

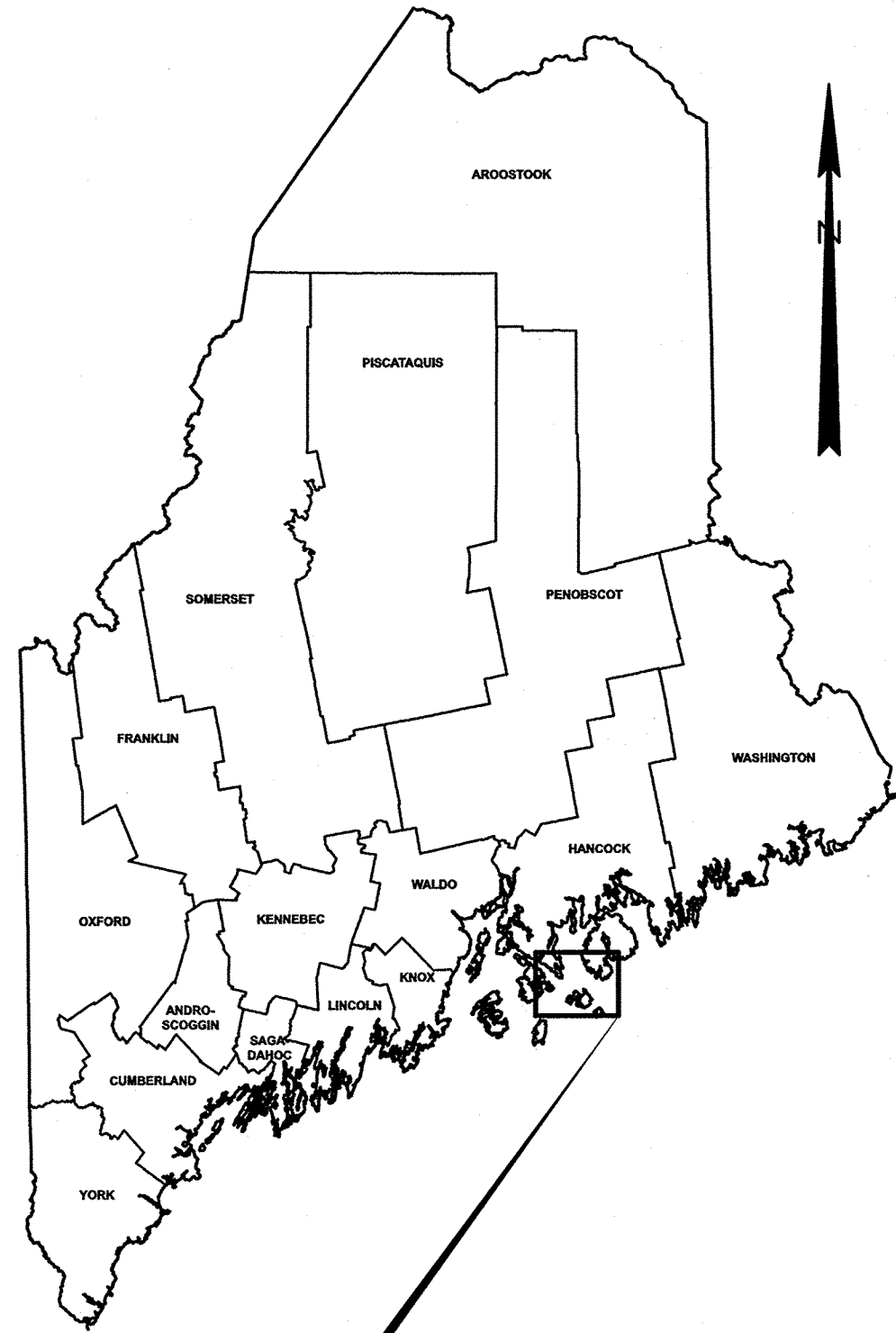
STATE OF MAINE
DEPARTMENT OF TRANSPORTATION



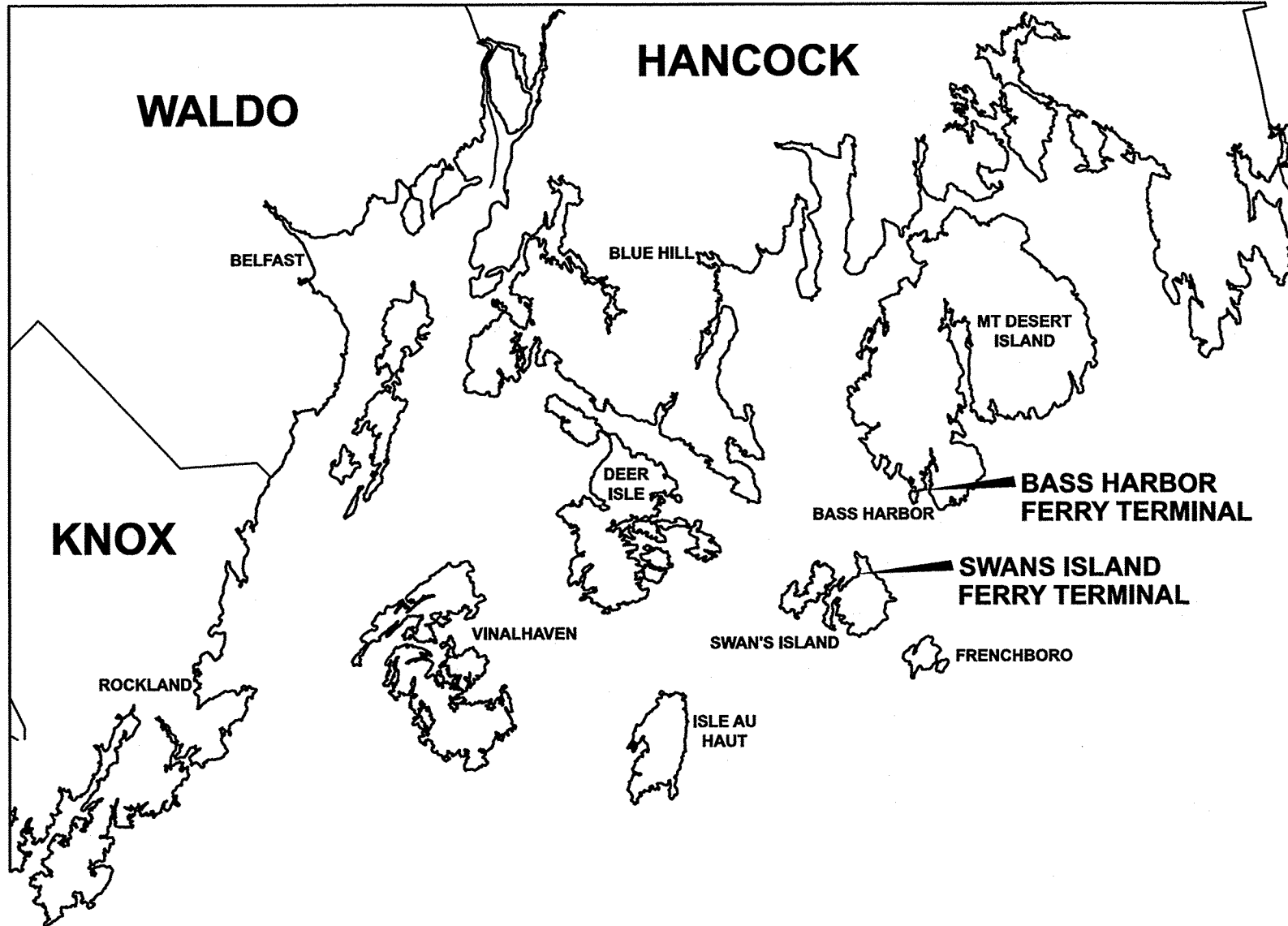
BASS HARBOR &
SWANS ISLAND

HANCOCK COUNTY
BASS HARBOR & SWANS ISLAND
TERMINALS

ELECTRICAL UPGRADES
WIN: 026962.10



PROJECT LOCATION



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STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

APPROVED
COMMISSIONER: *[Signature]*
CHIEF ENGINEER: *[Signature]*

DATE
5-15-25

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

Dana Bergman
SIGNATURE
18362
P.E. NUMBER
5/2/2025
DATE

PROJECT INFORMATION

PROGRAM	MULTIMODAL PROGRAM
PROJECT MANAGER	AURELE GORNEAU II
DESIGNER	DANA BERGMAN
CONSULTANT	STANTEC
PROJECT RESIDENT	
CONTRACTOR	
PROJECT COMPLETION DATE	

FERRY TERMINAL
ELECTRICAL UPGRADES

TITLE SHEET

WIN 26962.10

FEDERAL PROJECT NO.: 02696210

SHEET NUMBER

1

OF 20



PROJECT LOCATION:	BASS HARBOR & SWANS ISLAND FERRY TERMINALS
PROGRAM AREA:	MULTIMODAL
SCOPE OF WORK:	ELECTRICAL UPGRADES

ELECTRICAL ABBREVIATIONS LIST: (NOT ALL ABBREVIATIONS MAY BE USED)	
A	AMPERE(S)
A.C.	ALTERNATING CURRENT
AF	AMP FRAME
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AL	ALUMINUM
ALT	ALTERNATE
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BFG	BELOW FINISHED GRADE
BW	BUSWAY
C	CONDUIT (SEE RACEWAYS AND CONDUCTORS)
CB	CIRCUIT BREAKER
CC	CONTROL CABINET
CKT	CIRCUIT
COND	CONDUCTOR
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
D.C.	DIRECT CURRENT
DISC	DISCONNECT
DN	DOWN
DP	DOUBLE POLE
DT	DOUBLE THROW
E.C.	ELECTRICAL CONTRACTOR
E.HTR	ELECTRIC HEATER
EM	EMERGENCY
EXIST	EXISTING
F	FUSE
FDR	FEEDER
FS	FUSIBLE SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
G	GROUND
G.C.	GENERAL CONTRACTOR
GCB	GENERATOR CIRCUIT BREAKER
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
HACR	HEATING/AIR CONDITIONING/REFRIDGERATION
H.D.	HOT DIPPED
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
Hz	FREQUENCY IN CYCLES PER SECOND
INC	INCANDESCENT
JB	JUNCTION BOX
K	KEY OPERATED
KCMIL	THOUSAND CIRCULAR MIL(S)
kVA	KILOVOLT AMPERE(S)
kvar	KILOVAR(S)
kW	KILOWATT(S)
LA	LIGHTNING ARRESTER
LP	LIGHTING PANEL
LV	LOW VOLTAGE
MCB	MAIN CIRCUIT BREAKER
MGST	MAGNETIC STARTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
MTH	MOUNTING HEIGHT
MTR	MOTOR
MTS	MANUAL TRANSFER SWITCH
N.I.C.	NOT IN CONTRACT
NC	NORMALLY CLOSED
NF	NONFUSED
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLOAD ELEMENT
P	PILOT INDICATOR
pf	POWER FACTOR
PLG.C	PLUMBING CONTRACTOR
PNL	PANEL
PP	POWER PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
R	RELAY
RC	REMOTE CONTROL
RECP	RECEPTACLE

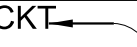
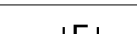
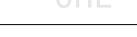
ELECTRICAL ABBREVIATIONS LIST (CONT.)	
(NOT ALL ABBREVIATIONS MAY BE USED)	
RGS	RIGID METAL CONDUIT
S.S.	SOLID STATE
SEC	SECONDARY
SP	SINGLE POLE
SST	SOLID STATE TRIP
ST	SINGLE THROW
SW	SWITCH
SWBD	SWITCHBOARD
T EL	TELEPHONE
TB	TERMINAL BOX
TEMP	TEMPORARY
TYP	TYPICAL
UG	UNDERGROUND
UNG	UNGROUND
UPS	UNINTERRUPTED POWER SUPPLY
V	VOLT(S)
VA	VOLTAMP(S)
var	REACTIVE VOLT AMPERES
VP	VAPORPROOF
VT	VOLTAGE TRANSFORMER
W	WATT(S)
WP	WEATHERPROOF
WR	WEATHER RESISTANT
XFMR	TRANSFORMER

ELECTRICAL SYMBOL / LEGEND:

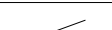
NOT ALL SYMBOLS SHOWN MAY BE USED

POWER AND LIGHTING APPURTANCES LEGEND:

SYMBOL	REFER TO PLANS FOR EXACT QUANTITIES AND LOCATIONS.
	LED LUMINAIRE AT DOLPHINS
	PANELBOARD - MOUNT AT 6'-6" TO TOP.
	ELECTRICAL PULL BOX, SIZED AS REQUIRED OR AS SHOWN ON DRAWINGS.
	JUNCTION BOX TYPE B, 8" x 16", SS, NEMA 4X. JUNCTION BOX NAME DESIGNATES 'C' FOR CONTROL AND 'P' FOR POWER.
	JUNCTION BOX TYPE A, 8" x 8", SS, NEMA 4X. JUNCTION BOX NAME DESIGNATES 'C' FOR CONTROL AND 'P' FOR POWER.
	MOTOR. HORSEPOWER AS SHOWN ON DRAWINGS.
	DISCONNECT SWITCH. SIZE PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF (WP) WHEN LOCATED OUTSIDE.
	FUSED DISCONNECT SWITCH. SIZE AND FUSES PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF (WP) WHEN LOCATED OUTSIDE.
	EMERGENCY 'STOP' PUSH BUTTON (MAINTAINED CONTACT). MOUNT AT 48" AFF MAX.
	DUPLEX CONVENIENCE OUTLET WR - WEATHER RESISTANT, GF - GFCI
	PHOTOCELL. AIM DEVICE NORTH.

CONDUITS AND CONDUCTORS LEGEND:	
SYMBOL	DESCRIPTION
	HOMERUN TO PANELBOARD OR AS NOTED
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	UNDERGROUND OR IN-SLAB ELECTRICAL CONDUITS
	ABOVE GROUND ELECTRICAL CONDUITS
	CONTROL WIRING
	OVERHEAD POLE MOUNTED ELECTRICAL CONDUCTORS
	EXISTING OVERHEAD POLE MOUNTED ELECTRICAL CONDUCTORS
	EXISTING ABOVE GROUND ELECTRICAL CONDUITS
	GUARDRAIL

ONE LINE AND WIRING DIAGRAM LEGEND:

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	CONTACTOR, NORMALLY OPEN
	CONTACTOR, NORMALLY CLOSED
	SWITCH, SINGLE POLE
	LEVEL SWITCH
	3-POSITION SWITCH
	COIL
	MOTOR OVERLOAD
	TRANSFORMER

STRUCTURE & EQUIPMENT LEGEND:

LOCATIONS:

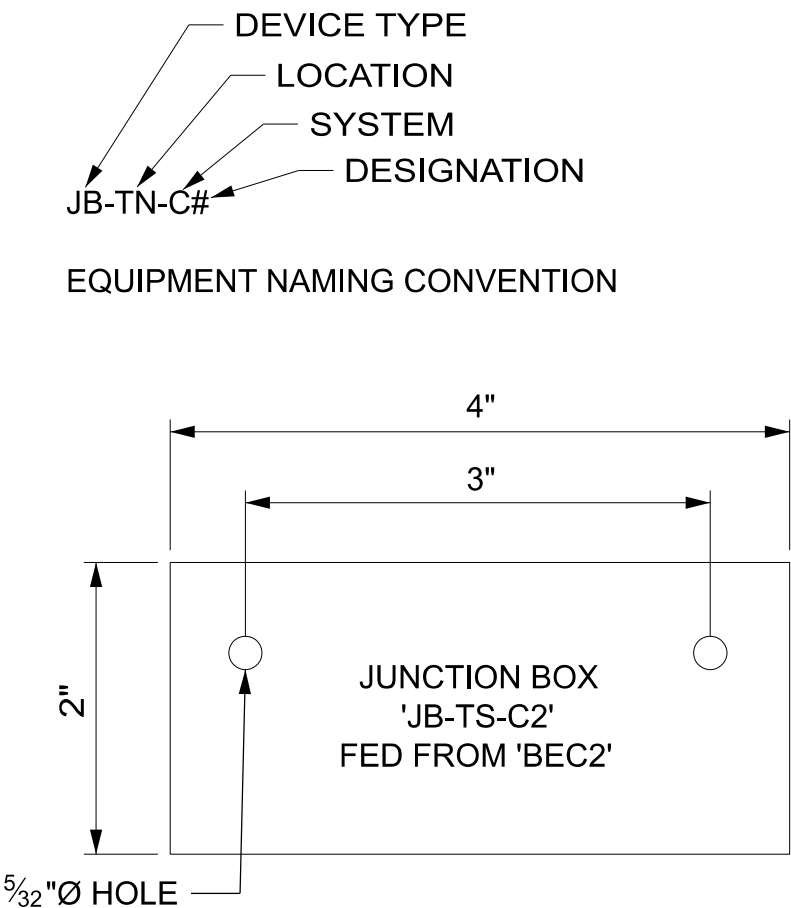
TN	-	TOWER NORTH
TNPB	-	TOWER NORTH BOTTOM PLATFORM
TNTP	-	TOWER NORTH TOP PLATFORM
TMP	-	TOWER MIDDLE PLATFORM
TSTP	-	TOWER SOUTH TOP PLATFORM
TSBP	-	TOWER SOUTH BOTTOM PLATFORM
TS	-	TOWER SOUTH
R	-	RAMP
ND#	-	NORTH DOLPHIN DESIGNATION
NW#	-	NORTH WALKWAY DESIGNATION
SD#	-	SOUTH DOLPHIN DESIGNATION
SW#	-	SOUTH WALKWAY DESIGNATION

DEVICES:

JB - JUNCTION BOX
DS - DISCONNECT
SW - SWITCHES
LS - LIMIT SWITCHES
CS - CONTROL STATION
XFMR - TRANSFORMER
BEC - BRIDGE EQUIPMENT CABINET

SYSTEM:

P - POWER
C - CONTROLS



EQUIPMENT NAME PLATE DETAIL

N.T.S.

ABBREVIATED LIST OF NEMA ENCLOSURE TYPES

TYPE 1: GENERAL PURPOSE. INDOOR.
TYPE 3R: RAINPROOF. OUTDOOR.
TYPE 4: WATERTIGHT AND DUST-TIGHT. NONCORROSIVE.
TYPE 4X: WATERTIGHT AND DUST-TIGHT. CORROSION RESISTANT.

SHOCK HAZARD/FLASH HAZARD ANALYSIS AND FIELD MARKING:

1. ELECTRICAL CONTRACTOR SHALL PROVIDE A SHOCK HAZARD AND A FLASH HAZARD ANALYSIS FOR ALL SWITCHBOARDS, PANELBOARDS, AND INDUSTRIAL CONTROL PANELS ON THE PROJECT. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SAFETY SIGNS AND LABELS AS A RESULT OF THE ANALYSIS.
2. ANALYSIS SHALL BE AS OUTLINED BY NFPA 70E. A SHOCK HAZARD ANALYSIS SHALL DETERMINE THE VOLTAGE TO WHICH PERSONNEL WILL BE EXPOSED, BOUNDARY REQUIREMENTS, AND THE PERSONAL PROTECTIVE EQUIPMENT NECESSARY IN ORDER TO MINIMIZE THE POSSIBILITY OF ELECTRICAL SHOCK TO PERSONNEL.
3. THE ANALYSIS SHALL BE PERFORMED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE AND ANALYSIS WILL BE SUBMITTED AS PART OF THE SHOP DRAWING PROCESS. REFER TO NFPA 70E FOR THE REQUIREMENTS OF CONDUCTING A SHOCK HAZARD ANALYSIS. A FLASH HAZARD ANALYSIS SHALL BE PERFORMED IN ORDER TO PROTECT PERSONNEL FROM THE POSSIBILITY OF BEING INJURED BY AN ARC-FLASH. THE ANALYSIS SHALL DETERMINE THE FLASH PROTECTION BOUNDARY AND THE PERSONAL PROTECTIVE EQUIPMENT FOR THE PEOPLE WITHIN THE FLASH PROTECTION BOUNDARY.
4. ALL SWITCHBOARDS, PANELBOARDS, AND INDUSTRIAL CONTROL PANELS, THAT ARE LIKELY TO REQUIRE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE WHILE ENERGIZED, SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.
5. REFER TO ANSI Z535.4 - PRODUCT SAFETY SIGNS AND LABELS. THIS REFERENCE PROVIDES GUIDELINES FOR SAFETY SIGNS AND LABELS FOR FIELD MARKING.

