CITY OF MERCER ISLAND

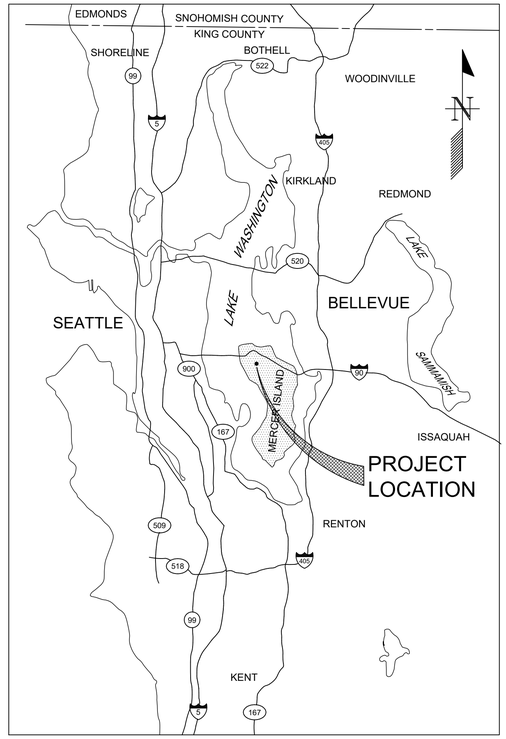
FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

7401 SE 32ND STREET

CONTRACT NO. 25-55

CITY CONTACT

CHRISTOPHER MARKS, PE
CITY OF MERCER ISLAND
UTILITIES ENGINEER
9601 SE 36TH ST
MERCER ISLAND, WA 98040
chris.marks@mercerisland.gov
CELL: 206-677-1027



REGIONAL MAP

DAVID EVANS AND ASSOCIATES INC.
14432 SE EASTGATE WAY
BELLEVUE, WA 98007
Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

COVER, REGIONAL MAP, CITY CONTACT

DATE: --/--/-- BY CK

REVISION BY: ---- DATE REVISION

NO.

FINAL FOR BID

RODNEY C. LANGER JR. STATE OF WASHINGTON 30046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. **1 0F 27**

G1

Plot Date: 12/16/2025 2:40 PM
Save Date: 12/16/2025 2:40 PM
By: Rachel Sadatian
By: Rads
File: P:\M\MRCR0000\2005\0400CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE RULES AND REGULATIONS OF THE CITY OF MERCER ISLAND CONSTRUCTION STANDARDS AND SPECIFICATIONS. IN THE EVENT THAT THERE IS A CONFLICT BETWEEN THE VARIOUS REFERENCED STANDARDS AND/OR THE PLANS, THE MORE RESTRICTIVE SHALL APPLY, AS DETERMINED BY THE OWNER. A COPY OF THESE DOCUMENTS SHALL BE ON SITE DURING CONSTRUCTION.

2. ALL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF THE CITY OF MERCER ISLAND AND OTHER PROJECT PERMIT REQUIREMENTS AS APPLICABLE. A COPY OF THE APPROVED PLANS MUST BE ON SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

3. THE OWNER SHALL BE NOTIFIED AND A PRECONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL TESTING AND CONSTRUCTION SHALL BE INSPECTED BY THE OWNER. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF 24 HOURS NOTICE PRIOR TO REQUIRED PERFORMANCE TESTING OR COVERING OF BURIED UTILITIES OR STATION APPURTENANCES. CONSTRUCTION HOURS ARE FROM 7AM TO 7PM WEEKDAYS AND 8AM TO 7PM WEEKENDS OR FEDERAL, STATE AND CITY HOLIDAYS. WORK REQUIRING INSPECTION BY THE CITY MUST BE PERFORMED BETWEEN 7AM AND 3:30 PM WEEKDAYS.

4. LOCATIONS SHOWN FOR EXISTING UTILITIES ARE APPROXIMATE. IDENTIFICATION, LOCATION, MARKING, AND RESPONSIBILITY FOR UNDERGROUND FACILITIES OR UTILITIES IS GOVERNED BY THE PROVISIONS OF CHAPTER 19.122, REVISED CODE OF WASHINGTON. CALL 811 OR 1-800-424-5555 TWO BUSINESS DAYS BEFORE DIGGING.

5. ALL EQUIPMENT AND MATERIAL WHICH IS NOTED AS "TO BE REMOVED" SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR, UNLESS SUCH EQUIPMENT OR MATERIAL IS NOTED AS "TO BE SALVAGED" OR "RELOCATED" (OR SIMILAR WORDING). SALVAGED AND RELOCATED ITEMS SHALL BE CLEANED AND DELIVERED TO THE OWNER OR RE-USED AS DIRECTED.

6. IN GENERAL, EXISTING STRUCTURES AND FACILITIES ARE NOTED AS "EXISTING" AND ARE SHOWN LIGHT IN LINE WEIGHTS OR AS A SCREENED BACKGROUND. NEW OR RELOCATED CONSTRUCTION, STRUCTURES, FACILITIES AND FEATURES ARE SHOWN IN HEAVIER LINE WEIGHTS.

7. ALL DIMENSIONS SHOWN ON THE CONTRACT DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS REFER TO THE HORIZONTAL AND VERTICAL PROJECTED PLANES, UNLESS OTHERWISE INDICATED.

8. WHERE OWNER'S STANDARD DETAILS ARE AVAILABLE OR REFERENCED IN PLAN DOCUMENTS, SUCH DETAILS ARE APPLICABLE REGARDLESS IF CALLED OUT OR NOT, UNLESS NOTED OTHERWISE.

9. ALL TREES, HEDGES, SHRUBS, AND OTHER VEGETATION SHOWN ON THE PLANS ARE EXISTING AND SHALL REMAIN UNLESS OTHERWISE NOTED. NO TREES SHALL BE REMOVED FROM PUBLIC RIGHT-OF-WAY OR ADJACENT PROPERTY WITHOUT APPROVAL FROM THE CITY. CARE SHALL BE TAKEN TO AVOID ROOT DAMAGE TO EXISTING TREES NOT TO BE REMOVED.

10. INSTALL AND MAINTAIN TEMPORARY FENCING AND OTHER MEASURES AS NECESSARY TO PREVENT THE GENERAL PUBLIC FROM ENTERING AND/OR PARKING ON PRIVATE PROPERTY. FENCING AND OTHER MEASURES SHALL ALSO PREVENT ACCESS TO THE TEMPORARY POWER EQUIPMENT AND CONDUCTORS. PROVIDE UNRESTRICTED ACCESS FOR THE CITY TO THE TWO EXISTING VAULT HATCHES AT ALL TIMES.

11. ENSURE WATER SERVICE IS NOT INTERRUPTED IN THE WATER SYSTEM. INTERRUPTION OF PRIMARY AND/OR STANDBY POWER TO THE PUMP STATION WILL REQUIRE INSTALLATION AND MAINTENANCE OF TEMPORARY EQUIPMENT AND APPURTENANCES. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO MAINTAIN PRIMARY AND BACKUP POWER SUPPLY AND WATER SERVICE AT ALL TIMES AT PRESSURES APPROXIMATELY EQUAL TO EXISTING PRESSURES. SEE TEMPORARY POWER SERVICE PLAN, SHEET E8, AND ELECTRICAL SPECIFICATIONS SECTION 16010 FOR ADDITIONAL REQUIREMENTS.

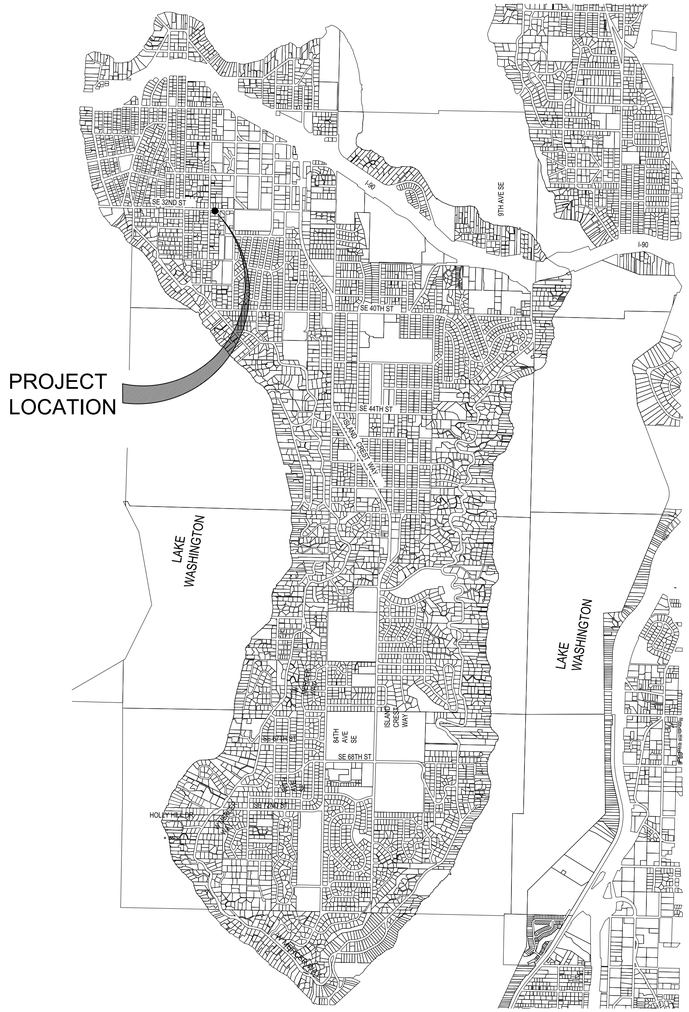
12. PROVIDE AND MAINTAIN TEMPORARY SEDIMENTATION COLLECTION FACILITIES TO INSURE SEDIMENT LADEN WATERS DO NOT ENTER THE NATURAL AND/OR EXISTING DRAINAGE SYSTEM OR ADJACENT WATER BODIES. ALL DISTURBED EARTHEN AREAS, SHALL BE SEEDED WITH A PERENNIAL GROUND COVER OR COVERED WITH MULCH TO MINIMIZE EROSION. GRASS SEEDING WILL BE DONE USING AN APPROVED HYDRO-SEEDER OR OTHER APPROVED METHOD. ALL EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH CITY STANDARDS AND TEMPORARY EROSION/SEDIMENTATION CONTROL NOTES HEREIN.

13. CAUTION -- EXTREME HAZARD -- OVERHEAD ELECTRICAL SERVICE LINES ARE GENERALLY NOT SHOWN ON THE DRAWINGS. ELECTRICAL LINES SHOWN ON THE DRAWINGS ARE LOCATED BY POINT-TO-POINT, POWER-POLE-TO-POWER-POLE CONNECTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXTENT OF ANY HAZARD CREATED BY OVERHEAD ELECTRICAL POWER OR CONFLICT OR CONSTRUCTION CHALLENGE CREATED BY OTHER OVERHEAD UTILITIES IN ALL AREAS AND SHALL FOLLOW PROCEDURES DURING CONSTRUCTION AS REQUIRED BY LAW AND REGULATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH UTILITY OWNERS AND DETERMINE THE EXTENT OF HAZARD AND REMEDIAL MEASURES AND SHALL TAKE WHATEVER PRECAUTIONS MAY BE REQUIRED.

14. DOCUMENT ALL VARIATIONS FROM THE PLANS AND PROVIDE THAT INFORMATION TO THE ENGINEER FOR PREPARATION OF RECORD DRAWINGS.

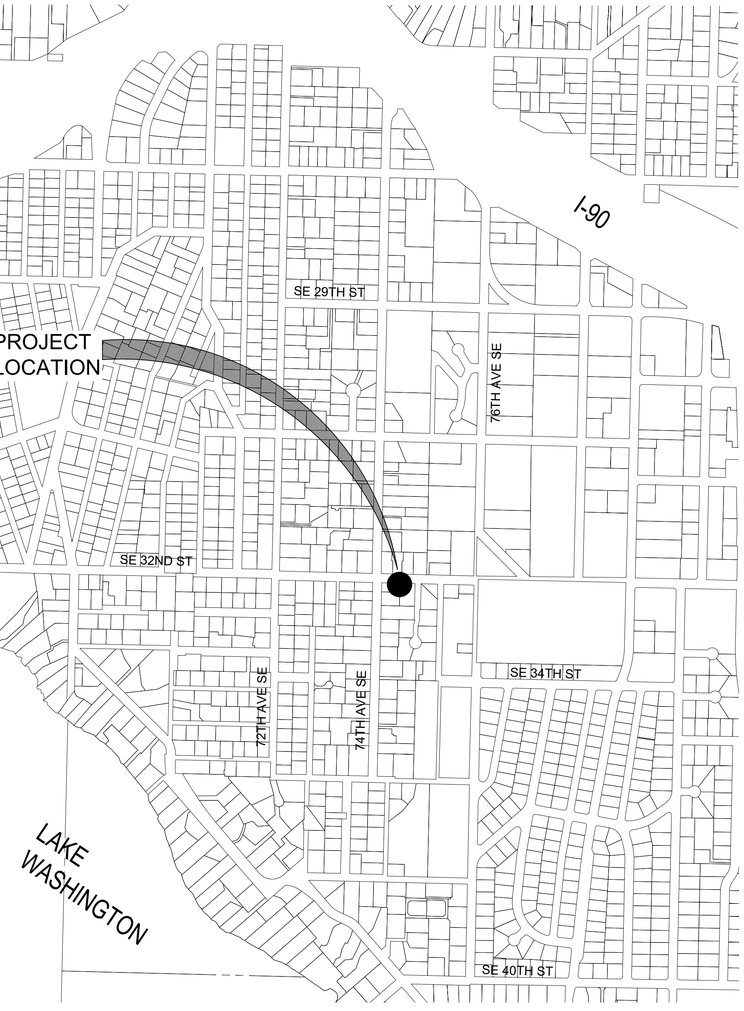
15. SECURE ALL LOADS PER RCW 46.61.655.

16. ALL MATERIALS TO BE INCORPORATED IN THE WORK SHALL BE AVAILABLE FOR INSPECTION ON SITE (OR AT AN OTHERWISE AGREED LOCATION) BY THE CITY A MINIMUM OF TWO BUSINESS DAYS PRIOR TO USE OR INSTALLATION OF SUCH MATERIALS.



MERCER ISLAND MAP

2000 1000 0 2000 4000
SCALE IN FEET



LOCATION MAP

500 250 0 500 1000
SCALE IN FEET

SHEET INDEX

G1	COVER - COVER, REGIONAL, MAP, AND CITY CONTACT	M1	VAULT DEMOLITION PLAN	E1	ELECTRICAL SITE PLAN, ELECTRICAL LEGEND AND ABBREVIATIONS
G2	GENERAL NOTES, LOCATION MAPS, AND SHEET INDEX	M2	MECHANICAL VAULT FLOOR PLAN AND DETAILS	E2	VAULT ELECTRICAL DEMOLITION PLAN
G3	WATER NOTES	M3	VAULT SECTION AND MECHANICAL DETAILS	E3	ELECTRICAL DEMOLITION PHOTOS
G4	LEGENDS, ABBREVIATIONS, PLAN SYMBOLS AND CALLOUTS	S1	STRUCTURAL GENERAL NOTES	E4	VAULT ELECTRICAL EQUIPMENT FLOOR PLAN
C1	SITE EXISTING CONDITIONS	S2	STRUCTURAL GENERAL NOTES CONTINUED	E5	ELECTRICAL ONE LINE DIAGRAM AND SCHEDULES
C2	ENLARGED SITE PLAN DEMOLITION	S3	SPECIAL INSPECTIONS AND TESTING	E6	GENERATOR AND FUEL TANK ELEVATIONS
C3	ENLARGED SITE PLAN SITE IMPROVEMENTS	S4	STRUCTURAL GENERAL NOTES CONTINUED	E7	ELECTRICAL EQUIPMENT ENCLOSURE PLAN AND ELEVATIONS
		S5	STRUCTURAL PLANS	E8	TEMPORARY POWER SERVICE PLAN - ONE LINE DIAGRAMS
		S6	BUILDING SECTIONS AND DETAILS	E9	TEMPORARY POWER SERVICE PLAN - VAULT PLAN
		S7	STRUCTURAL DETAILS CONTINUED	E10	TEMPORARY POWER SERVICE PLAN - EX EQUIPMENT PHOTOS

811 Know what's below. Call before you dig.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

GENERAL NOTES, LOCATION MAPS, AND SHEET INDEX

DATE: --/--/-- BY CK

REVISION BY: ---

NO.	DATE	REVISION

FINAL FOR BID

RODNEY C. LANGER STATE OF WASHINGTON 30046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

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PROJECT NO.
MRCR0000-2005

SHEET NO. **2 OF 27**

G2

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadatian
Save Date: 12/16/2025 2:40 PM By: Rads File: P:\MMRCR0000\2005\0400CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg

GENERAL CONSTRUCTION WATER NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF THE PERMITS ISSUED FOR THIS PROJECT.
2. OPERATION OF THE BOOSTER PUMP STATION SHALL BE COORDINATED WITH THE CITY OF MERCER ISLAND. REFER TO SPECIFICATION SECTION 01200.
3. CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT FOR TEMPORARY POWER SUPPLY SYSTEMS TO MAINTAIN CONTINUOUS OPERATION OF THE STATION THROUGHOUT THE CONSTRUCTION CONTRACT. THE STATION IS THE ONLY SOURCE OF POTABLE WATER AND FIRE SUPPRESSION SUPPLY TO A PORTION OF MERCER ISLAND. A SCHEMATIC PLAN AND SEQUENCE FOR POWER SERVICE CONNECTIONS IS INCLUDED ON SHEET E8 AND IN SPECIFICATION SECTION 16010. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SETUP, OPERATION, AND REMOVAL OF THE TEMPORARY POWER SUPPLY SYSTEMS AND THE CITY SHALL BE RESPONSIBLE FOR REGULAR OPERATION OF THE BOOSTER PUMP STATION.
4. CONTRACTOR SHALL PROVIDE AND MAINTAIN ACCESS AT ALL TIMES TO THE BOOSTER PUMP STATION FOR THE CITY, INCLUDING THE EXISTING PERSONNEL ENTRY HATCH AND EXISTING EQUIPMENT ACCESS HATCH.
5. CONTRACTOR SHALL COORDINATE CONSTRUCTION W/ PUGET SOUND ENERGY (PSE) PRIOR TO EXCAVATION NEAR GAS MAINS. THE PSE REPRESENTATIVE SHALL (AT A MINIMUM) BE ONSITE FOR CONSTRUCTION AROUND 4" DIAMETER AND LARGER AND/OR HIGH PRESSURE GAS MAIN. PROVIDE SAND BEDDING PER PSE REQUIREMENTS.
6. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES.

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BELLEVUE, WA 98007
Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

WATER NOTES

DATE: --/--/--
BY CK

REVISION BY: ----
NO. DATE REVISION

FINAL FOR BID

RODNEY C. LANGER JR. STATE OF WASHINGTON 30046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 3 OF 27

G3

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadatian
Save Date: 12/16/2025 2:40 PM By: Rads File: P:\MRCR0000\2005\0400CAD\EC\SHEETS\mrcr000-2005 E1-All A.dwg

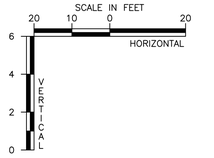
PLAN SYMBOLS AND CALLOUTS

PLAN

PROFILE

VIEW CALLOUT

NORTH ARROW



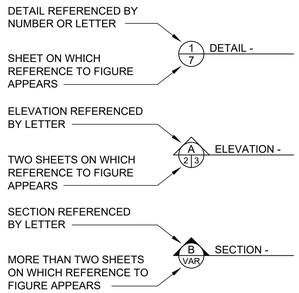
PROFILE GRID SCALE BAR

#

STANDARD CONSTRUCTION OR KEY NOTE BUBBLE

PLAN VIEW SCALE BAR

REFERENCE SYMBOLS



MATCH LINE - SEE SHEET XX

MATCH LINE CONTINUATION

LEGEND

	EXISTING MONUMENT (FOUND AS NOTED)
	EXISTING REBAR & CAP (FOUND AS NOTED)
EM	EXISTING POWER METER
PP	EXISTING POWER POLE
	EXISTING GUY POLE
	EXISTING GUY ANCHOR
	EXISTING TELEPHONE POLE
T	EXISTING TELEPHONE MANHOLE
	EXISTING FIRE HYDRANT
ICV	EXISTING IRRIGATION CONTROL VALVE
WSP	EXISTING WATER STAND PIPE
WM	EXISTING EXISTING WATER METER
WV	EXISTING WATER VALVE
	EXISTING STORM CATCH BASIN
S	EXISTING SANITARY SEWER MANHOLE
	EXISTING POST OR BOLLARD
	EXISTING MAILBOX
	EXISTING SIGN
0123456789	EXISTING TAX LOT / PARCEL NUMBER
	EXISTING DECIDUOUS TREE
	EXISTING CONIFEROUS TREE
	EXISTING DRIP LINE
	EXISTING RIGHT-OF-WAY CENTER LINE
	EXISTING RIGHT-OF-WAY LINE
	PARCEL LINE
	WOOD FENCE LINE (WDF)
G G	NATURAL GAS PIPE
P P	POWER LINE
OP OP	POWER OVERHEAD LINE
OT OT	TELEPHONE OVERHEAD LINE
W W	WATER PIPE
SD SD	STORM DRAIN PIPE
SS SS	SANITARY SEWER PIPE
	MAJOR CONTOUR 5' INTERVAL
	MINOR CONTOUR 1' INTERVAL
	TO BE REMOVED

ABBREVIATIONS

AB	ANCHOR BOLT
ABAND	ABANDONED
AC	ASBESTOS CEMENT, ASPHALTIC CONCRETE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
APPROX	APPROXIMATELY
APWA	AMERICAN PUBLIC WORKS ASSOCIATION
ARV	AIR RELIEF VALVE
ASPH	ASPHALT
ATS	AUTOMATIC TRANSFER SWITCH
AVE	AVENUE
AVG	AVERAGE
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BLDG	BUILDING
BLVD	BOULEVARD
BM	BENCH MARK
BOC	BACK OF CURB
BOW	BACK OF WALK
BOT	BOTTOM
BRG	BEARING
BSBL	BUILDING SETBACK LINE
BTWN	BETWEEN
CB	CATCH BASIN
CC	CENTER TO CENTER
CDF	CONTROLLED DENSITY FILL
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CG	CURB & GUTTER
CI	CAST IRON
CIP	CAST IN PLACE
CJ	CONSTRUCTION JOINT
CLF	CHAIN LINK FENCE
CL, C/L	CENTERLINE
CLR	CLEARANCE, CLEAR
CMP	CORRUGATED METAL PIPE
CMU	CONC MASONRY UNIT
CO	CLEAN OUT
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCT
CONT	CONTINUED/CONTINUOUS
COP	COPPER
CPEP	CORRUGATED POLYETHYLENE PIPE
CSBC	CRUSHED SURFACING BASE COURSE
CSTC	CRUSHED SURFACING TOP COURSE
CU	CUBIC
CULV	CULVERT
CYL	CYLINDER
D	DRAIN
DBL	DOUBLE
DEG	DEGREE
DET	DETAIL
DI	DUCTILE IRON
DIA	DIAMETER
D/L	DAYLIGHT
D/W	DRIVEWAY
DWG	DRAWING
E	EAST
EA	EACH
ECC	EXTRUDED CONCRETE CURB
EL, ELEV	ELEVATION
EO	EDGE OF
EOA	EDGE OF ASPHALT
EOC	EDGE OF CONCRETE
EOD	EDGE OF DIRT
EOG	EDGE OF GRAVEL
EOP	EDGE OF PAVEMENT
EP	EDGE OF ASPHALT PAVEMENT
EQ	EQUAL
EW	EACH WAY
EXC	EXCAVATION
EX	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FCA	FLANGED COUPLING ADAPTER
FF	FAR FACE
FFE	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH, FINISHED
FIXT	FIXTURE
FL	FLANGE, FLOW LINE
FM	FORCE MAIN
FNC	FENCE
FOC	FACE OF CURB
FOW	FACE OF WALL
FRP	FIBERGLASS REINFORCED PLASTIC
FT	FEET/FOOT
FTG	FOOTING
G	GAS LINE
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GM	GAS METER
GPM	GALLONS PER MINUTE
GPS	GLOBAL POSITIONING SYSTEM
GR	GUARD RAIL
GRVL	GRAVEL
GRD	GROUND
GV	GAS VALVE
H	HEIGHT
HB	HOSE BIB
HD	HEAD
HDCP	HANDICAP
HDG	HOT DIPPED GALV
HDPE	HIGH-DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
HP	HORSEPOWER, HIGH POINT
HPG	HIGH PRESSURE GAS
HSE	HOUSE
HT	HEIGHT
HWY	HIGHWAY
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IF	INSIDE FACE
IL	INLET
IN	INCH/INCHES
INV	INVERT
IP	IRON PIPE
IPS	IRON PIPE SIZE
JB	JUNCTION BOX
JT	JOINT
L	LENGTH
LBS	POUNDS
LF	LINEAL FOOT/FEET
LP	LONG PATTERN
M	METER
MAX	MAXIMUM
MB	MAILBOX
MCP	MAIN CONTROL PANEL
MH	MANHOLE
MIC	MONUMENT IN CASE
MIN	MINIMUM, MINUTE
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
ML	MATCH LINE
MON	MONUMENT
MTS	MANUAL TRANSFER SWITCH
N	NORTH
NA	NOT APPLICABLE
NE	NORTHEAST
NF	NEAR FACE
NOM	NOMINAL
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
NO	NUMBER
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OPT	OPTIC
OT	OVERHEAD TELEPHONE
P	POLE, POWER
PA	PLANTED AREA
PAR	PARALLEL
PB	ELEVATED PLANTER BOX
PC	POINT OF CURVE/CURVATURE
PD	PERFORATED DRAIN LINE
PE	PLAIN END
PED	PEDESTRIAN
PERF	PERFORATED
PI	POINT OF INTERSECTION
PL	PLASTIC
PR	PAIR
PROP	PROPERTY
PRV	PRES REDUCING VALVE
PS	PUMP STATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQ. IN.
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
P/C	PRECAST
P/L	PROPERTY LINE
R	RADIUS
RC	REINF CONC
RCP	REINF CONC PIPE
RD	ROAD, ROUND
REF	REFERENCE
REINF	REINFORCED
REQD	REQUIRED
RET	RETAINING
RETW	RETAINING WALL
RFCA	RESTRAINED FLANGED COUPLING ADAPTER
RGS	RIGID GALVANIZED STEEL
RR	RAILROAD
RRC	RR CROSSING
RT	RIGHT
RTU	REMOTE TELEMETRY PANEL
R/W	RIGHT OF WAY
S	SOUTH
SB	SOIL BORING
SC	SECTION CORNER
SCH. SCHED	SCHEDULE
SD	STORM DRAIN
SDCB	STORM DRAIN CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SE	SPOT EL SOUTHEAST
SEC	SECOND
SECT	SECTION
SERV	SERVICE
SHT	SHEET
SIM	SIMILAR
SL	SECTION LINE
SP	STATIC PRESSURE
STLT	STREET LIGHT
S/L	SURVEY LINE
SLJB	STREET LIGHTING JUNCTION BOX
SST	STAINLESS STEEL
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
ST	STREET
STA	STATION
STD	STANDARD
STL	STEEL
S/W	SIDEWALK
SW	SOUTHWEST
SYM	SYMMETRICAL
T	TOP
TB	THRUST BLOCK
T&B	TOP & BOTTOM
TBM	TEMP. BENCHMARK
TELB	BURIED TELEPHONE CABLE
TEL	TELEPHONE
TEMP	TEMPORARY
THD	THREADED
TJB	TELEPHONE JUNCTION BOX
TMH	TELEPHONE MANHOLE
TOC	TOP OF CURB OR CONCRETE
TOW	TOP OF WALL
TRJB	TRAFFIC CONTROL JUNCTION BOX
TV	TELEVISION
TYP	TYPICAL
UTIL	UTILITY
UG	UNDERGROUND
UP	UTILITY POLE
UPA	UTILITY POLE ANCHOR
V	VALVE
VAR	VARIES
VERT	VERTICAL
VLT	VAULT
W	WEST, WATER LINE
W/	WITH
WCR	WHEEL CHAIR RAMP
WM	WATER METER
W/O	WITHOUT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
YD	YARD

SYMBOLS

Ø	PHASE, DIAMETER
&	AND
'	FEET, MINUTES
"	INCHES, SECONDS
°	DEGREE
%	PERCENT

811
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Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

LEGEND, ABBREVIATIONS, PLAN SYMBOLS AND CALLOUTS

NO.	DATE	REVISION	BY	CK

REVISION BY: ---
DATE: --/--/--

FINAL FOR BID

RODNEY C. LANGER
STATE OF WASHINGTON
30046
REGISTERED PROFESSIONAL ENGINEER
12/16/25

CHECKED BY: RL
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DRAWN BY: DJ

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SHEET NO. **4 0F 27**

G4

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By: Rads
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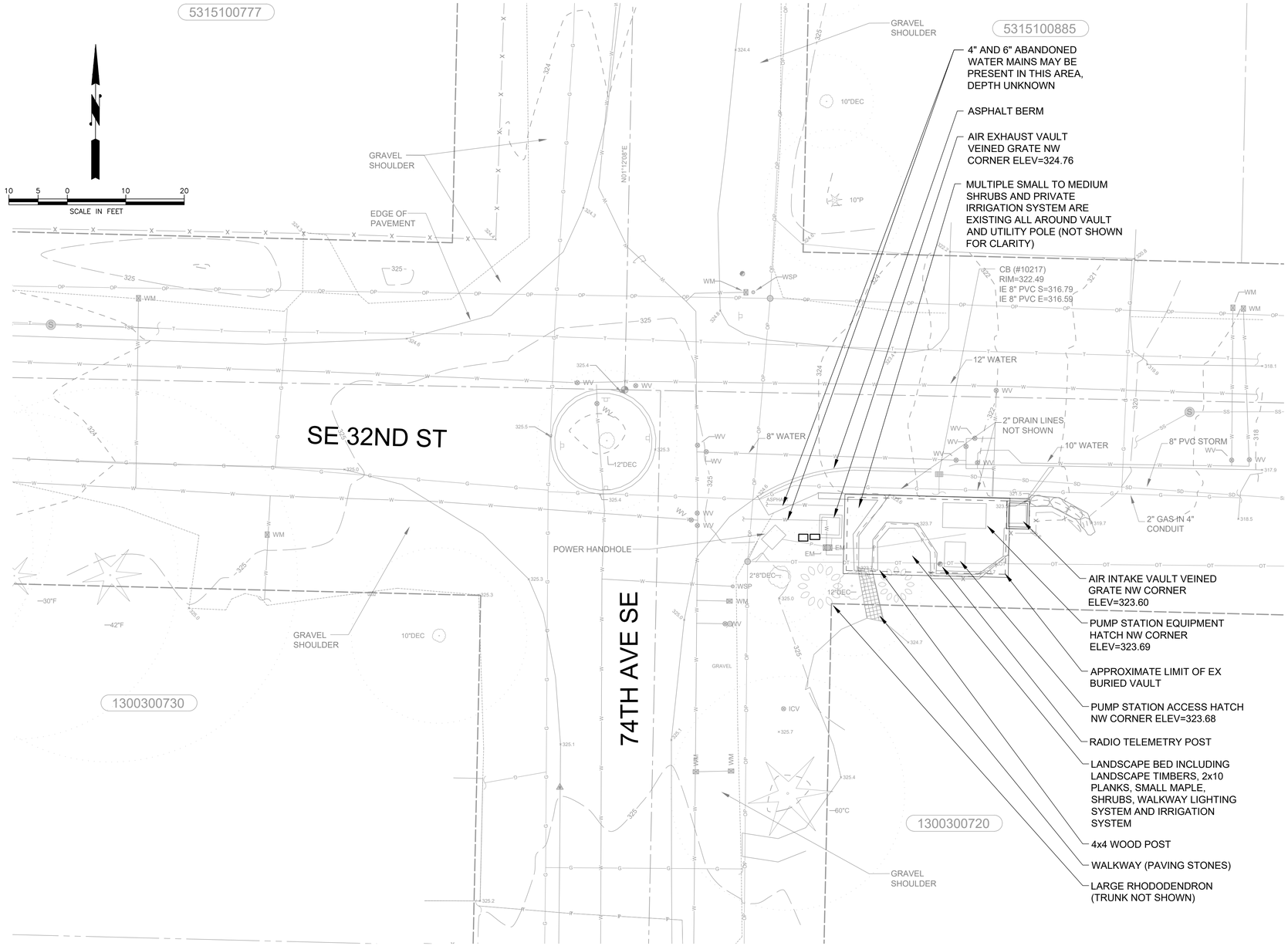
NW & SW 1/4 SEC. 12, TWP 24 N., RNG. 04 E., W.M.



