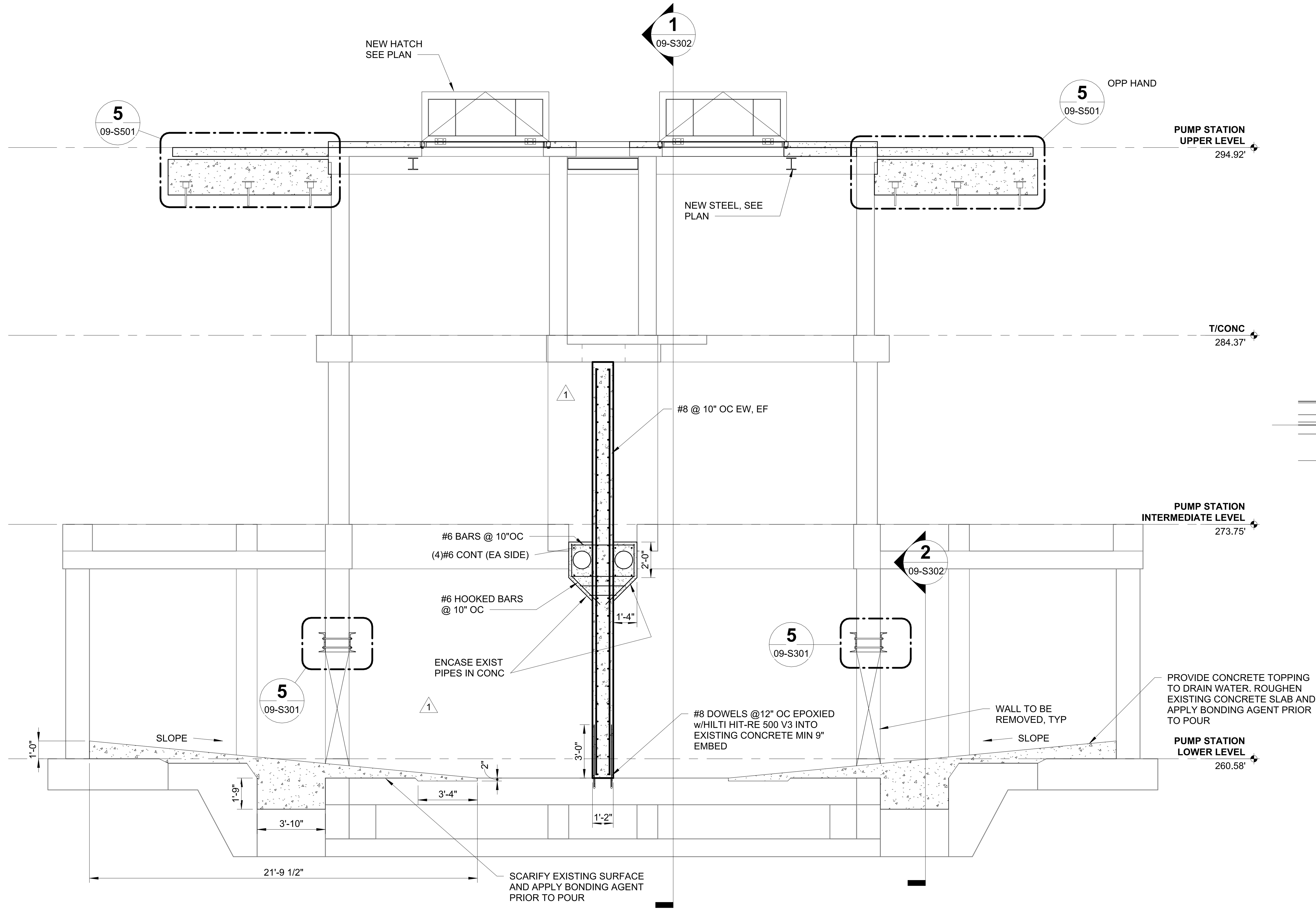
VAULT PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION

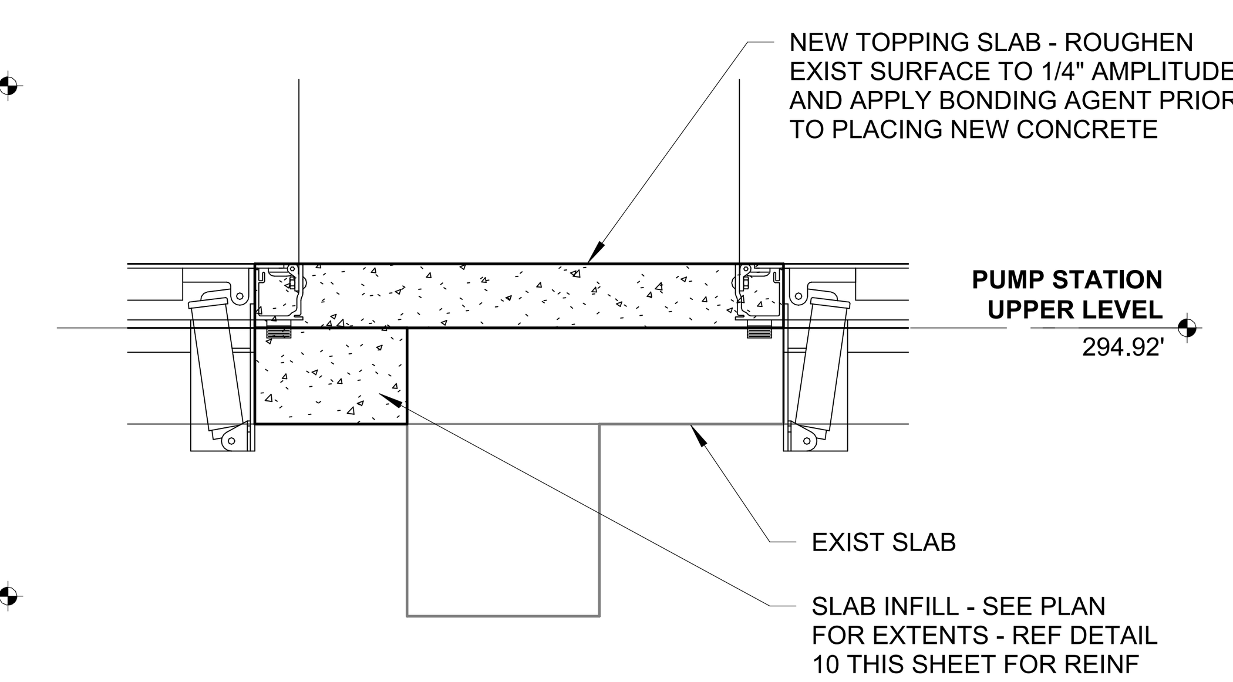
REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET:
09-S104
FILE NO.: 3618121

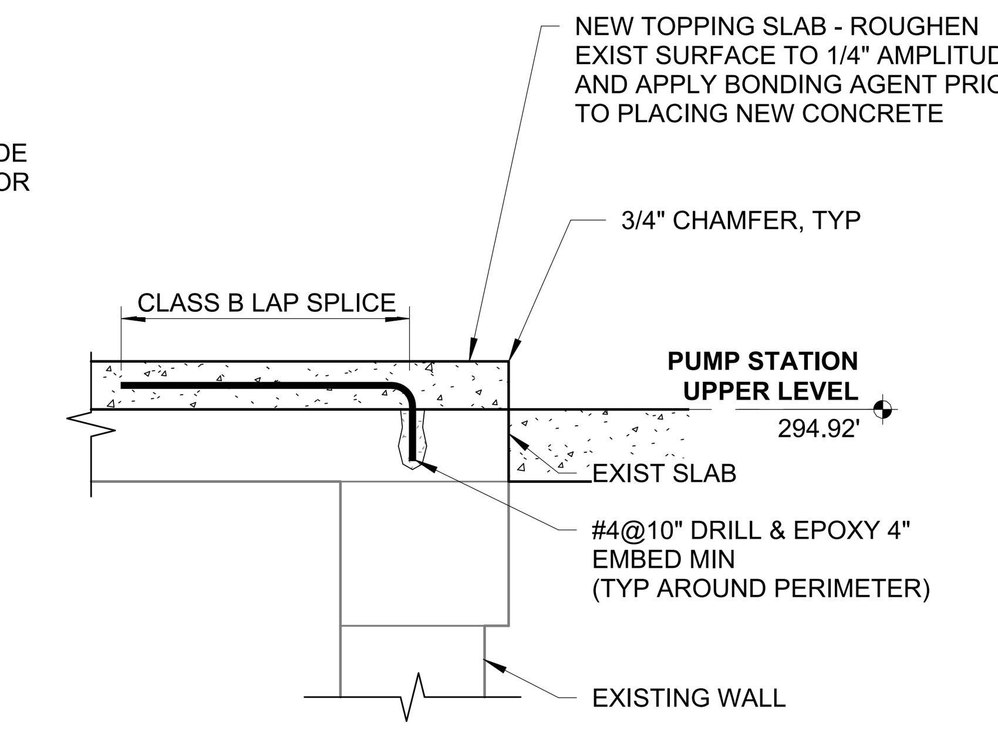


1 **SECTION**
09-S101
SCALE: 1/4" = 1'-0"

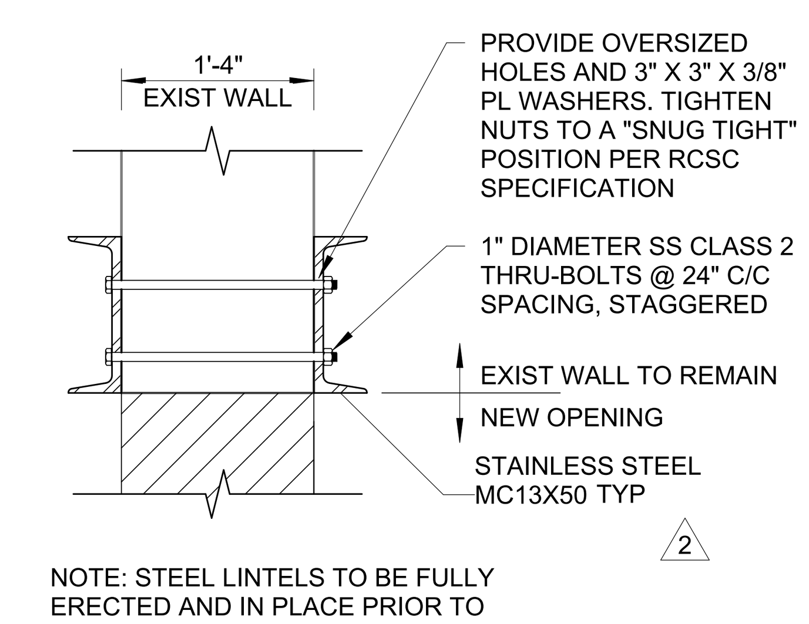
SECTION 2 NOT USED



3 **BETWEEN HATCHES**
09-S302
SCALE: 1" = 1'-0"

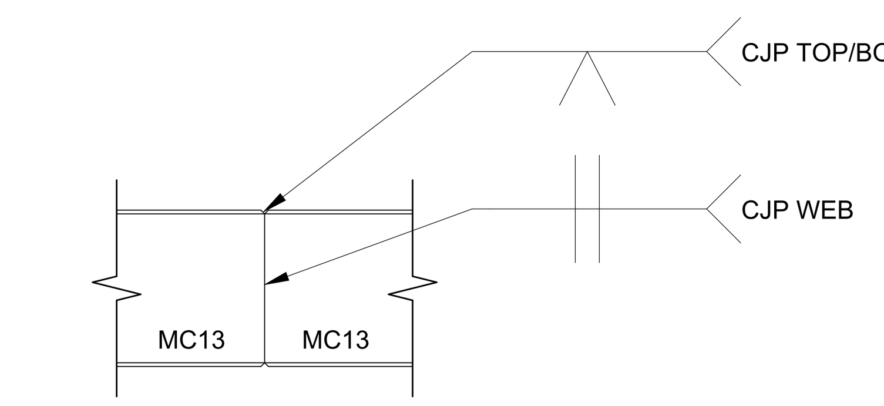


4 **TOPPING SLAB TO EXIST SLAB**
09-S301
SCALE: 3/4" = 1'-0"



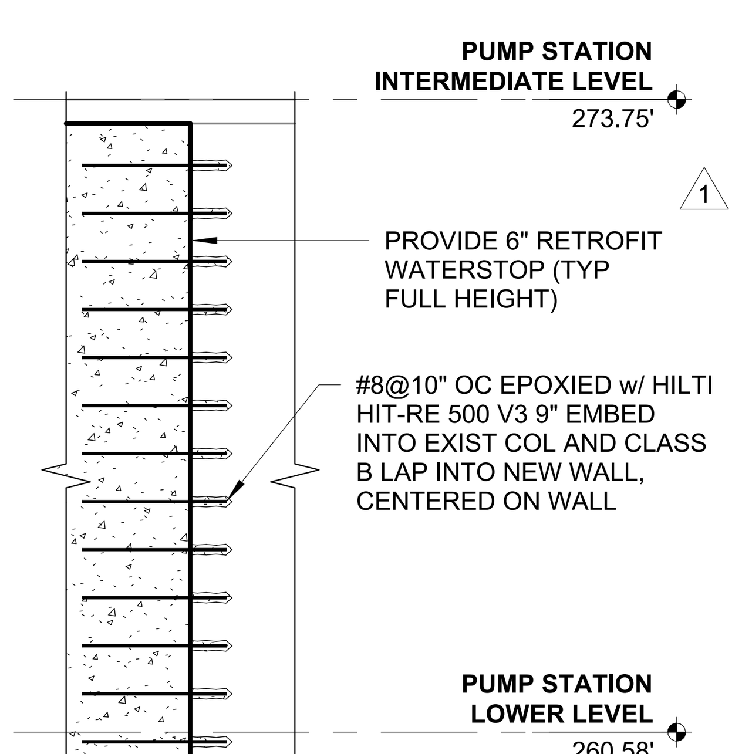
NOTE: STEEL LINTELS TO BE FULLY ERECTED AND IN PLACE PRIOR TO DEMOLITION OF THE WALL

5 **STEEL LINTEL**
09-S301
SCALE: 3/4" = 1'-0"

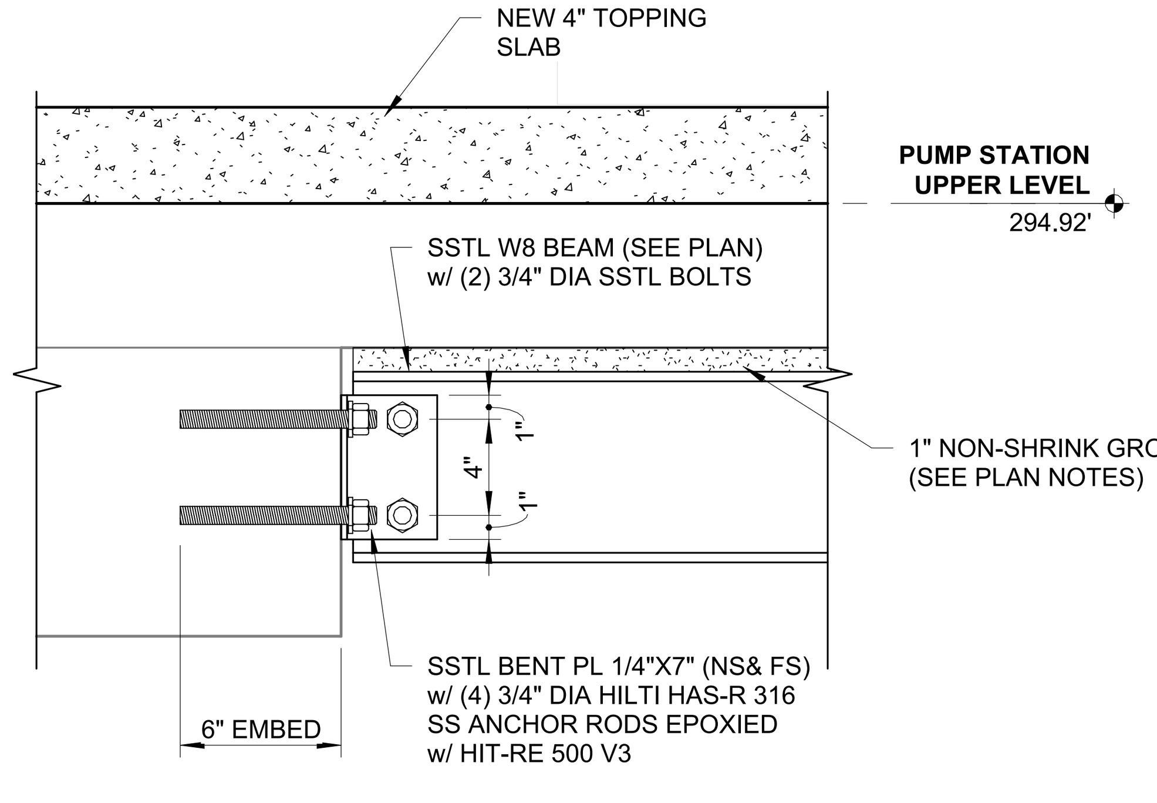


NOTE: SEE PLAN FOR SPLICE LOCATIONS

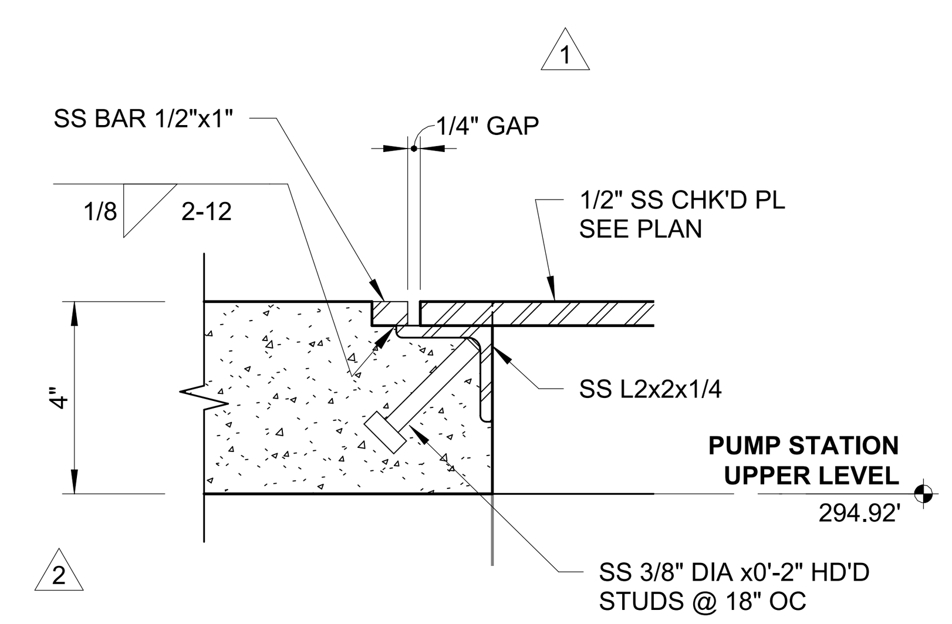
6 **CHANNEL SPLICE**
09-S301
SCALE: 3/4" = 1'-0"



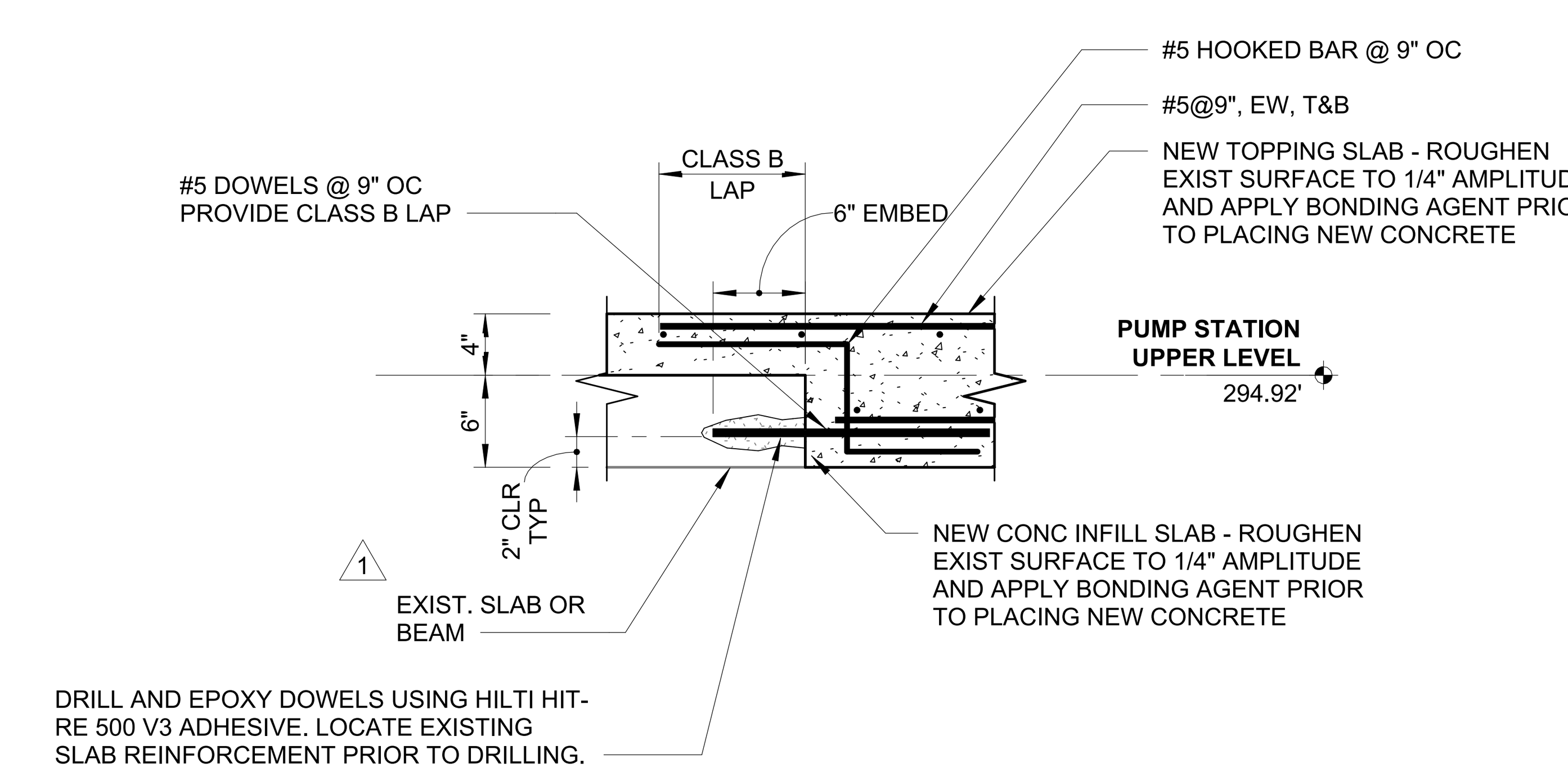
7 **EXISTING COL INTERFACE**
09-S301
SCALE: 1/4" = 1'-0"



8 **BEAM TO CONCRETE**
09-S301
SCALE: 1 1/2" = 1'-0"



9 **ARMORED EDGE**
09-S301
SCALE: 3" = 1'-0"



10 **CONCRETE INFILL**
09-S103
SCALE: 1" = 1'-0"

BARGE
DESIGN SOLUTIONS
615 3rd Avenue South // Suite 700 // Nashville, Tennessee 37210
Phone: 615.254.1500 // Fax 615.255.6572

GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.09.19 13:48:23-05'00'

SECTIONS

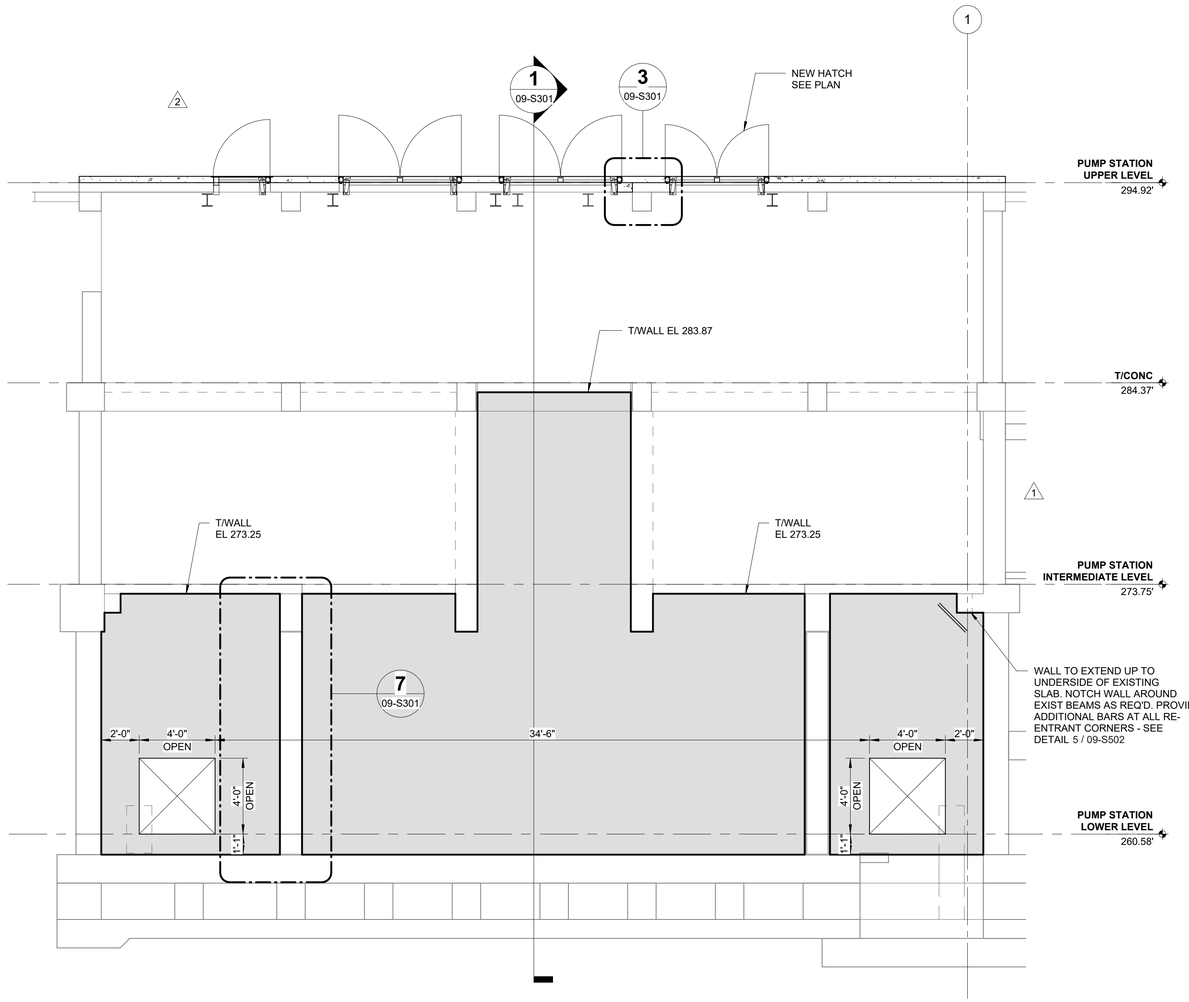
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION:

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5

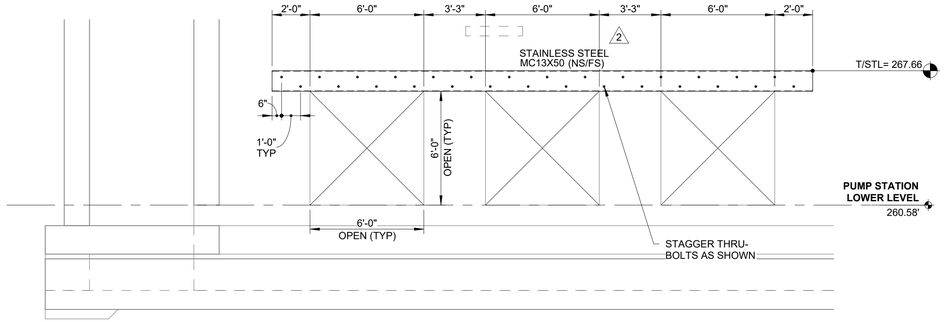
SHEET
09-S301
FILE NO.: 3618121

Discipline Sort: 8.3
Drawing: 09-S301 SECTIONS
File: PS\3618121_LPWRF_STRL.rvt
Time Date: 9/18/2024 3:32:55 PM



1 GATE OPENINGS

09-S302 SCALE: 1/4" = 1'-0"



2 SHORING SECTION

09-S302 SCALE: 1/4" = 1'-0"

BARGE DESIGN SOLUTIONS
615 3rd Avenue South / Suite 700 // Nashville, Tennessee 37210
Phone: 615.254.1500 // Fax 615.255.6572

GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.09.19 13:51:06-05'00'

SECTIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	08/14/2024	ADDENDUM 3
2	MRD	JBA	08/21/2024	ADDENDUM 5

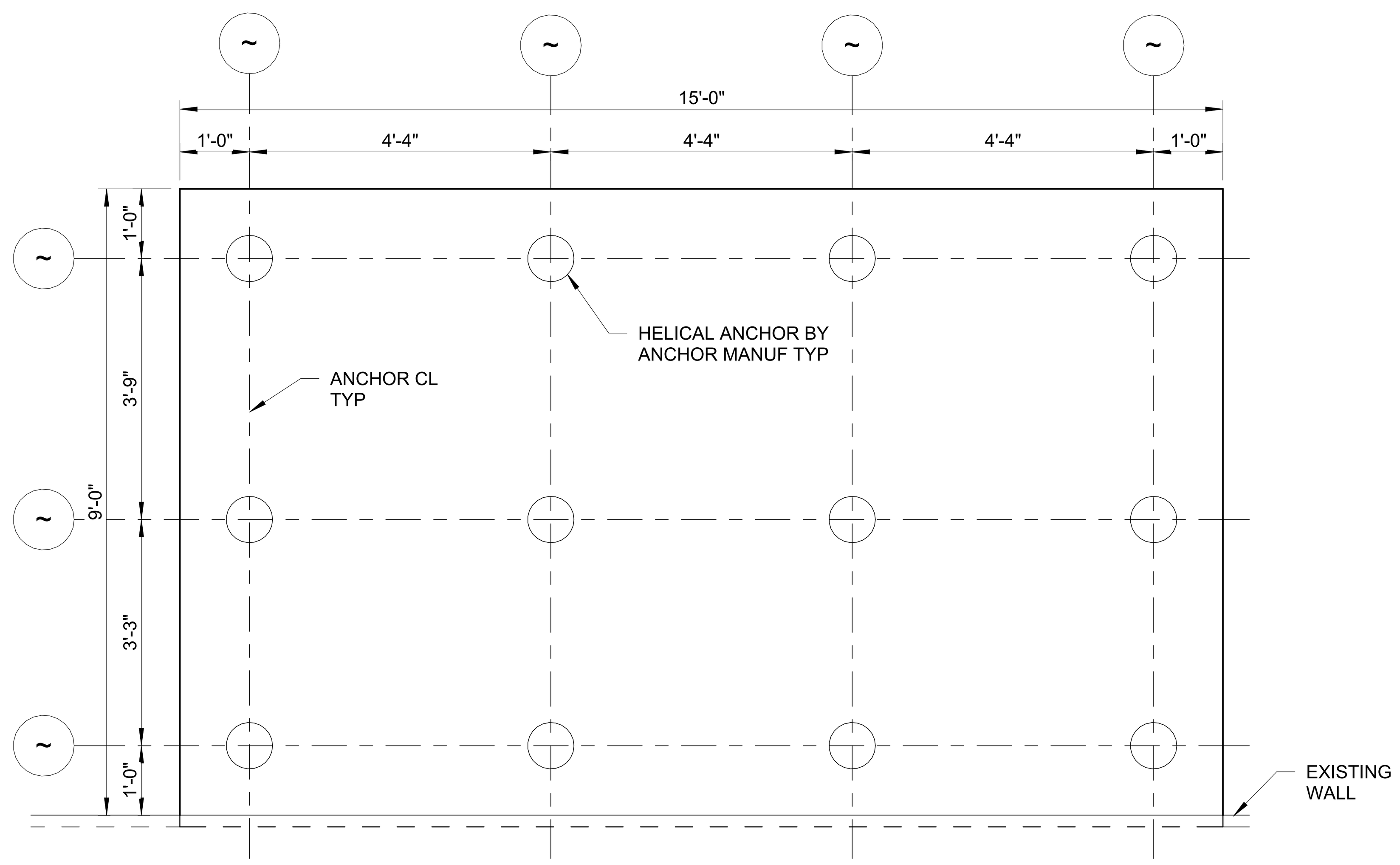
REVISION INFORMATION

SHEET

09-S302

FILE NO.: 3618121

Discipline Sort: 8.3
Drawing: 09-S302
Timer / Date: 9/18/2024 3:32:56 PM

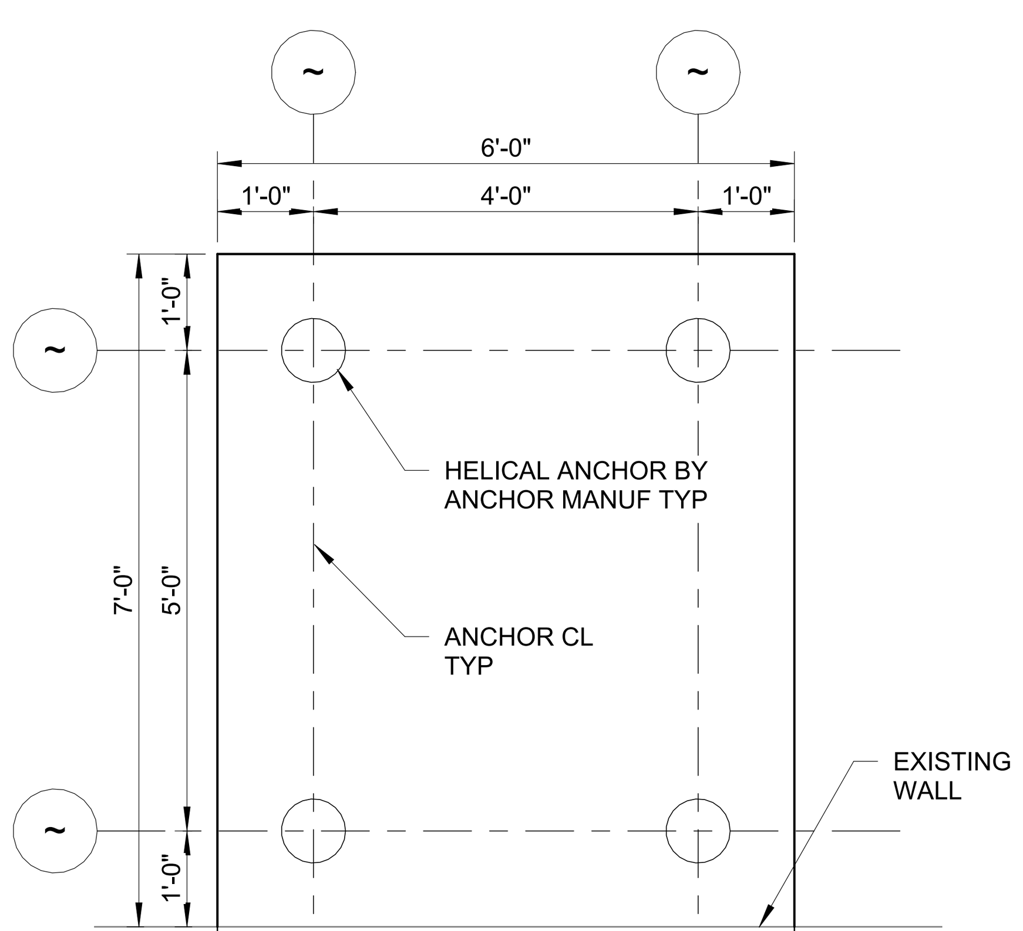


TRUE NORTH

1 / 09-S401

PIPE SADDLE SUPPORT FOUNDATION 1 - HELICAL PLAN

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

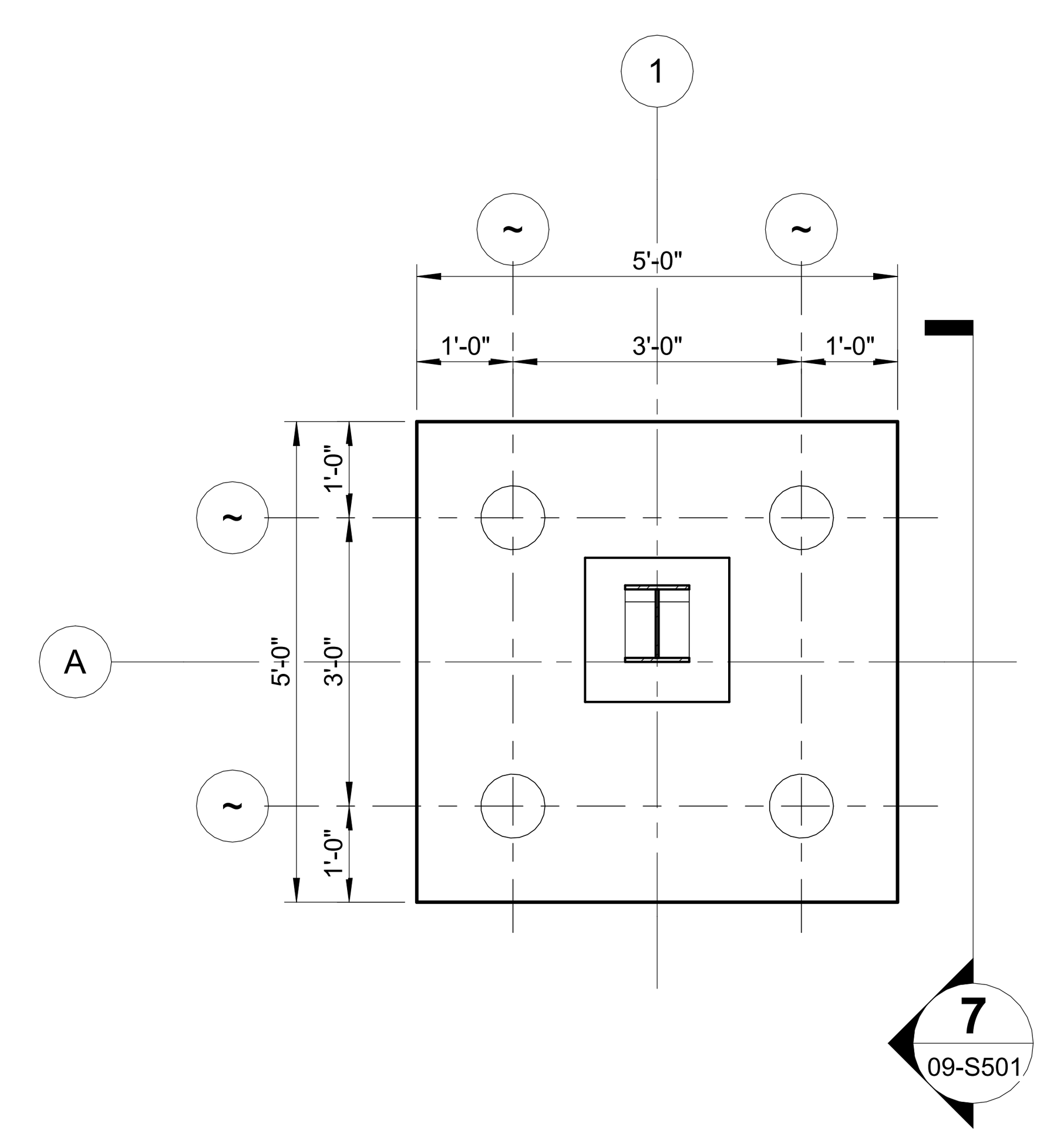


TRUE NORTH

3 / 09-S401

PIPE SADDLE SUPPORT FOUNDATION 2 - HELICAL PLAN

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

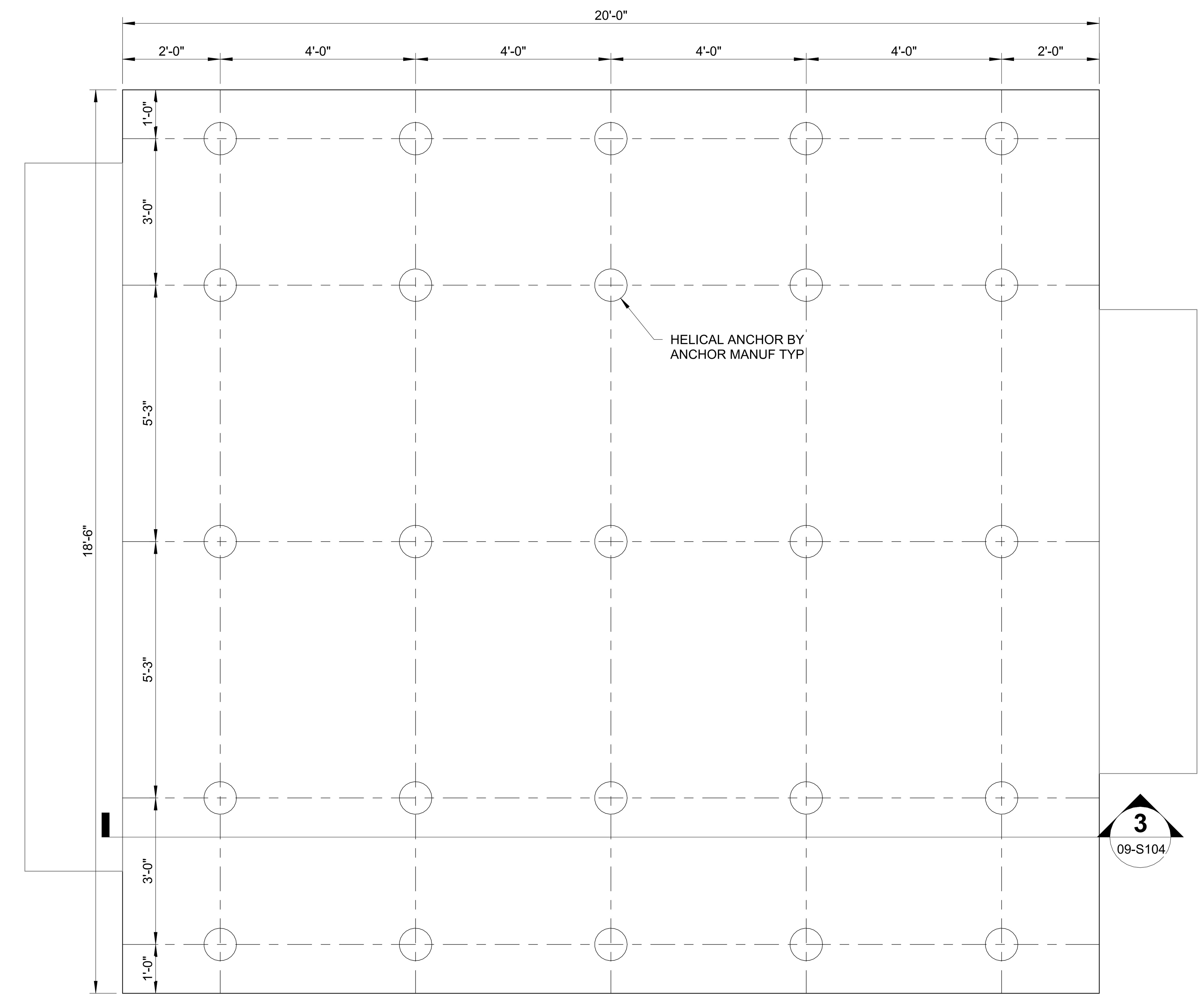


TRUE NORTH

4 / 09-S401

CANOPY FOUNDATION - HELICAL PLAN

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



TRUE NORTH

2 / 09-S401

INFLUENT FORCE MAIN METER VAULT - HELICAL PLAN

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

BARGE DESIGN SOLUTIONS
615 3rd Avenue South // Suite 700 // Nashville, Tennessee 37210
Phone: 615.254.1500 // Fax 615.255.6572

GEORGIA REGISTERED STRUCTURAL ENGINEER No. SE000550 BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.07.09
13:59:14-05'00'

ENLARGED PLANS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION:

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET

09-S401

FILE NO.: 3618121

Discipline Sort: 8.3
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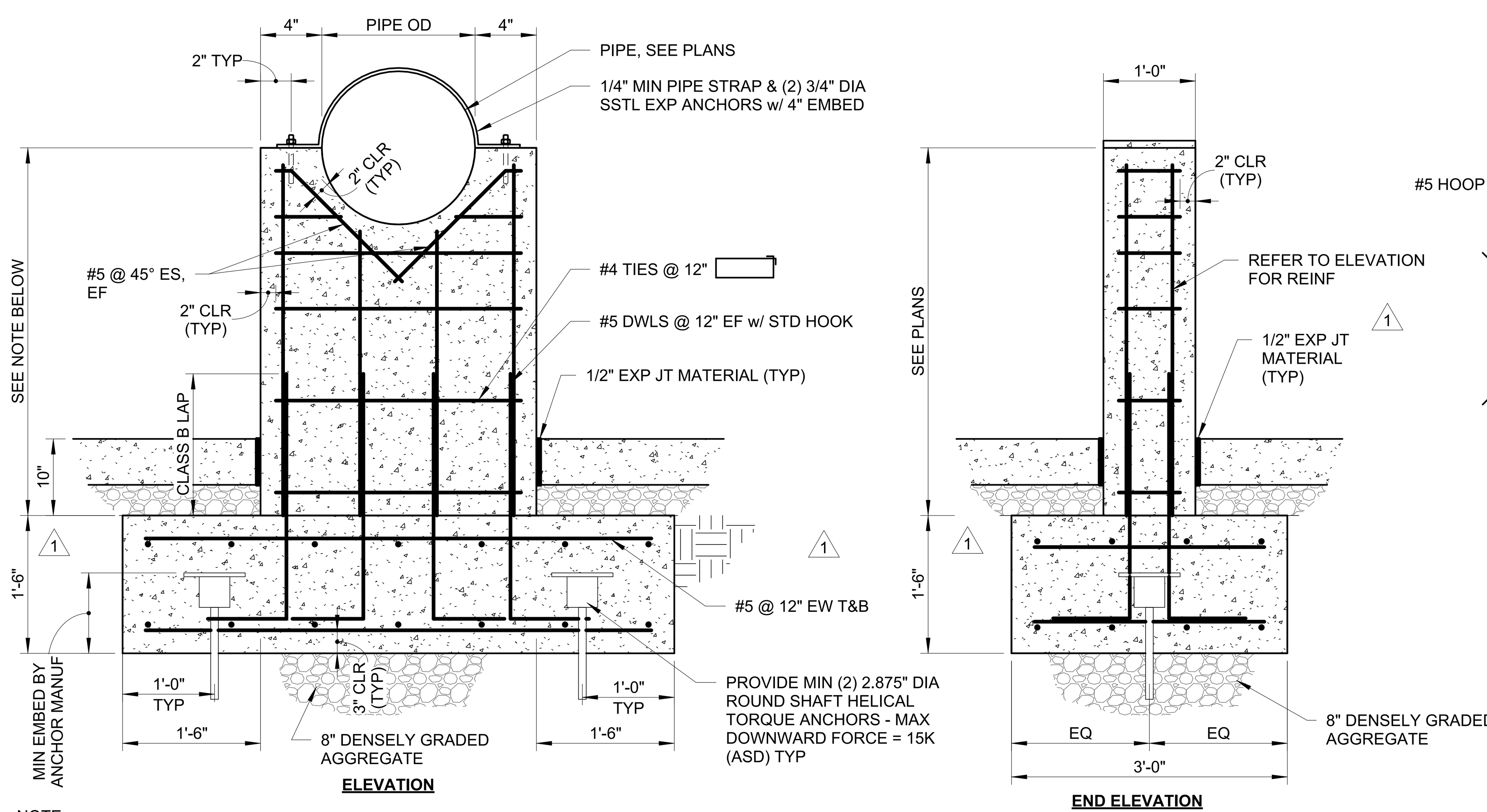
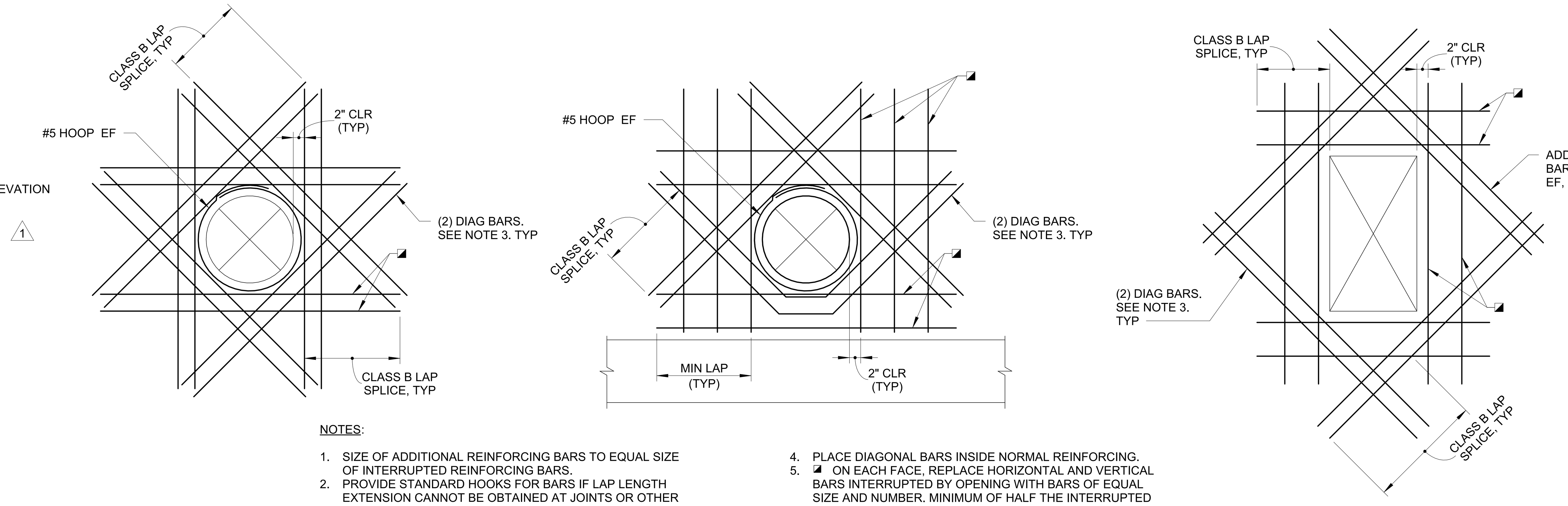
Time / Date: 7/9/2024 10:51:05 AM



NOTE:
ALIGN TOP OF PEDESTAL ELEVATIONS W/ PIPE CENTERLINE. COORDINATE T/PEDESTAL W/ OTHER DISCIPLINE DRAWINGS. NOTE TYPICAL FOR ALL PIPE SUPPORT PEDESTALS.