GENERAL NOTES:

1. ALL WORK SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (N.E.C.) LATEST EDITION.
2. ALL EXISTING EQUIPMENT, CONDUITS, AND CONDUCTORS SHALL REMAIN ACTIVE AND FUNCTIONAL DURING CONSTRUCTION AND SHALL BE DEACTIVATED AND REMOVED, AS NOTED ONCE THE PROPOSED EQUIPMENT IS INSTALLED AND FUNCTIONAL. CONTRACTOR TO COORDINATE WITH OWNER TO SCHEDULE CUTOVER, COMMISSIONING AND TESTING OUTSIDE OF SCHEDULED FERRY SERVICE.
3. EXISTING UNDERGROUND CONDUIT SHALL BE ABANDONED IN PLACE, CONDUIT ABOVE GROUND AND MOUNTED TO STRUCTURES SHALL BE REMOVED. ALL CONDUCTORS SHALL BE REMOVED.
4. RIGHT-OF-WAY LINES SHOWN ARE APPROXIMATE BASED ON TAX MAPS.
5. ALL RECEPTACLE LOCATIONS SHALL BE WR, GFCI LOCATED WITHIN 25FT OF EQUIPMENT, PROVIDE WITH WEATHERPROOF IN-USE COVERS, STAINLESS STEEL.
6. ALL CONDUIT SHALL BE PARALLEL TO STRUCTURAL ELEMENTS AND PRESENT A NEAT AND COMPLETE INSTALLATION. PROVIDE EXPANSION/DEFLECTION FITTINGS AT ALL JOINTS, EVEN IF NOT SHOWN ON PLANS.
7. CONDUITS, RACEWAYS AND CABLES SHALL BE PROPERLY AND SECURELY ATTACHED TO STRUCTURAL COMPONENTS AS REQUIRED BY N.E.C. ALL FASTENERS AND HARDWARE SHALL BE APPROVED FOR THE INSTALLATION AND THE CONDITIONS ENCOUNTERED.
8. EACH OUTLET OR JUNCTION IN ANY OF THE WIRING SYSTEMS SHALL BE MADE IN AN APPROVED JUNCTION BOX. SUCH BOX SHALL BE SUITABLE FOR THE SIZE AND NUMBER OF CONDUCTORS AND DEVICES TO BE INSTALLED, AS WELL AS THE CONDITION ENCOUNTERED. ALL SPLICES SHALL BE MADE WITH APPROVED, MECHANICAL CONNECTORS AND ALL SHALL BE SUBMERSIBLE RATED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF THE LOCATIONS OF EXISTING EQUIPMENT AND POWER CONNECTION DETAILS SO THAT THE ASSOCIATED ELECTRICAL WORK WILL BE PROPERLY COORDINATED AND INSTALLED.
10. ALL MECHANICAL EQUIPMENT SHALL HAVE HACR RATED BREAKERS PER N.E.C. REQUIREMENTS.
11. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH IS BEING FURNISHED TO THE GENERAL CONTRACTOR FOR COORDINATION PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTALLATION DETAILS AND SUPPORT COMPONENTS TO THE GENERAL CONTRACTOR SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
12. ALL CONDUITS MOUNTED OVER WATER SHALL BE TYPE RTRC. PVC COATED RIGID STEEL IS PERMITTED. CONDUIT ATTACHMENTS AND FITTINGS SHALL MATCH CONDUIT TYPE.
13. FLEXIBLE CONDUITS SHALL BE PVC COATED.
14. DROOP CABLES SHALL BE TYPE G. ALL WIRES IN CONDUITS SHALL BE TYPE XHHW-2, COPPER.
15. MINIMUM CONDUIT SIZE SHALL BE 1" FOR UNDERGROUND UNLESS OTHERWISE NOTED.
16. PROVIDE STAINLESS STEEL FRAMING CHANNEL ATTACHED TO THE VERTICAL SIDES OF THE DOLPHIN. EXTEND ABOVE THE TOP OF THE DOLPHIN FOR CONDUIT AND BOX SUPPORT. DO NOT SUPPORT FROM HANDRAILS.
17. NEW RAMP AND LOWER PLATFORM ENCLOSURES SHALL BE 16" X 16" x 8" STAINLESS STEEL, NEMA 4X.
18. CONDUIT WITHIN AREAS EXPECTED TO SEE VEHICULAR TRAFFIC TO BE PVC SCH 40 AND CONCRETE ENCASED.

GENERATOR NOTE:

1. THE MAINE STATE FERRY SERVICE WILL SUPPLY THE PROPOSED GENERATOR. THE CONTRACTOR WILL INSTALL AND CONNECT THE PROPOSED GENERATOR AND REMOVE AND STACK THE EXISTING GENERATOR AS NOTED IN THE SPECIAL PROVISIONS. IF THE PROPOSED GENERATOR IS NOT AVAILABLE FOR INSTALLATION PRIOR TO COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL A PRECAST COMPOSITE JUNCTION PRIOR TO THE PROPOSED GENERATOR AND PROVIDE CONDUIT TO CONNECT THE EXISTING GENERATOR TO THE PROPOSED ATS.

2	SHEET NUMBER	FERRY TERMINAL ELECTRICAL UPGRADES						PROJ. MANAGER		A. CORNEAU	BY	DATE		STATE OF MAINE DEPARTMENT OF TRANSPORTATION		
								DESIGNED/TAILED		EAB	MLC	MAR 2025		SIGNATURE	2696210	
								CHECKED/REVIEWED		DMB	JRT	MAR 2025				
								DESIGN-DETAILED2								
								DESIGN-DETAILED3								P.E. NUMBER
								REVISIONS 1								5/2/2025
								REVISIONS 2								DATE
								REVISIONS 3								
								REVISIONS 4								
								FIELD CHANGES								
LEGEND AND GENERAL NOTES																
OF 19																

MARK ID	MANUFACTURER	CATALOG NUMBER	DESCRIPTION OR SIZE	LOCATION	COLOR	MOUNTING	LIGHT SOURCE				DRIVER	BUG RATING	VOLTAGE	REMARKS	TOTAL WATTS
							TYPE	LUMENS	CCT(K)	CRI					
A	EXISTING	EXISTING	VAPORPROOF LUMINAIRE	VERTICAL LADDER AREA	GRAY	TRESTLE	EXIST	-	-	-	-	-	EXIST	RELAMP - AS DIRECTED BY OWNER	
B	EXISTING	EXISTING	VAPORPROOF LUMINAIRE	BRIDGE PLATFORMS	GRAY	CONDUIT/STANTION	EXIST	-	-	-	-	-	EXIST	RELAMP - AS DIRECTED BY OWNER	
C	EXISTING	EXISTING	AREA LIGHTS (TRESTLE)	UNDERSIDE MIDDLE PLATFORM	BR/BL	TRESTLE	LED	-	-	-	-	-	EXIST		
D	RAB	WPLED-4T-78-N/PCT	DOLPHIN AREA WALKWAY	EACH DOLPHIN	BRONZE	ARM/POLE	LED	10457	4000K	71	CC, 2000mA	B1 U0 G2	UNIV	MATCH EXISTING (120/277V TWIST LOCK PE), INSTALL BIRD SPIKES	78W
D POLE	RAB	EXISTING	4" SQUARE ALUMINUM 10FT	EACH DOLPHIN	BRONZE	CONCRETE	-	-	-	-	-	-	-	MATCH EXISTING	
F	EXISTING	EXISTING	LED FLOODLIGHT	TOP PLATFORM	BR/BL	POST	LED	-	-	-	-	-	EXIST		
NAV	EXISTING	EXISTING	NAVIGATION PIER LIGHT	LAST DOLPHINS	BRONZE	CONCRETE	INC	2 - 100W			-	EXISTING	120V	EXISTING A-19 BULBS	200W

1. ALL BALLASTS SHALL BE ELECTRONIC WITH 10% THD PER BASE STANDARDS.
2. EXISTING SHOWN FOR REFERENCE.
3. BOLD INDICATES NEW.

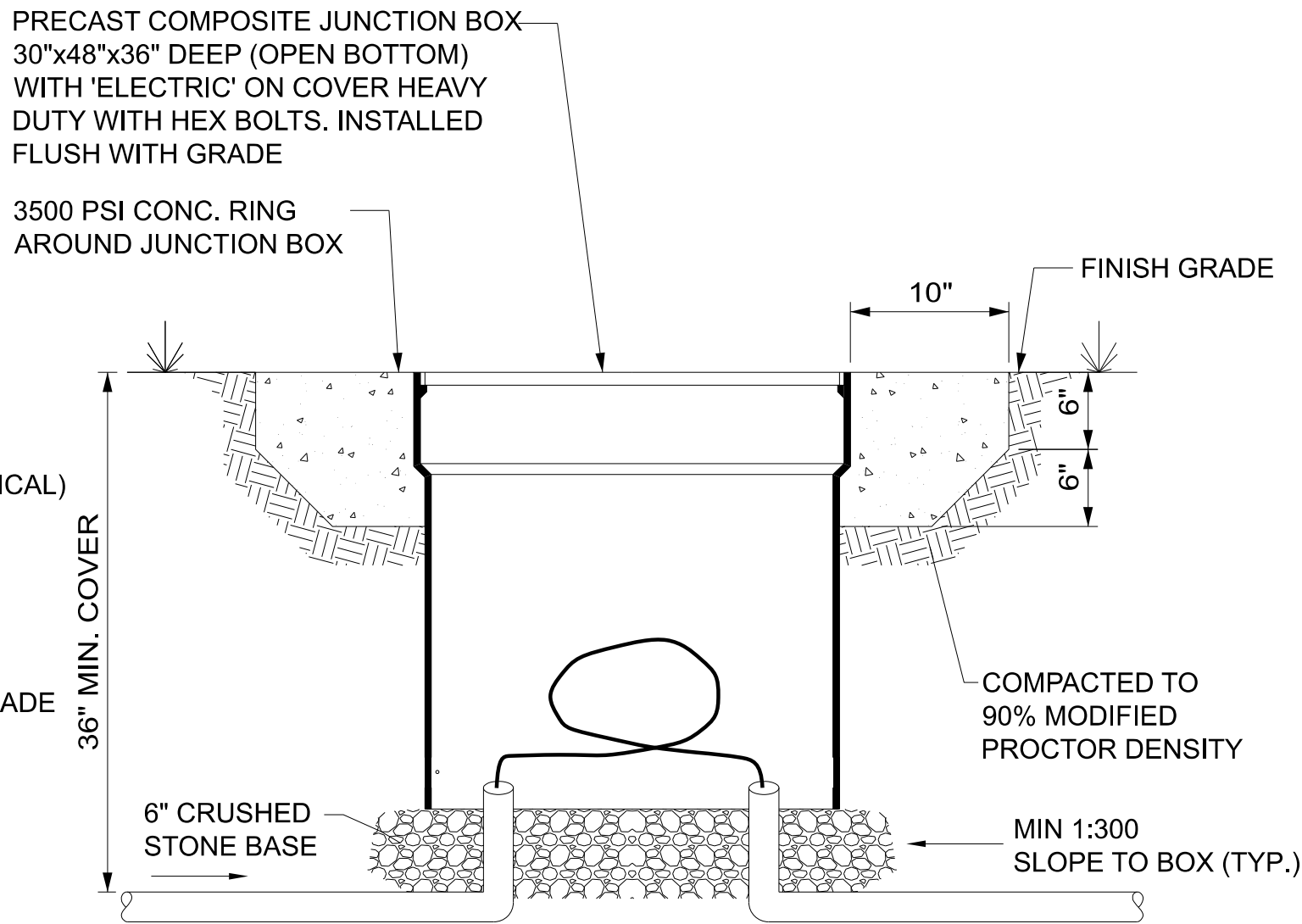


Diagram illustrating the cross-section of a trench structure, showing various layers and components:

- 4" HOT MIX ASPHALT IN ROADWAY
- 4" LOAM AND SEED
- DETECTABLE WARNING TAPE "CAUTION - ELECTRIC LINE BURIED BELOW"
- CLEAN BACKFILL WITH EXISTING MATERIAL COMPACTED TO 90% MODIFIED PROCTOR
- NO ROCKS SHALL PROJECT INSIDE OF TRENCH LIMITS
- ELECTRICAL POWER CONDUIT (3" diameter)
- 3" SAND ALL AROUND
- 24" WIDTH (MIN.)
- MIN. 13"
- 14'-20"
- 36" MINIMUM
- 3"
- 3"
- 12"
- 3"
- SIGNAL/CON CABLES

1. PROVIDE 3" CONCRETE ENCASEMENT AROUND PVC CONDUITS UNDER ALL ROADWAYS AND DRIVEWAY CROSSINGS TO 5' BEYOND EDGE OF PAVEMENT. CONCRETE ENCASEMENT SHALL BE FORMED SEPARATE FOR POWER AND COMMUNICATION. WHEN THE INTERVAL BETWEEN POURS IS GREATER THAN 2 HRS, #4 REINFORCING BARS 6 FT LONG SHALL BE INSTALLED IN THE CORNERS AT THE TOP AND BOTTOM ROWS.

Diagram illustrating the SL1 Emergency Stop Button assembly. The button is recessed in a stainless steel enclosure. The assembly includes a steel plate and a handrail.

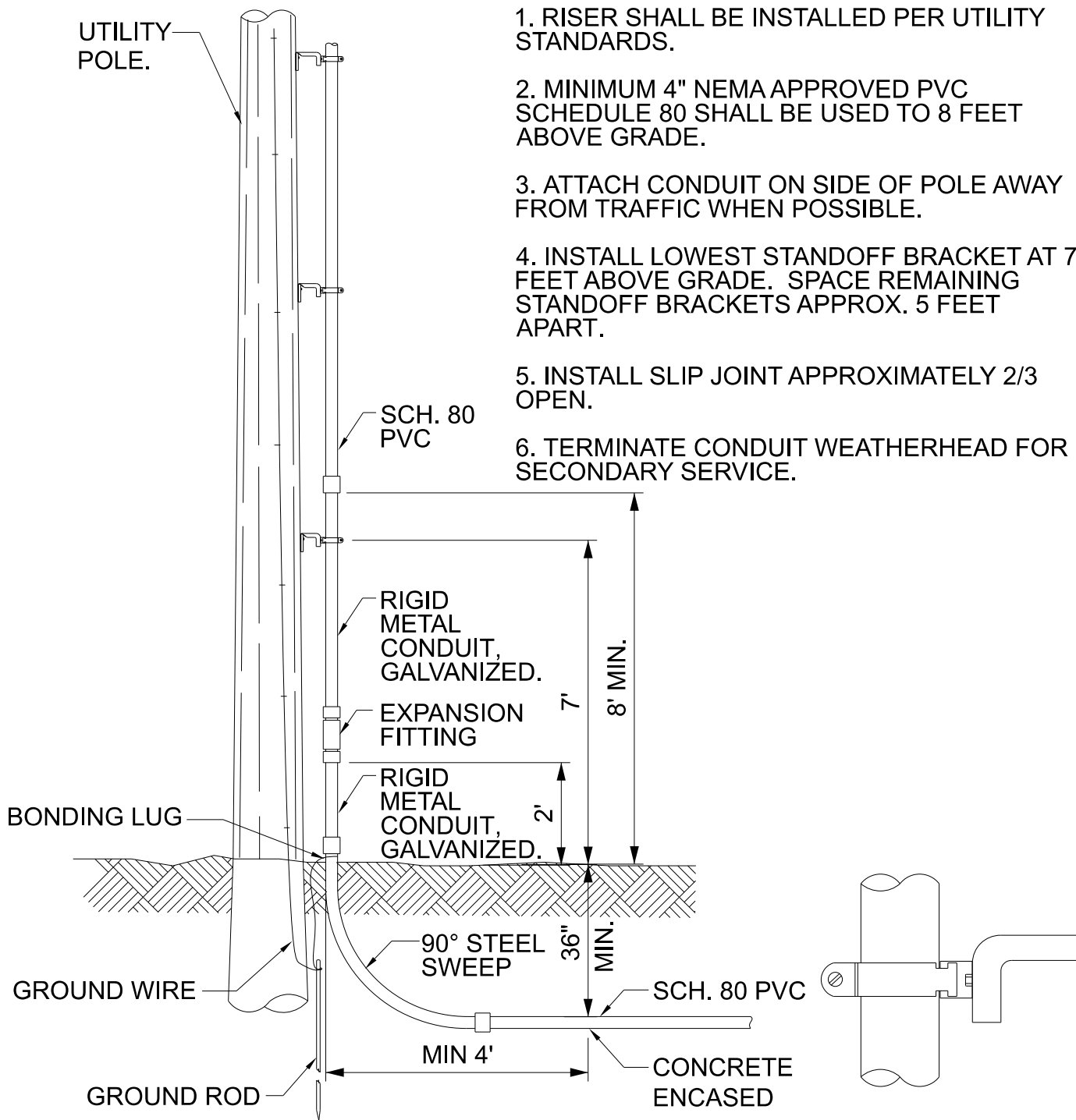
1. INSTALL 36" D X 36" H ROUND OR 36" SQUARE X 36" H JUNCTION BOX, AND CAST IRON FRAME.
2. INSTALL CONDUIT, WITH ALL JOINTS CEMENTED, THROUGH KNOCKOUT TO 4" INSIDE JUNCTION BOX. TERMINATE CONDUIT RUN WITH END BELL. CONDUIT DESTINATION TO BE PERMANENTLY MARKED ON CONDUIT END. CONDUIT SIZE AND TYPE AS SHOWN ON DRAWINGS. LIMIT (4) 4" DIAMETER CONDUITS PER KNOCKOUT
3. GAPS AROUND CONDUIT AT KNOCKOUT OPENINGS SHALL BE SEALED WITH CEMENT MORTAR TO PREVENT BACKFILL FROM ENTERING JUNCTION BOX.
4. INSTALL 1/4" DIAMETER NYLON PULL LINE IN EACH DUCT, INCLUDING 10' SLACK, AND SECURE TO CONDUIT PLUG. PLUGGED CONDUIT TO BE LEFT ACCESSIBLE.
5. INSTALL ON VIRGIN OR WELL TAMPED GRAVEL. WHERE POOR SOIL EXISTS, REMOVE TO 6" BELOW BOTTOM OF JUNCTION BOX AND BACKFILL WITH COMPACTED CLEAN GRAVEL, FREE OF FOREIGN MATTER AND DEBRIS, AND EXTENDING 12" PAST EDGE OF STRUCTURE. REMAINING BACKFILL SHALL NOT CONTAIN ASHES, FROZEN MATERIAL DEBRIS OR STONES LARGER THAN 2" IN MAXIMUM DIA.
6. WHEN INSTALLING CABLE , UTILIZE PULLING EYELETS PROVIDED IN JUNCTION BOX.
7. THE GRAY CAST IRON SHALL CONFORM TO AASHTO M 306.
8. DESIGN LOADING SHALL BE IN ACCORDANCE WITH AASHTO HS20-1983.
9. (5) 1-1/4" DIA. HOLES, 5" FROM EDGE AND 72 DEGREE APART.
10. "ELECTRIC" LETTERS 2-1/2" HIGH.
11. FOUNDRY NAME OR INSIGNIA AND DATE (YEAR MANUFACTURED) SHALL BE CAST IN UNDERSIDE OF COVER.
12. RIBS TO BE TAPERED FROM 1/2" TO 3/4".
13. LIFTING NOTCH ADJACENT TO EACH PICK HOLE.
14. THE 30" COVER FITS INTO THE 30" FRAME. WEIGHT OF 30" COVER APPROXIMATELY 265 POUNDS.

