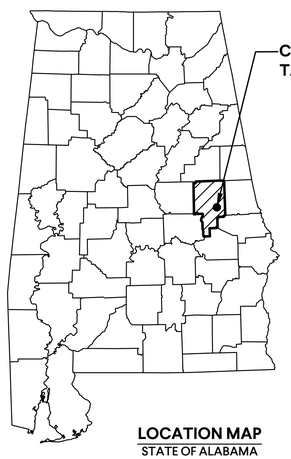
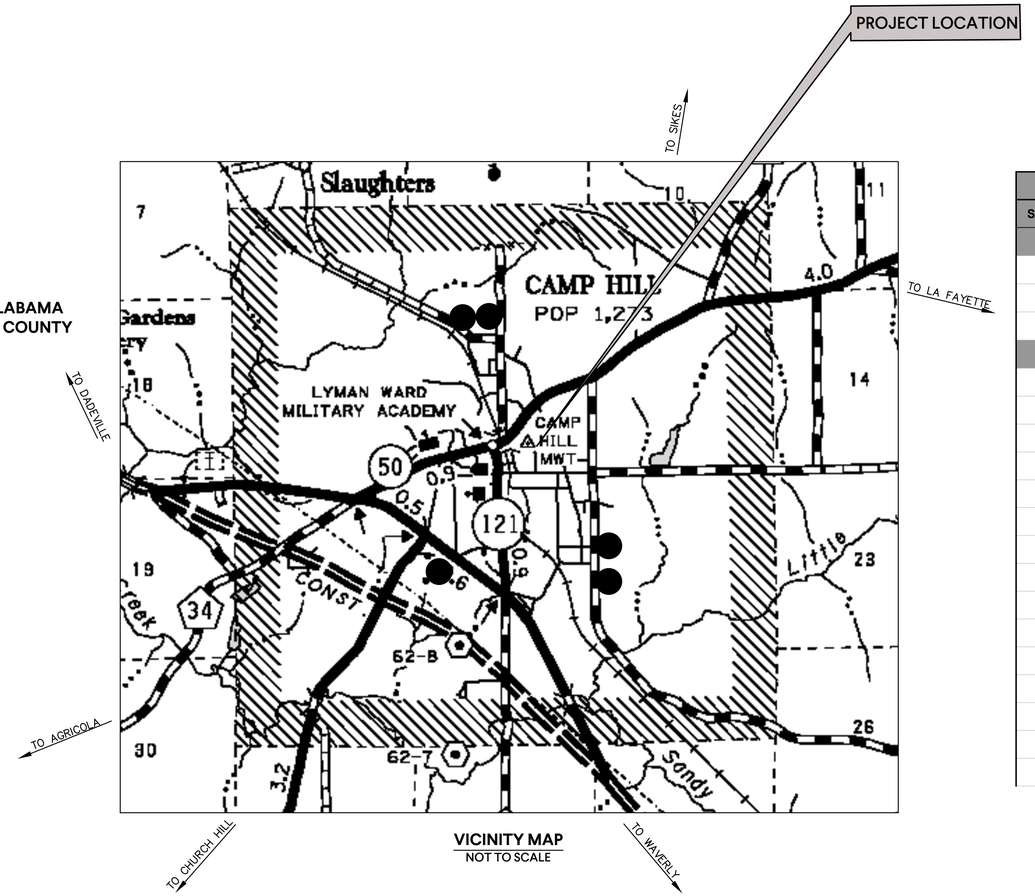
2022 CWSRF SANITARY SEWER SYSTEM LIFT STATION UPGRADES

GMC PROJECT NO. CMGM 22-0156(2)
CWSRF PROJECT NO. CS010915-01

TOWN OF CAMP HILL
TALLAPOOSA COUNTY, AL



LOCATION MAP
STATE OF ALABAMA



VICINITY MAP
NOT TO SCALE

DECEMBER 2023

DRAWING INDEX		
SHT #	SEQ. #	SHEET TITLE
GENERAL		
1	G-001	INDEX TO DRAWINGS, VICINITY MAP & LOCATION MAP
2	G-002	PROJECT NOTES & SYMBOLS LEGEND
3	G-003	OVERALL PROJECT MAP
CIVIL		
4	C-301	LIFT STATION #1 & #3 DEMO PLAN & SITE PLAN
5	C-302	LIFT STATION #4 & #5 DEMO PLAN & SITE PLAN
6	C-303	LIFT STATION #9 DEMO PLAN & SITE PLAN
7	C-901	LIFT STATION #3 DETAILS
8	C-902	TRAFFIC CONTROL DETAILS
9	E-001	ELECTRICAL NOTES, ABBREVIATIONS, & LEGEND
10	E-002	LIFT STATIONS #1, #2, #6, #7, #8 ELECTRICAL WORK
11	E-101	LIFT STATION #3 ELECTRICAL SITE PLAN
12	E-102	LIFT STATION #3 ELECTRICAL RISER DIAGRAM & DETAILS
13	E-103	LIFT STATION #4 ELECTRICAL SITE PLAN
14	E-104	LIFT STATION #4 ELECTRICAL RISER DIAGRAM & DETAILS
15	E-105	LIFT STATION #5 ELECTRICAL SITE PLAN
16	E-106	LIFT STATION #5 ELECTRICAL RISER DIAGRAM & DETAILS
17	E-107	LIFT STATION #9 ELECTRICAL SITE PLAN
18	E-108	LIFT STATION #9 ELECTRICAL RISER DIAGRAM & DETAILS

GMC
2660 East Chase Lane, Suite 200
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ISSUE	DATE
ISSUE	DATE
Prelim	22 Aug 2023
Final	22 Dec 2023

DRAWN BY: JBP
CHECKED BY: WC

SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

ALABAMA
No. 30839
PROFESSIONAL ENGINEER
J. WHEELER CROOK, II
2/27/24

COVER SHEET

G-001
sheet of

DRAWING FILE: T:\1-Projects\ALL\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\0 DWG\(2) Lift Station Rehab\1 G001 COVER.dwg
PLOTTED: Jan 08, 2024 - 2:07pm

PROJECT NOTES

1. THE ENGINEER WILL PROVIDE AN PROJECT REPRESENTATIVE TO BE AVAILABLE. THE PROJECT REPRESENTATIVE CAN BE REACHED AT (334) 271-3200, 2660 EASTCHASE LANE, SUITE 200, MONTGOMERY, ALABAMA 36117.

2. THE PROJECT REPRESENTATIVE WILL HAVE ON HANDS, AT ALL TIMES (1) APPROVED PERMIT, (2) PLANS AND SPECIFICATIONS, (3) A COPY OF PART VI OF THE MUTCD, (4)TRAFFIC CONTROL PLAN.

3. CALL ALABAMA LINE LOCATE CENTER.

4. DO NOT DISTURB SURVEY MARKER.

5. THE LOCATION AND SIZE OF EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER ONLY. THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND VERIFY LOCATION OF ANY AND ALL SUBSURFACE UTILITY LINES PRIOR TO STARTING WORK. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

6. ANY SOLID WASTE ENCOUNTERED DURING CONSTRUCTION (I.E., WOOD, STUMPS, ETC.) MUST BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE REGULATIONS OF THE ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT. (ADEM)

7. CONTRACTOR SHALL MINIMIZE THE DISTURBANCE TO ANY EXISTING LANDSCAPING AND TREES.

8. CONTRACTOR SHALL SAW CUT EXISTING TREE ROOTS ON TREES THAT WILL BE RETAINED DURING CONSTRUCTION TO MINIMIZE THE DISTURBANCE TO THE TREES.

9. ANY LANDSCAPING (SHRUBS, FLOWERS, ORNAMENTAL GRASS, ETC.) DISTURBED WITHIN THE TEMPORARY CONSTRUCTION EASEMENT DURING CONSTRUCTION SHALL BE REPLACED AND OR TRANSPLANTED, AND RESTORED TO PRE-CONSTRUCTION CONDITIONS.

10. ANY PROPERTY CORNERS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LICENSED SURVEYOR AT CONTRACTOR'S EXPENSE.

11. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN, WHICH WILL BE IN ACCORDANCE WITH "BEST MANAGEMENT PRACTICES", BEFORE ANY WORK COMMENCES AND THESE PLANS SHALL BE APPROVED BY THE OWNER.

12. COMBINATIONS OF SILT FENCING AND HAY BALES SHALL BE USED AS PROJECT CONDITIONS WARRANT TO PREVENT SEDIMENT RUNOFF FROM REACHING CREEKS & STREAMS WITHIN THE PROJECT AREA.

EXISTING UTILITY LEGEND

EXISTING BENDS	
EXISTING CABLE: MARKER	C
EXISTING CABLE: OVERHEAD	OTV
EXISTING CENTERLINE	
EXISTING CONCRETE MONUMENT	
EXISTING CREEK OR DITCH	
EXISTING CULVERT	
EXISTING EASEMENT	
EXISTING ELECTRICAL: BURIED	BE
EXISTING ELECTRICAL: OVERHEAD	OE
EXISTING FENCE: BARB WIRE	X X
EXISTING FENCE: CHAIN LINK	
EXISTING FENCE: WOOD	
EXISTING FIBER OPTIC: BURIED	BFO
EXISTING FIBER OPTIC MARKER	F
EXISTING FIRE HYDRANT ASSEMBLY	
EXISTING FLUSH HYDRANT	
EXISTING GAS MAIN	GM
EXISTING GAS MARKER	Gas
EXISTING GAS METER	GM
EXISTING GAS VALVE	
EXISTING GAS VENT	GV
EXISTING GRATE INLET	
EXISTING GUY WIRE	
EXISTING IRON PIN	
EXISTING LIGHT POLE	
EXISTING NAIL SET	
EXISTING POWER BOX	P
EXISTING POWER POLE	
EXISTING PROPERTY LINE	
EXISTING RAIL ROAD TRACKS	
EXISTING REDUCER	
EXISTING R.O.W.	
EXISTING SANITARY SEWER CLEAN OUT	CO
EXISTING SANITARY SEWER FORCE MAIN	FM
EXISTING SANITARY SEWER MANHOLE	SS
EXISTING SANITARY SEWER LINE	SS
EXISTING SANITARY SEWER VALVE	SV
EXISTING SIGN	
EXISTING TELEPHONE: BURIED	BT
EXISTING TELEPHONE MANHOLE	T
EXISTING TELEPHONE PEDESTAL	T
EXISTING TELEPHONE POLE	
EXISTING TREE	
EXISTING TREE LINE	
EXISTING WATER MAIN	WM
EXISTING WATER METER	
EXISTING WATER VALVE	
EXISTING WELL	W

REQUIRED UTILITY LEGEND

REQUIRED AIR RELEASE VALVE	
REQUIRED BENDS	
REQUIRED BORE CROSSING	
REQUIRED BURIED ELECTRICAL	BT
REQUIRED CURE IN PLACE PIPING (CIPP)	SS
REQUIRED FENCE	X X
REQUIRED FIRE HYDRANT ASSEMBLY	
REQUIRED FLUSH HYDRANT	
REQUIRED FORCE MAIN	
REQUIRED GAS METER	
REQUIRED GAS VALVE	
REQUIRED GRATE INLET	
REQUIRED GRAVITY LINE WITH MANHOLE	
REQUIRED OPEN/CUT PAVEMENT PATCH	
REQUIRED PERMANENT EASEMENT	
REQUIRED PROPERTY LINE	
REQUIRED REDUCER	
REQUIRED TAP SLEEVE & VALVE	
REQUIRED TEMPORARY EASEMENT	
REQUIRED WATER MAIN	
REQUIRED WATER METER	
REQUIRED WATER VALVE	
REQUIRED CCTV INSPECTION	

CONTRACTOR'S NOTE

1. UTILITIES INDICATED ON THE DRAWING ARE SHOWN AS EVIDENT BY SURFACE INVESTIGATION AND ARE PROVIDED FOR GENERAL INFORMATION ONLY. THE CONTRACTOR IS TO CONTACT ALL UTILITY COMPANIES AND VERIFY LOCATION OF ANY AND ALL SUBSURFACE UTILITY LINES PRIOR TO STARTING WORK.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND RESET FENCING TO ORIGINAL CONDITION WHERE REQUIRED AT NO ADDITIONAL COST.

3. 3' MINIMUM DISTANCE REQUIRED BETWEEN EXISTING UTILITY MAIN AND REQ'D UTILITY MAIN UNLESS OTHERWISE NOTED.

4. EXACT LOCATION OF AIR RELEASE VALVES TO BE DETERMINED IN THE FIELD BY THE ENGINEER UNLESS OTHERWISE NOTED.

5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAR AND GRUB AS NECESSARY TO INSTALL THE NEW PIPELINE.

GMC

2660 East Chase Lane, Suite 200
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ISSUE	DATE
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Prelim	22 Aug 2023
Final	22 Dec 2023

DRAWN BY: jap
CHECKED BY: wc

SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)
Scale:
Construction Drawings