1 09-S501 PIPE SUPPORT

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

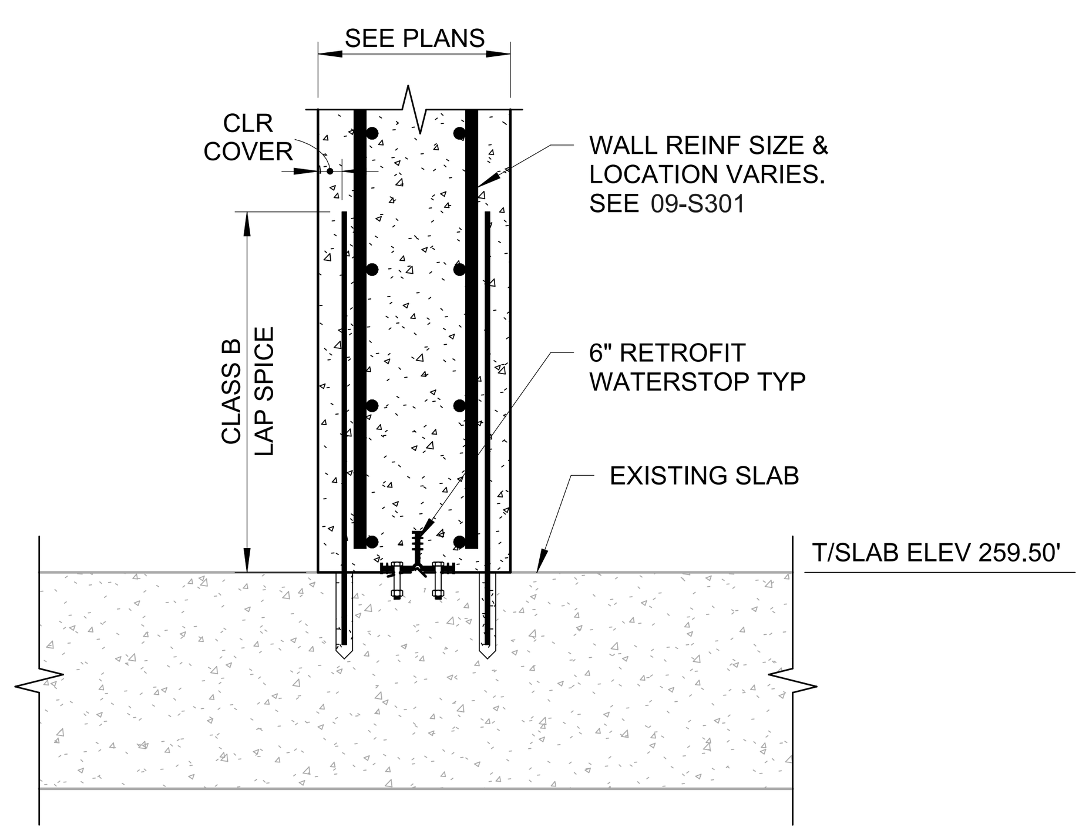


NOTES:

1. SIZE OF ADDITIONAL REINFORCING BARS TO EQUAL SIZE OF INTERRUPTED REINFORCING BARS.
2. PROVIDE STANDARD HOOKS FOR BARS IF LAP LENGTH EXTENSION CANNOT BE OBTAINED AT JOINTS OR OTHER OBSTRUCTIONS. PLACE ADDITIONAL BARS IN SAME PLANES AS INTERRUPTED REINFORCING.
3. UNLESS NOTED OTHERWISE, SIZE OF DIAGONAL BARS SHALL BE THE SAME SIZE AS THE INTERRUPTED NORMAL REINFORCING.
4. PLACE DIAGONAL BARS INSIDE NORMAL REINFORCING.
5. ON EACH FACE, REPLACE HORIZONTAL AND VERTICAL BARS INTERRUPTED BY OPENING WITH BARS OF EQUAL SIZE AND NUMBER. MINIMUM OF HALF THE INTERRUPTED BARS ON EACH SIDE. SPACE ADDED BARS AT 6" OC

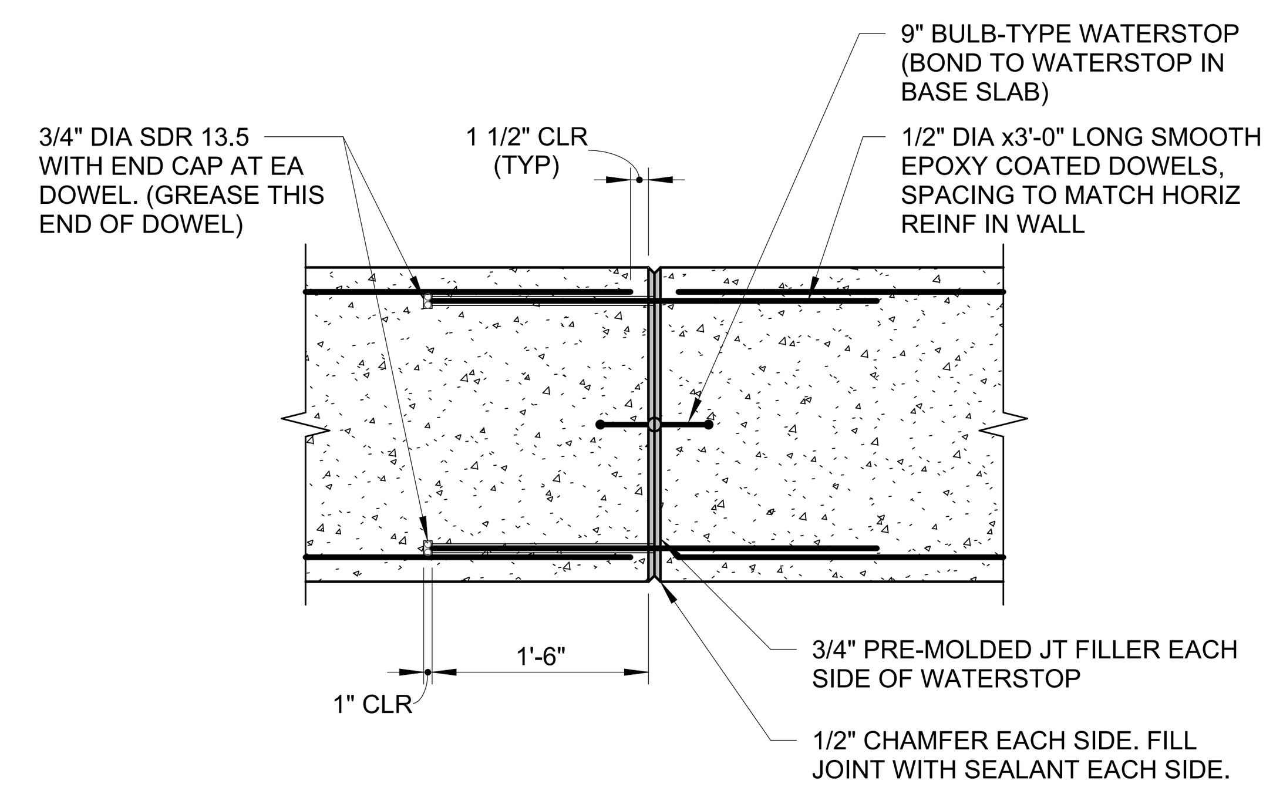
2 09-S501 ADDITIONAL REINFORCING AT OPENINGS

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



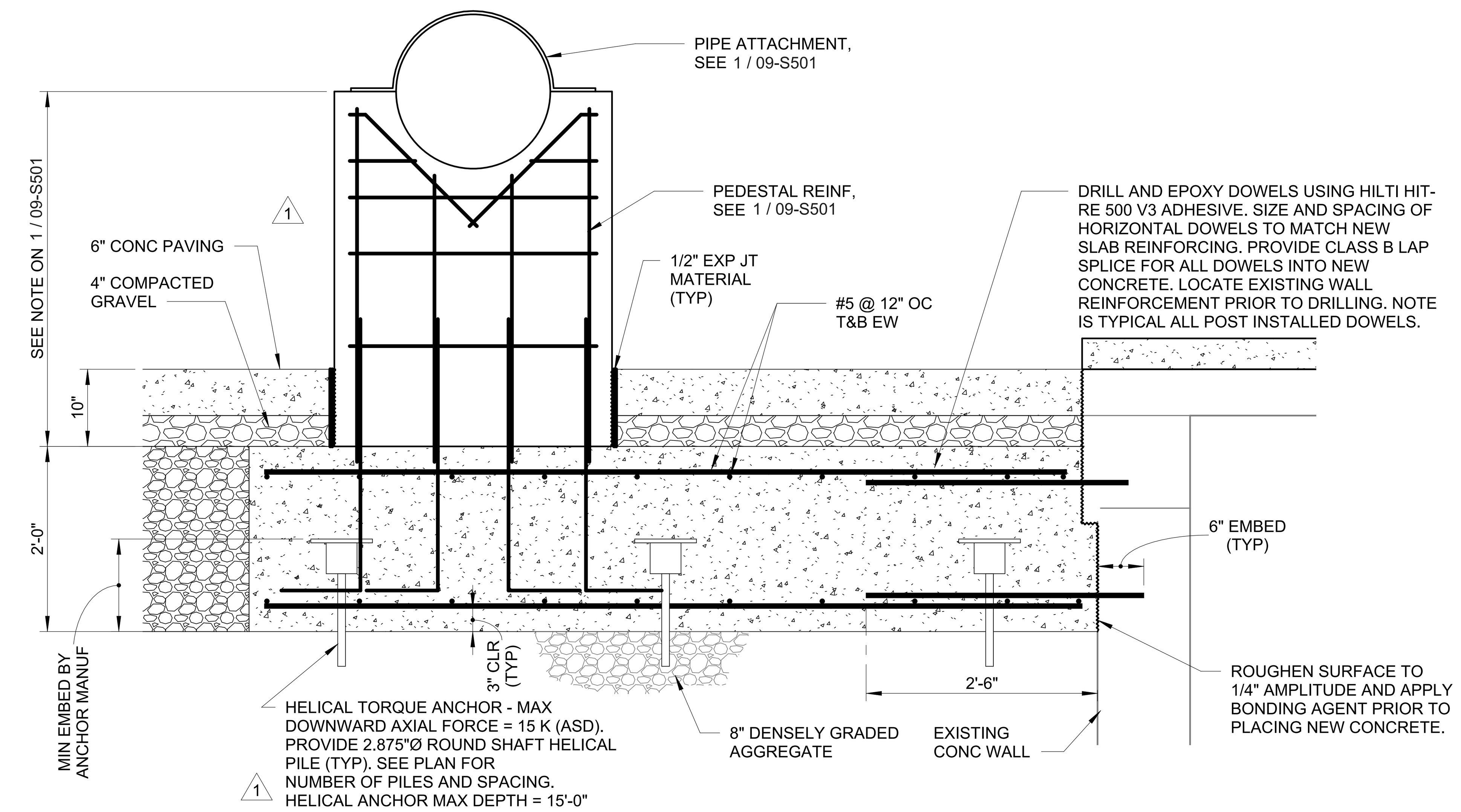
3 09-S501 BASE OF DIVIDER WALL

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



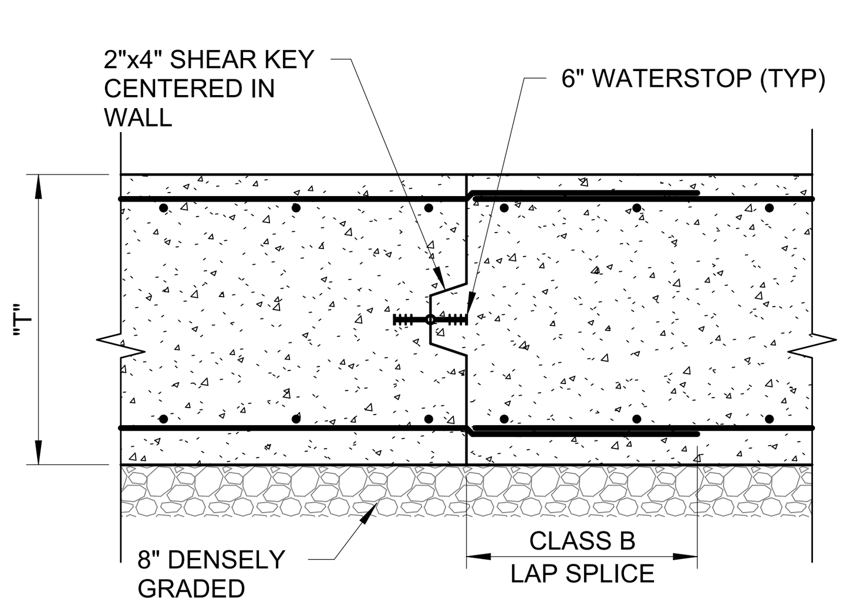
4 09-S501 FOUNDATION EXPANSION JOINT

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



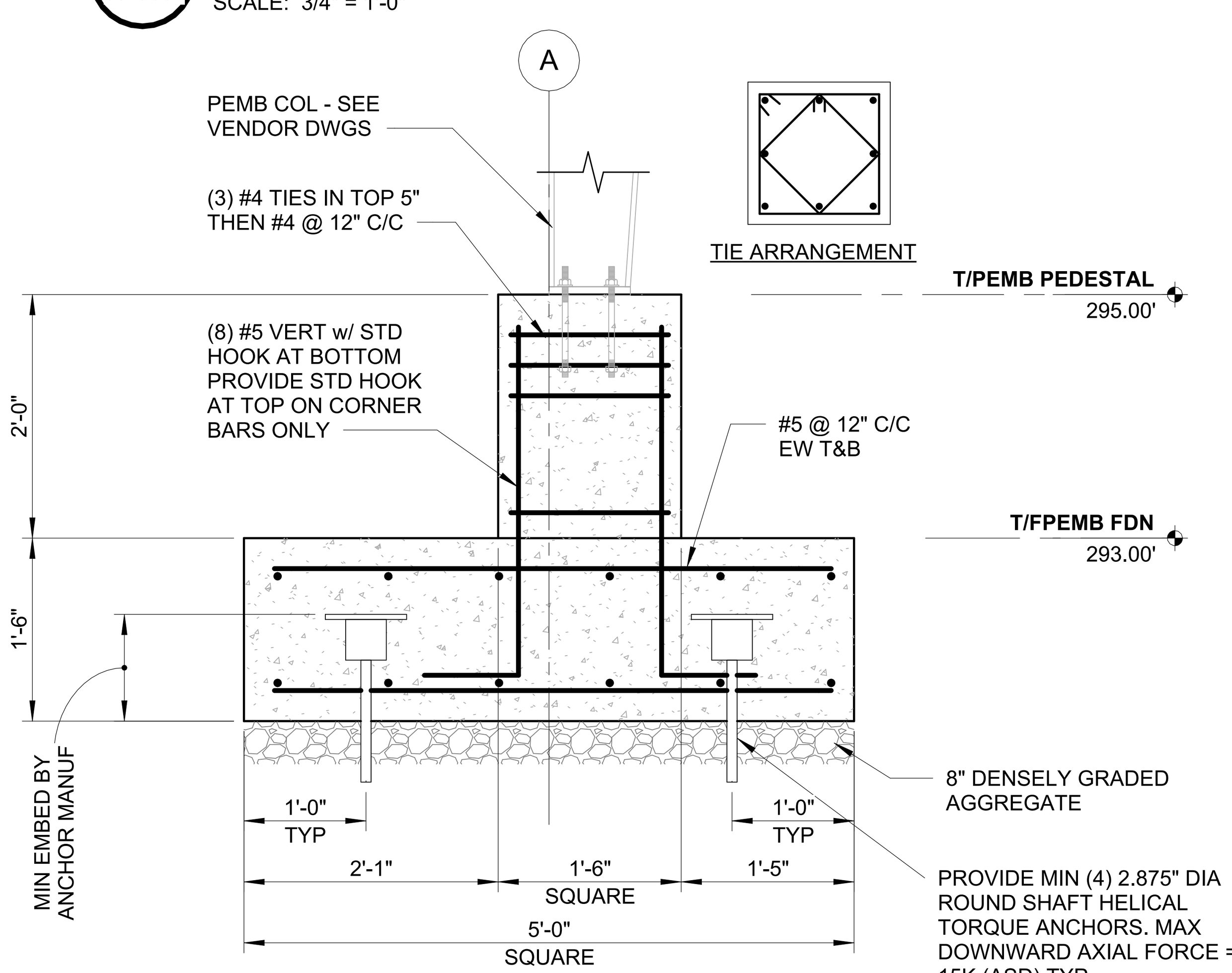
5 09-S501 PILE CAP SECTION

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



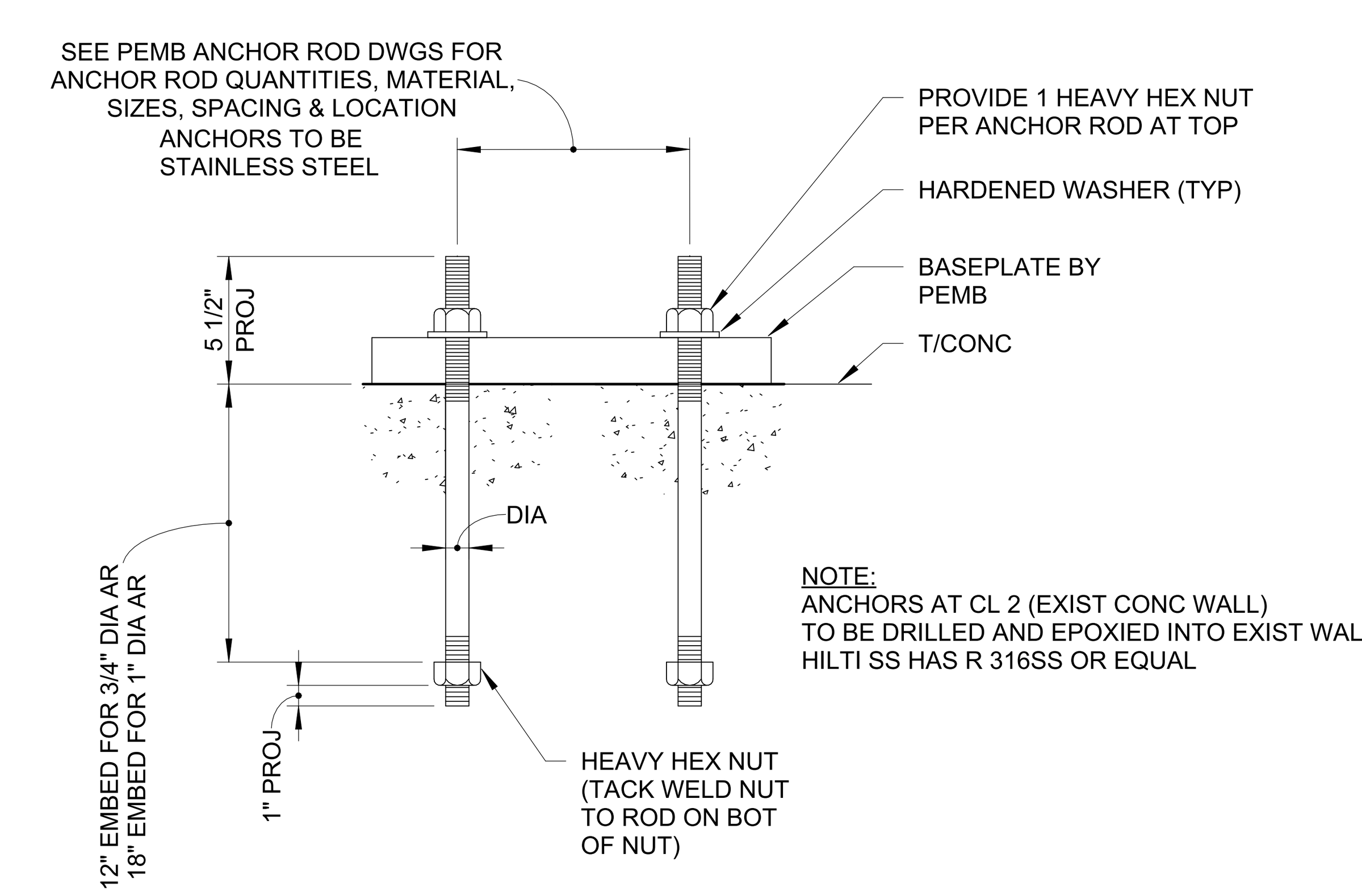
6 09-S501 FOUNDATION CONSTRUCTION JOINT

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



7 09-S501 SECTION

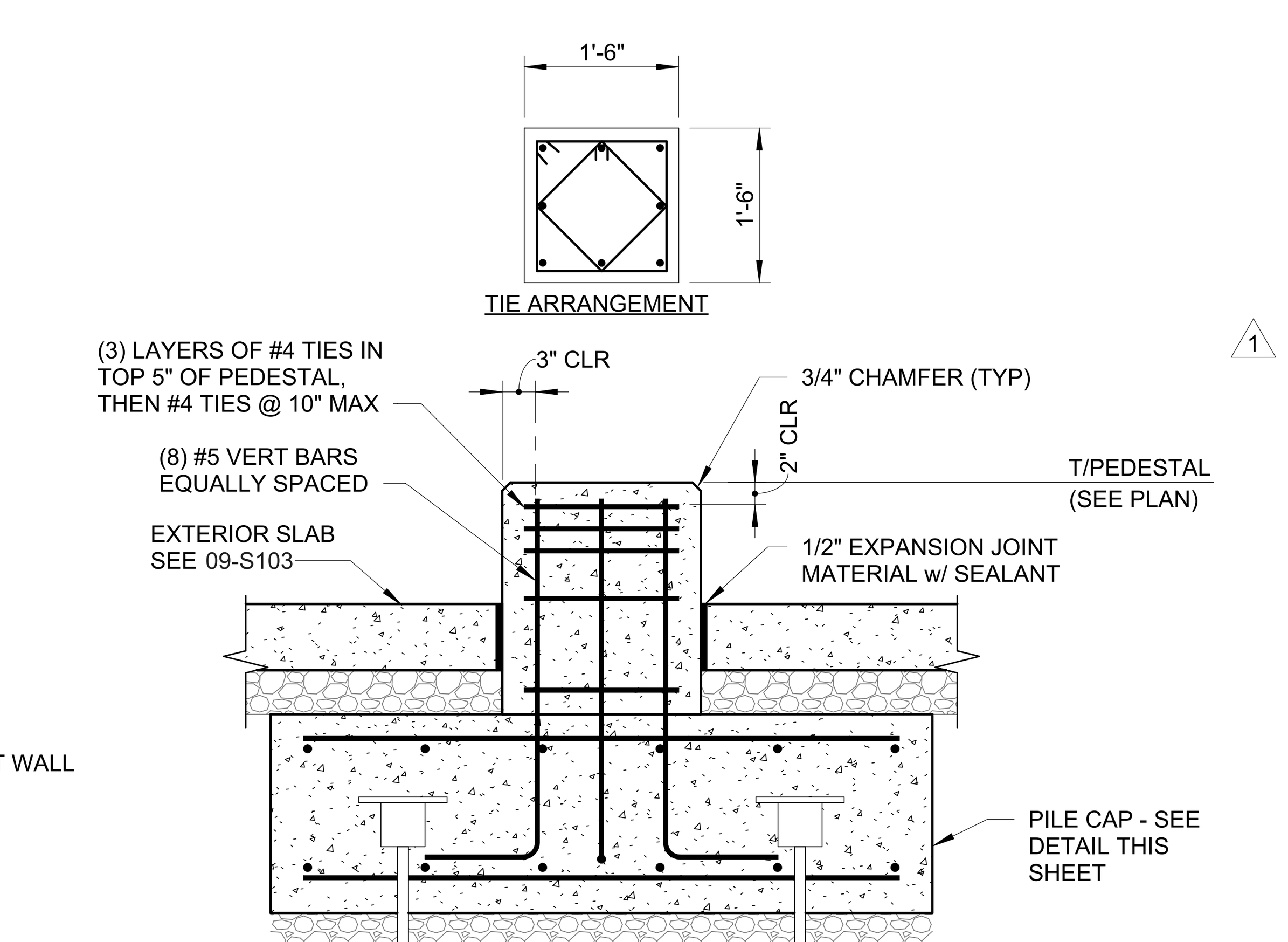
SCALE: 3/4" = 1'-0"



NOTE:
ANCHORS AT CL 2 (EXIST CONC WALL) TO BE DRILLED AND EPOXIED INTO EXIST WALL HILTI SS HAS R 316SS OR EQUAL

8 09-S501 TYPICAL PEMB ANCHOR ROD

NTS



9 09-S501 SECTION

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

BARGE DESIGN SOLUTIONS
615 3rd Avenue South // Suite 700 // Nashville, Tennessee 37210
Phone: 615.254.1500 // Fax 615.255.6572

GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.09.19 13:52:50-05'00'

DETAILS

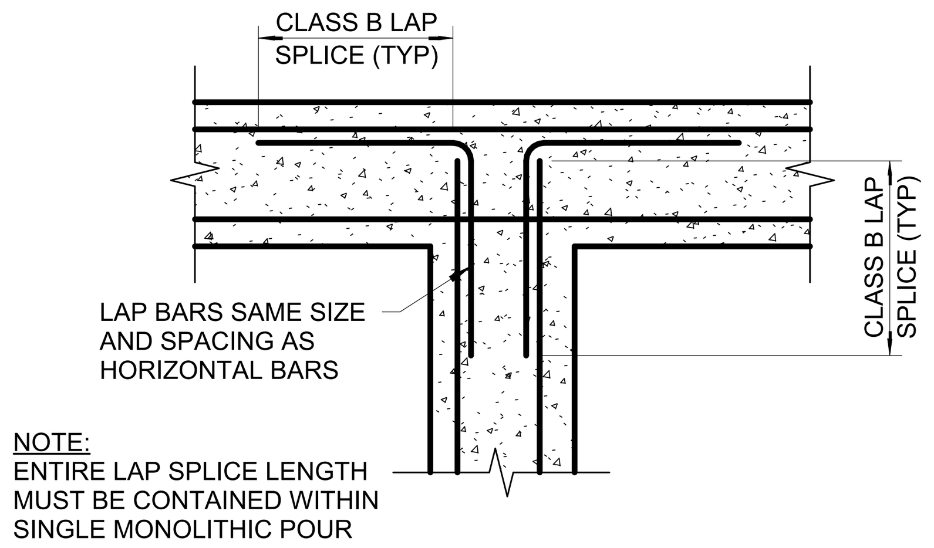
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHOURITY

REVISION INFORMATION:

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID
1	MRD	JBA	09/14/2024	ADDENDUM 3

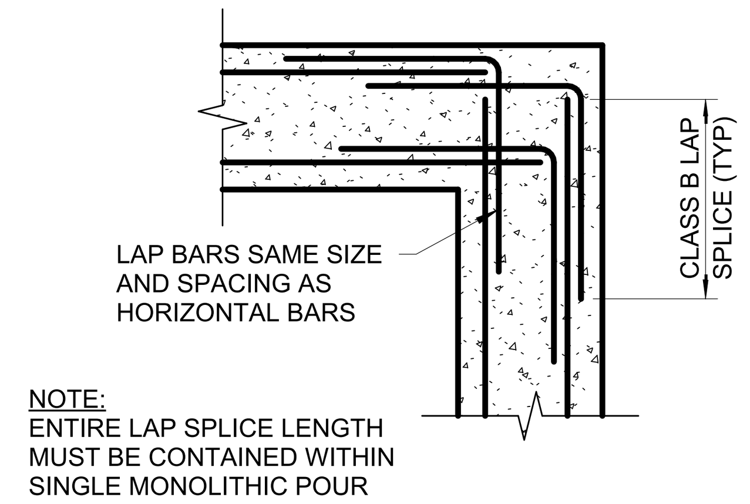
SHEET
09-S501
FILE NO.: 3618121

Discipline Sort: 9.3
Drawing: 09-S501 DETAILS
File: PS3618121_LPWRF_STRL.rvt
Time / Date: 9/18/2024 3:32:58 PM



1 09-S502 **WALL INTERSECTION**

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

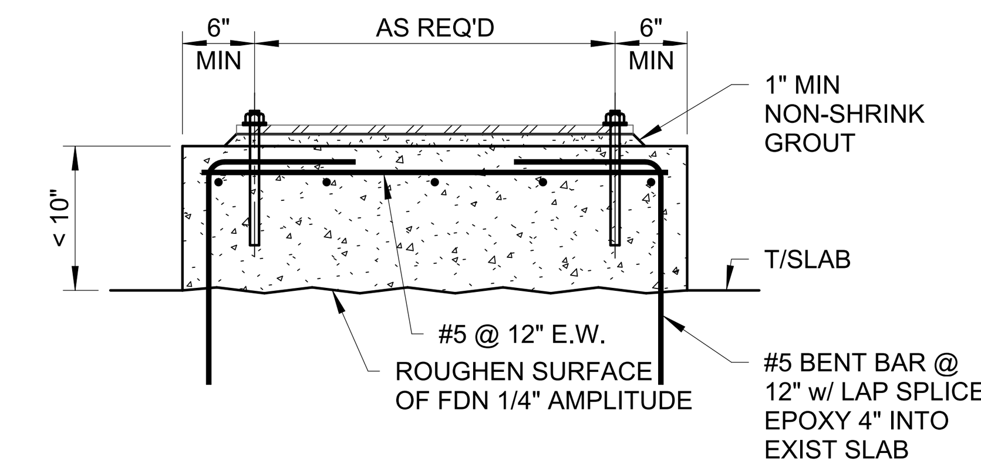


2 09-S502 **WALL CORNER**

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

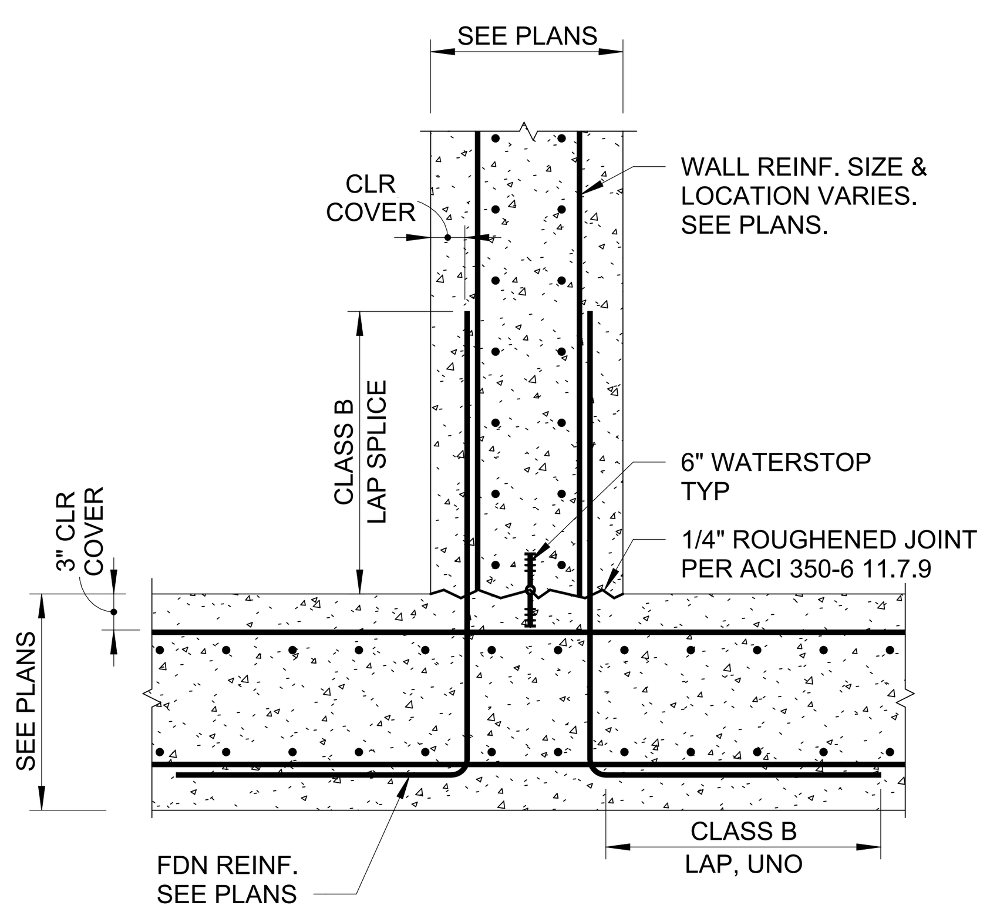
DESIGN NOTES:

1. PAD HEIGHT SHALL BE AS REQUIRED. COORDINATE SIZE AND LOCATION OF PAD WITH EQUIPMENT REQUIREMENTS.
2. PAD HEIGHTS EXCEEDING 1'-2" SHALL BE SPECIFICALLY DESIGNED AND DETAILED FOR THE EQUIPMENT BEING SUPPORTED.
3. EQUIPMENT ANCHORAGE SHALL BE DESIGNED BY OTHERS, U.N.O.
4. SEE SPECS. FOR ADDITIONAL EQUIPMENT ANCHORAGE CRITERIA.
5. COORDINATE WITH PROCESS DRAWINGS FOR LOCATIONS.



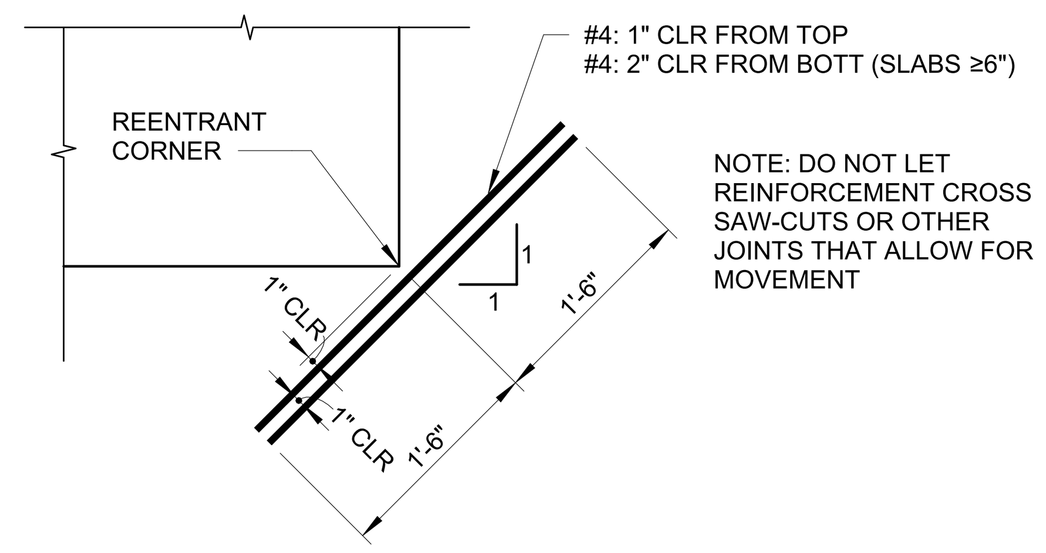
3 09-S502 **HOUSEKEEPING PAD**

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



4 09-S502 **BASE OF WALL**

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



5 09-S502 **REENTRANT CORNER REINFORCING**

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

BARGE DESIGN SOLUTIONS

615 3rd Avenue South // Suite 700 // Nashville, Tennessee 37210
Phone: 615.254.1500 // Fax 615.255.6572

GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.07.09 14:00:01-05'00'

DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

REVISION INFORMATION:

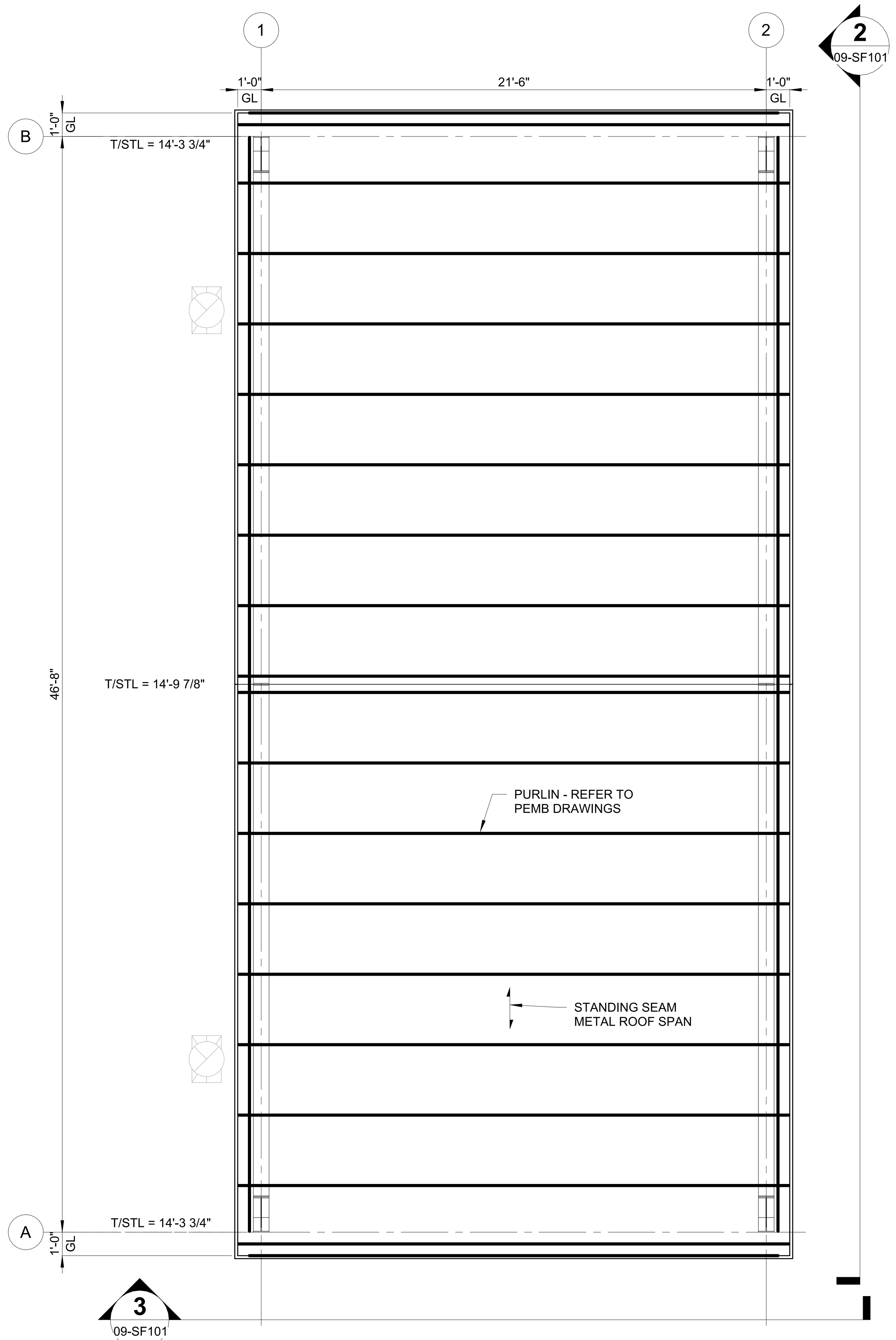
REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET

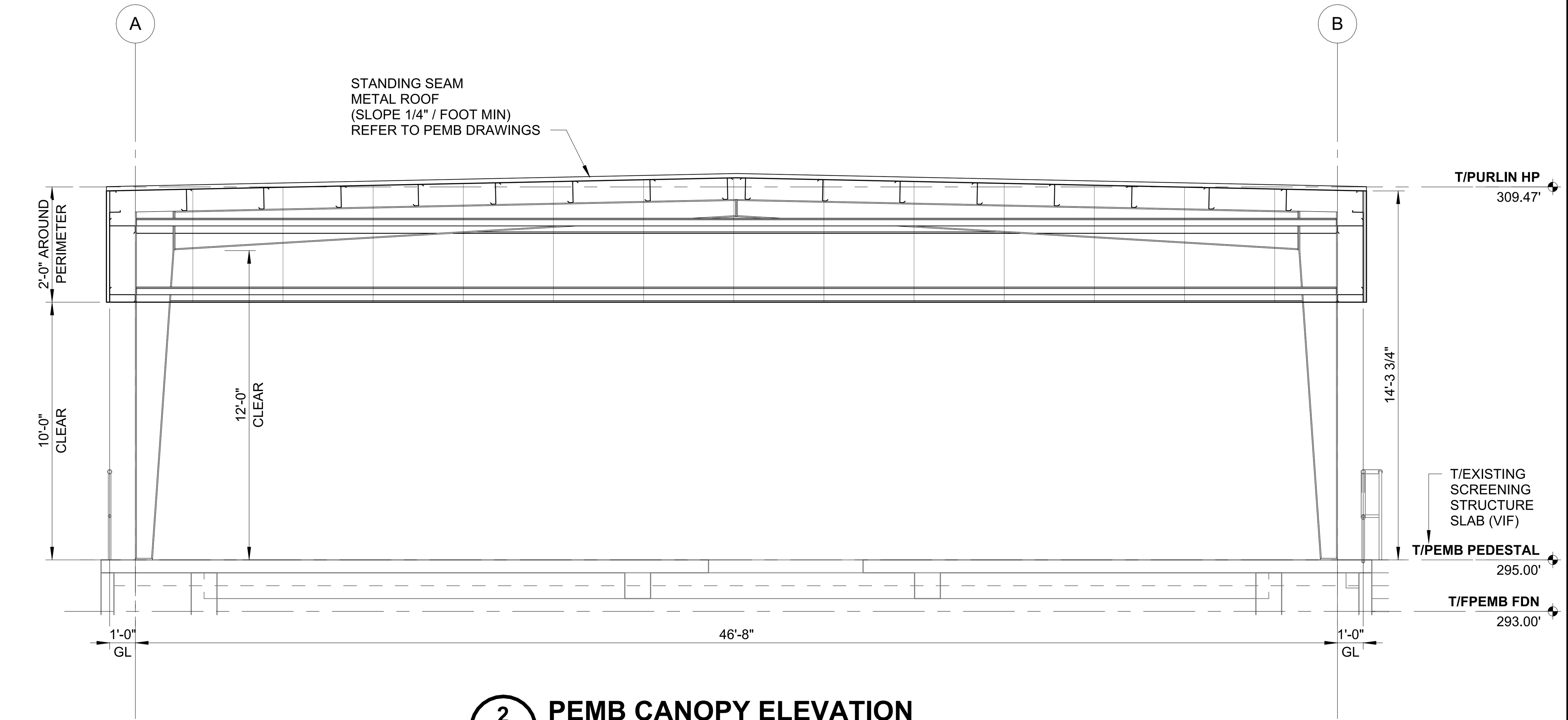
09-S502

FILE NO.: 3618121

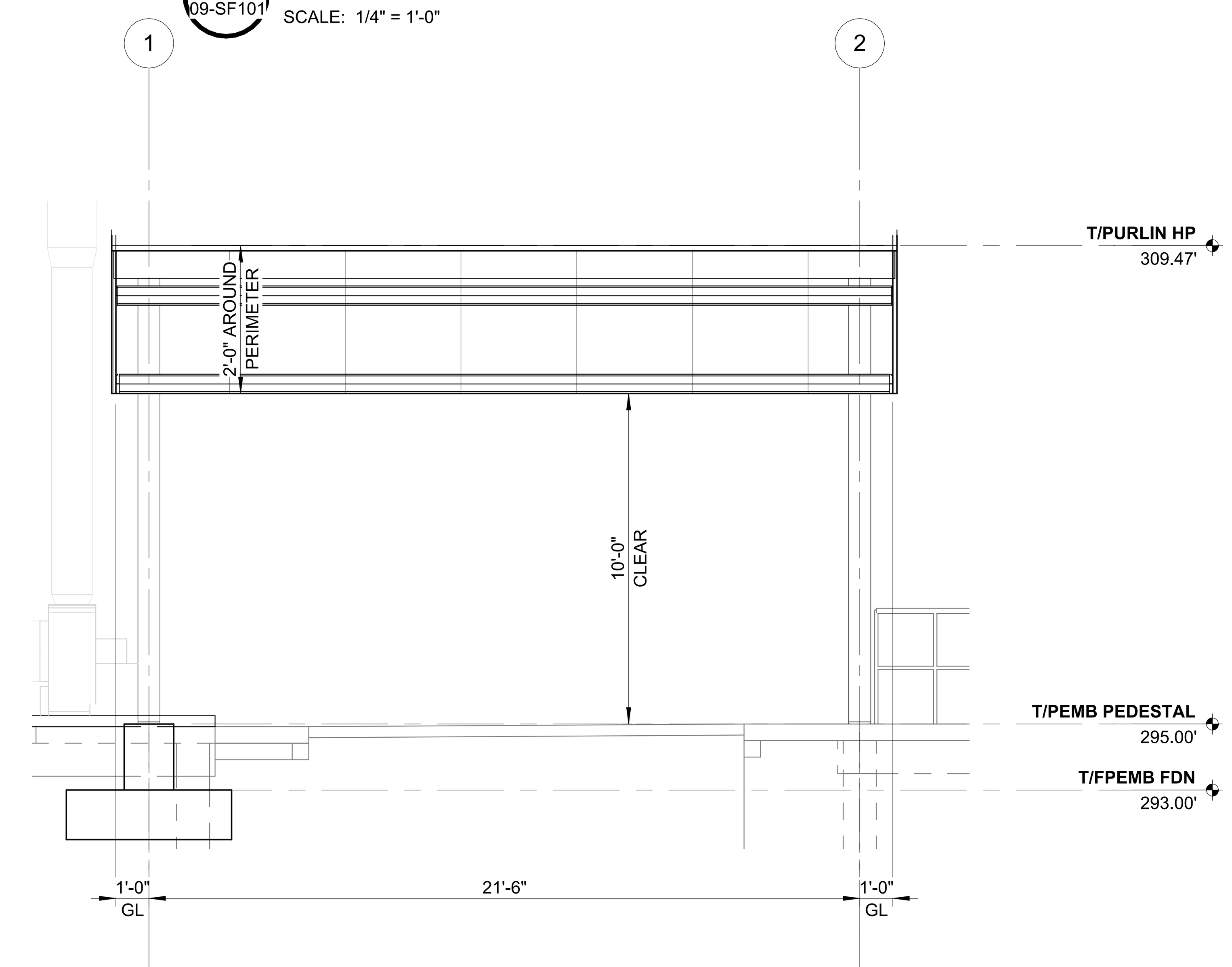
Discipline Sort: 8.3
Drawing: 09-S502 - DETAILS
File: Autodesk Docs://3618121 - Lower Poplar WRF Influent PS/3618121_LPWRF_STRL.rvt
Time / Date: 7/9/2024 10:51:07 AM



1 PEMB CANOPY ROOF FRAMING PLAN
09-SF101
SCALE: 1/4" = 1'-0"



2 PEMB CANOPY ELEVATION
09-SF101
SCALE: 1/4" = 1'-0"



3 PEMB ELEVATION
09-SF101
SCALE: 1/4" = 1'-0"

PLAN NOTES

1. FOR GENERAL NOTES SEE SHEET 09-S001.
2. PRE-ENGINEERED METAL BUILDING STRUCTURE TO BE DESIGNED PER THE DESIGN CRITERIA LISTED ON SHEET 09-S001.

