

**Addendum No. 1
to the Bidding Documents**

**Wright Way Sewer Pump Station Upgrade Project
Town of Ayer
Ayer, MA**

Issued July 31, 2023

Under the provisions of Article 7 of Section 00200, Instructions to Bidders, Bidders are informed that the Bidding Documents for the above mentioned Project are modified, corrected, and/or supplemented as follows. Addendum No. 1 becomes part of the Bidding Documents and Contract Documents.

Acknowledge receipt of this addendum by inserting its number on Page 00410-4, Article 5.2 of the Bid form. Failure to acknowledge receipt of the Addendum may subject the Bidder to disqualification.

Project Manual Changes

Item 1-1 Section 00000 – Cover Sheet

Add the attached Cover Sheet following the current Cover and before the Table of Contents.

Drawing Changes

Item 1-2 Structural Drawings; S-001 and S-101

Delete Drawings S-001 and S-101 in their entirety and **replace** it with the attached Drawings S-001 and S-101.

Item 1-3 Electrical Drawings; E-001, E-100, E-101, E-501 and E-601

Delete Drawings E-001, E-100, E-101, E-501 and E-601 in their entirety and **replace** it with the attached Drawings E-001, E-100, E-101, E-501 and E-601.

END OF ADDENDUM NO. 1

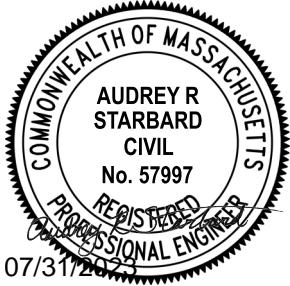
\\tighebond.com\data\Data\Projects\A\A5004 Ayer\014 Wright Way Pump Station\Bidding\Addenda\Addendum No. 1\ADDENDUM NO 1.docx

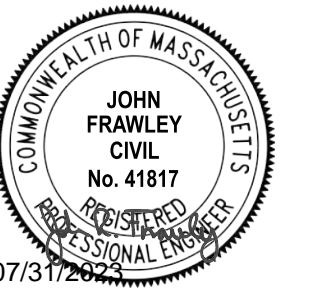
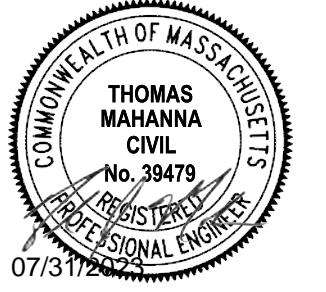
Wright Way Sewer Pump Station Project

DPW Project No. 24DPW01

Ayer Department of Public Works
Ayer, Massachusetts

July 2023





GENERAL

- STRUCTURAL WORKS SHALL CONFORM TO STATE BUILDING CODE, LATEST EDITION, INCLUDING MOST RECENT ADDENDA, AND CONTRACT DOCUMENTS. IN CASE OF CONFLICT, MOST STRINGENT REQUIREMENT SHALL GOVERN.
- CONTRACTOR SHALL VERIFY AND COORDINATE DIMENSIONS RELATED TO THIS PROJECT.
- CONTRACTOR SHALL EXAMINE DRAWINGS FOR ALL TRADES FOR THE VERIFICATION OF LOCATION AND DIMENSIONS OF ALL CHASES, INSERTS, OPENINGS, SLEEVES AND OTHER PROJECT REQUIREMENTS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
- PROVIDE CAULKING AT ALL CONTROL JOINTS. PROVIDE COMPRESSIBLE FILLER AND SEALANT AT ALL EXPANSION AND ISOLATION JOINTS.
- PROVIDE PREMOLDED JOINT FILLER WHERE SLABS ON GRADE ABUT WALLS AND COLUMNS.
- ALL ELEVATIONS ARE BASED ON USGS DATUM.

REINFORCEMENT

- DETAILING, FABRICATION, AND ERECTION OF REINFORCEMENT, UNLESS OTHERWISE NOTED, SHALL CONFORM TO ACI "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)" AND ACI "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 315)", LATEST EDITION.
- STEEL REINFORCEMENT UNLESS OTHERWISE SHOWN SHALL CONFORM TO ASTM A615 GRADE 60 MINIMUM (YIELD STRENGTH - 60,000 PSI).
- WELDED WIRE FABRIC REINFORCEMENT SHALL CONFORM TO: ASTM A185.
- PROVIDE AND SCHEDULE ON SHOP DRAWINGS, ALL NECESSARY ACCESSORIES TO HOLD REINFORCEMENT SECURELY IN POSITION: MINIMUM REQUIREMENTS SHALL BE: HIGH CHAIRS, 4'-0" ON CENTER, #5 SUPPORT BAR FOR HIGH CHAIRS, SLAB BOLSTERS, 3'-6" ON CENTER, ALL WIRE CHAIRS AND BOLSTERS TO BE PLASTIC TIPPED.
- THE CONCRETE PROTECTIVE COVERING FOR REINFORCEMENT SHALL BE AS FOLLOWS, UNLESS OTHERWISE SHOWN:
 - CAST-IN-PLACE CONCRETE.

	EXPOSED TO EARTH, WATER OR WEATHER	NOT EXPOSED TO EARTH, WATER, OR WEATHER
(a) SLAB ON GRADE	3 INCHES	2 INCHES
(b) SLAB/WALL #3 TO #5 INCL'S	1 1/2 INCHES	3/4 INCHES

(c) NOTE: MAXIMUM DEVIATION FROM THESE REQUIREMENTS SHALL BE +1/4" FOR SECTIONS TEN (10) INCHES OR LESS, AND +1/2" FOR SECTIONS OVER TEN (10) INCHES THICK.
 - PRECAST CONCRETE

	EXPOSED TO EARTH, WATER OR WEATHER	NOT EXPOSED TO EARTH, WATER, OR WEATHER
(a) SLABS #11 BAR AND SMALLER	1 1/4 INCHES	5/8 INCHES
(b) WALL #11 BAR AND SMALLER	3/4 INCHES	5/8 INCHES
 - IN NO CASE SHALL THE COVER BE LESS THAN THE BAR DIAMETER.
 - WHERE CONTINUOUS BARS ARE CALLED FOR THEY SHALL BE RUN CONTINUOUSLY AROUND CORNERS AND LAPPED AT NECESSARY SPLICES OR HOOKED AT DISCONTINUOUS ENDS.
- WHERE REINFORCEMENT IS NOT SHOWN ON DRAWINGS, PROVIDE REINFORCEMENT IN ACCORDANCE WITH APPLICABLE TYPICAL DETAILS OR SIMILAR TO THAT SHOWN FOR MOST NEARLY SITUATIONS, AS DETERMINED BY THE ENGINEER. IN NO CASE SHALL REINFORCEMENT BE LESS THAN MINIMUM REINFORCEMENT PERMITTED BY THE APPLICABLE CODES, NOR LESS THAN THE FOLLOWING:
 - STRUCTURAL SLABS - .0028 GROSS CONCRETE AREA IN EACH DIRECTION
 - STRUCTURAL WALLS - .0028 GROSS CONCRETE AREA IN EACH DIRECTION
- WHERE REINFORCEMENT IS CALLED FOR IN SECTION, REINFORCEMENT IS CONSIDERED TYPICAL WHEREVER THE SECTION APPLIES.
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- WELDED WIRE FABRICS SHALL LAP 12" OR TWO SPACES, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.
- REINFORCEMENT COUPLER SPLICES SHALL BE MECHANICAL DEVICES CAPABLE OF TRANSMITTING THE ULTIMATE TENSILE AND COMPRESSIVE STRENGTH OF THE BAR.
- INSTALLATION OF REINFORCEMENT SHALL BE COMPLETE AT LEAST 24 HOURS PRIOR TO SCHEDULED CONCRETE PLACEMENT. NOTIFY ENGINEER OF COMPLETION AT LEAST 24 HOURS PRIOR TO SCHEDULED COMPLETION OF REINFORCEMENT PLACEMENT.
- REINFORCEMENT SHALL BE SET BEFORE PLACING CONCRETE. SETTING ANY REINFORCEMENT INTO WET CONCRETE IS PROHIBITED.

CONCRETE

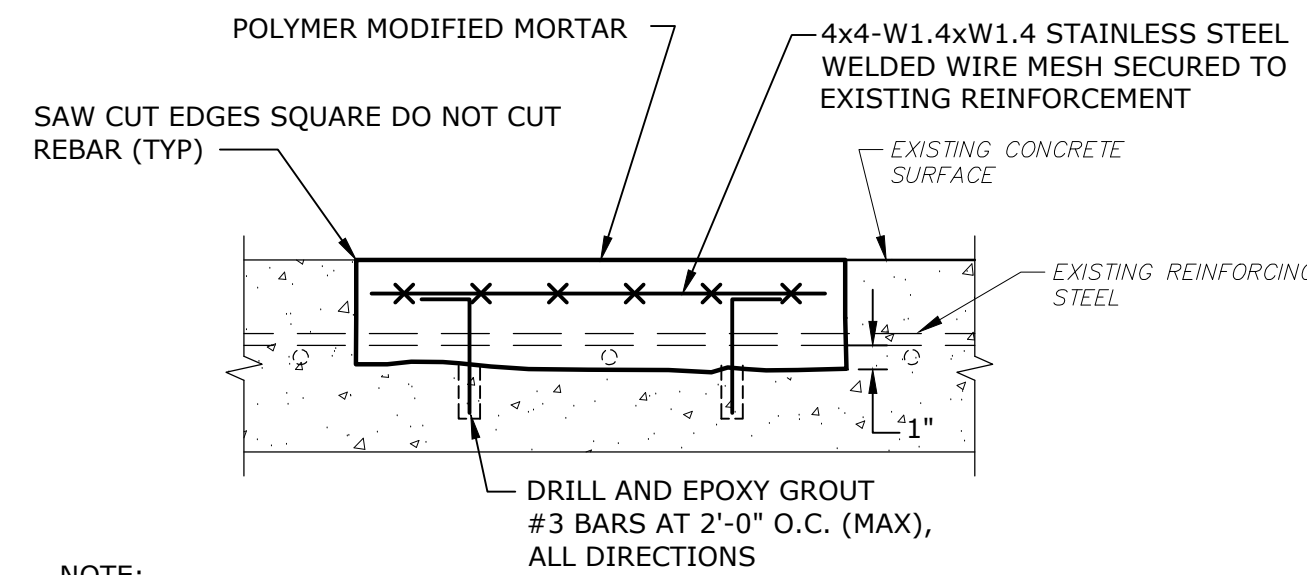
- CONCRETE WORK SHALL CONFORM TO THE LATEST EDITIONS OF THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318), AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDING (ACI 301).
- CONCRETE SHALL BE CONTROLLED CONCRETE, PROPORTIONED, MIXED, AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE TESTING AGENCY OR THE ENGINEER.
- CONCRETE SHALL BE NORMAL WEIGHT CONCRETE AND SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS OTHERWISE NOTED AND SHALL BE AIR ENTRAINED (SEE SPECS).
- THE USE OF CONSTRUCTION JOINTS WHERE SHOWN ON THE DRAWINGS IS MANDATORY. OMISSIONS, ADDITIONS OR CHANGES SHALL NOT BE MADE EXCEPT WITH THE SUBMISSION OF A WRITTEN REQUEST TOGETHER WITH DRAWINGS OF THE PROPOSED JOINT LOCATIONS FOR APPROVAL OF THE STRUCTURAL ENGINEER.
- WHERE CONSTRUCTION JOINTS ARE NOT SHOWN, DRAWINGS SHOWING LOCATION OF CONSTRUCTION JOINTS AND CONCRETE PLACING SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PREPARATION OF THE REINFORCEMENT SHOP DRAWINGS.
- CONCRETE SLABS SHALL BE CAST SO THAT THE SLAB THICKNESS IS AT NO POINT LESS THAN THAT INDICATED ON THE DRAWINGS.
- CONCRETE SLABS AND WALLS SHALL BE CAST ALTERNATELY OR IN A CHECKERBOARD FASHION SO THAT ADJACENT SECTIONS ARE PLACED NO SOONER THAN THREE DAYS APART. AT LEAST TWO DAYS MUST ELAPSE AFTER PLACING CONCRETE IN WALLS BEFORE PLACING FLOOR SYSTEM SUPPORTED THEREON.
- CONCRETE SHALL BE PLACED WITHOUT HORIZONTAL CONSTRUCTION JOINTS EXCEPT WHERE SHOWN OR NOTED.
- EXPOSED EDGES OF CONCRETE ELEMENTS SHALL HAVE CHAMFERED CORNERS
- ONLY CRITICAL CONSTRUCTION JOINTS ARE SHOWN. SEE SPECIFICATIONS FOR REQUIRED MAXIMUM SPACING OF CONSTRUCTION JOINTS.

BAR SIZE DESIGNATION		DEVELOPMENT LENGTH (INCHES)	SPlice LENGTH (INCHES)	
ENGLISH	METRIC	Ld	CLASS B	CLASS B TOP BARS
#3	#10	15	19	25
#4	#13	19	25	33
#5	#16	24	31	40
#6	#19	29	37	48
#7	#22	42	54	70
#8	#25	48	62	81
#9	#29	54	70	91
#10	#32	61	79	103

REBAR SPLICE LENGTH SCHEDULE

NOTES:

- IF CLEAR SPACING BETWEEN THE REBARS IS LESS THAN THREE BAR DIAMETERS, OR IF COVER IS LESS THAN TWO BAR DIAMETERS, INCREASE THE SPLICE LENGTH BY AN ADDITIONAL 50%.
- IF EPOXY COATED REBAR IS USED, INCREASE THE SPLICE LENGTH BY AN ADDITIONAL 50%.
- IF LIGHTWEIGHT CONCRETE IS USED, INCREASE THE SPLICE LENGTH BY AN ADDITIONAL 30%.
- THE MINIMUM REBAR SPLICE LENGTH SCHEDULE IS BASED ON F'c= 4,000 PSI AND Fy= 60,000 PSI. ADJUST FOR OTHER STRENGTHS USING ACI-318.
- FOR HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW, INCREASE THE DEVELOPMENT LENGTH BY AN ADDITIONAL 30%.
- WHEN BARS OF DIFFERENT SIZE ARE LAP SPLICED, THE SPLICE LENGTH SHALL BE THE LARGER OF EITHER THE DEVELOPMENT LENGTH OF THE LARGER BAR OR THE SPLICE LENGTH OF THE SMALLER BAR.



