

CODES

GOVERNING CODES AND REGULATIONS:

THIS DESIGN IS IN ACCORDANCE WITH THE FOLLOWING CODES AS AMENDED BY THE WASHINGTON STATE BUILDING CODE:

2018 INTERNATIONAL RESIDENTIAL CODE (IRC)

2018 INTERNATIONAL MECHANICAL CODE (IMC)

2018 UNIFORM PLUMBING CODE (UPC)

2018 WA STATE RESIDENTIAL ENERGY CODE

2018 NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

PROJECT INFO:

PROJECT ADDRESS:

5910 E MERCER WAY
MERCER ISLAND, WA 98040

PROJECT DESCRIPTION:

EXPANSION OF LIVING SPACE BY ENCLOSING AREAS UNDER THE EXISTING ROOF FOOTPRINT, CONVERTING CARPORT TO GARAGE.

PARCEL NUMBER:

192405-9097

LEGAL DESCRIPTION:

LEGAL DESCRIPTION FOR PROPERTY WAS OBTAINED FROM STATUTORY WARRANTY DEED RECORDED UNDER RECORDING NO. 20201026000836, RECORDS OF KING COUNTY, WASHINGTON.

THAT PORTION OF SECTION 19, TOWNSHIP 24 NORTH, RANGE 5 EAST, W.M., IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST MARGIN OF EAST MERCER WAY 1300 FEET NORTHERLY OF THE SOUTH LINE OF SAID SECTION 19; THENCE RUNNING EASTERLY ON A LINE PARALLEL TO THE SOUTH LINE OF SAID SECTION 19 ON A BEARING OF SOUTH 88°33'02" EAST A DISTANCE OF 90.00 FEET TO THE TRUE POINT OF BEGINNING;
THENCE SOUTH 14°06'58" WEST FOR A DISTANCE OF 92 FEET, MORE OR LESS, TO AN INTERSECTION WITH A LINE 1300 FEET NORTHERLY AND PARALLEL TO THE SOUTH LINE OF SAID SECTION 19;
THENCE RUNNING EASTERLY ON SAID PARALLEL LINE ON A BEARING OF SOUTH 88°33'02" EAST TO THE SHORE OF LAKE WASHINGTON;
THENCE NORTHERLY ALONG THE SHORE OF LAKE WASHINGTON TO A POINT WHICH BEARS SOUTH 88°33'02" EAST FROM THE TRUE POINT OF BEGINNING;
THENCE NORTH 88°33'02" WEST TO THE POINT OF BEGINNING.

TOGETHER WITH SECOND CLASS SHORE LANDS ADJOINING.

GENERAL NOTES

- DO NOT SCALE THE DRAWINGS.
- THIS PROJECT SHALL COMPLY WITH ALL GOVERNING REGULATIONS, ORDINANCES, BUILDING CODES, OR COVENANTS OF THE AREA IN WHICH IT IS BUILT.
- APPROVAL BY AN INSPECTOR DOES NOT CONSTITUTE AUTHORITY TO DEVIATE FROM THE DRAWINGS OR SPECIFICATIONS.
- PROVIDE ALL NECESSARY BARRICADES, WARNING SIGNS, AND DEVICES TO PROTECT PUBLIC AND CONSTRUCTION PERSONNEL DURING CONSTRUCTION.
- MAINTAIN ALL REQUIRED ACCESS AND EGRESS DURING CONSTRUCTION.
- FIRE SPRINKLER SYSTEM:
NFPA 72 MONITORED - CHAPTER 29 FIRE ALARM SYSTEM TO BE INSTALLED THROUGHOUT THE RESIDENCE. INSTALL KEY BOX AT GATE ACCESSIBLE BY FIRE DEPARTMENT.

7. DEFERRED SUBMITTAL ITEMS:
THE FOLLOWING IS A LIST OF ITEMS THAT ARE NOT INCLUDED IN THIS PLAN:

- ALTERNATIVE I-JOIST/BEAM MANUFACTURE PLANS
- MANUFACTURED TRUSS DESIGNS AND LAYOUTS
- HVAC SYSTEMS DESIGN
- ELECTRICAL PLANS AND SPECIFICATIONS (IF REQUIRED)
- LANDSCAPE DESIGN

BUILDING AREAS

EXISTING LOWER FLOOR:	1,234 SF
EXISTING MAIN FLOOR:	2,991 SF
TOTAL EXISTING FLOOR AREA:	4,225 SF
NEW LOWER FLOOR AREA:	248 SF
NEW MAIN FLOOR AREA:	119 SF
TOTAL NEW FLOOR AREA:	367 SF
CARPORT CONVERTED TO GARAGE:	600 SF
TOTAL PROPOSED FLOOR AREA:	5,192 SF
SITE AREA:	28,231 SF