BARGE DESIGN SOLUTIONS

GEORGIA REGISTERED No. SE000550 STRUCTURAL ENGINEER BRIAN H. WOOD

Digitally signed by Brian H Wood
Date: 2024.07.09
14:01:38-05'00'

PEMB ROOF FRAMING PLAN

LOWER POPLAR WATER RECLAMATION FACILITY

INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHOURITY

REVISION INFORMATION:

REV.	DR	CHK	DATE:	DESCRIPTION:
0	ACM	JBA	07/10/2024	ISSUED FOR BID

SHEET:
09-SF101

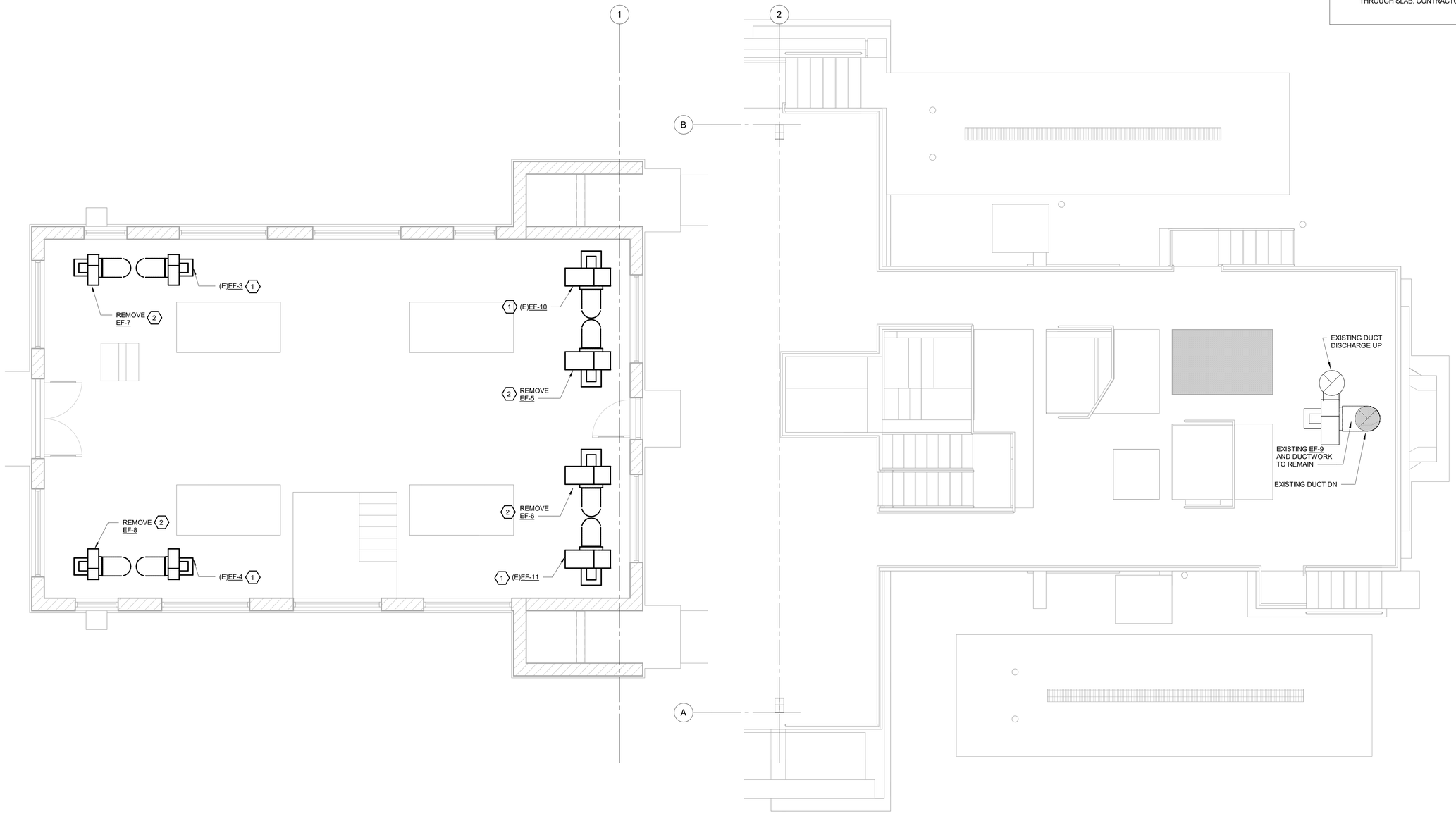
FILE NO.: 3618121

GENERAL NOTES

1. CONTRACTOR TO ASSESS EXISTING CONDITION OF EXHAUST FANS TO BE RELOCATED FOR RE-USE. RE-PAINT ANY EXPOSED METAL TO MATCH FACTORY FINISH.
2. CONTRACTOR SHALL COORDINATE WITH CLIENT AND PHASE DEMOLITION OF EXISTING DRYWELL EXHAUST SYSTEM. RELOCATION OF EXISTING EXHAUST SYSTEM SHALL MAINTAIN SERVICE FOR PROPER OPERATION OF ONE SET OF DRY WELL PUMPS UNTIL AT LEAST ONE SET OF WET WELL PUMPS ARE ONLINE AND OPERATING.

KEYED NOTES

1. REMOVE AND RELOCATE EXISTING EXHAUST FAN TO NEW LOCATION AS SHOWN ON 09-M101. DEMOLISH DUCWORK DOWN TO DRYWELL COMPLETE AND PATCH ABANDONED PENETRATION THROUGH SLAB. CONTRACTOR TO FIELD VERIFY.
2. REMOVE AND TURN OVER EXISTING EXHAUST FAN TO OWNER. DEMOLISH DUCWORK DOWN TO DRYWELL COMPLETE AND PATCH ABANDONED PENETRATION THROUGH SLAB. CONTRACTOR TO FIELD VERIFY.



BARGE DESIGN SOLUTIONS

GEORGIA REGISTERED PROFESSIONAL ENGINEER THOMAS E. LAW JR.

Digitally signed by Douglas E Law Jr
Date: 2024.07.08 16:59:21 -04'00'

PUMP STATION - UPPER LEVEL MECHANICAL HVAC DEMO PLAN

LOWER POPLAR WATER RECLAMATION FACILITY INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	PCJ	EJW	07/10/2024	ISSUED FOR BID

09-MD101

FILE NO.: 3618121

Discipline Sort: 13.2
Drawing: 09-MD101 - PUMP STATION - UPPER LEVEL MECHANICAL HVAC DEMO PLAN
File: Autodesk Docs://3618121 - Lower Poplar WRF Influent PS/3618121_LPWRF_MECH.rvt
Time / Date: 7/8/2024 2:53:14 PM

HVAC LEGEND

SYMBOL	DESCRIPTION	ABBV.
	SUPPLY AIR CEILING DIFFUSER	CD
	RETURN AIR GRILLE / REGISTER	RAG / RAR
	EXHAUST GRILLE / REGISTER	EG / ER
	SIDEWALL SUPPLY AIR GRILLE/REGISTER	SAG/SAR
	SIDEWALL RETURN AIR GRILLE/REGISTER	RAG/RAR
	DUCT MT'D. SIDEWALL SUPPLY AIR GRILLE/REGISTER	SAG/SAR
	DUCT MT'D. SIDEWALL SUPPLY AIR GRILLE/REGISTER	SAG/SAR
	SUPPLY DUCT RISE/DROP	
	SUPPLY DUCT RISE/DROP	
	RETURN DUCT RISE/DROP	
	RETURN DUCT RISE/DROP	
	EXHAUST DUCT RISE/DROP	
	EXHAUST DUCT RISE/DROP	
	SQUARE ELBOW WITH DOUBLE THICKNESS TURNING VANES	
	MANUAL VOLUME DAMPER	MVD
	FLEXIBLE DUCT CONNECTOR	FLEX.CONN.
	NEW DUCTWORK	
	EXISTING DUCTWORK TO REMAIN	
	EXISTING DUCTWORK TO BE REMOVED	
DSD	DUCT MOUNTED SMOKE DETECTOR	
T	THERMOSTAT	T'STAT
S	WALL MOUNTED ON/OFF SWITCH	
	AIRFLOW DIRECTION RETURN / EXHAUST	
	AIRFLOW DIRECTION SUPPLY	
B.O.D.	BOTTOM OF DUCT	
NIC	NOT IN CONTRACT	
FBO	FURNISHED BY OTHERS	
	CONNECT TO EXISTING	

GENERAL NOTES (MECHANICAL):

1. FURNISH LABOR, INSTALL MATERIALS AND EQUIPMENT, AND INCLUDE SERVICES AND INCIDENTALS PROPER TO THE INSTALLATION OF WORK INVOLVED FOR A COMPLETE AND OPERATING FACILITY.
2. GUARANTEE WORK TO BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE OR AS REQUIRED BY SPECIFICATIONS.
3. THE CONTRACTOR TO OBTAIN AND PAY FOR REQUIRED PERMITS, FEES AND INSPECTIONS FOR THE PROJECT.
4. PROVIDE EQUIPMENT THAT BEARS ACCEPTANCE LABEL FROM CERTIFIED TESTING LABORATORY (UL OR OTHER).
5. COORDINATE WITH OTHER TRADES, SPECS AND DRAWINGS, AND OWNER'S DIRECTIONS.
6. SURVEY JOB SITE TO OBTAIN A FULL UNDERSTANDING OF THE WORK INVOLVED IN CONNECTION WITH EXISTING CONDITIONS. ADDITIONAL FEES WILL NOT BE PAID FOR MISSING OR OVERLOOKED CONDITIONS REQUIRING ADDITIONAL WORK IF DETERMINED BY THE ENGINEER THAT SAID CONDITIONS COULD HAVE BEEN REASONABLY DETECTED DURING THE JOB SURVEY.
7. EQUIPMENT SELECTION AS SHOWN ON THE DRAWING IS FOR DESIGN PURPOSES ONLY. ACTUAL INSTALLED EQUIPMENT MAY DIFFER FROM THAT SHOWN. EQUIPMENT PERFORMANCE CHARACTERISTICS AND TYPE ARE THE GOVERNING FACTORS IN SUBSTITUTION "OR EQUAL." COORDINATE EQUIPMENT ELECTRICAL REQUIREMENTS WITH ELECTRICAL DRAWINGS.
8. THE MECHANICAL DRAWINGS ARE GENERALLY DIAGRAMMATIC AND SHOW THE RELATIONSHIP BETWEEN EQUIPMENT AND CONNECTIONS. DO NOT SCALE THE DRAWINGS FOR EXACT SIZE OR LOCATION. DETAILS AND ASSEMBLY DRAWINGS ARE SPECIFIC AND SHOULD BE CLOSELY FOLLOWED.
9. INSTALL THE MECHANICAL SYSTEM IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION, THE 2018 INTERNATIONAL BUILDING CODE, THE INTERNATIONAL MECHANICAL CODE, AND NFPA 90A.
10. FABRICATE AND INSTALL DUCTS IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS."
11. FABRICATE SHEET METAL DUCTWORK FROM GALVANIZED STEEL SHEET, ASTM 527.
12. EXTERNALLY INSULATE CONCEALED SUPPLY DUCTWORK WITHIN THE BUILDING ENVELOPE UNLESS OTHERWISE NOTED. DUCT DIMENSIONS ARE NET INSIDE DIMENSIONS. DO NOT INSULATE GENERAL EXHAUST DUCT.
13. INSULATE FLEXIBLE DUCTWORK WITH INSULATION TYPE FOR LOW PRESSURE APPLICATIONS. FLEXIBLE DUCTWORK WILL BE UL LISTED FOR UL181 CLASS 1 AIR DUCT MATERIAL COMPLYING WITH NFPA STANDARD 90A AND 90B. 5'-0" MAXIMUM LENGTH OF RETURN AND INSTALLED FREE OF KINKS IN ABRUPT TURNS.
14. BELL-MOUTH WITH SELF-STICK GASKET AND DAMPER OR CONICAL BELL-MOUTH SPIN-IN FITTING WITH DAMPER INSTALLED INSIDE OF RECTANGULAR SUPPLY DUCT AT FLEX DUCT TAKE-OFFS. INSTALL PER MANUFACTURER'S RECOMMENDATION.
15. DUCTWORK ELBOWS WILL BE RADIUS TYPE WHERE INSTALLATION PERMITS. CENTERLINE RADIUS WILL BE NOMINALLY 1.5 X W. WHERE A RADIUS TYPE ELBOW IS NOT FEASIBLE, ELBOW WILL BE SQUARE THROATED TYPE WITH TURNING VANES.
16. INSTALL BALANCING DAMPERS AT BRANCH DUCT TAKE-OFFS AND AT DUCT RUNOUTS ON END OF RUNS.
17. INSTALL SLEEVES WHERE DUCTS OR PIPING PENETRATE FOUNDATION WALLS, PARTITIONS, FLOOR OR ROOF. PACK AROUND SLEEVES AND SEAL WEATHER TIGHT. INSTALL FLASHING AS REQUIRED.
18. UNLESS OTHERWISE NOTED, MOUNT WALL THERMOSTATS AT 4'-6" ABOVE FINISHED FLOOR .
19. INSTALL CONTROLS IN ACCORDANCE WITH SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS.
20. COORDINATE THE LOCATIONS OF EQUIPMENT TO PROVIDE NECESSARY CLEARANCES FOR MAXIMUM PERFORMANCE AND MAINTENANCE.
21. SIZE REFRIGERANT LINES IN ACCORDANCE WITH DX EQUIPMENT MANUFACTURERS' RECOMMENDATION, ASHRAE STANDARDS, APPLICABLE DETAILS AND SPECIFICATIONS, WHERE CONDITIONS WARRANT, CONSIDER LENGTH OF RUN AND CHANGE IN ELEVATION IN SIZING REFRIGERANT LINES.
22. RECIRCULATING AIR HANDLING UNITS 2000 CFM OR GREATER WILL HAVE A FIRESTAT INSTALLED IN THE RETURN AIR STREAM PRIOR TO ANY EXHAUSTING OR MIXING WITH FRESH AIR AND A SMOKE DETECTOR INSTALLED IN THE SUPPLY AIR STREAM AHEAD OF ANY BRANCH CONNECTIONS. THE SENSING DEVICE WILL AUTOMATICALLY SHUTDOWN THE SYSTEM FAN(S) IF SMOKE OR A TEMPERATURE OF 150 DEGREES F. OR GREATER IS DETECTED. COORDINATE WITH ELECTRICAL CONTRACTOR.

BARGE DESIGN SOLUTIONS

MECHANICAL HVAC LEGEND AND GENERAL NOTES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR	CHK	DATE	DESCRIPTION
0	PCJ	FJW	07/10/2024	ISSUED FOR BID

SHEET: 09-M001

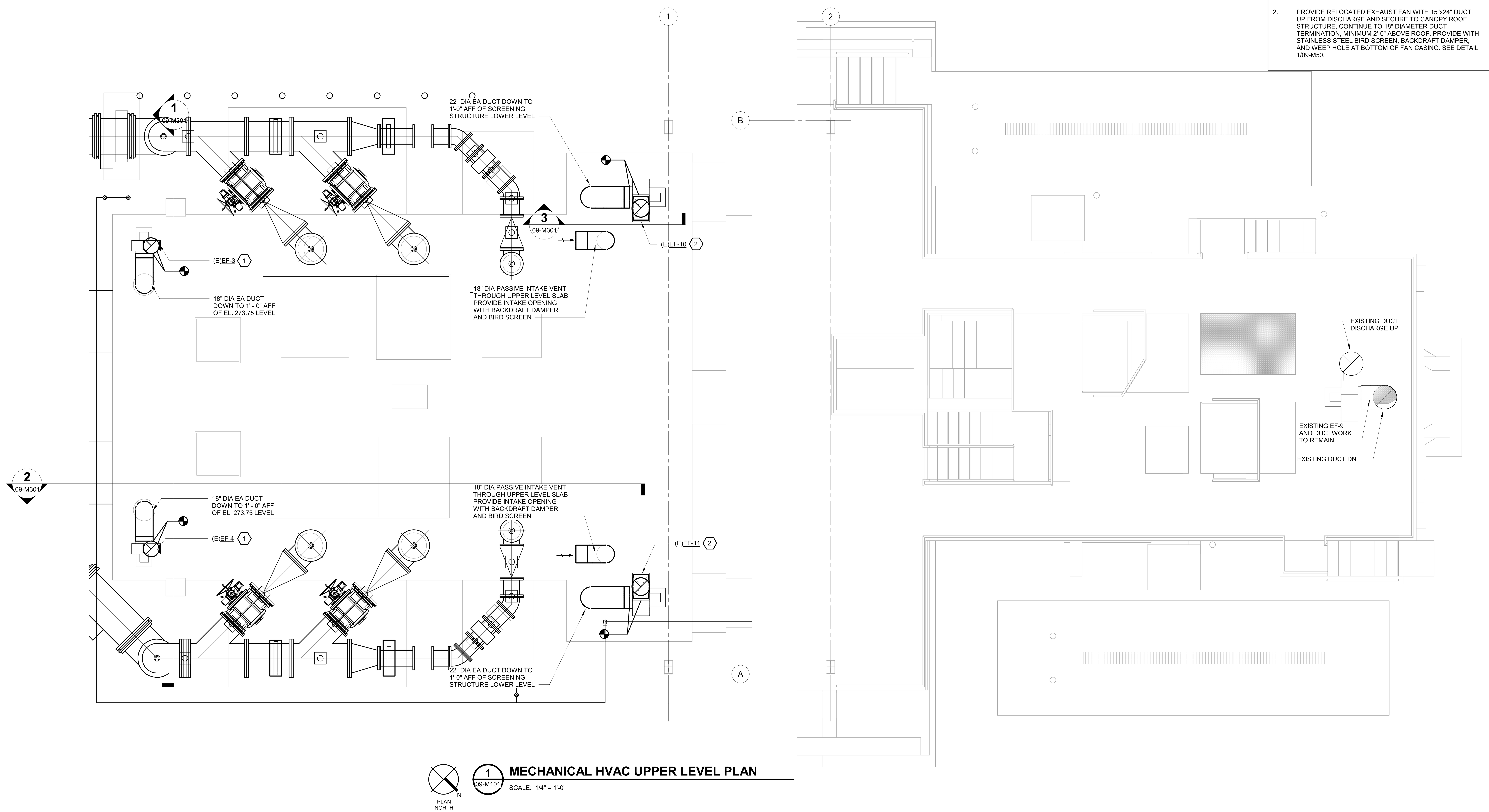
FILE NO.: 3618121

GENERAL NOTES

1. BASIS OF DESIGN: FACILITY LOCATION AND FUNCTION AS DEFINED PER NFPA 820 TABLE 4.2.2., ROW 14 FOR WASTEWATER PUMPING STATION WET WELLS. WET WELL IS IN CLASSIFIED AREA (CLASS I, DIVISION II) AND SHALL BE CONTINUOUSLY VENTILATED AT 12 AIR CHANGES PER HOUR.
2. EXHAUST FANS SHOWN ARE RELOCATED EXISTING EXHAUST FANS. PROVIDE NEW ACCESSORIES AS REQUIRED FOR PROPER OPERATION AT NEW LOCATION.
3. ALL DUCTWORK AND AIR DUCT ACCESSORIES SHOWN ARE IN A CORROSIVE ENVIRONMENT AND SHALL BE CONSTRUCTED OF FRP MATERIAL PER SPECIFICATION.
4. CONTRACTOR SHALL COORDINATE WITH CLIENT AND PHASE DEMOLITION OF EXISTING DRYWELL EXHAUST SYSTEM. RELOCATION OF EXISTING EXHAUST SYSTEM SHALL MAINTAIN SERVICE FOR PROPER OPERATION OF ONE SET OF DRY WELL PUMPS BEFORE AT LEAST ONE SET OF WET WELL PUMPS ARE ONLINE AND OPERATING.

KEYED NOTES

1. PROVIDE RELOCATED EXHAUST FAN WITH TRANSITION TO 16" DAIMETER DUCT TERMINATION AT DISCHARGE. PROVIDE WITH STAINLESS STEEL BIRD SCREEN, BACKDRAFT DAMPER, AND WEEP HOLE AT BOTTOM OF FAN CASING. SEE DETAIL 1/09-M501.
2. PROVIDE RELOCATED EXHAUST FAN WITH 15"x24" DUCT UP FROM DISCHARGE AND SECURE TO CANOPY ROOF STRUCTURE. CONTINUE TO 18" DIAMETER DUCT TERMINATION, MINIMUM 2'-0" ABOVE ROOF. PROVIDE WITH STAINLESS STEEL BIRD SCREEN, BACKDRAFT DAMPER, AND WEEP HOLE AT BOTTOM OF FAN CASING. SEE DETAIL 1/09-M50.



1 / 09-M101 **MECHANICAL HVAC UPPER LEVEL PLAN**

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

BARGE DESIGN SOLUTIONS

Digitally signed by Douglas E. Law Jr. Date: 2024.07.08 16:52:28 -04'00'

PUMP STATION - UPPER LEVEL MECHANICAL HVAC PLAN

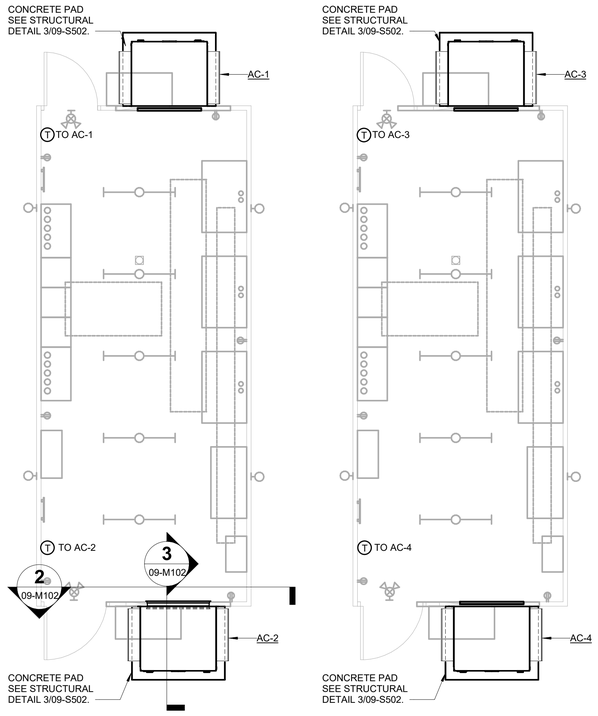
LOWER POPLAR WATER RECLAMATION FACILITY INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE:	DESCRIPTION
0	PCJ	FJW	07/10/2024	ISSUED FOR BID

SHEET: 09-M101

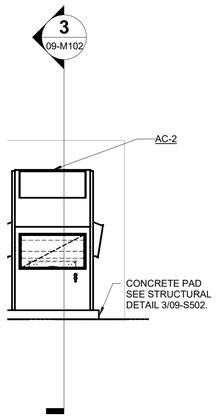
FILE NO.: 3618121



PLAN NORTH

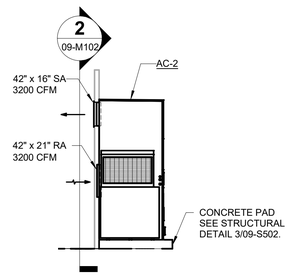
1 09-M102 ENLARGED ELECTRICAL ROOM HVAC PLAN

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



2 09-M102 HVAC SECTION 1

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



3 09-M102 HVAC SECTION 2

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

GENERAL NOTES

1. INSTALL HVAC EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS AND MAINTAIN RECOMMENDED CLEARANCES.
2. COORDINATE HVAC EQUIPMENT WITH PRE-ENGINEERED METAL BUILDING.
3. TEMPERATURE DESIGN SETPOINT FOR ELECTRICAL ROOM SHALL BE 85°F. AC UNITS SHALL FOLLOW FACTORY SEQUENCE OF OPERATION FOR OPTIMAL START, OPTIMAL STOP, NORMAL OPERATING MODE, ECONOMIZER MODE, AND ALARMS.

BARGE DESIGN SOLUTIONS

ENLARGED ELECTRICAL ROOM HVAC PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	PCJ	FJW	07/10/2024	ISSUED FOR BID

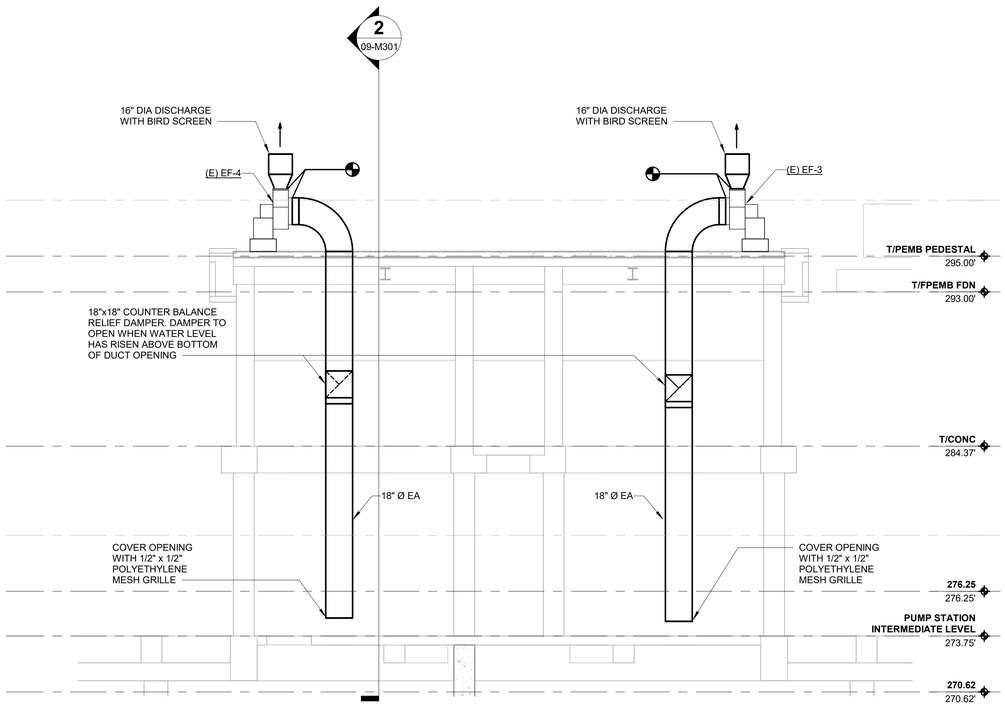
09-M102

FILE NO.: 3618121

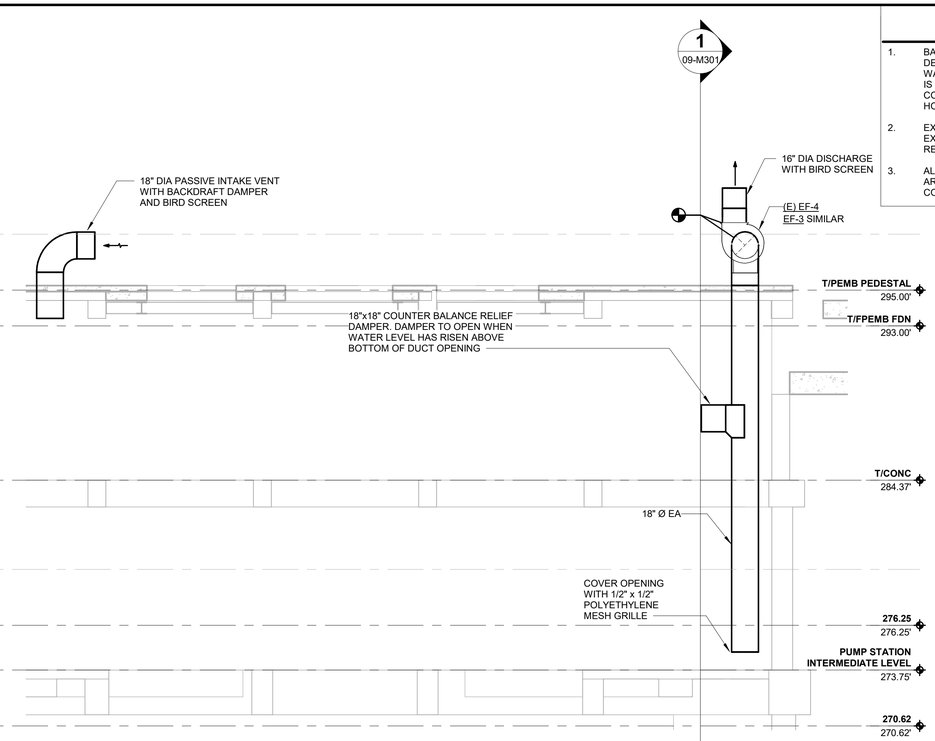
Discipline Sort: 13.3
Drawing: 09-M102 ENLARGED ELECTRICAL ROOM HVAC PLAN
File: Autodesk Docs://3618121 - Lower Poplar WRF influent PS/3618121_LPWRF_MECH.rvt
Time / Date: 7/8/2024 2:28:33 PM

GENERAL NOTES

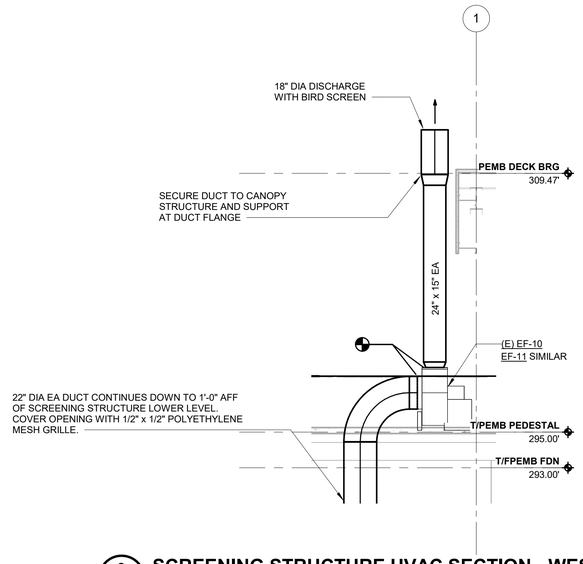
1. BASIS OF DESIGN: FACILITY LOCATION AND FUNCTION AS DEFINED PER NFPA 820 TABLE 4.2.2., ROW 14 FOR WASTEWATER PUMPING STATION WET WELLS. WET WELL IS IN CLASSIFIED AREA (CLASS I, DIVISION II) AND SHALL BE CONTINUOUSLY VENTILATED AT 12 AIR CHANGES PER HOUR.
2. EXHAUST FANS SHOWN ARE RELOCATED EXISTING EXHAUST FANS. PROVIDE NEW ACCESSORIES AS REQUIRED FOR PROPER OPERATION AT NEW LOCATION.
3. ALL DUCTWORK AND AIR DUCT ACCESSORIES SHOWN ARE IN A CORROSIVE ENVIRONMENT AND SHALL BE CONSTRUCTED OF FRP MATERIAL PER SPECIFICATION.



1 WET WELL HVAC SECTION - SOUTH
1 / 09-M101
SCALE: 1/4" = 1'-0"



2 WET WELL HVAC SECTION - EAST
2 / 09-M101
SCALE: 1/4" = 1'-0"



3 SCREENING STRUCTURE HVAC SECTION - WEST
3 / 09-M101
SCALE: 1/4" = 1'-0"

BARGE DESIGN SOLUTIONS

REGISTERED PROFESSIONAL ENGINEER GEORGIA DOUGLAS E. LAW, JR.
Digitally signed by Douglas E Law Jr
Date: 2024.07.08 20:56:03 -04'00'

HVAC SECTIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	PCJ	EJW	07/10/2024	ISSUED FOR BID

09-M301

FILE NO.: 3618121

Discipline Sort: 13.3
Drawing: 09-M301 - HVAC SECTIONS
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Time / Date: 7/8/2024 2:29:34 PM

EXISTING FAN SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL NUMBER	SERVICE	LOCATION	AIRFLOW (CFM)	EXT. S.P. (IN. WG)	FAN RPM	MOTOR DATA				WEIGHT (LBS.)	REMARKS
									BHP	DRIVE	VFD	V/PH/HZ		
(E) EF-3	BACKWARD INCLINED SWSI CLASS II APR-4	NEW YORK BLOWER	18 SST304	VENTILATION	ROOF	3,063	1.2	1160	1.03	BELT	NO	460/3/60	2[illegible]	1,2,3,4,5,6,7,8
(E) EF-4	BACKWARD INCLINED SWSI CLASS II APR-4	NEW YORK BLOWER	18 SST304	VENTILATION	ROOF	3,063	1.2	1160	1.03	BELT	NO	460/3/60	2[illegible]	1,2,3,4,5,6,7,8
(E) EF-10	BACKWARD INCLINED SWSI CLASS II APR-4	NEW YORK BLOWER	22 SST304	VENTILATION	ROOF	4,600	1	1160	1.52	BELT	NO	460/3/60	4[illegible]	1,2,3,4,5,6,7,8
(E) EF-11	BACKWARD INCLINED SWSI CLASS II APR-4	NEW YORK BLOWER	22 SST304	VENTILATION	ROOF	4,600	1	1160	1.52	BELT	NO	460/3/60	4[illegible]	1,2,3,4,5,6,7,8
													411	1,2,3,4,5,6

REMARKS:

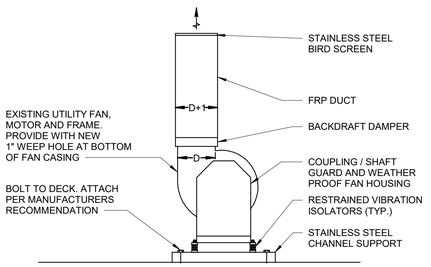
1. PROVIDE 1" WEEP HOLE AT BOTTOM OF EXISTING FAN HOUSING DRAIN..
2. STAINLESS STEEL BIRD SCREEN.
3. BACKDRAFT DAMPER
4. INLET AND OUTLET FLEX DUCT CONNECTOR
5. RE-COAT ANY BARE METAL EXPOSED DUE TO RE-INSTALLATION OR EXISTING WITH CORROSION AND UV RESISTANT COATING.
6. RESTRAINED VIBRATION ISOLATORS.
7. SEE ELECTRICAL FOR STARTER AND DISCONNECT INFORMATION.
8. INSTALL PER MANUFACTURER INSTALLATION INSTRUCTIONS.

WALL MOUNTED PACKAGE UNIT SCHEDULE

TAG	MANUFACTURER / MODEL NO.	NOMINAL TONS	SUPPLY FAN				COOLING CAPACITY @ ARI CONDITIONS			ELEC. HEAT		SINGLE-POINT POWER			REMARKS
			CFM	ESP (IN.)	HP	RPM	TOT. MBH	SENS. MBH	EER	KW	STAGES	V/PH/HZ	MCA	MOCP	
AC-1	BARD / W090APC18EP1	7.5	3200	-	2	1500	91.5	70.8	10.2	18	2	460/3/60	30	35	1,2,3,4,5,6,7,8,9,10
AC-2	BARD / W090APC18EP1	7.5	3200	-	2	1500	91.5	70.8	10.2	18	2	460/3/60	30	35	1,2,3,4,5,6,7,8,9,10
AC-3	BARD / W090APC18EP1	7.5	3200	-	2	1500	91.5	70.8	10.2	18	2	460/3/60	30	35	1,2,3,4,5,6,7,8,9,10
AC-4	BARD / W090APC18EP1	7.5	3200	-	2	1500	91.5	70.8	10.2	18	2	460/3/60	30	35	1,2,3,4,5,6,7,8,9,10

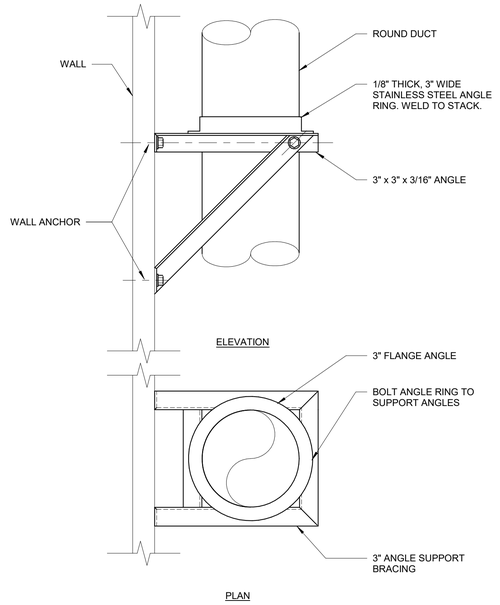
REMARKS:

1. GALVANIZED 16 GAUGE ZINC COATED STEEL CABINET WITH WEATHER RESISTANT BAKED ENAMEL FINISH.
2. ROUTE CONDENSATE TO EXTERIOR.
3. PROVIDE WITH 2- INCH PLEATED MERV 8 FILTER.
4. UNIT TO BE LOW AMBIENT TO 0 DEG. F.
5. PROVIDE WITH SG-5W SIDEWALL SUPPLY REGISTER AND RFG-5W RETURN AIR GRILLE.
6. ELECTRICAL TO PROVIDE DISCONNECT SWITCH.
7. PROVIDE WITH OPTIONAL TECHNICOAT AA COATED CONDENSERS AND EVAPORATOR COILS.
8. MANUFACTURER / MODEL NO. LISTED ARE BASIS OF DESIGN.
9. PROVIDE WITH REMOTE DIGITAL PROGRAMMABLE THERMOSTAT.
10. ECONOMIZER FREE COOLING.
10. INSTALL PER MANUFACTURER INSTALLATION INSTRUCTIONS.



NOTE:
RE-COAT ANY BARE METAL EXPOSED DUE TO RE-INSTALLATION OF EXHAUST FAN WITH CORROSION AND UV RESISTANT COATING.

1 DECK MOUNTED UTILITY FAN DETAIL
09-M501/ NTS



NOTE:
CORROSIVE ENVIRONEMT FRP DUCTWORK SUPPORTS SHALL BE STAINLESS STEEL.

2 VERTICAL DUCT SUPPORT FROM WALL DETAIL
09-M501/ NTS

BARGE DESIGN SOLUTIONS

GEORGIA REGISTERED PROFESSIONAL ENGINEER
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Date: 2024.07.03 16:59:50-04'00'
DOUGLAS E. LAW, JR.

HVAC DETAILS AND SCHEDULES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE	DESCRIPTION
0	PCJ	FJW	07/10/2024	ISSUED FOR BID

SHEET
09-M501
FILE NO.: 3618121

Disciplines Sort: 13.3
Drawing: 09-M501 - HVAC DETAILS AND SCHEDULES
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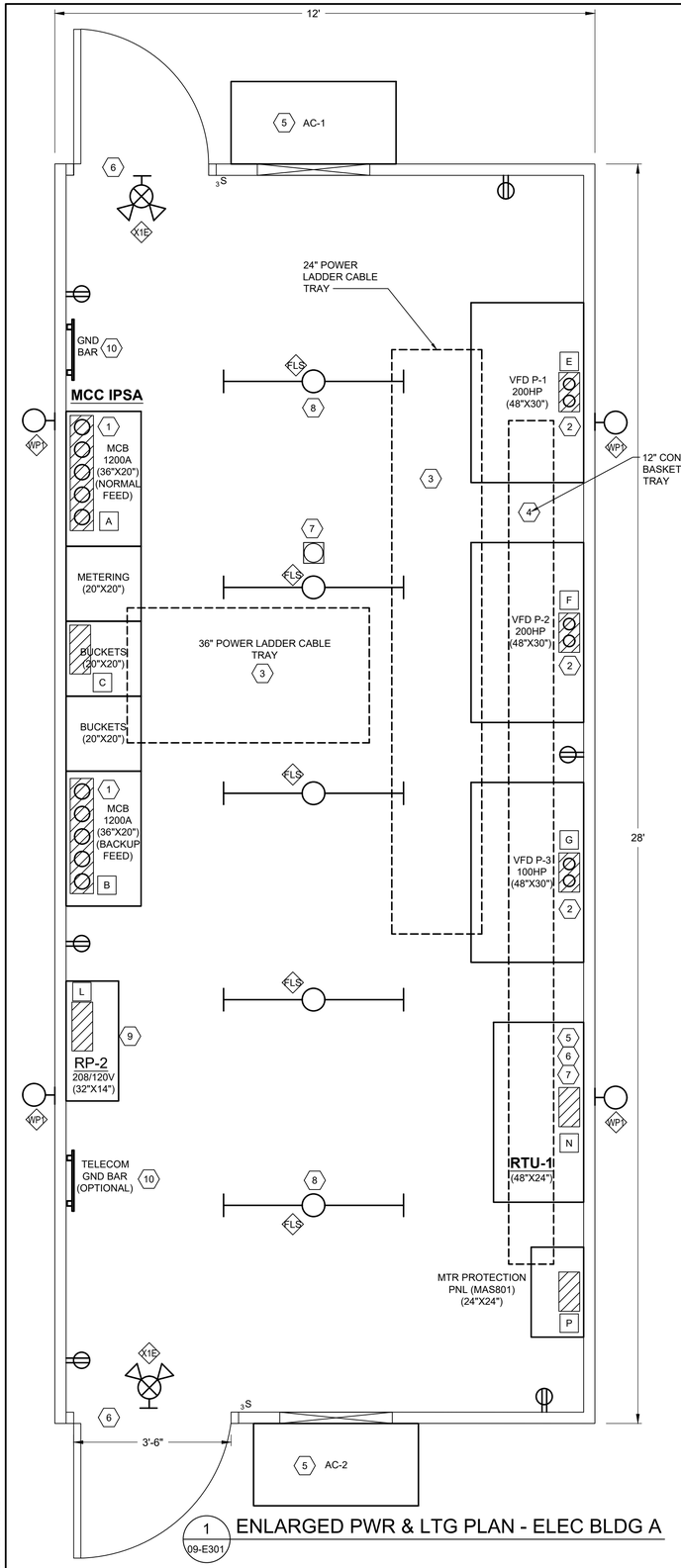
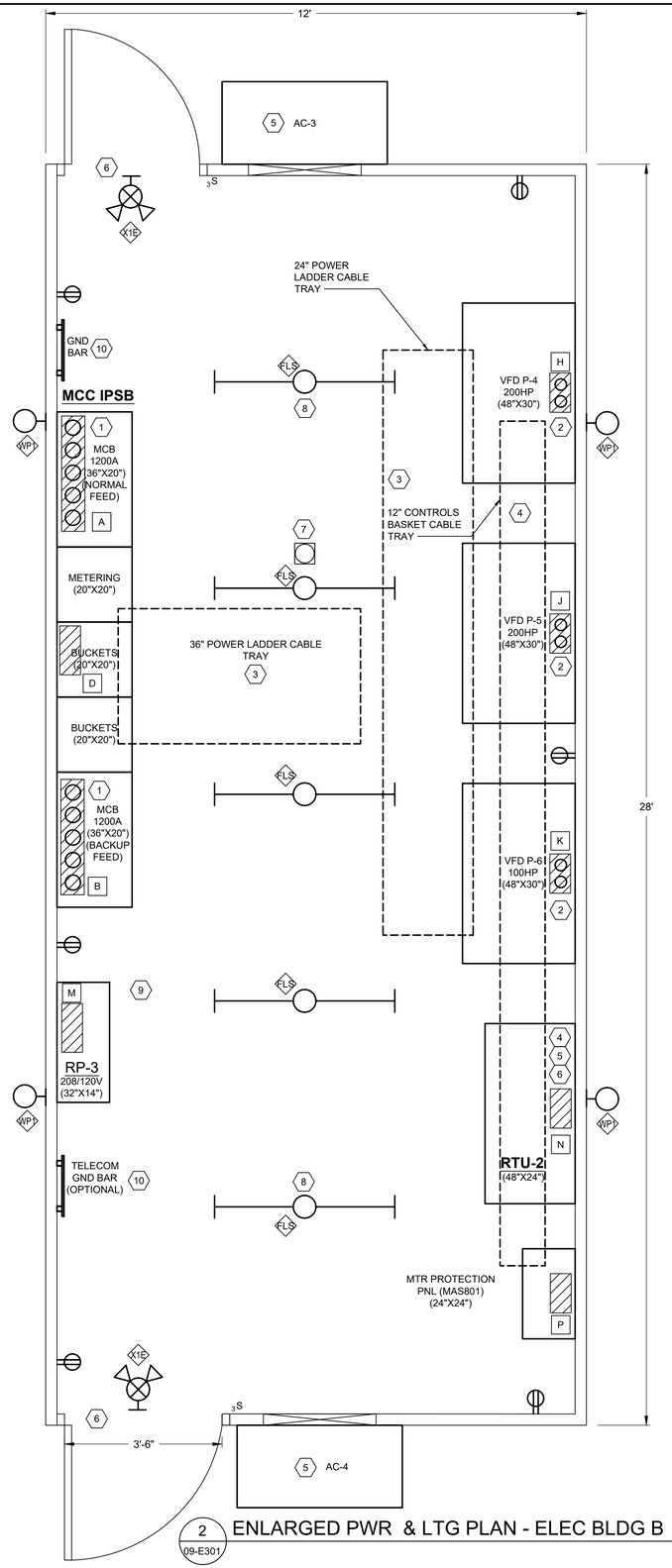


1 ENLARGED PWR & LTG PLAN - ELEC BLDG A
09-E301



2 ENLARGED PWR & LTG PLAN - ELEC BLDG B
09-E301

GENERAL NOTES:

A. ELECTRICAL BUILDINGS SHOWN ARE A PREFABRICATED CONSTRUCTION TYPE E-HOUSE CONCRETE BUILDING. THE LENGTH AND WIDTH DIMENSIONS ARE SHOWN FOR BUILDING SIZE. THE INTERIOR CEILING HEIGHT FROM FLOOR LEVEL SHALL BE A MINIMUM OF 12'. SEE PREFABRICATED BUILDING SPECIFICATIONS AND VENDORS APPROVED DOCUMENTATION AND REQUIREMENTS.