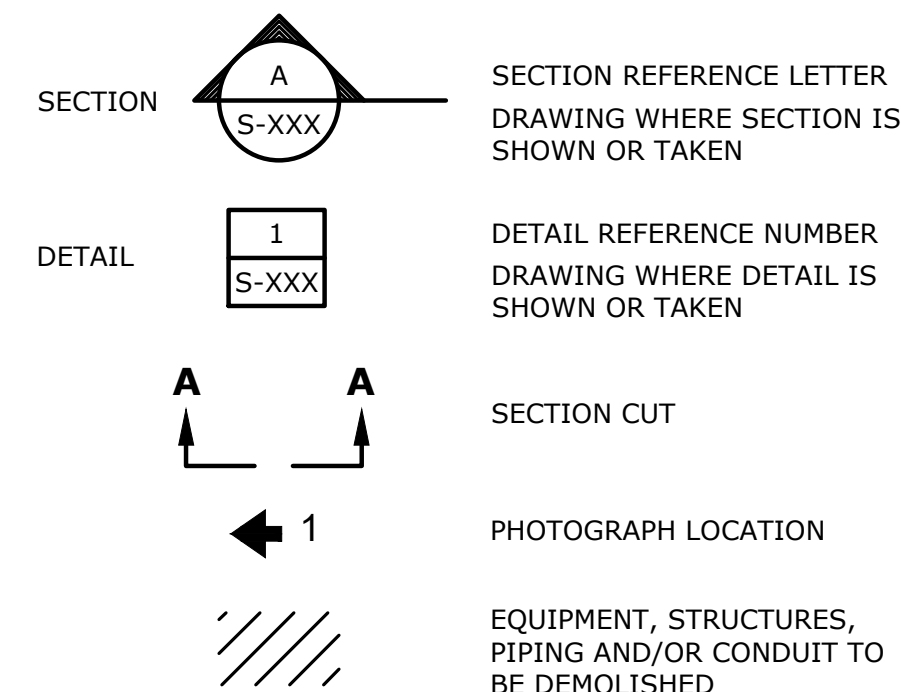
NOTE:
USE SIKATOP 122 PLUS OR APPROVED EQUAL FOR HORIZONTAL APPLICATIONS.
USE SIKATOP 123 PLUS OR APPROVED EQUAL FOR VERTICAL AND OVERHEAD APPLICATIONS.

TYPICAL SPALLED CONCRETE REPAIR
NO SCALE

CONCRETE REPAIR METHODS FOR SPALLED CONCRETE SURFACES

- REPAIR FLOOR SLAB AREAS THAT WILL NOT BE COVERED BY NEW EQUIPMENT PADS.
- THE REPAIRS TO FLOOR SLABS AND SPALLED CONCRETE SURFACE AREAS SHALL BE COMPLETED USING THE FOLLOWING CONSTRUCTION PROCEDURES:
 - SNAP CHALK LINES 2 INCHES MINIMUM FROM THE EDGE OF THE SPALLED CONCRETE SURFACE. SAW CUT CONCRETE ALONG CHALK LINES. DO NOT CUT REINFORCING STEEL.
 - REMOVE ALL DELAMINATED AND DETERIORATED CONCRETE AND ADDITIONAL CONCRETE TO THE EDGE OF THE SAW CUTS. "SOUND" CONCRETE SURFACES ADJACENT TO THE REPAIR AREA WITH A MASONS HAMMER TO CONFIRM CONCRETE INTEGRITY.
 - MECHANICALLY CLEAN REINFORCING STEEL TO REMOVE ALL VISIBLE CORROSION.
 - DRILL AND EPOXY GROUT #3 BARS WITHIN REPAIR AREA AS REQUIRED TO SECURE WELDED WIRE FABRIC.
 - PRIME THE REPAIR AREA WITH BONDING AGENT.
 - PLACE AND SECURE 4X4-W1.4XW1.4 GALVANIZED WELDED WIRE FABRIC ALONG ENTIRE REPAIR SURFACE.
 - INSTALL REPAIR MORTAR PER MANUFACTURER'S INSTRUCTIONS.
 - MOIST CURE REPAIR FOR 2 TO 3 DAYS, COVERED WITH A "BURLENE" CONCRETE CURING BLANKET.

GENERAL SYMBOLS



Wright Way Sewer Pump Station Upgrade Project



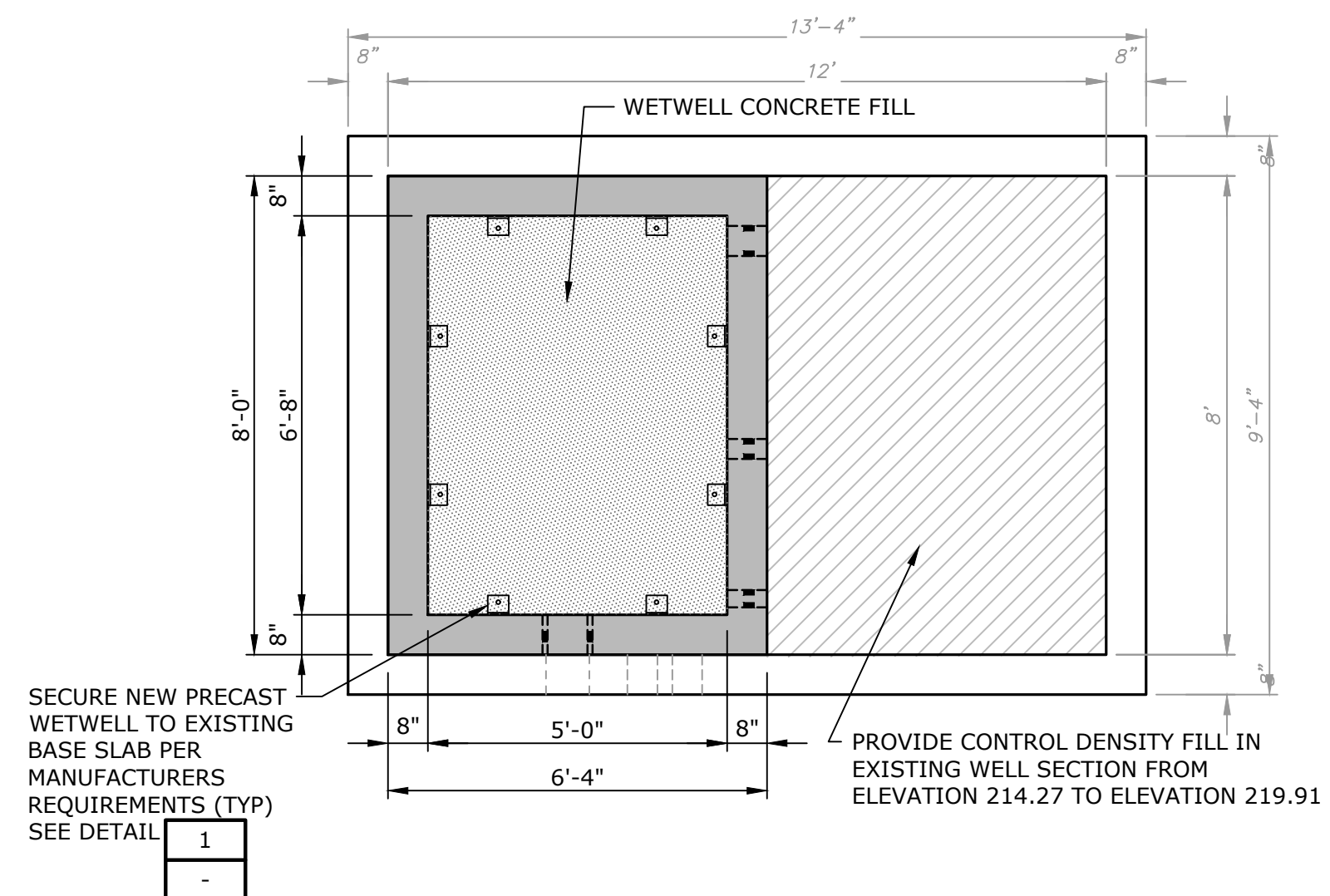
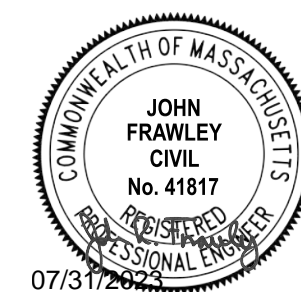
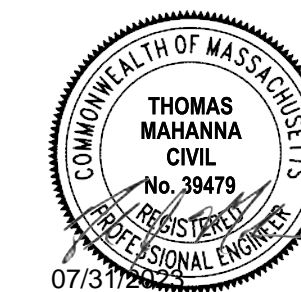
Ayer, Massachusetts

MARK	DATE	DESCRIPTION
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PROJECT NO: A5004-014		
DATE: JULY 2023		
FILE: A5004-014-S-001.dwg		
DRAWN BY: TMP		
DESIGNED/CHECKED BY: AS, DRF		
APPROVED BY: TJM		

