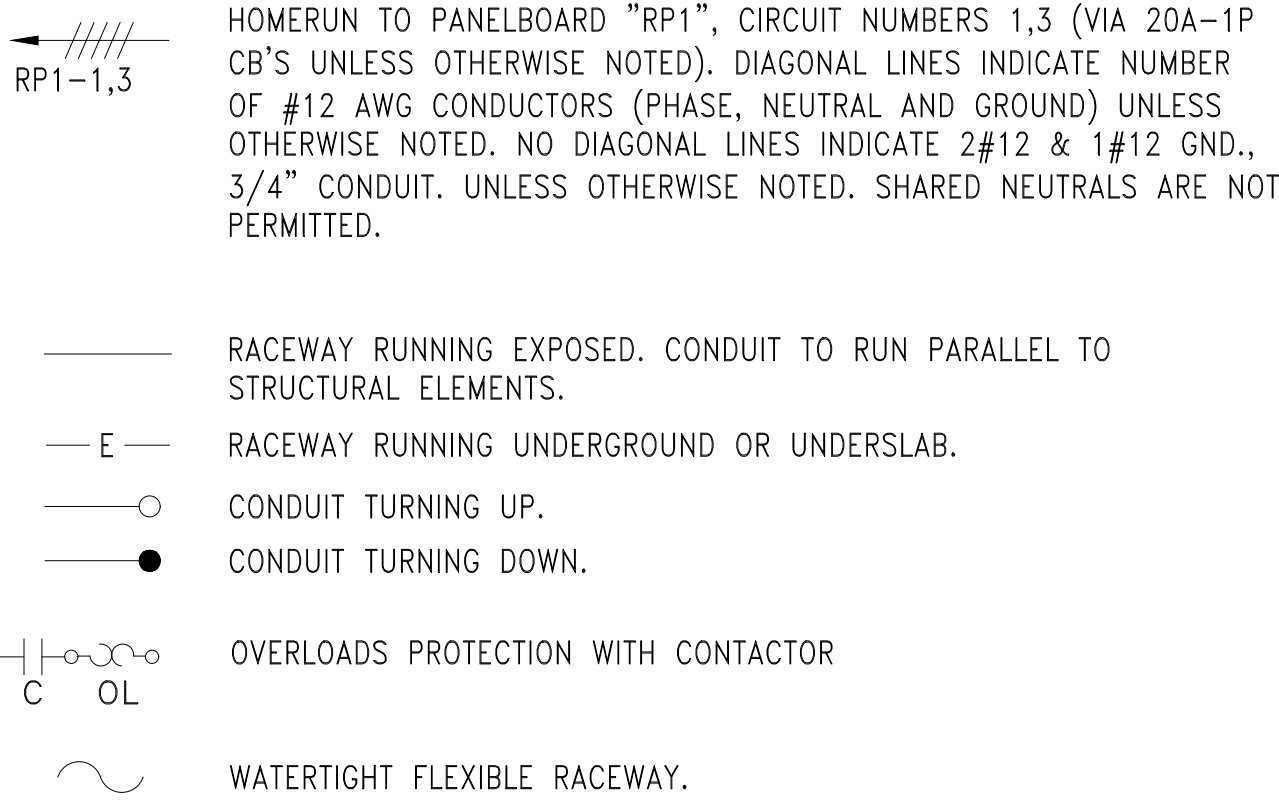


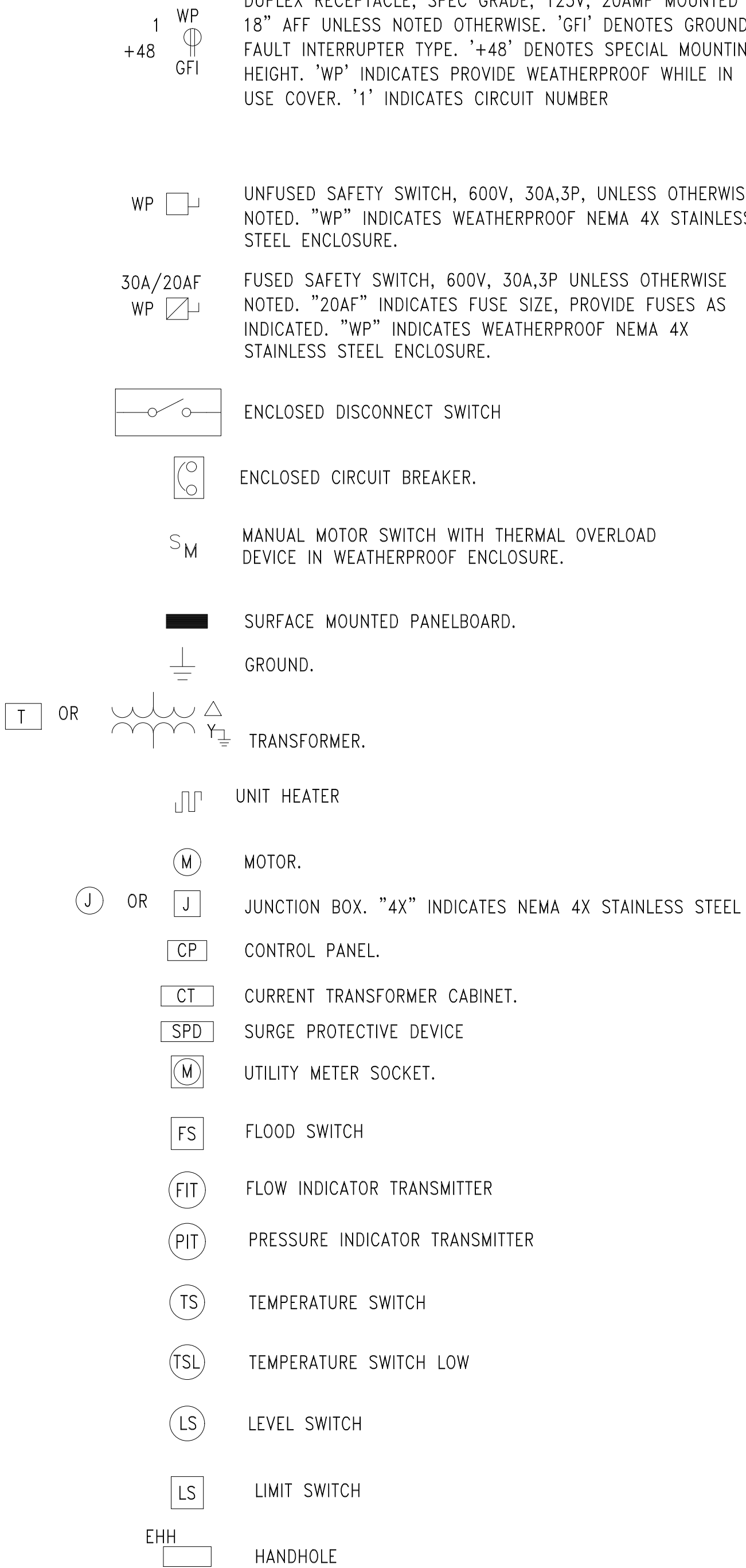
FILE NAME: \\US0552-PFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\6543_E-001.dwg LAYOUT NAME: E-001 ELECTRICAL LEGEND ABBREVIATIONS AND GENERAL NOTES PLOTTED: Friday, August 22, 2025 -- 1:38pm USER: tcamra

ELECTRICAL LEGEND

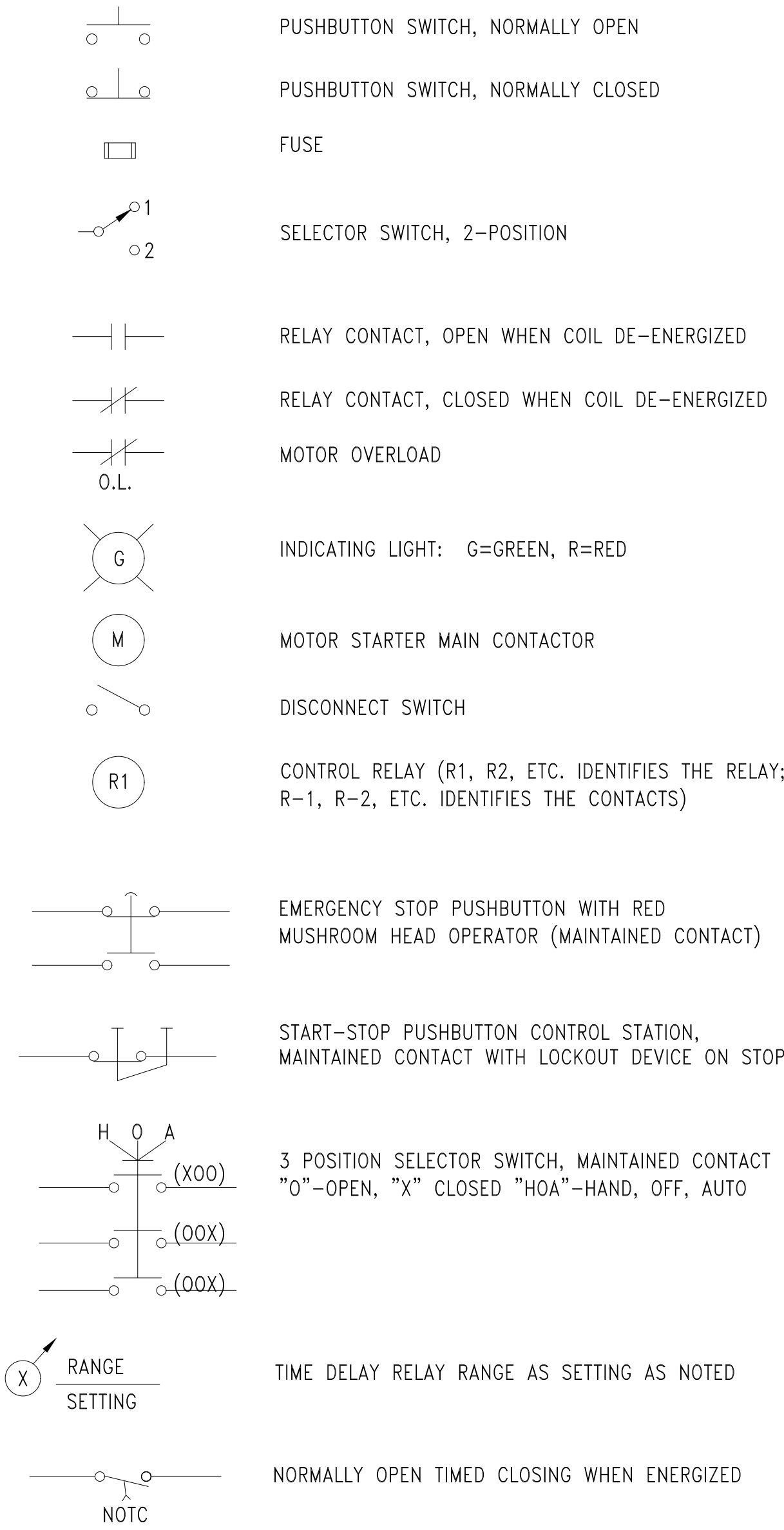
CONDUIT AND WIRE:



