

PORT OF TACOMA

**MAINTENANCE BUILDING
BACK-UP GENERATOR
PROJECT NO. 101610.01
CONTRACT NO. 071252**

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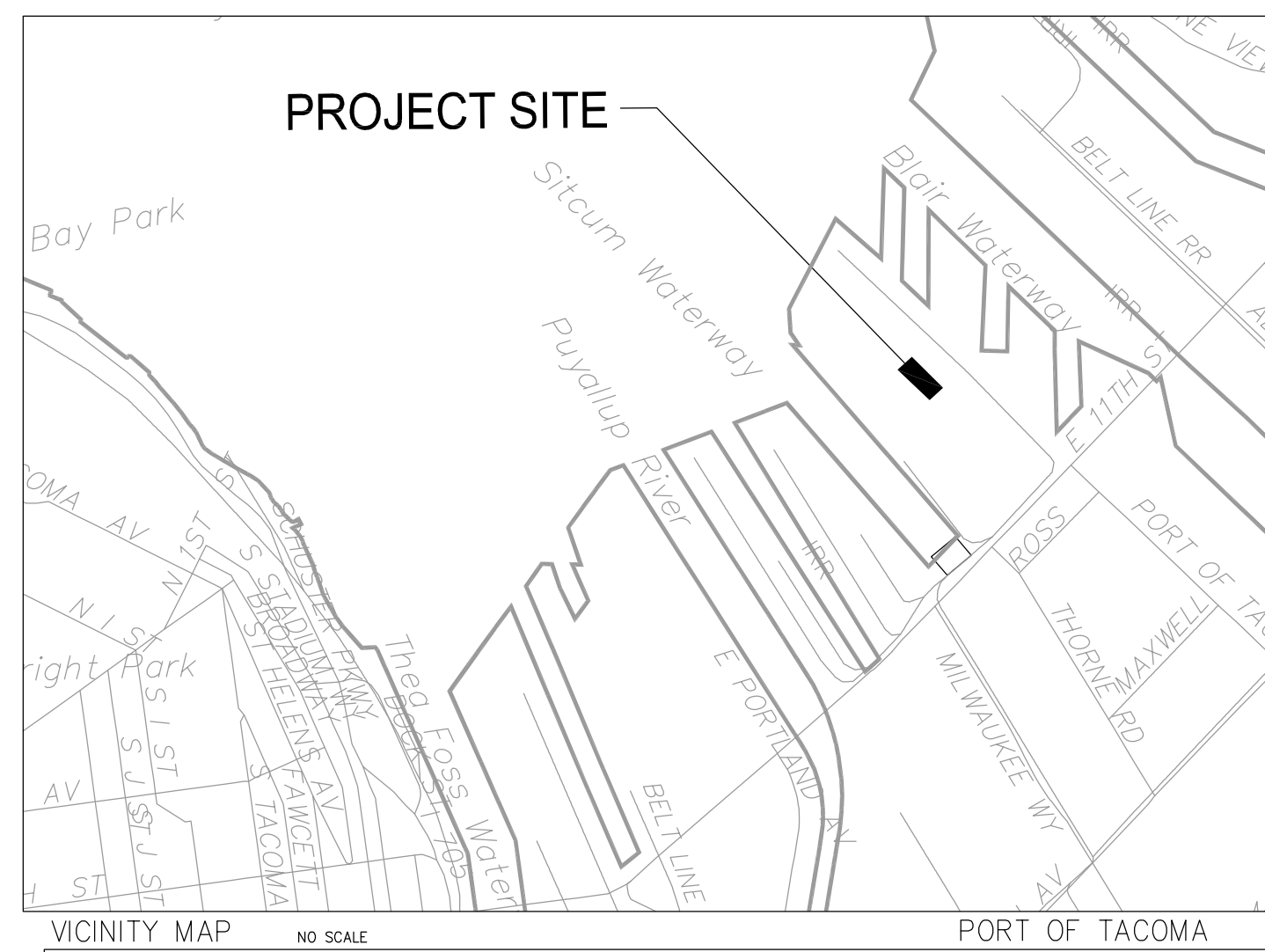
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3545 FACTORIA BOULEVARD SE., SUITE 200
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DRAWING LIST			
SHEET DESIGNATION	SHEET #	SHEET TITLE	REVISION
1	G01	COVER SHEET	BID SET
2	C01	TESC., GRADING, SURFACING, AND UTILITY PLAN	BID SET
3	C02	TESC., GRADING, SURFACING, AND UTILITY DETAILS	BID SET
4	S01	STRUCTURAL PLANS, GENERAL NOTES AND DETAILS	BID SET
5	E01.0	ELECTRICAL LEGENDS & SYMBOLS	BID SET
6	E01.1	ELECTRICAL ABBREVIATIONS	BID SET
7	E02.0	ELECTRICAL SITE PLAN	BID SET
8	E02.0TP	ELECTRICAL SITE PLAN - TEMPORARY	BID SET
9	E09.0	ELECTRICAL ROOM ENLARGED PLAN	BID SET
10	E10.0	ELECTRICAL ONE-LINE DIAGRAM	BID SET
11	E10.0R	ELECTRICAL ONE-LINE DIAGRAM - REMOVAL	BID SET
12	E10.0TP	ELECTRICAL ONE-LINE DIAGRAM - TEMPORARY	BID SET
13	E10.1	ELECTRICAL RISER DIAGRAM	BID SET
14	E10.1R	ELECTRICAL RISER DIAGRAM - REMOVAL	BID SET
15	E10.1TP	ELECTRICAL RISER DIAGRAM - TEMPORARY	BID SET
16	E10.2	MDB-1 SCHEDULE & LOAD CALCS	BID SET
17	E10.3	PANEL SCHEDULES	BID SET
18	E11.0	SERVICE EQUIPMENT - ENLARGED PLAN	BID SET
19	E11.1	SERVICE EQUIPMENT ELEVATION	BID SET
20	E11.2	SERVICE EQUIPMENT GROUNDING PLAN	BID SET
21	E11.3	GENERATOR WIRING DIAGRAM	BID SET
22	E12.0	GROUNDING DETAILS	BID SET

BID SET



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PORT ADDRESS: 802 PORT CENTER RD	
	TACOMA, WA 98421

MAINTENANCE BUILDING
BACK-UP GENERATOR
COVER SHEET

6692
G01
SH #1 of 22

CONT/CONS:	071252	TOWNSHIP:	21 NORTH	RANGE:	3 EAST	SECTION:	34
M. ID:	101610.01	DAT-HRZ:	.	VERT:	MLLW +9.39' @ TIDE	22.1933	
PHASE:	BID SET	PARCEL:	2275200633	DRAWING SCALE:	AS NOTED		

LEGEND

PROPOSED FEATURES-

- CATCH BASIN INSERT
- PAVEMENT SAWCUT
- DEMOLISH FEATURE
- HMA REMOVAL/RESTORE
- CONCRETE SURFACING
- CONCRETE PAD, SEE STRUCTURAL
- ELECTRICAL CONDUIT
- BOLLARD

EXISTING FEATURES-

- FOUND PORT MONUMENT
- SURVEY CONTROL POINT
- SANITARY SEWER MANHOLE
- STORM MANHOLE
- STORM CATCH BASIN
- WATER VALVE
- WATER HOSE BIB
- POWER MANHOLE
- POWER TRANSFORMER
- TELECOM RISER
- UTILITY CLEANOUT
- BOLLARD
- SIGN
- TAX PARCEL NUMBER
- STORM DRAIN LINE
- RECORD STORM LINE
- SANITARY SEWER LINE
- BURIED WATER LINE
- BURIED POWER LINE
- CHAIN LINK FENCE

ABBREVIATIONS-

- TC TOP OF CONCRETE
- TA TOP OF ASPHALT
- EX EXISTING ELEVATION
- ME MATCH EXISTING
- TGB TOP OF GRAVEL BASE

KEY NOTES:

- INSTALL CATCH BASIN PROTECTION PER DETAIL 3/C02
- PROTECT EXISTING FEATURE AS NOTED
- DEMOLISH EXISTING FEATURE AS NOTED
- SAWCUT PAVEMENT, FULL DEPTH UNLESS OTHERWISE NOTED. SEE DETAIL 2/C02
- FIELD VERIFY EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO CONDUIT PLACEMENT. MAINTAIN 6" MINIMUM VERTICAL CLEARANCE WITH OTHER UTILITIES AT ALL TIMES. SEE ALSO KEY NOTE 6
- INSTALL ELECTRICAL SERVICES/CONDUITS IN SAND BEDDING PER DETAIL 4/C02. REFER TO ELECTRICAL DRAWINGS FOR TRENCH SIZE AND CONDUIT SPACING
- INSTALL HOT MIX ASPHALT (HMA) PAVEMENT PATCH PER DETAIL 1/C02
- INSTALL ELEVATED CONCRETE PAD (2.67'x9.42'L) UNDER ELECTRICAL GEAR PER DETAIL 02/S01 WITH GRAVEL BASE SIMILAR TO DETAIL 1/C02. SET TOP OF PAD LEVEL AND MAX. 3" ABOVE ADJACENT ASPHALT PAVEMENT. SLOPE PAVEMENT AT 1% TO NE AND SE AROUND PAD.
- INSTALL GRAVEL BASE FOR CONCRETE GENERATOR PAD SIMILAR TO DETAIL 1/C02. PORT OF TACOMA MAINTENANCE WILL FORM AND PLACE CONCRETE PAD PER DETAIL 01/S01. SET PAD ELEVATIONS PER PLAN. MOUNT EQUIPMENT PER MANUFACTURER RECOMMENDATIONS AND DETAIL 03/S01. REFER TO ELECTRICAL DRAWINGS FOR GENERATOR INFORMATION
- INSTALL ELECTRICAL INFRASTRUCTURE ON ELEVATED CONCRETE PAD. REFER TO ELECTRICAL DRAWINGS AND DETAIL 02/S01
- INSTALL BOLLARDS TO PROTECT ELECTRICAL INFRASTRUCTURE PER DETAIL 5/C02. TO BE DONE BY PORT OF TACOMA MAINTENANCE.
- TEMPORARY FENCE REMOVAL TO BE DONE BY PORT OF TACOMA MAINTENANCE
- INSTALL FENCE END POSTS AT 20' CLEAR OPENING FOR GENERATOR'S MAINTENANCE ACCESS GATE PER DETAIL 6/C02. GATE AND FENCE INSTALLATION TO BE DONE BY PORT OF TACOMA MAINTENANCE. ADJUST BARBED WIRE ON EXISTING FENCE FOR 20' MINIMUM TO THE SOUTH OF THE GATE WITH SUPPORTS TO POINT OUTSIDE.
- INSTALL FRAME FOR AUTOMATIC TRANSFER SWITCH PER DETAIL 7/C02
- OPTIONAL UTILITY VAULT HAND HOLE, REFER TO ELECTRICAL DRAWINGS FOR MORE INFORMATION

GENERAL NOTES:

- REFER TO ELECTRICAL DRAWINGS FOR CONDUIT SIZING AND QUANTITY, EQUIPMENT DETAILS AND OTHER ELECTRICAL INFRASTRUCTURE.
- ELECTRICAL SYSTEM (TRENCH, CONDUIT, AND EQUIPMENT) SHALL BE INSTALLED BY A QUALIFIED ELECTRICAL CONTRACTOR LICENSED IN THE STATE OF WASHINGTON UNDER RCE 19.28.

PROJECT PARCEL NUMBER: 2275200633

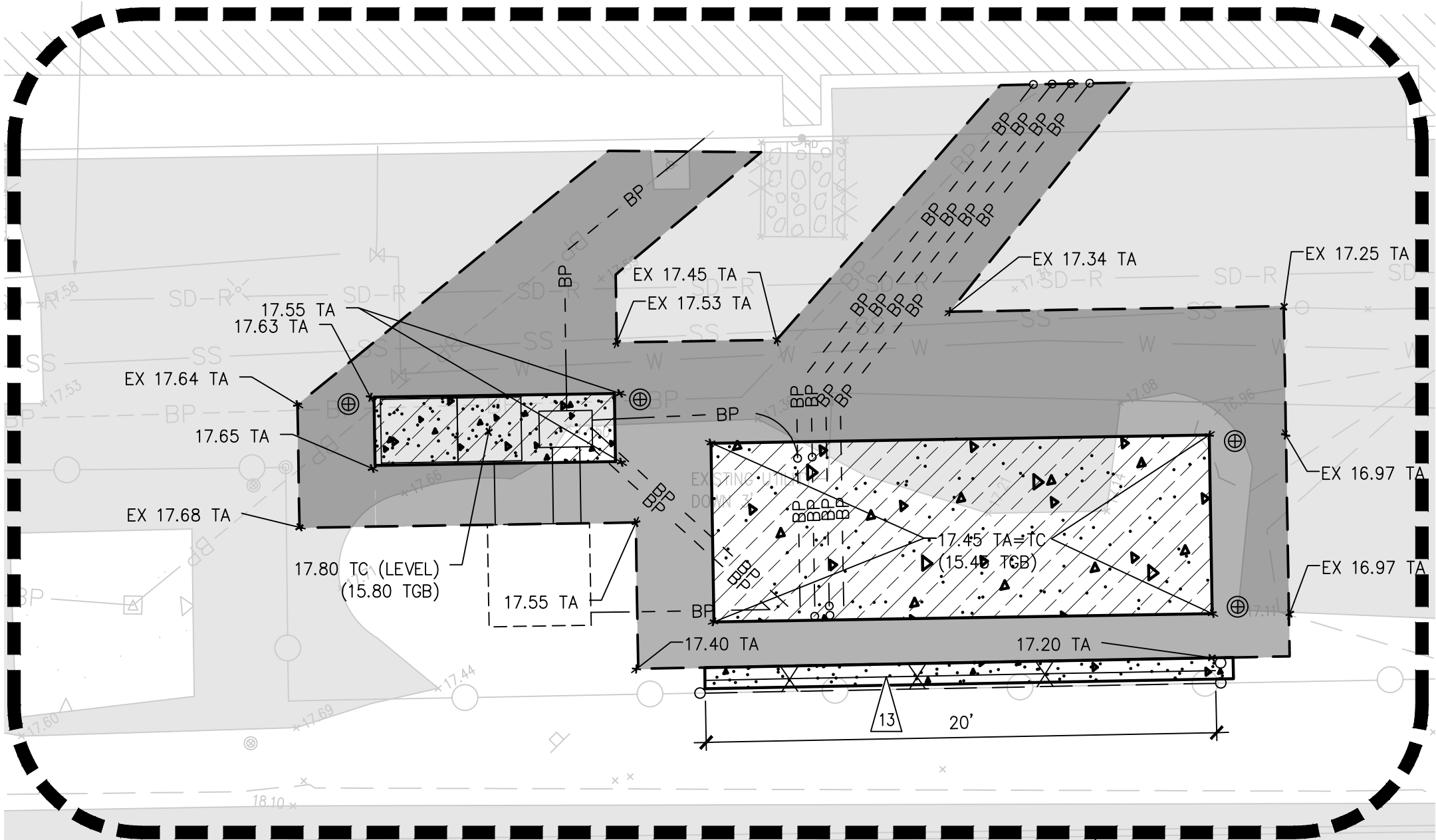
PROJECT SITE ADDRESS: ONE SITCUM PLAZA

ZONING: PMI (PORT MARITIME & INDUSTRIAL DISTRICT)

REPLACED HARD SURFACE: 560 SF

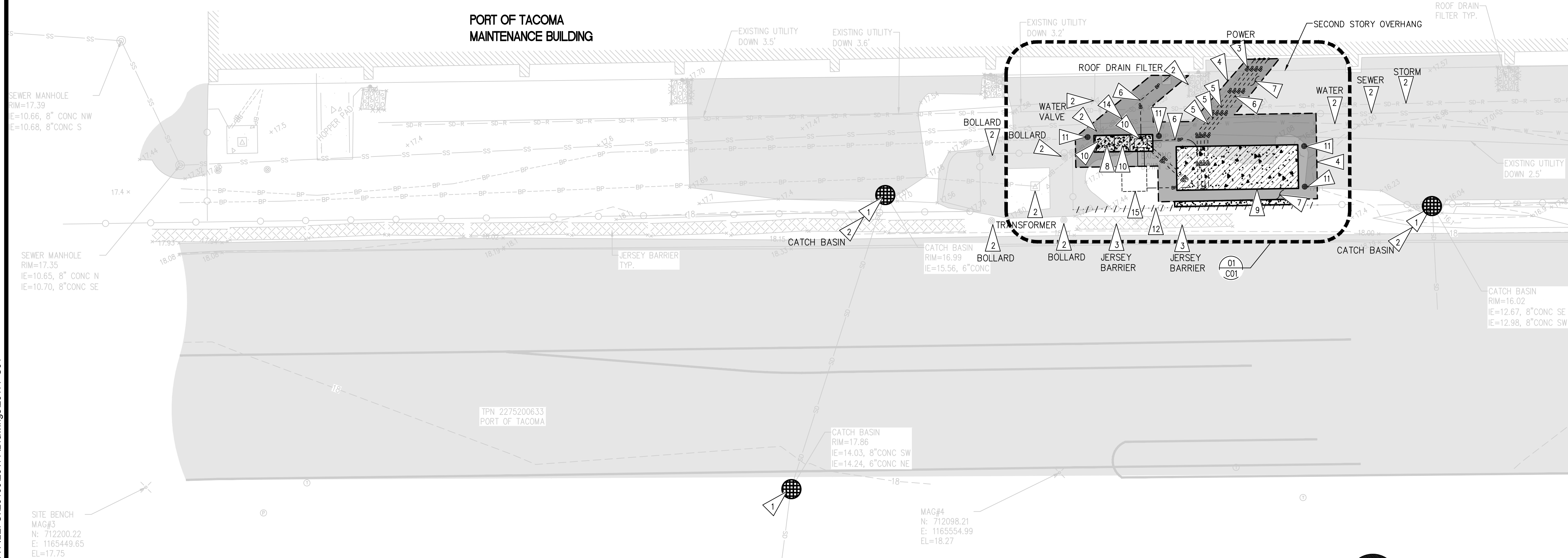
NEW HARD SURFACE: 0 SF

ESTIMATED EARTHWORK: 30 CY CUT / 30 CY FILL
(INCLUDES PIPE BEDDING, PAVEMENT SECTION & PADS)



01 ENLARGED GRADING AND GATE PLAN
SCALE: 1"=5'

PORT OF TACOMA
MAINTENANCE BUILDING



TESC, SURFACING AND UTILITY PLAN

SCALE: 1"=10'

HORIZONTAL DATUM

WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, E:1167094.61
NAD 83/2011
(PER PORT OF TACOMA SURVEY CONTROL MAP - 2016 -
UPDATED 2023)

POT #925
3"BRASS DISK WITH PUNCH, DOWN 0.8" FROM CASE RIM,
STAMPED "WSDOT SURVEY MONUMENT" AT THE INTERSECTION
OF EAST 11TH STREET AND THORNE ROAD.

N: 710501.77
E: 1166152.03

POT #146
3"BRASS DISK WITH "X" STAMPED "TACOMA PUBLIC WORKS
38486" AT THE INTERSECTION OF EAST 11TH STREET AND
PORT OF TACOMA ROAD.

N: 711474.21

VERTICAL DATUM

MLLW, 1983-2001 EPOCH

TIDE 22 1930 ELEVATION: 19.18

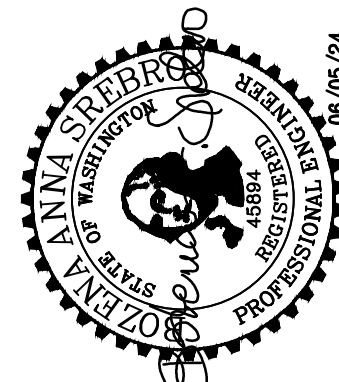
THIS MONUMENT WAS DESTROYED IN OCTOBER, 2022.
PORT OF TACOMA MONUMENT CONTROL MAP DATED
01/13/2023, UTILIZES MONUMENT '944 6484 A' AS ITS
VERTICAL BENCHMARK; AS DESCRIBED:

BENCHMARK '944 6484 A': BRASS DISK ON STEEL ROD, SET
IN PVC PIPE; LOCATED EAST OF CURVED WALL IN PLANTING
STRIP, NEAR THE SOUTHERN EDGE OF THE PORT OF TACOMA
OBSERVATION TOWER SITE.
ELEVATION = 16.88'
(BASED ON 1983-2001 TIDAL EPOCH)

TO CONVERT FROM MLLW (1983-2001 EPOCH) TO MLLW
(1960-1978 EPOCH); ADD 0.21'.



