Department of Local Services
Permitting Division

Residential Site Plan Template
11" x 17"

For Permitting Use

Received Date _____

Max. Impervious Surface Allowed _____
Max. Bldg. Height Allowed _____
Min. Bldg. setback from Street _____
Min. Garage setback from Street _____
Min. Bldg. setback from Interior _____

Signature _____

Date _____

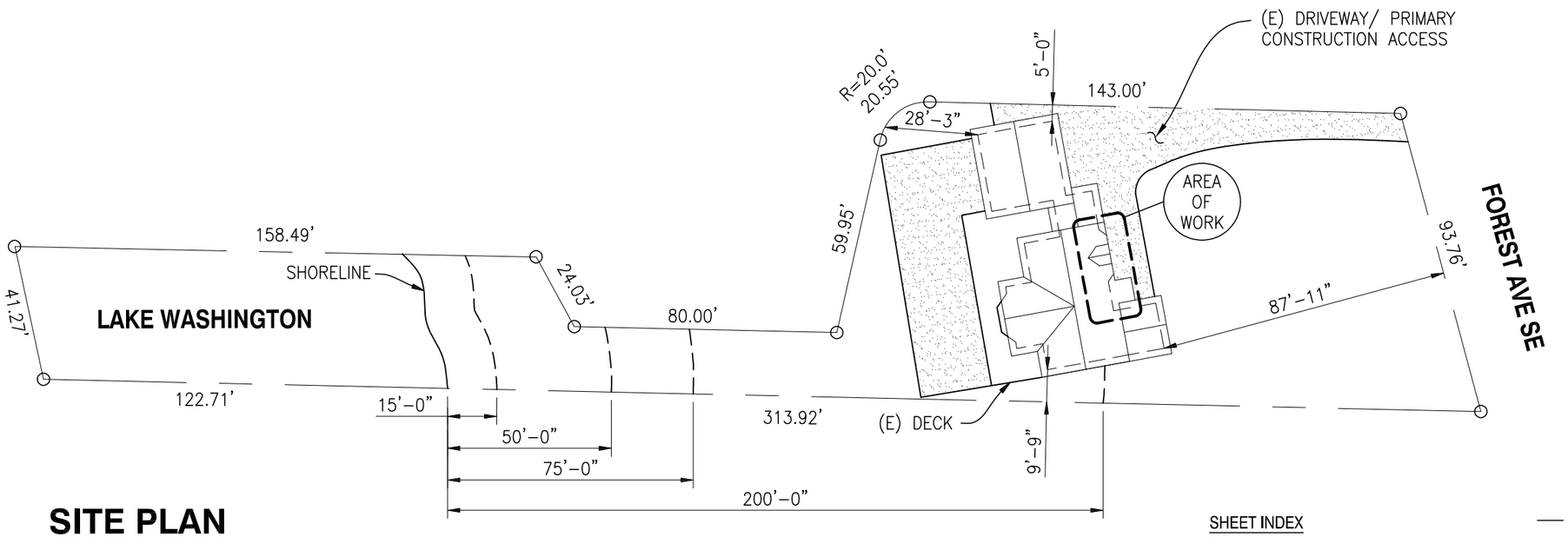
Building Approval
Signature _____
Date _____

Engineering / Drainage Approval
Signature _____
Date _____

Critical Areas Approval
Signature _____
Date _____

Clearing / Grading Approval
Signature _____
Date _____

Fire Approval
Signature _____
Date _____



SITE PLAN

0' 40' 80' 120'

SCALE: 1"=40'-0"

SHEET INDEX

Site Plan
S1.1 – General Notes
S1.2 – General Notes
S2.1 – (E) Foundation/ (N) Pin Pile Layout Plan
S4.1 – Bracket Details
S4.2 – Pin Pile Details

PROJECT DATA

- Project Description: Underpinning of existing foundation for mitigation of observed vertical settlement
- Project Address: 4609 Forest Ave SE
  Mercer Island, WA 98040
- County: King
- Parcel No: 132404-9015
- Building Code: 2021 IBC & 2021 IRC
- Zoning Code: Mercer Island Municipal Code
- Zoning: R-15
- Zoning Use: Single Family (Res Use/Zone)
- Site Area: 18,731 sf
- Lot Dimensions: As Shown
- Existing Building: 3,740 sf ((2) Story)
- Legal Description: LOT A MI SP #90-04-04 SD SP DAF – BEG NXN NLY LN GL 5 WITH SWLY LN FOREST AVE TH S 16-54-20 E ALG SD SWLY LN PROD 114.34 FT TAP ON LN 109.24 FT SLY & PLT NLY LN SD LOT 5 TH N 89-43-56 W ALG SD PLL LN 438.48 FT TO GOV MNDR LN TH N 13-39-20 W ALG SD MNDR LN 112.54 TO NW COR SD LOT 5 TH ELY ALG NLY LN SD S TPOB PLat Block: Plat Lot:
- Owner Contact Information: Rebecca Ebsworth
  rebebsworth@gmail.com
  (206) 713-6870