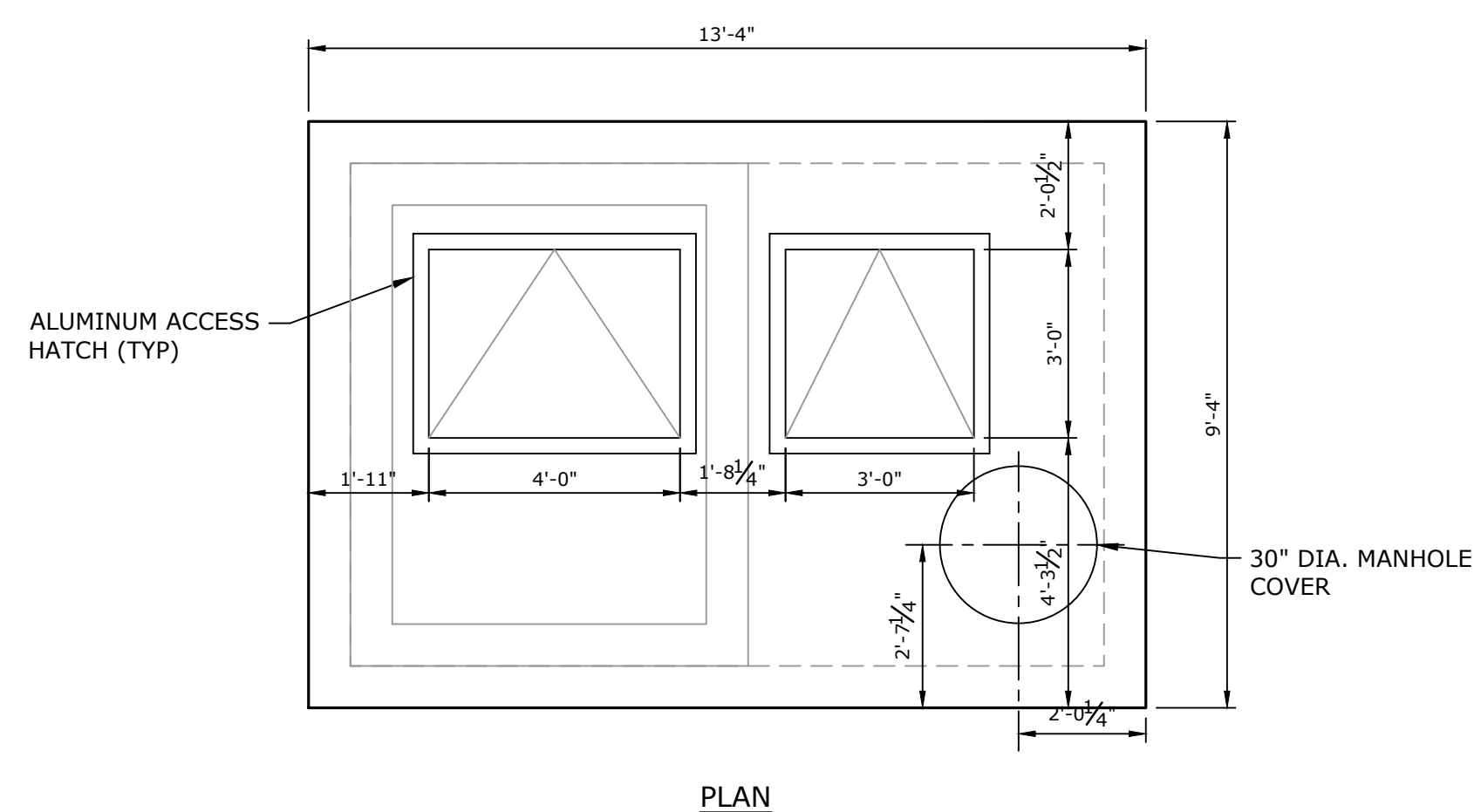
STRUCTURAL NOTES AND DETAILS

SCALE: NO SCALE

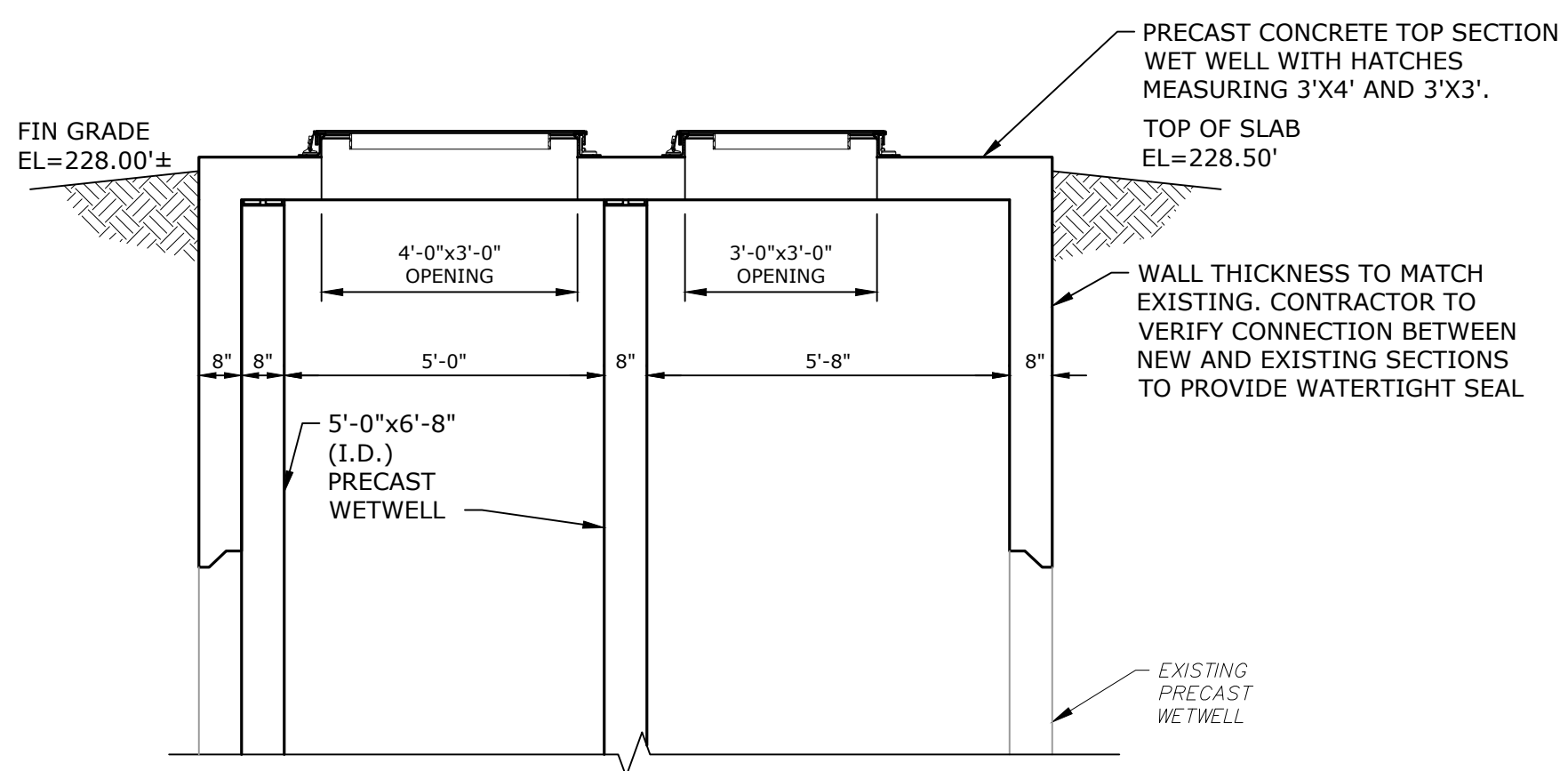
S-001



PUMP STATION WETWELL PLAN
3/8" = 1'-0"

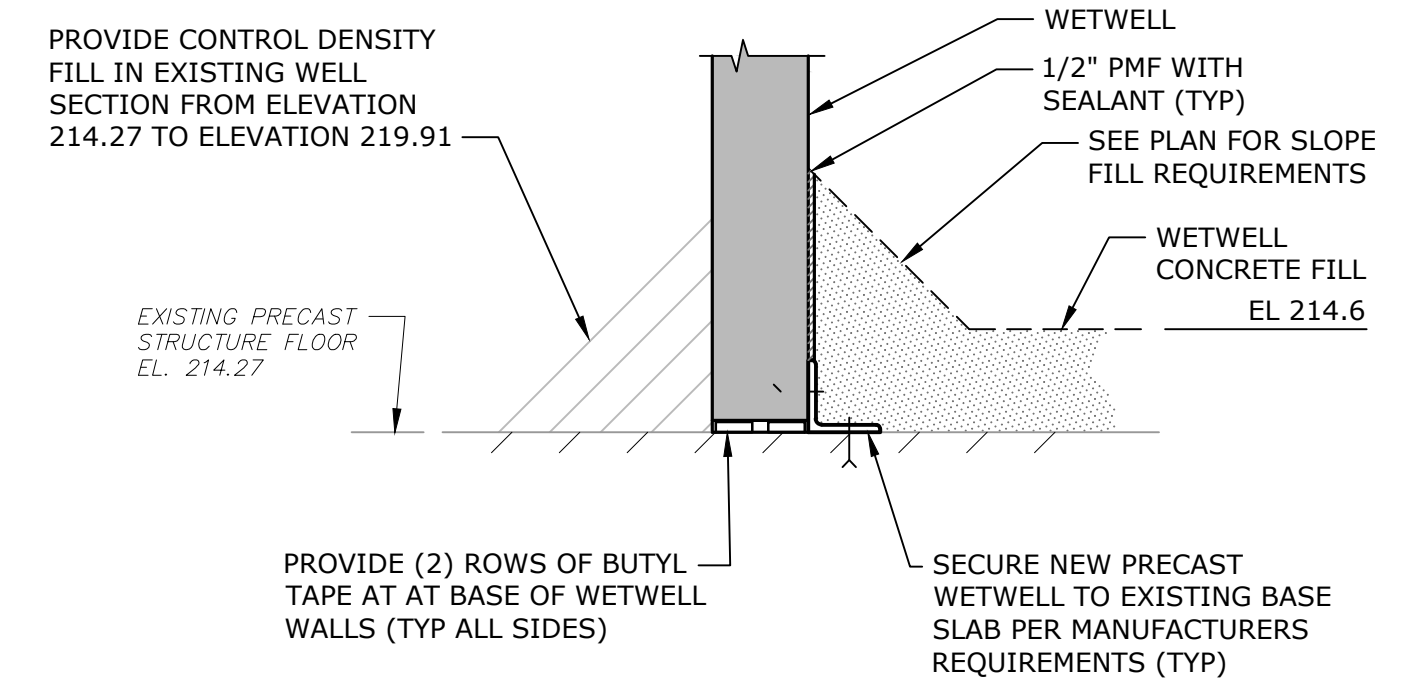


PLAN

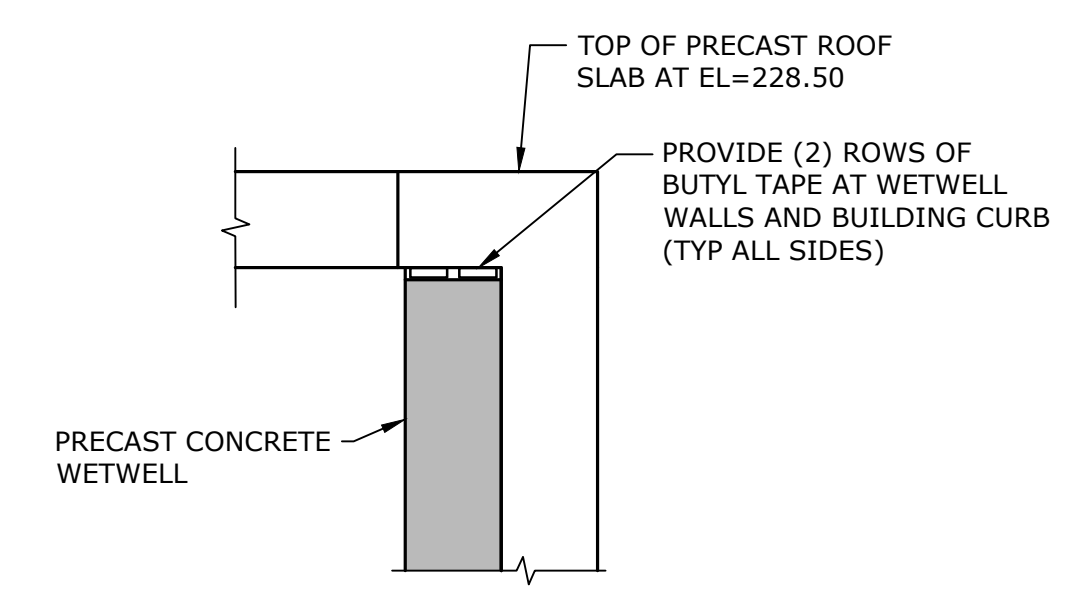


SECTION

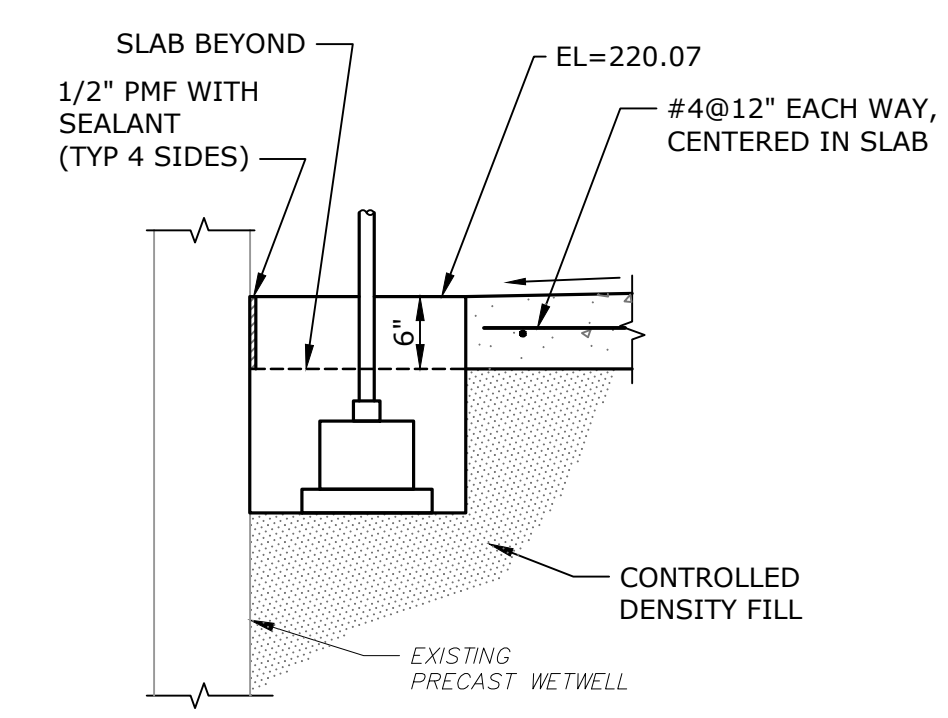
PUMP STATION PRECAST SECTION REPLACEMENT
3/8" = 1'-0"



DETAIL 1
3/4" = 1'-0" M-101



DETAIL 2
3/4" = 1'-0" M-101



DETAIL 3
3/4" = 1'-0" M-101

NOTE:
CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO FABRICATION OF PRECAST CONCRETE STRUCTURE.

Wright Way Sewer Pump Station Upgrade Project



Ayer, Massachusetts

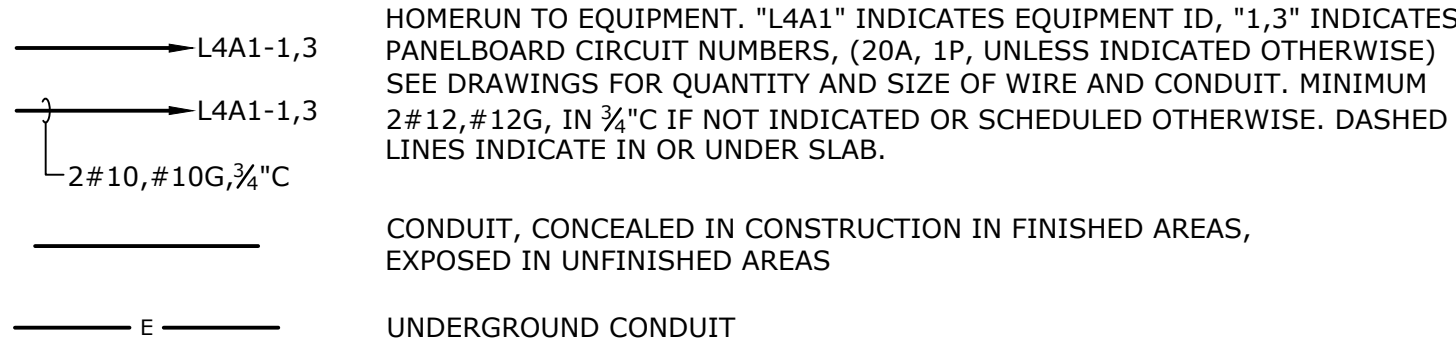
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DRAWN BY: TMP		
DESIGNED/CHECKED BY: AS, DRF		
APPROVED BY: TJM		

STRUCTURAL PLANS, SECTIONS, AND DETAILS

SCALE: AS SHOWN

Last Saved: 7/31/2023 1:48pm By: TMP
 Plotted On: Jul 31, 2023 1:48pm
 Title & Number: Wright Way Pump Station Drawings/AutoCAD/Sheet/A5004-014-S-101.dwg

RACEWAYS AND WIRING



NOTES:

- GREEN GROUND CONDUCTOR NOT INDICATED BUT SHALL BE INCLUDED IN EACH RACEWAY. SIZE SHALL BE #12AWG UNLESS INDICATED OTHERWISE.
- HOMERUNS TO PANELBOARDS SHALL HAVE A MAXIMUM OF THREE (3) PHASE CONDUCTORS (ONE PER PHASE), (3) NEUTRALS AND (3) GROUND CONDUCTORS IN EACH CONDUIT.

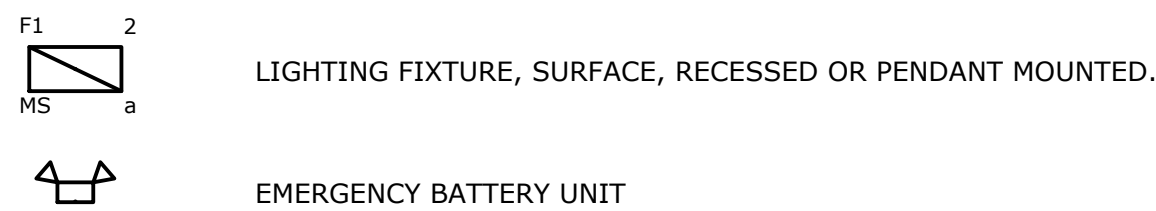
16 FEEDER TAG - REFER TO LEGEND OR TABLE OF FEEDER SIZES

BRANCH CIRCUIT WIRING NOTES

- WIRING IS SHOWN ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
- WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
- ALL SWITCH CONTROLS SHALL BE FURNISHED WITH WIRING AND CONDUIT AS REQUIRED.
- ALTHOUGH ALL BRANCH CIRCUIT WIRING AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
- A GREEN GROUNDING CONDUCTOR SHALL BE RUN WITH ALL CIRCUITS. VERIFY CONDUIT SIZE TO ENSURE IT CAN ACCOMMODATE ALL PHASE, NEUTRAL AND GROUND CONDUCTORS.
- ALL BRANCH CIRCUITS SHALL HAVE INDIVIDUAL NEUTRALS AND GROUNDS. BRANCH CIRCUITS SHALL NOT SHARE NEUTRALS OR GROUNDS.