SITE PLAN

SURVEY NOTES

1 THIS SURVEY WAS PERFORMED DURING APRIL, 2022 IN SUPPORT OF CITY OF MERCER ISLAND FIRST HILL PUMP STATION GENERATOR REPLACEMENT PROJECT AND IS INTENDED TO BE USED FOR THIS PURPOSE. SPECIFIC INFORMATION SHOWN HEREON SHOULD BE VERIFIED AS TO ITS ACCURACY IF THIS SURVEY IS TO BE USED FOR PURPOSES OTHER THAN WHAT IT WAS INTENDED FOR.

2 FIELD MEASUREMENTS FOR THIS SURVEY WERE PERFORMED USING TRIMBLE R12i GPS RECEIVER AND A TRIMBLE S7 TOTAL STATION. THIS SURVEY COMPLIES WITH THE MINIMUM REQUIRED "ERROR OF CLOSURE" OF 1:10,000 FOR WASHINGTON STATE PLANE COORDINATES AS SET FORTH PER W.A.C. 332-130-090 (AND POSITIONAL TOLERANCE LEVELS OF LESS THAN 0.011 METERS).

3 HORIZONTAL DATUM: WASHINGTON COORDINATE SYSTEM, NORTH ZONE, NAD83-91 PER THE WGS WAREHOUSE LEGACY DATABASE, POINT DESIGNATION NO. 6457 & 6473.

4 BASIS OF BEARING: HELD A BEARING OF NORTH 88°51'15" WEST ALONG THE MONUMENTED CENTERLINE OF SE 32ND ST FROM THE FOUND MONUMENTS AT 72ND & 74TH AVE SE.

5 VERTICAL DATUM: NAVD 88 PER THE WGS WAREHOUSE LEGACY DATABASE, POINT DESIGNATION NO. 6457 (ELEV=324.56')

6 CONTOUR INTERVAL: 1 FOOT

7 PROPERTY LINES SHOWN HEREON ARE BASED ON READILY AVAILABLE PLATS, SURVEYS, RIGHT OF WAY PLANS, KING COUNTY ASSESSOR INFORMATION AND GIS DATA.

8 ALL SURVEY MONUMENTS AND OTHER SURVEY MARKERS SHOWN HEREON WERE VISITED DURING APRIL, 2022 UNLESS OTHERWISE INDICATED.

9 THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT, ACCORDINGLY, ANY EASEMENTS OR RESTRICTIONS OF RECORD WHICH MAY BE REVEALED IN A TITLE REPORT HAVE NOT BEEN INCLUDED HEREON.

10 UNDERGROUND UTILITIES SHOWN REPRESENT FIELD SURVEYED PAINT MARKS AS PLACED ON THE GROUND BY A UTILITY LOCATE SERVICE TOGETHER WITH AVAILABLE UTILITY AS-BUILT AND REFERENCE DRAWINGS. NO GUARANTEE IS MADE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED OR THAT THE UNDERGROUND UTILITIES ARE SHOWN IN THEIR EXACT LOCATION. THE UTILITIES ARE SHOWN AS ACCURATELY AS POSSIBLE FROM AVAILABLE INFORMATION.

11 SUBSURFACE CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS PART OF THIS SURVEY.

12 **1-800-424-5555** MUST BE CALLED NOT LESS THAN 48 HOURS BEFORE BEGINNING EXCAVATION WHERE ANY UNDERGROUND UTILITIES MAY BE LOCATED. FAILURE TO DO SO COULD MEAN BEARING SUBSTANTIAL REPAIR COSTS. (UP TO THREE TIMES THE COST OF REPAIRS TO THE SERVICE).

13 ALL FEATURES INDICATED ON THIS SHEET ARE EXISTING

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Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

SITE EXISTING CONDITIONS

NO.	DATE	REVISION	BY	CK
REVISION BY: ----			DATE: --/--/--	

FINAL FOR BID

ORIGINAL SURVEY DRAWING ON FILE AT DAVID EVANS AND ASSOCIATES, INC., INCLUDED HERE FOR REFERENCE

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. **5 0F 27**

C1

Plot Date: 12/16/2025 2:41 PM
Save Date: 12/16/2025 2:40 PM
By: Rachel Sadatian
By: Rads
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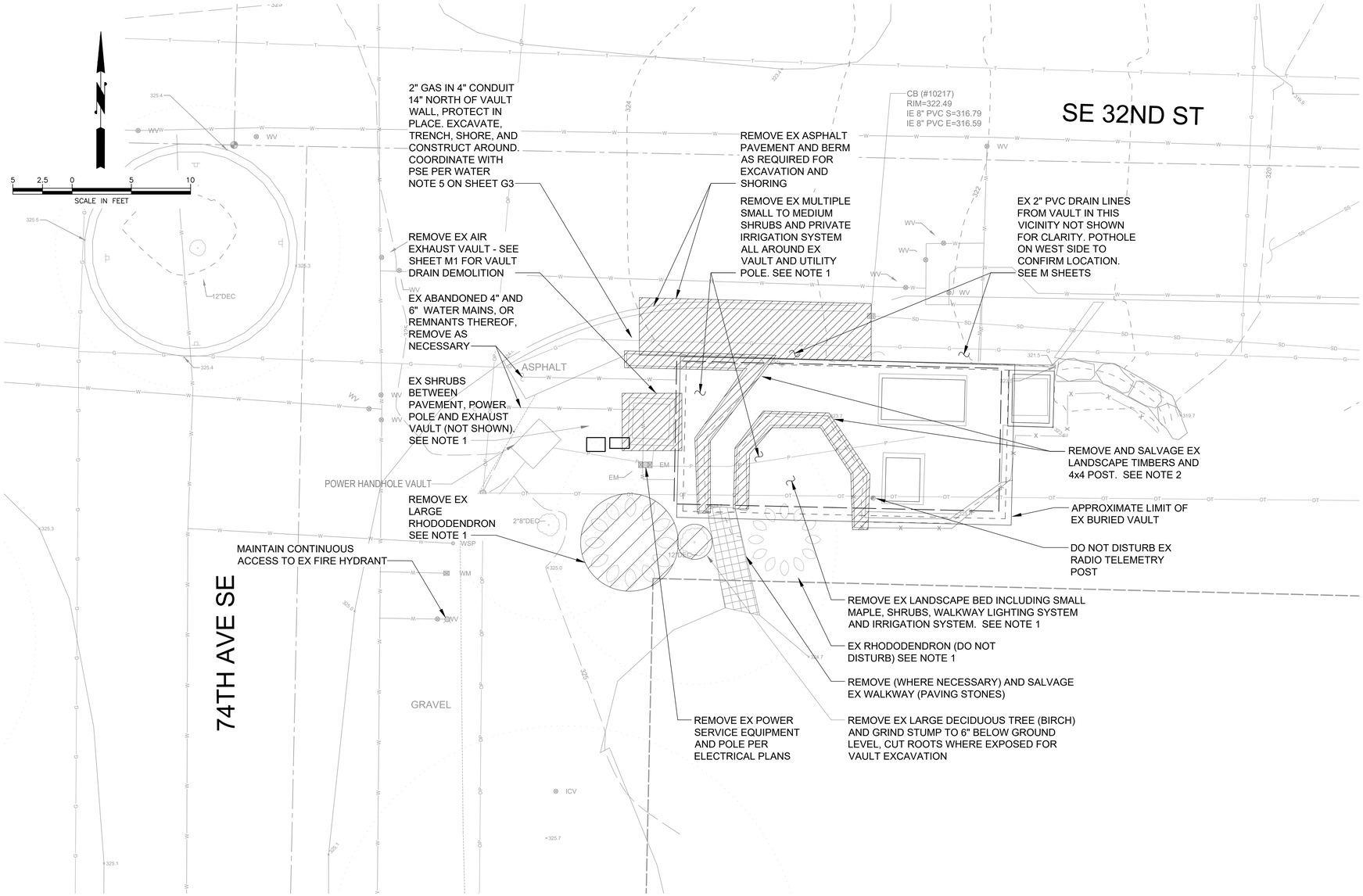
811 Know what's below. Call before you dig.

NW & SW 1/4 SEC. 12, TWP 24 N., RNG. 04 E., W.M.



SITE PLAN

CONSTRUCTION NOTES:

1. ADJACENT PROPERTY OWNER WILL REMOVE LANDSCAPE PLANTS FROM PLANTER BOXES AND ADJACENT AREAS AND MAINTAIN AND REPLANT FOLLOWING CONSTRUCTION, BUT ONLY THOSE PLANTS THAT ARE GROUND COVER OR SHRUBS UP TO 30" TALL. CONTRACTOR SHALL PROVIDE LABOR AND EQUIPMENT TO REMOVE LARGE RHODODENDRON (ADJACENT TO EX BIRCH TO BE REMOVED), THE JAPANESE MAPLE IN THE EASTERN PLANTER BOX, THE CAMELLIA NORTH OF THE BIRCH AND THE SHRUBS OVER 30" TALL BETWEEN THE STATION AND ADJACENT ROADWAY INTERSECTION. SUCH REMOVAL SHALL BE IN COORDINATION WITH THE ADJACENT PROPERTY OWNER. PROPERTY OWNER WILL DESIGNATE A LOCATION FOR REPLANTING, BY THE CONTRACTOR, OF THE LARGE RHODODENDRON IN THE IMMEDIATE PROJECT VICINITY. THE LARGE RHODODENDRON IMMEDIATELY SOUTH OF THE VAULT SHALL BE PROTECTED IN PLACE. THE EXISTING LIGHTING SYSTEM SHALL BE REMOVED AND REINSTALLED FOLLOWING CONSTRUCTION. THE EXISTING IRRIGATION SYSTEM SHALL BE REMOVED TO THE EDGE OF THE CONSTRUCTION AREA AND SALVAGED, AND THE SUPPLY LINES CAPPED, AND THE SYSTEM REINSTALLED FOLLOWING CONSTRUCTION.
2. REMOVE AND SALVAGE EXISTING LANDSCAPE TIMBERS, PLANKS AND MOUNTING HARDWARE. SALVAGE MATERIALS SUITABLE FOR REINSTALLATION, SUBJECT TO APPROVAL BY OWNER. CONTRACTOR SHALL ANTICIPATE REQUIREMENT TO REPLACE 50% OF THE LARGE LANDSCAPE TIMBERS AND ANCHORING HARDWARE, AND ALL OF THE PLANKS AND MOUNTING HARDWARE. REMOVE AND SALVAGE EX 4x4 POST AND APPURTENANCES AT SOUTHWEST EDGE OF LARGE PLANTER AREA.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

ENLARGED SITE PLAN DEMOLITION

NO.	DATE	REVISION BY: ----	DATE: --/--/--	BY CK
1				

FINAL FOR BID

RODNEY C. LANDER JR. STATE OF WASHINGTON 30046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. **6 0F 27**

C2

Plot Date: 12/16/2025 2:41 PM
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By: Rachel Sadatian
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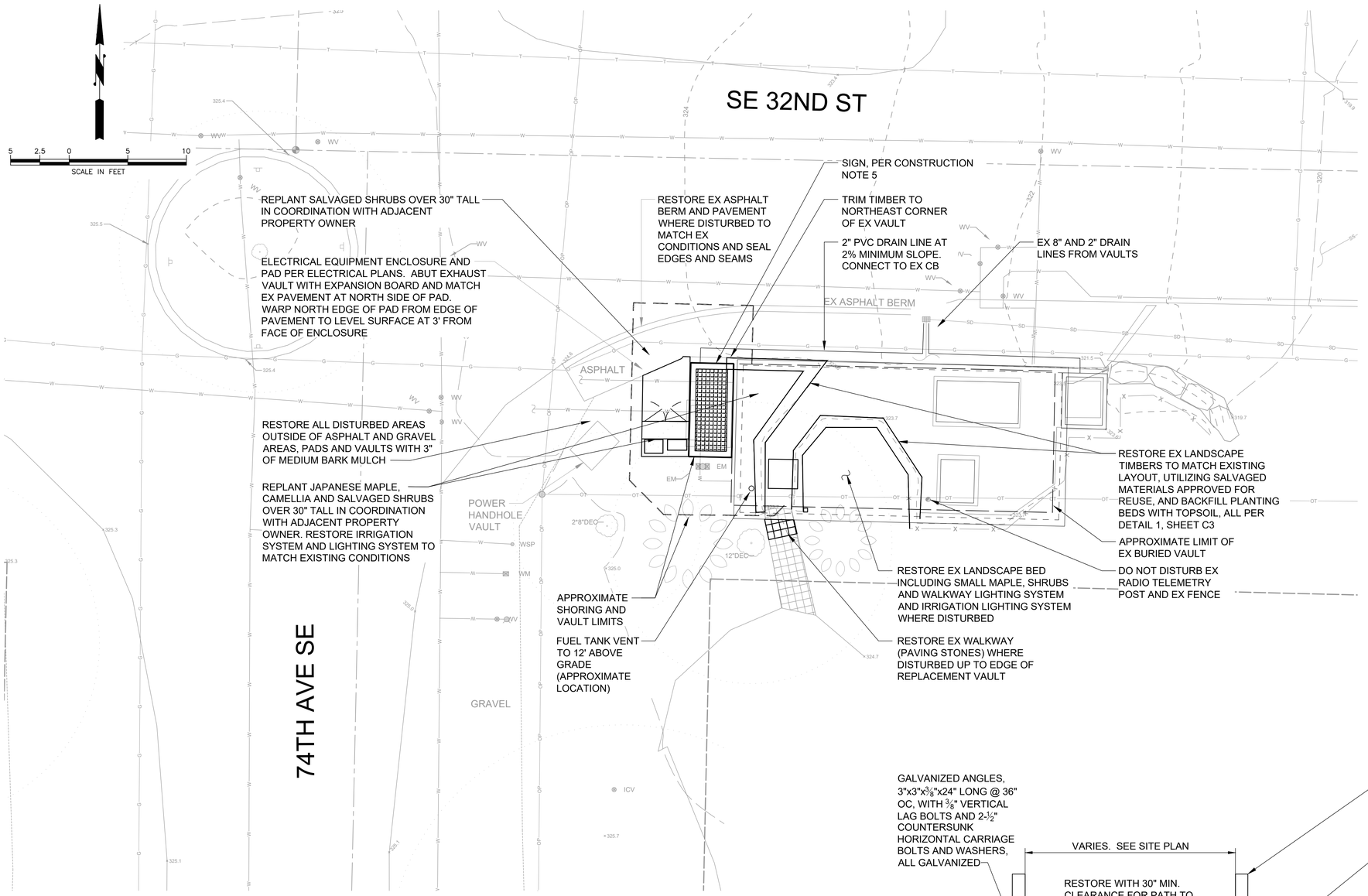
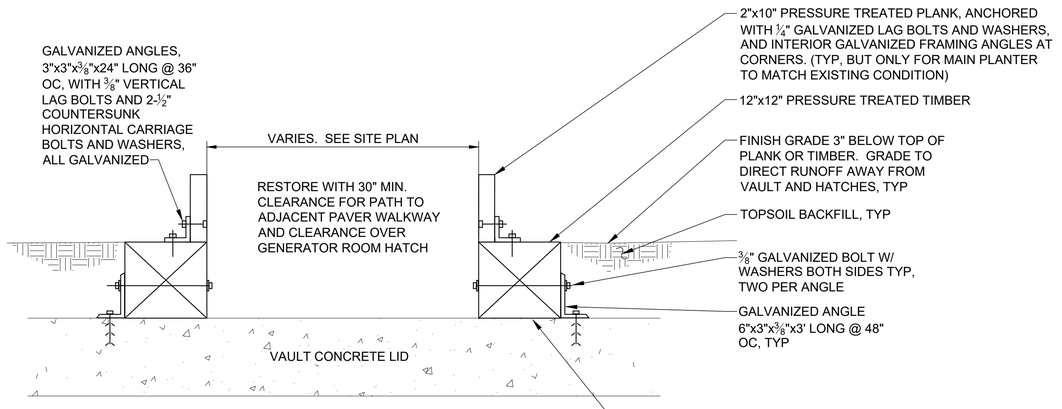


SITE PLAN

CONSTRUCTION NOTES:

1. ELECTRICAL SITE PLAN WORK NOT SHOWN FOR CLARITY. SEE ELECTRICAL PLANS FOR ELECTRICAL WORK INCLUDING TEMPORARY POWER SUPPLY PLAN AND REQUIREMENTS.
2. GENERATOR ROOM DRAIN PIPING NOT SHOWN FOR CLARITY. SEE FLOOR PLAN SHEETS.
3. EXISTING GRAVEL SHOULDERS IN IMMEDIATE VICINITY OF STATION MAY BE USED FOR PLACEMENT OF TEMPORARY POWER SUPPLY SYSTEM AND FOR PARKING OF CONSTRUCTION VEHICLES AND EQUIPMENT. ALL RESIDENTIAL DRIVEWAYS AND MAILBOXES SHALL REMAIN ACCESSIBLE.
4. RESTORE GRAVEL SHOULDER AREAS DISTURBED DURING CONSTRUCTION OR USED FOR PARKING, TEMPORARY EQUIPMENT OR STAGING WITH MINIMUM OF 2" LAYER OF COMPACTED CSTC.
5. ALUMINUM SIGN, MIN. DIMENSIONS 11"x17", ANCHORED IN CONCRETE WITH FOUR HAMMER DRIVE ANCHORS ON VAULT RISER, RED LETTERS ON WHITE BACKGROUND TO READ: GRATING AND VAULT NOT RATED FOR VEHICLE LOADING.



1 / C3 DETAIL - PLANTER RESTORATION

NTS

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CITY OF MERCER ISLAND

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

ENLARGED SITE PLAN SITE IMPROVEMENTS

NO.	DATE	REVISION	BY	CK

REVISION BY: ---- DATE: --/--/--

FINAL FOR BID

RODNEY C. LANGER JR. STATE OF WASHINGTON 50046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

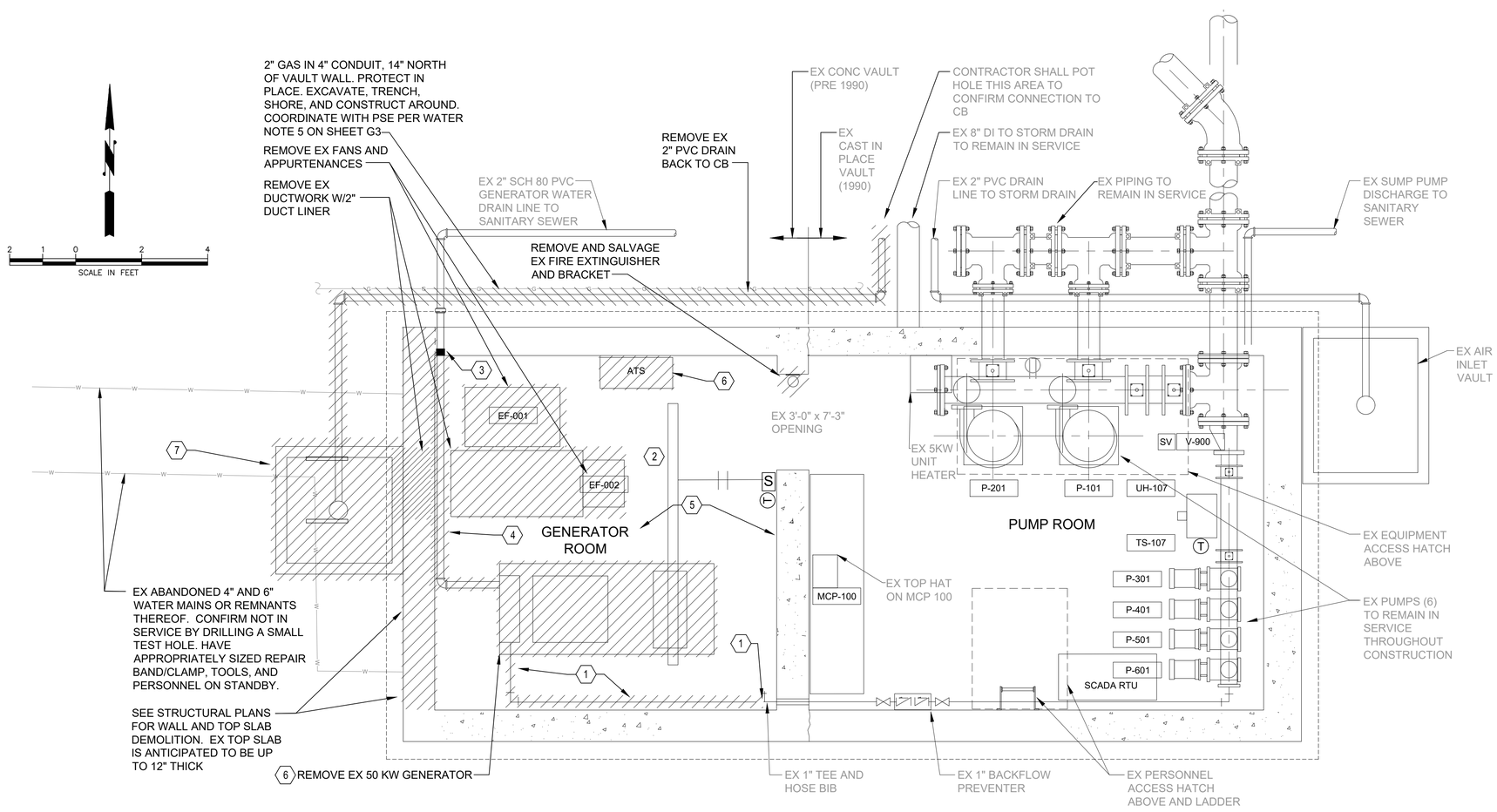
CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 7 OF 27

C3



VAULT EQUIPMENT DEMOLITION PLAN

CONSTRUCTION KEY NOTES:

1. ISOLATE AT VALVE WEST SIDE OF EX TEE AND HOSE BIB AND REMOVE GENERATOR HEAT EXCHANGER WATER SUPPLY AND DRAIN PIPING, FITTINGS, HOSE BIBS, VALVES, PIPE SUPPORTS AND APPURTENANCES WEST OF ISOLATION POINT.
2. REMOVE EX LIGHTING AS NEEDED TO FACILITATE DEMOLITION OF VAULT ROOF AND WALLS.
3. SEAL EX PIPE AT WALL OPENING PER DETAIL 1, SHEET M2.
4. REMOVE GENERATOR DRAIN PIPING WITHIN VAULT.
5. REMOVE ALL SOUND ATTENUATION MATERIAL FROM THE GENERATOR ROOM WALLS AND CEILING, INCLUDING ALL MATERIAL ANCHORAGE, FIBERGLASS DUCT BOARD AND IMPALING PINS, FIBERGLASS INSULATION, 2x4 BLOCKING AND PERFORATED ALUMINUM PANELS.
6. REMOVE GENERATOR, ATS, BATTERIES, AND OTHER APPURTENANCES. REFER TO ELECTRICAL PLANS FOR WIRING AND OTHER ELECTRICAL REMOVAL WORK AND REQUIREMENTS.
7. REMOVE EX EXHAUST AIR VAULT (PRECAST STRUCTURE ATTACHED TO EX VAULT WITH ¾" ANCHOR BOLTS).

CONSTRUCTION NOTES:

1. TEMPORARY POWER SUPPLY SHALL BE COMPLETED AND CONNECTED PRIOR TO ANY DEMOLITION OF EX ELECTRICAL OR MECHANICAL EQUIPMENT. SEE SEE SHEETS E8, E9, AND E10 FOR DETAILED REQUIREMENTS.
2. SEE STRUCTURAL PLANS FOR SPECIFIC DEMOLITION REQUIREMENTS FOR VAULT TOP AND END WALL MODIFICATIONS.
3. ELECTRICAL COMPONENTS IN PUMP ROOM AND VAULT LIGHTING NOT SHOWN FOR CLARITY.
4. SEE ELECTRICAL PLANS FOR SPECIFIC DEMOLITION REQUIREMENTS FOR ELECTRICAL EQUIPMENT.
5. REMOVE ALL EQUIPMENT ANCHORING AND SUPPORT HARDWARE IN GENERATOR ROOM, GRIND EMBEDDED MATERIALS SMOOTH TO EXISTING WALL AND REPAIR VOIDS PER DETAIL 1, SHEET M3.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

VAULT DEMOLITION PLAN

NO.	DATE	REVISION BY: ---	DATE: --/--/-- BY	CK

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RODNEY C. LANGER — STATE OF WASHINGTON — 30046 — REGISTERED PROFESSIONAL ENGINEER — 12/16/25

CHECKED BY: RL
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SUBMITTAL DATE: 12/16/25

PROJECT NO. MRCR0000-2005

SHEET NO. 8 0F 27

M1

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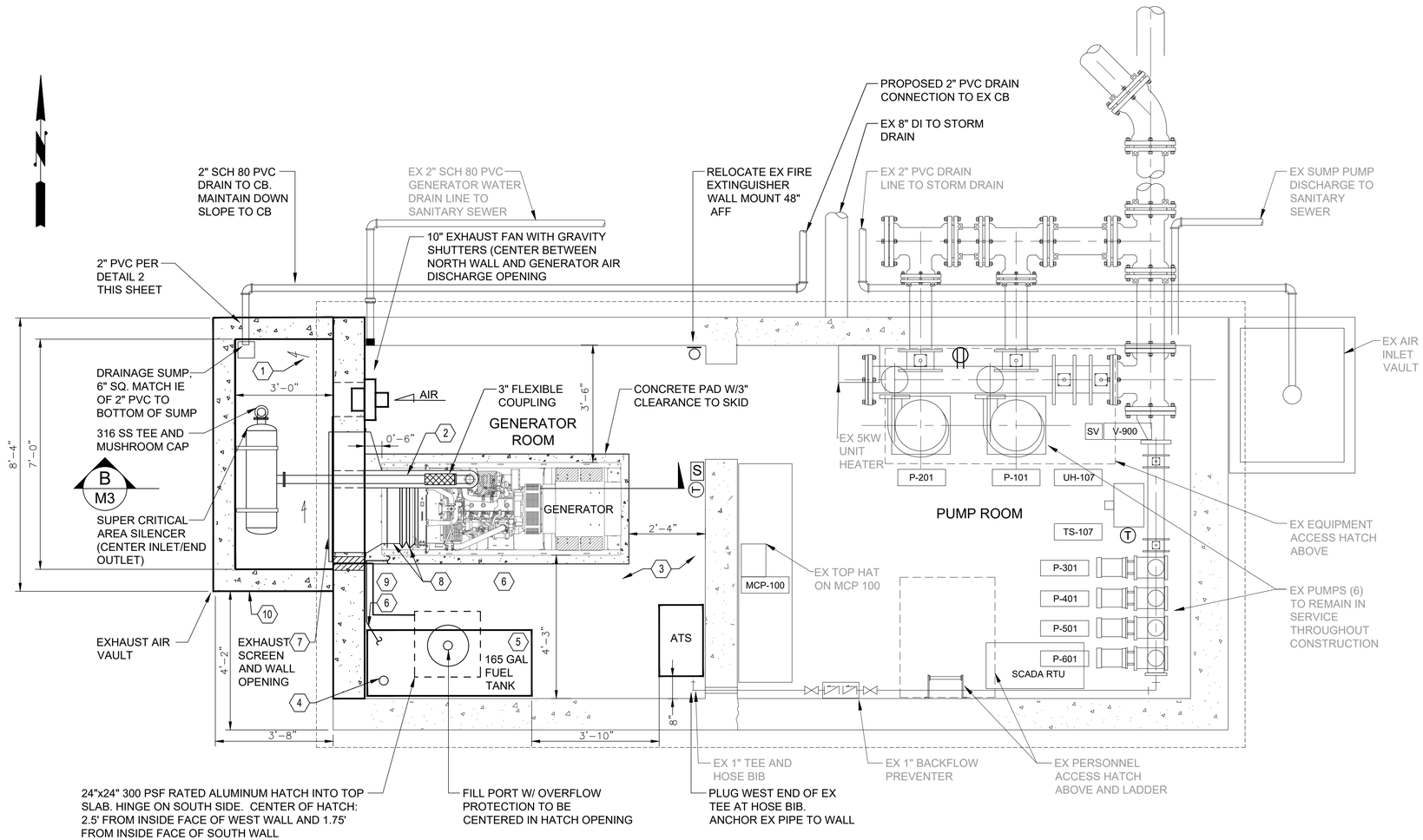
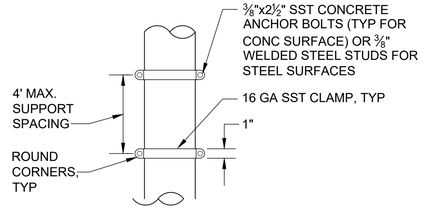


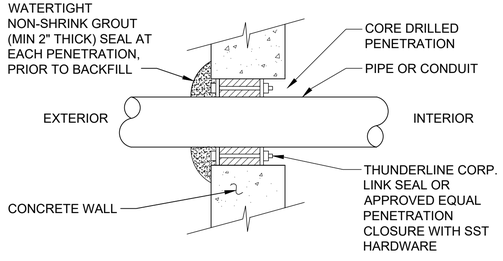
VAULT FLOOR PLAN

2 1 0 2 4
SCALE IN FEET



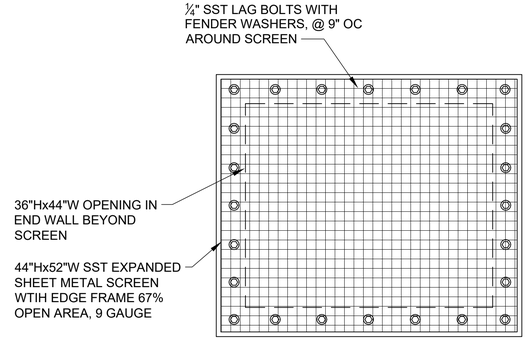
NOTE:
INSTALL SPACER BETWEEN CLAMP AND STRUCTURE TO PROVIDE SPACE BETWEEN DUCT AND STRUCTURE AS NECESSARY TO AVOID CONFLICTS WITH ELECTRICAL CONDUITS.