SITE PLAN NOTES

1. All work and material shall conform to the requirements of the City of Mercer Island design standards.
2. The Contractor shall obtain all required permits and licenses before starting construction.
3. The Contractor shall notify the Engineer, City of Mercer Island 24 hours before starting construction or resuming work after shutdowns, except for normal resumption of work following Sundays or holidays.
4. The Contractor shall assist the Engineer in preparing as-constructed drawings.
5. Contractor to specify exact locations of utility stubs. The Contractor assumes all liability and responsibility for all utility pipes, conduits or structures shown and not shown on these drawings and is req'd to take due precautionary measures to protect the utility lines on site.
6. All excavation req'd for pier installation shall be completed by hand.
7. All construction vehicles shall remain on the paved street, driveway, or authorized travel path.
8. No proposed horizontal or vertical expansion.

Permit Number _____ Parcel Number _____ Applicant Name _____

Site Address: 4609 Forest Ave SE, Mercer Island, WA 98040

Engineering Scale: 1" = 40'-0"

GENERAL REQUIREMENTS

Refer to subsequent plan and detail notes for variations and requirements specific to referenced project.

NOTE PRIORITIES: Notes on the individual drawings govern over notes on this sheet.

SPECIFICATIONS: Refer to the specifications for information in addition to that contained in these notes and the structural drawings.

STRUCTURAL DETAILS: The structural drawings are intended to show the general character and extent of the project. They are not intended to show all details of the work. Details noted "typical" apply to similar work throughout the project unless noted separately.

STRUCTURAL RESPONSIBILITIES: The structural engineer is responsible for the strength and stability of the primary structure in its completed form.

CONTRACTOR RESPONSIBILITIES: The contractor is responsible for the means and methods of construction and all job related safety standards (i.e. OSHA or Federally approved State plan). The contractor is responsible for the strength and stability of the structure during construction. The contractor shall provide temporary shoring, bracing and other elements required to maintain stability until the structure is complete. It is the contractor's responsibility to be familiar with the work required in the construction documents and the requirements for executing it properly. The contractor shall at his discretion employ a Washington State registered structural engineer for design of temporary bracing and shoring. It is the contractor's responsibility to contact the Engineer–of–Record to schedule applicable Structural Observations.

DISCREPANCIES: In case of discrepancies between the specifications, reference standards and the governing code, the Engineer will determine which shall govern. Discrepancies shall be brought to the attention of the Engineer before proceeding with the work.

SITE VERIFICATION: The contractor shall verify all dimensions and conditions at the site. Conflicts between the drawings and actual site conditions shall be brought to the attention of the Engineer before proceeding with the work.

CONSTRUCTION LOADS: Loads on the structure during construction shall not exceed the design loads as noted in DESIGN REQUIREMENTS below or the capacity of partially completed construction.

ADJACENT UTILITIES: The contractor shall determine the location of all adjacent underground utilities prior to excavation. Any utility information shown on the drawings and details are approximate and not necessarily complete.

ALTERNATES: Alternates for specified items may be submitted to the Engineer for review.

DESIGN CRITERIA

Building Code Conformance (meets or exceeds requirements):

2021 International Building Code (IBC)
2021 International Residential Code (IRC)
2021 Washington Building Code
2021 Washington Residential Code

DEAD LOADS:

Roof Dead Load	15 PSF
Floor Dead Load	15 PSF
Wood Wall Dead Load	12 PSF
Interior Wood Wall Dead Load	9 PSF
Concrete	150 PCF

LIVE LOADS:

Roof Snow Load	25 PSF
Floor Live Load (residential)	40 PSF

DEFLECTIONS:

Total Load Deflection Limit	L/240
Live Load Deflection Limit	L/360

PIN PILES

MATERIALS:
Bracket Plates – ASTM A36
(Min Yield Stress, Fy = 36 ksi / Min Tensile Stress, Fu = 58 ksi)
Pier Tubes – ASTM A500 Grade B or C
(Min Yield Stress, Fy = 46 ksi / Min Tensile Stress, Fu = 58 ksi)
External Sleeve – ASTM A500 Grade B or C
(Min Yield Stress, Fy = 46 ksi / Min Tensile Stress, Fu = 58 ksi)
Pier Cap – ASTM A36
(Min Yield Stress, Fy = 36 ksi / Min Tensile Stress, Fu = 58 ksi)
Coil Rod – ASTM A193 Grade B7
(Min Yield Stress, Fy = 105 ksi / Min Tensile Stress, Fu = 125 ksi)
Steel Angle Shapes – ASTM A36
(Min Yield Stress, Fy = 36 ksi / Min Tensile Stress, Fu = 58 ksi)

WELDING NOTES:
Conform to AWS D1.1. Welders shall be certified in accordance with AWS requirements. Use E70 electrodes of type required for materials to be welded.