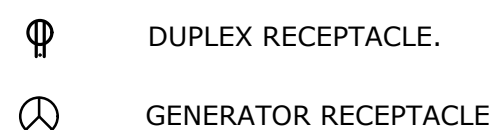
LIGHTING FIXTURES

NUMBERS/LETTERS SHOWN BESIDE LIGHT FIXTURES SHALL INDICATE THE FOLLOWING:
 "F1" (CAPITAL LETTER(S) OR COMBINATION OF CAPITAL LETTER(S) AND NUMBERS) INDICATES FIXTURE TYPE.
 "2" (NUMBER OR PANELBOARD NAME AND NUMBER) INDICATES CIRCUIT NUMBER.
 "a" (LOWERCASE LETTER) INDICATES SWITCH CONTROL OF FIXTURE.
 "E" INDICATES FIXTURE IS WIRED TO EMERGENCY SYSTEM.
 "NL" INDICATES FIXTURE IS WIRED AS A NIGHT LIGHT (ALWAYS ON).
 "PC" INDICATES FIXTURE IS FURNISHED WITH PHOTOCELL CONTROL.
 "MS" INDICATES FIXTURE IS FURNISHED WITH MOTION SENSOR.

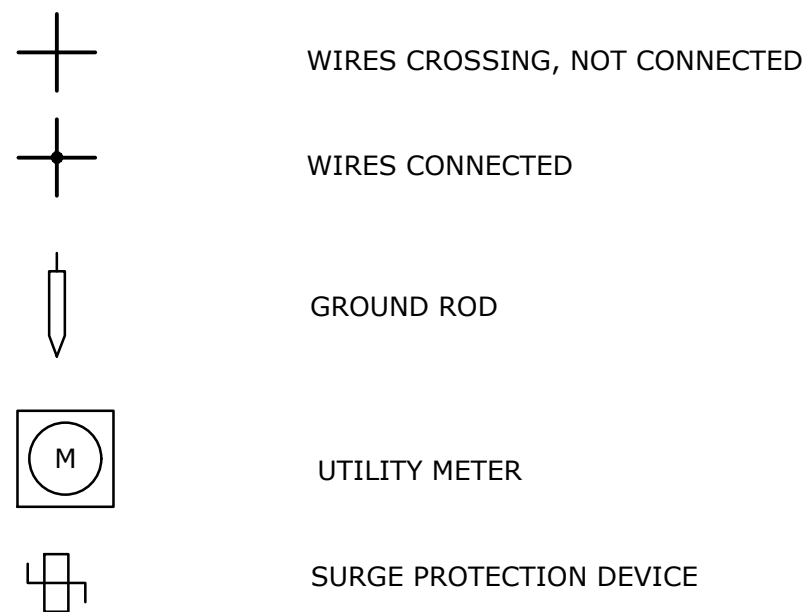


RECEPTACLES

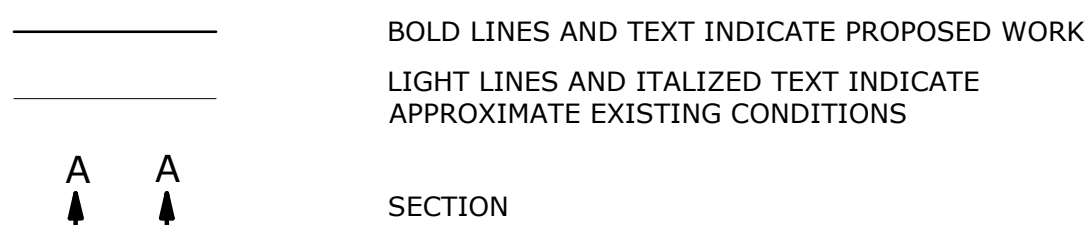
MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.
 NUMBERS/LETTERS SHOWN BESIDE RECEPTACLES SHALL INDICATED THE FOLLOWING:
 "GFI" INDICATES INTEGRAL GROUND FAULT INTERRUPTER.
 "2" (NUMBER OR PANELBOARD NAME AND NUMBER) INDICATES POWER CIRCUIT NUMBER.



SCHEMATIC SYMBOLS:



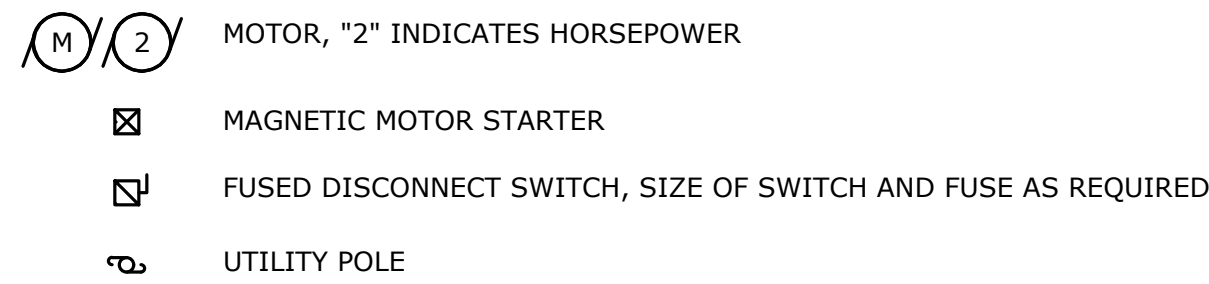
GENERAL SYMBOLS



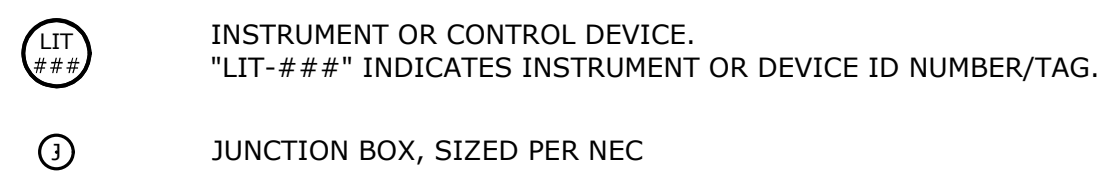
TOGGLE SWITCHES

MOUNTED AT 48" AFF UNLESS OTHERWISE NOTED.
 S_a SINGLE POLE TOGGLE SWITCH. "a" INDICATES FIXTURE CONTROL
 S₃ THREE WAY TOGGLE SWITCH

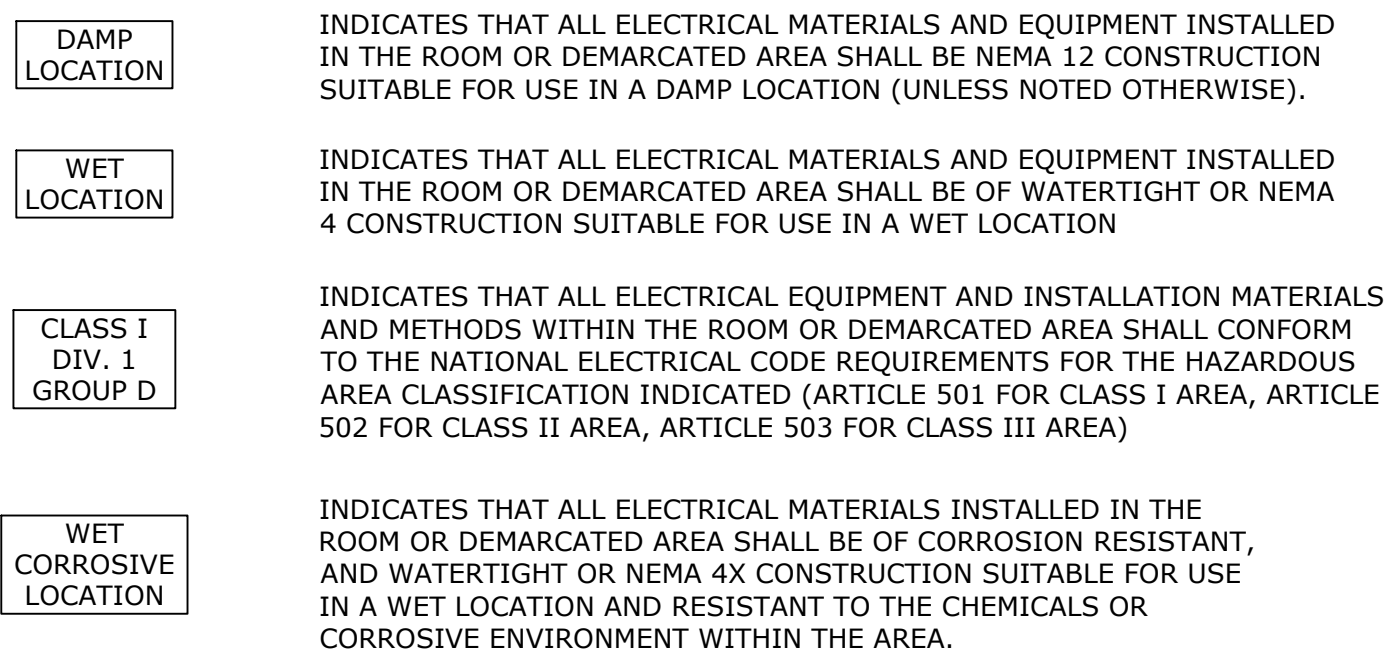
POWER DISTRIBUTION EQUIPMENT



MISCELLANEOUS



AREA CLASSIFICATIONS



GENERAL DEMOLITION NOTES

- DISCONNECT AND REMOVE EXISTING ELECTRICAL PANELBOARDS, JUNCTION BOXES, BRANCH CIRCUITS, FEEDERS, RACEWAYS, DEVICES, ETC., AS REQUIRED TO ACCOMPLISH THE NEW WORK AS SHOWN OR REASONABLY IMPLIED. REFER TO THE ARCHITECTURAL, PLUMBING, MECHANICAL, AND ELECTRICAL WORK SHOWN ON THE OTHER DRAWINGS OF THIS SET TO DETERMINE THE EXTENT OF THE DEMOLITION WORK REQUIRED.
- EXISTING BRANCH CIRCUITS NO LONGER SERVING ANY EQUIPMENT OR DEVICES SHALL BE PULLED BACK TO AND DISCONNECTED FROM THE PANEL OF ORIGIN. RE-LABEL EXISTING CIRCUIT BREAKERS AS SPARE AND PROVIDE A NEW LABEL/NAMEPLATE OR TYPE-WRITTEN PANEL DIRECTORY.
- COORDINATE WITH THE ENGINEER FOR EXISTING EQUIPMENT TO BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE THE ELECTRIC CONDUIT AND WIRING BACK TO THE POINT OF ORIGIN FOR EACH PIECE OF EQUIPMENT TO BE REMOVED.
- REMOVE ALL WIRING/CABLING NO LONGER IN USE FROM EXISTING RACEWAYS/CONDUITS. RACEWAYS/CONDUITS NO LONGER IN USE THAT ARE EMBEDDED IN FLOOR SLABS SHALL BE CUT BACK AS REQUIRED AND CAPPED. SURFACE-MOUNTED RACEWAYS/CONDUITS NO LONGER IN USE SHALL BE REMOVED.
- REFER TO SPECIFICATIONS FOR ADDITIONAL DEMOLITION CRITERIA.
- THE EXISTENCE OF UTILITIES AND APPURTENANCES AS SHOWN ON THESE DRAWINGS ARE FOR REFERENCE ONLY. THOROUGHLY INVESTIGATE THE EXACT SIZE, TYPE, LOCATION AND ELEVATION PRIOR TO THE START OF CONSTRUCTION. FIELD MEASURE TO VERIFY EXISTING AND CONTRACT INTERFACE DIMENSIONS, LOCATIONS, AND OTHER CONDITIONS. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE WHICH MIGHT BE OCCASIONED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.
- ASSUME MATERIALS TO BE DEMOLISHED ARE POSITIVE FOR HAZARDOUS MATERIALS AND DISPOSE OF AS NECESSARY IN ACCORDANCE WITH APPLICABLE REGULATIONS. REFER TO SPECIFICATIONS FOR MORE DETAILS.
- OWNER RETAINS RIGHT OF FIRST REFUSAL FOR ALL ITEMS TO BE REMOVED OR DEMOLISHED. TAKE REASONABLE CARE TO AVOID DAMAGE TO ITEMS TO BE RETAINED BY OWNER. NO ADDITIONAL CHARGE WILL BE ALLOWED FOR REMOVAL OF SALVAGEABLE ITEMS.
- FOR ITEMS BEING DEMOLISHED, REMOVE EXISTING SUPPORTS AND MOUNTING HARDWARE. FILL OPENINGS FROM ANCHOR HOLES AND CONDUIT/PIPE PENETRATIONS (UNLESS CONDUIT IS TO BE REUSED) WITH NON-SHRINK GROUT AND PAINT TO MATCH WALL OR FLOOR.
- VOIDS CREATED BY THE REMOVAL OF CONDUIT/WIRE IN FLOORS OR WALLS ABOVE OR BELOW CEILINGS SHALL BE PATCHED AND SEALED WITH MATERIALS MATCHING THE EXISTING CONSTRUCTION.
- PROPERLY DISPOSE OF DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES, REGULATIONS, AND STATE STANDARDS.