WEATHERHEAD

TYPE USE CABLE SHALL BE MARKED OR LISTED SUNLIGHT RESISTANT

6" MIN.

1. RISER SHALL BE INSTALLED PER UTILITY STANDARDS.
2. MINIMUM 4" NEMA APPROVED PVC SCHEDULE 80 SHALL BE USED TO 8 FEET ABOVE GRADE.
3. ATTACH CONDUIT ON SIDE OF POLE AWAY FROM TRAFFIC WHEN POSSIBLE.
4. INSTALL LOWEST STANDARD BRACKET AT 7 FEET ABOVE GRADE. SPACE REMAINING BETWEEN BRACKETS APPROX. 5 FEET APART.
5. INSTALL SLIP JOINT APPROXIMATELY 2/3 OPEN.
6. TERMINATE CONDUIT WEATHERHEAD FOR SECONDARY SERVICE.



SHALL BE
ED
TANT

ALLED PER UTILITY

PROVED PVC
USED TO 8 FEET

SIDE OF POLE AWAY
OSSIBLE.

ND OFF BRACKET AT 7
PACE REMAINING
APPROX. 5 FEET

PPROXIMATELY 2/3

WEATHERHEAD FOR

6" MIN. DIA., HEAVY-DUTY
STEEL GALVANIZED PIPE,
FILLED WITH CONCRETE,
TYPICAL.

YELLOW PIPE COVER WITH
REFLECTIVE STRIPES, SEE
NOTE BELOW.

PAVEMENT

FINISHED GRADE

GROUND

1/2" JOINT FILLER WHEN
LOCATED IN PAVEMENT

FILLED W/ CONCRETE

18" DIA. CONCRETE
FOUNDATION

18"

PLAN

PIPE BOLLARD
CENTERED IN
FOUNDATION

TAPER GRADE
AWAY
FROM
PIPE

6" COVER

8'-0" MIN.

4'-0" MIN.

1'-6"

SECTION

1. FACE OF BOLLARD SHALL BE 28" MIN FROM GENERATOR PAD ON SIDES AND REAR. BOLLARDS LOCATED AT THE FRONT OF THE PAD SHALL HAVE A MINIMUM OF 6" CLEARANCE. SPACING BETWEEN BOLLARDS SHALL BE MINIMUM 3 FEET TO MAXIMUM 5 FEET APART.
2. BOLLARD SHALL BE SUPPORTED WITH A 18" MIN. DIAMETER CONCRETE FOOTING 6" BELOW FINISHED GRADE TO BASE OF THE BOLLARD.

NOTE 11

NOTE 10

30"

LIMIT FOUR CONDUITS
MAXIMUM PER KNOCKOUT

CONDUITS (TYP.)

CAST IRON COVER
NOTE 1

CONDUIT PLUG
NOTE 4

36"

36" MIN.

6"

12"

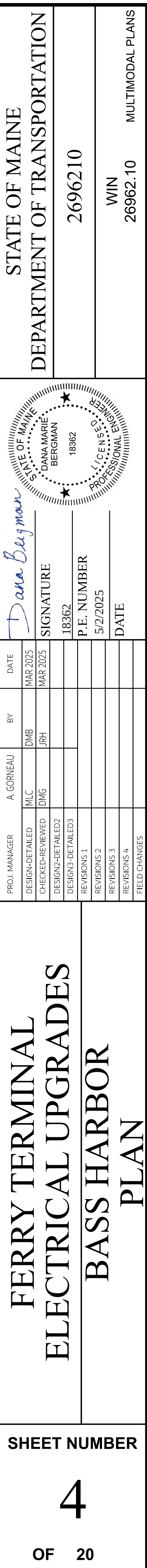
COMPACTED, FREE
DRAINING GRAVEL NOTE 5

Detectable
Electrical
Warning Tape

LINE IN
JUNCTION
BOX

PRECAST CONCRETE JUNCTION BOX

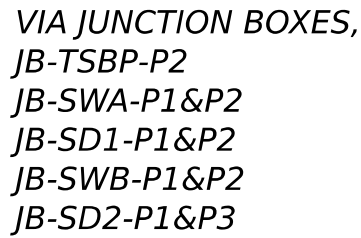
NOT TO SCALE





*TRANSITION FROM PVC TO EMT WHERE CONDUITS IN INTERIOR SPACE. WHERE CONDUITS ARE SUBJECT TO PHYSICAL DAMAGE USE RMC.

PROPOSED BASS HARBOR ONE LINE



NORTH DOLPHIN AND NAV HAZARD LIGHTS

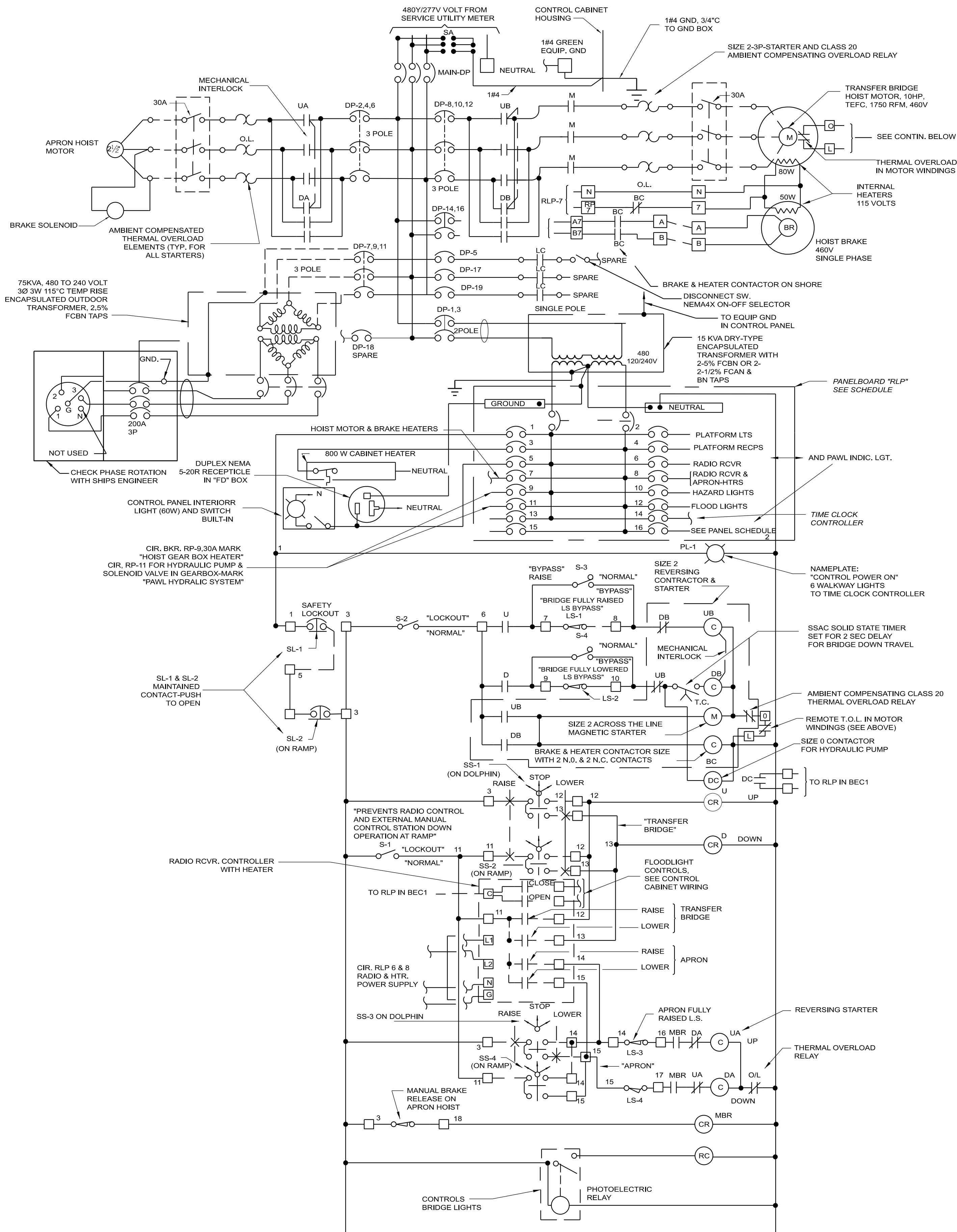
BUS 400A BKR RATING 35 KAIC SUPPLY VOLTAGE 480Y/277V SERVICE 3 PHASE, 4 WIRE		EQUIP NAME. MDP	LOCATION _____ MOUNTING SURFACE _____ DRAWING NO. _____
		MAIN BREAKER 225A FEEDER ENTRANCE TOP/BOTTOM FEEDER SIZE SEE ONE-LINE SOURCE SEE ONE-LINE	ENCLOSURE TYPE _____ NEMA 4X

PANEL No. DP														LOCATION		BRIDGE EQUIPMENT ENCLOSURE (BEC1)																									
BUS		250A												MOUNTING		SURFACE																									
PANEL RATING		25 KAIC												DRAWING No.																											
SUPPLY VOLTAGE		480Y/277V																																							
SERVICE		3 PHASE, 4 WIRE																																							
WIRING				DESCRIPTION		CODE	VA OR W		BREAKER		CKT. NO	BUS CONN	CKT. NO	BREAKER		VA OR W		CODE	DESCRIPTION		WIRING																				
WIRE	COND			OB	OC	POLE	A	A	A	A	NO		NO	POLE	A	A	A	OB	OC		COND	WIRE																			
SEE ONE-LINES	/	/	/	TRNS - 15kVA - PNL "RLP"	PWR	4310	/	2	/	60	1	2	4	3	15	/	443			EQUIP	/	/	/																		
	/	/	/		POWR	5970	/	2	/	60	1	2	4	3	15	/	443			EQUIP	/	/	/																		
	/	/	/	SPARE				1	20	5	x		6	1	3					EQUIP	/	/	/																		
SEE ONE-LINES	/	/	/	75 KVd SHORE CHARGING	REC	25000		3	150	9	x		8	10	3	40	/	3880			EQUIP	/	/																		
	/	/	/		REC	25000		3	150	9	x		10	3	40	/	3880			EQUIP	/	/	/																		
	/	/	/		REC		25000	11			x		12	1	3			3880		EQUIP	/	/	/																		
	/	/	/	SPARE				2	/	60	13	x	14	2	15	/	1400			POWER	/	/	/																		
	/	/	/						15		x		16	1	20	/	1440			POWER	/	/	/																		
	/	/	/	SPARE				1	20	17			18								/	/	/																		
	/	/	/					k	/	19	x		20	/	30	/					/	/	/																		
	/	/	/	SPARE				3	30	21	x		22	3	30	/					/	/	/																		
	/	/	/						/	23			24	/	30	/					/	/	/																		
TOTAL 1						30388	30388	25000											TOTAL 2						5723	5763	4323														
TOTAL 2						5723	5763	4323																																	
TOTAL 1 + 2						36111	36151	29323																																	
CONN. LOAD TOTAL						101584						MAIN BREAKER						225A						MAIN LUGS						MCB											
CONN. AMPERES TOTAL						122						FEEDER ENTRANCE						TOP/BOTTOM						FEEDER ENTRANCE TYPE						NEMA 3R											
EST. DEMAND LOAD TOTAL						69084						FEEDER SIZE						225 A						SEE ONE-LINE						ACCESSORIES						* INDICATES GFI BREAKER					
EST. DEMAND AMPERES TOTAL						83						SOURCE						SEE ONE-LINE												** INDICATES LOCK ON DEVICE											
												PANEL TYPE						DOOR-IN-DOOR												*** TWISTLOCK RECTANGLE											

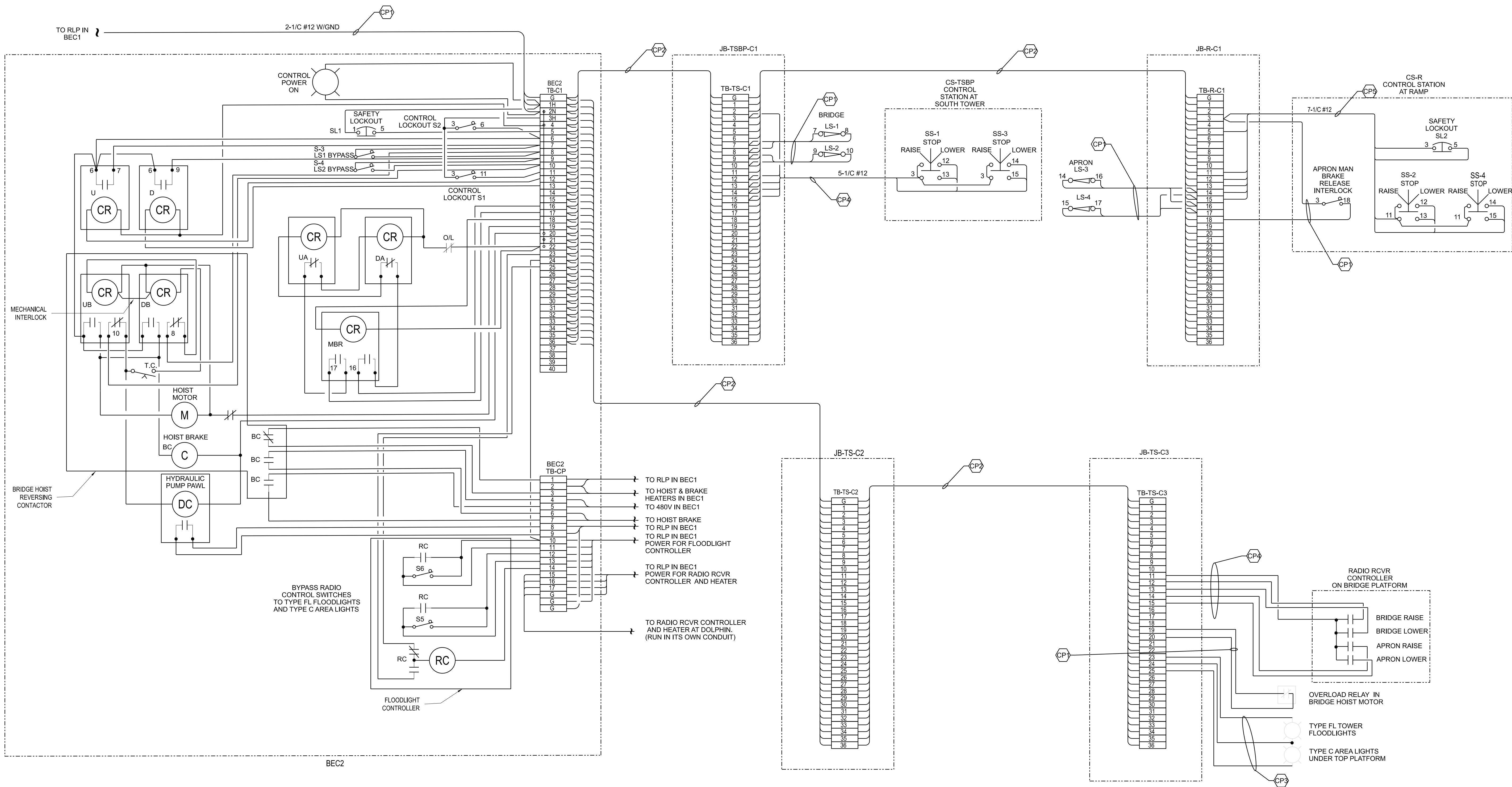
PROVIDE "HACR" RATED TYPE 1 BREAKERS FOR MECHANICAL MOTOR LOADS

BUS		100A		PANEL No. <u>RLP</u>										LOCATION		BRIDGE EQUIPMENT ENCLOSURE (BEC1)										
PANEL RATING		18 KAIC												MOUNTING		SURFACE										
SUPPLY VOLTAGE		120/240V												DRAWING No.												
SERVICE		1 PHASE, 3 WIRE																								
WIRING		DESCRIPTION		CODE	ØA	ØB	POLE	A	NO.	BUS	CKT.	BREAKER		ØA	ØB	CODE	DESCRIPTION		WIRING							
WIRE	COND									CONN		NO	POLE	A			COND	WIRE								
SEE ONE-LINE		BRIDGE CONTROL POWER		POWR	1000		1	20	1	X	2	1	20	500		LTS	LTS - BRIDGE PLATFORMS		SEE ONE-LINE							
2#12, 1#12G	3/4"			E-BHT	1000		1	20	3		X	4	1	20	720	RECP	RECP - BRIDGE GFCS		SEE ONE-LINE							
2#12, 1#12G	3/4"			RECP	360		1	20	5	X	6	1	20	500	EQUIP	RADIO RECEIVER		SEE ONE-LINE								
SEE ONE-LINE		HTR - HOIST MTR & BRAKE		E-BHT		800	1	20	7		X	8	1	20	1000	BHT	RADIO RECEIVER & APRON HTR		SEE ONE-LINE							
SEE ONE-LINE	W	W	PAWL HEATER	E-BHT	750		W	2	W	30	9	X	10	1	20	400	LTS	LTS - NAVIGATION / PIER BEACONS		SEE ONE-LINE						
W	W	W		E-BHT		750	W	W	W	11	X	12	1	20	1000	LTS	LTS - UPPER FLOOD LIGHTS		SEE ONE-LINE							
W	W	W	SPARE				W	2	W	13	X	14	1	20	100	EQUIP	LTS - CONTACTOR/ TIME CLOCK	3/4"	2#12, 1#12G							
W	W	W					W	W	W	15	X	16	W	2	W	700	LTS	LTS - DOLPHIN	W	SPARE						
		SPARE						1	20	17	X	18	W	W	17	700	LTS		W	SPARE						
		SPARE						1	20	19	X	20	W	2	W	20	LTS		W	SPARE						
		SPARE						1	20	21	X	22	W	W	21				W	SPARE						
		SPARE						1	20	23	X	24	1	20					W	SPARE						
TOTAL 1					2110	2550											TOTAL 2			2200	3420					
TOTAL 2						2200	3420																			
TOTAL 1 + 2					4310	5970																				
CONN. LOAD TOTAL					1020												MAIN BREAKER		80A		MAIN LUGS		N/A			
CONN. AMPERES TOTAL					48												FEEDER ENTRANCE		TOP/BOTTOM		ENCLOSURE TYPE		NEMA 3R			
EST. DEMAND LOAD TOTAL					10775												FEEDER SIZE		80A		SEE ONE-LINE		ACCESSORIES		* INDICATES GFI BREAKER	
EST. DEMAND AMPERES TOTAL					45												SOURCE		SEE ONE-LINE				A = AFCI \ GFCI BREAKER			
																	PANEL TYPE		DOOR-IN-DOOR				+ = EXISTING CIRCUIT			

BUS PANEL RATING SUPPLY VOLTAGE SERVICE 100A 18 KAIC 120/240V 1 PHASE, 3 WIRE										PANEL No. GEN LOCATION MOUNTING DRAWING No. GENERATOR SURFACE									
WIRING		DESCRIPTION	CODE	VA OR W	BREAKER	CKT.	BUS	CKT.	BREAKER	VA OR W	CODE	DESCRIPTION	WIRING						
WIRE	COND			ØA	ØB	POLE	A	NO	POLE	A	ØB		COND	WIRE					
2#12, 1#12G	LFNC	ENCLOSURE LIGHT LED	LTS	15		1	20	1	1	20	1500	GEN JACKET HEATER	LFNC	2#12, 1#12G					
		SPARE				3		2	4	1	20	GEN BATTERY CHARGER	LFNC						
		SPARE				5	x	6			1000	SPACE							
TOTAL 1				15					TOTAL 2		1500	1000							
TOTAL 2				1500	1000														
TOTAL 1 + 2				1515	1000														
CONN. LOAD TOTAL				2515															
CONN. AMPERES TOTAL				10															
EST. DEMAND LOAD TOTAL				2515															
EST. DEMAND AMPERES TOTAL				10															
MAIN BREAKER FEEDER ENTRANCE FEEDER SIZE SOURCE PANEL TYPE										40A TOP/BOTTOM SEE ONE-LINE SEE ONE-LINE DOOR-IN-DOOR									
MAIN LUGS ENCLOSURE TYPE ACCESSORIES										N/A NEMA 4X INDICATES GFI BREAKER ** INDICATES LOCK ON DEVICE									



ELEMENTARY DIAGRAM



PROPOSED BASS HARBOR WIRING DIAGRAM
CONTRACTOR TO PROVIDE FINAL WIRING DIAGRAM, BASED UPON FIELD CONDITIONS

CONDUIT & CONDUCTOR SCHEDULE				
KEY	CONDUIT SIZE	CONDUCTORS		
		FOR	FOR	FOR
		EQUIPMENT	CONTROLS	GROUND
CP1	1" RTRC		2#12	1#12G
CP2	1 1/2" RTRC		30#12	1#12G
CP3	1" RTRC		3#12	1#12G
CP4	1" RTRC		5#12	1#12G
CP5	1" RTRC		7#12	1#12G

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2696210

WIN
26962.10

MULTIMODAL PLANS

PROJ. MANAGER
A. GORREAU

DESIGNED
M.C.