CORROSION PROTECTION:
Sacrificial Design Thickness – Capacities include a scheduled loss in steel thickness due to corrosion for black, uncoated steel. Anchors are designed for 50–year scheduled sacrificial thickness loss in accordance with ICC–ES AC358.

INSTALLATION:
System to be installed per manufacturers recommendations. Minimum installation pressure is to be determined by the following equation:

Push Pier Installation Pressure (psi):
[DESIGN LOAD] X 2 / [AREA OF HYDRAULIC RAM].

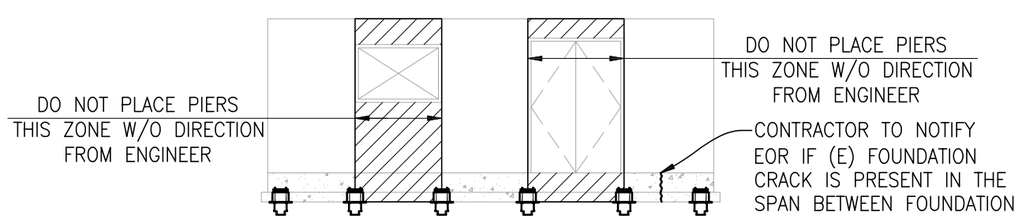
Pin piles are to be driven to refusal. Installation refusal is considered to be reached when the energy from a 110 lb pneumatic hammer no longer carries a vertical displacement of one inch movement observed in a one minute time span to the pile.

Minimum Pin Pile Installation Depth is 10'–0"± uno.

Notify engineer if minimum installation conditions cannot be achieved.

EXISTING UTILITY LINES:
Contractor to repair utility lines that may be damaged during installation.

PIN PILE SPLICING:
Piles are to be gravity spliced with fitting couplers. Building weight will ensure joints do not separate.



NO PIER PLACEMENT ZONE

1

SCALE: NTS

EXPIRES: 04/04/26

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EBSWORTH RESIDENCE
UNDERPINNING
4609 FOREST AVENUE SE
MERCER ISLAND, WA 98040

GENERAL NOTES

REVISIONS

PROJECT NO: MFR25-284
DESIGNED BY: BM
DRAWN BY: BM
CHECKED BY: JLD
DATE: 11.12.2025

SHEET NO: S1.1

TESTING & INSPECTION

Continuous special inspection is required during installation of Pin Piles per 2021 IBC SECTION 1810.4.12. The special inspector is responsible for verifying and recording the following:

- Project description (address, installation date, permit number)
- Pile and bracket configuration
- Part description (product manufacturer, bracket type, pier type, pier outside diameter, pier wall thickness)
- Pier inclination, location, depth, and installation pressure achieved

Load testing shall be performed in accordance with ASTM Method D1143 (QUICK METHOD) ON 20% of piers and will be selected by the special inspector. An alignment load (AL) Shall be applied to the pile prior to setting the deflection measuring equipment to zero or a reference position. The AL shall be no more than 10% of the design load. Incremental loading shall be in accordance with the following schedule.

TEST LOADING SCHEDULE	HOLD TIME	MAX DEFLECTION
AL (.10 DL MAX)	0 Minutes	
0.25 DL	Until Stable	
0.50 DL	Until Stable	
0.75 DL	Until Stable	
1.00 DL	Until Stable	
1.25 DL	Until Stable	
1.50 DL	Hold for Creep Test (see below)	0.04 inches
1.25 DL	Until Stable	
1.00 DL	Until Stable	
0.75 DL	Until Stable	
0.50 DL	Until Stable	
0.25 DL	Until Stable	

Load testing creep acceptance criteria shall be no greater than 0.04 inches within a 10 minute period. If movement is observed greater than 0.04 inches within the 10 minute period, the load test shall be held for an additional 50 minutes, the pier is to be deepened and re-tested, or the pier is to be abandoned and replaced with a new pier. If the load test is to be held the pier movements shall be measured at 15, 20, 30, 40, 50, and 60 minutes. The creep versus the logarithm of time shall be plotted. If the creep rate is less than 0.080 inches between 6 and 60 minutes, the load test shall be considered successful.

Pin Piles Test Pressure (psi): [DESIGN LOAD] X 1.5 / [AREA OF HYDRAULIC RAM].