ABBREVIATIONS

#	WIRE SIZE OR IDENTIFICATION NUMBER	MTS	MANUAL TRANSFER SWITCH
A	AMPERES	NC, NC	NORMALLY CLOSED
AF	AMPERE FRAME (CIRCUIT BREAKER RATING)	NEC	NATIONAL ELECTRICAL CODE
AFG	ABOVE FINISHED GRADE	NO	NORMALLY OPEN
AIC	AMPERE INTERRUPTING CAPACITY	NTS	NOT TO SCALE
AL	ALUMINUM	OL	OVERLOAD
AS	AMPERE SENSOR (CIRCUIT BREAKER RATING)	P	POLE
AT	AMPERE TRIP (CIRCUIT BREAKER RATING)	PH, Ø	PHASE
AWG	AMERICAN WIRE GAUGE	PLC	PROGRAMMABLE LOGIC CONTROLLER
BLDG	BUILDING	PVC	POLYVINYL CHLORIDE
C	CONDUIT	PT	POTENTIAL TRANSFORMER
CB	CIRCUIT BREAKER	PVC	POLYVINYL CHLORIDE
CT	CURRENT TRANSFORMER	R	RECESSED
CAT	CATALOG	RGS	RIGID GALVANIZED STEEL CONDUIT
CIR, CKT	CIRCUIT	RVNR	REDUCED-VOLTAGE NON-REVERSING
CP	CONTROL PANEL	S	SURFACE
COL	COLUMN	SCCR, SCR	SHORT CIRCUIT CURRENT INTERRUPTING RATING
Δ	DELTA	SCH 40	SCHEDULE 40 PVC CONDUIT
CU	COPPER	SP	SPARE
DISC SW, DS	DISCONNECT SWITCH	SPD	SURGE PROTECTION DEVICE
DWG	DRAWING	SS	STAINLESS STEEL
E	WIRED ON EMERGENCY CIRCUIT	SW	SWITCH
EC	ELECTRICAL CONTRACTOR	TEL	TELEPHONE
EM	EMERGENCY	TSP	TWISTED SHIELDED PAIR CABLE
EXP	EXPLOSION PROOF	TYP	TYPICAL
F	FLUSH	UG	UNDERGROUND
FU	FUSE	UPS	UNINTERRUPTABLE POWER SUPPLY
FT	FEET	V	VOLT
G	GROUND	VFD	VARIABLE FREQUENCY DRIVE (ALSO REFERRED TO AS ADJUSTABLE FREQUENCY DRIVE)
GC	GENERAL CONTRACTOR	Y	WYE
GFI, GFCI	GROUND FAULT CIRCUIT INTERRUPTER	W	WATT, WIRE
ID	IDENTIFICATION	WP	WEATHERPROOF
KCMIL, MCM	ONE THOUSAND CIRCULAR MILS	XFMR	TRANSFORMER
KVA	KILOVOLT-AMPERES		
KVAR	KILOVOLT-AMPERES REACTIVE		
KW	KILOWATTS		
LSIG	LONG/SHORT TIME, INSTANTANEOUS AND GROUND FAULT SETTINGS (FOR CIRCUIT BREAKER)		
MC	MECHANICAL CONTRACTOR		
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER		
MISC	MISCELLANEOUS		
MFR	MANUFACTURER		

GENERAL NOTES

- BOLD TEXT AND LINES INDICATE PROPOSED WORK, LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
- PROVIDE TEMPORARY POWER AND EQUIPMENT AS REQUIRED TO KEEP SYSTEMS OPERATIONAL, SEE 16050 FOR SEQUENCING AND SCHEDULING.
- FOR ELECTRICAL DETAILS, REFER TO DETAIL DRAWINGS
- REFER TO PROCESS MECHANICAL DRAWINGS AND VENDOR DRAWINGS FOR COORDINATION OF EQUIPMENT LOCATIONS AND POWER REQUIREMENTS.
- ALL CONDUIT SHALL BE INSTALLED ATTACHED TO THE TOP OF STEEL (TOP CHORD OF JOIST/GIRDER).
- COORDINATE ALL DEVICE LOCATIONS WITH GC PRIOR TO ROUGH-IN.
- ALL PIPES OR OTHER UTILITIES DAMAGED DURING THE CONTRACTOR'S OPERATIONS SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR OR REPLACE AT NO COST TO THE OWNER.
- SUPPORT ALL UTILITIES AND STRUCTURES DURING CONSTRUCTION AND MAKE REPAIRS IF DAMAGED.
- PREVENT DUST FROM BECOMING A NUISANCE OR HAZARD. CONTROL DUST DURING AND AFTER CONSTRUCTION.

GENERAL POWER NOTES

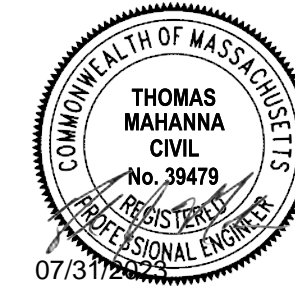
- ALL RECEPTACLES IN BELOW GRADE LOCATIONS SHALL HAVE WEATHER-PROOF WHILE-IN-USE COVERS AND SHALL BE GFI TYPE.
- DEVICE TYPES SHALL BE SUITABLE FOR THE SPECIFIC AREA CLASSIFICATION SHOWN.

GENERAL SITE NOTES

- ALL EXCAVATION, TRENCHING, BACK FILL AND COMPACTION OF DUCT BANKS, TRANSFORMER PADS, SITE LIGHTING BASE, BY THE GC.
- ALL CONCRETE WORK SHALL BE BY THE GC.

GENERAL LIGHTING NOTES

- FOR ELECTRICAL PANEL LOCATIONS, REFER TO RESPECTIVE FLOOR POWER PLAN.
- REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT LOCATIONS.
- COORDINATE THE LOCATION OF ALL EMERGENCY LIGHTING WITH EQUIPMENT. EMERGENCY LIGHTING SHALL NOT BE OBSTRUCTED.



Wright Way Sewer Pump Station Upgrade Project



Ayer, Massachusetts

MARK	DATE	DESCRIPTION
	7/18/23	BID DOCUMENT
PROJECT NO: A5004-014		
DATE: JULY 2023		
FILE: A5004-014-E-001.dwg		
DRAWN BY: TKV		
DESIGNED/CHECKED BY: TKV, MJR		
APPROVED BY: TJM		

ELECTRICAL SYMBOLS, ABBREVIATIONS, AND LEGEND

SCALE: AS SHOWN



Wright Way Sewer Pump Station Upgrade Project



Ayer, Massachusetts

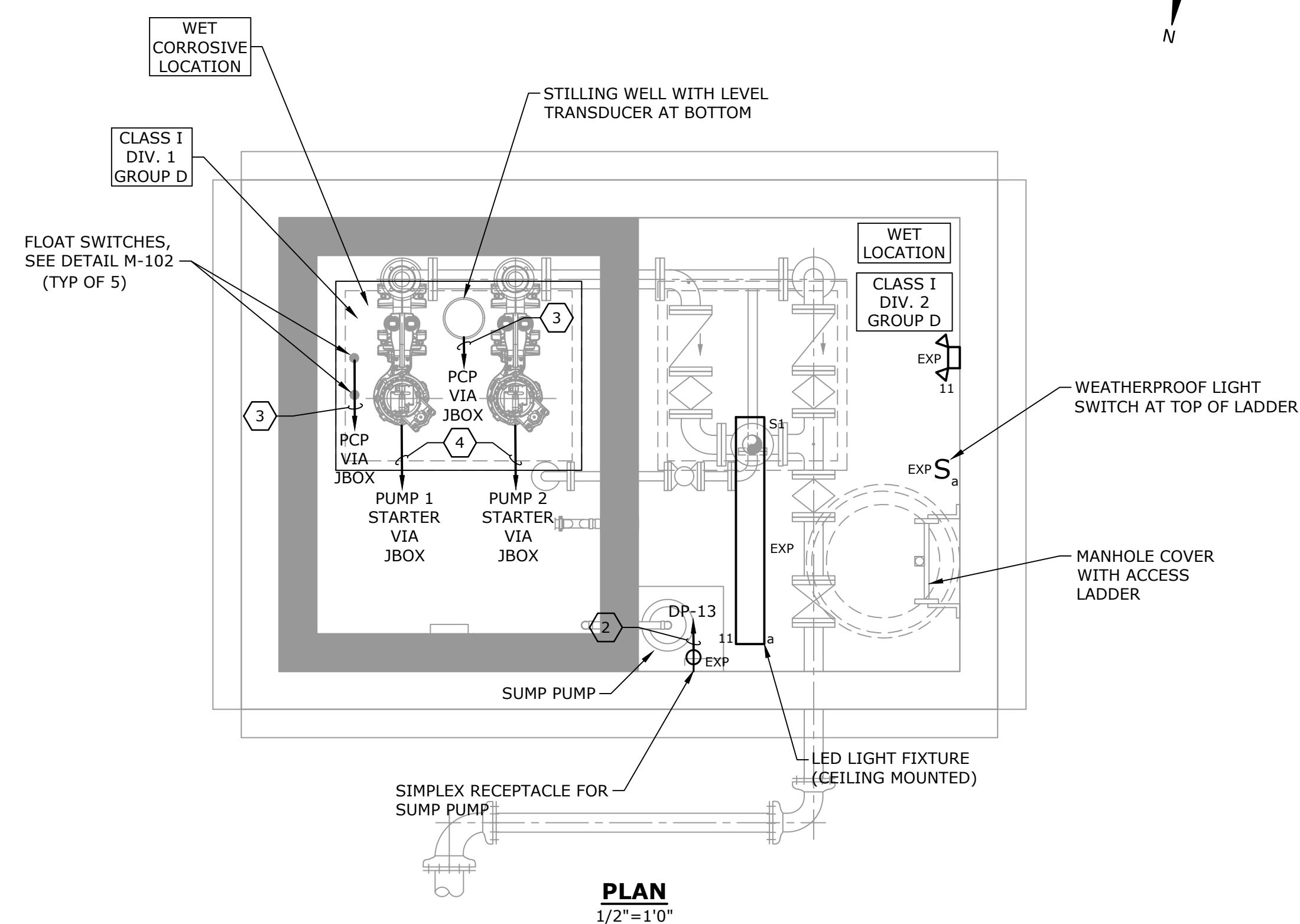
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PROJECT NO:	A5004-014	
DATE:	JULY 2023	
FILE:	A5004-014-E-101.dwg	
DRAWN BY:	TMP	
DESIGNED/CHECKED BY:	TKV, MJR	
APPROVED BY:	TJM	

ELECTRICAL FLOOR PLAN AND ELEVATION

SCALE: AS SHOWN

WIRE & CONDUIT CALLOUTS:

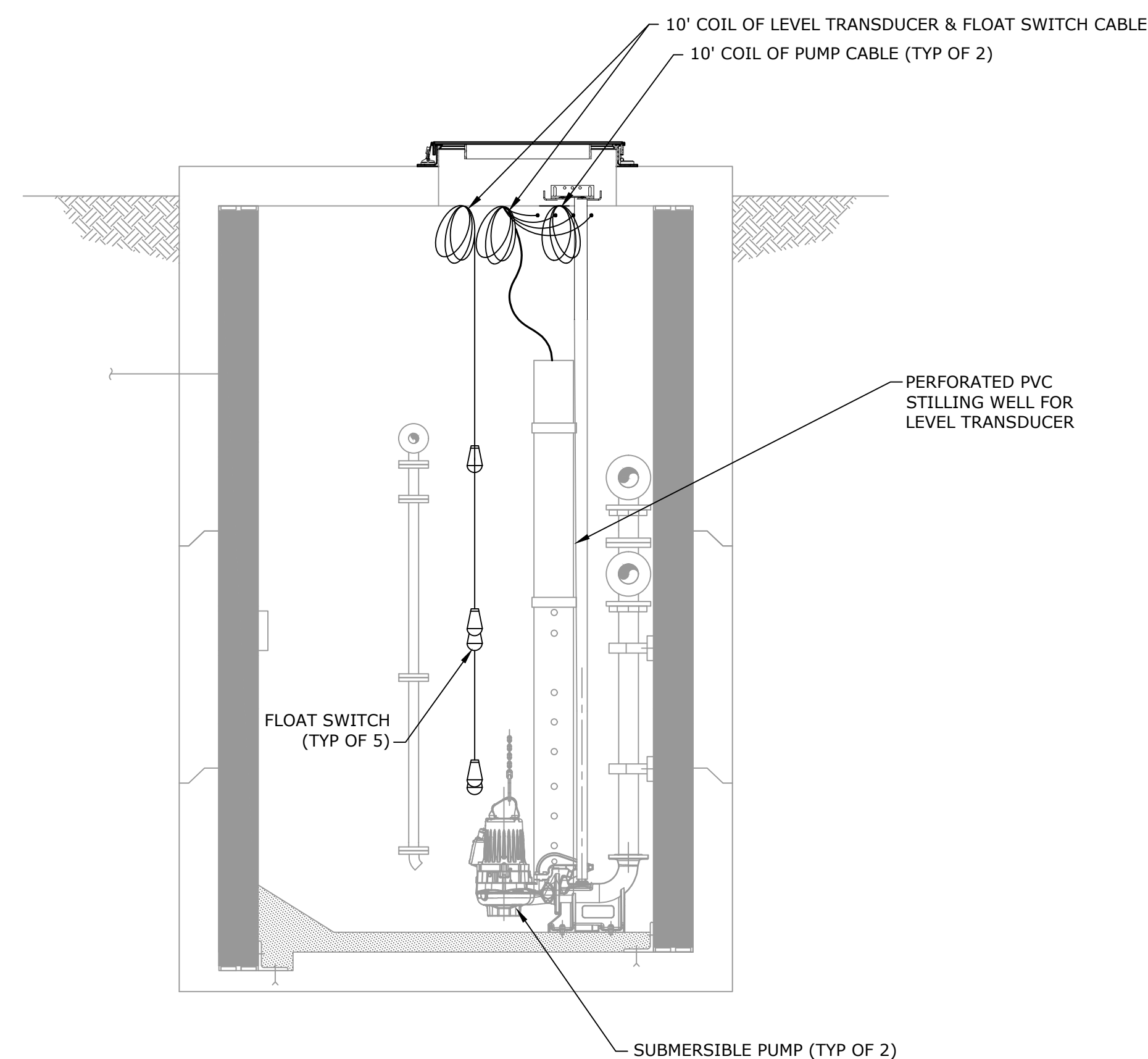
- 1 #18TSP, 1"C
- 2 SEE PANELBOARD SCHEDULE
- 3 MANUFACTURER CABLE IN 2"C. CONDUIT TO STUB OUT INTO WETWELL; EXPOSED CONDUIT IN THE WETWELL SHALL BE STAINLESS STEEL. PROVIDE CONDUIT BUSHING AND SEALANT AT OPENING.
- 4 MANUFACTURER CABLE IN 2"C. CONDUIT TO STUB OUT INTO WETWELL; EXPOSED CONDUIT IN THE WETWELL SHALL BE STAINLESS STEEL. PROVIDE CONDUIT BUSHING AND SEALANT AT OPENING.