POWER/MISCELLANEOUS:



SCHEMATIC WIRING DIAGRAMS:



ABBREVIATIONS:

A (AMP)	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CU	COPPER
DC	DIRECT CURRENT
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GND	GROUND
GRS	GALVANIZED RIGID STEEL
KVA	KILOVOLT AMPERES
LTG	LIGHTING
MEC	MASSACHUSETTS ELECTRICAL CODE
N.O.	NORMALLY OPEN
N.C.	NORMALLY CLOSED
OH	OVERHEAD
P	POLE
PH	PHASE
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SCH	SCHEDULE
SPD	SURGE PROTECTIVE DEVICE
T.S.	TWISTED SHIELD
UL	UNDERWRITERS LABORATORIES
VFD	VARIABLE FREQUENCY DRIVE
V	VOLTS
W	WATTS
WP	WEATHERPROOF
#	KEY NOTE

GENERAL NOTES:

- CONDUIT RUNS ARE SHOWN APPROXIMATE. LOCATIONS MAY BE ADJUSTED TO MATCH EXISTING AND PROPOSED CONDITIONS AS DIRECTED BY THE RESIDENT ENGINEER.
- ALL CONDUIT AND EQUIPMENT TO BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS ELECTRICAL CODE AND APPLICABLE LOCAL CODES.
- ALL EQUIPMENT AND MATERIALS SHALL BE UL LISTED FOR THEIR INTENDED PURPOSE.
- WIRE SIZES SHALL BE BASED ON AMERICAN WIRE GAUGE (AWG), AS APPLIED TO COPPER CONDUCTORS. 120 VOLT, GENERAL PURPOSE CIRCUITS AND SMALL APPLIANCE/DEVICE CIRCUITS SHALL BE #12 AWG COPPER MINIMUM UNLESS OTHERWISE NOTED.
- WIRE AND CABLE FURNISHED AND USED SHALL BE NEW. WIRE AND CABLE SHALL BE PROTECTED FROM WEATHER AND DAMAGE DURING STORAGE AND HANDLING.
- THE CONTRACTOR SHALL CAREFULLY MARK THE PROPOSED LOCATION OF THE CONCRETE FOUNDATION AND THEN SHALL DETERMINE IF ANY UTILITIES, OR UNDERGROUND OR OVERHEAD OBSTRUCTION WILL PREVENT THE INSTALLATION AT THIS LOCATION. SIMILAR MARKING SHALL BE DONE FOR THE CONDUIT RUNS TO THE FOUNDATION. IF SUCH AN OBSTRUCTION IS EVIDENT, THE CONTRACTOR SHALL REQUEST PERMISSION FROM THE ENGINEER TO MOVE OR ADJUST THE LOCATION OF THE FOUNDATION.
- ELECTRICAL SERVICE TO THE CONTROL CABINET WILL BE PROVIDED BY THE ELECTRIC UTILITY. CONTRACTOR SHALL PROVIDE CONDUIT RISER AND WIRE WITH ENOUGH SLACK FOR SERVICE CONNECTION, WHERE REQUIRED. CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC UTILITY FOR SERVICE CONNECTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRIC SERVICE CONNECTION AND RELATED FEES FROM THE UTILITY.
- CONTRACTOR SHALL PROVIDE A CONDUIT TO THE SERVICE POLE AND A CONDUIT RISER ON THE POLE FOR SPARE. CONTRACTOR SHALL COORDINATE WITH THE UTILITY PROVIDER TO ENSURE ALL REQUIREMENTS ARE MET.
- THE LOCATIONS OF EXISTING SUBSURFACE UTILITIES SHOWN ON THE PLANS WERE COMPILED FROM AVAILABLE RECORD DRAWINGS AND ARE NOT WARRANTED TO BE CORRECT. THE LOCATIONS ARE APPROXIMATE ONLY AND IN SOME CASES MAY BE INCOMPLETE. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES REQUIRED AND VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK.
- THE CONTRACTOR SHALL MAINTAIN AREAS IN AND AROUND THE WORK ZONE FREE AND CLEAR OF DEBRIS AT ALL TIMES. NO STOCK PILING OF EQUIPMENT OR MATERIAL SHALL BE PERMITTED OUTSIDE OF FIXED WORK ZONES.
- COORDINATE ALL ELECTRICAL WORK, CONDUIT, AND WIRE ROUTING WITH PROCESS EQUIPMENT AND STRUCTURAL ELEMENTS.
- ALL SPARE CONDUITS SHALL BE INSTALLED WITH A NYLON PULL STRING.
- CONDUITS ENTERING VAULTS SHALL BE SEALED INSIDE AND OUT TO PREVENT WATER INTRUSION INTO CHAMBER.
- CONDUITS ENTERING ABOVE GRADE CABINETS SHALL HAVE THE WIRE SEALED TO PREVENT INTRUSION OF WATER.

NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. :	6543	FILE NO. :	6543_E-001
ACCESSION NO. :	----	SECTION NO. :	W10
DATE:	AUGUST 2025	DESIGNED BY:	PKR
		DRAWN BY:	PKR
		CHECKED BY:	DPF
SCALE:	AS NOTED	APPROVED BY:	DPF



MASSACHUSETTS WATER RESOURCES AUTHORITY

PREPARED BY :



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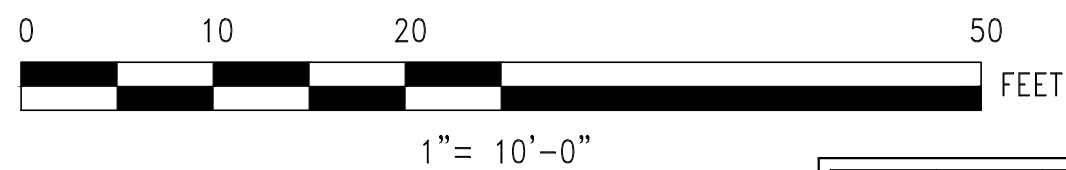
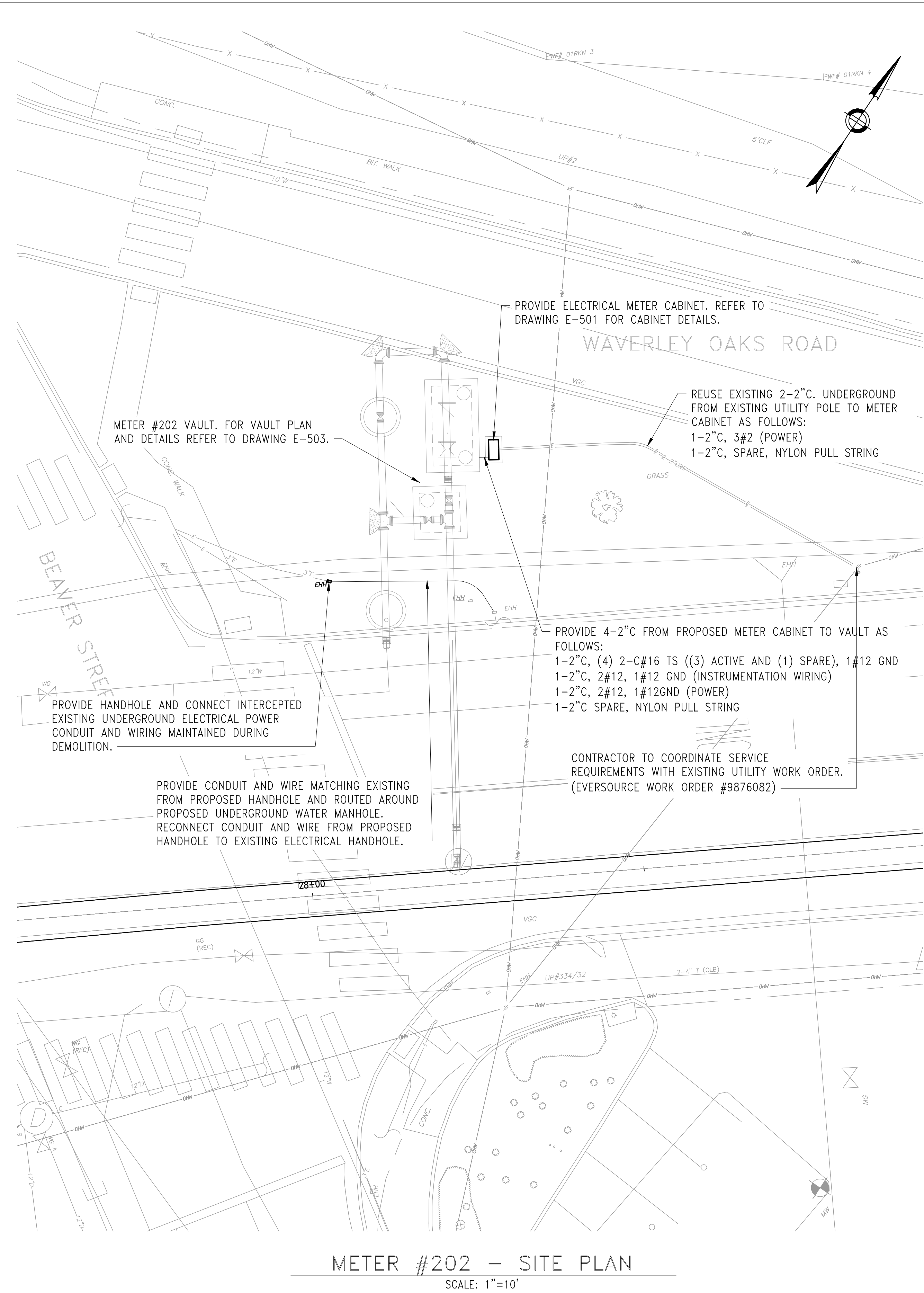
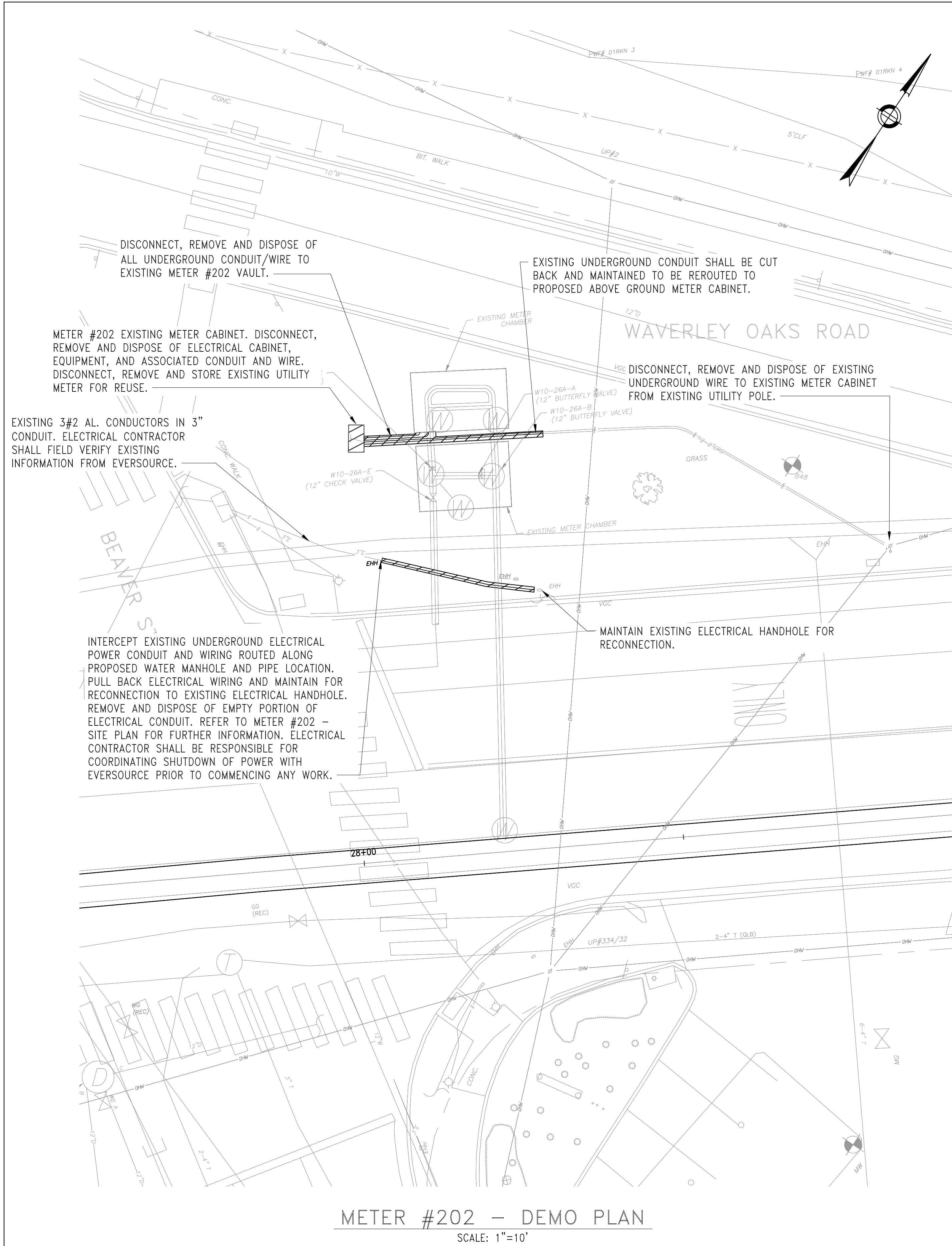
WESTON AQUEDUCT SUPPLY MAIN 3
REHABILITATION OF WATER MAINS
SECTION W10

