LOT SLOPE

HIGH POINT = 235'
LOW POINT = 164'
LOT SLOPE = 71'/238.5' = 29.77%
LOT COVERAGE = 35%
15033sf x .35 = 5261.6 sf total lot coverage allowed

HARDSCAPE

patio = 436 sf
walks = 140 sf
lower retaining walls = 180 sf
upper retaining wall = 100 sf
TOTAL = 856 sf

allowable = 15033 sf x .09 = 1353 sf

F.A.R. CALCULATION

Main Floor FA= 1972 sf
Basement FA = 1638
Upper Floor FA = 1581 sf
5191.0 sf

NO BASEMENT FAR EXCEPTION CLAIMED
stairs = (120 sf x 2 = 240 sf)

TOTAL chargeable FA = 4950 sf

LIMIT = .40 x 15033 sf = 6013.2sf
LIMITED TO 5000 sf BY ZONING

LOT COVERAGE (SHADED AREA)

House Roof to eaves (shaded) = 2694.2 sf
driveway (shaded) = 2148.5 sf
TOTAL = 4842.7 sf
15033sf x .35 = 5261.6 sf total lot coverage allowed before flag lot allowance

ELEVATION CALC.

	EL @ MIDPOINT	segment	wtd sgmnt
a	**186.00**	24.00	4464.00
b	198.00	22.00	4356.00
c	**198.00**	15.54	3076.92
d	**198.00**	10.00	1980.00
e	**198.00**	24.00	4752.00
f	**198.00**	5.00	990.00
g	**198.00**	10.00	1980.00
h	**198.00**	12.02	2379.96
i	208.00	24.00	4992.00
j	196.00	36.00	7056.00
k	192.00	35.54	6823.68
l	194.00	5.69	1103.86
m	**189.00**	16.00	3024.00
n	**189.00**	11.92	2252.88
		251.71	49231.30

AVG. EL = 195.59
BOLD = NEW EL LOWER THAN EXIST

TREE PLANTING NOTES

1. NEW TREES WILL BE AT LEAST 6 FEET TALL FOR CONIFERS AND 1.5 INCHES IN CALIPER FOR DECIDUOUS SPECIES
2. NEW TREES WILL BE PLANTED BETWEEN OCTOBER AND MARCH
3. MINIMUM SPACING BETWEEN TREES AND DISTANCES FROM BUILDINGS OR INFRASTRUCTURE WILL BE 10 FEET
4. EACH NEW TREE WILL BE WATERED FOR THE FIRST 2 YEARS ON THE FOLLOWING SCHEDULE:
- MINIMUM OF 5 GALLONS OF WATER PER WEEK FOR THE FIRST 4 WEEKS AFTER PLANTING
- EVERY 2 WEEKS WHEN WEEKLY DAYTIME MAXIMUM TEMPERATURES ARE BELOW 70°
- ONCE A WEEK WHEN WEEKLY DAYTIME MAXIMUM TEMPERATURES ARE OVER 70° (E.G. MAY THROUGH SEPTEMBER)

- NATIVE TREES SUGGESTED BY ARBORIST FOR HILL STABILIZING

DF = DOUGLAS FIR (*Pseudotsuga menziesii)*
M = PACIFIC MADRONE (*Arbutus menziesii)*
- NON-NATIVES
JM = JAPANESE MAPLE (*Acer palmatum)*

Parcel Number/Legal

Parcel # = 1574700170
Legal Description:

CHRISTIAN CHURCH CAMP ADD #2 LOT B
MERCER ISLAND SHORT PLAT NO 84-02-06
REC NO 8412209004 SD SHORT PLAT DAF -
LOT S 7 & 8 BLK 9 SD ADD & VAC ST ADJ
ZONING = R-8.4
lot size =15033 sf

Civil Engineer

Duffy Ellis
CES Civil Engineering
102 NW Canal St Seattle WA 98107
206.930.0342

Structural Engineer

Javid Abdi, PE, SE Atlas Consulting Structural Engineers
6810 NE 149th St Kenmore WA 98028
Phone: (206) 427-7233

Contractor

Artoush Construction and Remodeling
13101 NE 50th ST Bellevue WA
(425) - 890 - 9995

Project Description

New single family residence.

HIGH CONTRAST ADDRESS SIGN

UTILITY EASEMENT PER REC. # 8412209004 (HATCHED AREA)

2 STOREY RESIDENCE WITH BASEMENT

DECK

PATIO 436 sf

conc. STEPS 140 sf

4' wall (190)

12" wall (198)

UPDATED SHORING WALL CONFIG. SEE ENGINEERING

ultrablock max 6' in setback

ultrablock bench blocks max 6' in setback

min. setback

Required setback = .17 x 100' = 17'
Minimum setback = .33 x 17 = 5.61'

XXX
= GRADING PAIR AT EACH SIDE OF RETAINING WALL
XXX

A NFPA 13R Fire Sprinkler System in compliance with NFPA 13R and CoMI standards shall be installed throughout the residence. A separate FIRE permit is required.

Note that this sprinkler system requires a minimum of a 1.5" water meter and 2" water supply line.

A NFPA 72- Chapter 29 Monitored Fire Alarm System in compliance with NFPA 72 and CoMI standards shall be installed throughout the residence. A separate FIRE permit is required.

lot size =15033 sf

Geotechnical Engineer

Michael Xue, P.E.
Principal Geotechnical Engineer
PanGEO, Inc.
O 206.262.0370
M 206.491.0081
mxue@pangeoinc.com
3213 Eastlake Avenue East, Suite B
Seattle, WA 98102-7127

A. SITE PLAN

1" = 10'-0"

NORTH

(A) = WALL SEGMENT TAG FOR HEIGHT CALCULATION
– – – – – = EAVE/ROOF LINE
— — — = REVISED TOPO
EXISTING HOUSE, DRIVEWAY AND ALL HARDSCAPE ON PROPERTY TO BE REMOVED

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CONTENTS
Site Plan

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DATE
2.4.25
4.24.25
6.10.25
7.25.25
2.5.26
2.20.26

A-1

NOTES

SD = SMOKE DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP
CO = CARBON MONOXIDE DETECTOR, HARDWIRE w/ BATTERY BACK-UP
HD = HEAT DETECTOR, HARDWIRE w/ BATTERY BACK-UP

DOORS ARE (width per plan + 2" FOR R.O.) x 7'-10" (ie for a 3-0, r.o. = 3'-2" x 8'-0") unless otherwise indicated
= FAN, 50 CFM UNLESS OTHERWISE INDICATED
FOR SHEAR WALL INFORMATION SEE STRUCTURAL PLANS
ALL INTERIOR WALLS TO BE 2x4, EXTERIOR WALLS 2x6, EXCEPT AS INDICATED, OR EXISTING
(E) =EGRESS WINDOWS

Contractor shall verify to Inspector all guards and railings shall be capable of resisting 200 lb load on top rail acting in any direction as required by IRC Table R301.5.

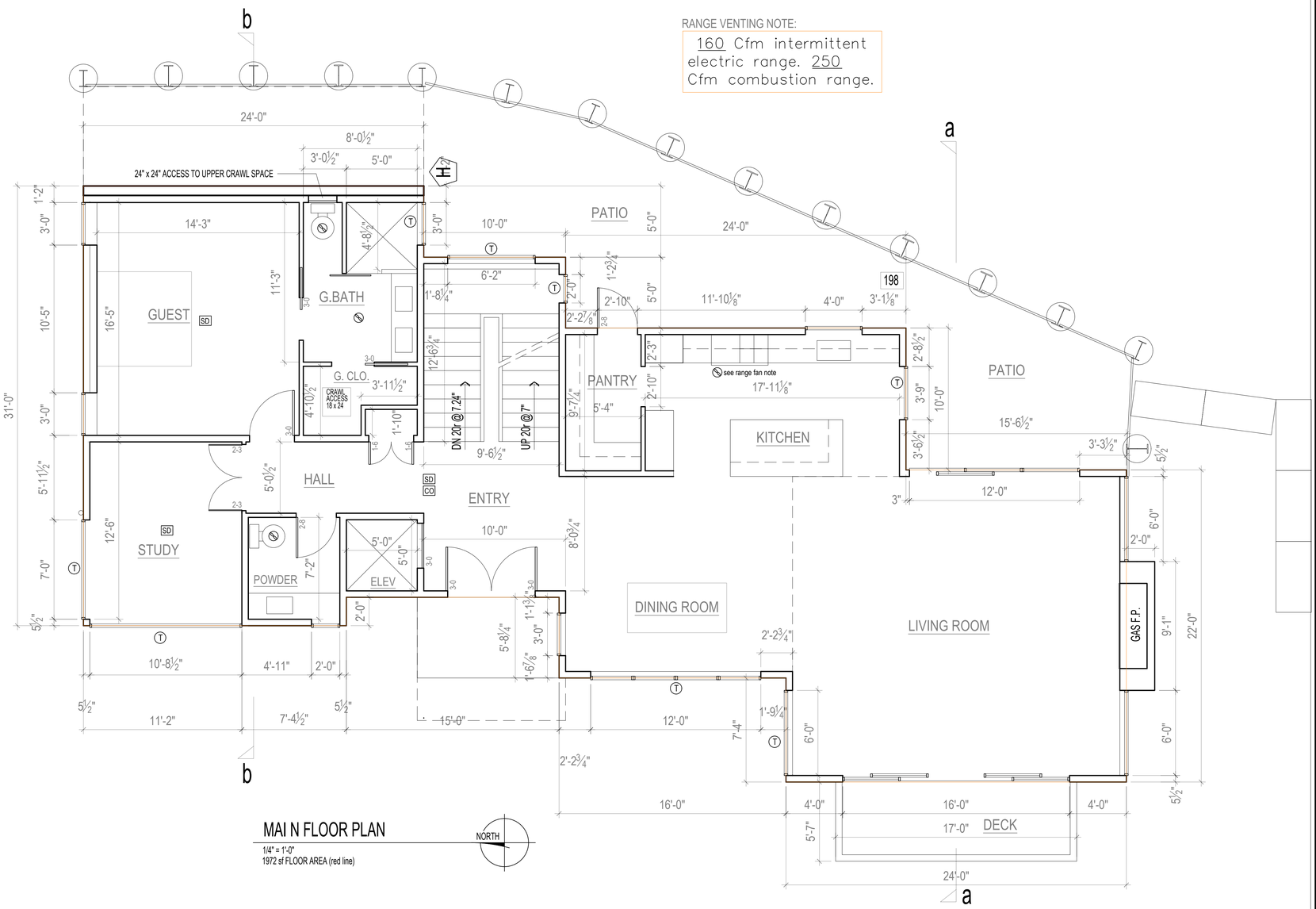
ALL WALLS FULL HIEGHT UNLESS OTHERWISE INDICATED
(T) =TEMPER/SAFETY GLAZE WINDOWS
ALL GAS F.P. TO BE APPROVED DIRECT VENT

EGRESS WINDOW REQUIREMENTS

Minimum of 5.7 square feet of net clear opening area. Minimum of 24 inches of net clear opening height. Minimum of 20 inches of net clear opening width. Opening must be max 44" above floor.

fire blocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space.

RANGE VENTING NOTE:
160 Cfm intermittent electric range. 250 Cfm combustion range.



MAI N FLOOR PLAN
1/4" = 1'-0"
1972 sf FLOOR AREA (red line)
NORTH

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CONTENTS
Main Floor

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6.10.25

A2

NOTES

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CO = CARBON MONOXIDE DETECTOR, HARDWIRE w/ BATTERY BACK-UP
HD = HEAT DETECTOR, HARDWIRE w/ BATTERY BACK-UP

DOORS ARE (width per plan) x 7'-10" (r.o. = 3'-2" x 8'-0") unless otherwise indicated

= FAN, 50 CFM UNLESS OTHERWISE INDICATED

FOR SHEAR WALL INFORMATION SEE STRUCTURAL PLANS

ALL INTERIOR WALLS TO BE 2x4, EXTERIOR WALLS 2x6, EXCEPT AS INDICATED, OR EXISTING

(E) =EGRESS WINDOWS

Contractor shall verify to Inspector all guards and railings shall be capable of resisting 200 lb load on top rail acting in any direction as required by IRC Table R301.5.

ALL WALLS FULL HIEGHT UNLESS OTHERWISE INDICATED

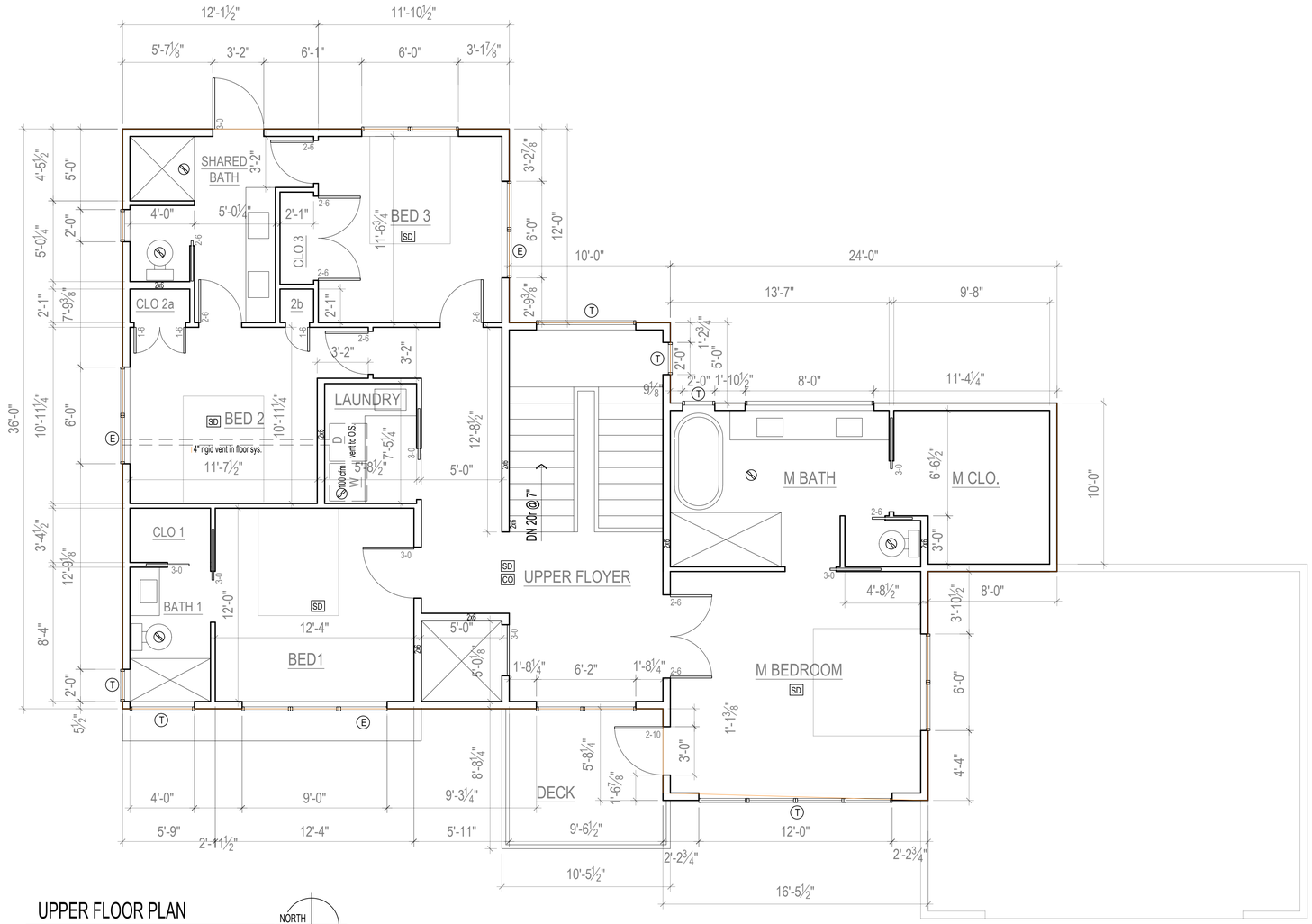
(T) =TEMPER/SAFETY GLAZE WINDOWS

ALL GAS F.P. TO BE APPROVED DIRECT VENT

EGRESS WINDOW REQUIREMENTS

Minimum of 5.7 square feet of net clear opening area. Minimum of 24 inches of net clear opening height. Minimum of 20 inches of net clear opening width. Opening must be max 44" above floor.

fire blocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space.



UPPER FLOOR PLAN

NORTH

1/4" = 1'-0"
1581 sf FLOOR AREA (red line)

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CONTENTS
Upper Floor

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A3

NOTES

SD = SMOKE DETECTOR, HARDWIRE, INTERCONNECTED w/ BATTERY BACK-UP
CO = CARBON MONOXIDE DETECTOR, HARDWIRE w/ BATTERY BACK-UP
HD = HEAT DETECTOR, HARDWIRE w/ BATTERY BACK-UP

DOORS ARE (width per plan) x 7'-10" (r.o. = 3'-2" x 8'-0") unless otherwise indicated

= FAN, 50 CFM UNLESS OTHERWISE INDICATED

FOR SHEAR WALL INFORMATION SEE STRUCTURAL PLANS

ALL INTERIOR WALLS TO BE 2x4, EXTERIOR WALLS 2x6, EXCEPT AS INDICATED, OR EXISTING

(E) =EGRESS WINDOWS

Contractor shall verify to Inspector all guards and railings shall be capable of resisting 200 lb load on top rail acting in any direction as required by IRC Table R301.5.

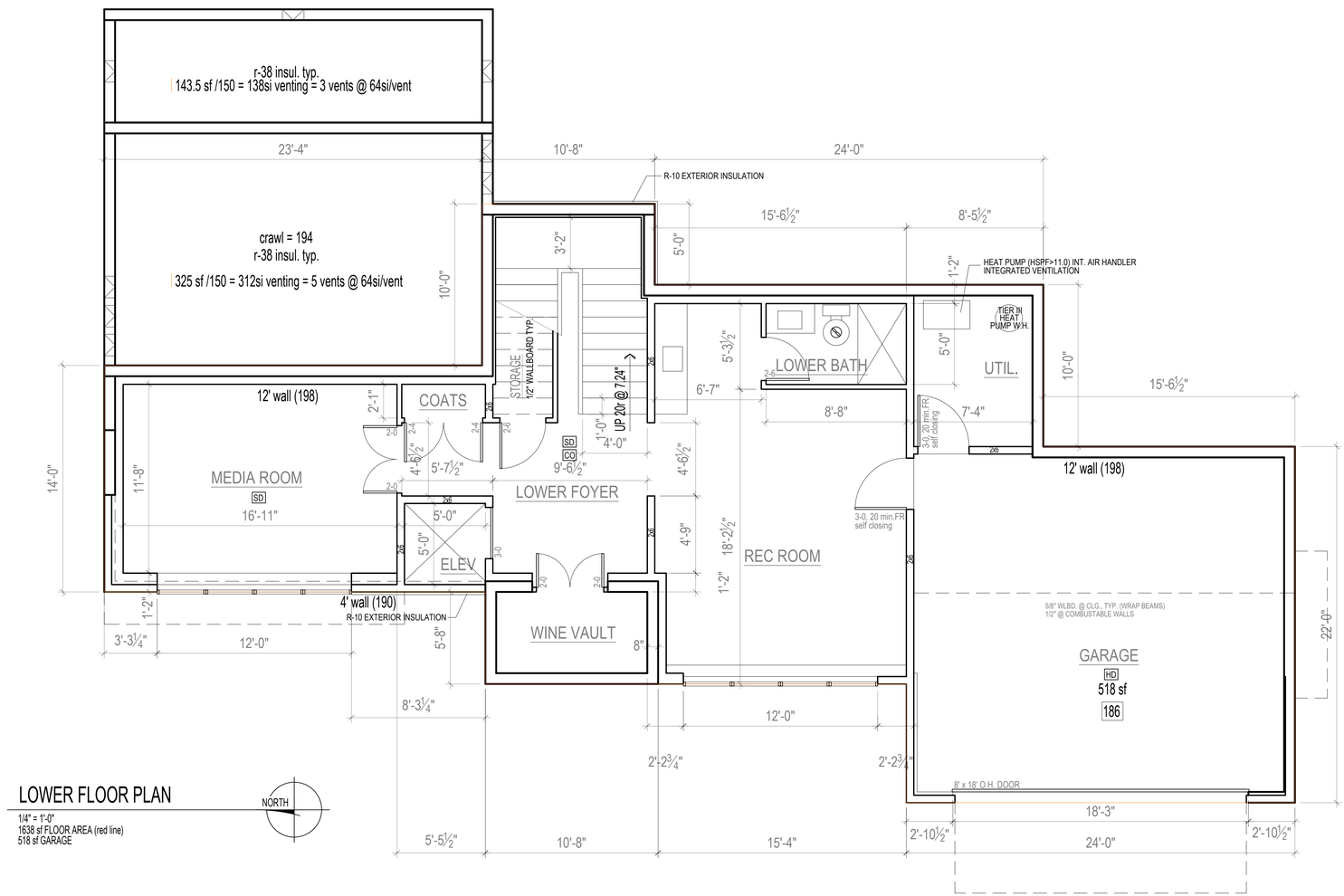
ALL WALLS FULL HIEGHT UNLESS OTHERWISE INDICATED

(T) =TEMPER/SAFETY GLAZE WINDOWS

ALL GAS F.P. TO BE APPROVED DIRECT VENT

EGRESS WINDOW REQUIREMENTS

Minimum of 5.7 square feet of net clear opening area. Minimum of 24 inches of net clear opening height. Minimum of 20 inches of net clear opening width. Opening must be max 44" above floor.



LOWER FLOOR PLAN

NORTH

1/4" = 1'-0"
1638 sf FLOOR AREA (red line)
518 sf GARAGE

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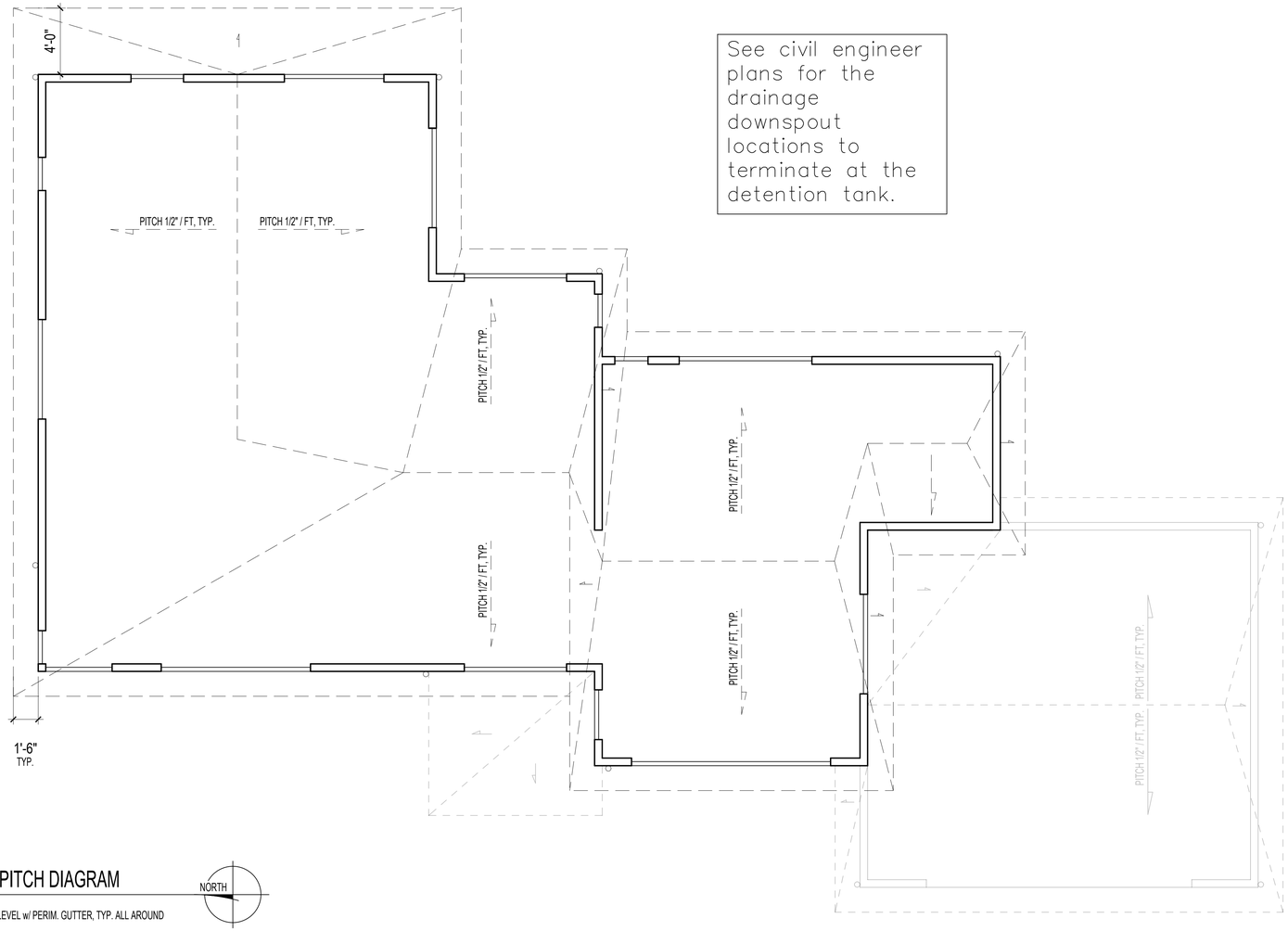
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CONTENTS
Lower Floor

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6.10.25

A4



See civil engineer plans for the drainage downspout locations to terminate at the detention tank.

ROOF PITCH DIAGRAM

1/4" = 1'-0"

EAVE TO BE LEVEL w/ PERIM. GUTTER, TYP. ALL AROUND

NORTH

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ROOF PLAN

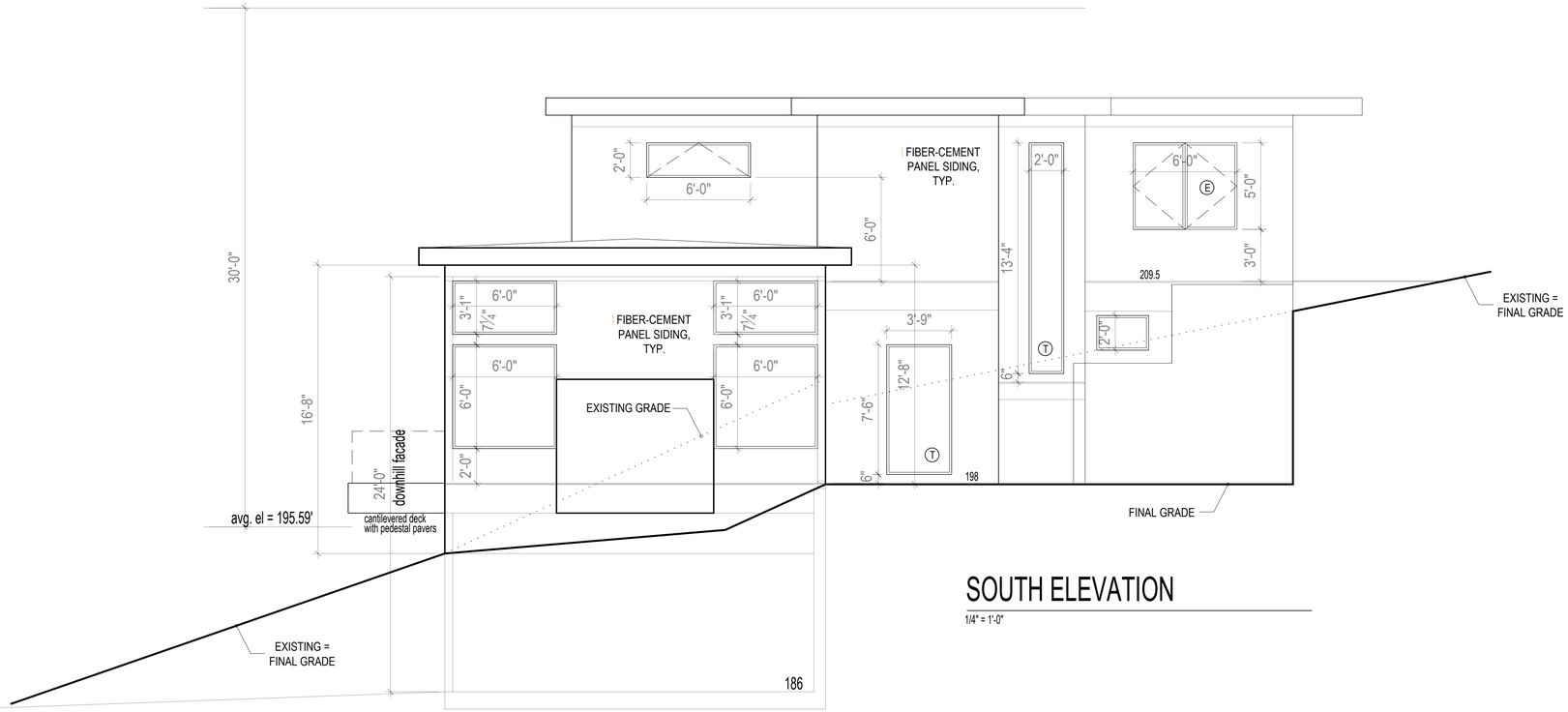
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A4.5



SOUTH ELEVATION

1/4" = 1'-0"



WEST ELEVATION

1/4" = 1'-0"

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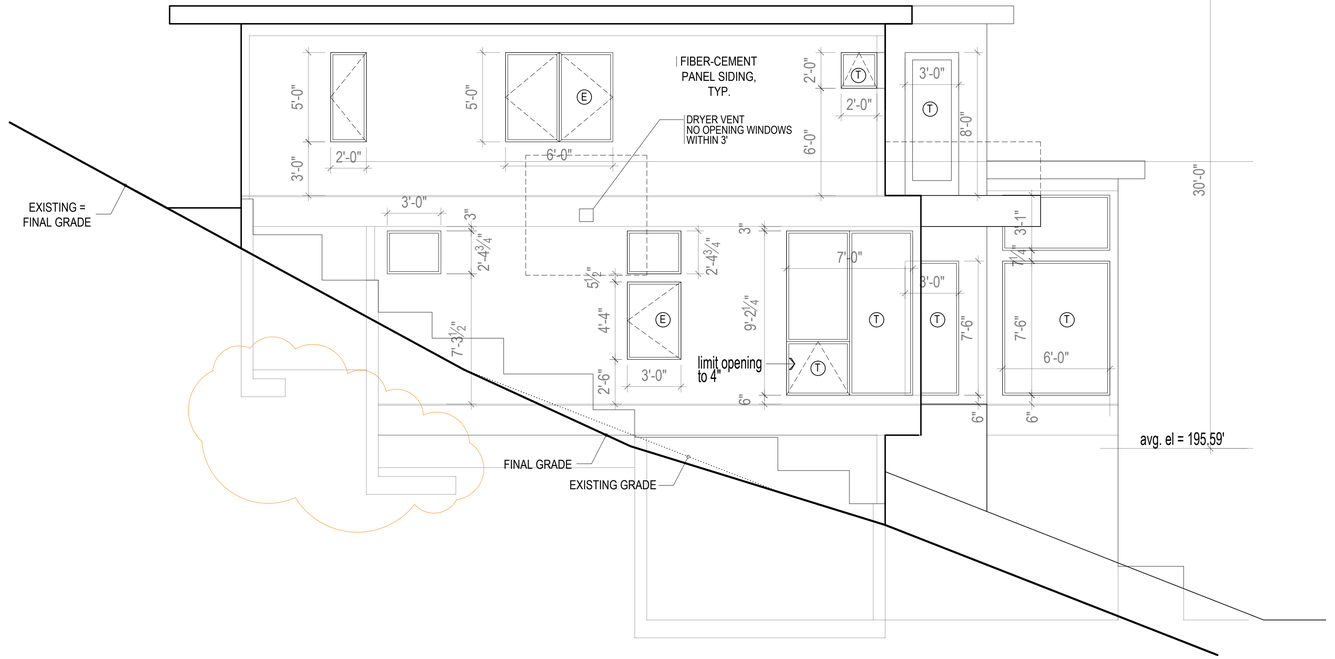
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CONTENTS
Elev

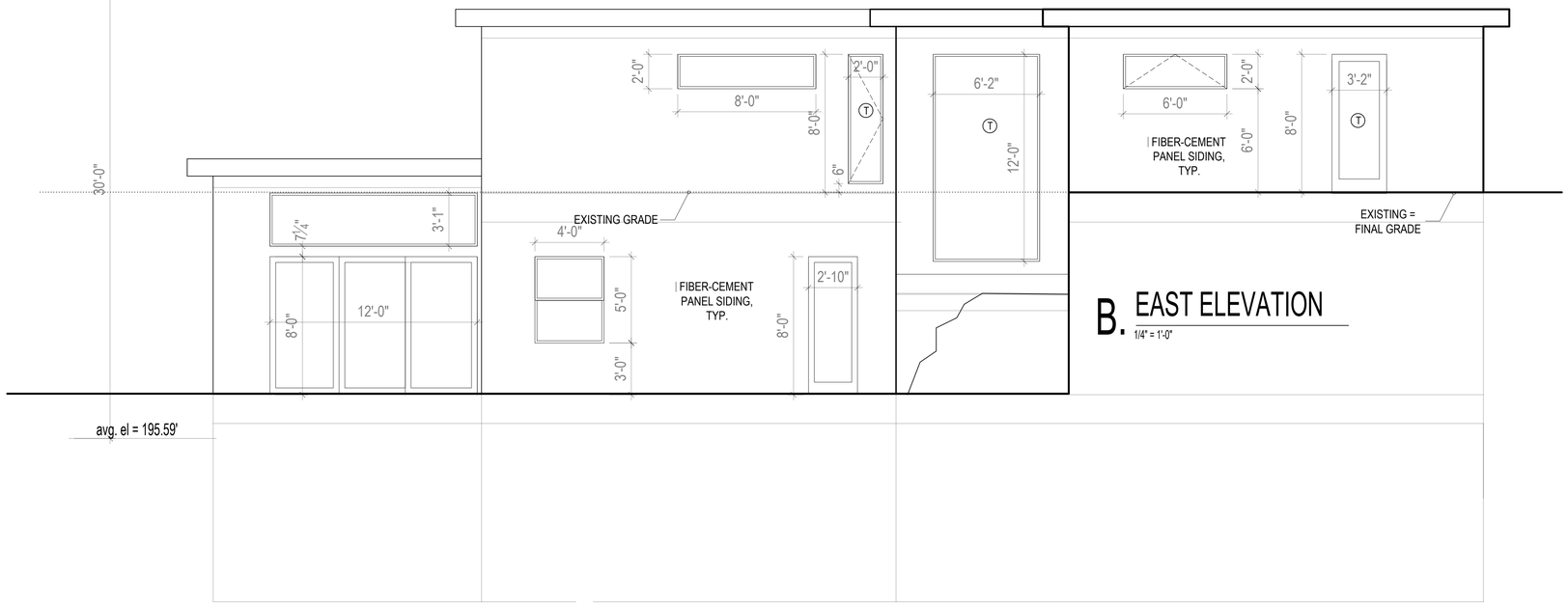
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6.10.25

A5



A. NORTH ELEVATION
1/4" = 1'-0"



B. EAST ELEVATION
1/4" = 1'-0"

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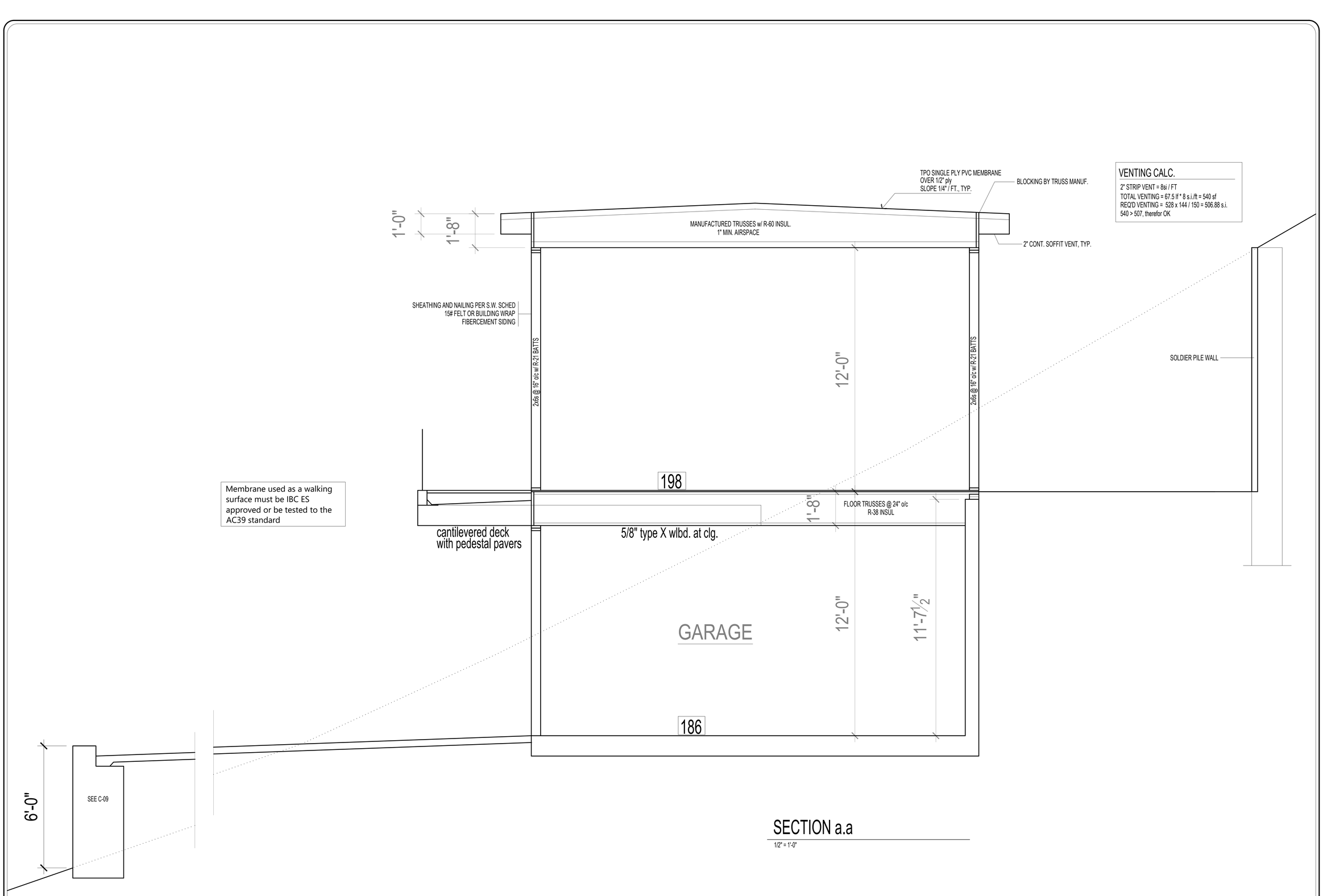
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CONTENTS
Elev

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6.10.25
7.25.25

A6



SECTION a.a

1/2" = 1'-0"

VENTING CALC.