CHECKED
D.M.B.

DATE
MAR 2025

BY
D.M.B.

SIGNATURE
Dana Bergman

18362

P.E. NUMBER
18362

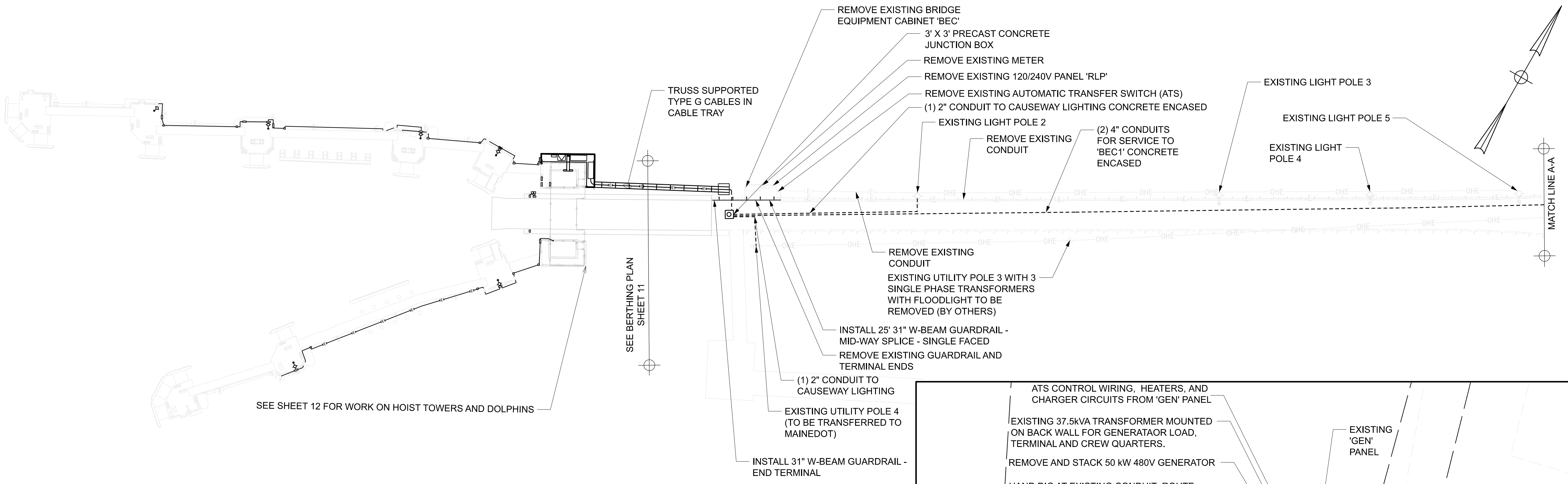
DATE
5/2/2025

FERRY TERMINAL
ELECTRICAL UPGRADES

BASS HARBOR
ELECTRICAL DETAILS

SHEET NUMBER
9

OF 20

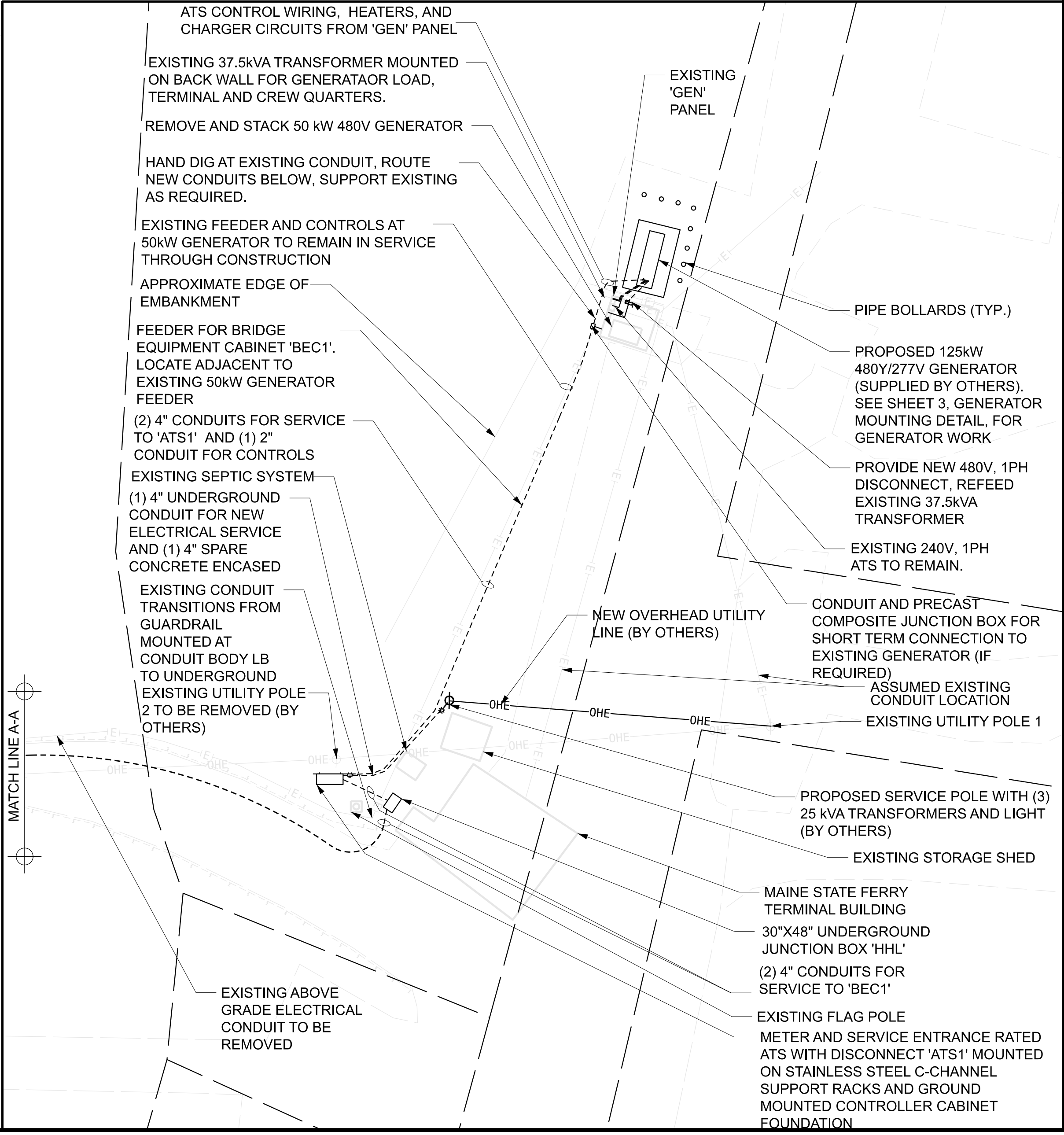
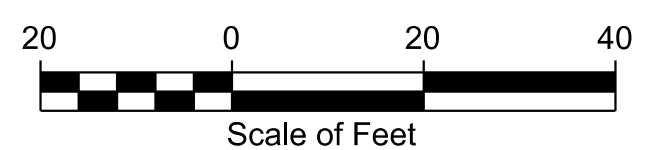


SEE SHEET 12 FOR WORK ON HOIST TOWERS AND DOLPHINS

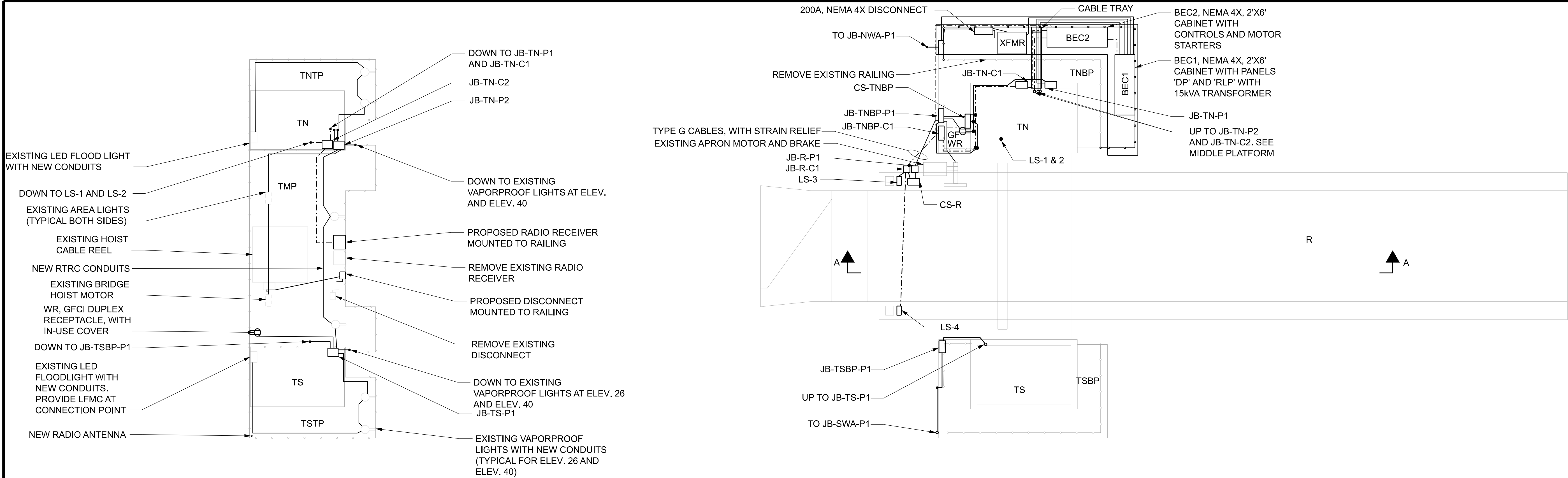
SEE BERTHING PLAN
SHEET 11

NOTES:

- SEE SHEET 2 FOR CONDUIT LEGEND
- SEE SHEET 2 FOR STRUCTURE AND EQUIPMENT LEGEND
- SEE SHEET 12 FOR WORK ON HOIST TOWERS.

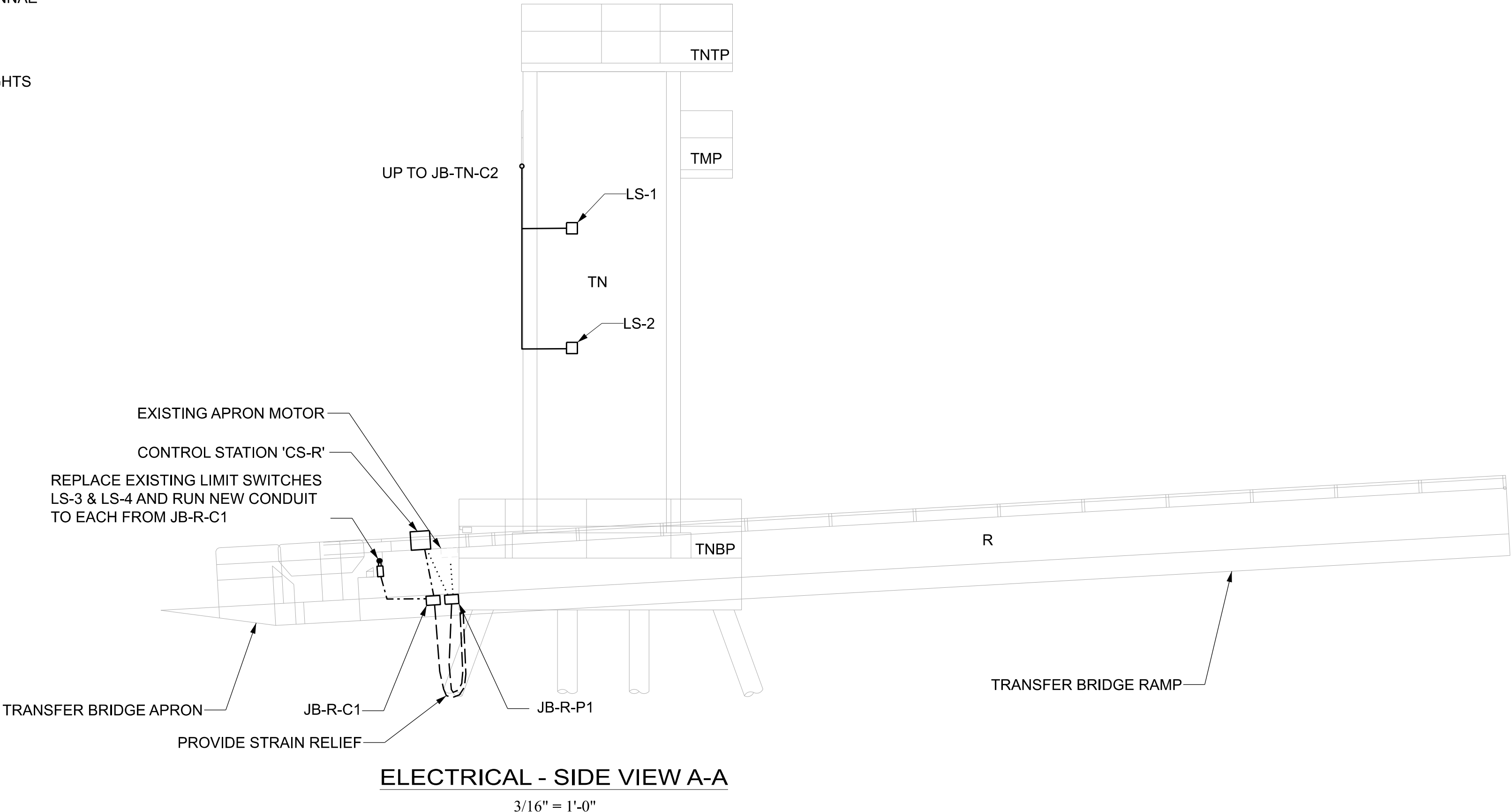
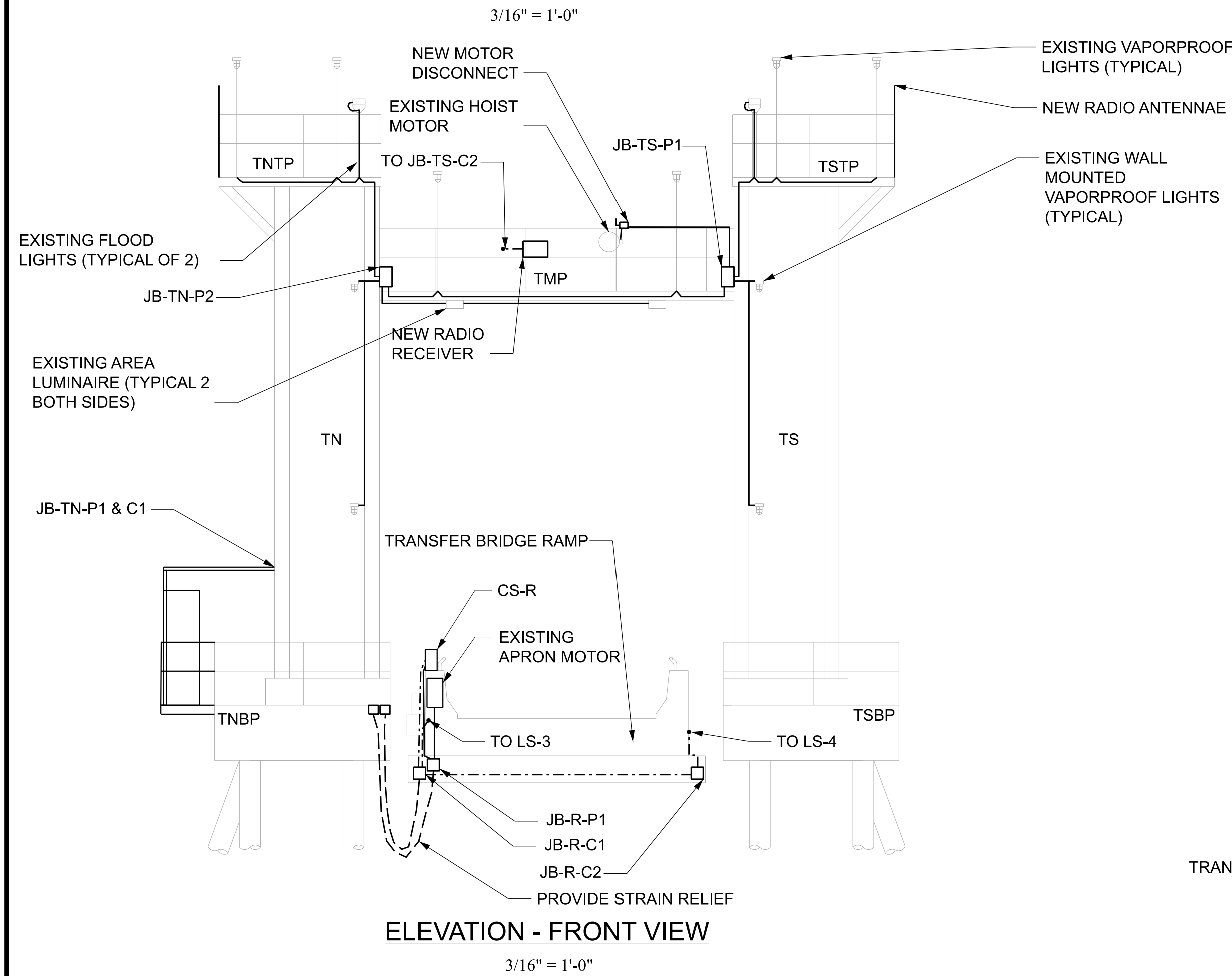


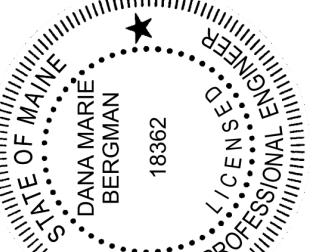
STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2696210		WIN 26962.10		MULTIMODAL PLANS	
		SIGNATURE Dana Marie Bergman		P.E. NUMBER 18362		DATE 5/2/2025	
PROJ. MANAGER A. GORNEAU	DESIGN-DETAILED M.L.C.	CHECKED-REVIEWED D.W.G.	BY D.M.B.	DATE MAR 2025			
					REVISIONS 1		
					REVISIONS 2		
					REVISIONS 3		
					REVISIONS 4		
					FIELD CHANGES		
FERRY TERMINAL ELECTRICAL UPGRADES					SWANS ISLAND PLAN		
SHEET NUMBER					10 OF 20		