ELECTRICAL LEGEND, ABBREVIATIONS, AND
GENERAL NOTES

DRAWING NO.

E-001

FILE NAME: \\US0552-PFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\13 Electrical\6543_E-101-102.dwg LAYOUT NAME: E-101 SITE PLAN - METER NO. 202 PLOTTED: Friday, August 22, 2025 - 2:49pm USER: dmacina



NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. :	6543	FILE NO. :	6543_E-101-102
ACCESSION NO. :	----	SECTION NO. :	W10
DATE:	AUGUST 2025	DESIGNED BY:	PKR
SCALE:	AS SHOWN	DRAWN BY:	PKR
		CHECKED BY:	DPF
		APPROVED BY:	DPF



MASSACHUSETTS WATER RESOURCES AUTHORITY

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WESTON AQUEDUCT SUPPLY MAIN 3
REHABILITATION OF WATER MAINS
SECTION W10

SITE PLAN - METER NO. 202

DRAWING NO.

E-101

54 OF 83

FILE NAME: \\US0552-PFSS01\workgroup\1951\active\195150185\CAD\2.2 Final Design\CP2\1.3 Electrical\6543_E-101-102.dwg LAYOUT NAME: E-102 SITE PLAN - METER NO. 152 PLOTTED: Friday, August 22, 2025 - 1:47pm USER: tcasno

CONTRACTOR SHALL CONFIRM EXACT LOCATION FOR POWER SOURCE POINT OF CONNECTION WITH BELMONT LIGHT AND PROVIDE CONDUIT AND WIRE AS REQUIRED FOR A COMPLETE INSTALLATION. (BELMONT LIGHT WORK ORDER #2023001346)

PROVIDE 2-2"C. CONCRETE ENCASED UNDERGROUND FROM NEAREST UTILITY POWER SOURCE TO PROPOSED METER CABINET AS FOLLOWS:
1-2"C, 3#2 (POWER)
1-2"C, SPARE, NYLON PULL STRING

TRANSMITTER MANHOLE, PROVIDED BY OTHERS

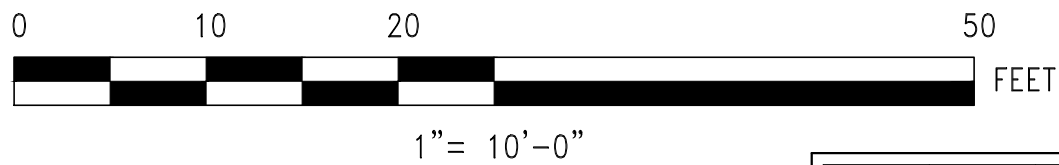
METER #152 VAULT. FOR VAULT PLAN AND DETAILS REFER TO DRAWING E-503.

PROVIDE 4-2"C CONCRETE ENCASED UNDERGROUND FROM ABOVE GROUND METER CABINET TO VAULT AS FOLLOWS:
1-2"C, (4) 2-C#16 TS ((3) ACTIVE AND (1) SPARE), 1#12 GND,
1-2"C, 4#12, 1#12 GND (INSTRUMENTATION WIRING)
1-2"C, 2#12, 1#12GND (POWER)
1-2"C SPARE, NYLON PULL STRING

PROVIDE ELECTRICAL METER CABINET. REFER TO DRAWING E-501 FOR CABINET DETAILS.

METER #152 - SITE PLAN

SCALE: 1"=10'



NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. :	6543	FILE NO. :	6543_E-101-102
ACCESSION NO. :	----	SECTION NO. :	W10
DATE:	AUGUST 2025	DESIGNED BY:	PKR
		DRAWN BY:	PKR
		CHECKED BY:	DPF
SCALE:	AS SHOWN	APPROVED BY:	DPF



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SECTION W10

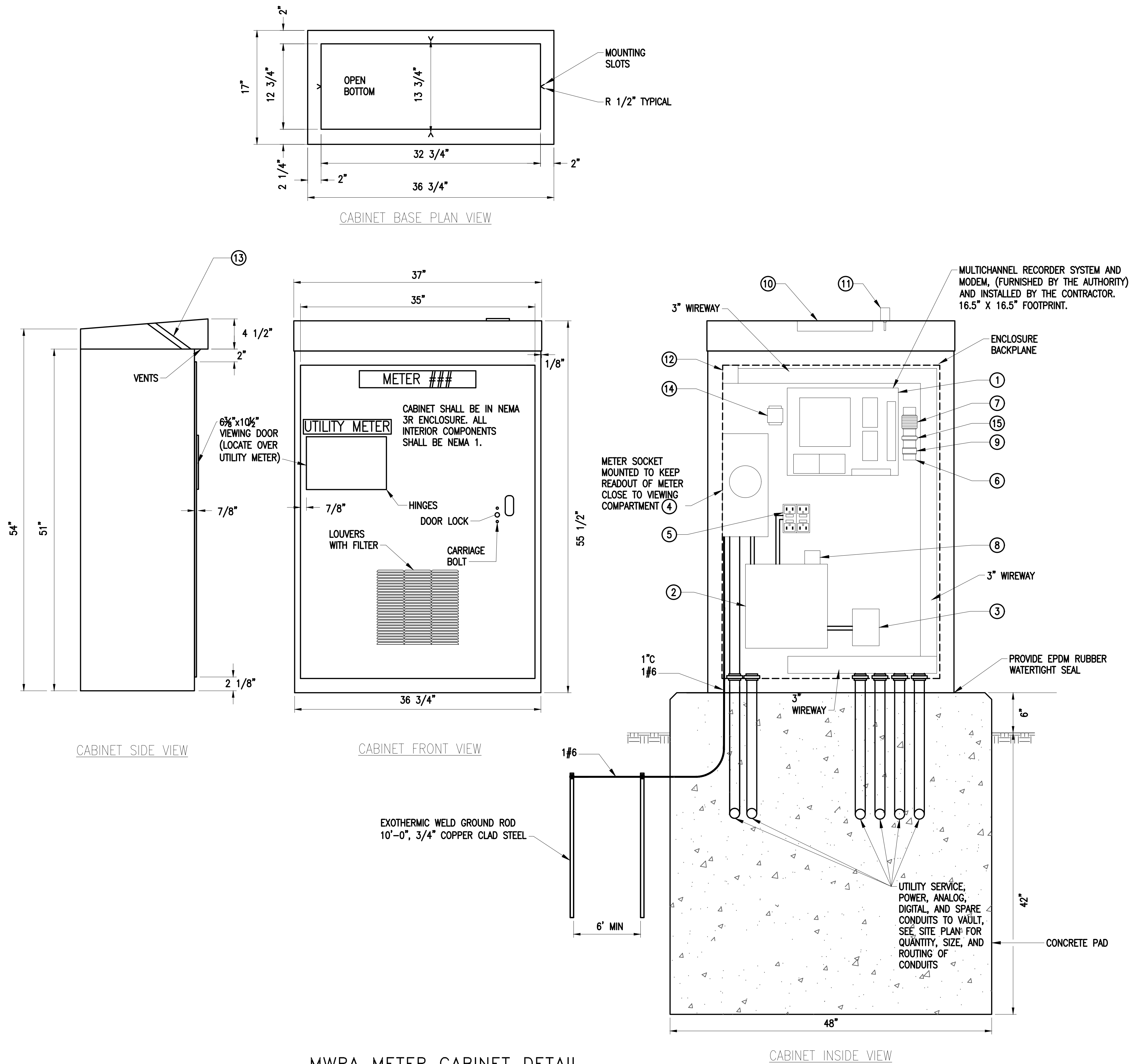
SITE PLAN - METER NO. 152

DRAWING NO.