EXPIRES: 04/04/26

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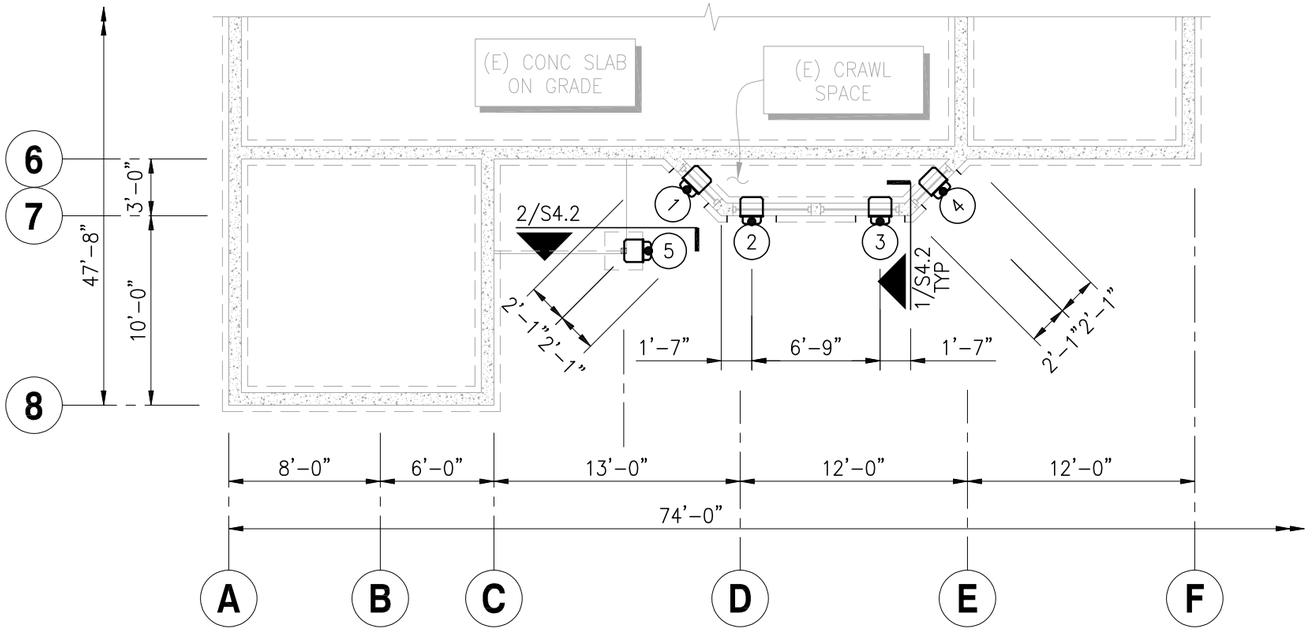
MERCER ISLAND, WA 98040

GENERAL NOTES

REVISIONS

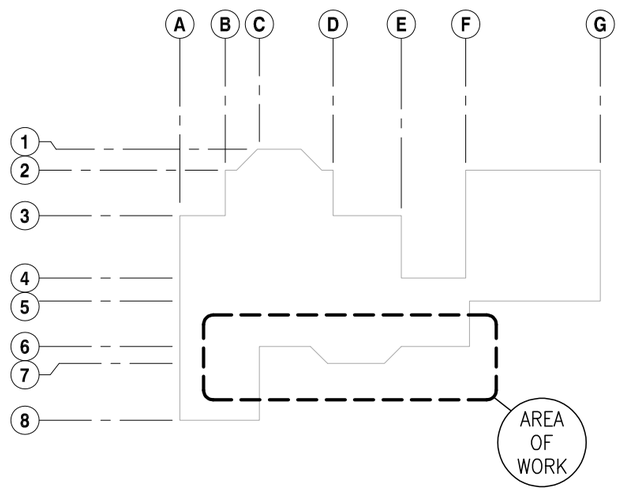
PROJECT NO: MFR25-284
DESIGNED BY: BM
DRAWN BY: BM
CHECKED BY: JLD
DATE: 11.12.2025

SHEET NO: **S1.2**



PARTIAL (E) FDN/(N) PIN PILE LAYOUT PLAN

SCALE: 1/8"=1'-0"



KEY PLAN

SCALE: NTS

(E) FOUNDATION/(N) PIN PILE LAYOUT PLAN NOTES:

1. REFERENCE S1.1 & S1.2 FOR GENERAL REQUIREMENTS
2. CONTRACTOR TO NOTIFY ENGINEER OF RECORD OF DISCREPANCIES BETWEEN FIELD CONDITIONS & THOSE SHOWN IN THESE DOCUMENTS PRIOR TO WORK TYP
3. INDICATES (E) CONC STEMWALL ON (E) CONC FOOTING (CONTRACTOR TO VERIFY 8"Wx2'-0"H (E) CONC WALL AND 1'-4"Wx10"DP (E) CONC FOOTING MIN TYP (NOTIFY ENGINEER OF RECORD IF FIELD CONDITIONS DIFFER IN THE AREA OF WORK))
4. ⊠ INDICATES (E) WOOD POST/COLUMN
5. X/SX.X SECTION CUT – DETAIL NUMBER/SHEET NUMBER
6. (#) INDICATES LOCATION OF PIN PILE & BRACKET SYSTEM PER DETAIL(S) ON S2.1 ((5) TOTAL)

   PIN PILE INSTALLATION NOTES:
   - DESIGN LOAD = 2,941 LBS
   - 2.375"ø PIPE PILE W/ 0.154" THICK WALL
   - 3.5"øx36" LONG PIPE SLEEVE W/ 0.220" THICK WALL
   - MINIMUM 10'-0" INSTALLATION DEPTH
   - DRIVE UNTIL LESS THAN 1" MOVEMENT IS OBSERVED IN A 1 MIN TIME SPAN WITH A 110 LB PNEUMATIC HAMMER
7. PIER SPACING SHALL BE AS INDICATED ON PLAN
8. CONTRACTOR TO NOTIFY ENGINEER OF RECORD IF (E) FOUNDATION CRACK IS PRESENT IN THE SPAN BETWEEN FOUNDATION BRACKETS
9. FILL ALL VISIBLE CRACKS IN THE FOUNDATION WALL WITH HYDRAULIC CEMENT OR EPOXY
10. ALL CONSTRUCTION MATERIALS IN THESE DOCUMENTS ARE (N) UNO

JESSE L. DEAN
STATE OF WASHINGTON
21005606
REGISTERED
PROFESSIONAL ENGINEER

EXPIRES: 04/04/26

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MERCER ISLAND, WA 98040

(E) FDN/(N) PIN PILE LAYOUT PLAN

REVISIONS

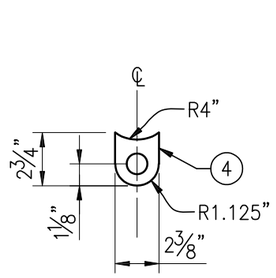
PROJECT NO: MFR25-284
DESIGNED BY: BM
DRAWN BY: BM
CHECKED BY: JLD
DATE: 11.12.2025

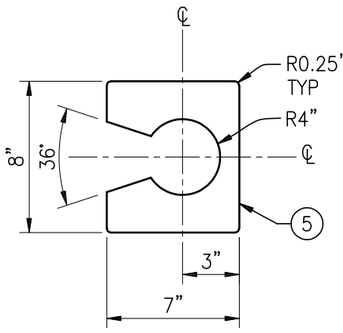
SHEET NO: **S2.1**

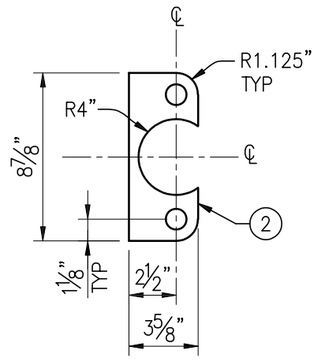
MATERIALS LIST

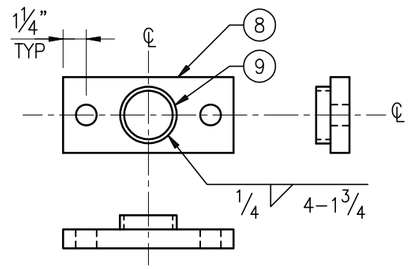
ITEM #	PART DESCRIPTION (BRACKET ASSY)
1	A572 GR. 50 BENT BASE PL 3/8 W/ (2) 5/8" SLOTTED HOLES IN VERT LEG
2	A572 GR. 50 UPPER TUBE BRACE PL 3/8" W/ (2) 1.1"ø HOLES
3	A572 GR. 50 GUSSET PL 3/8 W/ HAND HOLD CUT OUT
4	A572 GR. 50 LOWER TUBE BRACE PL 3/8 W/ 1.1"ø HOLE – QTY (2)
5	A36 OR A572 SAND PL 1/4
6	A513 4"øx0.188"x11.5" TUBE*
7	A500 GR. B S40 1.66"x0.140"x2.125" TUBE SPACER*
ITEM #	PART DESCRIPTION (CAP PLATE ASSY)
8	A572 PL1x4x0'–9" W/ (2) 1.1" HOLES
9	A500 S40 3.5"øx0.216"x0.75" PIPE*