1 / - DETAIL - PIPE / DUCT CLAMP
NTS



NOTE:
THIS DETAIL SHALL BE USED FOR PIPE PENETRATIONS ON ALL CONCRETE STRUCTURES, INCLUDING ELECTRICAL CONDUIT, AIR DUCTS, WATER OR WASTEWATER PIPES, AND DRAIN PIPES, UNLESS OTHERWISE NOTED.

2 / VAR DETAIL - PENETRATION SEAL
NTS



3 / - DETAIL - EXHAUST SCREEN
NTS

CONSTRUCTION KEY NOTES:

1. SLOPE FLOOR TOWARDS SUMP.
2. 3" NPT SCHEDULE 40 BLACK IRON COMBUSTION AIR PIPING, LONG RADIUS BENDS ONLY, INSULATED IN GENERATOR ROOM. COORDINATE WITH GENERATOR MANUFACTURER ON FLEXIBLE COUPLING PLACEMENT. SUPPORT PIPING PER MSS SP-58 AND GENSET MANUFACTURER RECOMMENDATIONS. ROUTE THOUGH WALL WITH INSULATED THIMBLE (NOT SHOWN).
3. ACOUSTIC PANELING PER DETAIL 2, SHEET M3 AROUND CEILING AND WALL MOUNTED EQUIPMENT AND CONDUIT AND OVER FULL EXTENT OF CEILING AND GENERATOR ROOM WALLS.
4. ROUTE 2" BLACK IRON VENT PIPING THROUGH TOP SLAB AND TERMINATE 12' ABOVE FINISHED GRADE WITH MUSHROOM CAP. VENT TO BE MINIMUM OF 9" FROM SOUTH WALL (FOR WALL-MOUNTED CONDUIT CLEARANCE). COORDINATE STRUCTURAL OPENING WITH VENT LOCATION AS PROVIDED IN SHOP DRAWINGS. CORE DRILL AND SEAL PENETRATION PER DETAIL 2, SHEET M2. COORDINATE WITH REBAR DESIGNER TO AVOID REBAR. INSTALL DI PIPE SLEEVE WITH WEEP RING.
5. DOUBLE WALLED UL-142 TANK. NOT ALL OPENINGS/PENETRATIONS ARE SHOWN FOR CLARITY. SEE SHEET E6 FOR DETAILS.
6. SCH. 40 BLACK STEEL OR DUAL WALL CONTAINED FLEXIBLE PIPING FUEL LINES ON WALL BETWEEN TANK AND GENERATOR. ROUTING SHOWN IS DIAGRAMMATIC ONLY, INSTALL PER GENERATOR MANUFACTURER'S INSTRUCTIONS.
7. 44"Hx52"W SST EXPANDED SHEET METAL SCREEN PER DETAIL 3, SHEET M2. FLUSH MOUNT TO WALL. WALL OPENING TO BE 36"Hx44" W.
8. SHEET METAL EXPANSION DUCT WITH NON-METALLIC FLUE DUCT EXPANSION JOINT, AND ADAPTER FITTINGS TO MOUNT TO RADIATOR. EXPANSION JOINT DUCT OPENING TO MATCH OR EXCEED RADIATOR SURFACE AREA. EXPANSION DUCT OPENING TO MATCH WALL OPENING. SEAL DUCT TO WALL WITH GASKET AND SS HARDWARE.
9. 1½" PVC HATCH CHANNEL FRAME DRAIN TO AIR VAULT. CORE AND SEAL WALL PENETRATION PER DETAIL 2, SHEET M3. MAINTAIN NEGATIVE SLOPE TO VAULT. SUPPORT PER DETAIL 1 SHEET M3.
10. ALL EXTERIOR CONCRETE SURFACES SHALL BE COATED WITH CEMENTITIOUS WATERPROOFING PRIOR TO BACKFILL.

CONSTRUCTION NOTES:

1. SEE ELECTRICAL PLANS FOR ELECTRICAL EQUIPMENT AND CONNECTION DETAILS.
2. ELECTRICAL COMPONENTS IN PUMP ROOM AND VAULT LIGHTING NOT SHOWN FOR CLARITY.
3. LOCATION OF GENERATOR PAD AND RADIATOR AIR DISCHARGE OPENING IN WEST WALL SHALL BE BASED ON DIMENSIONS OF GENERATOR ASSEMBLY. AIR DUCT SHALL BE FIELD FIT TO TRANSITION FROM RADIATOR TO WALL OPENING.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT
CITY OF MERCER ISLAND
MECHANICAL VAULT FLOOR PLAN AND DETAILS

NO.	DATE	REVISION BY: ---
		DATE: -/-/- BY CK

FINAL FOR BID

RODNEY C. LANGER JR. STATE OF WASHINGTON 20046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 9 OF 27
M2

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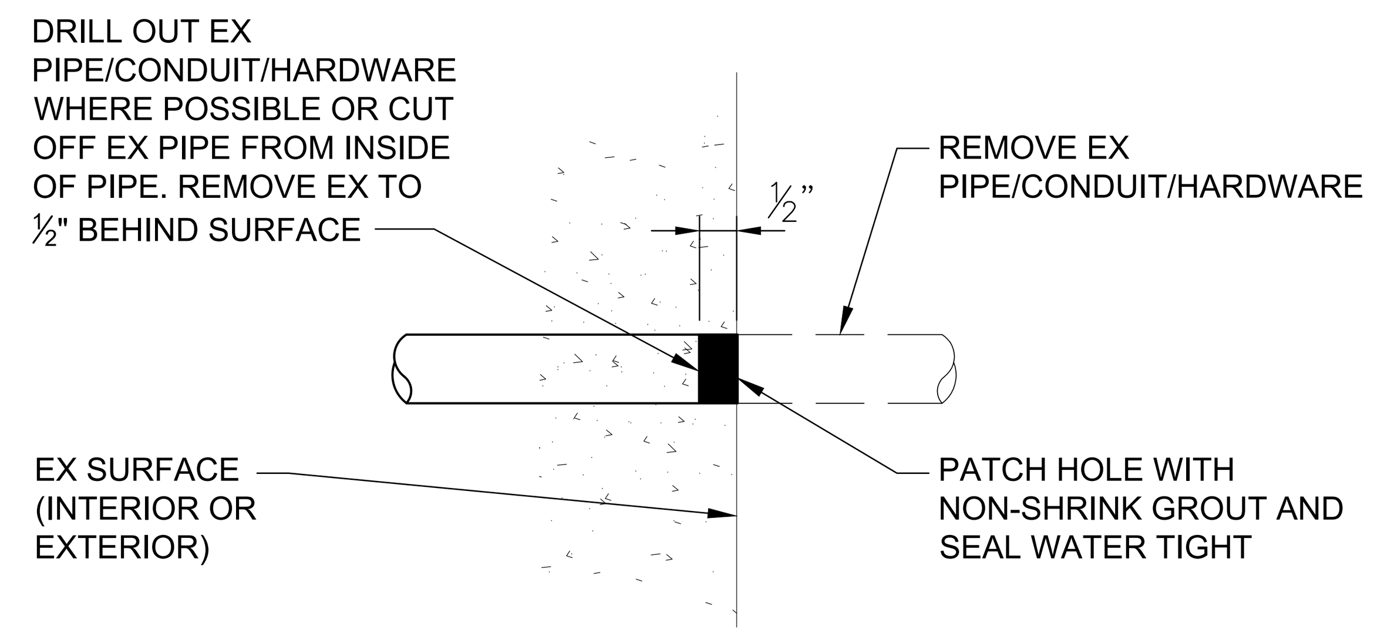
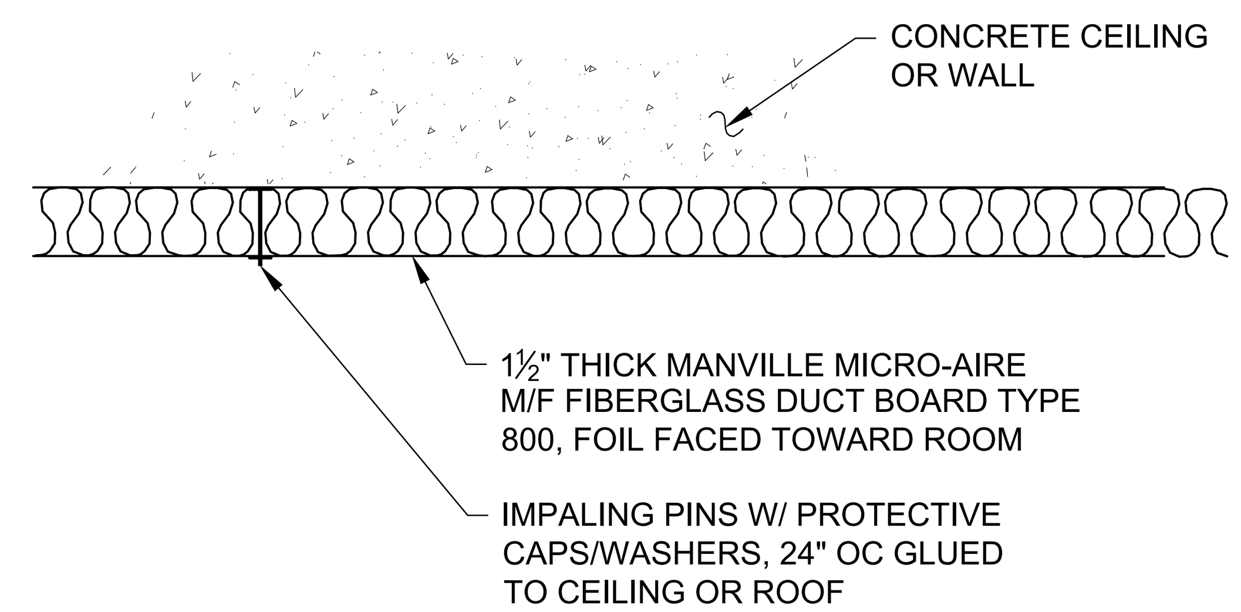


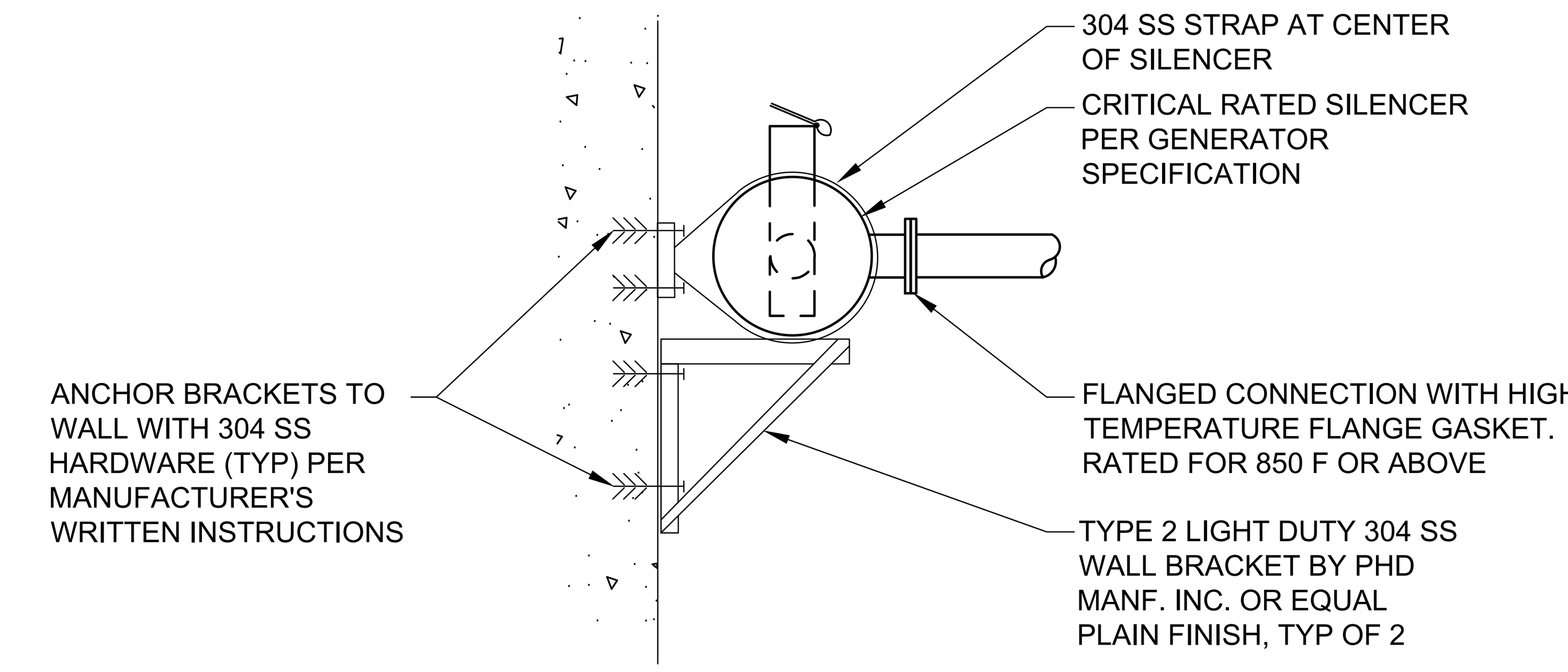
1 - DETAIL - PIPE/HARDWARE REMOVAL

NTS



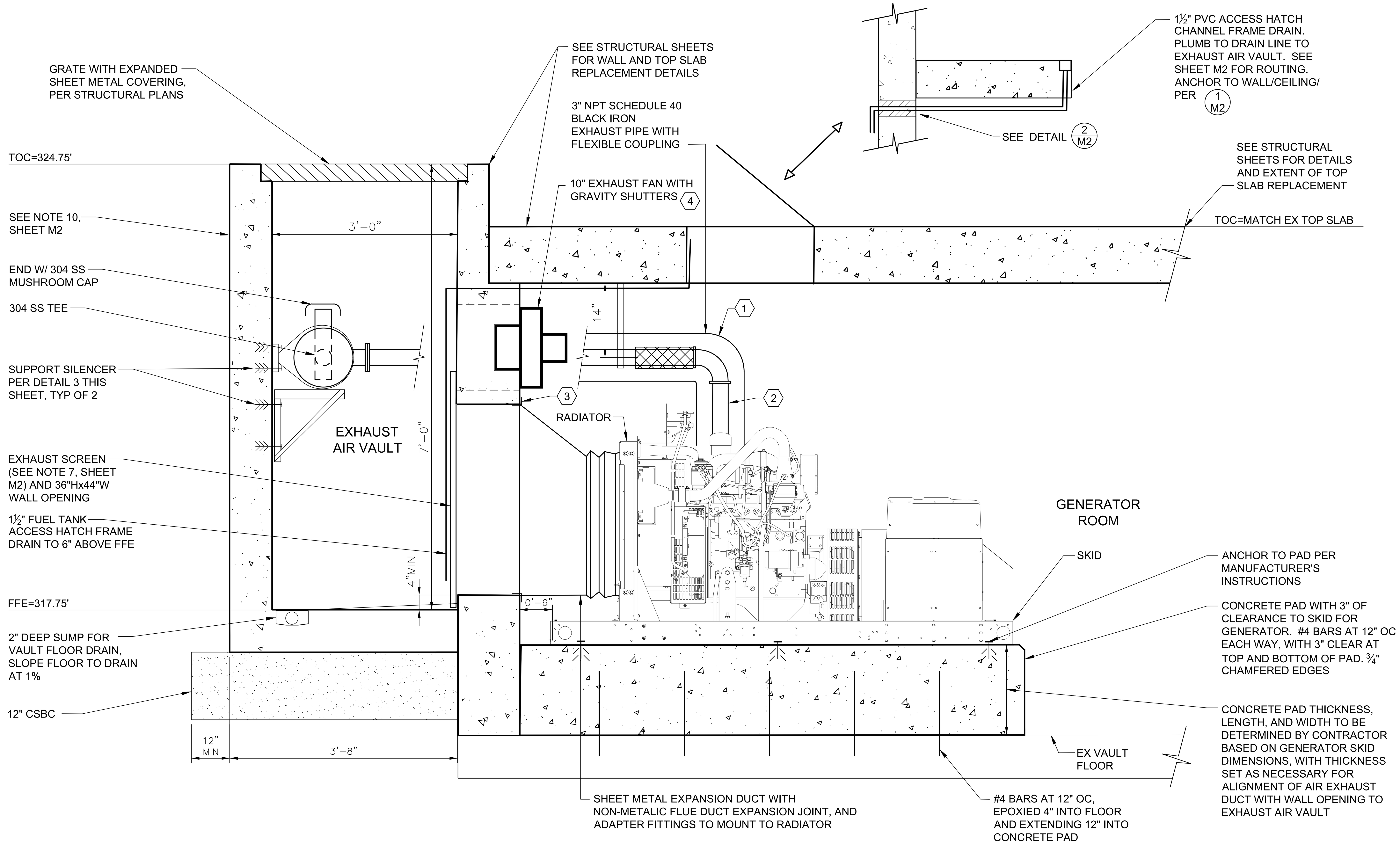
2 - DETAIL - ACOUSTICAL WALL AND CEILING TREATMENT

NTS



3 - DETAIL - SILENCER WALL MOUNTING BRACKET

NTS



B/M2 - SECTION - GENERATOR ROOM

1 .5 0 1 2
SCALE IN FEET

CONSTRUCTION KEY NOTES:

1. SUPPORT PIPING SUCH THAT ZERO WEIGHT IS ON THE GENERATOR EXHAUST OUTLET PIPING. 3" NPT SCHEDULE 40 BLACK IRON COMBUSTION AIR PIPING, INSULATED IN GENERATOR ROOM. COORDINATE WITH GENERATOR MANUFACTURER ON FLEXIBLE COUPLING PLACEMENT. SUPPORT PIPING FROM CEILING WITH CLEVIS HANGAR OR AS RECOMMENDED BY GENERATOR MANUFACTURER. PROVIDE NEGATIVE SLOPE IN PIPING TO SILENCER. SLOPE SHOWN FOR REFERENCE ONLY. ROUTE THROUGH WALL WITH 16" OD (MAX) INSULATED THIMBLE (NOT SHOWN).
2. JOINT AS RECOMMENDED BY GENERATOR MANUFACTURER. COORDINATE END TYPE TO MATCH GENERATOR EXHAUST PIPE END CONNECTION. INSULATE JOINT TO MATCH PIPING INSULATION.
3. SEAL DUCTWORK TO WALL WITH GASKET AND SS HARDWARE.
4. 10" EXHAUST FAN, SURFACE MOUNT, WITH GRAVITY SHUTTERS IN NOMINAL 10" SQUARE BLOCKOUT IN END WALL, DISCHARGE TO EXHAUST AIR VAULT, MOUNT WITH SST HARDWARE AND CAULK AROUND MOUNTING FLANGE (HESSAIRE 10SF4V30C OR EQUAL). LOCATE WITH CENTER 15" BELOW CEILING.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

VAULT SECTION AND MECHANICAL DETAILS

DATE: --/--/-- BY CK

REVISION BY: ----

NO.	DATE	REVISION

FINAL FOR BID

RODNEY C. LANGER JR. STATE OF WASHINGTON 30046 REGISTERED PROFESSIONAL ENGINEER 12/16/25

CHECKED BY: RL
DESIGNED BY: AS
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

PROJECT STRUCTURAL NOTES MERCER ISLAND, KING COUNTY WA, 98040

GENERAL INFORMATION:

1. STRUCTURAL DRAWINGS ARE A PORTION OF THE CONTRACT DOCUMENTS AND ARE INTENDED TO BE USED WITH MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS FROM THESE DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
2. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
3. ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY SIGNIFICANT DISCREPANCIES FROM CONDITIONS SHOWN ON THE DRAWINGS.
4. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. RESPONSIBILITY SHALL INCLUDE BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION MEANS AND METHODS, TECHNIQUES, SEQUENCING, AND SAFETY REQUIRED TO COMPLETE CONSTRUCTION.
5. UNLESS OTHERWISE NOTED, MATERIAL AND DESIGN SPECIFICATIONS CITED HEREIN SHALL BE THOSE CONFORMING WITH THE VERSION OF THE APPLICABLE SPECIFICATIONS OR CODE MOST RECENTLY ADOPTED BY THE PERMITTING AUTHORITY. THESE STRUCTURAL NOTES ARE TO BE USED AS A SUPPLEMENT TO THE SPECIFICATIONS.
6. THIS STRUCTURE AND ALL OF ITS PARTS MUST BE ADEQUATELY BRACED AGAINST WIND, LATERAL EARTH AND SEISMIC FORCES UNTIL THE PERMANENT LATERAL-FORCE RESISTING SYSTEMS HAVE BEEN CONSTRUCTED AND ALL ATTACHMENTS AND CONNECTIONS NECESSARY FOR THE STABILITY OF THE STRUCTURE AND ITS PARTS HAVE BEEN MADE.
7. ALL FEATURES OF CONSTRUCTION NOT FULLY SHOWN SHALL BE OF THE SAME TYPE AND CHARACTER AS SHOWN FOR SIMILAR CONDITIONS, SUBJECT TO REVIEW BY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD.
8. ALL PRODUCTS AND MATERIALS USED BY THE CONTRACTOR SHALL BE APPLIED, PLACED, ERECTED OR INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
9. ALL KEYNOTES INDICATE NEW ITEMS TYPICALLY UNLESS NOTED OTHERWISE.

CODE REQUIREMENT:

1. CONFORM TO THE 2021 WASHINGTON STATE BUILDING CODE, BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC). NOTE: THIS APPLIES TO ALL REFERENCES TO WSBC.

DESIGN CRITERIA:

1. THE WORK UNDER THE FOLLOWING SPECIFICATION SECTIONS IS SUBJECT TO SPECIAL INSPECTIONS AS DESCRIBED IN SECTION 1704 OF THE WSBC.
   00 23 00 - EARTHWORK
   03 30 00 - CAST IN PLACE CONCRETE
   05 12 00 - STRUCTURAL STEEL
   DESIGN IS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE WSBC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADING AND ALLOWABLE LOAD IS USED FOR DESIGN:

A. LIVE LOADS:

PUBLIC AREA	100 PSF
EXTERIOR BALCONY/DECK	60 PSF

B. GROUND SNOW LOAD: 25 PSF

EXPOSURE FACTOR	1.0
SNOW IMPORTANCE FACTOR	1.0
THERMAL FACTOR	1.0
FLAT ROOF SNOW LOAD	25 PSF

C. WIND LOAD:

BASIC WIND SPEED (3-SECOND GUST)	97 MPH
WIND EXPOSURE	C
WIND IMPORTANCE FACTOR	1.0
BUILDING CATEGORY	II
INTERNAL PRESSURE COEFFICIENT	0.18
TOPOGRAPHIC FACTOR	1.0

D. EARTHQUAKE DESIGN DATA:

RISK CATEGORY	II
S_S	1.418g
S_1	0.493g
S_{DS}	1.134g
S_{D1}	1.134g
SITE CLASS	D
SEISMIC DESIGN CATEGORY	D
SEISMIC IMPORTANCE FACTOR	1.0
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

BASIC SEISMIC-FORCE RESISTING SYSTEM:
SPECIAL REINFORCED CONCRETE SHEAR WALLS

RESPONSE MODIFICATION FACTOR	R = 5
SEISMIC RESPONSE COEFFICIENT	C_S = 0.19

SPECIAL INSPECTION:

1. SPECIAL INSPECTIONS WILL BE PROVIDED BY THE OWNER. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

SUBMITTALS:

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION REGARDING ALL STRUCTURAL ITEMS, INCLUDING THE FOLLOWING:
   A. CONCRETE MIX DESIGNS, CONCRETE AND MASONRY REINFORCEMENT (INCLUDING MILL TEST REPORTS), STRUCTURAL STEEL (INCLUDING MILL TEST REPORTS)
   B. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND ARE SUBJECT TO REVIEW AND ACCEPTANCE OF THE STRUCTURAL ENGINEER OF RECORD.
   C. THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. ANY CONNECTIONS TO THE STRUCTURE SHALL CONFORM TO WSBC AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO FABRICATION.

DIVISION 03 - CONCRETE

CONCRETE:

1. CONCRETE WORK SHALL CONFORM TO CHAPTER 19 OF THE WSBC. CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD 28 DAY CYLINDER TESTS PER ASTM C39, AND SHALL BE AS FOLLOWS:

ABSOLUTE WATER-CEMENT RATIO BY WEIGHT

f'c (PSI)	NON AIR-ENTRAINED	AIR-ENTRAINED	USE
3,000	N/A	0.50	MISC. CONCRETE, CURBS, SIDEWALKS, ETC.
3,500	0.42	N/A	EXPOSED SLABS ON GRADE OR METAL DECK
4,000	0.50	N/A	INTERIOR SLABS ON GRADE
4,000	0.45	N/A	BASEMENT WALLS AND SPREAD FOOTINGS
4,000	0.50	N/A	CONCRETE ON METAL DECK, U.N.O.
4,500	N/A	0.45	EXTERIOR SLABS ON GRADE, WALLS,...
5,000	0.45	N/A	COLUMNS AND SHEAR WALLS AS NOTED

2. VERIFY WATER/CEMENT RATIO WITH FLOOR COVERING MANUFACTURER FOR CONCRETE FLOORS WITH MOISTURE SENSITIVE FLOOR COVERINGS, AND VERIFY COORDINATE WITH PROJECT SPECIFICATIONS.
3. MINIMUM CEMENT CONTENT PER CUBIC YARD SHALL BE AS FOLLOWS:
   • f'c=4,000 psi: 550 lbs.
4. FLY ASH CONFORMING TO ASTM C618 (INCLUDING TABLE 2A) TYPE F, MAY BE USED TO REPLACE UP TO 20% OF THE CEMENT CONTENT, PROVIDED THAT THE MIX STRENGTH IS SUBSTANTIATED BY TEST DATA.
5. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS, ALONG WITH TEST DATA COMPLIANT WITH WSBC SECTION 1905, A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE. NO WATER MAY BE ADDED TO CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE CONCRETE MIX DESIGN.
6. A WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494, USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, SHALL BE INCORPORATED IN CONCRETE DESIGN MIXES. A HIGH-RANGE WATER-REDUCING (HRWR) ADMIXTURE CONFORMING TO ASTM C494, TYPE F OR G, MAY BE USED IN CONCRETE MIXES PROVIDING THAT THE SLUMP DOES NOT EXCEED 8". AN AIR-ENTRAINING AGENT CONFORMING TO ASTM C260 SHALL BE USED IN CONCRETE MIXES FOR EXTERIOR HORIZONTAL SURFACES EXPOSED TO WEATHER. THE AMOUNT OF ENTRAINED AIR SHALL BE 5% +/- 1% BY VOLUME.