NOTES:

- 1. PROVIDE EXPLOSION-PROOF SEALS FOR CONDUITS THAT ENTER THE WETWELL. INSTALL THE EXPLOSION-PROOF SEALS IN THE ELECTRICAL ENCLOSURE IN ACCORDANCE WITH THE NEC AND DETAILS ON E-501.
- 2. PROVIDE CONDUIT SEALANT FOR CONDUITS THAT ENTER THE VALVE VAULT AREA (SEALANT SHALL BE CODE-COMPLIANT FOR CLASS 1 DIV 2 LOCATIONS).

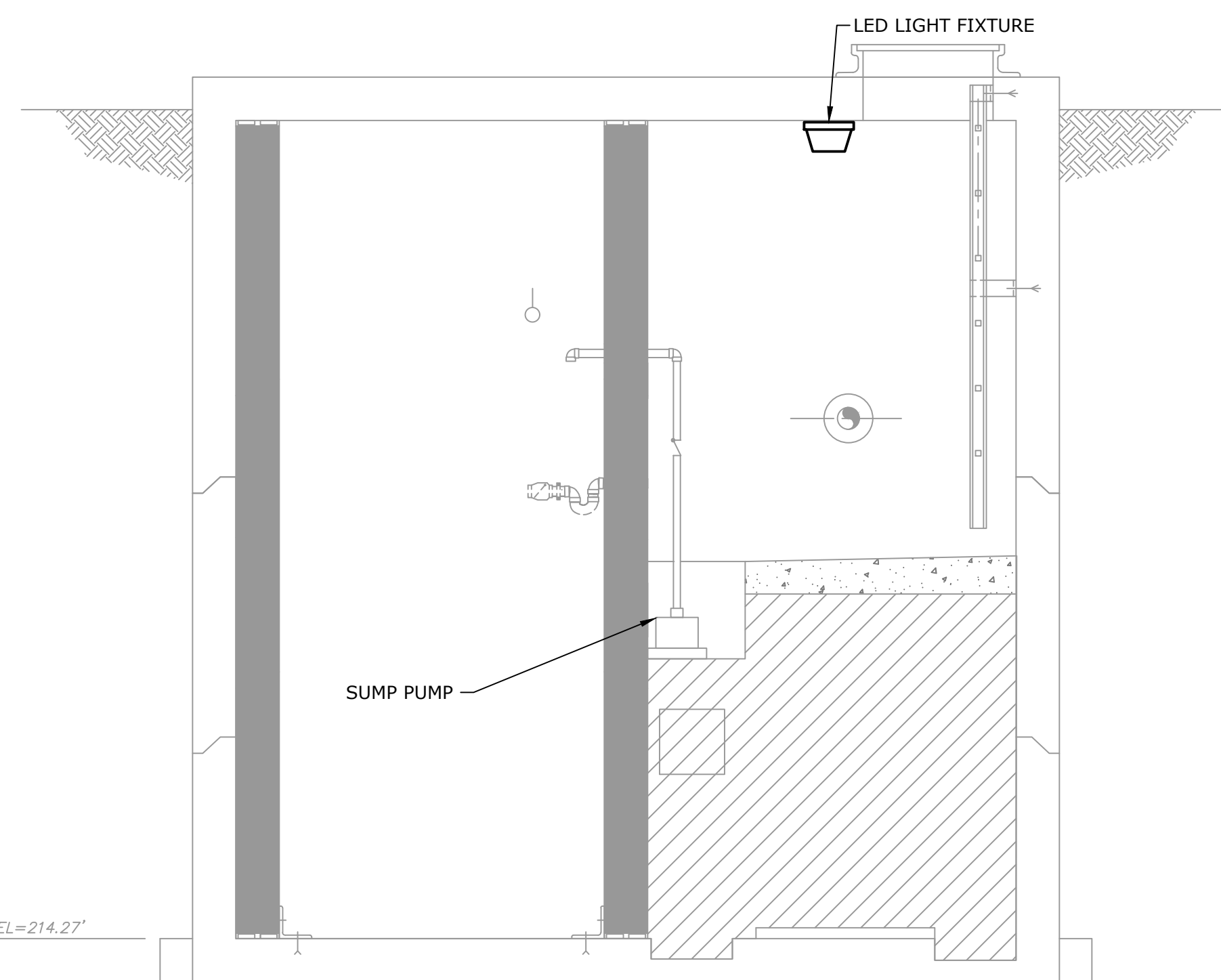
PLAN
1/2"=1'-0"



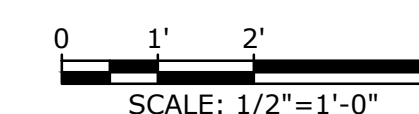
SECTION B
1/2"=1'-0"

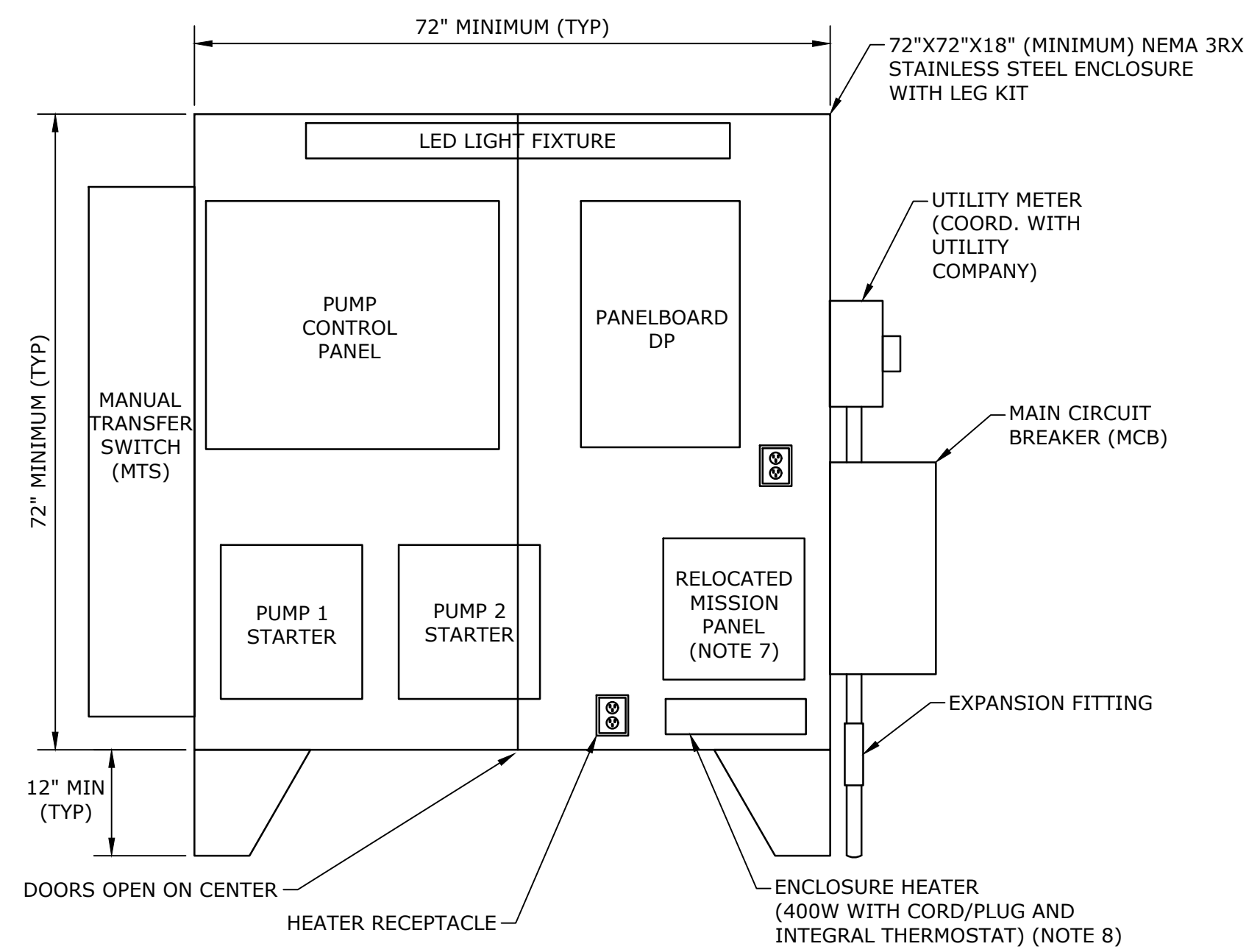
NOTES:

- 1. BIND COILED CABLE WITH STAINLESS STEEL STRAPS. HANG COILED CABLE FROM STAINLESS STEEL HOOKS USING STAINLESS STEEL CLIPS AND HARDWARE.



SECTION A
1/2"=1'-0"