STATE OF ALABAMA
No. 30839
PROFESSIONAL ENGINEER
J. WHEELER CROOK IV
2/27/24

Project Notes & Legend

G-002

sheet of

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CHECKED BY:	wc

SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

ALABAMA LICENSED No. 30839 PROFESSIONAL ENGINEER J. WHEELER CROOK, JR. 2/27/24

Overall Map

G-003

sheet of

DRAWING FILE: T:\1 Projects\ALL\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\00 DWG\(2) Lift Station Rehab\03 Overall.dwg
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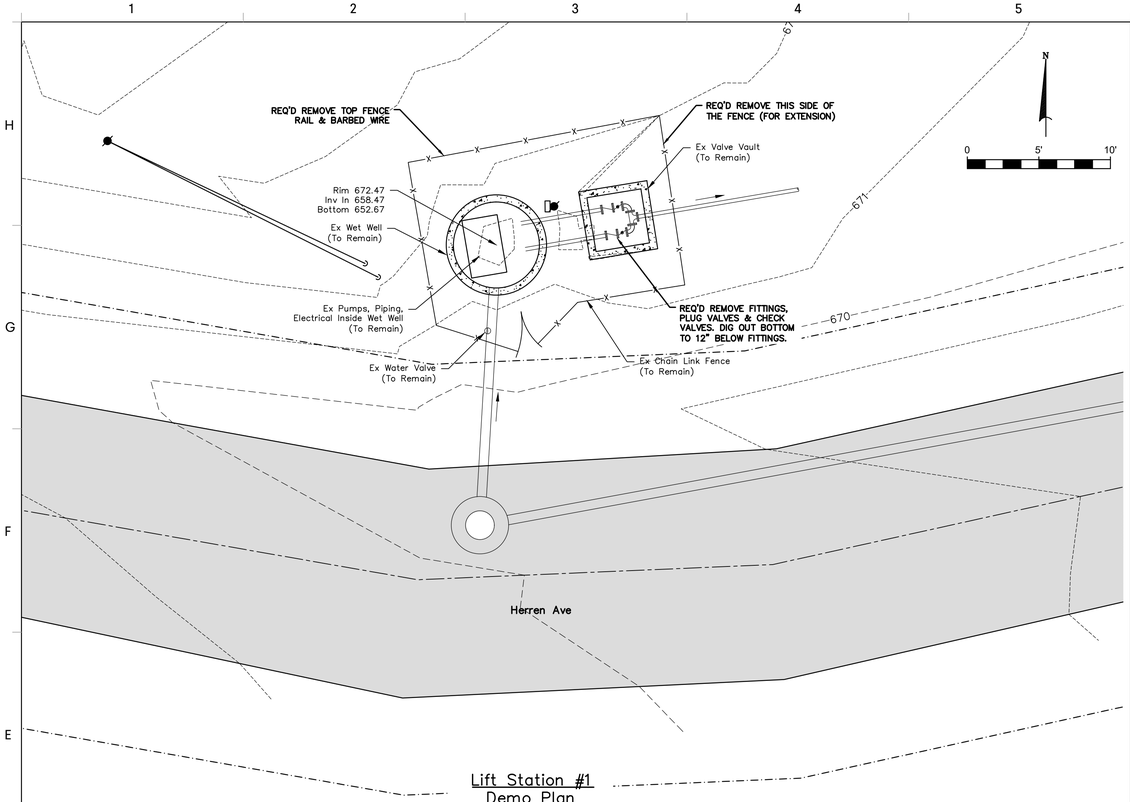
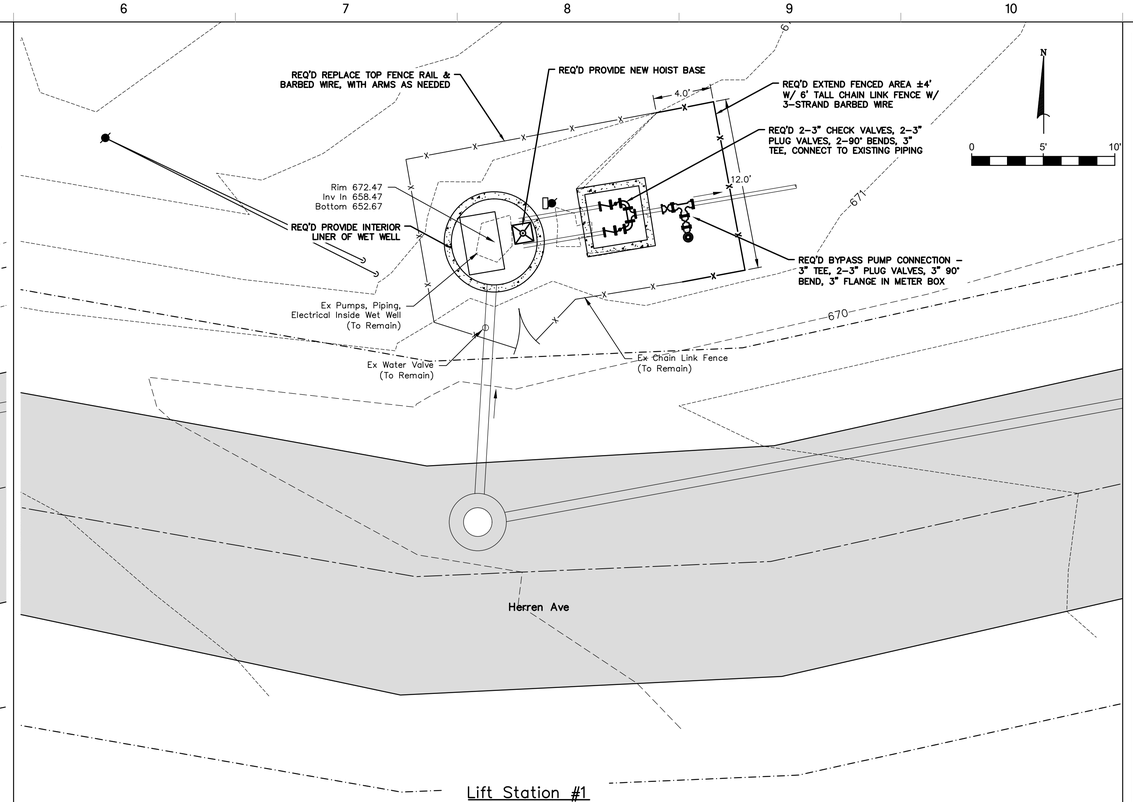
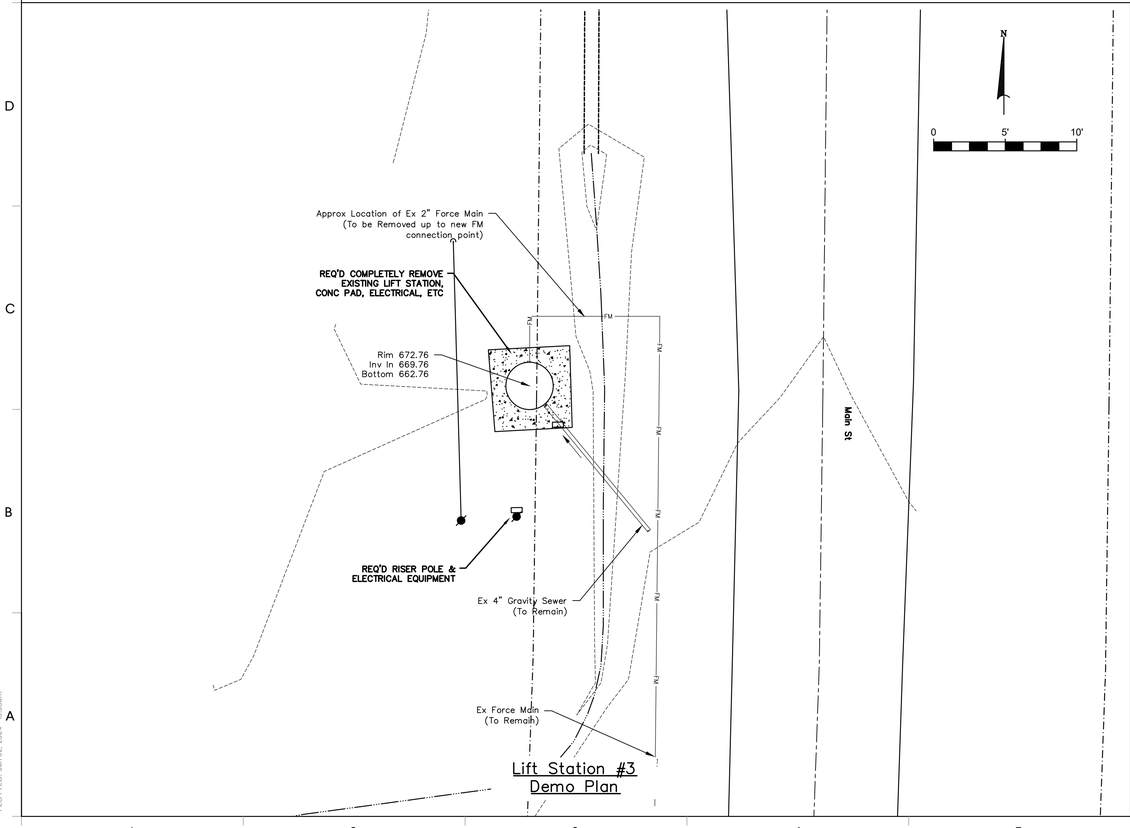


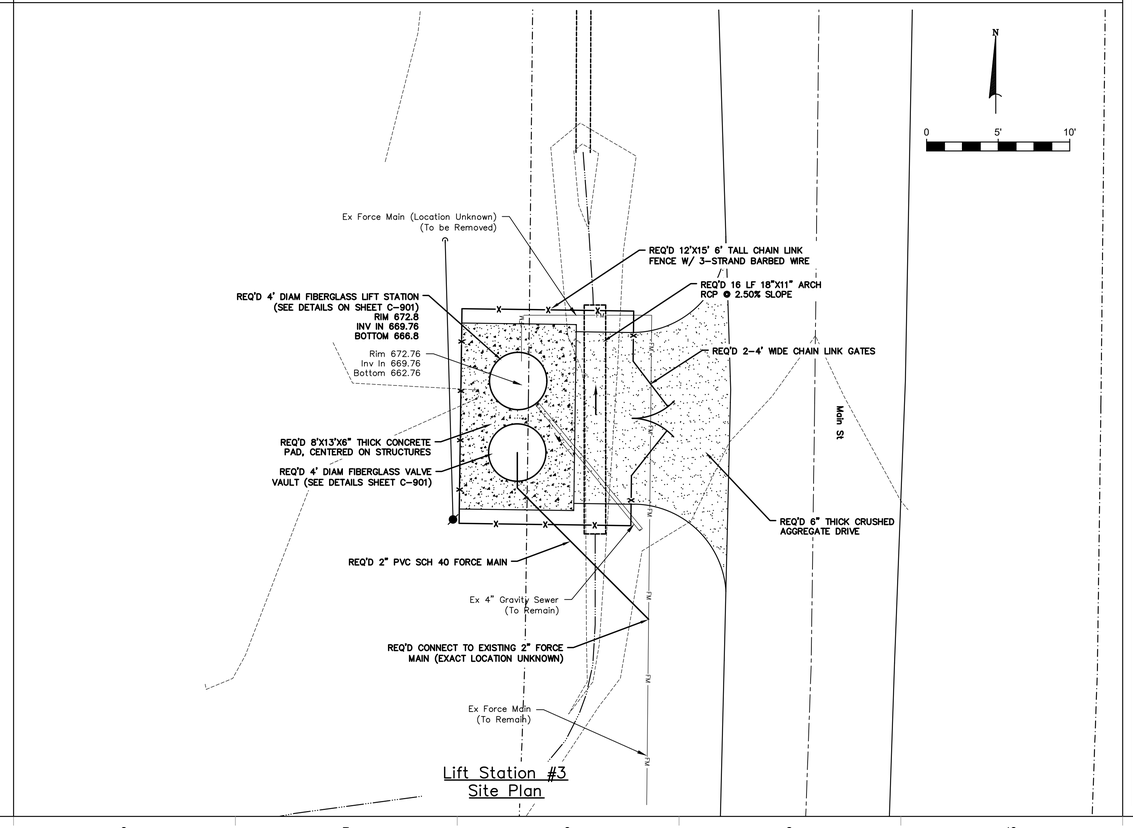
Lift Station #1
Demo Plan



Lift Station #1
Site Plan



Lift Station #3
Demo Plan



Lift Station #3
Site Plan

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Prelim	22 Aug 2023
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SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

STATE OF ALABAMA
No. 30839
PROFESSIONAL ENGINEER
J. WHEELER CROOK III
9/27/24

Lift Station #1 & #3
Demo Plan & Site Plan

C-301

sheet of

DRAWING FILE: T:\1 Projects\AL\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\0 DWG\(2) Lift Station Rehab\03 Overall.dwg
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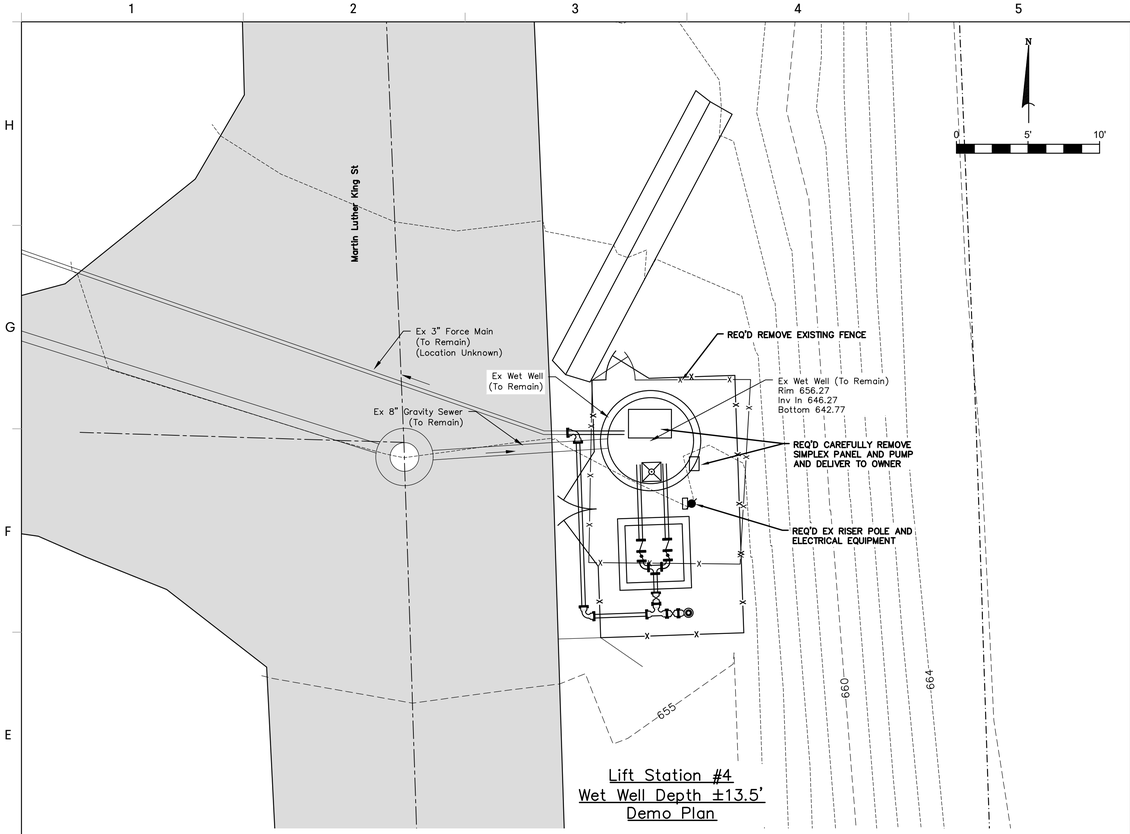
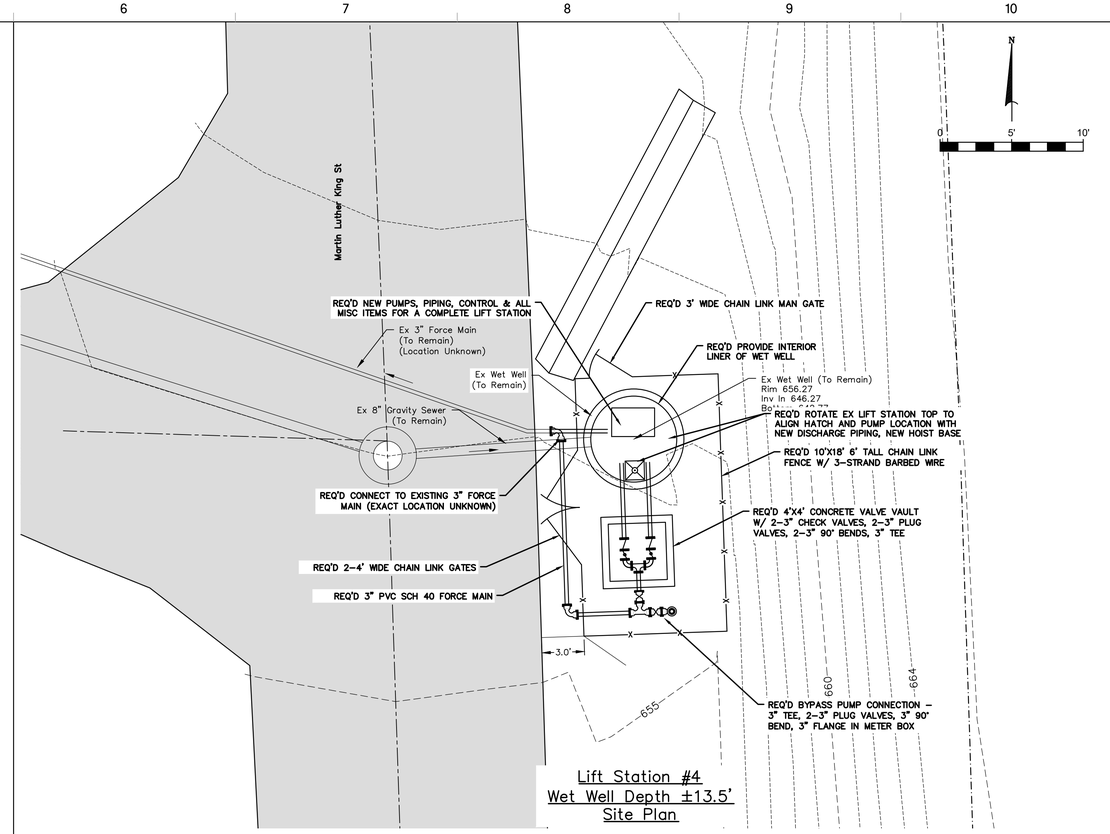
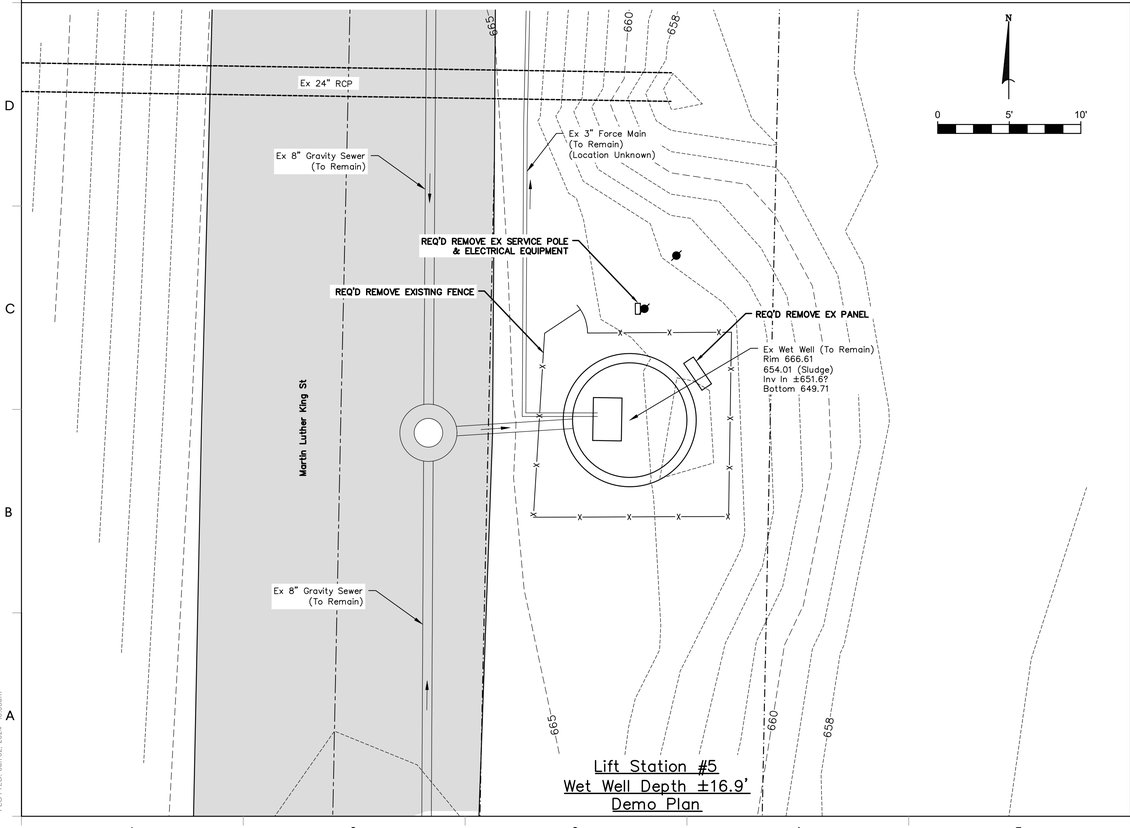