CONCRETE CAST IN PLACE:

1. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4" WITHOUT THE USE OF ADMIXTURES AS NOTED.
2. A MINIMUM OF THREE (3) CONCRETE TEST CYLINDERS SHALL BE PROVIDED FOR EACH ONE HUNDRED (100) CU. YARDS, OR EACH DAY OF POUR, FOR EACH CONCRETE STRENGTH. CYLINDERS SHALL BE TESTED AS FOLLOWS:
   A. ONE (1) AT SEVEN (7) DAYS, AND
   B. TWO (2) AT TWENTY-EIGHT (28) DAYS
3. CONCRETE CYLINDER SAMPLING AND TESTING SHALL CONFORM WITH ASTM SPECIFICATIONS. ACCEPTANCE OF CONCRETE SHALL BE GOVERNED BY THE PROVISIONS OF ACI 318 "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". TWO (2) SETS OF MIX DESIGNS, WITH COMPLETE STATISTICAL BACKUP, SHALL BE SUBMITTED FOR REVIEW.
4. CONCRETE MATERIALS, FORM WORK, MIXING, PLACING AND CURING SHALL CONFORM WITH THE SPECIFICATIONS CONTAINED IN THE ACI "MANUAL OF CONCRETE PRACTICE".
5. AT AREAS OF DEPRESSIONS FOR SLABS AND BEAMS, PROVIDE MINIMUM THICKNESS OF DEPTH AS FOR ADJACENT AREAS, UNLESS NOTED OTHERWISE.
6. CONCRETE SLABS SHALL BE INSTALLED WITH CONSTRUCTION JOINTS NOT SPACED FARTHER THAN 12'-6" APART AND SHALL BE DIVIDED INTO APPROXIMATELY SQUARE PANELS. PANEL DIMENSION RATIOS SHALL NOT EXCEED 1.5:1.
7. ALL SAW CUT CONTROL JOINTS SHALL BE CUT WITHIN 4 TO 12 HOURS AFTER CONCRETE PLACEMENT. SAW CUT SHALL BE 1.5" DEEP.
8. CONCRETE SHALL NOT BE PLACED ON FROZEN GROUND.
9. BOND NEW CONCRETE TO EXISTING CONCRETE WITH "WELD-CRETE", AS MANUFACTURED BY LARSON PRODUCTS CORPORATION, OR APPROVED. AS A MINIMUM, EXISTING CONCRETE SURFACES SHALL BE ROUGHENED BY CHIPPING TO A MINIMUM 1/4" AMPLITUDE TO EXPOSE COARSE AGGREGATE. PREPARATION AND APPLICATION IS TO BE IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
10. ALL EXPOSED CORNERS SHALL HAVE 3/4" CHAMFER, UNLESS NOTES OTHERWISE.
11. MASS CONCRETE CONSTRUCTION: AGGREGATE SIZE USED SHALL BE 1 1/2".
   A. MAXIMUM SLUMP SHALL NOT EXCEED THREE INCHES (3"). MASTERBUILDER'S RHEOBILD 1000 MAY BE USED TO INCREASE WORKABILITY.
   B. POZZOLANS CONSTITUTING FIFTEEN PERCENT (15%) OF THE WEIGHT OF THE PORTLAND-POZZOLAN CEMENT MIX MAY BE ADDED TO THE MIX TO AID IN REDUCING TEMPERATURE RISE. COOL WATER SHALL USED DURING BATCHING.
   C. CURING SHALL BE DONE BY WATER FOR A MINIMUM OF FOURTEEN (14) DAYS.
   D. MASS CONCRETE APPLIES TO SECTION THICKER THAN 3'-0"; FIFTY-SIX (56) DAY COMPRESSIVE STRENGTH MAY BE USED.

CONCRETE REINFORCING STEEL:

1. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. FOR DEFORMED BARS AND ASTM A185 FOR SMOOTH WELDED WIRE FABRIC (WWF), UNLESS OTHERWISE NOTED. REINFORCING STEEL TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE.
2. BARS IN SLABS SHALL BE SUPPORTED ON WELL CURED CONCRETE BLOCKS OR APPROVED METAL CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STRANDED PRACTICE, MSP-1. REINFORCING STEEL SHALL BE DETAINED IN ACCORDANCE WITH THE "ACI MANUAL OF STANDARD PRACTICE, MSP-1 REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", ACI 315. LAP ALL REINFORCING BARS PER THE TYPICAL LAP SPLICE LENGTH SCHEDULE, EXCEPT AS NOTED. MECHANICAL SPLICES NOTED ON THE PLANS SHALL BE DAYTON BAR-GRIP SPLICES OR APPROVED WITH A CURRENT ICC APPROVAL REPORT.

TYPICAL LAP SPLICE LENGTH SCHEDULE

BAR SIZE	3,000 psi		4,000 psi		5,000 psi		6,000 psi	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
#3	22	32	19	28	17	25	16	23
#4	29	43	25	37	22	33	20	31
#5	36	54	31	47	28	42	25	38
#6	43	64	37	56	33	50	31	46
#7	63	94	54	81	49	73	44	66
#8	72	107	62	93	55	83	51	76
#9	81	121	70	105	63	94	57	85
#10	91	136	79	118	70	105	64	96
#11	101	151	87	131	78	117	71	107

NOTES:
A. DIMENSIONS ARE IN INCHES.
B. CASES 1 AND 2 ARE DEFINED AS FOLLOWS: (db = BAR DIAMETER)
   a. BEAMS OR COLUMNS:
      • CASE 1: COVER ≥ db AND c-c SPACING ≥ 2db
      • CASE 2: COVER < db OR c-c SPACING < 2db
   b. ALL OTHERS:
      • CASE 1: COVER ≥ db AND c-c SPACING ≥ 3db
      • CASE 2: COVER < db OR c-c SPACING < 3db
C. FOR TOP BARS, MULTIPLY LAP LENGTH ABOVE BY 1.3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.

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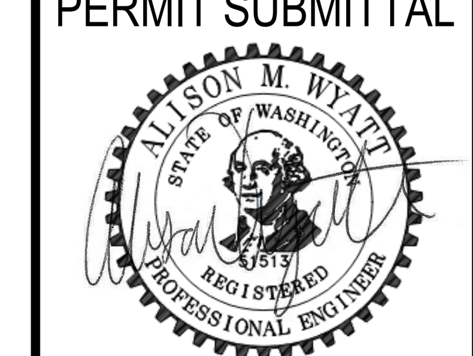
FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

STRUCTURAL GENERAL NOTES

NO.	DATE	REVISION	REVIEWED BY:	DATE:	BY	CK

PERMIT SUBMITTAL



11/17/2025

CHECKED BY: AMWY
DESIGNED BY: AXVI
DRAWN BY: JCFL

SUBMITTAL DATE: 12/09/24

PROJECT NO. MRCR000-2005

SHEET NO. 11 OF 25

S1

1. REINFORCEMENT SHALL BE SECURED IN FORMS WITH TIES AND ANCHORAGE TO PREVENT DISPLACEMENT. ALL TIE WIRE SHALL BE MIN. #16 ANNEALED STEEL.
2. ALL REINFORCING STEEL SHALL BE TIED 100% ALONG ALL PERIMETER EDGES AND 50%FIELD.
3. REINFORCING (MINIMUM UNLESS NOTED OTHERWISE ON PLANS)
   A. PLACE TWO (2) NO. 4 CONTINUOUS AT BOTTOM, TOP AND AT DISCONTINUOUS ENDS OF ALL FOUNDATIONS.
   B. PLACE 2'-0" x 1'-0" BARS AT CORNERS AND INTERSECTIONS FOR WALLS AND FOUNDATIONS EQUAL IN SIZE AND NUMBER TO HORIZONTAL REINFORCING.
   C. PLACE TWO (2) NO. 4x OPENING DIMENSIONS PLUS 4'-0" EACH SIDE OF ALL OPENINGS AND TWO (2) NO. 4x4'-0" DIAGONAL BARS AT EACH CORNER OF ALL SLAB OPENINGS GREATER THAN 1'-6" IN DIMENSION.
4. ALL WELDED WIRE FABRIC SHALL CONFORM WITH ASTM A 185. ALL WIRE FABRIC SHALL BE SUPPLIED, LAID IN FLAT SHEETS AND CHAIRED TO PROPER POSITION IN SLABS. LAP ONE (1) FULL MESH PLUS 2" ON SIDES AND ENDS.
5. ALL REINFORCING STEEL SHALL BE DETAILED, FABRICATED AND PLACED IN ACCORDANCE WITH ACI DETAILING MANUAL 315.
   A. ALL REINFORCING STEEL SHALL BE ACCURATELY AND SECURELY PLACED.
   B. REINFORCING SHALL NOT BE BENT OR DISPLACED FOR THE CONVENIENCE OF OTHER TRADES, UNLESS APPROVED BY THE STRUCTURAL ENGINEER.
   C. SPLAY REINFORCING STEEL AROUND OPENINGS WITH 1" IN 10" SPLAY, UNLESS NOTED OTHERWISE.
   D. MINIMUM COVER FROM CONCRETE SURFACES TO REINFORCING STEEL SHALL BE:
      - 3" TO BOTTOM OF FOOTING
      - 2" TO EARTH FACE OF WALL
      - 3/4" TO INSIDE FACE OF WALL
      - 1-1/2" TO MAIN STEEL BEAMS AND COLUMNS
      - 3/4" SLAB TO TOP AND BOTTOM SURFACES, CENTER OF SLAB ON GRADE
6. REINFORCEMENT BARS SHALL NOT BE TACK WELDED, WELDED, HEATED OR CUT, UNLESS INDICATED ON THE CONTRACT DOCUMENTS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
7. REINFORCEMENT COUPLERS SHALL BE LENTON, FOX-HOWLETT OR APPROVED, CAPABLE OF DEVELOPING ONE HUNDRED TWENTY-FIVE PERCENT (125%) OF THE SPECIFIED YIELD STRENGTH OF THE REINFORCEMENT.

CONCRETE WALL REINFORCING (UNLESS OTHERWISE NOTED):

TYPICAL CONCRETE WALL REINFORCING			
WALL THICKNESS	HORIZONTAL BARS	VERTICAL BARS	LOCATION
6"	#4 @ 16" o.c.	#4 @ 16" o.c.	AT C.L. OF WALL
8"	#4 @ 12" o.c.	#4 @ 16" o.c.	AT C.L. OF WALL
10"	#4 @ 18" o.c.	#4 @ 18" o.c.	AT EACH FACE
12"	#4 @ 16" o.c.	#4 @ 16" o.c.	AT EACH FACE

1. CONTINUE HORIZONTAL WALL BARS THROUGH PILASTERS, COLUMNS AND INTERSECTING WALLS. AT SLAB PROVIDE ONE #5 FOR SINGLE-LAYER REINFORCING AND TWO #5 FOR DOUBLE-LAYER REINFORCING, 4'-0" LONG, DIAGONALLY AT EACH CORNER OF ALL OPENINGS. REFER TO TYPICAL DETAILS FOR POSITION OF CORNER BARS AND BARS IN SMALL WALL SECTIONS. SLAB BARS SHALL BE HOOKED INTO WALLS, OR HOOKED DOWELS SHALL BE PROVIDED TO MATCH REINFORCING. PROVIDE TWO #4, 4'-0" LONG DIAGONALLY AT EACH RE-ENTRANT CORNER IN SLABS. PROVIDE HOOKED DOWELS FROM FOOTINGS TO MATCH VERTICAL WALL REINFORCING.

CONCRETE ACCESSORIES:

1. EXPANSION BOLTS SHALL BE HILTI KWIK TZ, SIMPSON STRONG BOLT, DEWALT POWER-STUD+SD2, OR APPROVED WITH EQUIVALENT ICC ALLOWABLE TENSION AND SHEAR VALUES. EXPANSION BOLTS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.
2. EPOXY ADHESIVE SHALL BE HILTI HIT-RE 500 V3, SIMPSON SET-XP, DEWALT PURE110+ EPOXY, DEWALT AC200+ ACRYLIC, OR APPROVED WITH EQUIVALENT ICC ALLOWABLE TENSION AND SHEAR VALUES. EPOXY ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.
3. PERMANENTLY EXPOSED EMBEDDED PLATES AND ANGLES SHALL BE HOT-DIPPED, GALVANIZED AFTER FABRICATION, UNLESS OTHERWISE NOTED. NO LOADS OR WELDS SHALL BE PLACED ON EMBEDDED PLATES OR ANGLES FOR A MINIMUM OF 7 DAYS AFTER CASTING.
4. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS SHALL BE DONE BY A CERTIFIED ADHESIVE ANCHOR INSTALLER (AAI) AS CERTIFIED THROUGH ACI/CRSI, OR AN APPROVED ALTERNATE WHEN SUBMITTED AND APPROVED BY THE EOR (ACI 318-11 D.9.2.2)/(ACI 318-14 17.8.2.2). PROOF OF CURRENT CERTIFICATION SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF INSTALLATION.
5. ADHESIVE ANCHORS MUST BE INSTALLED IN CONCRETE AGED A MINIMUM OF 21 DAYS (ACI 318-11 D.2.2)/(ACI 318-14 17.1.2).

NON-SHRINK GROUT:

1. GROUT SHALL BE NON-SHRINKABLE GROUT CONFORMING WITH ASTM C 1107 AND C.R.D. - 621, CORPS OF ENGINEERS "SPECIFICATIONS FOR NON-SHRINK GROUT". GROUT SHALL HAVE A SPECIFIED COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS OF 5000 psi. PRE-GROUTING OF BASE PLATES WILL NOT BE PERMITTED.

DIVISION 05 - METALS

STRUCTURAL STEEL AND MISCELLANEOUS IRON:

STRUCTURAL STEEL SHALL BE:

STRUCTURAL STEEL	
ASTM A992, GRADE 50	WIDE FLANGE SHAPES
ASTM A572, GRADE 50	PLATES WHERE NOTED
ASTM A36	CHANNELS, PLATES, AND ANGLES, U.N.O.
ASTM A500, GRADE B (Fy = 46 KSI)	HOLLOW STRUCTURAL SECTIONS (TUBES)
ASTM A53, GRADE B (Fy = 35 KSI)	PIPES

1. DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" WITH "COMMENTARY" AND THE "CODE OF STANDARD PRACTICE", WITH EXCEPTIONS NOTED IN SPECIFICATIONS.
2. DRAWINGS ARE DIMENSIONED FOR LAYOUT AND NOT DIMENSIONED PER AISC STANDARDS. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO COORDINATE BETWEEN ALL DRAWINGS AND DEVELOP SHOP DRAWINGS WITH DETAIL AND DIMENSIONING PER AISC.
3. ALL FABRICATION, ERECTION, IDENTIFICATION, AND PAINTING SHALL CONFORM TO AISC SPECIFICATIONS.
4. ALL STEEL EXPOSED TO WEATHER, SOIL, MOISTURE, OR AS DENOTED ON PLANS SHALL BE HOT DIP GALVANIZED PER ASTM A-123, OR OTHER APPROVED PROTECTIVE COATING.
5. ALL WELDING SHALL CONFORM TO AWS (LATES EDITION) SPECIFICATIONS.
   A. ALL WELDERS TO BE QUALIFIED UNDER AWS SPECIFICATIONS WITHIN THE PAST TWO YEARS FOR THE TYPE OF WELDING PERFORMED.
   B. ALL WELDS SHALL BE PERFORMED USING PRE-QUALIFIED WELDING PROCEDURES.
   C. WELDS FILLER METAL SHALL BE AWS A5.1 OR A5.5 E70XX ELECTRODES OR AWS A5.18 ER70S-X OR A5.2 E7XT-X.
   D. AFTER FABRICATION, BUT BEFORE INSTALLATION, REMOVE RUST, SCALE, GREASE, AND OIL BY WIRE BRUSHING AND CHEMICAL TREATMENT.
   E. WELDING OF REINFORCING STEEL SHALL BE AS SPECIFIED IN THESE STRUCTURAL NOTES UNDER "CONCRETE REINFORCING STEEL".
   F. WELDS TO METAL DECK, METAL STUDS OR OTHER LIGHT GAUGE METALS SHALL CONFORM WITH AWS D1.3.
6. ALL HIGH-STRENGTH BOLTS, MATERIAL AND INSTALLATION, SHALL CONFORM WITH ASTM STANDARDS.
   A. BOLTS SHALL CONFORM WITH ASTM A 325, TYPE N. BOLTS NOT NOTED IN THE DRAWINGS AS TYPE SC SHALL BE TYPE X.
   B. FRICTION CONNECTIONS SHALL BE FREE OF PAINT AT THE FAYING SURFACES, OR A CLASS A SURFACE SHALL BE PROVIDED.
   C. FOR FRICTION TYPE CONNECTIONS (TYPE SC), LOAD-INDICATING BOLTS SHALL BE THE LEJEUNE TENSION CONTROL FASTENING SYSTEM MANUFACTURED BY THE LEJEUNE BOLT COMPANY, OR APPROVED. LOAD-INDICATING BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER. CONNECTION BOLTS SHALL HAVE A HARDENED WASHER PLACED UNDER THE ELEMENT TO BE TIGHTENED. AS APPROVED, STANDARD TYPE SC BOLTS WITH LOAD-INDICATING WASHERS MAY BE USED IN LIEU OF THE LOAD-INDICATING BOLT ASSEMBLY. LOAD-INDICATING WASHERS SHALL BE ASTM F959 "CORONET", AS MANUFACTURED BY THE COOPER AND TURNER DIVISION OF J AND M TURNER, INC.
   D. FOR BEARING-TYPE CONNECTIONS, TYPE N, BOLTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION, ONLY.
   E. ALL HIGH-STRENGTH BOLTS SHALL BE INSTALLED WITH HARDENED WASHERS, CONFORMING WITH ASTM F 436, AND NUTS, CONFORMING WITH ASTM A 563.
   F. ALL BOLTS REQUIRING GALVANIZATION SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153, CLASS C.
   G. NO WELDING TO HIGH-STRENGTH BOLTS IS ALLOWED.
7. ALL MEMBERS SHALL BE CONNECTED WITH SEMI-FINISHED MACHINE BOLTS, UNLESS NOTED OTHERWISE ON PLANS. MACHINE BOLTS SHALL CONFORM TO ASTM A 307, GRADE A.
8. STRUCTURAL STEEL AND MISCELLANEOUS IRON:
   A. EXPANSION ANCHORS SHALL BE I.C.B.O. APPROVED (ZINC PLATED IN ACCORDANCE WITH ASTM B633, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTMA 153, A.I.S.I. 304 STAINLESS STEEL) AND CONFORM WITH FS FF-S-325, GROUP II, TYPE 4, CLASS 1. ACCEPTABLE ANCHORS ARE HILTI "KWIK-BOLT TZ", SIMPSON STRONG BOLT, OR DEWALT POWER STUD+. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   B. SLEEVE ANCHORS SHALL BE I.C.B.O. APPROVED (ZINC PLATED IN ACCORDANCE WITH ASTM B 633, A.I.S.I. 304 STAINLESS STEEL) AND CONFORM WITH FS FF-S-325, GROUP II, TYPE 3, CLASS 3. AN ACCEPTABLE ANCHOR IS THE HILTI "SLEEVE" ANCHOR, AS MANUFACTURED BY THE HILTI FASTENING SYSTEMS, INC. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   C. FLUSH SHELL ANCHORS SHALL BE I.C.B.O. APPROVED (ZINC PLATED IN ACCORDANCE WITH ASTM B 633, A.I.S.I. 303 STAINLESS STEEL) AND CONFORM WITH FS FF-S-325, GROUP VIII, TYPE 1. AN ACCEPTABLE ANCHOR IS THE HILTI "HDI" ANCHOR, AS MANUFACTURED BY HILTI FASTENING SYSTEMS, INC. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   D. ADHESIVE ANCHORS SHALL BE I.C.B.O. APPROVED AND SHALL CONSIST OF ALL-THREAD ANCHOR ROD, NUT, WASHER AND EPOXY INJECTION GEL SYSTEM. ANCHOR RODS SHALL BE MANUFACTURED FROM:
      a. A-36 MATERIAL (ZINC PLATED IN ACCORDANCE WITH ASTM B 633, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153).
      b. ASTM A 193, GRADE B-7 MATERIAL (ZINC PLATED IN ACCORDANCE WITH ASTM B 633, HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153).
      c. A.I.S.I. 304 OR 316 STAINLESS STEEL, IN ACCORDANCE WITH ASTM F 593. ANCHOR RODS SHALL HAVE ROLLED THREADS. NUTS SHALL CONFORM WITH ASTM A 194. ACCEPTABLE ADHESIVE INJECTION GEL SYSTEMS ARE THE HILTI HIT-RE 500 V3, SIMPSON SET XP OR DEWALT 1000+. ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. ANCHOR BOLT SHALL CONFORM WITH ASTM A 307, GRADE A, AND SHALL BE PROVIDED WITH STANDARD WASHERS AND NUTS. GALVANIZE EXTERIOR BOLTS. GALVANIZING SHALL BE IN ACCORDANCE WITH ASTM A 153, CLASS C. NUTS SHALL BE OVER-TAPPED TO CLASS 2A FIT BEFORE GALVANIZING, IN ACCORDANCE WITH ASTM A 563.
10. BOLT HEADS OR NUTS BEARING ON SLOPING FLANGES SHALL BE EQUIPPED WITH BEVELED WASHERS.
11. ERECTION AIDS (SUCH AS BOLTS, CLIPS, SHIMS, SEATS OR ANY OTHERS REQUIRED TO FACILITATE CONSTRUCTION) ARE THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND PROVIDE.
12. ALL BRACING SHALL HAVE TWO (2) BOLT CONNECTIONS, UNLESS NOTED OTHERWISE. ALL CROSS BRACING SHALL BE BOLTED AT INTERSECTIONS WITH TWO (2) BOLT MINIMUM FOR ST AND ONE (1) BOLT FOR ANGLES. PROVIDE FILLER PLATE BETWEEN CROSS BRACES, AS REQUIRED.
13. ALL FIELD WELDS TO GALVANIZED STEEL AND AREAS DAMAGED BY WELDING, FLAME CUTTING OR HANDLING, SHALL BE REPAIRED WITH AN ORGANIC COLD GALVANIZING COMPOUND HAVING A MINIMUM OF NINETY-FOUR PERCENT (94%) ZINC DUST IN THE DRY FILM. APPLY IN MULTIPLE COATS, UNTIL AN 8 MIL THICKNESS HAS BEEN ACHIEVED. SURFACES TO RECEIVE ZINC-RICH PAINT SHALL BE CLEAN, DRY AND FREE OF OIL, GREASE, SALT AND CORROSION PRODUCTS.
14. STEEL LADDERS AND STAIRS SHALL BE CONSTRUCTED OF MEMBERS OF THE SIZES SHOWN. LADDERS AND STAIRS SHALL BE ALL-WELDED CONSTRUCTION, FINISHED SMOOTH AND NEAT. PROVIDE ANCHOR CLIPS AND ACCESSORIES, AS REQUIRED FOR COMPLETE INSTALLATION.
15. ALL EMBEDDED STEEL SHALL BE FABRICATED FROM MATERIAL CONFORMING WITH THE REQUIREMENTS OF ASTM A 36. HOT-DIP GALVANIZE IN ACCORDANCE WITH ASTM A 123, UNLESS NOTED OTHERWISE.
16. STEEL FLOOR GRATING SHALL BE MCNICHOLS EXPANDED METAL FLATTENED, GALVANIZED STEEL, HOT DIPPED, 1/2" NO 13 FLATTENED, 57% OPEN AREA, OR APPROVED EQUAL,OVER GRATING PACIFIC 19-W4 1-1/4x3/16 GALVANIZED, OR APPROVED EQUAL. MATERIAL, FABRICATION, QUALITY ASSURANCE AND INSTALLATION SHALL COMPLY THE APPLICABLE PROVISIONS AND RECOMMENDATIONS OF THE N.A.A.M.M. METAL BAR GRATING MANUALS (N.N.S.I./N.A.A.M.M. MBG531 AND MBG532).
   A. ALL EDGES SHALL BE BANDED. FOR EXTERIOR APPLICATIONS, SERRATED GRATING AND TREAD SHALL BE USED.
   B. ALL FLOOR GRATING SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM 123.
   C. FLOOR GRATING SHALL BE FASTENED TO FLOOR STEEL USING GRATING MANUFACTURER'S STAINLESS STEEL HOLDOWN CLIPS, IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
   D. ALL OPENINGS IN GRATING AT LEG SUPPORTS SHALL BE 1" LARGER THAN THE BASE PLATE DIMENSIONS, UNLESS NOTED OTHERWISE.
   E. PROVIDE PIPING OPENINGS IN GRATING AS REQUIRED. ALL OPENINGS THROUGH GRATING SHALL BE BANDED.

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

STRUCTURAL GENERAL NOTES CONTINUED

NO.	DATE	REVISION	BY	CK

REVIEWED BY:

DATE:

PERMIT SUBMITTAL

ALISON M. WYATT
STATE OF WASHINGTON
51513
REGISTERED PROFESSIONAL ENGINEER
11/17/2025

CHECKED BY: AMWY
DESIGNED BY: AXVI
DRAWN BY: JCFL

SUBMITTAL DATE: 12/09/24

PROJECT NO. MRCR000-2005

SHEET NO. 12 OF 25

S2

SCHEDULE K - CONTRACTOR'S STATEMENT OF RESPONSIBILITY FOR SEISMIC RESISTANCE SECTION 1704.4		
TYPE	REQUIRED	NOT REQUIRED
1. CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN THE FOLLOWING FOR CONTRACTOR AND EACH SUBCONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF THE MAIN WIND OR SEISMIC-FORCE-RESISTING SYSTEM, DESIGNATED SEISMIC SYSTEMS OR A WIND OR SEISMIC-RESISTING COMPONENT LISTED IN THE STATEMENT OF SPECIAL INSPECTIONS. THE CONTRACTOR AND SUBCONTRACTORS SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK ON THE SYSTEM OR COMPONENT. THE CONTRACTOR'S STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF THE AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION. INCLUDING: SPECIAL INSPECTIONS, TESTING OR STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE ARE REQUIRED AS SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL ON THIS STATEMENT OF SPECIAL INSPECTION:	X	--
a. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL INSPECTION REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTIONS AND THE ATTACHED SCHEDULES.	X	--
b. ACKNOWLEDGEMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING SAFETY DIVISION.	X	--
c. PROCEDURES FOR EXERCISING CONTROL WITHIN CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING AND THE DISTRIBUTION OF THE REPORTS.	X	--
d. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.	X	--

SCHEDULE L - STRUCTURAL OBSERVATIONS SECTION 1704.6		
TYPE	CONDITION PROMPTING SPECIAL INSPECTION	WSBC REFERENCE
1. STRUCTURAL OBSERVATIONS FOR STRUCTURES WHERE ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST		1704.6.1
c. STRUCTURAL OBSERVATIONS FOR STRUCTURES WHEN SO DESIGNATED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE OF THE DESIGN.	X	
2. STRUCTURAL OBSERVATIONS FOR SEISMIC RESISTANCE FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY D, E, OR F WHERE ONE OR MORE OF THE FOLLOWING CONDITIONS EXIST.		1704.6.2
a. STRUCTURAL OBSERVATIONS FOR STRUCTURES CLASSIFIED AS RISK CATEGORIES III OR IV.	X	

REQUIRED SPECIAL INSPECTIONS OF SHOP FABRICATION OF LOAD-BEARING MEMBERS OR LATERAL LOAD-RESISTING MEMBERS OR ASSEMBLIES SECTION 1704.2.5	
TYPE	WSBC REFERENCE
1. SPECIAL INSPECTION IS NOT REQUIRED WHERE THE WORK IS DONE ON THE PREMISES OF AN APPROVED FABRICATOR. ATTACH APPROVED FABRICATOR'S CERTIFICATE OF COMPLIANCE OR REGISTRATION BY A NATIONALLY RECOGNIZED ACCREDITING AUTHORITY AS APPROVED FABRICATOR	1704.2.5 & 1704.2.5.1

SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE SECTION (SEE WSBC SECTION 1705.12 AND EXCEPTIONS)				
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	WSBC REFERENCE
2. DESIGNATED SEISMIC SYSTEMS' INSPECTION FOR STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E, OR F. CONSTRUCTION DOCUMENTS SHALL SPECIFY THE REQUIREMENTS FOR CERTIFICATION BY ANALYSIS, TESTING OR EXPERIENCE DATA FOR NONSTRUCTURAL COMPONENTS AND DESIGNATED SEISMIC SYSTEMS PER ASCE 7 SECTION 13.2.2, VERIFY THAT LABELING, ANCHORAGE OR MOUNTING SYSTEMS CONFORM TO THE CERTIFICATE OF COMPLIANCE.			ASCE 7 SECTION 13.2.2	--
3. ARCHITECTURAL COMPONENTS' PERIODIC INSPECTION IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORIES D, E, OR F			--	1705.12.5
a. ERECTION AND FASTENING OF EXTERIOR CLADDING, INTERIOR AND EXTERIOR NONBEARING WALLS, AND INTERIOR AND EXTERIOR VENEER MORE THAN 30 FEET IN HEIGHT ABOVE GRADE OR WALKING SURFACE	--	X		
4. MECHANICAL AND ELECTRICAL COMPONENTS' INSPECTION IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORIES C, D, E, OR F				1705.12.6
a. ANCHORAGE OF ELECTRICAL EQUIPMENT FOR EMERGENCY OF STANDBY POWER SYSTEMS	--	X	--	
c. INSTALLATION AND THE ANCHORAGE OF PIPING SYSTEMS CARRYING HAZARDOUS MATERIALS AND THEIR ASSOCIATED MECHANICAL UNITS.	--	X	--	
d. INSTALLATION AND THE ANCHORAGE OF HVAC DUCTWORK THAT WILL CONTAIN HAZARDOUS MATERIALS.	--	X	--	
e. INSTALLATION AND ANCHORAGE OF VIBRATION ISOLATION SYSTEMS WHERE THE CONSTRUCTION DOCUMENTS REQUIRE A NORMAL CLEARANCE OF 0.25" OR LESS BETWEEN THE EQUIPMENT SUPPORT FRAME AND RESTRAINT.	--	X	--	
f. INSTALLATION OF MECHANICAL AND ELECTRICAL EQUIPMENT, INCLUDING DUCT WORK, PIPING SYSTEMS, AND THEIR STRUCTURAL SUPPORTS, WHERE AUTOMATIC FIRE SPRINKLER SYSTEMS ARE INSTALLED.	--	X	--	
1) MINIMUM CLEARANCES HAVE BEEN PROVIDED AS REQUIRED	--	X	13.2.3 ASCE/SEI 7	
2) A NOMINAL CLEARANCE OF NOT LESS THAN 3 INCHES HAS BEEN PROVIDED BETWEEN FIRE PROTECTION	--	X	--	
3) SPRINKLER SYSTEM DROPS AND SPRINGS: STRUCTURAL MEMBERS NOT USED COLLECTIVELY OR INDEPENDENTLY TO SUPPORT THE SPRINKLERS: EQUIPMENT ATTACHED TO THE BUILDING STRUCTURE; AND OTHER SYSTEMS' PIPING (MINIMUM CLEARANCE INSPECTION NOT REQUIRED WHERE FLEXIBLE SPRINKLER HOSE FITTINGS ARE USED).	--	X	--	