BID SET
JUNE 5, 2024



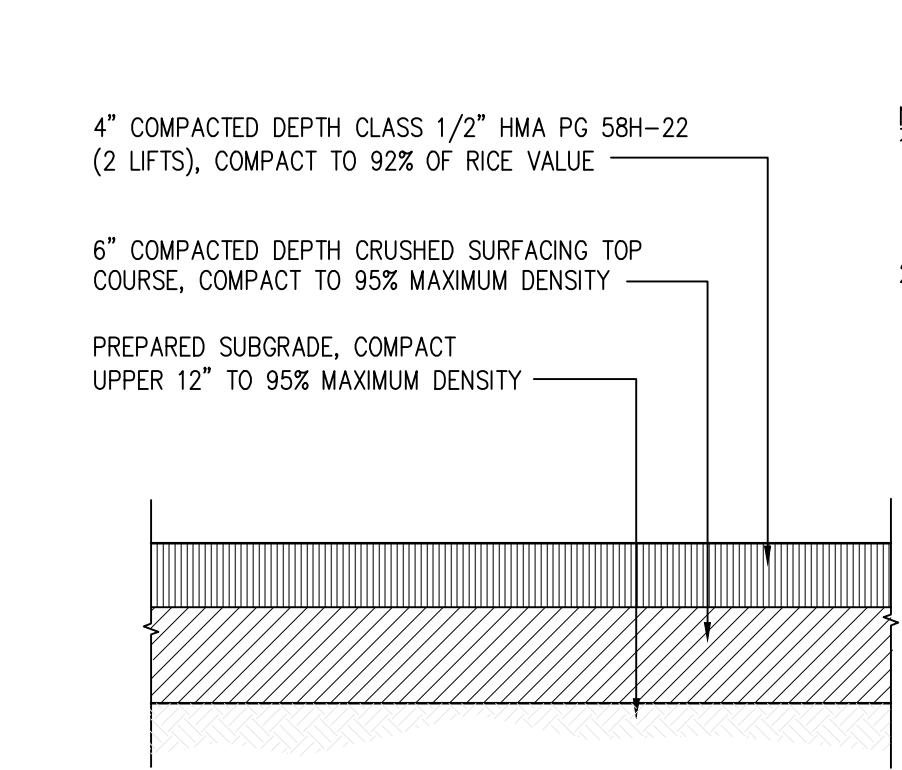
KH	06/05/24
CHECKED BY	DATE
BAS	06/05/24
PROJ. ENGR	DATE
DIRECTOR	04 Jun 2024
PRINTED BY:	streob
PORT ADDRESS:	802 PORT CENTER ROAD TACOMA, WA 98421

APPROVED:	
M. ID:	101610.01
PHASE:	BID SET

6692	C01	SH # 2 OF 22
CONTR/CONS:	071252	TOWNSHIP: 21 NORTH
RANGE:	3 EAST	SECTION: 34
DAT-HRZ:	WA83/2011	VERT: MLLW 16.88' @ 944 6484 A
PARCEL:	2275200633	DRAWING SCALE: AS NOTED

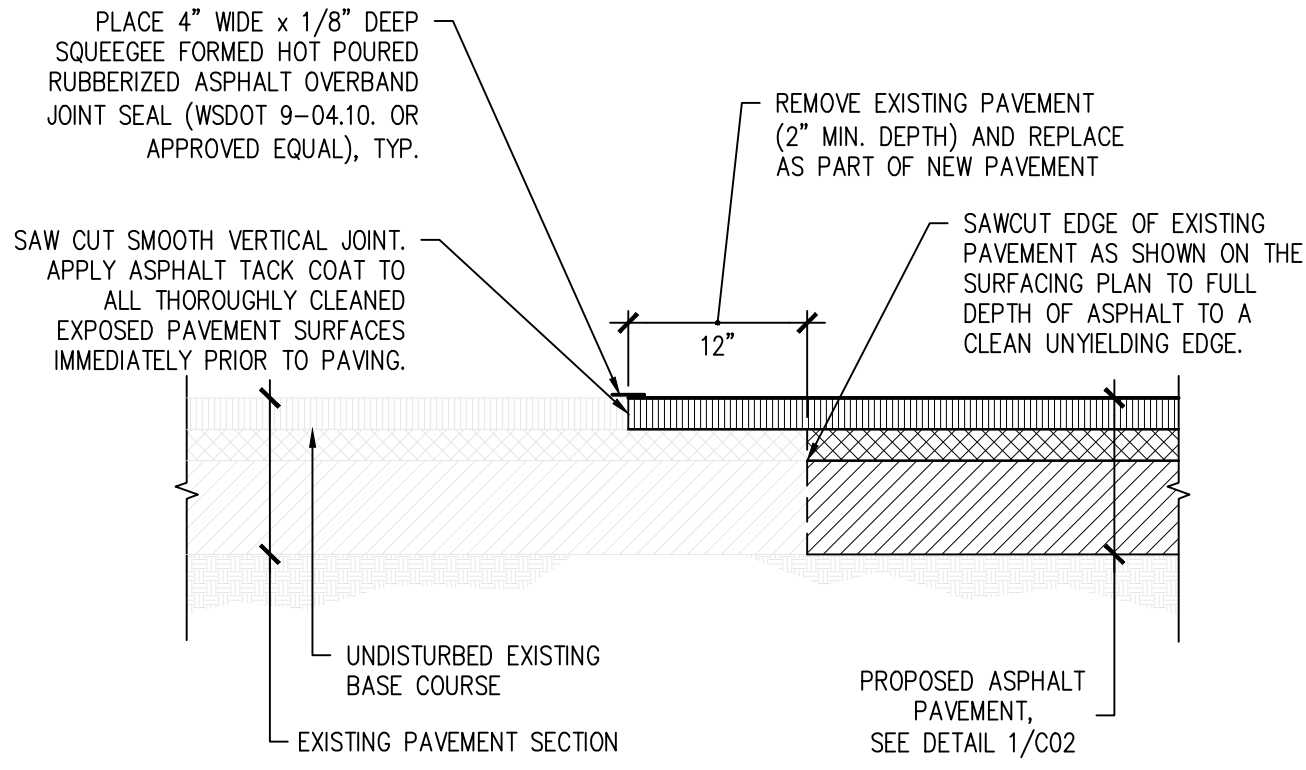
MAINTENANCE BUILDING
BACK-UP GENERATOR
TESC, GRADING, SURFACING AND UTILITY PLAN



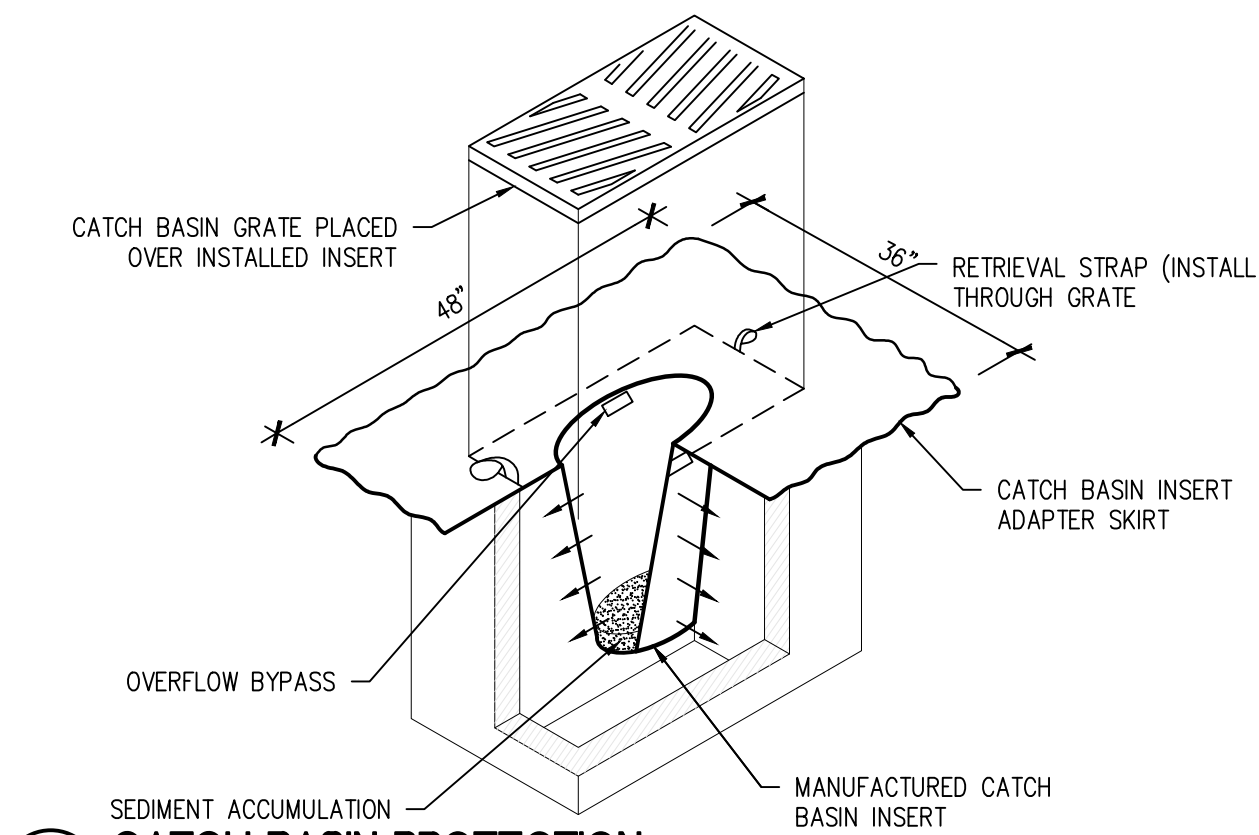


1 HOT MIX ASPHALT (HMA) PAVEMENT SECTION
SCALE: N.T.S.

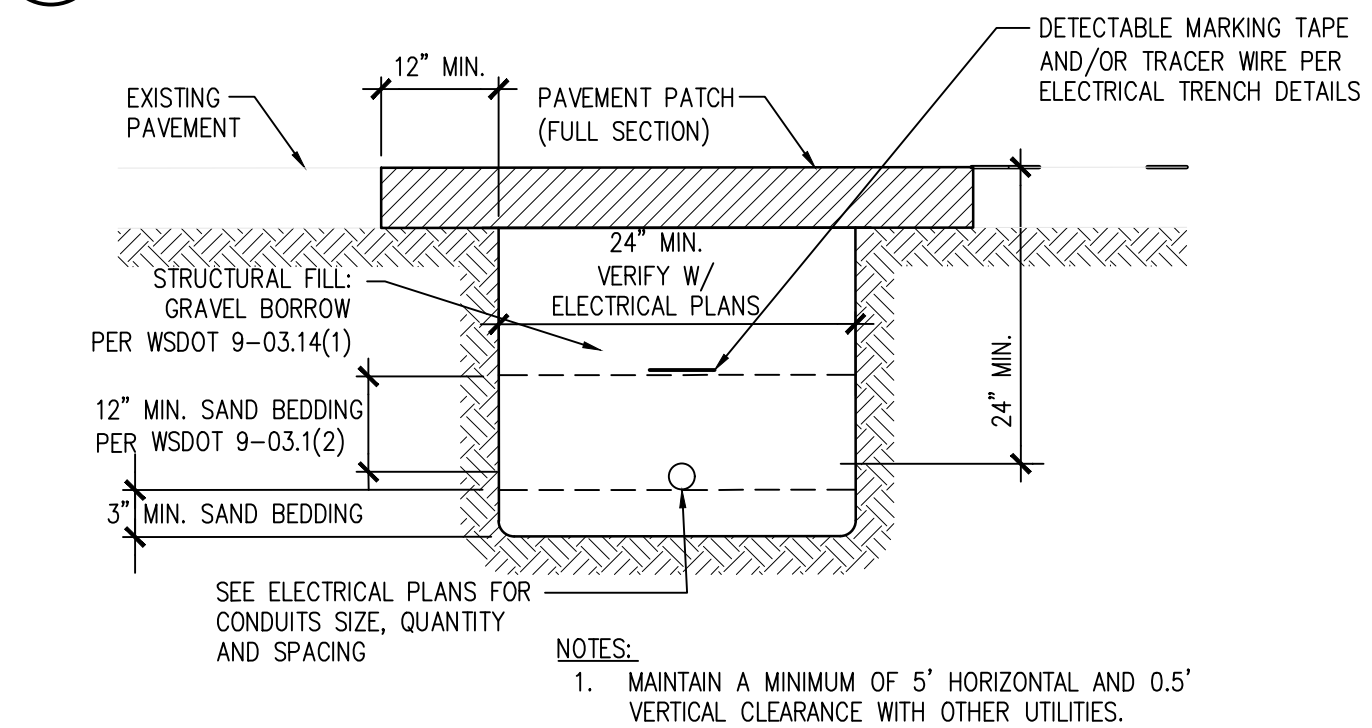
- NOTES:
1. CRUSHED SURFACING TOP COURSE (CSTC) SHALL COMPLY WITH WSDOT STANDARD SPECIFICATION 9-03.9(3).
 2. STRUCTURAL FILL, IF NEEDED, SHALL COMPLY WITH WSDOT STANDARD SPECIFICATION 9-03.14 GRAVEL BORROW.



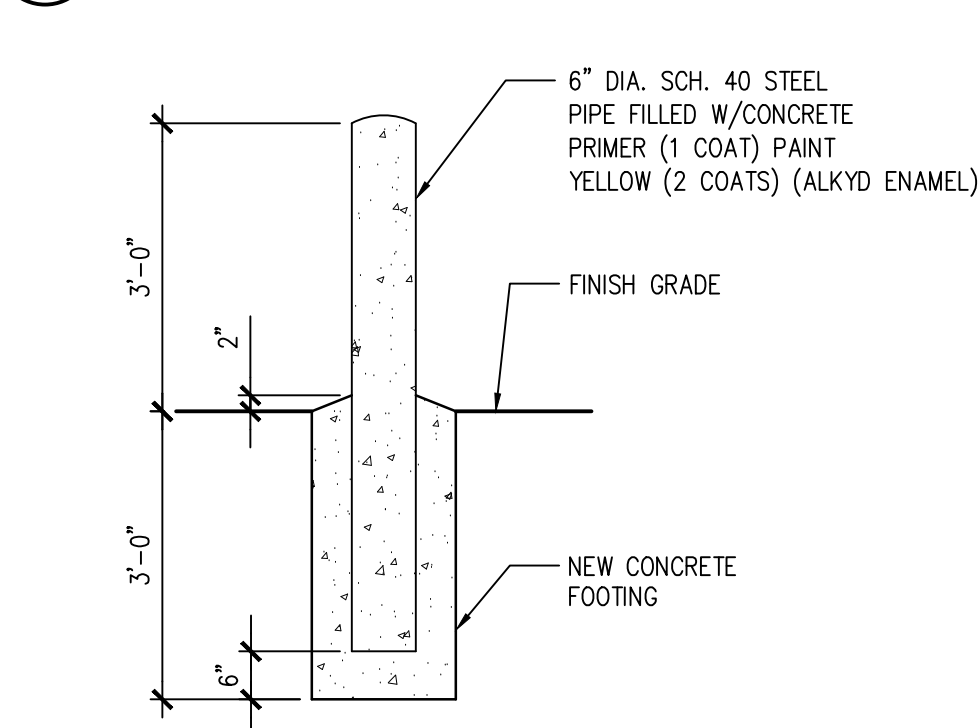
2 PAVEMENT JOINT SECTION
SCALE: N.T.S.



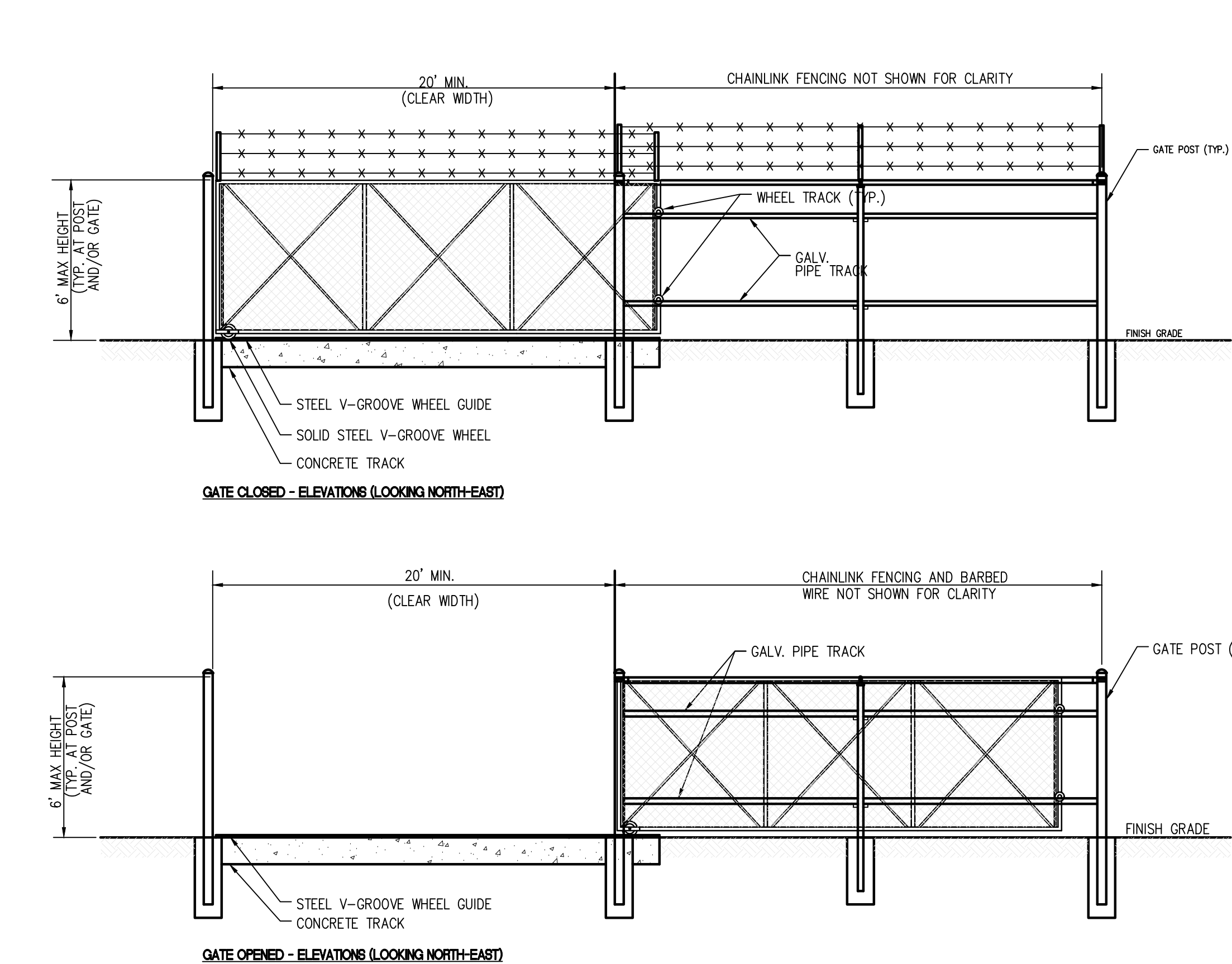
3 CATCH BASIN PROTECTION
SCALE: N.T.S.



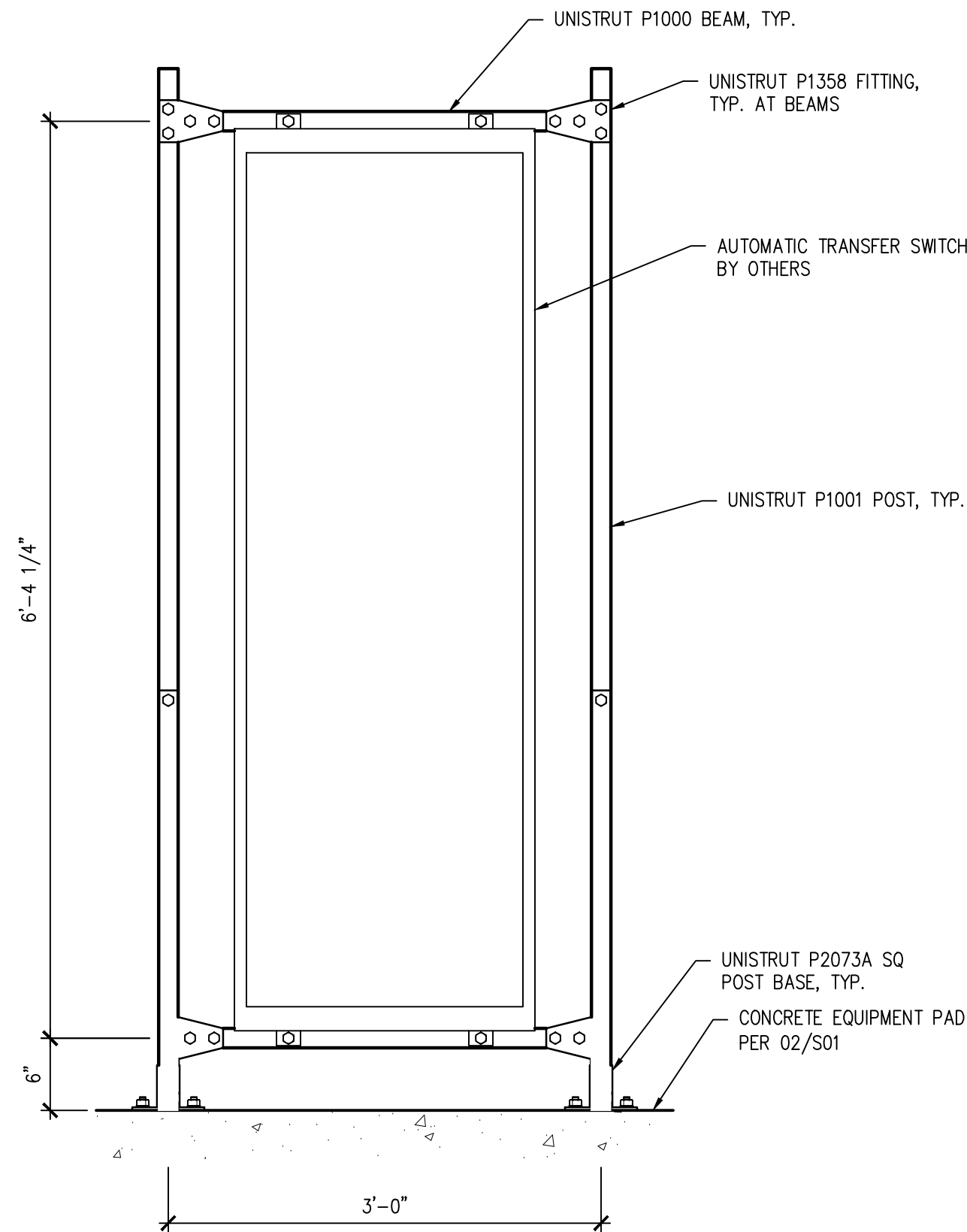
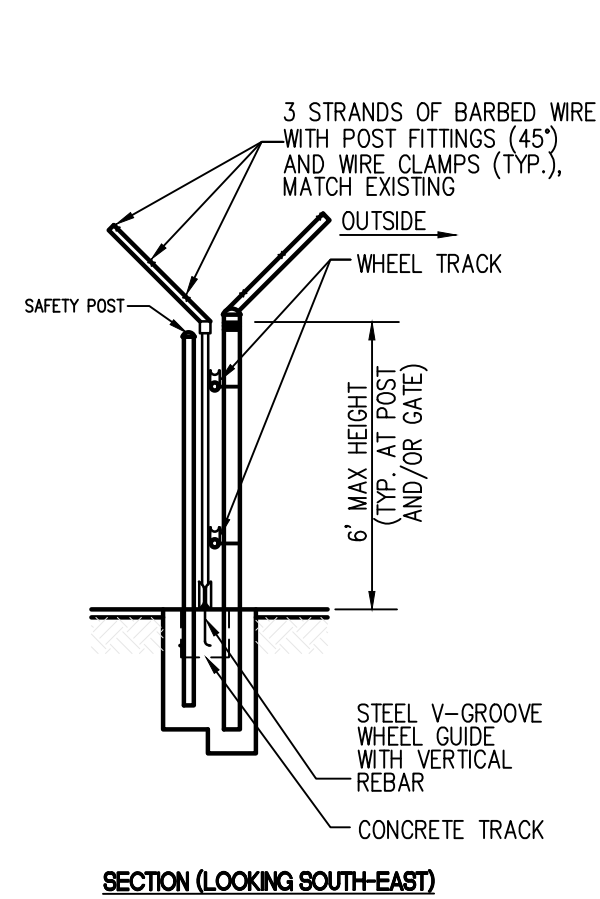
4 UTILITY TRENCH
SCALE: N.T.S.