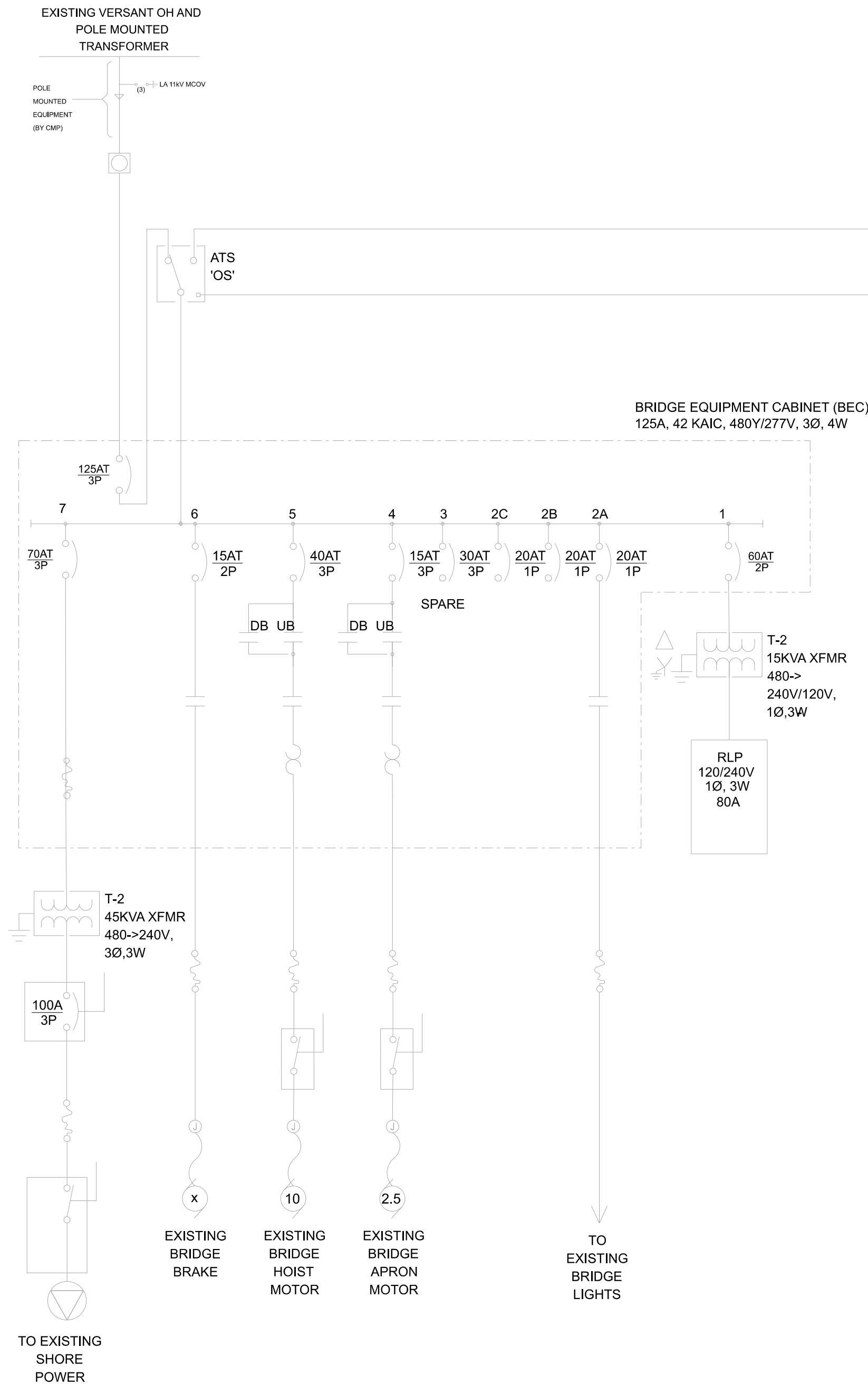


ELECTRICAL PLAN - MIDDLE AND TOP PLATFORM

ELECTRICAL PLAN - BOTTOM PLATFORM



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2696210		WIN 26962.10		MULTIMODAL PLANS	
		SIGNATURE <i>Dana Bergman</i>		P.E. NUMBER 18362		DATE 5/2/2025	
PROJ. MANAGER	BY	DATE					
A. GORNEAU	DMB	MAR 2025					
DESIGN-DETAILED	MLC	MAR 2025					
CHECKED-REVIEWED	DWG						
DESIGN-DETAILED	DWG						
DESIGN-DETAILED	DWG						
REVISIONS 1							
REVISIONS 2							
REVISIONS 3							
REVISIONS 4							
FIELD CHANGES							
FERRY TERMINAL ELECTRICAL UPGRADES			SWANS ISLAND HOIST TOWER DETAILS				
SHEET NUMBER			12				
			OF 20				

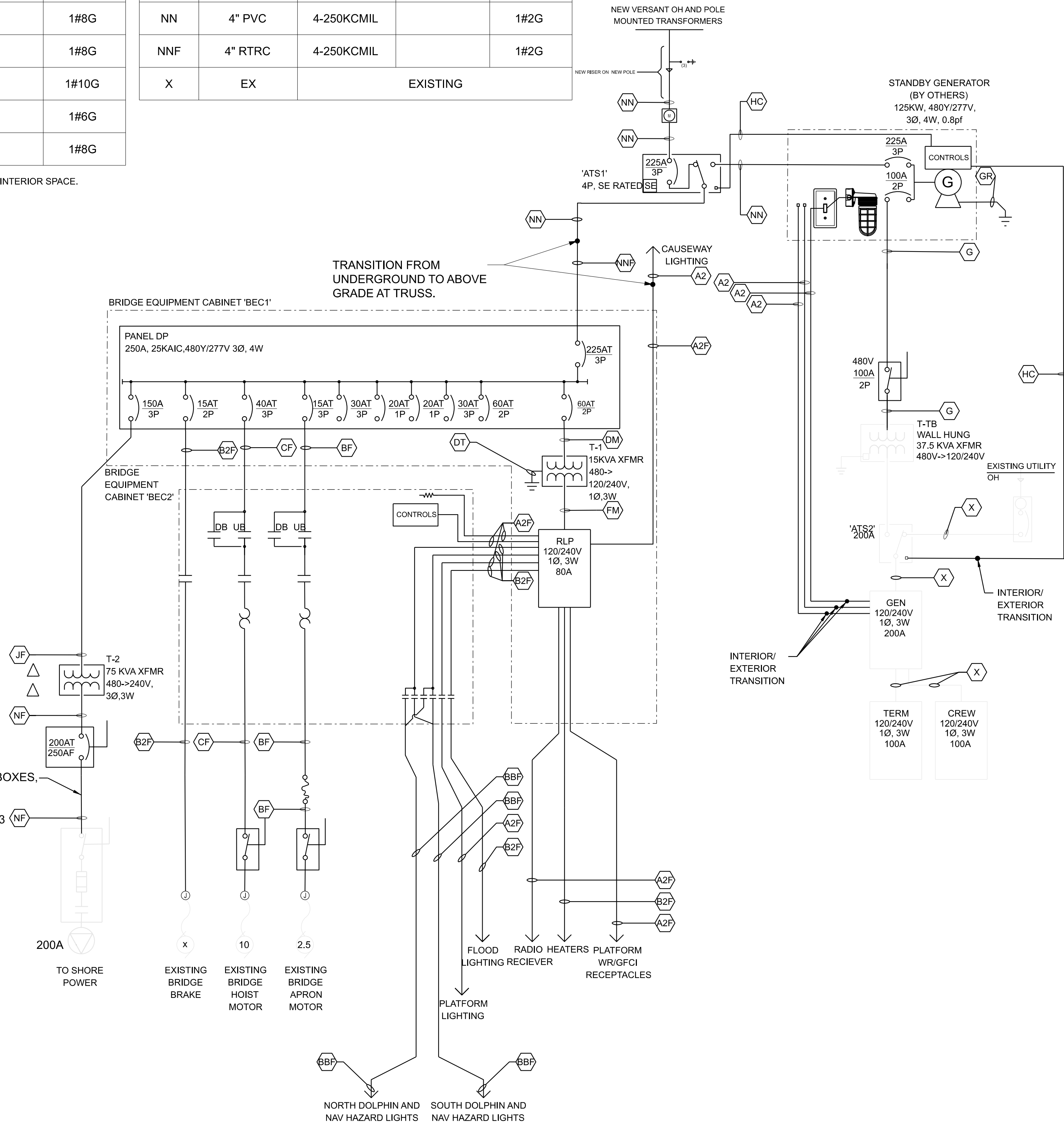


EXISTING SWANS ISLAND ONE LINE

CONDUIT & CONDUCTOR SCHEDULE				
KEY	CONDUIT SIZE	CONDUCTORS		
		FOR EQUIPMENT	FOR CONTROLS	FOR GROUND
A2	1" PVC* / EMT	2#12		1#12G
A2F	1" RTRC	2#12		1#12G
B2F	1" RTRC	2#10		1#10G
BF	1" RTRC	3#10		1#10G
BBF	1" RTRC	4#10		1#10G
C	1" PVC* / EMT	3#8		1#8G
CF	1" RTRC	3#8		1#8G
DM	1" EMT	2#6		1#10G
DT	1" PVC			1#6G
FM	1-1/2" EMT	3#3		1#8G

* TRANSITION FROM PVC TO EMT WHERE CONDUITS IN INTERIOR SPACE.

CONDUIT & CONDUCTOR SCHEDULE				
KEY	CONDUIT SIZE	CONDUCTORS		
		FOR EQUIPMENT	FOR CONTROLS	FOR GROUND
G	1-1/2" EMT	3#2		1#8G
GR	1" PVC*			1#2G
HC	1-1/4" PVC*/EMT		17#14	1#14G
JF	2" RTRC	3#1/0		1#6G
NF	4" RTRC	3-250KCMIL		1#2G
NN	4" PVC	4-250KCMIL		1#2G
NNF	4" RTRC	4-250KCMIL		1#2G
X	EX	EXISTING		



PROPOSED SWANS ISLAND ONE LINE

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2696210

WIN
26962.10

MULTIMODAL PLANS

DATE
MAR 2025

BY
DMB

PROJ. MANAGER
A. GORREAU

CHECKED-REVIEWED
MLC

DESIGNED-DETAILED
DMG

DESIGNED-DETAILED
DMG

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

SIGNATURE
18362

P.E. NUMBER
52/2025

DATE

FERRY TERMINAL
ELECTRICAL UPGRADES

SWANS ISLAND
ELECTRICAL DETAILS

SHEET NUMBER

13

OF 20

BUS _____ 400A _____ BKR RATING _____ 35 KAIC _____ SUPPLY VOLTAGE _____ 480Y/277V _____ SERVICE _____ 3 PHASE, 4 WIRE _____		EQUIP NAME. <u>MDP</u>	LOCATION _____ MOUNTING _____ DRAWING No. _____	AT SE RATED ATS _____ SURFACE _____ _____
		MAIN BREAKER _____ 225A _____ FEEDER ENTRANCE _____ TOP/BOTTOM _____ FEEDER SIZE _____ SEE ONE-LINE _____ SOURCE _____ SEE ONE-LINE _____	ENCLOSURE TYPE _____ NEMA 4X _____	

PANEL No. DP														LOCATION			BRIDGE EQUIPMENT ENCLOSURE (BEC1)														
														DRAWING No.			SURFACE														
BUS		250A																													
PANEL RATING		25 KAIC																													
SUPPLY VOLTAGE		480Y/277V																													
SERVICE		3 PHASE, 4 WIRE																													
WIRING		DESCRIPTION		CODE		VA OR W			BREAKER		CKT.		BUS		CKT.		BREAKER		VA OR W			CODE		DESCRIPTION		WIRING					
WIRE		COND				ØA		ØB		ØC		POLE		A		NO		A		ØA		ØB		ØC				COND		WIRE	
SEE ONE-LINES		TRANS - 15kVA - PNL "RLP"		POWR		4310		5970				1		2		3		4		443		443				EQUIP		MTR - APRON		SEE ONE-LINES	
		SPARE		POWR								1		20		5		6				443				EQUIP					
																		8		16						EQUIP					
SEE ONE-LINES		75 kVA SHORE CHARGING		RECP		25000		25000				3		150		9		10		3		3880		3880		EQUIP		MTR - BRIDGE HOIST SYSTEM		SEE ONE-LINES	
		SPARE		RECP				25000				1		11		12		12		15		1400		3880		EQUIP		10 HP			
												1		15		16		16		16						POWER		MTR - HOIST BRAKE		SEE ONE-LINES	
		SPARE										1		20		17		18		1		1440						POWER			
														19		20		20		1								SPARE			
3#10, 1#10G		3/4" SPD										3		30		21		22		3		30						SPARE			
												1		23		23		24		1											
																		TOTAL 2		5723		5763		4323							
		TOTAL 1				29320		29320		25000																					
		TOTAL 2				5723		5763		4323																					
		TOTAL 1 + 2				35043		35083		29323																					
		CONN. LOAD TOTAL				99449																									
		CONN. AMPERES TOTAL				120																									
		EST. DEMAND LOAD TOTAL				66949																									
		EST. DEMAND AMPERES TOTAL				81																									

PANEL No. <u>RLP</u>															LOCATION		BRIDGE EQUIPMENT ENCLOSURE (BEC1)	
BUS 100A															MOUNTING		SURFACE	
PANEL RATING 18 KAIC																		
SUPPLY VOLTAGE 120/240V																		
SERVICE 1 PHASE, 3 WIRE																		
															DRAWING No. _____			

WIRING		DESCRIPTION	CODE	VA OR W		BREAKER		CKT. BUS		CKT. BREAKER		VA OR W		CODE	DESCRIPTION	WIRING	
WIRE	COND			ØA	ØB	POLE	A	NO	CONN	NO	POLE	A	ØB			COND	WIRE
SEE ONE-LINE		BRIDGE CONTROL POWER	POWR	1000		1	20	1	x	2	1	20	500	LTS	LTS - BRIDGE PLATFORMS		SEE ONE-LINE
2#12, 12G	3/4"	CABINET HEATER	EHT		1000	1	20	3	x	4	1	20	720	RECP	RECP - BRIDGE GFCIS		SEE ONE-LINE
2#12, 12G	3/4"	CABINET RECEPTACLE	RECP	360		1	20	5	x	6	1	20	500	EQUIP	RADIO RECEIVER		SEE ONE-LINE
SEE ONE-LINE		HTR - HOIST MOTR AND BRAKE	EHT			1	20	7	x	8	1	20	1000	EHT	RADIO RECEIVER & APRON HTR		SEE ONE-LINE
SEE ONE-LINE		PAWL HEATER	EHT	750		1	20	9	x	10	1	20	400	LTS	LTS - NAVIGATION / PIER BEACONS		SEE ONE-LINE
	W		EHT		750	1	20	11	x	12	1	20	1000	LTS	LTS - UPPER FLOOD LIGHTS		SEE ONE-LINE
	W		EHT			1	20	13	x	14	1	20	100	EQUIP	LTS - CONTACTOR / TIME CLOCK	3/4"	SEE ONE-LINE
	W					1	20	15	x	16	2	20	700	LTS	LTS - DOLPHIN		SEE ONE-LINE
	W					1	20	17	x	18	2	20	700	LTS	LTS - WOOD POLE MOUNTED		SEE ONE-LINE
	W					1	20	21	x	22	1	20		LTS	CAUSEWAY LIGHTS		
		SPARE				1	20	23	x	24					SPARE		
TOTAL 2				2200	3420												
TOTAL 1 + 2				4310	5970												
CONN. LOAD TOTAL				10280													
CONN. AMPERES TOTAL				43													
EST. DEMAND LOAD TOTAL				10775													
EST. DEMAND AMPERES TOTAL				45													

MAIN BREAKER		80A		MAIN LUGS		N/A	
FEEDER ENTRANCE		TOP/BOTTOM		ENCLOSURE TYPE		NEMA 3R	
FEEDER SIZE		80A SEE ONE-LINE		ACCESSORIES		INDICATES GFI BREAKER	
SOURCE		SEE ONE-LINE		A = AFCI		GFCI BREAKER	
PANEL TYPE		DOOR-IN-DOOR		+		= EXISTING CIRCUIT	

BUS _____ 200A _____

PANEL RATING _____ EX KAIC _____

SUPPLY VOLTAGE _____ 120/240V _____

SERVICE _____ 1 PHASE, 3 WIRE _____

PANEL No. GEN

(EXISTING)

LOCATION _____ MOUNTING _____

GENERATOR BUILDING _____ SURFACE _____

DRAWING No. _____

WIRING		DESCRIPTION	CODE	VA OR W		BREAKER		CKT. NO.	BUS CONN.	CKT. NO.	BREAKER		VA OR W		CODE	DESCRIPTION	WIRING		
WIRE	COND.			ØA	ØB	POLE	A				NO.	POLE	A	ØA			ØB	COND	WIRE
2#12,1#12G	1"	GEN - BATT CHARGING	POWR	1920		1	20	1		2		1	20			RECP	RECP - GARAGE	COND	WIRE
2#12,1#12G	1"	GEN - LIGHT	LTS		64	1	15	3		x	4	1	20		64	LTS	LTS - GARAGE	EX	EXISTING
2#12,1#12G	1"	GEN - HEATER	POWR	1000		1	20	5		x	6	2	100				ON	EX	EXISTING
		BLANK						7	x	8	2	10	30				NO LABEL	W	W
		BLANK						9		10							BLANK		
		BLANK						11	x	12							BLANK		
		BLANK						13	x	14			/				BLANK		
		BLANK						15	x	16							BLANK		
		BLANK						17	x	18	/		100				BLANK		
		BLANK						19	x	20							BLANK		
		BLANK						21	x	22							BLANK		
		BLANK						23	x	24							BLANK		
		BLANK						25	x	26							BLANK		
EXISTING /	W	TERMINAL BUILDING	/			2	160	27	x	28	2	100	/			CREW QUARTERS	W	W	
	W		W			29	x	30		30	2	100	/						
		TOTAL 1		2920	64					TOTAL 2		720	64						
		TOTAL 2		720	64														
		TOTAL 1 + 2		3640	128														
		CONN. LOAD TOTAL			3768														
		CONN. AMPERES TOTAL			16														
		EST. DEMAND LOAD TOTAL			3768														
		EST. DEMAND AMPERES TOTAL			16														

MAIN BREAKER _____ 200A _____

FEEEDER ENTRANCE _____ EXISTING _____

FEEEDER SIZE _____ 200A _____ EXISTING _____

SOURCE _____ 37.5kVA XFMR _____

PANEL TYPE _____ DOOR-IN-DOOR _____

MAIN LUGS _____ N/A _____

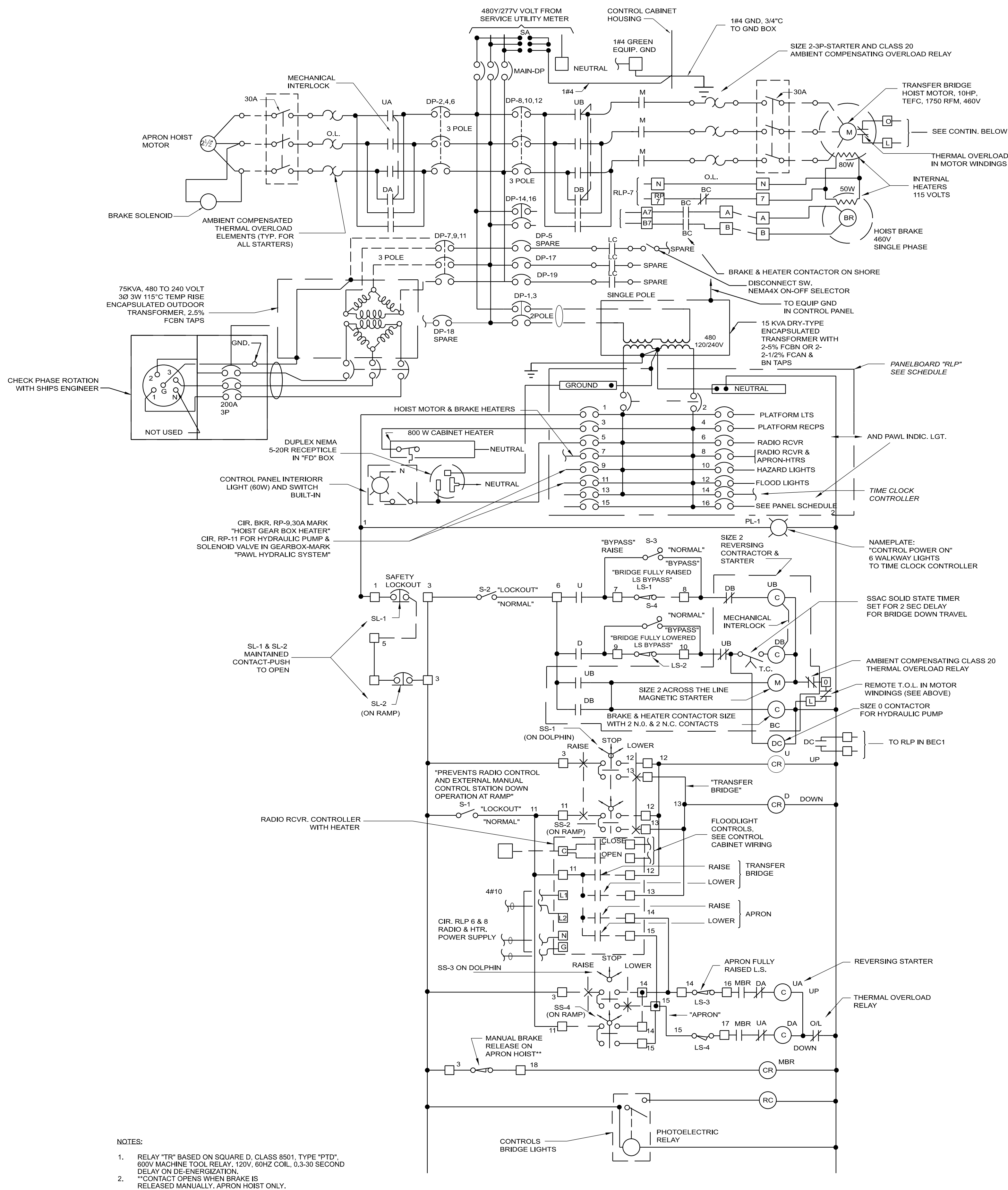
ENCLOSURE TYPE _____ NEMA 1 _____

ACCESSORIES : INDICATES GPI BREAKER _____

** INDICATES LOCK ON DEVICE

NOTE: CONNECTED AND DEMAND LOAD DOES NOT INCLUDE EXISTING TERMINAL AND CREW BUILDING LOADS.