2" STRIP VENT = 8si / FT
TOTAL VENTING = 67.5 lf * 8 s.i./ft = 540 sf
REQ'D VENTING = 528 x 144 / 150 = 506.88 s.i.
540 > 507, therefor OK

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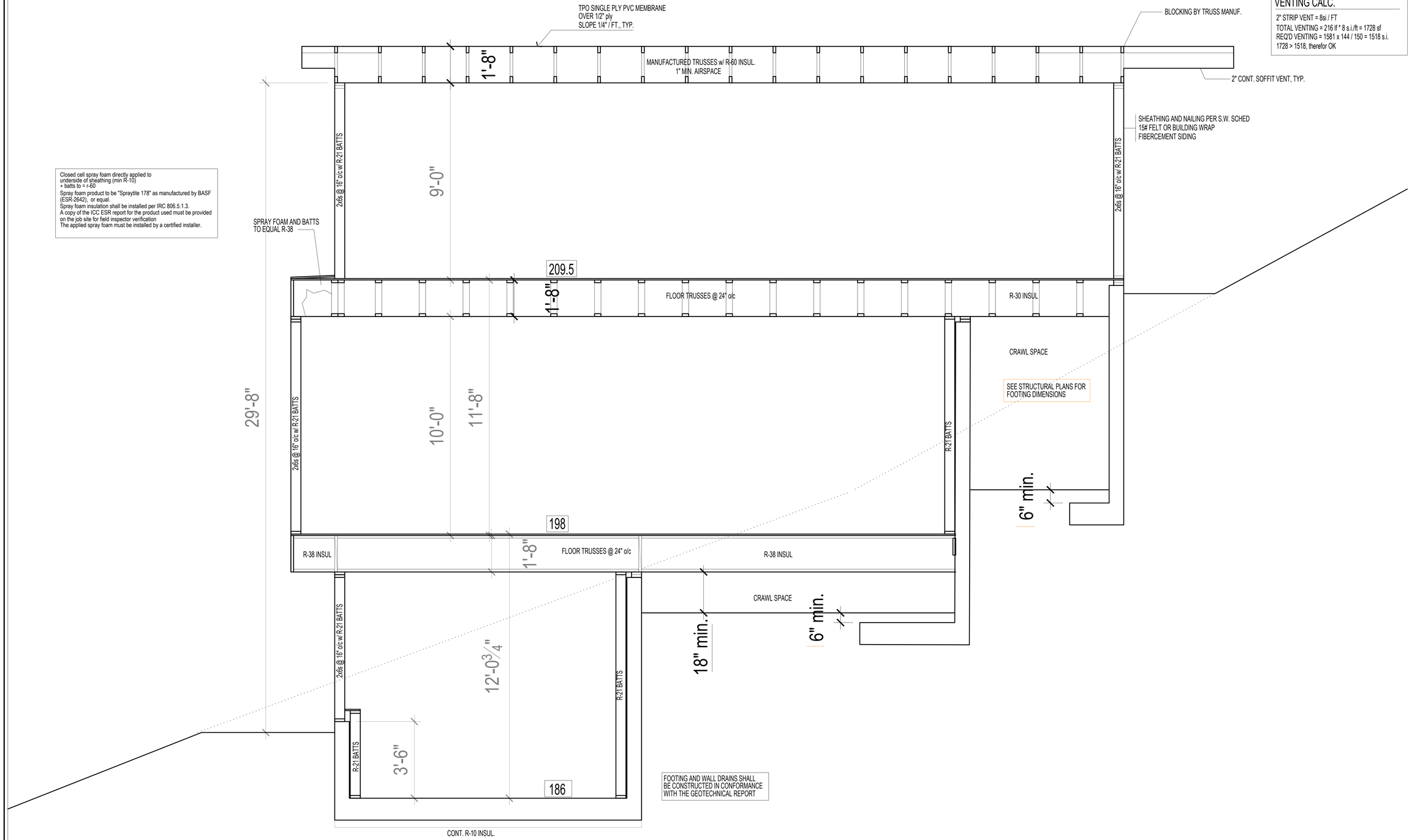
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CONTENTS
Section

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A7



Closed cell spray foam directly applied to
underside of sheathing (min R-10)
+ batts to = r-60
Spray foam product to be "Spraytite 178" as manufactured by BASF (ESR-2642), or equal.
Spray foam insulation shall be installed per IRC 806.5.1.3.
A copy of the ICC ESR report for the product used must be provided on the job site for field inspector verification
The applied spray foam must be installed by a certified installer.

VENTING CALC.

2" STRIP VENT = 8si / FT
TOTAL VENTING = 216 lf * 8 s.i./ft = 1728 sf
REQ'D VENTING = 1581 x 144 / 150 = 1518 s.i.
1728 > 1518, therefor OK

SECTION b.b

1/2" = 1'-0"
FOR STRUCT. DETAILS SEE S3.2
R-10 AT WINDOW HEADERS, TYP.

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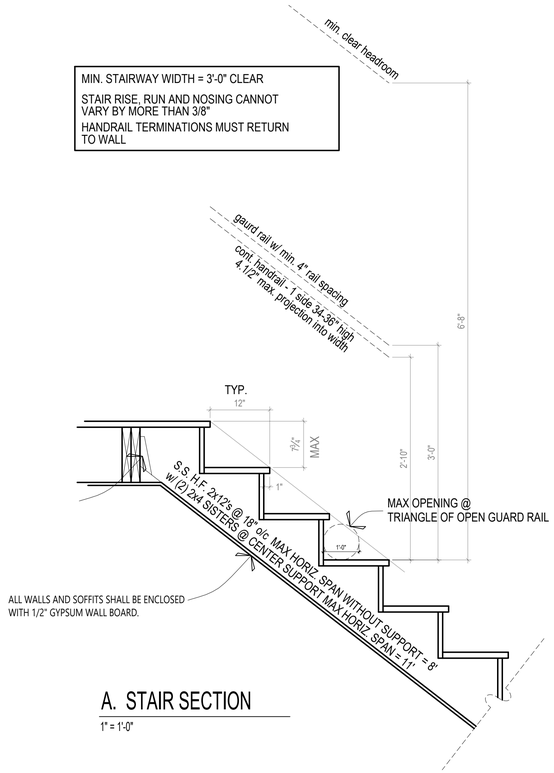
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CONTENTS
Section

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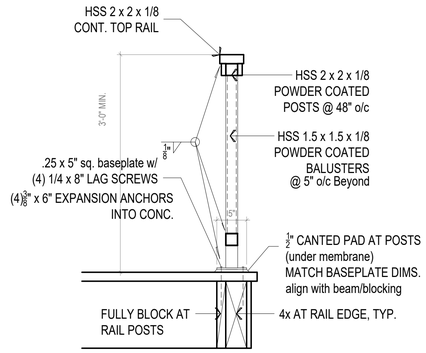
DATE
1.12.24
6.10.25
7.25.25

A8



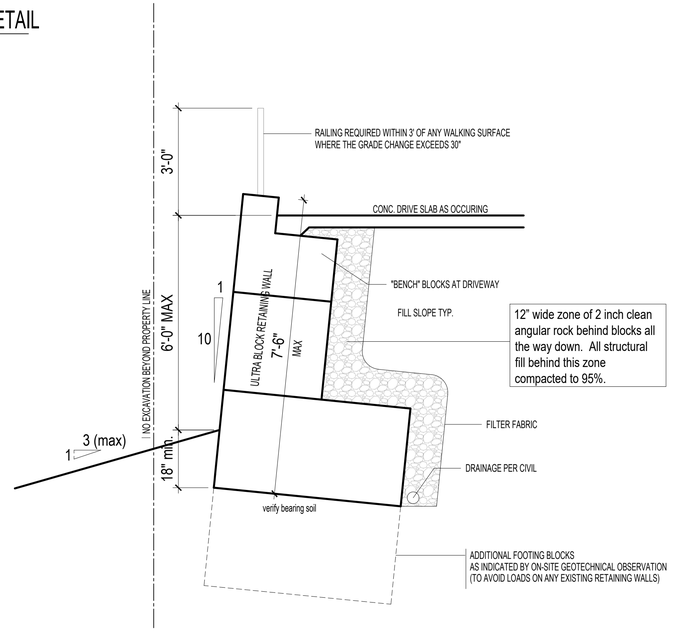
A. STAIR SECTION

1" = 1'-0"



B. RAILING DETAIL

1" = 1'-0"

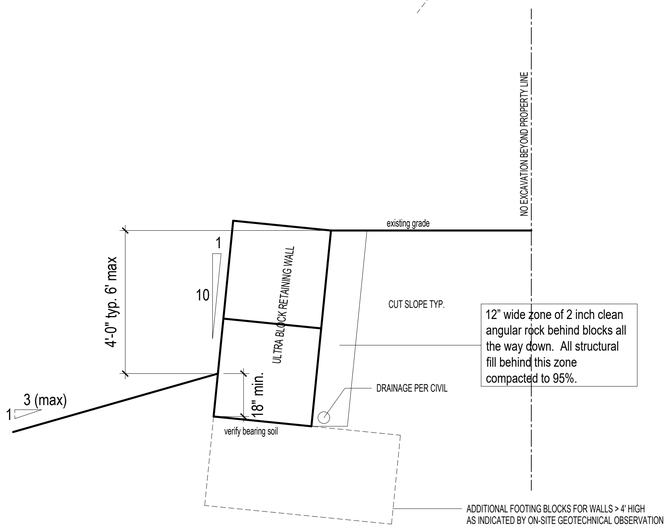


C. GRAVITY RETAINING WALLS @ FILL SLOPES

1" = 1'-0"

ULTRABLOCK RETAINING WALL:

1. WALLS (2½X2½X5 FEET IN DIMENSION) MAY ALSO BE CONSIDERED TO SUPPORT THE TEMPORARY EXCAVATIONS. HOWEVER, USE OF ULTRABLOCK SHORING WILL REQUIRE EXCAVATIONS ABOVE THE BLOCKS TO EXTEND INTO THE ROW. THE ULTRABLOCK WALL SHOULD HAVE A MAXIMUM HEIGHT OF 7½ FEET (THREE BLOCKS HIGH)
2. THE MAXIMUM WALL HEIGHT OF STAGGERED BLOCKS IS 7½ FEET (I.E., 3 BLOCKS IN HEIGHT);
3. THE BACK SLOPE ABOVE THE WALL SHALL BE NO STEEPER THAN 1H:3V (6' MAXIMUM);
4. THE SUBGRADE AT THE BASE OF THE ULTRABLOCK BLOCKS SHALL CONSIST OF DENSE NATIVE SOIL OR LEVELING CRUSHED ROCK PLACED ON DENSE SOIL;
5. NO EXCAVATION SHALL BE MADE UNTIL BLOCKS ARE AVAILABLE ON SITE
6. THE WIDTH OF UNSUPPORTED CUT FACE FOR BLOCK PLACEMENT SHALL BE LIMITED TO NO MORE THAN ABOUT 12 FEET AT ANY GIVEN TIME;
7. BLOCKS SHALL BE PLACED IMMEDIATELY AFTER THE CUT IS MADE, OTHERWISE THE CUT FACE SHALL BE BUTTRESSED WITH ON-SITE SOILS UNTIL THE BLOCKS CAN BE PLACED;
8. ANY VOIDS BEHIND BLOCKS SHALL BE BACKFILLED WITH GRAVEL IMMEDIATELY AFTER THE BLOCK WALL ARE INSTALLED; AND
9. GEOTECHNICAL ENGINEER SHALL PROVIDE FULL TIME OBSERVATION DURING BLOCK WALL INSTALLATION.



D. GRAVITY RETAINING WALLS @ CUT SLOPES

1" = 1'-0"

GEOTECHNICAL SPECIAL INSPECTOR SHALL CONTINUOUSLY MONITOR THE EXCAVATION FOR AND INSTALLATION OF THE ECOLOGY BLOCK WALL.

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CONTENTS
Details

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DATE
1.12.24
6.10.25
7.25.25
2.20.24

A9

Project Information
5818 W Mercer

Contact Information
Chris Luthi
cluthi@comcast.net

Messages / Comments * **RESULT= PASS**

UA Reduction = 23.92. Proposed UA is better than baseline by 2.6%

Window area is 32% of floor area

Whole House Mechanical Ventilation Airflow Rate: 170 CFM with Run Time Percent of 50%, Balanced, Distributed
Maximum allowable total measured duct leakage: 288 CFM25

* Results assume your inputs are complete and correct. Results do not constitute an approval. Analysis should be reviewed by your AHJ.

ANALYSIS SET UP

What code compliance pathway are you using?	U-Factor Compliance Path
Project Building Type?	New Construction
Occupancy Type?	R3 Single family dwellings and townhouses
Code Version?	WSEC 2021
Classification:	Medium Dwelling Unit -- 3594 sq. ft
Baseline Description:	Code Baseline - Baseline and proposed window areas are equal.
About Your Selection:	Up to 15 sf exempt window and 24 sf exempt door allowable

RESULTS - Comparison of Baseline and Proposed Design **

Component Performance, R occupancies	Baseline U	Baseline Area	Baseline UA	Proposed Design U	Proposed Design Area	Proposed Design UA
Doors U =	0.300	371	111.2	0.300	371	111.2
Overhead Glazing U =	0.500	0	0.0		0	0.0
Vertical Glazing U =	0.300	1,149	344.6	0.300	1,149	344.6
Flat/Vaulted Ceilings U =	0.024	2,066	49.6	0.017	2,066	35.1
Wall (above grade) U =	0.056	3,689	206.4	0.054	3,689	199.2
Floors over Crawlspace U =	0.029	520	15.1	0.025	520	13.0
Slab on Grade F =	0.540	0	0.0		0	0.0
Below Grade Wall U =	0.035	2,450	85.8	0.035	2,450	85.8
Below Grade Slab F =	0.500	245	122.5	0.500	245	122.5

* Values from Table R402.1.2 (Oct 2023)

Baseline UA Total	935.3	Proposed UA Total	911.4
Required Credits	8.0	Proposed Credits	8.0 from Tables 406.2 and 406.3
		UA Percent Reduction	3%
		UA Reduction	23.9

If the Proposed UA ≤ the Target UA, and the Proposed Credits from Table 406 are ≥ those required in Section R406, than the home meets the WSEC.

** Results assume your inputs are complete and correct. Results do not constitute an approval. Analysis should be reviewed by your AHJ.

Table R406.2 Energy Equalization Credits

System No.	Full Description	Select System Type	Fuel Normalization Credits (406.2)	Energy Credits (406.3)	Total Credits (406.2 & 406.3)
4	For heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) or Table C403.3.2(6) OR Air to Water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550/590	Variable Refrigerant Heat Pump or Air-to-Water Heat Pump	3.0	5.0	8.0

Table R406.3 Energy Credits

Option No.	Category	Select Options	Energy Credits	Brief Description of Selected Options*
1	Efficient Building Envelope	Not Selected	0.0	-
2	Air Leakage Control and Efficient Ventilation	Option 2.1	1.0	Per Section R402.4.1.2 / 2.0 ACH50 / For R-2, 0.25 cfm per ft2 at 50 Pa / HRV with min SHR eff of 0.65 per IRC Section M1505.3 or IMC Section 403.8
3.1 -3.10	High Efficiency HVAC	Option 3.6	1.0	Air source ducted Heat Pump w/ Min HSPF2 of 10 (HSPF of 11). If htg design temp is 23F or below a cold climate variable capacity heat pump is required.
3.11	High Efficiency HVAC: Smart Thermostat	Option 3.11	0.5	Connected Energy Star Certified smart thermostat.
4	High Efficiency HVAC Distribution System	Option 4.1	0.5	Ducts/distribution system in conditioned space per R403.3.2 Electric resistance, hydronic, ductless and gas fired systems = 80% AFUE systems not permitted
5.1	Efficient Water Heating: Drain Heat Recovery		0.0	
5.2	Efficient Water Heating: Compact Hot Water Distribution	Not Selected	0.0	-
5.3-5.8	Efficient Water Heating	Option 5.8	2.0	Electric heat pump water heater meeting NEEA Tier 3..
6	Renewable Electric Energy 3,000 kWh		0.0	
7	Appliance Package		0.0	
	Energy Credits		5.0	

*Refer to WSEC 2015 Table R406.2 for complete option descriptions and requirements

THERMAL ENVELOPE DETAILS - Proposed Design

Conditioned Floor Area, Proposed Design 3,594 sq. ft
Classification Medium Dwelling Unit
Notes

Exterior Doors

Plan ID	Component Description	Ref.	Door U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
Exempt		-							0	0.0
GarDoor	Code Baseline, U=0.30	-	0.30	1	3	0	8	0	25	7.6
entry	Code Baseline, U=0.30	-	0.30	1	6	0	8	0	49	14.8
fr	Code Baseline, U=0.30	-	0.30	1	16	0	8	0	128	38.4
fr	Code Baseline, U=0.30	-	0.30	1	12	0	8	0	96	28.8
pantry	Code Baseline, U=0.30	-	0.30	1	2	10	8	0	23	6.8
mbed	Code Baseline, U=0.30	-	0.30	1	3	0	8	0	24	7.2
Sbath	Code Baseline, U=0.30	-	0.30	1	3	0	8	0	25	7.6
									0	0.0
									0	0.0
									0	0.0
				Sum of Area and UA					371	111.2
				Exterior Doors Area Weighted U						0.300

Overhead Glazing

Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
									-	
									-	
									-	
									-	
									-	
				Sum of Area and UA					0.0	0
				Overhead Glazing Area Weighted U						

Vertical Glazing Schedule

Rows to Show 30

	Plan ID	Component Description	Ref.	Glazing U	Qt.	Width Feet	Width Inch	Height Feet	Height Inch	Area	UA
	Exempt		-	-						-	-
1	Media	U=0.30 (Code Baseline)	Table 406.2	0.30	1	12	0	5	4.5	64.5	19.35
2	Rec	U=0.30 (Code Baseline)	Table 406.2	0.30	1	12	0	5	4.5	64.5	19.35
3	Dining	U=0.30 (Code Baseline)	Table 406.2	0.30	1	12	0	7	0	90.0	27.00
4	Dining	U=0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	7	0	22.5	6.75
5	Living	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	7	0	45.0	13.50
6	Living	U=0.30 (Code Baseline)	Table 406.2	0.30	2	6	0	6	0	72.0	21.60
7	Living	U=0.30 (Code Baseline)	Table 406.2	0.30	2	6	0	3	0	37.0	11.10
8	Living	U=0.30 (Code Baseline)	Table 406.2	0.30	1	16	0	3	0	49.3	14.80
9	Living	U=0.30 (Code Baseline)	Table 406.2	0.30	1	12	0	3	0	37.0	11.10
10	Kitchen	U=0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	7	0	28.1	8.44
11	Kitchen	U=0.30 (Code Baseline)	Table 406.2	0.30	1	4	0	5	0	20.0	6.00
12	Gbath	U=0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	2	0	6.0	1.80
13	Stairs	U=0.30 (Code Baseline)	Table 406.2	0.30	1	2	10	13	0	26.7	8.00
14	Stairs	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	12	0	74.0	22.20
15	Obed	U=0.30 (Code Baseline)	Table 406.2	0.30	2	3	0	2	4.75	14.4	4.31
16	Obed	U=0.30 (Code Baseline)	Table 406.2	0.30	1	3	0	4	0	13.0	3.90
17	Office	U=0.30 (Code Baseline)	Table 406.2	0.30	1	7	0	9	2.25	64.3	19.29
18	Office	U=0.30 (Code Baseline)	Table 406.2	0.30	1	10	0	9	3.75	99.4	29.81
19	Powder	U=0.30 (Code Baseline)	Table 406.2	0.30	1	2	0	5	0	10.0	3.00
20	UpFoyer	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	6	0	38.0	11.41
21	Mbed	U=0.30 (Code Baseline)	Table 406.2	0.30	1	12	0	7	0	90.0	27.00
22	Mbed	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	2	0	12.0	3.60
23	Mbath	U=0.30 (Code Baseline)	Table 406.2	0.30	2	2	0	8	0	32.0	9.60
24	b3	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	5	0	30.0	9.00
25	b3	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	2	0	12.0	3.60
26	Sbath	U=0.30 (Code Baseline)	Table 406.2	0.30	1	2	0	5	0	10.0	3.00
27	b2	U=0.30 (Code Baseline)	Table 406.2	0.30	1	6	0	5	0	30.0	9.00
28	b1bath	U=0.30 (Code Baseline)	Table 406.2	0.30	1	2	0	2	0	4.0	1.20
29	b1bath	U=0.30 (Code Baseline)	Table 406.2	0.30	1	4	0	2	0	8.0	2.40
30	b1bath	U=0.30 (Code Baseline)	Table 406.2	0.30	1	9	0	5	0	45.0	13.50
				Sum of Area and UA					1,148.7	344.6
				Vertical Glazing Area Weighted U						0.300
				Vertical Glazing and Doors Area Weighted U						0.300

Floor (over crawl or exterior)

Plan ID	Component Description	Ref.	Floor U	Area	UA
	R38 vented Joist (2021 1.2, 1.3; 2018 1.3-1.6)	10-3	0.025	520	13
			Sum of Area and UA	520	13

Slab on Grade (less than 2 feet below grade)

Plan ID	Component Description	Ref.	Slab F	Slab Perim	FP
			Sum of Perimeter and FP	0	0

Below Grade Walls and Slabs

Plan ID	Component Description	Slab Depth	Ref.	Wall U	Wall Area	Wall UA	Slab F	Slab Perim	Slab UA
	R21 Batt w/TB	7' depth	WSU	0.035	2,450	85.8	0.500	245	123
			Sum of Area, Length and UA		2,450	85.8		245	123

Links to Download Forms, Checklists and Other Resources

	Link
Compliance Certificate	Compliance Certificate Instructions
Insulation Certificate for Residential New Construction	Insulation Certificate
Duct Testing Affadavits	
Existing Construction	Affidavit, Existing
New Construction	Affidavit, New
Prescriptive Checklist for 2018 WSEC	Prescriptive Checklist
Alterations (Remodel) Worksheet	Worksheet
EER SEER2 COP HSPF2 Converter	https://www.ablcottengineering.com/eer-seer2-cop-hspf2-kelvin-converter

Show Ventilation Calculator? Show

Ventilation Requirements

Conditioned Floor Area	3,594 sq. ft.	
Number of Bedrooms	5	
Run-Time Percent in Each 4-Hour Segment	50%	
Is the system Balanced?	Balanced	Verify system meets definition of 'Balanced Whole-House Ventilation'
Is the system Distributed?	Distributed	Verify system meets definition of 'Distributed Whole-House Ventilation'
Ventilation Code Section	IRC, Chapter 15	
Whole House Mechanical Ventilation Airflow Rate	170 CFM	

Show Distribution System Calculator? Show

HVAC Thermal Distribution System Download R8-33 (2018) http://www.energy.wsu.edu/Documents/Duct%20Testing%20Standards%20_2018

Is this a hydronic heating system?	No	
Location of Ducts	Conditioned Space	
Location of Air Handler	Conditioned Space	
Is Duct Testing Required?	Yes	
Maximum Duct Leakage:		
Maximum total measured duct leakage per square foot	0.08	CFM25 per sq. ft.
Maximum allowable total measured duct leakage	288	CFM25

A maximum of 10 feet of return ducts and 5 feet of supply ducts are allowed to be located outside of the building thermal envelope, if insulated and sealed per R403.3.7.

Show Heating System Sizing? Show

Heating System Sizing - Proposed Design Try Out BetterBuiltNW's HVAC Sizing Tool: https://betterbuiltnw.com/resources/hvac-sizing-tool/

Nearest Weather Station	Seattle Sea-Tac AP	
Indoor Design Temperature	70 F	
Outdoor Design Temperature	24 F	
Design Temperature Difference (dT)	46 F	
Conditioned Floor Area, Proposed Design	3,594 ft2	
Conditioned Volume (Leave blank to use default of 8.5 ft. ceiling height)	38,940 ft3	Average ceiling height =10 ft. Volume = 35940 ft3
Average ceiling height	10.0 ft	

Flat/Vaulted Ceilings

Plan ID	Component Description	Ref.	Attic U	Area	UA
MAIN	R60 blown Attic ADV baffled (2021 1.3, 1.4; 2018 1.6)	10-7	0.017	1,581	26.9
LOWER	R60 blown Attic ADV baffled (2021 1.3, 1.4; 2018 1.6)	10-7	0.017	485	8.2
			Sum of Area and UA	2,066	35.1

Walls (Above Grade)

Plan ID	Component Description	Ref.	Wall U	Net Area	UA
	R21 cavity+R9 foam INT 2X6W Lap (Code Baseline)	10-5	0.054	3,689	199
			Sum of Area and UA	3,689	199

HVAC System Type Heat Pump
Location of HVAC Distribution System Conditioned Space

Sum of UA, including exempt door and window	911	
Envelope Heat Load (Sum of UA X dT)	41,924	Btu / Hour
Air Leakage Heat Load (Volume X 0.6 X dT X .018)	17,855	Btu / Hour
Building Design Heat Load (Air Leakage + Envelope Heat Loss	59,779	Btu / Hour
Building and Duct Heat Load	59,779	Btu / Hour
For ducts located in unconditioned space: Sum of Building Heat Loss X 1.1		
For ducts located in conditioned space or ductless: Sum of Building Heat Loss X 1		
Maximum Heat Equipment Output	74,724	Btu / Hour
Building and Duct Heat Loss X 1.25 for heat pumps	21.9	kW
Building and Duct Heat Loss X 1.40 for all other systems		

PRIMARY RESIDENCE HVAC NOTES

DUCTED HEAT PUMP (HSPF>11.0) INT. AIR HANDLER
INTEGRATED HEAT RECOVERY VENTILATION
REQUIRED VENTING = CONTINUOUS 85CFM
SET TO OPERATE AT 170 CFM FOR 2 HOURS IN EA. 4 HR PERIOD (50%)
PROVIDED BY VARIABLE SPEED HIGH EFF. FAN (MAX .35 WATTS/CFM)
CONTOLLED TO OPERATE AT LOW SPEED IN VENTILATION
MODE ONLY.

design professional or builder
shall complete and
post an "Insulation Certificate for
Residential Construction" within 3'
of the electrical panel prior to
final inspection.

Maximum flow rates for shower heads and kitchen sink - 1.75 GPM or less. All other lavatory faucets - 1.0 GPM
or less.

Per WSEC R402.4, The building thermal Envelope shall be constructed to limit air leakage to 2.0 air changes per hour maximum. The results of the test shall be signed by the party conducting the test and provided to the code official (R402.4.1.2). Per WSEC R403.1.1, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule. Per WSEC R403.2.2, Ducts, air handlers, and filter boxes shall be sealed. Per WSEC R404.1, A minimum of 90 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

9317 REGISTERED ARCHITECT CHRIS LUTHI STATE OF WASHINGTON

2728 63rd Ave SE
Mercer Island WA

CONTENTS
C3 Energy Code

DRAWN BY
CRL

DATE
2.4.25

A10

General Structural Notes (GSN's)

CRITERIA:

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON STATE ADMINISTRATIVE CODE AMENDMENTS, 2021 EDITION. ⚠
2. DESIGN LOADING CRITERIA
   - RISK CATEGORY SBC TABLE 1604.5 II
   - ROOF SNOW LOAD . . . . . 25 PSF (I_S = 1.0)
   - ROOF DEAD LOAD . . . . . 15 PSF
   - RESIDENTIAL LIVE LOAD . . . . . 40 PSF
   - DECK LIVE LOAD . . . . . 60 PSF
   - FLOOR DEAD LOAD . . . . . 25 PSF

   EARTHQUAKE . . . . . SEISMIC DESIGN CATEGORY D
   S_S = 1.63, S_1 = 0.64, S_{DS} = 1.19, S_{D1} = 0.72
   EQUIVALENT LATERAL FORCE PROCEDURE
   LIGHT FRAME (WOOD) WALLS AND ROOFS SHEATHED WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR
   R = 6.5, Ω_0 = 2½, I_E = 1.0, C_d = 4, C_s = 0.183
   BASE SHEAR, V = 63.5 K (LRFD)

   WIND . . . . . 110 MPH, EXPOSURE "C", Kzt = 1.3
   COMPONENTS & CLADDING . . . . . –52.5/–31.5 PSF MAX. AT WALLS (LRFD/ASD)
   –52.5/–31.5 GROSS UPLIFT AT ROOF (LRFD/ASD)
   WIND PRESSURES BASED ON LESS THAN 10 SQUARE FOOT TRIBUTARY AREAS NEAR WALL CORNERS OR ROOF EDGES (EXCLUDING CORNER ZONES AT ROOF). REDUCED DESIGN PRESSURES MAY BE CALCULATED IN ACCORDANCE WITH ASCE 7-16 CHAPTER 30.
3. STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ENGINEER OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BUILDING LAYOUT DIMENSIONS (GRID LAYOUTS, SITE COORDINATES, ETC.) AMONGST ALL TRADES, INCLUDING SHOP FABRICATED ITEMS.
4. CONTRACTOR SHALL PROVIDE TEMPORARY BRACING, BOTH FOR VERTICAL LOADS AND LATERAL STABILITY, FOR THE STRUCTURE AND STRUCTURAL COMPONENTS UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.
6. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.
7. ALL STRUCTURAL SYSTEMS COMPOSED OF COMPONENTS TO BE FIELD ERECTED SHALL BE SUPERVISED BY THE SUPPLIER DURING MANUFACTURING, DELIVERY, HANDLING, STORAGE AND ERECTION IN ACCORDANCE WITH INSTRUCTIONS PREPARED BY THE SUPPLIER.
8. SEISMIC BRACING AND/OR GRAVITY SUPPORT AND ANCHORAGE OF ALL MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON, EXCEPT FOR ELEMENTS SPECIFICALLY SHOWN AND DETAILED ON THE STRUCTURAL DRAWINGS. THE MECHANICAL/ELECTRICAL CONTRACTOR MUST HIRE THE ENGINEER AND IS RESPONSIBLE FOR ALL COSTS RELATED TO THE PURCHASE AND INSTALLATION OF NECESSARY SUPPORTS, BRACING AND ANCHORAGE. SEISMIC BRACING AND ANCHORAGE DESIGN AND CONSTRUCTION SHALL COMPLY WITH CHAPTER 13 OF ASCE 7-10.
9. SHOP DRAWING REVIEW: SHOP DRAWINGS FOR TRUSSES SHALL BE SUBMITTED TO THE CONTRACTOR, ARCHITECT, AND ENGINEER OF RECORD FOR REVIEW PRIOR TO FABRICATION OF THESE ITEMS. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE ENGINEER OF RECORD, AND THEREFORE MUST BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL REVIEW AND STAMP DRAWINGS PRIOR TO REVIEW BY ENGINEER OF RECORD. SUBMITTALS SHALL INCLUDE A REPRODUCIBLE AND ONE COPY. THE REPRODUCIBLE SHALL BE MARKED AND RETURNED. SHOP DRAWING SUBMITTALS PROCESSED BY THE ENGINEER ARE NOT CHANGE ORDERS. THE PURPOSE OF SHOP DRAWING SUBMITTALS BY THE CONTRACTOR IS TO DEMONSTRATE TO THE ENGINEER THAT THE CONTRACTOR UNDERSTANDS THE DESIGN CONCEPT BY INDICATING WHICH MATERIAL IS INTENDED TO BE FURNISHED AND INSTALLED AND BY DETAILING THE INTENDED FABRICATION AND INSTALLATION METHODS. IF DEVIATIONS, DISCREPANCIES, OR CONFLICTS BETWEEN SHOP DRAWING SUBMITTALS AND THE CONTRACT DOCUMENTS ARE DISCOVERED EITHER PRIOR TO OR AFTER SHOP DRAWING SUBMITTALS ARE PROCESSED BY THE ENGINEER, THE DESIGN DRAWINGS AND SPECIFICATIONS SHALL CONTROL AND SHALL BE FOLLOWED.
10. DEFERRED SUBMITTALS SHALL BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF WASHINGTON. THE COMPONENT DESIGNER SHALL BE A REGISTERED STRUCTURAL ENGINEER IF REQUIRED BY THE BUILDING OFFICIAL OF THE LOCAL JURISDICTION. BUILDING COMPONENT SUBMITTALS SHALL INCLUDE THE DESIGNING PROFESSIONAL ENGINEER'S STAMP AND SHALL BE APPROVED BY THE COMPONENT DESIGNER PRIOR TO CURSORY REVIEW BY THE ENGINEER OF RECORD FOR LOADS IMPOSED ON THE BASIC STRUCTURE. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE INCLUDING ACCOMMODATION FOR STRUCTURAL DISPLACEMENT PER ASCE 7-10 SECTION 13.3.2, AND ALL NECESSARY CONNECTIONS NOT SPECIFICALLY CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS. DEFERRED SUBMITTALS SHALL INDICATE MAGNITUDE AND DIRECTION OF ALL LOADS IMPOSED ON BASIC STRUCTURE. DESIGN CALCULATIONS SHALL BE INCLUDED IN THE SUBMITTAL. THE CONTRACTOR SHALL FORWARD DEFERRED SUBMITTALS TO THE BUILDING OFFICIAL AND HAVE THE DEFERRED SUBMITTALS ON SITE FOR THE GOVERNING JURISDICTIONS INSPECTORS USE AND REFERENCE. THE FOLLOWING BUILDING COMPONENTS SHALL BE DEFERRED SUBMITTALS FOR THIS PROJECT:
    - PREFABRICATED CONNECTOR PLATE WOOD TRUSSES (SEE GENERAL NOTE #23)

GEOTECHNICAL:

11. FOUNDATION NOTES: SUBGRADE PREPARATION INCLUDING DRAINAGE, EXCAVATION, COMPACTION, AND FILLING REQUIREMENTS, SHALL CONFORM STRICTLY WITH THE SPECIFICATIONS OR AS DIRECTED BY THE, OWNER APPOINTED GEOTECHNICAL ENGINEER. FOOTINGS SHALL BEAR ON UNDISTURBED MEDIUM DENSE OR FIRMER NATIVE SOILS OR ON PROPERLY COMPACTED STRUCTURAL FILL PLACED ON THE SUITABLE NATIVE SOILS, AT LEAST 12" BELOW LOWEST ADJACENT FINISHED GRADE. ANY UNDOCUMENTED FILL AND/OR LOOSE NATIVE SOILS SHOULD BE REMOVED AND REPLACED WITH STRUCTURAL FILL BELOW FOUNDATION ELEMENTS. STRUCTURAL FILL BELOW FOOTINGS SHOULD CONSIST OF CLEAN ANGULAR ROCK ⅜ TO 4 INCHES IN SIZE. SOIL CONDITIONS DURING FOUNDATION EXCAVATION WORK SHALL BE VERIFIED BY THE OWNER APPOINTED GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF ALL FOOTINGS.
    - ALLOWABLE SOIL PRESSURE . . . . . 2,000 PSF
    - LATERAL EARTH PRESSURE (UNRESTRAINED) . . . . . 35 PCF
      (RESTRAINED) . . . . . 55 PCF
    - SEISMIC SURCHARGE PRESSURE (UNRESTRAINED) . . . . . 7H, UNIFORM
      (RESTRAINED) . . . . . 14H, UNIFORM
    - PASSIVE EARTH PRESSURE (WITH 1.5 FACTOR OF SAFETY . . . . . 250 PCF
    - BASE COEFFICIENT OF FRICTION (WITH 1.5 FACTOR OF SAFETY) 0.3

    ALL BOTTOM OF EXTERIOR FOOTINGS, AND INTERIOR FOOTINGS IN AN UNCONDITIONED SPACE, SHALL BE SET 12" BELOW GRADE AT A MINIMUM TO REACH FROST DEPTH.
    GEOTECHNICAL REFERENCE: Cobalt Geoscience; Geotechnical Evaluation; Proposed Residence; 5818 W. Mercer Way; Mercer Island, WA; November 8, 2025

ANCHORAGE:

13. DRIVE PINS AND OTHER POWDER-ACTUATED FASTENERS SHALL BE ONE OF THE FOLLOWING INSTALLED IN STRICT ACCORDANCE WITH THE ICC-ES REPORTS INDICATED AND MANUFACTURER'S INSTRUCTIONS INCLUDING MINIMUM EMBED REQUIREMENTS: "IE SERIES" (0.157" DIAMETER) AS MANUFACTURED BY ITW RAMSET (ICC-ES NO. 1799); OR "X-U" (0.157" DIAMETER) AS MANUFACTURED BY HILTI, INC. (ICC-ES NO. 2269); OR "STRONG-TIE PDPA" (0.157" DIAMETER) AS MANUFACTURED BY SIMPSON STRONG-TIE COMPANY, INC. (ICC-ES NO. 2138); OR "CSI PIN" (0.157" DIAMETER) AS MANUFACTURED BY DEWALT/POWERS (ICC-ES NO. 2024); OR AN APPROVED EQUIVALENT IN STRENGTH AND EMBEDMENT. MINIMUM EMBEDMENT IN CONCRETE SHALL BE 1" UNLESS OTHERWISE NOTED. MAINTAIN AT LEAST 3-1/2" TO NEAREST CONCRETE EDGE.

CONCRETE:

14. CONCRETE SHALL BE MIXED, PROPORTIONED, CONVEYED AND PLACED IN ACCORDANCE WITH ACI 318-18 CHAPTER 4 AND 26, AND ACI 301. CONCRETE SHALL ATTAIN A 28-DAY STRENGTH OF $f'c$ = 2,500 PSI (5½ SACK 2500 PSI CONCRETE MIX PER SBC SECTION CA1904.2). AIR-ENTRAINMENT IS NOT REQUIRED FOR DURABILITY PURPOSES. MIXES SHALL BE PROPORTIONED TO PRODUCE A 5-INCH OR LESS SLUMP, WITH A MAXIMUM ALLOWABLE TOLERANCE OF 1-INCH PLUS.
15. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, fy = 60,000 PSI. GRADE 60 REINFORCING BARS WHICH ARE TO BE WELDED SHALL CONFORM TO ASTM A706. REINFORCEMENT COMPLYING WITH ASTM A615(S1) MAY BE WELDED ONLY IF MATERIAL PROPERTY REPORTS INDICATING CONFORMANCE WITH WELDING PROCEDURES SPECIFIED IN A.W.S. D1.4 ARE SUBMITTED. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A1064.
16. REINFORCING STEEL SHALL BE DETAILED (INCLUDING HOOKS AND BENDS) IN ACCORDANCE WITH ACI 315-99 AND 318-18. LAP ALL CONTINUOUS REINFORCEMENT IN ACCORDANCE WITH "REINFORCEMENT SPLICE AND DEVELOPMENT LENGTH SCHEDULE" OF 10/S3.1. PROVIDE CORNER BARS AT ALL WALL AND FOOTING INTERSECTIONS. LAP ADJACENT MATS OF WELDED WIRE FABRIC A MINIMUM OF 12" AT SIDES AND ENDS. NO BARS PARTIALLY EMBEDDED IN HARDENED CONCRETE SHALL BE FIELD BENT UNLESS OTHERWISE NOTED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
17. CONCRETE PROTECTION (COVER) FOR REINFORCING STEEL SHALL BE AS FOLLOWS:
    - FOOTINGS AND OTHER UNFORMED SURFACES CAST AGAINST & PERMANENTLY EXPOSED TO EARTH
      3" FOR ALL REINFORCING BAR SIZES
    - FORMED SURFACES EXPOSED TO EARTH (i.e. WALLS BELOW GROUND) OR WEATHER
      1½" FOR #5 REINFORCING BARS OR SMALLER
      2" FOR #6 REINFORCING BARS OR LARGER
17. DEVELOPMENT AND SPLICE LENGTH SHALL BE NO LESS THAN THAT SHOWN IN TABLE BELOW:

		MISCELLANEOUS BARS		TOP BARS		HOOKED BARS
$f'c$ < 3000 psi	BAR SIZE	Ld	SPLICE	Ld	SPLICE	Ldh
	#3	17"	23"	22"	29"	9"
	#4	22"	29"	29"	38"	11"
	#5	28"	37"	36"	47"	14"
	#6	33"	43"	43"	56"	17"
$f'c$ = 4000 psi	BAR SIZE	Ld	SPLICE	Ld	SPLICE	Ldh
	#3	15"	20"	19"	25"	8"
	#4	19"	25"	25"	33"	10"
	#5	24"	32"	31"	41"	12"
	#6	29"	38"	37"	49"	15"
$f'c$ = 5000 psi	BAR SIZE	Ld	SPLICE	Ld	SPLICE	Ldh
	#3	13"	17"	17"	23"	7"
	#4	17"	23"	23"	30"	9"
	#5	22"	29"	28"	37"	11"
	#6	26"	34"	34"	45"	13"
$f'c$ = 6000 psi	BAR SIZE	Ld	SPLICE	Ld	SPLICE	Ldh
	#3	12"	16"	16"	21"	6"
	#4	16"	21"	21"	28"	8"
	#5	20"	26"	26"	34"	10"
	#6	24"	32"	31"	41"	12"

    A. VALUES FOR UNCOATED REINFORCING AND NORMAL WEIGTH CONCRETE WITH CLEAR SPACING > db, CLEAR COVER > db, AND MINIMUM STIRRUPS OR TIES THROUGHOUT Ld OR CLEAR SPACING > 2db AND CLEAR COVER > db
    B. DEVELOP ALL REINFORCING IN STRUCTURAL SLABS WITH MINIMUM DEVELOPMENT LENGTH Ld
    C. Ldh = DEVELOPMENT LENGTH OF BAR WITH STANDARD HOOK
    D. TOP BAR = HORIZONTAL BAR WITH MORE THAN 12" OF FRESH CONCRETE BELOW (EXCLUDING WALL HORIZONTAL REINFORCING) OR AS NOTED ON DOCUMENTS AS "TOP BAR"
    E. ALL TABULATED VALUES ARE IN INCHES
18. BONDING AGENT SHALL BE "MASTEREMACO ADH 326" BY BASF CORPORATION, OR EQUIVALENT, AND SHALL BE USED WHERE NEW CONCRETE IS PLACED AGAINST HARDENED CONCRETE. PLACE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS, INCLUDING PREPARATION OF EXISTING SURFACES. CONCRETE SHALL BE CONSIDERED HARDENED AFTER 56 DAYS.
19. NON-SHRINK GROUT SHALL BE FURNISHED BY AN APPROVED MANUFACTURER AND SHALL BE MIXED AND PLACED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. GROUT STRENGTH SHALL BE AT LEAST EQUAL TO THE MATERIAL ON WHICH IT IS PLACED (6,000 PSI MINIMUM).