E-102

55 OF 83

FILE NAME: \\US0552-PPFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\CABINET DETAILS PLOTTED: Friday, August 22, 2025 - 1:48pm USER: tcasna LAYOUT NAME: E-501 ELECTRICAL CABINET DETAILS



MWRA METER CABINET DETAIL
SCALE: NTS

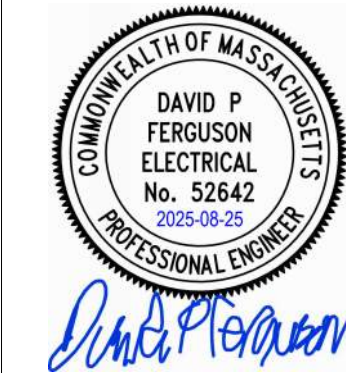
PANEL P1				
VOLTS: 120/240V, 1Ø, 3W AMPS: 100A MAIN CIRCUIT BREAKER AIC: 10,000 A				
CKT	LOAD	POLES	AMPS	LOAD
1	CABINET LIGHT	1	15	0.01
2	CONTROL PANEL POWER	1	15	0.20
3	CABINET RECEPTACLE	1	15	0.18
4	CABINET HEATER	1	15	0.20
5	VAULT RECEPTACLE	1	15	0.18
6	CABINET FAN	1	15	0.02
7	SURGE PROTECTION DEVICE	2	20	
8				
9	SPARE	1	20	
10	SPARE	1	20	
11	SPACE	1	0	
12	SPACE	1	0	
SUBTOTALS- KVA				0.79
				3.2917

#	CABINET METER COMPONENTS		
NO.	COMPONENT	MANUFACTURER	BASIS OF DESIGN
1	MULTICHANNEL RECORDER SYSTEM AND MODEM	FURNISHED BY THE AUTHORITY	TELOG
2	120/240V 100A 1PH 3W PANELBOARD "P1"	SQUARE D	Q01120M100C, QOC12US, PK9GTA
3	HEATER	HOFFMAN	DAH2001A
4	METER SOCKET	-	-
5	WEATHER-RESISTANT GFCI TWIN DUPLEX RECEPTACLE	-	-
6	DIN RAIL	-	-
7	SURGE SUPPRESSION TERMINAL BLOCKS	PHOENIX CONTACT	TT-2-PE-24DC
8	PANEL SURGE PROTECTION DEVICE	CITEL	DS150E
9	RELAY	-	-
10	CABINET LIGHT	PENTAIR	LEDA1S35
11	VANDAL RESISTANT CELLULAR ANTENNA	TELOG	A-ETV-LTE
12	DOOR INTRUSION SWITCH	-	-
13	EXHAUST FAN	PENTAIR	A4AXFN
14	EXHAUST FAN THERMOSTAT	STEGO	011409-00
15	CB1	-	-

NOTE: REFER TO ELECTRICAL WIRING DIAGRAM ON DRAWING E-601 FOR FURTHER INFORMATION

NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. : 6543	FILE NO. : 6543_E-501
ACCESSION NO. : ----	SECTION NO. : W10
DATE: AUGUST 2025	DESIGNED BY: PKR
	DRAWN BY: PKR
	CHECKED BY: DPF
SCALE: AS NOTED	APPROVED BY: DPF



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REHABILITATION OF WATER MAINS
SECTION W10

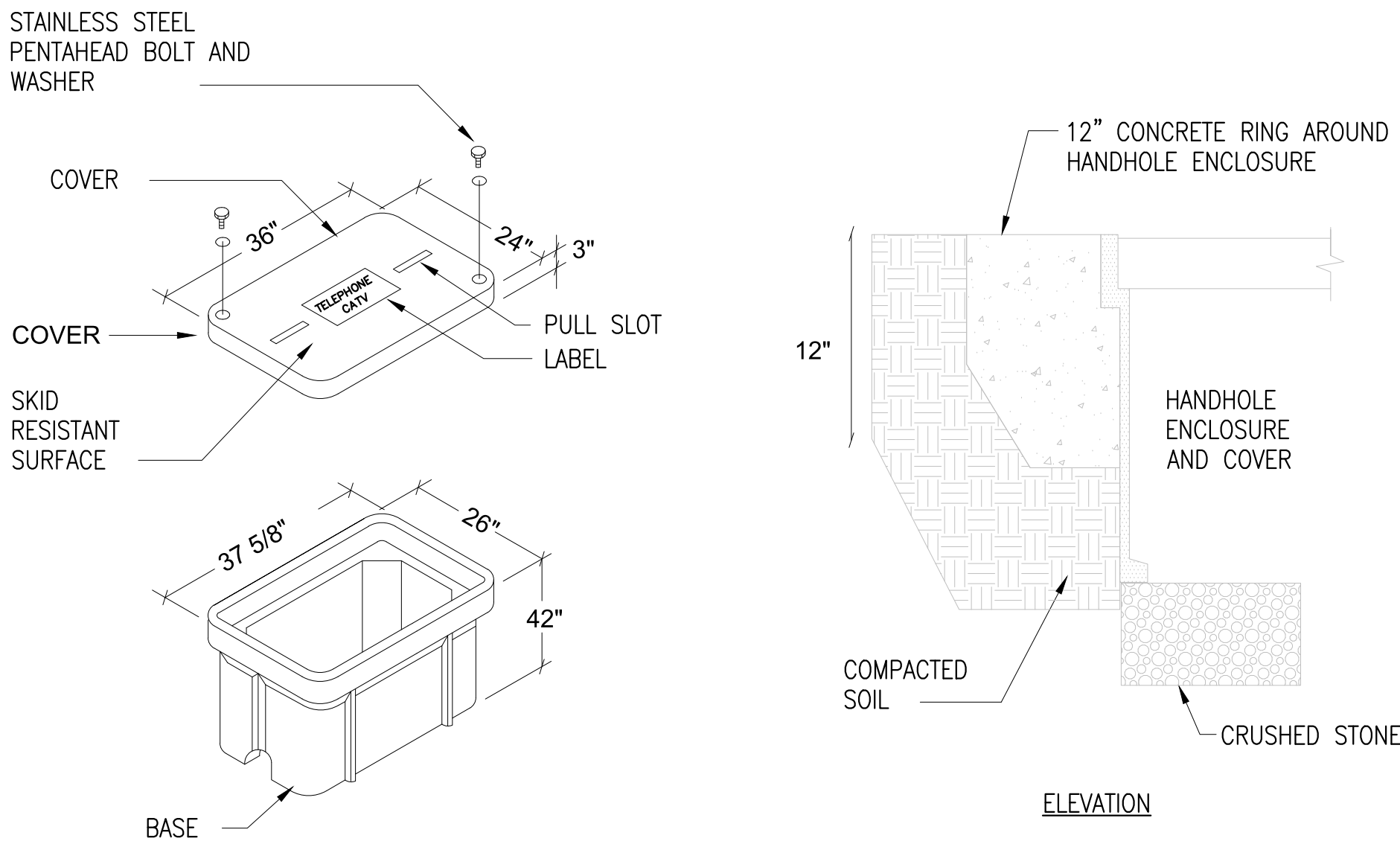
ELECTRICAL CABINET DETAILS

DRAWING NO.

E-501

56 OF 83

FILE NAME: \\US0552-PPFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\6543_E-502.dwg LAYOUT NAME: E-502 ELECTRICAL DETAILS PLOTTED: Friday, August 22, 2025 - 1:48pm USER: tcasano

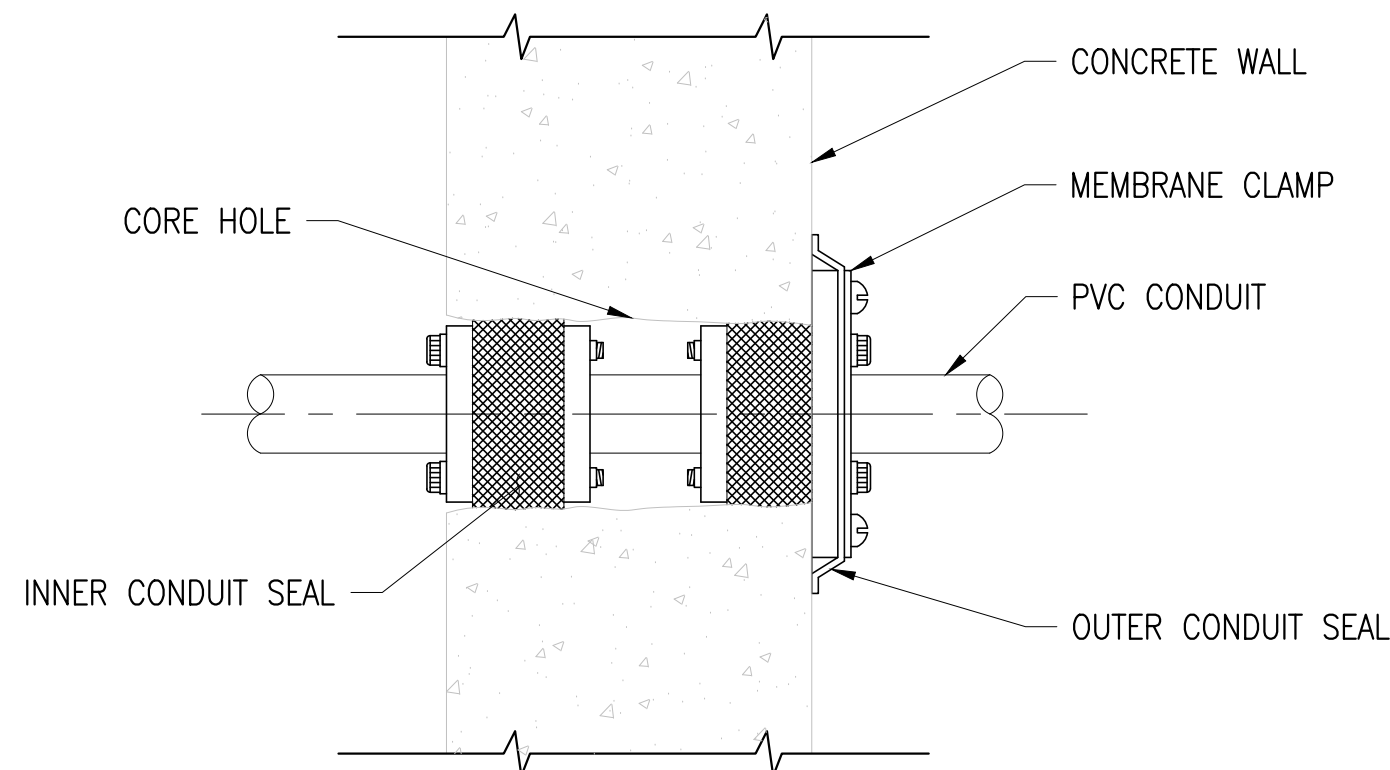


HANDHOLE REQUIREMENTS

1. PROVIDE OPEN BOTTOM HANDHOLE. HOUSING SHALL BE A POLYMER CONCRETE REINFORCED WITH A HEAVY WEAVE FIBERGLASS REINFORCING. PROVIDE QUAZITE #PG STYLE OR APPROVED EQUAL.
2. PROVIDE STAINLESS STEEL BOLTS AND INSERTS.
3. PROVIDE "ELECTRICAL" LABEL FOR POWER HANDHOLES.
4. COORDINATE DEPTH OF HANDHOLES WITH EXISTING CONDITIONS IN THE FIELD. CONTRACTOR SHALL PROVIDE EXTENSION BOXES AS REQUIRED.
5. HANDHOLES SHALL BE LOCATED A MINIMUM OF 3' OFF AREAS SUBJECT TO VEHICULAR TRAFFIC.
6. COVER AND BOX SHALL WITHSTAND A SERVICE LOAD OF NO LESS THAN 15000 LBS OVER A 10" BY 10" AREA