REQUIRED TESTING AND QUALIFICATION FOR SEISMIC RESISTANCE SECTION 1703.13				
TYPE	NOT REQUIRED	REQUIRED	REFERENCED STANDARD	WSBC REFERENCE
1. TESTING OF NONSTRUCTURAL COMPONENTS SUCH AS ARCHITECTURAL, MECHANICAL AND ELECTRICAL COMPONENTS IN STRUCTURES ASSIGNED SEISMIC DESIGN CATEGORIES B, C, D, E OR F AND WHERE THE REQUIREMENTS ARE MET BY SUBMITTAL OF MANUFACTURER'S CERTIFICATION AND COMPLY WITH WSBC	--	X	ASCE 7 SECTION 13.2.1 ITEM 2	1705.13.2
a. MANUFACTURER'S CERTIFICATION THAT THE COMPONENT IS SEISMICALLY QUALIFIED BY ONE OR MORE OF THE FOLLOWING AND AS SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL ON THE CONSTRUCTION DOCUMENTS:	--	X	--	
1) ANALYSIS.	--	X	--	
2) TESTING IN ACCORDANCE WITH THE ALTERNATIVE SET FORTH IN REFERENCE SECTION OF ASCE 7.	--	X	ASCE 7 SECTION 13.2.5	
3) EXPERIENCE DATA IN ACCORDANCE WITH THE ALTERNATIVE SET FORTH IN REFERENCE SECTION OF ASCE 7.	--	X	ASCE 7 SECTION 13.2.6	
2. TESTING OF DESIGNATED SEISMIC SYSTEMS IN STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY C, D, E, OR F THAT HAVE MECHANICAL, ELECTRICAL OR PLUMBING COMPONENTS OF THE DESIGNATED SEISMIC SYSTEMS THAT ARE SUBJECT TO THE REQUIREMENTS SET FORTH IN REFERENCE SECTIONS OF ASCE 7	--	X	ASCE 7 SECTION 13.2.1 OR 13.2.2	1705.13.3
a. COMPONENTS WITH HAZARDOUS SUBSTANCES AND ASSIGNED AN IMPORTANCE FACTOR > 1.5 IN ACCORDANCE WITH REFERENCED ASCE 7 SECTION SHALL BE CERTIFIED BY THE MANUFACTURER AS MAINTAINING CONTAINMENT FOLLOWING THE DESIGN EARTHQUAKE GROUND MOTION BY ANALYSIS, APPROVED SHAKE TABLE TESTING IN ACCORDANCE WITH REFERENCED ASCE 7 SECTION OR DATA IN ACCORDANCE WITH REFERENCED ASCE 7 SECTION	--	X	ASCE 7 SECTION 13.1.3 ASCE 7 SECTION 13.2.5 ASCE 7 SECTION 13.2.6	
3. TESTING OF SEISMIC ISOLATION SYSTEM COMPONENTS IN SEISMICALLY ISOLATED STRUCTURES ASSIGNED TO SEISMIC DESIGN CATEGORY B, C, D, E OR F, TESTED IN ACCORDANCE WITH REFERENCED ASCE 7 SECTION.	--	X	ASCE 7 SECTION 17.8 (1705.13.4)	--

SCHEDULE J - SPECIAL CASES SECTION 1705.1.1		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. POST INSTALLED ANCHORS IN CONCRETE OR MASONRY	--	X

TABLE 1705.2 REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION			
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD a
1. MATERIAL VERIFICATION OF HIGH-STRENTH BOLTS, NUTS AND WASHERS:			
a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS AND SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	--	X	AISC 360, SECTION A3.3 AND APPLICABLE ASTM MATERIAL STANDARDS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	--	X	AISC 360, SECTION M2.5
2. INSPECTION OF HIGH-STRENGTH BOLTING:			
a. SNUG-TIGHT JOINTS.	--	X	AISC 360, SECTION M2.5
b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITH MATCHMARKING, TWIST-OFF BOLT OR DIRECT TENSION INDICATOR METHODS OF INSTALLATION.	X	--	
c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-OF-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH METHODS OF INSTALLATION.	--	X	
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL:			
a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.	--	X	AISC 360, SECTION N2.1
b. FOR OTHER STEEL, IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.	--	X	APPLICABLE ASTM MATERIAL STANDARDS
c. MANUFACTURER'S CERTIFIED TEST REPORTS.	--	X	--
4. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:			
a. MANUFACTURER'S CERTIFIED TEST REPORTS.	--	X	--
5. MATERIAL VERIFICATION OF WELD FILLER MATERIALS:			
a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS	--	X	AISC 360, SECTION A3.5 AND APPLICABLE AWS A5 DOCUMENTS
b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	--	X	--
6. INSPECTION OF WELDING:			
a. STRUCTURAL STEEL AND COLD-FORMED STEEL DECK:			
1) COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS.	X	--	AWS D1.1
2) MULTIPASS FILLET WELDS.	X	--	
3) SINGLE-PASS WELDS > 5/16".	X	--	
4) OTHER REINFORCING STEEL.	--	X	
5) SINGLE-PASS FILLET WELDS ≤ 5/16".	--	X	
6) FLOOR AND ROOF DECK WELDS.	--	X	ASW D1.3
b. REINFORCING STEEL:			
1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.	--	X	AWS D1.4, ACI 318 SECTION 4.2.2
2) REINFORCING STEEL RESISTING FLEXRUAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALL OF CONCRETE AND SHEAR REINFORCEMENT	X	--	
3) SHEAR REINFORCEMENT.	X	--	
4) OTHER REINFORCING STEEL.	--	X	
7. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIAMCE:			
a. DETAILS SUCH AS BRACING AND STIFFENING.	--	X	--
b. MEMBER LOCATION.	--	X	
c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION	--	X	

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

SPECIAL INSPECTIONS AND TESTING

NO.	DATE	REVISION	BY	CK

REVIEWED BY:

DATE:

PERMIT SUBMITTAL

ALISON M. WYATT — STATE OF WASHINGTON — 53513 — REGISTERED PROFESSIONAL ENGINEER

11/17/2025

CHECKED BY: AMWY
DESIGNED BY: AXVI
DRAWN BY: JCFL

SUBMITTAL DATE: 12/09/24

PROJECT NO. MRCR000-2005

SHEET NO. 13 OF 25

S3

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TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION				
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	--	X	ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING.				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	--	X	AWS D1.4 ACI 318: 26.6.4	--
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"	--	X		
c. INSPECT ALL OTHER WELDS.	--	--		
3. INSPECT ANCHORS CAST IN CONCRETE.	--	X	ACI 318: 17.8.2	--
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS.				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	--	X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	--
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	X	X		
5. VERIFY USE OF REQUIRED DESIGN MIX	--	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE AND TECHNIQUES.	X	--	ASTM C172 ASTMC31 ACI 318: 26.5, 26.12	1908.10
7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	--	ACI 318: 26.5	1908.6 1908.7 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	--	X	ACI 318: 26.5.3-26.5.5	1908.9
9. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	--	X	ACI 318: 26.11.2	--
10. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	--	X	ACI 318: 26.11.1.2(b)	--

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS		
TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERFIY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	--	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.	--	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	--	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	--
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	--	X

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

SPECIAL INSPECTIONS AND TESTING CONTINUED

NO.	DATE	REVISION	BY	CK

DATE:

REVIEWED BY:

PERMIT SUBMITTAL

ALISON M. WYATT STATE OF WASHINGTON 51513 REGISTERED PROFESSIONAL ENGINEER

11/17/2025

CHECKED BY: AMWY
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DRAWN BY: JCFL

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PROJECT NO.
MRCR000-2005

SHEET NO. 14 OF 25

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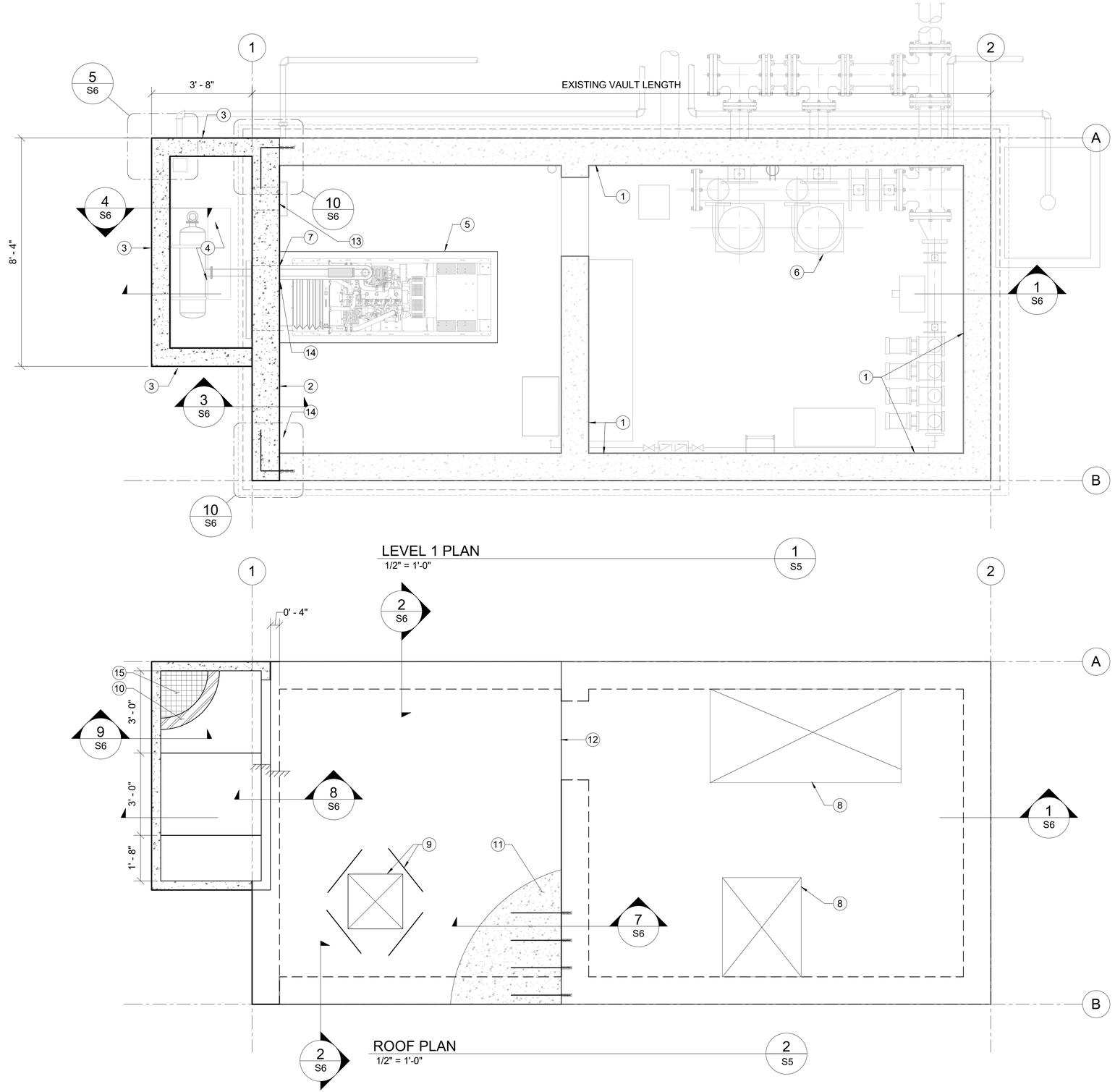

PLAN NOTES

A.	SHEET S1-S4 FOR ALL NOTES AND SCHEDULES.
B.	COORDINATE ALL DIMENSIONS & FEATURES NOT SHOWN WITH ENGINEER
C.	COORDINATE PERIMETER CONDITIONS WITH MECHANICAL DRAWINGS.
D.	CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRETE: ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES; BLOCKOUTS FOR PLUMBING AND VENTS. ALL DUCTS, CHASES AND PIPES PER MECHANICAL, PLUMBING, AND ELECTRICAL.
E.	SEE MECHANICAL DRAWINGS FOR CONTROL/CONSTRUCTION JOINT INFO.
F.	DIMENSIONS SHOWN ARE FOR REFERENCE ONLY, CONFIRM W/ MECHANICAL PLANS AND DETAILS.
G.	ALL FOOTINGS TO BEAR OVER GRADE OVER FIRM, UNDISTURBED, NON-EXPANSIVE NATIVE MATERIAL OR STRUCTURAL FILL.
H,	SLAB) ELEVATION ASSUMED 0'-0". FOR ACTUAL T/SLAB ELEVATION REFER TO CIVIL AND MECHANICAL DRAWINGS. VAPOR BARRIER PER ENGINEER. PROVIDE FREE-DRAINING GRANULAR FILL.
I,	FIBERMESH IS AN ACCEPTABLE ALTERNATE TO WELDED WIRE FABRIC IN THE SLAB ON GRADE. PROVIDE FIBER DOSAGE PER ICBO AND MANUFACTURER RECOMMENDATIONS, BUT NOT LESS THAN ICBO RECOMMENDATIONS. SUBMIT TO ENGINEER FOR REVIEW.

LEGEND

X / 0' - 0"	INDICATES FOOTING TYPE. SEE 1XSX.XX FOR SCHEDULE. INDICATES TOP OF FOOTING ELEVATION.
EL. X'-XX"	INDICATES TOP OF SLAB ELEVATION.
	INDICATES STEP IN ELEVATION.
X	INDICATES HOLDOWN TYPE AND LOCATION. SEE HOLDOWN SCHEDULE FOR ADDITIONAL INFORMATION.
	INDICATES NEW CONCRETE WALL

PLAN KEYNOTES

1	EXISTING CONCRETE WALL TO REMAIN
2	NEW 12" CONC WALL W/ #5 @ 12"OC EW EF
3	NEW 8" CONC WALL W/ REINF #5 @ 10"OC EW
4	8" CONC SLAB ON GRADE W/ REINF #4 @ 12"OC EW SLOPE SLAB PER MEP
5	CONC PAD THICKNESS PER MEP
6	EQUIPMENT PER MEP TYP
7	AIR DISCHARGE OPENING PER MEP PROVIDE ADD'L REINF PER 2/S7
8	EXISTING HATCH
9	NEW ACCESS HATCH PROVIDE ADD'L REINF PER 3/S7
10	MCNICHOLS EXPANDED METAL FLATTENED, GALVANIZED STEEL, HOT DIPPED, 1/2" NO 13 FLATTENED, 57% OPEN AREA, OVER BAR GRATING OR APPROVED EQUAL
11	10" CONCRETE LID W/ #5 @ 10"EW T&B
12	EAST LIMIT OF REMOVAL OF EX TOP SLAB - SAW CUT FULL THICKNESS
13	EXHAUST FAN OPENING (NOMINAL 10" SQUARE) PER MEP PROVIDE ADD'L REINF PER 2/S7
14	CORED WALL PENETRATIONS FOR GENERATOR EXHAUST PIPE THIMBLE AND ELECTRICAL CONDUITS (3) 2" CONDUITS AND PENETRATION SEALS, (1) 1-1/2" CONDUIT AND PENETRATION SEAL. SEE 1/S7 FOR ADD'L INFO
15	FIBERGATE COMPOSITE STRUCTURES, HLC 1-1/2" DEEP x 1"x2" RECTANGULAR MESH, OR APPROVED EQUAL. SEE DETAIL 9/S6 FOR ATTACHMENT

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

STRUCTURAL PLANS

DATE:	BY	CK
	JF	AW

REVIEWED BY: NO.	DATE	REVISION
1	11/14/25	PLAN MODIFICATIONS

PERMIT SUBMITTAL

ALISON M. WYATT — STATE OF WASHINGTON — 24613 — REGISTERED PROFESSIONAL ENGINEER

11/17/2025

CHECKED BY: AMWY
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DRAWN BY: JCFL

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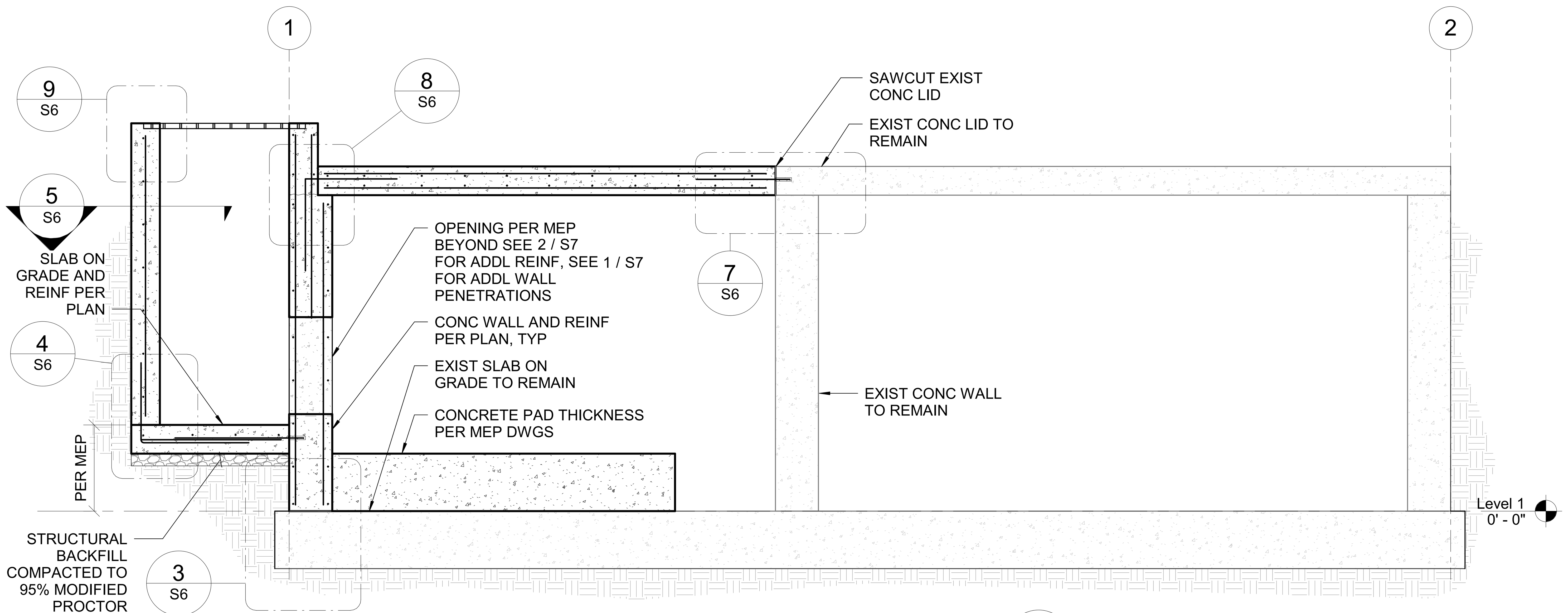
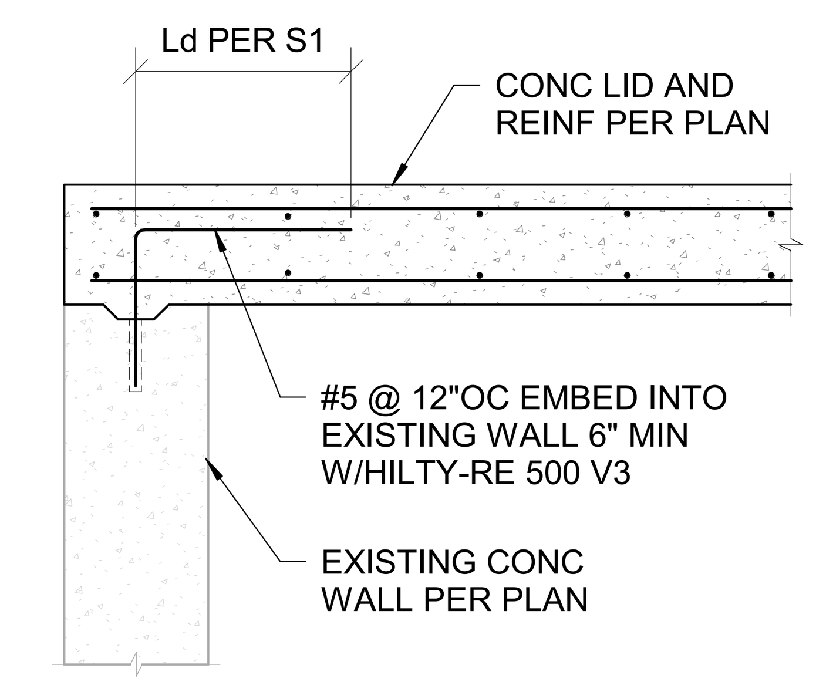


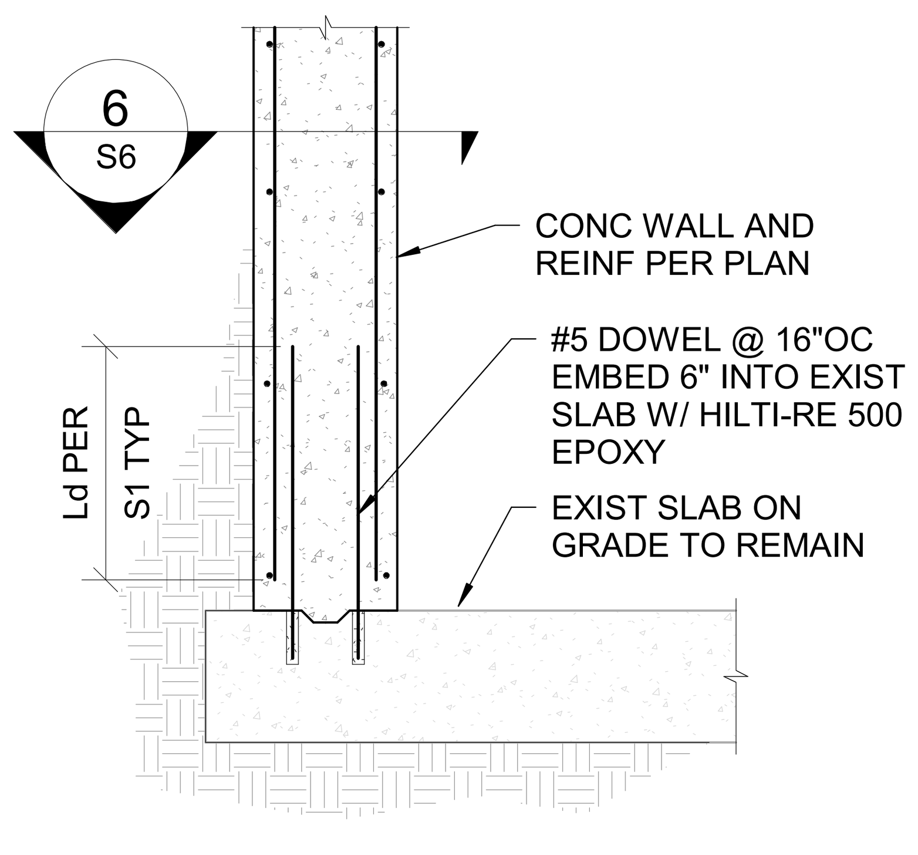
VAULT SECTION — 1 / S6

1/2" = 1'-0"



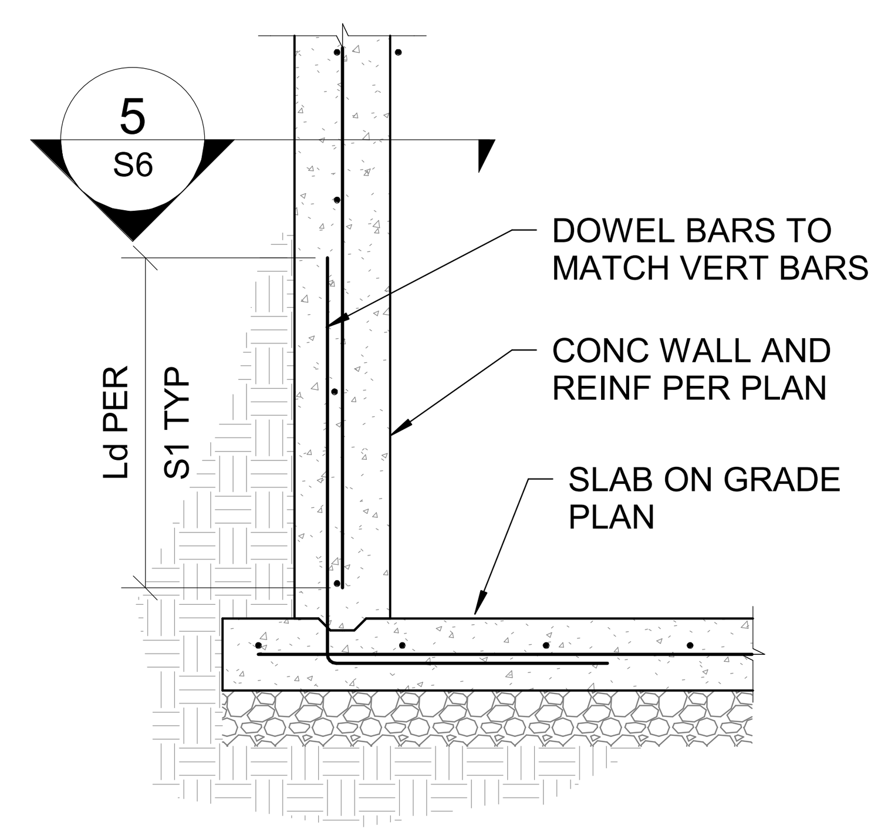
CONC LID TO EXISITNG WALL — 2 / S6

3/4" = 1'-0"



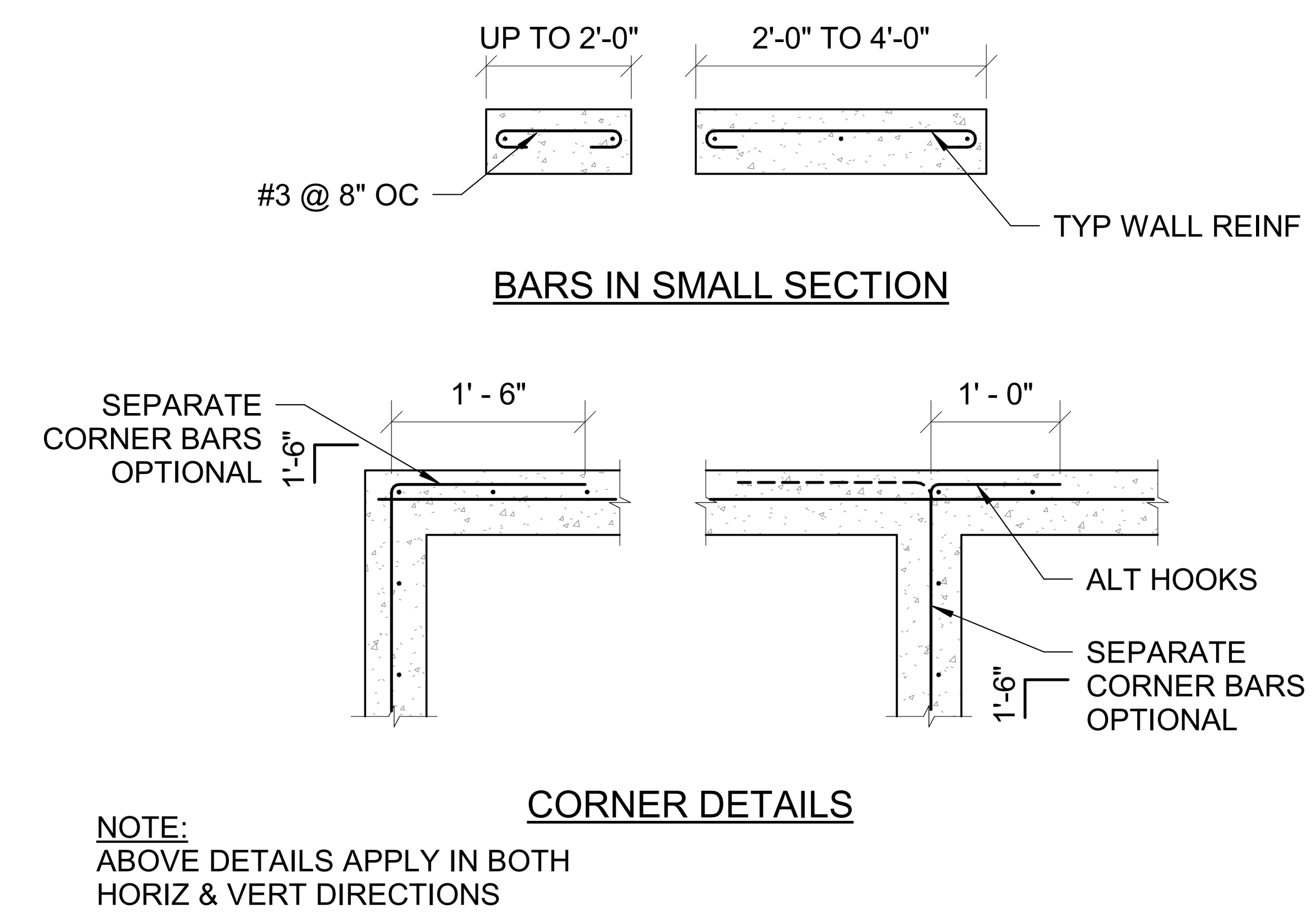
CONC WALL AT EXISTING FOOTING — 3 / S6

3/4" = 1'-0"