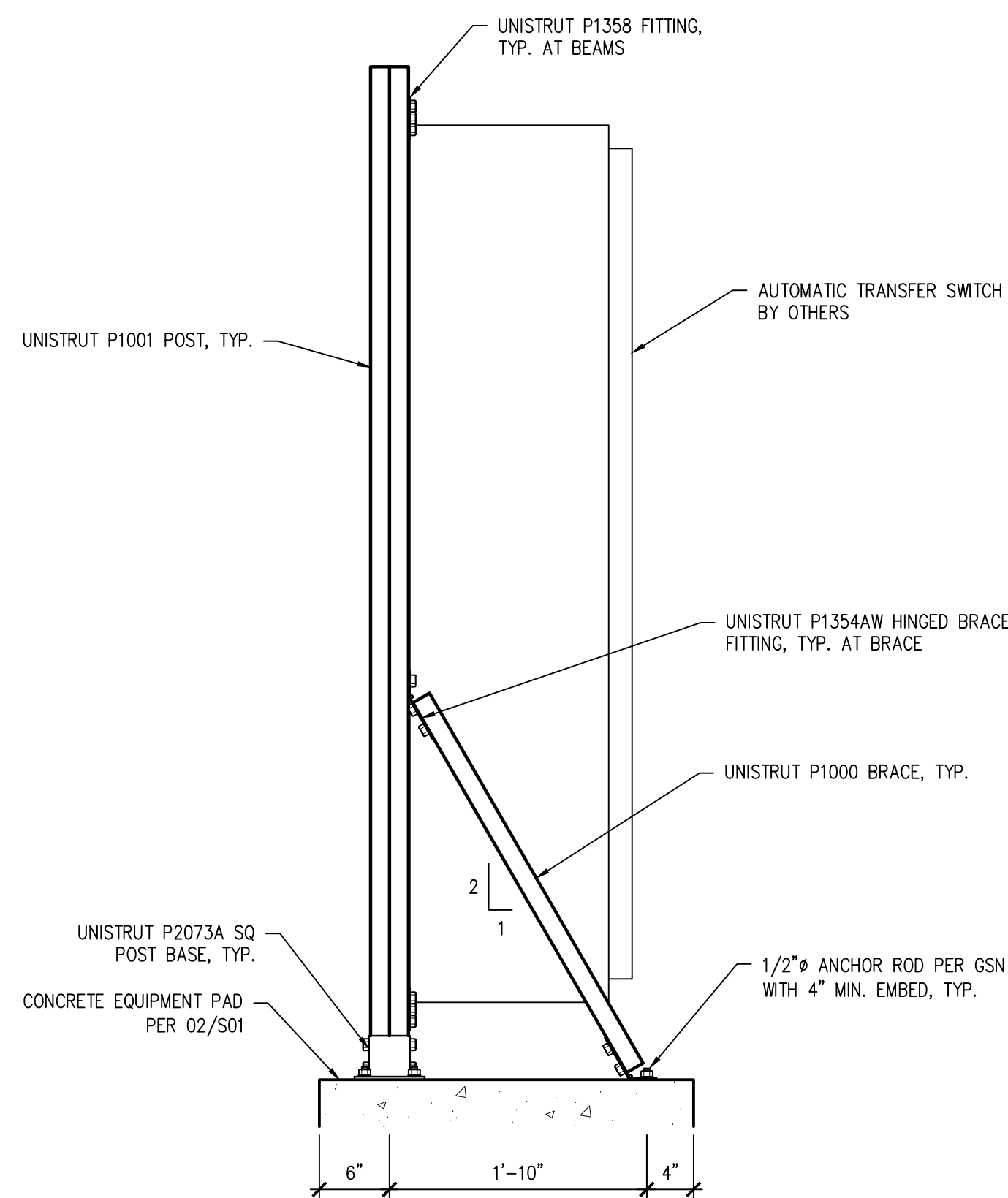
5 BOLLARD DETAIL
SCALE: N.T.S.



6 SLIDING MAINTENANCE GATE -DETAILS
SCALE: N.T.S.



7 AUTOMATIC TRANSFER SWITCH FRAME ELEVATIONS
SCALE: N.T.S.



6692 C02 SH # 3 OF 22		MAINTENANCE BUILDING BACK-UP GENERATOR TESC, GRADING, SURFACING AND UTILITY DETAILS				APPROVED:		KH 06/05/24				 sitts & hill CIVIL STRUCTURAL ARCHITECTURAL SURVEY 4115 CENTER STREET TACOMA, WA 98409 PHONE: (253) 883-5441 WWW.SHITTSSANDHILL.COM									
CON/CONS: 071252		TOWNSHIP: 21 NORTH		RANGE: 3 EAST		SECTION: 34		CHECKED BY DATE				MARK:		REVISION:		BY:		APPR:		DATE:	
M. ID: 101610.01		DAT-HRZ: WA83/2011		VERT: MLLW 16.88' @ 944 6484 A		PRINTED BY: srebrob		JUN 04, 2024				BAS 06/05/24									
PHASE: BID SET		PARCEL: 2275200633		DRAWING SCALE: AS NOTED		PORT ADDRESS: 802 PORT CENTER ROAD		TACOMA, WA 98421													

GENERAL STRUCTURAL NOTES

CODES AND REFERENCES:

2018 EDITION OF THE INTERNATIONAL WITH STATE OF WASHINGTON AND CITY OF TACOMA AMENDMENTS AND SUPPLEMENTED WITH ASCE 7-16.

ALL CODE REFERENCES HEREAFTER SHALL CORRESPOND TO THE FOLLOWING EDITIONS, U.N.O.:

MATERIAL CONCRETE	CODE EDITION BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY, ACI 318-14.
CONCRETE REINFORCING STRUCTURAL STEEL	ACI SP-066-04 ACI DETAILING MANUAL. 15TH EDITION OF STEEL CONSTRUCTION MANUAL (AISC SCM) INCLUDING THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS AISC 360-16.

LOADS:

RISK CATEGORY = II.

WIND:
WIND SPEED = 97 MPH, EXPOSURE C.

SEISMIC:
IMPORTANCE FACTOR I_e = 1.0.
LATITUDE = 47.2703; LONGITUDE = -122.4122.
 S_s = 1.35, S_1 = 0.465, SEISMIC SITE CLASS = D.
 S_{ds} = 0.9, S_{d1} = 0.853, SEISMIC DESIGN CATEGORY = D.

FOUNDATIONS:

GEOTECHNICAL REPORT SUPPLIED BY GROVER C. WAY, P.E. CONSULTING SOILS ENGINEER: W.O. 8950; DATED October 1989. SPREAD AND CONTINUOUS FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL OR CONTROLLED COMPACTED FILL 18" MINIMUM BELOW FINISHED GRADE. FINISHED GRADE IS DEFINED AS TOP OF SLAB FOR INTERIOR FOOTINGS AND LOWEST ADJACENT GRADE WITHIN 5'-0" FOR PERIMETER FOOTINGS. DESIGN SOIL BEARING VALUE = 2,000 PSF. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION PRIOR TO COMMENCEMENT OF EARTHWORK. PRIOR TO PLACEMENT OF CONCRETE GEOTECHNICAL ENGINEER SHALL INSPECT FOUNDATION EXCAVATIONS.

CONCRETE:

MINIMUM 28-DAY STRENGTH OF CONCRETE SHALL BE 3,000 PSI.

ALL CONCRETE CONSTRUCTION SHALL CONFORM TO ACI. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, EXCEPT THAT SLABS ON GRADE NEED BE VIBRATED ONLY AT TRENCHES, FLOOR DUCTS, TURNDOWNS, ETC. MAXIMUM SLUMP IS 4 1/2" FOR CONCRETE WITHOUT PLASTICIZER. IF PLASTICIZER IS USED, A HIGHER FINAL SLUMP MAY BE ALLOWED UPON STRUCTURAL ENGINEER'S APPROVAL. MAXIMUM WATER/CEMENT RATIO (W/C) SHALL BE 0.47 FOR GENERAL CONCRETE. USE 1 1/2" MINUS COARSE AGGREGATE FOR CONCRETE 6" THICK AND GREATER; USE 3/4" MINUS COARSE AGGREGATE FOR THINNER SECTIONS. PROVIDE AIR ENTRAINMENT (5% $\pm$ 1%) IN CONCRETE EXPOSED TO FREEZE-THAW ACTION.

FLY ASH:

FLY ASH, IF PERMITTED BY OWNER, SHALL BE LIMITED TO 18% OF CEMENTITIOUS MATERIALS AND SHALL HAVE A REPLACEMENT FACTOR OF 1.2 RELATIVE TO CEMENT REPLACED. NO FLY ASH ADDITIVES SHALL BE USED IN FLATWORK OR ARCHITECTURALLY EXPOSED CONCRETE.

REINFORCING STEEL FOR CONCRETE:

USE ASTM A615, GRADE 60 (FY = 60 KSI), DEFORMED BARS FOR ALL BARS. NO TACK WELDING OF REINFORCING BARS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE WITH THE STRUCTURAL ENGINEER. ACI 318 SHALL APPLY. SUPPORT OF FOUNDATION REINFORCING MUST PROVIDE ISOLATION FROM MOISTURE AND CORROSION.

REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. ALL BARS SHALL BE PER ACI SP-66. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90-DEGREE HOOKS, U.N.O. SECURELY TIE ALL BARS IN LOCATION BEFORE PLACING CONCRETE.

LAP SPLICES IN CONCRETE:

LAP SPLICES, U.N.O., SHALL BE CLASS "B" TENSION LAP SPLICES PER ACI 318. STAGGER SPLICES A MINIMUM OF (1) LAP LENGTH.

ALL SPLICE LOCATIONS SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT ALL CORNERS AND INTERSECTIONS PER TYPICAL DETAILS.

REINFORCING STEEL COVER:

ALL REINFORCING SHALL BE CHAIED TO ENSURE PROPER CLEARANCES. CLEAR CONCRETE COVERAGES AS FOLLOWS:

CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#6 OR LARGER	2"
#5 AND SMALLER	1 1/2"
FLAT SLAB	3/4"
ALL OTHER PER A.C.I. 318.	

ADHESIVE DOWELS:

ALL ADHESIVE DOWELS SHALL HAVE CURRENT ICC APPROVAL FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE, SUCH AS HILTI HIT-RE 500-V3 (ICC ESR-3814) AND SIMPSON SET-3G (ICC ESR-4057) OR APPROVED EQUIVALENT.

FIBER REINFORCING:

FIBER-REINFORCED CONCRETE SHALL CONTAIN 1.5 POUNDS PER CY FIBERS SUCH AS "FIBERMESH 300" POLYPROPYLENE FIBRILLATED FIBERS BY PROPEX CONCRETE SYSTEMS, OR APPROVED EQUIVALENT. ADD TO CONCRETE MIX PER THE MANUFACTURER'S INSTRUCTIONS. FIBERS SHALL CONFORM TO ASTM C1116, TYPE III. ALL CONCRETE FLATWORK SHALL BE FIBER-REINFORCED.

STRUCTURAL STEEL:

ALL CONSTRUCTION SHALL BE PER AISC-SCM.

ALL MISC STRUCTURAL STEEL SHALL BE ASTM A36, FY = 36 KSI MIN.

ANCHOR RODS:

ALL ANCHOR RODS SHALL CONFORM TO ASTM F1554, GRADE 55 U.N.O.

ADHESIVE ANCHORS IN CONCRETE:

ALL ADHESIVE ANCHORS SHALL HAVE CURRENT ICC APPROVAL FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE, SUCH AS HILTI HY200 V3 (ICC ESR-4868) AND SIMPSON AT-XP (IAPMO UES ER-263) OR APPROVED EQUIVALENT. THREADED RODS SHALL BE STAINLESS STEEL.

STRUCTURAL STEEL (CONTINUED):

EXPANSION BOLTS IN CONCRETE:

ALL EXPANSION BOLTS SHALL HAVE CURRENT ICC APPROVAL FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE, SUCH AS HILTI KWIK BOLT TZ2 (ICC ESR-4266) AND SIMPSON STRONG-BOLT 2 WEDGE ANCHOR (ICC ESR-3037) OR APPROVED EQUIVALENT. BOLTS SHALL BE STAINLESS STEEL.

SLOTTED CHANNEL FRAMING:

SLOTTED CHANNEL FRAMING MEMBERS AND CONNECTORS SHALL BE BY UNISTRUT, COOPER B-LINE OR ACCEPTED SUBSTITUTION. PART NUMBERS INDICATED ON THE DRAWINGS ARE UNISTRUT NUMBERS. TIGHTEN BOLTS TO 50 FT-LBS OF TORQUE FOR RESISTANCE TO SLIP FOR 1/2"-13 BOLTS. ALL MEMBERS SHALL BE PAINTED PER SPECIFICATION.

GENERAL:

THE STRUCTURAL CONSTRUCTION DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT ARE NOT LIMITED TO BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. THE STRUCTURAL ENGINEER SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURE OF CONSTRUCTION, OR THE SAFETY PRECAUTIONS AND THE PROGRAMS INCIDENT THERETO NOR SHALL OBSERVATION VISITS TO THE SITE INCLUDE INSPECTION OF THESE ITEMS.

CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON FRAMED CONSTRUCTION. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.

WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS OR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDA, U.N.O.

ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION.

OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. IF AN OPTION IS CHOSEN, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL NECESSARY CHANGES AND SHALL COORDINATE ALL DETAILS.

NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.

CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS PRIOR TO START OF CONSTRUCTION. RESOLVE ANY DISCREPANCY WITH THE OWNER.

TYPICAL DETAILS MAY NOT NECESSARILY BE CUT ON PLANS, BUT APPLY, U.N.O.

WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND/OR SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.

ANY ENGINEERING DESIGN, PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW, SHALL BEAR THE SEAL OF A REGISTERED ENGINEER RECOGNIZED BY THE BUILDING CODE JURISDICTION OF THIS PROJECT.

DEFERRED SUBMITTALS:

SHOP DRAWING SUBMITTALS REQUIRED BY THESE GENERAL STRUCTURAL NOTES WHICH CONTAIN DESIGN CALCULATIONS SEALED BY A REGISTERED ENGINEER OTHER THAN THE ENGINEER OF RECORD SHALL BE SUBMITTED PRIOR TO CONSTRUCTION TO THE BUILDING OFFICIAL FOR REVIEW. THE DOCUMENTS WILL FIRST BE REVIEWED BY THE ENGINEER OF RECORD AND DETERMINED TO BE IN GENERAL CONFORMANCE WITH THE BUILDING DESIGN. THESE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE BUILDING OFFICIAL HAS APPROVED THEIR DESIGN AND SUBMITTAL DOCUMENTS.

THE FOLLOWING ITEMS SHALL BE SUBMITTED PER THIS SECTION:

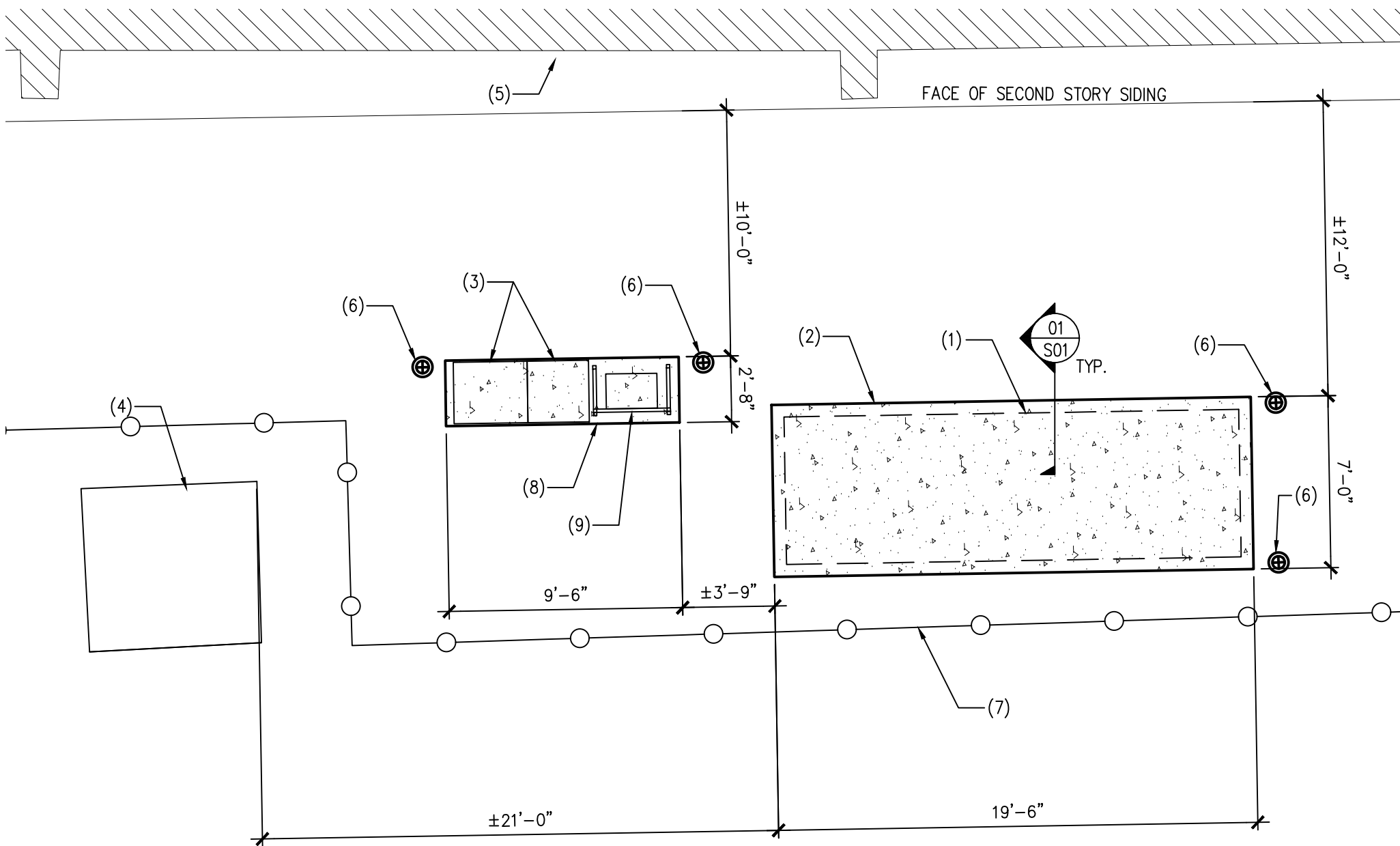
CONCRETE MIX DESIGNS

SPECIAL STRUCTURAL INSPECTION:

SPECIAL INSPECTION IS TO BE PROVIDED FOR THE ITEMS LISTED BELOW IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE BUILDING SAFETY DEPARTMENT. "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE CITY INSPECTIONS REQUIRED BY IBC SECTION 110.3. SPECIAL INSPECTION IS REQUIRED PER SECTIONS 1704 AND 1705 FOR THE FOLLOWIN

- EPOXY AND ADHESIVE ANCHORS:
 - DURING THE PLACEMENT OF ALL ANCHORS.
- DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
 - THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS TO THE APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
 - PER IBC SECTION 1704.2.4: THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED TO THE DESIGN AUTHORITY AND THE BUILDING OFFICIAL. SUBMIT A FINAL REPORT AS REQUIRED.
 - UPON COMPLETION OF THE ASSIGNED WORK, THE ENGINEER SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT, TO THE BEST OF THEIR KNOWLEDGE, THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS, SPECIFICATIONS AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

FOR ADDITIONAL INFORMATION ON SPECIAL STRUCTURAL INSPECTIONS, CONTACT STRUCTURAL ENGINEER PRIOR TO START OF CONSTRUCTION.