IBC TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

REQUIRED?	VERIFICATION & INSPECTION	CONTINUOUS	PERIODIC	REF STD.	IBC REF.
N/A	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
N/A	2. REINFORCING BAR WELDING: A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A 706. B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND C. INSPECT ALL OTHER WELDS	--- --- X	X X X	AWS D1.4 ACI 318 26.5.4	---
N*	3. INSPECT ANCHORS CAST IN CONCRETE.	---	X	ACI 318: 17.8.2	---
N/A	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A	X	X	ACI 318: 17.8.2.4 ACI 318:17.8.2	---
N*	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
N*	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	---	ASTM C 172 ASTM C 31 ACI 318: 26.4.5, 26.12	1908.10
N*	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	---	ACI 318: 26.4.5	1908.6, 1908.7, 1908.8
N*	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	---	X	ACI 318: 26.4.7–26.4.9	1908.9
N/A	9. INSPECT PRESTRESSED CONCRETE FOR: A. APPLICATION OF PRESTRESSING FORCES; AND B. GROUTING OF BONDED PRESTRESSING TENDONS	X X	--- ---	ACI 318: 26.9.2.1 ACI 218: 26.9.2.3	---
N/A	10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	---	X	ACI 318: CH. 26.8	---
N*	11. 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 STRUCTL SLABS.	---	X	ACI 318: 26.10.2	---
N*	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	---	X	ACI318: 26.10.1(b)	---

* EXCEPTIONS 2 PER IBC SECTION 1705.3 APPLIES TO CONCRETE WORK ON THIS PROJECT.

WOOD:

20. FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH W.C.L.I.B. STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 17 OR W.W.P.A. WESTERN LUMBER GRADING RULES. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:
    - PLATES, LEDGERS & MISC: DOUGLAS FIR NO. 3 OR STUD GRADE
    - LIGHT FRAMING: MIN. BASIC DESIGN STRESS, F_b = 525 PSI, E = 1400 KSI; F_c = 775 PSI, F_t = 325 PSI
    - JOISTS & RAFTERS: DOUGLAS FIR NO. 2; MIN. BASIC DESIGN STRESS, F_b = 900 PSI, E = 1600 KSI; F_c = 1350 PSI, F_t = 575 PSI
    - BEAMS: DOUGLAS FIR NO. 1
      - 4x_ MIN. BASIC DESIGN STRESS, F_b = 1000 PSI, E = 1700 KSI; F_c = 1500 PSI, F_t = 675 PSI
      - 6x_ MIN. BASIC DESIGN STRESS, F_b = 1350 PSI, E = 1600 KSI; F_c = 925 PSI, F_t = 675 PSI
    - COLUMNS: DOUGLAS FIR NO. 1
      - 4x_ MIN. BASIC DESIGN STRESS, F_b = 1000 PSI, E = 1700 KSI; F_c = 1500 PSI, F_t = 675 PSI
      - 6x_ MIN. BASIC DESIGN STRESS, F_b = 1200 PSI, E = 1600 KSI; F_c = 1000 PSI, F_t = 825 PSI
21. MANUFACTURED LUMBER SHALL BE AS MANUFACTURED BY TRUS JOIST OR APPROVED EQUAL. REQUESTS FOR APPROVAL AS EQUAL WILL REQUIRE SUBMITTAL OF ICC REPORT EQUIVALENT TO ESR-1387 FOR LAMINATED VENEER LUMBER (LVL, LAMINATED STRAND LUMBER (LSL), OR PARALLEL STRAND LUMBER (PSL). THE MINIMUM ALLOWABLE DESIGN VALUES ARE AS FOLLOWS:
    - LVL – F_b = 2,600 F_v = 290 PSI E = 2,000,000 PSI
    - LSL – F_b = 1,900 F_v = 150 PSI E = 1,300,000 PSI
22. GLUED LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND A.I.T.C. STANDARDS IN ACCORDANCE WITH SBC SECTION 2303.1.3. EACH MEMBER SHALL BEAR AN A.I.T.C. IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN A.I.T.C. CERTIFICATE OF CONFORMANCE. HORIZONTAL MEMBERS AND INCLINED MEMBERS OF LESS THAN 1:1 SLOPE SHALL HAVE A RADIUSED CAMBER OF 3,500 FT. UNLESS OTHERWISE NOTED.
    - SIMPLE SPAN BEAMS: DOUGLAS FIR COMBINATION 24F–V4; F_b = 2400 PSI; F_v = 265 PSI; E = 1,800,000 PSI
    - CONTINUOUS OR CANTILEVERED BEAMS: DOUGLAS FIR COMBINATION 24F–V8; F_b = 2400 PSI; F_v = 265 PSI; E = 1,800,000 PSI

    THESE MEMBERS ARE NOTED AS "•" IN PLAN
    GLUED LAMINATED MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE TREATED WITH A NON-CORROSIVE, APPROVED PRESERVATIVE.
23. PREFABRICATED CONNECTOR PLATE WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER IN ACCORDANCE WITH ANSI/TPI 1-2007 AND IBC SECTION 2303.4 FOR THE SPANS AND CONDITIONS SHOWN ON THE DRAWINGS. DESIGN LOADS SHALL BE AS FOLLOWS:

    ROOF TRUSSES
    - TOP CHORD LIVE LOAD 25 PSF, SNOW
    - BOTTOM CHORD LIVE LOAD 0 PSF
    - TOP CHORD DEAD LOAD 10 PSF
    - BOTTOM CHORD DEAD LOAD 5 PSF
    - WIND UPLIFT (TOP CHORD) SEE NOTE#2 COMPONENTS & CLADDING ROOF LOADS

    FLOOR TRUSSES
    - TOP CHORD LIVE LOAD 40 PSF
    - BOTTOM CHORD LIVE LOAD 0 PSF
    - TOP CHORD DEAD LOAD 20 PSF
    - BOTTOM CHORD DEAD LOAD 5 PSF

    THE TRUSS MANUFACTURER SHALL COORDINATE LOCATIONS AND SUPPORT CONFIGURATIONS OF PLUMBING, MECHANICAL UNITS, DUCTS, AND/OR OTHER MISCELLANEOUS ITEMS WITH THE CONTRACTOR PRIOR TO TRUSS FABRICATION. THE TRUSS MANUFACTURER SHALL DESIGN TRUSSES TO SUPPORT ALL LOADS ASSOCIATED WITH SUCH ITEMS. THE TRUSS SHOP DRAWINGS SHALL INCLUDE ALL DESIGN LOADS AND APPROVED HANGER CONNECTION DETAILS TO TRUSS CHORDS FOR SUPPORT OF HUNG MECHANICAL SYSTEM COMPONENTS AS APPLICABLE.

    WOOD TRUSSES SHALL UTILIZE APPROVED CONNECTOR PLATES (GANGNAIL OR EQUAL). SHOP DRAWINGS AND CALCULATIONS SHALL BE PROVIDED AS A DEFERRED SUBMITTAL TO THE CONTRACTOR AND STRUCTURAL ENGINEER OF RECORD PER GENERAL STRUCTURAL NOTE 13. SHOP DRAWINGS SHALL INDICATE SHAPES, BEARING POINTS, INTERSECTIONS, HIPS, VALLEYS, ETC. EXACT COMPOSITION OF SPECIAL HIP, VALLEY, AND INTERSECTION AREAS (USE OF GIRDER TRUSSES, JACK TRUSSES, STEP-DOWN TRUSSES, ETC.) SHALL BE DETERMINED BY THE MANUFACTURER UNLESS OTHERWISE NOTED ON THE DRAWINGS. THE TRUSS MANUFACTURER SHALL PROVIDE ALL TRUSS-TO-TRUSS BEAM/JOIST CONNECTION DETAILS AND REQUIRED CONNECTION MATERIALS. THE TRUSS MANUFACTURER SHALL DESIGN AND PROVIDE DETAILS FOR ALL TEMPORARY AND PERMANENT TRUSS BRACING AND BRIDGING.
24. ROOF & WALL SHEATHING SHALL BE APA RATED, EXTERIOR OR EXPOSURE 1 PLYWOOD OR ORIENTED STRAND BOARD (OSB) IN CONFORMANCE WITH SBC SECTION 2303.1.5. SHEATHING SHALL BE MANUFACTURED UNDER THE PROVISIONS OF VOLUNTARY PRODUCT STANDARDS DOC PS 1–09, PS 2–10, OR APA PRP–108 PERFORMANCE STANDARDS AND POLICIES FOR STRUCTURAL USE PANELS. SEE DRAWINGS FOR THICKNESS, SPAN RATING, AND NAILING REQUIREMENTS.
25. AT NON-SHEAR WALL EXTERIOR WALLS, UNLESS OTHERWISE NOTED, WALL SHEATHING SHALL BE 7/16" (NOMINAL) WITH SPAN RATING OF 24/16 WITH 8d @ 6" oc PANEL NAILING (APPLIES TO ALL SHEATHING PANEL EDGES); AND 8d @ 12" oc TO INTERMEDIATE FRAMING.
26. ALL PRESSURE-TREATED (P.T.) WOOD MEMBERS SPECIFIED ON THE DRAWINGS THAT OCCUR ABOVE GROUND AND CONTINUOUSLY PROTECTED FROM MOISTURE (INTERIOR LOCATIONS) SHALL BE PRESSURE-TREATED WITH DOT SODIUM BORATE (SBX) WITHOUT $NaSiO_2$. AT LOCATIONS PERMANENTLY EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND, WOOD MEMBERS SHALL BE PRESSURE-TREATED WITH ALKALINE COPPER QUAT (ACQ-C FOR DOUGLAS-FIR) PRESERVATIVE UNLESS OTHERWISE NOTED. AMMONIACAL COPPER ZINC ARSENATE (ACZA) PRESERVATIVE OR OTHER PRESERVATIVES WITH AMMONIA CARRIERS, SHALL NOT BE USED.
    GLUED LAMINATED MEMBERS EXPOSED TO WEATHER OR MOISTURE SHALL BE TREATED WITH A NON-CORROSIVE, APPROVED PRESERVATIVE.
    SEE NOTE #27 FOR MATERIAL REQUIREMENTS OF CONNECTORS AND FASTENERS IN CONTACT WITH PRESSURE-TREATED MEMBERS.
27. TIMBER CONNECTORS CALLED OUT BY LETTERS AND NUMBERS SHALL BE "STRONG-TIE" BY SIMPSON COMPANY, AS SPECIFIED N THEIR WOOD CONSTRUCTION CONNECTORS CATALOG NO. C-C-2017-18. INSTALL NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER. CONNECTORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, CENTER STRAP ON JOINT AND INSTALL NUMBER AND SIZE OF FASTENERS AS SPECIFIED BY MANUFACTURER, WITH EQUAL NUMBER AND SIZE OF FASTENERS IN EACH MEMBER. ALL BOLTS IN WOOD MEMBERS SHALL CONFORM TO ASTM A307. INSTALL WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. ALL SHIMS SHALL BE SEASONED AND DRIED AND THE SAME GRADE (MINIMUM) AS MEMBERS CONNECTED.

    ALL TIMBER CONNECTORS IN CONTACT WITH PRESSURE-TREATED WOOD THAT USED PRESERVATIVE CHEMICALS OTHER THAN DOT SODIUM BORATE (SBX) WITHOUT $NaSiO_2$ SHALL BE MANUFACTURED FROM Z_{MAX} STEEL BY SIMPSON (G185 STEEL PER ASTM A653), OR TYPE 304 OR 316 STAINLESS STEEL. ALTERNATIVELY, CONNECTORS CAN BE POST HOT DIP GALVANIZED PER ASTM A123 OR MECHANICALLY GALVANIZED PER ASTM B695, CLASS 55 OR GREATER. STAINLESS STEEL FASTENERS SHALL BE USED WITH STAINLESS STEEL CONNECTORS, AND HOT DIP GALVANIZED FASTENERS PER ASTM A153 SHALL BE USED WITH GALVANIZED CONNECTORS.
28. WOOD FRAMING NOTES: THE FOLLOWING SHALL APPLY UNLESS OTHERWISE NOTED ON THE DRAWINGS:
    A. ALL WOOD FRAMING DETAILS SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THE SBC. MINIMUM NAILING SHALL CONFORM TO SBC TABLE 2304.10.1 OR CURRENT ICC-ES REPORT NER-272. COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. INSTALL WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. INSTALLATION OF LAG SCREWS SHALL CONFORM TO 2021 NDS SECTION 11.1.4, AND INSTALLATION OF BOLTS SHALL CONFORM TO 2021 NDS SECTION 11.1.3.
    B. WALL FRAMING: TWO STUDS MINIMUM SHALL BE INSTALLED AT THE ENDS OF ALL WALLS, UNLESS NOTED OTHERWISE NOTED. INSTALL SOLID BLOCKING FOR WOOD COLUMN THROUGH FLOOR SPACES TO SUPPORTS BELOW.
       ALL STUD WALLS SHALL HAVE THEIR LOWER WOOD PLATES ATTACHED TO WOOD FRAMING BELOW WITH 16d NAILS @ 12" oc STAGGERED OR BOLTED TO CONCRETE WITH ⅜"ø ANCHOR BOLTS @ 4'-0" oc PER SBC SECTION 2308.6 (EMBED 7"), UNLESS OTHERWISE NOTED. 3" x 3" x 0.229" PLATE WASHERS SHALL BE USED WITH ALL SILL PLATE ANCHOR BOLTS AND INSTALLED PER AF&PA SDPWS-2015 SECTION 4.3.6.4.3. INDIVIDUAL MEMBERS OF BUILT-UP STUD POSTS SHALL BE NAILED TO EACH OTHER WITH 16d @ 12" oc STAGGERED.
    C. FLOOR AND ROOF FRAMING: INSTALL SOLID BLOCKING AT ALL BEARING POINTS. TOENAIL JOISTS TO SUPPORTS WITH (2)16d NAILS. ATTACH TIMBER JOISTS TO FLUSH HEADERS OR BEAMS WITH SIMPSON METAL JOIST HANGERS IN ACCORDANCE WITH NOTES ABOVE. NAIL ALL MULTI-JOIST BEAMS TOGETHER WITH 16dø12"oc STAGGERED.
       ROOF AND FLOOR SHEATHING SHALL BE LAID UP WITH GRAIN PERPENDICULAR TO SUPPORTS AND NAILED AS SHOWN ON THE DRAWINGS. INSTALL APPROVED PANEL EDGE CLIPS CENTERED BETWEEN JOISTS/TRUSSES AT UNBLOCKED ROOF SHEATHING EDGES. ALL FLOOR SHEATHING EDGES SHALL HAVE APPROVED TONGUE-AND-GROOVE JOINTS OR SHALL BE SUPPORTED WITH SOLID BLOCKING ALLOW ⅛" SPACING AT ALL PANEL EDGES AND ENDS OF LOOR AND ROOF SHEATHING. TOENAIL BLOCKING TO SUPPORTS WITH 16dø12"oc. IN ACCORDANCE WITH SBC SECTION 1604.8.3, DECKS SHALL BE POSITIVELY ANCHORED TO THE STRUCTURE BY MEANS OTHER THAN NAILS SUBJECT TO WITHDRAWAL. ANCHOR WITH MINIMUM (1) CS16 STRAP AT EACH END ATTACHED TO DECK JOISTS AND TO A SOLID BLOCKING MEMBER WITHIN THE BUILDING.
    D. NAILING: A MINIMUM NAIL DIAMETER AND LENGTH SHALL BE AS FOLLOWS:

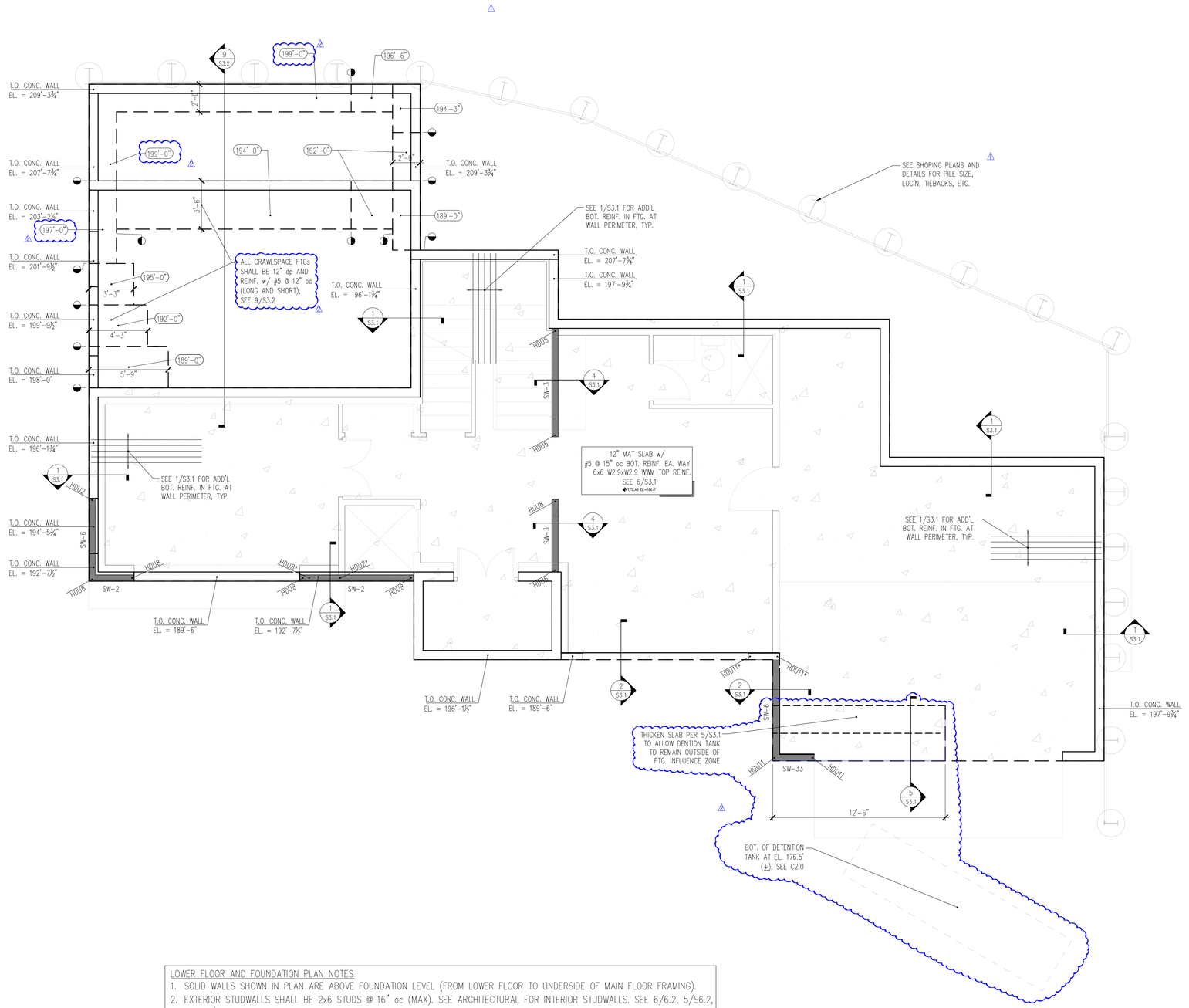
	NAIL SIZE ON DRAWINGS	DIAMETER x LENGTH
SHEATHING NAILS	8d	0.131" x 2½"
	10d	0.148" x 2½"
FRAMING NAILS	10d	0.148" x 3"
	16d	0.148" x 3½"

    E. WOOD SHRINKAGE: THE PLUMBING, FIRE PROTECTION, DRAINAGE, MECHANICAL, ELECTRICAL, CLADDING, AND OTHER SYSTEMS INSTALLED WITHIN THE BUILDING SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE VERTICAL SHRINKAGE AT ALL W

LEGEND

- CONCRETE FOOTING
- CONCRETE WALL
- POST
- F_._ SPREAD FOOTING PER 3/S3.1
- xx'-xx" DENOTES TOP OF FOOTING ELEVATION (±)
- low / high DENOTES STEP IN FOOTING 9/S3.1
- SW-_ DENOTES EXTENT OF SHEARWALL TYPE SW-_ PER 1/S6.5
- HDU DENOTES SHEARWALL TENSION TIE PER 4/S6.5

CONNECTOR TABLE		
	SIMPSON DESIGNATION	NOTES
Ⓐ	JB ~or~ LUS	HANGER
Ⓑ	THA422	TOP FLANGE HANGER
Ⓒ	ITS ~or~ IUS	HANGER



LOWER FLOOR AND FOUNDATION PLAN NOTES

1. SOLID WALLS SHOWN IN PLAN ARE ABOVE FOUNDATION LEVEL (FROM LOWER FLOOR TO UNDERSIDE OF MAIN FLOOR FRAMING).
2. EXTERIOR STUDWALLS SHALL BE 2x6 STUDS @ 16" oc (MAX). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. SEE STRUCTURAL GENERAL NOTES #14 – 19 FOR CONCRETE AND CONCRETE REINFORCING REQUIREMENTS.
4. SEE GENERAL STRUCTURAL NOTE #11 FOR FOUNDATION CRITERIA.

1/S2.1 LOWER FLOOR AND FOUNDATION PLAN

1/4" = 1'-0"

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ATLAS CONSULTING STRUCTURAL ENGINEERS

JAVID ABDI STATE OF WASHINGTON 53199 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

5818 West Mercer
Mercer Island

CONTENTS
Lower Floor and Foundation Plan

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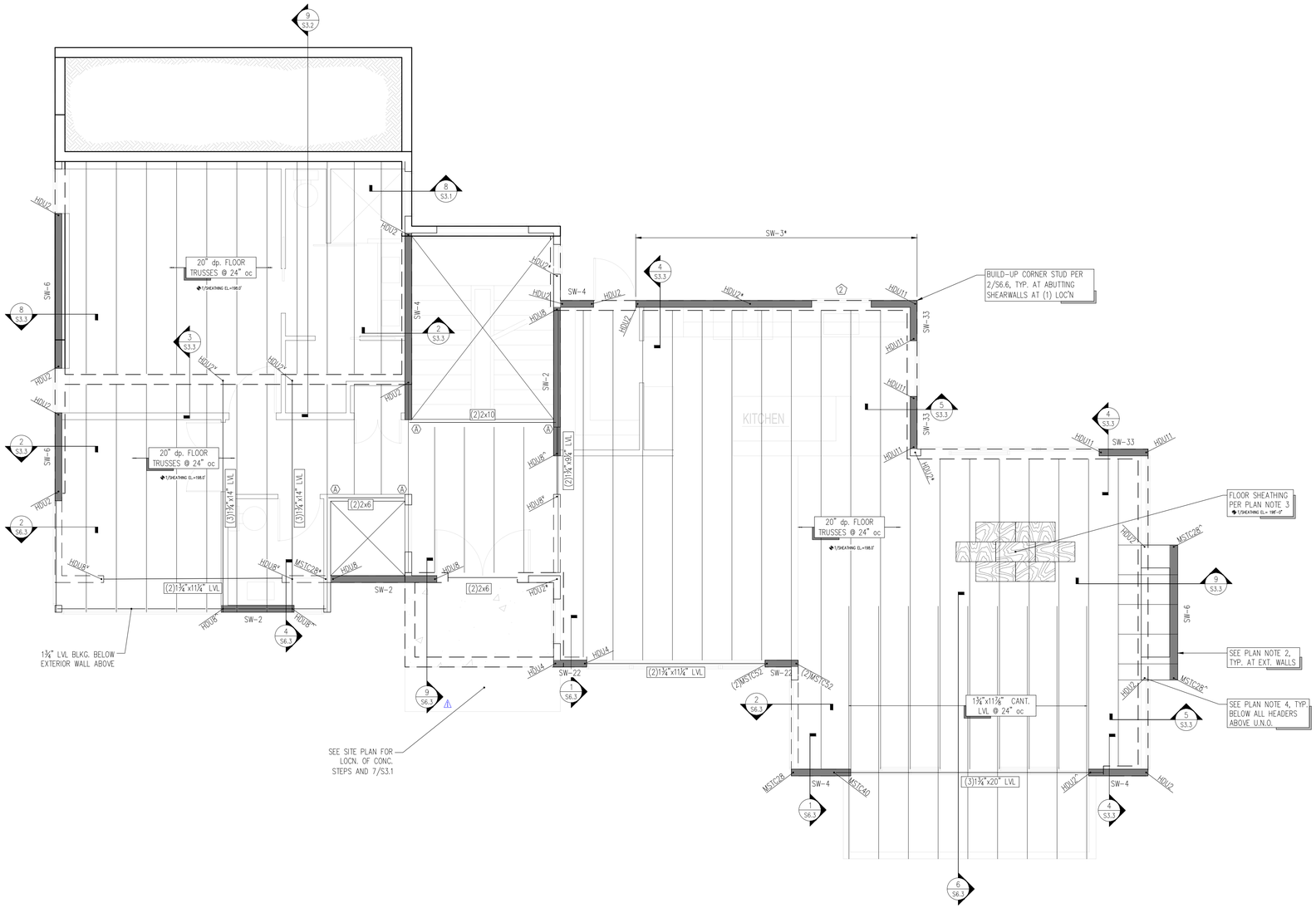
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LEGEND

CONCRETE WALL BELOW	SW-_ — DENOTES EXTENT OF SHEARWALL TYPE SW-_ PER 1/S6.5
CONCRETE WALL	
STRUCTURAL WOOD STUDWALL	SW-_* — DENOTES STRAPPED SHEARWALL PER 7/S6.6, WITH ⬡ DENOTING STRAP PER SCHEDULE ABOVE & BELOW OPENING
POST BELOW	
POST	HDU_ / MSTC_ — DENOTES SHEARWALL TENSION TIE PER 4/S6.5
HEADER or BEAM	* = DENOTES TRANSFER TIE FROM TIE ABOVE * = DENOTES TIE FROM BEAM TO STUD/POST ABOVE * = DENOTES TIE FROM BEAM TO STUD/POST BELOW
JOIST	

CONNECTOR TABLE

	SIMPSON DESIGNATION	NOTES
Ⓐ	JB ~or~ LUS	HANGER
Ⓑ	THA422	TOP FLANGE HANGER
Ⓒ	ITS ~or~ IUS	HANGER



MAIN FLOOR FRAMING PLAN NOTES

1. SOLID WALLS SHOWN IN PLAN ARE ABOVE MAIN FLOOR FRAMING ELEVATION (FROM MAIN FLOOR TO UNDERSIDE OF UPPER FLOOR). DASHED WALLS SHOWN IN PLAN ARE BELOW MAIN FLOOR FRAMING ELEVATION (FROM FOUNDATION TO UNDERSIDE OF MAIN FLOOR FRAMING)
2. EXTERIOR STUDWALLS SHALL BE 2x6 STUDS @ 16" oc (MAX). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. FLOOR SHEATHING SHALL CONSIST OF ¾" T&G SHEATHING (PANEL SPAN RATING 48/24). NAIL SHEATHING AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.1). GLUE SHEATHING AT ALL SUPPORTS w/ ADHESIVE CONFORMING TO ASTM SPECIFICATION D3498.
4. ALL HEADERS ABOVE (SEE 1/S2.3) SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.2 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.2 AT LOAD BEARING EXTERIOR WALLS
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING RAFTERS, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.1 U.N.O. IN PLAN.

1 / S2.2 — MAIN FLOOR FRAMING PLAN

1/4" = 1'-0"

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Mercer Island

CONTENTS
Main Floor
Framing Plan

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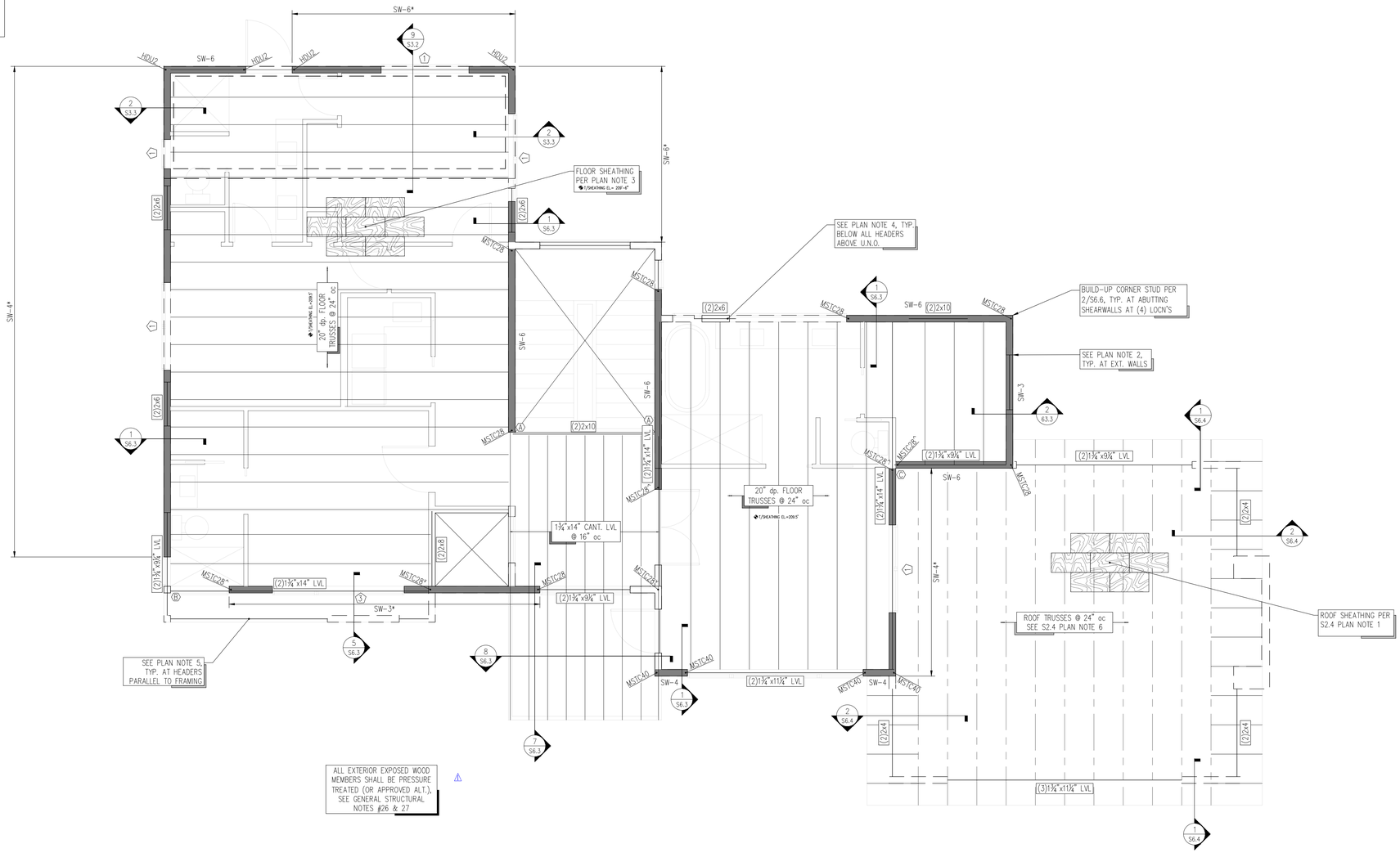
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LEGEND

STRUCTURAL WOOD STUDWALL BELOW	DENOTES EXTENT OF SHEARWALL TYPE SW-_ PER 1/S6.5
STRUCTURAL WOOD STUDWALL	DENOTES STRAPPED SHEARWALL PER 7/S6.6, WITH ⬠ DENOTING STRAP PER SCHEDULE ABOVE & BELOW OPENING
POST BELOW	DENOTES SHEARWALL TENSION TIE PER 4/S6.5
POST	* - DENOTES TRANSFER TIE FROM TIE ABOVE ^ - DENOTES TIE FROM BEAM TO STUD/POST ABOVE * - DENOTES TIE FROM BEAM TO STUD/POST BELOW
HEADER or BEAM	
JOIST	

CONNECTOR TABLE		
	SIMPSON DESIGNATION	NOTES
Ⓐ	JB ~or~ LUS	HANGER
Ⓑ	THA422	TOP FLANGE HANGER
Ⓒ	ITS ~or~ IUS	HANGER



ALL EXTERIOR EXPOSED WOOD MEMBERS SHALL BE PRESSURE TREATED (OR APPROVED ALT.). SEE GENERAL STRUCTURAL NOTES #26 & 27.

MAIN FLOOR FRAMING PLAN NOTES

1. SOLID WALLS SHOWN IN PLAN ARE ABOVE MAIN FLOOR FRAMING ELEVATION (FROM UPPER FLOOR TO UNDERSIDE OF ROOF). DASHED WALLS SHOWN IN PLAN ARE BELOW UPPER FLOOR FRAMING ELEVATION (FROM MAIN FLOOR TO UNDERSIDE OF UPPER FLOOR FRAMING)
2. EXTERIOR STUDWALLS SHALL BE 2x6 STUDS @ 16" oc (MAX). SEE ARCHITECTURAL FOR INTERIOR STUDWALLS. SEE 6/6.2, 5/S6.2, AND 2/S6.2 FOR ALLOWABLE HOLES & NOTCHES IN STUDWALL STUDS AND TOP & BOTTOM PLATES.
3. FLOOR SHEATHING SHALL CONSIST OF ¾" T&G SHEATHING (PANEL SPAN RATING 48/24). NAIL SHEATHING AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.1). GLUE SHEATHING AT ALL SUPPORTS w/ ADHESIVE CONFORMING TO ASTM SPECIFICATION D3498.
4. ALL HEADERS ABOVE (SEE 1/S2.3) SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.2 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.2 AT LOAD BEARING EXTERIOR WALLS
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING RAFTERS, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.1 U.N.O. IN PLAN.

1 S2.3 UPPER FLOOR FRAMING PLAN

1/4" = 1'-0"

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CONTENTS
Upper Floor Framing Plan

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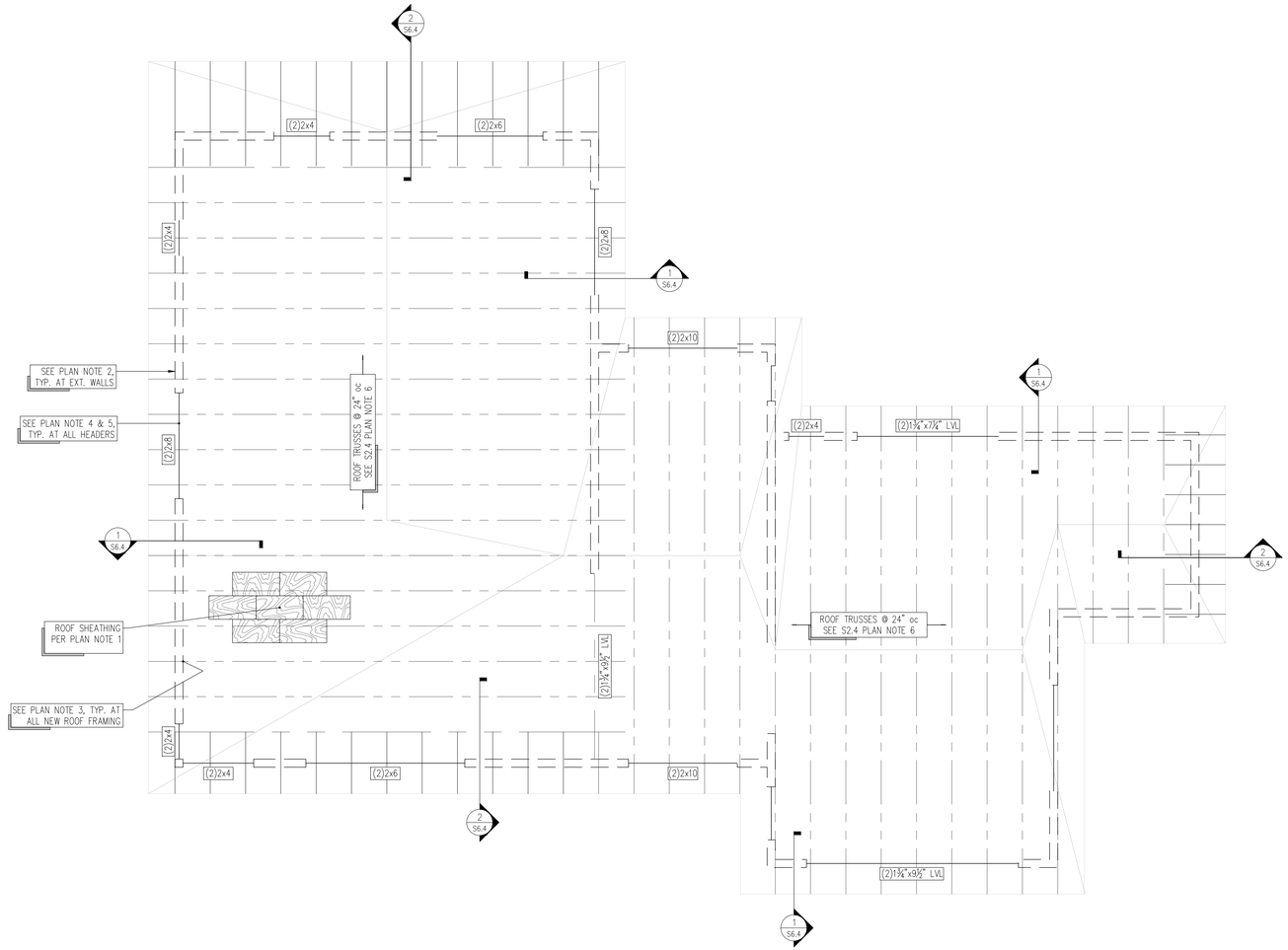
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LEGEND

STRUCTURAL WOOD STUDWALL BELOW	
POST BELOW	
HEADER or BEAM	
CONNECTOR PLATE WOOD TRUSS	
ROOF FRAMING	

CONNECTOR TABLE		
	SIMPSON DESIGNATION	NOTES
Ⓐ	JB ~or~ LUS	HANGER
Ⓑ	THA422	TOP FLANGE HANGER
Ⓒ	ITS ~or~ IUS	HANGER



ROOF FRAMING PLAN NOTES

1. ROOF SHEATHING SHALL CONSIST OF ⅝" SHEATHING (PANEL SPAN RATING 32/16) NAILED AT ALL FRAMED PANEL EDGES, DIAPHRAGM BOUNDARIES, AND SHEAR WALLS w/ 10d @ 6" oc; AND AT ALL INTERMEDIATE SUPPORTS w/ 10d @ 12" oc (SEE 3/S6.2).
2. DASHED WALLS AND SHEARWALLS SHOWN IN PLAN ARE BELOW ROOF FRAMING ELEVATION.
3. PROVIDE H2.5A HURRICANE TIES AT EACH END OF ALL ROOF FRAMING.
4. ALL HEADERS SHALL HAVE A MINIMUM NUMBER OF POSTS PER 4/S6.1 AT NON-LOAD BEARING EXTERIOR WALLS, AND PER 6/S6.1 AT LOAD BEARING EXTERIOR WALLS.
5. HEADERS IN EXTERIOR WALLS NOT SUPPORTING RAFTERS, JOISTS, OR BEAMS SHALL BE PER DETAIL 4/S6.1 U.N.O. IN PLAN.
6. SEE GENERAL STRUCTURAL NOTE #9, 10, AND 22 FOR CONNECTOR PLATE ROOF TRUSS REQUIREMENTS.