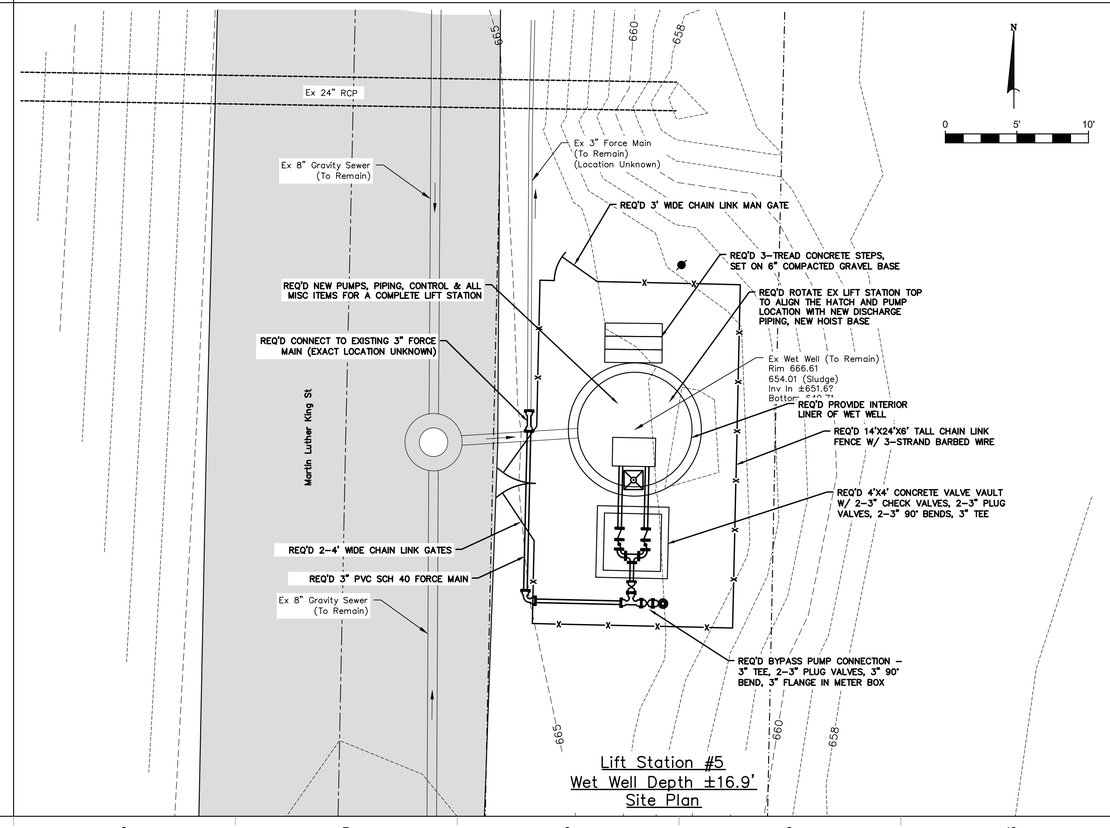
Lift Station #4
Wet Well Depth ±13.5'
Demo Plan



Lift Station #4
Wet Well Depth ±13.5'
Site Plan



Lift Station #5
Wet Well Depth ±16.9'
Demo Plan



Lift Station #5
Wet Well Depth ±16.9'
Site Plan

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CHECKED BY: WC

SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

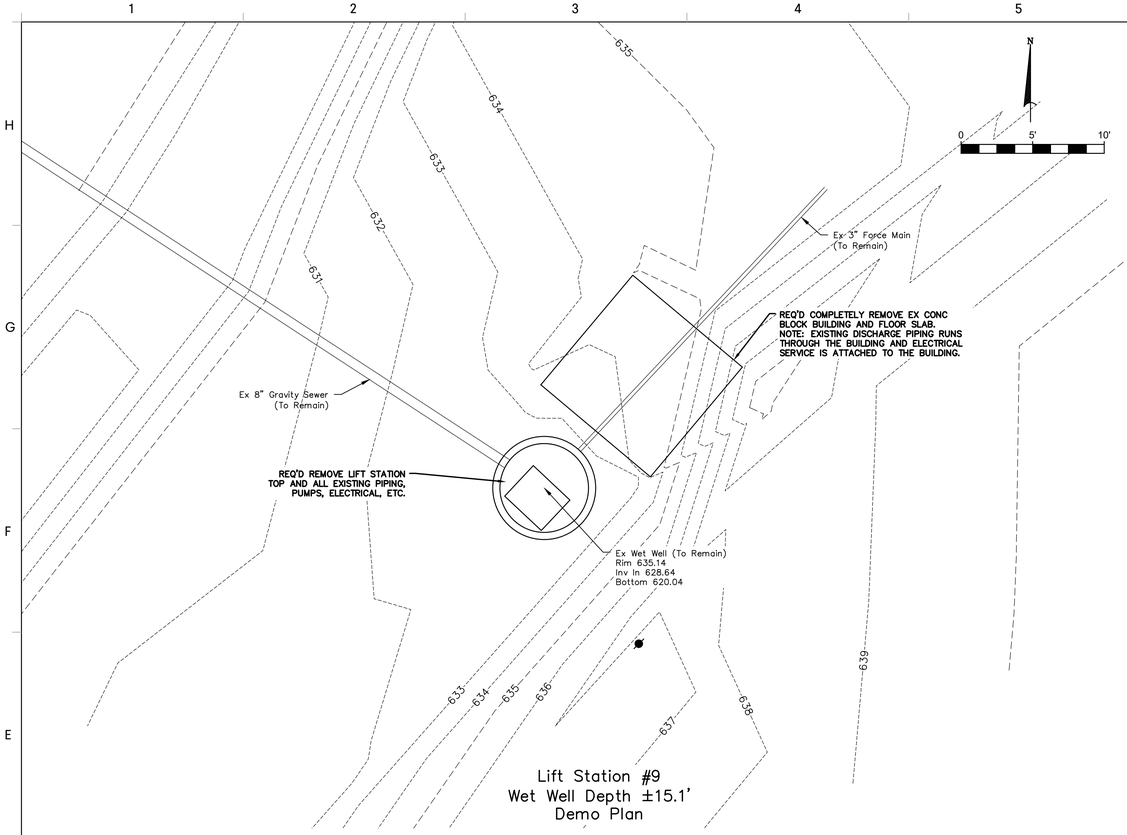
STATE OF ALABAMA
LICENSED
No. 30839
PROFESSIONAL ENGINEER
J. WHEELER CROOK IV
2/27/24

Lift Station #4 & #5
Demo Plan & Site Plan

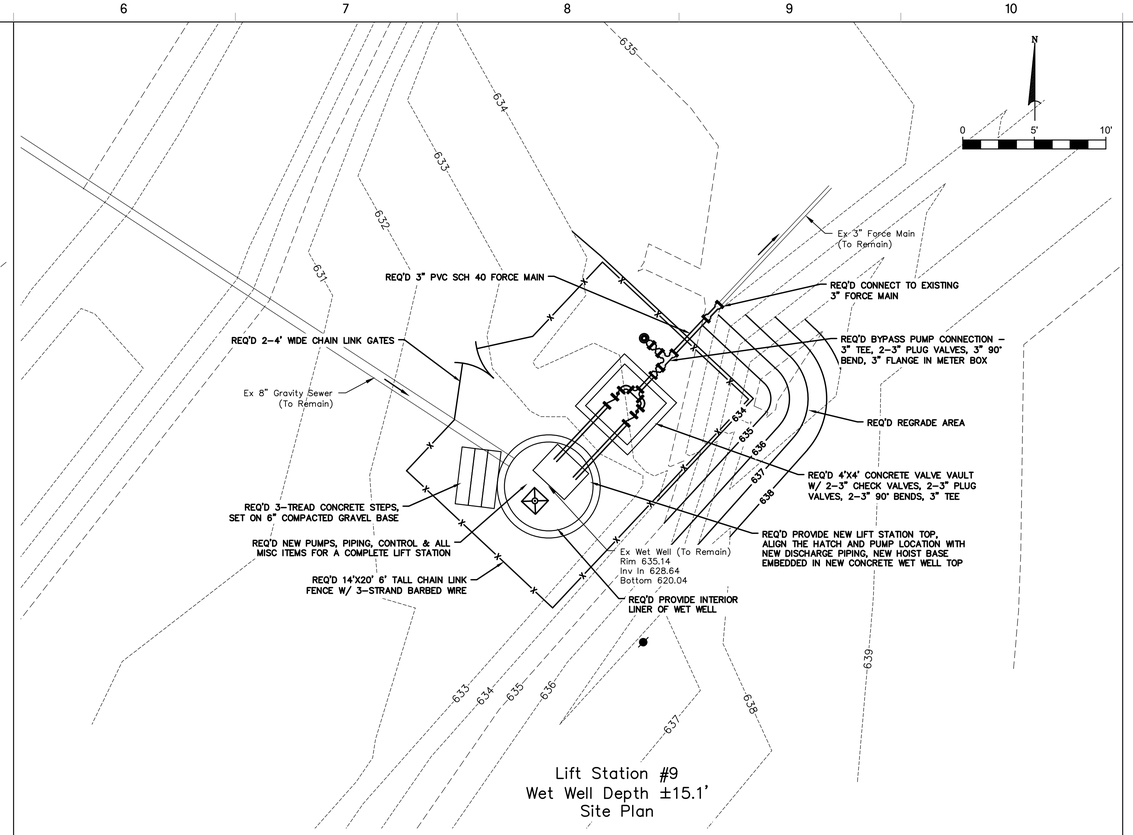
C-302

sheet of

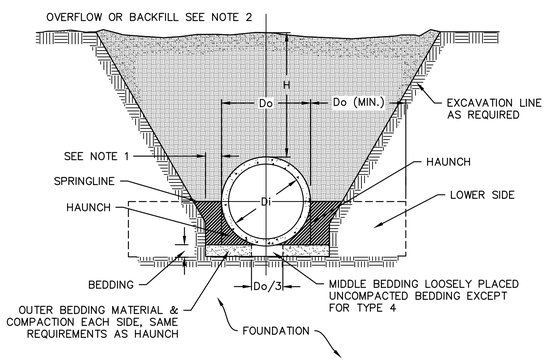
DRAWING FILE: T:\Projects\ALL\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\0 DWG\(2) Lift Station Rehab\03 Overall.dwg
PLOTTED: Jan 02, 2024 - 10:05am



Lift Station #9
Wet Well Depth ±15.1'
Demo Plan



Lift Station #9
Wet Well Depth ±15.1'
Site Plan



1. CLEARANCE BETWEEN PIPE & TRENCH WALL SHALL BE ADEQUATE TO ENABLE SPECIFIED COMPACTION BUT NOT MORE THAN Do/6.
2. OVERFILL OR BACKFILL MATERIAL SHALL MEET THE REQUIREMENTS OF AASHTO A1, A3, A2-4, A2-5 OR A4.
3. COMPACTION SHALL BE ACCORDING WITH TABLE NO. 1. PROCTOR STANDARD DENSITY SHALL FOLLOW THE AASHTO T-99, T310.
4. WHEN THE TRENCH WIDTH SPECIFIED MUST BE EXCEEDED, THE OWNER AND THE ENGINEER OF RECORD SHALL BE NOTIFIED.
5. THE TRENCH WIDTH SHALL BE WIDER THAN SHOWN IF REQUIRED FOR ADEQUATE SPACE TO ATTAIN THE SPECIFIED COMPACTION IN THE HAUNCH AND BEDDING ZONES.
6. EMBANKMENT LOADING SHALL BE USED WHEN TRENCH WALLS CONSIST OF EMBANKMENT UNLESS A GEOTECHNICAL ANALYSIS IS MADE AND THE SOIL IN THE TRENCH WALLS IS COMPACTED TO A HIGHER LEVEL THAN THE SOIL IN THE BACKFILL ZONE.
7. REQUIRED BEDDING THICKNESS IS THE THICKNESS OF THE BEDDING PRIOR TO PLACEMENT OF THE PIPE.
8. **ALL RCP STORM PIPE IN THIS PROJECT SHALL BE INSTALLED ACCORDING TO ASTM C1479, TYPE 2 INSTALLATION.**

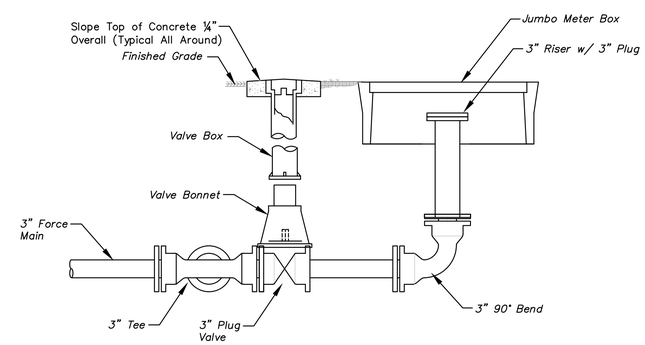
FINAL BACKFILL INSTALLED ACCORDING TO ASTM C1479, TYPE 2 INSTALLATION

STRUCTURAL BACKFILL INSTALLED ACCORDING TO ASTM C1479, TYPE 2 INSTALLATION

TABLE NO. 1 SOIL AND MINIMUM COMPACTION REQUIREMENTS

INSTALLATION TYPE	BEDDING THICKNESS	HAUNCH & OUTER BEDDING	LOWER SIDE
TYPE 1	Do/24 MINIMUM; NOT LESS THAN 3". IF ROCK FOUNDATION, USE Do/12 MINIMUM; NOT LESS THAN 6".	95% PROCTOR STANDARD FOR SOIL A1 & A3	UNDISTURBED NATURAL SOIL WITH FIRMNESS EQUIVALENT TO THE FOLLOWING PLACED SOILS: 90% PROCTOR STANDARD FOR SOIL A1 & A3 OR 95% PROCTOR STANDARD FOR SOIL A2-4 & A2-5 OR EMBANKMENT TO THE SAME REQUIREMENTS
TYPE 2	Do/24 MINIMUM; NOT LESS THAN 3". IF ROCK FOUNDATION, USE Do/12 MINIMUM; NOT LESS THAN 6".	90% PROCTOR STANDARD FOR SOIL A1 & A3 OR 95% FOR SOILS A2-4, A2-5 & A4	UNDISTURBED NATURAL SOIL WITH FIRMNESS EQUIVALENT TO THE FOLLOWING PLACED SOILS: 85% PROCTOR STANDARD FOR SOIL A1 & A3 OR 90% PROCTOR STANDARD FOR SOIL A2-4, A2-5 & A4 OR EMBANKMENT TO THE SAME REQUIREMENTS

TYPICAL TRENCH DETAIL FOR REINFORCED CONCRETE PIPE
N.T.S.