HANDHOLE DETAIL 36"L x 24"W x 42"D
SCALE: NTS

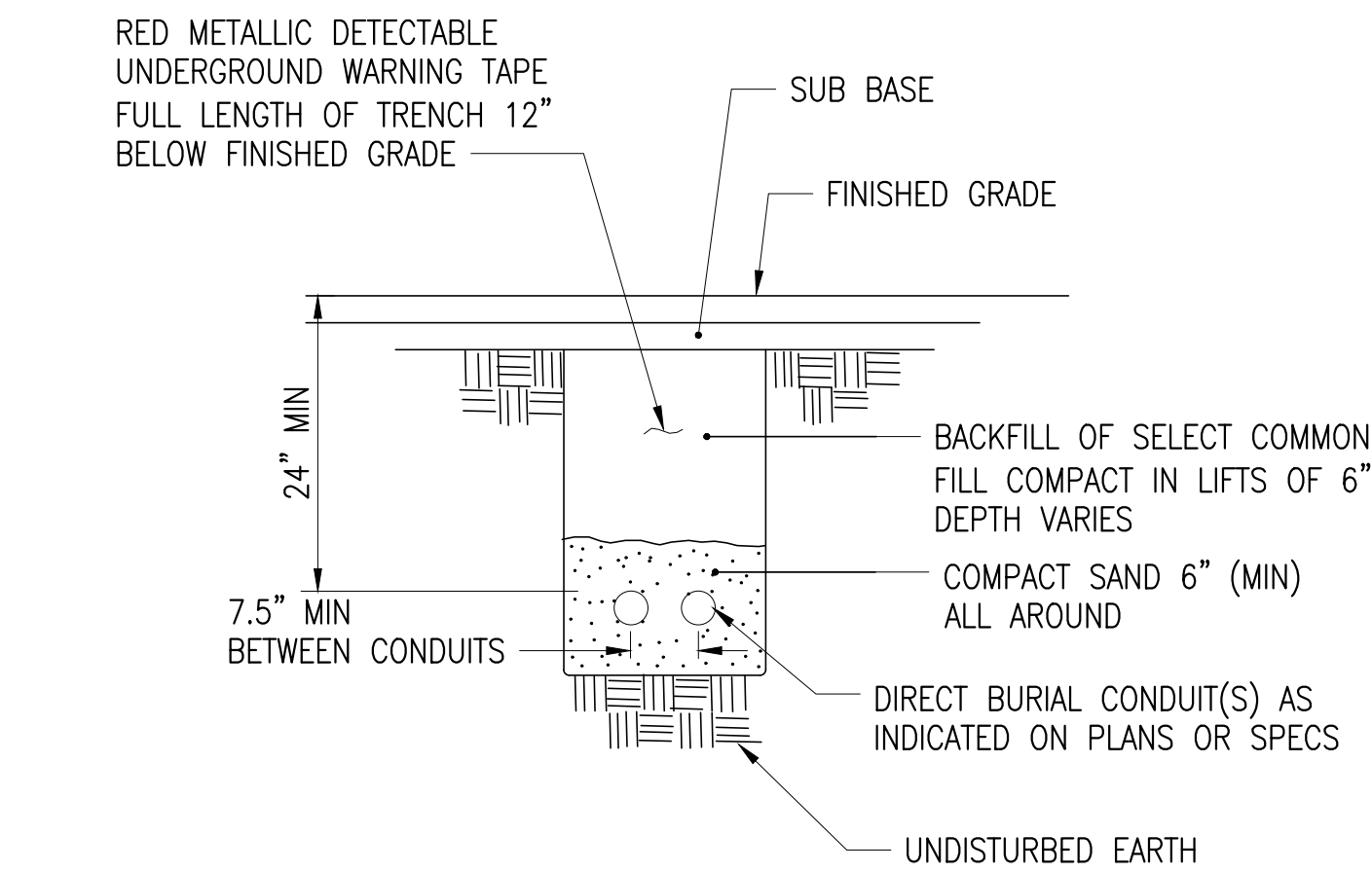
1



CONDUIT PENETRATION DETAIL

SCALE: NTS

4



DIRECT BURIED CONDUIT

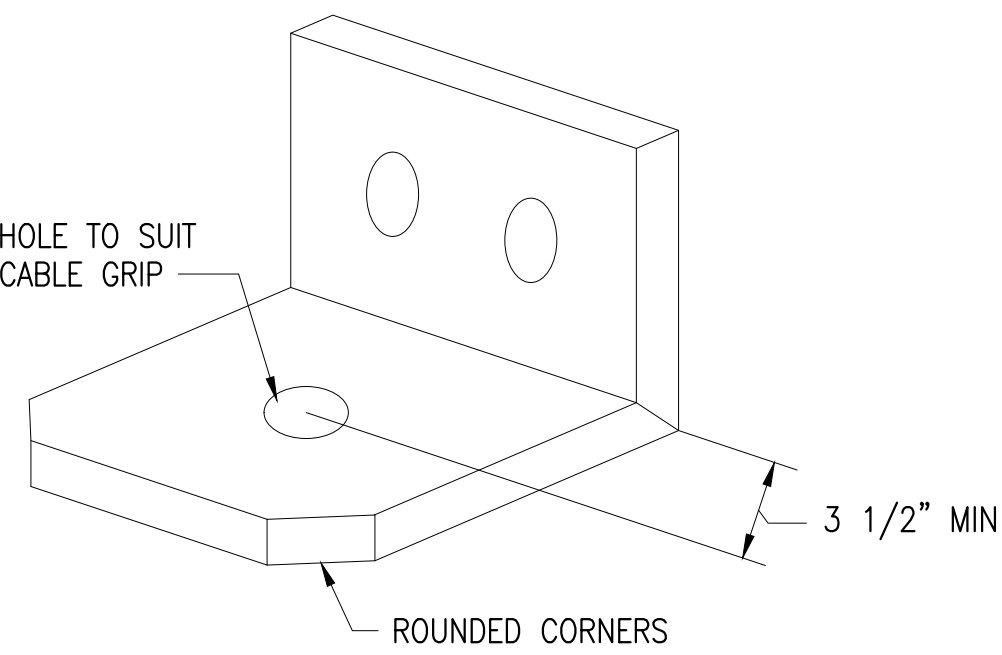
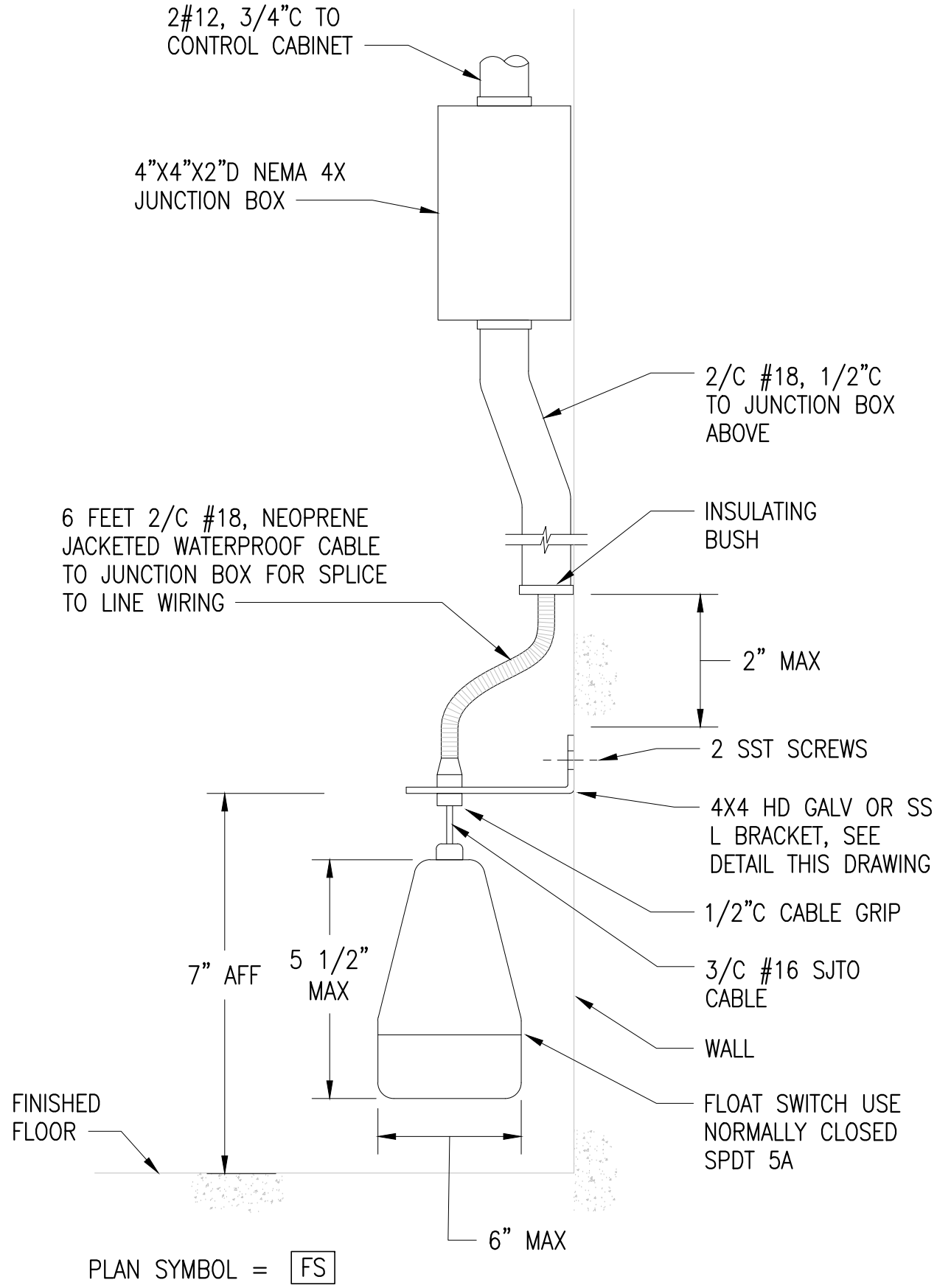
SCALE: NTS