1 / S2.4 ROOF FRAMING PLAN

1/4" = 1'-0"

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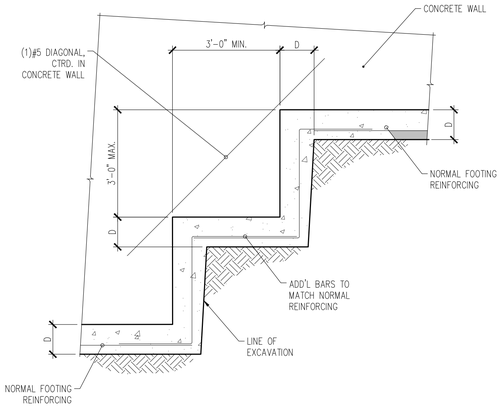
CONTENTS

Roof
Framing Plan

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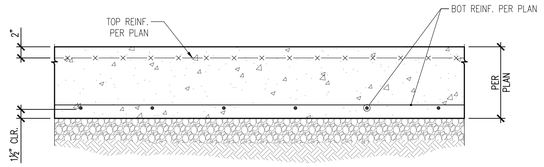
DATE
01.02.25

S2.4



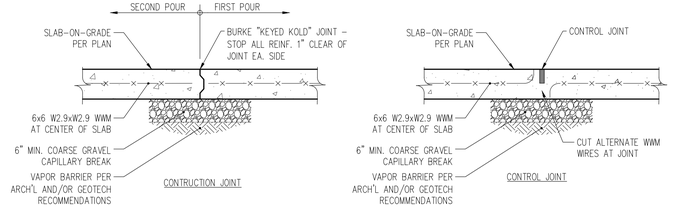
9 S3.1 TYPICAL STEPPED FOOTING
N.T.S.

CONSTRUCTION/CONTROL JOINTS IN SLABS ON GRADE SHALL BE PROVIDED TO DIVIDE SLAB INTO RECTANGULAR AREAS 225 SQUARE FEET OR LESS. AREAS SHALL BE APPROXIMATELY SQUARE AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS MUST BE APPROVED BY THE ARCHITECT. SEE 3/S3.1

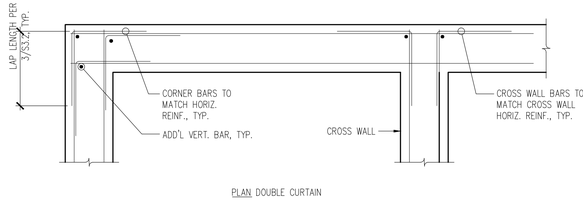


6 S3.1 SECTION THROUGH MAT SLAB
1" = 1'-0"

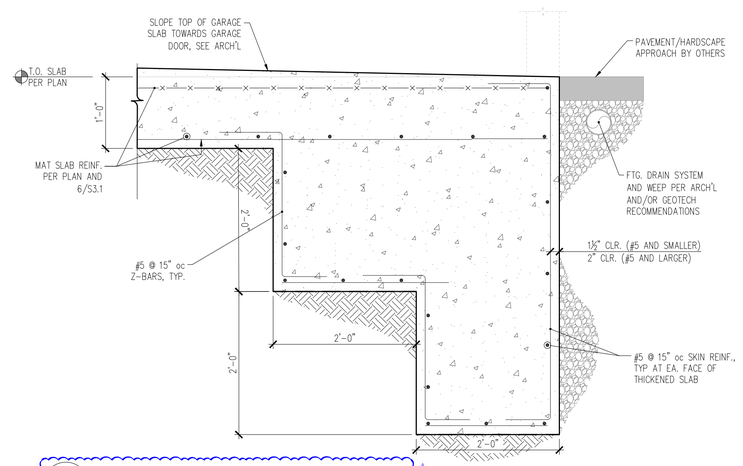
CONSTRUCTION/CONTROL JOINTS IN SLABS ON GRADE SHALL BE PROVIDED TO DIVIDE SLAB INTO RECTANGULAR AREAS 225 SQUARE FEET OR LESS. AREAS SHALL BE APPROXIMATELY SQUARE AND HAVE NO ACUTE ANGLES. JOINT LOCATIONS MUST BE APPROVED BY THE ARCHITECT



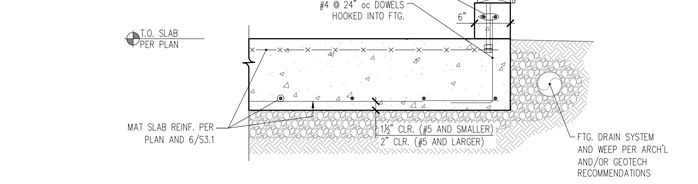
3 S3.1 EXTERIOR SLAB-ON-GRADE JOINTING
1" = 1'-0"



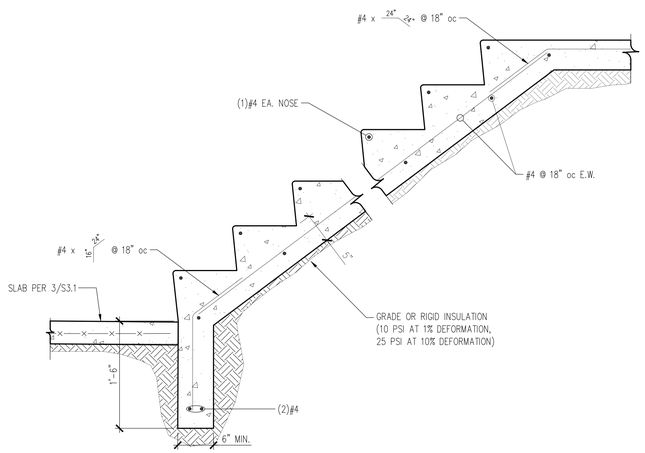
8 S3.1 TYPICAL WALL CORNER REINFORCING
N/A



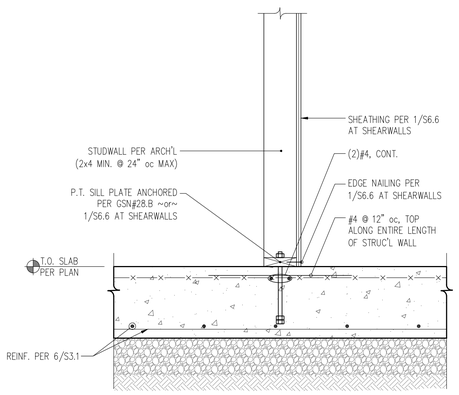
5 S3.1 SECTION THROUGH MAT SLAB AT GARAGE ENTRANCE
1" = 1'-0"



2 S3.1 SECTION THROUGH MAT SLAB AT LOW GRADE
1" = 1'-0"



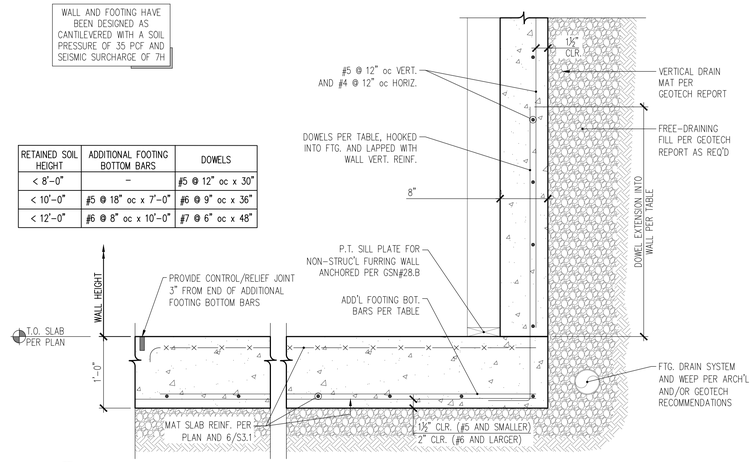
7 S3.1 CAST-IN-PLACE STAIR
N/A



4 S3.1 SECTION THROUGH MAT SLAB AT INTERIOR STRUCTURAL WALL
1" = 1'-0"

WALL AND FOOTING HAVE BEEN DESIGNED AS CANTILEVERED WITH A SOIL PRESSURE OF 35 PCF AND SEISMIC SURCHARGE OF 7H

RETAINED SOIL HEIGHT	ADDITIONAL FOOTING BOTTOM BARS	DOWELS
< 8'-0"	–	#5 @ 12" oc x 30"
< 10'-0"	#5 @ 18" oc x 7'-0"	#6 @ 9" oc x 36"
< 12'-0"	#6 @ 8" oc x 10'-0"	#7 @ 6" oc x 48"



1 S3.1 SECTION THROUGH FOUNDATION WALL
1" = 1'-0"

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DAVID ABDI STATE OF WASHINGTON 53159 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

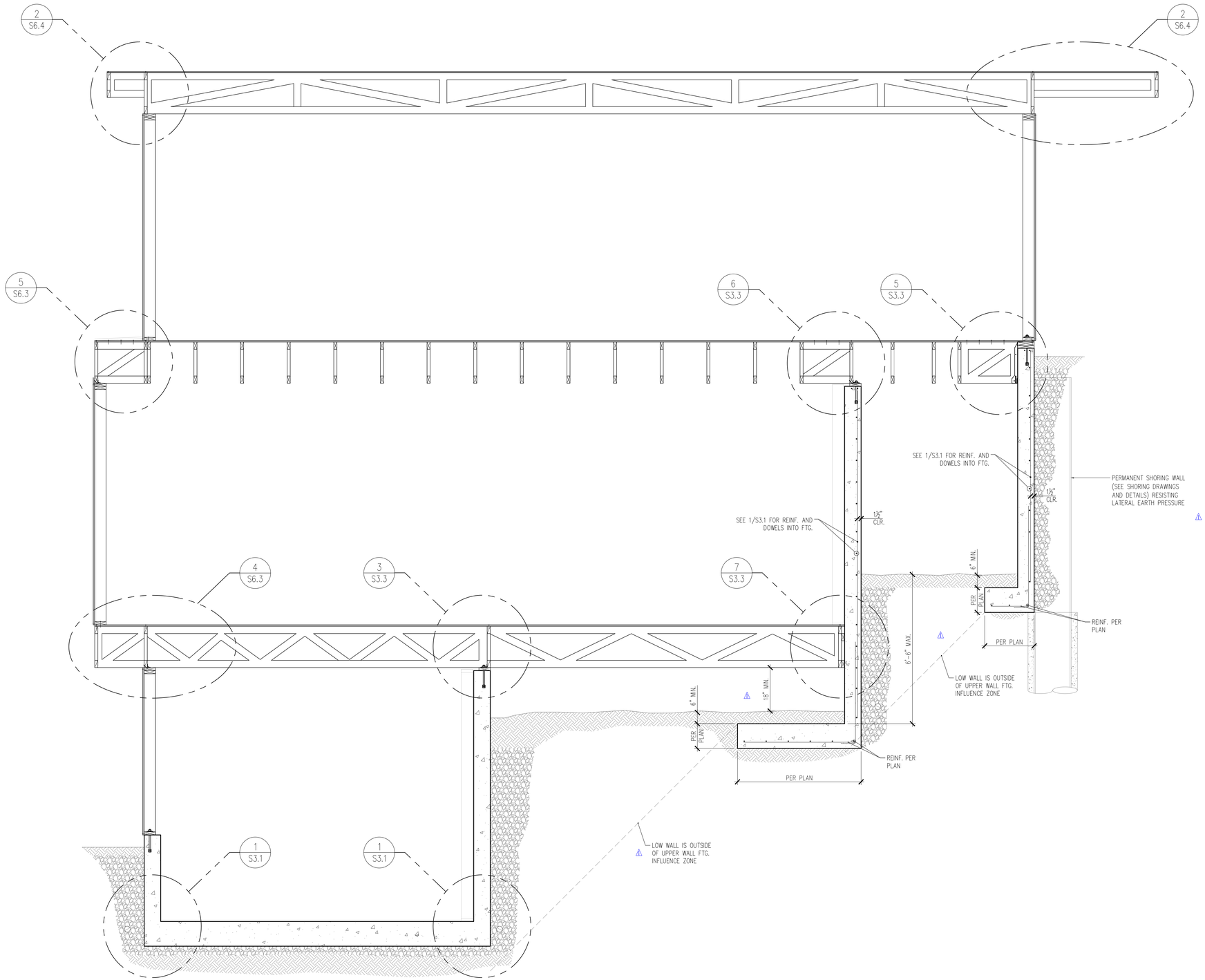
5818 West Mercer
Mercer Island

CONTENTS
Foundation & Main Floor Details

DRAWN BY
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DATE
01.02.25
06.06.25
07.25.25△

S3.1



9 S3.2 SECTION
1/2" = 1'-0"

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JAVID ABDI
STATE OF WASHINGTON
53199
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

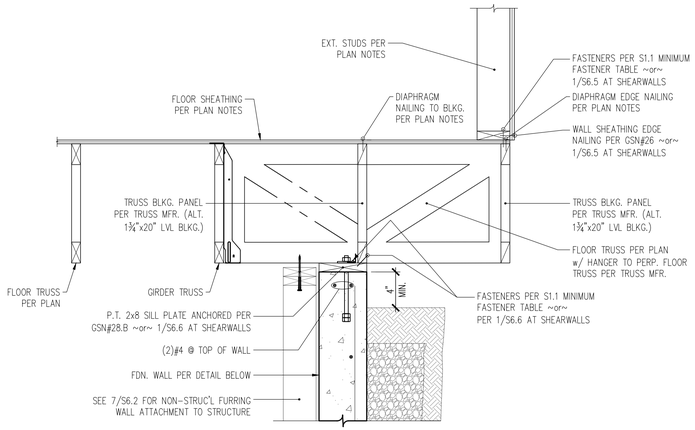
5818 West Mercer
Mercer Island

CONTENTS
Foundation & Main Floor Details

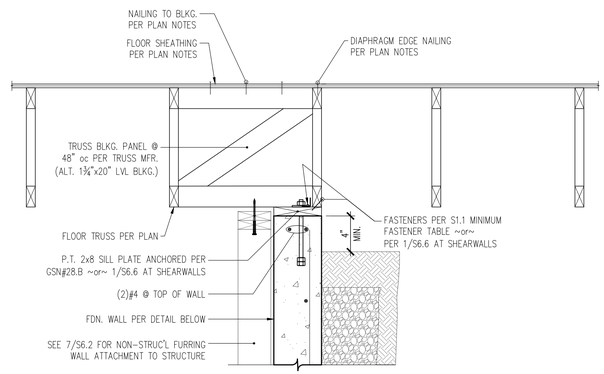
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01.02.25
06.06.25

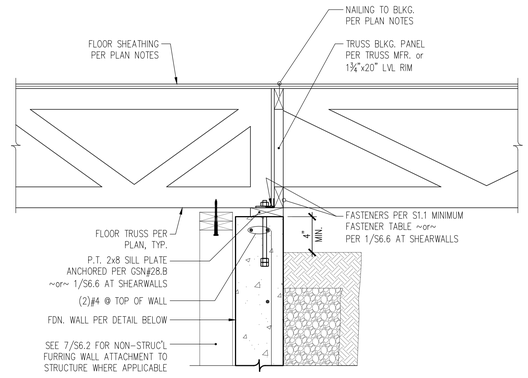
S3.2



9 S3.3 SECTION THROUGH FOUNDATION WALL AT OFFSET EXTERIOR WALL ABOVE
1" = 1'-0"



6 S3.3 SECTION THROUGH FOUNDATION WALL BELOW PARALLEL FLOOR TRUSS AT EACH SIDE
1" = 1'-0"

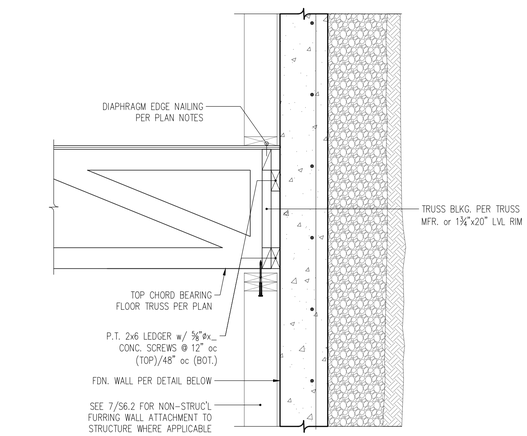


3 S3.3 SECTION THROUGH FOUNDATION WALL BELOW PERPENDICULAR FLOOR TRUSS AT EACH SIDE
1" = 1'-0"

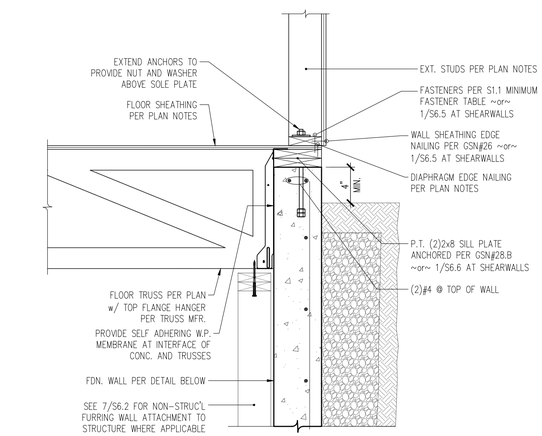
8 S3.3 SECTION THROUGH FOUNDATION WALL AT PARALLEL FLOOR TRUSS
1" = 1'-0"

5 S3.3 SECTION THROUGH FOUNDATION WALL BELOW SOLE PLATE AT PARALLEL FLOOR TRUSS
1" = 1'-0"

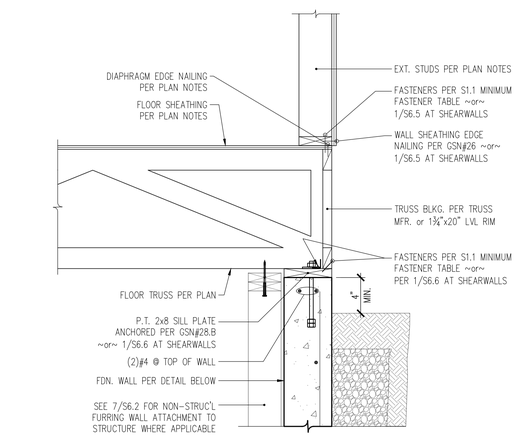
2 S3.3 SECTION THROUGH FOUNDATION WALL BELOW PARALLEL FLOOR TRUSS
1" = 1'-0"



7 S3.3 SECTION THROUGH FOUNDATION WALL AT PERPENDICULAR FLOOR TRUSS
1" = 1'-0"



4 S3.3 SECTION THROUGH FOUNDATION WALL BELOW SOLE PLATE AT PERPENDICULAR FLOOR TRUSS
1" = 1'-0"



1 S3.3 SECTION THROUGH FOUNDATION WALL BELOW PERPENDICULAR FLOOR TRUSS
1" = 1'-0"

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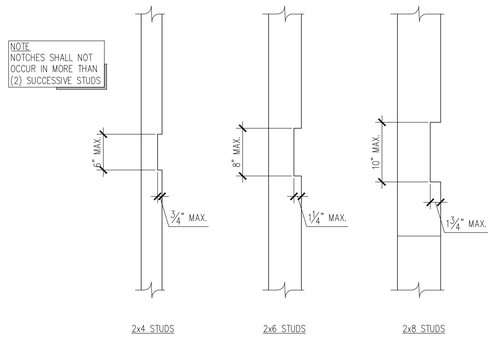
5818 West Mercer
Mercer Island

CONTENTS
Foundation & Main Floor Details

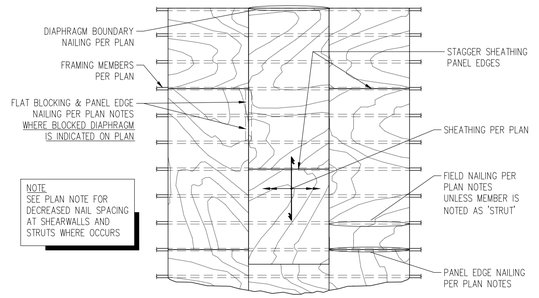
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01.02.25

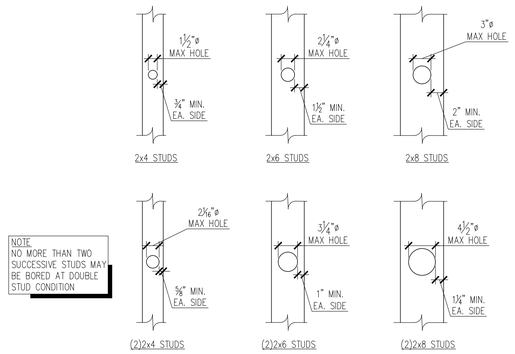
S3.3



6 S6.1 ALLOWABLE HOLES IN STUDWALL STUDS
NTS



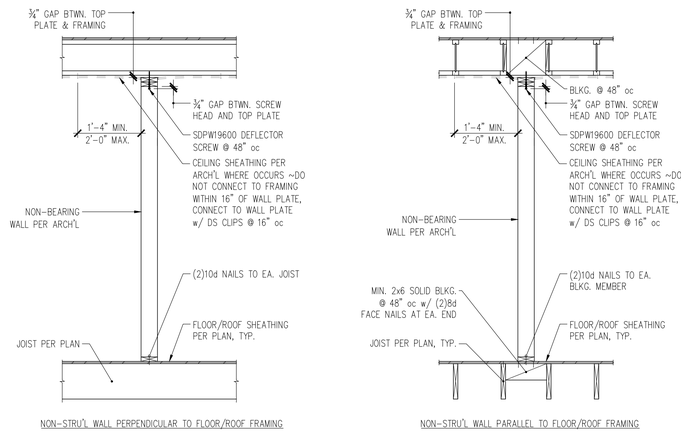
3 S6.1 TYPICAL DIAPHRAGM NAILING
NTS



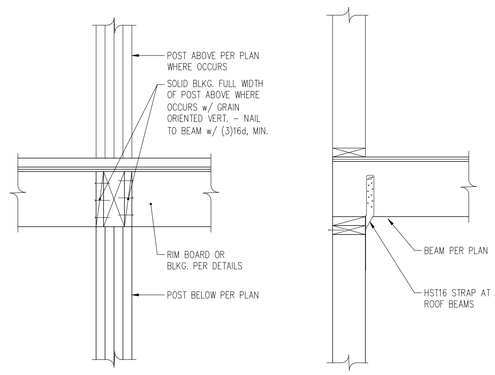
5 S6.1 ALLOWABLE HOLES IN STUDWALL STUDS
NTS

	NO REINF. REQUIRED	STRAP REINF. REQUIRED
2x4 PLATES	1½"ø MAX. HOLE ¾" MIN. EA. SIDE	2⅝"ø MAX. HOLE CMSTC16x3'-0" (CS16x2'-0" AT BOT. PLATES) ⅜" MIN. EA. SIDE
2x6 PLATES	2¼"ø MAX. HOLE 1½" MIN. EA. SIDE	3¾"ø MAX. HOLE CMSTC16x3'-0" (CS16x2'-0" AT BOT. PLATES) ¾" MIN. EA. SIDE
2x8 PLATES	3¼"ø MAX. HOLE 2" MIN. EA. SIDE	5"ø MAX. HOLE CMSTC16x3'-0" (CS16x2'-0" AT BOT. PLATES) 1¼" MIN. EA. SIDE

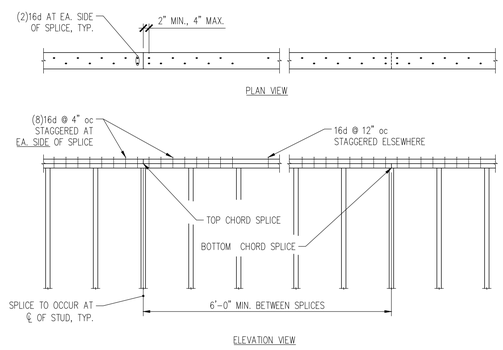
2 S6.1 ALLOWABLE HOLES THROUGH TOP PLATES
NTS



7 S6.1 CONNECTION OF NON-STRUC'L PARTITION WALL TO STRUCTURE
NTS



4 S6.1 TYPICAL BEAM PERPENDICULAR TO WALL
NTS



1 S6.1 TOP PLATE SPLICE
NTS

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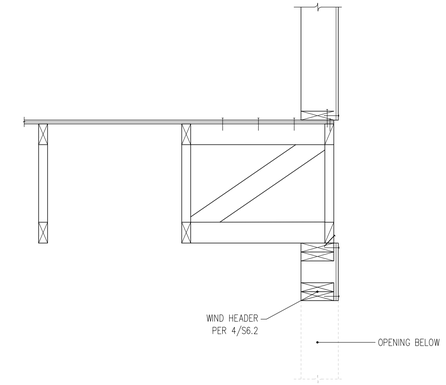
5818 West Mercer
Mercer Island

CONTENTS
Typical Framing Details

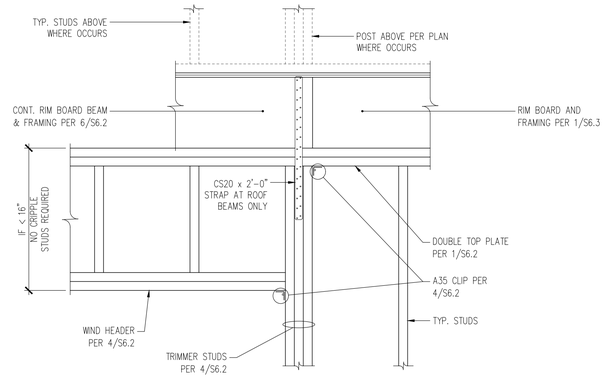
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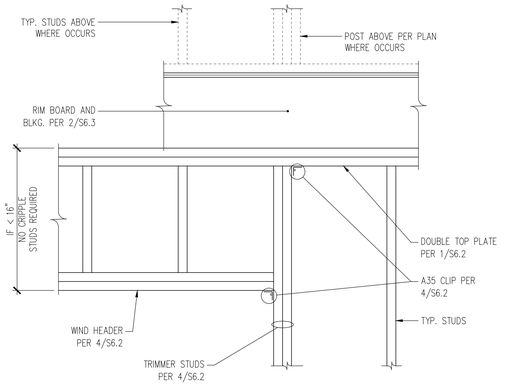
S6.1



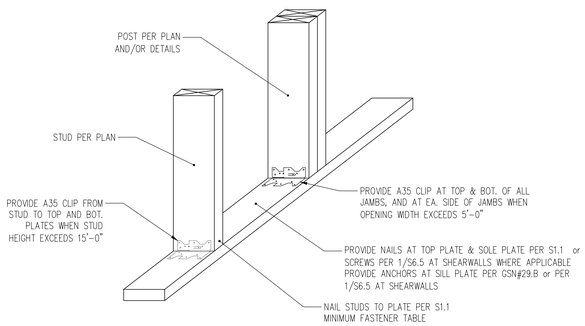
3 S6.2 TYPICAL WIND HEADER IN NON-LOAD BEARING EXTERIOR WALL
NTS



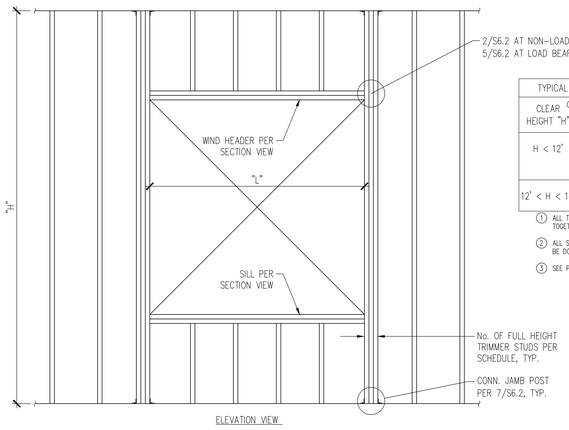
5 S6.2 TYPICAL FLUSH BEAM/HEADER IN EXTERIOR WALL
NTS



2 S6.2 TYPICAL WIND HEADER DETAIL
NTS



7 S6.2 CONNECTION OF EXTERIOR STUDS AT TOP & BOTTOM PLATES
NTS



TYPICAL EXTERIOR WALL OPENING FRAMING SCHEDULE ③

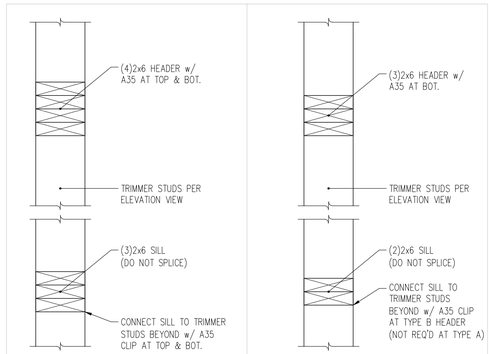
CLEAR HEIGHT "H" ①	OPENING WIDTH "L"	HDR./SILL TYPE PER SECTION AT RIGHT	No. OF FULL HEIGHT TRIMMER STUDS ①
H < 12"	L ≤ 6'-0"	A	2
	6' < L < 10'	B	2
	10' ≤ L ≤ 15'	C	3
12' < H < 16'	L ≤ 10'	B	3
	10' ≤ L ≤ 15'	C	6x8

① ALL TRIMMER STUDS, HEADERS, AND SILLS SHALL BE NAILED TOGETHER PER S1.1

② ALL STRUCTURAL TRIMMER STUDS, SILLS, AND HEADERS SHALL BE DOUGLAS FIR #2 OR BETTER

③ SEE PLANS FOR LVL STUD WALL LOCATIONS, WHERE APPLICABLE

4 S6.2 TYPICAL WIND HEADER
NTS



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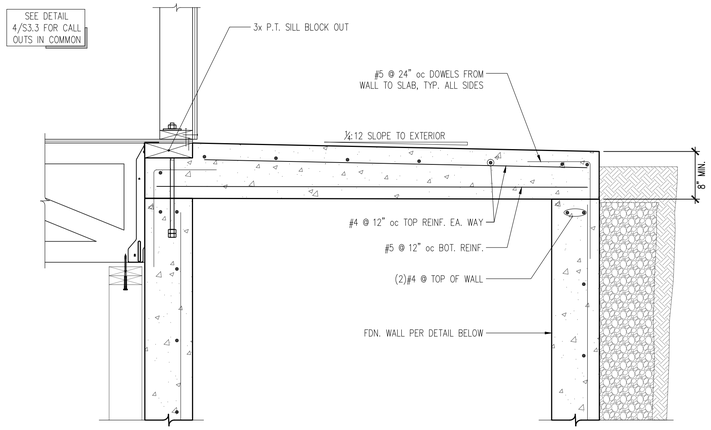
5818 West Mercer
Mercer Island

CONTENTS
Typical Framing Details

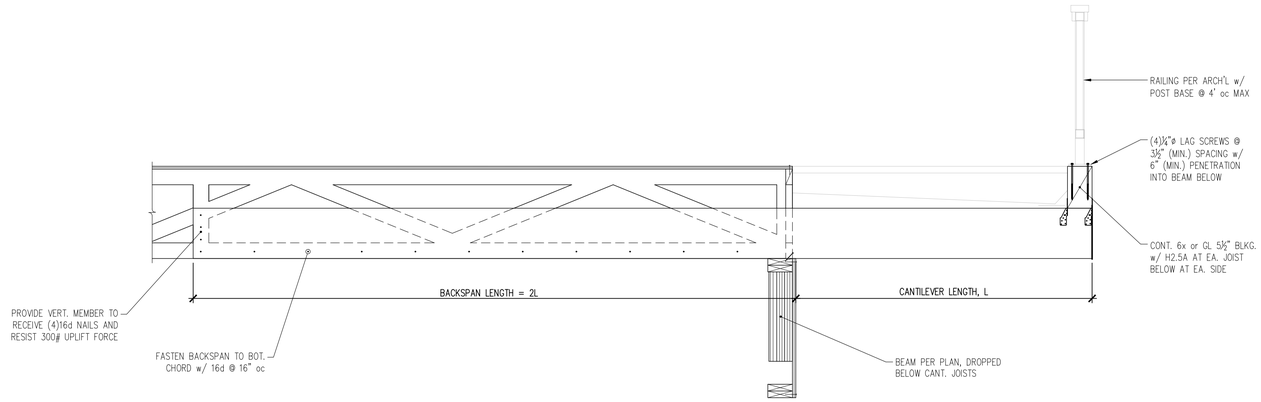
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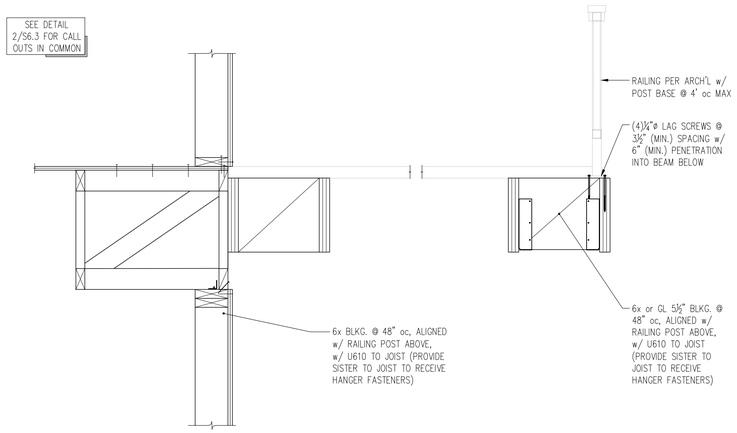
S6.2



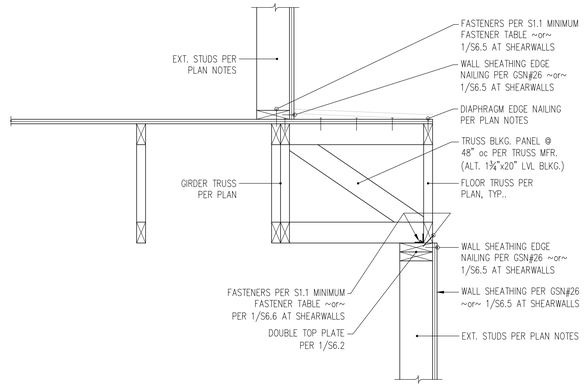
9 S6.3 SECTION THROUGH PERPENDICULAR TRUSS AND ELEVATED EXTERIOR SLAB ⚠
1" = 1'-0"



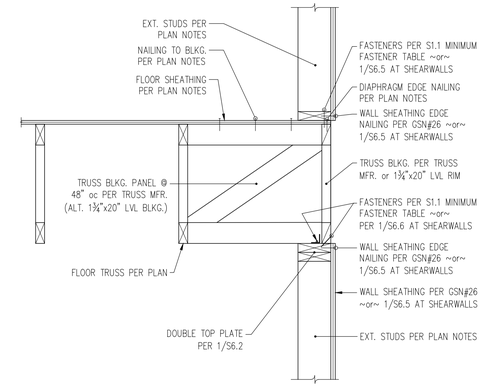
6 S6.3 SECTION AT CANTILEVERED DECK JOISTS
NTS



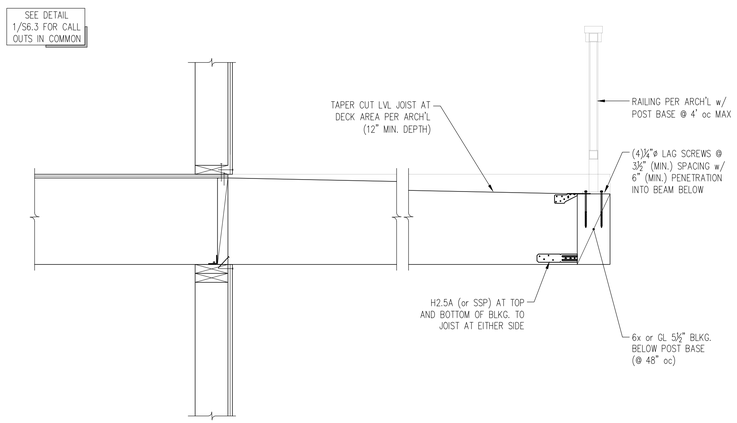
8 S6.3 SECTION THROUGH PARALLEL TRUSS AND DECK JOISTS
1" = 1'-0"



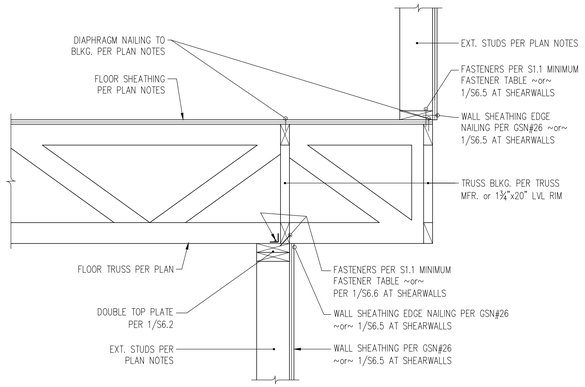
5 S6.3 SECTION THROUGH OFFSET EXTERIOR WALLS AT PARALLEL TRUSS
1" = 1'-0"



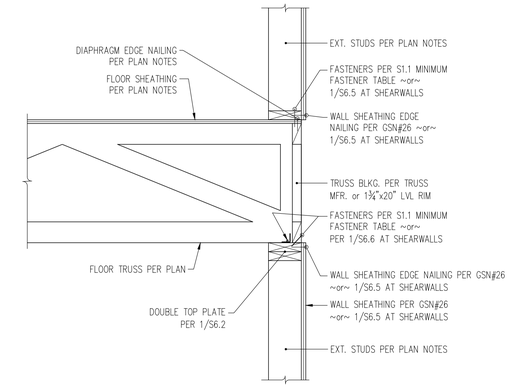
2 S6.3 SECTION THROUGH EXTERIOR WALL AT PARALLEL TRUSS
1" = 1'-0"