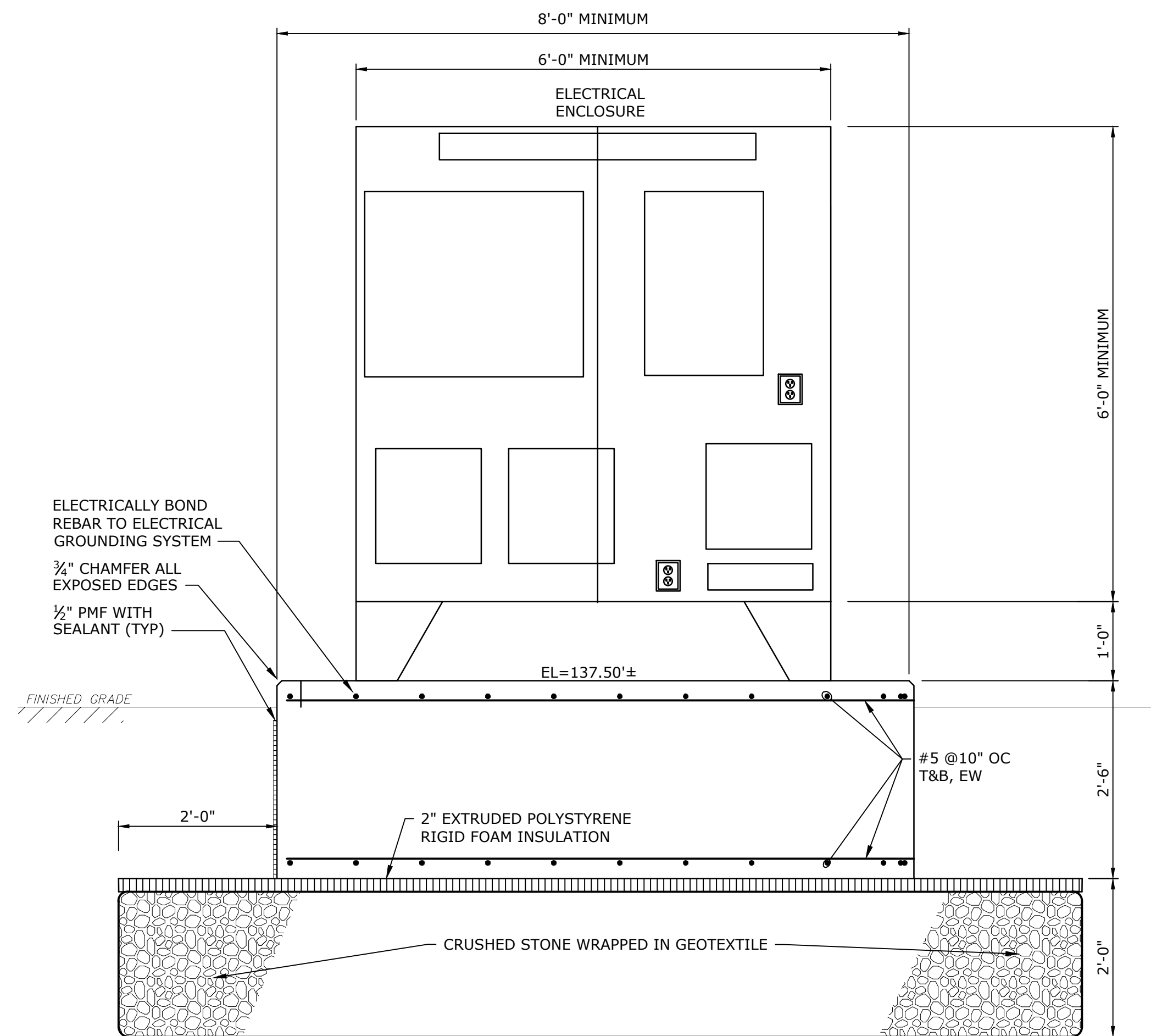




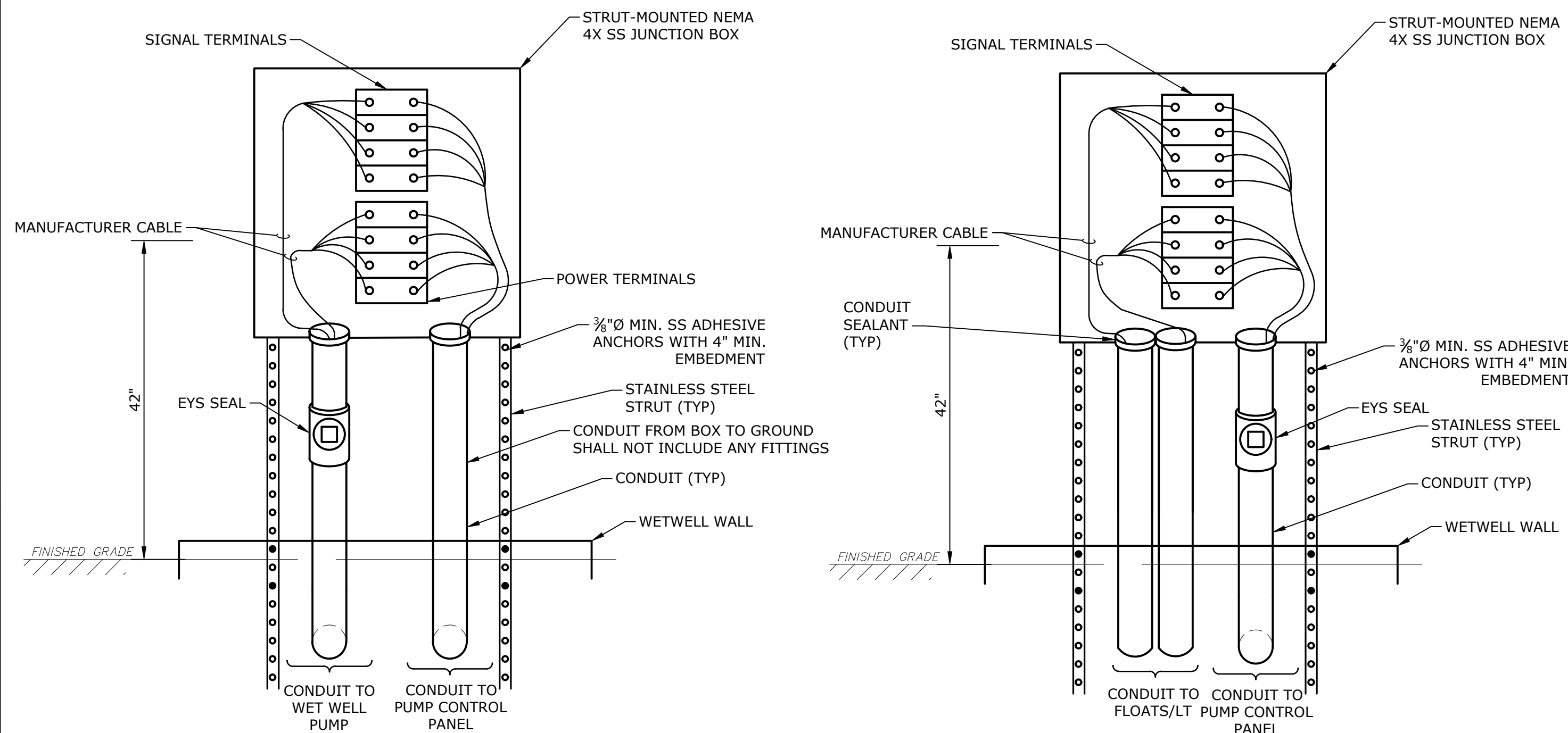
ELECTRICAL ENCLOSURE

ELECTRICAL ENCLOSURE NOTES:

1. PROVIDE LED LIGHT WITH A SWITCH INTERLOCKED WITH ENCLOSURE DOOR.
2. PROVIDE A THERMOSTATICALLY-CONTROLLED ENCLOSURE VENTILATION FAN ("FILTER FAN"; NVENT/HOFFMAN HF05 FILTER FAN (EXHAUST) OR EQUAL) WITH FILTERED EXHAUST AND MATCHING FILTERED INTAKE GRILLE, RATED FOR NEMA 3R/OUTDOOR APPLICATIONS. ALL FILTERS MUST BE REPLACEABLE. THE FILTER FAN SHALL REQUIRE AN OPENING OF APPROXIMATELY 5"x5" OR 6"x6" WITH AN AIRFLOW RATE OF 30CFM OR MORE. PROVIDE A STAINLESS STEEL FILTER FAN SHROUD (NVENT/HOFFMAN HH05 SS TYPE 304 STAINLESS STEEL FILTER FAN SHROUD OR EQUAL) OVER THE FAN AND INTAKE GRILLE TO ENSURE PROTECTION FROM WIND-DRIVEN RAIN. THE THERMOSTAT SHALL BE INTENDED FOR WALL MOUNTING (MUST NOT HAVE EXPOSED LIVE PARTS; MOST DIN-RAIL MOUNTED THERMOSTATS ARE NOT ACCEPTABLE). COORDINATE CUTOUT DIMENSIONS WITH FAN/GRILLE MANUFACTURER. WIRE THE THERMOSTAT AND FAN TO A POWER CIRCUIT IN THE PANELBOARD USING 3#12 IN 3/4".
3. ELECTRICAL ENCLOSURE TO BE NEMA 3RX/12, STAINLESS STEEL.
4. LED LIGHT FIXTURE SHALL BE KURTZON MODEL WL-B-1-40-2\LEDR-840-120V OR EQUAL.
5. PROVIDE 10#14, #14G, 3/4" FROM THE PCP TO EACH PUMP STARTER. PROVIDE 5 MFR-SUPPLIED FLOAT SWITCH CABLES IN 1" FROM THE PCP TO THE FLOAT SWITCHES IN THE WETWELL (THESE CABLES ARE INTRINSICALLY SAFE). PROVIDE 1 MFR-SUPPLIED FLOAT SWITCH CABLE AND 1#18TSP (SPARE) IN 1" FROM THE PCP TO THE LEVEL TRANSDUCER IN THE WETWELL (THESE CABLES ARE INTRINSICALLY SAFE). PROVIDE 16#14 (SOME ARE SPARE) AND 2#18TSP (SPARE) FROM THE PCP TO THE MISSION PANEL.
6. ONLY IF REQUIRED FOR PROPER COMMUNICATION, MOUNT MISSION PANEL ANTENNA TO THE EXTERIOR OF THE ENCLOSURE AND RUN MFR-RECOMMENDED ANTENNA CABLE FROM THE ANTENNA TO THE MISSION PANEL. ELSE, MOUNT ANTENNA ON INTERIOR OF ENCLOSURE.
7. RELOCATE EXISTING MISSION PANEL FROM INSIDE EXISTING VALVE VAULT TO THE APPROPRIATE LOCATION AS INDICATED BY NOTE 6.
8. PROVIDE AN ENCLOSURE HEATER WITH INTEGRAL THERMOSTAT, 400W MINIMUM, MODEL DAH4001B BY HOFFMAN OR EQUAL. PROVIDE CORD AND PLUG.



ELECTRICAL ENCLOSURE SECTIONAL ELEVATION

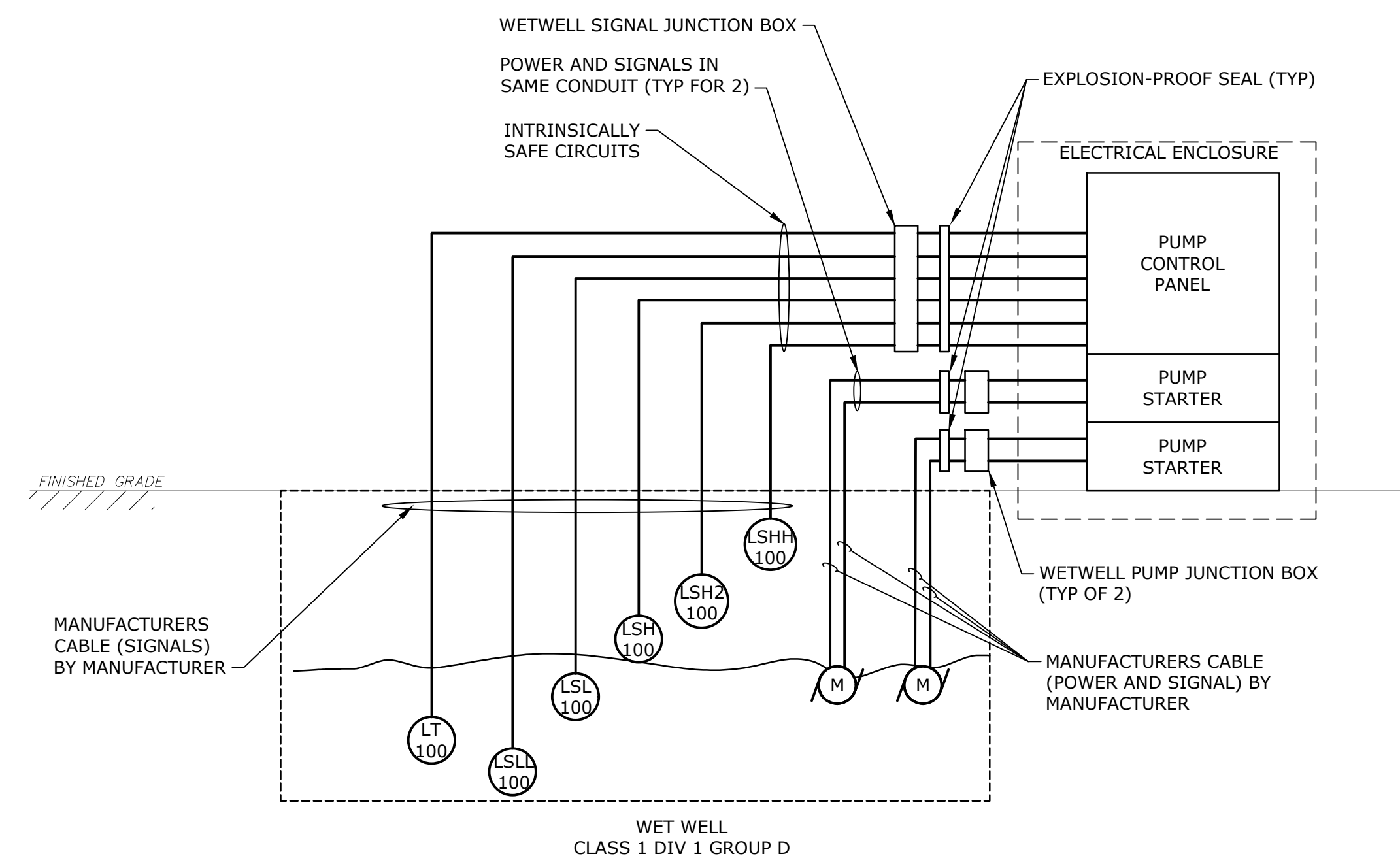


WET WELL PUMP JUNCTION BOX ELEVATION AND DETAIL

NO SCALE
TYP OF PUMPS 1 AND 2
MAINTAIN AT LEAST 36" BETWEEN THE WETWELL PUMP JUNCTION BOXES AND THE SIGNAL JUNCTION BOX

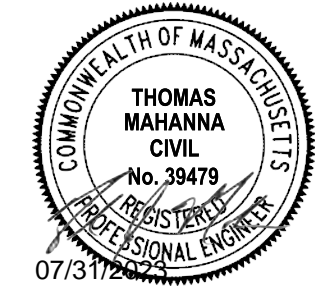
WET WELL SIGNAL JUNCTION BOX ELEVATION AND DETAIL

NO SCALE
NOTE: THE ENVELOPE EXTENDING TO 36" AROUND THE WETWELL SIGNAL JUNCTION BOX AND DOWN TO THE GROUND IS RATED CLASS I DIV 1



CONTROL WIRING BLOCK DIAGRAM (TYPICAL)

NO SCALE



Wright Way Sewer Pump Station Upgrade Project



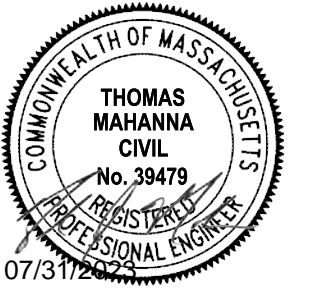
Ayer, Massachusetts

MARK	DATE	DESCRIPTION
	7/18/23	BID DOCUMENT
PROJECT NO:	A5004-014	
DATE:	JULY 2023	
FILE:	A5004-014-E-501.dwg	
DRAWN BY:	TKV	
DESIGNED/CHECKED BY:	TKV, MJR	
APPROVED BY:	TJM	

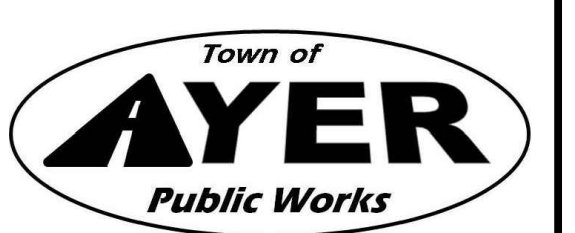
ELECTRICAL DETAILS

SCALE: AS SHOWN

Last Saved: 7/20/2023, 2:55pm By: TKV
 Plotted On: Jul 25, 2023, 2:55pm By: TKV
 Title & Number: Wright Way Sewer Pump Station Drawings\AutoCAD\Sheet\A5004-014-E-501.dwg



Wright Way Sewer Pump Station Upgrade Project



Ayer, Massachusetts

MARK	7/18/23	BID DOCUMENT
DATE		DESCRIPTION
PROJECT NO:	A5004-014	
DATE:	JULY 2023	
FILE:	A5004-014-E-601.dwg	
DRAWN BY:	TKV	
DESIGNED/CHECKED BY:	TKV, MJR	
APPROVED BY:	TJM	