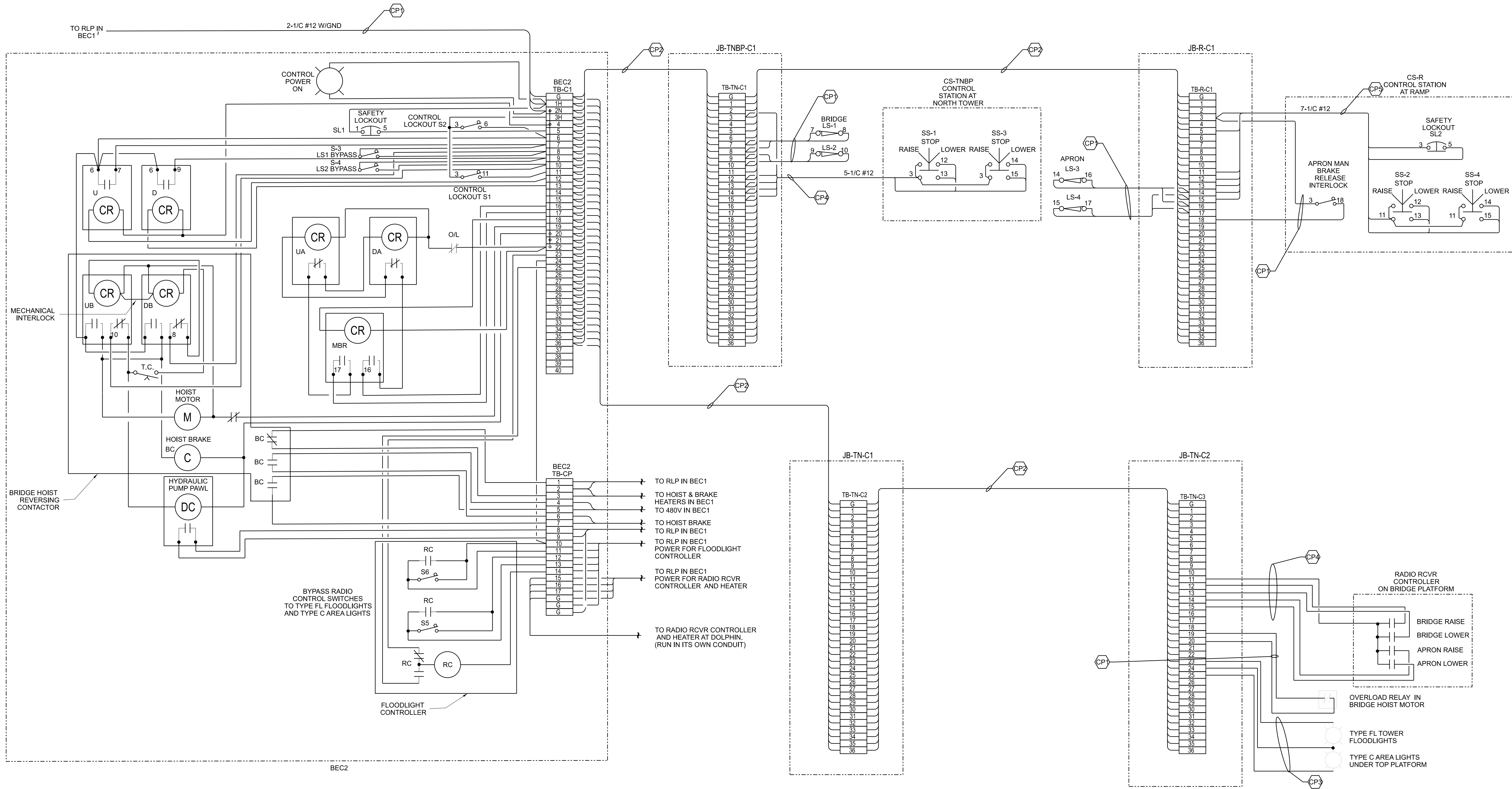
BOLD INDICATES NEW/MODIFIED DEVICES



NOTES:

1. RELAY "TR" BASED ON SQUARE D, CLASS 8501, TYPE "PTD", 600V MACHINE TOOL RELAY. 120V, 60HZ COIL, 0.3-30 SECOND DELAY ON DE-ENERGIZATION.
2. **CONTACT OPENS WHEN BRAKE IS RELEASED MANUALLY. APRON HOIST ONLY.

ELEMENTARY DIAGRAM



PROPOSED SWANS ISLAND WIRING DIAGRAM
CONTRACTOR TO PROVIDE FINAL WIRING DIAGRAM, BASED UPON FIELD CONDITIONS

CONDUIT & CONDUCTOR SCHEDULE				
KEY	CONDUIT SIZE	CONDUCTORS		
		FOR	FOR	FOR
		EQUIPMENT	CONTROLS	GROUND
CP1	1" RTRC		2#12	1#12G
CP2	1½" RTRC		30#12	1#12G
CP3	1" RTRC		3#12	1#12G
CP4	1" RTRC		5#12	1#12G
CP5	1" RTRC		7#12	1#12G

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2696210

WIN
26962.10

MULTIMODAL PLANS

PROJ. MANAGER
A. GORREAU

DESIGN-DETAILED
MLC

CHECKED-REVIEWED
JRH

DESIGN-DETAILED
DWG

DESIGN-DETAILED
DWG

REVISIONS 1

REVISIONS 2

REVISIONS 3

REVISIONS 4

FIELD CHANGES

DATE
MAR 2025

BY
DMB

DATE
MAR 2025

BY
JRH

SIGNATURE
DANA BERGMAN

P.E. NUMBER
18362

DATE
5/2/2025

DATE
MAR 2025

BY
DMB

DATE
MAR 2025

BY
JRH

SIGNATURE
DANA BERGMAN

P.E. NUMBER
18362

DATE
5/2/2025

FERRY TERMINAL
ELECTRICAL UPGRADES

SWANS ISLAND
ELECTRICAL DETAILS

SHEET NUMBER

15

OF 20

GENERAL NOTES

1. THESE NOTES CONTAIN GENERAL INFORMATION AND ARE NOT COMPLETE FOR CONSTRUCTION PURPOSES. CONTRACTOR SHALL VERIFY INFORMATION GIVEN HERE WITH SPECIFICATIONS AND OTHER DRAWINGS AND BRING ANY CONFLICTS TO THE ENGINEER'S ATTENTION BEFORE BEGINNING.
2. ALL DIMENSIONS AND DETAILS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
3. CONTRACTOR SHALL PROVIDE AND MAINTAIN HORIZONTAL AND VERTICAL CONTROLS IN THE MAINE STATE PLANE COORDINATE SYSTEM.
4. THE CONTRACTOR SHALL BE AWARE OF THE EELGRASS LIMITS WHICH IS APPROXIMATED BASED ON A JUNE 27, 2019 DIVE SURVEY BY MAINEDOT. ALL ACTIONS DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO DEMOLITION, INSTALLATION, AND EQUIPMENT SETUP AND STORAGE, SHALL NOT AFFECT THESE ENVIRONMENT RESOURCES.

SPECIFICATIONS AND CODES

1. STATE OF MAINE, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, MARCH 2020. INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.
2. CODES AND OTHER REFERENCES

A. US ARMY CORPS OF ENGINEERS: COASTAL ENGINEERING MANUAL, CURRENT EDITION

B. AASHTO LRFD SPECIFICATIONS, 8TH EDITION, 2017 WITH INTERIM'S

C. AWS, D1.1, "STRUCTURAL WELDING CODE STEEL," CURRENT EDITION

D. AWS, D1.2, "STRUCTURAL WELDING CODE ALUMINUM," CURRENT EDITION

E. MUBEC, "MAINE UNIFORM BUILDING AND ENERGY CODE", EFFECTIVE APRIL 7, 2025

F. IBC 2021, "INTERNATIONAL BUILDING CODE", 2021

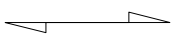
G. ASCE 7-16, "MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES", 2016

H. AISC, 360-16, "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", 2016

I. ACI 318-19, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE", 2019

J. ADM-2020, "ALUMINUM DESIGN MANUAL", 2020

LEGEND



GRATING SPAN
DIRECTION

ABBREVIATIONS:

CL	CENTERLINE
CLR	CLEAR
C-T-C	CENTER TO CENTER
CY	CUBIC YARD
Ø	DIAMETER
DN	DOWN
EA	EACH
EL	ELEVATION IN FEET
HSS	HOLLOW STRUCTURAL SECTIONS
ID	INSIDE DIAMETER
K (KIP)	1000 POUNDS
KB	KNEE BRACE
LBS	POUNDS
LF	LINEAR FEET
MAX.	MAXIMUM
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MIN.	MINIMUM
MLLW	MEAN LOWER LOW WATER
MLW	MEAN LOW WATER
MSL	MEAN SEA LEVEL
NA	NOT APPLICABLE
NGVD29	NATIONAL GEODETIC VERTICAL DATUM 29
N.T.S.	NOT TO SCALE
OC	ON CENTER
PL OR PL	PLATE
PSF	POUNDS PER SQUARE FOOT
R	RADIUS
REF	REFERENCE
SCHD.	SCHEDULE
SF	SQUARE FOOT
TOC	TOP OF CONCRETE
TYP.	TYPICAL
UHMW	ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE
UON	UNLESS OTHERWISE NOTED
USACOE	UNITED STATES ARMY CORPS OF ENGINEERS

LEGEND:

1. VERTICAL CONTROL FOR MARINE STRUCTURES IS IN REFERENCE TO MLLW (MEAN LOWER LOW WATER). TO CONVERT TO NATIONAL GEODETIC VERTICAL DATUM 29 (NGVD29), USE THE FOLLOWING FORMULA: EL. (NGVD29) = EL. (MLLW) - 9.28FT
2. HORIZONTAL CONTROL IS THE MAINE STATE PLANE COORDINATE SYSTEM (EAST ZONE), NAD 27.

DEMOLITION NOTES

1. DEMOLITION SHALL BE CONDUCTED TO PREVENT DEBRIS FROM FALLING INTO THE OCEAN. TO THE MAXIMUM EXTENT PRACTICABLE, ALL CONSTRUCTION DEBRIS, INCLUDING ANY LIQUIDS OR SLURRIES THAT ARE PRODUCED AS PART OF THE DEMOLITION, SHALL BE CAPTURED AND DISPOSED OF PROPERLY. THE CONTRACTOR SHALL COMPLY WITH APPLICABLE PERMIT CONDITIONS AND ENVIRONMENTAL REGULATIONS LISTED IN THE SPECIFICATIONS. WORK SHALL INCLUDE REMOVAL OF ANY CONSTRUCTION DEBRIS FROM THE OCEAN AND INSTALLATION AND MAINTENANCE OF APPROPRIATE TURBIDITY CONTROLS DURING DEMOLITION AND CONSTRUCTION SUCH THAT NO TURBIDITY ESCAPES THE IMMEDIATE WORK AREA. UNDERWATER INSPECTIONS MAY BE CONDUCTED BY THE OWNER'S REPRESENTATIVE TO ENSURE ALL DEMOLITION AND CONSTRUCTION DEBRIS IS REMOVED FROM THE OCEAN.

STRUCTURAL DESIGN CRITERIA

1. WIND: RISK CATEGORY III
BASIC WIND SPEED V_w = 119MPH
EXPOSURE D
2. LIVE LOADS: PLATFORMS: 60PSF
3. SNOW GROUND SNOW LOAD = 50 PSF
4. ICE DESIGN ICE THICKNESS = 1.5 INCHES
CONCURRENT TEMPERATURE = 5°F
WIND ON ICE GUST SPEED = 50 MPH
5. SEISMIC SDS = 0.229
SD1 = 0.101
SOIL CLASS D (ASSUMED)
SEISMIC IMPORTANCE FACTOR IE = 1.25
SEISMIC DESIGN CATEGORY = B
6. TIDAL RANGES (ELEVATIONS IN FEET):

BASS HARBOR	TIDAL DATUM				
	NGVD29	MSL	MLW	MLLW	STND
TOP OF DOLPHIN*	9.10	12.71	18.00	18.38	21.85
HIGHEST OBSERVED TIDE	6.93	10.54	15.83	16.21	19.68
MHHW	2.09	5.70	10.99	11.37	14.84
MHW	1.67	5.28	10.57	10.95	14.42
NGVD29**	0.00	3.61	8.90	9.28	12.75
MSL	-3.61	0.00	5.29	5.67	9.14
MLW	-8.90	-5.29	0.00	0.38	3.85
MLLW	-9.28	-5.67	-0.38	0.00	3.47
LOWEST OBSERVED TIDE	-12.19	-8.58	-3.29	-2.91	0.56
STND (STATION DATUM)	-12.75	-9.14	-3.85	-3.47	0.00

*ALONG TOP EDGE OF DOLPHIN AT CORNER NEAREST PEN.
**NGVD29 CONVERSION TAKE FROM ARCHIVE PROJECT DRAWINGS.

STATION ID: 8413320, BAR HARBOR, ME
TIDAL EPOCH: 1983-2001

SWAN'S ISLAND	TIDAL DATUMS				
	NGCD29	MSL	MLW	MLLW	STND
TOP OF DOLPHIN*	9.12	12.94	18.04	18.40	19.31
HIGHEST OBSERVED TIDE	6.93	10.75	15.85	16.21	17.12
MHHW	1.64	5.46	10.56	10.92	11.83
MHW	1.23	5.05	10.15	10.51	11.42
NGVD29**	0.00	3.82	8.92	9.28	10.19
MSL	-3.82	0.00	5.10	5.46	6.37
MLW	-8.92	-5.10	0.00	0.36	1.27
MLLW	-9.28	-5.46	-0.36	0.00	0.91
LOWEST OBSERVED TIDE	-10.19	-6.37	-1.27	-0.91	0.00
STND (STATION DATUM)	-12.19	-8.37	-3.27	-2.91	-2.00

*ALONG TOP EDGE OF DOLPHIN AT CORNER NEAREST PEN.
**NGVD29 CONVERSION TAKE FROM ARCHIVE PROJECT DRAWINGS.

STATION ID: 8413320, BAR HARBOR, ME
TIDAL EPOCH: 1983-2001

STRUCTURAL STEEL AND MISCELLANEOUS STEEL FABRICATIONS

1. UNLESS OTHERWISE NOTED, ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING ASTM STANDARDS:

W AND WT: ASTM A992

CHANNELS AND ANGLES: ASTM A36

HSS: ASTM A500 GRADE B

PIPE: ASTM A53 TYPE E OR S, GRADE B

ALL OTHER SHAPES AND PLATES: ASTM A36
2. ALL BOLTS AND NUTS FOR STEEL CONNECTIONS SHALL CONFORM TO ASTM F3125, GRADE 325, TYPE 1 AND BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153. SET ANCHOR BOLTS BY TEMPLATE ONLY.
3. ALL STRUCTURAL AND MISCELLANEOUS STEEL, INCLUDING ALL FASTENERS, UNLESS NOTED OTHERWISE, SHALL BE HOT-DIP GALVANIZED. GALVANIZE ITEMS AFTER FABRICATION. STRESS RELIEVE BENDS BEFORE GALVANIZING. GALVANIZING DAMAGED ACCIDENTALLY OR DUE TO FIELD WELDING SHALL BE RESTORED WITH A FIELD APPLIED GALVANIZING COMPOUND.
4. WELDING ELECTRODES: E70XX, LOW HYDROGEN
5. ALL WELDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STRUCTURAL WELDING CODE, D1.1 AND D3.6, OF THE AMERICAN WELDING ASSOCIATION (AWS).

POST INSTALLED ANCHORS

1. ANCHOR SIZE AND EMBEDMENT SHALL BE AS SHOWN ON THE DRAWINGS.
2. EPOXY AND RESIN BONDING AGENTS SHALL BE ONE OF THE PRODUCTS LISTED ON THE MAINE DOT QUALIFIED PRODUCTS LIST.
3. PRIOR TO FABRICATION OF PLATFORM FRAMING AND DRILLING OF THE ANCHOR BOLTS, CONTRACTOR MUST LOCATE REINFORCING STEEL AND EMBEDDED CONDUIT WITH PACHOMETER TO AVOID INTERFERENCE.

ALUMINUM CABLE TRUSS

1. THE CONTRACTOR SHALL DESIGN, FABRICATE AND INSTALL AN ALUMINUM CABLE TRUSS SPANNING BETWEEN THE EXISTING CONCRETE ABUTMENT AND NEW PLATFORM.

A. ALUMINUM PLATE SHALL CONFORM TO ASTM B209 ALLOY 6061.

B. ALUMINUM EXTRUDED SHAPES SHALL CONFORM TO ASTM B221 ALLOY 6061.

C. WELDING SHALL BE IN ACCORDANCE WITH AWS D1.2.

D. TRUSS CONNECTIONS TO GRATING AND LANDSIDE SUPPORT MUST ALLOW FOR LATERAL AND TRANSVERSE MOVEMENT.
2. THE CABLE TRUSS DESIGN SHALL ADHERE TO THE SPECIFICATIONS AND CODES, AND STRUCTURAL DESIGN CRITERIA LISTED ON THIS DRAWING.
3. THE CONTRACTOR SHALL SUBMIT THE CABLE TRUSS DESIGN AND CALCULATIONS, INCLUDING LIFTING POINTS, STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MAINE, TO MDOT AND STANTEC FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. DESIGN OF TRUSS SHALL COMPLY WITH THE REQUIREMENTS OF MAINEDOT STANDARD SPECIFICATION SECTION 645.0232 - SIGN SUPPORT STRUCTURES FOR BRIDGE-TYPE SIGN SUPPORT.
4. TRUSS LANDING DETAILS ON THESE DRAWINGS ARE TO BE FINALIZED BY ENGINEER OF RECORD AFTER REVIEW AND APPROVAL OF CONTRACTOR'S TRUSS DESIGN.
5. CONTRACTOR SHALL ISOLATE AND PREVENT CONTACT BETWEEN DISIMILIAR METALS (ALUMINUM/STEEL) BY USING NEOPRENE WASHERS IN BOLTED CONNECTIONS AND NON-METALLIC BEARING PLATES AS SHOWN IN THESE DRAWINGS.