DRAWING INDEX

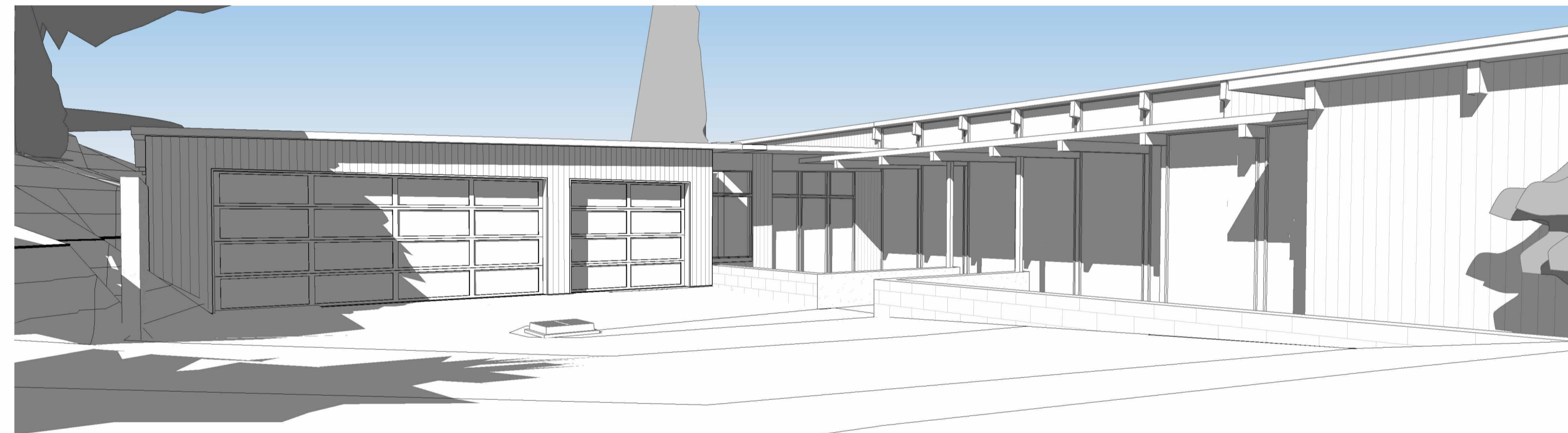
SHEET NUMBER	SHEET NAME	Current Revision
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G0.2	CODE COMPLIANCE DIAGRAMS	2
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PROJECT CONTACTS