BYPASS PUMPING CONNECTION
NOT TO SCALE

GMC
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ISSUE	DATE
ISSUE	DATE
Prelim	22 Aug 2023
Final	22 Dec 2023

DRAWN BY: jsp
CHECKED BY: WC

SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

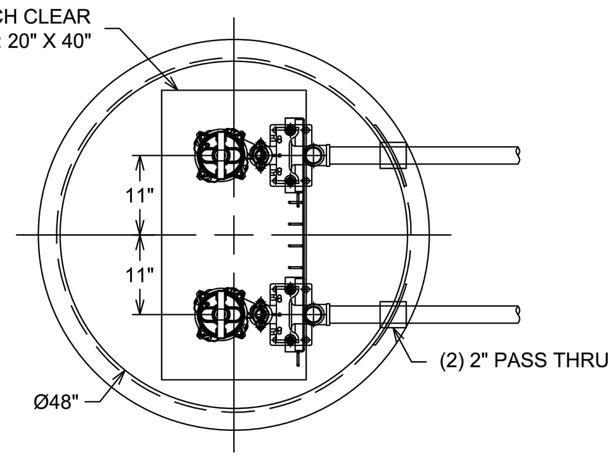
Construction Drawings

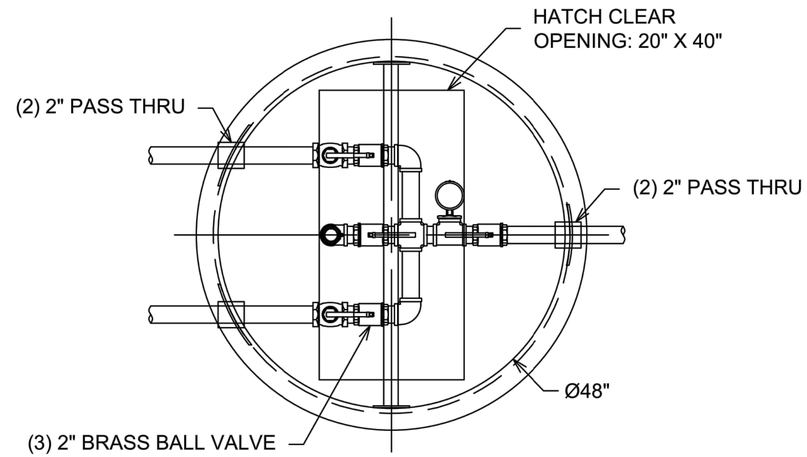
ALABAMA LICENSED No. 30839 PROFESSIONAL ENGINEER J. WHEELER CROOK 2/27/24

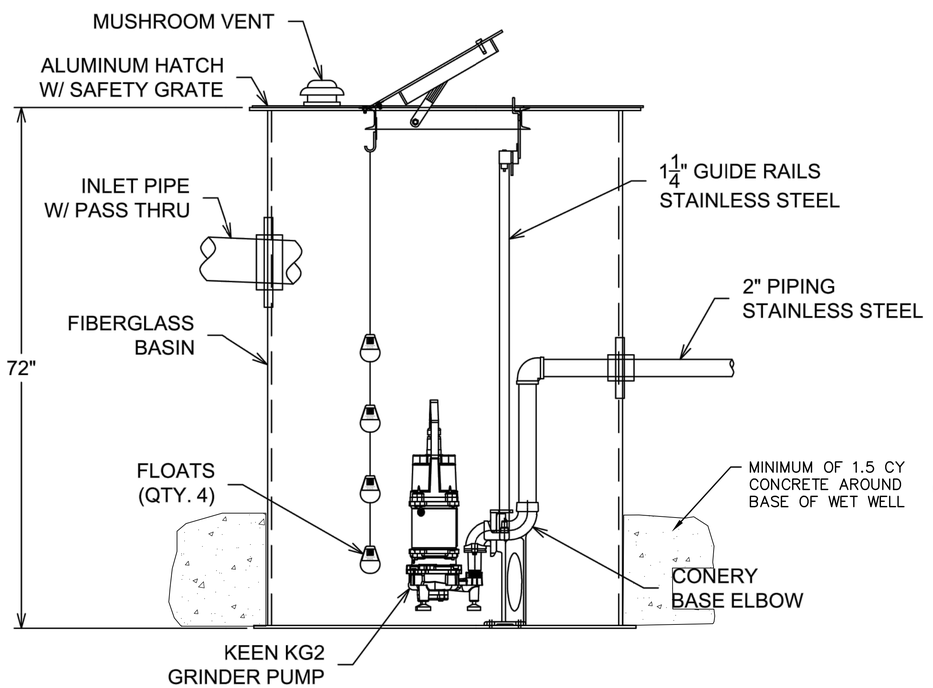
Lift Station #9
Demo Plan & Site Plan

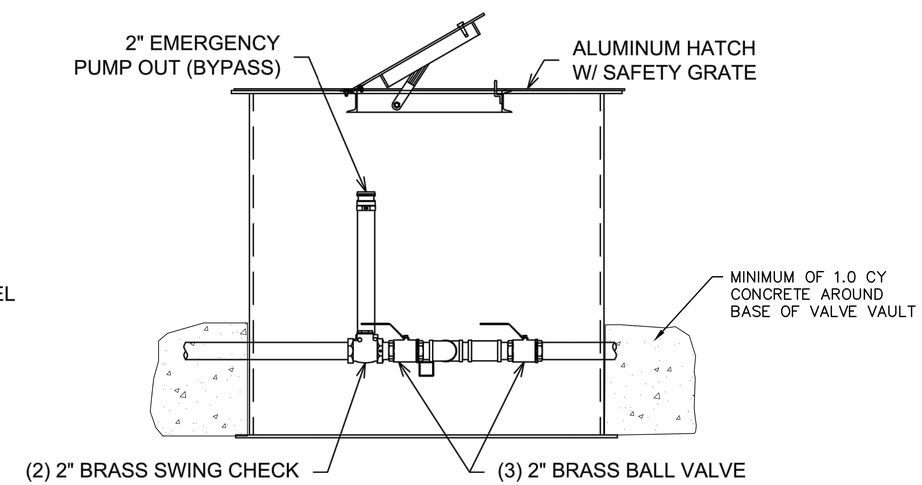
C-303
sheet of

DRAWING FILE: T:\1 Projects\A\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\0 DWG\(2) Lift Station Rehab\03 Overall.dwg
PLOTTED: Jan 11, 2024 - 9:49am









NOTES:
1. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE STATED
2. ALL DIMENSIONS ARE $\pm\frac{1}{16}$"

APPROVAL		
PRINT:	SIGNATURE:	DATE:

J.H. WRIGHT & ASSOCIATES, INC.
27395 Pollard Road * P.O. Box 1085 * Daphne, Al. 36526
Phone: (888) 655–7867 * Fax: (251) 621–8111

		DATE	APPROVED BY	DATE
DRAWN	ZACH FARRIS	06.23.2023		
CHECKED	ALEC PARLIAMENT	06.23.2023		
DESIGNED				

GMC
CAMP HILL - LIFT STATION REHAB
PO# TBD QUOTE# PAM0523-09

DRAWING NO.	SCALE	PROJECTION	REV
GMC - CAMP HILL LS REHAB	N.T.S.		0

GMC
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SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

ALABAMA LICENSED No. 30839 PROFESSIONAL ENGINEER J. WHEELER CROOK JR. 2/27/24

Lift Station #3
Details

C-901

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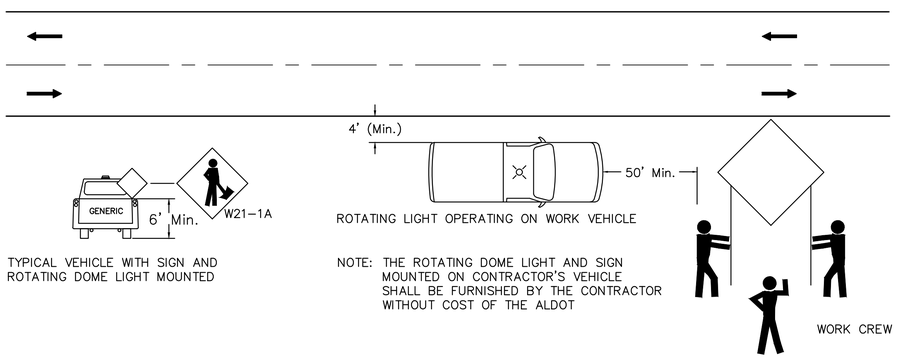
DRAWING FILE: T:\1 Projects\AL\Camp Hill, Town of\22-0156 2022 CWSRF Sewer System Improvements\0 DWG\(2) Lift Station Rehab\03 Overall.dwg
PLOTTED: Jan 17, 2024 - 10:22am

TRAFFIC CONTROL PLAN

TYPICAL METHOD FOR PLACEMENT OR REMOVAL OF CONSTRUCTION SIGNS



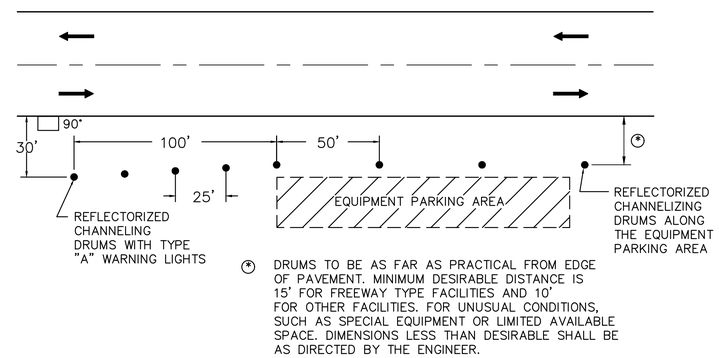
TYPICAL VEHICLE WITH SIGN AND ROTATING DOME LIGHT MOUNTED

ROTATING LIGHT OPERATING ON WORK VEHICLE

NOTE: THE ROTATING DOME LIGHT AND SIGN MOUNTED ON CONTRACTOR'S VEHICLE SHALL BE FURNISHED BY THE CONTRACTOR WITHOUT COST OF THE ALDOT

DELINEATING DETAILS FOR EQUIPMENT PARKING AREAS

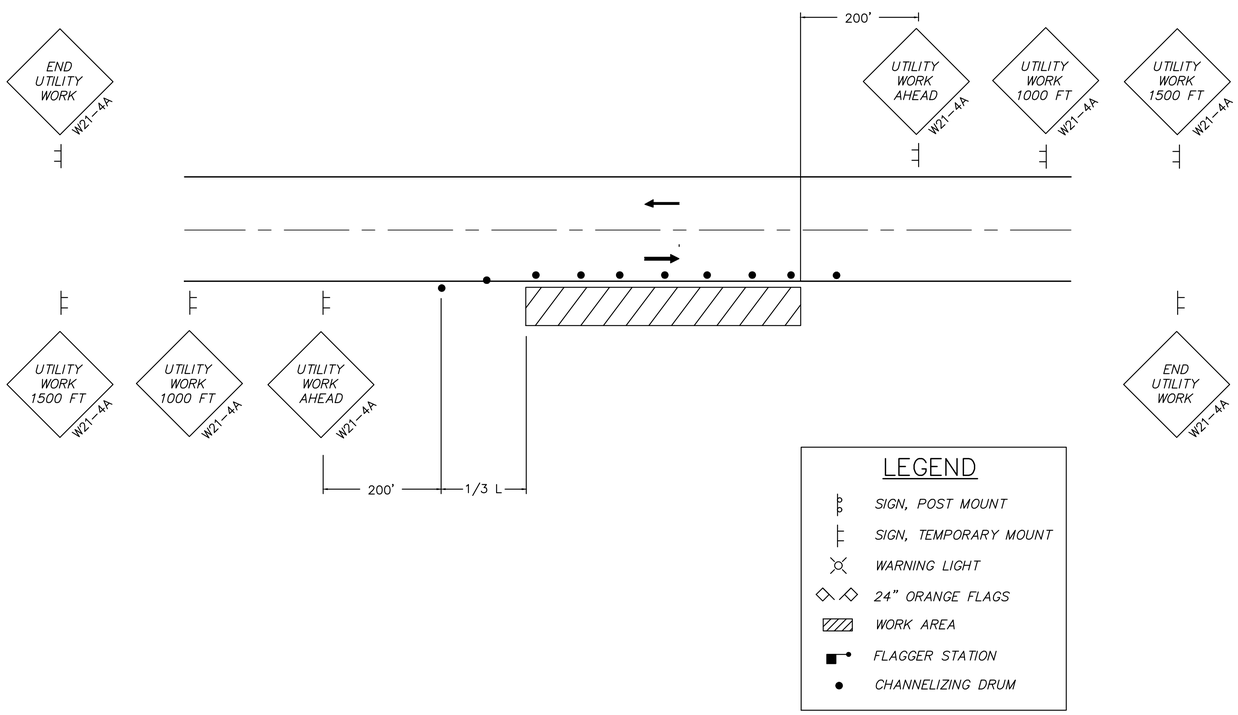
(FOR USE ONLY WHEN EQUIPMENT CANNOT 30 FT OR MORE FROM THE EDGE OF PAVEMENT)



DRUMS TO BE AS FAR AS PRACTICAL FROM EDGE OF PAVEMENT. MINIMUM DESIRABLE DISTANCE IS 15' FOR FREEWAY TYPE FACILITIES AND 10' FOR OTHER FACILITIES. FOR UNUSUAL CONDITIONS, SUCH AS SPECIAL EQUIPMENT OR LIMITED AVAILABLE SPACE. DIMENSIONS LESS THAN DESIRABLE SHALL BE AS DIRECTED BY THE ENGINEER.

TYPICAL APPLICATION – SHOULDER WORK WITH MINOR ENCROACHMENT

NOTE:
CHANNELIZING DRUMS WILL BE REQUIRED AT ALL TIMES WHILE CONSTRUCTION IS ADJACENT TO ANY LANE CARRYING TRAFFIC.



700 ANY CONFLICTING ROADWAY SIGNS SHALL BE REMOVED AND STOCKPILED BY THE CONTRACTOR IN AN AREA DESIGNATED BY THE ENGINEER ONLY WITH ALDOT DISTRICT ENGINEER APPROVAL. SIGNS SHALL BE RESET BY THE CONTRACTOR AT THE END OF EACH WORK DAY WHERE PRIOR REMOVED. ANY SIGNS TO BE REMOVED SHALL BE COORDINATED WITH THE ALDOT DISTRICT ENGINEER PRIOR TO REMOVAL.

701 THE TRAFFIC CONTROL PLAN IS DEVELOPED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE TRAFFIC CONTROL DEVICES INDICATED REPRESENT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS WARRANT ADDITIONAL TRAFFIC CONTROL DEVICE, THEY SHALL BE INSTALLED IN CONFORMANCE WITH THE M.U.T.C.D. AS DIRECTED BY THE ALABAMA DEPARTMENT OF TRANSPORTATION DISTRICT ENGINEER.

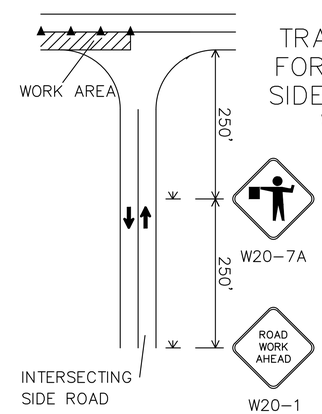
702 DURING NON–WORKING HOURS NO EQUIPMENT OR MATERIAL SHALL BE PARKED OR STORED CLOSER THAN 30 FEET TO THE EDGE OF ANY ROADWAY CARRYING TRAFFIC. WHEN THIS IS NOT PRACTICAL IT SHALL BE PLACED IN AN AREA DESIGNATED BY REFLECTORIZED DRUMS AND WARNING LIGHTS. THIS INCLUDES STORAGE OF TRAFFIC CONTROL DEVICES SUCH AS TRAILER MOUNTED OR OTHER TEMPORARY SIGNS, BARRICADES, DRUMS, ETC. WHICH ARE NOT IN USE DURING NON–WORKING HOURS.