CABLE TRUSS DESIGN CRITERIA

1. ENVIRONMENTAL LOADS - SEE STRUCTURAL DESIGN CRITERIA THIS SHEET
2. CABLE(S) DEAD LOAD 10 PLF
3. CABLE TRAY DEAD LOAD 10 PLF

UHMW BEARING PAD

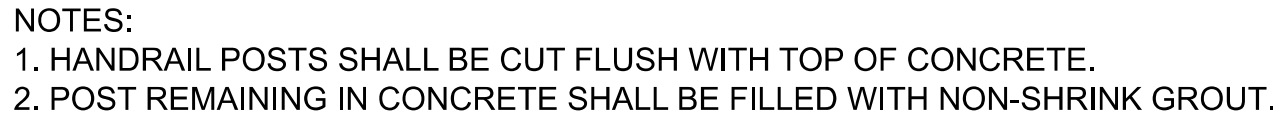
1. UHMW PE FOR THE BEARING PAD SHALL CONFORM TO ASTM D 6712-25 TYPE 1 CLASS 1 GRADE 1.
2. THE COLOR OF THE UHMW BEARING PAD SHALL BE BLACK AND CONTAIN UV STABILIZER.
3. TOP EDGES OF BEARING PAD SHALL BE CHAMFERED ¼".

STATE OF MAINE DEPARTMENT OF TRANSPORTATION	2696210	WIN 26962.10	MULTIMODAL PLANS
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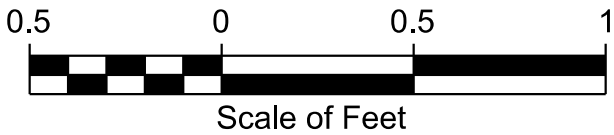
	DATE	DATE	BY	PROJ. MANAGER	CHECKED-DETAILED	CHECKED-REVIEWED	DESIGNED-DETAILED	DESIGNED-REVIEWED	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES
	MAR 2025	MAR 2025	MM	A. CORNEAU	LEG	RES							
SIGNATURE		18349		P.E. NUMBER		5/2/2025		DATE					

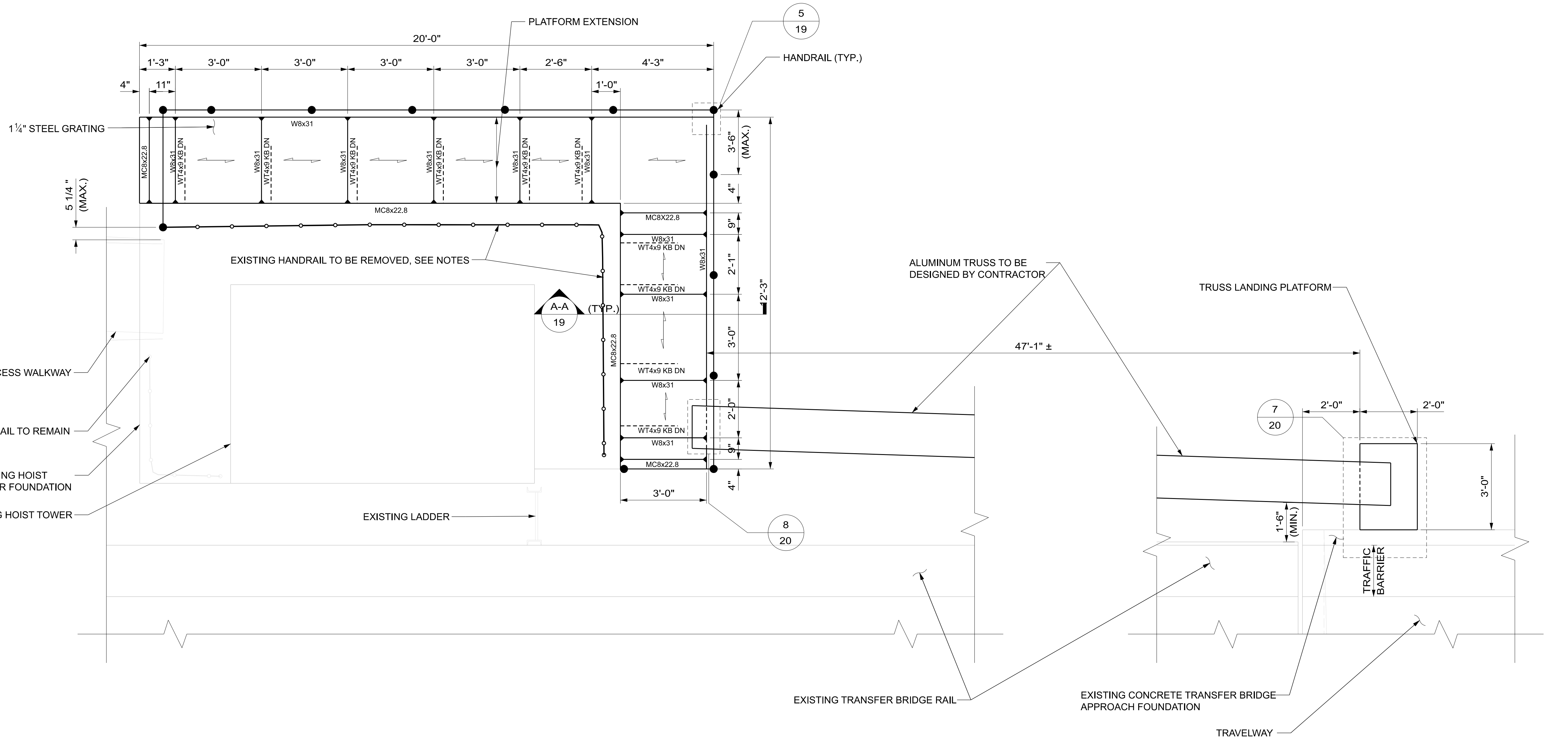
FERRY TERMINAL ELECTRICAL UPGRADES	STRUCTURAL NOTES
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SHEET NUMBER
16
OF 20



SCALE: $\frac{1}{2}" = 1'-0"$





NOTES:
1. HANDRAIL POSTS SHALL BE CUT FLUSH WITH TOP OF CONCRETE.
2. POST REMAINING IN CONCRETE SHALL BE FILLED WITH NON-SHRINK GROUT.

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION

2696210

WIN
26962.10
MULTIMODAL PLANS

STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
PROFESSIONAL ENGINEER
NO. PE18849
NICO LAZZO

Signature: *Nico Lazzo*
SIGNATURE
18349
P.E. NUMBER
5/2/2025
DATE

FERRY TERMINAL
ELECTRICAL UPGRADES

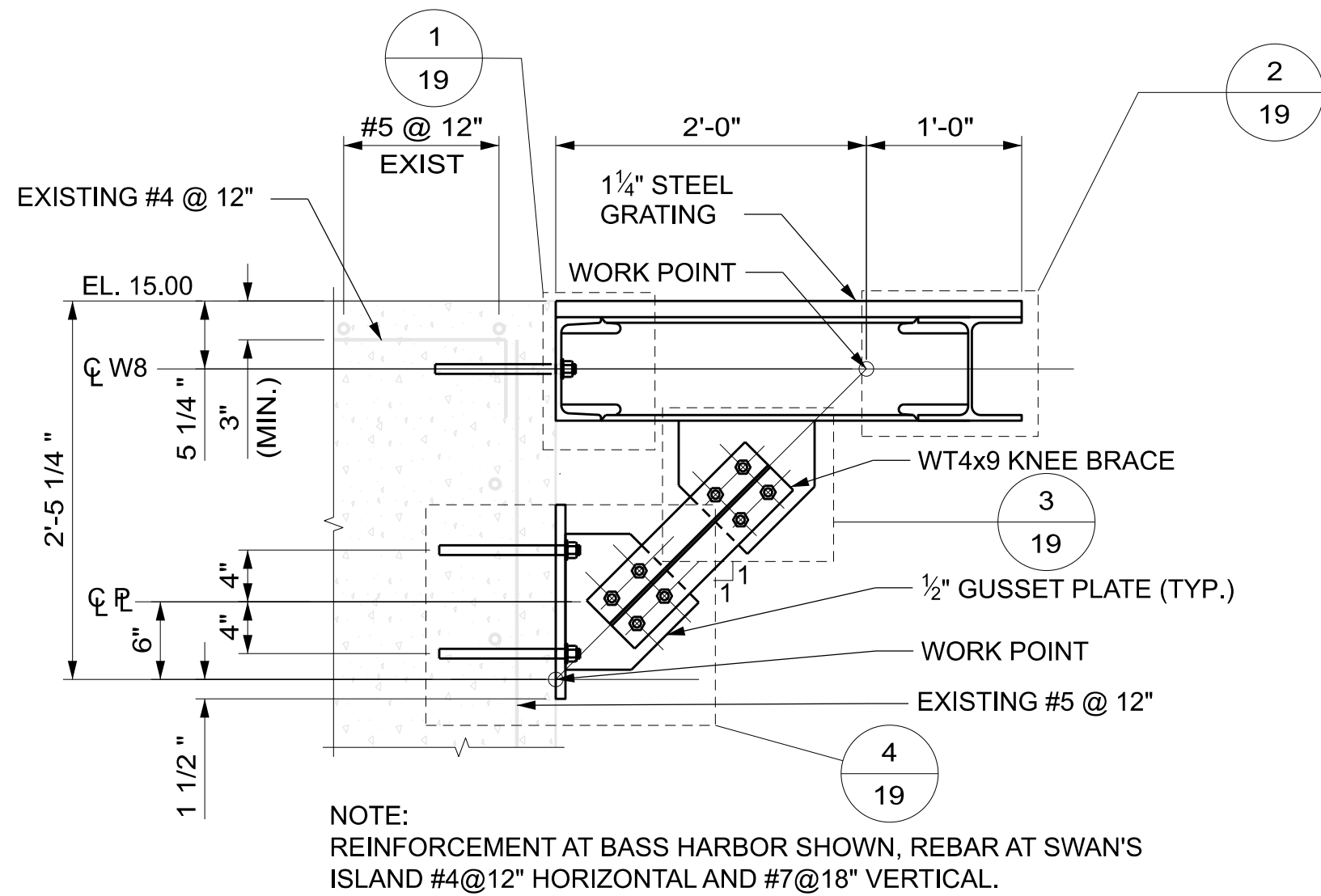
SWANS ISLAND PARTIAL PLAN

SHEET NUMBER

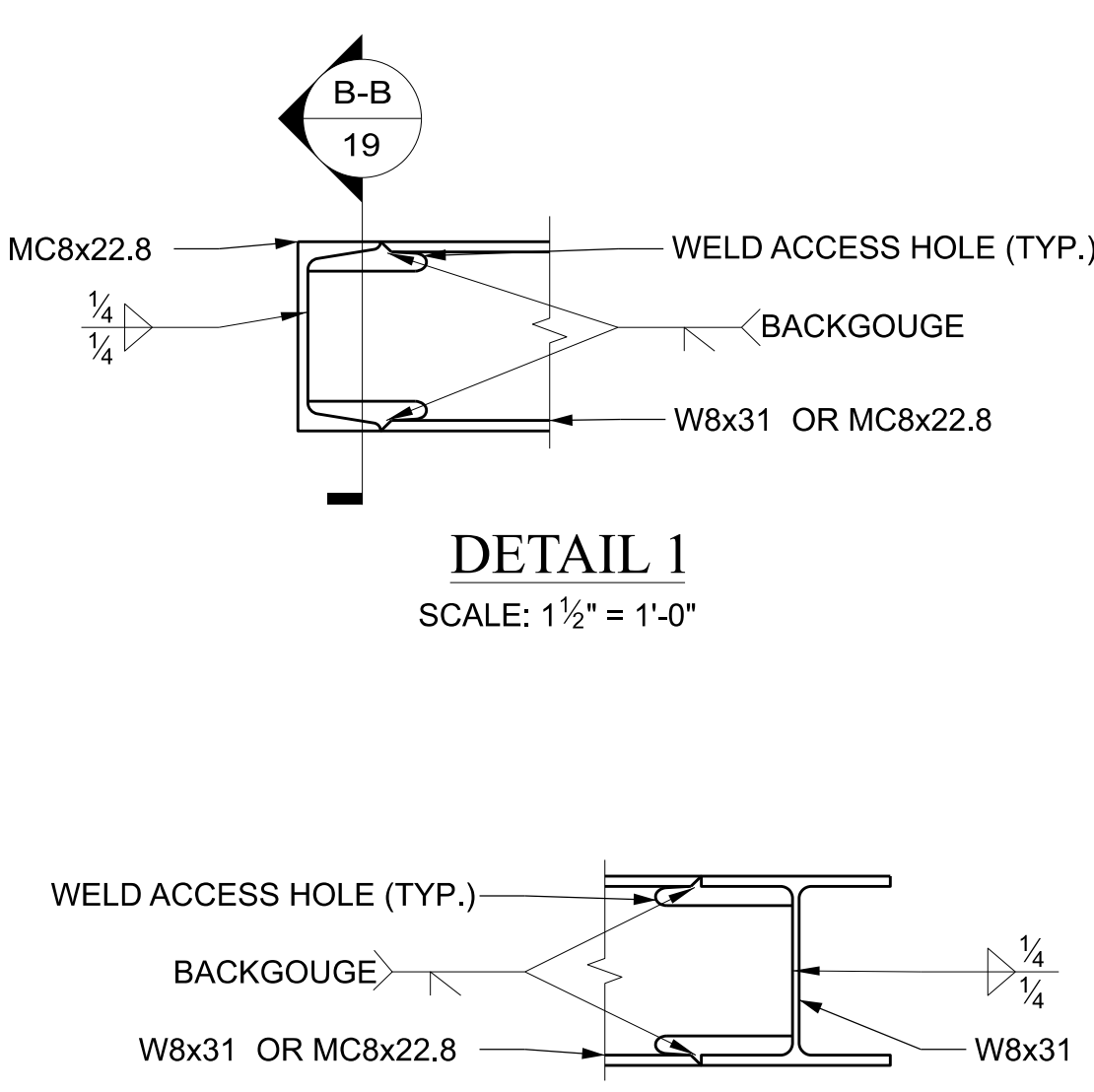
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OF 20

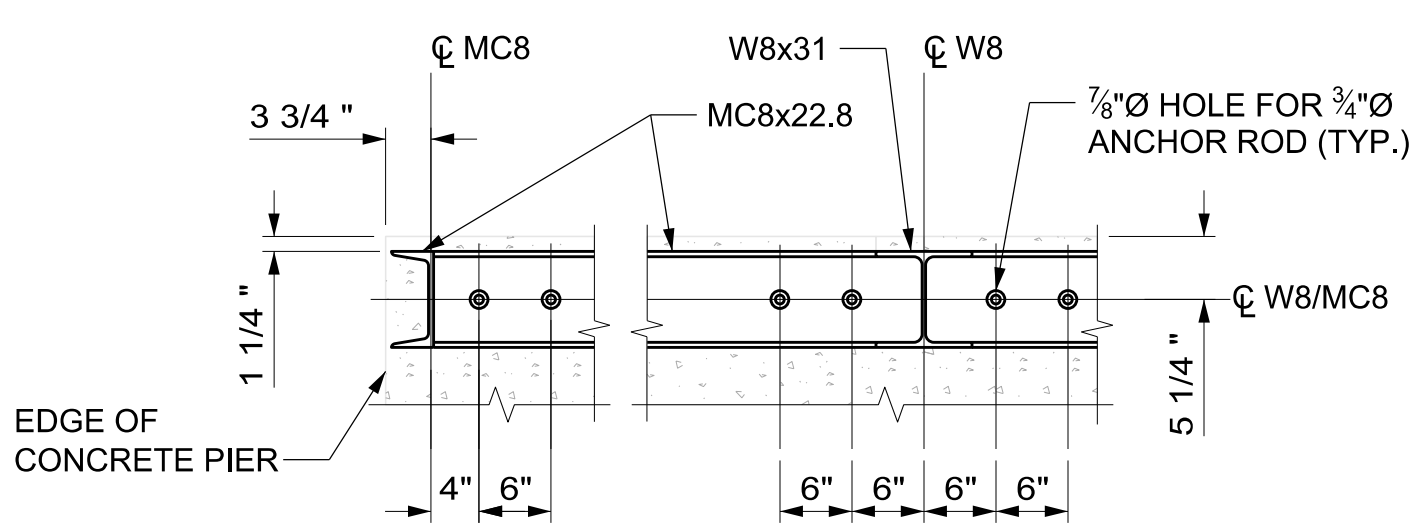
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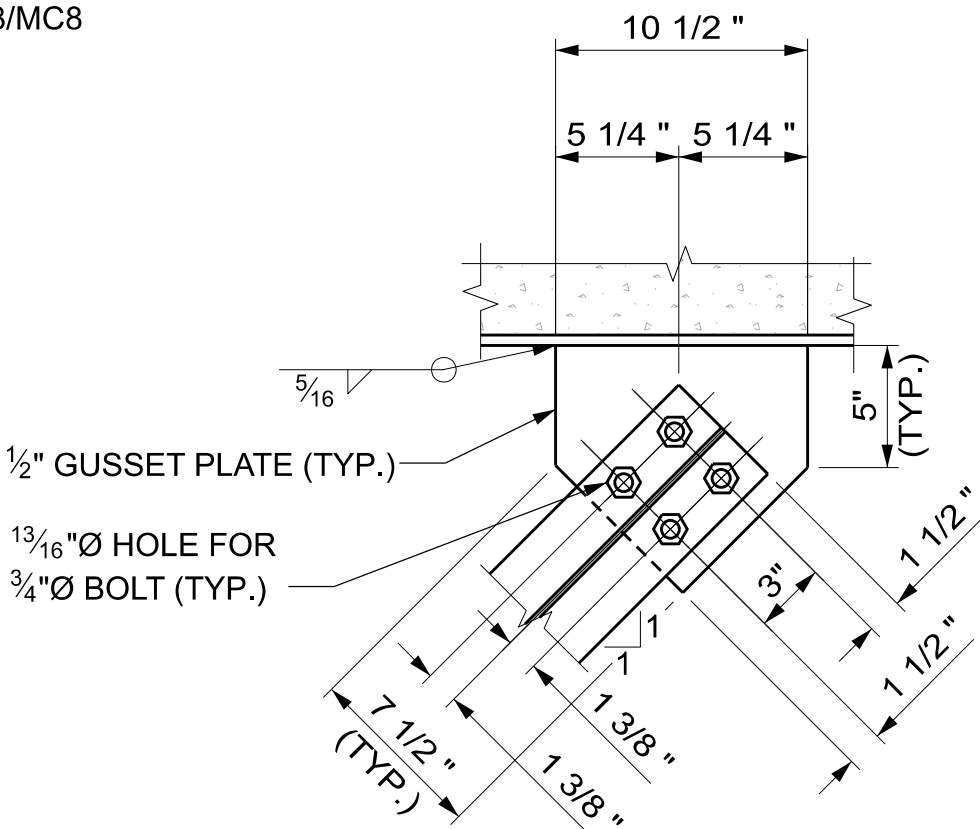
SECTION A-A
SCALE: 1" = 1'-0"