B. ALL MCC CABINETS, STAND ALONE VFD CABINETS, RTU CABINETS, MAS PANEL, AND OTHERS SHOWN ARE PROPOSED DIMENSIONS. SEE VENDOR FINAL APPROVAL DRAWINGS AND SPECIFICATIONS FOR EXACT DIMENSIONS.

C. ALL VFD's SHALL BE EQUIPPED WITH A BYPASS SWITCH AND SOFT START.

D. ALL CABINETS AND EQUIPMENT ARE TO BE PROVIDED AND CONNECTED IN THE ELECTRICAL BUILDINGS PER MANUFACTURER'S DRAWINGS AND SPECIFICATIONS.

E. THE MCC's, VFD's, AND MAS PANEL SHALL BE PROVIDED, WIRED, AND TESTED AT THE PREFAB BUILDING's MANUFACTURING FACILITY PRIOR TO SHIPPING ELECTRICAL BUILDINGS ONSITE.

F. SEE THE MCC ONE-LINE DIAGRAMS, MCC ELEVATIONS, RISER DIAGRAM, AND ELECTRICAL PANEL SCHEDULES FOR DETAILS ON INDIVIDUAL CIRCUITS AND BREAKER RATINGS.

G. SEE CONDUIT PENETRATION SCHEDULE BELOW FOR KEYED REFERENCES ON REQUIRED FLOOR PENETRATIONS SHOWN NEXT TO THE HATCHED AREAS AT BOTTOM OF CABINETS AND EQUIPMENT. SEE EQUIPMENT CONNECTION SCHEDULES AND ELECTRICAL PANEL SCHEDULES FOR ADDITIONAL ELECTRICAL CIRCUITS THAT MAY ROUTE VIA OVERHEAD CONDUIT, CABLE TRAY, OR UNDER THE FLOOR RACEWAYS. CONTRACTOR IS TO VERIFY ALL REQUIRED PENETRATIONS.

H. PROPERLY FILL AND SEAL ALL CONDUIT PENETRATIONS PER NFPA-70, SPECIFICATIONS, AND OTHER APPLICABLE CODE REQUIREMENTS.

J. ALL ELECTRICAL PANELS AND EQUIPMENT INSTALLED OUTSIDE WILL BE NEMA-4X OR NEMA-3R GASKETED. COORDINATE NEMA TYPE WITH OWNER.

K. CONTRACTOR SHALL PROVIDE ARC-FLASH CALCULATIONS AND STUDY FROM A REGISTERED ELECTRICAL ENGINEER. THE CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL REQUIRED ELECTRICAL EQUIPMENT. SEE SPECIFICATIONS FOR ARC-FLASH LABEL REQUIREMENTS.

KEY NOTES:

1. ROUTE BOTH THE MAIN SECONDARY 480V FEED AND BACKUP (2ND) FEED FROM THE TRANSFORMER T-10 AND T-12's SECONDARY BUSES INTO THE MCC's MAIN SUPPLY (MCB) NORMAL & BACKUP FEED CABINETS VIA BOTTOM FED AS SHOWN. SEE THE ELECTRICAL SITE PLAN, RISER DIAGRAM, OVERALL ONE-LINE, MCC ONE-LINE DIAGRAMS, AND VENDOR SPECIFICATIONS FOR MORE DETAILS.

2. ROUTE THE 480V VFD SUPPLY CIRCUITS FROM THE VFD CABINETS (BOTTOM FED) TO EACH CORRESPONDING EXTERIOR 480V DISCONNECT PANELS MOUNTED NEAR PUMPS AT CANOPY AREA. SEE THE ELECTRICAL SITE PLAN, MCC ONE-LINE DIAGRAMS, RISER DIAGRAM, ENLARGED POWER PLAN, AND VENDOR SPECIFICATIONS FOR MORE DETAILS.

3. PROVIDE A 36"W X 6"H LADDER TYPE CABLE TRAY SYSTEM APPROXIMATELY 18 TO 24" BELOW CEILING FOR ROUTING POWER CIRCUITS BETWEEN MCC CABINETS AND VFD CABINETS AS SHOWN. MAINTAIN BOTTOM OF CABLE TRAY AT LEAST 16" OR MORE ABOVE MCC AND VFD CABINETS FOR PROPER CABLE BEND RADIUS. UNDER THE FLOOR CONDUITS/RACEWAYS ARE ACCEPTABLE INSTEAD OF OVERHEAD CABLE TRAY.

4. PROVIDE A 12"W X 4"H BASKET TYPE CABLE TRAY SYSTEM APPROXIMATELY 18 TO 24" BELOW CEILING FOR ROUTING CONTROLS AND COMMUNICATIONS CIRCUITS BETWEEN SCADA RTU, MAS PANEL, VFD'S, AND MCC CABINETS AS SHOWN. MAINTAIN BOTTOM OF CABLE TRAY AT LEAST 16" OR MORE ABOVE ALL CABINETS. MAINTAIN PROPER SEPARATION FROM POWER CIRCUITS. UNDER THE FLOOR CONDUITS/RACEWAYS ARE ACCEPTABLE INSTEAD OF OVERHEAD CABLE TRAY.

5. THE ELECTRICAL BUILDING's AC PACKAGED UNITS SHALL BE DETERMINED AND SIZED ACCORDING TO MECHANICAL ENGINEERING RECOMMENDATIONS (SEE MECHANICAL DRAWINGS), AND BY THE PREFABRICATED BUILDING MANUFACTURER. THE UNITS SHALL BE POWERED FROM THE 480V MCCs IN RIGID CONDUIT AND PROVIDED ACCORDING TO THE VENDOR's DRAWINGS AND SPECIFICATIONS. AC UNITS SHALL BE SHUTDOWN DURING A FIRE ALARM INDICATION FROM THE COMBINATION SMOKE DETECTOR AND HORN VIA THE SCADA RTU SYSTEM. COORDINATE WITH AC VENDOR.

6. A DOOR ENTRY INTRUSION ALARM SHALL BE CONNECTED TO ALL DOORS AND WIRED BACK TO THE SCADA RTU CABINET. FOR EXPEDITED LIFE SAFETY EGRESS IN THE ELECTRICAL BUILDINGS, ALL DOORS SHALL BE EQUIPPED WITH PANIC BAR HARDWARE. ONE DOOR SHALL BE 42" WIDE AND OTHER 36" WIDE AS SHOWN.

7. A COMBINATION SMOKE DETECTOR & HORN SHALL BE PROVIDED IN EACH BUILDING FOR BASIC FIRE PROTECTION. A STATUS ALARM SHALL BE WIRED BACK TO THE SCADA RTU CABINET FOR FIRE ALARM INDICATION. ALSO, A CONTROL POINT SHALL BE SENT TO THE AC UNITS FOR SHUTDOWN DURING FIRE ALARM INDICATION.

8. LED 4' STRIP LIGHTING SHALL BE INCLUDED WITH E-HOUSE BUILDINGS FROM MANUFACTURER AND PROVIDED AT ~10 AFF. CONTRACTOR TO COORDINATE CABLE TRAY INSTALLATION AROUND LIGHTING AND OTHER DISCIPLINES TO AVOID ANY SHADOWS CAUSED BY ANY OBSTRUCTIONS. LIGHT FIXTURES ARE NOT TO BE USED AS A PULL-BOX UNLESS APPROVED BY MANUFACTURER. INCLUDE A 3-WAY SWITCH MOUNTED AT EACH DOOR. SEE LIGHTING FIXTURE SCHEDULE FOR FIXTURE TYPES.

9. A 480/208/120V DELTA-WYE (20kVA), MINI-POWER ZONE TO BE PROVIDED. THE PRIMARY POWER TO BE FED FROM MCC VIA RIGID CONDUIT. SEE MCC ONE-LINES AND ELECTRICAL PANEL SCHEDULES FOR MORE DETAILS.

10. PROVIDE A GROUND BAR AS SHOWN IN EACH ELECTRICAL BUILDING. A SECOND TELECOM GROUND BAR CAN BE PROVIDED AS OPTIONAL.

AREA FOR BUILDING FLOOR CONDUIT PENETRATION CUTOUT. SEE KEYED PENETRATION SCHEDULE BELOW.

CONDUIT PENETRATION SCHEDULE

TAG LABEL	DESCRIPTION	CONDUIT PENETRATON LOCATION	CONDUIT SIZES AND PENETRATIONS	FUTURE / SPARE CONDUIT	NOTES
A	PRIMARY SUPPLY	MCB-NORMAL CABINET	(4) SETS OF 4"C	(1) SET OF 4"C	1
B	BACKUP SUPPLY	MCB-BACKUP CABINET	(4) SETS OF 4"C	(1) SET OF 4"C	1
C	SUPPLY TO PNL DP-1A	MCC-A, SECTION-3	(1) SET OF 2-1/2"C	(1) SET OF 2-1/2"C	1
D	SUPPLY TO PNL DP-1B	MCC-B, SECTION-3	(1) SET OF 2-1/2"C	(1) SET OF 2-1/2"C	1
E	VFD SUPPLY TO P-1 DISCONNECT	VFD P-1 CABINET	(1) SET OF 3"C	(1) SET OF 3"C	1
F	VFD SUPPLY TO P-2 DISCONNECT	VFD P-2 CABINET	(1) SET OF 3"C	(1) SET OF 3"C	1
G	VFD SUPPLY TO P-3 DISCONNECT	VFD P-3 CABINET	(1) SET OF 2"C	(1) SET OF 2"C	1
H	VFD SUPPLY TO P-4 DISCONNECT	VFD P-4 CABINET	(1) SET OF 3"C	(1) SET OF 3"C	1
J	VFD SUPPLY TO P-5 DISCONNECT	VFD P-5 CABINET	(1) SET OF 3"C	(1) SET OF 3"C	1
K	VFD SUPPLY TO P-6 DISCONNECT	VFD P-6 CABINET	(1) SET OF 2"C	(1) SET OF 2"C	1
L	MISCELLANEOUS POWER FOR CONTROLS	PANEL RP-2	(4) SETS OF 1"C	(1) SET OF 1"C	2
M	MISCELLANEOUS POWER FOR CONTROLS	PANEL RP-3	(4) SETS OF 1"C	(1) SET OF 1"C	2
N	SCADA CONTROL CIRCUITS	SCADA RTU CABINETS	(6) SETS OF 2"C	(1) SET OF 2"C	3
P	MOTOR PROTECTION CONTROLS CIRCUITS	MAS-801 PANELS	(6) SETS OF 1"C	(1) SET OF 1"C	3

NOTES:
1. 480V POWER CIRCUITS.
2. 208/120V CIRCUITS.
3. CONTROLS CIRCUITS.

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

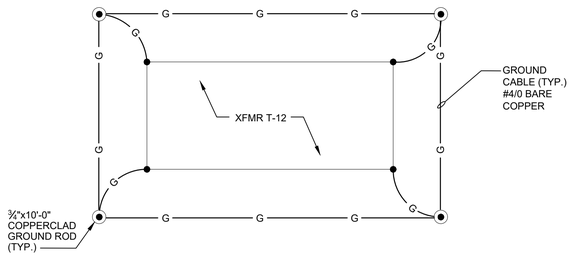
ENLARGED POWER PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

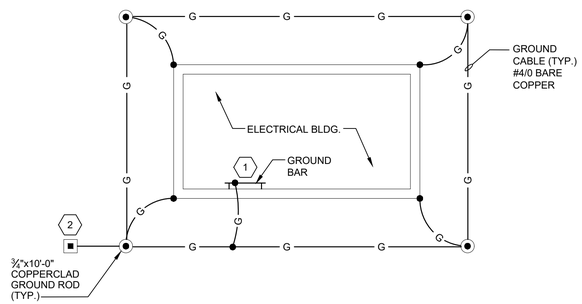
REVISION INFORMATION			
REV/	DR	CHK	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-E101
FILE NO. 3618121

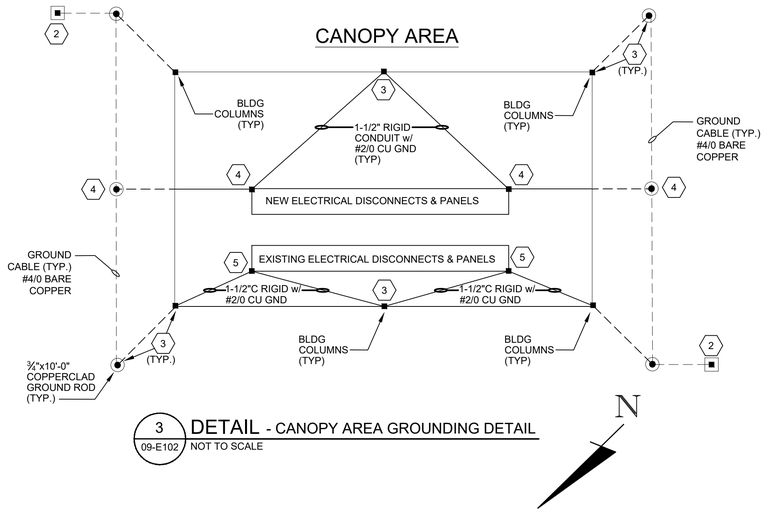
USER:JLKITTRELL
FILE:F:\3809\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_09-E101.dwg
SAVED:7/1/2024
PLOTTED:7/10/2024



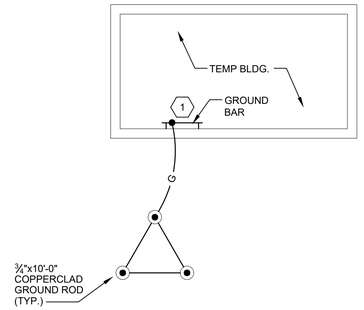
1 09-E102 DETAIL - TRANSFORMER PAD TYPICAL GROUNDING DETAIL
NOT TO SCALE



2 09-E102 DETAIL - ELECTRICAL BLDG TYPICAL GROUNDING DETAIL
NOT TO SCALE



3 09-E102 DETAIL - CANOPY AREA GROUNDING DETAIL
NOT TO SCALE



4 09-E102 DETAIL - TEMP BLDG TYPICAL GROUNDING DETAIL
NOT TO SCALE

GENERAL NOTES:

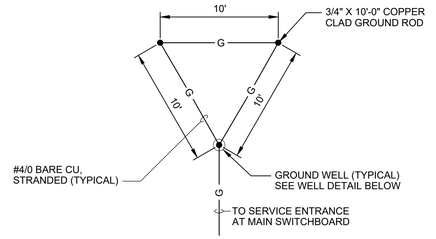
1. THE ELECTRICAL CONTRACTOR IS TO COORDINATE INSTALLATION WITH ALL OTHER TRADES.
2. PROVIDE A #4/0 CU GND LOOP / RING AROUND XFMR PAD, DISCONNECT PAD, AND ELECTRICAL BLDGS AS SHOWN WITH 10' LONG, 3/4" DIA COPPER CLAD GROUND RODS AT 10' DEPTH IN EARTH WITH TOPS OF RODS 18" BELOW. MAINTAIN THE GND RING AT 36-48" AROUND THE EXTERIOR OF PADS OR BLDGS AND AT A DEPTH OF AT LEAST 36" DEEP.
3. ADD #4/0 CU GND CONNECTIONS TO XFMR, DISCONNECTS, STEEL FRAMING, AND ELECTRICAL BLDGS INTERIOR GND BUS BAR. TERMINATE ALL GND CONNECTIONS ACCORDING TO MANUFACTURER's SPECIFICATIONS.
4. ADD #4/0 CU GND CONNECTIONS AT EACH CORNER OF ELECTRICAL BLDGS AND ADD GND CONNECTIONS TO ANY AND ALL METAL STAIRS.
5. PROVIDE A STANDARD #4/0 CU TRIANGLE GROUNDING CONNECTION OUTSIDE OF TEMPORARY BLDGS WITH (3) 10' LONG, 3/4" DIA COPPER CLAD GROUND RODS AT 10' APART AND 10' DEPTH IN EARTH, AND 10' AWAY FROM THE TEMPORARY BLDG's AS SHOWN.
6. ALL GND CONNECTIONS SHOWN TO GROUND LOOP ARE TO BE #4/0 CU.

KEYED NOTES:

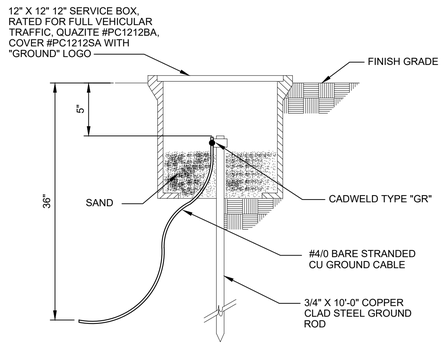
1. PROVIDE #4/0 AWG CU CONNECTIONS FROM GROUND GRID TO GROUND BARS AS SHOWN IN ELECTRICAL BUILDING DETAIL.
2. PROVIDE A GROUND TEST WELL AS NEEDED AROUND ELECTRICAL BUILDINGS AND CANOPY AREA AS SHOWN IN THE DETAILS.
3. ADD #2/0 AWG CU GND CONNECTIONS FROM COLUMNS TO NEW #4/0 AWG CU GND GRID AT CANOPY AREA AS SHOWN. WHERE CU GND CONDUCTOR CANNOT ROUTE UNDERGROUND, ROUTE IN RIGID CONDUIT AS SHOWN TO EACH COLUMN.
4. ADD #4/0 AWG CU GND CONNECTIONS FROM NEW & EXISTING ELECTRICAL PANELS, DISCONNECTS, AND ENCLOSURES AT CANOPY AREA TO NEW #4/0 AWG CU GND GRID AS SHOWN.
5. CONNECT NEW CANOPY GROUND GRID TO EXISTING GROUND RODS FOR ALL EXISTING ELECTRICAL EQUIPMENT.

GROUNDING LEGEND

■	GROUNDING - CONDUCTOR CONNECTION
◉	GROUNDING - 3/4" x 10' COPPER WELD GROUND ROD
▣	GROUND TEST WELL
▬	GROUND BAR



PLAN VIEW



GROUND ROD WELL

5 09-E102 DETAIL - GROUNDING TRIAD
NOT TO SCALE

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07/10/2024

ELECTRICAL GROUNDING PLAN & DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDDS

09-E102

FILE NO. 3618121

USER:JLK0TTRELL
FILE:F:\3636181\3618121\04_CAD\ELEC\03_PLOT\3618121_09-E102.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

GENERAL NOTES:

A. CONSTRUCTION CONTRACTOR SHALL WALK DOWN THE SITE CAREFULLY AND EXAMINE THE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.

B. ALL ABOVE GRADE CONDUIT CONNECTIONS AND FITTINGS TO BE VAPOR / MOISTURE / WEATHER PROOF. COORDINATE ALL ABOVE GRADE RIGID CONDUIT ROUTING WITH OWNER AND OTHER DISCIPLINES FOR RECEPTACLES, LIGHTING, ETC. SEE ELECTRICAL PANEL SCHEDULES FOR MORE DETAILS.

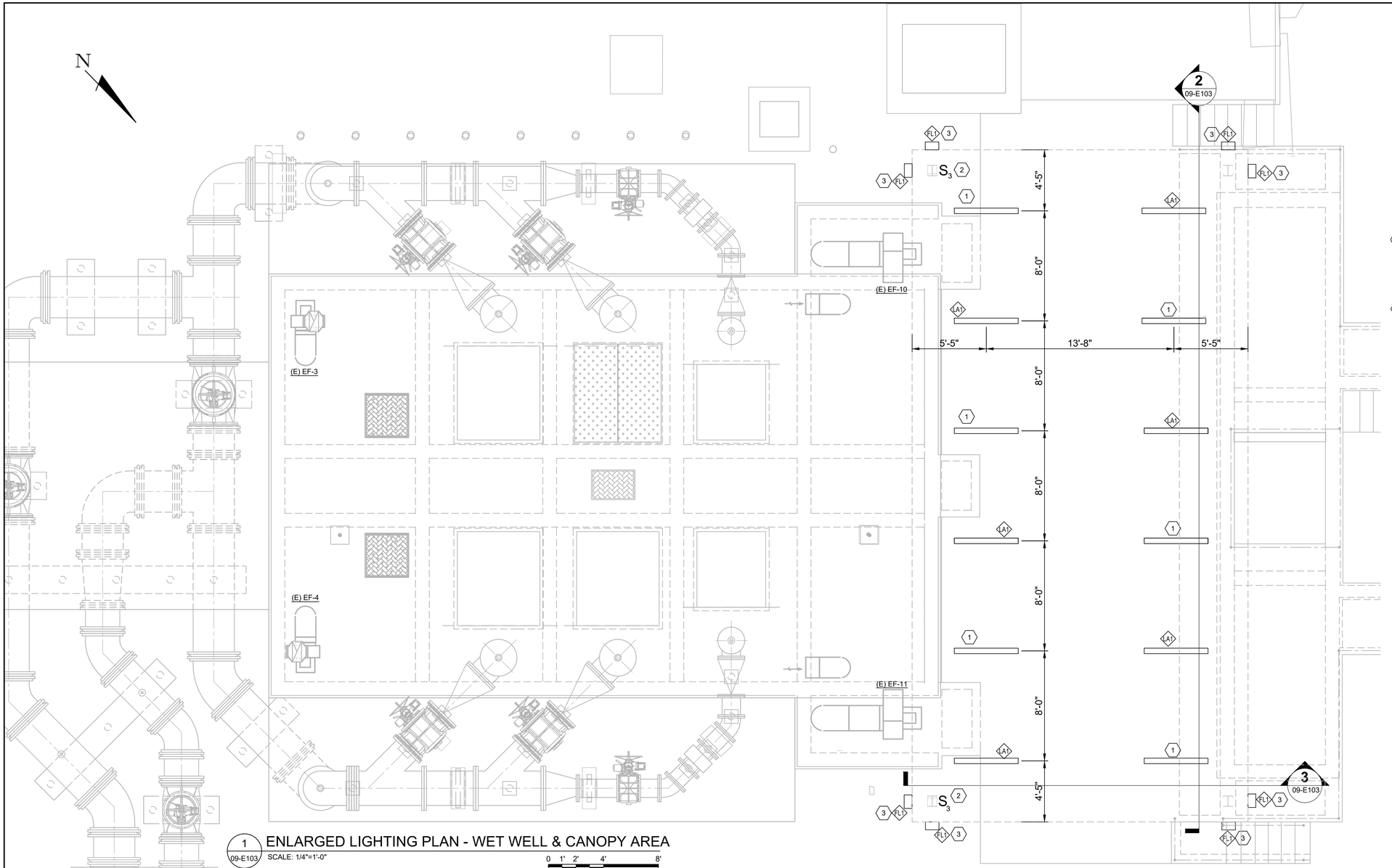
C. DO NOT USE ANY LIGHT FIXTURE AS A RACEWAY FOR CONDUCTORS NOT SERVING THE FIXTURE, UNLESS FIXTURE IS DESIGNATED AND UL-LISTED FOR SUCH USE.

KEY NOTES: (#)

(1) PROVIDE INTERIOR CANOPY LED LIGHTING AS SHOWN TO ROOF PURLINS WITH OPTIONAL PENDANT MOUNTING VERSUS FLUSH MOUNTING. COORDINATE FIXTURE LOCATIONS, INSTALLATION AND RIGID CONDUIT ROUTING WITH ALL OTHER DISCIPLINES. SEE LIGHTING FIXTURE SCHEDULE AND STRUCTURAL DRAWINGS FOR MORE DETAILS.

(2) PROVIDE TYPICAL WEATHER PROOF 3-WAY SWITCHES TO CANOPY COLUMNS AS SHOWN. COORDINATE LOCATION AND INSTALLATION WITH OWNER AND OTHER DISCIPLINES.

(3) PROVIDE EXTERIOR LED FLOOD LIGHTING AS SHOWN. ELECTRICAL CONTRACTOR TO COORDINATE FIXTURE INSTALLATION AND EXACT LOCATIONS WITH OWNER AND OTHER DISCIPLINES. SEE LIGHTING FIXTURE SCHEDULE FOR MORE DETAILS.



1 09-E103 ENLARGED LIGHTING PLAN - WET WELL & CANOPY AREA
SCALE: 1/4"=1'-0"
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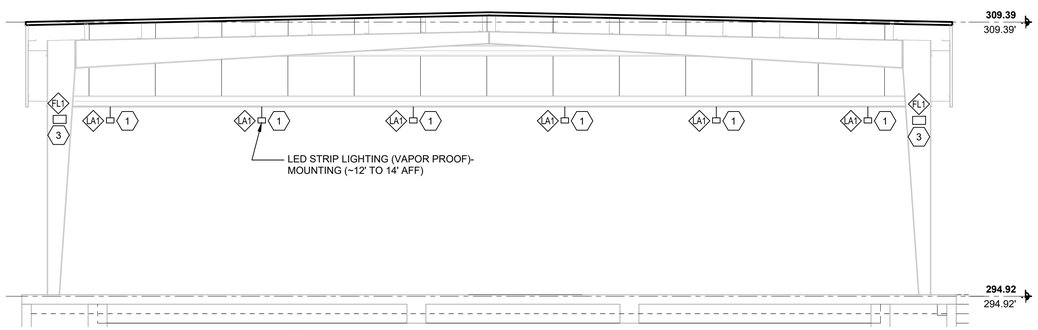
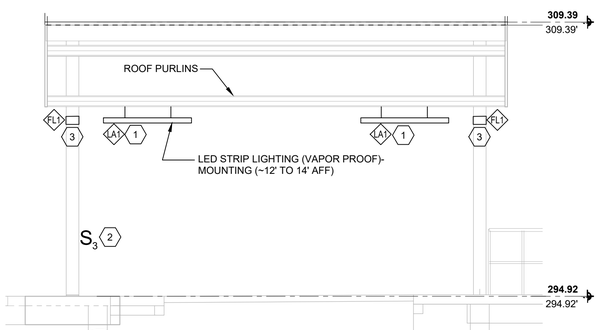


2 09-E103 CANOPY LIGHTING - SECTION VIEW
SCALE: 1/4" = 1'-0"



3 09-E103 CANOPY LIGHTING - SECTION VIEW
SCALE: 1/4" = 1'-0"

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY 07/10/2024

ENLARGED LIGHTING PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE
0	JLK	MC	07/10/2024

DESCRIPTION: ISSUED FOR BIDS

09-E103

FILE NO. 3618121

USER:JLK1TRELL
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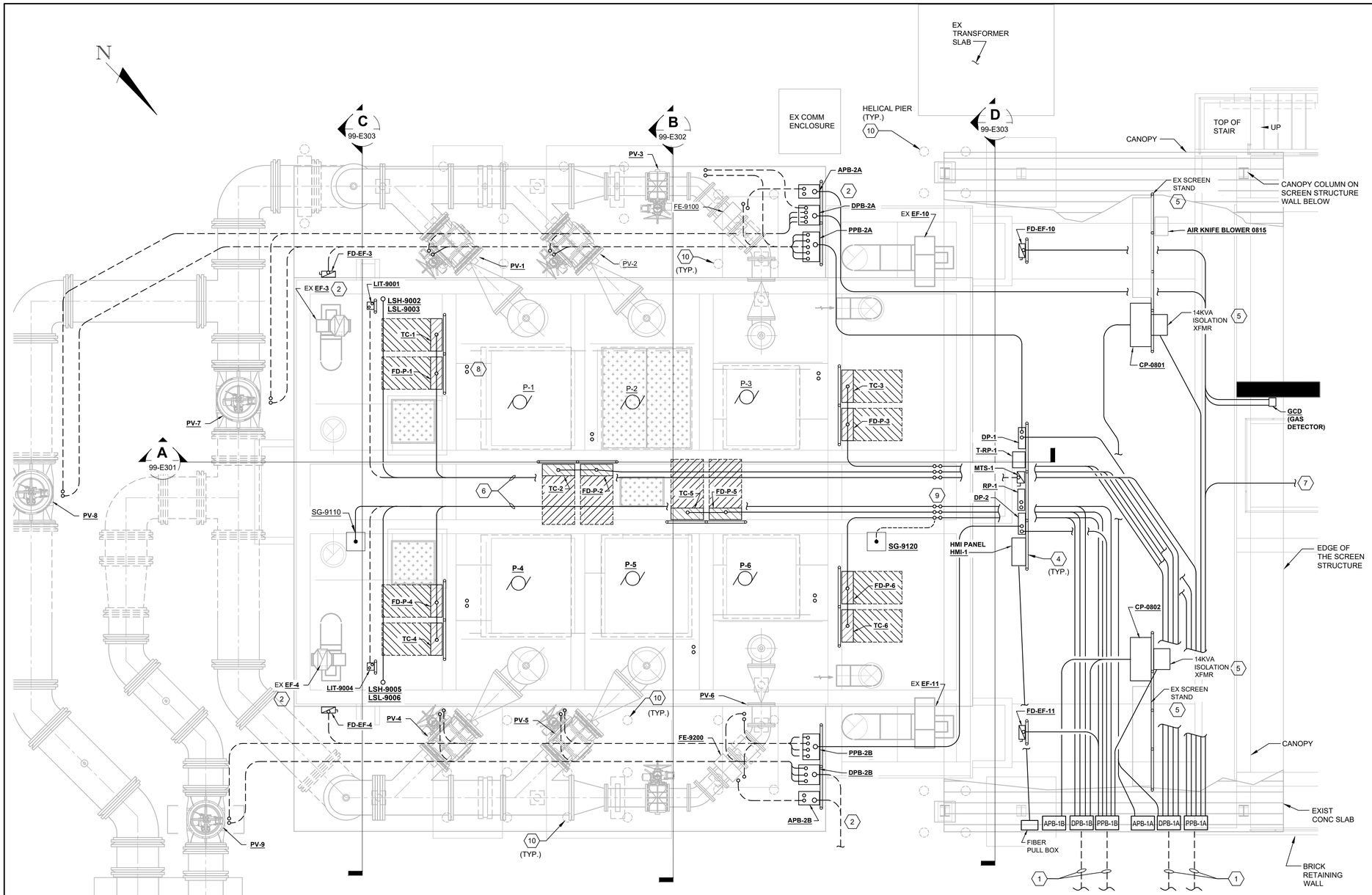
SAVED:6/27/2024
PLOTTED:7/10/2024



1 09-E302 ENLARGED POWER PLAN - WET WELL & CANOPY AREA

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

0 1' 2' 4' 8'

GENERAL NOTES:

A. CONSTRUCTION CONTRACTOR SHALL WALK DOWN THE SITE CAREFULLY AND EXAMINE THE PORTIONS OF THE SITE AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH ALL EXISTING CONDITIONS THAT MAY AFFECT EXECUTION OF THE WORK.

B. THE NEW CONDUIT ROUTING SHOWN ON THIS DRAWING IS DIAGRAMMATIC, CONSTRUCTION AND FIELD PERSONNEL ARE TO VERIFY EXACT ROUTING PER ACTUAL ON -SITE CONDITIONS.

C. ALL NEW CONDUIT ROUTING REQUIRES EMBEDDED CONCRETE DUCT BANK UNLESS OTHERWISE SPECIFIED. COORDINATE ALL EXACT DUCT BANK ROUTING WITH OWNER AND OTHER DISCIPLINES. SEE REFERENCED DUCT BANK DETAIL ON THIS SHEET.

D. ALL ABOVE GRADE CONDUIT CONNECTIONS AND FITTINGS TO BE VAPOR / MOISTURE / WEATHER PROOF. COORDINATE ALL ABOVE GRADE RIGID CONDUIT ROUTING WITH OWNER AND OTHER DISCIPLINES FOR EQUIPMENT, RECEPTACLES, LIGHTING, ETC.

E. VERIFY ALL MECHANICAL AND ELECTRICAL EQUIPMENT TO BE PROVIDED. DO NOT ATTACH STARTERS AND DISCONNECTS DIRECTLY TO MECHANICAL EQUIPMENT. PROVIDE WALL-MOUNT SUPPORT, STEEL ANGLE COLUMN SUPPORT, OR UNISTRUT RACK CONSTRUCTED SUPPORTED BY WALL, STEEL, AND/OR FLOOR FOR THAT PURPOSE. SEE EQUIPMENT VENDOR FINAL APPROVAL DRAWINGS AND SPECIFICATIONS FOR MORE DETAILS.

F. ADJUST ANY CONDUIT, WIRING, DISCONNECT SIZING AND FUSING PER EQUIPMENT MANUFACTURER'S FINAL REQUIREMENTS AND SPECIFICATIONS FOR ACTUAL SIZING.

KEY NOTES: (#)

1. EMBEDDED CONCRETE DUCT BANK CONDUITS TO TRANSITION TO ABOVE GROUND RIGID CONDUITS AT CANOPY AREA VIA POWER AND CONTROLS PULL-BOXES AS SHOWN.
2. SEE EQUIPMENT CONNECTION SCHEDULES AND ELECTRICAL PANEL SCHEDULES FOR MORE DETAILS ON EQUIPMENT AND CONNECTIONS. REFER TO MANUFACTURER'S FINAL APPROVED DWGS AND SPECIFICATIONS FOR FINAL INSTALLATION AND CONNECTIONS.
3. ALL RECEPTACLES SHOWN SHALL BE INDUSTRIAL GRADE, WEATHER PROOF, GFCI RATED.
4. ALL NEW EQUIPMENT (DISTRIBUTION PANELS, DISCONNECTS, TERMINATION CABINETS, ENCLOSURES, ETC.) SHALL BE MOUNTED ON ELECTRICAL UNISTRUT TYPE PEDESTALS AS SHOWN. COORDINATE MOUNTING LOCATIONS WITH OWNER AND OTHER DISCIPLINES. SEE EQUIPMENT CONNECTION SCHEDULES FOR MORE DETAILS.
5. THE EXISTING PEDESTALS WITH DISCONNECTS, SWITCHES, AND CONTROLS FOR THE SCREENER GATES, EXHAUST FANS, CONVEYOR BELT, ETC., SHALL REMAIN.
6. PROVDE CONDUIT BELOW GRADE IN BALLAST CHAMBER. SEE 09-E302 FOR ELEVATION.
7. CONTINUE TO EXISTING EXHAUST FAN 9 (EF-9) IN SCREENS AREA. PROVIDE LOCAL FUSED DISCONNECT (30A) AT EF-9.
8. STUB-UP LOCATION FOR FLYGT CABLES, CORE WET WELL AND SLEEVE. PROVIDE SEALANT AFTER FLYGT CABLES ARE INSTALLED (TYP).
9. STUB-UP CONDUIT FROM BALLAST CHAMBER AND RUN OVHERHEAD IN CANOPY AREA. CORE BALLAST CHAMBER AND SLEEVE. PROVIDE SEALANT AFTER CONDUITS AREA INSTALLED (TYP).
10. COORDINATE EMBEDDED CONDUITS WITH FINAL HELICAL PILE LOCATIONS. PRELIMINARY HELICAL PILE LOCATIONS ARE SHOWN FOR REFERENCE ONLY. PROVIDE MINIMUM 1 INCH SEPARATION BETWEEN EMBEDDED CONDUITS.

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

ENLARGED POWER PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE
0	JLK	MC	07/10/2024

DESCRIPTION: ISSUED FOR BIDS

09-E301

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\36\3618113\3618121\04_CAD\ELEC\03_PLOT\3618121_09-E301.dwg
SAVED:7/1/2024
PLOTTED:7/10/2024

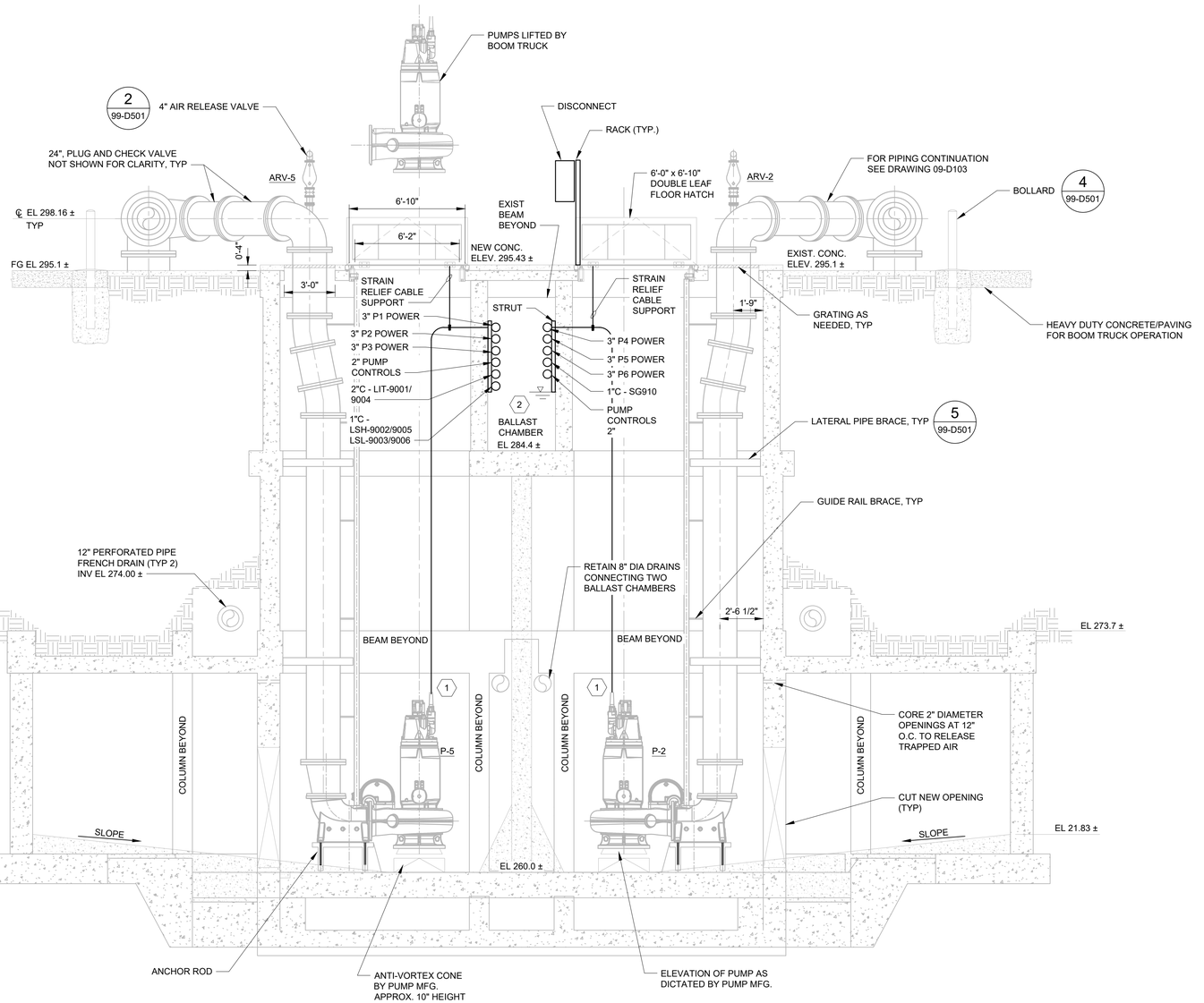
GENERAL NOTES:

1. SEE THE ENLARGED POWER PLAN FOR THE AREA INDICATED AS CLASSIFIED AREA (CLASS I, DIVISION II). ALL CONSTRUCTION SHALL CONFORM TO NEC 500, NFPA 820, AND OTHER APPLICABLE CODES AND LOCAL JURISDICTIONS. ALL ELECTRICAL / MECH EQUIPMENT, ENCLOSURES, DISCONNECTS, CONDUITS / RACEWAYS, AND CABLING LOCATED OUTSIDE THE CLASSIFED AREA MUST MAINTAIN 3-FT HORIZONTALLY AND 1.5-FT VERTALLY ABOVE GRADE MINIMUM CLEARANCE. ELECTRICAL / MECH EQUIPMENT, ENCLOSURES, DISCONNECTS, CONDUITS / RACEWAYS, CABLING, AND ALL CONNECTIONS WITHIN THE HAZARDOUS AREA MUST CONFORM TO ALL CODES RELATED TO THE HAZARDOUS CLASSIFICATION WITH ALL APPROVED EQUIPMENT RATINGS / TYPES, ENCLOSURES, FITTINGS, CONNECTIONS, SEALINGS, ETC., PER NEC AND NFPA.

KEY NOTES: (#)

(1) VENDOR (XYLEM / FLYGT) SUPPLIED FACTORY SUBCAB CABLE FROM TERMINATION / DISCONNECT CABINETS TO PUMPS SHALL BE PROVIDED.

(2) CORE CONCRETE WALL FROM BALLAST CHAMBER TO WET WEL FOR PUMP CABLING. PROVIDE 2 HOUR FIRE SEALANT. PROVIDE STRAIN RELIEF OF FLYGT CABLE AT ENTRANCE OF WET WELL.



B / 09-E302 PUMP STATION ELECTRICAL SECTION

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

0 1' 2' 4' 8"

BARGE DESIGN SOLUTIONS
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07/10/2024

PUMP STATION ELECTRICAL SECTION

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-E302

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3638\18113618121\04_CAD\ELEC\03_PLOT\3618121_09-E302.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

GENERAL NOTES:

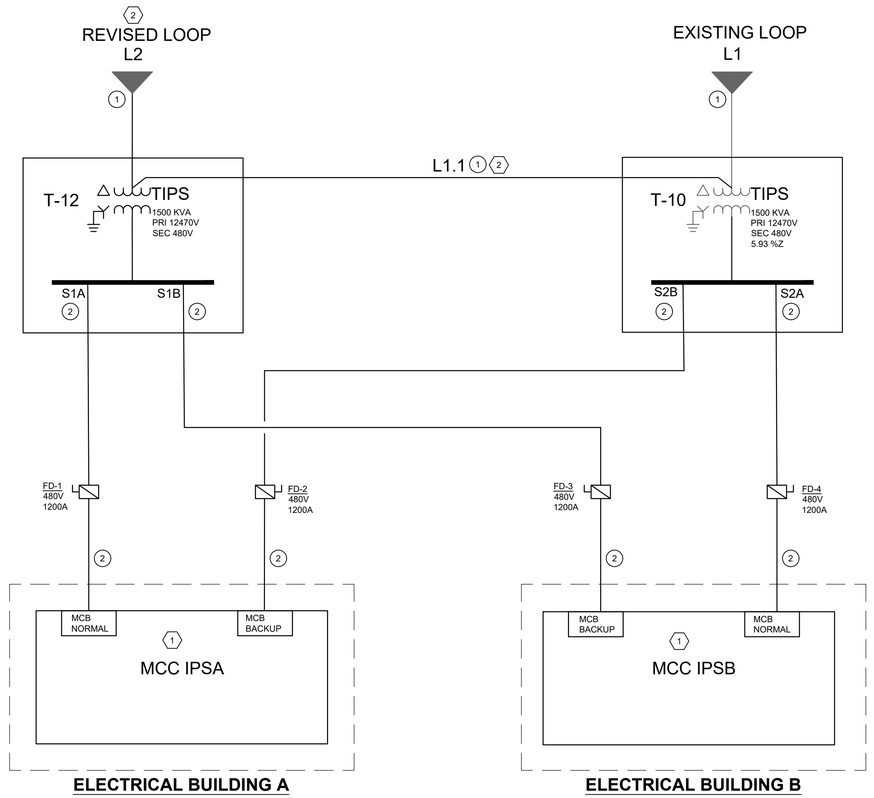
A. REFERENCE THE EXISTING OVERALL ONE-LINE DIAGRAM SHOWN AS "REFERENCE ONLY" FOR MORE DETAILS.

KEY NOTES:

(1) PROVIDE LOCKOUT TAGOUT PROCEDURES AND COORDINATE PROCEDURES WITH KIRK KEY INTERLOCKING SYSTEM PROVIDED IN THE MCC'S MCB CABINETS (NORMAL AND BACKUP) IN ELECTRICAL BUILDINGS AS SHOWN. SEE MCC ONE-LINE DIAGRAMS FOR MORE DETAILS.

PANELBOARD CONDUIT AND WIRE SCHEDULE

SYMBOL	DESCRIPTION
1 (1)	(1) SET OF (3) #500 KCMIL, 15kV, CU, AND (1) #1/0 AWG CU GND IN 5"C.
1 (2)	(4) SETS OF (3) #500 KCMIL, 600V, CU, AND (1) #3/0 AWG CU GND IN EACH 4"C.