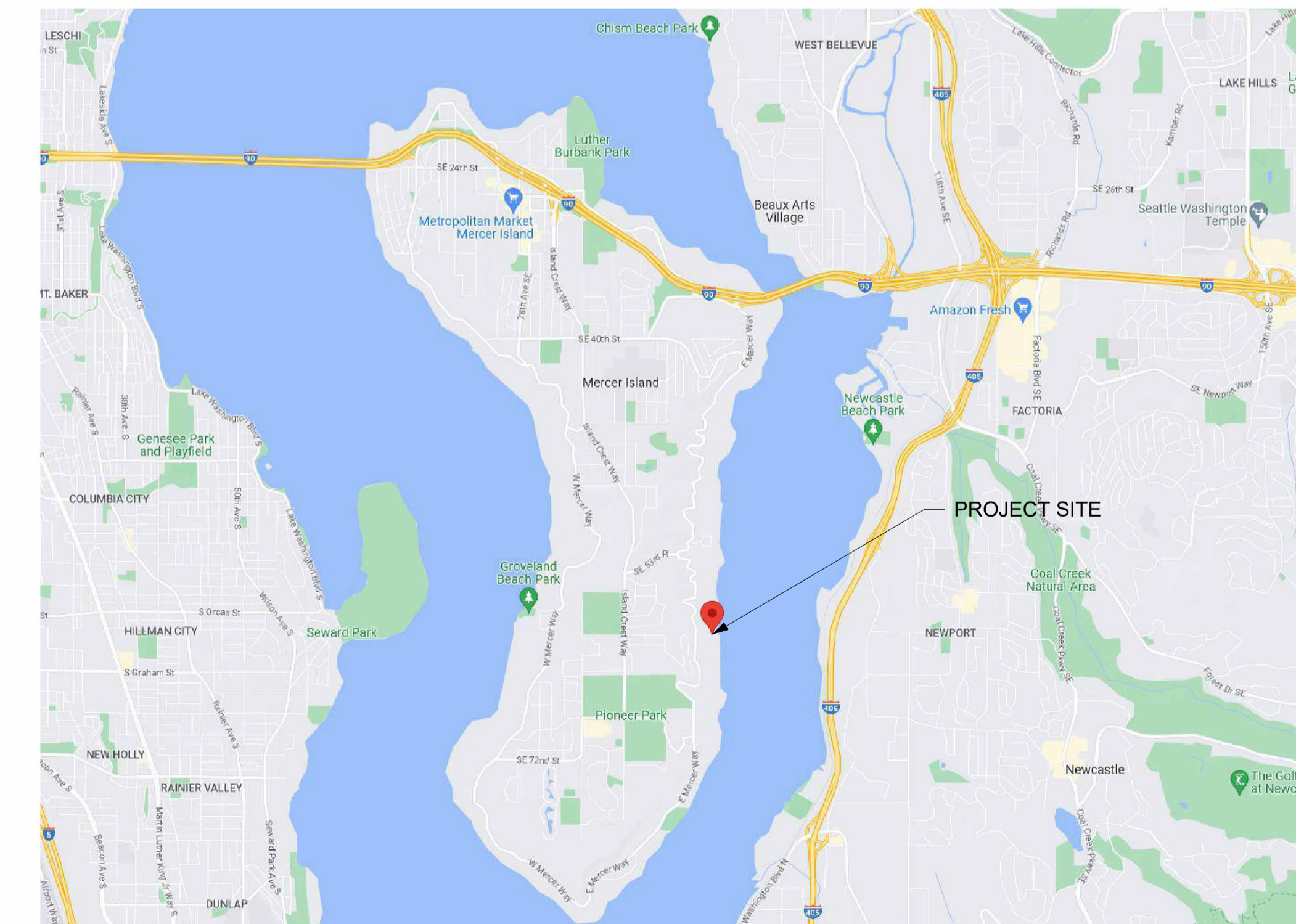
CLIENT:
FELICE LIGHTSTONE
5910 E MERCER WAY
MERCER ISLAND, WA 98040

CONTRACTOR - DESIGN/BUILD:
LOCHWOOD LOZIER CUSTOM HOMES
8708 152ND AVE NE
REDMOND, WA 98052
425-576-9200

STRUCTURAL ENGINEER:
MULHERN + KULP RESIDENTIAL STRUCTURAL ENGINEERING
7220 TRADE STREET, SUITE 350
SAN DIEGO, CA 92121
619-650-0010



VICINITY MAP



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DRAWN BY: MIM
CHECKED BY: TL
DATE: 02/04/19
SCALE:

LIGHTSTONE
5910 E MERCER WAY
MERCER ISLAND, WA 98040

22079LIG

PROJECT

REV DATE ISSUE/REVISION

1 05/22/23 PERMIT SUBMITTAL
06/09/23 PERMIT RESUBMITTAL

SHEET TITLE

COVER SHEET

REVISION NO.

1

SUPERSEDES ALL PREVIOUS REVISIONS

SHEET NO.

G0.0

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NOT FOR CONSTRUCTION

ENERGY CODE COMPLIANCE

PERSCRIPTIVE APPROACH

CLIMATE ZONE 5 AND 4C (MARINE)

FENESTRATION MAXIMUM U-FACTOR: 0.30 - 0.28 (PER ENERGY CREDIT 1.3)
 SKYLIGHT MAXIMUM U-FACTOR: 0.50
 REQUIRED R-VALUE AT CEILINGS: R-49
 REQUIRED R-VALUE AT SINGLE RAFTER OR JOIST VAULTED CEILINGS: R-38
 REQUIRED R-VALUE AT WOOD FRAMED WALLS: R21 INT
 REQUIRED R-VALUE AT MASS WALLS: R21
 REQUIRED R-VALUE AT WALLS BELOW GRADE: R-10 EXT +TB, R-15 INT +TB, R-21 CAVITY +TB
 REQUIRED R-VALUE AT FLOORS: R30 - R38 (PER ENERGY CREDIT 1.3)
 REQUIRED R-VALUE AT SLABS ON GRADE: R-10 PERIMETER, R-10 UNDER SLAB (ENTIRE SLAB PER ENERGY CREDIT 1.3)

ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS:

ENERGY CREDITS REQUIRED PER R406.3

SMALL DWELLING UNIT < 1,500 SF: 3.0 CREDITS
 MEDIUM DWELLING UNIT 1,500 SF > 5,000 SF: 6 CREDITS
 LARGE DWELLING UNIT >5,000 SF: 7 CREDITS
ADDITIONS < 500 SF: 1.5 CREDITS

CREDITS PROVIDED PER OPTIONS SELECTED FROM FUEL NORMALIZATION TABLE R406.2:

4 - MINI SPLIT (0.5 CREDITS)
 FOR HEATING SYSTEM BASED ON ELECTRIC RESISTANCE WITH A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM IN ACCORDANCE WITH SECTION R403.7.1 INCLUDING THE EXCEPTION.