703 THE CONTRACTOR SHALL NOT LEAVE ANY DROPOFF GREATER THAN TWO INCHES UNPROTECTED AT ANY PLACE WHERE CONSTRUCTION IS ADJACENT TO EXISTING PAVEMENT.

704 WHERE FLAGPERSONS ARE REQUIRED STAFF MOUNTED STOP/SLOW PADDLES SHALL BE USED.

705 RESTORATION, CLEANUP AND GRASSING PER ALDOT SPECIFICATIONS SHALL BE ACCOMPLISHED IMMEDIATELY UPON COMPLETION OF THE INSTALLATION.

TRAFFIC CONTROL FOR INTERSECTING SIDE ROADS WITHIN WORK AREA



NOTE: THE W20–1 AND W20–7A SIGNS TO BE USED ON INTERSECTING ROADS SHALL BE 36"X36" IN SIZE. THE TEMPORARY MOUNTED W20–1 ROAD WORK AHEAD SIGN SHOWN ON THE SIDE ROAD WILL NOT BE REQUIRED IF ONE IS ALREADY POST MOUNTED ON THE SIDE STREET.

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CHECKED BY: wc

SANITARY SEWER SYSTEM LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

ALABAMA LICENSED No. 30839 PROFESSIONAL ENGINEER J. WHEELER CROOK JR. 9/27/24

Traffic Control Plan

C-902

sheet of

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE N.E.C. AND THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. WIRING SYSTEMS SHALL CONSIST OF COPPER WIRING INSTALLED IN CONDUIT, MINIMUM WIRE SIZE SHALL BE #12AWG, MINIMUM CONDUIT SIZE SHALL BE 3/4".
3. CONDUIT ABOVE CEILINGS, IN WALLS, ETC. SHALL BE EMT, WHERE NOT SUBJECT TO MOISTURE OR DAMAGE. WHERE SUBJECT TO DAMAGE, OUTSIDE BUILDING SHALL BE GALVANIZED RIGID CONDUIT. CONDUITS (ALL SIZES) ROUTED EXPOSED SHALL BE GALVANIZED RIGID CONDUIT. CONDUITS SHALL BE SIZED IN ACCORDANCE WITH TABLE 1, CHAPTER NINE OF N.E.C.
4. CONDUCTORS SHALL BE 99% COPPER (NO ALUMINUM CONDUCTORS WILL BE ACCEPTED).
5. EQUIPMENT GROUNDING SHALL BE IN ACCORDANCE WITH N.E.C.
6. ALL ELECTRICAL EQUIPMENT SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR.
7. ALL WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCES AND CONFLICTS. REFER TO THE DRAWINGS OF THE RESPECTIVE SYSTEMS PRIOR TO SUBMISSION OF BIDS FOR ADDITIONAL WORK WHICH MAY BE REQUIRED AS PART OF THIS WORK. NO ALLOWANCES WILL BE MADE FOR THE LACK OF COORDINATION BETWEEN DISCIPLINES OR SYSTEMS AND EQUIPMENT.
8. THE WORK SHALL BE COORDINATED WITH THE ENGINEERING DOCUMENTS FOR THE EXACT LOCATION OF LIGHT FIXTURES, EQUIPMENT, DEVICES, ETC. TO ASSURE PROPER PLACEMENT OF SAID DEVICES AND EQUIPMENT. WHERE A CONFLICT EXISTS BETWEEN ANY TWO DOCUMENTS, NOTIFY THE ENGINEER PRIOR TO ANY INSTALLATION FOR RESOLUTION.
9. THE CONTRACTOR SHALL VERIFY ALL EQUIPMENT BEING INSTALLED PRIOR TO INSTALLATION TO ASSURE THAT THE FEEDER, DISCONNECT, STARTER, OVER CURRENT PROTECTION, ETC. MATCHES THE ACTUAL NAMEPLATE DATA AS SUPPLIED BY THE MANUFACTURER.
10. SPECIFIC REQUIREMENTS REGARDING MATERIALS, WORKMANSHIP, AND THE WORK TO BE DONE ARE COVERED BY THE SPECIFICATIONS WHICH COMPLEMENT THE PLANS. WORK CALLED FOR BY THE SPECIFICATIONS OR THE PLANS IS REQUIRED THE SAME AS IF REQUIRED BY BOTH. WHERE A CONFLICT EXISTS BETWEEN THE PLANS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS OF THE TWO SHALL APPLY.
11. REFER TO EQUIPMENT CUT SHEETS AND MANUFACTURER'S DATA FOR ROUGH IN LOCATIONS OF ELECTRICAL CONNECTIONS AND INTERCONNECTIONS OF ALL EQUIPMENT.
12. INSTALL OVER CURRENT PROTECTION AND BRANCH CIRCUIT WIRING PER U.L. LISTING
13. REQUIREMENTS FOR EQUIPMENT SERVED - REFER TO NAMEPLATE DATA.
14. PROVIDE START-UP ASSISTANCE TO OWNER PERSONNEL AND EQUIPMENT TECHNICIANS TO CONFIRM CORRECT PHASE ROTATION, PROPER OPERATION & SEQUENCE, AND CONTROLS.
15. ELECTRICAL CONTRACTOR TO FIELD MARK ELECTRICAL SERVICE EQUIPMENT WITH A CONSPICUOUS AND PERMANENT LABEL THAT INDICATES THE AVAILABLE FAULT CURRENT PER NEC 110.16 & 110.24.
16. ELECTRICAL CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCEMENT OF ANY EXCAVATION.
17. ELECTRICAL EQUIPMENT SHALL BE FULLY RATED FOR THE FAULT CURRENT INDICATED ON THE PLANS. NO SERIES RATING WILL BE ACCEPTED.
18. SUBSURFACE CONDUIT SHALL BE SCHEDULE 40PVC UNO. VERTICAL TURN UPS SHALL BE GRC SWEEP 90S WITH A BITUMASTIC COATING UNO.
19. ALL EMPTY CONDUITS SHALL HAVE A 200 LBS NYLON PULL STRING AND BE CAPPED AT BOTH ENDS. ALL CONDUITS SHALL BE ADEQUATELY SEALED TO PREVENT ENTRY OF RODENTS, WATER, AND OTHER FOREIGN MATTER. DUCT TAPE IS NOT AN ACCEPTABLE MEANS OF CAPPING.
20. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VISIT THE SITE AND TO BECOME THOROUGHLY FAMILIAR WITH ALL EXISTING CONDITIONS PRIOR TO BID DATE AS HE SHALL BE RESPONSIBLE FOR THE SAME.
21. ELECTRICAL CONTRACTOR WILL PROVIDE ALL MATERIAL TO FINALIZE A NEAT, COMPLETE, AND PROPERLY WORKING ELECTRICAL SYSTEM WHICH CONFORMS TO ALL LOCAL CODES AND THE NATIONAL ELECTRICAL CODE (N.E.C.), PLANS, AND SPECIFICATIONS.
22. CONTRACTOR SHALL REPAIR ANY DISTURBED AREA TO SAME COMPACTION, GRADE, SLOPE, ETC. AS ORIGINAL AREA INCLUDING REPLACEMENT OF SOD, GRASS, ROCK, GRAVEL, RIP-RAP, ETC. TO THE SATISFACTION OF THE OWNER AND ENGINEER.
23. SLOPE ALL AREAS AROUND CONCRETE PADS TO PREVENT WATER PONDING.
24. CLEAN UP ALL DEBRIS AROUND CONSTRUCTION SITE DAILY.
25. REMOVE ANY SPILLED DIRT, CONCRETE, ETC. FROM ANY DRIVEWAYS, ROADWAYS OR CONSTRUCTION SITE AS DIRECTED BY OWNER OR ENGINEER.
26. CONTRACTOR SHALL CUT AND PATCH ALL CONCRETE TO MATCH EXISTING WHERE REQUIRED TO INSTALL UNDERGROUND CONDUIT.

LEGEND

FLOAT SWITCH	▶
MOTOR - HORSEPOWER AS INDICATED.	(M)
CONDUIT OR RACEWAY UNDERGROUND OR CONCEALED IN FLOOR SLAB.	⌒
ABOVE GROUND CONDUIT.	——
WALL SWITCH SPST 48" AFF TO CENTER UNO 20A 120/277V. WEATHER PROOF.	$WP
GROUND CONNECTION, EXOTHERMIC.	●
GROUND ROD & CONNECTION. ('T' INDICATES TEST WELL)	(●) T
GROUND CONNECTION, 1-HOLE OR 2-HOLE SOLDERLESS MECHANICAL OR COMPRESSION LUG.	■
GROUND CABLE FOR GROUNDING ELECTRODE SYSTEM (GES).	—— G ——

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERES	FIX	FIXTURE	P	POLE
AC	AIR CONDITIONING	FLUOR.	FLUORESCENT	PC	PHOTO CELL
ACT	ABOVE COUNTER TOP	GFI	GROUND FAULT INTERRUPTER	PMS	PROPERTY MANAGEMENT SYSTEM
AFF	ABOVE FINISHED FLOOR	GRC	GALVANIZED RIGID STEEL CONDUIT	PNL	PANEL
AIC	AMPERES INTERRUPTING CAPACITY (MIN)	GRND, G	GROUND	PVC	POLYVINYL CHLORIDE
APPROX.	APPROXIMATELY	HP	HORSEPOWER	RS	RAPID START
AWG	AMERICAN WIRE GAUGE	IAW	IN ACCORDANCE WITH	RSC	RIGID STEEL CONDUIT
ANN	ANNUNCIATOR	IF	INSIDE FROST	SD	SMOKE DETECTOR
BLDG	BUILDING	IG	ISOLATED GROUND	SIM	SIMILAR
BPS	BOLTED PRESSURE SWITCH	INCAN	INCANDESCENT	S/S	STAINLESS STEEL
C	CONDUIT	J	JUNCTION	SPST	SINGLE POLE SINGLE THROW
CAT	CATALOG	KVA	KILO-VOLT-AMPERE	T	TRANSFORMER
CATV	CABLE TELEVISION	KW	KILOWATT	TC	TRAY CABLE
CKT	CIRCUIT	LAHJ	LOCAL AUTHORITY HAVING JURISDICTION	TBB	TELEPHONE BACKBOARD
CONT	CONTINUATION	LGT	LIGHT	TEL	TELEPHONE
CR	CARD READER	M	METER	TM	TV MONITOR
DD	DUCT DETECTOR	MAT	MASTER ANTENNA TELEVISION	TYP	TYPICAL
DIA	DIAMETER	MAX	MAXIMUM	UNO	UNLESS OTHERWISE NOTED
DIM	DIMENSION	MCM	THOUSAND CIRCULAR MILS	V	VOLT
DP	DISTRIBUTION PANEL	MDP	MAIN DISTRIBUTION PANEL	W	WIRE
DWG	DRAWINGS	MIN	MINIMUM	WP	WEATHERPROOF
EA	EACH	MLO	MAIN LUGS ONLY	WW	WARM WHITE
EC	EMPTY CONDUIT	MPC	MAIN POWER CENTER	XFMR	TRANSFORMER
ELEC	ELECTRICAL	MTD, MTG	MOUNT (ED), (ING)	PDC	POWER DISTRIBUTION CONTROLLER
EMER	EMERGENCY	N	NORTH	E.W.	EACH WAY
EMT	ELECTRICAL METALLIC TUBING	NEC	NATIONAL ELECTRIC CODE		
EOL	END OF LINE RESISTOR	NIC	NOT IN CONTRACT		
EQUIP	EQUIPMENT	NO	NUMBER		
F	FUSED	NTS	NOT TO SCALE		
FA	FIRE ALARM	OC	ON CENTER		
FIN	FINISH	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION		

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LIFT STATION UPGRADES
TOWN OF CAMP HILL

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Construction Drawings

ELECTRICAL NOTES, ABBREVIATIONS, & LEGEND

E-001

1 E-002 LIFT STATIONS #1, #2, #6, #7, #8 ELECTRICAL WORK

SCALE: 1" = 500'

GENERAL NOTES:

1. INSTALL NEW NEMA 4X CELLULAR SCADA PANEL AT EXISTING LIFT STATION SITES #1, #2, #6, #7, AND #8. SEE DETAIL 2/E-002 FOR MOUNTING REQUIREMENTS.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING ALL SITES TO DETERMINE MOUNTING LOCATIONS AND CONNECTION REQUIREMENTS. LOCATIONS FOR EACH SITE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

3. 120V POWER CIRCUIT WITH OVERCURRENT PROTECTION FOR NEW SCADA PANEL SHALL BE SUPPLIED FROM THE EXISTING PUMP CONTROL PANEL. OVERCURRENT PROTECTION SHALL BE SIZED AS REQUIRED FOR THE FLA OF THE NEW SCADA PANEL. EXISTING 120V TRANSFORMER, WIRING AND ASSOCIATED OVERCURRENT PROTECTION IN THE EXISTING PUMP CONTROL PANEL SHALL BE UPGRADED IF REQUIRED FOR THE ADDITIONAL SCADA PANEL LOAD.

4. INSTALL NEW TERMINAL BLOCKS IN EXISTING PUMP CONTROL PANEL FOR CONTROL WIRING AS REQUIRED FOR CONNECTION OF DIGITAL CIRCUITS TO NEW SCADA PANEL.

5. INSTALL NEW LAMINATED WIRING DIAGRAM WITH ADHESIVE BACKING ON THE INSIDE COVER OF THE PUMP CONTROL PANEL, INCORPORATING CHANGES MADE TO THE EXISTING PUMP CONTROL PANEL.

6. REQUIREMENTS FOR CELLULAR SCADA PANEL ARE AS FOLLOWS:

A. REMOTE MONITORING

1. THE CONTROLLER SHALL BE CELLULAR BASED AND SHALL INCLUDE (1) YEAR OF CELLULAR DATA SERVICE.

2. MONITORING SHALL INCLUDE DIGITAL INPUT MONITORING/ALARMS ONLY. INSTANTANEOUS ANALOG I/O SHALL NOT BE REQUIRED.

3. THE MONITORING SYSTEM SHALL BE COMPLETELY PROGRAMMED AND CONFIGURED USING A STANDARD WEB BROWSER.

4. PROPRIETARY PROGRAMMING SOFTWARE OR SKILLS SHALL NOT BE REQUIRED.

5. UPON SUCCESSFUL LOGIN INTO THE WEB SITE, THE USER SHALL BE ABLE TO VISUALIZE ALL OF STATION REGISTERED TO THAT USER ON AN INTERACTIVE MAP. THE STATION ICON SHALL BE DISPLAYED ON THE MAP AT THE ACTUAL ROAD LOCATION. CLICKING ON STATION ICON SHALL OPEN THE STATION PAGE AND DISPLAY ALL MONITORED DATA.

6. USERS SHALL BE ABLE TO GENERATE HISTORICAL TRENDING GRAPHS BASED ON A SELECTABLE TIME PERIOD AND A GIVEN VALUE. BELOW ARE THE AVAILABLE VALUES:

a.) PUMP1 CYCLE/HR/DAY/WEEK/MONTH/YEAR

b.) PUMP2 CYCLE/HR/DAY/WEEK/MONTH/YEAR

c.) PUMP1 RUNTIME/HR/DAY/WEEK/MONTH/YEAR

d.) PUMP2 RUNTIME/HR/DAY/WEEK/MONTH/YEAR

7. THE USER SHALL BE ABLE TO EXPORT THE GENERATED GRAPHS INTO A .PDF FILE FOR PRINTING OR TO ATTACH IN AN E-MAIL. THE DATA SHALL BE AVAILABLE IN A TABULAR FORMAT FOR EXPORT TO A .XLS FORMAT SPREADSHEET FOR FURTHER ANALYSIS.

8. EACH ALARM SHALL BE CONFIGURED TO SEND AN SMS (TEXT) NOTIFICATION OR/AND AN E-MAIL TO ONE OR MULTIPLE USERS. THE SYSTEM SHALL ALLOW MULTIPLE USERS FOR SEPARATE LOGIN PURPOSE AND ALARM NOTIFICATION. A LOG OF ALL ALARM NOTIFICATIONS SENT SHALL BE DISPLAYED ON THE WEB SITE, AND SHALL BE AVAILABLE FOR EXPORT INTO A .XLS FORMAT SPREADSHEET FOR FURTHER ANALYSIS. ALARMS SHALL BE CONFIGURABLE TO SEND A NOTIFICATION UPON ACTIVATION AND ANOTHER UPON DE-ACTIVATION (FAULT NO LONGER ACTIVE).