7 S6.3 SECTION THROUGH PERPENDICULAR TRUSS AND DECK JOISTS
1" = 1'-0"



4 S6.3 SECTION THROUGH OFFSET EXTERIOR WALLS AT PERPENDICULAR TRUSS
1" = 1'-0"



1 S6.3 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR TRUSS
1" = 1'-0"

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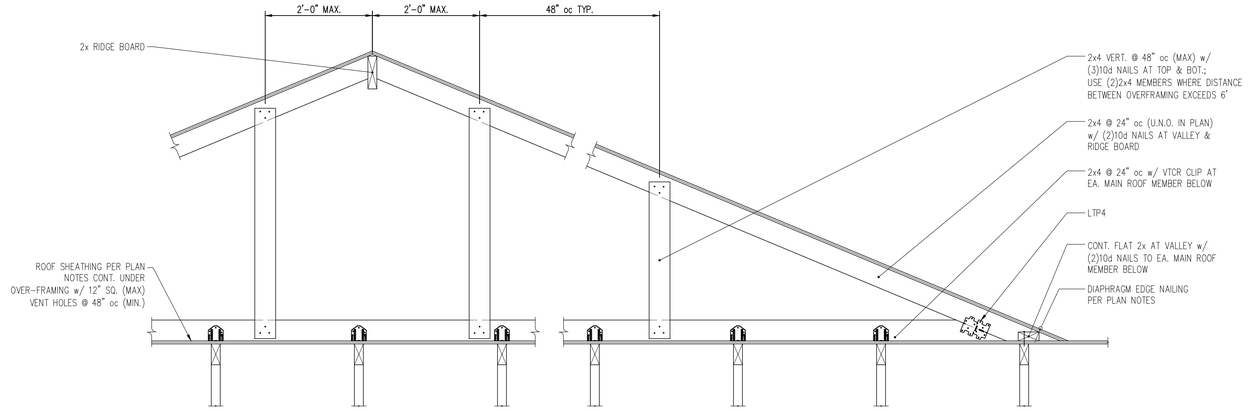
5818 West Mercer
Mercer Island

CONTENTS
Floor Framing Details

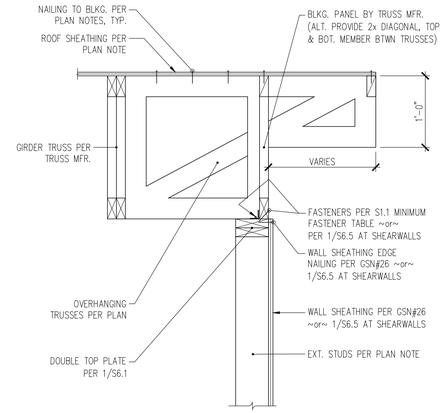
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DATE
01.02.25
06.06.25

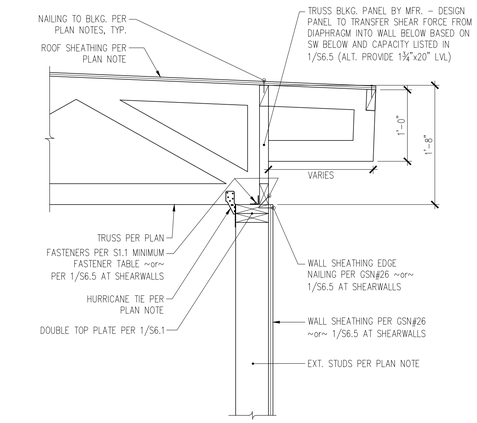
S6.3



6 / S6.4 TYPICAL ROOF OVERFRAMING
1" = 1'-0"



2 / S6.4 SECTION THROUGH EXTERIOR WALL AT PARALLEL ROOF TRUSSES
1" = 1'-0"



1 / S6.4 SECTION THROUGH EXTERIOR WALL AT PERPENDICULAR ROOF TRUSSES
1" = 1'-0"

ATLAS CONSULTING STRUCTURAL ENGINEERS

DAVID ABDI STATE OF WASHINGTON 53199 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

5818 West Mercer
Mercer Island

CONTENTS
Roof Framing Details

DRAWN BY
JDA

DATE
01.02.25

S6.4

STRAP TENSION TIE SCHEDULE

TIE ① MARK	Min. # of studs	CLEAR SPAN AND TOTAL FASTENERS ②	ASD ③ CAPACITY	BUILT-UP STUD FACE NAILS or SCREWS ④
MSTC28	(2)2x	18" – (12)0.148"ø x 3¼"	1,150#	10d @ 6" oc
MSTC40	(2)2x	18" – (28)0.148"ø x 3¼"	2,690#	10d @ 4" oc
MSTC52	(3)2x	18" – (44)0.148"ø x 3¼"	4,225#	(8)¼"ø x 4½" SDS
MSTC66	(3)2x	18" – (64)0.148"ø x 3¼"	5,850#	(12)¼"ø x 6" SDS
(2)MSTC52	(2)4x8	18" – (44)0.148"ø x 3¼"	7,750#	(14)¼"ø x 6" SDS
(2)MSTC66	7¼x7¼	18" – (64)0.148"ø x 3¼"	9,800#	(12)¼"ø x 6" SDS

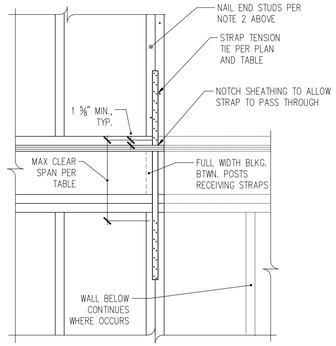
TENSION TIE ABOVE BEAM

TIE ① MARK	Min. # of studs	FASTENERS ②	ASD ③ CAPACITY	BUILT-UP STUD ④ FACE NAILS or SCREWS
MSTC28^	(2)2x	(28)0.148"ø x 3¼"	1,400#	10d @ 4" oc
HDU2^	(2)2x	(6)¼"ø x 2½" SDS	3,100#	10d @ 4" oc
HDU8^	4x8	(20)¼"ø x 2½" SDS	6,400#	(15)¼"ø x 6" SDS

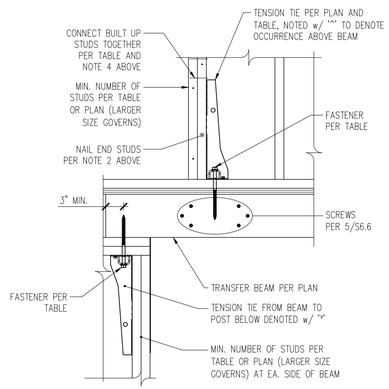
1. TENSION TIE TYPES REFER TO SIMPSON STRONG-TIE CATALOG CALLOUTS.
2. NAIL PLYWOOD SHEATHING TO STUDS RECEIVING HOLDOWN WITH SCHEDULED PANEL EDGE NAILING. STAGGER NAILS SO THAT EACH STUD IS NAILED.
3. FASTENERS NOTED IN TABLE ABOVE REPRESENT THE TOTAL AMOUNT. FOR STRAPS, HALF OF THE FASTENERS SHALL BE PROVIDED INTO EACH STUD.
4. SCREWS SHALL BE SPACED EQUALLY ALONG FULL HEIGHT OF STUD ABOVE TENSION TIE. PROVIDE SCREWS AS NOTED IN TABLE AT ONE FACE OF BUILT-UP STUD, AND 10d @ 6" oc NAILS AT OPPOSITE FACE OF BUILT UP STUD.

^ DENOTES TENSION TIE THAT OCCURS ATOP OF A FRAMING MEMBER TO POST/STUD ABOVE
v DENOTES TENSION TIE THAT OCCURS BELOW FRAMING MEMBER TO POST/STUD BELOW

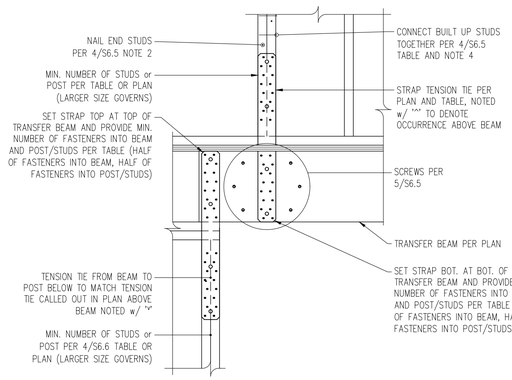
MSTC28^ or v – SET STRAP SO ½ OF FASTENERS ARE INSTALLED INTO BEAM, SEE 8/S6.5 – 4 TOTAL SDW EWP-PLY SCREWS, SEE 5/S6.6
HDU2^ or v – ⅜"ø LAG SCREW WITH 7½" MINIMUM PENETRATION INTO BEAM – 6 TOTAL SDW EWP-PLY SCREWS, SEE 5/S6.6
HDU8^ or v – ⅜"ø LAG SCREW WITH 11½" MINIMUM PENETRATION INTO BEAM – 12 TOTAL SDW EWP-PLY SCREWS, SEE 5/S6.6



ELEVATION VIEW – TYPICAL CONDITION



ELEVATION VIEW – TENSION TIE ABOVE BEAM



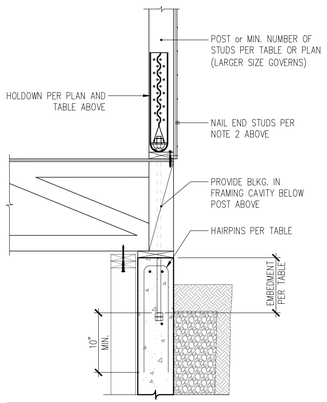
ELEVATION VIEW – TENSION TIE ABOVE BEAM

8 S6.5 STRAP TENSION TIE ABOVE TRANSFER BEAM
N.T.S.

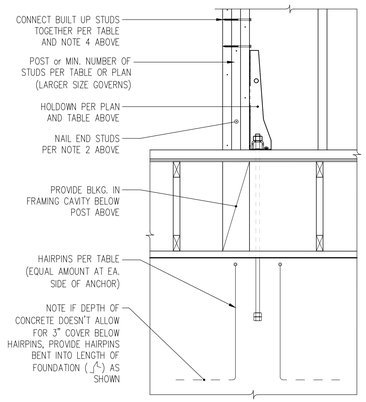
HOLDOWN TENSION TIE SCHEDULE

TIE ① MARK	MIN. NUMBER ② OF STUDS	ANCHOR (ø x EMBEDMENT) ③ and No. OF HAIRPIN DOWELS	FASTENERS FROM TIE TO STUD	ASD CAPACITY	BUILT-UP STUD FACE NAILS or SCREWS ④
HDU2	(2)2x	⅝"ø x 10" – (2)#4 HAIRPIN	(6)¼"ø x 2½" SDS SCREWS	3,075#	10d @ 4" oc
HDU4	(3)2x	⅝"ø x 10" – (2)#4 HAIRPIN	(10)¼"ø x 2½" SDS SCREWS	4,565#	(9)¼"ø x 4½" SDS
HDU5	(3)2x	⅝"ø x 10" – (2)#4 HAIRPIN	(14)¼"ø x 2½" SDS SCREWS	5,645#	(10)¼"ø x 4½" SDS
HDU8	(4)2x	⅞"ø x 10" – (4)#4 HAIRPIN	(20)¼"ø x 2½" SDS SCREWS	7,870#	(15)¼"ø x 6" SDS
HDU11	6x6	1"ø x 10" – (4)#4 HAIRPIN	(30)¼"ø x 2½" SDS SCREWS	11,175#	N/A

1. TENSION TIE TYPES REFER TO SIMPSON STRONG-TIE CATALOG CALLOUTS.
2. NAIL PLYWOOD SHEATHING TO STUDS RECEIVING HOLDOWN WITH SCHEDULED PANEL EDGE NAILING. STAGGER NAILS SO THAT EACH STUD IS NAILED.
3. ANCHORS SHALL BE HEAVY HEX HEAD WITH DOUBLE NUT CAST INTO CONCRETE.
   ASTM F 1554 Gr. 36 FOR ⅝"ø ANCHOR
   ASTM F 1554 Gr. 55 FOR ⅞"ø AND 1"ø ANCHORS
4. SCREWS SHALL BE SPACED EQUALLY ALONG FULL HEIGHT OF STUD ABOVE TENSION TIE. PROVIDE SCREWS AS NOTED IN TABLE AT ONE FACE OF BUILT-UP STUD, AND 10d @ 6" oc NAILS AT OPPOSITE FACE OF BUILT UP STUD.



SECTION VIEW



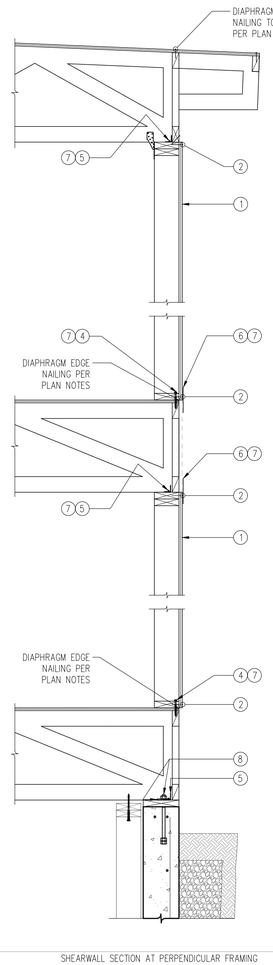
ELEVATION VIEW

4 S6.5 HOLDOWN DETAIL AND SCHEDULE
1" = 1'-0"

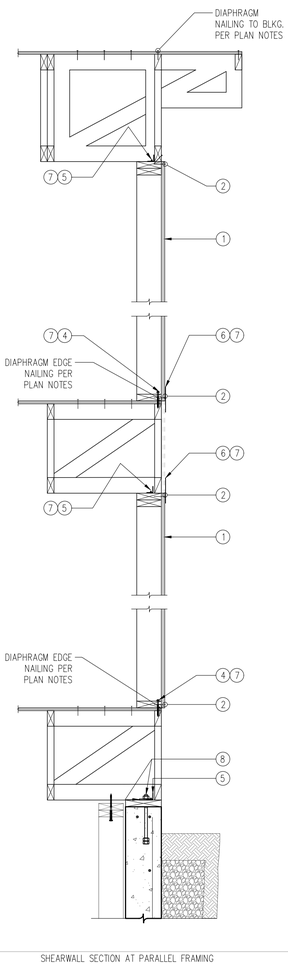
SHEARWALL SCHEDULE

SHEARWALL PANEL TYPE	① SHEATHING THICKNESS	② 0.148" x 2¼" PANEL NAILING	③ STUD/BLKG. AT ABUTTING PANEL EDGES & SILL PLATE THICKNESS	⑦ CONN. OF BLKG. OR FRAMING to TOP PLATE; AND SOLE PLATE TO SILL PLATE ④ ¼"ø x 3½" SDS SCREWS	⑤ A35 CLIPS	⑥ LTP4 PLATES	⑧ ⑨ ANCHOR BOLTS TO CONC. ⅝"ø	¾"ø	ASD CAPACITY, PLF
SW-6	½"	6" oc	2x	15" oc	25" oc	24" oc	48" oc	48" oc	310
SW-4	½"	4" oc	3x	10" oc	16" oc	16" oc	38" oc	48" oc	460
SW-3	½"	3" oc	3x	8" oc	13" oc	12" oc	29" oc	40" oc	600
SW-2	½"	2" oc	3x	6" oc	10" oc	9" oc	19" oc	26" oc	770
SW-44	½"	4" oc EA. SIDE	3x	5" oc	8" oc	8" oc	14" oc	20" oc	920
SW-33	½"	3" oc EA. SIDE	3x	4" oc	6" oc	6" oc	14" oc	20" oc	1200
SW-22	½"	2" oc EA. SIDE	3x	3" oc	5" oc	4" oc	11" oc	15" oc	1540

1. SHEATHING SHALL CONSIST OF ½" PLYWOOD AND HAVE A MINIMUM SPAN RATING OF 24/0. AT INTERIOR SHEARWALLS ONLY, 15/32" OSB SHALL BE USED
2. PANEL NAILING APPLIES TO ALL SHEATHING PANEL EDGES. INSTALL BLOCKING AT ALL UNFRAMED PANEL EDGES. ENSURE SHEATHING IS NAILED TO ALL INTERMEDIATE STUDS/BLOCKING WITH PANEL NAILS AT 12"oc.
3. DOUBLE 2x MEMBERS MAY BE SUBSTITUTED FOR 3x MEMBERS AT WALLS WITH ONLY ONE LAYER OF SHEATHING. 2x MEMBERS SHALL BE NAILED TOGETHER WITH 10d FACE: @ 3" oc FOR SW-4 AND @ 2¼" oc FOR SW-3 (116#/NAIL)
4. ROWS OF NAILS AND SDS SCREWS SHALL BE OFFSET AT LEAST ½" AND STAGGERED. MINIMUM EDGE DISTANCE FOR NAILS AND SDS SCREWS INTO EDGE OF MEMBERS SHALL BE ⅜" (400#/SCREW)
5. A35 CLIPS SHALL BE INSTALLED w/ (12)0.131 x 1½ " NAILS (650#/CLIP)
6. LTP4 LATERAL TIE PLATES MAY BE INSTALLED OVER SHEATHING w/ (12)0.131 x 2½" NAILS (625#/CLIP)
7. CONTRACTOR SHALL USE LTP4 PLATES FROM SHEATHING TO RIM ~or~ SDS SCREWS FROM SHEATHING TO RIM.
   CONTRACTOR SHALL USE A35 CLIPS FROM RIM TO STUDWALL DOUBLE TOP PLATE ~or~ LTP4 PLATES FROM SHEATHING TO STUDWALL DOUBLE TOP PLATE.
8. PLATE WASHERS IN 2x4 STUD WALLS AND ALL SINGLE SIDED SHEARWALLS SHALL BE 3"x3"x0.229". DOUBLE SIDED 2x6 SHEARWALLS SHALL HAVE 4½"x3"0.229" PLATE WASHERS. THE EDGE OF PLATE WASHERS SHALL BE LOCATED WITHIN ½" OF THE EDGE OF BOTTOM PLATE ON THE SIDE WITH SHEATHING.
9. CAST ANCHORS A MINIMUM OF 7" INTO CONCRETE. PROVIDE ADDITIONAL ANCHOR BOLTS AT EACH SIDE OF PLATE BREAKS AND PENETRATIONS EXCEEDING THE "NO REINFORCING" HOLE SIZE PER 2/S6.1.



SHEARWALL SECTION AT PERPENDICULAR FRAMING



SHEARWALL SECTION AT PARALLEL FRAMING

1 S6.5 SHEARWALL SECTION AND SCHEDULE
1" = 1'-0"

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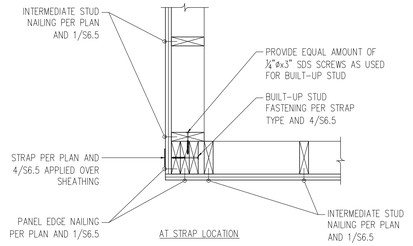
5818 West Mercer
Mercer Island

CONTENTS
Lateral
Details

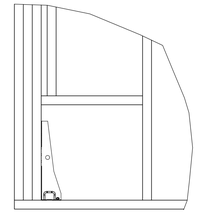
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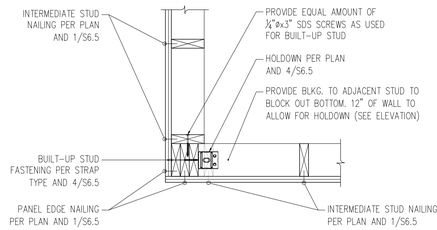
S6.5



AT STRAP LOCATION



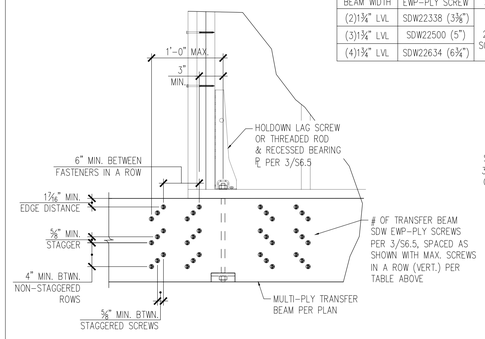
ELEVATION VIEW



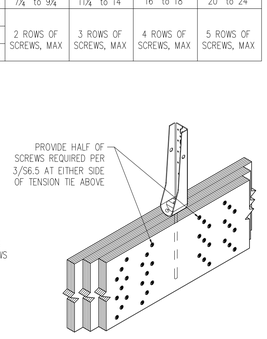
AT HOLDOWN LOCATION

2 S6.6 SHEAR WALL INTERSECTION AND TENSION TIE POSITIONING
N.T.S.

TRANSFER BEAM WIDTH	SIMPSON SDW EWP-PLY SCREW	TRANSFER BEAM DEPTH			
		7¼" to 9¼"	11¼" to 14"	16" to 18"	20" to 24"
(2)1¾" LVL	SDW22338 (3⅜")	2 ROWS OF SCREWS, MAX	3 ROWS OF SCREWS, MAX	4 ROWS OF SCREWS, MAX	5 ROWS OF SCREWS, MAX
(3)1¾" LVL	SDW22500 (5")				
(4)1¾" LVL	SDW22634 (6¾")				

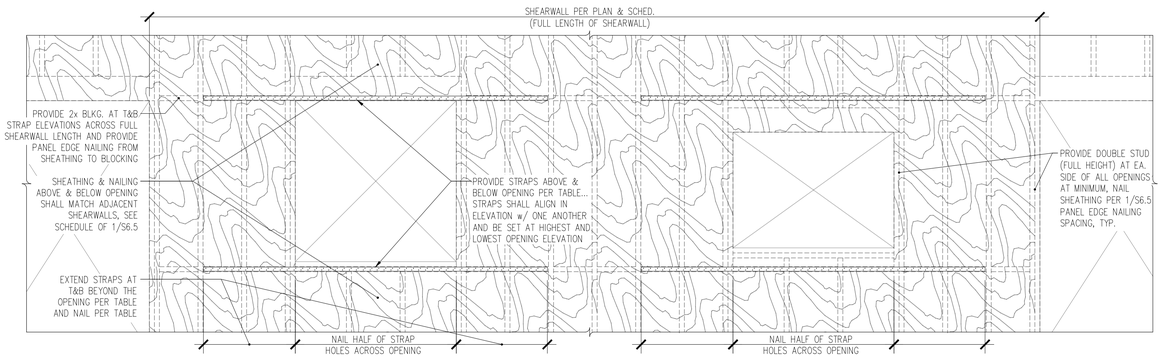


TRANSFER BEAM ELEVATION VIEW

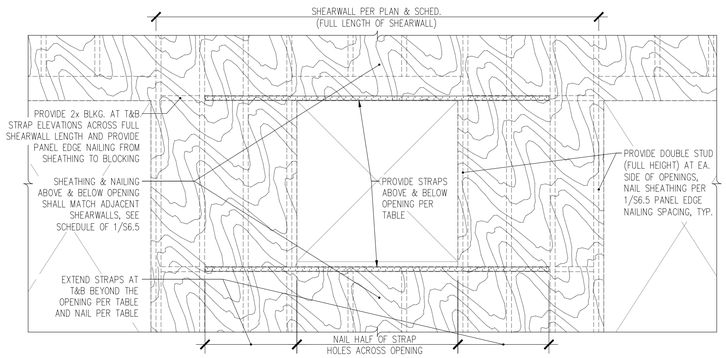


ISOMETRIC VIEW

5 S6.6 MULTI-PLY TRANSFER BEAM CONNECTION DETAILS
1" = 1'-0"



MULTIPLE OPENINGS



ONE OPENING

TYPE	STRAP	END LENGTH	NAILS
1	CS20	16"	(12)0.148"x2½"
2	CS20	24"	(12)0.148"x2½"
3	CS20	30"	(12)0.148"x2½"
4	CS18	24"	(16)0.148"x2½"
5	CS18	30"	(16)0.148"x2½"
6	CS18	34"	(16)0.148"x2½"
7	CS16	30"	(20)0.148"x2½"
8	CS16	45"	(20)0.148"x2½"

STRAP TABLE

7 S6.6 STRAPPED SHEARWALL DETAIL
N.T.S.

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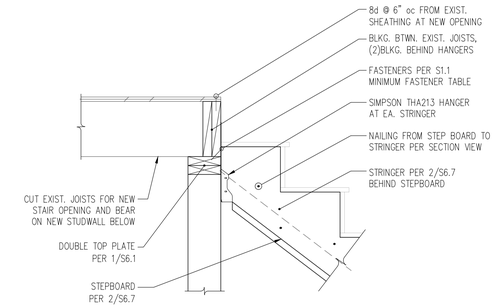
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CONTENTS
Lateral
Details

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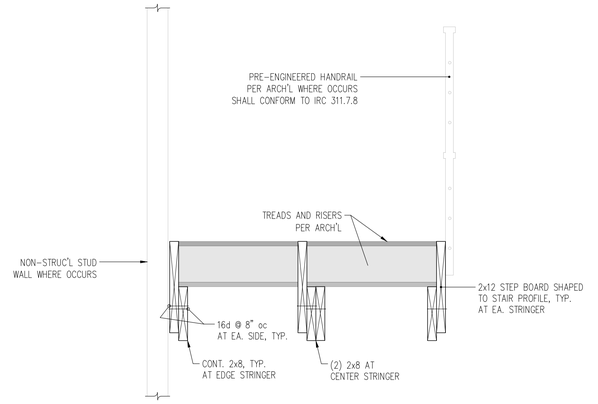
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S6.6

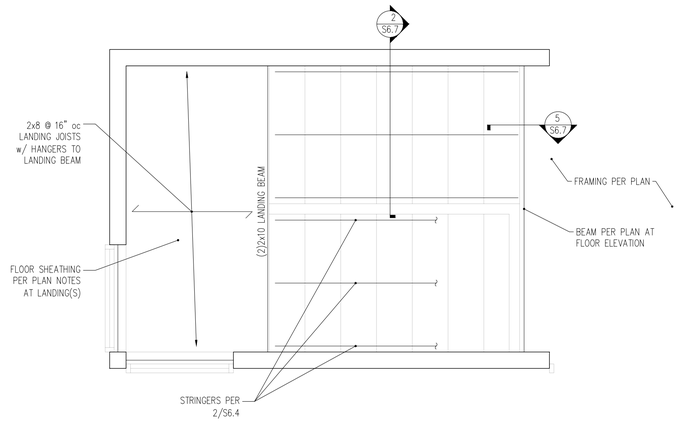


STRINGER STEPPING DOWN FROM FLOOR LEVEL

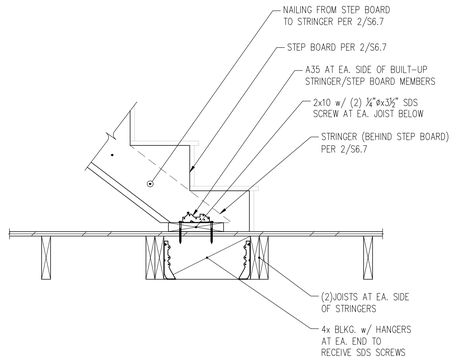
5 S6.7 ELEVATION OF STRINGER TO SUPPORT MEMBER
1" = 1'-0"



2 S6.7 SECTION THROUGH STAIR FRAMING
1" = 1'-0"



4 S6.7 TYPICAL STAIR FRAMING/LANDING PLAN VIEW
1" = 1'-0"



1 S6.7 ELEVATION VIEW OF STAIR STRINGERS BEARING ATOP FRAMING
1" = 1'-0"

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5818 West Mercer
Mercer Island

CONTENTS
Typical Stair Details

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S6.7

General Shoring Notes

CRITERIA:

1. ALL MATERIALS, WORKMANSHIP, DESIGN, AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, SPECIFICATIONS, AND THE INTERNATIONAL BUILDING CODE (IBC) WITH WASHINGTON STATE ADMINISTRATIVE CODE AMENDMENTS, 2021 EDITION

2. SHORING DRAWINGS SHALL BE USED IN CONJUNCTION WITH ALL OTHER CONTRACT DOCUMENTS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY DIMENSIONS AND CONDITIONS FOR COMPATIBILITY AND SHALL NOTIFY ENGINEER OF ALL DISCREPANCIES PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE BUILDING LAYOUT DIMENSIONS (GRID LAYOUTS, SITE COORDINATES, ETC.) AMONGST ALL TRADES, INCLUDING SHOP FABRICATED ITEMS.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.

4. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND THE STRUCTURAL ENGINEER.

5. SUBMITTALS: SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ANY FABRICTATION OR CONSTRUCTION FOR ALL STRUCTURAL ITEMS INCLUDING THE FOLLOWING: STRUCTURAL STEEL & MISCELLANEOUS METAL. PROPOSED DEMOLITION AND SHORING SEQUENCE SHALL ALSO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW.

6. UTILITY LOCATION: THE SHORING CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL ADJACENT UNDERGROUND UTILITIES PRIOR TO DRILLING PILE HOLES, OR CUTTING OR DIGGING IN STREETS OR ALLEYS. THE UTILITIES INFORMATION SHOWN ON THE SURVEY MAY NOT BE COMPLETE.

MINIMUM PILE AND BUILDING MONITORING REQUIREMENTS

7. PROVIDE PHOTO DOCUMENTATION OF THE ADJACENT BUILDINGS PRIOR TO THE START OF SHORING WALL CONSTRUCTION, IF APPLICABLE. ESTABLISH A BASELINE READING OF MONITORING POINTS ON THE GROUND SURFACE AND SETTLEMENT-SENSITIVE STRUCTURES BEHIND THE SHORING WALL ALIGNMENTS PRIOR TO EXCAVATION OR INSTALLATION OF THE SHORING SYSTEM. BASELINE MONITORING POINTS SHALL BE ESTABLISHED ON THE FACING BUILDING CORNERS OF THE ADJACENT BUILDINGS, AS WELL AS INTERMEDIATE POINTS SPACED NO MORE THAN 15 FEET APART AT THE NORTH FACING WALL OF THE ADJACENT BUILDINGS. THE HORIZONTAL (X AND Y) COORDINATES AND ELEVATIONS SHALL BE ESTABLISHED BY A LICENSED LAND SURVEYOR (NOT THE CONTRACTOR) PRIOR TO STARTING EARTHWORK ACTIVITIES OR SHORING INSTALLATION.

   ALL SURVEYING SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. SURVEY MID-HEIGHT OF THE SHORING WALLS AT 25-FEET (X AND Y) INTERVALS AND AT THE TOP OF EVERY SOLDIER PILE. SURVEY FREQUENCY SHALL BE DETERMINED BY THE GEOTECHNICAL ENGINEER AFTER REVIEW AND APPROVAL BY THE AUTHORITY HAVING JURISDICTION (AHJ). SURVEY SHALL OCCUR A MINIMUM OF ONCE A WEEK DURING SHORING INSTALLATION AND EXCAVATION. SURVEY FREQUENCY MAY BE DECREASED AFTER SHORING SYSTEM IS INSTALLED AND THE EXCAVATION IS COMPLETE IF DATA INDICATES THAT NO OR LITTLE ADDITIONAL MOVEMENT OCCURS. A DECREASED SURVEY FREQUENCY MUST BE DETERMINED BY THE GEOTECHNICAL ENGINEER AND MUST BE REVIEWED AND APPROVED BY AHJ. SURVEYING MUST CONTINUE UNTIL PERMANENT BUILDING STRUCTURE (INCLUDING FLOOR SLABS AS BRACES) IS COMPLETED UP TO GRADE LEVEL.

   FOR ALL SURVEY ACTIVITY, SURVEY ACCURACY SHALL BE 0.001 FEET. THE GEOTECHNICAL ENGINEER SHALL REVIEW THE SURVEY DATA WITHIN 2 DAYS OF BEING MEASURED AND PROVIDE AN EVALUATION OF SHORING WALL PERFORMANCE ALONG WITH THE SURVEY DATA TO AHJ ON AT LEAST A WEEKLY BASIS. IMMEDIATELY AND DIRECTLY NOTIFY THE GEOTECHNICAL ENGINEERS, STRUCTURAL ENGINEERS, AND SDCI IF 0.04 FEET OF MOVEMENT OR ANY UNUSUAL OR SIGNIFICANTLY INCREASED MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS.

   IMMEDIATELY AND DIRECTLY NOTIFY THE GEOTECHNICAL ENGINEERS, STRUCTURAL ENGINEERS, WALL DESIGNER, AND SDCI IF 0.05 INCHES OF MOVEMENT OCCURS BETWEEN TWO CONSECUTIVE READINGS AND WHEN TOTAL MOVEMENTS REACH 1 INCH. AT THAT AMOUNT OF MOVEMENT, THE GEOTECHNICAL AND STRUCTURAL ENGINEERS SHALL DETERMINE THE CAUSE OF THE DISPLACEMENT AND DEVELOP REMEDIAL MEASURES SUFFICIENT TO LIMIT TOTAL LATERAL DEFLECTION AT TOP OF PILES TO 1 INCH. ALL EARTHWORK AND CONSTRUCTION ACTIVITIES MUST BE DIRECTED TOWARDS IMMEDIATE IMPLEMENTATION OF REMEDIAL MEASURES NECESSARY TO LIMIT TOTAL WALL MOVEMENTS TO WHAT HAS BEEN DEFINED AS ACCEPTABLE BY THE DESIGN TEAM AND AHJ (AS INDICATED ABOVE).

SPECIAL INSPECTIONS:

8. STEEL CONSTRUCTION: VERIFY AND/OR INSPECT STEEL CONSTRUCTION PER SBC TABLE 1704.3 AND IBC SECTIONS 1704.3 AND 1707.2. THIS INCLUDES (BUT IS NOT LIMITED TO) STRUCTURAL STEEL, HIGH STRENGTH BOLTING, AND WELDING.

9. SOILS: SPECIAL INSPECTIONS OF THE EXISTING SITE SOIL CONDITIONS, FILL PLACEMENT, AND LOAD-BEARING REQUIREMENTS PER IBC SECTIONS 1704.7.1 – 1704.7.3 ARE REQUIRED.

10. SOLDIER PILE SHORING: SPECIAL INSPECTIONS OF SOLDIER PILES ARE REQUIRED PER IBC SECTIONS 1704.8 AND 1704.9.

GEOTECHNICAL:

11. GEOTECHNICAL REFERENCE: (△4)
    PanGeo Incorporated; File No. 25-466; Response to Geotechnical Review Comments – REV01; Proposed SFR; 5818 West Mercer Way, Mercer Island, WA

12. FOUNDATION EXCAVATION, BACKFILL, AND COMPACTION SHALL CONFORM TO SPECIFICATION REQUIREMENTS. THIS CONSTRUCTION WORK, INCLUDING DRAINAGE, SHORING, AND SUCH OTHER RELATED WORK AS REQUIRED, SHALL BE CONDUCTED BY THE CONTRACTOR UNDER THE OBSERVATION AND DIRECTION OF THE GEOTECHNICAL ENGINEER.

13. CONTRACTOR SHALL PROVIDE FOR DESIGN AND INSTALLATION OF ALL CRIBBING, SHEATHING, AND SHORING REQUIRED TO SAFELY RETAIN EXCAVATIONS, U.N.O.

14. BACKFILL BEHIND ALL SHORING WALLS WITH WELL DRAINING, GRANULAR FILL MATERIAL, AND PROVIDE PERFORATED PIPE DRAINS AS DESCRIBED IN THE ABOVE REFERENCED SOIL REPORT.

15. SHAFT EXCAVATION SHALL BE PERFORMED UNDER THE SUPERVISION OF THE GEOTECHNICAL ENGINEER.

16. PROTECT THE TOP OF SHAFT EXCAVATIONS IN ORDER TO PREVENT THE ENTRY OF SOIL OR OTHER UNDESIRABLE MATERIALS IN THE SHAFT.

17. DRILLED PIER FOUNDATIONS SHALL BE INSTALLED BY DRILLING CONCENTRIC SHAFTS OF DIAMETERS INDICATED IN THE DRAWINGS.

18. DESIGN CRITERIA AS OUTLINED BY THE AFOREMENTIONED GEOTECH REPORT, AND REPLICATED IN FIGURES ON THIS SHEET TO THE RIGHT, HAS BEEN USED TO DESIGN THE SHORING SYSTEM: (△4)
    A. Minimum embedment should be at least 8 feet below bottom of excavation.
    B. A factor of safety of 1.5 has been applied to the recommended active earth pressure values. No factor of safety has been applied to the recommended passive pressure values.
    C. Active pressures should be applied over the full width of the pile spacing above the base of the excavation, and over one pile diameter below the base of the excavation.
    D. Surcharge pressures should be applied over the entire length of the loaded area.
    E. Passive pressure should be applied to 2.5 times the diameter of the soldier piles, or pile center-to-center spacing, whichever is less.
    F. For lagging design, refer to report text.

19. OBSERVATION BY THE GEOTECHNICAL ENGINEER IS REQUIRED FOR THE SHORING SYSTEM INSTALLATION INCLUDING DRILLING OF PILE HOLES, INSTALLATION OF SOLDIER PILES AND LEAN MIX CONCRETE, TIEBACK INSTALLATION, GROUTING AND LOAD TESTING. A COMPLETE AND ACCURATE RECORD SHALL BE KEPT OF ALL PILE DEPTHS, QUANTITY OF LEAN MIX PER PILE, AND ANY UNUSUAL CONDITIONS ENCOUNTERED. THE CONTRACTOR SHALL PROVIDE TESTING EQUIPMENT THAT HAS BEEN CALIBRATED IN THE PAST 60 DAYS. MEASUREMENTS OF ANCHOR MOVEMENT SHALL BE OBTAINED WITH EQUIPMENT ACCURATE TO 0.001 INCH.

LAGGING:

20. ALL WOOD USED FOR LAGGING SHALL CONFORM TO "GRADING AND DRESSING RULES," WEST COAST LUMBER INSPECTION BUREAU, LATEST EDITION, MINIMUM GRADE SHALL BE HEM-FIR #2.

21. ALL WOOD FRAMING IN DIRECT CONTACT WITH SOIL, CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE-TREATED WITH AN APPROVED PRESERVATIVE PER IBC SECTION 2303.1.8. PERMANENT SHORING WALL SYSTEMS THAT USE CUT OR DRILLED SECTIONS OF TREATED MATERIAL SHALL BE TREATED WITH AN APPROVED PRESERVATIVE PER IBC SECTION 2303.1.8. SEE IBC SECTION 2304.11 FOR ADDITIONAL REQUIREMENTS.

CONCRETE AND GROUT:

22. LEAN MIX: ALL CDF SHALL HAVE A MINIMUM OF 1-1/2 SACK (141 LBS) OF CEMENT PER CUBIC YARD OF CONCRETE. TYPE I, II, OR II PORTLAND CEMENT CONFORMING TO ASTM C150/AASHTO M85 SHALL BE USED FOR CDF.

23. STRUCTURAL GROUT SHALL HAVE THE FOLLOWING PROPERTIES: f'c = 3000 PSI (@ 5 DAYS), 9 SACK MIN. PUMPABLE, 8" MINIMUM SLUMP

24. ADMIXTURES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C49/AASHTO M194, SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, AND SHALL BE APPROVED BY THE ENGINEER

25. AGGREGATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C33/AASHTO M6 FOR FINE AGGREGATES AND AASHTO M80, CLASS B FOR COARSE AGGREGATES.