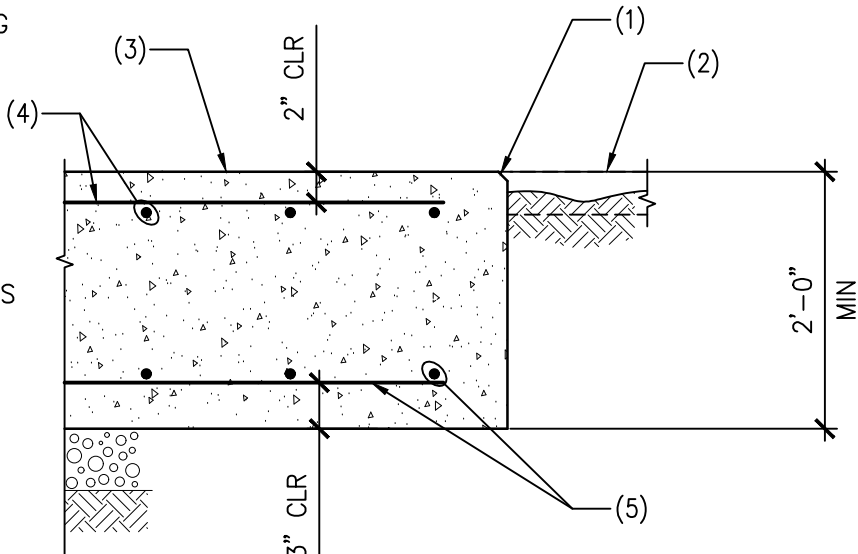
A FOUNDATION PLAN
SCALE: 3/16"=1'-0"

NOTES:

- CHAMFER EDGES
- CONCRETE SLAB OR FINISH GRADE AS OCCURS
- CONCRETE EQUIPMENT PAD
- #5 AT 12" O.C. EACH WAY TOP
- #5 AT 12" O.C. EACH WAY BOTTOM

NOTES:

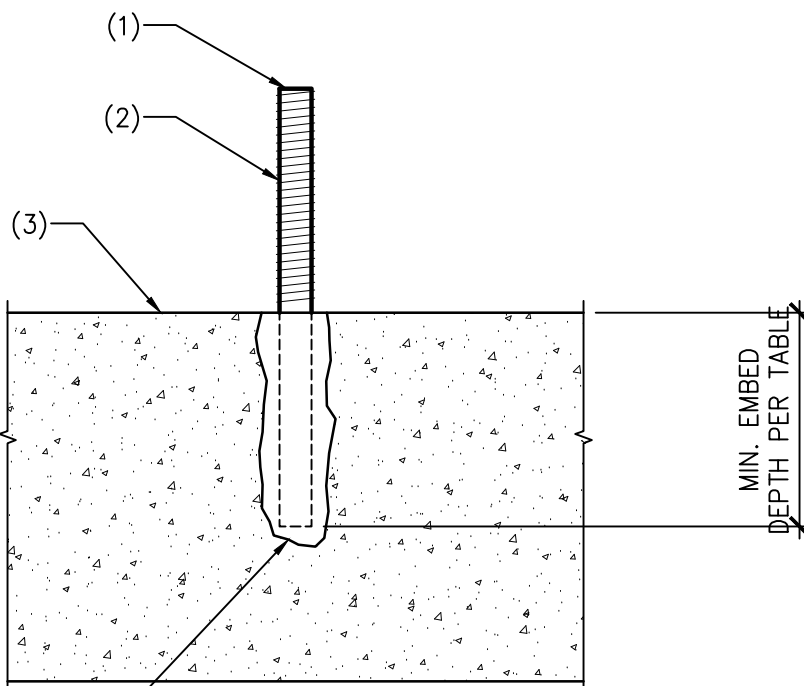
- ALL ANCHORS SHALL BE TYPE 316 STAINLESS STEEL
- ANCHOR SIZE PER EQUIPMENT MANUFACTURER
- CONCRETE PAD
- USE ADHESIVE PER GSN



01 CONCRETE EQUIPMENT PAD ON GRADE
SCALE: N.T.S.

NOTES:

- CHAMFER EDGES
- CONCRETE SLAB OR FINISH GRADE AS OCCURS
- CONCRETE EQUIPMENT PAD
- #5 AT 12" O.C. EACH WAY TOP
- #5 AT 12" O.C. EACH WAY BOTTOM

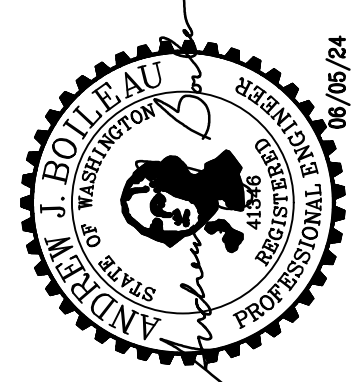


ANCHOR	EMBED
1/2" DIA.	6"
5/8" DIA.	8"
3/4" DIA.	9"
1" DIA.	12"

02 RAISED CONCRETE EQUIPMENT PAD
SCALE: N.T.S.

03 EPOXY ANCHOR DETAIL
SCALE: 1/2"=1'-0"

BID SET
JUNE 5, 2024

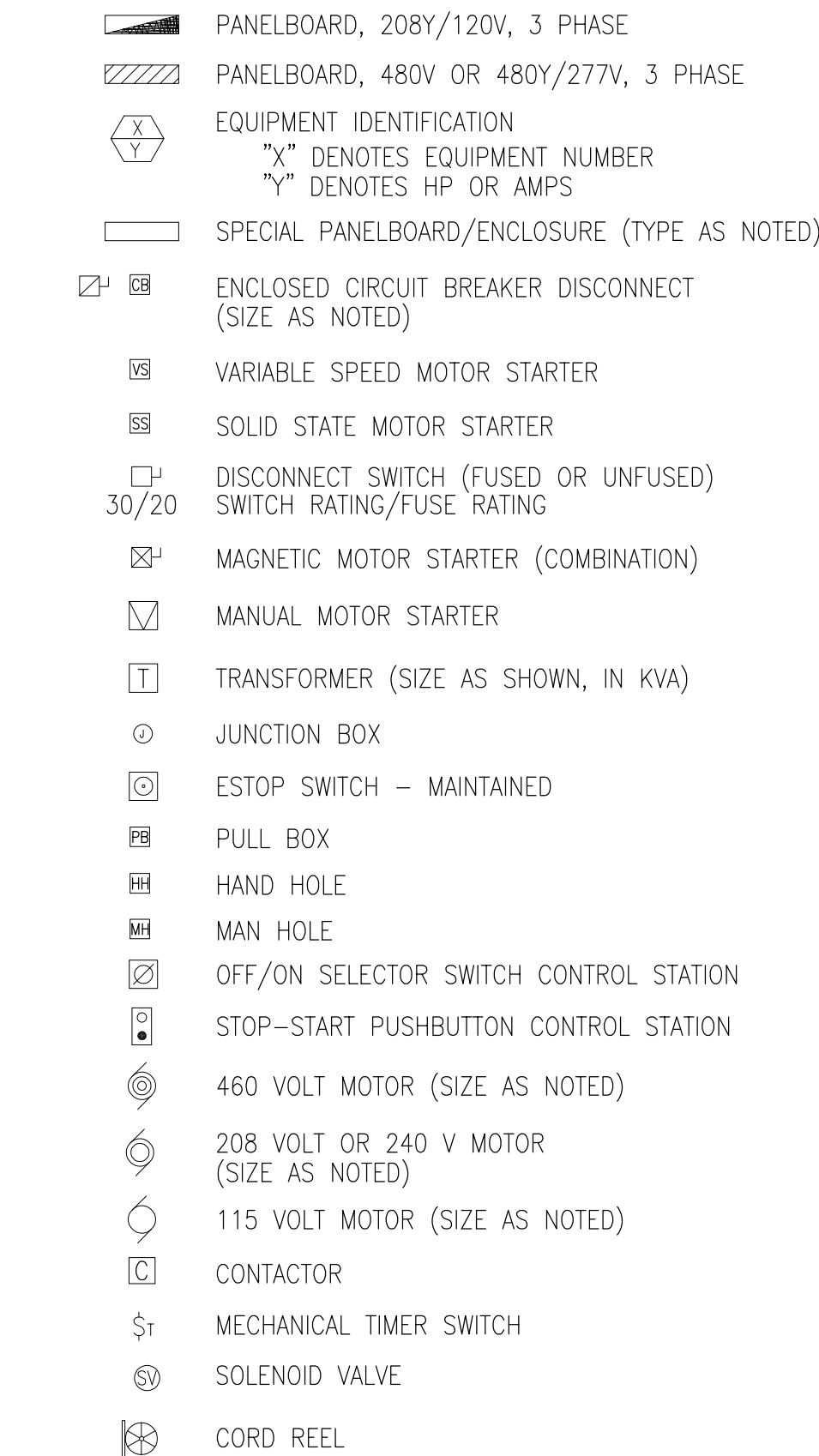


A-JB	06/05/24
CHECKED BY	DATE
SME	06/05/24
PROJ. ENGR	DATE
DIRECTOR	06/05/24
PRINTED BY:	srebrob Jun 04, 2024
PORT ADDRESS:	802 PORT CENTER ROAD
TACOMA, WA	98421

MAINTENANCE BUILDING	BACK-UP GENERATOR
STRUCTURAL SITE PLAN, GENERAL NOTES AND DETAILS	
TOWNSHIP: 21 NORTH	RANGE: 3 EAST
SECTION: 34	
DAT-HRZ: WA83/2011	VERT: MLLW 16.88' @ 944 6494 A
PARCEL: 2275200633	DRAWING SCALE: AS NOTED

6692	S01
SH # 4	OF 22
CON/CONS:	071252
M. ID:	101610.01
PHASE:	BID SET

POWER



 CONDUIT SURFACE MOUNTED OR CONCEALED.
 CONDUIT IN WALL OR CEILING SPACE.
 CONTAINS ONE AWG #12 PHASE, AND ONE
 AWG #12 NEUTRAL CONDUCTOR UNLESS
 OTHERWISE NOTED. "E" INDICATES
 EMERGENCY CIRCUIT.
 ----- CONDUIT UNDERGROUND, UNDER FLOOR SLAB,
 OR IN CEILING SPACE OF FLOOR BELOW WITH
 CONDUCTORS AS ABOVE.
 CONDUIT ONLY.
 FLEXIBLE METAL CONDUIT. PROVIDE CIRCUIT
 CONDUCTORS REQUIRED BASED ON 60 DEGREE
 CELSIUS CONDUCTOR RATING.

CONDUIT & WIRE CONT'D



AE	ANALYTICAL ELEMENT (PH, ORP)
AT	ANALYTICAL TRANSMITTER (PH, ORP)
FS	FLOW SWITCH
FT	FLOW TRANSMITTER
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
	MOTORIZED VALVE
PS	PRESSURE SWITCH
PT	PRESSURE TRANSMITTER
SV	SOLENOID VALVE
TE	TEMPERATURE ELEMENT (RTD, TIC)
TS	TEMPERATURE SWITCH
TT	TEMPERATURE TRANSMITTER
ZS	POSITION SWITCH

	TRANSFORMER (DASHED LINE INDICATES ELECTROSTATIC SHIELD)
	SURGE ARRESTER
	CIRCUIT BREAKER (DRAW-OUT TYPE)
	POTENTIAL TRANSFORMER
2 480:120	QUANTITY & RATIO AS SHOWN
	CURRENT TRANSFORMER
3 800:5	QUANTITY & RATIO AS SHOWN
	AMMETER w/SWITCH
	VOLTMETER w/SWITCH
	WATT-OUR METER
	480V OR 480Y/277V
E19-1 400 A M. BKR. 3 PH, 4 W	PANELBOARD (RATINGS AS NOTED)
	208V OR 208Y/120V
E19-3 225 A M. BKR. 3 PH, 4 W	PANELBOARD (RATINGS AS NOTED)

Diagram illustrating the components of a motor circuit:

- 3A**: CONTROLLER OR MCC CUBICLE NUMBER
- 2**: STARTER SIZE
- HP**: MOTOR HORSEPOWER
- POWER FACTOR CORRECTION CAPACITOR (IF REQUIRED)**
- THERMO MAGNETIC CIRCUIT BREAKER**
- MAGNETIC ONLY CIRCUIT BREAKER**

	PANEL TERMINAL WITH NUMBER
	PANEL WIRING WITH WIRE NUMBER
	FIELD WIRING WITH WIRE NUMBER
	TERMINAL IN MCC
	TERMINAL IN PLC CONTROL PANEL
	REMOTE TERMINAL FIELD
	PANEL DEVICE TERMINAL
	CONTROL PANEL TERMINAL
	FLEX I/O TERMINAL
	FUSE

	FUSED SWITCH
	M.V. DISCONNECT SWITCH
	(NF OPTION) L.V. DISCONNECT SWITCH (NON FUSED)
	SWITCH RATING
	<u>INTERLOCK</u> K=KEY M=MECHANICAL E=ELECTRICAL
	FEEDER TYPE DESIGNATION
	AVAILABLE FAULT CURRENT (CLOSED TRANSITION/NORMAL)
	EQUIPMENT AIC RATING
	APPROXIMATE FEEDER LENGTH IN FEET TO BE CONFIRMED LATER.

	DISCONNECT SWITCH
	FUSE
	CIRCUIT BREAKER
	TRANSFORMER
	GROUND CONNECTION
	PILOT LIGHT * INDICATES COLOR
	PUSHBUTTON MOMENTARY CONTACT NORMALLY OPEN
	PUSHBUTTON MOMENTARY CONTACT NORMALLY CLOSED
	SELECTOR SWITCH MAINTAINED CONTACT TWO POSITION
	SELECTOR SWITCH MAINTAINED CONTACT THREE POSITION
	SOLENOID VALVE
	PRESSURE SWITCH - N.C. OPENS ON RISING PRESSURE
	PRESSURE SWITCH - N.O. CLOSES ON RISING PRESSURE
	FLOAT OR LEVEL SWITCH - N.C. OPENS ON RISING LEVEL
	FLOAT OR LEVEL SWITCH - N.O. CLOSES ON RISING LEVEL
	FLOW SWITCH - N.C. OPENS ON INCREASE IN FLOW
	FLOW SWITCH - N.O. CLOSES ON INCREASE IN FLOW
	TEMPERATURE SWITCH - N.C. OPENS ON RISING TEMP
	TEMPERATURE SWITCH - N.O. CLOSES ON RISING TEMP
	LIMIT SWITCH - N.C.
	LIMIT SWITCH - N.O.
	<u>RELAYS & COILS</u> * = TYPE
	M=MOTOR STARTER CR=CONTROL RELAY C=CONTACTOR TR=TIME DELAY OR TIMING RELAY
	N.O. CONTACT
	N.C. CONTACT
	N.O. - ON DELAY CONTACT
	N.C. - ON DELAY CONTACT
	N.O. - OFF DELAY CONTACT
	N.C. - OFF DELAY CONTACT

BID SET
JUNE 5, 2024



APPROVED: _____ CEC 01/09/24

CHECKED BY	DATE

BUILDING

ADVANCE

MAINT

C

C

MAINTENANCE BUILDING

C

C

BINDING EDGE

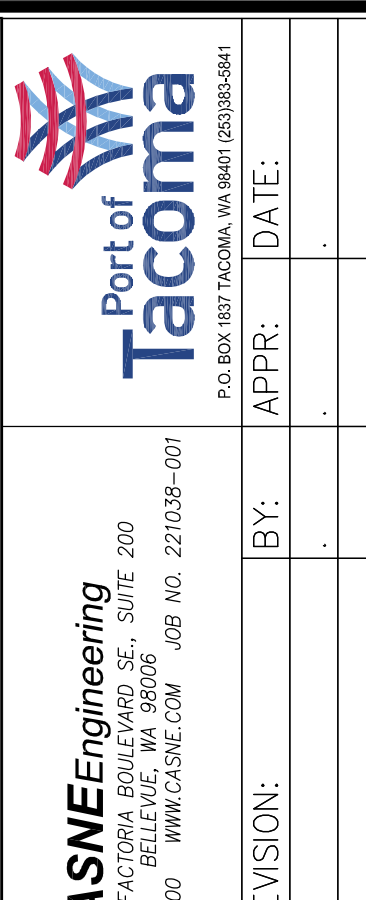
BINDING EDGE

BINDING EDGE

BINDING EDGE

BINDING EDGE

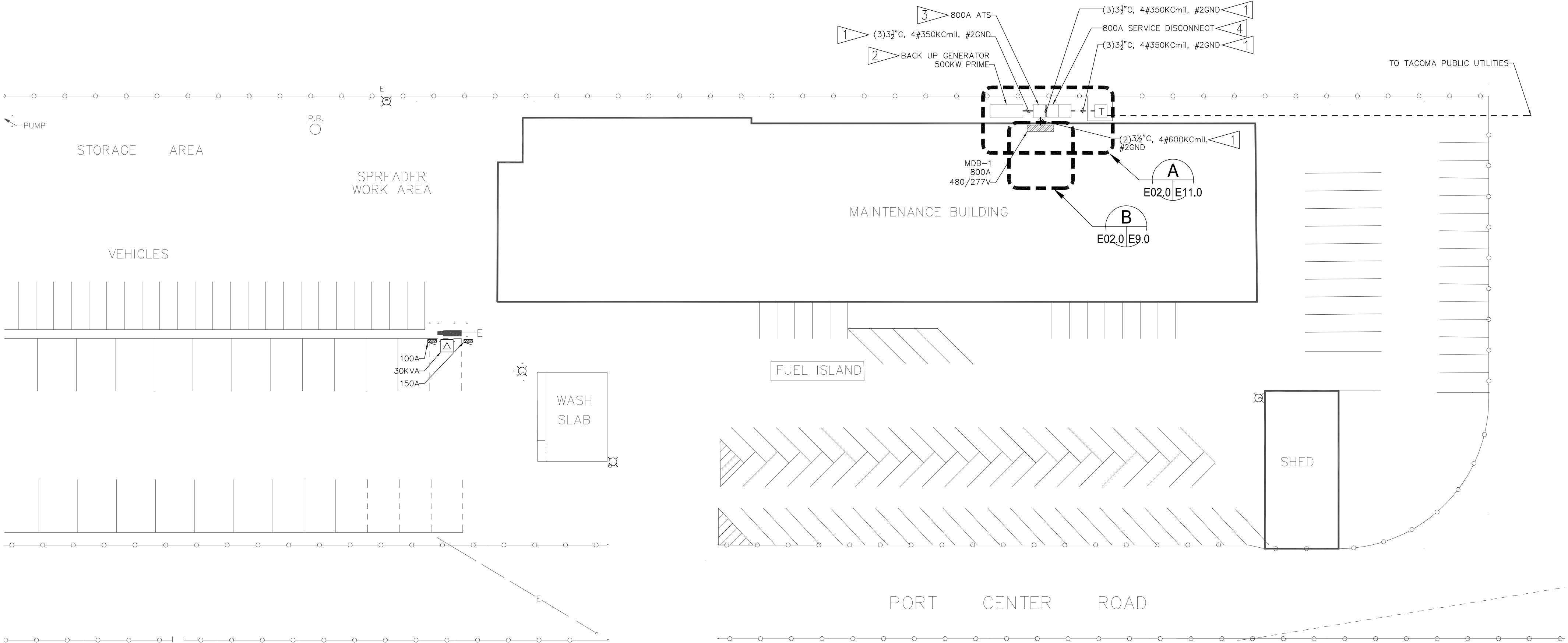
BID SET
JUNE 5, 2024



SNE Engineering ACTORIA BOULEVARD SE., SUITE 200 SEASIDE, WA 98138-3000 WWW.CSNE.COM JOB NO. 221038-001		Port of Tacoma P.O. BOX 1387 TACOMA, WA 98401 (253)308-5541
DIVISION:	BY:	APPR:
_____	_____	_____
_____	_____	DATE:
_____	_____	_____

SNE Engineering ACTORIA BOULEVARD SE., SUITE 200 SEASIDE, WA 98138-3000 WWW.CSNE.COM JOB NO. 221038-001		Port of Tacoma P.O. BOX 1387 TACOMA, WA 98401 (253)308-5541
DIVISION:	BY:	APPR:
_____	_____	_____
_____	_____	DATE:
_____	_____	_____

VISION:	BY:	APPR:	DATE:



GENERAL NOTES

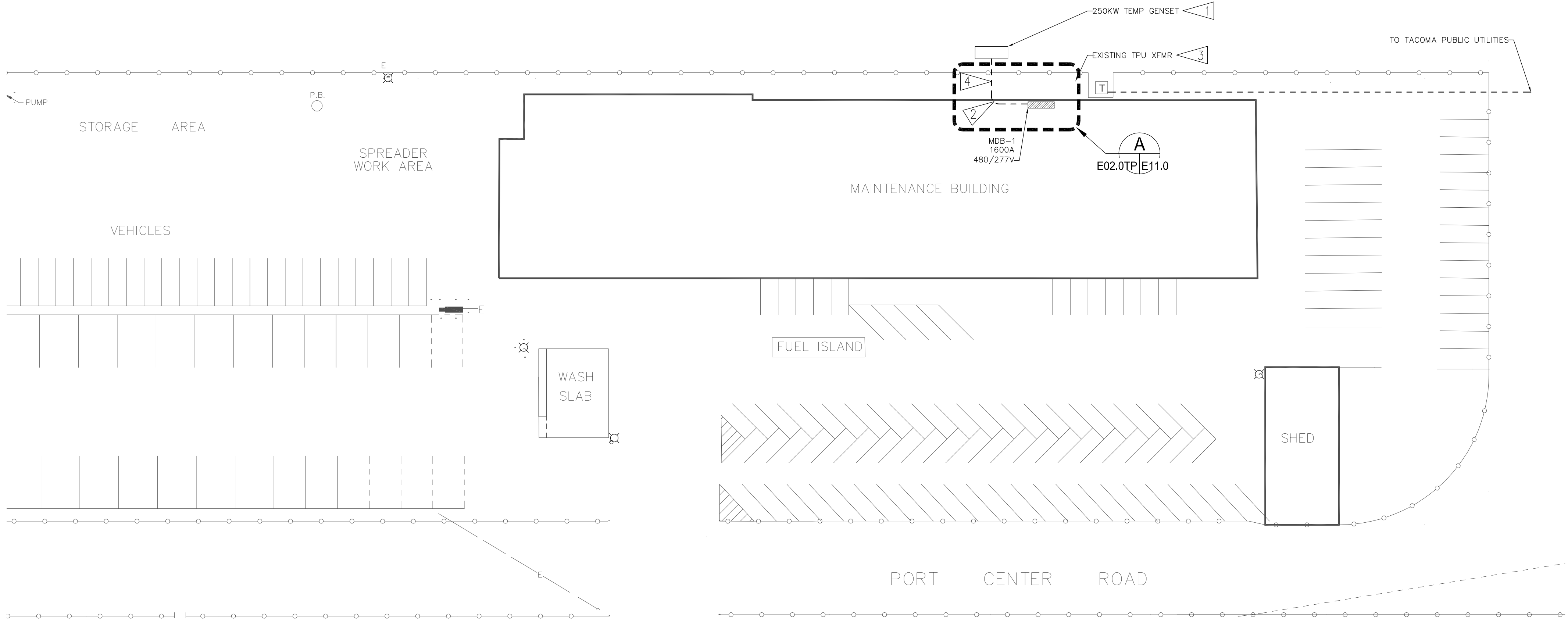
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS AND RELATED WORK AS INDICATED ON THE DRAWINGS.
2. ALL WORK SHALL COMPLY WITH LOCAL ORDINANCES, AND SHALL CONFORM TO THE NEC.
3. ALL WIRE TO BE XHHW-2 UNLESS OTHERWISE SPECIFIED.
4. CONDUIT AND EQUIPMENT SUPPORTS ABOVE GROUND SHALL BE STAINLESS STEEL.
5. TRANSFORMER, UNDERGROUND CONDUIT, AND SERVICE EQUIPMENT SHALL COMPLY WITH TACOMA PUBLIC UTILITIES STANDARDS. THESE STANDARDS CAN BE OBTAINED FROM THE TPU WEBSITE AT WWW.MYTPU.ORG.
6. PRIMARY CIVIL (TRENCH, CONDUIT, AND VAULTS) SYSTEM AND SECONDARIES SHALL BE INSTALLED BY A QUALIFIED, LICENSED ELECTRICAL CONTRACTOR IN THE STATE OF WASHINGTON, UNDER RCE 19.28.