1 OVERALL ONE-LINE DIAGRAM
09-E601 SCALE: NTS

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry 2024.09.25 11:16:54-05'00'

ELECTRICAL ONE-LINE DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

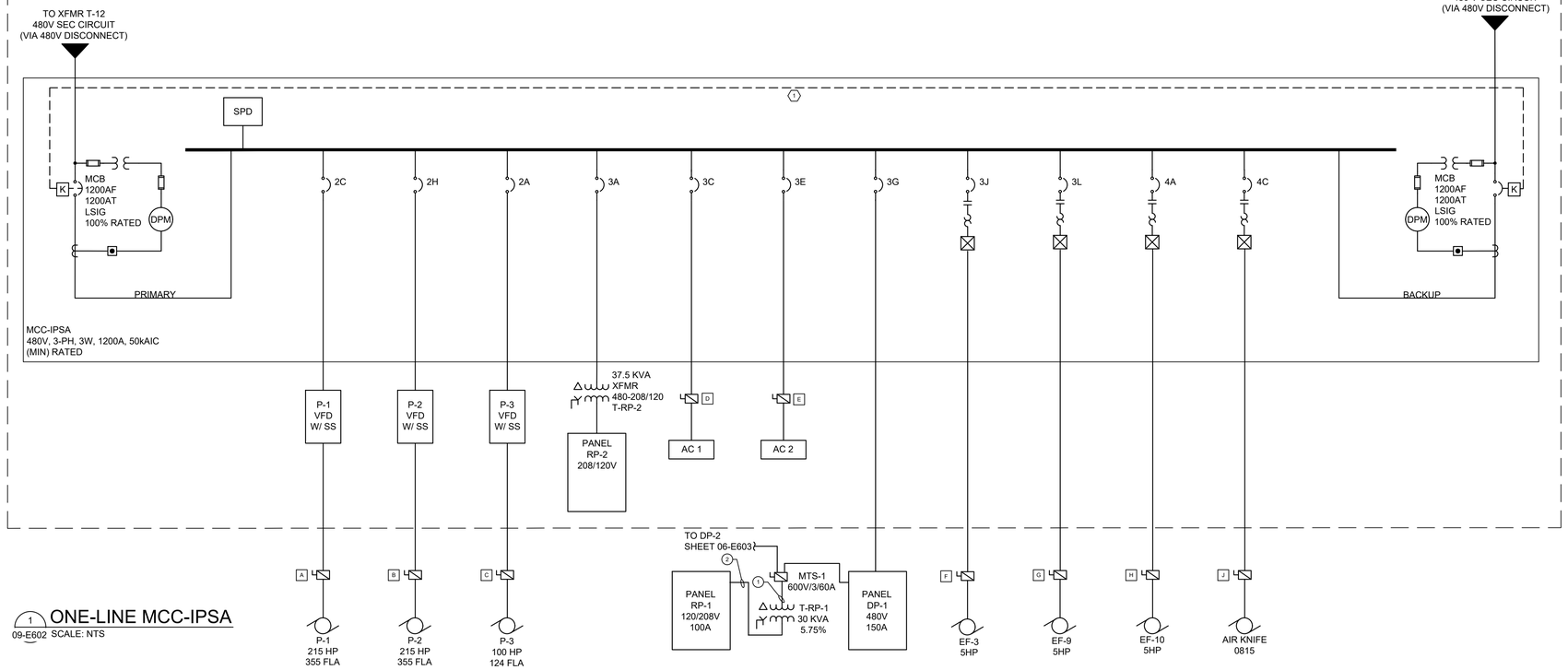
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/02/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

09-E601

FILE NO. 3618121

USER:JLK1TTRELL
FILE:\\corp.bwsc.net\data\Projects\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_09-E601.dwg
SAVED:9/24/2024
PLOTTED:9/24/2024

PRE-FAB ELECTRICAL BLDG A



1 ONE-LINE MCC-IPSA
09-E602 SCALE: NTS

GENERAL NOTES:

A. ALL VFD's SHALL BE EQUIPPED WITH A BYPASS SWITCH AND A SOFT START. VFD's SHALL BE SUPPLIED BY XYLEM/FLYGT.

B. SEE THE ELECTRICAL PANEL SCHEDULES FOR DETAILS ON OTHER INDIVIDUAL CIRCUITS AND BREAKER RATINGS NOT SHOWN.

C. SEE OVERALL ONE-LINE AND RISER DIAGRAM FOR 480V SUPPLY FEEDS AND CONNECTIONS FROM XFMR'S T-10 & T-12 VIA THE 480V DISCONNECTS.

D. SEE THE EQUIPMENT CONNECTION SCHEDULE BELOW FOR CONNECTION DETAILS.

E. CONTRACTOR SHALL PROVIDE ARC-FLASH CALCULATIONS AND STUDY FROM A REGISTERED ELECTRICAL ENGINEER. THE CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL REQUIRED ELECTRICAL EQUIPMENT. SEE SPECIFICATIONS FOR ARC-FLASH LABEL REQUIREMENTS.

KEY NOTES:

1. KIRK KEY INTERLOCKING SYSTEM SHOWN TO BE PROVIDED ACCORDING TO MANUFACTURING SPECIFICATIONS WHERE ONLY ONE POWER SOURCE IS TO BE ENERGIZED IN THE MCC'S MCB CABINET AT ONE TIME. COORDINATE THE NORMAL AND BACKUP POWER FEEDS WITH THE KIRK KEY INTERLOCKING SYSTEM PROVIDED AT EXTERIOR 480V DISCONNECTS. SEE THE OVERALL ONE-LINE DIAGRAM AND RISER DIAGRAM.

PANELBOARD CONDUIT AND WIRE SCHEDULE

SYMBOL	DESCRIPTION
1	(1) SET OF (3) #4 AWG, 1000V, CU, AND (1) #6 AWG CU GND IN 1-1/2"C.
2	(1) SET OF (4) #2 AWG, 1000V, CU, AND (1) #8 AWG CU GND IN 1-1/2"C.

DISCONNECT SCHEDULE

SYMBOL	TAG	DESCRIPTION
A	FD-P-1	3-PH, 600V, 600A (FAR) / NEMA-4X
B	FD-P-2	3-PH, 600V, 600A (FAR) / NEMA-4X
C	FD-P-3	3-PH, 600V, 200A (FAR) / NEMA-4X
D	FD-AC-1	3-PH, 600V, 60A (FAR) / NEMA-4X
E	FD-AC-2	3-PH, 600V, 60A (FAR) / NEMA-4X
F	FD-EF-3	3-PH, 600V, 30A (FAR) / NEMA-4X
G	FD-EF-9	3-PH, 600V, 30A (FAR) / NEMA-4X
H	FD-EF-10	3-PH, 600V, 30A (FAR) / NEMA-4X
J	FD-AK-0815	3-PH, 600V, 30A (FAR) / NEMA-4X

EQUIPMENT CONNECTION SCHEDULE - ELECTRICAL BLDG "A"

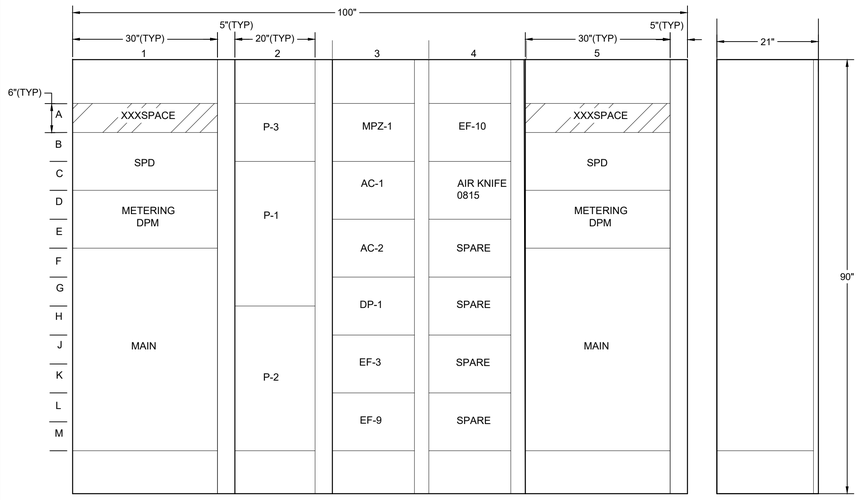
TAG	DESCRIPTION	LOCATION	LOAD		FLA	VOLTS/ PHASE	CIRCUIT BREAKER FRAME	MIN TRIP SETTING	BLDG_PANEL	FEEDERS (HOMERUN)			FUSED DISCONNECT (AT UNIT)	NOTES
			KW	HP						WIRE (CU)	GND (CU)	CONDUIT		
P-1	PUMP P-1	WET WELL	160.0	215	355.0	460/3	600	540	MCC-A	2 SETS OF (3) #4/0	(1) #2 AWG	3"C	600V/3P/600A (FAR)	1, 3
P-2	PUMP P-2	WET WELL	160.0	215	355.0	460/3	600	540	MCC-A	2 SETS OF (3) #4/0	(1) #2 AWG	3"C	600V/3P/600A (FAR)	1, 3
P-3	PUMP P-3	WET WELL	75.0	100	124.0	460/3	200	175	MCC-A	(3) #2/0 AWG	(1) #4 AWG	2"C	600V/3P/200A (FAR)	1, 3
AC-1	AC UNIT 1	ELECTRICAL BLDG-A	18.0	N/A	31.0	460/3	60	60	MCC-A	(3) #4 AWG	(1) #6 AWG	1-1/2"C	600V/3P/60A	4
AC-2	AC UNIT 2	ELECTRICAL BLDG-A	18.0	N/A	31.0	460/3	60	60	MCC-A	(3) #4 AWG	(1) #6 AWG	1-1/2"C	600V/3P/60A	4
SG-0812	SCREEN SLIDE GATE	SCREEN AREA	6.1	5	7.6	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
DP-1*	DISTRIBUTION PANEL DP-1	CANOPY AREA	59.8	N/A	N/A	460/3	150	150	MCC-A	(3) #1/0 AWG	(1) #6 AWG	2"C	SEE MCC ONE-LINE	N/A
RP-2	RP-2 (208/120V)	ELECTRICAL BLDG-A	20.0	N/A	N/A	208/3	150	150	T-RP-2	(3) #1/0 AWG	(1) #6 AWG	2"C	SEE MCC ONE-LINE	N/A
PV-1	VALVE FOR P-1	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-2	VALVE FOR P-2	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-3	VALVE FOR P-3	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
SG-9110	WW XFER SLIDE GATE CH #1	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
CP-801	801 SCREEN CONTROL PNL	CANOPY AREA	38.3	N/A	48.0	460/3	150	60	DP-1*	(3) #4 AWG	(1) #6 AWG	1 1/2"C	SEE DP-1 PNL SCHED	N/A
EF-3	EXHAUST FAN-3 (STARTER)	WET WELL	6.1	5	7.6	460/3	60	20	MCC-A	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
EF-9	EXHAUST FAN-9 (STARTER)	CANOPY AREA	6.1	5	7.6	460/3	60	20	MCC-A	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
EF-10	EXHAUST FAN-10 (STARTER)	CANOPY AREA	6.1	5	7.6	460/3	60	20	MCC-A	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-7	PV-7 ISOLATION VALVE	WET WELL	3.2	N/A	4.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-8	PV-8 ISOLATION VALVE	WET WELL	3.2	N/A	4.0	460/3	150	20	DP-1*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
RTU-1	SCADA RTU-1 PANEL	ELECTRICAL BLDG-A	12.8	N/A	16.0	120/1	60	20	MPZ-1	(2) #12 AWG	(1) #12 AWG	3/4"C	SEE RP-2 PNL SCHED	N/A
MPR-1	MOTOR PROTECTION PANEL 1 (MAS)	ELECTRICAL BLDG-A	12.8	N/A	16.0	120/1	60	20	MPZ-1	(2) #12 AWG	(1) #12 AWG	3/4"C	SEE RP-2 PNL SCHED	N/A
AIR KNIFE 0815	BCONV-0815 AIR KNIFE	SCREEN AREA	6.1	5	7.6	460/3	60	20	MCC-A	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
FE-9100	P-3 FLOW METER	WET WELL	0.2	N/A	1.7	120/1	100	20	MPZ-2*	(2) #12 AWG	(1) #12 AWG	3/4"C	SEE RP-2 PNL SCHED	2
MTS-1	MANUAL TRANSFER SWITCH	CANOPY AREA	10.0	N/A	12.0	460/3	50	50	DP-2*	(3) #4 AWG	(1) #6 AWG	1-1/2"C	N/A	5
T-RP-2	TRANSFORMER: 480-208/120	ELECTRICAL BLDG-A	37.5	N/A	N/A	460/3	60	60	MCC-A	(3) #6 AWG	(1) #8 AWG	1-1/2"C	N/A	N/A
P-1 VFD	PUMP P-1 (VFD)	ELECTRICAL BLDG-A	160.0	250	335.0	460/3	600	540	MCC-A	2 SETS OF (3) #350 KCMIL	(1) #2 AWG	3"C	N/A	N/A
P-2 VFD	PUMP P-2 (VFD)	ELECTRICAL BLDG-A	160.0	250	335.0	460/3	600	540	MCC-A	2 SETS OF (3) #350 KCMIL	(1) #2 AWG	3"C	N/A	N/A
P-3 VFD	PUMP P-3 (VFD)	ELECTRICAL BLDG-A	75.0	125	124.0	460/3	200	175	MCC-A	(3) #4/0 AWG	(1) #6 AWG	2"C	N/A	N/A

* EXTERIOR PANEL, NEMA-4X

NOTES:

1. PROVIDE FUSED DISCONNECT , HEAVY DUTY, NEMA 12 - INDOORS OR NEMA 4X (OR NEMA 3R GASKETED) - OUTDOORS. FUSE PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE WITH MOTOR RATED, TOGGLE SWITCH DISCONNECT MOUNTED ADJACENT TO LOAD.
3. VFD PROVIDED WITH UNIT. INCLUDE VFD RATED CABLES.
4. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. PROVIDE WIRING AND LOCAL DISCONNECT PER MANUFACTURER'S REQUIREMENTS. VFD / STARTER TO BE INCLUDED WITH UNIT.
5. DISCONNECT TO BE DOUBLE POLE DOUBLE THROW AND FED FROM A OR B-SIDE FEED (BLDG-A OR BLDG-B).

KW	AMPS	MIN TRIP



2 FRONT & SIDE ELEVATION - MCC-IPSA
09-E602 SCALE: NTS

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

ELECTRICAL ONE-LINE DIAGRAM

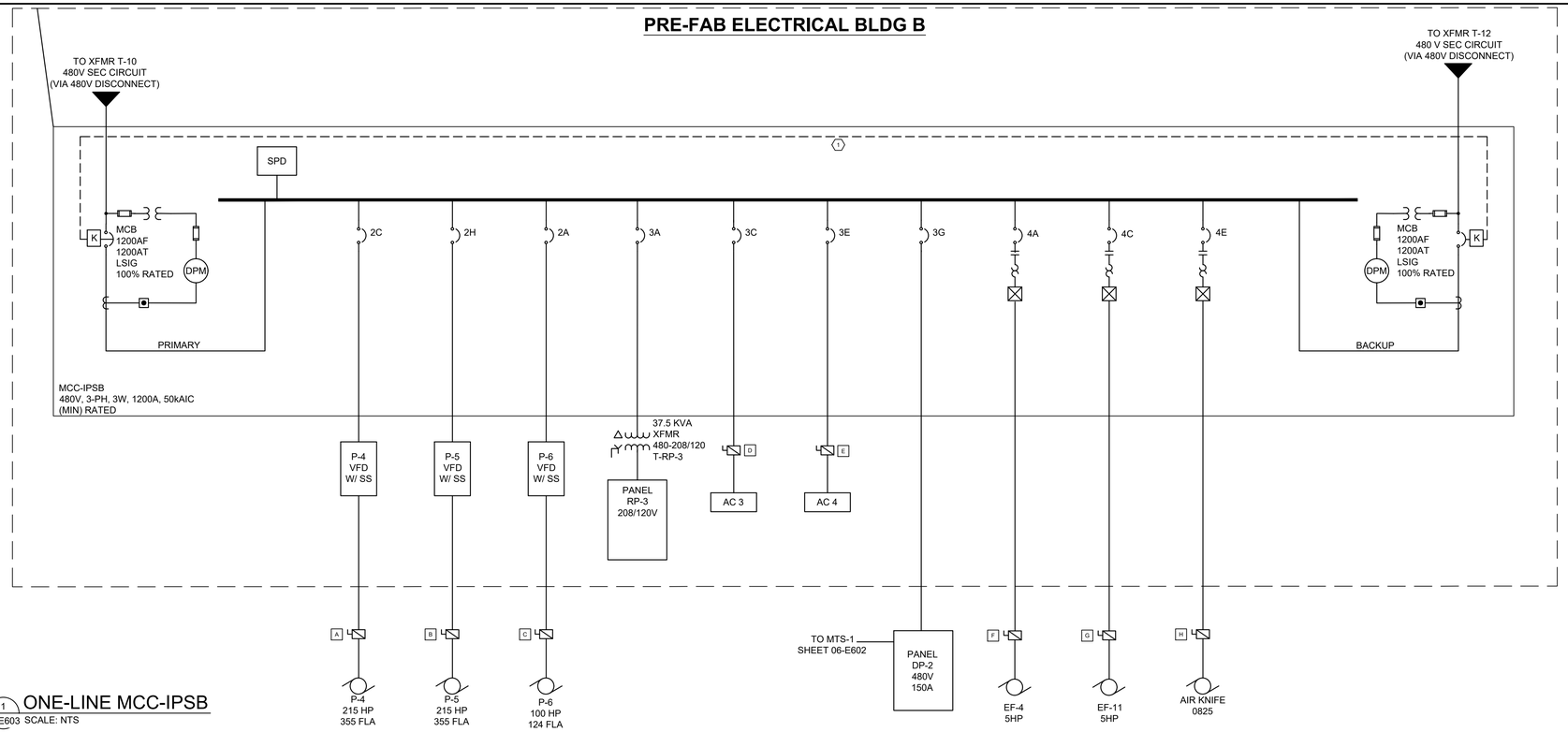
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MIC	07/10/2024	ISSUED FOR BIDS

09-E602

FILE NO. 3618121



1 ONE-LINE MCC-IPSB
09-E603 SCALE: NTS

GENERAL NOTES:

A. ALL VFD's SHALL BE EQUIPPED WITH A BYPASS SWITCH AND A SOFT START. VFD's SHALL BE SUPPLIED BY XYLEM/FLYGT.

B. SEE THE ELECTRICAL PANEL SCHEDULES FOR DETAILS ON OTHER INDIVIDUAL CIRCUITS AND BREAKER RATINGS NOT SHOWN.

C. SEE OVERALL ONE-LINE AND RISER DIAGRAM FOR 480V SUPPLY FEEDS AND CONNECTIONS FROM XFMR'S T-10 & T-12 VIA THE 480V DISCONNECTS.

D. SEE THE EQUIPMENT CONNECTION SCHEDULE BELOW FOR CONNECTION DETAILS.

E. CONTRACTOR SHALL PROVIDE ARC-FLASH CALCULATIONS AND STUDY FROM A REGISTERED ELECTRICAL ENGINEER. THE CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL REQUIRED ELECTRICAL EQUIPMENT. SEE SPECIFICATIONS FOR ARC-FLASH LABEL REQUIREMENTS.

1 KEY NOTES:

KIRK KEY INTERLOCKING SYSTEM SHOWN TO BE PROVIDED ACCORDING TO MANUFACTURING SPECIFICATIONS WHERE ONLY ONE POWER SOURCE IS TO BE ENERGIZED IN THE MCC'S MCB CABINET AT ONE TIME. COORDINATE THE NORMAL AND BACKUP POWER FEEDS WITH THE KIRK KEY INTERLOCKING SYSTEM PROVIDED AT EXTERIOR 480V DISCONNECTS. SEE THE OVERALL ONE-LINE DIAGRAM AND RISER DIAGRAM.

DISCONNECT SCHEDULE

SYMBOL	TAG	DESCRIPTION
A	FD-P-1	3-PH, 600V, 600A (FAR) / NEMA-4X
B	FD-P-2	3-PH, 600V, 600A (FAR) / NEMA-4X
C	FD-P-3	3-PH, 600V, 200A (FAR) / NEMA-4X
D	FD-AC-3	3-PH, 600V, 60A (FAR) / NEMA-4X
E	FD-AC-4	3-PH, 600V, 60A (FAR) / NEMA-4X
F	FD-EF-4	3-PH, 600V, 30A (FAR) / NEMA-4X
G	FD-EF-11	3-PH, 600V, 30A (FAR) / NEMA-4X
H	FD-AK-0825	3-PH, 600V, 30A (FAR) / NEMA-4X

EQUIPMENT CONNECTION SCHEDULE - ELECTRICAL BLDG "B"

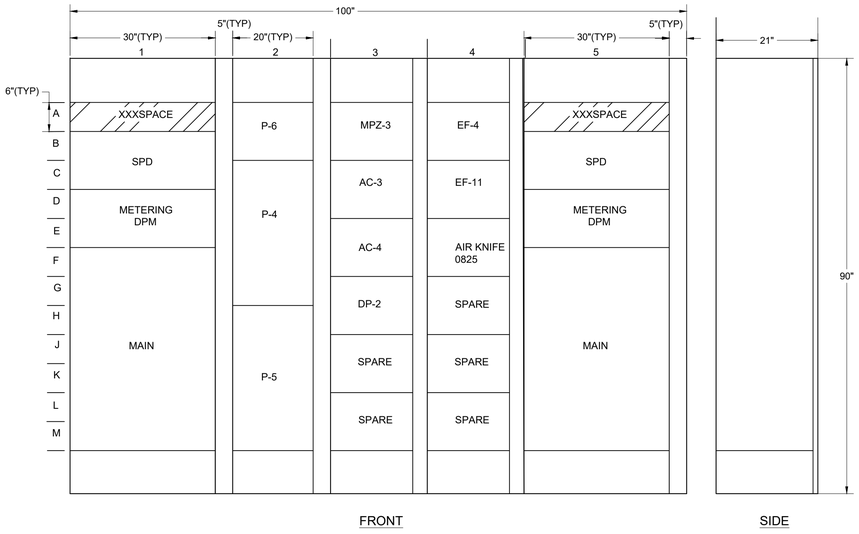
TAG	DESCRIPTION	LOCATION	LOAD		FLA	VOLTS/ PHASE	CIRCUIT BREAKER FRAME	MIN TRIP SETTING	BLDG_PANEL	FEEDERS (HOMERUN)			FUSED DISCONNECT (AT UNIT)	NOTES
			KW	HP						WIRE (CU)	GND (CU)	CONDUIT		
P-4	PUMP P-4	WET WELL	160.0	215	355.0	460/3	600	540	MCC-B	2 SETS OF (3) #4/0	(1) #2 AWG	3"C	600V/3P/600A (FAR)	1, 3, 6, 7
P-5	PUMP P-5	WET WELL	160.0	215	355.0	460/3	600	540	MCC-B	2 SETS OF (3) #4/0	(1) #2 AWG	3"C	600V/3P/600A (FAR)	1, 3, 6, 7
P-6	PUMP P-6	WET WELL	75.0	100	124.0	460/3	200	175	MCC-B	(3) #2/0 AWG	(1) #4 AWG	2"C	600V/3P/200A (FAR)	1, 3, 6
EF-4	EXHAUST FAN-4 (STARTER)	WET WELL	6.1	5	7.6	460/3	60	20	MCC-B	(3) #10 AWG	(1) #10 AWG	1"C	600V/3P/30A	1
AC 3	AC UNIT 3	ELECTRICAL BLDG-B	18.0	N/A	31.0	460/3	60	60	MCC-B	(3) #4 AWG	(1) #6 AWG	1-1/2"C	600V/3P/60A	4
AC 4	AC UNIT 4	ELECTRICAL BLDG-B	18.0	N/A	31.0	460/3	60	60	MCC-B	(3) #4 AWG	(1) #6 AWG	1-1/2"C	600V/3P/60A	4
DP-2*	DISTRIBUTION PANEL DP-2	CANOPY AREA	59.8	N/A	N/A	460/3	150	150	MCC-B	(3) #1/0 AWG	(1) #6 AWG	2"C	SEE MCC ONE-LINE	N/A
RP-3	RP-3 (208/120V)	ELECTRICAL BLDG-B	20.0	N/A	N/A	208/3	150	150	T-RP-3	(4) #1/0 AWG	(1) #6 AWG	2"C	SEE MCC ONE-LINE	N/A
PV-4	VALVE FOR P-4	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-5	VALVE FOR P-5	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-6	VALVE FOR P-6	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
PV-9	PV-9 ISOLATION VALVE	WET WELL	3.2	N/A	4.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
SG-9120	WW XFER SLIDE GATE CH #2	WET WELL	1.6	N/A	2.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
SG-0822	SCREEN SLIDE GATE	SCREEN AREA	1.6	N/A	2.0	460/3	150	20	DP-2*	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
CP-802	802 SCREEN CONTROL PNL	CANOPY AREA	38.3	N/A	48.0	460/3	150	60	DP-2*	(3) #4 AWG	(1) #6 AWG	1 1/2"C	SEE DP-2 PNL SCHED	N/A
EF-4	EXHAUST FAN-4 (STARTER)	WET WELL	6.1	5	7.6	460/3	100	20	MCC-B	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
EF-11	EXHAUST FAN-11 (STARTER)	CANOPY AREA	6.1	5	7.6	460/3	100	20	MCC-B	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
RTU-2	SCADA RTU-2 PANEL	ELECTRICAL BLDG-B	12.8	N/A	16.0	120/1	60	20	MPZ-3	(3) #10 AWG	(1) #10 AWG	3/4"C	SEE RP-3 PNL SCHED	N/A
MPR-2	MOTOR PROTECTION PANEL 2 (MAS)	ELECTRICAL BLDG-B	12.8	N/A	16.0	120/1	60	20	MPZ-3	(2) #12 AWG	(1) #12 AWG	3/4"C	SEE RP-3 PNL SCHED	N/A
AIR KNIFE 0825	BCONV-0825 AIR KNIFE	SCREEN AREA	6.1	5	7.6	460/3	60	20	MCC-B	(3) #10 AWG	(1) #10 AWG	3/4"C	600V/3P/30A	1
FE-9200	P-6	WET WELL	0.2	N/A	1.7	120/1	100	20	MPZ-4*	(2) #12 AWG	(1) #12 AWG	3/4"C	SEE RP-3 PNL SCHED	2
MTS-1	MANUAL TRANSFER SWITCH	CANOPY AREA	10.0	N/A	12.0	460/3	50	50	DP-2*	(3) #4 AWG	(1) #6 AWG	1-1/2"C	N/A	5
T-RP-3	TRANSFORMER 480-208/120	ELECTRICAL BLDG-B	37.5	N/A	N/A	460/3	60	60	MCC-B	(3) #6 AWG	(1) #8 AWG	1-1/2"C	N/A	N/A
P-4 VFD	PUMP P-4 (VFD)	ELECTRICAL BLDG-B	160.0	250	355.0	460/3	600	540	MCC-B	2 SETS OF (3) #350 KCMIL	(1) #2 AWG	3"C	N/A	N/A
P-5 VFD	PUMP P-5 (VFD)	ELECTRICAL BLDG-B	160.0	250	355.0	460/3	600	540	MCC-B	2 SETS OF (3) #350 KCMIL	(1) #2 AWG	3"C	N/A	N/A
P-6 VFD	PUMP P-6 (VFD)	ELECTRICAL BLDG-B	75.0	125	124.0	460/3	200	175	MCC-B	(3) #4/0 AWG	(1) #6 AWG	2"C	N/A	N/A

* EXTERIOR PANEL, NEMA-4X

NOTES:

1. PROVIDE FUSED DISCONNECT , HEAVY DUTY, NEMA 12 - INDOORS OR NEMA 4X (OR NEMA 3R GASKETED) - OUTDOORS. FUSE PER MANUFACTURER'S RECOMMENDATIONS.
2. PROVIDE WITH MOTOR RATED, TOGGLE SWITCH DISCONNECT MOUNTED ADJACENT TO LOAD.
3. VFD PROVIDED WITH UNIT. INCLUDE VFD RATED CABLES.
4. INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. PROVIDE WIRING AND LOCAL DISCONNECT PER MANUFACTURER'S REQUIREMENTS. VFD / STARTER TO BE INCLUDED WITH UNIT.
5. DISCONNECT TO BE DOUBLE POLE DOUBLE THROW AND FED FROM A OR B-SIDE FEED (BLDG-A OR BLDG-B).
6. PROVIDE LSI ELECTRONIC TRIP BREAKER.
7. PROVIDE 100% RATED BREAKER.

	KW	AMPS	MIN TRIP
MCC-B TOTAL PROJECTED LOAD	516.9	1389.1	1200



2 FRONT & SIDE ELEVATION - MCC-IPSB
09-E603 SCALE: NTS

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER JORDAN WILLIAM LANDRY
07/10/2024

ELECTRICAL ONE-LINE DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV-	DR	CHK	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-E603

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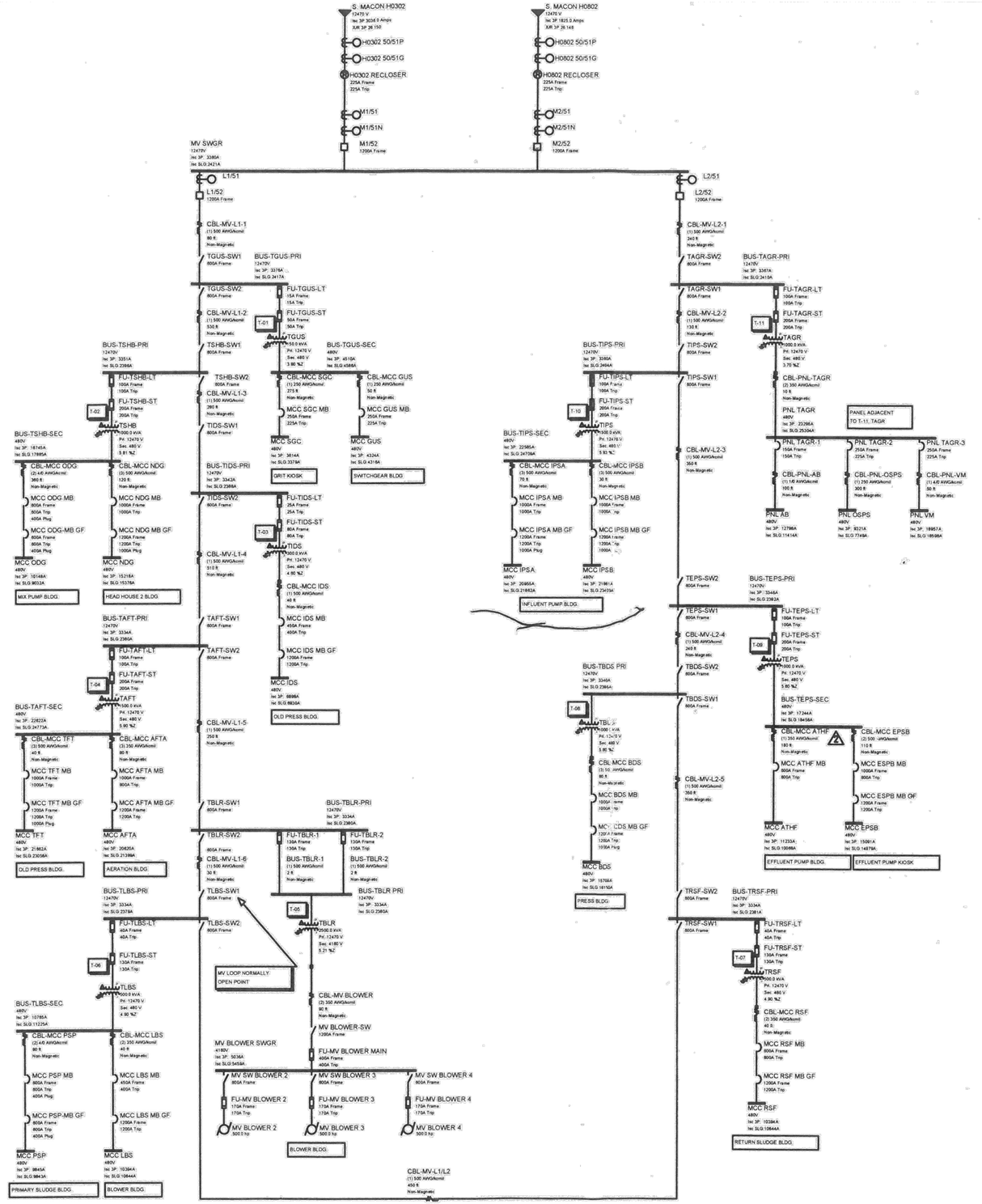

1 OVERALL ONE-LINE DIAGRAM
09-E601 SCALE: NTS

FOR REFERENCE ONLY

BARGE DESIGN SOLUTIONS
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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LAWERY
07/10/2024

ELECTRICAL ONE-LINE DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-E604

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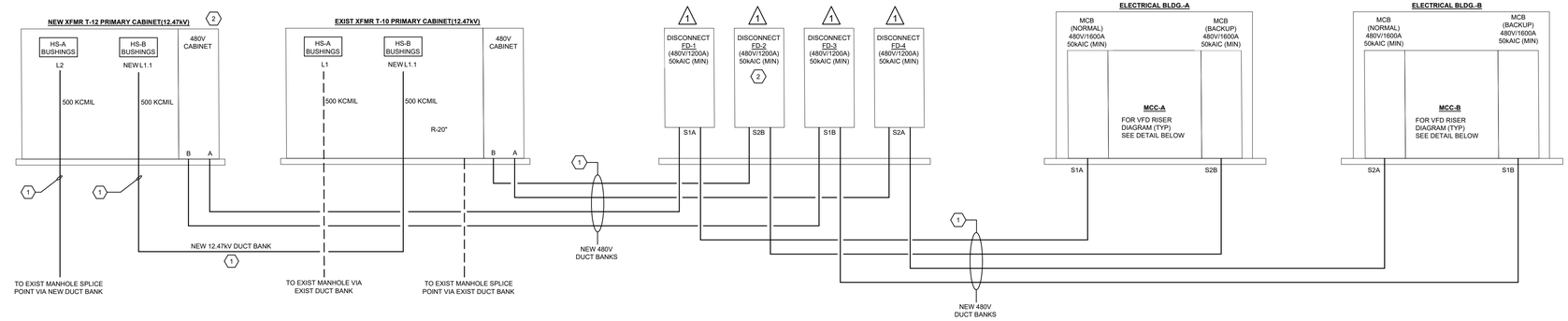


1 09-E605 ELECTRICAL RISER DIAGRAM
NOT TO SCALE

GENERAL NOTES:

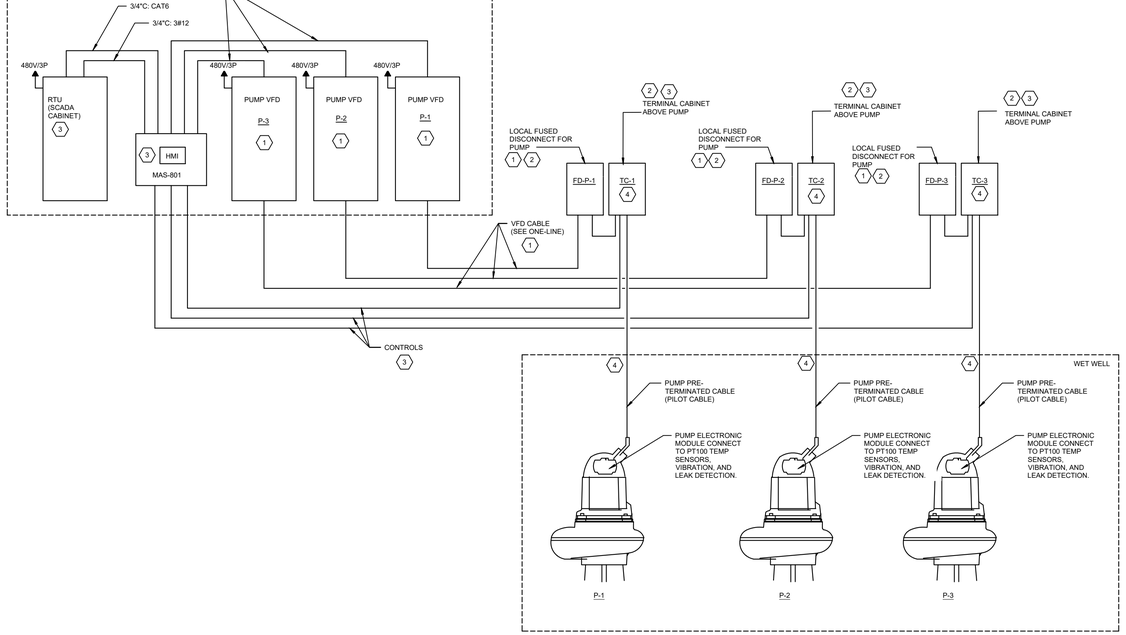
A. CONTRACTOR SHALL PROVIDE ARC-FLASH CALCULATIONS AND STUDY FROM A REGISTERED ELECTRICAL ENGINEER. THE CONTRACTOR SHALL PROVIDE ARC-FLASH LABELS FOR ALL REQUIRED ELECTRICAL EQUIPMENT. SEE SPECIFICATIONS FOR ARC-FLASH LABEL REQUIREMENTS.

KEYED NOTES: (#)

1. SEE ONE-LINE DIAGRAMS AND EQUIPMENT CONNECTION SCHEDULES FOR CONDUIT AND CABLES SIZES. SEE ELECTRICAL SITE PLAN FOR REFERENCED SECTION VIEWS OF ELECTRICAL DUCT BANK DETAILS.
2. ALL NEW OUTDOOR EQUIPMENT AND CABINETS TO BE NEMA-4X.
3. SEE CONTROLS WIRING DIAGRAMS FOR CONDUIT AND CABLE INFORMATION AND CONNECTIONS FROM VFD CONTROLS, SCADA RTU, MAS-801, HMI, AND PUMPS.
4. PUMP FACTORY CABLE TO BE MOTOR SUBCAB FLEXIBLE TYPE AND INCLUDES POWER AND CONTROLS. POWER AND CONTROLS CONDUCTORS TO BE SEPARATED AT EACH CORRESPONDING CONTROLS TERMINAL CABINETS AS SHOWN. SEE TERMINAL CABINET WIRING DIAGRAM AND VENDOR SPECIFICATIONS FOR MORE DETAILS.

NOTE: RTU CABINET SHALL BE PROVIDED BY INTEGRATOR AND INSTALLED BY CONTRACTOR IN FIELD.

NOTE: VFD TO BE PROVIDED BY PUMP VENDOR AND WILL BE SHIPPED TO E-HOUSE SUPPLIER TO BE FACTORY INSTALLED.



2 09-E605 SUBMERSIBLE PUMP AND MOTOR PROTECTION RISER DIAGRAM (TYPICAL)
SCALE: NTS

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Brian W Landry 2024.09.25 11:17:04-05'00'

ELECTRICAL RISER DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

09-E605

FILE NO. 3618121

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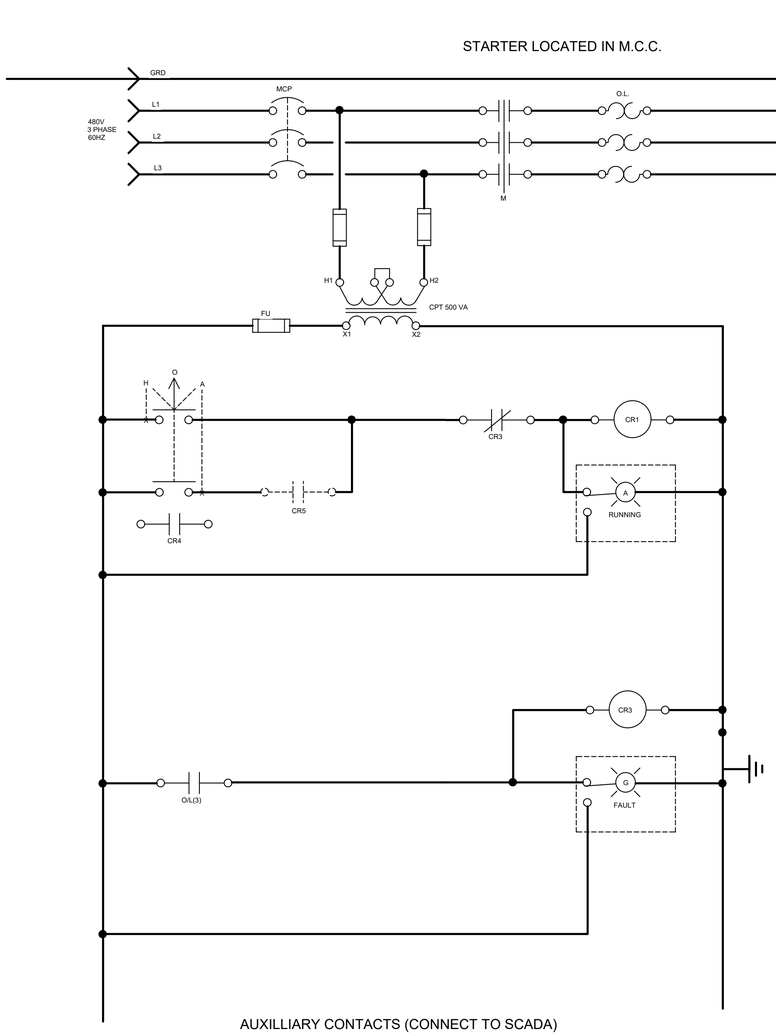
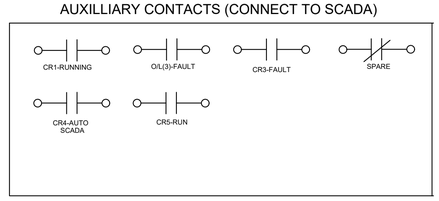
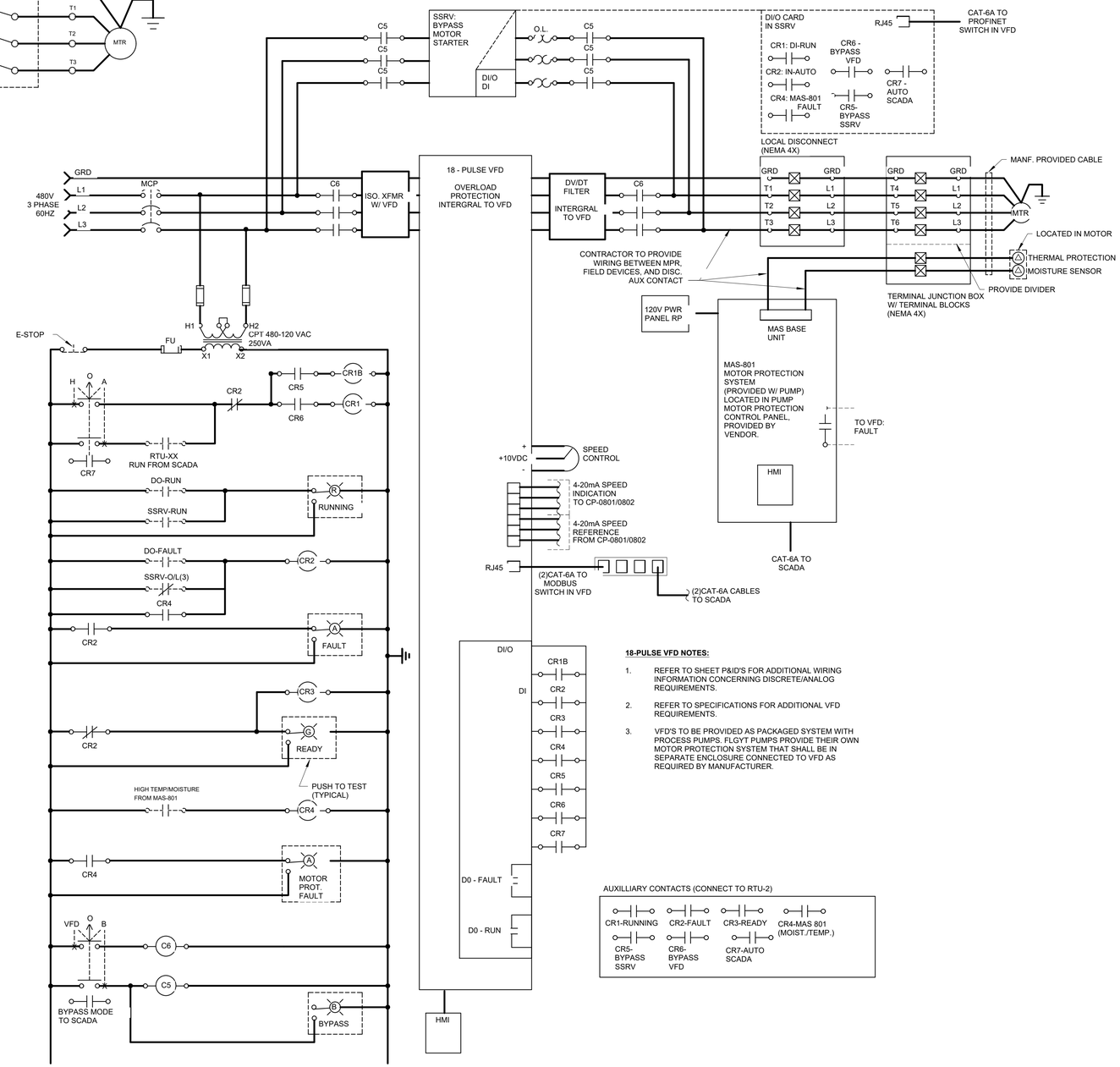
PLOTTED:9/24/2024





1 09-E606 MOTOR STARTER WIRING DIAGRAM
NOT TO SCALE



1 09-E606 VFD WIRING DIAGRAM
NOT TO SCALE

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL BRIAN WILLIAM LANDRY ENGINEER
07/10/2024

ELECTRICAL WIRING DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

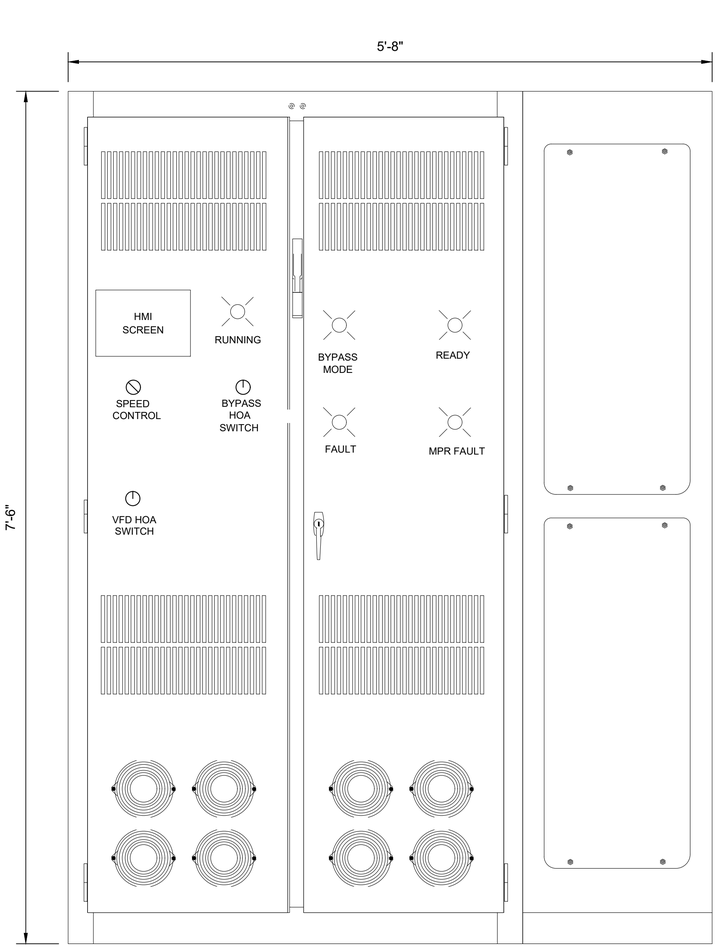
REVISION INFORMATION			
REV.	DR.	CHK.	DATE
0	JLK	MG	07/10/2024

DESCRIPTION: ISSUED FOR BIDS

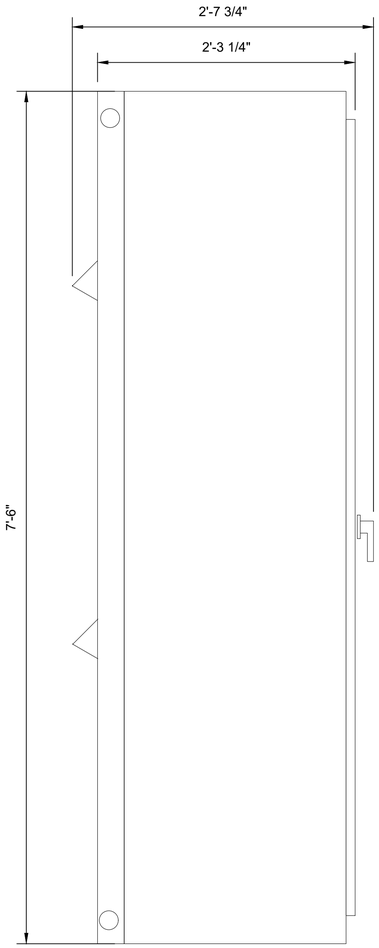
09-E606

FILE NO. 3618121

USER: JLK1TTRELL
FILE: F:\36\3618113618121\04_CAD\ELEC\03_PLOT\3618121_09-E606.dwg
SAVED: 6/27/2024
PLOTTED: 7/10/2024



FRONT



SIDE

1 09-E606 VFD FRONT PANEL ELEVATION
NOT TO SCALE

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07/10/2024

ELECTRICAL VFD PANEL ELEVATIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION				
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-E607
FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3618181\3618121\04_CAD\ELEC\03_PLOT\3618121_09-E607.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

GENERAL NOTES:

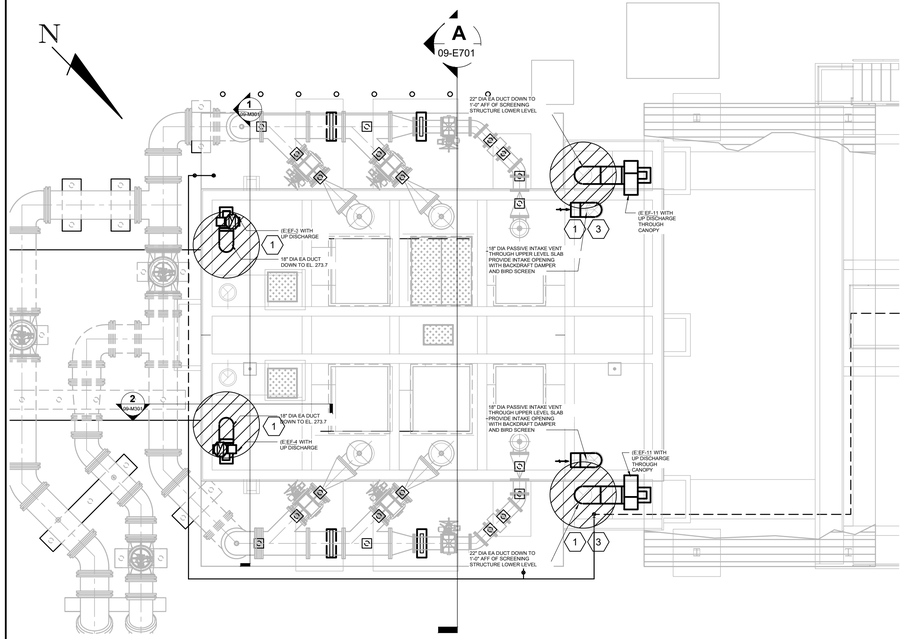
A. HATCHED AREAS SHOWN SHALL CONFORM TO NEC 500, NFPA 820, AND OTHER APPLICABLE CODES AND LOCAL JURISDICTIONS FOR THE HAZAROUS CLASSIFIED AREAS AS INDICATED FOR CLASS I , DIVISION II.