9. A MOBILE APPLICATION SHALL BE AVAILABLE FOR ANDRIOD AND IOS DEVICES. THE MOBILE APP SHALL OFFER THE FOLLOWING FUNCTIONALITY:

a.) VIEWING MULTIPLE STATIONS ON THE MAP

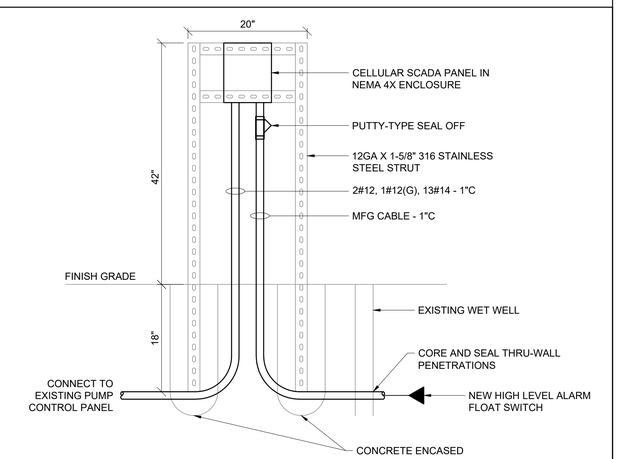
b.) VIEWING STATION STATUS, DATA, AND TRENDS

c.) SETTING UP OR EDITING ALARM NOTIFICATIONS

B. THE CONTROLLER SHALL BE PRIMEX PUMP WATCH LITE, OR ENGINEER APPROVED EQUAL.

C. THE CONTROLLER SHALL BE MOUNTED IN A UL LISTED NEMA 4X ENCLOSURE.

7. SEE PROJECT MANUAL FOR ADDITIONAL SPECIFICATIONS.



2 E-002 **SCADA SUPPORT DETAIL**

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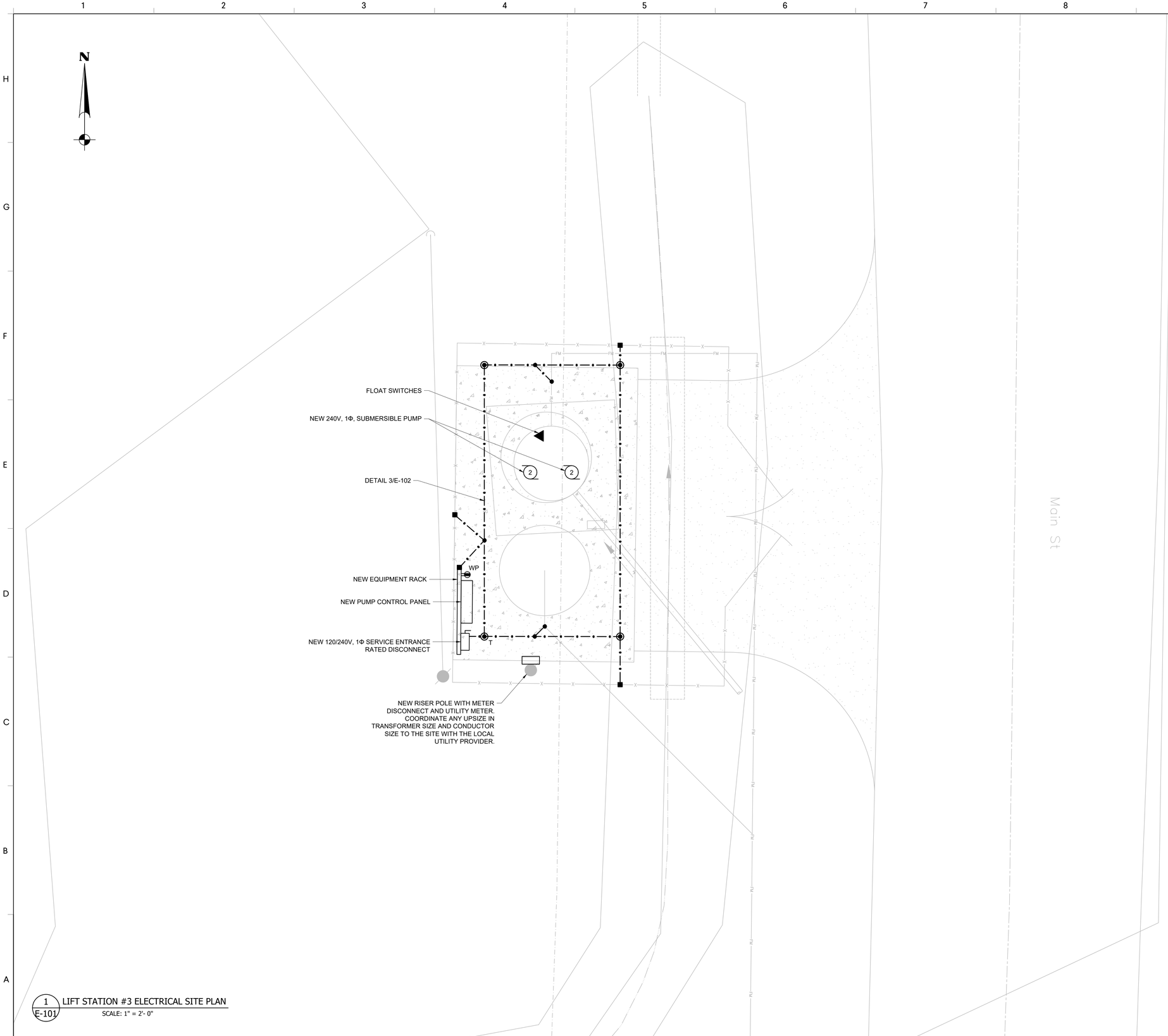
Construction Drawings

LIFT STATIONS #1, #2, #6, #7, #8 ELECTRICAL WORK

E-002

DRAWING FILE: V:\+Projects\2023 Projects\+MGM\VMGM230041 - Camp Hill 2022 CWSRF Sewer System Improv\+Drawings\Electrical\E-002 - LIFT STATIONS #1 #2 #6 #7 #8.dwg
PLOTTED: Jan 08, 2024 - 10:pm



1 / E-101 LIFT STATION #3 ELECTRICAL SITE PLAN

SCALE: 1" = 2'- 0"

GENERAL NOTES:

1. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT FROM SITE.
2. SEE RISER DIAGRAM FOR MORE INFORMATION ON CONDUIT AND WIRE.

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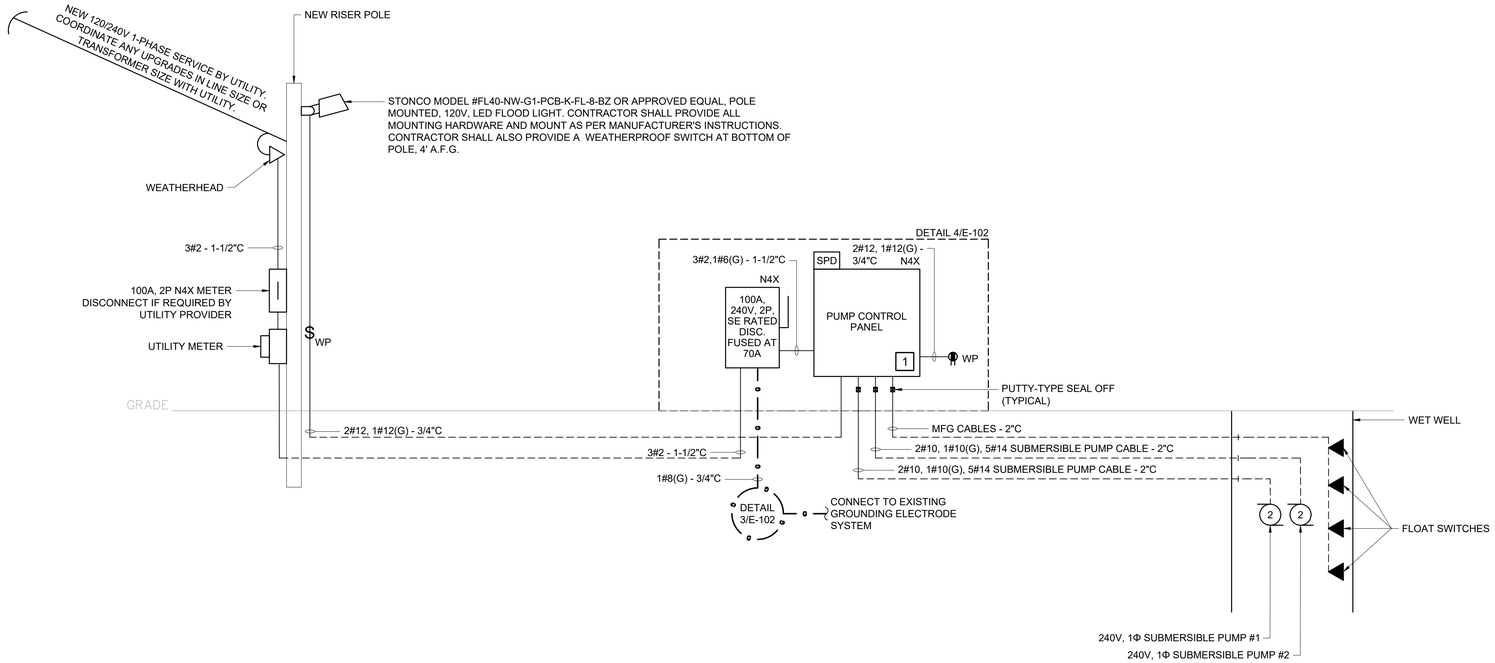
Construction Drawings

LIFT STATION #3
SITE PLAN

E-101

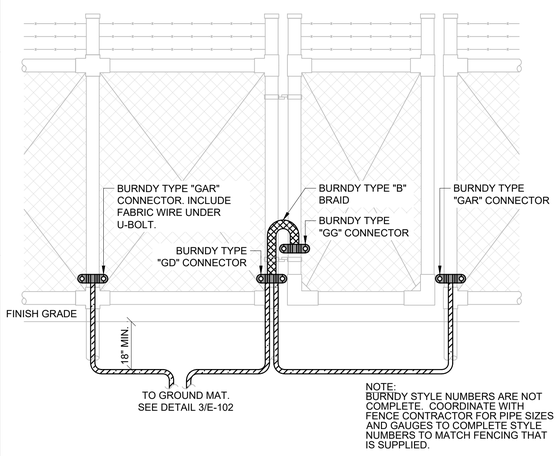
KEYED NOTES: #

1. CELLULAR SCADA PANEL MOUNTED INSIDE PUMP CONTROL PANEL.



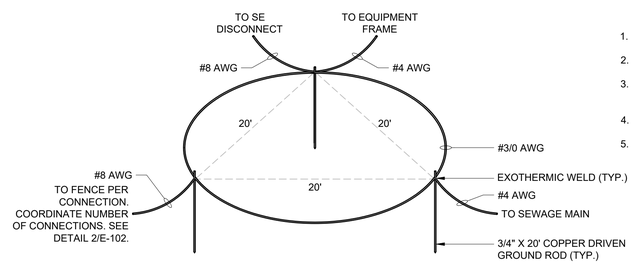
1 / E-102 LIFT STATION #3 MAIN RISER DIAGRAM

Not To Scale



2 / E-102 FENCE GROUNDING DETAIL

Not to Scale

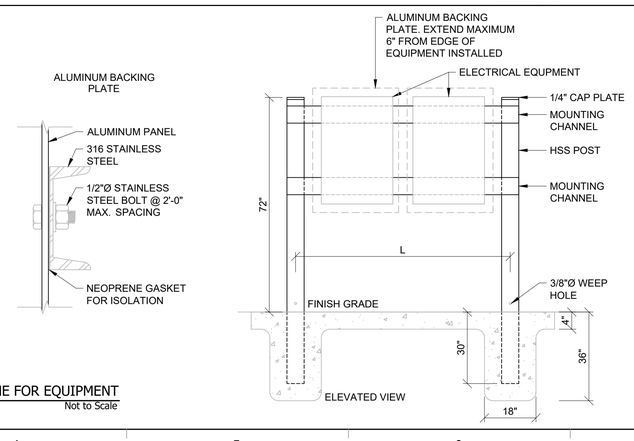


3 / E-102 GROUND MAT

NOT TO SCALE

GROUND MAT DETAIL NOTES

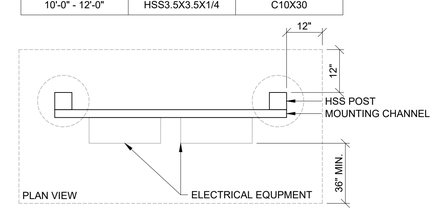
1. ALL WIRE FOR GROUND MAT SHALL BE #3/0 AWG UNO.
2. GROUND RODS SHALL BE 3/4" X 20' SECTIONAL COPPER GROUND RODS.
3. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CONDUCTORS SHALL BE EXOTHERMIC WELDS.
4. GROUND MAT SHALL BE INSTALLED 30" BELOW GRADE MINIMUM.
5. IN ADDITION TO THE GROUND MAT, THE CONTRACTOR SHALL PROVIDE A COMPLETE GROUNDING SYSTEM IAW NEC ARTICLE 250.



4 / E-102 MOUNTING FRAME FOR EQUIPMENT

Not to Scale

MOUNTING FRAME SIZING SCHEDULE		
HSS SPACING (L)	HSS SIZE	MOUNTING CHANNEL SIZE
0'-0" - 6'-11"	HSS3X3X1/4	C4X4.5
7'-0" - 9'-11"	HSS3X3X5/16	C8X11.5
10'-0" - 12'-0"	HSS3.5X3.5X1/4	C10X30



NOTES:
1) DESIGNED FOR 120 MPH WIND SPEED.
2) GROUND CONDITIONS 300 LBF LATERAL RESISTANCE MIN.
3) EQUIPMENT DL. 1000 lbs. MAX.
4) ALL FRAME MATERIAL SHALL BE MADE OF 316 STAINLESS STEEL

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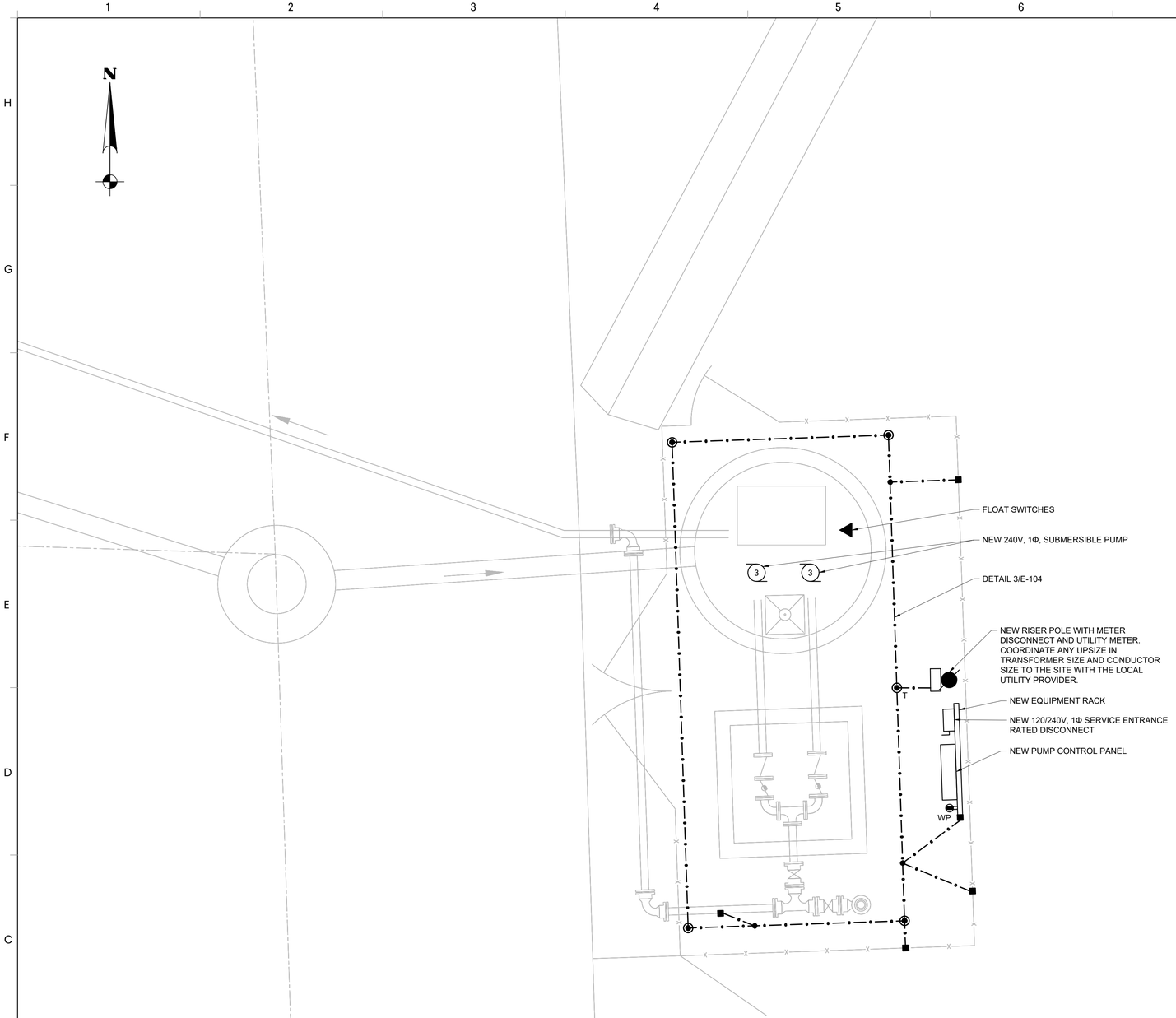
Construction Drawings

LIFT STATION #3
ELECTRICAL RISER
DIAGRAM & DETAILS

E-102



1 / E-103 LIFT STATION #4 ELECTRICAL SITE PLAN

SCALE: 1" = 2'- 0"

GENERAL NOTES:

1. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT FROM SITE.
2. SEE RISER DIAGRAM FOR MORE INFORMATION ON CONDUIT AND WIRE.