ELECTRICAL ONE LINE DIAGRAM, DETAILS, AND SCHEDULES

SCALE: AS SHOWN

E-601

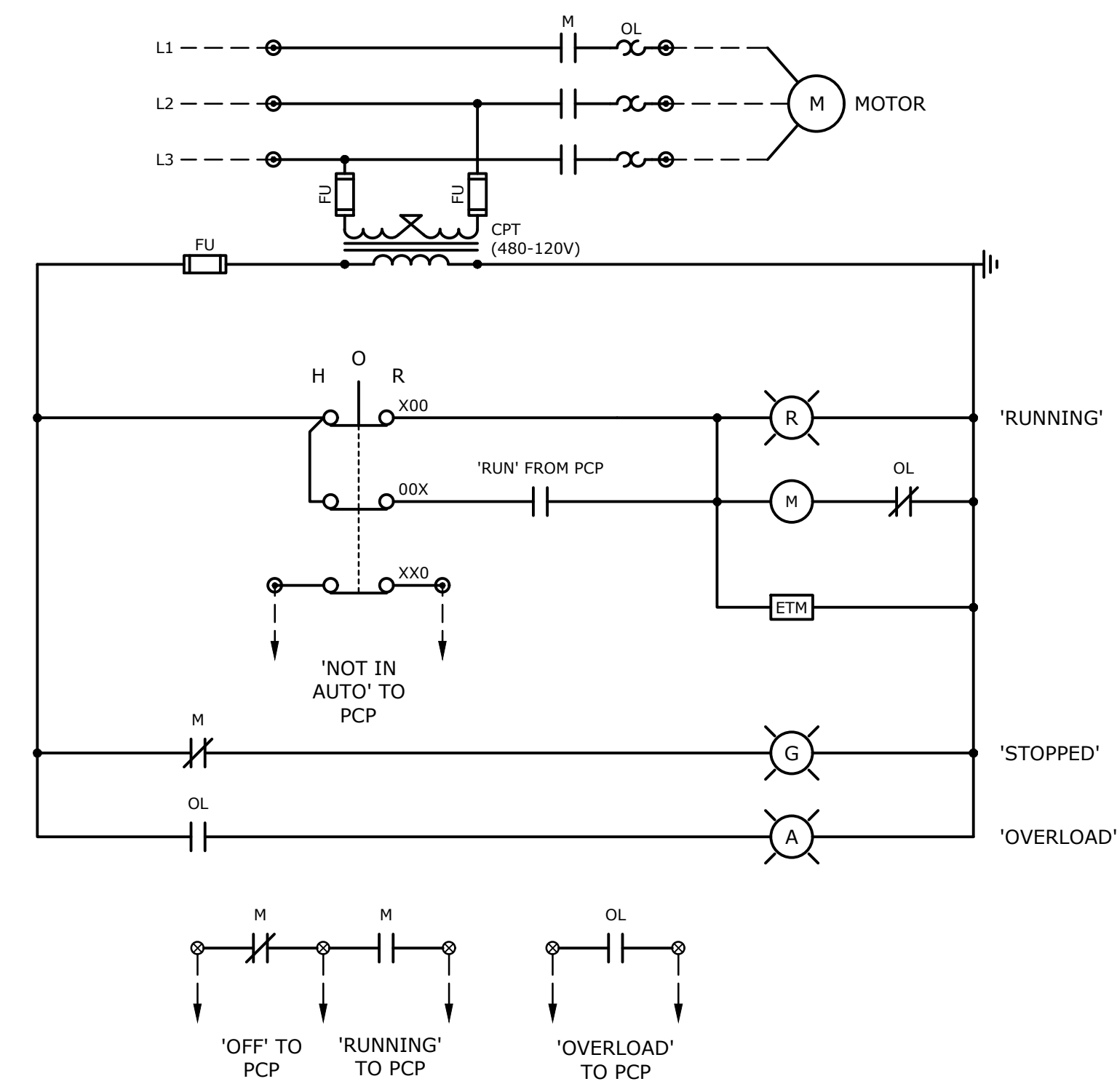
VOLTAGE (L-L): 208 PHASE: 3 WIRE: 4 VA, L1 9,352 PANEL NO. DP	
VOLTAGE (L-N): 120 VA, L2 8,952	
MAIN BUS: 100 AMPS VA, L3 8,302	
MAIN BREAKER: 100 A FRAME 100 A TRIP	
MOUNTING: SURFACE KAIC: 22 TOTAL VA 26,606	
LOCATION: ELECTRICAL ENCLOSURE	
NOTES: NEMA 12 ENCLOSURE MAIN BREAKER SHALL INCLUDE LSI SETTINGS	

WIRE SIZE	CONDUIT SIZE	DIRECTORY	VA LOAD					VA LOAD					WIRE SIZE		
			L1	L2	L3	CKT.	AMPS	AMPS	CKT.	L1	L2	L3		DIRECTORY	CONDUIT SIZE
3/6 & 1#10G	1"	PUMP 1	3,696			1	50							1"	3/6 & 1#10G
-	-			3,696		3							-	-	
2#12 & 1#12G	3/4"	ENCLOSURE HEATER	400			7	20						3/4"	2#12 & 1#12G	
2#12 & 1#12G	3/4"	MISSION PANEL		500		9	20						3/4"	2#12 & 1#12G	
2#12 & 1#12G	3/4"	VAULT LIGHTING			250	11	20				600		3/4"	2#12 & 1#12G	
2#12 & 1#12G	3/4"	SUMP PUMP	1,200			13	20			100			3/4"	2#12 & 1#12G	
2#12 & 1#12G	3/4"	PUMP CONTROL PANEL		1,000		15	20			50			3/4"	2#12 & 1#12G	
-	-				10	17	30				50		3/4"	2#12 & 1#12G	
-	-		10			19							-	-	
-	-			10		21							-	-	
-	-					23							-	-	
SUBTOTAL			5,306	5,206	3,956					4,046	3,746	4,346	SUBTOTAL		

PANELBOARD DP SCHEDULE
CIRCUITS RUN BELOW GRADE TO THE DRYWELL SHALL BE COMBINED INTO A SINGLE 2" CONDUIT. DERATE WIRES AS NEEDED.

TYPE	FIXTURE DESCRIPTION	MANUFACTURER				LAMP DATA				
		MANUFACTURER	CATALOG NUMBER (LED FIXTURES)	EQUAL MFG #1	EQUAL MFG #2	WATTS	LUMEN	TYPE	K	VOLT
EBUX	EMERGENCY BATTERY UNIT - C1D2 WITH LED LAMPS	EMERGLITE	G-125VH3M-2LJ-DA	LIGHTALARMS	DUAL-LITE	10		LED		120/277
S1	CEILING MOUNTED C1D1, C1D2, C2D1, C2D2, C3 HAZARDOUS LOCATION	ARCUS	MOR-EX-CM-RM-RV-759K-80W-S	LARSON	KILLARK	74	11,500	LED	5000	120/277

LIGHTING FIXTURE SCHEDULE



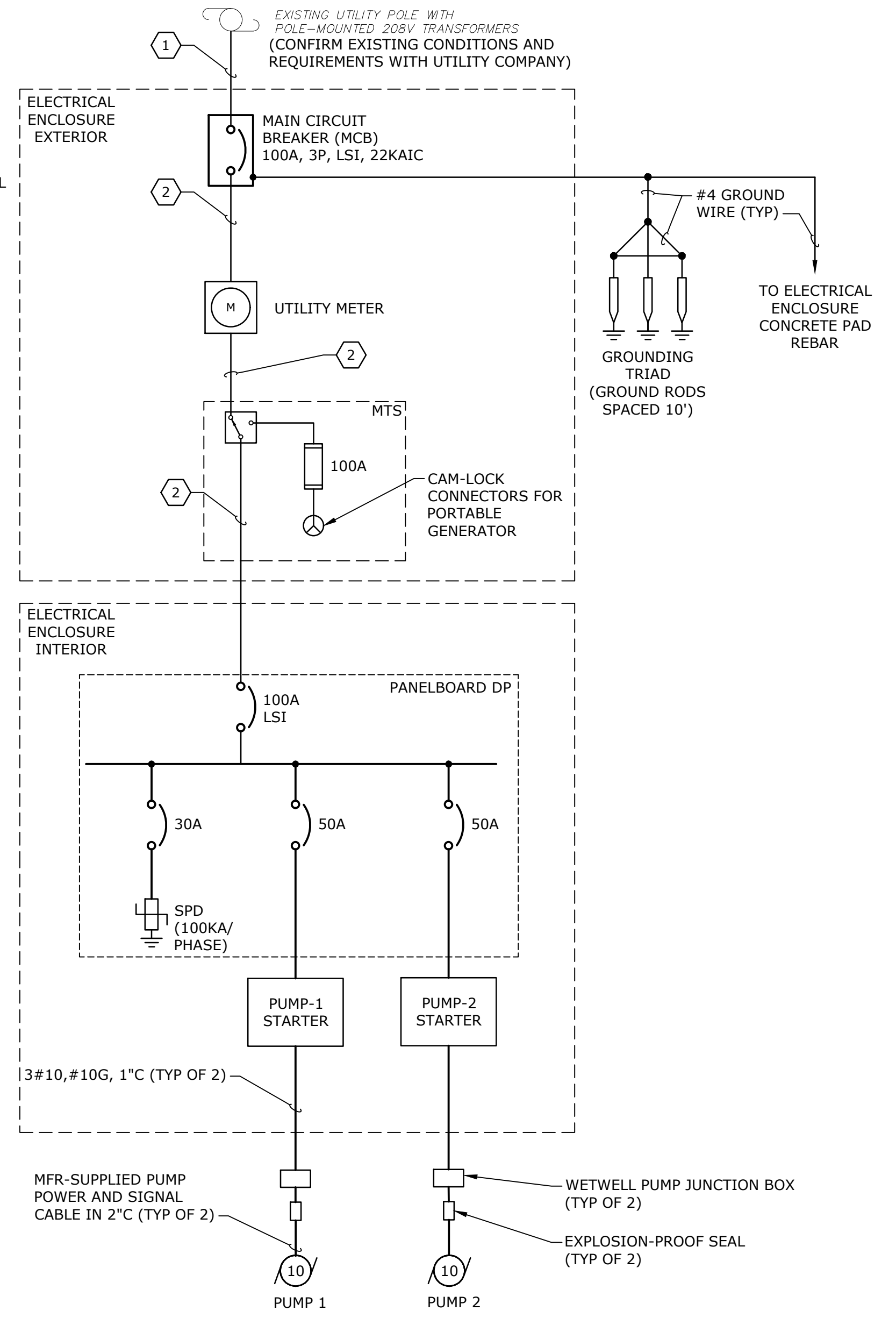
PUMP STARTER WIRING DIAGRAM

NOTES:

- PROVIDE A NEMA 12 ENCLOSURE.
- MOUNT HAND-OFF-REMOTE SWITCH AND PILOT LIGHTS ON COVER OF STARTER ENCLOSURE.
- WHEN RUN IN HAND MODE, THE PUMP WILL NOT BE PROTECTED BY THE OVERTEMP/SEAL LEAK DETECTION SYSTEMS.
- THE PUMP CABLE INCLUDES 4 SIGNAL WIRES (FOR PUMP SEAL LEAK AND OVERTEMP SIGNALS). SPLICE THESE WIRES INSIDE OF THE STARTER AND EXTEND THEM USING 4#14, 3/4" C TO THE CORRESPONDING SEAL LEAK/OVERTEMP MONITOR IN THE PCP.

WIRE & CONDUIT CALLOUTS:

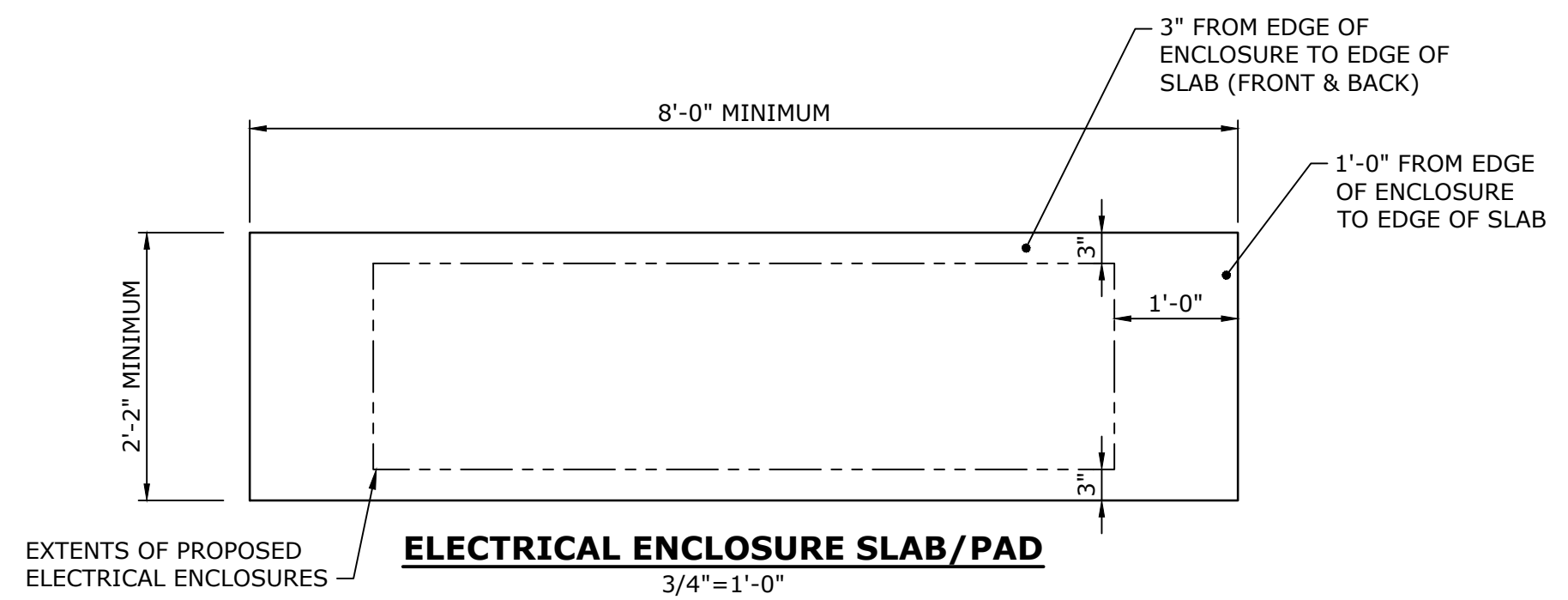
- 4#1, 4" CONDUIT AND 4" SPARE WITH PULL CORD. SWEEPS/ELBOWS AND ABOVE-GRADE CONDUIT SHALL BE RIGID STEEL.
- 4#1, #4G, 1.5"C



PROPOSED ELECTRICAL ONE-LINE DIAGRAM

NOTES:

- ONE-LINE DIAGRAM SHOWS MAIN POWER DISTRIBUTION COMPONENTS ONLY. REFER TO OTHER DRAWINGS FOR ADDITIONAL INFORMATION ON MINOR POWER DISTRIBUTION ITEMS, SIGNAL AND COMMUNICATIONS WIRING, ETC.
- PRIOR TO STARTING ANY WORK, COORDINATE WITH THE UTILITY COMPANY FOR ALL INSTALLATION REQUIREMENTS. IN THE EVENT OF ANY DISCREPANCIES BETWEEN UTILITY COMPANY REQUIREMENTS AND THE CONTRACT DOCUMENTS, CONTACT THE ENGINEER FOR GUIDANCE.
- STARTERS PROVIDED WITH PUMPS BY DIVISION 11.



Last Saved: 7/20/2023 2:56pm By: TJM
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 Title & Number: Wright Way Pump Station Drawings\AutoCAD\Sheet\A5004-014-E-601.dwg