KEY NOTES: (#)

1. ALL ELECTRICAL / MECH EQUIPMENT, ENCLOSURES, DISCONNECTS, CONDUITS / RACEWAYS, AND CABLING LOCATED OUTSIDE THE CLASSIFED AREA SHALL REMAIN UNCLASSIFIED. ANY EQUIPMENT AND CONNECTIONS WITHIN THE HAZARDOUS AREA OR WITHIN 3 FEET OF EXHAUST FANS AND EXHAUST DUCTS AS SHOWN MUST CONFORM TO ALL CODES RELATED TO THE HAZARDOUS CLASSIFICATION WITH ALL APPROVED EQUIPMENT RATINGS / TYPES, ENCLOSURES, FITTINGS, CONNECTIONS, SEALINGS, ETC., PER NEC 500 AND NFPA 820.
2. GAS DETECTION MONITORING SHALL BE REQUIRED FOR MONITORING THE CLASSIFIED AREA AS INDICATED WITH GAS DETECTION SENSORS MOUNTED WITHIN WET WELL AREA ACCORDING TO NFPA 820.
3. COORDINATE WITH MECHANICAL DRAWINGS FOR EXHAUST FAN DUCT OPENING HEIGHT. SEE DRAWING 09-M501.
4. ALL EXISTING AND NEW PENETRATIONS TO BE SEALED FROM HAZARDOUS LOCATION TO MAINTAIN UNCLASSIFIED RATING.

LEGEND:

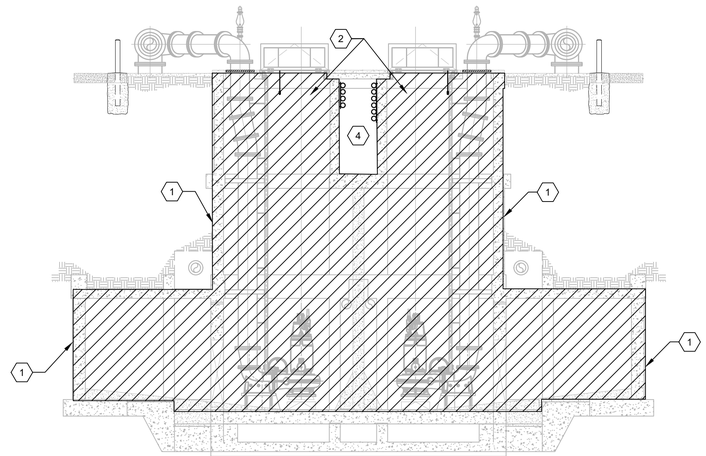
HAZARDOUS CLASS I, DIVISION II AREAS



1 09-E302 ENLARGED POWER PLAN - WET WELL & CANOPY AREA

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

0 2' 4' 8' 16'



A 09-E302 ENLARGED SECTION - WET WELL

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

0 2' 4' 8' 16'

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ENLARGED POWER PLAN

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

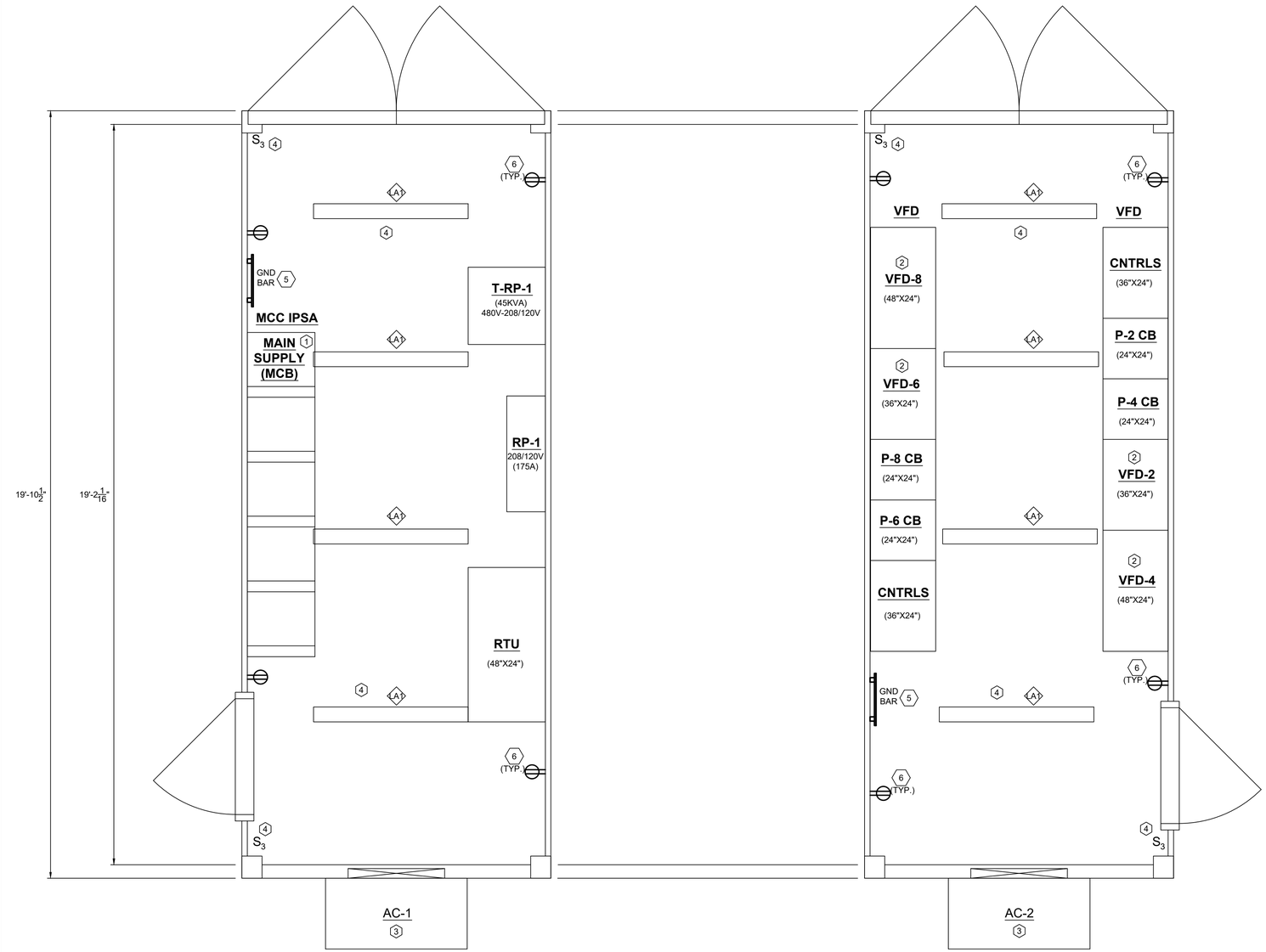
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

REVISION INFORMATION

09-E701

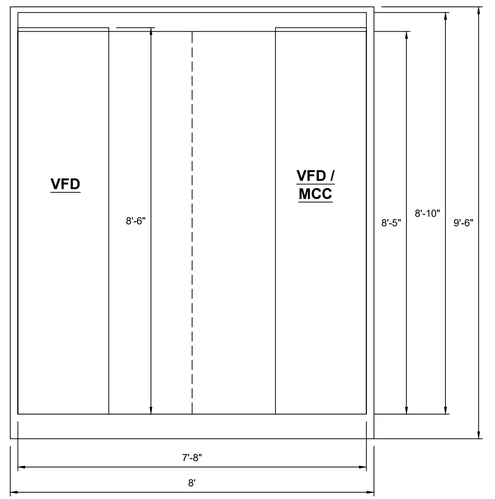
FILE NO. 3618121

USER:JLK\ITRELL
FILE:F:\3638\18113618121\04_CAD\ELEC\03_PLOT\3618121_09-E701.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024



1 ENLARGED POWER PLAN - TEMP ELEC BLDG A
09-ED301

2 ENLARGED POWER PLAN - TEMP ELEC BLDG B
09-ED301



3 END VIEW ELEVATION TYPICAL
09-ED301 SCALE: 1" = 20'-0"

GENERAL NOTES:

A. THE TEMPORARY ELECTRICAL BUILDINGS SHOWN SHALL BE REQUIRED FOR RELOCATING THE MCC-IPSA, VFDS, AND OTHER EQUIPMENT AS SHOWN FROM THE IPS BUILDING. THESE SHALL BE TEMPORARILY POWERED FROM THE EXISTING 12.47KV / 480V (1500KVA) T-10 XFMR. SEE THE TEMPORARY DEMOLITION DRAWINGS FOR THE OVERALL ONE-LINE DIAGRAM, SITE PLAN, AND MCC ONE-LINE FOR MORE DETAILS ON TEMPORARY CONNECTIONS AND MCC TEMPORARY EQUIPMENT ELEVATIONS.

B. ALL EXISTING MCC CABINETS SHOWN ARE 102" IN HEIGHT.

C. ALL EXISTING STAND ALONE VFD CABINETS ARE 102" IN HEIGHT.

D. DURING THIS TEMPORARY CONFIGURATION, THE EXISTING RTU / PLC CONTROLS CABINET IN THE IPS BUILDING SHALL BE DUPLICATED, WIRED, AND TESTED WITH A NEW RTU / CONTROLS CABINET PRIOR TO DEMOLISHING ALL RTU / CONTROLS IN THE IPS BUILDING.

E. THE EXISTING VFDS SHALL MAINTAIN THEIR EXISTING BYPASS SWITCH AND SOFT START DURING THIS TEMPORARY CONFIGURATION.

F. ALL EXISTING EQUIPMENT, EXISTING CABINETS, AND NEW EQUIPMENT ARE TO BE RELOCATED AND CONNECTED IN THE TEMP ELECTRICAL BUILDINGS PER MANUFACTURER'S DRAWINGS AND SPECIFICATIONS ALONG WITH OWNER'S COORDINATION .

G. ALL ELECTRICAL PANELS AND EQUIPMENT INSTALLED OUTSIDE THE ELECTRICAL BUILDINGS SHALL BE NEMA-4X OR NEMA-3R GASKETED. COORDINATE NEMA TYPE WITH OWNER.

H. IT IS THE CONTRACTOR'S RESPONSIBILITY TO RELOCATE AND MAINTAIN TEMPORARY EQUIPMENT AND WIRING DURING CONSTRUCTION. FINAL TESTING AND REPORTS ARE NOT
1 REQUIRED FOR THE TEMPORARY PHASE. TEST EXISTING EQUIPMENT AND WIRING AS REQUIRED TO COMPLETE SCOPE OF WORK DURING CONSTRUCTION.

I. THE CONTRACTOR SHALL IDENTIFY ANY EQUIPMENT PROBLEMS PRIOR TO RELOCATION AND VERIFY PERFORMANCE AFTER
1 RELOCATION. CONTRACTOR SHALL PROTECT EQUIPMENT FROM DAMAGE DURINNG AND REPLACE IF NECESSARY.

KEY NOTES:

1. REROUTE THE EXISTING XFMR T-10'S 480V SECONDARY TO THE TEMPORARY BUILDING MCC-IPSA MCB SUPPLY CABINET AS SHOWN. CONDUITS TO PENETRATE THE TEMPORARY BUILDING'S FLOOR INTO MCC CABINET BOTTOM ACCORDING TO THE EXISTING WESTING HOUSE MCC's PENETRATION SPECIFICATIONS.

2. CONNECT UP EXISTING VFD's VIA POWER CABINETS FROM THE MCC-IPSA AND ACCORDING TO EXISTING CONFIGURATION SIMILAR TO MCC-IPSB IN IPS BLDG.

3. THE TEMPORARY BUILDINGS SHALL BE EQUIPPED WITH AN AC PACKAGED UNIT THAT SHALL BE SIZED APPROPRIATELY BY MECHANICAL TO MAINTAIN PROPER VENTILATION AND COOLING DURING THIS TEMPORARY CONFIGURATION.

4. TEMPORARY 4' LED STRIP LIGHTING SHALL BE PROVIDED FOR THE TEMPORARY BUILDINGS AS SHOWN WITH A SIMPLY 3-WAY SWITCH PROVIDED AT BOTH DOOR OPENINGS.

5. PROVIDE A GROUND BAR AS SHOWN IN EACH TEMPORARY ELECTRICAL BUILDING.

6. ADD RECEPTACLES AS NEEDED IN EACH TEMP ELECTRICAL BUILDING.

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Brian W Landry
2024.09.25
11:17:14-05'00'

ENLARGED POWER PLAN - TEMP ELEC BLDG

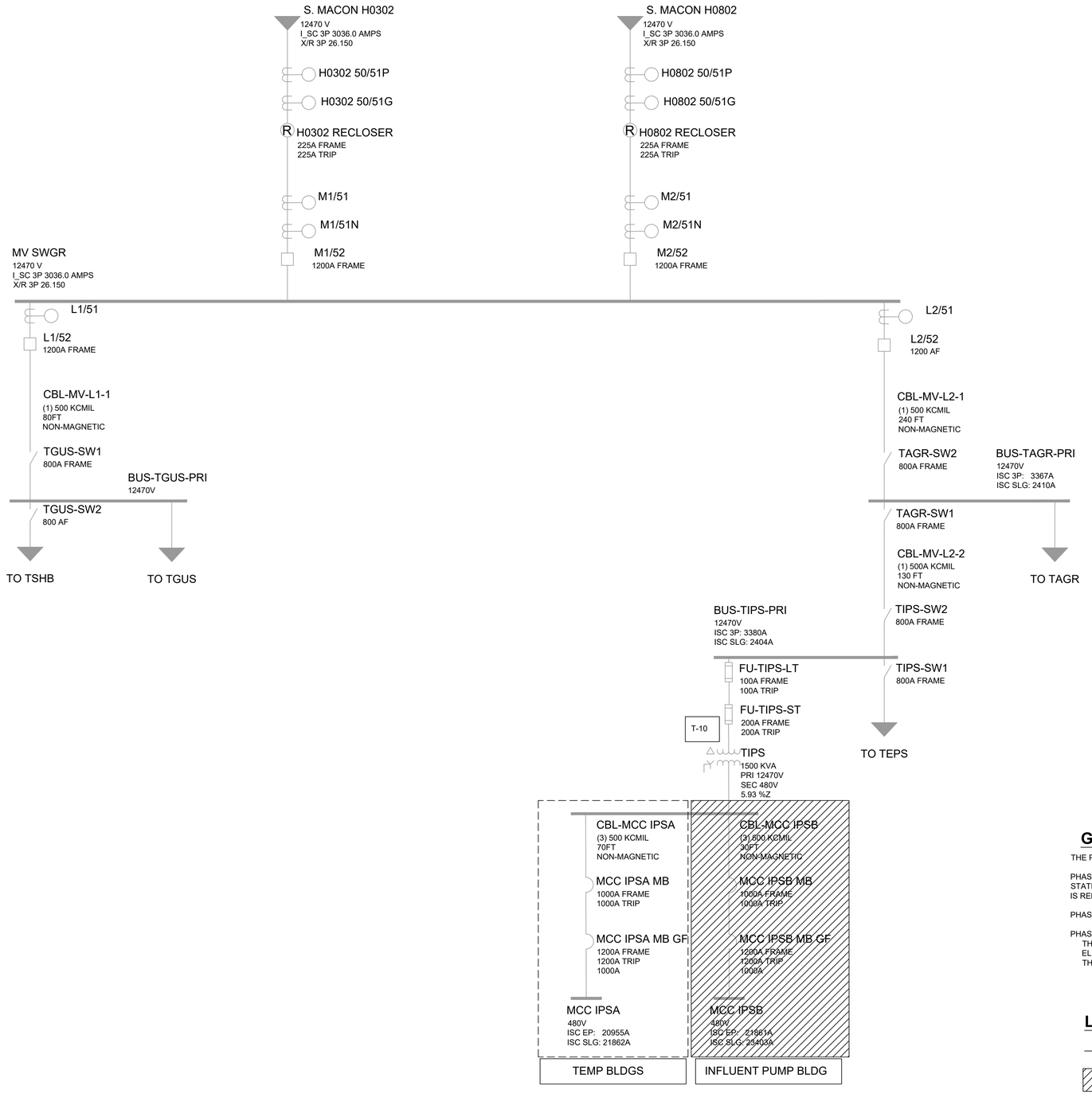
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

09-ED301

FILE NO. 3618121

USER:JLKITTRELL
FILE:\\corp.bwsc.net\data\Projects\36\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_09-ED301.dwg
SAVED:9/17/2024
PLOTTED:9/24/2024



GENERAL NOTES:

THE PUMP STATION SHALL BE REMOVED IN PHASES.

PHASE 1: MCC-IPSA SHALL BE RELOCATED TO THE TEMP BUILDING. PUMP STATION SHALL RUN ON MCC-IPSA AND ASSOCIATED PUMPS UNTIL MCC-IPSA IS RELOCATED AND IN SERVICE.

PHASE 2: MCC-IPSB AND ASSOCIATED PUMPS/VFD'S SHALL BE DEMOLISHED.

PHASE 3: THE FIRST E-HOUSE AND PUMPS SHALL BE PROVIDED AND HALF OF THE PUMP STATION SHALL BE OPERATIONAL. THE TEMPORARY ELECTRICAL BUILDING, MCC-IPSA AND ASSOCIATED EQUIPMENT SHALL THEN BE DEMOLISHED.

LEGEND:

- – – – – – – TEMPORARY RELOCATED
- DEMOLISHED

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

ELECTRICAL ONE-LINE DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-ED601

FILE NO. 3618121

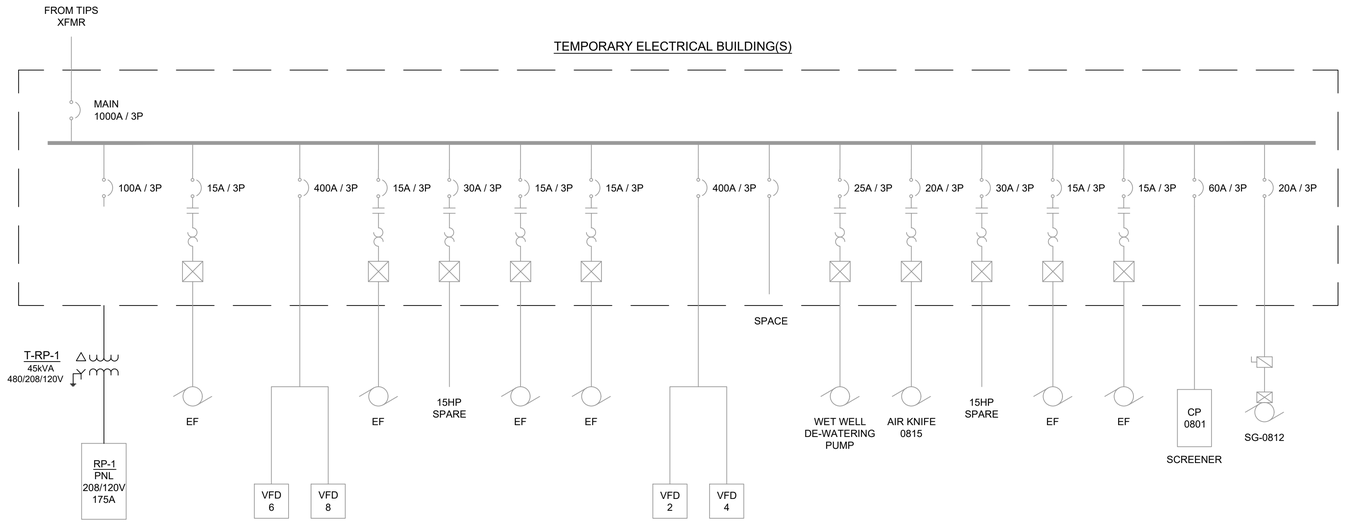
USER:JLKITTRELL
FILE:F:\3618\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_09-ED601.dwg
SAVED:9/27/2024
PLOTTED:7/10/2024

TEMPORARY CONFIGURATION NOTES:

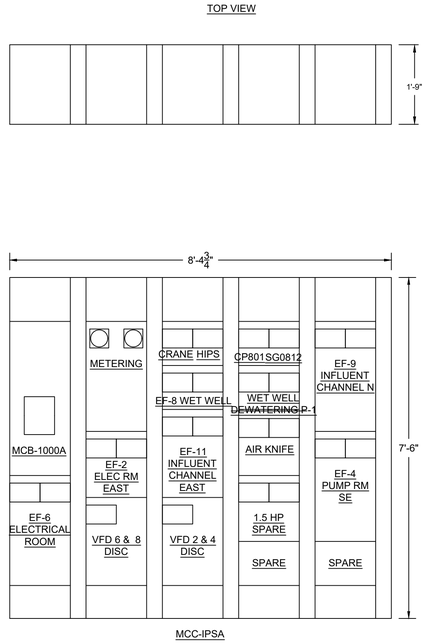
1) RELOCATE MCC-IPSA OUTSIDE IN TEMPORARY BUILDING.
2) RECONNECT THE MCC-IPSA TO THE EXISTING TRANSFORMER T-10 USING 3 SETS OF #500 MCM + #2 GND.
3) RELOCATE VFD'S 2, 4, 6, & 8 TO TEMP BLDG AND RECONNECT TO MCC IPSA.
4) RELOCATE ALL REQUIRED EF'S AND CP-0801 PANEL AND RECONNECT TO MCC IPSA.
5) PROVIDE A NEW 480:208/120V TRANSFORMER AND 208/120V PANEL AND RECONNECT TO ALL 208/120V LOADS AS REQUIRED.
6) RECONNECT SG-0812 GATE CONTROLLER TO MCC IPSA.
7) VERIFY ALL MCC-IPSA CIRCUITS ARE OPERATIONAL AND WORKING PROPERLY.
8) DE-ENERGIZE AND DEMOLISH MCC IPSB AND RELATED CONNECTIONS INSIDE THE INFLUENT PUMP BLDG.
9) MR SYSTEMS TO PROVIDE A NEW SCADA RTU CABINET WITH ALL CONTROLS & STATUS POINTS PROGRAMMED, LOCATED IN TEMP BLDG, AND TEMPORARILY WIRED UP. CABINET SHALL REMAIN IN TEMP BLDG DURING CONSTRUCTION. RTU CABINET SHALL BE MOVED TO PERMANENT LOCATION IN THE 2ND ELEC BLDG "B" AFTER THE 1ST ELEC BLDG "A" HAS BEEN INSTALLED AND IS OPERATIONAL.
10) SEE TEMPORARY DEMOLITION ELECTRICAL SITE PLAN AND TEMP BUILDING FLOOR PLANS AND ELEVATION FOR MORE DETAILS.

LEGEND:

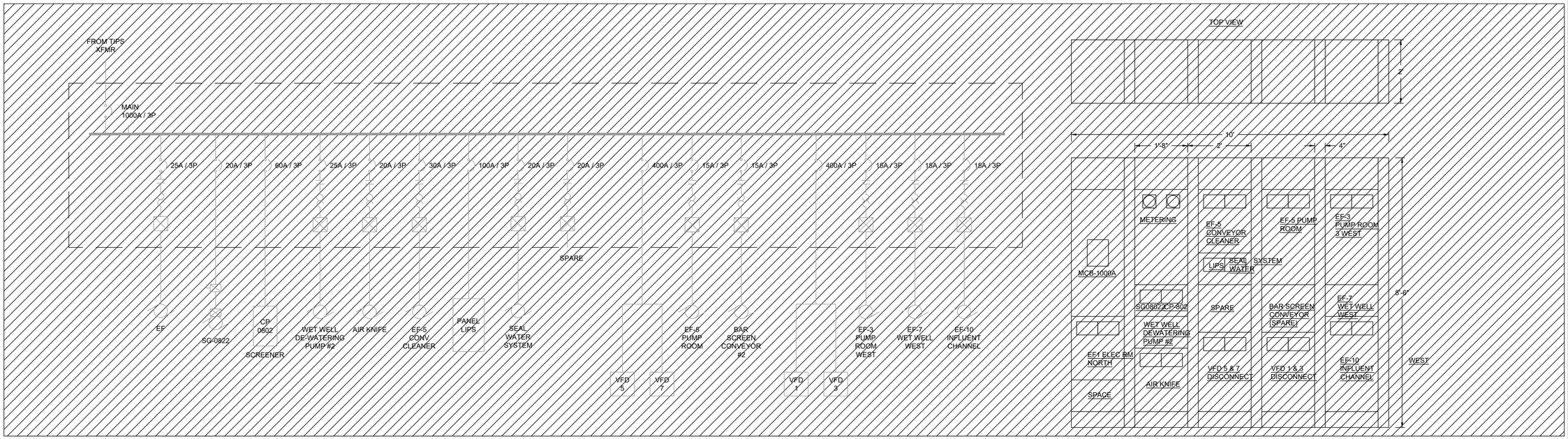
- TEMPORARY RELOCATED
- DEMOLISHED



1 ONE-LINE TEMP MCC - IPSA
09-ED602 SCALE: NTS



2 ELEVATION TEMP MCC - IPSA
09-ED602 SCALE: NTS



3 ONE-LINE MCC - IPSB
09-ED602 SCALE: NTS

4 ELEVATION MCC - IPSB
09-ED602 SCALE: NTS

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07/10/2024

TEMPORARY ELECTRICAL ONE-LINE DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION			
REV	DR	CHK	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

09-ED602

FILE NO. 3618121

USER:JLKITTRELL
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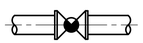
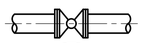
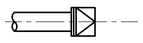
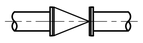
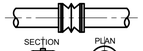
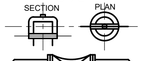
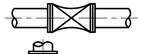
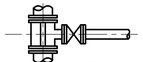
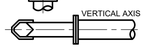
SAVED:6/27/2024
PLOTTED:7/10/2024

VALVE DESIGNATIONS

SYMBOLS: DOUBLE LINE	SYMBOLS: SINGLE LINE	TYPE
		FOOT VALVE
		VACUUM RELIEF VALVE
		PRESSURE RELEASE VALVE
		HOSE BIBB
		GATE VALVE
		ALTITUDE VALVE, PRESSURE CONTROL REGULATING VALVE, SURGE OR PRESSURE RELIEF
		BUTTERFLY VALVE
		BALL CONTROL VALVE
		BALL VALVE
		DIAPHRAGM VALVE
		FLOODWATER (DUCKBILL) VALVE
		CHECK VALVE
		WAFER CHECK VALVE
		CONE VALVE
		GLOBE VALVE
		PLUG VALVE
		MUD VALVE
		PINCH VALVE
		TAPPING SLEEVE AND VALVE
		TELESCOPIC VALVE

SYMBOL LEGEND

DOUBLE LINE	SINGLE LINE	
		90° FLANGE BEND
		FLANGE TEE
		REDUCER CONCENTRIC
		FLOW METER
		FLEXIBLE CONNECTION
		PRESSURE INDICATOR
		SOLENOID OPERATED
		MOTOR OPERATED
		QUICK CONNECT COUPLING

JOINT DESIGNATIONS

SYMBOL	TYPE
	FLANGED JOINT
	MECHANICAL JOINT
	THREADED JOINT
	PUSH ON JOINT
	BOLTED FLEXIBLE COUPLING
	GROOVED COUPLING
	SOCKET TYPE JOINT (FRP OR PVC PIPE)
	EXPANSION JOINT
	FLANGE ADAPTER COUPLING
	BLIND FLANGE
	DISMANTLING JOINT
	RESTRAINED FLANGE ADAPTOR

PIPE DESIGNATIONS

SYMBOL	TYPE
	CORED HOLE IN EXISTING WALL
	WALL SLEEVE W/ WATER COLLAR (STANDARD)
	FLANGE X FLANGE WALL PIPE
	FLANGE X PLAIN END WALL PIPE
	FLANGE X PLAIN END WALL PIPE (TAPPED FOR STUDS)
	MECHANICAL JOINT X MECHANICAL JOINT WALL PIPE (TAPPED FOR STUDS)
	MECHANICAL JOINT X PLAIN END WALL PIPE (TAPPED FOR STUDS)
	PUSH ON BELL JOINT X PLAIN END WALL PIPE

PIPING AND VALVES GENERAL NOTES

1. INSTALL ALL PIPING SUPPORTS AND PIPING IN ACCORDANCE WITH THE LATEST EDITION OF THE ASME ANSI POWER PIPING CODE B 31.1.
2. LOCATE PRESSURE TAPS ON THE TOP OF PROCESS PIPES, UNLESS OTHERWISE INDICATED ON DWGS.
3. LOCATE SAMPLE TAPS ON THE SIDE OF PROCESS PIPES.
4. LOCATE DRAIN TAPS ON THE BOTTOM OF PROCESS PIPES.
5. UNLESS OTHERWISE NOTED, PIPE ELEVATIONS SHOWN ON PIPING DRAWINGS REFER TO CENTERLINE OF THE PIPE.
6. ALL GROUND BURIED PIPING TO HAVE A MINIMUM OF 36" OF EARTH COVER OR AS DETAILED ON THE DRAWINGS. MAINTAIN MINIMUM CLEARANCE BETWEEN PIPES OF 6".
7. INSTALL ALL PLUG, BUTTERFLY AND BALL VALVES WITH THE SHAFT IN THE HORIZONTAL POSITION, UNLESS OTHERWISE DIRECTED.

SITE PLAN LEGEND

	NEW BUILDING
	EXISTING BUILDING
	NEW STRUCTURE (TANKS, ETC.)
	EXISTING STRUCTURE (TANKS, ETC.)
	FUTURE STRUCTURE
	NEW PIPING SINGLE LINE
	NEW PIPING DOUBLE LINE
	EXISTING PIPING SINGLE LINE
	EXISTING PIPING DOUBLE LINE
	NEW MANHOLE
	EXISTING MANHOLE
	NEW VALVE BOX
	EXISTING VALVE BOX
	NEW VALVE MANHOLE AND NUMBER
	EXISTING VALVE MANHOLE
	NEW YARD HYDRANT ASSEMBLY
	NEW FIRE HYDRANT ASSEMBLY
	EXISTING FIRE HYDRANT ASSEMBLY
	NEW UNDERGROUND ELECTRICAL CONDUIT
	EXISTING UNDERGROUND ELECTRICAL CONDUIT
	NEW CATCH BASIN
	EXISTING CATCH BASIN
	PIPING OR EQUIPMENT TO BE DEMOLISHED
	STRUCTURE (TANKS, ETC.) OR PAVEMENT TO BE REMOVED
	STRUCTURE/ BUILDING TO BE RENOVATED
	ABANDON PIPE
	NEW CONCRETE PAVEMENT
	EXISTING CONCRETE PAVEMENT
	NEW ASPHALT PAVEMENT
	EXISTING ASPHALT PAVEMENT
	NEW GRAVEL DRIVE
	EXISTING GRAVEL DRIVE
	STRAW BALES
	RIP-RAP
	NEW CONTOURS
	EXISTING CONTOURS
	NEW FENCE
	EXISTING FENCE
	PROPERTY LINE
	NEW POWER POLE
	EXISTING POWER POLE
	STRUCTURE IDENTIFIER
	SILT FENCE
	EASEMENT BOUNDARY

EROSION CONTROL SYMBOLS

Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)
Du	DUST CONTROL ON DISTURBED AREAS
Co	CONSTRUCTION EXIT
Sd1-S	TYPE S SEDIMENT BARRIER (SENSITIVE)
Sd1-NS	TYPE NS SEDIMENT BARRIER (NON-SENSITIVE)
Sd2-F	DROP INLET PROTECTION
Sd2-P	CURB INLET PROTECTION

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:24:58-04'00'

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

GENERAL LEGEND

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

99-G001

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\30\3618\13618121\04_CAD\GENL\99-G001.dwg
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PLOTTED:7/8/2024

GENERAL NOTES

1. NOT ALL OFFSETS AND FITTINGS ARE SHOWN. PROVIDE OFFSETS AND FITTINGS AS REQUIRED BY FIELD CONDITIONS AS PART OF THE WORK.
2. NO EXTRA PAYMENT SHALL BE ALLOWED FOR WORK CALLED FOR ON PLANS, BUT NOT INCLUDED ON THE BID SCHEDULE. THIS INCIDENTAL WORK WILL BE REQUIRED AND SHALL BE INCLUDED UNDER THE PAY ITEM TO WHICH IT RELATES.
3. THE CONTRACTOR IS ISSUED A COMPLETE SET OF CONTRACT DRAWINGS WHILE EVERY EFFORT HAS BEEN MADE TO CONCENTRATE THE WORK OF TRADES ON SPECIFIC SHEETS AND LABELED ACCORDINGLY. THERE ARE NECESSARY INSTANCES WHERE WORK IS SHOWN ON, OR CROSS-REFERENCED TO, OTHER DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL DRAWINGS AND COORDINATE THE WORK.
4. EXISTING PIPING AND FACILITIES SHOWN LIGHT. NEW PIPING AND FACILITIES SHOWN DARK. SOME ITEMS TO BE DEMOLISHED MAY BE SPECIFICALLY LABELED ON THESE DRAWINGS. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION REGARDING DEMOLITION.
5. THE EXISTENCE AND LOCATION OF SITE IMPROVEMENTS, UTILITIES, MECHANICAL SYSTEMS, ELECTRICAL SYSTEMS, AND OTHER CONSTRUCTION INDICATED AS EXISTING ARE NOT GUARANTEED. BEFORE BEGINNING WORK, INVESTIGATE AND VERIFY THE EXISTENCE AND LOCATION OF MECHANICAL AND ELECTRICAL SYSTEMS AND OTHER CONSTRUCTION AFFECTING THE WORK.
6. THE CONTRACTOR SHALL USE PROPER BARRICADING TO PROVIDE FOR THE SAFE PASSAGE OF PEDESTRIAN AND VEHICULAR TRAFFIC DURING UTILITY CONSTRUCTION.
7. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM GDOT AND MACON WATER AUTHORITY PRIOR TO UTILITY CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY.
8. THESE PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONSTRUCTION CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SAFETY SYSTEMS AS REQUIRED BY MACON WATER AUTHORITY.
9. THE CONTRACTOR TO LOCATE, PROTECT, AND MAINTAIN BENCHMARKS, MONUMENTS, CONTROL POINTS AND PROJECT ENGINEERING REFERENCE POINTS. REESTABLISH DISTURBED OR DESTROYED ITEMS BY REGISTERED SURVEYOR IN THE STATE OF GEORGIA AT NO ADDITIONAL COST TO OWNER.
10. INFORMATION REGARDING EXISTING CONDITIONS AND FACILITIES ARE DERIVED FROM PREVIOUS CONTRACT DRAWINGS OBTAINED FROM MACON WATER AUTHORITY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY UNKNOWN.
11. LEGEND REPRESENTS STANDARD LINE TYPES AND HATCHING UNLESS INDICATED ON SPECIFIC DRAWINGS.
12. THE CONTRACTOR IS TO COORDINATE STAGING AREAS WITH OWNER.
13. WHILE EVERY EFFORT HAS BEEN MADE TO IDENTIFY THE ITEMS TO BE DEMOLISHED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW THE SCOPE OF WORK IN THE FIELD, REVIEW THESE CONTRACT DRAWINGS, ALL PREVIOUS PLANT CONSTRUCTION DRAWINGS & DOCUMENTS AND THE DEMOLITION SPECIFICATIONS, THE EXISTING FACILITY PLANS, AND DEMOLISH ALL ITEMS NECESSARY TO ACCOMMODATE THE PROPOSED WORK. ALSO THE CONTRACTOR SHALL REPAIR ALL SURFACES AND PLUG ABANDONED PENETRATIONS UPON REMOVAL OF THE DEMOLISHED ITEMS PER THE SPECIFICATION.
14. THE CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND EXAMINE LOCAL CONDITIONS TO BE ENCOUNTERED, IMPROVEMENTS TO BE PROTECTED, PERMITS AND FEES REQUIRED, AND OTHER RESEARCH NECESSARY TO ASSURE THAT THE PROJECT IS THOROUGHLY UNDERSTOOD AND IS FULLY AWARE OF ALL CONDITIONS AND CONSTRAINTS WHICH MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION.
15. NO SPOILS OR EQUIPMENT STORAGE IS ALLOWED WITHIN THE 100-YEAR FLOODPLAIN.
16. THE CONTRACTOR'S OPERATIONS SHALL CONFORM TO THE RULES AND REGULATIONS OF THE STATE CONSTRUCTION SAFETY ORDERS PERTAINING TO EXCAVATION AND TRENCHING.
17. LEGEND SYMBOLS MAY VARY BY DISCIPLINE. LEGENDS ARE SHOWN ON THE DISCIPLINE NOTES AND LEGEND SHEETS.
18. THE CONTRACTOR IS RESPONSIBLE TO REPLACE SOD, IRRIGATION, AND LANDSCAPING WHICH HAS BEEN REMOVED OR DAMAGED DUE TO CONSTRUCTION PRACTICES TO EXISTING OR BETTER CONDITION.
19. THE CONTRACTOR SHALL PROVIDE FITTINGS, PLUGS, AND OTHER SERVICES REQUIRED FOR FILLING, FLUSHING, TESTING, ETC. NO SEPARATE PAY ITEM.
20. CONCRETE PLACEMENT SHALL STOP AT EXPANSION JOINTS IN SIDEWALKS AS DIRECTED BY THE ENGINEER.
21. ALL OPEN EXCAVATION LEFT OVERNIGHT SHALL BE ENCLOSED WITH ORANGE SAFETY FENCE.
26. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH A SIGNED SET OF PLANS WITH ALL THE FINAL MEASUREMENTS AND AS BUILT INFORMATION FOR PREPARATION OF AS BUILT PLANS WITH MACON WATER AUTHORITY INSPECTORS PRIOR TO SUBMITTAL TO ENGINEER.
27. DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT WHICH MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED ON ANY WETLANDS, WATER BODY, OR STREAM BED. THE CONTRACTOR STAGING AREAS AND VEHICLE MAINTENANCE AND PARKING AREAS IN A MANNER TO MINIMIZE POLLUTANT RUNOFF AND IN ACCORDANCE WITH MACON WATER AUTHORITY REQUIREMENTS.
28. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ALL FENCES, CONCRETE ISLANDS, OR CONCRETE DRIVEWAYS IN THE WORK AREA TO THEIR ORIGINAL CONDITION PRIOR TO COMPLETION OF THE CONTRACT. THIS SHALL APPLY TO ALL OF THE MENTIONED ITEMS WHETHER THEY ARE SHOWN ON THE PLAN OR NOT. NO SEPARATE PAY ITEM.
29. THE CONTRACTOR MUST CONTACT THE COUNTY CONSTRUCTION INSPECTOR FOR THE COUNTY OF JURISDICTION 48 HOURS IN ADVANCE (NOT INCLUDING WEEKENDS) OF ANY MINOR STREET CLOSURE. THE ADVANCE TIME NOTICE IS NECESSARY TO INSTALL ADVISORY SIGNS AND GIVE MOTORISTS NOTICE OF THE STREET CLOSURE. THE CONSTRUCTION INSPECTOR AFTER BEING NOTIFIED WILL CONTACT THE TRAFFIC ENGINEERING OFFICE TO MAKE THE NECESSARY ARRANGEMENTS.
30. DETOUR ROUTING AROUND WORK ACTIVITIES, MAINTENANCE OF DETOUR SIGNS, AND FLAGMEN ARE THE CONTRACTOR'S RESPONSIBILITY. NO SEPARATE PAYMENT WILL BE MADE.
31. THE CONTRACTOR IS RESPONSIBLE FOR SEQUENCING HIS WORK SO AS NOT TO DISRUPT PLANT OPERATIONS. CLOSE COORDINATION BETWEEN THE CONTRACTOR, ENGINEER, AND PLANT PERSONNEL IS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR REMOVING MATERIAL, LABOR, ETC. FOR TEMPORARY CONNECTIONS DURING ALL REMOVAL AND REPLACEMENT CONDITIONS. ALL CONSTRUCTION & MATERIALS USED SHALL BE IN ACCORDANCE WITH MACON WATER AUTHORITY STANDARDS, SPECIFICATIONS, AND RISK MANAGEMENT REQUIREMENTS. ALL MATERIALS TAKEN FOR DISPOSAL MUST BE DISPOSED OF AT A PERMITTED LANDFILL SITE. CONTRACTOR SHALL PROVIDE ENGINEER WITH THE HAULING MANIFESTS TO DOCUMENT PROPER DISPOSAL.
32. THE DRAWINGS SHOW AS MUCH INFORMATION AS CAN BE REASONABLY OBTAINED BY AN ENGINEERING SURVEY PARTY AND FROM UTILITY RECORDS REGARDING THE LOCATION AND NATURE OF PIPELINES, STORM SEWER, WATERLINES, SANITARY SEWER, TELEPHONE CONDUITS, ETC. HOWEVER, THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO LOCATE UNDERGROUND FEATURES SUFFICIENTLY IN ADVANCE OF OPERATIONS TO PRELUDE DAMAGE.
33. IN THE EVENT THAT UNDERGROUND FACILITIES NOT SHOWN ON THE DRAWINGS ARE ENCOUNTERED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE WORK INTENDED, AT NO INCREASE IN THE CONTRACT PRICE.
34. CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A SAFE, NEAT, AND WORKMAN-LIKE MANNER AT ALL TIMES. JOB SITE SAFETY SHALL NOT BE COMPROMISED.
35. "SCREENED" (LIGHT) DELINEATION INDICATED ON THE DRAWINGS DENOTES EXISTING FACILITIES. "SCREENED" INFORMATION WAS TAKEN FROM EXISTING CONSTRUCTION DRAWINGS AND DATA, IS FOR REFERENCE ONLY, AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO THE ORDERING OF MATERIALS AND BEGINNING OF CONSTRUCTION. "BOLD" DELINEATION IS NEW WORK TO BE CONSTRUCTED UNDER THIS CONTRACT.
36. CONTRACTOR SHALL COMPLY WITH THE GOVERNING AGENCY NPDES CONSTRUCTION REQUIREMENTS, AND SHALL PROVIDE APPROPRIATE MITIGATION OR PROTECTION AND RESTORATION AT ALL LOCATIONS AS REQUIRED BY THEIR OPERATIONS, AND AS DIRECTED BY ENGINEER. SPECIAL CONSTRUCTION REQUIREMENTS, TEMPORARY PROTECTIVE FENCING OR BARRICADES, SHEETING, SHORING, EROSION PROTECTION, AND SURFACE RESTORATION AT CERTAIN LOCATIONS ARE INDICATED ON THE DRAWINGS TO BRING CONTRACTOR'S ATTENTION TO SENSITIVE AREAS.