STEEL

26. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL BE BASED ON THE LATEST EDITIONS OF THE A.I.S.C. SPECIFICATIONS AND CODES:
    A. SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS-ALLOWABLE STRESS AND PLASTIC DESIGN, OR LOAD AND RESISTANCE FACTOR DESIGN SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS.
    B. CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, ADOPTED APRIL 14, 2010.
       a. IN REFERENCE TO SECTIONS 3.1.2 AND 4.4.1, THE CONTRACT DOCUMENTS (DESIGN DRAWINGS) SHOW COMPLETE CONNECTION DETAILS FOR ALL MEMBERS EXCEPT THOSE NOTED TO BE DESIGN-BUILD ITEMS. ALTERNATE CONNECTION DETAILS REQUESTED BY THE FABRICATOR SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL VIA A REQUEST FOR INFORMATION (RFI) PRIOR TO COMPLETION OF SHOP DRAWINGS.
       b. IN REFERENCE TO SECTION 3.1.6, FABRICATOR SHALL ALSO REVIEW PROJECT SPECIFICATIONS AND ARCHITECTURAL DRAWINGS TO DETERMINE PAINTING AND GALVANIZING REQUIREMENTS. MEMBERS EMBEDDED IN CONCRETE, MASONRY OR TO RECEIVE SPRAY-ON FIREPROOFING SHALL NOT BE PAINTED. DO NOT PAINT OR GALVANIZE AREAS OF PIECES TO BE FIELD WELDED, OR REMOVE PAINT AND GALVANIZING IN FIELD PRIOR TO WELDING.
       c. IN REFERENCE TO SECTION 3.3, IN THE EVENT OF DISCREPANCIES BETWEEN DESIGN DRAWINGS AND SPECIFICATIONS, THE DESIGN DRAWINGS GOVERN.
       d. IN REFERENCE TO SECTION 4.1, THE FABRICATOR SHALL NOT ASSUME BID PACKAGES CONSTITUTE RELEASING THE DRAWINGS FOR CONSTRUCTION WITHOUT EXPLICIT DIRECTION TO DO SO BY THE OWNER.
    C. SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS.
    D. QUALITY CONTROL SHALL BE IN ACCORDANCE WITH AISC 360 CHAPTER N (AISC 341 CHAPTER J FOR STEEL SEISMIC SYSTEM).
       CONTRACTOR SHALL ALSO COMPLY WITH OSHA REGULATION 29 CFR PART 1926 SUBPART R – STEEL ERECTION, PUBLISHED JANUARY 18, 2001. MISCELLANEOUS PLATES FOR GUYING CABLE ATTACHMENTS, TEMPORARY JOIST BRACING, ETC. SHALL BE ADDED AS REQUIRED. CONTRACTOR SHALL EVALUATE COLUMNS AND PROVIDE ADEQUATE BASE PLATE SHIMS, ADDITIONAL TEMPORARY ERECTION BOLTS/CLIPS, GUYS, OR TEMPORARY BRACING AS REQUIRED PER SECTION 1926.755.

24. STRUCTURAL STEEL PLATES AND RODS SHALL CONFORM TO ASTM A36, Fy = 36 KSI. WIDE FLANGE STEEL SHAPES SHALL CONFORM TO ASTM A992, Fy = 50 KSI. ANCHOR BOLTS SHALL CONFORM TO ASTM F1554 (36 KSI) UNLESS NOTED OTHERWISE. STEEL-TO-STEEL CONNECTION BOLTS SHALL CONFORM TO ASTM A325.

25. DIMENSIONAL TOLERANCE FOR STRUCTURAL STEEL MEMBERS SHALL BE PER THE AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES, SECTION 6.4 AND ASTM SPECIFICATION A6. UNLESS SPECIFICALLY ALLOWED BY THE ENGINEER, COLUMN MEMBERS SHALL NOT BE MODIFIED BY THE ROTARY STRAIGHTENING PROCESS.

ANCHOR TESTING

26. THE ANCHOR TESTING SHOULD BE CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE POST TENSIONING INSTITUTE (PTI) "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS." ESSENTIALLY ELEMENTS OF VERIFICATION TESTS ARE AS FOLLOWS:
    A. PERFORM A MINIMUM OF TWO VERIFICATIONS TESTS ON EACH ANCHOR TYPE, INSTALLATION METHOD AND SOIL TYPE WITH THE TESTED ANCHORS CONSTRUCTED TO THE SAME DIMENSIONS AS PRODUCTION ANCHORS. THE CONTRACTOR SHOULD CONSIDER PERFORMING THE VERIFICATION TESTS PRIOR TO INSTALLING PRODUCTION ANCHORS;
    B. TEST LOCATIONS TO BE DETERMINED IN CONJUNCTION AND APPROVED BY THE GEOTECHNICAL ENGINEER;
    C. TEST ANCHORS, WHICH WILL BE LOADED TO 200% OF THE DESIGN LOAD, MAY REQUIRE ADDITIONAL PRESTRESSING STEEL (STEEL LOAD NOT TO EXCEED 80% OF THE ULTIMATE TENSILE STRENGTH) OR REINFORCING OF THE SOLDIER PILE;
    D. LOAD TEST ANCHORS TO 150% LOAD IN 25% LOAD INCREMENTS, HOLDING EACH INCREMENTAL LOAD FOR AT LEAST 5 MINUTES AND RECORDING DEFLECTION OF THE ANCHOR HEAD AT VARIOUS TIMES WITHIN EACH HOLD TO THE NEAREST 0.01 INCH;
    E. AT THE 150% LOAD, THE HOLDING PERIOD SHALL BE AT LEAST 60 MINUTES;
    F. AFTER COMPLETION OF THE 150% HOLD, LOAD THE ANCHOR IN 25% LOAD INCREMENTS TO THE 200% LOAD, WHICH SHALL BE HELD FOR 10 MINUTE, AND;
    G. A SUCCESSFUL TEST SHALL PROVIDE A MEASURED CREEP RATE OF 0.04 INCHES OR LESS AT THE 150% LOAD BETWEEN 1 AND 10 MINUTES, AND 0.08 INCHES BETWEEN 6 AND 60 MINUTES, AND BOTH SHALL HAVE A CREEP RATE THAT IS LINEAR OR DECREASING WITH TIME. THE APPLIED LOAD MUST REMAIN CONSTANT DURING ALL HOLDING PERIODS (I.E. NO MORE THAN 5% VARIATION FROM THE SPECIFIED LOAD).

VERIFICATION TESTED ANCHORS OR EXTENDED CREEP PROOF TESTED ANCHORS NOT MEETING THE ACCEPTANCE CRITERIA WILL REQUIRE A REDESIGN BY THE CONTRACTOR TO ACHIEVE THE ACCEPTANCE CRITERIA.

ALL PRODUCTION ANCHORS SHOULD BE PROOF TESTED TO 130% OF THE DESIGN LOAD. THE ANCHOR TESTING SHOULD BE CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE POST TENSIONING INSTITUTE (PTI) "RECOMMENDATIONS FOR PRESTRESSED ROCK AND SOIL ANCHORS."ESSENTIAL ELEMENTS OF PROOF TESTS ARE SUMMARIZED BELOW:

    A. LOAD TEST ALL PRODUCTION ANCHORS TO 130% OF THE DESIGN LOAD IN 25% LOAD INCREMENTS, HOLDING EACH INCREMENTAL LOAD UNTIL A STABLE DEFLECTION IS ACHIEVED (RECORD DEFLECTION OF THE ANCHOR HEAD AT VARIOUS TIMES WITHIN EACH HOLD TO THE NEAREST 0.01 INCH);
    B. AT THE 130% LOAD, THE HOLDING PERIOD SHALL BE AT LEAST 10 MINUTES;
    C. A SUCCESSFUL TEST SHALL PROVIDE A MEASURED CREEP RATE OF 0.04 INCHES OR LESS AT THE 150% LOAD BETWEEN 1 AND 10 MINUTES WITH A CREEP RATE THAT IS LINEAR OR DECREASING WITH TIME. THE APPLIED LOAD MUST REMAIN CONSTANT DURING THE HOLDING PERIOD (I.E. NO MORE THAN 5% VARIATION FROM THE 130% LOAD). ANCHORS FAILING THIS PROOF TESTING CREEP ACCEPTANCE CRITERIA MAY BE HELD AN ADDITIONAL 50 MINUTES FOR CREEP MEASUREMENT. ACCEPTABLE PERFORMANCE WOULD EQUATE TO A CREEP OF 0.08 INCHES OR LESS BETWEEN 5 AND 50 MINUTES WITH A LINEAR OR DECREASING CREEP RATE.

WALL DRAINAGE

27. THE DRAINAGE NETWORK SHALL CONSIST OF INSTALLING THE PREFABRICATED GEOCOMPOSITE DRAINAGE STRIPS, PVC CONNECTION PIPES, AND WALL FOOTING DRAINS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. EXCLUSIVE OF THE WALL FOOTING DRAINS, ALL ELEMENTS OF THE DRAINAGE NETWORK SHALL BE INSTALLED PRIOR TO SHOTCRETING OR CASTING CONCRETE WALLS AGAINST SHORING.

28. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING A DRY EXCAVATION FACE AND A DRY SUBGRADE. THE STATIC GROUNDWATER TABLE OCCURS BELOW THE BOTTOM OF THE PROPOSED EXCAVATION. HOWEVER, PERCHED WATER TABLES MAY BE ENCOUNTERED ABOVE THE STATIC GROUNDWATER LEVEL. IN THE EVENT OF GROUND WATER INFILTRATION, THE CONTRACTOR IS REQUIRED TO DEWATER THE GROUND SUCH THAT THE GROUNDWATER LEVEL IS MAINTAINED AT LEAST 3 FEET BELOW THE MAXIMUM EXCAVATION LEVELS. THE CONTRACTOR SHALL PROVIDE THE DEWATERING PLAN TO THE ENGINEER FOR REVIEW. NO EXCAVATION FOR SHORING SHOULD EXTEND BELOW THE WATER TABLE UNTIL THE GROUND IS PROPERLY DEWATERED. ANY FACE STABILITY PROBLEMS THAT RESULT FROM INADEQUATE DEWATERING ARE THE RESPONSIBILITY OF THE CONTRACTOR.

29. THE CONTRACTOR SHALL PROVIDE POSITIVE CONTROL AND DISCHARGE OF ALL SURFACE WATER ENCOUNTERED DURING CONSTRUCTION TO THE EXTENT NECESSARY TO PREVENT ADVERSE CONDITIONS AS DETERMINED BY THE OWNER'S REPRESENTATIVE. DAMAGE CAUSED BY THE FAILURE TO CONTROL SURFACE WATER SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER. SURFACE WATER RUNOFF FLOW AND FLOWS FROM EXISTING SUBSURFACE DRAINAGE FEATURES SHOULD BE CAPTURED INDEPENDENTLY OF THE WALL DRAINAGE NETWORK AND CONVEYED TO AN OUTFALL STRUCTURE OR STORM SEWER AS DETERMINED BY THE OWNER'S REPRESENTATIVE. REMEDIAL MEASURES FOR EXISTING SUBSURFACE DRAINAGE FEATURES ENCOUNTERED DURING THE WORK WHICH WERE NOT IDENTIFIED ON THE PLANS WILL BE PAID FOR AS EXTRA WORK PER THE CONTRACT DOCUMENTS.

30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONDITION AND MAINTENANCE OF ANY PIPE OR CONDUIT USED TO CONTROL SURFACE WATER DURING CONSTRUCTION. UPON SUBSTANTIAL COMPLETION OF THE WORK, SURFACE WATER CONTROL PIPES OR CONDUITS SHALL BE REMOVED FROM THE SITE. ALTERNATIVELY PIPES OR CONDUITS THAT ARE LEFT IN PLACE WITH THE APPROVAL OF THE OWNER'S REPRESENTATIVE SHALL BE FULLY GROUTED (ABANDONED) OR LEFT IN A MANNER THAT PROTECTS THE STRUCTURE AND ALL ADJACENT FACILITIES FROM MIGRATION OF FINES THROUGH THE PIPE OR CONDUIT AND POTENTIAL GROUND LOSS.

31. GEOCOMPOSITE DRAIN STRIPS SHALL BE INSTALLED AS SHOWN ON THE PLANS. THE GEOCOMPOSITE DRAIN SHALL BE ONE HALF THE WIDTH OF THE PILE SPACING AND SHALL BE SECURED TO THE LAGGING WITH THE GEOTEXTILE SIDE AGAINST THE LAGGING. INSTALLATION OF DRAIN STRIPS SHALL BE MADE CONTINUOUS BY USING THE SHINGLE METHOD OF SPLICING WITH A 4 INCH MINIMUM OVERLAP SUCH THAT THE FLOW OF WATER IS NOT IMPEDED. THE EDGES OF THE DRAINAGE STRIPS CUT FROM A WIDER WIDTH WILL BE SECURED WITH A METHOD APPROVED BY THE ENGINEER.

32. CONNECTION PIPES AND WEEPHOLES SHALL BE INSTALLED AS SHOWN ON THE PLANS. CONNECTION PIPES SHALL BE LENGTHS OF SOLID PIPE INSTALLED TO DIRECT WATER FROM THE GEOCOMPOSITE DRAIN STRIPS IN THE THE FOOTING DRAIN. CONNECTION PIPES AND WEEPHOLES SHALL BE CONNECTED TO THE DRAIN STRIPS AS SHOWN ON THE PLANS, UNLESS APPROVED OTHERWISE BY THE ENGINEER. THE JOINT BETWEEN THE DRAIN PIPE AND DRAIN STRIP, AND THE DISCHARGE END OF THE CONNECTOR PIPE SHALL BE SEALED TO PREVENT SHOTCRETE INTRUSION. DAMAGE OF THE GEOCOMPOSITE DRAIN STRIP WHICH, IN THE OPINION OF THE OWNER'S REPRESENTATIVE, MAY CAUSE INTERRUPTION IN FLOW HALL REQUIRED INSTALLATION OF ADDITIONAL CONNECTION PIPES OR WEEPHOLES ABOVE THE DAMAGED SECTION. CONNECTION PIPES SHALL BE EXTENDED TO THE EDGE OF THE FOOTING DRAIN BUT NOT THROUGH THE DRAINAGE GEOTEXTILE. THE INTEGRITY OF THE DRAINAGE GEOTEXTILE SHALL NOT BE INTERRUPTED.

PILE SCHEDULE

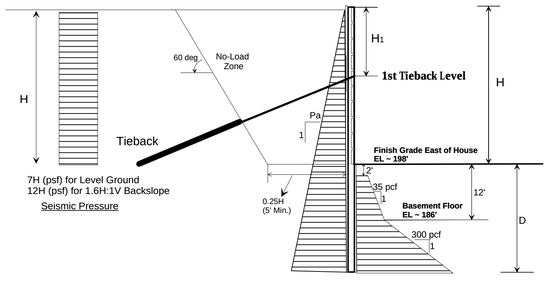
PILE #	AUGER ø (FT)	WIDE FLANGE	EMBEDMENT DEPTH "D" (FT)	MAX or AVERAGE RETAINING HEIGHT "H" (FT)	TYPE		MIN. TOP OF PILE ELEVATION	BOTTOM OF EXCAVATION	BOTTOM OF PILE	TIEBACK (SEE NOTE)				
										ELEVATION	ANGLE	LOAD (KIPS)	EXPECTED BONDED LENGTH	EXPECTED UNBONDED LENGTH
S1	2'-0"	W12x16	9.50'	7'-0" (LEVEL)	CANTILEVER	TEMPORARY	191.90'	185.00'	172.00'		–		–	–
S2	2'-0"	W12x16	11.00'	7'-0" (LEVEL)	CANTILEVER	TEMPORARY	191.90'	185.00'	172.00'		–		–	–
S3	2'-0"	W14x26	13.50'	10'-0" (LEVEL)	CANTILEVER	TEMPORARY	195.10'	185.00'	169.00'		–		–	–
S4	2'-0"	W16x40	16.00'	12'-0" (LEVEL)	CANTILEVER	TEMPORARY	197.10'	185.00'	168.00'		–		–	–
S5	2'-0"	W18x50	17.50'	13'-6" (LEVEL)	CANTILEVER	TEMPORARY	198.40'	185.00'	166.25'		–		–	–
S6	2'-0"	W18x50	18.00'	14'-0" (LEVEL)	CANTILEVER	TEMPORARY	199.10'	185.00'	165.75'		–		–	–
S7	2'-0"	W18x50	18.50'	14'-9" (LEVEL)	CANTILEVER	TEMPORARY	199.70'	185.00'	165.00'		–		–	–
E0	2'-0"	W14x26	10.25'	7'-0" (1.6:1 RETAINED SLOPE)	CANTILEVER	PERMANENT	209.00'	202.00'	191.75'		–		–	–
E1	2'-6"	W18x55	9.00'	24'-6" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	209.50'	185.00'	176.00'	199.50'	20°	47.9 K	19.2 ft	12.8 ft
E2	2'-6"	W18x60	9.00'	25'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.00'	185.00'	176.00'	200.00'	20°	76.5 K	30.6 ft	13.2 ft
E3	2'-6"	W18x65	9.00'	25'-6" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.50'	185.00'	176.00'	200.50'	20°	78.9 K	31.6 ft	13.5 ft
E4	2'-6"	W18x60	9.00'	25'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.00'	185.00'	176.00'	200.00'	20°	76.5 K	30.6 ft	13.2 ft
E5	2'-6"	W18x60	9.00'	25'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.00'	185.00'	176.00'	200.00'	20°	76.5 K	30.6 ft	13.2 ft
E6	2'-6"	W18x60	9.00'	25'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.00'	185.00'	176.00'	200.00'	20°	76.5 K	30.6 ft	13.2 ft
E7	2'-6"	W18x60	9.00'	25'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	210.00'	185.00'	176.00'	200.00'	20°	76.5 K	30.6 ft	13.2 ft
E8	2'-6"	W18x60	9.00'	20'-6" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	209.50'	189.00'	180.00'	202.50'	20°	55.3 K	22.2 ft	11.4 ft
E9	2'-6"	W18x60	8.00'	16'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	209.00'	193.00'	185.00'	204.00'	20°	41.4 K	16.6 ft	9.2 ft
E10	2'-6"	W18x60	8.00'	15'-6" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	208.50'	193.00'	185.00'	203.50'	20°	38.6 K	15.5 ft	8.8 ft
E11	2'-6"	W18x60	8.00'	13'-0" (1.6:1 RETAINED SLOPE)	TIEBACK	PERMANENT	208.50'	195.50'	184.50'	203.50'	20°	34.8 K	14.0 ft	7.5 ft
E12	2'-6"	W18x76	21.00'	10'-6" (2:1 RETAINED SLOPE)	CANTILEVER	PERMANENT	208.50'	198.00'	177.00'		–		–	–
E13	2'-6"	W18x76	21.00'	10'-6" (2:1 RETAINED SLOPE)	CANTILEVER	PERMANENT	208.50'	198.00'	177.00'		–		–	–
E14	2'-6"	W16x36	16.50'	9'-6" (2:1 RETAINED SLOPE)	CANTILEVER	PERMANENT	207.50'	198.00'	181.50'		–		–	–
N1	2'-0"	W14x30	18.00'	6'-0" (LEVEL)	CANTILEVER	TEMPORARY	204.00'	198.00'	180.00'		–		–	–

NOTE
THE MANNER IN WHICH THE TIEBACK ANCHORS CARRY LOAD WILL DEPEND ON THE TYPE OF ANCHOR SELECTED, THE METHOD OF INSTALLATION, AND THE SOIL CONDITIONS SURROUNDING THE ANCHOR. PER THE GEOTECH REPORT REFERENCED IN CSN#1, THE TIEBACK LOADS NOTED ABOVE AND ANY ADDITIONAL RECOMMENDATIONS AND/OR REPORTS FROM THE GEOTECHNICAL ENGINEER SHALL BE USED BY THE SHORING CONTRACTOR TO SELECT AND INSTALL SUITABLE TIEBACKS. TIEBACK ANCHORS SHALL BE CAPABLE OF SATISFACTORILY ACHIEVING THE ABOVE DESIGN STRUCTURAL LOADS, WITH A PULLOUT RESISTANCE FACOR OF SAFETY OF AT LEAST 2; PERMANENT ANCHORS REQUIRE ADDITIONAL CONSIDERATION AND SHALL BE REVIEWED AND APPROVED BY THE GEOTECHNICAL AND STRUCTURAL ENGINEER.

(△3)(△4)

TIEBACK SOLDIER PILE SHORING WALL SOIL PRESSURE DIAGRAMS

PERMANENT CONDITION PILES E1 - E11



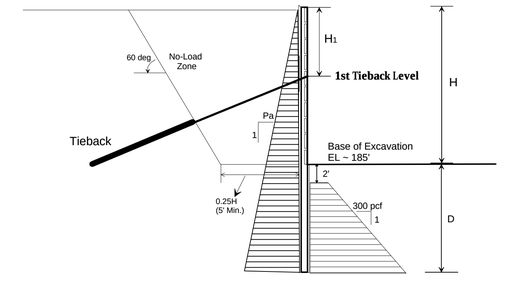
Pa = 49H psf (Level Background)

Earth Pressure Factor for Backslope		
Backslope, X:1	**Earth Pressure Factor (A)**	**Pile Locations**
Level	1	S1 – S7
3H:1V	1.2	
2H:1V	1.4	E12 – E14
1.6H:1V	1.55	E1 – E11

Tiebacks:

Minimum Bond Length: 12 feet
Assume Maximum Allowable Capacity:
2.5 kip / foot

TEMPORRY CONDITION PILES E1 - E11



Pa = 35H psf (Level Background)

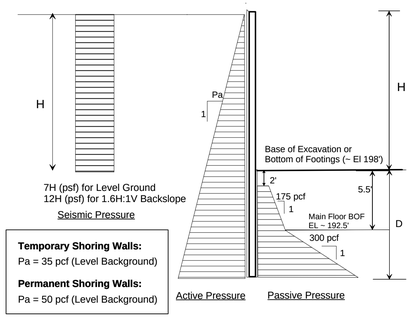
Earth Pressure Factor for Backslope		
Backslope, X:1	**Earth Pressure Factor (A)**	**Pile Locations**
Level	1	S1 – S7
3H:1V	1.2	
2H:1V	1.4	E12 – E14
1.6H:1V	1.55	E1 – E11

Tiebacks:

Minimum Bond Length: 12 feet
Assume Maximum Allowable Capacity:
2.5 kip / foot

CANTILEVERED SOLDIER PILE SHORING WALL SOIL PRESSURE DIAGRAMS

PILES E0, E12 - E14, N1


H
Pa
1
H
Base of Excavation or Bottom of Footings (~ El 198')
2'
175 pcf
1
5.5
Main Floor BOF EL ~ 192.5'
300 pcf
1
D
7H (psf) for Level Ground
12

FOUND IRON PIPE W/CAP
0.04'N OF LINE & 0.32'W
FROM PROP COR

FOUND REBAR/CAP
LS# 20764
0.22'NW OF LINE &
0.19'SW FROM PROP COR

FOUND TACK/LEAD
0.05'S OF LINE
& 0.15'W FROM
PROP COR

SET REBAR/CAP
AT PROP COR

FOUND IRON PIPE W/CAP
0.15'SE OF LINE &
0.14'NW FROM PROP COR

FOUND IRON PIPE
0.49'W OF LINE &
0.08'S FROM PROP COR

FOUND IRON PIPE
0.16'S OF PROP LINE

UTILITY EASEMENT PER
REC. NO. 8412209004

FENCE LINE ±
ALONG PROP LINE

N 88°32'49" W 119.60'

N 01°27'41" E 43.00'

N 29°43'35" E 43.05'

N 60°52'00" W 49.07'

N 07°00'04" E
40.45'

N 89°41'32" E
52.00'

N 88°32'49" W
239.69'

N 01°14'40" E

39.7'

21.8'

6.3'

5.0'

6.1'

ECOBLOCK RETAINING
WALL SET INSIDE
SOUTHERN PROPERTY
LINE TO ACCOMMODATE
GRADE CHANGE

TIEBACKS ARE GRAPHICALLY
PROJECTED ONTO HORIZONTAL
PLANE, MAX TOTAL EXPECTED
TIEBACK LENGTHS
(BONDED+UNBONDED) ARE
NOTED HERE WITH UNBONDED
AND BONDED LENGTHS NOTED
IN SH0.1 PILE SCHEDULE

1
SH1.1
TEMPORARY GRADING AND SHORING PLAN
1/8" = 1'-0"

NORTH

ATLAS CONSULTING STRUCTURAL ENGINEERS

DAVID ABDI
STATE OF WASHINGTON
53159
REGISTERED
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

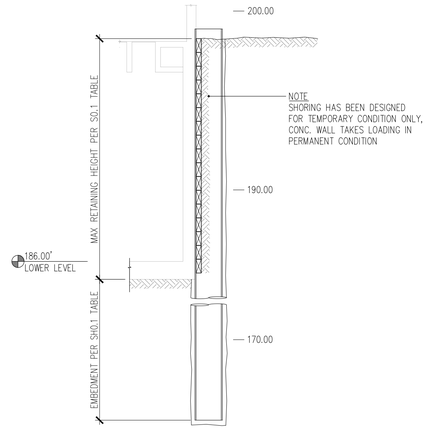
5818 West Mercer
Mercer Island

CONTENTS
Temporary
Grading and
Shoring Plan

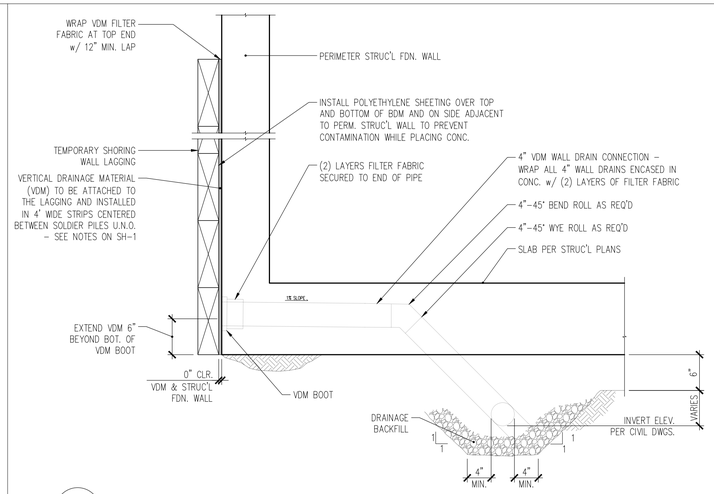
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JDA

DATE
01.03.25
06.09.25
07.25.25 ⚠
09.12.25 ⚠
02.20.26 ⚠

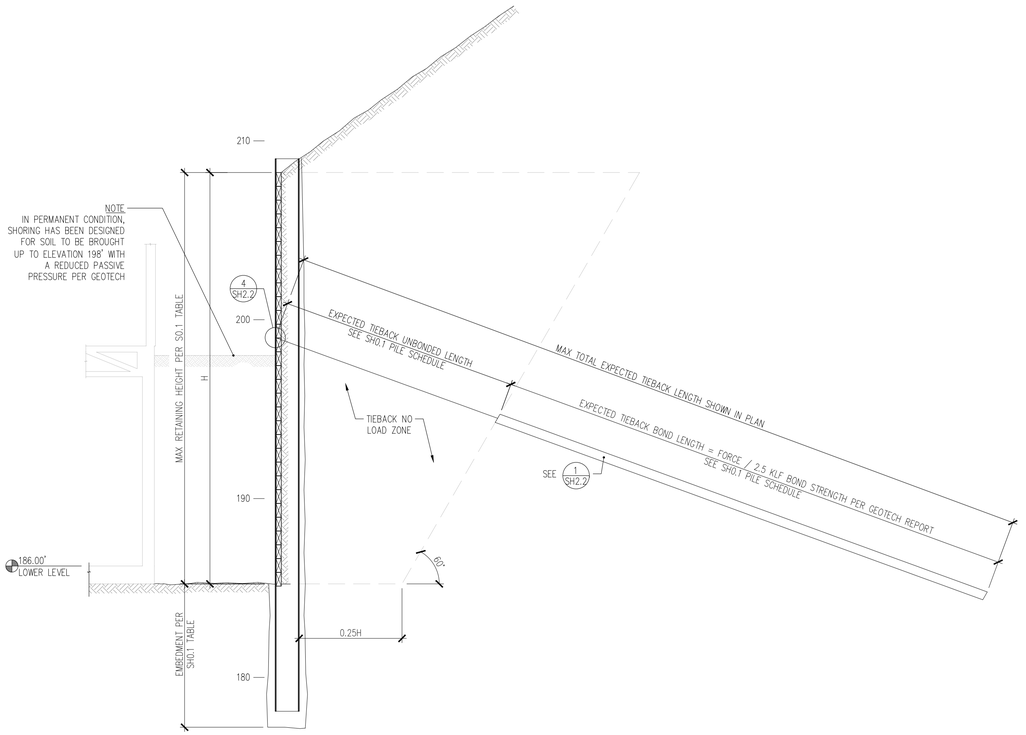
SH1.1 ⚠



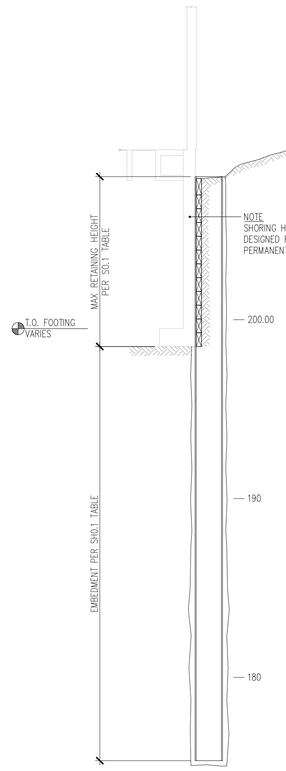
6 SH2.1 CANTILEVERED SOLDIER PILE SECTION (S1 – S7)
1/4" = 1'-0"



3 SH2.1 WALL DRAINAGE DETAIL
NTS

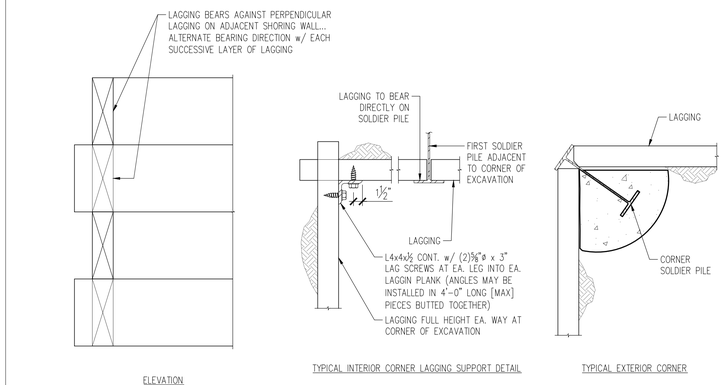


TIEBACK (E1–E10) ⚠2 ⚠3 ⚠4



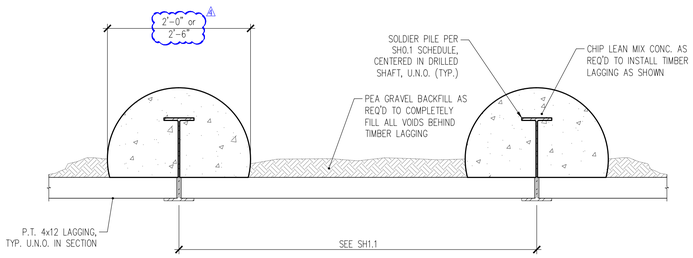
CANTILEVER (E11–E14)

7 SH2.1 TIEBACK SOLDIER PILE SECTION (E1 – E10) AND CANTILEVERED SOLDIER PILE SECTION (E11 – E14))
1/4" = 1'-0"



2 SH2.1 CORNER DETAILS
NTS

NOTE
UNLAGGED EXCAVATION SHALL NOT EXCEED 6 FT. IN HEIGHT NOR REMAIN UNSUPPORTED OVERNIGHT



1 SH2.1 TYPICAL PILE/SHAFT LAGGING DETAIL
NTS

ATLAS CONSULTING STRUCTURAL ENGINEERS
JAVID ABDI STATE OF WASHINGTON 53159 STRUCTURAL ENGINEER PROFESSIONAL ENGINEER

5818 West Mercer
Mercer Island

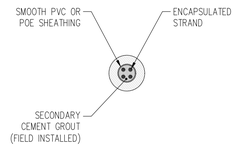
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Shoring Details

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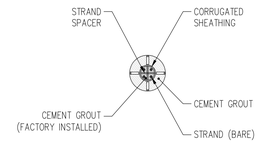
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09.12.25 ⚠4
02.20.26 ⚠4

SH2.1

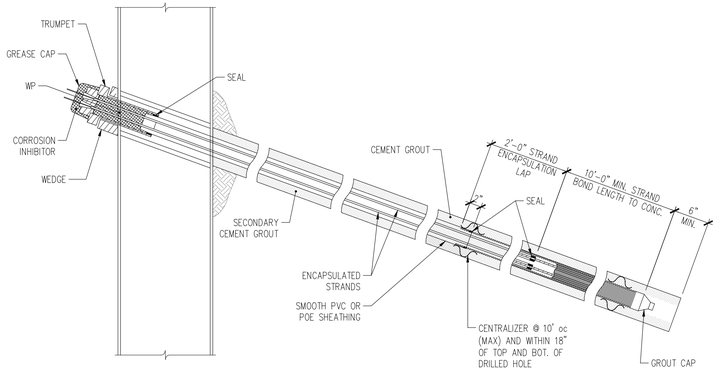
NOTE.
THE MANNER IN WHICH THE TIEBACK ANCHORS CARRY LOAD WILL DEPEND ON THE TYPE OF ANCHOR SELECTED, THE METHOD OF INSTALLATION, AND THE SOIL CONDITIONS SURROUNDING THE ANCHOR. PER THE GEOTECH REPORT REFERENCED IN GSN#11, THE TIEBACK LOADS NOTED ABOVE AND ANY ADDITIONAL RECOMMENDATIONS AND/OR REPORTS FROM THE GEOTECHINCAL ENGINEER SHALL BE USED BY THE SHORING CONTRACTOR TO SELECT AND INSTALL SUITABLE TIEBACKS. TIEBACK ANCHORS SHALL BE CAPABLE OF SATISFACTORILY ACHIEVING THE ABOVE DESIGN STRUCTURAL LOADS, WITH A PULLOUT RESISTANCE FACOR OF SAFETY OF AT LEAST 2. PERMANENT ANCHORS REQUIRE ADDITIONAL CONSIDERATION AND SHALL BE REVIEWED AND APPROVED BY THE GEOTECHNICAL AND STRUCTURAL ENGINEER.



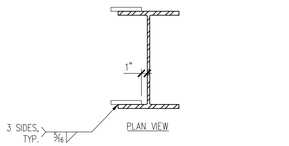
SECTION A–A

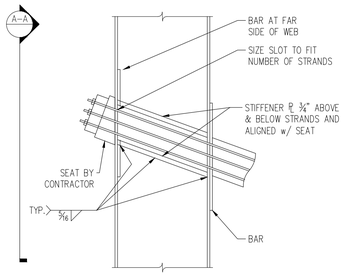


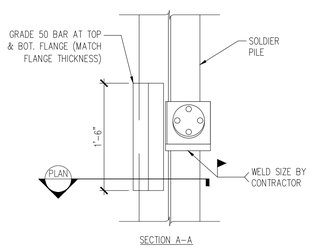
SECTION B–B



1 SH2.2 TYPICAL PERMANENT TIEBACK SECTION
NTS







SECTION A–A

4 SH2.2 TYPICAL TIEBACK ANCHORAGE
NTS

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DAVID ABDI
STATE OF WASHINGTON
53199
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

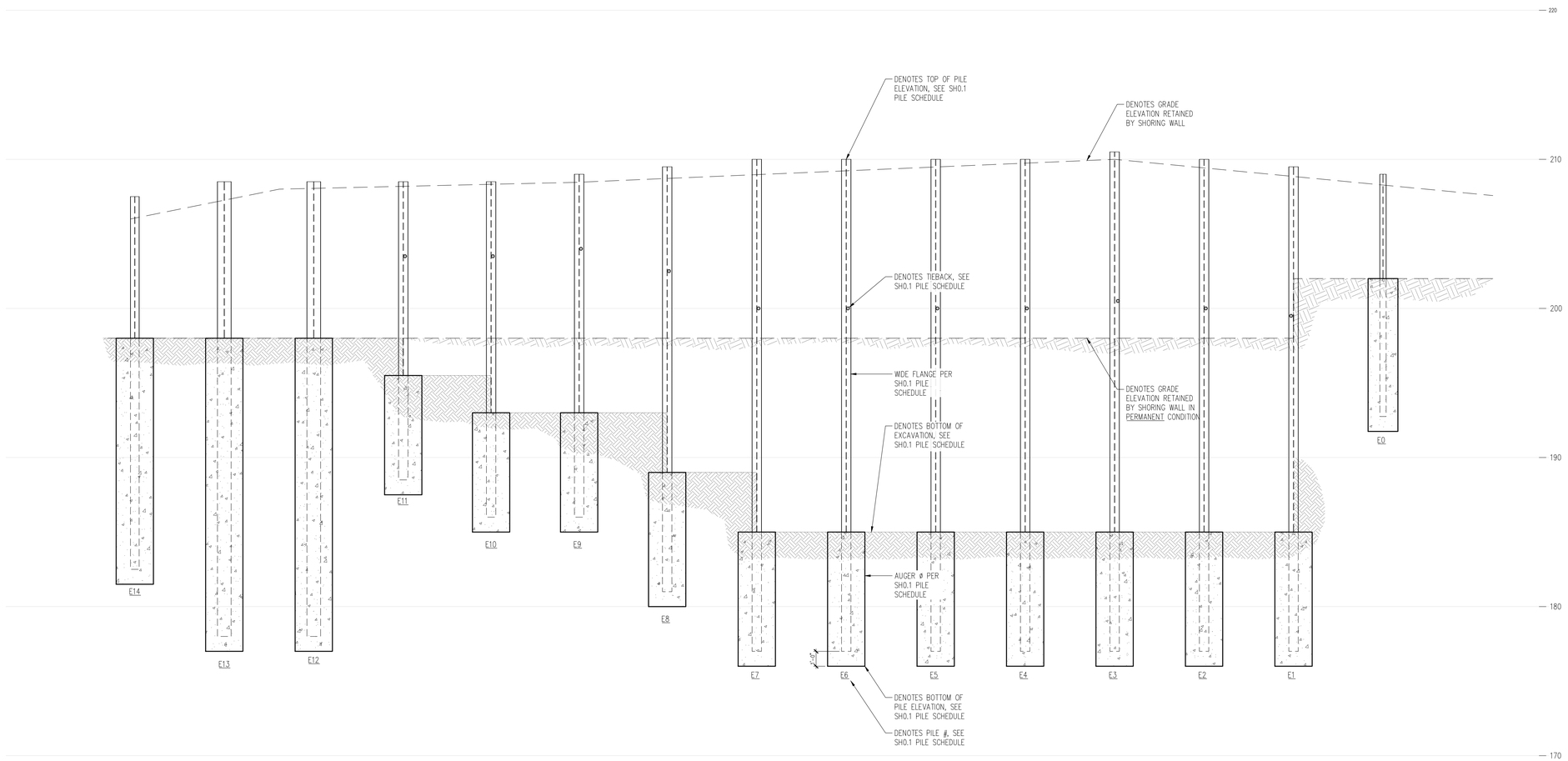
5818 West Mercer
Mercer Island

CONTENTS
Shoring Details

DRAWN BY
JDA

DATE
07.25.25

SH2.2



7 / SH3.1 ELEVATION VIEW OF EAST TIEBACK SOLDIER PILE WALL (E0 – E11) AND CANTILEVERED SOLDIER PILE WALL (E12 – E14))

3/8" = 1'-0"

ATLAS CONSULTING STRUCTURAL ENGINEERS

JAVID ABDI — STATE OF WASHINGTON — 53199 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

5818 West Mercer

Mercer Island

CONTENTS

Shoring Details

DRAWN BY

JDA

DATE

02.20.26 A

SH3.1 A

TREE PROTECTION DETAIL

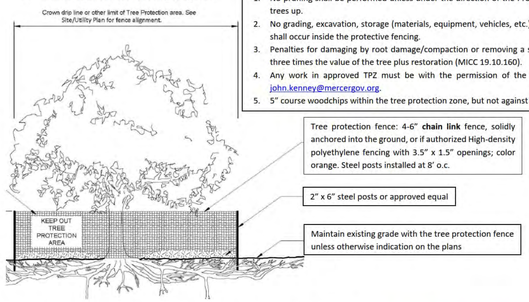
TREE PROTECTION AREA (TPZ)

KEEP OUT!