NOTES:
1. * DIMENSIONS GIVEN AS OUTER DIAMETER x WALL THICKNESS x LENGTH
2. IF GALVANIZED, HOT DIP GALVANIZE PER ASTM 123
3. ALL PL MATERIAL TO BE LASERCUT TO ±0.032", AN ANGULARITY OF ± 1°, & DIMENSIONALLY ± 0.062"
4. ASTM 1018 WILL BE EQ TO A572

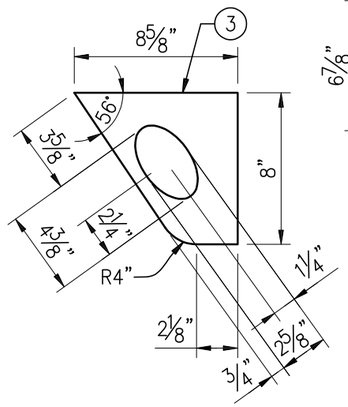


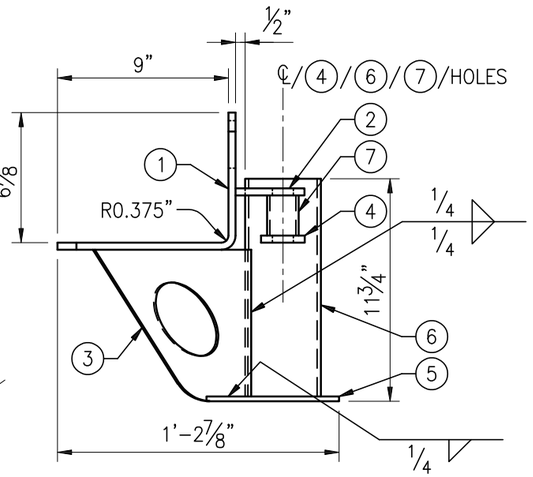






CAP PLATE





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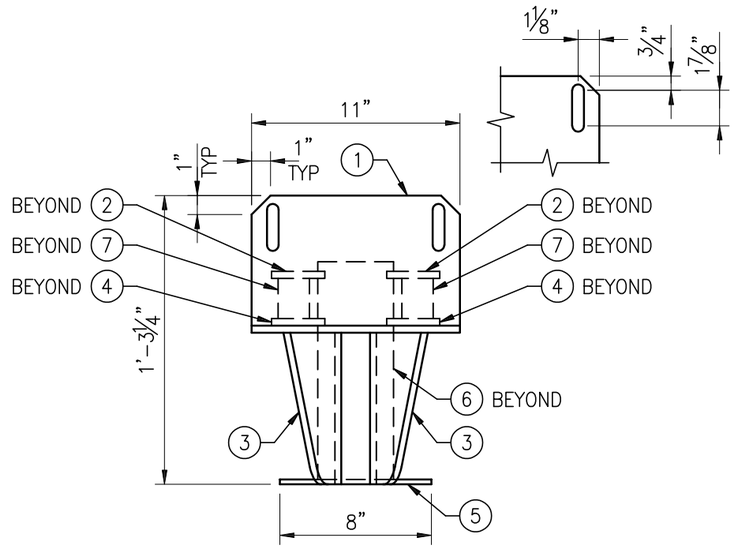

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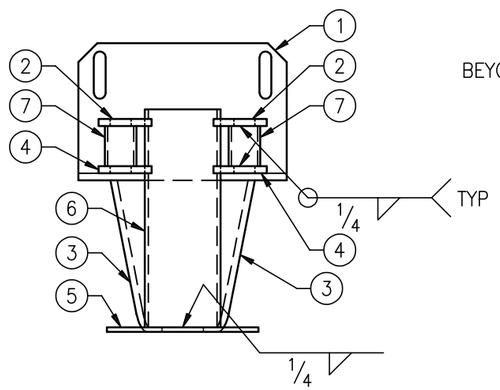

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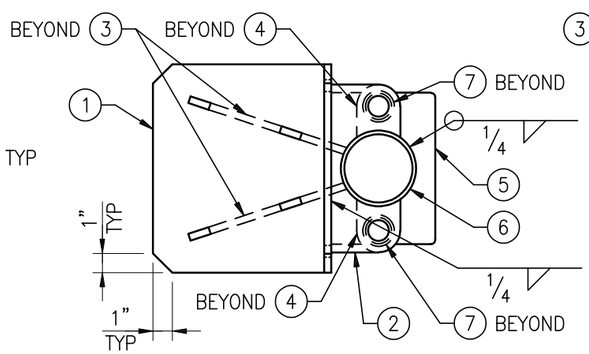
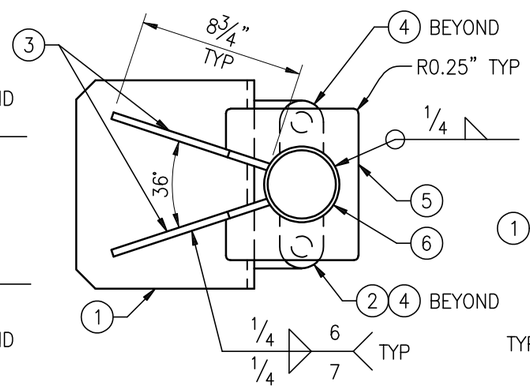