5

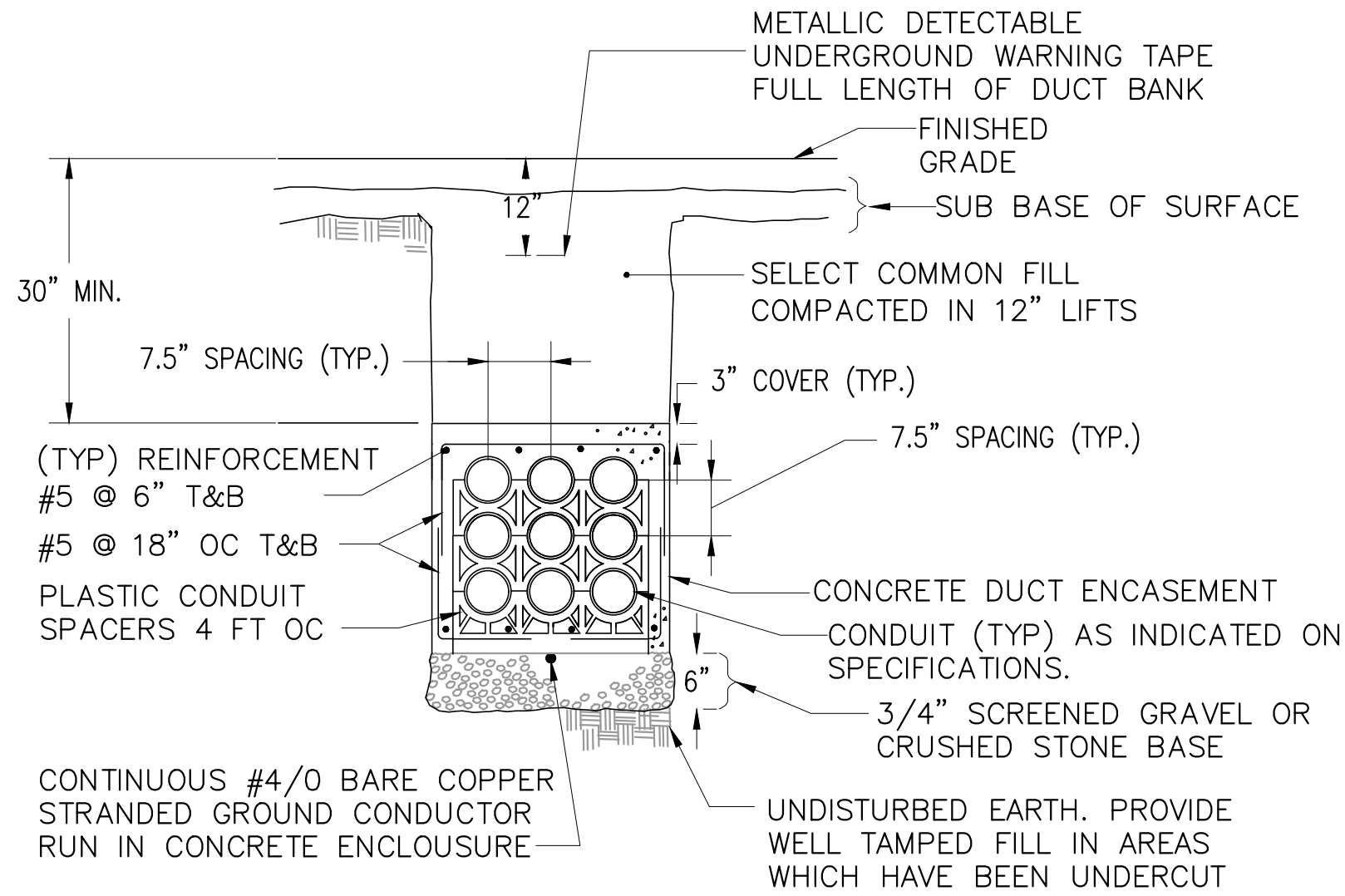
FLOODING ALARM FLOAT SWITCH MOUNTING DETAIL

SCALE: NTS

2



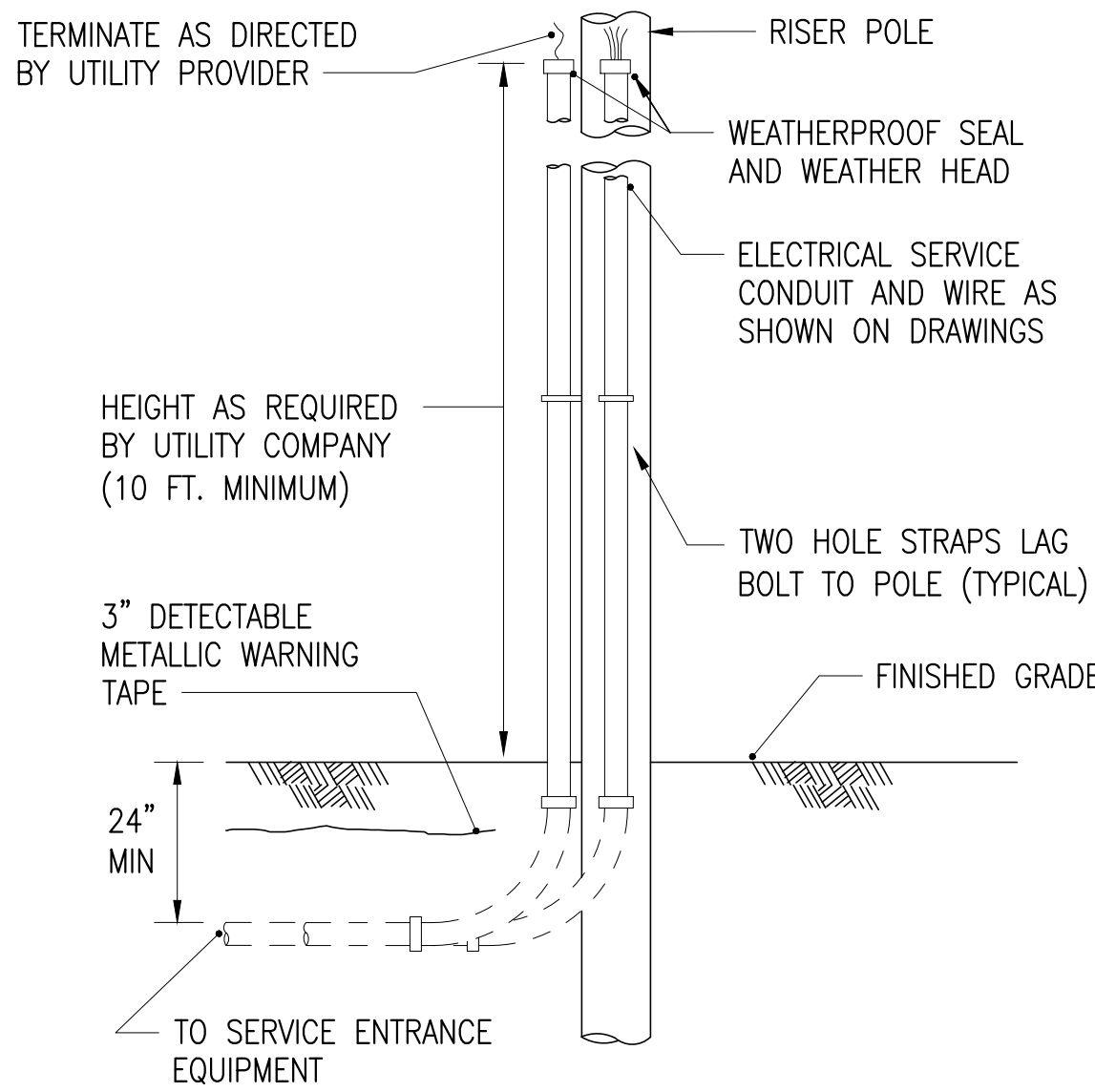
L-BRACKET DETAIL
NOT TO SCALE



TYPICAL CONCRETE ENCASED DUCTBANK

SCALE: NTS

3



UTILITY COMPANY RISER POLE INSTALLATION

SCALE: NTS

6

NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. : 6543	FILE NO. : 6543_E-502
ACCESSION NO. : ----	SECTION NO. : W10
DATE: AUGUST 2025	DESIGNED BY: PKR
	DRAWN BY: PKR
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SCALE: AS NOTED	APPROVED BY: DPF



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WESTON AQUEDUCT SUPPLY MAIN 3
REHABILITATION OF WATER MAINS
SECTION W10

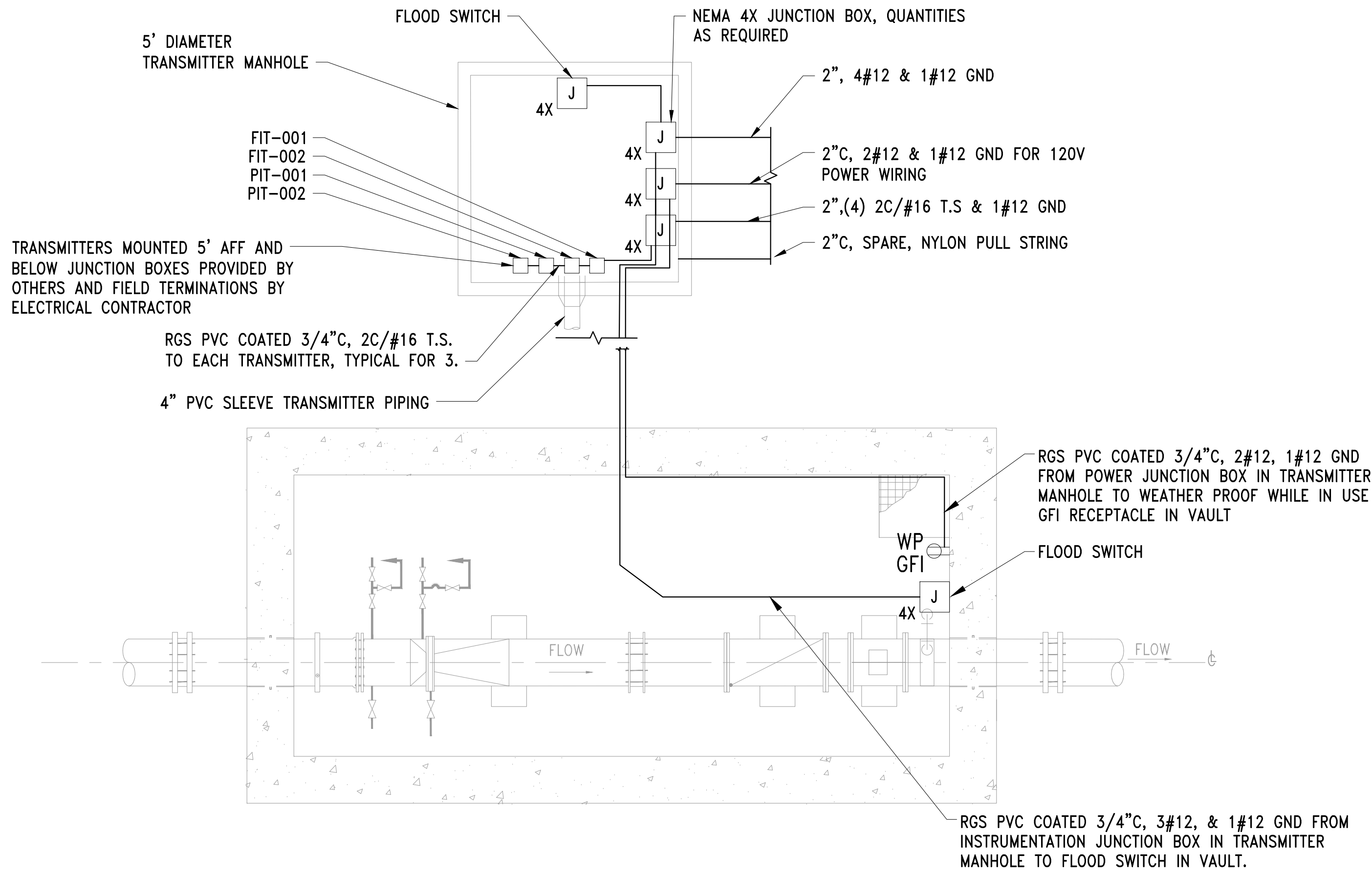
ELECTRICAL DETAILS

DRAWING NO.