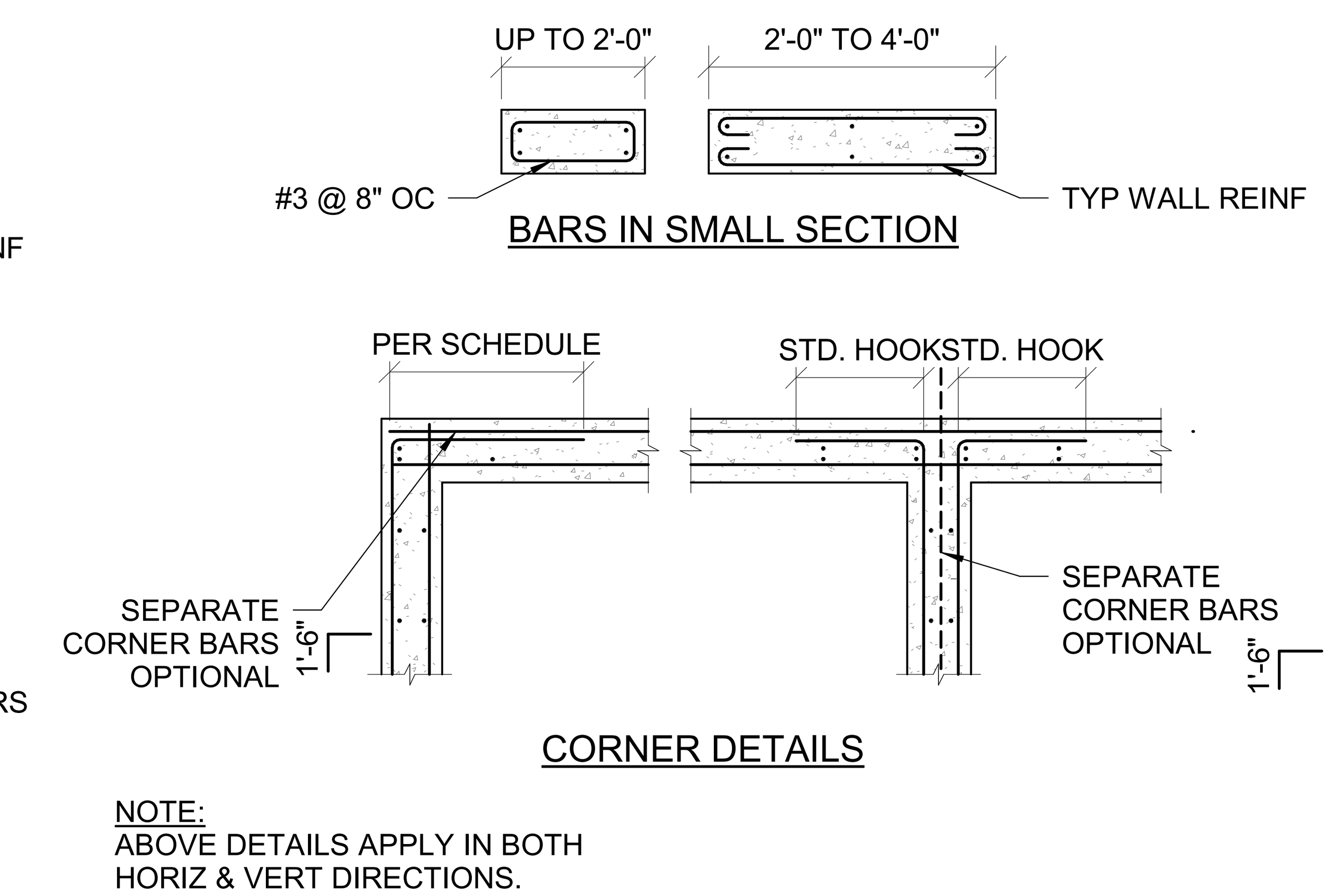
CONC WALL AT KEYED SLAB — 4 / S6

3/4" = 1'-0"



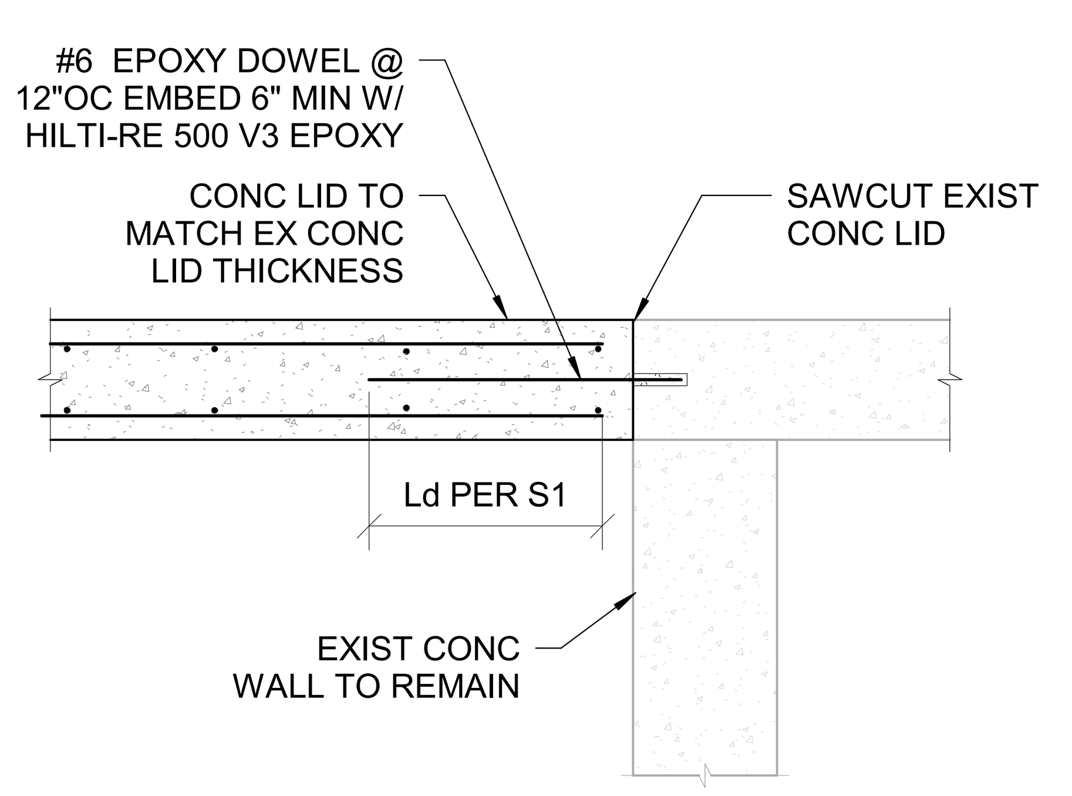
WALL DETAILS-SINGLE LAYER REINFORCING — 5 / S6

3/4" = 1'-0"



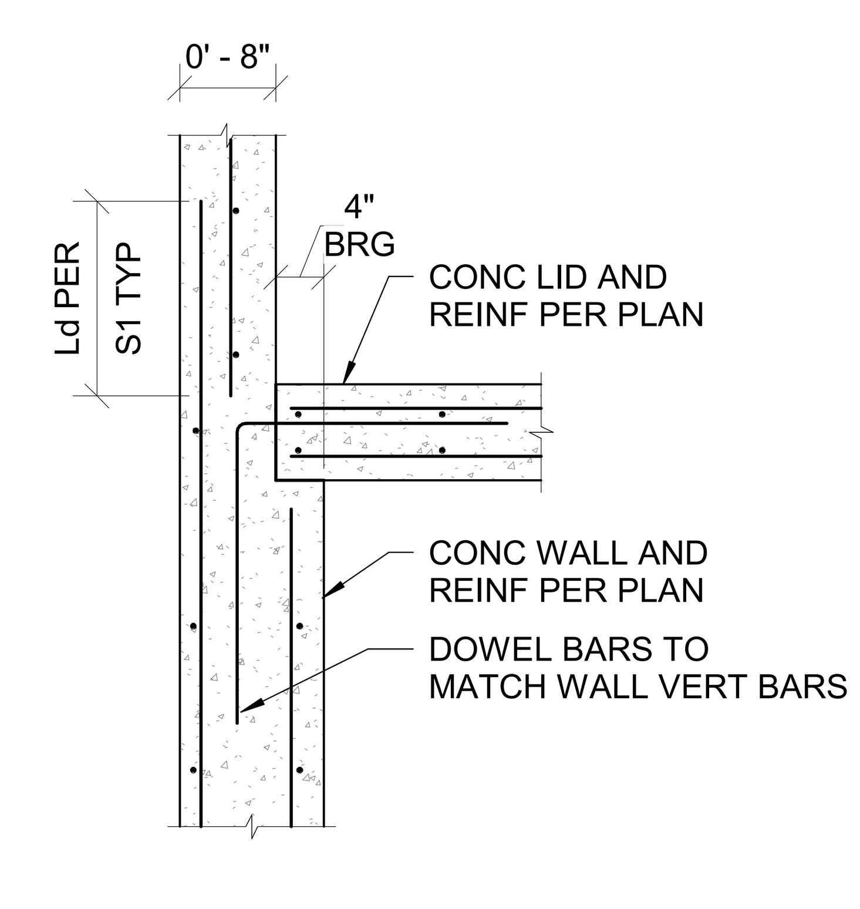
WALL DETAILS-DOUBLELAYER REINFORCING — 6 / S6

3/4" = 1'-0"



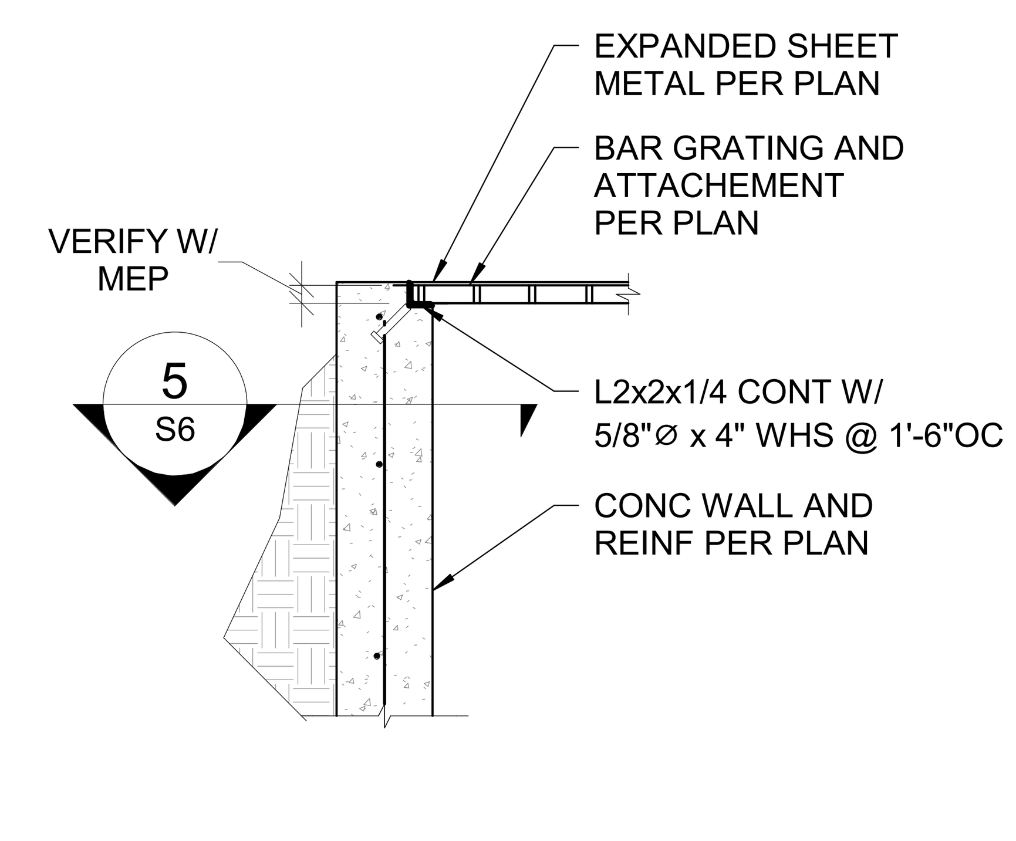
CONC LID TO EXISITNG — 7 / S6

3/4" = 1'-0"



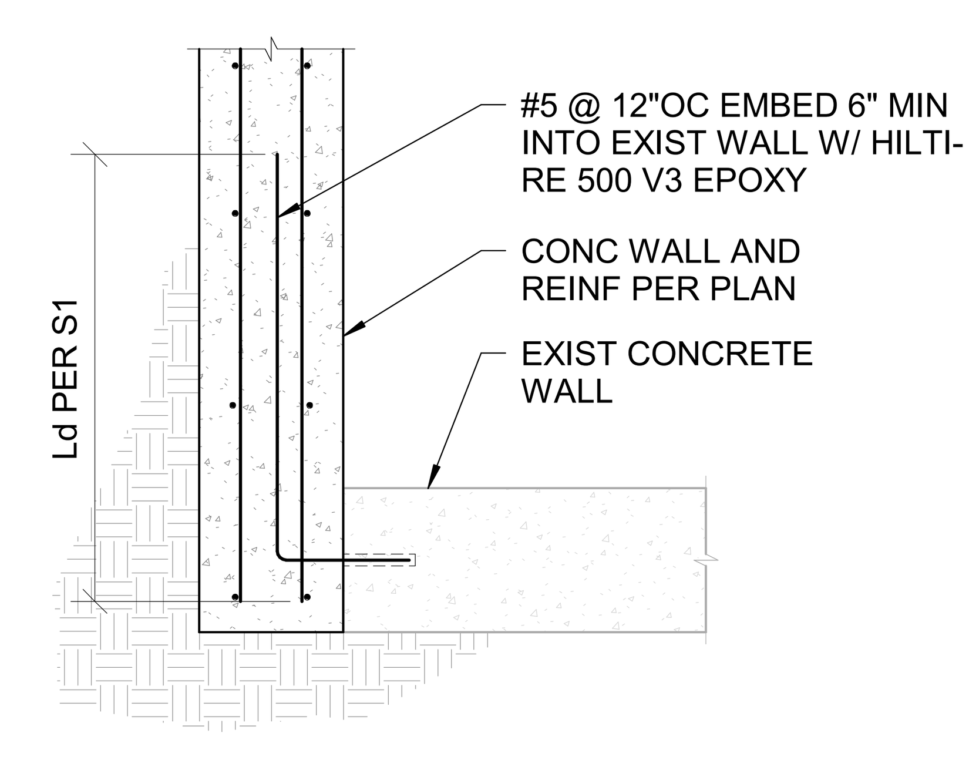
TYP. WALL THICKNESS REDUCTION — 8 / S6

3/4" = 1'-0"



CONC WALL AT KEYED SLAB — 9 / S6

3/4" = 1'-0"



CONC WALL CONNECTION AT EXISTING WALL - PLAN VIEW — 10 / S6

3/4" = 1'-0"

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

BUILDING SECTION AND DETAILS

NO.	DATE	REVISION	BY	CK

REVIEWED BY:

DATE:

PERMIT SUBMITTAL

ALLISON M. WYATT — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER

11/17/2025

CHECKED BY: AMWY

DESIGNED BY: AXVI

DRAWN BY: JCFL

SUBMITTAL DATE: 12/09/24

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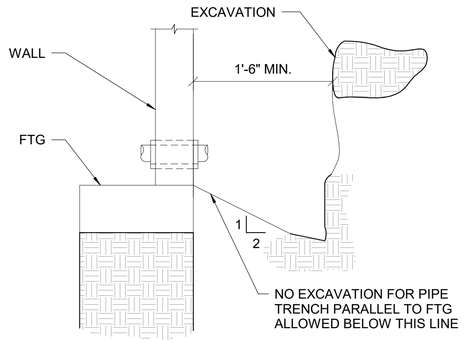
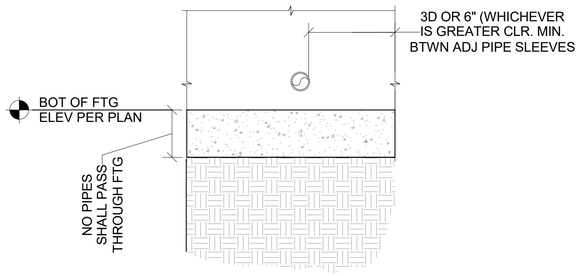
SHEET NO. 16 OF 25

S6



SECTION

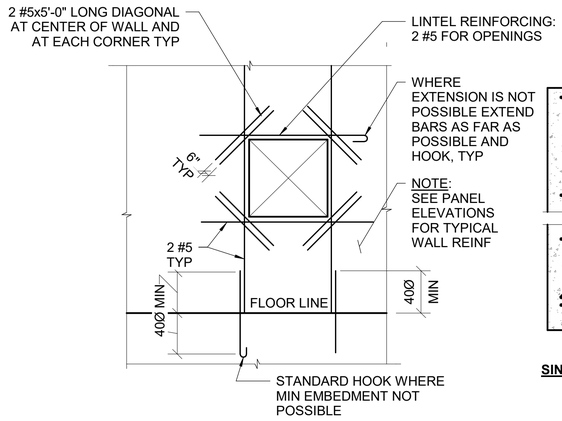


ELEV

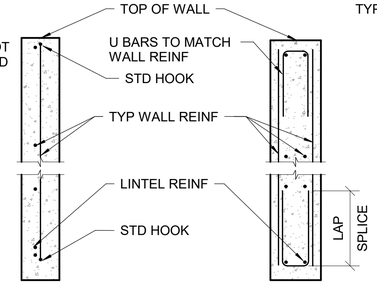
TYP. PIPE PENETRATION AT FOUNDATION WALL

3/4" = 1'-0"

1 / S7

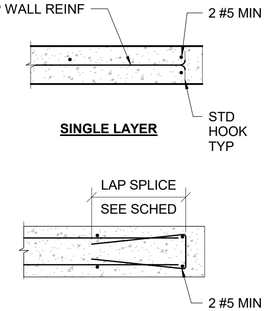


ELEVATION
NTS



SINGLE LAYER **DOUBLE LAYER**

LINTEL AND TOP OF WALL

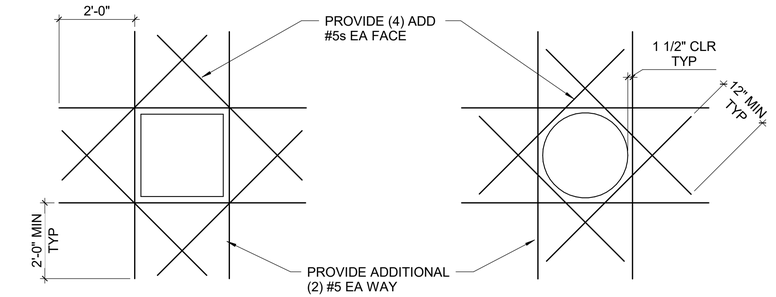


PLAN - JAMB OR END OF WALL

MIN REINF AT CONC PANEL WALL OPNGS

1" = 1'-0"

2 / S7



NOTE:
THESE DETAILS ARE APPLICABLE FOR OPENINGS WITH SIDE OR DIAMETER DIMENSIONS GREATER THAN 12"

ADDITIONAL REINF AT CONC LID OPENING

1/2" = 1'-0"

3 / S7

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

STRUCTURAL DETAILS CONTINUED

NO.	DATE	REVIEWED BY:	DATE:	BY	CK

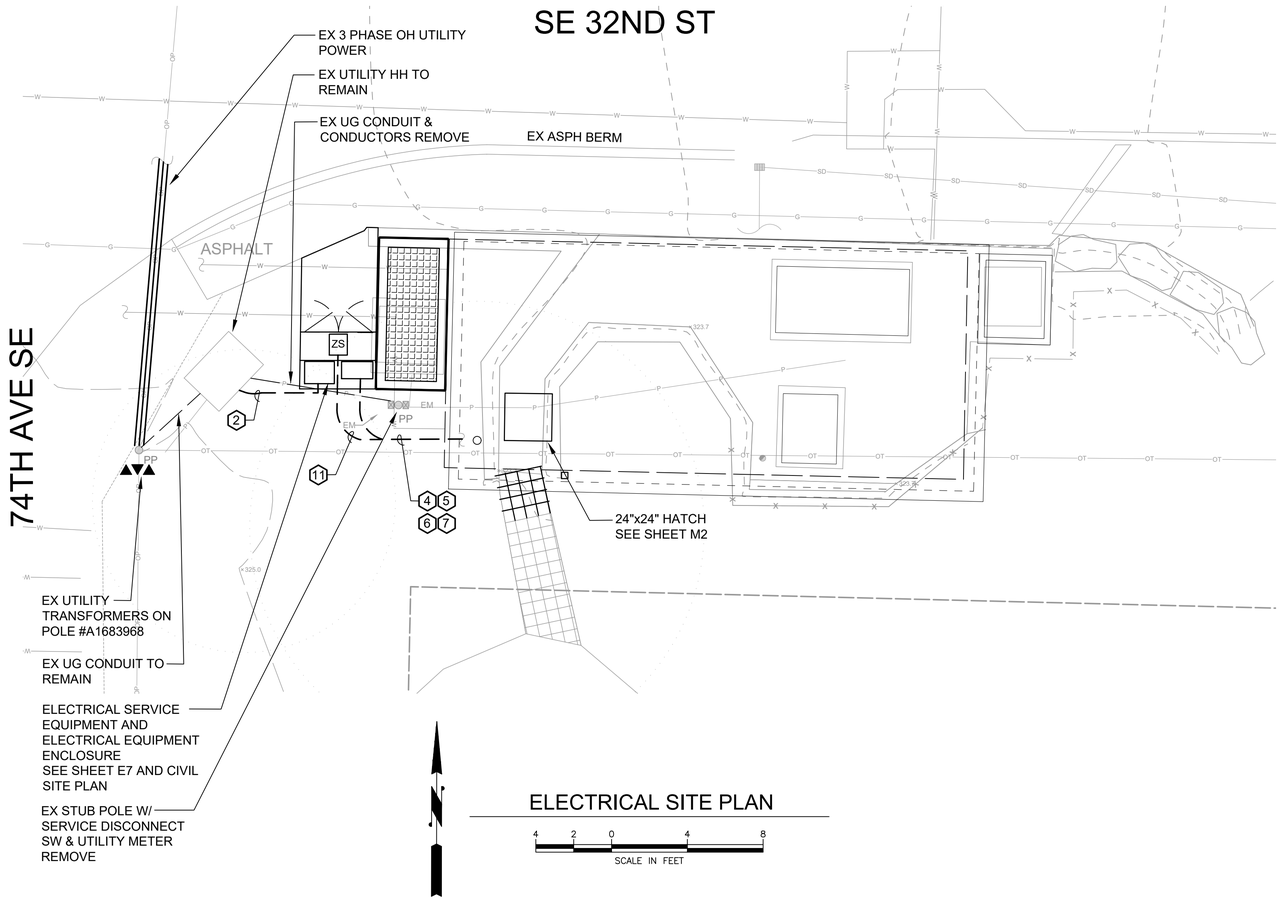
PERMIT SUBMITTAL

ALLISON M. WYATT — STATE OF WASHINGTON — 31517 — REGISTERED PROFESSIONAL ENGINEER

11/17/2025

CHECKED BY:	AMWY
DESIGNED BY:	AXVI
DRAWN BY:	JCFL
SUBMITTAL DATE:	12/09/24
PROJECT NO.	MRCR000-2005
SHEET NO.	17 OF 25

S7



ELECTRICAL SITE PLAN

4 2 0 4 8

SCALE IN FEET

GENERAL ELECTRICAL AND ONE-LINE DIAGRAM SYMBOLS LEGEND

SYMBOL	SYMBOL DESCRIPTION
G	EXPOSED CONDUIT (CROSS TICKS INDICATE NUMBER OF AWG #12 UNLESS OTHERWISE NOTED). G INDICATES GROUND CONDUCTOR
	CONDUIT ROUTED BELOW GROUND OR CONCEALED
	LIQUID TIGHT FLEXIBLE CONDUIT
	CONDUIT TURNED UP OR DOWN
H	HOME RUN TO PANEL. 1/2" CONDUIT. CROSS TICKS INDICATE NO. OF #12 CONDUCTORS, UNLESS OTHERWISE NOTED
G	GROUND CONDUCTOR (ON ONE-LINE DIAGRAM)
N	NEUTRAL CONDUCTOR (ON ONE-LINE DIAGRAM)
	UTILITY CO 3 PHASE TRANSFORMER BANK
	DISCONNECT SWITCH
SPD	SURGE PROTECTIVE DEVICE
	CONDUCTOR CONNECTION (ON ONE-LINE DIAGRAM)
XA XP	BREAKER: AMPERE RATING/ NO. OF POLES (ONE-LINE DIAGRAM)
	EXISTING EQUIPMENT TO BE REMOVED
M 20HP	MOTOR/PUMP-HORSEPOWER (ONE-LINE DIAGRAM)
WP GFCI	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER
J	JUNCTION BOX
F	EXHAUST FAN
	GROUND ROD
XX	FLAG NOTE SYMBOL
XX	CONDUIT AND CONDUCTOR TAG
M WHM	UTILITY METER, WATT HOUR METER
30A 30A	FUSED DISCONNECT SWITCH, AMPERE RATING, FUSE AMPERE RATING
	AUTOMATIC TRANSFER SWITCH
	SWITCH (ONE-LINE DIAGRAM)
	LIMIT SWITCH (ONE-LINE DIAGRAM)
X	EQUIPMENT SCHEDULE CALLOUT
S	LIGHT SWITCH SINGLE POLE, 120V, 20A
ZS	LIMIT SWITCH

ELECTRICAL ABBREVIATIONS LEGEND

SYMBOL	SYMBOL DESCRIPTION
2 PR	2 PAIR
AMP	AMPERE
BB	HAND-OFF-AUTO
BRKR	BREAKER
C, COND	CONDUIT
CGB	CORD GRIP BRUSHING
CPT	CONTROL POWER TRANSFORMER
EXP	EXPLOSION PROOF CX1, DIV 1.
GFI	GROUND FAULT INTERRUPTER
HH	HANDHOLE
HP	HORSEPOWER
KVA	KILOVOLT-AMPERE
MCP	MAIN CONTROL PANEL
PSE	PUGET SOUND ENERGY
SHLD	SHIELDED
SPD	SURGE PROTECTIVE DEVICE
TWSD	TWISTED
WP	WEATHERPROOF

CONSTRUCTION NOTES:

1. SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.
2. ELECTRICAL CONTINUITY TO THE STATION AND PUMP EQUIPMENT MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. 480Y/277 VOLT, 3 PHASE, 150 AMP POWER SHALL BE CONTINUOUSLY PROVIDED TO THE STATION AT ALL TIMES DURING CONSTRUCTION. TEMPORARY, SOUND ATTENUATED STANDBY POWER GENERATORS COMPLETE WITH AUTOMATIC TRANSFER SWITCHES SHALL BE PROVIDED TO ASSURE POWER CONTINUITY. THE AREA SHALL BE SECURED WITH SUITABLE FENCING, BARRIERS, AND MARKING TO PREVENT UNAUTHORIZED ACCESS AND ACCIDENTAL CONTACT WITH TEMPORARY POWER WIRING. SEE TEMPORARY POWER PLAN SHEETS E8-E10 AND SPECIFICATION SECTION 16010 FOR ADDITIONAL REQUIREMENTS.
3. PRIOR TO CONSTRUCTION, CAREFUL CONSIDERATION SHALL BE GIVEN TO SEQUENCING OF ELECTRICAL DEMOLITION, WITH CAREFUL CONSIDERATION FOR TEMPORARY POWER AND RECONNECTION. NO POWER TRANSFERS SHALL OCCUR ON MONDAYS, FRIDAYS OR THE DAY BEFORE A HOLIDAY. ALL POWER TRANSFERS SHALL BE SCHEDULED IN COOPERATION WITH THE CITY AT LEAST TWENTY-ONE BUSINESS DAYS IN ADVANCE. SEE TEMPORARY POWER PLAN SHEETS E8-E10 AND SPECIFICATION SECTION 16010 FOR ADDITIONAL REQUIREMENTS.