TOP



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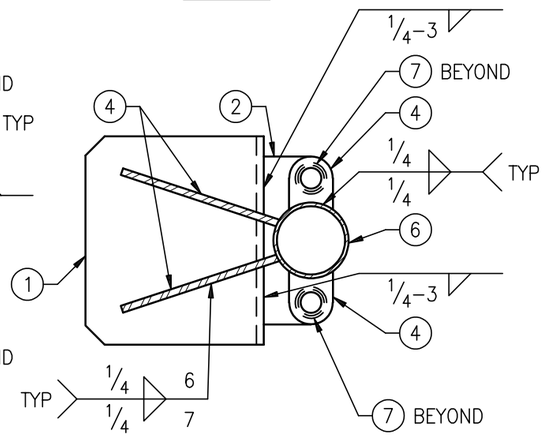

BOTTOM

SAND PL REMOVED FOR CLARITY

PP21617-34B & PP21617-34 CAP DETAILS

SCALE: 1 1/2"=1'–0"

1

JESSE L. DEAN
STATE OF WASHINGTON
21005606
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 04/04/26

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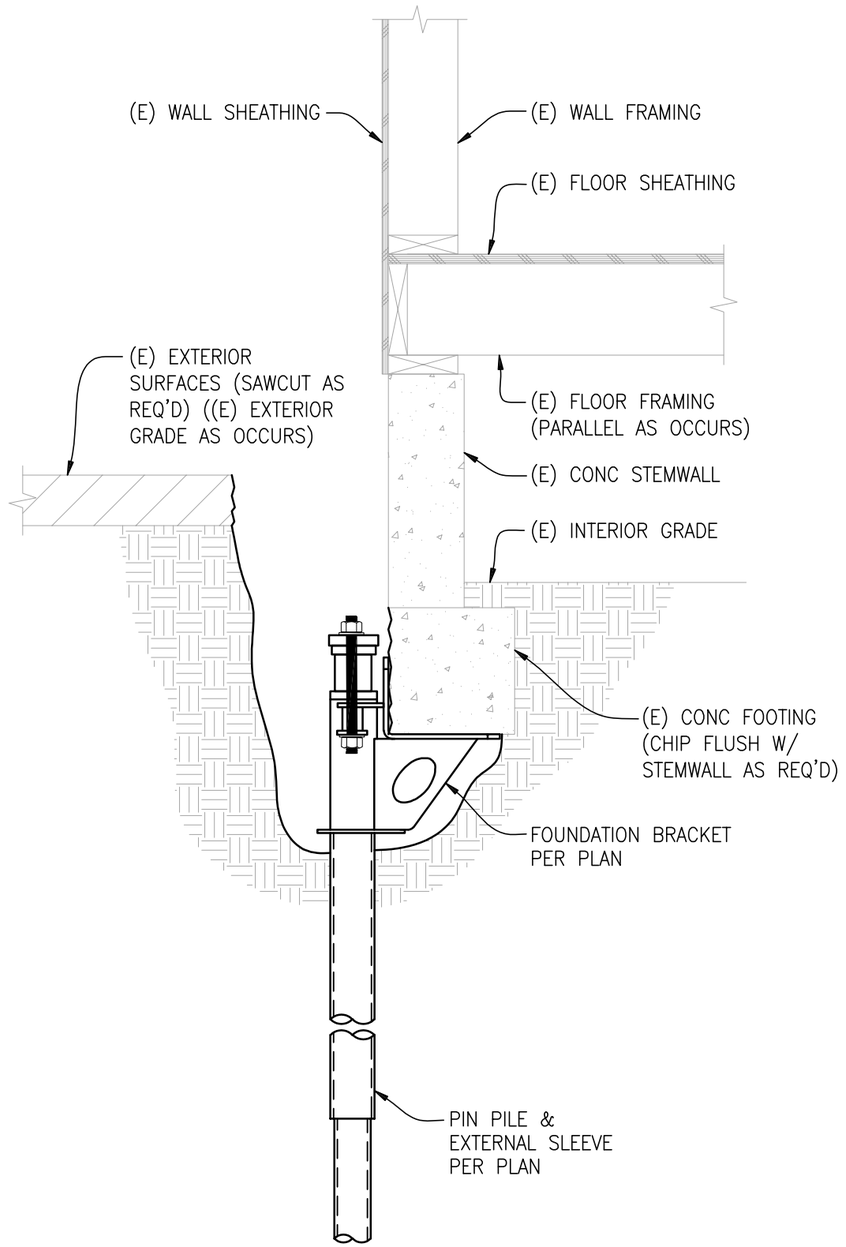
MERCER ISLAND, WA 98040