DO NOT REMOVE OR ADJUST THE APPROVED LOCATION OF THIS TREE PROTECTION AREA

Trees enclosed by this fence are protected and are subject to the conditions of the tree permit. Violation of tree conditions may lead to:

1. Correction Notices or Stop Work Orders until compliance is achieved
2. RE Inspection Fees/financial penalties
3. Arborist reports recommending mitigation



Notes

1. No pruning shall be performed unless under the direction of the Project Arborist. Including limbing trees up.
2. No grading, excavation, storage (materials, equipment, vehicles, etc.), or other unpermitted activity shall occur inside the protective fencing.
3. Penalties for damaging by root damage/compaction or removing a saved tree may be a fine up to three times the value of the tree plus restoration (MICC 19.10.160).
4. Any work in approved TPZ must be with the permission of the City Arborist (206) 275-7713, john.kenney@mercergov.org.
5. 5" course woodchips within the tree protection zone, but not against the tree trunk.

Any Work in the protected area must be with the permission of the City Arborist john.kenney@mercergov.org

EROSION CONTROL LEGEND

LIMITS OF DISTURBANCE		
FILTER FABRIC FENCE (SILT FENCE)	SF	
STABILIZED CONSTRUCTION ENTRANCE	CE	CE
CATCH BASIN INLET PROTECTION	IP	
TREE PROTECTION FENCING ALSO SEE C1.2	TP	
STRAW WATTLES	SW	USE AS NEEDED
PLASTIC COVERING	PC	COVER EXPOSED AREAS WITHIN MERCER ISLAND TIME LIMIT
STOCKPILE	SP	
COMPOST SOCK	CS	SEDIMENT CONTROL OPTION RECOMMENDED IN LIEU OF SILT FENCE
COMPOST BERM	CB	SEDIMENT CONTROL OPTION RECOMMENDED IN LIEU OF SILT FENCE
DUST CONTROL	DC	
MULCHING, MATTING, & COMPOST BLANKETS	MU	

SOIL AMENDMENT REQUIRED

COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL ON C3.5.

ESTIMATED TOPSOIL IMPORT = 45 CY

TREE LEGEND

..... EXCEPTIONAL TREE

WET SEASON RESTRICTION (OCT 1-APRIL 1)

LAND CLEARING, GRADING, FILLING, AND FOUNDATION WORK ARE NOT PERMITTED, BETWEEN OCTOBER 1 AND APRIL 1 WITHIN LANDSLIDE HAZARD AREAS, OR IF MORE THAN 2,000 SQUARE FEET OF DISTURBANCE IS PROPOSED IN AN EROSION HAZARD AREA.

THE BUILDING OFFICIAL MAY DETERMINE THAT ISSUING A BUILDING PERMIT FOR WORK THAT WOULD BE PROHIBITED BY THESE LIMITATIONS IS NOT PRACTICABLE DURING THE REGULATED SEASON OR UNLESS A SEASONAL DEVELOPMENT LIMITATION WAIVER IS ISSUED. (SEE MICC 17.14.010 SECTION 105.3.1)

A WAIVER TO THIS SEASONAL DEVELOPMENT LIMITATION MAY BE GRANTED IF COMPELLING JUSTIFICATION IS DEMONSTRATED AND SUPPORTED BY A GEOTECHNICAL EVALUATION OF THE SITE AND PROPOSED CONSTRUCTION ACTIVITIES.

SOIL INSPECTION REQUIRED BY ENGINEER

A POST CONSTRUCTION INSPECTION & CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER. THIS IS REQUIRED BEFORE FINAL SIGN-OFF BY CITY.

TREE PROTECTION REQUIREMENTS

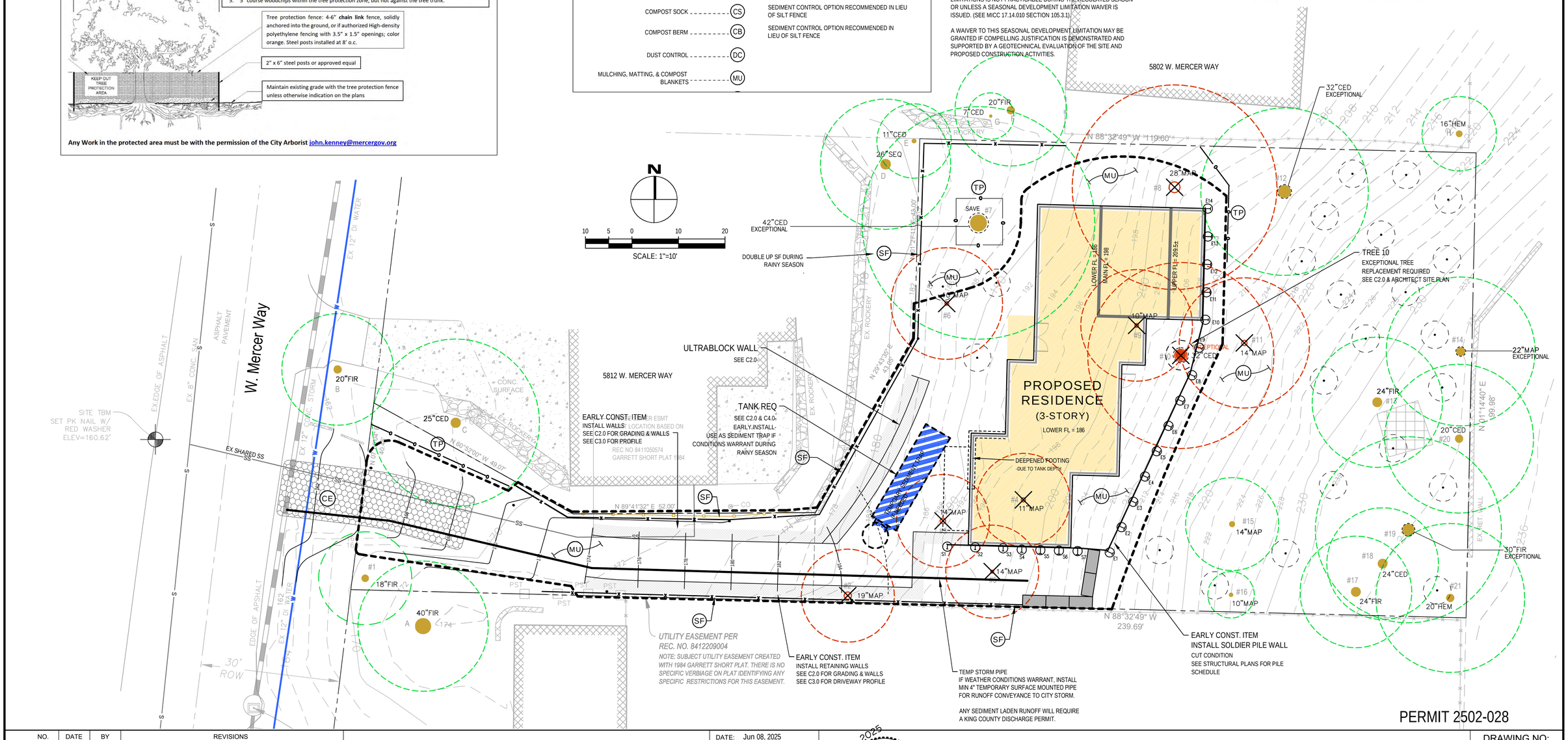
SEE SHEET C1.2 FOR TREE PROTECTION REQUIREMENTS PER REPORT BY SCOTT SHELBY CONSULTING

EROSION HAZARD NOTES: GEOTECHNICAL ENGINEER

Erosion Hazard

The Natural Resources Conservation Services (NRCS) maps for King County indicate that the site is underlain by Alderwood gravelly sandy loam (8 to 15 percent slopes) and Kitsap silt loam (2 to 8 percent slopes). These soils would have a slight to moderate erosion potential in a disturbed state depending on the slope magnitude.

It is our opinion that soil erosion potential at this project site can be reduced through landscaping and surface water runoff control. Typically, erosion of exposed soils will be most noticeable during periods of rainfall and may be controlled by the use of normal temporary erosion control measures, such as silt fences, hay bales, mulching, control ditches and diversion trenches. The typical wet weather season, with regard to site grading, is from October 31st to April 1st. Erosion control measures should be in place before the onset of wet weather.



PERMIT 2502-028

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: Jun 08, 2025
JOB# 2105
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

Jun 08, 2025
JEFFREY E. KING
STATE OF WASHINGTON
39766
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450 SEATTLE, WA 98103
206.930.0342 DUFFY@CESOLUTIONS.US

TESC PLAN

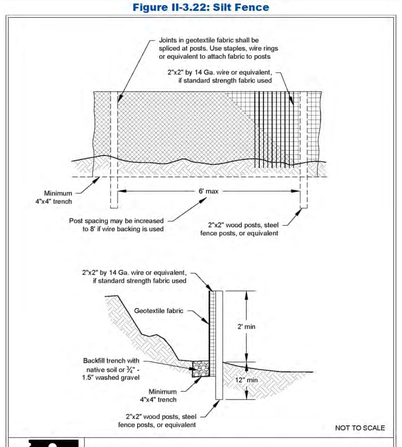
PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C1.0

APN 157470-0170
#2502-28

SILT FENCE DETAIL — DOE

Figure II-3.22: Silt Fence



Silt Fence

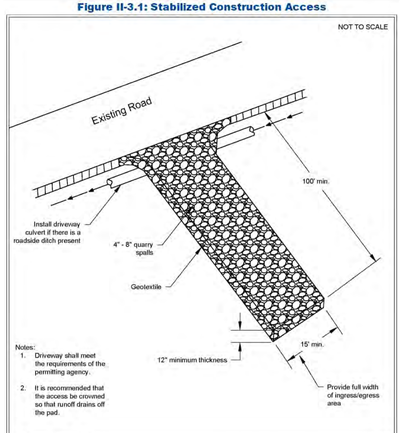
Revised July 2017

DEPARTMENT OF ECOLOGY State of Washington

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CONSTRUCTION ENTRANCE — DOE

Figure II-3.1: Stabilized Construction Access



Stabilized Construction Access

Revised June 2018

DEPARTMENT OF ECOLOGY State of Washington

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RECOMMENDED CONSTRUCTION SEQUENCE

A DETAILED CONSTRUCTION SEQUENCE IS NEEDED TO ENSURE THAT EROSION AND SEDIMENT CONTROL MEASURES ARE APPLIED AT THE APPROPRIATE TIMES. A RECOMMENDED CONSTRUCTION SEQUENCE IS PROVIDED BELOW:

1. HOLD AN ONSITE PRE-CONSTRUCTION MEETING.

2. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR (MAY BE CONSOLIDATED WITH THE REQUIRED NOTICE OF CONSTRUCTION SIGN).

3. FLAG OR FENCE CLEARING LIMITS.

4. INSTALL CATCH BASIN PROTECTION, IF REQUIRED.

5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).

6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC.).

7. CONSTRUCT SEDIMENT PONDS AND TRAPS.

8. GRADE AND STABILIZE CONSTRUCTION ROADS.

9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING FOR PROJECT DEVELOPMENT.

10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF MERCER ISLAND STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

11. RELOCATE SURFACE SURFACE WATER CONTROLS OR TESC MEASURES, OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE TESC IS ALWAYS IN ACCORDANCE WITH CITY OF MERCER ISLAND TESC REQUIREMENTS.

12. COVER ALL AREAS THAT WILL BE UN-WORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON (MAY 1 TO SEPT 30) OR TWO DAYS DURING THE WET SEASON (OCT 1 TO APRIL 30) WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.

13. STABILIZE ALL AREAS WITHIN SEVEN DAYS OF REACHING FINAL GRADE.

14. SEED, SOD, STABILIZE, OR COVER ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.

15. UPON COMPLETION OF THE PROJECT, STABILIZE ALL DISTURBED AREAS AND REMOVE BMPS IF APPROPRIATE.

DENUDED AREAS REQUIREMENTS

APRIL 1 TO SEPT 30
ALL DENUDED AREAS MUST BE STABILIZED WITHIN 7 DAYS OF CONSTRUCTION. PLEASE READ ALL CITY TESC NOTES ON SHEET C1.2.

OCT 1 TO MARCH 31
ALL DENUDED AREAS MUST BE STABILIZED WITHIN 2 DAYS OF GRADING. IF AN EROSION PROBLEM ALREADY EXISTS ON THE SITE, OTHER COVER PROTECTION AND EROSION CONTROL WILL BE REQUIRED.

ARBORIST TREE PROTECTION REQUIREMENTS

Tree Protection Specifications — SCOTT SHELBY CONSULTING

The following is a list of protection measures that must be employed before, during and after construction to ensure the long-term viability of retained trees.

1. Project Arborist: The project arborists shall at a minimum have an International Society of Arboriculture (ISA) Certification and ISA Tree Risk Assessment Qualification.

2. Tree Protection Zone (TPZ): In some cases, the TPZ may extend outside tree protection fencing. Work within the TPZ must be approved and monitored by the project arborist.

3. Tree Protection Fencing: Tree protection shall consist of 6-foot chain-link fencing installed at the TPZ as approved by the project arborist. Fence posts shall be anchored into the ground or bolted to existing hardscape surfaces.

a) Where trees are being retained as a group, the fencing shall encompass the entire area including all landscape beds or lawn areas associated with the grove.
b) Per arborist approval, TPZ fencing may be placed at the edge of existing hardscape within the TPZ to allow for staging and traffic.
c) Where work is planned within the TPZ, install fencing at edge of TPZ and move to limits of disturbance at the time that the work within the TPZ is planned to occur. This ensures that work within the TPZ is completed to specification.
d) Where trees are protected at the edge of the project boundary, construction limits fencing shall be incorporated as the boundary of tree protection fencing.

4. Access Beyond Tree Protection Fencing: In areas where work such as installation of utilities is required within the TPZ, a locking gate will be installed in the fencing to facilitate access. The project manager or project arborist shall be present when tree protection areas are accessed.

5. Tree Protection Signage: Tree protection signage shall be affixed to fencing every 20 feet. Signage shall be fluorescent, at least 2' x 2' in size, with 3" tall text. Signage will note: "Tree Protection Area - Do Not Enter: Entry into the tree protection area is prohibited unless authorized by the project manager." Signage shall include the contact information for the project manager and instructions for gaining access to the area.

6. Filter / Silt Fencing: Filter / silt fencing within the TPZ of retained trees shall be installed in a manner that does not sever roots. Install so that filter / silt fencing sits on the ground and is weighted in place by sandbags or gravel. Do not trench to insert filter / silt fencing into the ground.

7. Monitoring: The project arborist shall monitor all ground disturbance at the edge of or within the TPZ, including where the TPZ extends beyond the tree protection fencing.

8. Soil Protection: No parking, foot traffic, materials storage, or dumping (including excavated soils) are allowed within the TPZ. Heavy machinery shall remain outside of the TPZ. Access to the tree protection area will be granted under the supervision of the project arborist. If project arborist allows, heavy machinery can enter the area if soils are protected from the load. Acceptable methods of soil protection include applying 3/4-inch plywood over 4 to 6 inches of wood chip mulch or use of AlturnaMats. (or equivalent product approved by the project arborist). Retain existing paved surfaces within or at the edge of the TPZ for as long as possible.

9. Soil Remediation: Soil compacted within the TPZ of retained trees shall be remediated using pneumatic air excavation according to a specification produced by the project arborist.

10. Canopy Protection: Where fencing is installed at the limits of disturbance within the TPZ, canopy management (pruning or tying back) shall be conducted to ensure that vehicular traffic does not damage canopy parts. Exhaust from machinery shall be located five feet outside the dripline of retained trees. No exhaust shall come in contact with foliage for prolonged periods of time.

EROSION CONTROL NOTES

D.8.2 STANDARD ESC PLAN NOTES
THE STANDARD ESC PLAN NOTES MUST BE INCLUDED ON ALL ESC PLANS. AT THE APPLICANT'S DISCRETION, NOTES THAT IN NO WAY APPLY TO THE PROJECT MAY BE OMITTED; HOWEVER, THE REMAINING NOTES MUST NOT BE RENUMBERED. FOR EXAMPLE, IF ESC NOTE #3 WERE OMITTED, THE REMAINING NOTES SHOULD BE NUMBERED 1, 2, 4, 5, 6, ETC.

1. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).

2. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND
UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.

3. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED BY SURVEY TAPE OR FENCING, IF REQUIRED, PRIOR TO CONSTRUCTION (SWDM APPENDIX D). DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE CLEARING LIMITS SHALL BE PERMITTED. THE CLEARING LIMITS SHALL BE MAINTAINED BY THE APPLICANT/ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.

4. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES, SUCH AS CONSTRUCTED WHEEL WASH SYSTEMS OR WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN AND TRACK OUT TO ROAD RIGHT OF WAY DOES NOT OCCUR FOR THE DURATION OF THE PROJECT.

5. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO SURFACE WATERS, DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.

6. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G. ADDITIONAL COVER MEASURES, ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, PERIMETER PROTECTION ETC.) AS DIRECTED BY CITY OF MERCER ISLAND.

7. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE KEPT OF WEEKLY REVIEWS OF THE ESC FACILITIES.

8. ANY AREAS OF EXPOSED SOILS, INCLUDING ROADWAY EMBANKMENTS, THAT WILL NOT BE DISTURBED FOR TWO CONSECUTIVE DAYS DURING THE WET SEASON OR SEVEN DAYS DURING THE DRY SEASON SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).

9. ANY AREA NEEDING ESC MEASURES THAT DO NOT REQUIRE IMMEDIATE ATTENTION SHALL BE ADDRESSED WITHIN SEVEN (7) DAYS.

10. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH DURING THE DRY SEASON, BI-MONTHLY DURING THE WET SEASON, OR WITHIN TWENTY FOUR (24) HOURS FOLLOWING A STORM EVENT.

11. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT-LADEN WATER INTO THE DOWNSTREAM SYSTEM.

12. ANY PERMANENT RETENTION/DETENTION FACILITY USED AS A TEMPORARY SETTLING BASIN SHALL BE MODIFIED WITH THE NECESSARY EROSION CONTROL MEASURES AND SHALL PROVIDE ADEQUATE STORAGE CAPACITY. IF THE FACILITY IS TO FUNCTION ULTIMATELY AS AN INFILTRATION SYSTEM, THE TEMPORARY FACILITY MUST BE ROUGH GRADED SO THAT THE BOTTOM AND SIDES ARE AT LEAST THREE FEET ABOVE THE FINAL GRADE OF THE PERMANENT FACILITY.

13. COVER MEASURES WILL BE APPLIED IN CONFORMANCE WITH APPENDIX D OF THE SURFACE WATER DESIGN MANUAL

14. PRIOR TO THE BEGINNING OF THE WET SEASON (OCT. 1), ALL DISTURBED AREAS SHALL BE REVIEWED TO IDENTIFY WHICH ONES CAN BE SEEDED IN PREPARATION FOR THE WINTER RAINS. DISTURBED AREAS SHALL BE SEEDED WITHIN ONE WEEK OF THE BEGINNING OF THE WET SEASON.

A EROSION CONTROL NOTES: COBALT GEO

Erosion and sediment control (ESC) is used to reduce the transportation of eroded sediment to wetlands, streams, lakes, drainage systems, and adjacent properties. Erosion and sediment control measures should be implemented, and these measures should be in general accordance with local regulations. At a minimum, the following basic recommendations should be incorporated into the design of the erosion and sediment control features for the site:

1. Schedule the soil, foundation, utility, and other work requiring excavation or the disturbance of the site soils, to take place during the dry season (generally May through September). However, provided precautions are taken using Best Management Practices (BMP's), grading activities can be completed during the wet season (generally October through April).

2. All site work should be completed and stabilized as quickly as possible.

3. Additional perimeter erosion and sediment control features may be required to reduce the possibility of sediment entering the surface water. This may include additional silt fences, silt fences with a higher Apparent Opening Size (AOS), construction of a berm, or other filtration systems.

4. Any runoff generated by dewatering discharge should be treated through construction of a sediment trap if there is sufficient space. If space is limited other filtration methods will need to be incorporated.

CITY NOTES

1. ANY CHANGES TO THE APPROVED PLANS REQUIRES CITY APPROVAL THROUGH A REVISION.
2. APPLICANT IS RESPONSIBLE FOR ANY DAMAGES TO UNDERGROUND UTILITIES CAUSED FROM THIS CONSTRUCTION.
3. CATCH BASIN FILTERS SHOULD BE PROVIDED FOR ALL STORM DRAIN CATCH BASINS/INLETS DOWNSLOPE AND WITHIN 500 FEET OF THE CONSTRUCTION AREA. CATCH BASIN FILTERS SHOULD BE DESIGNED BY THE MANUFACTURER FOR USE AT CONSTRUCTION SITES AND APPROVED BY THE CITY INSPECTOR. CATCH BASIN FILTERS SHOULD BE INSPECTED FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. IF THE FILTER BECOMES CLOGGED, IT SHOULD BE CLEANED OR REPLACED.
4. CONTRACTORS SHALL VERIFY LOCATIONS AND DEPTHS OF UTILITES.
5. AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, CALL "ONE CALL" AT 1.800.424.5555
6. DO NOT BACKFILL WITH NATIVE MATERIAL ON PUBLIC RIGHT-OF-WAY. ALL MATERIAL MUST BE IMPORTED
7. EROSION CONTROL: ALL "LAND DISTURBING ACTIVITY" IS SUBJECT TO PROVISIONS OF MERCER ISLAND ORDINANCE 95C-118 "STORM WATER MANAGEMENT." SPECIFIC ITEMS TO BE FOLLOWED AT YOUR SITE:
8. PROTECT ADJACENT PROPERTIES FROM ANY INCREASED RUNOFF OR SEDIMENTATION DUE TO THE CONSTRUCTION PROJECT THROUGH THE USE OF APPROPRIATE "BEST MANAGEMENT PRACTICES" (BMP) EXAMPLES INCLUDE, BUT ARE NOT LIMITED TO, SEDIMENT TRAPS, SEDIMENT PONDS, FILTER FABRIC FENCES, VEGETATIVE BUFFER STRIPS OR BIOENGINEERED SWALES.
9. CONSTRUCTION ACCESS TO THE SITE SHOULD BE LIMITED TO ONE ROUTE. STABILIZE ENTRANCE WITH QUARRY SPALLS TO PREVENT SEDIMENT FROM LEAVING THE SITE OR ENTERING THE STORM DRAINS.
10. PREVENT SEDIMENT, CONSTRUCTION DEBRIS, PAINTS, SOLVENTS, ETC., OR OTHER TYPES OF POLLUTION FROM ENTERING PUBLIC STORM DRAINS. KEEP ALL POLLUTION ON YOUR SITE.
11. ALL EXPOSED SOILS SHALL REMAIN DENUDED FOR NO LONGER THAN SEVEN (7) DAYS AND SHALL BE STABILIZED WITH MULCH, HAY, OR THE APPROPRIATE GROUND COVER. ALL EXPOSED SOILS SHALL BE COVERED IMMEDIATELY DURING ANY RAIN EVENT.
12. INSTALLATION OF CONCRETE DRIVEWAYS, TREES, SHRUBS, IRRIGATION, BOULDERS, BERMS, WALLS, GATES, AND OTHER IMPROVEMENTS ARE NOT ALLOWED IN THE PUBLIC RIGHT-OF-WAY WITHOUT PRIOR APPROVAL, AND AN ENCROACHMENT AGREEMENT AND RIGHT OF WAY PERMIT FROM THE SENIOR DEVELOPMENT ENGINEER.
13. OWNER SHALL CONTROL DISCHARGE OF SURFACE DRAINAGE RUNOFF FROM EXISTING AND NEW IMPERVIOUS AREAS IN A RESPONSIBLE MANNER. CONSTRUCTION OF NEW GUTTERS AND DOWNSPOUTS, DRY WELLS, LEVEL SPREADERS OR DOWNSTREAM CONVEYANCE PIPE MAY BE NECESSARY TO MINIMIZE DRAINAGE IMPACT TO YOUR NEIGHBORS. CONSTRUCTION OF MINIMUM DRAINAGE IMPROVEMENTS SHOWN OR CALLED OUT ON THIS PLAN DOES NOT IMPLY RELIEF FROM CIVIL LIABILITY FOR YOUR DOWNSTREAM DRAINAGE.
14. POT HOLING THE PUBLIC UTILITIES IS REQUIRED PRIOR TO ANY GRADING ACTIVITIES LESS THAN 6" OVER THE PUBLIC MAINS (WATER, SEWER AND STORM SYSTEMS). IF THERE IS A CONFLICT, THE APPLICANT IS REQUIRED TO SUBMIT A REVISION FOR APPROVAL PRIOR TO ANY GRADING ACTIVITIES OVER THE PUBLIC MAINS.
15. REMEMBER: EROSION CONTROL IS YOUR FIRST INSPECTION.
16. ROOF DRAINS MUST BE CONNECTED TO THE STORM DRAIN SYSTEM AND INSPECTED BY THE PUBLIC WORKS DEPARTMENT PRIOR TO ANY BACKFILLING OF PIPE.
17. SILENT FENCE: CLEAN AND PROVIDE REGULAR MAINTENANCE OF THE SILT FENCE. THE FENCE IS TO REMAIN VERTICAL AND IS TO FUNCTION PROPERLY THROUGHOUT THE TERM OF THE PROJECT.
18. WORK IN PUBLIC RIGHT OF WAY REQUIRES A RIGHT-OF-WAY USE PERMIT.
19. REFER TO WATER SERVICE PERMIT FOR ACTUAL LOCATION OF NEW WATER METER AND SERVICE LINE DETERMINED BY MERCER ISLAND WATER DEPARTMENT.
16. THE TV INSPECTION OF THE EXISTING SIDE SEWER TO THE CITY SEWER MAIN IS REQUIRED. IF THE RESULT OF THE TV INSPECTION IS NOT IN SATISFACTORY CONDITION, AS DETERMINED BY THE CITY OF MERCER ISLAND INSPECTOR, THE REPLACEMENT OF THE EXISTING SIDE SEWER IS REQUIRED. ALTERNATELY, A PRESSURE TEST OF THE SIDE SEWER, FROM SEWER MAIN TO POINT OF CONNECTION, MAY BE SUBSTITUTED FOR THE VIDEO INSPECTION.
20. NEWLY INSTALLED SIDE SEWER REQUIRES A 4 P.S.I. AIR TEST OR PROVIDE 10' OF HYDROSTATIC HEAD TEST.
21. POT HOLING THE PUBLIC UTILITIES IS REQUIRED PRIOR TO ANY GRADING ACTIVITIES LESS THAN 6" OVER THE PUBLIC MAINS (WATER, SEWER AND STORM SYSTEMS). IF THERE IS A CONFLICT, THE APPLICANT IS REQUIRED TO SUBMIT A REVISION FOR APPROVAL PRIOR TO ANY GRADING ACTIVITIES OVER THE PUBLIC MAINS.
22. THE LIMITS AND EXTENDS OF THE PAVEMENT IN THE PUBLIC RIGHT OF WAY SHALL BE DETERMINED BY THE CITY ENGINEER PRIOR TO FINALIZE THE PROJECT.

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: May 22, 2025
JOB# 2105
DRAFTED: SS DESIGN: DE
DIGITAL SIGNATURE

May 22, 2025 — JEFFREY B. KLEIN — STATE OF WASHINGTON — 39795 — REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450 SEATTLE, WA 98103
206.930.0342 DUFFY@CESOLUTIONS.US

TESC & CITY NOTES
TESC DETAILS

PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO: C1.2

APN 157470-0170

SANITARY SEWER IMPROVEMENTS

1. -
2. -4 OR 6" SDR 35 PVC SANITARY SEWER(SS) @ MIN 1.0 %.
3. -
4. -
7. -

WATER IMPROVEMENTS

10. -1.5" WATER METER WITH 1.5" WATER SERVICE FROM MAIN TO METER REQUIRED PER STANDARD DETAIL W-13. 13R SPRINKLER SYSTEM REQ.
11. -(FIRE SPRINKLERS REQUIRED).....2.0" WATER SUPPLY REQUIRED FROM METER TO HOUSE. SPEC: 250 PSI PRIVATE HDPE (ASTM D2239) . RECOMMENDED DEPTH=36".
12. -
14. -

STORM DRAIN

20. -4" STORM DRAIN (3034 PVC) @ MIN 2 % GRADE
21. -4" FOUNDATION DRAIN (3034 PVC) @ MIN 2 % GRADE
22. -6" STORM DRAIN (3034 PVC) @ MIN 2 % GRADE
23. -
24. -
25. -
26. -
28. -
29. -

STORM DRAIN STRUCTURES

30. -
31. -TYPE 1 CB WITH VANED LID. MAX 5' RIM TO FL DEPTH. PROVIDE RISOR WITH TURNED-DOWN ELBOW IN DRIVEWAY.
32. -
33. -
34. -
35. -
36. -6" WIDE NDS DURASLOPE CHANNEL DRAIN OR EQUAL. CLASS B VEHICLE RATED GRATE.
36A. -
38. -PATIO AREA DRAIN: MIN 8" DIAMETER PEDESTRIAN GRATE
39. -
40. -PRIVATE TYPE 40 CATCH BASIN OR EQUAL. INCLUDE OIL TEE (OR INVERTED ELBOW) IN DRIVEWAY LOCATIONS.
41. -54" ID TYPE 2 MH CONTROL STRUCTURE WITH SOLID LID. SEE ALL DETAILS AND PROFILE C4.0.
43. -
46. -
47. -72" DETENTION PIPE: ALUMINIZED CMP OR EQUAL. CONTACT CONTECH FOR FABRICATION OF TANK. FORWARD FABRICATION PLANS TO ENGINEER FOR REVIEW. SEE PLAN FOR SIZE AND CONFIGURATION. SEE PROFILE, NOTES, AND DETAILS ON C4.0.

-

STREET IMPROVEMENTS

71. -PAVEMENT RESTORATION - COORDINATE SCOPE OF PAVEMENT RESTORATION WITH CITY INSPECTOR

STORM BMP's

50. -COMPOST AMENDED SOIL TO ALL DISTURBED AREAS (SEE DETAIL SHEET C3.5). TILL 2-3" OF COMPOST INTO UPPER 8" OF SOIL. LOOSEN COMPACTED SUBSOIL, IF NEEDED BY RIPPING TO 12" DEPTH. MULCH LANDSCAPE BEDS AFTER PLANTING.
51. -
52. -
53. -
54. -
55. -
56. -
57. -
58. -

SOILS

SOILS REPORT SUMMARY

Infiltration recommendation?	**No**: sloped site is within an infiltration infeasibility area
Project	Artoush Residence
Depth of Boring	16.5'
Soil profile	Weathered Outwash over Lawton Clay
Density=	medium dense to very stiff
Soil classification:	SM over SM/ML
Date of digging:	October 29, 2024
Geotech consultant:	Phil Haberman, PE, LG, LEG, Cobalt Geosciences

SURVEYOR

TOPOGRAPHIC SURVEY BY:
TERRANE
11235 SE 6th STREET, SUITE 130
BELLEVUE, WA 98004
PHONE 425-458-4488
info@terrane.net

VERTICAL DATUM

NAVD 88 PER GPS OBSERVATIONS
SEE SURVEY

LEGAL DESCRIPTION

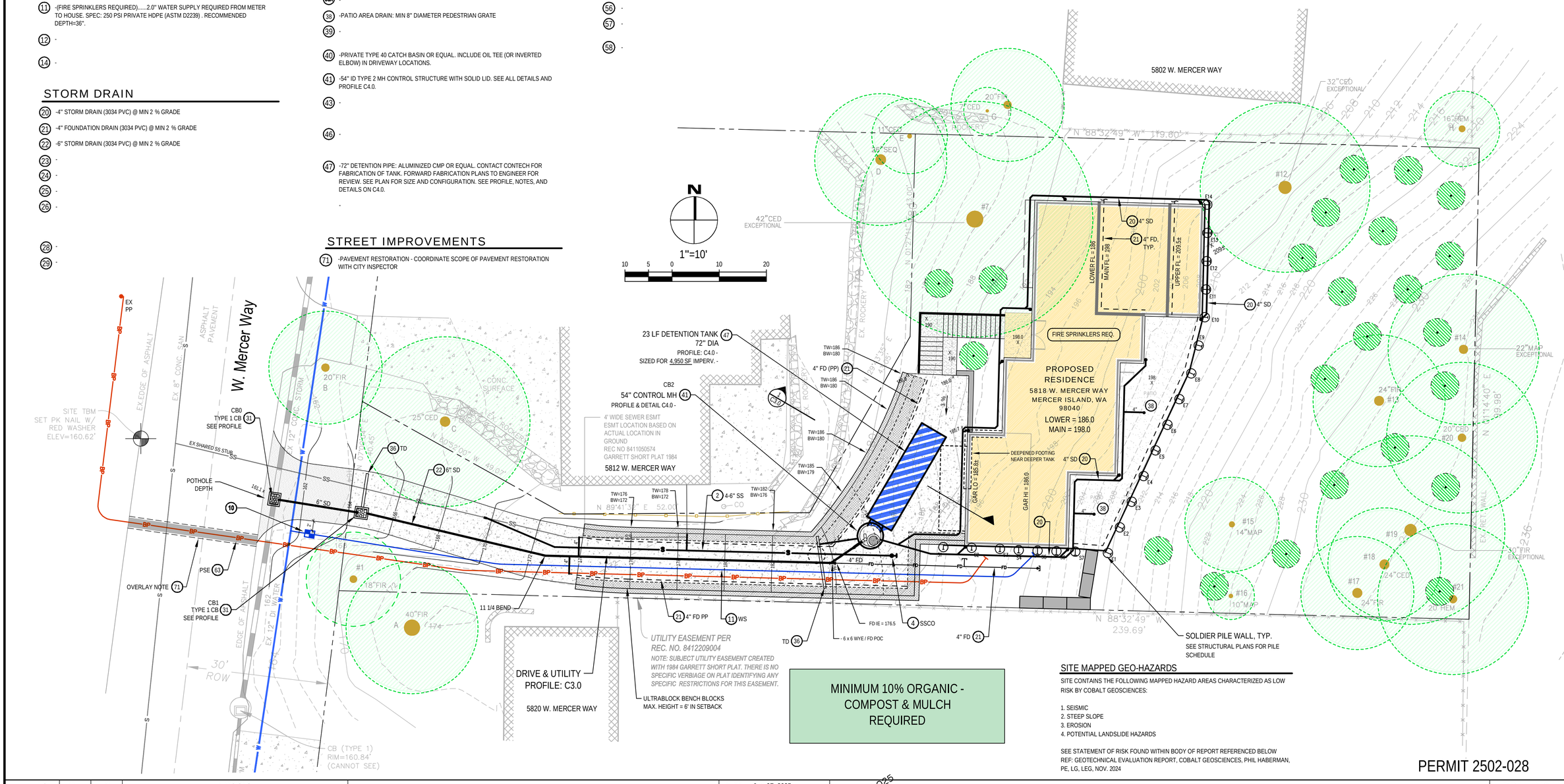
SEE C1.0

SOIL AMENDMENT REQUIRED

COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL ON C3.5.

SOIL INSPECTION REQUIRED BY ENGINEER

A POST CONSTRUCTION INSPECTION & CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER. THIS IS REQUIRED BEFORE FINAL PERMITSIGN-OFF AND CERTIFICATE OF OCCUPANCY.