FOR ELECTRICAL DESIGN ELEMENTS

ROBERT J CASNE STATE OF WASHINGTON 12218 REGISTERED PROFESSIONAL ENGINEER 12/16/25

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

ELECTRICAL SITE PLAN, ELECTRICAL LEGEND AND ABBREVIATIONS

DATE: --/--/-- BY CK

REVISION BY: ---- NO. DATE REVISION

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

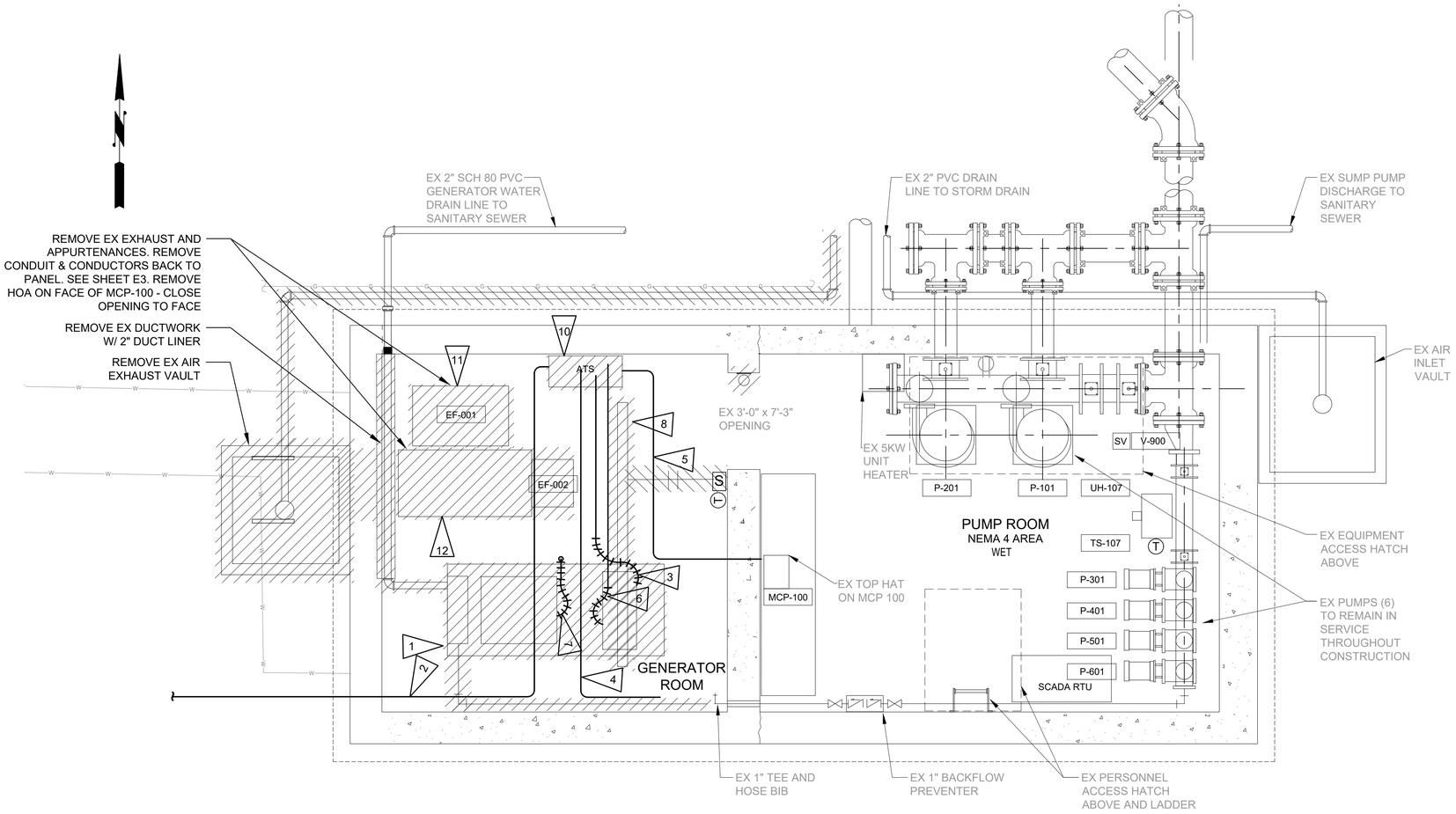
SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. **18 0F 27**

E1

Plot Date: 12/16/2025 2:41 PM By: Rachel Sebastian
Save Date: 12/16/2025 2:40 PM By: Radis File: P:\MMRCR0000\2005\04\00CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg



VAULT ELECTRICAL DEMOLITION PLAN

2 1 0 2 4
SCALE IN FEET

FLAG NOTES:

1. EXISTING GENERATOR. DISCONNECT COOLING WATER INPUT AND DISCHARGE LINES, DRAIN AND PROPERLY DISPOSE OF DIESEL FUEL, ENGINE COOLANT, ENGINE OIL. DISCONNECT ALL CONDUIT AND CONDUCTORS, BATTERY CHARGER, HEAT EXCHANGER, EXHAUST PIPING AND MUFFLER. REMOVE BATTERIES AND REMOVE ENTIRE GENERATOR SET. DELIVER GENERATOR (NOT INCLUDING FUEL TANK) AND ATS TO CITY PUBLIC WORKS SHOP (9601 SE 36TH ST) GRIND ANCHOR BOLTS FLUSH WITH FLOOR.
2. EX SERVICE CONDUIT – REMOVE CONDUIT AND CONDUCTOR FROM ATS TO METER.
3. EX GENERATOR POWER CONDUIT AND CONDUCTOR – REMOVE.
4. EX EMPTY CONDUIT -REMOVE.
5. EX LOAD CONDUIT- REMOVE CONDUIT AND CONDUCTOR FROM ATS TO MCP-100.
6. EX GENERATOR CONTROL CONDUIT – REMOVE CONDUIT AND CONDUCTOR FROM GENERATOR TO ATS.
7. EX POWER TO BATTERY CHARGER AND ENGINE HEATER- REMOVE CONDUIT AND CONDUCTOR BACK TO MCP-100.
8. EX LIGHT FIXTURE – REMOVE AND ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100 AND SW ON WALL.
9. REMOVE ALL CONDUIT AND CONDUCTORS IN THE VAULT CEILING BACK TO THE MCP-100. REMOVE VAULT CEILING FOR EXTRACTION OF EXISTING GENERATOR - SEE CIVIL DRAWINGS FOR DETAILS.
10. EX ATS – REMOVE.
11. EX EF-001 – REMOVE FAN AND REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100. REMOVE H-O-A ON FACE OF MCP-100. CLOSE OPENING IN FACE.
12. EX EF-002 – REMOVE FAN AND REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100.

DEMOLITION NOTE:

1. TEMPORARY POWER SUPPLY SHALL BE COMPLETED AND CONNECTED PRIOR TO ANY DEMOLITION OF EX ELECTRICAL OR MECHANICAL EQUIPMENT. SEE SHEETS E8, E9, AND E10 FOR DETAILED REQUIREMENTS.
2. SEE STRUCTURAL PLANS FOR SPECIFIC DEMOLITION REQUIREMENTS FOR VAULT TOP AND END WALL MODIFICATIONS.
3. SEE MECHANICAL PLANS FOR SPECIFIC DEMOLITION REQUIREMENTS FOR OTHER EQUIPMENT AND MATERIALS.
4. REMOVE ALL EQUIPMENT ANCHORING AND SUPPORT HARDWARE, GRIND EMBEDDED MATERIALS SMOOTH TO EX WALL AND REPAIR VOIDS PER (1/M3)

FOR ELECTRICAL DESIGN ELEMENTS

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

VAULT ELECTRICAL DEMOLITION PLAN

NO.	DATE	REVISION	BY	CK
REVISION BY: ----			DATE: --/--/--	

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 19 0F 27

E2

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadallon
Save Date: 12/16/2025 2:40 PM By: R.sads File:P:\MMRCR0000\2005\0400\CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg

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EXISTING GENERATOR

EXISTING GENERATOR CONDUITS AND LIGHTING

EXISTING ATS

EXISTING VENTILATION FANS

FLAG NOTES:

1. EXISTING GENERATOR. DISCONNECT COOLING WATER INPUT AND DISCHARGE LINES, DRAIN AND PROPERLY DISPOSE OF DIESEL FUEL, ENGINE COOLANT, ENGINE OIL. DISCONNECT ALL CONDUIT AND CONDUCTORS, BATTERY CHARGER, HEAT EXCHANGER, EXHAUST PIPING AND MUFFLER. REMOVE BATTERIES AND REMOVE ENTIRE GENERATOR SET. DELIVER GENERATOR (NOT INCLUDING FUEL TANK) AND ATS TO CITY PUBLIC WORKS SHOP (9601 SE 36TH ST) GRIND ANCHOR BOLTS FLUSH WITH FLOOR.
2. EX SERVICE CONDUIT – REMOVE CONDUIT AND CONDUCTOR FROM ATS TO METER.
3. EX GENERATOR POWER CONDUIT AND CONDUCTOR – REMOVE.
4. EX EMPTY CONDUIT -REMOVE.
5. EX LOAD CONDUIT- REMOVE CONDUIT AND CONDUCTOR FROM ATS TO MCP-100.
6. EX GENERATOR CONTROL CONDUIT – REMOVE CONDUIT AND CONDUCTOR FROM GENERATOR TO ATS.
7. EX POWER TO BATTERY CHARGER AND ENGINE HEATER- REMOVE CONDUIT AND CONDUCTOR BACK TO MCP-100.
8. EX LIGHT FIXTURE – REMOVE AND ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100 AND SW ON WALL.
9. REMOVE ALL CONDUIT AND CONDUCTORS IN THE VAULT CEILING BACK TO THE MCP-100. REMOVE VAULT CEILING FOR EXTRACTION OF EXISTING GENERATOR - SEE CIVIL DRAWINGS FOR DETAILS.
10. EX ATS – REMOVE.
11. EX EF-001 – REMOVE FAN AND REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100. REMOVE H-O-A ON FACE OF MCP-100. CLOSE OPENING IN FACE.
12. EX EF-002 – REMOVE FAN AND REMOVE ALL ASSOCIATED CONDUIT AND CONDUCTORS BACK TO MCP-100.

DEMOLITION NOTE:

1. TEMPORARY POWER SUPPLY SHALL BE COMPLETED AND CONNECTED PRIOR TO ANY DEMOLITION OF EX ELECTRICAL OR MECHANICAL EQUIPMENT. SEE SHEETS E8, E9, AND E10 FOR DETAILED REQUIREMENTS.

FOR ELECTRICAL DESIGN ELEMENTS

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12216
REGISTERED PROFESSIONAL ENGINEER
12/16/25

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT
CITY OF MERCER ISLAND

ELECTRICAL DEMOLITION PHOTOS

NO.	REVISION BY: ---- DATE	REVISION	DATE: -/-/-- BY	CK

FINAL FOR BID

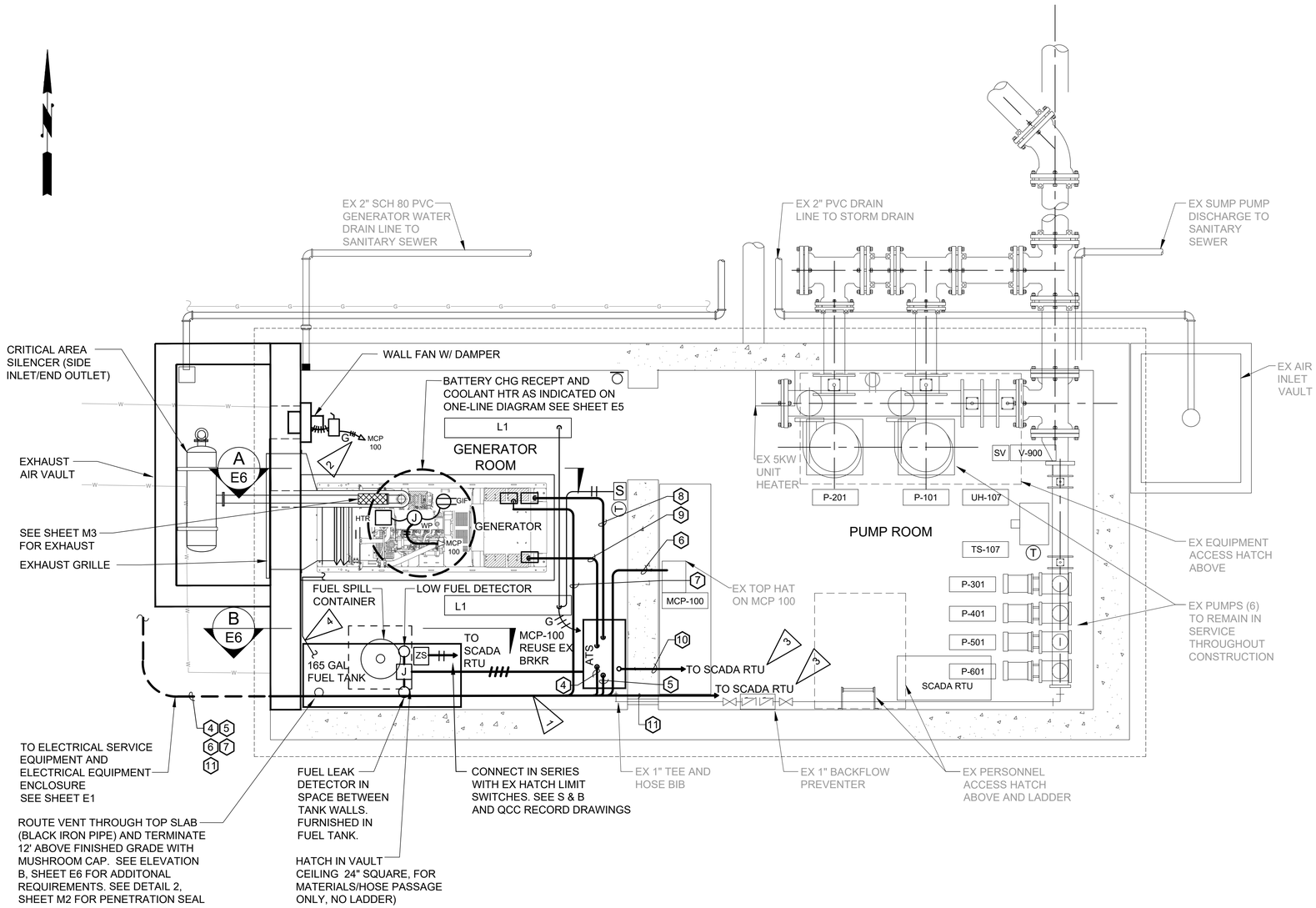
CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 20 OF 27

E3



VAULT ELECTRICAL EQUIPMENT FLOOR PLAN

SCALE IN FEET: 2 1 0 2 4

FLAG NOTES:

1. MOUNT CONDUIT ON WALL USING UNISTRUT AND APPROPRIATE CLAMPS.
2. REUSE 20A-1P BREAKER IN MCP-100 FOR WALL FAN. REUSE H O A ON FACE OF MCP-100. SEE WIRING DIAGRAM ON SHEET E6.
3. COORDINATE WITH CITY'S SCADA PROGRAMMER. TERMINATE DRY CONTACTS ON TERMINALS IDENTIFIED BY CITY'S SCADA PROGRAMMER. SEE SPECIFICATION SECTION 16921 AND QUALITY CONTROLS CORPORATION REFERENCE DRAWINGS.
4. SEE CONSTRUCTION KEY NOTE 6, SHEET M2.

CONSTRUCTION NOTES:

1. SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.
2. SEAL ALL VAULT WALL CONDUIT PENETRATIONS PER DETAIL 2, SHEET M2.

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	MFG CALLOUT
L1	NOMINAL 4' LONG x 7" WIDE x 4" DEPTH LED DAMP LABELED FIXT. SURFACE MOUNT 4000K CCT LDPI INDUSTRIAL LIGHTING	LDPI INDUSTRIAL LIGHTING LE203774 V14 ASF SM SL

FOR ELECTRICAL DESIGN ELEMENTS

ROBERT J CASNE STATE OF WASHINGTON 12218 REGISTERED PROFESSIONAL ENGINEER 12/16/25

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Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

VAULT ELECTRICAL EQUIPMENT FLOOR PLAN

DATE: --/--/-- BY CK

REVISION BY: ---- NO. | DATE | REVISION

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO. **MRCR0000-2005**

SHEET NO. **21 0F 27**

E4

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadelian
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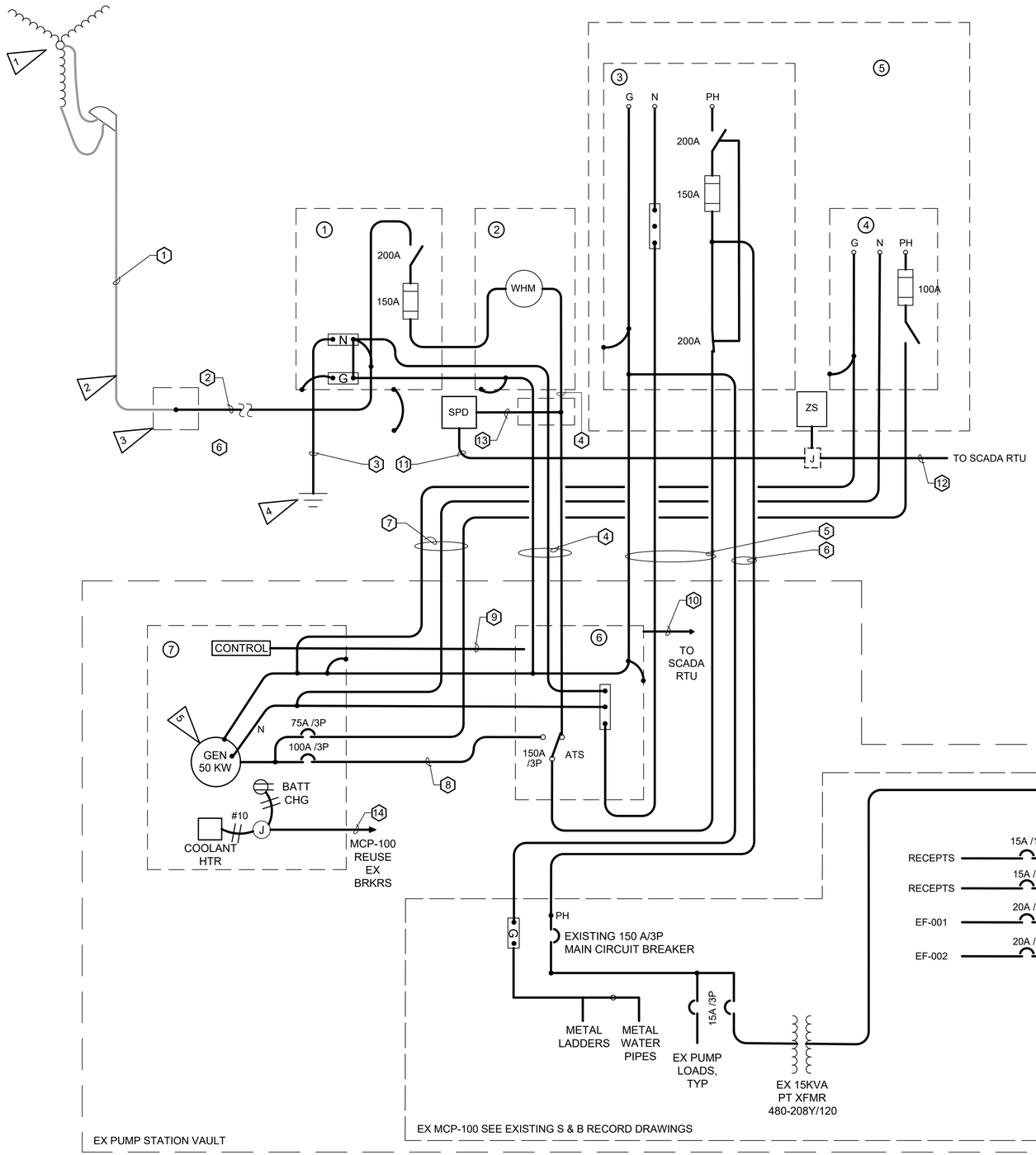

ELECTRICAL ONE LINE DIAGRAM

FLAG NOTES:

1. EX (3) 25kVA SINGLE PHASE TRANSFORMERS CONNECTED 480Y/277 V, 3 PHASE SECONDARY
   MAX AVAIL FAULT CURRENT 4800 A.
2. EX CONDUIT & CONDUCTOR ON POLE TO REMAIN.
3. EX HANDHOLE, REUSE IN PLACE.
4. PROVIDE (2) ¾", 8' LONG COPPERCLAD STEEL GROUND RODS 8' APART INTERCONNECTED WITH #2 BARE COPPER.
5. NEUTRAL AND GROUND MUST BE SEPARATE AT GENERATOR. GROUND FRAME OF GENERATOR TO THE EQUIPMENT GROUND CONDUCTOR. THE NEUTRAL SHALL BE SOLIDLY CONNECTED TO THE NEUTRAL BUS IN THE ATS & MTS AND SERVICE NEUTRAL.

CONDUIT & CONDUCTOR SCHEDULE

NO	DESCRIPTION
1	2"C, 4#1/0 (EXISTING)
2	2"C, 4#1/0
3	3/4" PVC, 1#6G
4	2"C, 4#1/0, 1#6G
5	2"C, 4#1/0, 1#6G
6	2"C, 3#1/0, 1#6G
7	1 1/2"C, 4#1, 1#8G
8	1 1/2"C, 4#1, 1#8G
9	3/4"C, 10#14
10	1"C, 24#14
11	1/2"C, 2#14
12	1/2"C, 4#14
13	3/4"C, 5#10
14	3/4"C, 2#10, 2#12, 1#12G

EQUIPMENT SCHEDULE

NO	DESCRIPTION
1	SERVICE ENTRANCE DISCONNECT
2	METER SOCKET PER PSE REQUIREMENTS
3	MANUAL TRANSFER SWITCH W/ CAM-LOK CONNECTOR
4	DISCONNECT SW W/ CAM-LOK CONNECTOR
5	ELECTRICAL EQUIPMENT ENCLOSURE
6	AUTOMATIC TRANSFER SWITCH
7	STANDBY GENERATOR

FOR ELECTRICAL DESIGN ELEMENTS

ROBERT J. CASNE — STATE OF WASHINGTON — 12218 — REGISTERED PROFESSIONAL ENGINEER — 12/16/25

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

ELECTRICAL ONE LINE DIAGRAM AND SCHEDULES

DATE: --/--/-- BY CK

REVISION BY: ---- NO. DATE REVISION

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 22 0F 27

E5

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadatian
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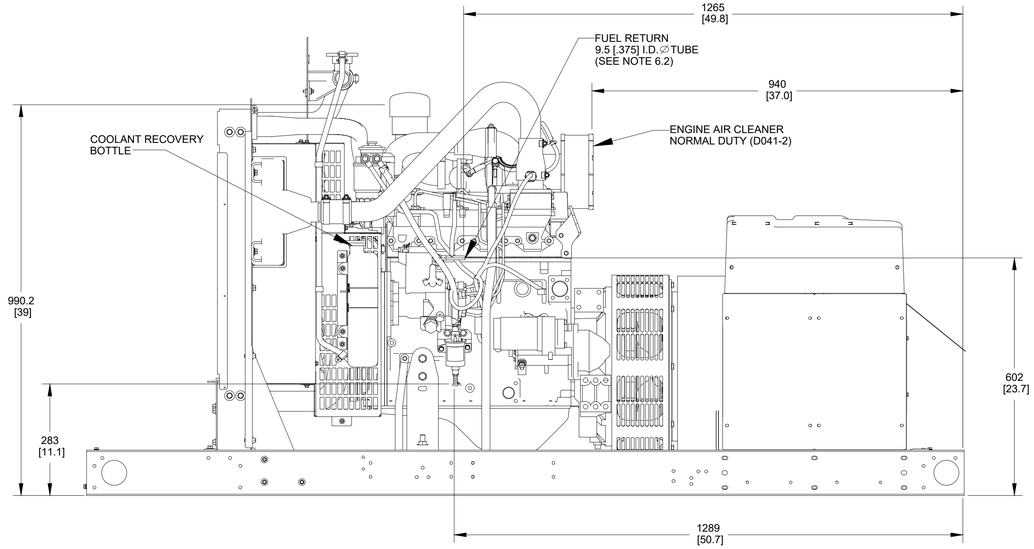
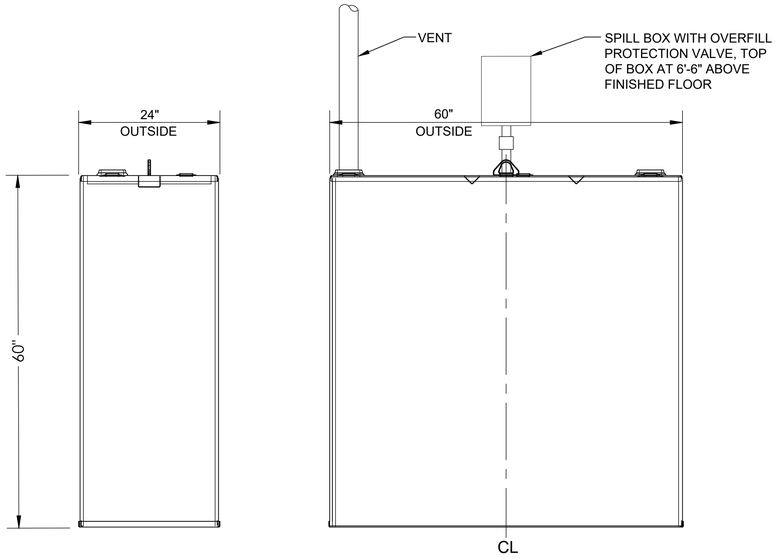


NOTES:

1. GENERATOR SHALL BE DIESEL FUELED ENGINE GENERATOR WITH MINIMUM CAPACITY OF 50 KW. SEE SPECIFICATIONS FOR EQUIPMENT REQUIREMENTS.
2. GENERATOR DEPICTED IN ELEVATION A IS FOR GENERAL REFERENCE ONLY, BASED ON EQUIPMENT AVAILABLE FROM CUMMINS. VERIFY ALL DIMENSIONS OF GENERATOR TO BE INSTALLED IN STATION.

A - ELEVATION - GENERATOR

NTS



LEFT SIDE

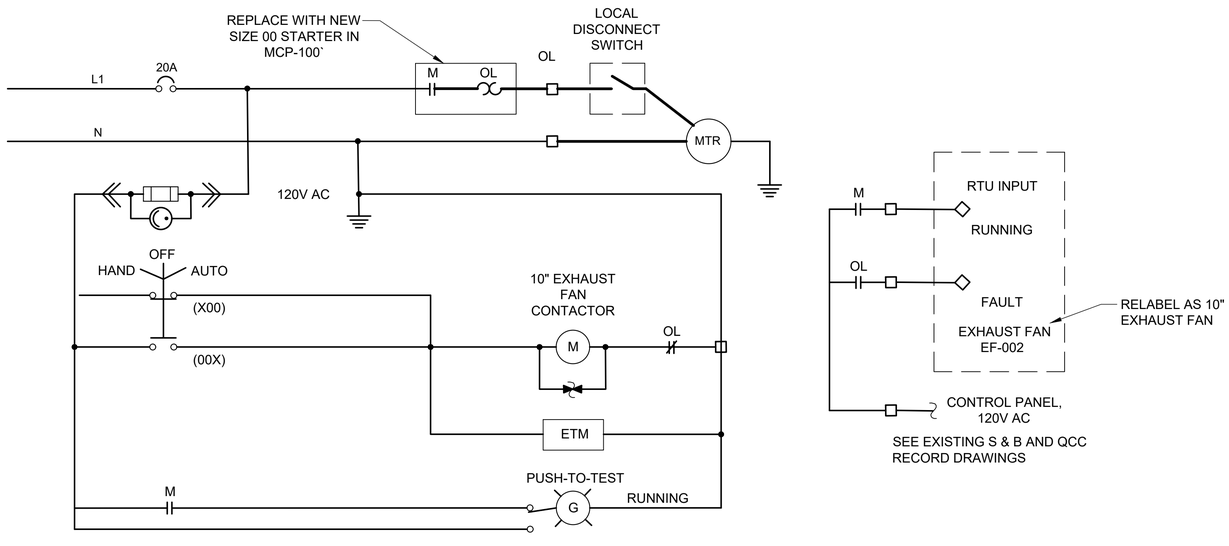
FRONT VIEW

NOTES:

1. FUEL TANK SHOWN IS FOR REFERENCE ONLY AND IS NOT TO SCALE. OPENING LOCATIONS AND SIZES SHALL MATCH PLAN VIEW.
2. FUEL TANK SHALL BE SELF SUPPORTING FREE STANDING DUAL WALL 165 GALLON TANK FOR STORAGE AND SUPPLY TO THE GENERATOR OF #2 DIESEL FUEL. SEE SPECIFICATIONS FOR EQUIPMENT REQUIREMENTS.
3. PLACE VENT AND FILL FITTINGS PER VAULT AND SITE PLAN, TO LOCATE FILL FITTING UNDER TOP SLAB HATCH AND VENT FITTING CLEAR OF HATCH OPENING AND MINIMUM OF 9" FROM WALL FOR CLEARANCE FOR WALL-MOUNTED CONDUIT ABOVE FUEL TANK.
4. LABEL FUEL TANK WITH HAZARDOUS MATERIAL RATING LABEL.