CREDITS PROVIDED PER OPTIONS SELECTED FROM ENERGY CREDITS TABLE R406.3:

3.4 - HIGH EFFICIENCY HVAC EQUIPMENT (1.5 CREDITS)
 DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM, ZONAL CONTROL; IN HOMES WHERE THE PRIMARY HEATING SYSTEM IS ZONAL ELECTRIC HEATING, A DUCTLESS MINI-SPLIT HEAT PUMP SYSTEM WITH A MINIMUM HSPF OF 10.0 SHALL BE INSTALLED AND PROVIDE HEATING TO THE LARGEST ZONE OF THE HOUSING UNIT.

2018 WSEC NOTES

1. THE THERMAL ENVELOPE SHALL BE CONSTRUCTED TO LIMIT AIR LEAKAGE PER SECTION R402.4.1 THROUGH R402.4.4 AND SHALL BE TESTED PER SECTION R402.4.1.2, EXCEPT THE TESTED AIR LEAKAGE TO BE REDUCED TO 1.5 AIR CHANGES PER HOUR MAX. SEE TABLE R402.4.1.1 FOR AIR BARRIER AND INSULATION INSTALLATION.

2. INDOOR AND OUTDOOR LIGHTING SHALL COMPLY WITH SECTION 404.

3. HVAC DUCTS SHALL BE SEALED AND LEAK TESTED AS REQUIRED PER SECTION R402.4.

4. OPEN BLOWN OUR POURED LOOSE FILL INSULATION MAY BE USED ONLY WHEN THE CEILING IS 3:12 SLOPE OR LESS AND THERE IS AT LEAST 30" ON CLEAR SPACE FROM THE TOP OF THE BOTTOM TRUSS CHORD TO THE ROOF SHEATHING. SEE SECTION R402.2.1.1.

5. OPEN BLOWN POURED OR SPRAY APPLIED ROOF/CEILING INSULATION SHALL BE IDENTIFIED BY INCHES OF THICKNESS WITH DENSITY AND R-VALUE MARKERS INSTALLED AT ONE FOR EVERY 300 SQ. FT. THROUGH THE ATTIC SPACE PER SECTION R303.1.1.1.

6. A PERMANENT RESIDENTIAL ENERGY COMPLIANCE CERTIFICATE SHALL BE COMPLETED BY THE BUILDER OR OTHER APPROVED PARTY AND POSTED ON A WALL IN THE SPAE WHERE THE FURNACE IS LOCATED, A UTILITY ROOM, OR AN APPROVED LOCATION INSIDE THE BUILDING. PER SECTION R401.3. THE CERTIFICATE SHALL INCLUDE:

- A) PREDOMINANT R-VALUES OF INSTALLED INSULATION.
- B) U-FACTORS AND SHGC OF WINDOWS AND SKYLIGHTS INSTALLED AT THE HEATED ENVELOPE.
- C) THE TYPE AND EFFICIENCY OF HVAC AND WATER HEATING EQUIPMENT.
- D) DUCT LEAKAGE RATES FROM THE DUCT TEST.
- E) AIR LEAKAGE RATES IF A BLOWER DOOR TEST WAS CONDUCTED.

7. ATTIC AND CRAWL SPACE ACCESS DOORS SHALL BE INSULATED TO ADJACENT INSULATION STANDARD AND WEATHER STRIPPED PER R402.2.4.

8. R404.1 LIGHTING EQUIPMENT (MANDATORY). A MINIMUM OF 90% OF LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

9. PROVIDE 100 CFM INTERMITTENTLY OPERATING POINT-OF-USE VENTILATION AT KITCHEN.

10. PROVIDE 50 CFM INTERMITTENTLY OPERATING POINT-OF-USE VENTILATION AT ALL BATHS AND LAUNDRY.

11. AT LEAST ONE THERMOSTAT PER DWELLING UNIT SHALL BE CAPABLE OF CONTROLLING THE HEATING AND COOLING SYSTEM ON A DAILY SCHEDULE.