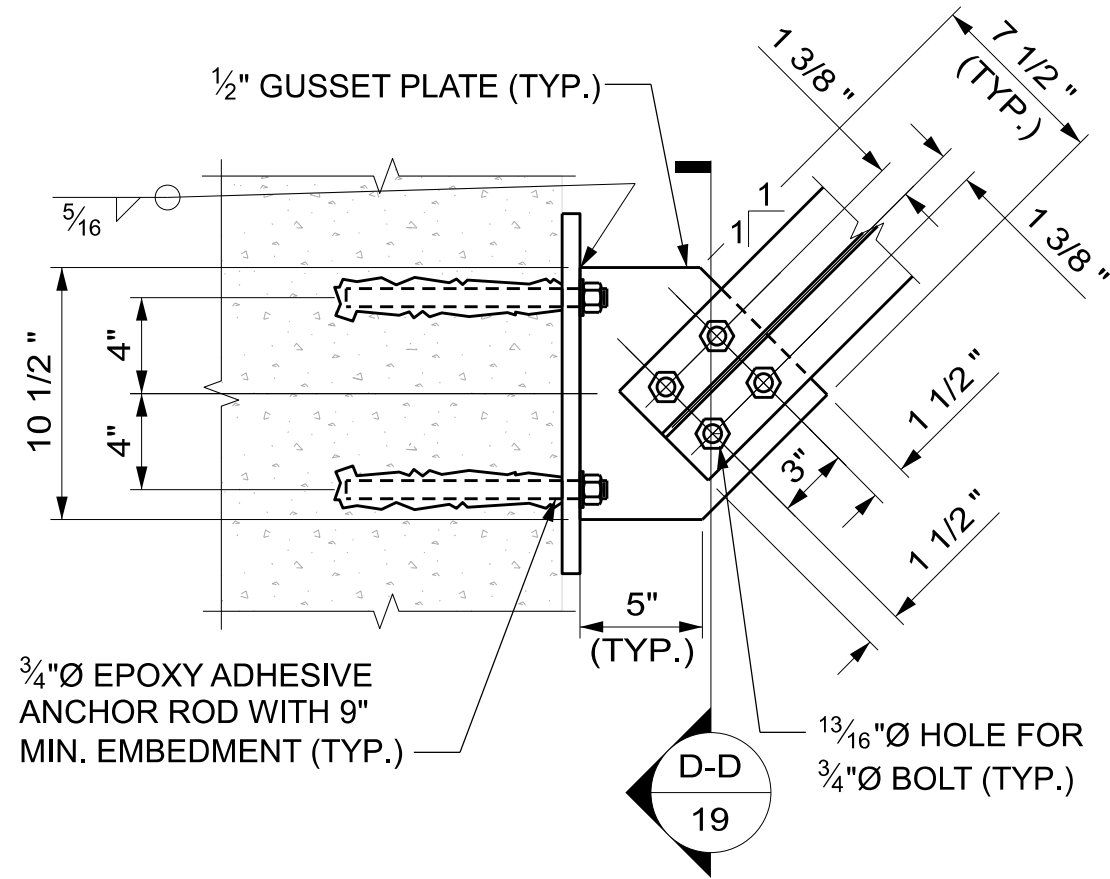
DETAIL 2
SCALE: 1 1/2" = 1'-0"



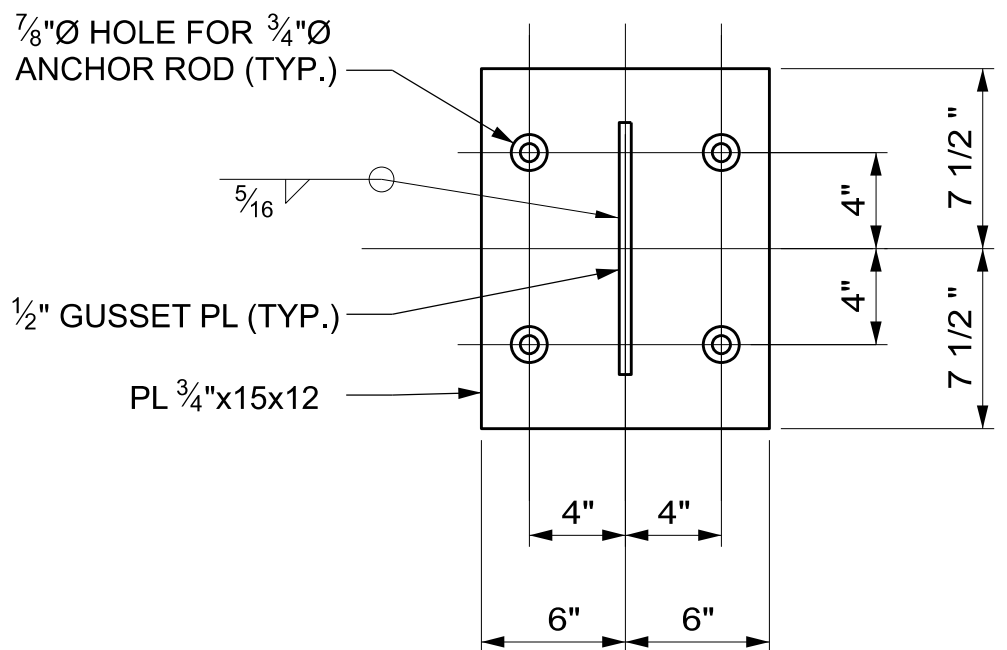
SECTION B-B
SCALE: 3/4" = 1'-0"



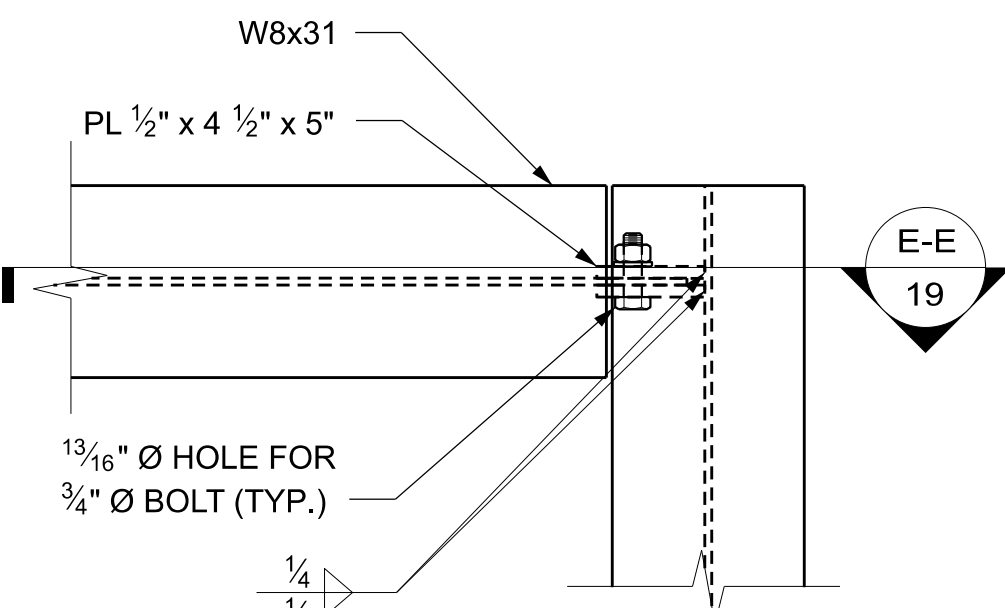
DETAIL 3
SCALE: 1 1/2" = 1'-0"



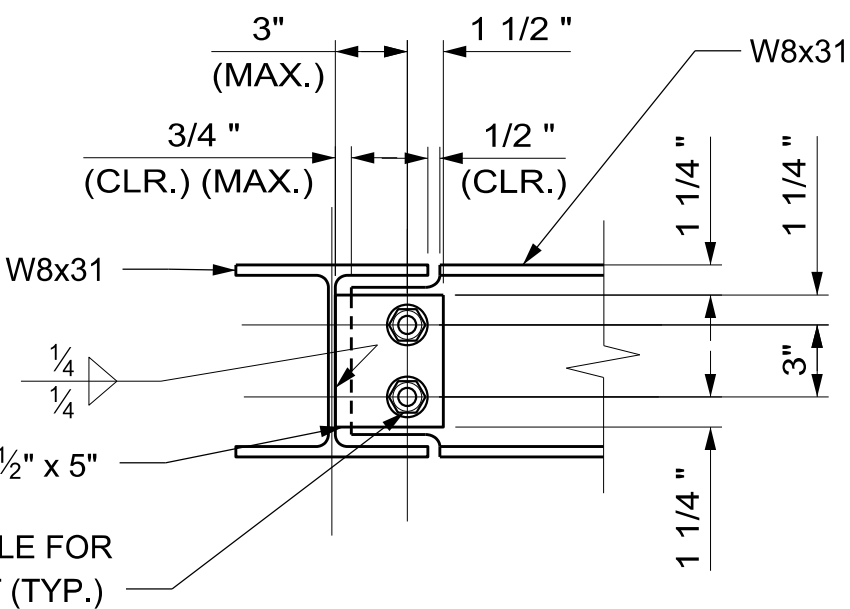
DETAIL 4
SCALE: 1 1/2" = 1'-0"



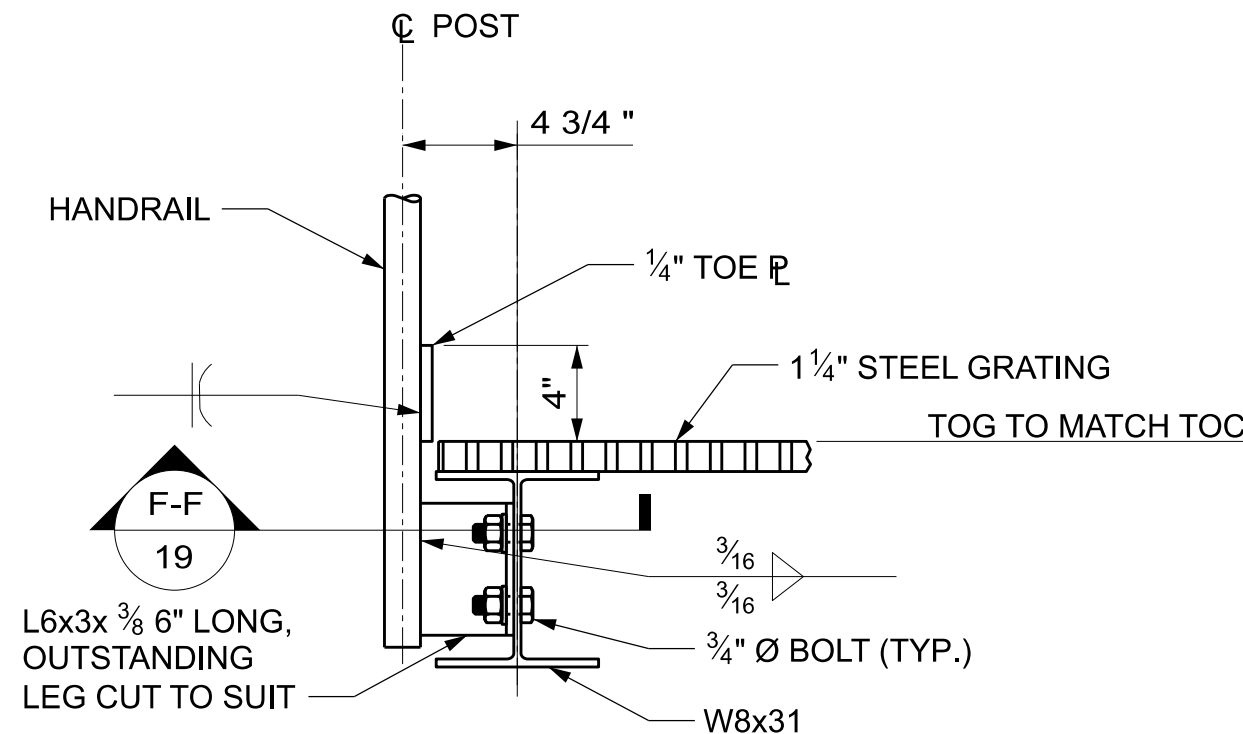
SECTION D-D
SCALE: 1 1/2" = 1'-0"



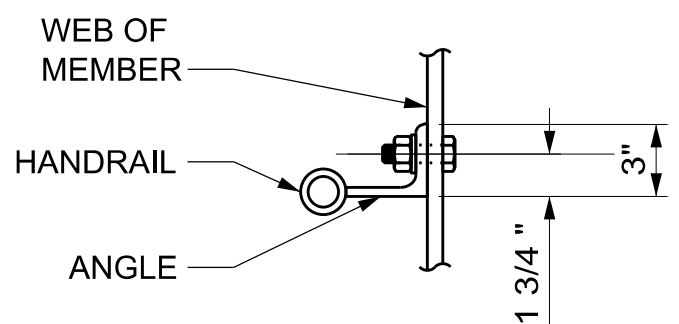
DETAIL 5
SCALE: 1 1/2" = 1'-0"



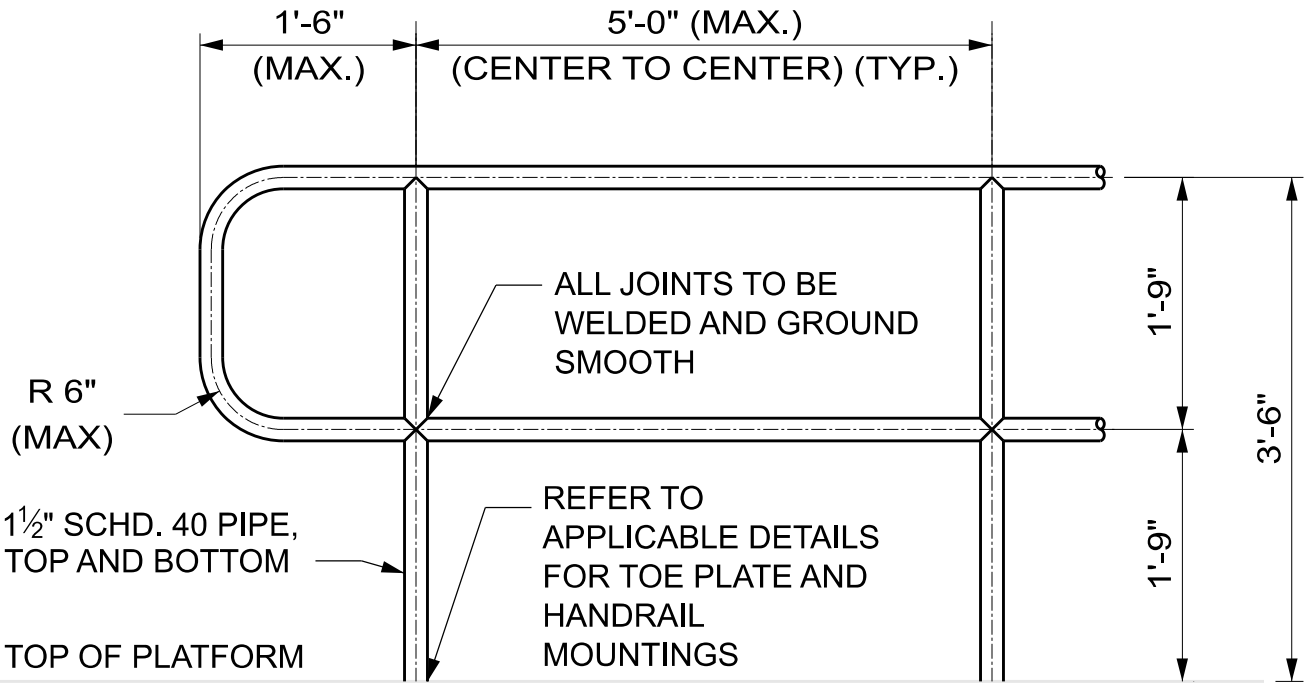
SECTION E-E
SCALE: 1 1/2" = 1'-0"



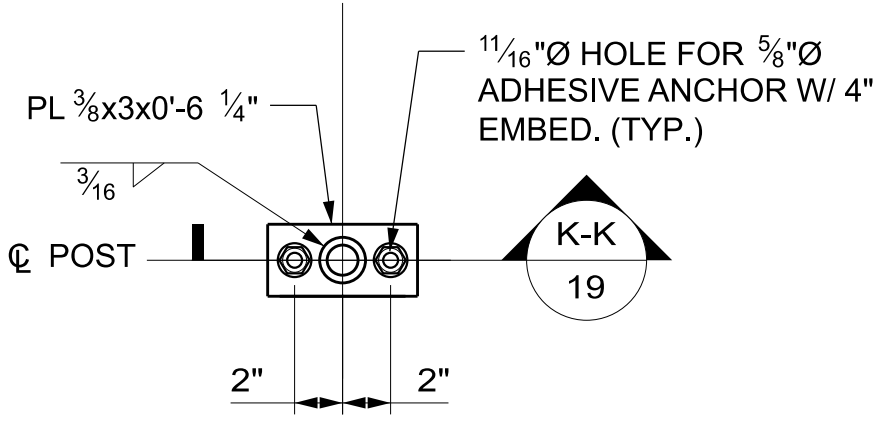
TYPICAL TOE PLATE AND
HAND RAIL DETAIL
SCALE: 1 1/2" = 1'-0"



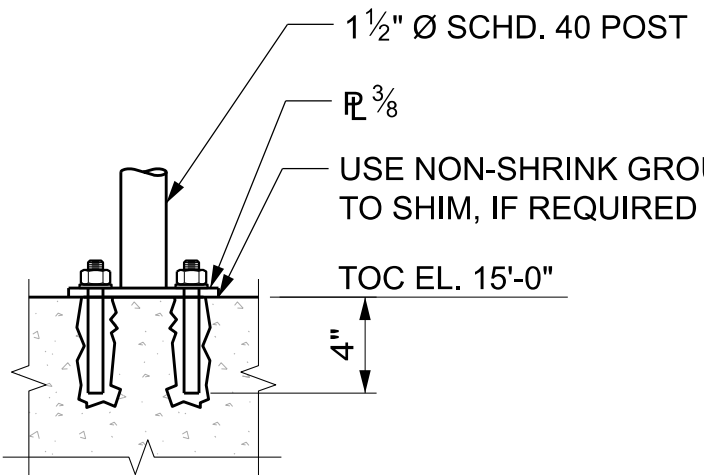
SECTION F-F
SCALE: 1 1/2" = 1'-0"



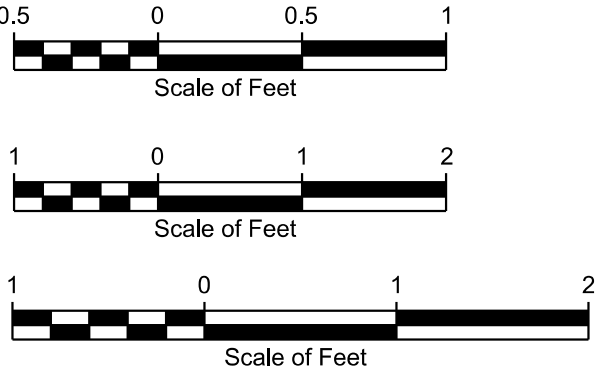
TYPICAL HANDRAIL DETAIL
SCALE: 3/4" = 1'-0"



TYPICAL HANDRAIL
POST IN CONCRETE
SCALE: 1 1/2" = 1'-0"



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



STATE OF MAINE DEPARTMENT OF TRANSPORTATION		2696210		WIN 26962.10		MULTIMODAL PLANS	
FERRY TERMINAL ELECTRICAL UPGRADES PLATFORM DETAILS (1 OF 2)		SHEET NUMBER 19 OF 20					
PROJ. MANAGER A. GORÉAU	DATE MAR 2025	BY REH	SIGNATURE <i>Almeida</i>	NO. PE18349	P.E. NUMBER 18349	DATE 5/2/2025	DATE
DESIGN-REVIEWED RES	REVISIONS 1	REVISIONS 2	REVISIONS 3	REVISIONS 4	FIELD CHANGES		