CONSTRUCTION NOTES

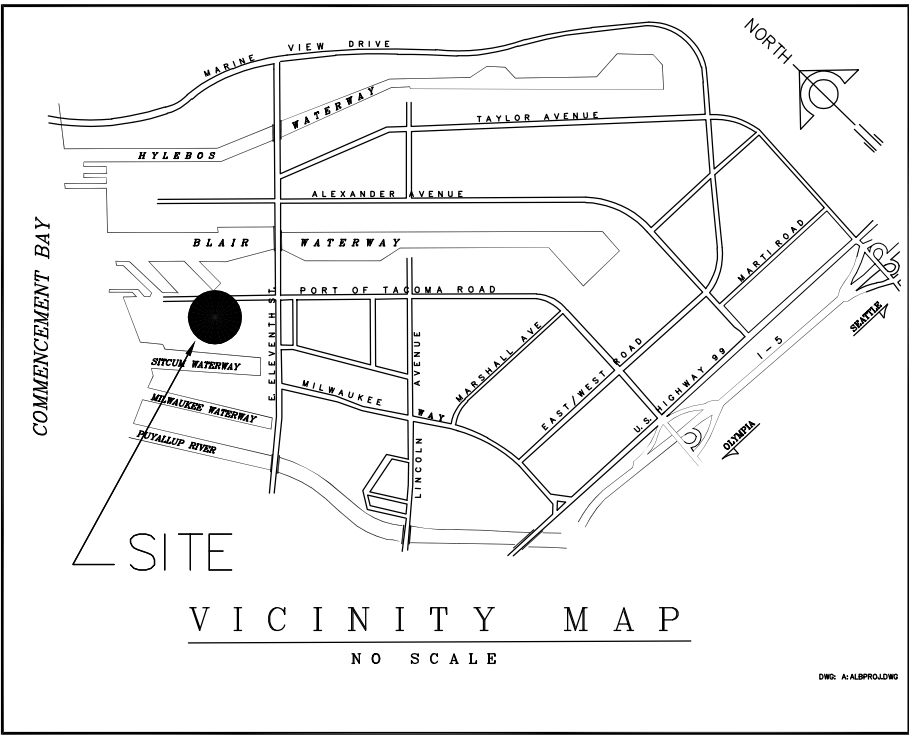
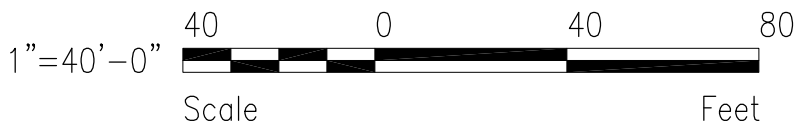
1. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, SUPPORTS, AND ANCILLARY HARDWARE.
2. INSTALL 500KW GENERATOR, PROVIDED BY OTHERS.
3. INSTALL 800A SERVICE RATED XFMR SWITCH, PROVIDED BY OTHERS.
4. INSTALL 800A EUSERC RATED SERVICE EQUIPMENT, PROVIDED BY OTHERS.

BID SET
JUNE 5, 2024

6692 E02.0 SH #7 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR ELECTRICAL SITE PLAN		APPROVED:	CEC 01/09/24 CHECKED BY: DATE		 CASAFE Engineering 3545 FACTORIA BOULEVARD SE, SUITE 200 BELLEVUE, WA 98006 WWW.CASAFE.COM JOB NO. 221038-001 (425) 522-1000	 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441
	CONTR/CONS: 071252 M. ID: 101610.01 PHASE: BID SET	TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34 DATE-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933 PARCEL: 2275200633	DIRECTOR ENG. DATE PRINTED BY: Hanna.Gil May 30, 2024 PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421	REVISION: BY: . DATE: . APPR: . MARK: .			



A ELECTRICAL SITE PLAN - TEMPORARY
E02.0TP
SCALE: 1:40



GENERAL NOTES

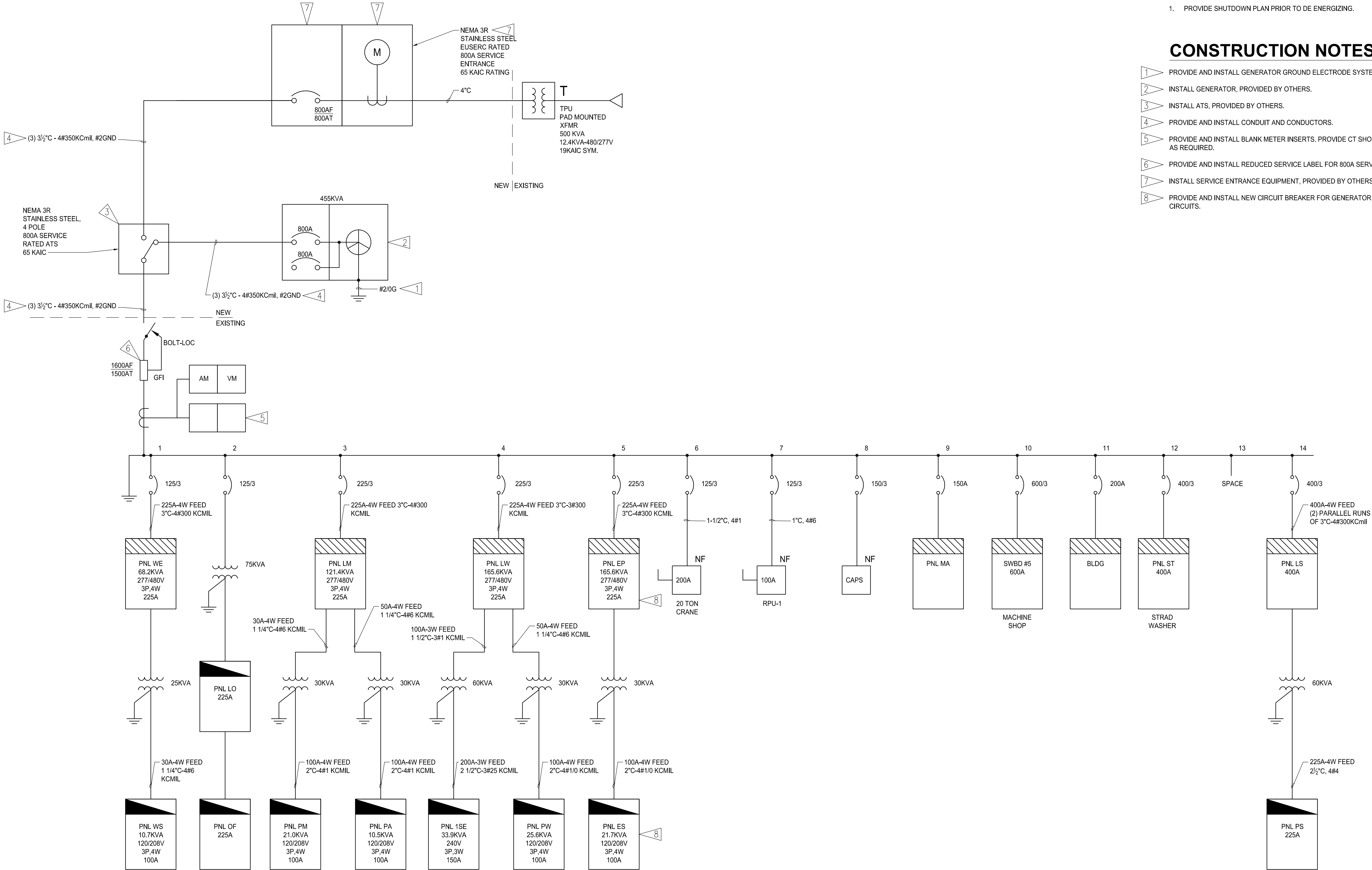
1. SET TEMPORARY GENERATOR IN LOCATION THAT DOES NOT INHIBIT PERMANENT GENERATOR EQUIPMENT INSTALL.

CONSTRUCTION NOTES

1. COORDINATE TEMPORARY GENERATOR, SUPPLIED BY OTHERS.
2. CORE DRILL ELECTRICAL ROOM WALL IN THIS LOCATION FOR ROUTING OF TEMPORARY SERVICE CABLE.
3. OBTAIN SERVICES OF TPU TO DE-ENERGIZE XFMR, AND REMOVE SERVICE ENTRANCE CONDUCTORS TO MDB-1.
4. ROUTE TEMPORARY GENERATOR SERVICE CABLE FROM GENERATOR TO INCOMING LUGS OF MDB-1.

BID SET
JUNE 5, 2024

6692 E02.0TP SH #8 of 22			MAINTENANCE BUILDING BACK-UP GENERATOR ELECTRICAL SITE PLAN - TEMPORARY			APPROVED:			CEC 04/25/23 CHECKED BY DATE FG 04/25/23						 3545 FACTORIA BOULEVARD SE., SUITE 200 BELLEVUE, WA 98006 WWW.CASNE.COM JOB NO. 221038-001 P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441 Port of Tacoma								
CONT/CONS: 071252 M. ID: 101610.01 PHASE: BID SET			TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34 DATE-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933 PARCEL: 2275200633			DIRECTOR ENG. DATE PRINTED BY: chose.goodnight Jun 04, 2024 PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421			MARK:			REVISION:			BY:			APPR:			DATE:		



GENERAL NOTES

- 1. PROVIDE SHUTDOWN PLAN PRIOR TO DE ENERGIZING.

CONSTRUCTION NOTES

- 1. PROVIDE AND INSTALL GENERATOR GROUND ELECTRODE SYSTEM.
- 2. INSTALL GENERATOR, PROVIDED BY OTHERS.
- 3. INSTALL ATS, PROVIDED BY OTHERS.
- 4. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS.
- 5. PROVIDE AND INSTALL BLANK METER INSERTS. PROVIDE CT SHORTING BLOCKS AS REQUIRED.
- 6. PROVIDE AND INSTALL REDUCED SERVICE LABEL FOR 800A SERVICE.
- 7. INSTALL SERVICE ENTRANCE EQUIPMENT, PROVIDED BY OTHERS.
- 8. PROVIDE AND INSTALL NEW CIRCUIT BREAKER FOR GENERATOR AND ATS BRANCH CIRCUITS.

BID SET
JUNE 5, 2024

6692

E10.0

SH #10 of 22

CONT./CONS: 071252

M. ID: 101610.01

PHASE: BID SET

Maintenance Building

Back-up Generator

Electrical One-Line Diagram

TOWNSHIP: 21 NORTH

RANGE: 3 EAST

SECTION: 34

DAT-HRZ: .

VERT: MLLW 19.39' @ TIDE 22.1933

PARCEL: 2275200633

DRAWING SCALE: AS NOTED

APPROVED:

CEC 01/09/24

CHECKED BY: FG

DATE: 01/09/24

DIRECTOR ENG. DATE: Honna Gil May 30, 2024

PRINTED BY: Honna Gil May 30, 2024

PORT ADDRESS: 802 PORT CENTER RD

TACOMA, WA 98421

Port of Tacoma

3545 FACTORIA BOULEVARD SE, SUITE 200

BELEVUE, WA 98006

WWW.CASNE.COM

JOE NO. 221038-001

CASNE Engineering

3545 FACTORIA BOULEVARD SE, SUITE 200

BELEVUE, WA 98006

WWW.CASNE.COM

JOE NO. 221038-001

Professional Engineer

3576

REGISTERED

PROFESSIONAL

06/05/24

DATE

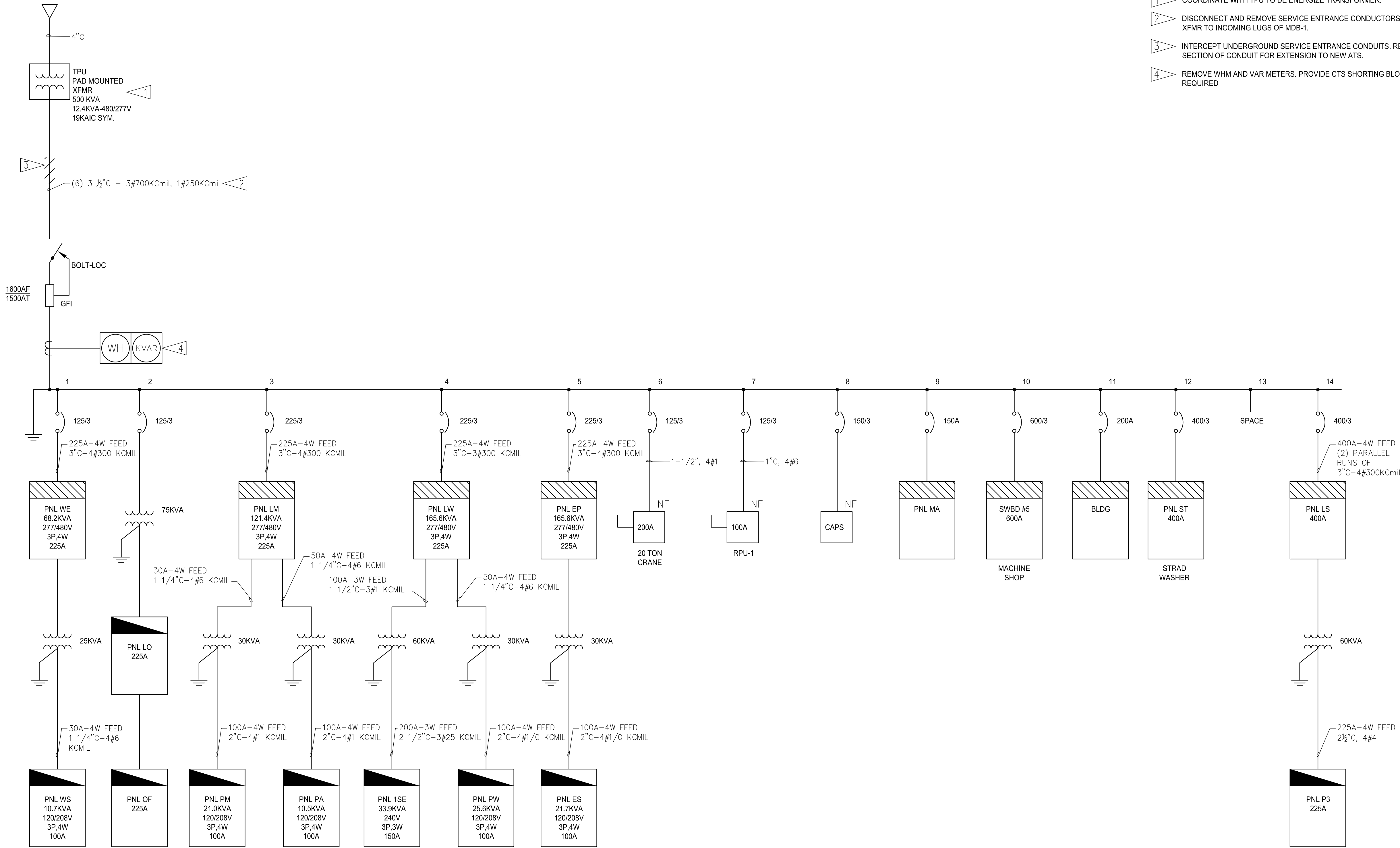
MARK:

REVISION:

BY:

APPR:

DATE:



1 ELECTRICAL ONE-LINE - REMOVAL
E10.0R SCALE: NTS

GENERAL NOTES

1. PROVIDE SHUTDOWN PLAN PRIOR TO DE ENERGIZING.

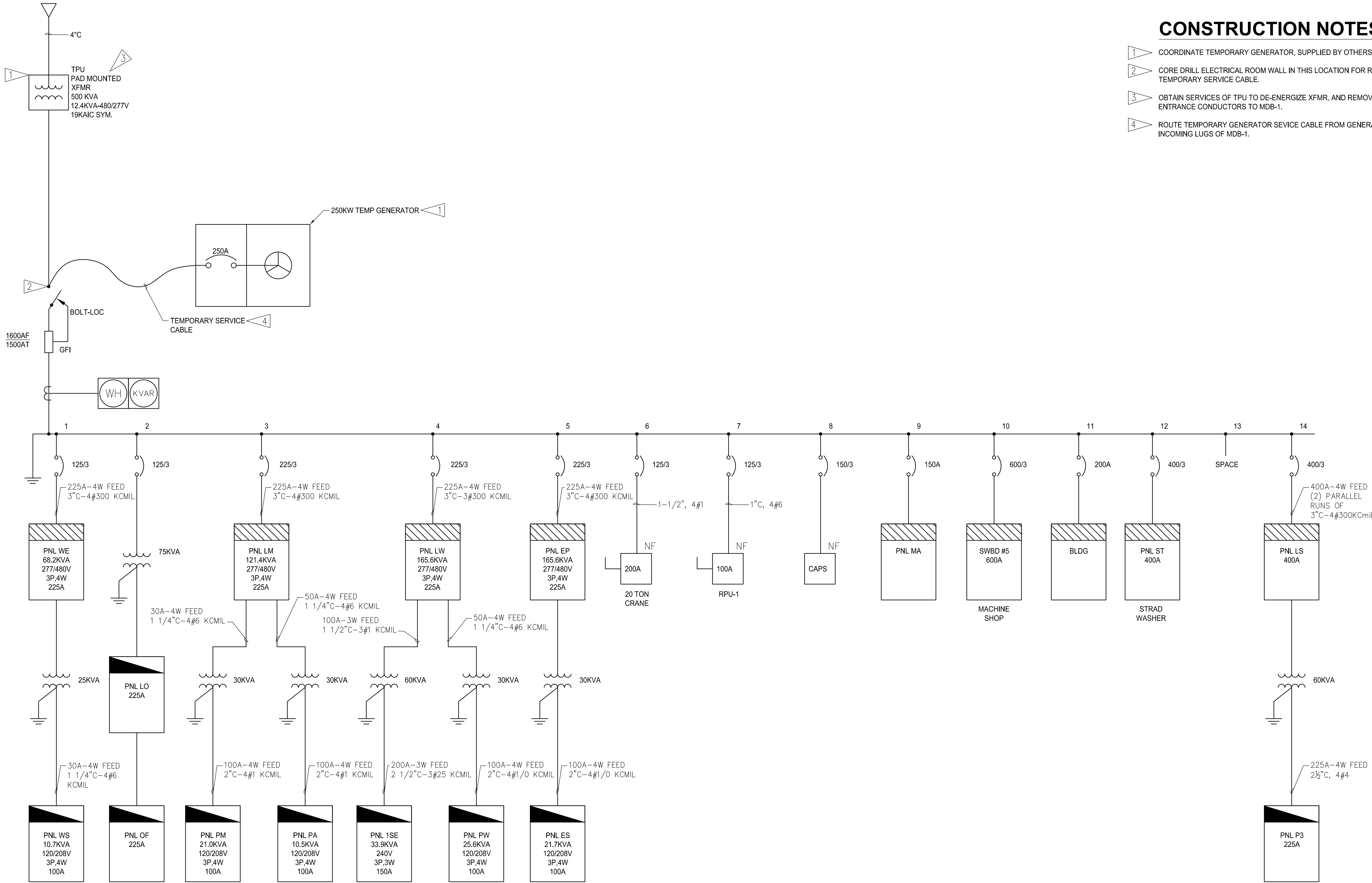
CONSTRUCTION NOTES

1. COORDINATE WITH TPU TO DE ENERGIZE TRANSFORMER.
2. DISCONNECT AND REMOVE SERVICE ENTRANCE CONDUCTORS FROM TPU XFMR TO INCOMING LUGS OF MDB-1.
3. INTERCEPT UNDERGROUND SERVICE ENTRANCE CONDUITS. REMOVE SECTION OF CONDUIT FOR EXTENSION TO NEW ATS.
4. REMOVE WHM AND VAR METERS. PROVIDE CTS SHORTING BLOCKS AS REQUIRED

BID SET
APRIL 23, 2024

6692 E10.0R SH #11 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR ELECTRICAL ONE-LINE DIAGRAM - REMOVAL		APPROVED:	CEC 01/09/24 CHECKED BY: DATE		 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (206) 388-5441
	CONT./CONS: 071252 M. ID: 101610.01 PHASE: BID SET	TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34 DATE-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933 PARCEL: 2275200633	DIRECTOR ENG. DATE PRINTED BY: Hanna Gil May 30, 2024 PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421	REVISION: MARK: . BY: . DATE: .		