CIVIL/SITE DEVELOPMENT NOTES

1. ELEVATIONS REFER TO USGS DATUM.
2. PROVIDE MAINTENANCE ON COMPLETED CONSTRUCTION AS FREQUENTLY AS NECESSARY THROUGH THE CONSTRUCTION PERIOD. ADJUST AND LUBRICATE OPERABLE COMPONENTS TO ENSURE OPERABILITY WITHOUT DAMAGING EFFECTS.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY INTERFERENCE WITH EXISTING UTILITIES AND ANY FACILITIES BEING INSTALLED IN THIS PROJECT.
4. LOCATION OF NEW INSTRUMENTATION IS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE FINAL INSTRUMENTATION LOCATION WITH THE ENGINEER.
5. THE CONTRACTOR IS TO VERIFY AND COORDINATE ALL EXISTING STRUCTURES, PIPING, ELEVATIONS, LOCATIONS, SIZE, AND TYPE OF MATERIAL WITH NEW PIPING PRIOR TO CONSTRUCTION. IF DISCREPANCIES ARISE BETWEEN THESE CONTRACT DRAWINGS AND ACTUAL FIELD CONDITION, THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IN WRITING.
6. THE CONTRACTOR IS TO PROVIDE ALL ADAPTERS FOR TRANSITIONS BETWEEN DIFFERENT PIPE MATERIALS.
7. THE CONTRACTOR IS TO PROVIDE POSITIVE SITE DRAINAGE DURING CONSTRUCTION OPERATIONS. ALL FINAL LINES AND GRADES SHALL BE CONSTRUCTED TO MAINTAIN POSITIVE SITE DRAINAGE TO EXISTING DRAINAGE STRUCTURES.
8. ALL PAVEMENT TO BE RESTORED SHALL BE SAW CUT PRIOR TO RESTORATION.
9. ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE OR SUBSURFACE OUTSIDE OF THE PAVEMENT CUT AREA SHALL BE REGARDED AS A PART OR THE STREET CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOUGES, CUTS, CRACKING, DEPRESSIONS, AND/OR ANY OTHER DAMAGE CAUSED BY THE CONTRACTOR DURING THE EXECUTION OF THE WORK. THE AREAS WILL BE INCLUDED IN THE TOTAL AREA OF REPAIR. THE AREAS OF REPAIR SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS AND SPECIFICATIONS.
10. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION UNLESS NOTED OTHERWISE.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNER MARKERS AND STAKING. PROPERTY CORNER MARKERS OR STAKING DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REESTABLISHED BY A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF GEORGIA AT CONTRACTOR'S EXPENSE.
12. BEFORE CONSTRUCTION IS STARTED, THE CONTRACTOR SHALL COORDINATE WITH THE OWNER OF EACH UTILITY AND DEFINE THE REQUIREMENTS AND METHODS TO ACCOMMODATE THE PROTECTION, TEMPORARY SUPPORT, ADJUSTMENT, OR RELOCATION OF ANY UTILITIES AFFECTED BY THE PROPOSED NEW WORK. NO SEPARATE PAY ITEM.
13. FOR ALL SITE GRADING, SMOOTH PARABOLIC TRANSITIONS SHALL BE MADE BETWEEN CHANGES IN SLOPE. PARABOLIC ROUNDING SHALL APPLY TO ALL CUT AND FILL SECTIONS.
14. THE CONTRACTOR SHALL HAND COMPACT OR PROVIDE CONTROLLED LOW-STRENGTH MATERIAL BACKFILL AS REQUIRED TO ENSURE COMPACTION BENEATH EXISTING UTILITIES. TYPICAL ALL LOCATIONS. NO SEPARATE PAY ITEM.
15. CLEAN AND PROTECT CONSTRUCTION IN PROGRESS AND ADJOINING MATERIALS ALREADY IN PLACE. APPLY PROTECTIVE COVERING WHERE REQUIRED TO ENSURE PROTECTION FROM DAMAGE OR DETERIORATION. DAMAGED EQUIPMENT OR MATERIALS SHALL BE REMOVED FROM THE PROJECT SITE AND REPLACED AT NO COST TO THE OWNER.
16. THE EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE ONLY. SOME OF THE LOCATIONS SHOWN WERE OBTAINED FROM RECORDS AND INFORMATION AVAILABLE AND ARE NOT GUARANTEED. UTILITIES NOT SHOWN ON THIS DRAWING MAY EXIST. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES FOR FIELD VERIFICATION AND IS RESPONSIBLE FOR ANY DAMAGES TO, AND FOR MAINTENANCE AND PROTECTION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL HAVE THE SOLE RESPONSIBILITY OF FIELD VERIFYING EACH UTILITY LOCATION AND COORDINATING AND NOTIFYING OWNERS AT LEAST SEVENTY-TWO (72) HOURS PRIOR TO EXCAVATION.
22. THE CONTRACTOR SHALL NOT PLACE AND WASTE MATERIALS IN THE 100-YEAR FLOOD PLAIN WITHOUT FIRST OBTAINING AN APPROVED FLOOD PLAIN DEVELOPMENT PERMIT AS REQUIRED FROM THE U.S. CORP OF ENGINEERS.
23. ALL TEMPORARY TRAFFIC CONTROL DEVICES, ETC. SHALL BE PROVIDED BY THE CONTRACTOR WITHOUT DIRECT PAYMENT, UNLESS OTHERWISE NOTED OR STATED.
24. THE CONTRACTOR IS TO CONTACT THE UTILITY COMPANY LOCATOR FORTY-EIGHT (48) HOURS PRIOR TO EXCAVATION. THE CONTRACTOR HAS THE RESPONSIBILITY TO PROTECT AND SUPPORT ALL UTILITY LINES DURING CONSTRUCTION. CONTRACTOR ASSUMES ALL LIABILITY IF HE FAILS TO CARRY OUT THIS RESPONSIBILITY.
25. ALL EXISTING UTILITY MANHOLES, METER BOXES, PULL BOXES, WATER VALVE BOXES, ETC. LOCATED WITHIN THE CONSTRUCTION AREAS OR WITHIN THE RIGHT-OF-WAY SHALL BE ADJUSTED TO FINISH PAVEMENT ELEVATIONS AND IF NOT WITHIN PAVEMENT, 3 INCHES ABOVE FINISH GROUND ELEVATION, OR AS DIRECTED BY THE CONTRACT DOCUMENTS.

WATER/WASTEWATER NOTES

1. WHENEVER POWER POLES ARE ADJACENT TO THE PROPOSED WATER LINE, THE CONTRACTOR SHALL PROVIDE PROPER SHORING OR OTHER SUITABLE SUPPORT DURING CONSTRUCTION OF THE WATER LINE. THE UTILITY COMPANY MAINTENANCE DEPARTMENT MUST APPROVE SHORING.
2. WHERE A NEW WATER OR WASTEWATER LINE CROSSES WITHIN 18 INCHES UNDER A STORM DRAIN, THE WATER OR WASTEWATER LINE SHALL BE ENCASED FOR AT LEAST ONE (1) FOOT OUTSIDE EACH SIDE OF THE STORM DRAIN DITCH LINE. NO SEPARATE PAY ITEM.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEWAGE FLOW DURING ALL PHASES OF CONSTRUCTION. A FLOW MANAGEMENT PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
4. THE CONTRACTOR IS RESPONSIBLE TO ENSURE THAT NO OVERFLOWS OR SPILLAGE OF SEWER OCCURS. SHOULD THIS OCCUR, THE CONTRACTOR SHALL:
   A. IDENTIFY THE SOURCE OF THE SPILL AND ATTEMPT TO ELIMINATE ANY ADDITIONAL SPILLAGE.
   B. CONTAIN THE SPILL IN PLACE AND PREVENT CONTAMINATION OF STREAMS.
   C. CLEAN UP THE SPILL AND DISPOSE OF CONTAMINATED MATERIALS.
   D. DISINFECT THE AREA OF THE SPILL WITH A MIXTURE OF HTH CHLORINE AND WATER.
   E. IDENTIFY AND TRAIN PERSONNEL RESPONSIBLE FOR SPILLAGE PREVENTION AND CONTROL.

   NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE FOR THIS WORK. ALL WORK SHALL BE DONE ACCORDING TO GUIDELINES SET BY GA EPD.

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:26:22-04'00'

GENERAL NOTES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BIM	MA	07/10/2024	ISSUED FOR BID

99-G002

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GENERAL ABBREVIATIONS

AB	ANCHOR BOLTS
ABAN	ABANDON
ABC	AGGREGATE BASE COURSE
ABS	ACRYLONITRILE BUTADIENE STYRENE
AC	ASBESTOS CEMENT
ACST	ACOUSTIC
ADDL	ADDITIONAL
ADJ	ADJUSTABLE
ADPT	ADAPTER
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASPH	ASPHALT
ASSY	ASSEMBLY
AUTO	AUTOMATIC
AUX	AUXILIARY
AVE	AVENUE
AVG	AVERAGE
BC	BACK OF CURB
BF	BLIND FLANGE
BKGD	BACKGROUND
BLT	BUILT
BM	BENCHMARK
BM	BLOWOFF
BO	BURIED GEARED OPERATOR
BOT	BOTTOM
BTWN	BETWEEN
BYP	BY PASS
C	COMPRESSION JOINT
C&G	CURB AND GUTTER
CAP	CAPACITY
CAT	CATALOG
CB	CATCH BASIN
CCC	CHLORINE CONTACT CHAMBER
CCW	COUNTER CLOCKWISE
CER	CERAMIC
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHKR	CHECKER
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CL2	CHLORINE
CLG	CEILING
CLR	CLEAR
CM	CONCRETE MONUMENT
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COM	COMMON
CONC	CONCRETE
CONC FLR	CONCRETE FLOOR
CONN	CONNECT
CONSTR	CONSTRUCT
CONT	CONTINUOUS
CP	CONTROL PANEL
CPLG	COUPLING
CTR	CENTER
CU	COPPER
CU FT	CUBIC FEET
CU IN	CUBIC INCHES
CU YD	CUBIC YARD
CW	CLOCKWISE
dB	DECIBEL
dBA	UNIT OF SOUND LEVEL
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLITION
DHW	DESIGN HIGH WATER
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DISC	DISCONNECT
DISCH	DISCHARGE
DIST	DISTANCE
DMJ	DISMANTLING JOINT
DN	DOWN
DW	DOUBLE WALL
DWG	DRAWING
E	EAST
EA	EACH
ECC	ECCENTRIC
ECC RDCR	ECCENTRIC REDUCER
ED	EQUIPMENT DRAIN
EF	EACH FACE
EFF	EFFLUENT
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC
ELEC DR OP	ELECTRIC DOOR OPENER
EL VA	ELECTRIC VALVE ACTUATOR
EMER	EMERGENCY
EMER SHR	EMERGENCY SHOWER
ENCL	ENCLOSURE
EP	EDGE OF PAVEMENT (PAVING)
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ESMT	EASEMENT
ET	ELAPSED TIME
EW	EACH WAY
EXP	EXPANSION
EXST	EXISTING
EXST GR	EXISTING GRADE
EXT	EXTERNAL
F	FAHRENHEIT
FAC	FLANGE ADAPTER COUPLING
FB	FLAT BAR
FCO	FLOOR CLEANOUT
FCP	FACTORY CONTROL PANEL
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FF EL	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN FLR	FINISH FLOOR
FIN GR	FINISH GRADE
FLEX	FLEXIBLE
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FM	FORCEMAIN
FN	FENCE
FRP	FIBER REINFORCED PLASTIC
FT	FEET
FT	FOOT
FTG	FOOTING
G	NATURAL GAS
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GBT	GRAVITY BELT THICKENER
GEN	GENERAL
GL	GLASS
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GROOVED END
GRTG	GRATING
GSKT	GASKET
H	HIGH
HB	HOSE BIBB
HGR	HANGER
HOA	HAND-OFF-AUTOMATIC
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH SERVICE
HT	HEIGHT
HT/INS	HEAT TRACE AND INSULATE
HU	HUB AND SPIGOT
HWA	HIGH WATER ALARM
HWL	HIGH WATER LEVEL
HWY	HIGHWAY
HYD	HYDRANT OR HYDRAULIC
Hz	HERTZ
ID	INSIDE DIAMETER
IN	INCH
IND	INDICATOR
INF	INFLUENT
INFO	INFORMATION
INSTR	INSTRUMENT
INSUL	INSULATION
INV	INVERT
INV EL	INVERT ELEVATION
IP	IRON PIN
IR	IRON ROD
JCT	JUNCTION
JT	JOINT
KWY	KEY WAY
L	ANGLE
LAB	LABORATORY
LAT	LATITUDE
LATL	LATERAL
LBS	POUND
LF	LINEAR FEET (FOOT)
LCP	LOCAL CONTROL PANEL
LH	LEFT HAND
LIM SW	LIMIT SWITCH
LIN	LINEAR
LIQ	LIQUID
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LNG	LONGITUDE
LO	LOCK OUT
LOC	LOCATION
LOG	LOGARITHM
LONG	LONGITUDINAL
LP	LIGHT POLE
LR	LONG RADIUS
LT	LIGHT
LVR	LOUVER
LW	LOW WATER
LWA	LOW WATER ALARM
LWL	LOW WATER LEVEL
M	METER
MACH	MACHINE
MAINT	MAINTENANCE
MAN	MANUAL
MATL	MATERIAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MEAS	MEASURE
MECH	MECHANICAL
MED	MEDIUM
MFD	MANUFACTURED
MFG	MANUFACTURING
MFR	MANUFACTURER
MFR REC	MANUFACTURER'S RECOMMENDATION
MGD	MILLION GALLONS PER DAY
MG/L	MILLIGRAMS PER LITER
MH	MANHOLE
MID	MIDDLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MMADF	MAXIMUM MONTH AVERAGE DAILY FLOW
MON	MONUMENT
MOT	MOTOR
MSL	MEAN SEA LEVEL
MTD	MOUNTED
MTL	METAL
N	NORTH
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRIC CODE
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO	NUMBER
NOM	NOMINAL
NORM	NORMAL
NTS	NOT TO SCALE
NUM	NUMERAL
OA	OVERALL
OC	ON CENTER
OC EW	ON CENTER EACH WAY
OD	OUTSIDE DIAMETER
OE	OR EQUAL
OH	OVERHEAD
OHE	OVERHEAD ELECTRIC
OL	OVERLOAD
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIONAL
ORIG	ORIGINAL
OVFL	OVERFLOW
PC	POINT OF CURVE
PE	PLAIN END
PERF	PERFORATED
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
pH	ACID/ALKALINE SCALE
PI	POINT OF INTERSECTION
PKG	PACKAGE
PL	PROPERTY LINE OR PLATE
PLAT	PLATFORM
PNEU VA	PNEUMATIC VALVE ACTUATOR
PO	PUSH ON JOINT
POS	POSITIVE
PPM	PARTS PER MILLION
PR	PAIR
PRESS	PRESSURE
PREV	PREVIOUS
PRI	PRIMARY
PRKG	PARKING
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH, GAUGE
PSL	PIPE SLEEVE
PSUPT	PIPE SUPPORT
PT	POINT OF TANGENCY
PVG	PAVING
PWR	POWER
Q	RATE OF FLOW
QTR	QUARTER
QTY	QUANTITY
R	RADIUS
RD	ROAD
RECD	RECEIVED
RECM	RECOMMENDATION
RED	REDUCER
REF	REFRIGERATOR OR REFERENCE
REINF	REINFORCE
REM	REMOVABLE
REP	REPAIR
REPL	REPLACE
REQD	REQUIRED
RESIL	RESILIENT
REV	REVERSE
RJ	RESTRAINED JOINT
RM	ROOM
RND	ROUND
ROW	RIGHT OF WAY
RPM	REVOLUTIONS PER MINUTE
RPZ	REDUCED PRESSURE ZONE
RR	RAILROAD
S	SOUTH
S/S	START/STOP
SALV	SALVAGE
SAN	SANITARY
SCFM	STANDARD CUBIC FEET PER MINUTE
SCHED	SCHEDULE
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SEG	SEGMENT
SF	SQUARE FOOT (FEET)
SGL	SINGLE
SHLDR	SHOULDER
SHV	SHELVING
SIM	SIMILAR
SL	SLUDGE
SLDR	SOLDER
SLNT	SEALANT
SLV	SLEEVE
SOLN	SOLUTION
SPEC	SPECIFICATION
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SST	STAINLESS STEEL
STA	STATION
STD	STANDARD
STIF	STIFFENER
STK	STOCK
STL	STEEL
STRUCT	STRUCTURAL
SW	SOLVENT WELD
SWD	SIDE WATER DEPTH
SWR	SEWER
SYM	SYMBOL
SYMM	SYMMETRICAL
T	TREAD
T&B	TOP AND BOTTOM
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TDH	TOTAL DYNAMIC HEAD
TECH	TECHNICAL
TEL	TELEPHONE
TEMP	TEMPERATURE
TEMP	TEMPORARY
THD	THREADED
THK	THICKNESS
TOB	TOP OF BERM
TOS	TOP OF SLAB
TOW	TOP OF WALL
TYP	TYPICAL
UGND	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
UV	ULTRAVIOLET
V	VENT
VA	VOLT AMPERE
VAC	VACUUM
VAR	VARIES
VB	VACUUM BREAKER
VB	VALVE BOX
VERT	VERTICAL
VOC	VOLATILE ORGANIC COMPOUND
VOL	VOLUME
VTR	VENT THROUGH ROOF
W	WEST
W/	WITH
W/O	WITHOUT
WAS	WASTE ACTIVATED SLUDGE
WD	WOOD
WL	WATER LINE
WLD	WELDED
WM	WATER METER
WSLV	WALL SLEEVE
WT	WATER TABLE
WW	WASTE WATER
XFER	TRANSFER
XFMR	TRANSFORMER
YD	YARD DRAIN
YH	YARD HYDRANT
YI	YARD INLET
YR	YEAR

VALVES

AC CHKV	AIR CUSHION CHECK VALVE
ARV	AIR RELEASE VALVE
B CHKV	BALL CHECK VALVE
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BV	BALL VALVE
CCV	CUSHION CHECK VALVE
CV	CHECK VALVE
FH	FIRE HYDRANT
GV	GATE VALVE
KGV	KNIFE GATE VALVE
NV	NEEDLE VALVE
OCCV	OIL CUSHIONED CHECK VALVE
PCV	PRESSURE CHECK VALVE
PHV	PINCH VALVE
PRV	PRESSURE REGULATING VALVE
PV	PLUG VALVE
RSGV	RESILIENT SEAT GATE VALVE
SAV	SURGE ANTICIPATOR VALVE
SV	SOLENOID VALVE
TS&V	TAPPING SLEEVE AND VALVE

NOTES:

1. SEE PID - ABBREVIATIONS SHEET FOR EQUIPMENT, PROCESS FLUID AND PIPE MATERIAL TAG DESCRIPTION.

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PHONE (678) 515-8411

GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:27:05-04'00'

STANDARD ABBREVIATIONS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION				
REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/10/2024	ISSUED FOR BID

99-G003

FILE NO. 3618121

USER:BEMATHIS
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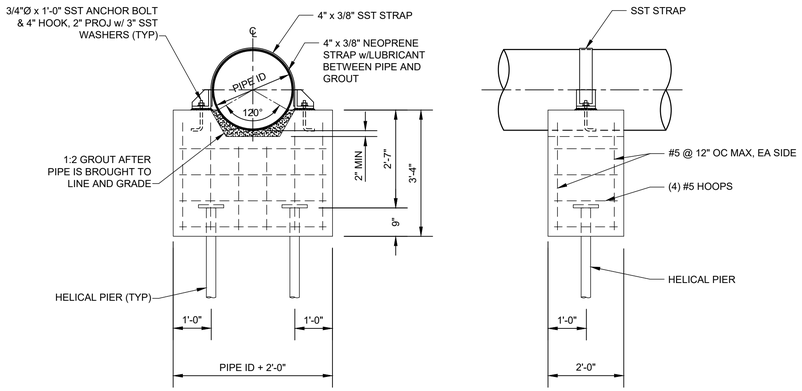
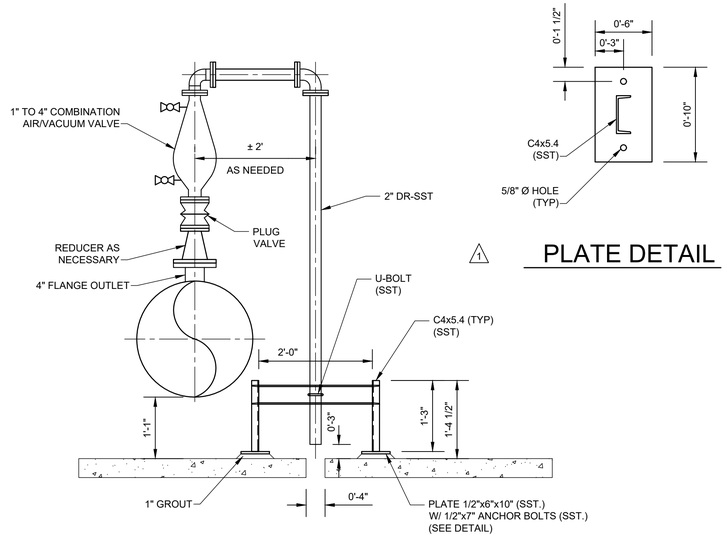
SAVED:5/29/2024
PLOTTED:7/8/2024



1 HELICAL PIER

09-D101 SCALE: N.T.S.

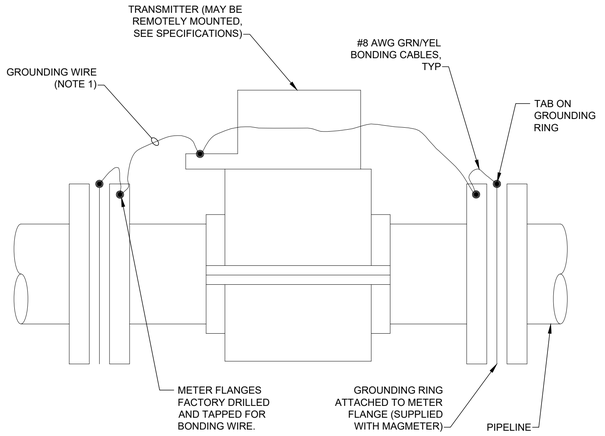


2 AIR/VACUUM VALVE

09-D101 SCALE: N.T.S.

1

PLATE DETAIL

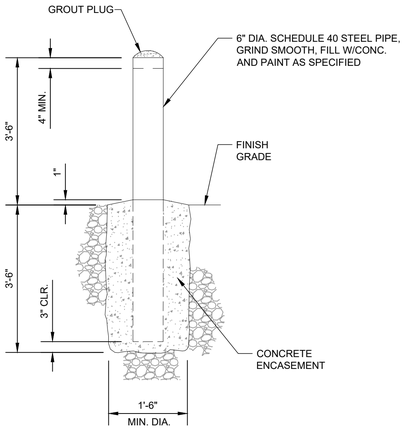


NOTES:

1. NO. 8 AWG INSULATED IF LENGTH IS LESS THAN 6'. IF MORE THAN 6', INSTALL CONDUCTOR IN 3/4" CONDUIT.
2. BOND MAGMETER TO POWER CIRCUIT GROUND CONDUCTOR AT FLOW ELEMENT.
   A) POWER CIRCUIT GROUND CONDUCTOR AT TRANSMITTER.
   B) NEAREST AVAILABLE EQUIPMENT GROUND CONNECTION POINT.
   C) SEPARATE TAIL FROM EMBEDDED GROUND MAT.

3 MAGNETIC FLOWMETER INSTALLATION

09-D103 SCALE: N.T.S.

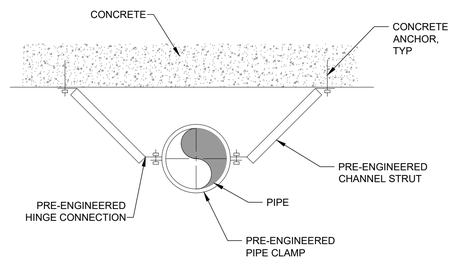


NOTES:

1. ALL MATERIALS SHALL BE GALVANIZED

4 BOLLARDS

09-D103 SCALE: N.T.S.

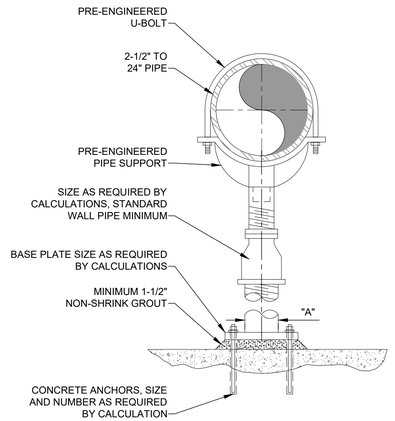


NOTES:

1. ONLY FOR VERTICAL OR FLOOR MOUNTED PIPES.
2. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED.

5 PIPE SUPPORT - VERTICAL PIPE CLAMP

09-D301 SCALE: N.T.S.



DIMENSION TABLE	
PIPE SIZE	"A" MINIMUM NOMINAL PIPE SIZE
2-1/2"	2-1/2"
3"	2-1/2"
4"	3"
6"	3"
8"	3"
10"	3"
12"	3"
14"	4"
16"	4"
20"	6"
24"	6"
30"	6"

NOTES:

1. SUBMIT FINAL DESIGN AND CALCULATIONS FOR SUPPORT AND ANCHORAGE AS SPECIFIED

1

6 PIPE SUPPORT SADDLE - ADJUSTABLE PEDESTAL

09-D301 SCALE: N.T.S.

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.09.24 14:13:23-04'00'

PROCESS DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	BM	MA	07/30/2024	ISSUED FOR BID
1	BM	MA	07/30/2024	ADDENDUM NO. 1

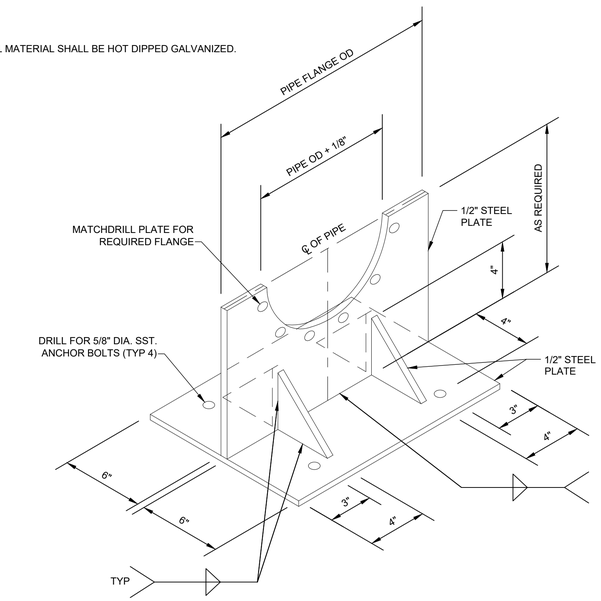
99-D501

FILE NO. 3618121

USER:BEMATHIS
FILE:F:\3618\18113618121\04_CAD\WA\TRPLOT\3618121D_99501.dwg
SAVED:9/17/2024
PLOTTED:9/17/2024

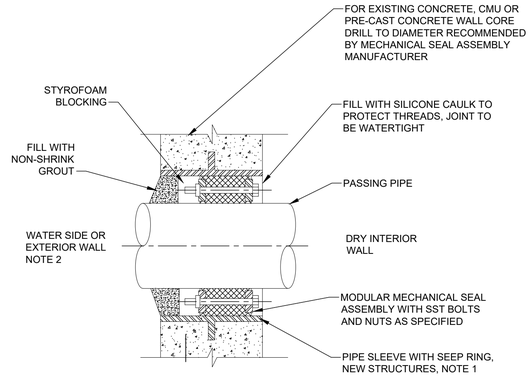
NOTE:

1. ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED.



1 PIPE SUPPORT - FLANGE

SCALE: N.T.S.

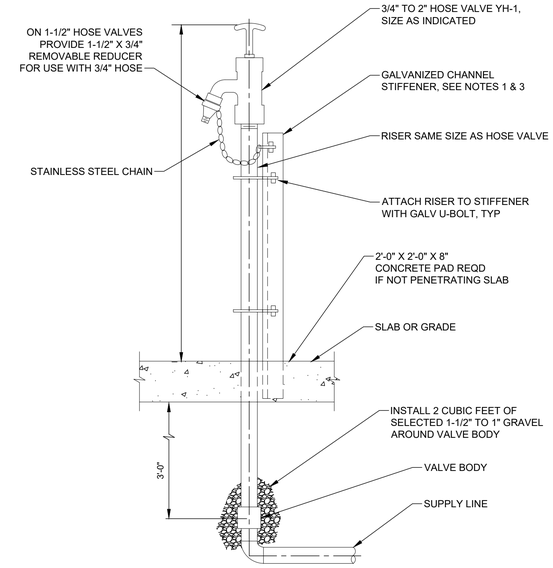


NOTES:

1. WHERE EXISTING CONCRETE STRUCTURE IS TO BE CORE DRILLED, ULTRASONIC TEST OR X-RAY THE AREA FOR EMBEDDED ITEMS BEFORE CORE DRILLING. IF EMBEDDED ITEMS ARE FOUND, NOTIFY THE ENGINEER IMMEDIATELY.
2. WHERE PIPE PASSES THROUGH INTERIOR WALL, GROUT IS NOT REQUIRED.

2 WALL PIPE PENETRATION SEAL

SCALE: N.T.S.

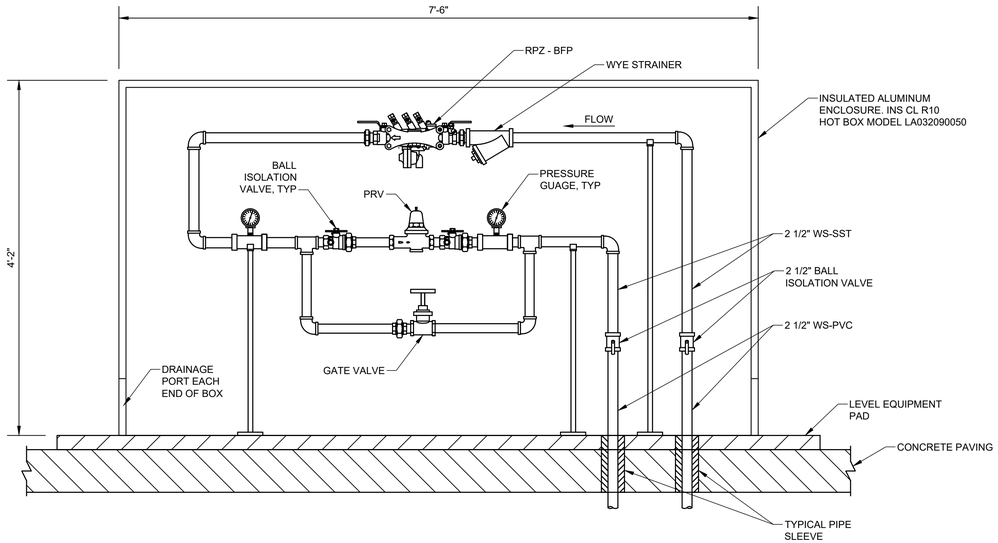


NOTES:

1. PROVIDE HOSE RACKS PER DETAIL FOR "HOSE RACKS".
2. C4X5.4 FOR UP TO 2" OD, C5X6.7 FOR 3" OD, AND C6X8.2 FOR MAX 3.5" OD.

3 NON-FREEZE YARD HYDRANT YH-1 (POST MOUNT)

SCALE: N.T.S.



4 ABOVE GROUND BACKFLOW PREVENTER IN INSULATED ENCLOSURE

SCALE: N.T.S.

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GEORGIA REGISTERED No. 24385 PROFESSIONAL ENGINEER MICHAEL LYNN ALEXANDER

Digitally signed by Mike Alexander
Date: 2024.07.10 08:24:24-04'00'

PROCESS DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR	CHK	DATE	DESCRIPTION
0	BM	MA	07/19/2024	ISSUED FOR BID

99-D502

FILE NO. 3618121

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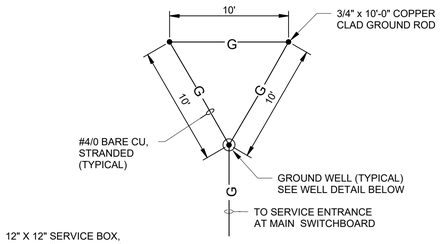
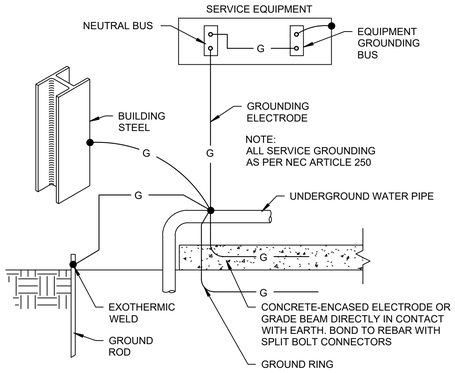
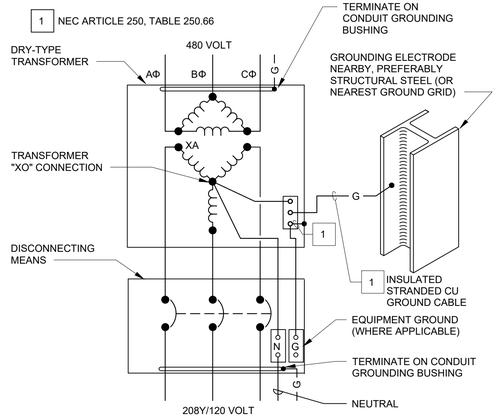
PLOTTED:7/9/2024



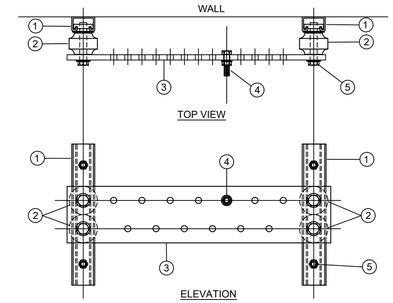
1 GROUNDING TRIAD
99-E701 SCALE: NTS



2 SERVICE ENTRANCE GROUNDING
99-E701 SCALE: NTS

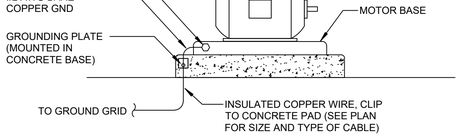


3 LV XFMR GROUNDING
99-E701 SCALE: NTS

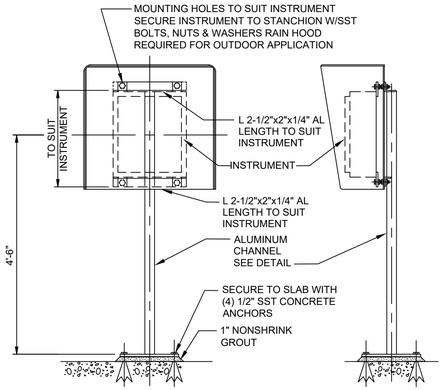


1. UNISTRUT CHANNEL CAT.#G-1012-SM, 1" x 1-5/8" x 8"
2. 2" O.D. x 1" PORTER RED-POLY INSULATORS, NEMA CLASS"B"
3. 4" x 3/8" x 1'-6" COPPER BUS, DRILLED AS SHOWN
4. 1/4" TOGGLE BOLT AND SQUARE WASHER (TYPICAL FOR 4)
5. 3/8" x 1" BRASS BOLT, LOCK WASHER AND NUT (TYPICAL FOR 8)

4 POWER GROUND BAR
99-E701 SCALE: NTS



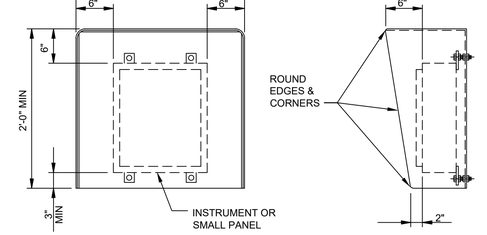
5 TYP MOTOR GROUNDING
99-E701 SCALE: NTS



NOTES:

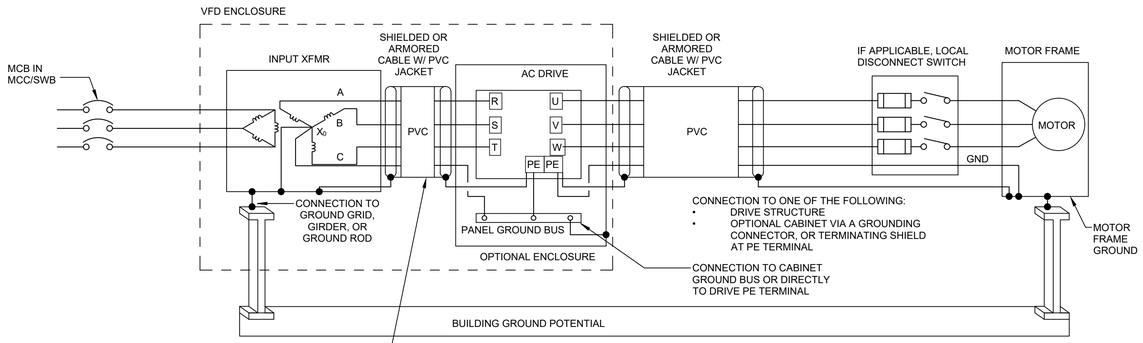
1. ROUND OFF ALL EXPOSED EDGES AND CORNERS.
2. PAINT ALUMINUM IN CONTACT WITH CONCRETE ACCORDING TO SPECIFICATIONS FOR PAINTING.

6 STAND SUPPORT
99-E701 SCALE: NTS



1. MOUNT RAIN HOOD BETWEEN INSTRUMENT AND MOUNTING BRACKET. DRILL HOLES IN RAIN HOOD AS PER MOUNTING HOLES FOR INSTRUMENT.

7 RAIN HOOD INSTALLATION
99-E701 SCALE: NTS



8 VFD GROUNDING
99-E701 SCALE: NTS

NOTES:

1. SHIELD AND GROUND SHALL TERMINATE AT A PE TERMINAL ON THE VFD AND AT THE MOTOR JUNCTION BOX. WIRE SHALL BE CONTINUOUS FROM THE MOTOR DIRECTLY BACK TO THE DRIVE WITH NO INTERRUPTIONS OR INTERMEDIATE TERMINATIONS. THIS INCLUDES DISCONNECT PASS THROUGH.
2. SHIELDED CABLE SHALL BE ISOLATED FROM ACCIDENTAL NOISE FROM CONTACT WITH BUILDING GROUND.
3. IF SPLICING IS REQUIRED, FULLY SHIELDED BULKHEAD CONNECTS SHALL BE USED.
4. SINGLE POINT - CONNECT ONE GROUND POINT OR GROUND BUS BAR DIRECTLY TO THE STRUCTURAL STEEL OF BUILDING FOR CABINET INSTALLATIONS. GROUND ALL CIRCUITS

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY
07/10/2024

ELECTRICAL DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION				
REV.	DR	CHK	DATE	DESCRIPTION
0	JLK	MJC	07/10/2024	ISSUED FOR BIDS

99-E701

FILE NO. 3618121

USER:JLKITTRELL
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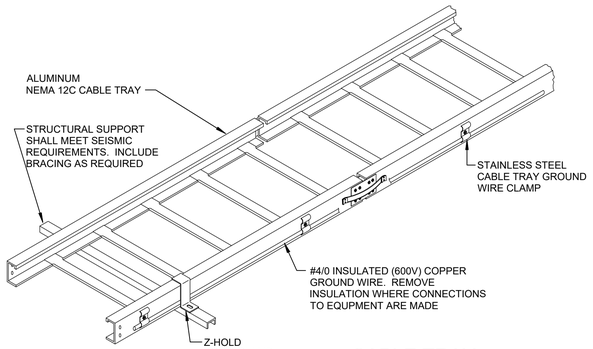
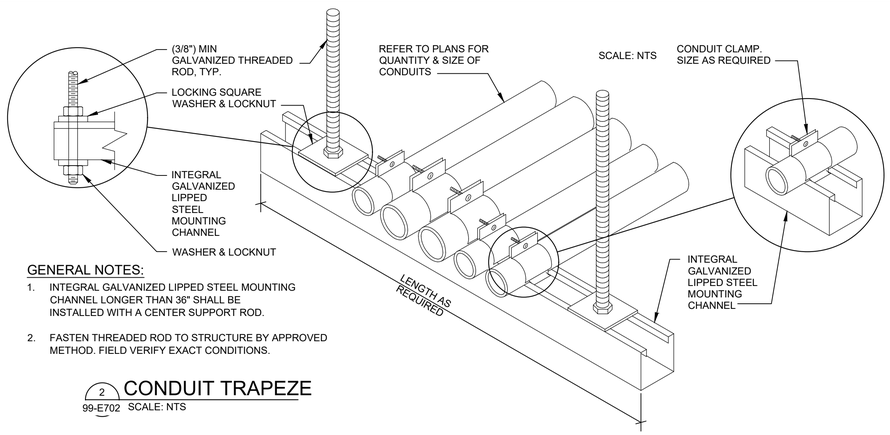
SAVED:6/27/2024
PLOTTED:7/10/2024



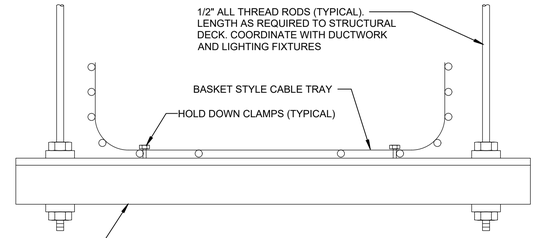
1 CABLE TRAY
99-E702 SCALE: NTS



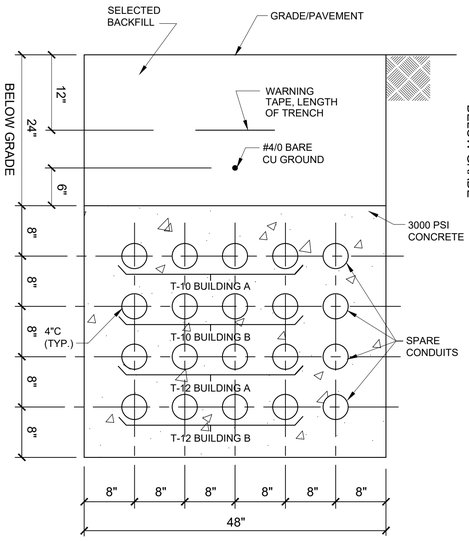
GENERAL NOTES:

1. INTEGRAL GALVANIZED LIPPED STEEL MOUNTING CHANNEL LONGER THAN 36" SHALL BE INSTALLED WITH A CENTER SUPPORT ROD.
2. FASTEN THREADED ROD TO STRUCTURE BY APPROVED METHOD. FIELD VERIFY EXACT CONDITIONS.

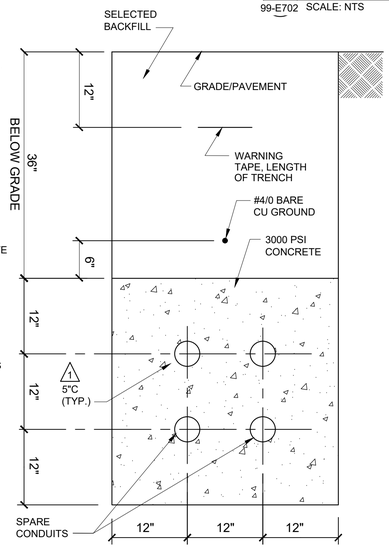
2 CONDUIT TRAPEZE
99-E702 SCALE: NTS



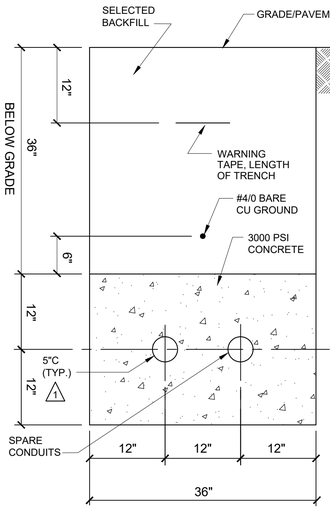
3 BASKET CABLE TRAY MOUNTING
99-E702 SCALE: NTS



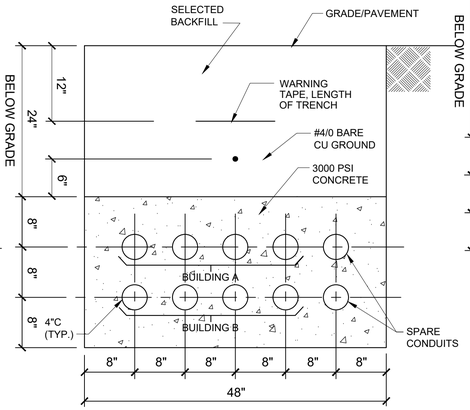
10 LOW VOLTAGE (480V) DUCT BANK DETAIL
99-E702 SCALE: NTS



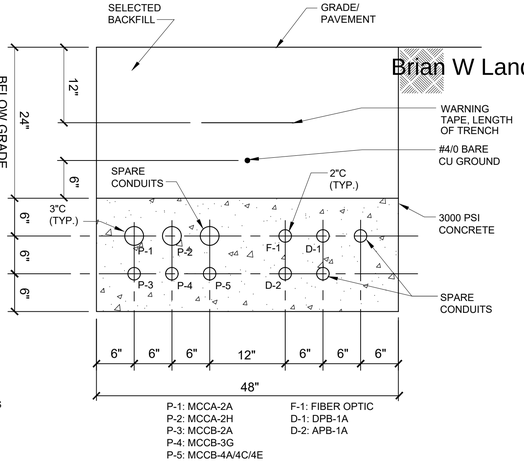
11 MEDIUM VOLTAGE (12.4kV)DUCT DETAIL
99-E702 SCALE: NTS



12 MEDIUM VOLTAGE (12.47kV) DUCT BANK DETAIL
99-E702 SCALE: NTS



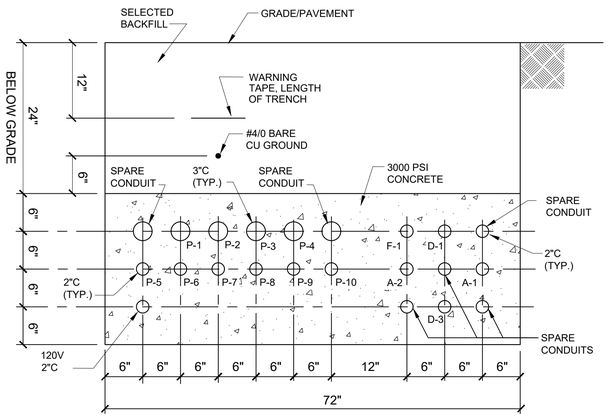
13 LOW VOLTAGE (480V) DUCT BANK DETAIL
99-E702 SCALE: NTS



P-1: MCCA-2A
P-2: MCCA-2H
P-3: MCCB-2A
P-4: MCCB-3G
P-5: MCCB-4A/4C/4E

F-1: FIBER OPTIC
D-1: DPB-1A
D-2: APB-1A

14 LOW VOLTAGE (480V) DUCT BANK DETAIL
99-E702 SCALE: NTS

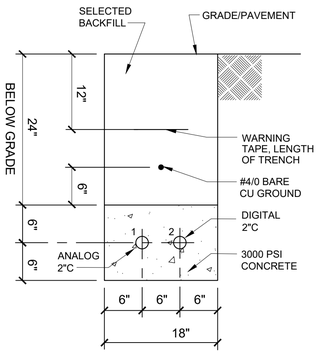


P-1: MCCA-2C
P-2: MCCA-2H
P-3: MCCA-2C
P-4: MCCA-2H
P-5: MCCA-2A

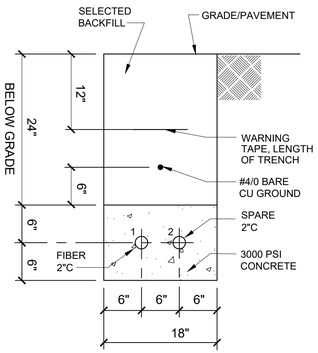
P-6: MCCA-3G
P-7: MCCA-4A/4C/3J/3L
P-8: MCCB-2A
P-9: MCCB-3G
P-10: MCCB-4A/4C/4E

F-1: FIBER OPTIC
D-1: DPB-1A
D-3: DPB-1B
A-1: APB-1B
A-2: APB-1A

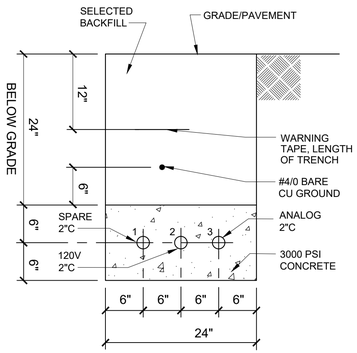
15 LOW VOLTAGE (480V) DUCT BANK DETAIL
99-E702 SCALE: NTS



16 CONTOLS DUCT BANK
99-E702 SCALE: NTS



17 CONTROLS DUCT BANK DETAIL
99-E702 SCALE: NTS



18 LOW VOLTAGE (480V) DUCT BANK DETAIL
99-E702 SCALE: NTS

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-5411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry
2024.09.25
11:17:24-05'00'

ELECTRICAL DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/02/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 5

99-E702

FILE NO. 3618121

USER:JLKITTRELL
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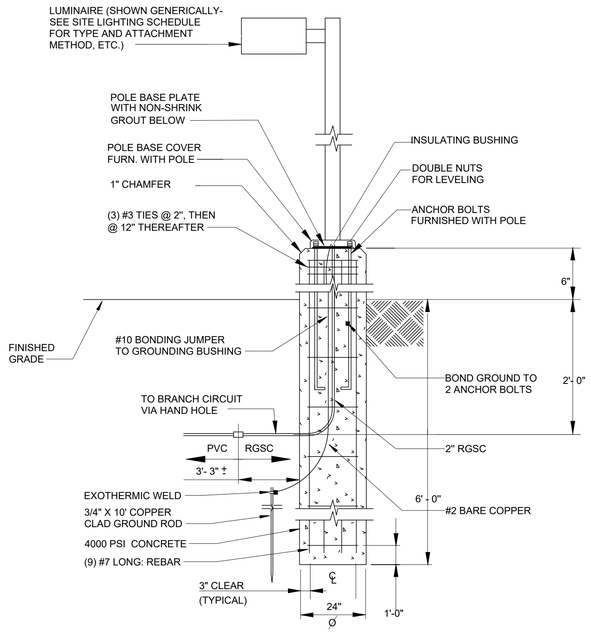
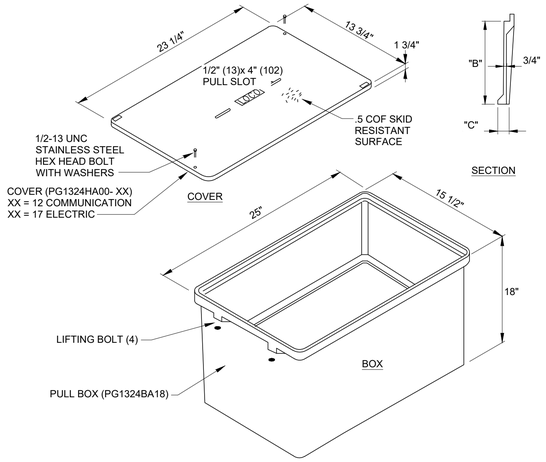
SAVED:9/17/2024
PLOTTED:9/24/2024

1 NOT USED
99-E703 SCALE: NTS

2 NOT USED
99-E703 SCALE: NTS

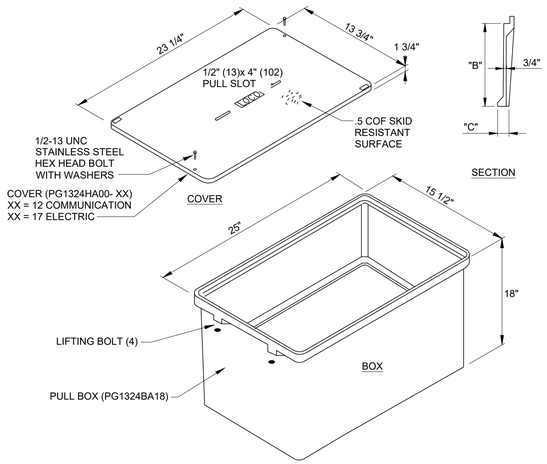


3 STREET LIGHTING DETAIL
99-E703 SCALE: NTS



NOTES:
1. INSTALLATION SHALL BE IN STRICT COORDINATION WITH PLANS.
2. TAP/PULL BOX FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR.
3. PROVIDE & INSTALL 6" TO 8" GRAVEL BASE.
4. USE LARGER SIZE WHERE NOTED ON DRAWINGS
5. COVER LOGO TO READ "COMMUNICATION"
6. SIZE PULL-BOXES ACCORDING TO NEC. PG1224 SHOWN AS EXAMPLE.