B - ELEVATION - GENERATOR FUEL TANK

NTS



SEE EXISTING S & B AND QCC RECORD DRAWINGS

EXISTING EF-002 EXHAUST FAN CONTROL WIRING - REUSE AS NOTED

NTS

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FOR ELECTRICAL DESIGN ELEMENTS

ROBERT J. CASNATE — STATE OF WASHINGTON — 12218 — REGISTERED PROFESSIONAL ENGINEER — 12/16/25

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

GENERATOR AND FUEL TANK ELEVATIONS

NO.	REVISION BY: ---- DATE	REVISION	DATE: -/-/- BY	CK

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

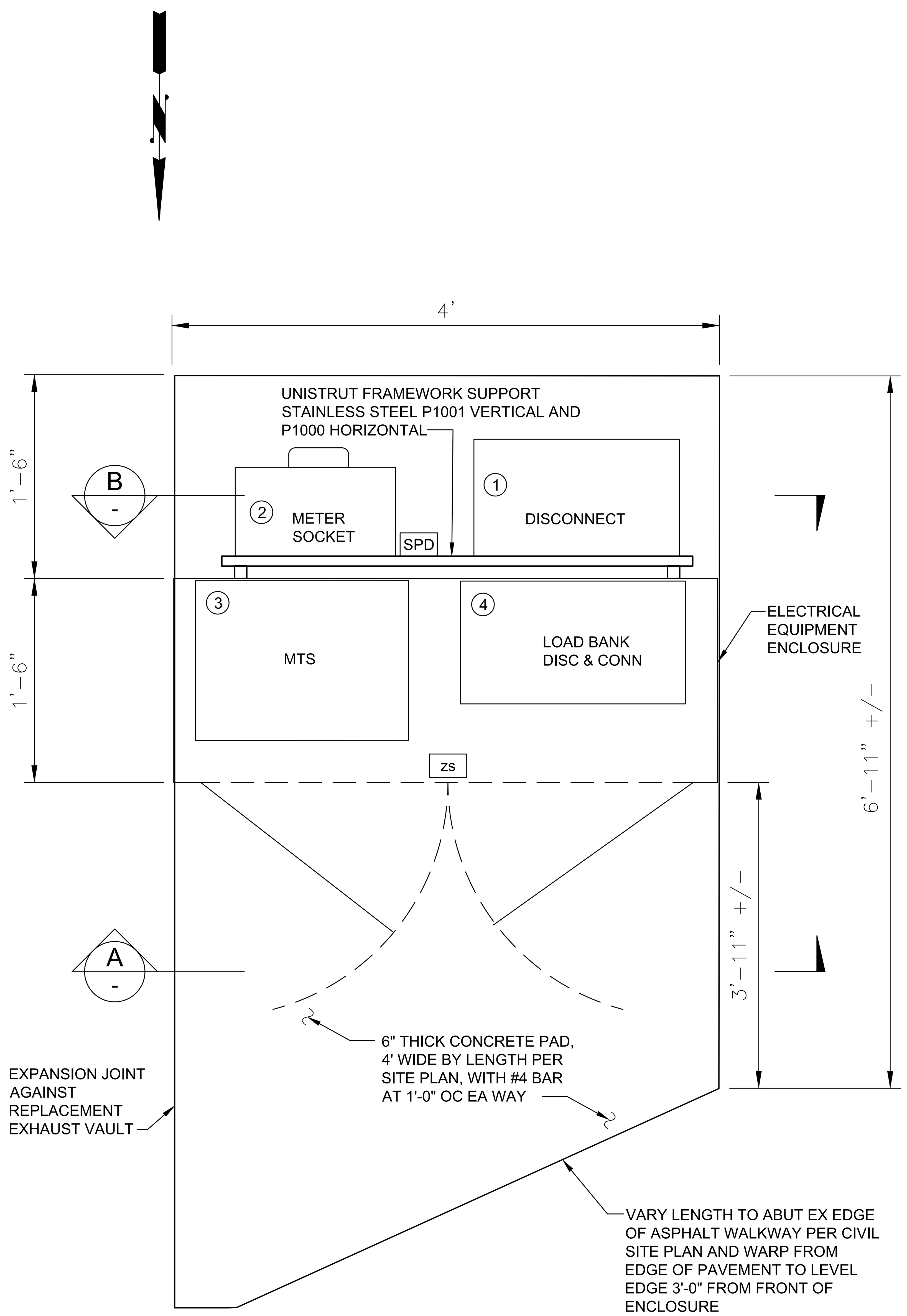
PROJECT NO.
MRCR0000-2005

SHEET NO. **23 0F 27**

E6

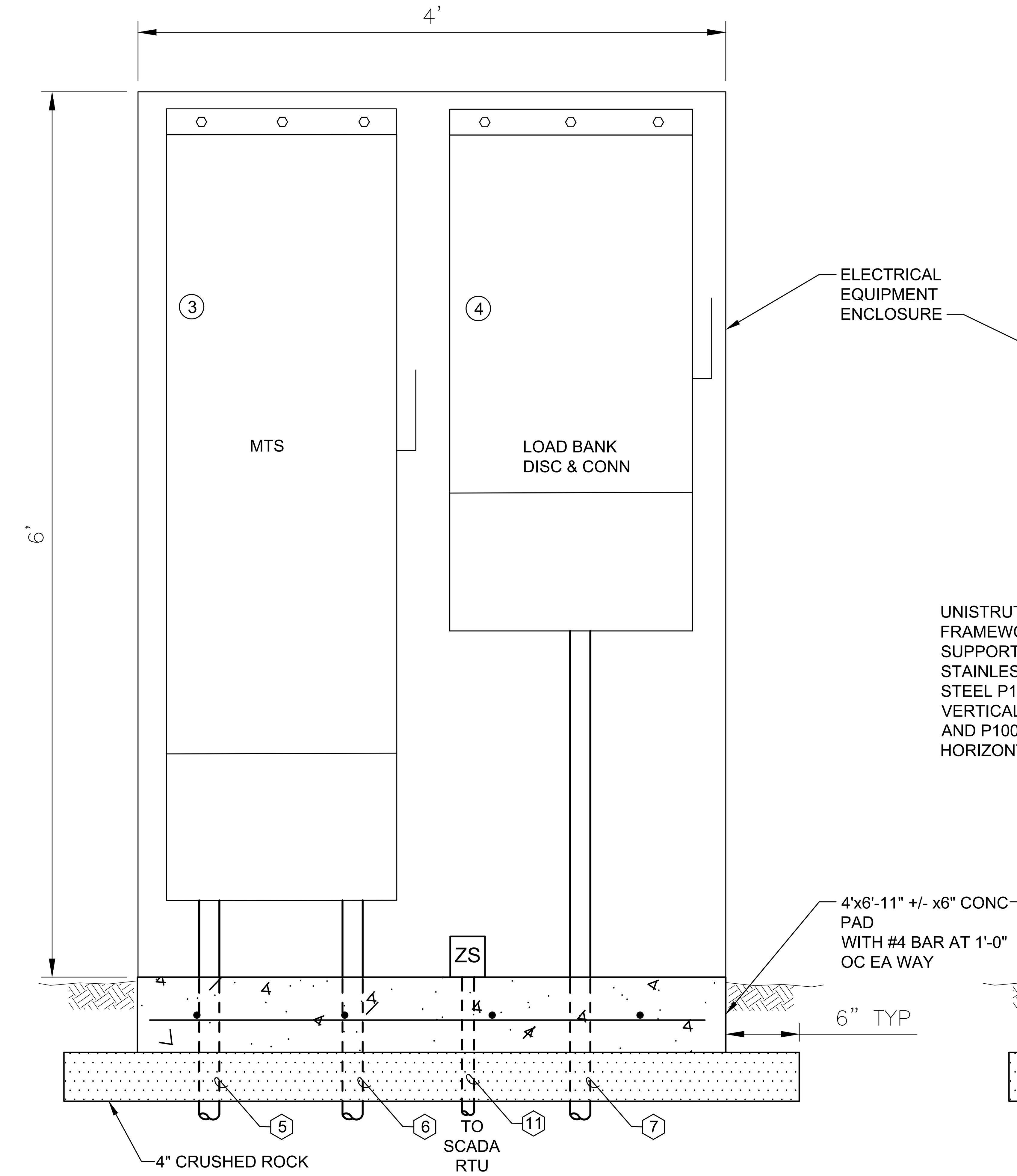
CONSTRUCTION NOTE:

1. SEE SHEET E5 FOR CONDUIT AND CONDUCTOR SCHEDULE.



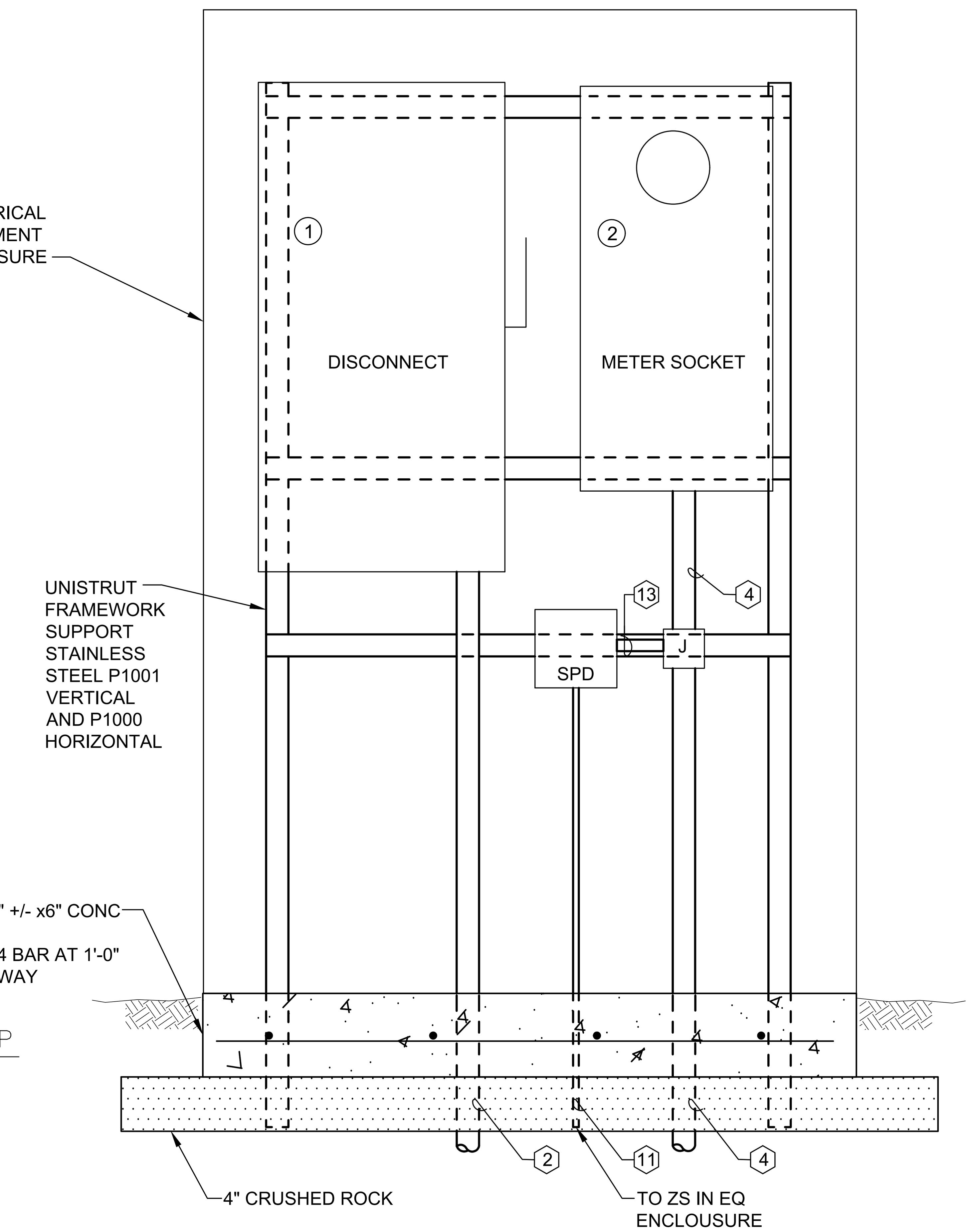
PLAN

NTS



A - ELEVATION - ELECTRICAL EQUIPMENT ENCLOSURE

NTS



B - ELEVATION - ELECTRICAL EQUIPMENT ENCLOSURE

NTS

FOR ELECTRICAL DESIGN ELEMENTS

ROBERT J. CASNE STATE OF WASHINGTON 12218 REGISTERED PROFESSIONAL ENGINEER 12/16/25

RJC ENGINEERING, PLLC
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rjcasne@outlook.com

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14432 SE EASTGATE WAY
BELLEVUE, WA 98007
Phone: 425.519.6500

FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

ELECTRICAL EQUIPMENT ENCLOSURE PLAN AND ELEVATIONS

DATE: --/--/-- BY CK

REVISION BY: ----

NO.	DATE	REVISION

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO. MRCR0000-2005

SHEET NO. 24 OF 27

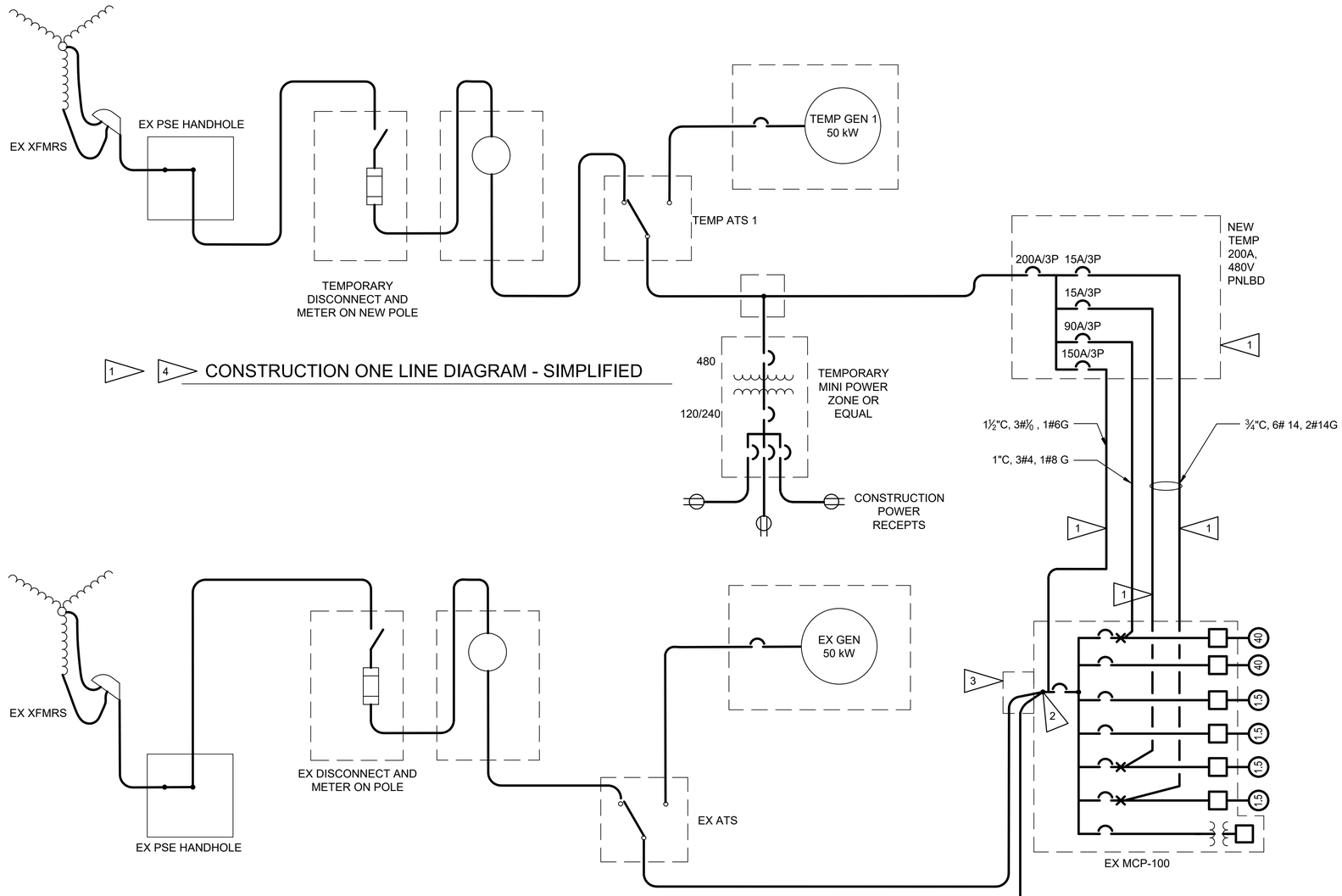
E7

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadatian
Save Date: 12/16/2025 2:40 PM By: Rads File: P:\M\MRCR00002005\0400CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg

CONTINUOUS POWER PROCEDURE REQUIREMENTS:
SEE ELECTRICAL SPECIFICATIONS SECTION 16010
FOR TEMPORARY POWER REQUIREMENTS

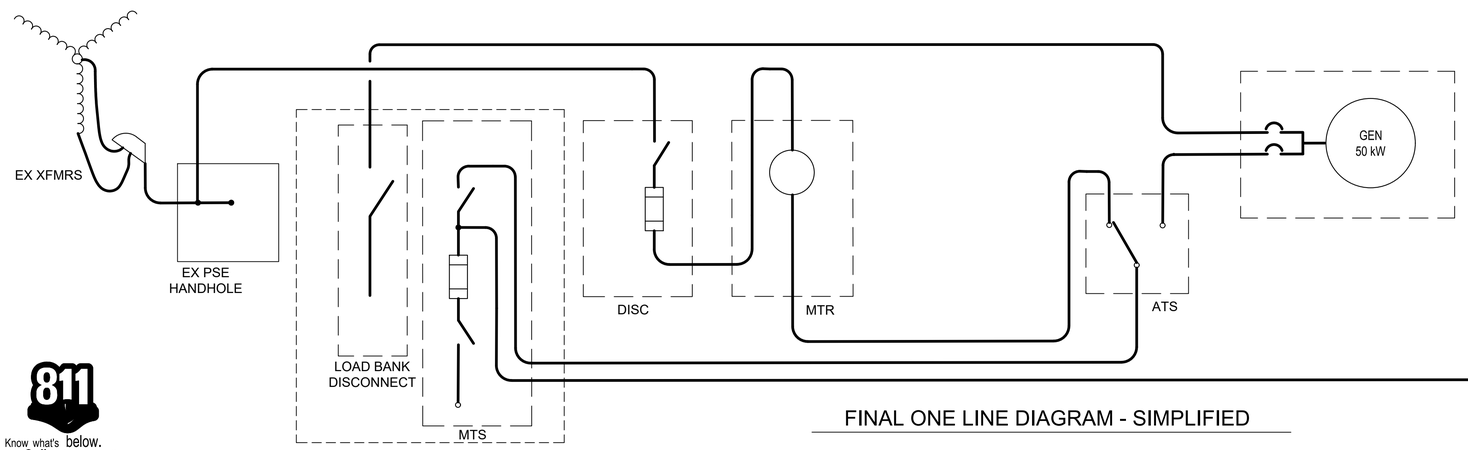
FLAG NOTES:

1. TEMPORARY WIRING TO BE REMOVED AFTER PERMANENT CONNECTION. SEE SHEET E9.
2. MAKE CONNECTIONS TO THE MAIN CIRCUIT BREAKER. ONLY ONE SOURCE AT A TIME.
3. TOP HAT ON EXISTING MOP 100.
4. ALL CONDUCTORS, CIRCUIT BREAKERS, FUSES & SWITCHES SHALL BE RATED FOR 150 A MIN. EXCEPT AS NOTED AND EXCEPT MINI-POWER ZONE CONNECTION WHICH SHALL BE SIZED BY THE CONTRACTOR.



1 4 CONSTRUCTION ONE LINE DIAGRAM - SIMPLIFIED

EXISTING ONE LINE DIAGRAM - SIMPLIFIED



FINAL ONE LINE DIAGRAM - SIMPLIFIED

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FOR ELECTRICAL DESIGN ELEMENTS

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

TEMPORARY POWER SERVICE PLAN - ONE LINE DIAGRAMS

NO.	REVISION	DATE	BY	CK

DATE: --/--/--
REVISION BY: ---

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. 25 0F 27

E8

Plot Date: 12/16/2025 2:41 PM
Save Date: 12/16/2025 2:40 PM
By: Rachel Sadatian
By: Rads
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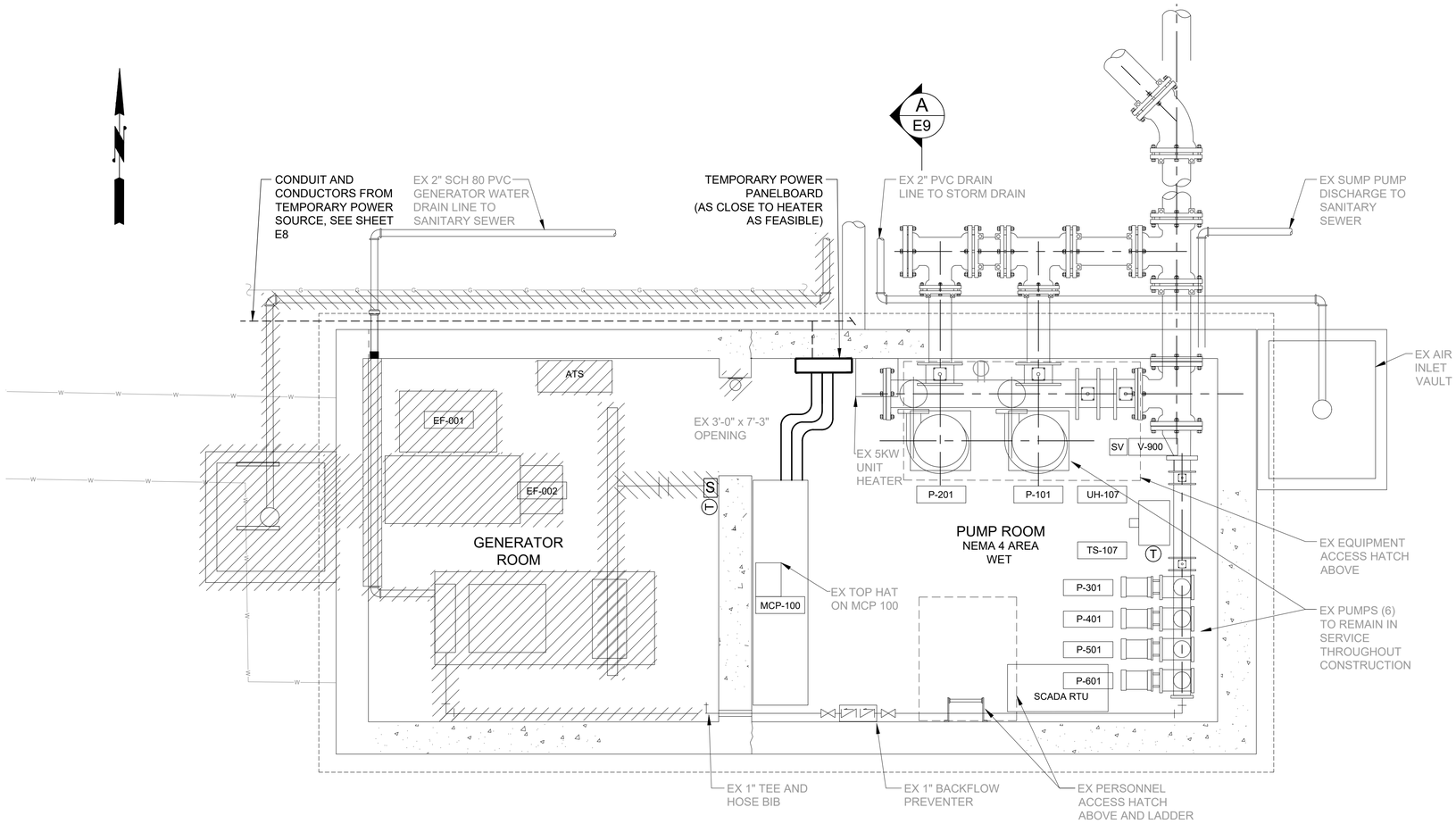
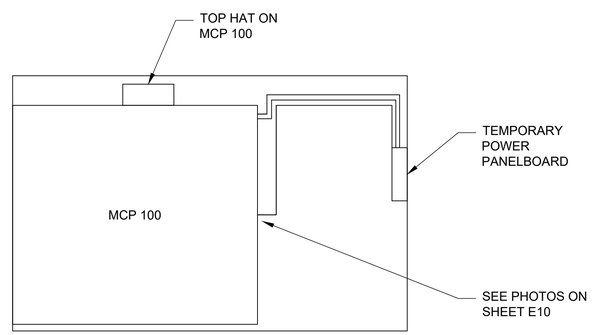


CONTINUOUS POWER VAULT PLAN

2 1 0 2 4

SCALE IN FEET



A - SECTION A

NTS

FOR ELECTRICAL DESIGN ELEMENTS

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

TEMPORARY POWER SERVICE PLAN - VAULT PLAN

NO.	DATE	REVISION	BY	CK

DATE: --/--/--

REVISION BY: ----

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO. **26 0F 27**

E9

811 Know what's below. Call before you dig.

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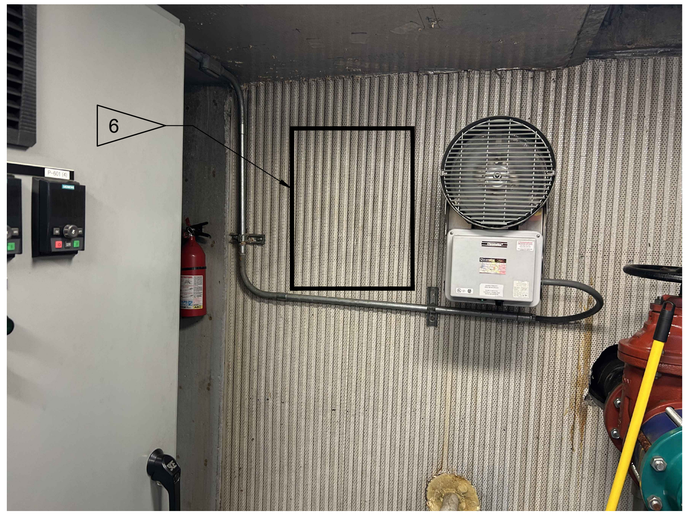
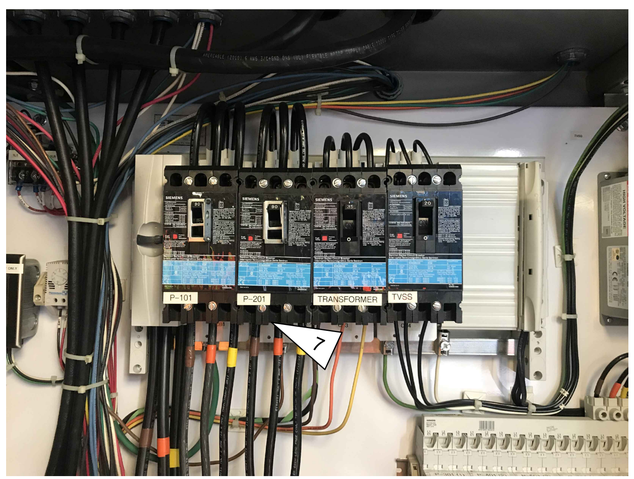
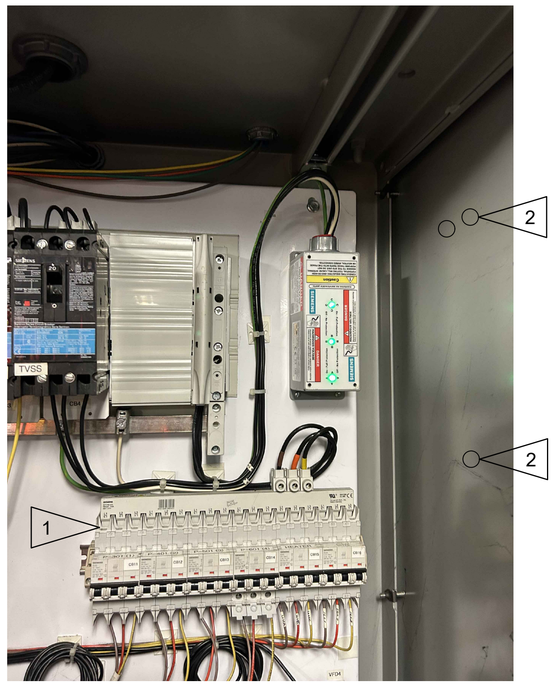
Save Date: 12/16/2025 2:40 PM By: Rads File: P:\MMRCR0000\2005\0400CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg







FLAG NOTES:

1. CIRCUIT BREAKERS SEE S & B RECORD DRAWINGS. MAKE TEMPORARY CONNECTIONS TO DESIGNATED 1.5 HP PUMPS ON LOAD SIDE OF BREAKERS.
2. MAKE PENETRATION IN MCP 100 AS NEAR TO THE FRONT OF THE ENCLOSURE AS POSSIBLE USING EXTREME CARE NOT TO ALLOW DRILLING DEBRIS TO FALL INTO EXISTING LIVE EQUIPMENT. PROVIDE PROTECTIVE BARRIERS AS REQUIRED. USE EXISTING CHANNELS ABOVE TO SUPPORT TEMPORARY CONDUCTORS.
3. EXISTING TOP HAT ON MCP 100.
4. EXISTING BEAM.
5. EXISTING CONNECTIONS TO MAIN 150 A CIRCUIT BREAKER IN MCP 100. MAKE TEMPORARY CONNECTIONS HERE. USE EXISTING CHANNEL ABOVE TO SUPPORT TEMPORARY CONDUCTORS.
6. LOCATION OF TEMPORARY 480 VOLT PANELBOARD.
7. EXISTING CONNECTION TO 40 HP PUMP NO. 2. MAKE TEMPORARY CONNECTIONS HERE.

FOR ELECTRICAL DESIGN ELEMENTS

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FIRST HILL BOOSTER STATION GENERATOR REPLACEMENT

CITY OF MERCER ISLAND

TEMPORARY POWER SERVICE PLAN - EX. EQUIPMENT PHOTOS

NO.	DATE	REVISION	BY	CK

REVISION BY: ----
DATE: --/--/--

FINAL FOR BID

CHECKED BY: RL
DESIGNED BY: RJC
DRAWN BY: DJ

SUBMITTAL DATE: 12/16/25

PROJECT NO.
MRCR0000-2005

SHEET NO: 27 0F 27

E10

Plot Date: 12/16/2025 2:41 PM By: Rachel Sadahiro
Save Date: 12/16/2025 2:40 PM By: Rads File:P:\MMRCR0000\2005\0400\CAD\EC\SHEETS\mrcr000-2005 Ec Alt A.dwg