DETAILS

REVISIONS

PROJECT NO:	MFR25-284
DESIGNED BY:	BM
DRAWN BY:	BM
CHECKED BY:	JLD
DATE:	11.12.2025

SHEET NO: S4.1



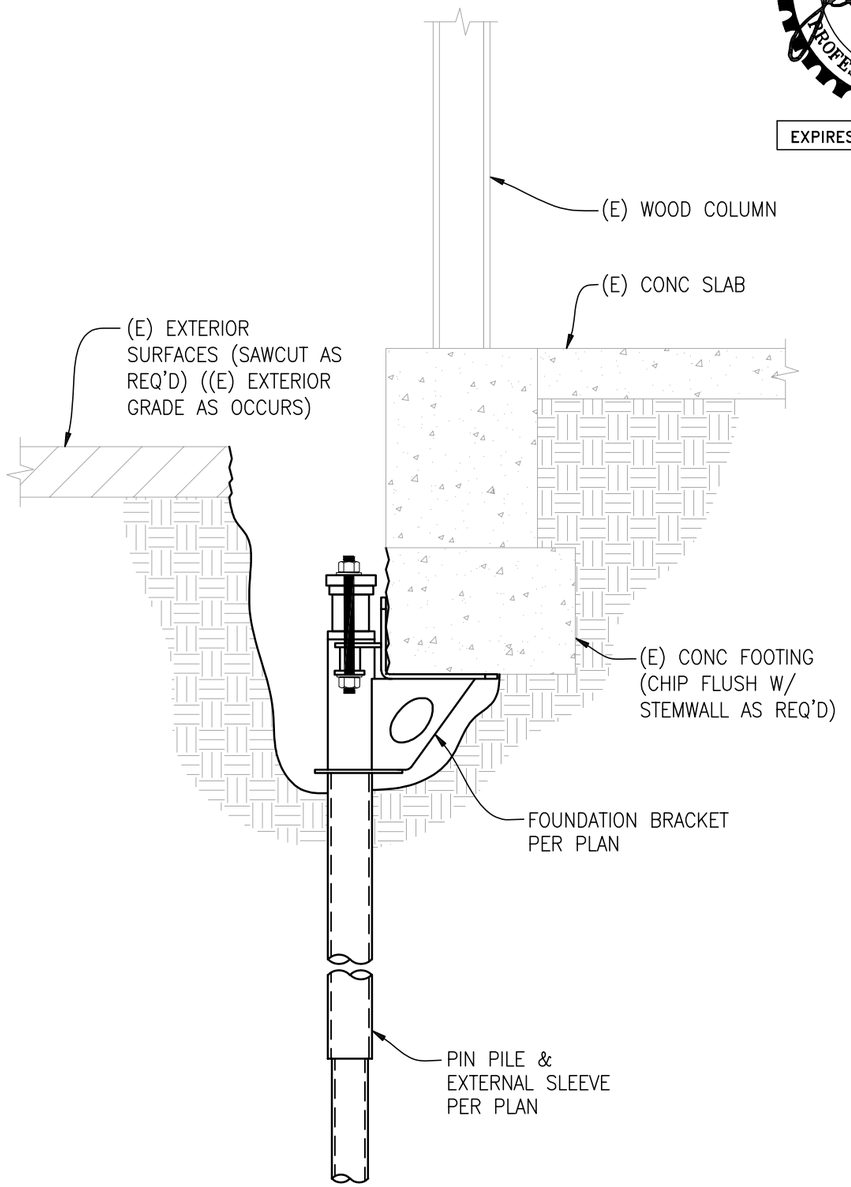
NOTE:

REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) PIN PILE TO (E) FOUNDATION DETAIL

1

SCALE: 1"=1'-0"



NOTE:

REF PLAN FOR LAYOUT & INSTALLATION REQ'S

(N) PIN PILE TO (E) FOUNDATION DETAIL

2

SCALE: 1"=1'-0"

JESSE L. DEAN
STATE OF WASHINGTON
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EXPIRES: 04/04/26

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4609 FOREST AVENUE SE
MERCER ISLAND, WA 98040

PIN PILE DETAILS

REVISIONS

PROJECT NO: MFR25-284
DESIGNED BY: BM
DRAWN BY: BM
CHECKED BY: JLD
DATE: 11.12.2025

SHEET NO: **S4.2**