5 POLYMER CONCRETE PULL BOX - CONTROLS
99-E703 SCALE: NTS



NOTES:
1. INSTALLATION SHALL BE IN STRICT COORDINATION WITH PLANS.
2. TAP/PULL BOX FURNISHED & INSTALLED BY ELECTRICAL CONTRACTOR.
3. PROVIDE & INSTALL 6" TO 8" GRAVEL BASE.
4. USE LARGER SIZE WHERE NOTED ON DRAWINGS
5. COVER LOGO TO READ "POWER"
6. SIZE PULL-BOXES ACCORDING TO NEC. PG1224 SHOWN AS EXAMPLE.

6 POLYMER CONCRETE PULL BOX - POWER
99-E703 SCALE: NTS

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry 2024.09.25 11:17:34-05'00'

ELECTRICAL DETAILS

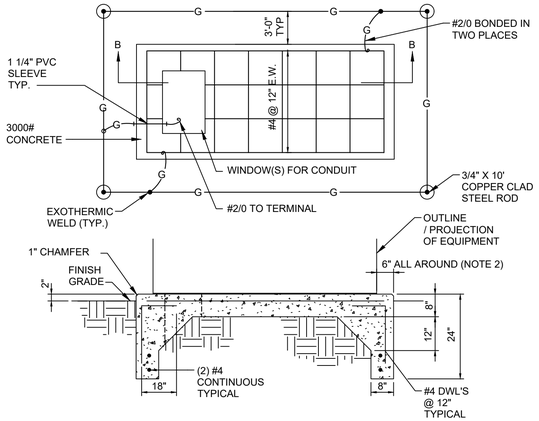
LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV	DR	CHK	DATE	DESCRIPTION
0	J.K.	M/C	07/09/2024	ISSUED FOR BIDS
1	J.K.	M/C	08/21/2024	ADDENDUM 5

99-E703

FILE NO. 3618121

USER:JLKITTRELL
FILE:\\corp.bwsc.net\data\Projects\36\3618118121\04_CAD\ELEC\D3_PLOT\3618121_99-E703.dwg
SAVED:9/24/2024
PLOTTED:9/24/2024

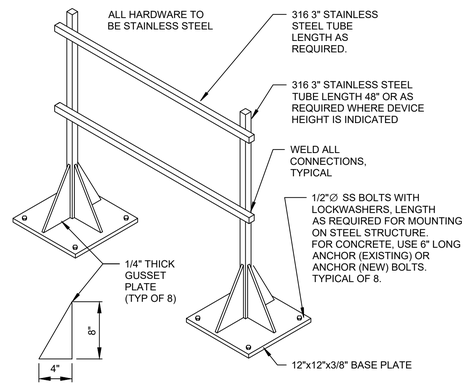


NOTES:

1. OVERALL PAD DIMENSIONS AND CONDUIT STUB-OUT LOCATIONS SHALL BE DETERMINED BY EQUIPMENT SHOP DRAWINGS.

1 INTERIOR HOUSEKEEPING PAD

99-E704 SCALE: NTS

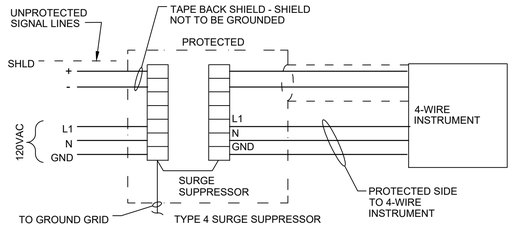


GENERAL NOTES:

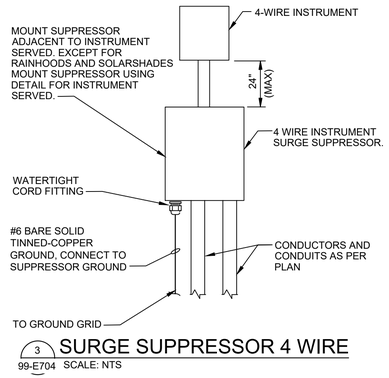
1. ALL SCREWS, MOUNTING HARDWARE, BOLTS, CONNECTION POINTS, TUBES, BRACKETS, ETC. SHALL BE NON-CORROSIVE STAINLESS STEEL OR PVC COATED TO PROTECT FROM CORROSIVE ENVIRONMENT.

2 EQUIPMENT FRAME

99-E704 SCALE: NTS



WIRING DIAGRAM



3 SURGE SUPPRESSOR 4 WIRE

99-E704 SCALE: NTS

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-5411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRYAN WILLIAM LANDRY
07/10/2024

ELECTRICAL DETAILS

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS

99-E704

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3618181\3618121\04_CAD\ELEC\03_PLOT\3618121_99-E704.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024

PANEL: RP-2

SERVICE: 208Y/120 VOLT, 3 PHASE, 4 WIRE
LOCATION: ELECTRICAL BUILDING A

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	RECEPTACLES, INDOOR		20 / 1	1.44	1.7			0.29	20 / 1		LIGHTING	2
3	MPP-1		20 / 1	1.9		2.4		0.5	20 / 1		SITE LIGHTING	4
5	RTU-1		20 / 1	1.9			1.9	0	20 / 1		SPARE	6
7	RECEPTACLES, OUTDOOR	GFCI	20 / 1	0.48	0.5			0	20 / 1		SPARE	8
9	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	10
11	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	12
13	SPARE		20 / 1	0	0.0			0	20 / 1		SPARE	14
15	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	16
17	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	18
19	SPARE		20 / 1	0	0.0			0	20 / 1		SPARE	20
21	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	22
23	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	24

	A	B	C	
DEMAND KVA				
TOTAL KVA SHOWN	2.2	2.4	1.9	6.5
TOTAL KVA CONNECTED	2.2	2.4	1.9	6.5

BUS DATA

- AMPERE RATING - CONT: 60A
- SCCR: 10KA
- BUS: COPPER/NEUTRAL/GROUND
- TOP FEED

MAIN BREAKER
40A PRIMARY; 60A SECONDARY

ENCLOSURE
■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM: MCC-IPSA VIA T-RP-2
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD
OTHER	6.5	100%	6.5
TOTAL	6.5		6.5

PANEL: RP-3

SERVICE: 208Y/120 VOLT, 3 PHASE, 4 WIRE
LOCATION: ELECTRICAL BUILDING B

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	RECEPTACLES, INDOOR		20 / 1	1.44	1.7			0.29	20 / 1		LIGHTING	2
3	MPP-2		20 / 1	1.9		2.4		0.5	20 / 1		SITE LIGHTING	4
5	RTU-2		20 / 1	1.9			1.9	0	20 / 1		SPARE	6
7	RECEPTACLES, OUTDOOR	GFCI	20 / 1	0.48	0.5			0	20 / 1		SPARE	8
9	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	10
11	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	12
13	SPARE		20 / 1	0	0.0			0	20 / 1		SPARE	14
15	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	16
17	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	18
19	SPARE		20 / 1	0	0.0			0	20 / 1		SPARE	20
21	SPARE		20 / 1	0		0.0		0	20 / 1		SPARE	22
23	SPARE		20 / 1	0			0.0	0	20 / 1		SPARE	24

	A	B	C	
DEMAND KVA				
TOTAL KVA SHOWN	2.2	2.4	1.9	6.5
				0.0
TOTAL KVA CONNECTED	2.2	2.4	1.9	6.5

BUS DATA

- AMPERE RATING - CONT: 60A
- SCCR: 10KA
- BUS: COPPER/NEUTRAL/GROUND
- TOP FEED

MAIN BREAKER
40A PRIMARY; 60A SECONDARY

ENCLOSURE
■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM: MCC-IPSB VIA T-RP-3
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD
OTHER	6.5	100%	6.5
TOTAL	6.5		6.5

LIGHT FIXTURE SCHEDULE

	DESIGNATION	LED	WATTS (W) (INPUT)	LUMENS (DELIVERED OUTPUT)	COLOR TEMPERATURE (K)	COLOR RENDERING INDEX (CRI)	DESCRIPTION: SHIELDING, TYPE MATERIALS, FINISH, MOUNTING	MANUFACTURER'S PRODUCT ITEM (BASIS OF DESIGN) COMPANY	CATALOG NO.	VOLTAGE (V)	REMARKS
	FL1	X	83	12300	4000	80	FLOOD LIGHT	HOLOPHANE	PSLED P3 65 40K	MVOLT	FLOOD LIGHT - TILT 45 DEGREES
	LA1	X	40	5300	5000	80	4 FOOT LED STRIP FIXTURE	SYLVANIA	VAPOR1B/040UNVD850/48EC/GR	MVOLT	VAPOR TIGHT, QUICK DISC, PENDANT MOUNT / CEILING MOUNT
1	S	X	201	29218	5000	70	LED POLE LIGHT	COOPER LIGHTING	ARCH-L-PA3-200-750-U-T2R	208 OR 120V	SITE LIGHTING - POLE HEIGHT TO BE 20' AFG
	WP1	X	39	3398	4000	70	EXTERIOR WALL-PACK EMERGENCY DISCHARGE LIGHT	HOLOPHANE	W4GLED 10C 4000K T3M MVOLT	MVOLT	INCLUDE EXTERIOR PHOTOCELL
	X1 X1E	X	X	X	X	X	EXIT SIGN - SINGLE FACE (E) - 2 TWO HEAD EMERGENCY	LITHONIA	LQM LED-R	MVOLT	EXIT SIGN - SINGLE FACE EQUIPPED WITH BATTERY BACKUP (90 MINS)

1

GENERAL NOTES:

A. FOR EXISTING ELECTRICAL CIRCUITS SHOWN AND RE-CIRCUITED TO NEW ELECTRICAL PANELS, THE TOTAL KVA LOADS INDICATED ON PANEL SCHEDULES ARE ESTIMATED AT BEST AND ARE NOT EXACT KVA LOADS DUE TO LIMITED NAME PLATE INFORMATION.

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-8411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL BRIAN WILLIAM LANDRY ENGINEER

Brian W Landry
2024.09.25 11:17:45-05'00'

ELECTRICAL SCHEDULES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REV.	DR	CHK	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 1 5

99-E801

FILE NO. 3618121

USER:JLKITTRELL
FILE:\\corp.bvsc.net\data\Projects\36\3618113\3618121\04_CAD\ELEC\03_PLOT\3618121_99-E801.dwg
SAVED:9/17/2024
PLOTTED:9/24/2024

PANEL: DP-1

SERVICE: 480 VOLT, 3 PHASE, 3 WIRE
LOCATION: CANOPY

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	MTS-1 MANUAL TRANSFER SWITCH		50 / 3	4.2	17.0			12.8			CP-0801	2
3				4.2		17.0		12.8	60 / 3			4
5				4.2			17.0	12.8				6
7	SPARE		20 / 3		2.1			2.1			SG-0812	8
9						2.1		2.1	20 / 3			10
11							2.1	2.1				12
13	FLEX RAKE #1		20 / 3	0.5	0.5			0			SPARE	14
15				0.5		0.5		0	20 / 3			16
17				0.5			0.5	0				18
19	SPARE		20 / 3	0	0.5			0.5			PV-0830	20
21				0		0.5		0.5	20 / 3			22
23				0			0.5	0.5				24
25	PV-1/PV-2/PV-3		20 / 3	1.5	2.0			0.5			SG-9110	26
27				1.5		2.0		0.5	20 / 3			28
29				1.5			2.0	0.5				30
31	SPARE		20 / 3		1.1			1.1			PV-7/PV-8	32
33						1.1		1.1	20 / 3			34
35							1.1	1.1				36
37	SPARE		20 / 3		0.0						SPARE	38
39						0.0			20 / 3			40
41							0.0					42

	A	B	C		
	23.2	23.2	23.2	69.6	TOTAL KVA SHOWN
	23.2	23.2	23.2	69.6	TOTAL KVA CONNECTED

BUS DATA

AMPERE RATING - CONT: 150A
SCCR: 10KA
BUS: COPPER/NEUTRAL/GROUND
TOP FEED

MAIN BREAKER
150A

ENCLOSURE
■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM: MCC-IPSA
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD
OTHER	69.6	100%	69.6
TOTAL	69.6		69.6

PANEL: DP-2

SERVICE: 480 VOLT, 3 PHASE, 3 WIRE
LOCATION: CANOPY

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	MTS-1 MANUAL TRANSFER SWITCH		50 / 3	4.2	17.0			12.8			CP-0802	2
3				4.2		17.0		12.8	60 / 3			4
5				4.2			17.0	12.8				6
7	SPARE		20 / 3		0.5			0.5			SG-0822	8
9						0.5		0.5	20 / 3			10
11							0.5	0.5				12
13	FLEX RAKE #2		20 / 3	0.5	0.5			0			SPARE	14
15				0.5		0.5		0	20 / 3			16
17				0.5			0.5	0				18
19	SPARE		20 / 3	0	0.0						SPARE	20
21				0		0.0			20 / 3			22
23				0			0.0					24
25	PV-4/PV-5/PV-6		20 / 3	1.5	2.0			0.5			SG-9120	26
27				1.5		2.0		0.5	20 / 3			28
29				1.5			2.0	0.5				30
31	SPARE		20 / 3	0.5				0.5			PV-9	32
33					0.5			0.5	20 / 3			34
35							0.5	0.5				36
37	SPARE		20 / 3	0.0							SPARE	38
39						0.0			20 / 3			40
41							0.0					42

	A	B	C		
	20.5	20.5	20.5	61.5	TOTAL KVA SHOWN
				0.0	
	20.5	20.5	20.5	61.5	TOTAL KVA CONNECTED

BUS DATA

AMPERE RATING - CONT: 150A
SCCR: 10KA
BUS: COPPER/NEUTRAL/GROUND
TOP FEED

MAIN BREAKER
150A

ENCLOSURE
■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM: MCC-IPSB
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD
OTHER	61.5	100%	61.5
TOTAL	61.5		61.5

PANEL: RP-1

SERVICE: 208Y/120 VOLT, 3 PHASE, 4 WIRE
LOCATION: CANOPY

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	REC STANDS		20 / 1	1.0	1.0				20 / 1		SPARE	2
3	REC CANOPY		20 / 1	1.0		2.0		1.0	20 / 1		LTG OUTSIDE	4
5	SAMP-0801		20 / 1	1.0			2.0	1.0	20 / 1		LTG CANOPY	6
7	FIT-9100		20 / 1	1.0	2.0			1.0	20 / 1		INSTRUMENTS (LIT)	8
9	FIT-9200		20 / 1	1.0		2.5		1.5	20 / 1		HMI-1 CONTROL PANEL	10
11	S[ARE		20 / 1				1.0	1.0	20 / 1		GCD GAS DETECTOR	12
13	SPARE		20 / 1		0.0				20 / 1		SPARE	14
15	SPARE		20 / 1			0.0			20 / 1		SPARE	16
17	SPARE		20 / 1				0.0		20 / 1		SPARE	18
19	SPARE		20 / 1		0.0				20 / 1		SPARE	20
21	SPARE		20 / 1			0.0			20 / 1		SPARE	22
23	SPARE		20 / 1				0.0		20 / 1		SPARE	24

	A	B	C		
	3.0	4.5	3.0	10.5	TOTAL KVA SHOWN
	3.0	4.5	3.0	10.5	TOTAL KVA CONNECTED

DEMAND KVA

BUS DATA

AMPERE RATING - CONT: 100A
SCCR: 10KA
BUS: COPPER/NEUTRAL/GROUND
TOP FEED

MAIN BREAKER
100A

ENCLOSURE
■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM:
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD
OTHER	10.5	100%	10.5
TOTAL	10.5		10.5

GENERAL NOTES:

A. FOR EXISTING ELECTRICAL CIRCUITS SHOWN AND RE-CIRCUITED TO NEW ELECTRICAL PANELS, THE TOTAL KVA LOADS INDICATED ON PANEL SCHEDULES ARE ESTIMATED AT BEST AND ARE NOT EXACT KVA LOADS DUE TO LIMITED NAME PLATE INFORMATION.

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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER JORDAN WILLIAM LANDRY 07/10/2024

ELECTRICAL SCHEDULES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE
0	JLK	MC	07/10/2024

DESCRIPTION: ISSUED FOR BIDS

99-E802

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\36\3618\13\3618121\04_CAD\ELEC\03_PLOT\3618121_99-E802.dwg
SAVED:6/27/2024
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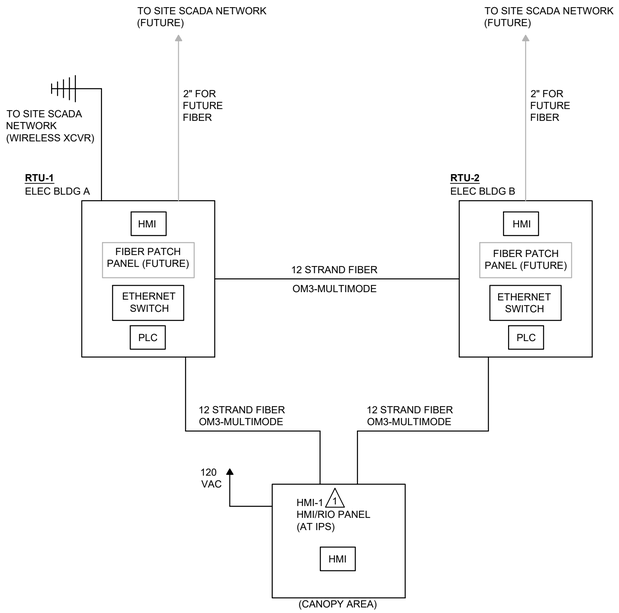

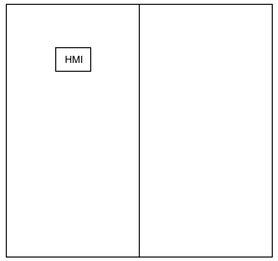

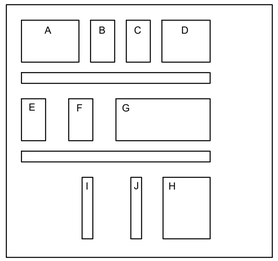

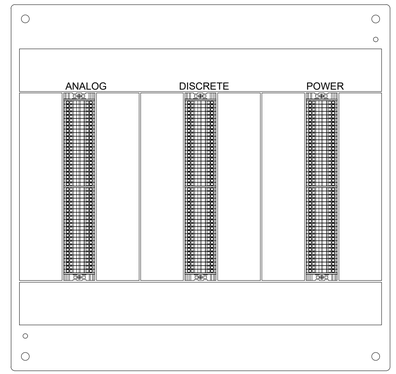

RTU-3 NOTES:
1. PROVIDE NEMA 4X ENCLOSURE WITH DEAD FRONT PANEL AND HMI SCREEN INSIDE DOOR.
2. PROVIDE ETHERNET SWITCH IN ENCLOSURE.
3. INTEGRATOR SHALL PROVIDE FINAL FRONT PANEL, BACK PANEL, WIRING DIAGRAMS, AND DATA SHEET INFORMATION PER SPECIFICATIONS.
4. PROVIDE FIBER PATCH PANEL WITH LC CONNECTORS FOR FIBER BETWEEN CABINETS AND FUTURE FIBER CONNECTIONS (MIN 24 STRAND).

BOM:

A. MAIN CIRCUIT BREAKER AND SUB-BREAKERS; SPD
B. GRACEPORT (DUPLEX RECEPTACLE)
C. 24V DC POWER SUPPLY
D. RADIO
E. ETHERNET SWITCH
F. 480:120V 300VA CPT
G. PLC
H. UPS
I. DISRETE I/O (RELAYS AND TERMINAL BLOCKS)
J. ANALOG I/O (SURGE SUPRESSION AND TERMINAL BLOCKS)

GENERAL NOTES:
1. MAJOR MATERIALS ARE SHOWN ONLY. INTEGRATOR TO PROVIDE ALL MISCELLANEOUS MATERIALS REQUIRED FOR A COMPLETE SYSTEM.
2. INTEGRATOR SHALL PROVIDE FINAL FRONT PANEL, BACK PANEL, WIRING DIAGRAMS, AND DATA SHEET INFORMATION PER SPECIFICATIONS.
3. PROVIDE FIBER PATCH PANEL WITH LC CONNECTORS FOR FIBER BETWEEN CABINETS AND FUTURE FIBER CONNECTIONS (MIN 24 STRAND).
4. PROVIDE NEW ISOLATION XFMRs FOR SCADA RTU's IN E-HOUSES. REUSE EXISTING ISOLATION XFMR's FOR EXISTING SCADA RTU PANELS CP-0801 AND CP-0802 AT CANOPY AREA.

1 CONTROL PANEL WIRING DIAGRAM OVERVIEW

SCALE: NTS

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL BRIAN WILLIAM LANDRY ENGINEER

Brian W Landry
2024.09.25 11:17:56-05'00'

CONTROL PANEL WIRING DIAGRAM OVERVIEW

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK	DATE	DESCRIPTION
0	JLK	MIC	07/10/2024	ISSUED FOR BIDS
1	JLK	MIC	09/06/2024	ADDENDUM 5

99-E851

FILE NO. 3618121

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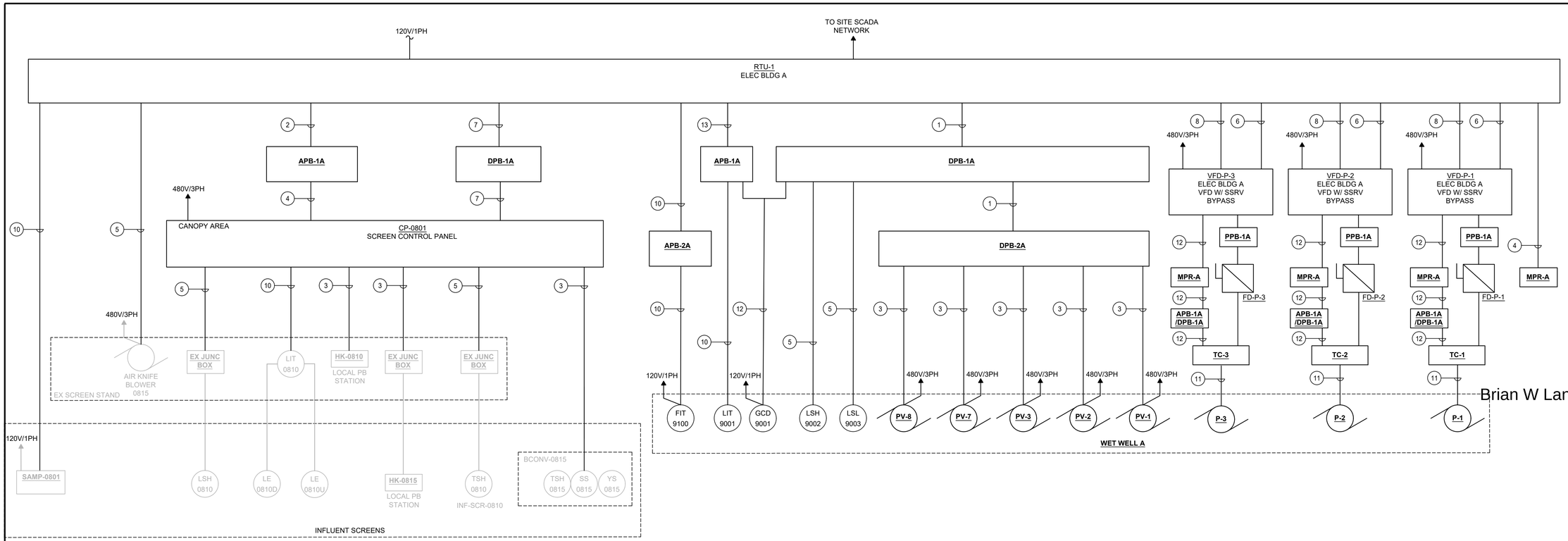
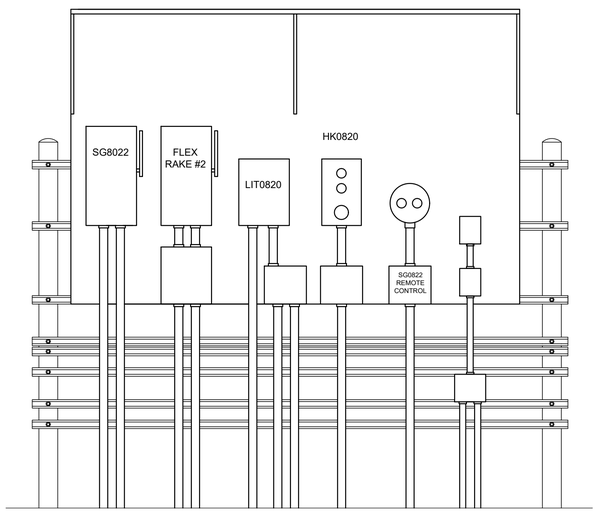
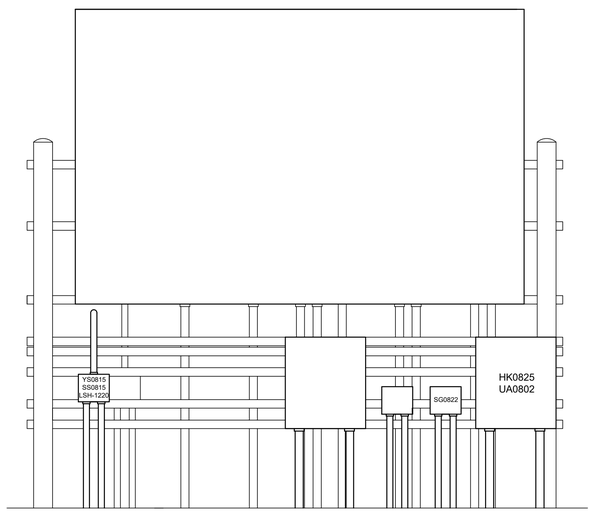
SAVED:9/24/2024
PLOTTED:9/24/2024



1 RTU-1 WIRING DIAGRAM

SCALE: NTS





2 SCREEN PANEL FRONT AND REAR ELEVATIONS

SCALE: NTS

GENERAL NOTES:

1. PROVIDE NEW ISOLATION XFMR's FOR SCADA RTU's IN E-HOUSES. REUSE EXISTING ISOLATION XFMR's FOR EXISTING SCADA RTU PANELS CP-0801 AND CP-0802 AT CANOPY AREA.

CONDUIT AND WIRE SIZE SCHEDULE

	SYMBOL	DESCRIPTION
	1	(1) 3"C, (4) 10#14
1	2	(1) 2"C, (2) 2#16 TSP
	3	(1) 1"C, (1) 8#14
1	4	(1) 2"C, (1) CAT-6A, (2) 2#16 TSP
	5	(1) 1"C, (1) 4#14
	6	(1) 1"C, (1) 12#14
	7	(1) 3"C, (2) 12#14
	8	(2) 1-1/2"C, (2) 4#18 TSP,(2) CAT-6A
1	9	(1) 2"C, (4) 2#16 TSP
1	10	(1) 1-1/2"C, (2) 2#16 TSP
	11	(1) 2"C, FLYGT SUBCAB CABLE
1	12	(2) 1"C, (1) 2#16 TSP, (1) 2#14
1	13	(1) 3"C, (6) 2#16 TSP

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry 2024.09.25 11:18:06-05'00'

RTU -1 WIRING DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/30/2024	ISSUED FOR BIDS
1	JLK	MC	09/26/2024	ADDENDUM 5

99-E852

FILE NO. 3618121

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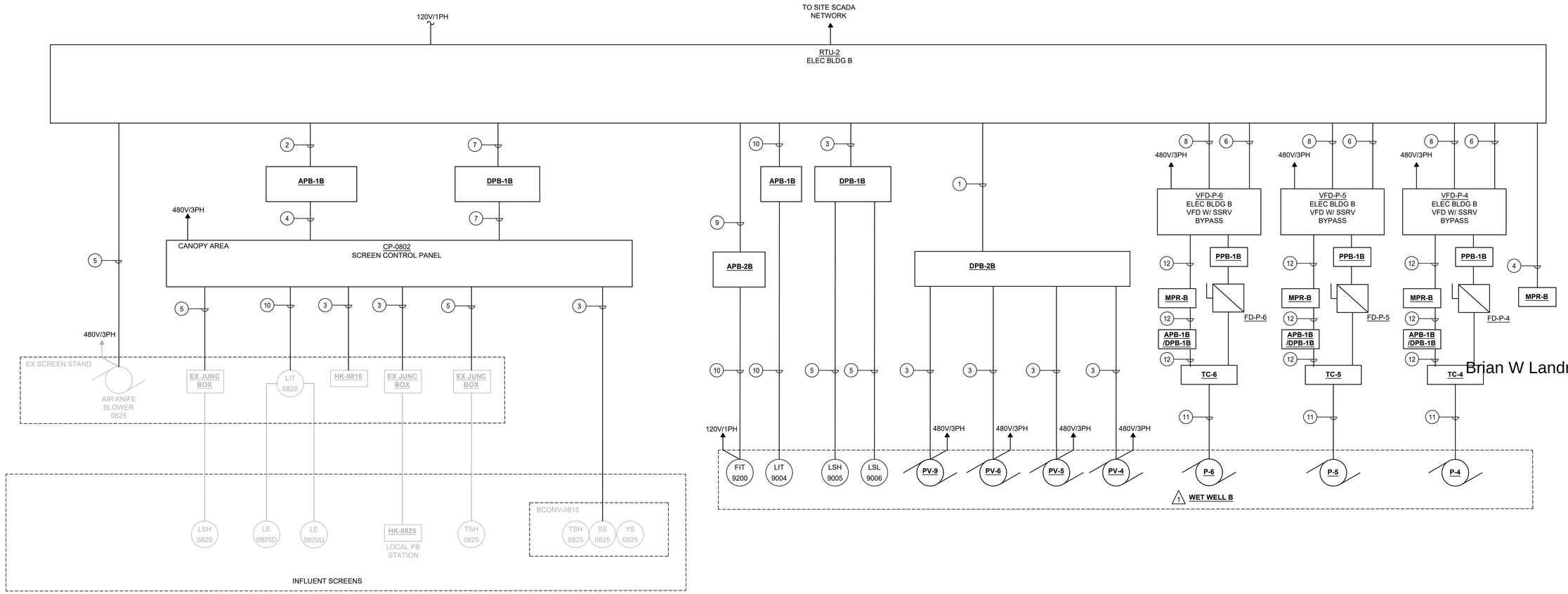
SAVED:9/17/2024
PLOTTED:9/24/2024



1 RTU - 2 WIRING DIAGRAM

SCALE: NTS

GENERAL NOTES:

1. PROVIDE NEW ISOLATION XFMR's FOR SCADA RTU's IN E-HOUSES. REUSE EXISTING ISOLATION XFMR's FOR EXISTING SCADA RTU PANELS CP-0801 AND CP-0802 AT CANOPY AREA.

CONDUIT AND WIRE SIZE SCHEDULE

	SYMBOL	DESCRIPTION
	1	(1) 2"C, (4) 10#14
1	2	(1) 2"C, (2) 2#16 TSP
	3	(1) 1"C, (1) 8#14
1	4	(1) 2"C, (1) CAT-6A, (2) 2#16 TSP
	5	(1) 1"C, (1) 4#14
	6	(1) 1"C, (1) 12#14
	7	(1) 3"C, (2) 12#14
	8	(2) 2"C, (2) 4/C #18 TSP,(2) CAT-6A
1	9	(1) 2"C, (4) 2#16 TSP
1	10	(1) 1-1/2"C, (2) 2#16 TSP
	11	(1) 2"C, FLYGT SUBCAB CABLE
1	12	(2) 1"C, (1) 2#16 TSP, (1) 2#14
1	13	(1) 3"C, (5) 2#16 TSP

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry 2024.09.25 11:18:16-05'00'

RTU-2 WIRING DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION			
REV.	DR.	CHK	DATE	DESCRIPTION
0	JLK	MC	07/19/2024	ISSUED FOR BIDS
1	JLK	MC	09/12/2024	ADDENDUM 5

99-E853

FILE NO. 3618121

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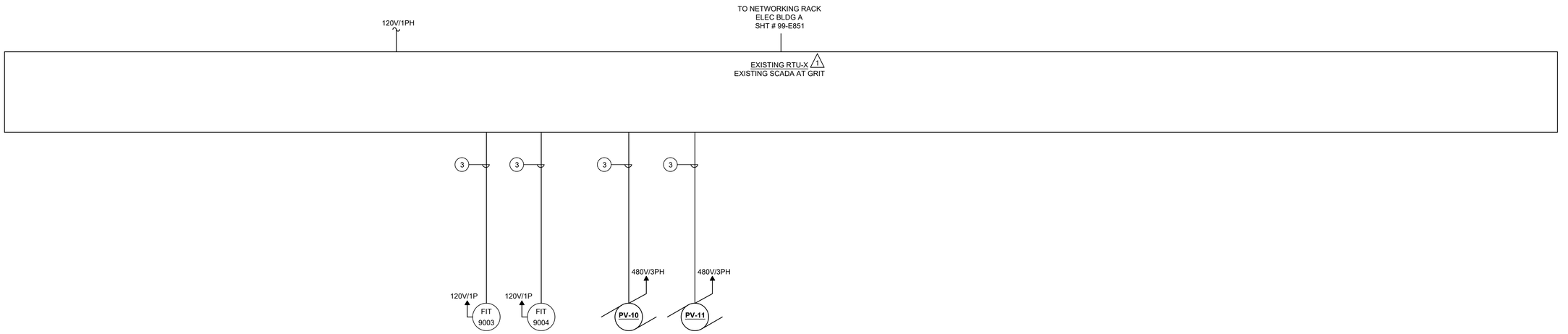
PLOTTED:9/24/2024



1 CONTROL PANEL WIRING DIAGRAM OVERVIEW

SCALE: NTS

GENERAL NOTES:

1. PROVIDE NEW ISOLATION XFMR's FOR SCADA RTU's IN E-HOUSES. REUSE EXISTING ISOLATION XFMR's FOR EXISTING SCADA RTU PANELS CP-0801 AND CP-0802 AT CANOPY AREA.

CONDUIT AND WIRE SIZE SCHEDULE

SYMBOL	DESCRIPTION
1	NOT USED
2	NOT USED
1 3	(1) 2"C, (1) 2#16 TSP
4	NOT USED
5	NOT USED
6	NOT USED
7	NOT USED
8	NOT USED
9	NOT USED
10	NOT USED

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LANDRY

Brian W Landry
2024.09.25 11:18:26-05'00'

EXISTING GRIT RTU WIRING DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS
1	JLK	MC	08/21/2024	ADDENDUM 1

99-E854

FILE NO. 3618121

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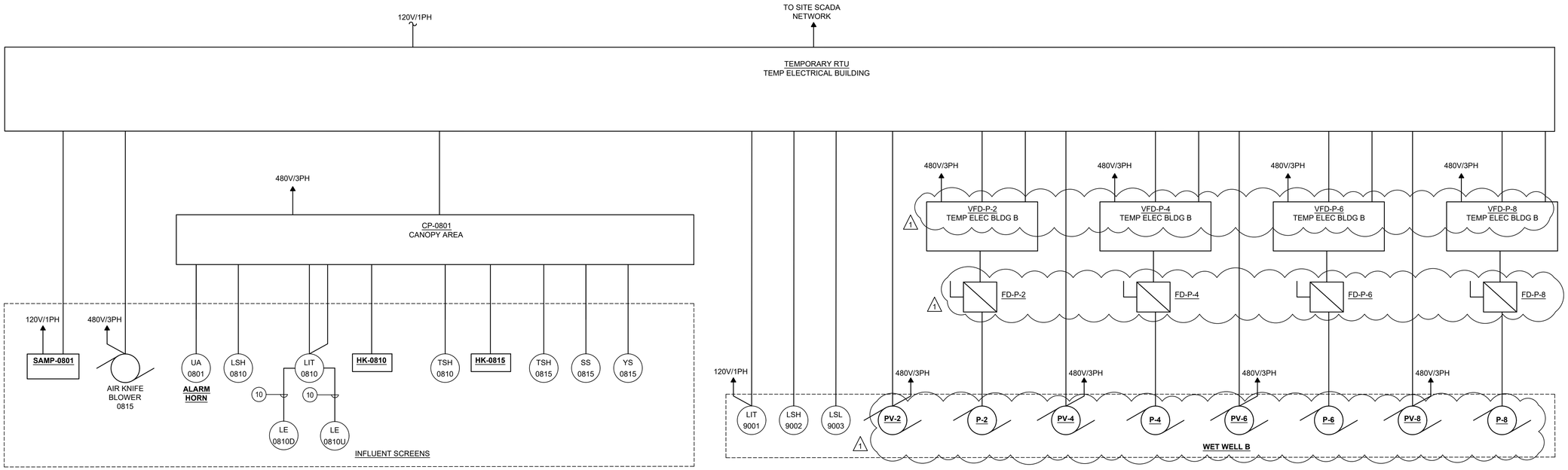

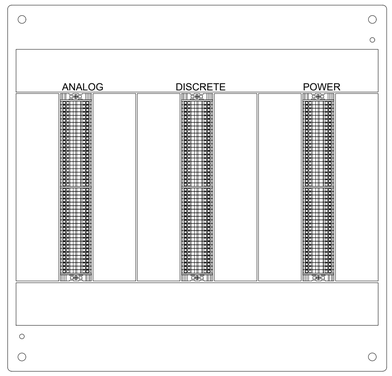

1 TEMPORARY RTU WIRING DIAGRAM

SCALE: NTS

BARGE DESIGN SOLUTIONS
6522 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
PHONE (678) 515-9411

GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER
BRIAN WILLIAM LANDRETH
02/13/2025

TEMPORARY RTU WIRING DIAGRAM

LOWER POPLAR WATER RECLAMATION FACILITY INFLUENT PUMP STATION IMPROVEMENTS

MACON WATER AUTHORITY

REVISION INFORMATION

REV	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MC	07/10/2024	ISSUED FOR BIDS
1	JLK	MC	02/13/2025	REVISE EXISTING PUMP NUMBERING

99-E855

FILE NO. 3618121

USER:GWGORE
FILE:\\corp.bwsc.net\data\Projects\360\3618\3618121\04_CAD\ELEC\03_PLOT\3618121_99-E855.dwg
SAVED:2/14/2025
PLOTTED:2/14/2025

PANEL: TEMP LIPS

SERVICE: 208Y/120 VOLT, 3 PHASE, 4 WIRE

LOCATION: ELECTRICAL ROOM

CKT NO.	DIRECTORY	ACC.	CKT. BKR.	LOAD (KVA)	A	B	C	LOAD (KVA)	CKT. BKR.	ACC	DIRECTORY	CKT. NO.
1	POLE LIGHT		20 / 1		0.0				20 / 1		SPARE	2
3	LIGHT & REC WET WELL ALARM		20 / 1			0.0			20 / 1		SPARE	4
5	#2 VALVE		20 / 1				0.0		20 / 1		FLUME METER	6
7	SPARE		20 / 1		0.0				20 / 1		SPARE	8
9	SPARE		20 / 1			0.0			- / 1		SPACE	10
11	DOWNSTAIRS LTS		25 / 1				0.0		25 / 1		REC	12
13	SPACE		- / 1		0.0				- / 1		SPACE	14
15	OUTSIDE WEST OUTLETS		20 / 1			0.0			20 / 1		SPARE	16
17	WET WELL LIGHT EAST SIDE		20 / 1				0.0		20 / 1		SPARE	18
19	SPARE		20 / 1		0.0				20 / 1		SPARE	20
21	SPARE		20 / 1			0.0			20 / 1		SPARE	22
23	SAMPLE MH		30 / 1				0.0		20 / 1		SPARE	24
25	SPARE		20 / 1		0.0				20 / 1		SPARE	26
27	SUMP PUMP WEST		20 / 1			0.0			- / 1		SPACE	28
29	SUMP PUMP EAST		20 / 1				0.0		POL3 / 1		REC STANDS SOUTH	30
31	SPARE		20 / 1		0.0				30 / 1		OUTSIDE LTS	32
33	POLE LIGHT		20 / 1			0.0			30 / 1		REC STANDS NORTH	34
35	DEHUMIDIFIER		20 / 1				0.0		30 / 1		BS #1 HEATER	36
37	DEHUMIDFIER		20 / 1		0.0				30 / 1		BS #2 HEATER	38
39	SPACE		20 / 1			0.0			30 / 1		HEAT TRACE WATER PIPE	40
41	SPACE		20 / 1						30 / 1		HEAT TRACE WATER PIPE	42
43	SPARE		20 / 1						20 / 1		SPARE	44
45	SPARE		20 / 1						20 / 1		SPARE	46
47	SPARE		20 / 1				0.0		20 / 1		SPARE	48

A	B	C	DEMAND KVA
0.0	0.0	0.0	0.0 TOTAL KVA SHOWN
			0.0 SUB-FEED KVA LOAD FROM PANEL xx (link data for totals)
0.0	0.0	0.0	0.0 TOTAL KVA CONNECTED

BUS DATA

AMPERE RATING - CONT: 400A
SCCR: 10KA
BUS: COPPER/NEUTRAL/GROUND
TOP FEED

☐ MAIN LUGS ONLY
■ MAIN BREAKER
AF: 400A
AT: 400A

ENCLOSURE

■ SURFACE ☐ FLUSH
☐ NEMA 1 ☐ NEMA 3R
☐ NEMA 12 ■ NEMA 4X

MANUFACTURER:
TYPE:

FED FROM:
NOTES:

LOAD CLASSIFICATION	CONNECTED LOAD	DEMAND FACTOR	DIVERSIFIED LOAD	
OTHER	0.0	100%	0.0	
TOTAL	0.0		0.0	

TEMPORARY CONFIGURATION NOTES:

1. THE EXISTING LIPS 208/120V PANEL SHOWN IS FOR INFORMATION ONLY OF THE EXISTING CIRCUITS THAT SHALL BE MAINTAINED AND SHALL BE TRANSFERRED TO THE NEW TEMPORARY RP-1 208/120V PANEL THAT SHALL BE LOCATED IN THE TEMP 1 ELECTRICAL BUILDING. THIS LIPS PANEL SHALL BE DEMOLISHED AFTER ALL CIRCUITS REMAINING ARE TRANSFERRED TO RP-1 PANEL.
2. DUE TO INADEQUATE LOAD INFORMATION ON EXISTING CIRCUITS SHOWN, THE EXACT kVA LOADS FOR THESE ARE UNKNOWN AS SHOWN.
3. UPON COMPLETION OF DEMOLITIONS, EXISTING CIRCUITS THAT ARE TO REMAIN SHALL BE RELOCATED FROM THE TEMP RP-1 PANEL (TEMP 1 ELEC BLDG) TO THE PERMANENT MINI-POWER ZONE PANELS (MPZ-2 & MPZ-4) LOCATED UNDER THE CANOPY AREA. SEE NEW ELECTRICAL PANEL SCHEDULES FOR MPZ-2 & MPZ-4.

BARGE DESIGN SOLUTIONS
6525 The Corners Parkway // Suite 450 // Peachtree Corners, Georgia 30092
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GEORGIA REGISTERED No. PE044693 PROFESSIONAL ENGINEER BRIAN WILLIAM LAMERY
07/10/2024

ELECTRICAL SCHEDULES

LOWER POPLAR WATER RECLAMATION FACILITY
INFLUENT PUMP STATION IMPROVEMENTS
MACON WATER AUTHORITY

REVISION INFORMATION

REV.	DR.	CHK.	DATE	DESCRIPTION
0	JLK	MIC	07/10/2024	ISSUED FOR BIDS

99-ED801

FILE NO. 3618121

USER:JLKITTRELL
FILE:F:\3836181\3618121\04_CAD\ELEC\03_PLOT\3618121_99-ED801.dwg
SAVED:6/27/2024
PLOTTED:7/10/2024