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TOWN OF CAMP HILL

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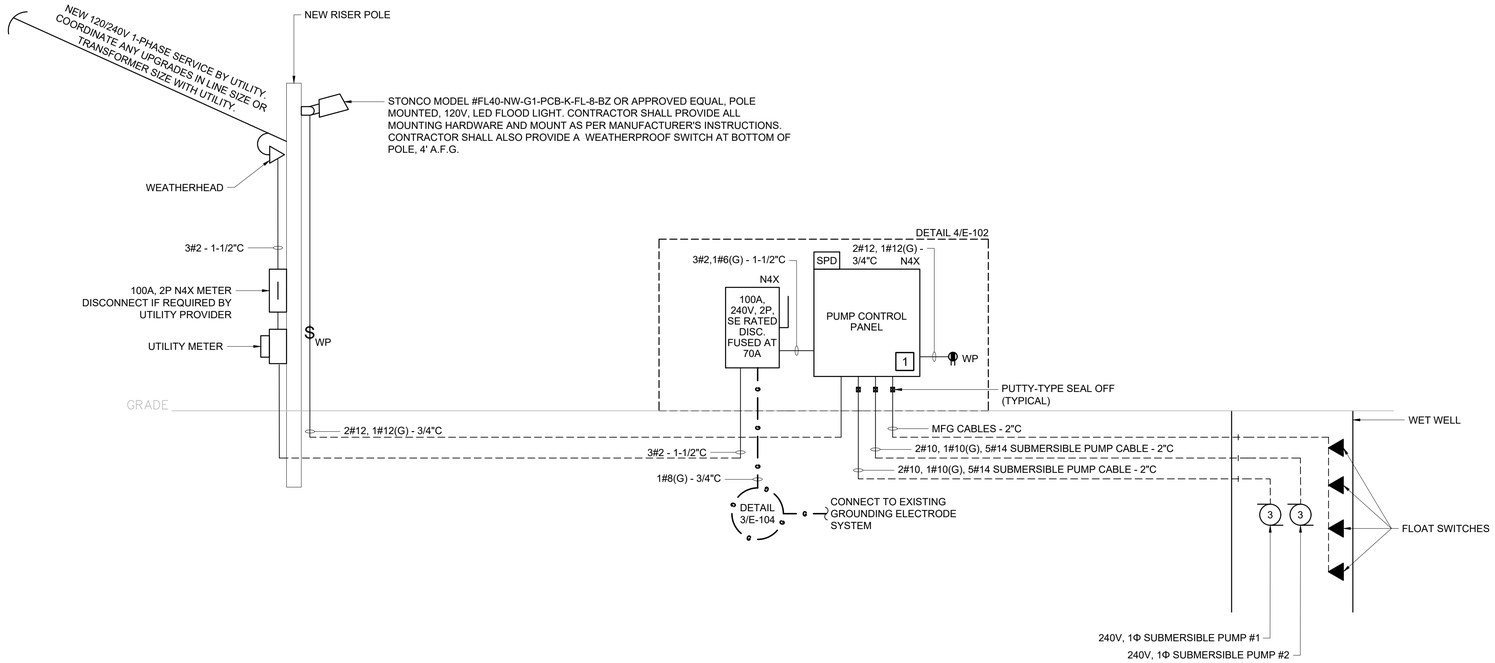
Construction Drawings

LIFT STATION #4
SITE PLAN

E-103

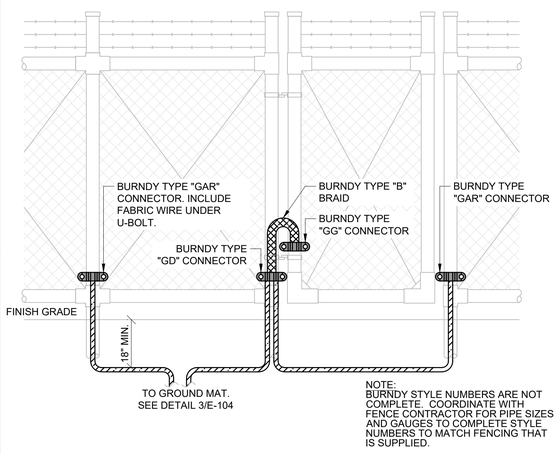
KEYED NOTES: #

1. CELLULAR SCADA PANEL MOUNTED INSIDE PUMP CONTROL PANEL.



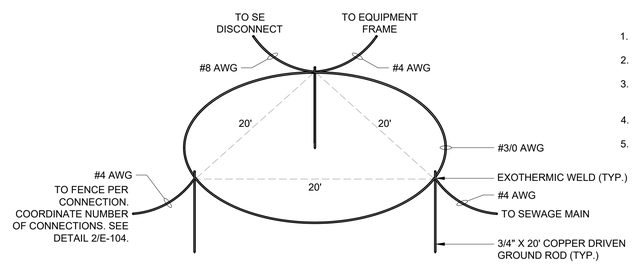
1 / E-104 LIFT STATION #4 MAIN RISER DIAGRAM

Not To Scale



2 / E-104 FENCE GROUNDING DETAIL

Not to Scale

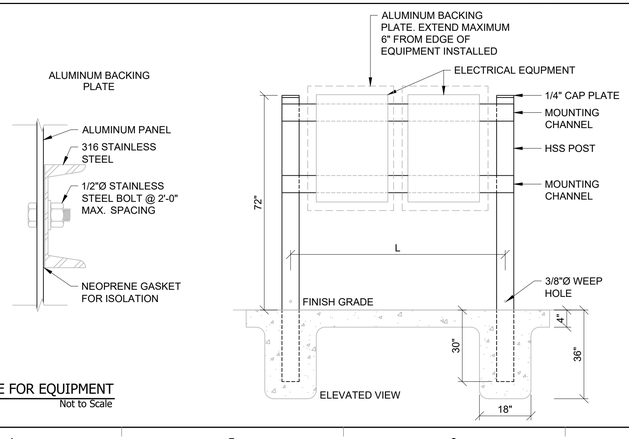


3 / E-104 GROUND MAT

NOT TO SCALE

GROUND MAT DETAIL NOTES

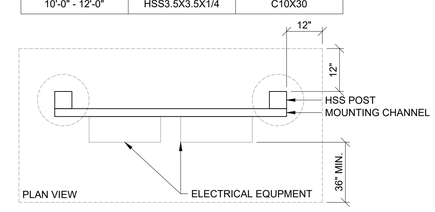
1. ALL WIRE FOR GROUND MAT SHALL BE #3/0 AWG UNO.
2. GROUND RODS SHALL BE 3/4" X 20' SECTIONAL COPPER GROUND RODS.
3. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CONDUCTORS SHALL BE EXOTHERMIC WELDS.
4. GROUND MAT SHALL BE INSTALLED 30" BELOW GRADE MINIMUM.
5. IN ADDITION TO THE GROUND MAT, THE CONTRACTOR SHALL PROVIDE A COMPLETE GROUNDING SYSTEM IAW NEC ARTICLE 250.



4 / E-104 MOUNTING FRAME FOR EQUIPMENT

Not to Scale

MOUNTING FRAME SIZING SCHEDULE		
HSS SPACING (L)	HSS SIZE	MOUNTING CHANNEL SIZE
0'-0" - 6'-11"	HSS3X3X1/4	C4X4.5
7'-0" - 9'-11"	HSS3X3X5/16	C8X11.5
10'-0" - 12'-0"	HSS3.5X3.5X1/4	C10X30



NOTES:
1) DESIGNED FOR 120 MPH WIND SPEED.
2) GROUND CONDITIONS 300 LBF LATERAL RESISTANCE MIN.
3) EQUIPMENT DL. 1000 lbs. MAX.
4) ALL FRAME MATERIAL SHALL BE MADE OF 316 STAINLESS STEEL

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CHECKED BY: JRD

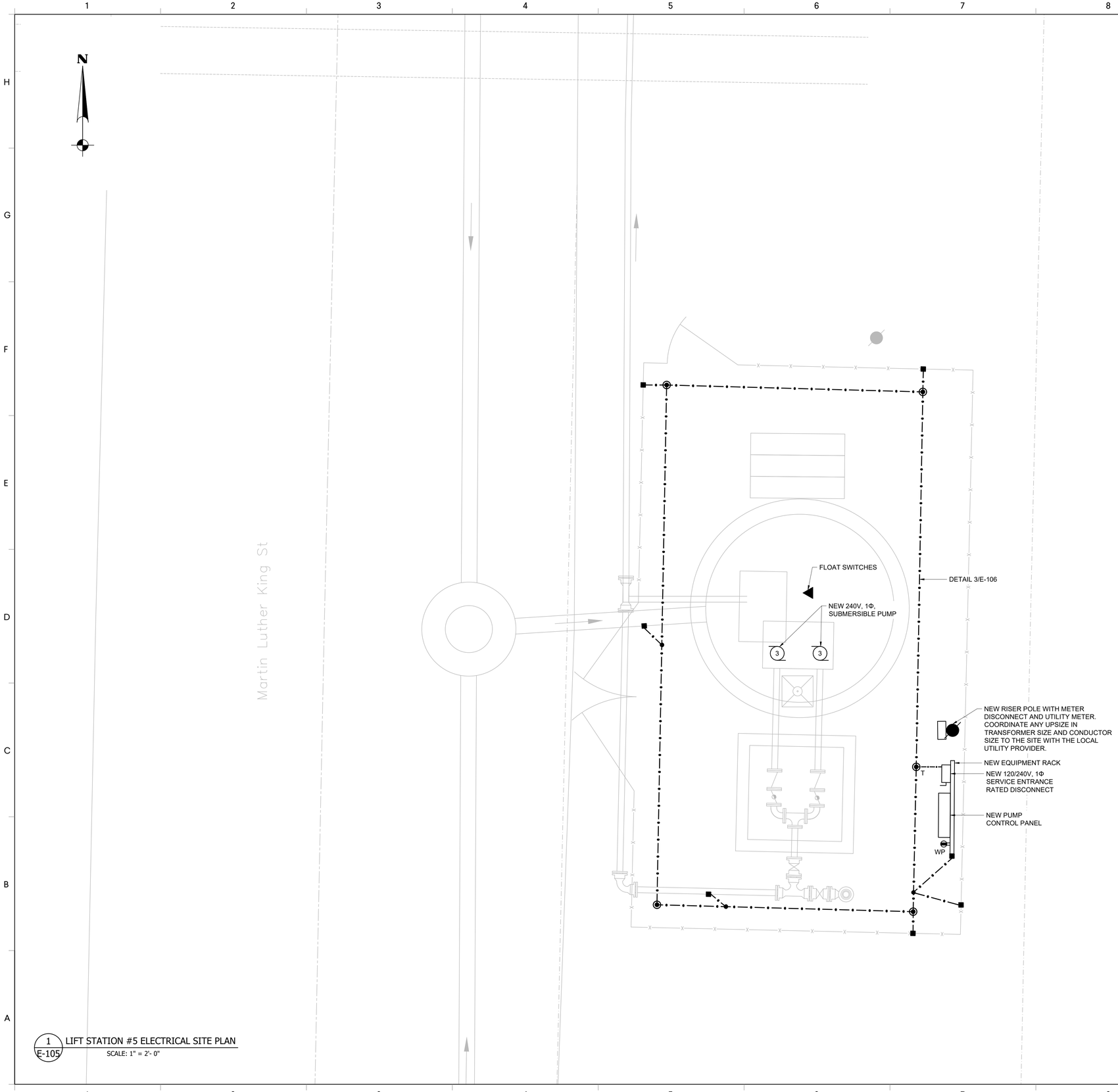
SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

LIFT STATION #4
ELECTRICAL RISER
DIAGRAM & DETAILS

E-104



1 / E-105 LIFT STATION #5 ELECTRICAL SITE PLAN

SCALE: 1" = 2'- 0"

GENERAL NOTES:

1. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT FROM SITE.
2. SEE RISER DIAGRAM FOR MORE INFORMATION ON CONDUIT AND WIRE.

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SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

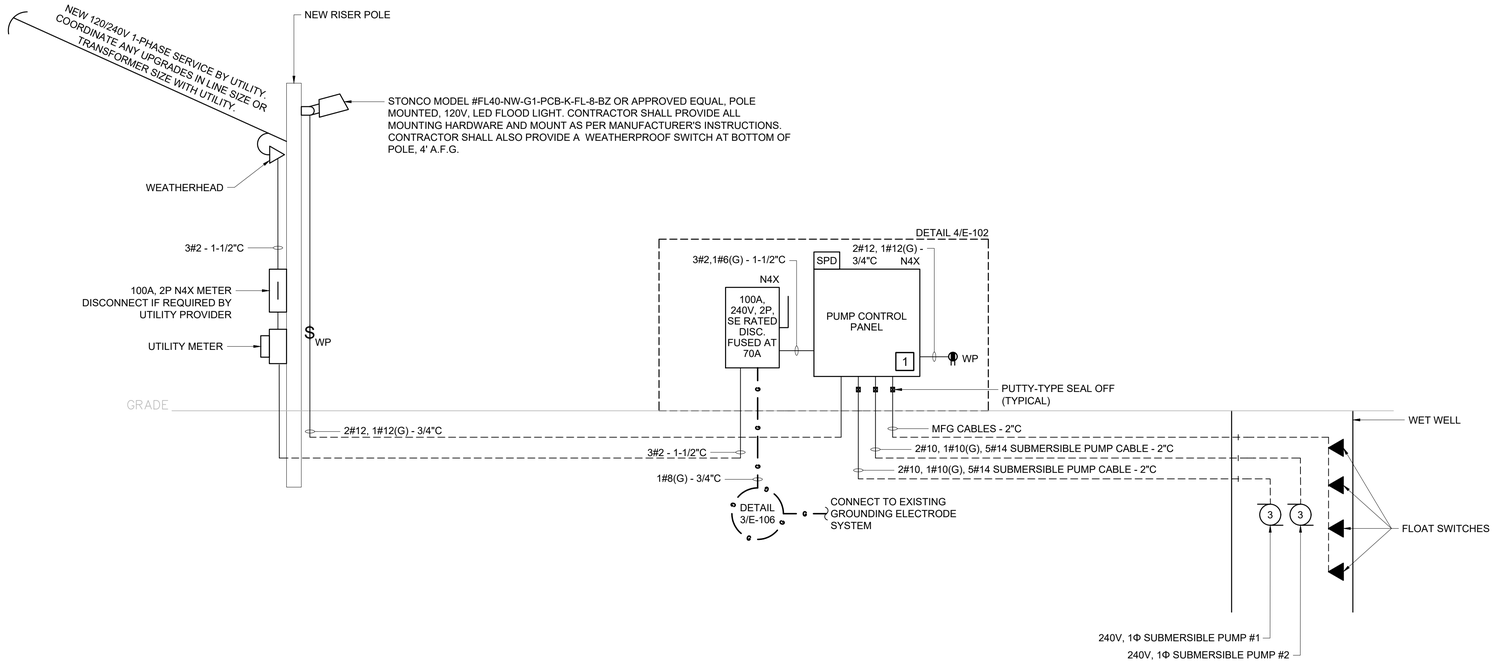
STATE OF ALABAMA LICENSED No. 52673 PROFESSIONAL ENGINEER