E-502

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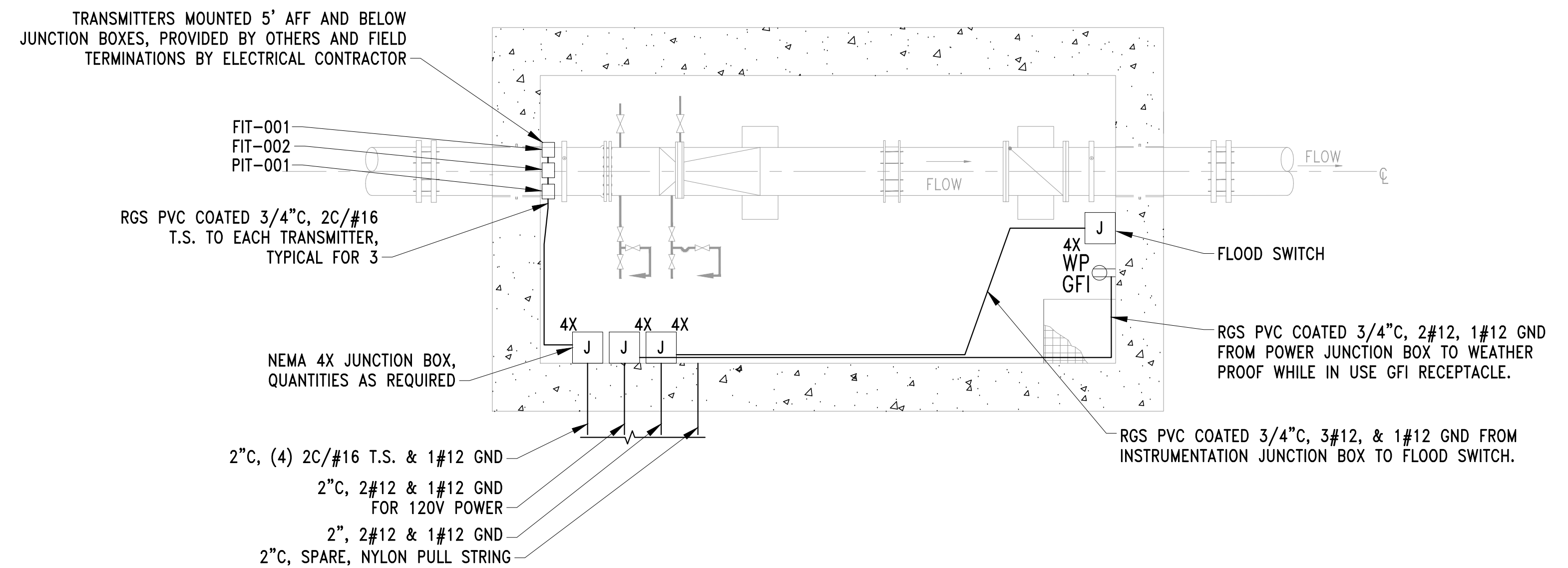
FILE NAME: \\US0552-PFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\6543_E-503.dwg LAYOUT NAME: E-503 ELECTRICAL VAULT DETAILS PLOTTED: Friday, August 22, 2025 - 1:49pm USER: lcoano



MWRA REVENUE METER #152 VAULT

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

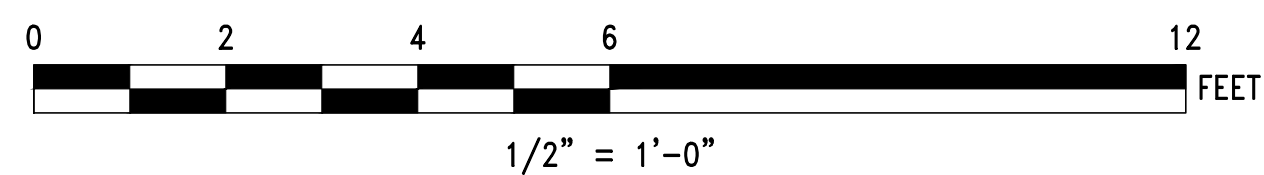
A



MWRA METER #202 VAULT PLAN

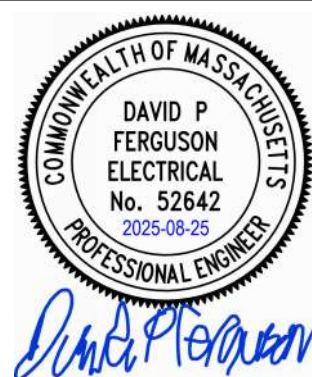
SCALE: 1/2" = 1' - 0"

E-503 B



NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. : 6543	FILE NO. : 6543_E-503
ACCESSION NO. : ----	SECTION NO. : W10
DATE: AUGUST 2025	DESIGNED BY: PKR
	DRAWN BY: PKR
	CHECKED BY: DPF
SCALE: AS NOTED	APPROVED BY: DPF



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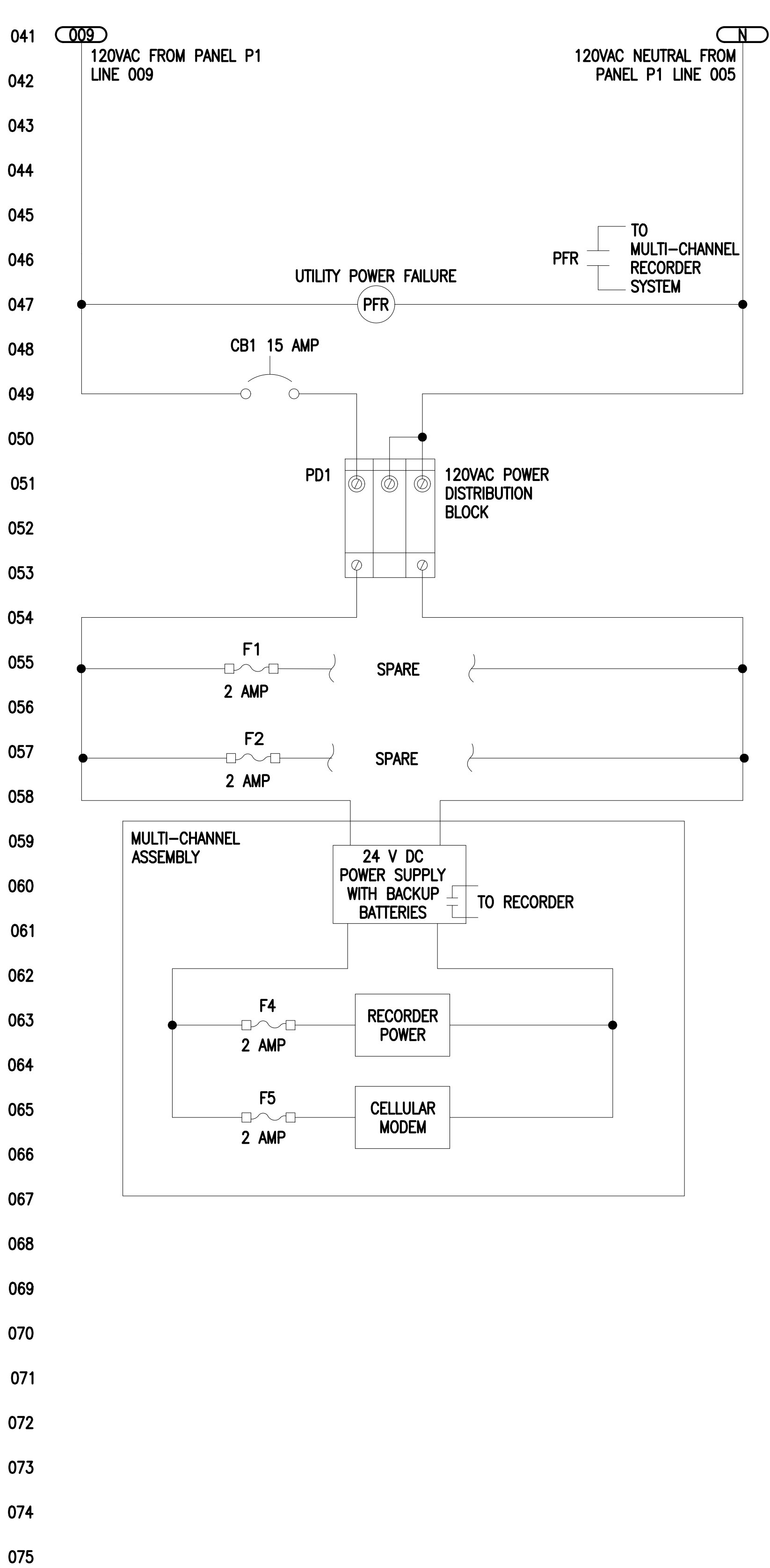
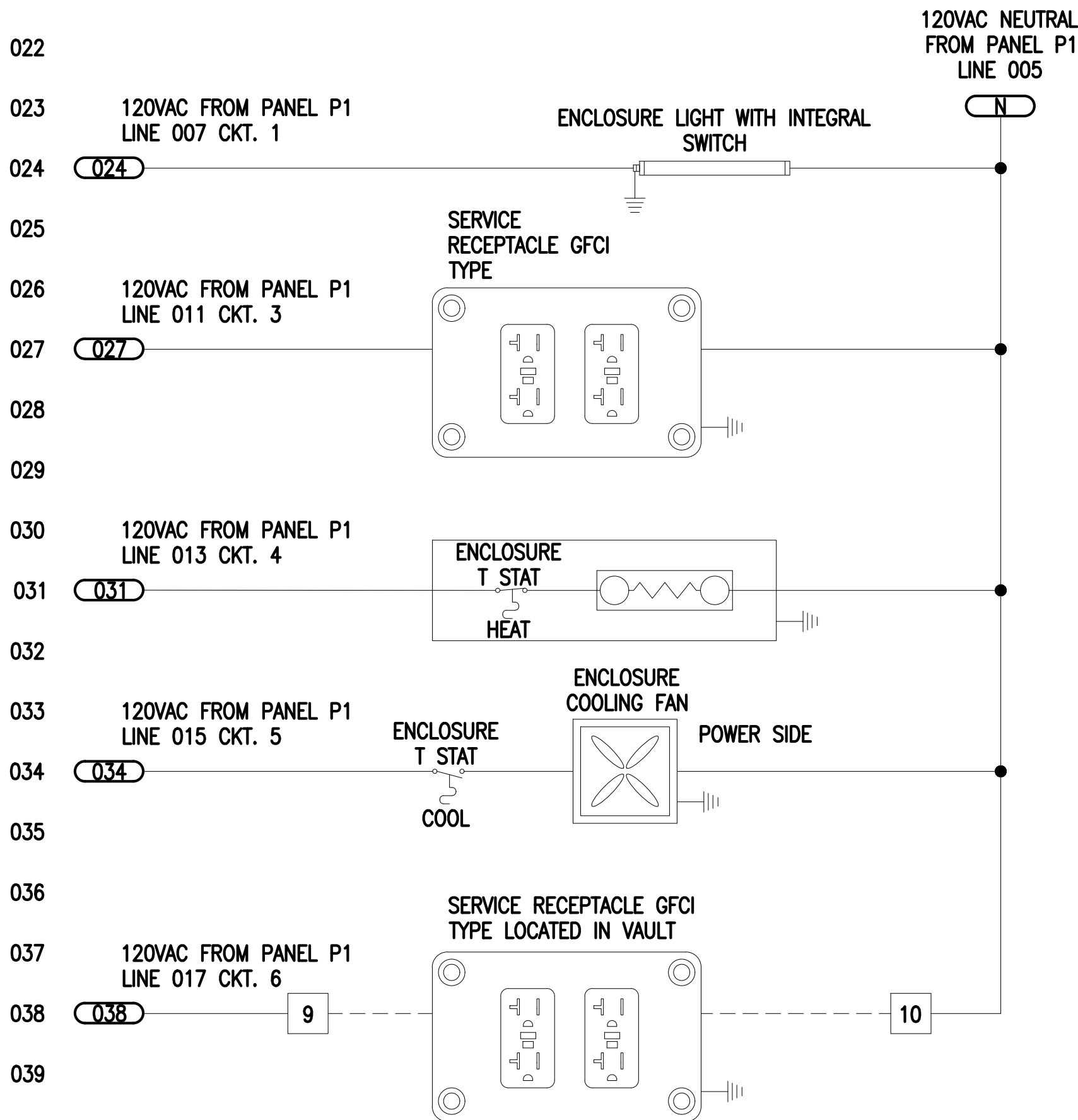
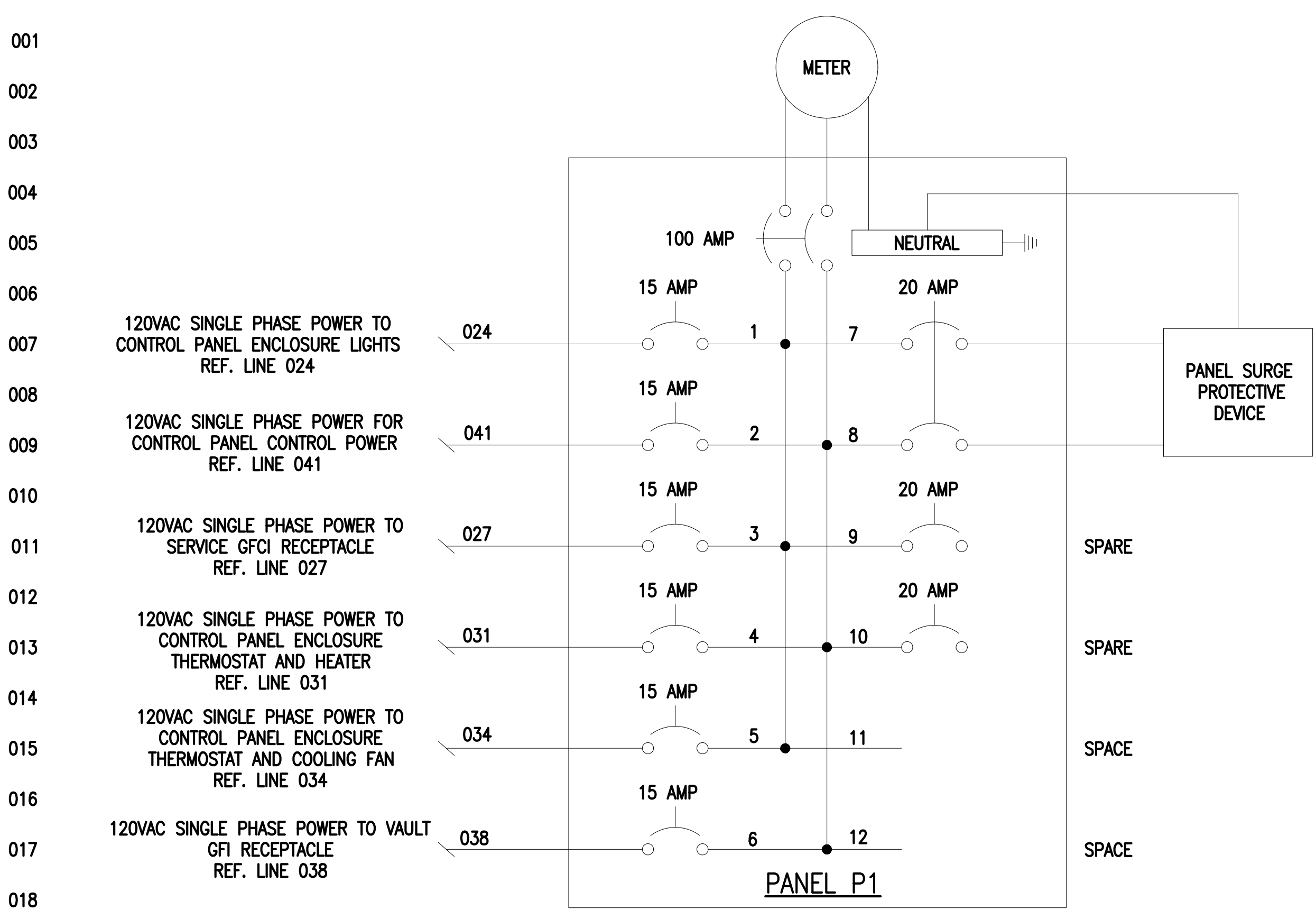
ELECTRICAL VAULT DETAILS