REMOVAL



1 ELECTRICAL ONE-LINE - TEMPORARY
E10.0TP SCALE: NTS

GENERAL NOTES

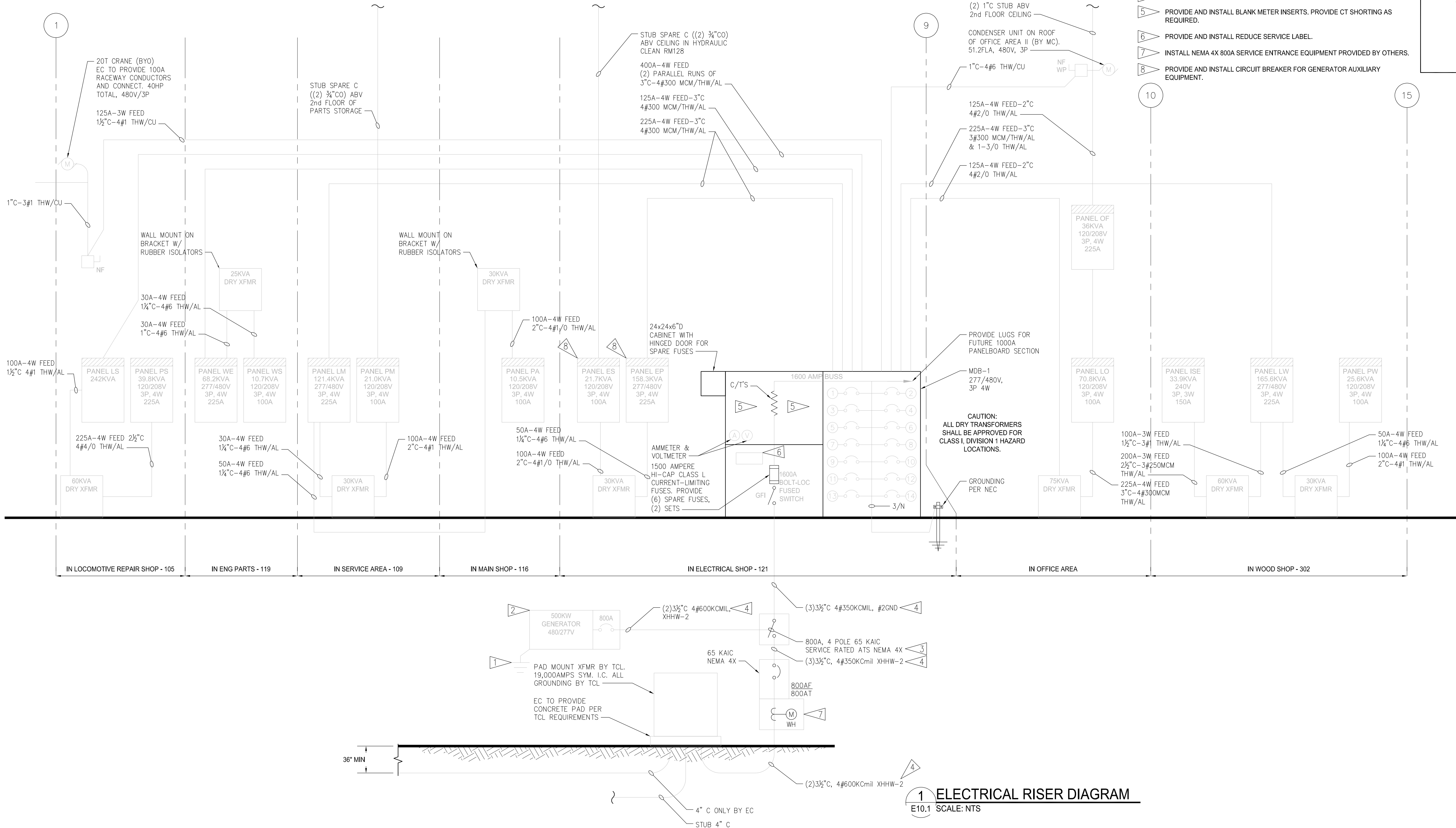
1. SET TEMPORARY GENERATOR IN LOCATION THAT DOES NOT INHIBIT PERMANENT GENERATOR EQUIPMENT INSTALL.

CONSTRUCTION NOTES

1. COORDINATE TEMPORARY GENERATOR, SUPPLIED BY OTHERS.
2. CORE DRILL ELECTRICAL ROOM WALL IN THIS LOCATION FOR ROUTING OF TEMPORARY SERVICE CABLE.
3. OBTAIN SERVICES OF TPU TO DE-ENERGIZE XFMR, AND REMOVE SERVICE ENTRANCE CONDUCTORS TO MDB-1.
4. ROUTE TEMPORARY GENERATOR SERVICE CABLE FROM GENERATOR TO INCOMING LUGS OF MDB-1.

BID SET
JUNE 5, 2024

6692 E10.0TP SH #12 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR				APPROVED: CEC 01/09/24 CHECKED BY: DATE FG 01/09/24 PROJ. ENGR. DATE PRINTED BY: Honna Gil May 30, 2024 PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421		 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441		
	CONT/CONS: 071252	TOWNSHIP: 21 NORTH	RANGE: 3 EAST	SECTION: 34					
M. ID: 101610.01	DAT-HRZ: .	VERT: MLLW 19.39' @ TIDE	22.1933	DRAWING SCALE: AS NOTED	MARK:	REVISION:	BY:	APPR:	DATE:
PHASE: BID SET									



GENERAL NOTES

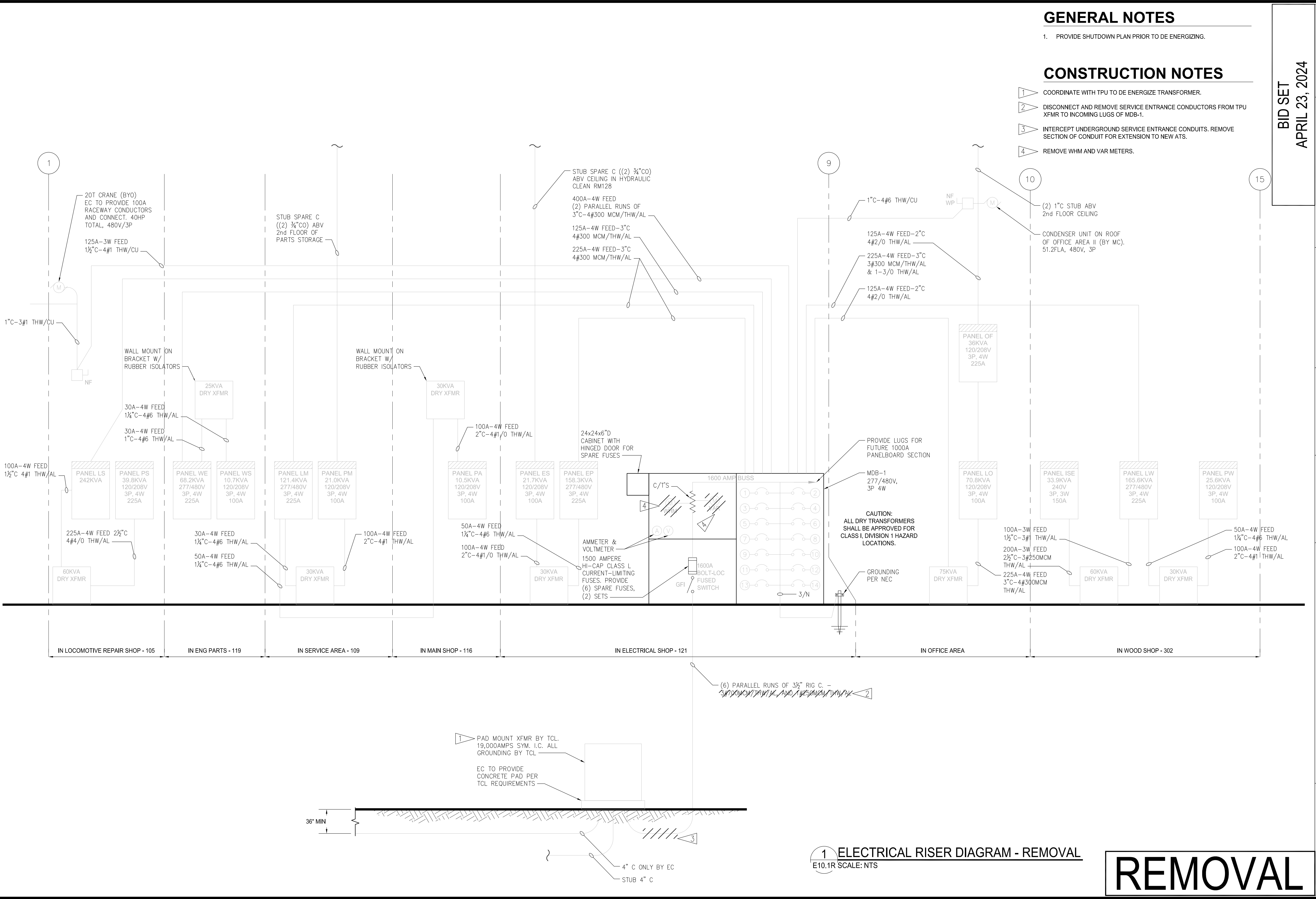
1. PROVIDE SHUTDOWN PLAN PRIOR TO DE ENERGIZING.
2. CONDUCTORS SHALL BE TYPE XHHW-2.

CONSTRUCTION NOTES

1. PROVIDE AND INSTALL GENERATOR GROUND ELECTRODE SYSTEM.
2. INSTALL GENERATOR, PROVIDED BY OTHERS.
3. INSTALL ATS, PROVIDED BY OTHERS.
4. PROVIDE AND INSTALL CONDUIT AND CONDUCTORS.
5. PROVIDE AND INSTALL BLANK METER INSERTS. PROVIDE CT SHORTING AS REQUIRED.
6. PROVIDE AND INSTALL REDUCE SERVICE LABEL.
7. INSTALL NEMA 4X 800A SERVICE ENTRANCE EQUIPMENT PROVIDED BY OTHERS.
8. PROVIDE AND INSTALL CIRCUIT BREAKER FOR GENERATOR AUXILIARY EQUIPMENT.

BID SET
JUNE 5, 2024

6692 E10.1 SH #13 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR ELECTRICAL RISER DIAGRAM				Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253)883-5441	
	CONT./CONS: 071252	TOWNSHIP: 21 NORTH	RANGE: 3 EAST	SECTION: 34	DATE: 07/12/22	DATE: 07/12/22
M. ID: 101610.01	DAT-HRZ: .	VERT: MLLW 19.39' @ TIDE 22.1933	PRINTED BY: Hanna Gil May 30, 2024	PROJ. ENGR. DATE	BY: .	
PHASE: BID SET	PARCEL: 2275200633	DRAWING SCALE: AS NOTED	PORT ADDRESS: 802 PORT CENTER RD	TACOMA, WA 98421	REVISION: .	
			APPROVED: .	CEC 01/09/24	CHECKED BY DATE	
			FG 01/09/24			
			3545 FACTORY BOULEVARD SE, SUITE 200 BELLEVUE, WA 98006 WWW.CASNE.COM JOB NO. 221038-001			
			CASNE Engineering			
			P.E. E. CLUTE WASHINGTON 35276 REGISTERED PROFESSIONAL ENGINEER			

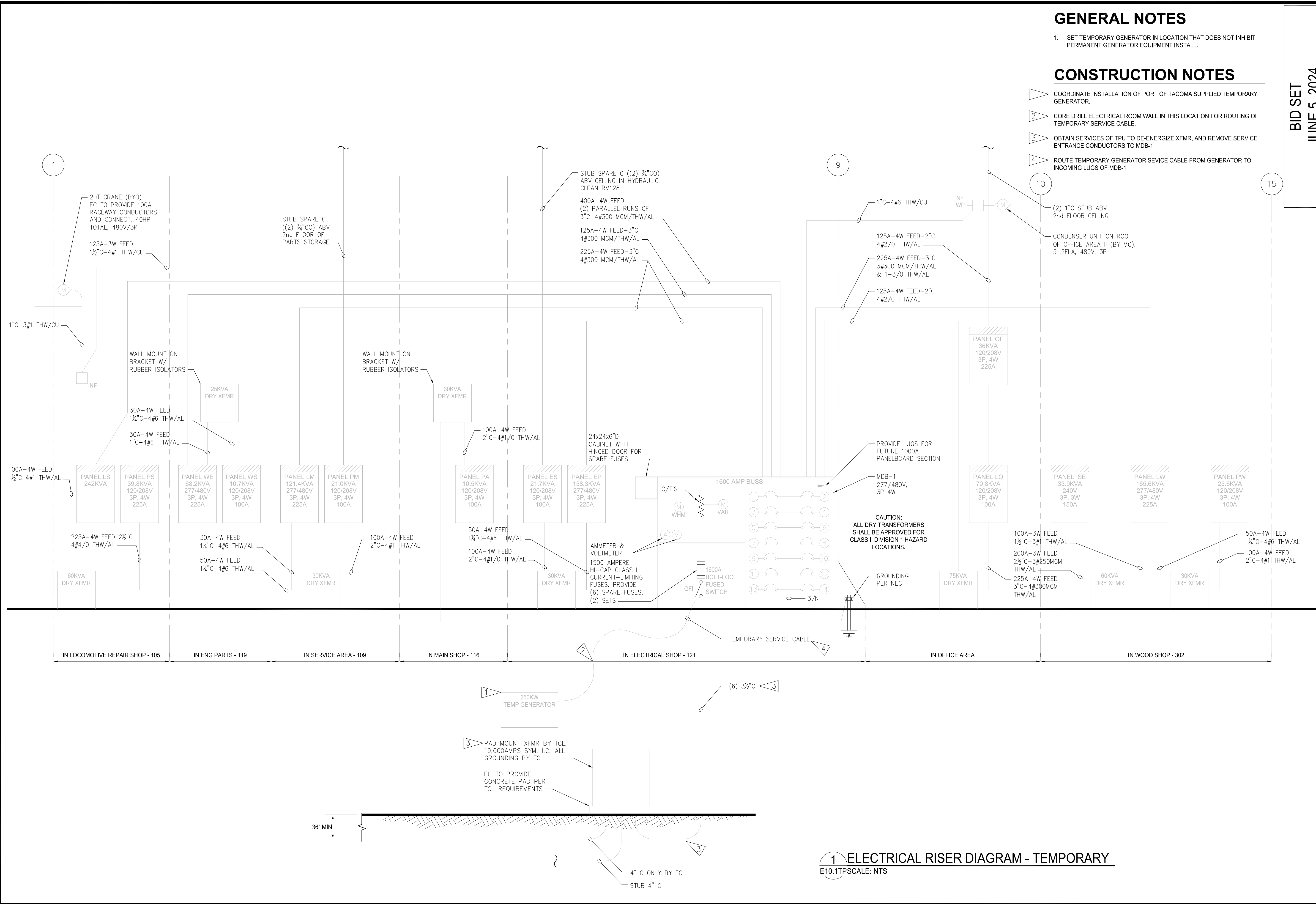


1 ELECTRICAL RISER DIAGRAM - REMOVAL
E10.1R SCALE: NTS

REMOVAL

BID SET
APRIL 23, 2024

6692 E10.1R SH #14 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR				APPROVED:		CEC 01/09/24			 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253) 885-5441			
	ELECTRICAL RISER DIAGRAM - REMOVAL				CHECKED BY DATE		DATE						
	TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34				PROJ. ENGR DATE		DATE						
	DAT-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933				PRINTED BY: Hanna Gil May 30, 2024		DATE						
PHASE: BID SET				PARCEL: 2275200633				DRAWING SCALE: AS NOTED				PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421	



1. SET TEMPORARY GENERATOR IN LOCATION THAT DOES NOT INHIBIT PERMANENT GENERATOR EQUIPMENT INSTALL.

1. COORDINATE INSTALLATION OF PORT OF TACOMA SUPPLIED TEMPORARY GENERATOR.
2. CORE DRILL ELECTRICAL ROOM WALL IN THIS LOCATION FOR ROUTING OF TEMPORARY SERVICE CABLE.
3. OBTAIN SERVICES OF TPU TO DE-ENERGIZE XFMR, AND REMOVE SERVICE ENTRANCE CONDUCTORS TO MDB-1
4. ROUTE TEMPORARY GENERATOR SERVICE CABLE FROM GENERATOR TO INCOMING LUGS OF MDB-1

CONSTRUCTION NOTES

BID SET
JUNE 5, 2024



APPROVED:	CEC 01/09/24
	CHECKED BY DATE
	FG 01/09/24
DIRECTOR ENG. DATE	PROJ. ENCR DATE
PRINTED BY: Hanna Gil	May 30, 2024
PORT ADDRESS: 802	PORT CENTER RD
	TACOMA WA 98421

TOWNSHIP: 21 NORTH	RANGE: 3 EAST	SECTION: 34
DAT-HRZ:	VERT:	MLW 19.39' @ TIDE 22.1933
PARCEL: 2275200633	DRAWING SCALF:	AS NOTED

6692
E10.1TP
SH #15 of 22

CONT/CONS:	071252
M. ID:	101610.01
PHASE:	BID SET

MDB-1 SCHEDULE									
BLDG	MAINTENANCE				INSTALLATION DATE				
PANEL	MDB-1				LOCATION			ELEC SHOP	
YTPE	1600A SWITCHGEAR				FEEDERS			(2) 4#600	
RATING	1600 AMPS BUS / 800A FEED				FROM			ATS	
					AVAIL. FAULT CKT CURRENT			19KAIC	
					DATE REVISED			1/9/2024	
					CIRCUIT REVISED				
					JOB NO.			71252	
CIRCUIT	BKR. TYPE	FRAME & AMPS	WIRE SIZE	LOAD	CIRCUIT PHASE			LOCATION	
					A	B	C		
1abc		225	#300	PANEL WE					
3abc		225	#300	PANEL LM					
5abc		225	#300	PANEL EP					
7abc		100	#7	RPU-1					
9abc				PANEL MA					
11abc				BLDG					
13abc				SPACE					
2abc		100		75KVA TRANSFORMER FOR PANEL LO					
4abc		225	#300	PANEL LW					
6abc		200	#1	20 TON CRANE					
8abc				CAPS					
10abc		600		SWITCHBOARD #5					
12abc		400		PANEL ST					
14abc		400	#300	PANEL LS					
CONNECTED LOAD 399KVA/ 480A									

1

MDB-1 SCHEDULE

E10.2 SCALE: NTS

METERING SCHEDULE FOR LOAD DATA										
	INSTALLATION	FROM	TO	KWH HISTORY	KVARH HSTORY	POWER FACTOR	RATCHET	ACTUAL DEMAND	ADJUSTED DEMAND	BELLING DEMAND
1	700104205	10/28/2022	12/31/2022	189,120.00	45,480.00	0.9723	237	328	328	328
2	700104205	9/29/2022	10/27/2022	128,520.00	40,440.00	0.9539	239	268	268	268
3	700104205	8/30/2022	9/28/2022	119,400.00	45,360.00	0.9348	239	257	261	261
4	700104205	7/30/2022	8/29/2022	120,480.00	52,320.00	0.9172	239	222	230	239
5	700104205	6/30/2022	7/29/2022	117,240.00	47,160.00	0.9278	239	244	250	250
6	700104205	5/28/2022	6/29/2022	140,040.00	46,800.00	0.9484	239	296	296	296
7	700104205	4/29/2022	5/27/2022	146,760.00	39,840.00	0.9651	239	326	326	326
8	700104205	3/31/2022	4/28/2022	159,240.00	40,440.00	0.9692	239	354	354	354
9	700104205	3/2/2022	3/30/2022	163,080.00	39,840.00	0.9714	239	360	360	360
10	700104205	2/1/2022	3/1/2022	172,680.00	39,600.00	0.9747	239	388	388	388
11	700104205	12/30/2021	1/31/2022	211,680.00	43,800.00	0.9793	239	395	395	395
12	700104205	11/30/2021	12/29/2021	196,560.00	38,400.00	0.9814	264	383	383	383
13	700104205	10/27/2021	11/29/2021	203,880.00	42,960.00	0.9785	264	399	399	399
NOTES: PEAK LOAD CALCULATION PER NEC 220.87 PEAK LOAD =399KVA										
PEAK LOAD CALCULATION = 399*1.25 = 498.75 KVA → (600A)										

2

RECORDED LOAD DATA FOR LOAD

E10.2 SCALE: NTS

6692

E10.2

SH #16 of 22

CONT/CONS: 071252
M. ID: 101610.01
PHASE: BID SET

MANTENANCE BUILDING

BACK-UP GENERATOR

MDB-1 SCHEDULE & LOAD CALCS

TOWNSHIP: 21 NORTH
RANGE: 3 EAST
SECTION: 34
DATE-HRZ: .
PARCEL: 2275200633

VERT: MLLW 19.39' @ TIDE 22.1933
DRAWING SCALE: AS NOTED

APPROVED:

CEC 01/09/24
CHECKED BY: DATE
FG 01/09/24

DIRECTOR ENG. DATE
PRINTED BY: Hanna Gil May 30, 2024
PORT ADDRESS: 802 PORT CENTER RD
TACOMA, WA 98421

BID SET

JUNE 5, 2024

CASNE Engineering

3545 FACTORIA BOULEVARD, SE, SUITE 200
BELLEVUE, WA 98006
(425) 522-1000 WWW.CASNE.COM JOB NO. 221038-001

MARK: REVISION: BY: DATE: APR: .