LIFT STATION #5
SITE PLAN

E-105

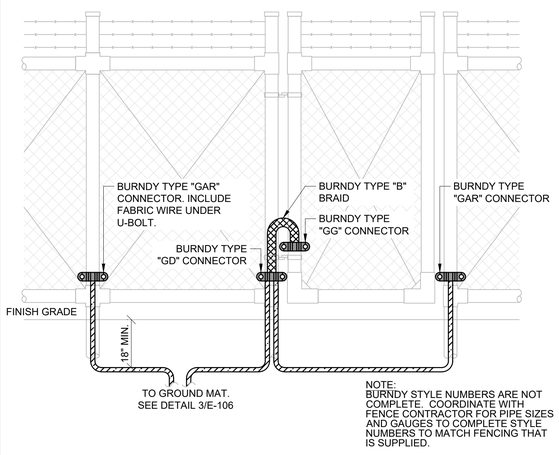
KEYED NOTES: #

1. CELLULAR SCADA PANEL MOUNTED INSIDE PUMP CONTROL PANEL.



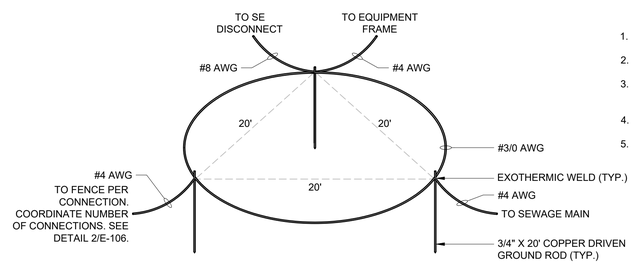
1 / E-106 LIFT STATION #5 MAIN RISER DIAGRAM

Not To Scale



2 / E-106 FENCE GROUNDING DETAIL

Not to Scale

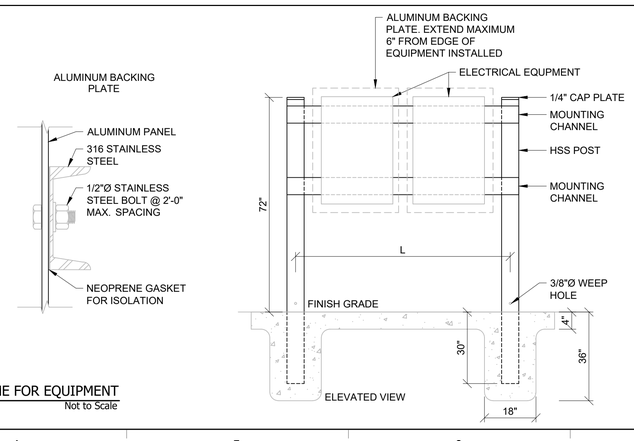


3 / E-106 GROUND MAT

NOT TO SCALE

GROUND MAT DETAIL NOTES

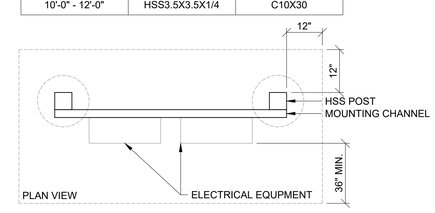
1. ALL WIRE FOR GROUND MAT SHALL BE #3/0 AWG UNO.
2. GROUND RODS SHALL BE 3/4" X 20' SECTIONAL COPPER GROUND RODS.
3. ALL CONNECTIONS BETWEEN GROUND RODS AND GROUND CONDUCTORS SHALL BE EXOTHERMIC WELDS.
4. GROUND MAT SHALL BE INSTALLED 30" BELOW GRADE MINIMUM.
5. IN ADDITION TO THE GROUND MAT, THE CONTRACTOR SHALL PROVIDE A COMPLETE GROUNDING SYSTEM IAW NEC ARTICLE 250.



4 / E-106 MOUNTING FRAME FOR EQUIPMENT

Not to Scale

MOUNTING FRAME SIZING SCHEDULE		
HSS SPACING (L)	HSS SIZE	MOUNTING CHANNEL SIZE
0'-0" - 6'-11"	HSS3X3X1/4	C4X4.5
7'-0" - 9'-11"	HSS3X3X5/16	C8X11.5
10'-0" - 12'-0"	HSS3.5X3.5X1/4	C10X30



NOTES:
1) DESIGNED FOR 120 MPH WIND SPEED.
2) GROUND CONDITIONS 300 LBF LATERAL RESISTANCE MIN.
3) EQUIPMENT DL. 1000 lbs. MAX.
4) ALL FRAME MATERIAL SHALL BE MADE OF 316 STAINLESS STEEL

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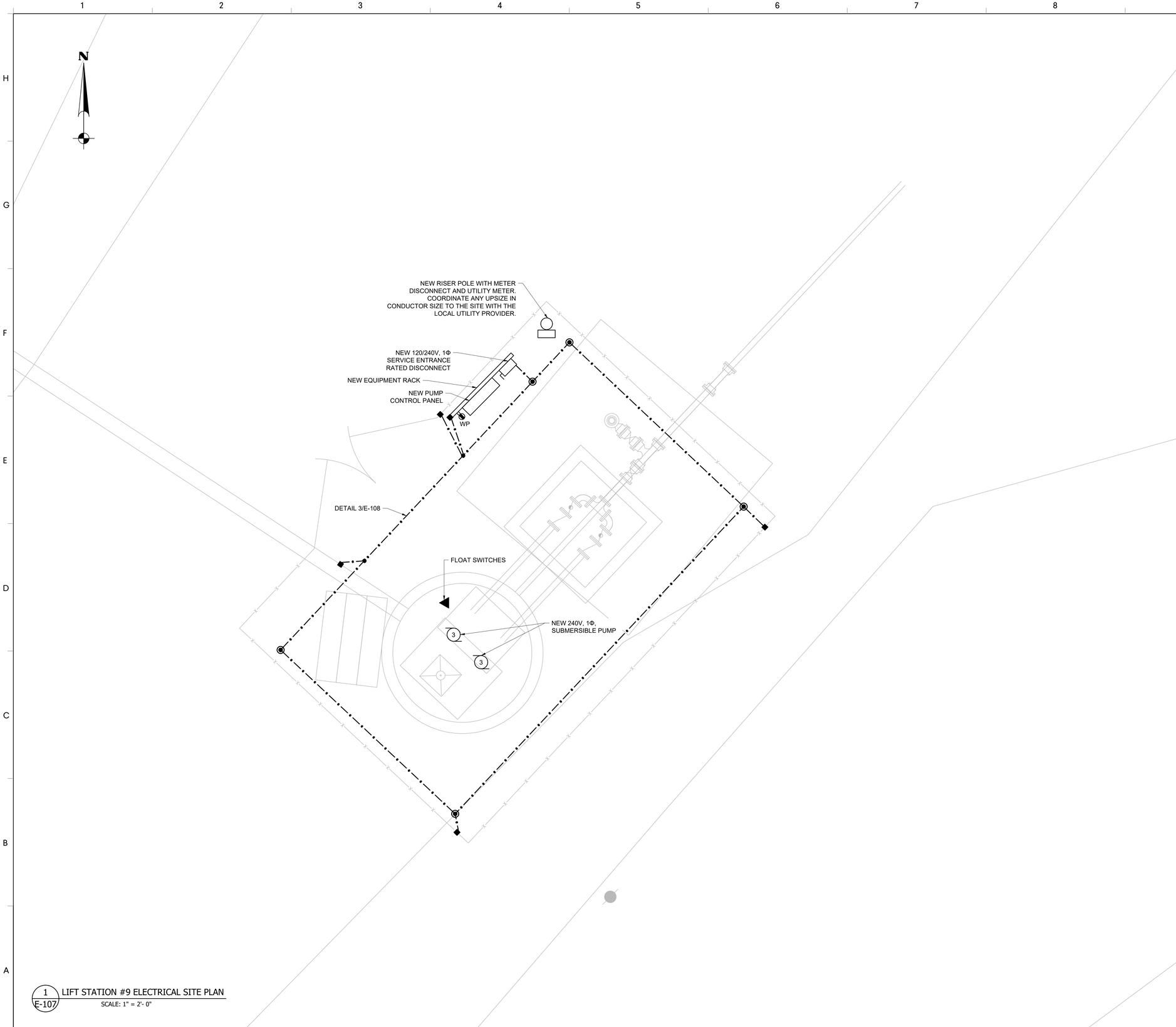
SANITARY SEWER SYSTEM
LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

LIFT STATION #5
ELECTRICAL RISER
DIAGRAM & DETAILS

E-106



1 / E-107 LIFT STATION #9 ELECTRICAL SITE PLAN

SCALE: 1" = 2'- 0"

GENERAL NOTES:

1. REMOVE ALL EXISTING ELECTRICAL EQUIPMENT FROM SITE.
2. SEE RISER DIAGRAM FOR MORE INFORMATION ON CONDUIT AND WIRE.

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LIFT STATION UPGRADES
TOWN OF CAMP HILL

CMGM 22-0156(2)

Construction Drawings

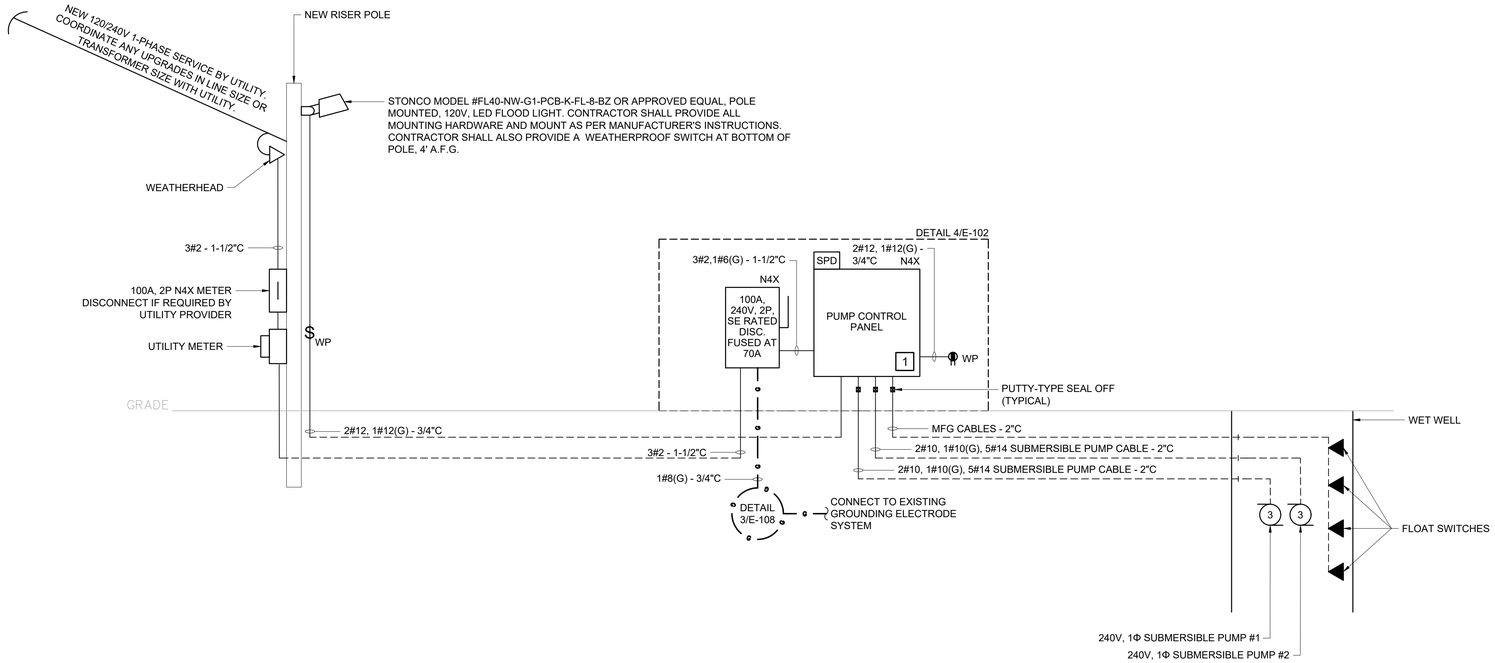
LICENSED
B. A. HARRIS
No. 52673
PROFESSIONAL
ENGINEER
STATE OF ALABAMA

LIFT STATION #9
SITE PLAN

E-107

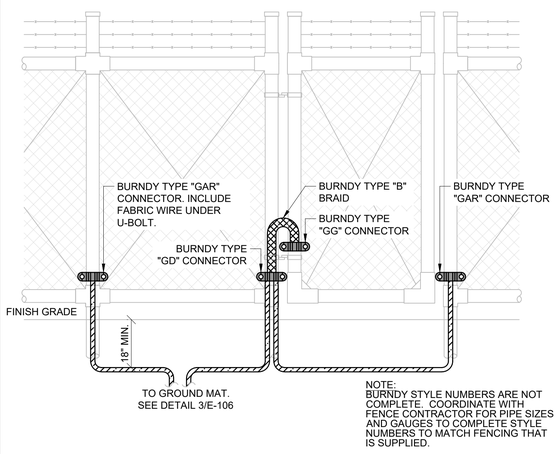
KEYED NOTES: #

1. CELLULAR SCADA PANEL MOUNTED INSIDE PUMP CONTROL PANEL.



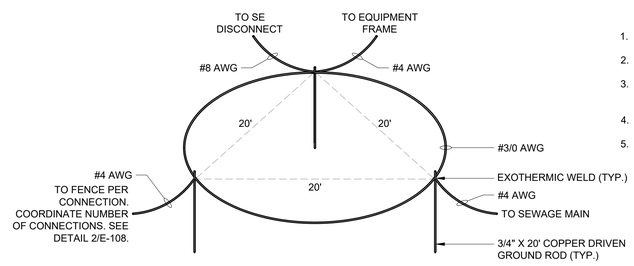
1 / E-108 LIFT STATION #9 MAIN RISER DIAGRAM

Not To Scale



2 / E-108 FENCE GROUNDING DETAIL

Not to Scale



3 / E-108 GROUND MAT

NOT TO SCALE

GROUND MAT DETAIL NOTES

1. ALL WIRE FOR GROUND MAT SHALL BE #3/0 AWG UNO.
2. GROUND RODS SHALL BE 3/4" X 20' SECTIONAL COPPER GROUND RODS.
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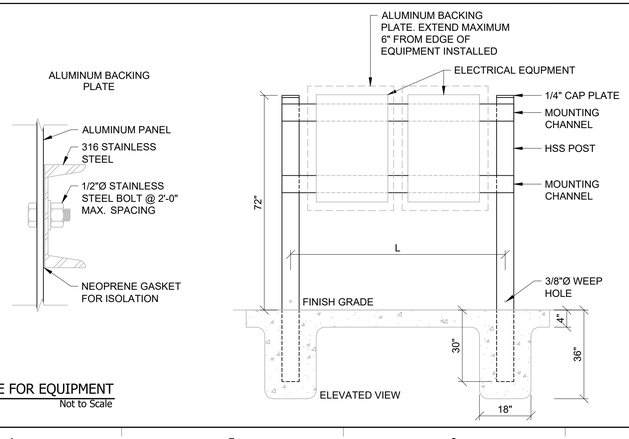

4 / E-108 MOUNTING FRAME FOR EQUIPMENT

Not to Scale

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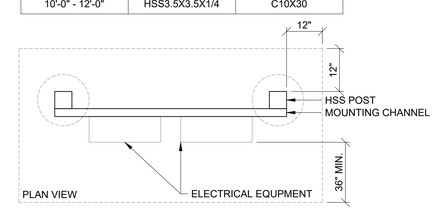

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Construction Drawings

LIFT STATION #9
ELECTRICAL RISER
DIAGRAM & DETAILS

E-108