SITE MAPPED GEO-HAZARDS

SITE CONTAINS THE FOLLOWING MAPPED HAZARD AREAS CHARACTERIZED AS LOW RISK BY COBALT GEOSCIENCES:

1. SEISMIC
2. STEEP SLOPE
3. EROSION
4. POTENTIAL LANDSLIDE HAZARDS

SEE STATEMENT OF RISK FOUND WITHIN BODY OF REPORT REFERENCED BELOW
REF: GEOTECHNICAL EVALUATION REPORT, COBALT GEOSCIENCES, PHIL HABERMAN, PE, LG, LEG, NOV. 2024

PERMIT 2502-028

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: Jun 07, 2025
JOB# 2105
DRAFTED: DE DESIGN: DE
DIGITAL SIGNATURE

Jun 07, 2025
JEFFREY E. RANUM
STATE OF WASHINGTON
39766
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450
206.930.0342
SEATTLE, WA 98103
DUFFY@CESOLUTIONS.US

DRAINAGE / CIVIL PLAN

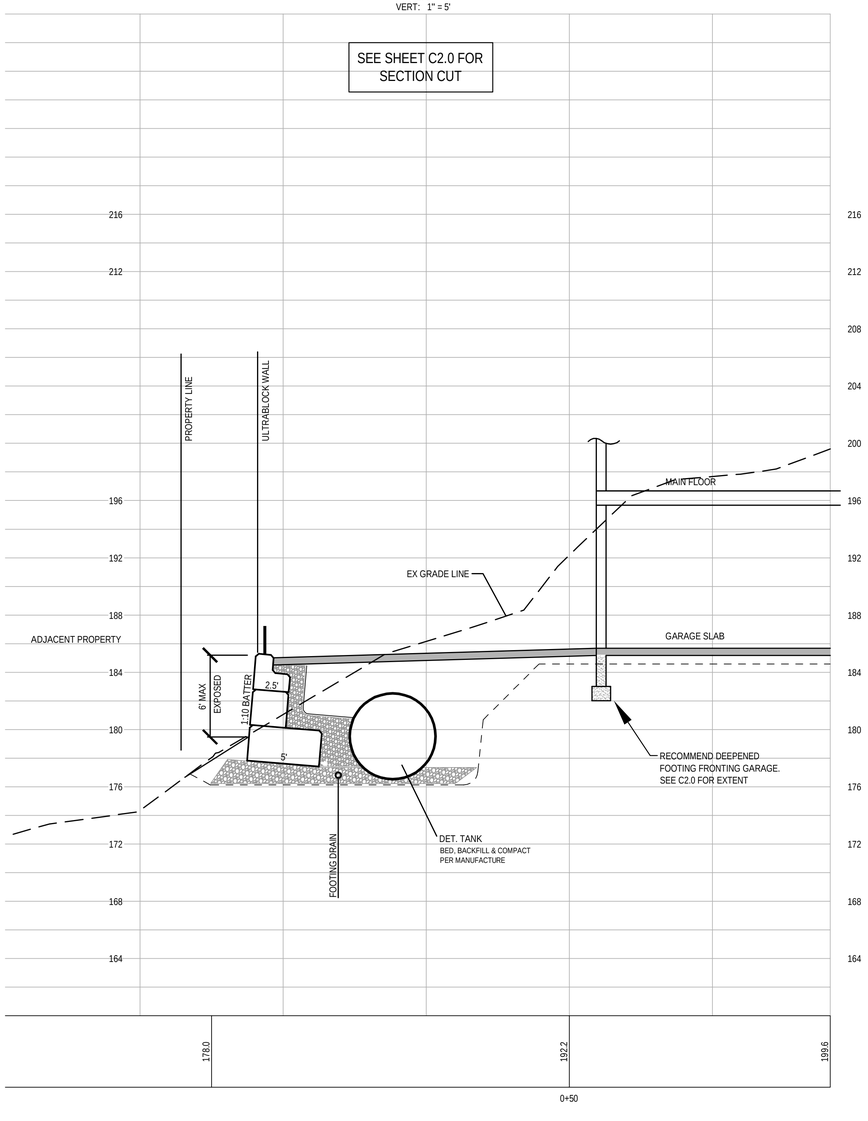
PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C2.0

APN 157470-0170
#2502-28

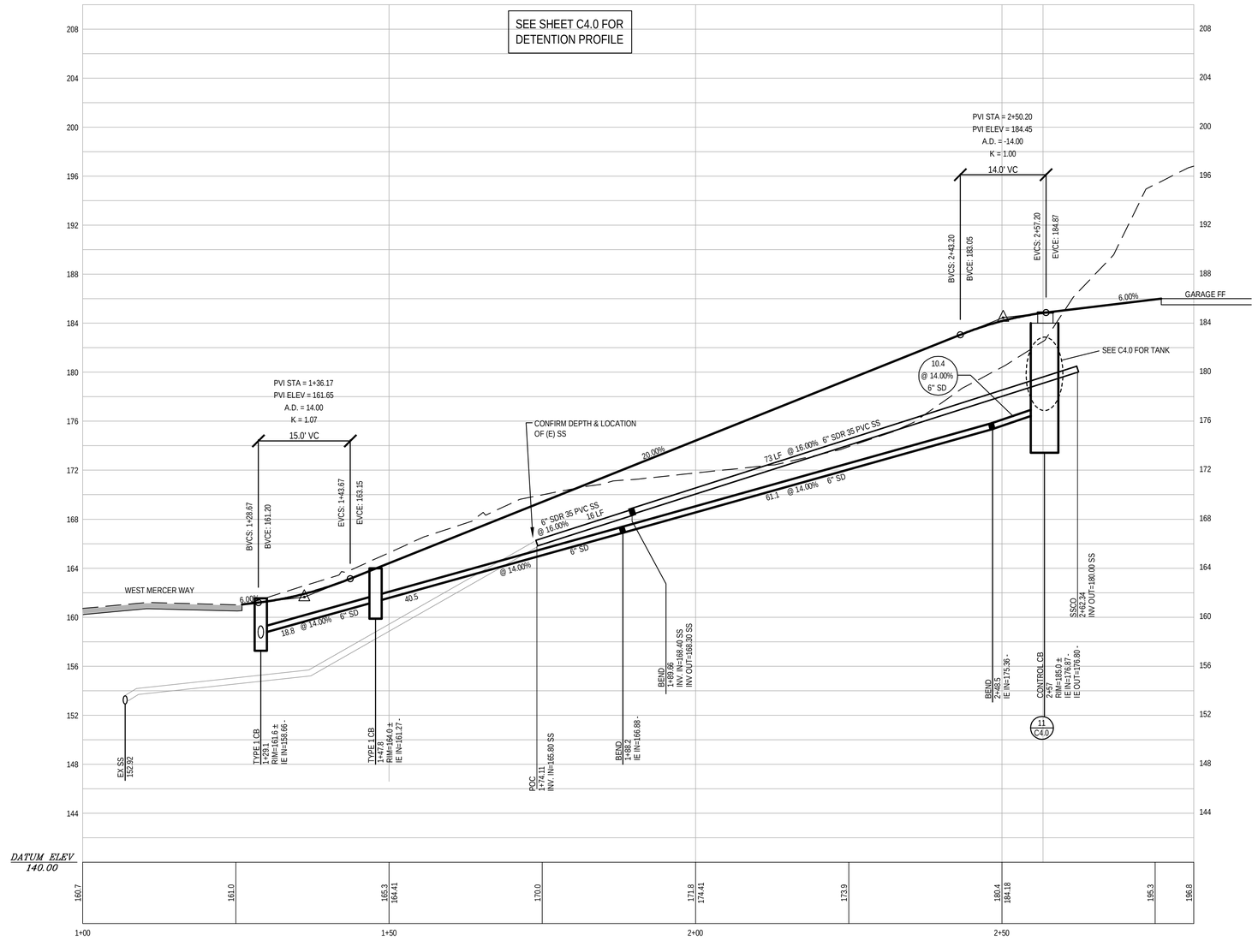
1 ULTRABLOCK WALL SECTION 1

SCALE:
HORIZ: 1" = 5'
VERT: 1" = 5'



2 DRIVEWAY PROFILE

SCALE:
HORIZ: 1" = 10'
VERT: 1" = 5'



PERMIT 2502-028

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: Jun 07, 2025
JOB# 2105
DRAFTED: DE DESIGN: DE
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Jun 07, 2025
JEFFREY E. DUFFY
STATE OF WASHINGTON
39706
REGISTERED
PROFESSIONAL ENGINEER

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701 N 36th STREET, SUITE 450
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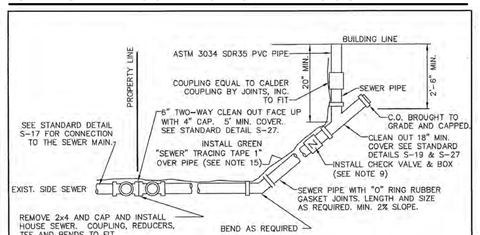
PROFILES & SECTIONS

PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C3.0

APN 157470-0170
#2502-28

SIDE SEWER CONNECTION AT HOUSE



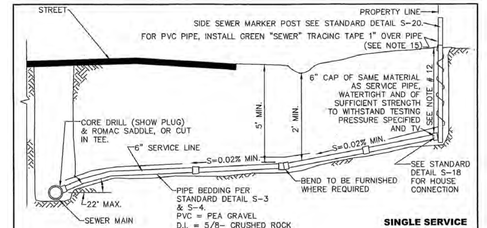
BUILDING CONNECTION

NOTES

1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. ALL HOUSE PLUMBING OUTLETS MUST BE CONNECTED TO THE SEWER: NO DOWN SPOUTS OR STORM DRAINAGE MAY BE CONNECTED TO THE SEWER SYSTEM.
4. 18" MINIMUM COVERAGE OVER PIPE.
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH ⅛ BEND OR WYE. 90° CHANGE WITH 1/8 BEND AND WYE.
6. 4" SEWER PIPE MINIMUM SIZE ON PROPERTY. 2% MINIMUM GRADE.
7. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT SEWER ORDINANCES.
8. ALL CONSTRUCTION REQUIRES A PLAN SHOWING PROPERTY AND DIMENSIONS AND COMPLETION OF SIDE SEWER APPLICATION AND MAINTENANCE AGREEMENT, AS NEEDED.
9. BACK WATER VALVE (CHECK VALVE) IS REQUIRED:
   A. IF CONNECTED TO A SHARED SIDE SEWER.
   B. IF CONNECTION AT HOUSE IS LOWER THAN BOTH UPSTREAM AND DOWNSTREAM MANHOLE.
   C. SEE S-23 & S-24 FOR LAKE LINE REQUIREMENTS.
10. AS-BUILT DRAWING SHOWING LOCATION OF SIDE SEWER & ALL BENDS, C.O. ETC., IN RELATION TO THE HOUSE IS REQUIRED AFTER INSPECTION & INSTALLATION. SEE STANDARD DETAIL S-38 FOR A TYPICAL "AS BUILT".
11. THE MINIMUM PIPE SIZE FOR SIDE SEWERS SHALL BE:
    6" – WITHIN THE PUBLIC RIGHT-OF-WAY.
    4" – SINGLE FAMILY RESIDENCES.
    6" – 2 TO 6 SINGLE FAMILY RESIDENCES.
    6" – BUILDINGS OTHER THAN SINGLE FAMILY RESIDENCES.
12. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.

CITY OF MERCER ISLAND		
STANDARD DETAILS		
SEWER		
HOUSE SEWER CONNECTION		
6-5-2009	NO SCALE	**S-18**
REV DATE		APPROVED

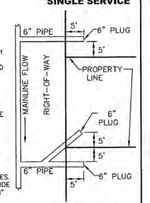
SIDE SEWER STUB



SINGLE SERVICE

NOTES

1. ELBOWS SHALL NOT BE GREATER THAN 45 DEGREES.
2. CLEAN OUT IS REQUIRED FOR EACH PIPE LENGTH GREATER THAN 100' AND FOR EACH 90° ACCUMULATED ELBOW/100'.
3. RIGHT-OF-WAY RESTORATION SHALL MATCH OR EXCEED THE ORIGINAL CONDITION AND BE IN ACCORDANCE WITH CITY STANDARDS.
4. ALL TRENCH BACKFILL IN PUBLIC RIGHT-OF-WAY OR ROADWAY AREAS SHALL BE CRUSHED SURFACING PER WSDOT 9-09.9(3) OR BANK RUN GRAVEL PER WSDOT 9-03.19, COMPACTED IN 6" LIFTS OR MAY BE CDF WHEN DIRECTED BY THE CITY ENGINEER (SEE DETAIL S-3).
5. LAY PIPE IN STRAIGHT LINE BETWEEN BENDS. MAKE ALL CHANGES IN GRADE OR LINE WITH 1/8 BEND OR WYE. 90° CHANGE WITH 1/8 BEND AND WYE.
6. 6" SEWER PIPE MINIMUM SIZE IN RIGHT-OF-WAY, AND ELSEWHERE AS DIRECTED BY ENGINEER. 2% MIN. GRADE (UNLESS DIRECTED BY ENGINEER), 50% MAXIMUM.
7. ALL A.C. MAINS TO BE TAPPED IN ACCORDANCE WITH WAC 296-62-30775 STATE/FEDERAL GUIDELINES AND CERTIFICATION.
8. CONSTRUCTION IN RIGHT-OF-WAY MUST BE DONE BY A REGISTERED AND LICENSED CONTRACTOR.
9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT CITY SEWER ORDINANCES.
10. WHERE CITY ENGINEER ALLOWS SIDE SEWER CONNECTIONS TO MANHOLE, INVERT OF SIDE SEWER SHALL BE EQUAL TO OR ABOVE MAIN SEWER CROWN, BUT NOT TO EXCEED 18" ABOVE INVERT OF MAIN SEWER.
11. UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MIN. OF 6' DEEP AT PROPERTY LINE, OR 5' LOWER THAN THE LOWEST ELEVATION, WHICH EVER IS LOWER.
12. ALL PIPE MATERIALS NOT TO STANDARDS WILL BE ABANDONED AND REPLACED WITH DUCTILE IRON OR PVC PIPE OF THE SAME SIZE.
13. IF A BUILDING SEWER IS TO SERVE MORE THAN ONE PROPERTY, BY JOINT AGREEMENT OF THE OWNERS, AN APPROVED EASEMENT INSURING THAT ALL PROPERTIES INVOLVED SHALL HAVE PERPETUAL USE OF THE SIDE SEWER, HAVING PROVISIONS FOR OPERATION, MAINTENANCE, RECONSTRUCTION AND FOR ACCESS FOR REPAIR PURPOSES, SHALL BE SIGNED BY THE OWNERS. THIS EASEMENT SHALL BE RECORDED WITH THE COUNTY AUDITOR. A SIX INCH (MINIMUM) DIAMETER PIPE SHALL BE USED FOR THE COMMON LINE AND A SIX INCH CLEANOUT EXTENDING TO WITHIN 12 INCHES OF THE GROUND SURFACE SHALL BE PROVIDED AT THE WYE WHERE THE UPPER GRADE CONNECTIONS ARE MADE. BACKWATER VALVES SHALL BE INSTALLED ON SERVICE LINES UPSTREAM OF THE CONNECTION TO THE SHARED SIDE SEWER.
14. THE CITY ENGINEER MAY REQUIRE BACKWATER VALVES ON SIDE SEWERS WHEN DEEMED NECESSARY. THE EFFECTIVE OPERATION AND MAINTENANCE OF ANY BACKWATER VALVE SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE SIDE SEWER.
15. UTILITY PIPE TRACER TAPE SHALL BE DETECTABLE BELOW GROUND SURFACE, COLOR CODED, WITH UTILITY NAME PRINTED ON TAPE. CONDUCTIVE WARNING TAPE REQUIRED OVER ALL WATER PIPE. TAPE SHALL BE MANUFACTURER'S STANDARD PERMANENT, BRIGHT-COLORED, CONTINUOUS PRINTED PLASTIC TAPE, ALUMINUM BACKED, INTENDED FOR DIRECT-BURIAL SERVICE. TAPE SHALL BE NOT LESS THAN 6" WIDE X 4 MILS THICK.



DOUBLE SERVICE

CITY OF MERCER ISLAND		
STANDARD DETAILS		
SEWER		
SIDE SEWER CONNECTION AND STUB		
6-5-2009	NO SCALE	**S-17**
REV DATE		APPROVED

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: May 22, 2025
JOB# 2105
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

May 22, 2025
JEFFREY E. DUFFY
STATE OF WASHINGTON
39766
REGISTERED
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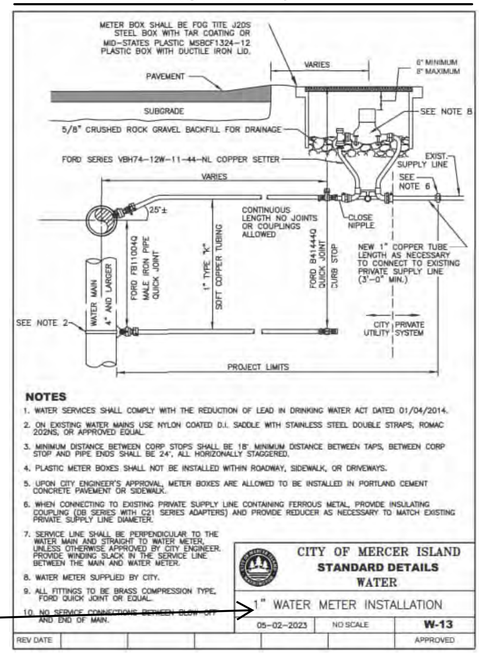
SAN SEWER DETAILS

PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C3.2

APN 157470-0170

WATER METER INSTALLATION



NOTES

1. WATER SERVICES SHALL COMPLY WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
2. ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL DOUBLE STRAPS, ROMAC 202NS, OR APPROVED EQUAL.
3. MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18" MINIMUM DISTANCE BETWEEN TAPS, BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24", ALL HORIZONALLY STAGGERED.
4. PLASTIC METER BOXES SHALL NOT BE INSTALLED WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS.
5. UPON CITY ENGINEER'S APPROVAL, METER BOXES ARE ALLOWED TO BE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK.
6. WHEN CONNECTING TO EXISTING PRIVATE SUPPLY LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING PRIVATE SUPPLY LINE DIAMETER.
7. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER. PROVIDE WINDING SLACK IN THE SERVICE LINE BETWEEN THE MAIN AND WATER METER.
8. WATER METER SUPPLIED BY CITY.
9. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
10. NO SERVICE CONNECTIONS BETWEEN ELBOW OFF AND END OF MAIN.

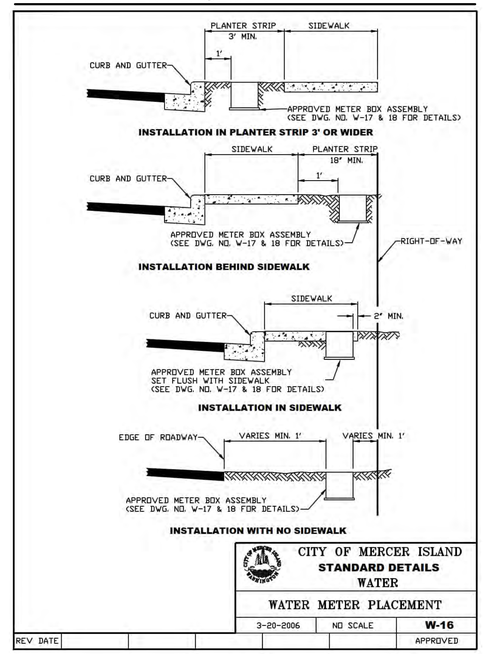
CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

1" WATER METER INSTALLATION

REV DATE				05-02-2023	NO SCALE	W-13
						APPROVED

MAY 2025 UPDATE
1.5" REQUIRED DUE TO 13R SPRINKLER SYSTEM

WATER METER PLACEMENT



CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

WATER METER PLACEMENT

REV DATE				3-20-2006	NO SCALE	W-16
						APPROVED

NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: May 22, 2025
JOB# 2105
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

May 22, 2025
JEFFREY E. DUFFY
STATE OF WASHINGTON
20766
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450 SEATTLE, WA 98103
206.930.0342 DUFFY@CESOLUTIONS.US

WATER DETAILS

PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C3.3

APN 157470-0170

MINIMUM 10% ORGANIC - COMPOST SOIL REQUIRED

SOIL AMENDMENT REQUIRED

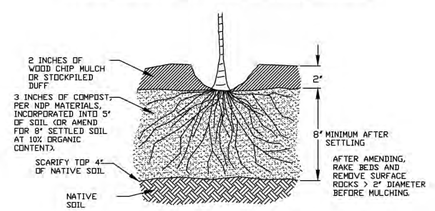
COMPOST AMENDED SOIL REQUIRED ON ALL LANDSCAPED AREAS AFTER CONSTRUCTION. SEE DETAIL BELOW.

SOIL INSPECTION REQUIRED BY ENGINEER

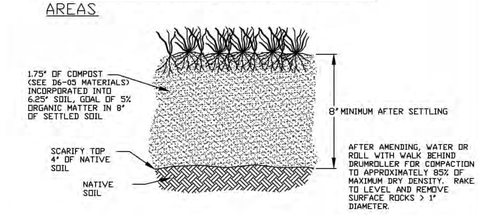
A POST CONSTRUCTION INSPECTION & CERTIFICATION OF AMENDED SOILS IS REQUIRED BY A LICENSED CIVIL ENGINEER. THIS IS REQUIRED BEFORE FINAL SIGN-OFF BY CITY.

COMPOST AMENDED SOIL SPEC

AMENDMENT FOR LANDSCAPED AREAS



SOIL AMENDMENT FOR GRASS OR TURF AREAS



NOTES:

1. AMEND SOILS PER BDE MANUAL, VOL. V, 5.31, BMP T5.13, (2012 OR CURRENT) OR WWW.SOILSFORSALMON.ORG.
2. DO NOT AMEND SOILS IN AREAS WITH UNDISTURBED SOIL AND NATIVE VEGETATION.
3. OPTIONAL ALTERNATIVE: STOCKPILE NATIVE TOPSOIL ONSITE, AMEND IF NEEDED, AND REPLACE BEFORE PLANTING.
4. OPTIONAL ALTERNATIVE: IMPORT TOPSOIL MIX OF SUFFICIENT ORGANIC CONTENT AND DEPTH TO MEET REQUIREMENTS.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: AMENDED SOILS

NO. ~~NDP-1~~

JANUARY 2023 NO SCALE

PERMIT 2403-078

NO.	DATE	BY	REVISIONS

APPLICANT
LEI WU AND INGRID CHANG
2956 72nd AVENUE SE
MERCER ISLAND, WA 98040

DATE: May 22, 2025
JOB# 2094
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

May 22, 2025 — JEFFREY E. KLEIN — STATE OF WASHINGTON — 39795 REGISTERED PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450 SEATTLE, WA 98103
206.930.0342 DUFFY@CESOLUTIONS.US

STORM, BMP DETAILS

WU/CHANG RESIDENCE
2956 72nd AVENUE SE, MERCER ISLAND, WA 98040

DRAWING NO: C3.5

APN 531510-0744

1 MERCER ISLAND DETENTION "TABLE 1"

Table 1

ON-SITE DETENTION DESIGN FOR PROJECTS BETWEEN 500 SF AND 9,500 SF NEW PLUS REPLACED IMPERVIOUS SURFACE AREA

New and Replaced Impervious Surface Area (sf)	Detention Pipe Diameter (in)	Detention Pipe Length (ft) B soils	Detention Pipe Length (ft) C soils	Lowest Orifice Diameter (in)[3] B soils	Lowest Orifice Diameter (in)[3] C soils	Distance from Outlet Invert to Second Orifice (ft) B soils	Distance from Outlet Invert to Second Orifice (ft) C soils	Second Orifice Diameter (in) B soils	Second Orifice Diameter (in) C soils
500 to 1,000 sf	36"	30	22	0.5	0.5	2.2	2.0	0.5	0.8
	48"	18	11	0.5	0.5	3.3	3.2	0.9	0.8
	60"	11	7	0.5	0.5	4.2	3.4	0.5	0.6
1,001 to 2,000 sf	36"	66	43	0.5	0.5	2.2	2.3	0.9	1.4
	48"	34	23	0.5	0.5	3.2	3.3	0.9	1.2
	60"	22	14	0.5	0.5	4.3	3.6	0.9	0.9
2,001 to 3,000 sf	36"	90	66	0.5	0.5	2.2	2.4	0.9	1.9
	48"	48	36	0.5	0.5	3.1	2.8	0.9	1.5
	60"	30	20	0.5	0.5	4.2	3.7	0.9	1.1
3,001 to 4,000 sf	36"	120	78	0.5	0.5	2.4	2.2	1.4	1.6
	48"	62	42	0.5	0.5	2.8	2.9	0.8	1.3
	60"	42	26	0.5	0.5	3.8	3.9	0.9	1.3
4,001 to 5,000 sf	36"	134	91	0.5	0.5	2.8	2.2	1.7	1.5
	48"	73	49	0.5	0.5	3.6	2.9	1.6	1.5
	60"	46	31	0.5	0.5	4.6	3.5	1.6	1.3
5,001 to 6,000 sf	36"	162	109	0.5	0.5	2.7	2.2	1.8	1.6
	48"	90	59	0.5	0.5	3.5	2.9	1.7	1.5
	60"	54	37	0.5	0.5	4.6	3.6	1.6	1.4
6,001 to 7,000 sf	36"	192	128	0.5	0.5	2.7	2.2	1.9	1.8
	48"	102	68	0.5	0.5	3.7	2.9	1.9	1.6
	60"	64	43	0.5	0.5	4.6	3.6	1.8	1.5
7,001 to 8,000 sf	36"	216	146	0.5	0.5	2.8	2.2	2.0	1.9
	48"	119	79	0.5	0.5	3.8	2.9	2.2	1.7
	60"	73	49	0.5	0.5	4.5	3.6	2.0	1.6
8,001 to 8,500 sf[1]	36"	228	155	0.5	0.5	2.8	2.2	2.1	1.9
	48"	124	84	0.5	0.5	3.7	2.9	1.9	1.8
	60"	77	53	0.5	0.5	4.6	3.6	2.0	1.6
8,501 to 9,000 sf	36"	NA[1]	164	0.5	0.5	NA[1]	2.2	NA[1]	1.9
	48"	NA[1]	89	0.5	0.5	NA[1]	2.9	NA[1]	1.9
	60"	NA[1]	55	0.5	0.5	NA[1]	3.6	NA[1]	1.7
9,001 to 9,500 sf[2]	36"	NA[1]	174	0.5	0.5	NA[1]	2.2	NA[1]	2.1
	48"	NA[1]	94	0.5	0.5	NA[1]	2.9	NA[1]	2.0
	60"	NA[1]	58	0.5	0.5	NA[1]	3.7	NA[1]	1.7

MAY 2025 NOTE
TANK DIAMETER CHANGED TO 72 INCH DUE TO SITE CONSTRAINTS. EQUIVALENT STORAGE= 23 LF

1.2"
4.3'
23 LF

Notes:

• Minimum Requirement #7 (Flow Control) is required when the 100-year flow frequency causes a 0.15 cubic feet per second increase (when modeled in WWHM with a 15-minute timestep). Breakpoints shown in this table are based on a flat slope (0-5%). The 100-year flow frequency will need to be evaluated on a site-specific basis for projects on moderate (5-15%) or steep (> 15%) slopes.

• Soil type to be determined by geotechnical analysis or soil map.

• Sizing includes a Volume Correction Factor of 120%.

• Upper bound contributing area used for sizing.

[1] On Type B soils, new plus replaced impervious surface areas exceeding 8,500 sf trigger Minimum Requirement #7 (Flow Control)

[2] On Type C soils, new plus replaced impervious surface areas exceeding 9,500 sf trigger Minimum Requirement #7 (Flow Control)

[3] Minimum orifice diameter = 0.5 inches

in = inch

ft = feet

sf = square feet

Basis of Sizing Assumptions:

Sized per MR#5 in the Stormwater Management Manual for Puget Sound Basin (1992 Ecology Manual)

SBUH, Type 1A, 24-hour hydrograph

2-year, 24-hour storm = 2 in; 10-year, 24-hour storm = 3 in; 100-year, 24-hour storm = 4 in

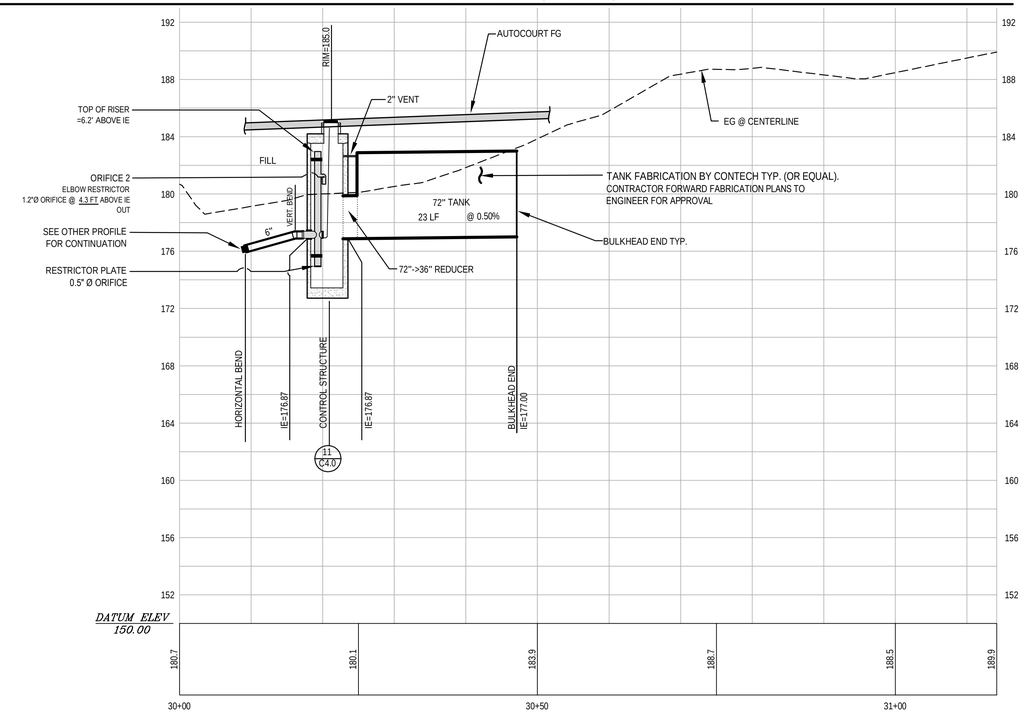
Predeveloped = second growth forest (CN = 72 for Type B soils, CN = 81 for Type C soils)

Developed = impervious (CN = 98)

0.5 foot of sediment storage in detention pipe

Overland slope = 5%

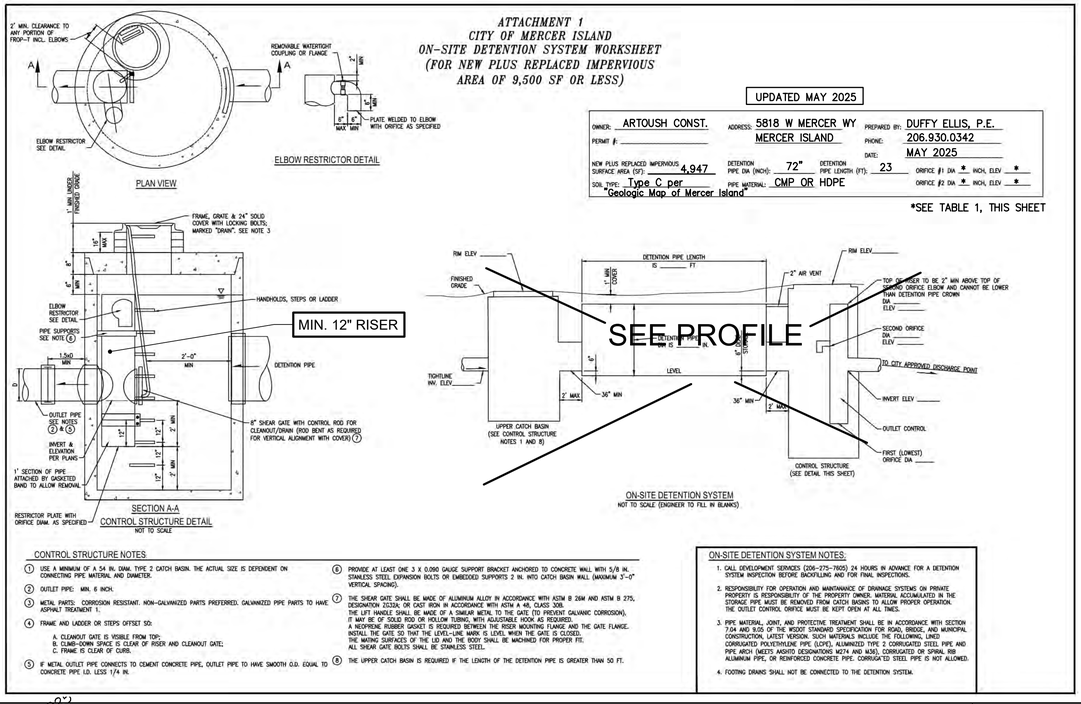
2 DETENTION PROFILE



10 IMPERVIOUS TABLE

Impervious Area Spreadsheet - Stormwater Version		
Proposed Residence - 5818 West Mercer Way, Mercer Island, WA 98040		
Gross Site area	15,033	sf
	0.345	acres
Existing Impervious Area		
Existing to be demo-ed	93	sf
Existing to remain	0	sf
total on-site (new + replaced) proposed =	93	sf
Proposed Impervious Area (on-site) (new + replaced)		
Roof	2,694	sf
Exposed concrete driveway, on-site	2,138	sf
Front steps, exposed	115	sf
total on-site (new + replaced) proposed =	4,947	sf
total new + replaced impervious =	4,947	sf
total existing to remain =	0	sf
total proposed lawn/landscape =	10,086	sf

11 MERCER ISLAND DETENTION DETAIL



NO.	DATE	BY	REVISIONS

APPLICANT
ARTOUSH CONSTRUCTION REMODELING LLC

DATE: May 22, 2025
JOB# 2105
DRAFTED: SS DESIGN: SS
DIGITAL SIGNATURE

May 22, 2025
JEFFREY E. ELLIS
STATE OF WASHINGTON
30766
REGISTERED
PROFESSIONAL ENGINEER

CIVIL ENGINEERING SOLUTIONS
701 N 36th STREET, SUITE 450 SEATTLE, WA 98103
206.930.0342 DUFFY@CESOLUTIONS.US

DETENTION TANK DETAIL

PROPOSED RESIDENCE
5818 WEST MERCER WAY, MERCER ISLAND, WA 98040

DRAWING NO:
C4.0

APN 157470-0170

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER QUIT CLAIM DEED RECORDING # 20190108000554)

PARCEL B OF MERCER ISLAND SHORT PLAT NO. MI-84-02D6, RECORDED UNDER RECORDING NO. 8412209004, BEING A PORTION OF LOTS 7 AND 8, BLOCK 9, CHRISTIAN CHURCH COMMUNITY CAMP DIVISION NO. 2, AS PER PLAT THEREOF RECORDED IN VOLUME 31 OF PLATS, PAGE 42, IN KING COUNTY, WASHINGTON.

SITUATED IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

ACCEPTED A BEARING OF N 14°36'00" E BETWEEN MONUMENTS FOUND ALONG THE CENTERLINE OF W MERCER WAY, PER REFERENCE NO. 1.

REFERENCES

R1. MERCER ISLAND SHORT PLAT NO. M.I.-84-02-06. VOL. 43, PGS. 14-14A, RECORDS OF KING COUNTY, WASHINGTON.

VERTICAL DATUM

NAVD 88 PER GPS OBSERVATIONS

SITE TEMP. BENCHMARK
DESCRIPTION: PK NAIL W/ RED WASHER
LOCATION: 42.0'W & 32.3'N FROM SW PROPERTY CORNER
ELEVATION: 160.62'

SURVEYOR'S NOTES

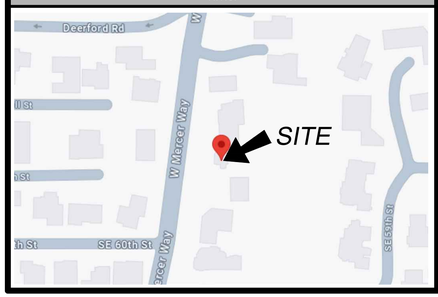
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN SEPTEMBER OF 2024. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 1574700170
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 15,033 S.F. (0.35 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 3-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

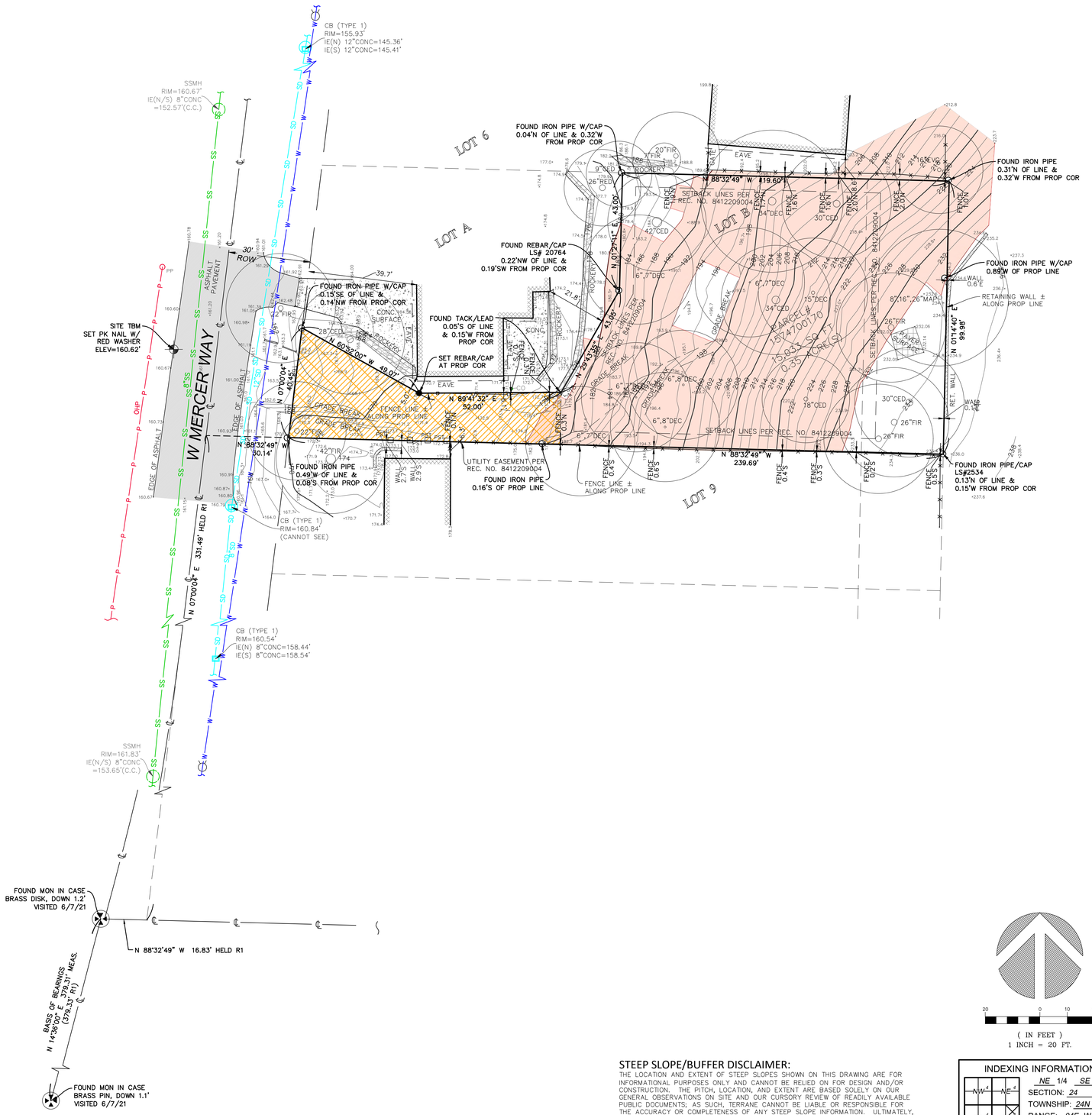
LEGEND

- BENCHMARK
- CENTERLINE ROW
- FENCE LINE (CHAIN LINK)
- FENCE LINE (WOOD)
- IRON PIPE (FOUND)
- MONUMENT (IN CASE, FOUND)
- PROPERTY LINE (SUBJECT)
- REBAR & CAP (SET)
- RETAINING WALL
- RIGHT-OF-WAY LINES
- BUILDING
- POST
- TREE (AS NOTED)
- ASPHALT SURFACE
- CONCRETE SURFACE
- PAVER SURFACE
- ROCKERY
- STEEP SLOPE AREA
- POWER POLE
- POWER (OVERHEAD)
- INLET (TYPE 1)
- INLET (TYPE 2)
- STORM DRAIN LINE
- CLEANOUT
- SEWER MANHOLE
- SEWER LINE
- FIRE HYDRANT
- WATER LINE
- BLDG BUILDING
- C.C. CENTER CHANNEL
- CALC'D CALCULATED
- CB CATCH BASIN
- CONC CONCRETE
- COR CORNER
- DEC DECIDUOUS
- ELEV ELEVATION
- EVG EVERGREEN
- LS# LAND SURVEYOR NUMBER
- MEAS MEASURED
- MON MONUMENT
- OHP OVERHEAD POWER
- PROP PROPERTY
- ROW RIGHT OF WAY
- SQ FT SQUARE FEET
- SSMH SANITARY SEWER MANHOLE
- SF SQUARE FEET
- UTILITY EASEMENT PER REC. NO. 8412209004

VICINITY MAP

N.T.S.





(IN FEET)
1 INCH = 20 FT.

STEEP SLOPE/BUFFER DISCLAIMER:

THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS; AS SUCH, TERRANE CANNOT BE LIABLE OR RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ANY STEEP SLOPE INFORMATION. ULTIMATELY, THE LIMITS AND EXTENT OF ANY STEEP SLOPES ASSOCIATED WITH ANY SETBACKS OR OTHER DESIGN OR CONSTRUCTION PARAMETERS MUST BE DISCUSSED AND APPROVED BY THE REVIEWING AGENCY BEFORE ANY CONSTRUCTION CAN OCCUR.

INDEXING INFORMATION

NE 1/4 SE 1/4
SECTION: 24
TOWNSHIP: 24N
RANGE: 04E, W.M.
COUNTY: KING

We are the measure | terrane.net

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 1574700170

5818 W MERCER WAY
5818 WEST MERCER WAY
MERCER ISLAND, WA 98040



09/20/24

TERRANE
11235 SE 6th St, Suite 130
Bellevue, WA 98004
p: 425-458-4488 | e: info@terrane.net

JOB NUMBER:	241599
DATE:	09/20/24
DRAFTED BY:	VGB
CHECKED BY:	JJS/JGM
SCALE:	1" = 10'

REVISION HISTORY

SHEET NUMBER
1 OF 1