Port of Tacoma

P.O. BOX 1837 TACOMA, WA 98401 (253) 854-5441

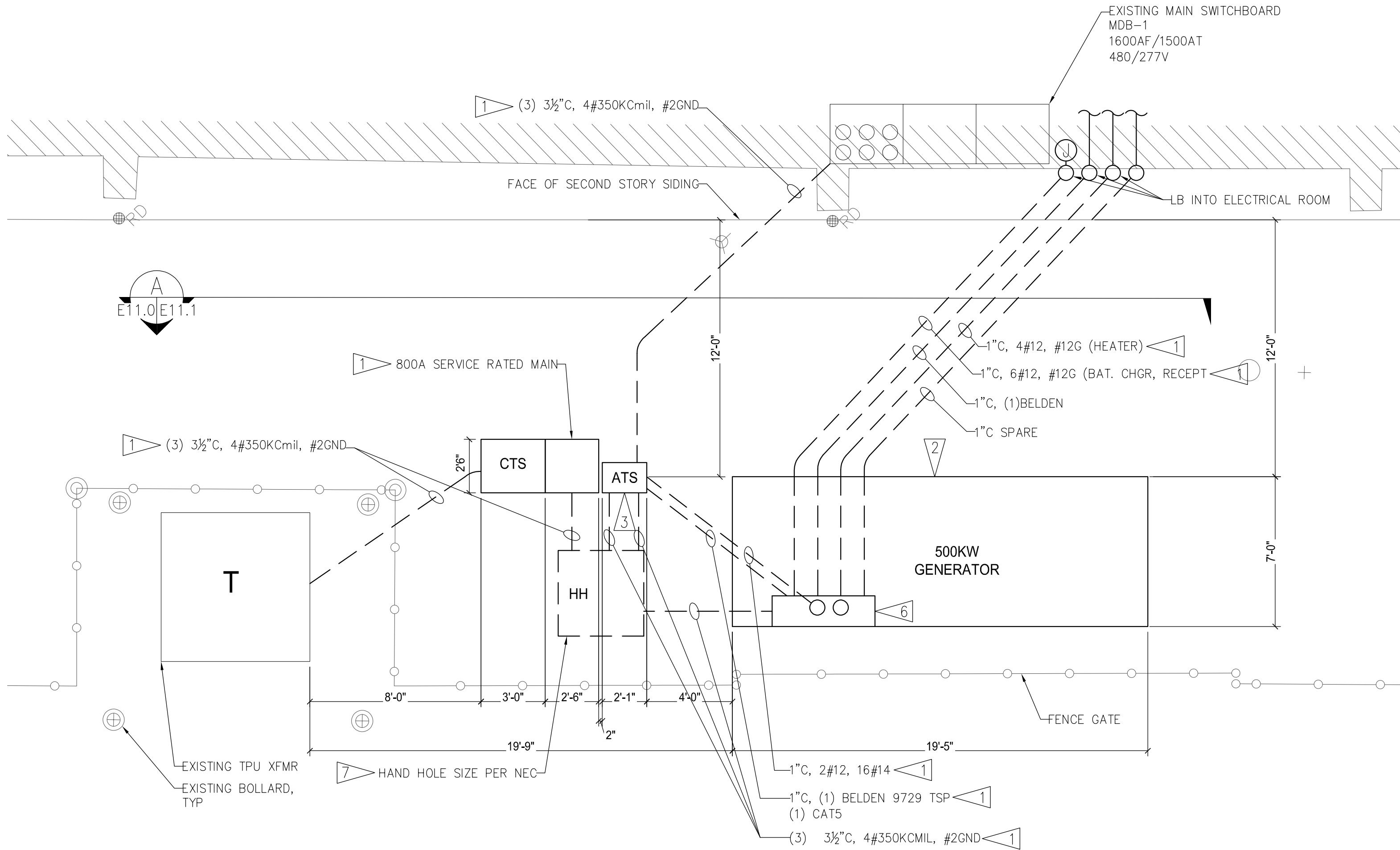
CRITIS E. CLUTE E

3576

REGISTERED PROFESSIONAL ENGINEER

STATE OF WASHINGTON

06/05/24

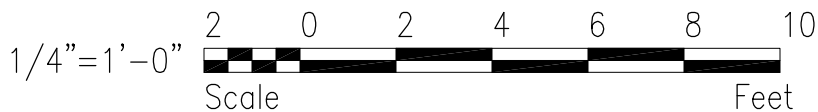


A

SERVICE EQUIPMENT - ENLARGED PLAN

E11.0

SCALE: 1/4" = 10'-0"



GENERAL NOTES

- FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS AND RELATED WORK AS INDICATED ON THE DRAWINGS.
- ALL WORK SHALL COMPLY WITH LOCAL ORDINANCES, AND SHALL CONFORM TO THE NEC.
- ALL WIRE TO BE XHHW-2 UNLESS OTHERWISE SPECIFIED.
- CONDUIT AND EQUIPMENT SUPPORTS ABOVE GROUND SHALL BE STAINLESS STEEL.
- TRANSFORMER, UNDERGROUND CONDUIT, AND SERVICE EQUIPMENT SHALL COMPLY WITH TACOMA PUBLIC UTILITIES STANDARDS. THESE STANDARDS CAN BE OBTAINED FROM THE TPU WEBSITE AT WWW.MYTPU.ORG.
- PRIMARY CIVIL (TRENCH, CONDUIT, AND VAULTS) SYSTEM AND SECONDARIES SHALL BE INSTALLED BY A QUALIFIED, LICENSED ELECTRICAL CONTRACTOR IN THE STATE OF WASHINGTON, UNDER RCE 19.28.

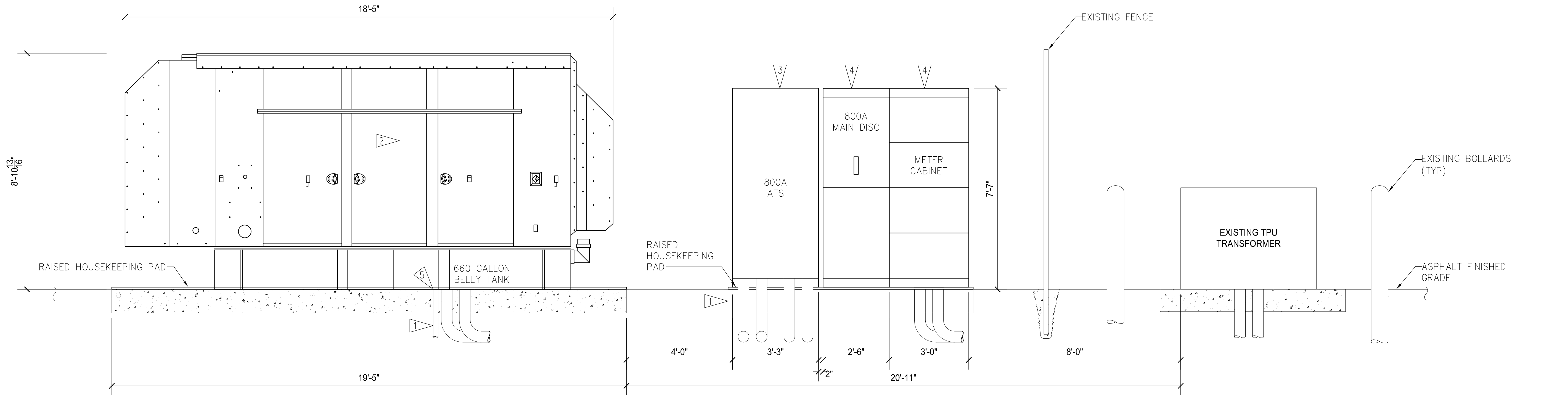
CONSTRUCTION NOTES

- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, SUPPORTS, AND ANY ANCILLARY HARDWARE.
- INSTALL 500KW GENERATOR SUPPORTS, PROVIDED BY OTHERS.
- INSTALL 800A XFMR SWITCH, PROVIDED BY OTHERS, PROVIDE STAINLESS STEEL EQUIPMENT RACK FOR RACK MOUNTING OF ATS.
- NOT USED.
- INSTALL ELECTRICAL SERVICE ENTRANCE EQUIPMENT PROVIDED BY OTHERS.
- PROVIDE ALL ELECTRICAL STUB UP IN FUEL TANK OPEN CHASE AREA. SEE GENERATOR SUBMITTAL DWGS. FOR DETAILS.
- PROVIDE AND INSTALL UTILITY VAULT HAND HOLE WITH H20 AND SLIP LID.

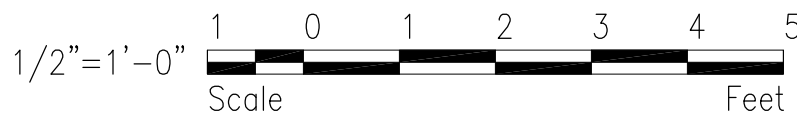
BID SET

JUNE 5, 2024

6692 E11.0 SH #18 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR				APPROVED:	CEC 01/09/24 CHECKED BY DATE FG 01/09/24	 Christine E. Clutter Professional Engineer No. 35276 State of Washington	 CASNE Engineering 3545 FACTORIA BOULEVARD SE, SUITE 200 BELLEVUE, WA 98006 WWW.CASNE.COM JOB NO. 221038-001 (425) 522-1000	 Port of Tacoma P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441
	CONT/CONS: 071252 M. ID: 101610.01 PHASE: BID SET	TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34 DATE-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933 PARCEL: 2275200633	DIRECTOR ENG. DATE PRINTED BY: chose.goodnight Jun 04, 2024 PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421	MARK: . REVISION: . BY: . APPR: . DATE: .					



A SERVICE EQUIPMENT ELEVATION
E11.1 SCALE: 1/2" = 1'-0"



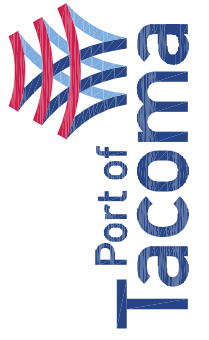
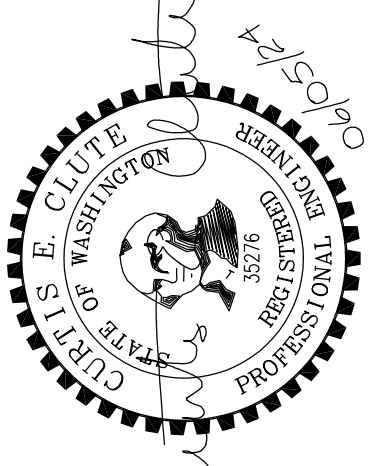
GENERAL NOTES

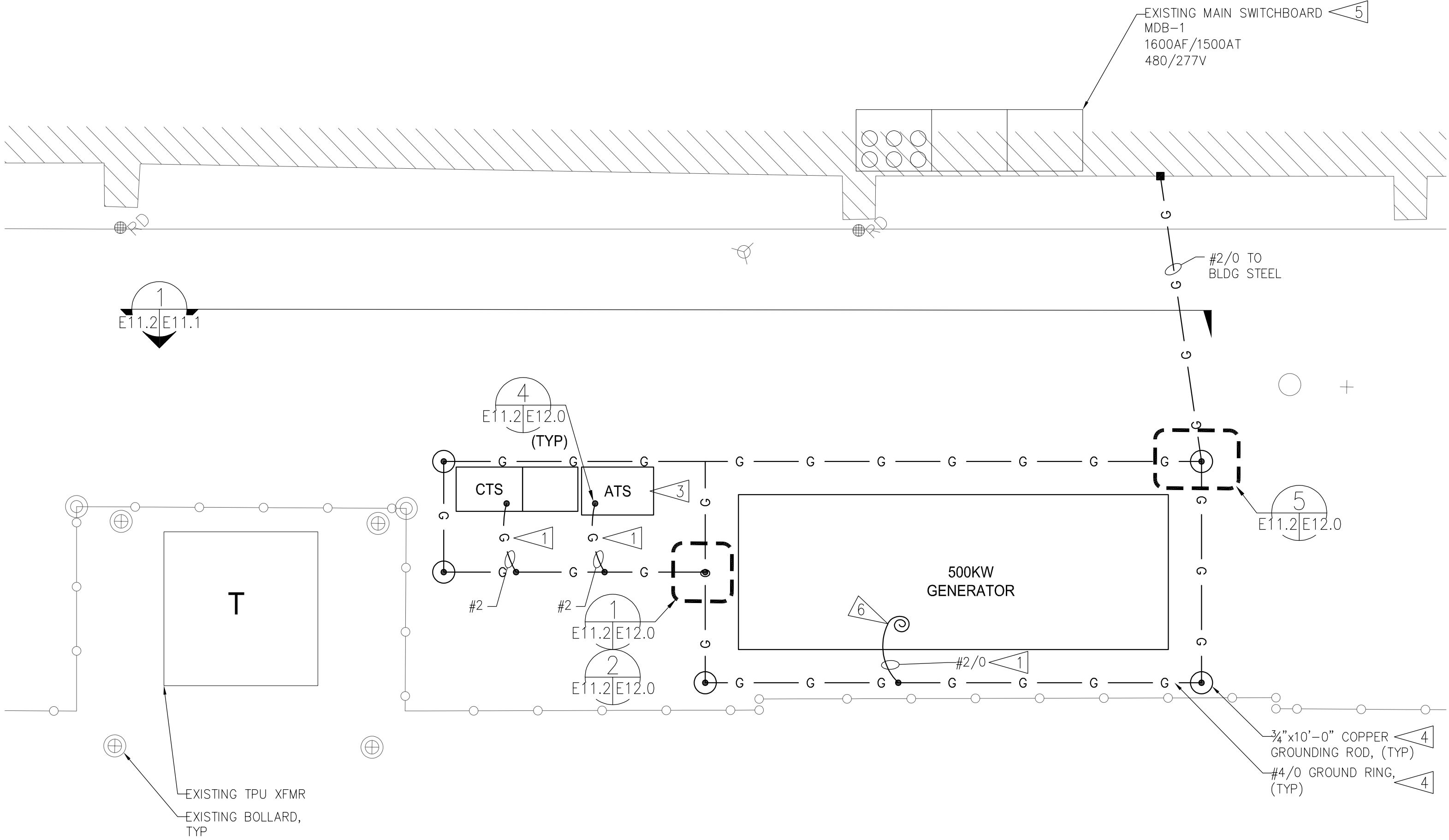
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS AND RELATED WORK AS INDICATED ON THE DRAWINGS.
2. ALL WORK SHALL COMPLY WITH LOCAL ORDINANCES, AND SHALL CONFORM TO THE NEC.
3. ALL WIRE TO BE XHHW-2 UNLESS OTHERWISE SPECIFIED.
4. CONDUIT AND EQUIPMENT SUPPORTS ABOVE GROUND SHALL BE STAINLESS STEEL.
5. TRANSFORMER, UNDERGROUND CONDUIT, AND SERVICE EQUIPMENT SHALL COMPLY WITH TACOMA PUBLIC UTILITIES STANDARDS. THESE STANDARDS CAN BE OBTAINED FROM THE TPU WEBSITE AT WWW.MYTPU.ORG.
6. PRIMARY CIVIL (TRENCH, CONDUIT, AND VAULTS) SYSTEM AND SECONDARIES SHALL BE INSTALLED BY A QUALIFIED, LICENSED ELECTRICAL CONTRACTOR IN THE STATE OF WASHINGTON, UNDER RCE 19.28.

CONSTRUCTION NOTES

1. PROVIDE AND INSTALL CONDUIT, CONDUCTORS, SUPPORTS, AND ANY ANCILLARY HARDWARE.
2. INSTALL 500KW GENERATOR SUPPORTS, PROVIDED BY OTHERS.
3. INSTALL 800A XFMR SWITCH, PROVIDED BY OTHERS. PROVIDE AND INSTALL STAINLESS STEEL CHANNEL RACK FOR MOUNTING.
4. INSTALL SERVICE ENTRANCE EQUIPMENT PROVIDED BY OTHERS.
5. SEE GENERATOR SUBMITTAL DRAWING FOR EXACT CONDUIT STUB UP LOCATIONS.

BID SET
JUNE 5, 2024

6692 E11.1 SH #19 of 22	MAINTENANCE BUILDING BACK-UP GENERATOR SERVICE EQUIPMENT ELEVATION				APPROVED:	CEC 01/09/24 CHECKED BY: FG DATE: 01/09/24
	CONT/CONS: 071252 M. ID: 101610.01 PHASE: BID SET	TOWNSHIP: 21 NORTH RANGE: 3 EAST SECTION: 34 DATE-HRZ: . VERT: MLLW 19.39' @ TIDE 22.1933 PARCEL: 2275200633	DRAWING SCALE: AS NOTED	DIRECTOR ENG. DATE: Hanna.Gil May 30, 2024 PRINTED BY: HANNA.GIL PORT ADDRESS: 802 PORT CENTER RD TACOMA, WA 98421		
 P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441				 3545 FACTORIA BOULEVARD SE, SUITE 200 BELLEVUE, WA 98006 (425) 522-1000 WWW.CASNE.COM JOB NO. 221038-001		
		MARK:	REVISION:	BY:	APPR:	DATE:



GENERAL NOTES

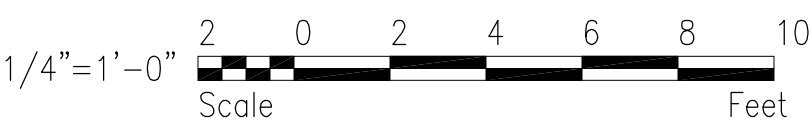
- FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS AND RELATED WORK AS INDICATED ON THE DRAWINGS.
- ALL WORK SHALL COMPLY WITH LOCAL ORDINANCES, AND SHALL CONFORM TO THE NEC.
- ALL WIRE TO BE XHHW-2 UNLESS OTHERWISE SPECIFIED.
- CONDUIT AND EQUIPMENT SUPPORTS ABOVE GROUND SHALL BE STAINLESS STEEL.
- TRANSFORMER, UNDERGROUND CONDUIT, AND SERVICE EQUIPMENT SHALL COMPLY WITH TACOMA PUBLIC UTILITIES STANDARDS. THESE STANDARDS CAN BE OBTAINED FROM THE TPU WEBSITE AT WWW.MYTPU.ORG.
- PRIMARY CIVIL (TRENCH, CONDUIT, AND VAULTS) SYSTEM AND SECONDARIES SHALL BE INSTALLED BY A QUALIFIED, LICENSED ELECTRICAL CONTRACTOR IN THE STATE OF WASHINGTON, UNDER RCE 19.28.

CONSTRUCTION NOTES

- PROVIDE PROVIDE EQUIPMENT GROUND PIGTAILS.
- INSTALL 500KW GENERATOR SUPPORTS, PROVIDED BY OTHERS.
- INSTALL 800A ATS AND SERVICE EQUIPMENT PROVIDED BY OTHERS.
- INSTALL XFMR COUNTERPOISE GROUND RING WITH 3/4"x10' COPPER GROUNDING RODS.
- REMOVE GROUND TO NEUTRAL BONDING JUMPER AT MDB-1 UPON FINAL SYSTEM CUTOVER.
- SEE GENERATOR SUBMITTAL DRAWING FOR EXACT CONDUIT STUB UP LOCATIONS.

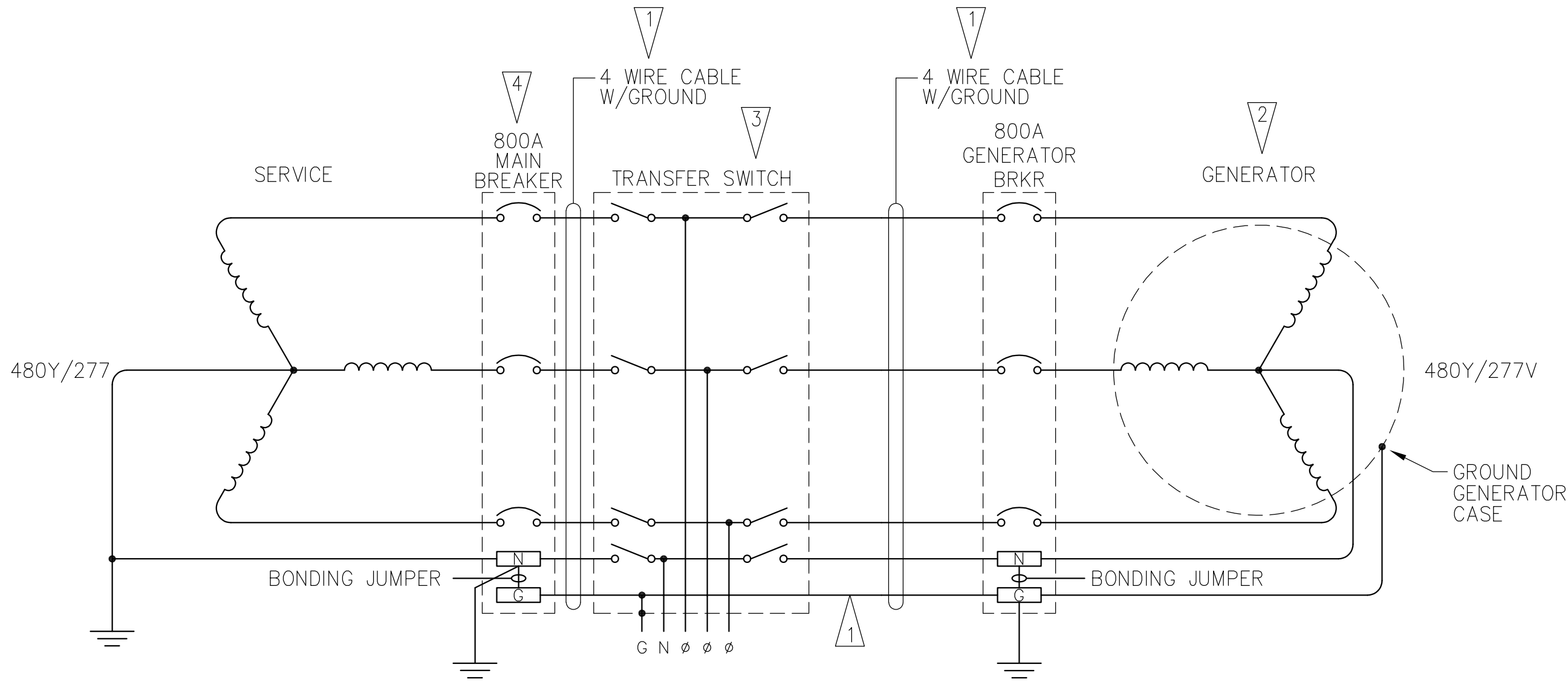
A SERVICE EQUIPMENT - GROUNDING PLAN

E11.0 SCALE: 1/4" = 10'-0"



BID SET
JUNE 5, 2024

6692										E11.2										SH #20 of 22									
MAINTENANCE BUILDING																													
BACK-UP GENERATOR																													
SERVICE EQUIPMENT GROUNDING PLAN																													
CONTR/CONS: 071252										TOWNSHIP: 21 NORTH										RANGE: 3 EAST SECTION: 34									
M. ID: 101610.01										DAT-HRZ: .										VERT: MLLW 19.39' @ TIDE 22.1933									
PHASE: BID SET										PARCEL: 2275200633										DRAWING SCALE: AS NOTED									
APPROVED:										CEC 01/09/24										CHECKED BY DATE									
										FG 01/09/24										PROJ. ENGR DATE									
										DIRECTOR ENG. DATE										PRINTED BY: Hanna Gil May 30, 2024									
										PORT ADDRESS: 802 PORT CENTER RD										TACOMA, WA 98421									
										CASNE Engineering										3545 FACTORIA BOULEVARD SE, SUITE 200 BELLEVUE, WA 98006 WWW.CASNE.COM JOB NO. 221038-001 (425) 522-1000									
MARK:										REVISION:										BY:									
APPR:										DATE:																			
P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441																													
Port of Tacoma																													



GENERATOR/TRANSFER SWITCH CONNECTION DIAGRAM
SCALE: NONE

1
E11.3

GENERAL NOTES

1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND TOOLS FOR COMPLETION OF ALL ELECTRICAL SYSTEMS AND RELATED WORK AS INDICATED ON THE DRAWINGS.
2. ALL WORK SHALL COMPLY WITH LOCAL ORDINANCES, AND SHALL CONFORM TO THE NEC.
3. ALL WIRE TO BE XHHW-2 UNLESS OTHERWISE SPECIFIED.
4. CONDUIT AND EQUIPMENT SUPPORTS ABOVE GROUND SHALL BE STAINLESS STEEL.
5. TRANSFORMER, UNDERGROUND CONDUIT, AND SERVICE EQUIPMENT SHALL COMPLY WITH TACOMA PUBLIC UTILITIES STANDARDS. THESE STANDARDS CAN BE OBTAINED FROM THE TPU WEBSITE AT WWW.MYTPU.ORG.
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CONSTRUCTION NOTES

- 1

PROVIDE AND INSTALL CONDUIT, CONDUCTORS, SUPPORTS, AND ANY ANCILLARY HARDWARE.
- 2

INSTALL 500KW GENERATOR SUPPORTS PROVIDED BY OTHERS.
- 3

INSTALL 800A ATS PROVIDED BY OTHERS.
- 4

INSTALL SERVICE ENTRANCE EQUIPMENT PROVIDED BY OTHERS.