DRAWING NO.

E-503

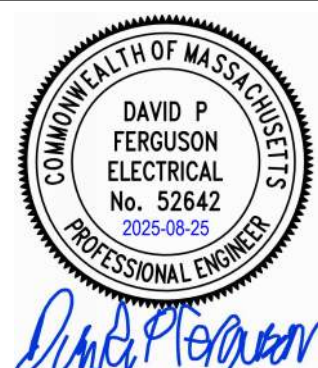
58 OF 83

FILE NAME: \\US0552-PPFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\6543_E-601-E-603.dwg LAYOUT NAME: E-601 ELECTRICAL WIRING DIAGRAM PLOTTED: Friday, August 22, 2025 - 1:50pm USER: lcamma



NO.	DATE	BY	CHK'D	REVISION

CONTRACT NO. :	6543	FILE NO. :	6543_E-601-E-603
ACCESSION NO. :	----	SECTION NO. :	W10
DATE:	AUGUST 2025	DESIGNED BY:	PKR
SCALE:	AS NOTED	DRAWN BY:	PKR
		CHECKED BY:	DPF
		APPROVED BY:	DPF



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SECTION W10

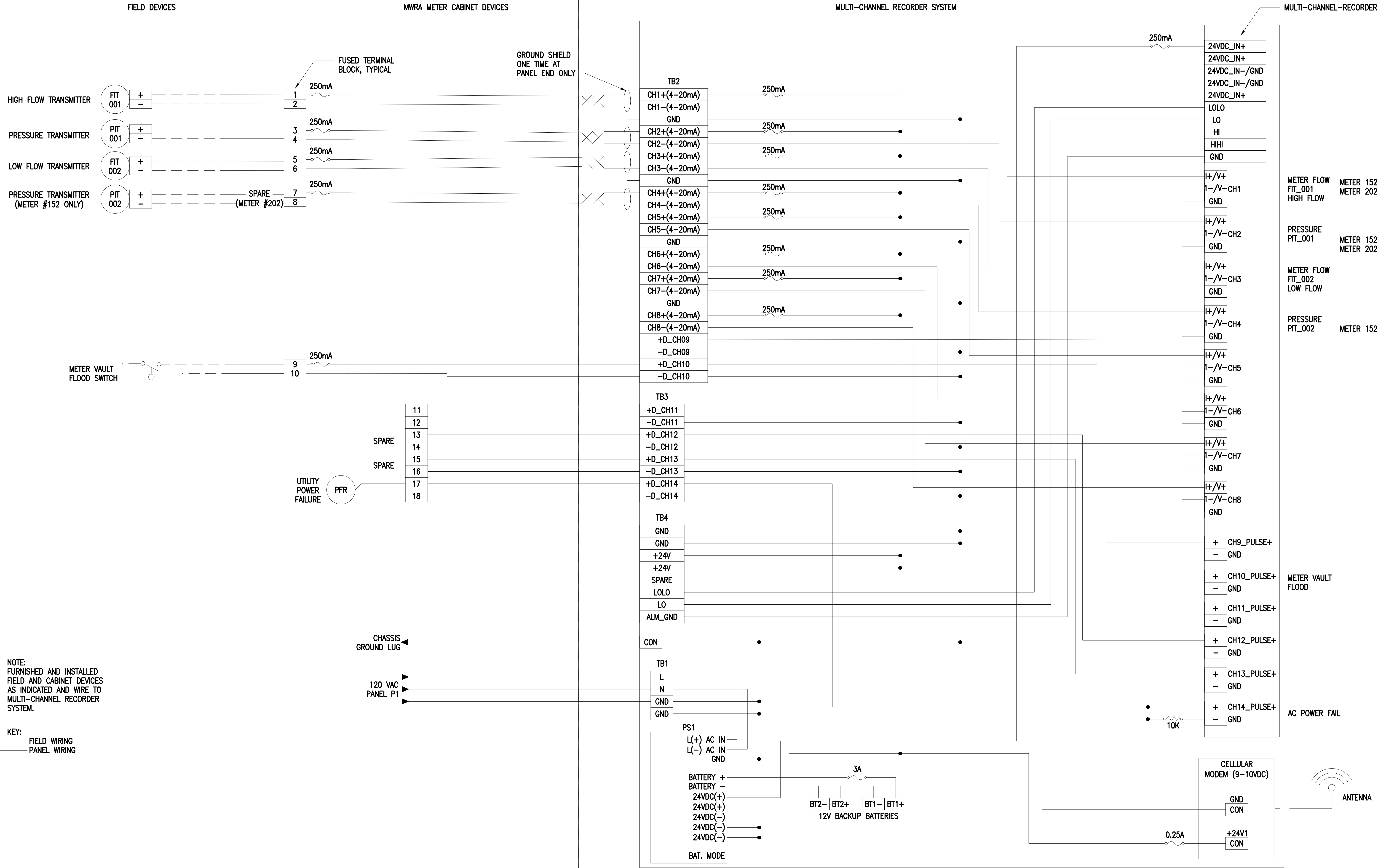
ELECTRICAL WIRING DIAGRAM

DRAWING NO.

E-601

59 OF 83

FILE NAME: \\US0552-PPFSS01\workgroup\1951\active\19510185\CAD\2.2 Final Design\CPA\1.3 Electrical\6543_E-601-E-603.dwg LAYOUT NAME: E-602 ELECTRICAL INSTRUMENTATION WIRING DIAGRAM PLOTTED: Friday, August 22, 2025 - 1:50pm USER: tcoama



PROPOSED MWRA METER CABINET INSTRUMENTATION WIRING DIAGRAM

NOT TO SCALE

CONTRACT NO. : 6543		FILE NO. : 6543_E-601-E-603	
ACCESSION NO. : ----		SECTION NO. : W10	
DATE: AUGUST 2025		DESIGNED BY: PKR	
SCALE: AS NOTED		DRAWN BY: PKR	
		CHECKED BY: DPF	
		APPROVED BY: DPF	

DAVID P. FERGUSON
ELECTRICAL
No. 52642
2025-08-25
PROFESSIONAL ENGINEER

MASSACHUSETTS WATER RESOURCES AUTHORITY

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WESTON AQUEDUCT SUPPLY MAIN 3
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SECTION W10

ELECTRICAL INSTRUMENTATION WIRING
DIAGRAM

DRAWING NO.
E-602

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