6692

E11.3
SH #21 of 22

CONT/CONS:	071252	TOWNSHIP:	21 NORTH	RANGE:	3 EAST	SECTION:	34
M. ID:	101610.01	DAT-HRZ:	.	VERT:	MLLW 19.39'	@ TIDE	22.1933
PHASE:	BID SET	PARCEL:	2275200633	DRAWING SCALE:	AS NOTED		

MAINTENANCE BUILDING
BACK-UP GENERATOR
GENERATOR WIRING DIAGRAM

APPROVED:

DIRECTOR	ENG.	DATE	CEC	01/09/23
	BY:		CHECKED BY	DATE
	FG	01/09/23	PROJ. ENGR	DATE
PRINTED BY: Hanna Gil			May 30, 2024	
PORT ADDRESS: 802 PORT CENTER RD			TACOMA, WA 98421	

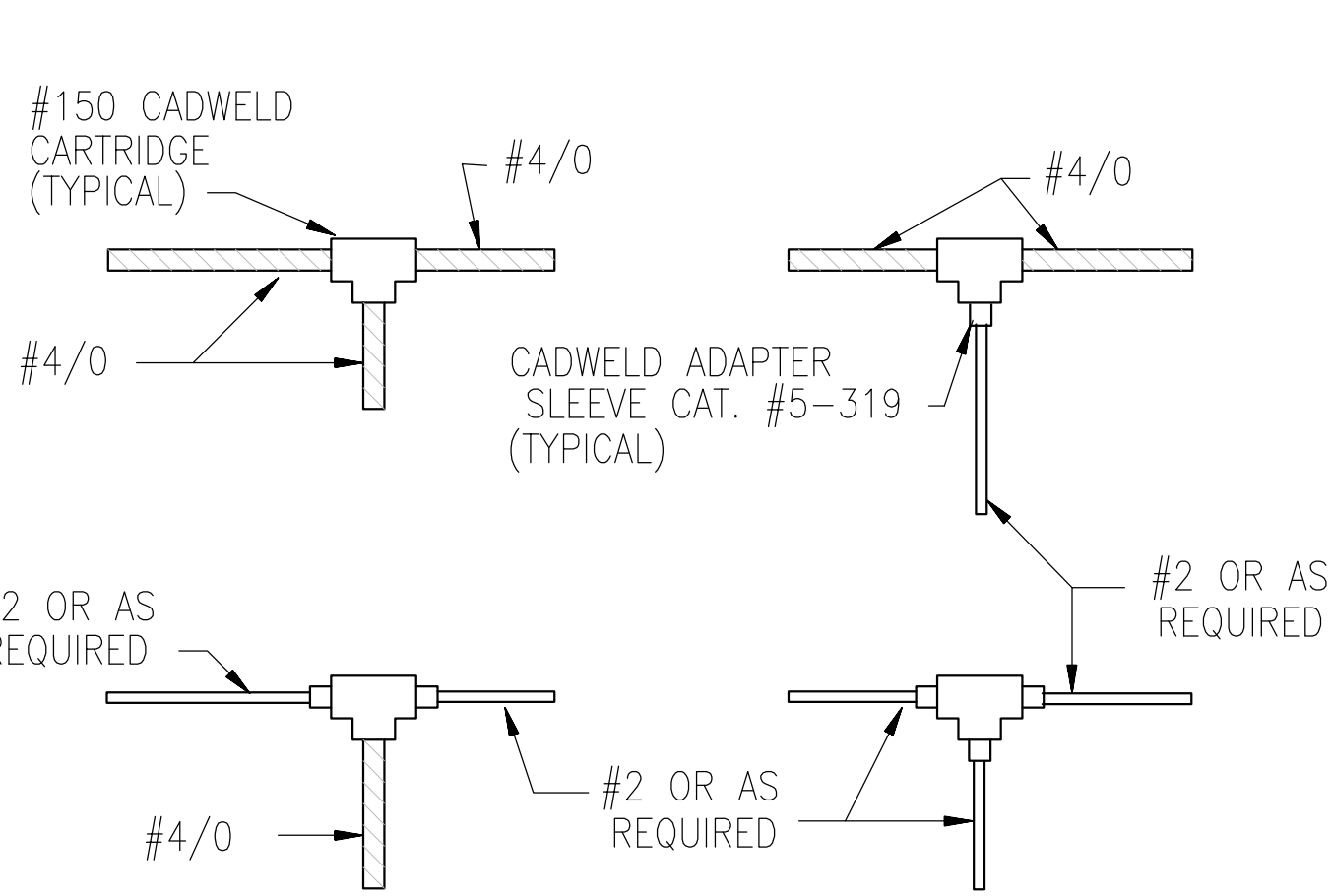


CASNE Engineering
3545 FACTORIA BOULEVARD, SE, SUITE 200
BELLEVUE, WA 98006
(425) 522-1000 WWW.CASNE.COM JOB NO. 221038-001

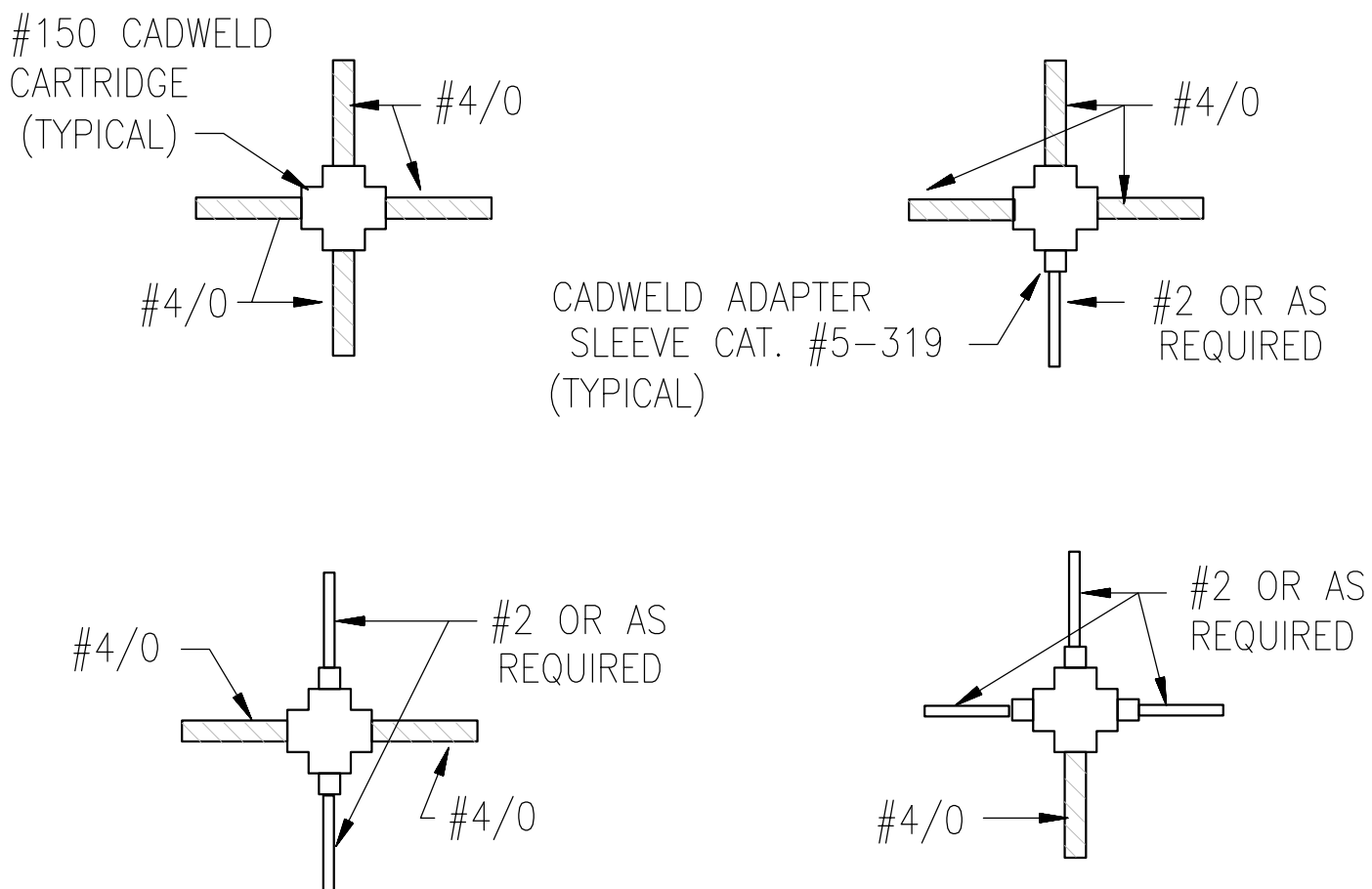
Port of Tacoma
P.O. BOX 1837 TACOMA, WA 98401 (253) 883-5441

MARK:	REVISION:	BY:	APPR:	DATE:

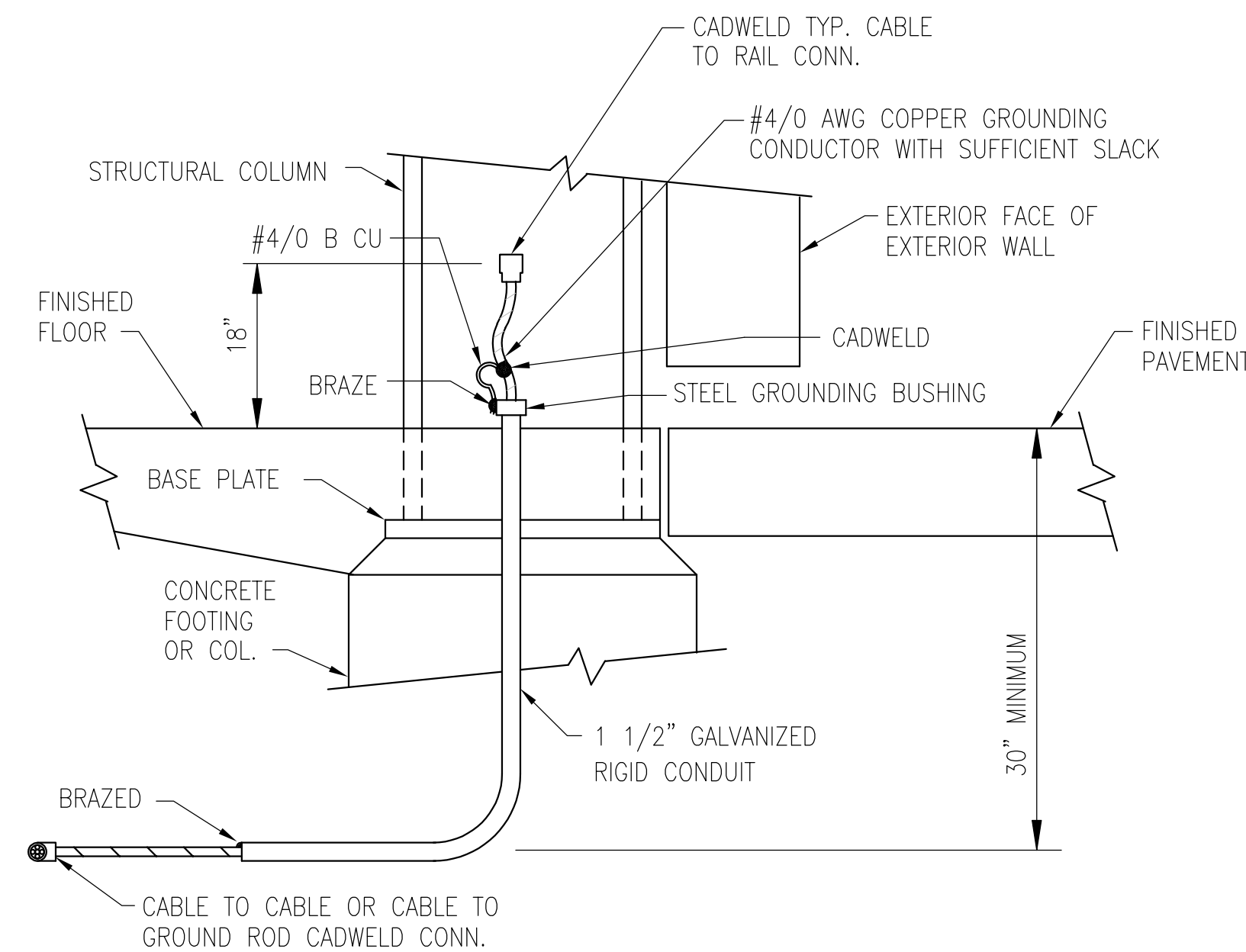
BID SET
JUNE 5, 2024



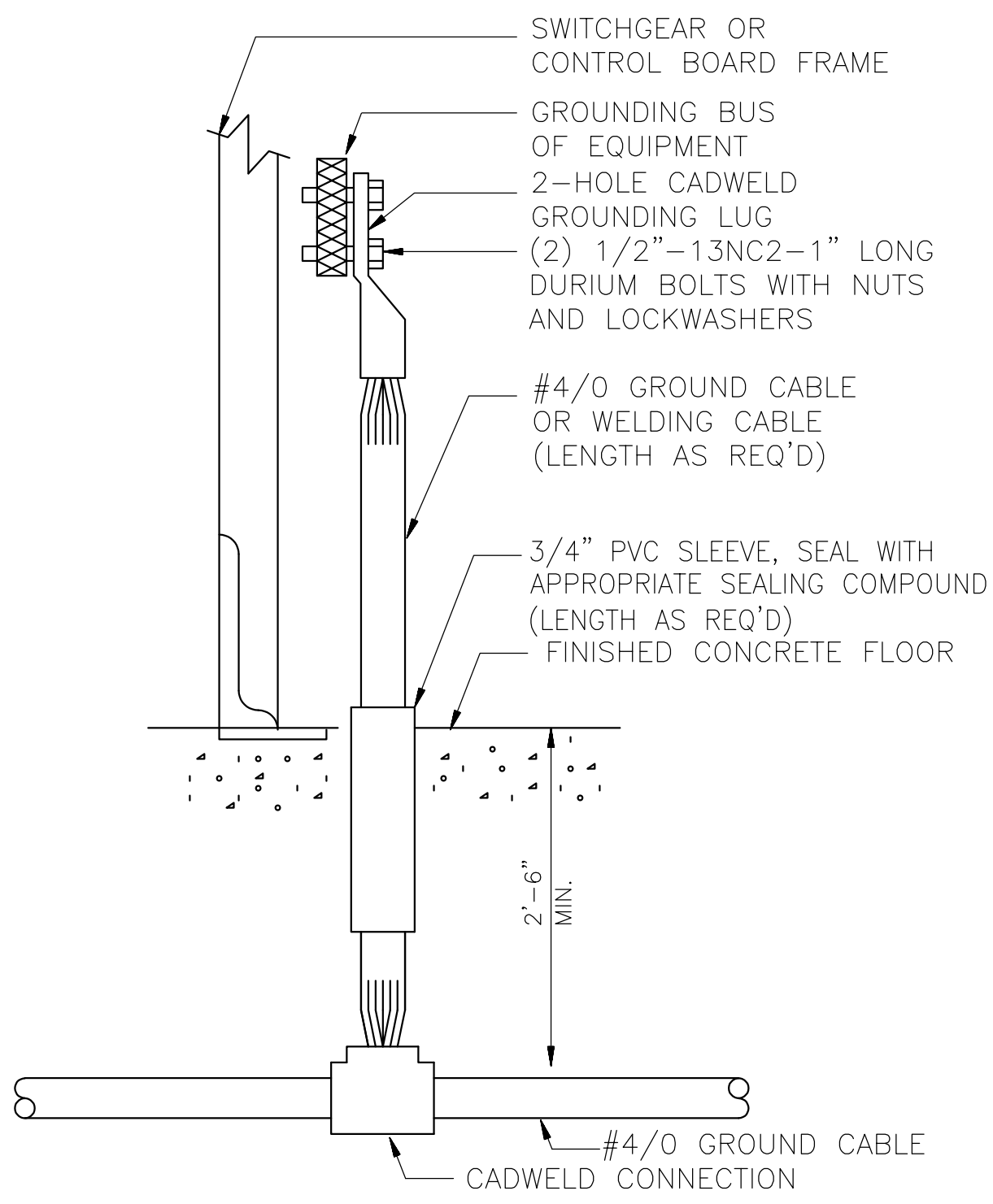
CADWELD CONNECTION TYPE TA
(TEE OF HORIZONTAL RUN TO TAP CABLE)
E11.2 E12.0



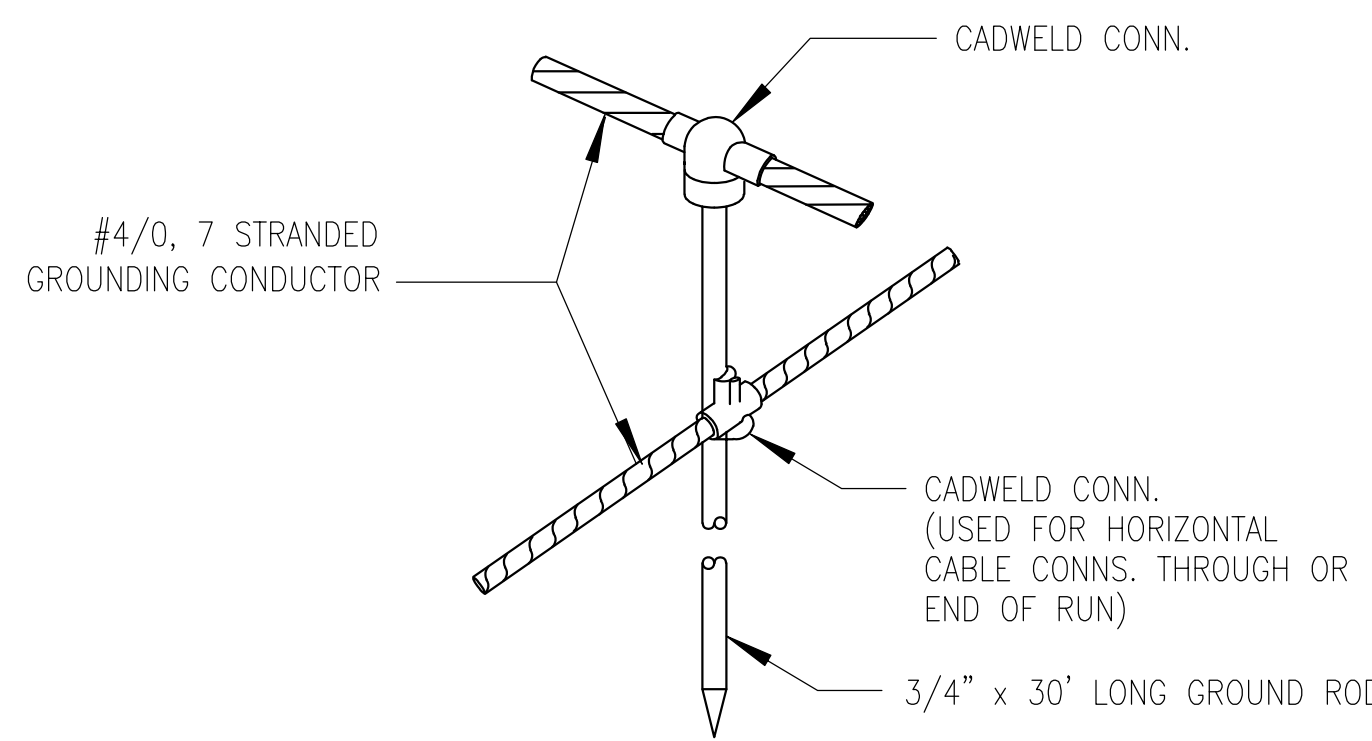
CADWELD CONNECTION TYPE XA
(CROSS OF HORIZONTAL CABLES, TAP CABLE CUT)
E11.2 E12.0



STEEL TO GROUND GRID CONNECTION DETAIL
SCALE: NONE
E11.2 E12.0



SWITCHGEAR OR CONTROL BOARD DIRECT GROUNDING
SCALE: NONE
E11.2 E12.0



CONDUCTOR TO GROUND ROD CONNECTION DETAIL
SCALE: NONE
E11.2 E12.0

LEGEND/SCHEDULE
SEE SHEET E01.0, E01.1.

CONSTRUCTION NOTES
1 PROVIDE GENERATOR AND SERVICE EQUIPMENT GROUNDING.

BID SET
JUNE 5, 2024

6692 E12.0 SH #22 of 22										MAINTENANCE BUILDING BACK-UP GENERATOR GROUNDING DETAILS										APPROVED:		CEC 01/09/23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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