12. ACCESS HATCHES AND DOORS (WSEC R402.2.4): ALL ACCESS HATCHES AND DOORS FROM UNCONDITIONED SPACES TO UNCONDITIONED SPACES SHALL BE WEATHER STRIPPED AND INSULATED TO A LEVEL EQUIVALENT TO THE INSULATION OF THE SURROUNDING SURFACES. ACCESS SHALL BE PROVIDED TO ALL EQUIPMENT THAT PREVENTS DAMAGING OR COMPRESSING THE INSULATION. A WOOD FRAMED OR EQUIVALENT BAFFLE OR RETAINER IS REQUIRED TO BE PROVIDED WHEN LOOSE FILL INSULATION IS INSTALLED, THE PURPOSE OF WHICH IS TO PREVENT THE LOOSE FILL INSULATION FROM SPILLING INTO THE LIVING SPACE WHEN THE ATTIC ACCESS IS OPENED, AND TO PROVIDE PERMANENT MEANS OF MAINTAINING THE INSTALLED R-VALUE OF THE LOOSE FILL INSULATION.

2018 Washington State Energy Code – Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family – New & Additions (effective February 1, 2021) Version 1.2

These requirements apply to all IRC building types, including detached one- and two-family dwellings and multiple single-family dwellings (townhouses).

Project Information	Contact Information
LIGHTSTONE ADDITION 5910 E MERCER WAY, MERCER ISLAND, WA 98040	MATT MAMIYA/LOCHWOOD LOZIER CUSTOM HOMES 8708 152ND AVE NE, REDMOND, WA 98052

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.

Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative	MATT MAMIYA	Date	05/19/2023
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All Climate Zones (Table R402.1.1)		
	R-Value *	U-Factor *
Fenestration U-Factor ^a	n/a	0.30
Skylight U-Factor ^a	n/a	0.50
Glazed Fenestration SHGC ^{b,c}	n/a	n/a
Ceiling ^e	49	0.026
Wood Frame Wall ^{d,h}	21 int	0.056
Floor	30	0.029
Below Grade Wall ^{e,h}	10/15/21 int + TB	0.042
Slab ^{d,i} R-Value & Depth	10, 2 ft	n/a

R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.

The fenestration U-factor column excludes skylights.

"10/15/21 +STB" means R-10 continuous insulation on the exterior of the wall, or R-15 continuous insulation on the interior of the wall, or R-21 cavity insulation plus a thermal break between the slab and the basement wall at the interior of the basement wall. "10/15/21 +STB" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the wall. "STB" means R-5 thermal break between floor slab and basement wall.

R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.

For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.

R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.

For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.

Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

Prescriptive Path - Single Family 2018 Washington State Energy Code-R 1

2018 Washington State Energy Code – Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family – New & Additions (effective February 1, 2021)

Summary of Table R406.2 (cont.)			
Energy Options	Energy Credit Option Descriptions (cont.)	Credits - select ONE energy option from each category *	User Notes
5.1 ^d	Efficient Water Heating	0.5	<input type="checkbox"/>
5.2	Efficient Water Heating	0.5	<input type="checkbox"/>
5.3	Efficient Water Heating	1.0	<input type="checkbox"/>
5.4	Efficient Water Heating	1.5	<input type="checkbox"/>
5.5	Efficient Water Heating	2.0	<input type="checkbox"/>
5.6	Efficient Water Heating	2.5	<input type="checkbox"/>
6.1 ^e	Renewable Electric Energy (3 credits max)	1.0	<input type="checkbox"/>
7.1	Appliance Package	0.5	<input type="checkbox"/>
Total Credits		2.0	<input checked="" type="checkbox"/> Calculate Table <input type="checkbox"/> Clear Form

- a. An alternative heating source sized at a maximum of 0.5 W/sf (equivalent) of heated floor area or 500 W, whichever is bigger, may be installed in the dwelling unit.
- b. Equipment listed in Table C403.3.2(4) or C403.3.2(5)
- c. Equipment listed in Table C403.3.2(1) or C403.3.2(2)
- d. You cannot select more than one option from any category EXCEPT in category 5. Option 5.1 may be combined with options 5.2 through 5.6. See Table 406.3.
- e. 1.0 credit for each 1,200 kWh of electrical generation provided annually, up to 3 credits max. See the complete Table R406.2 for all requirements and option descriptions.
- f. Use the single radiobutton in the upper right of the second column to deselect radiobuttons in that group.

Please print only pages 1 through 3 of this worksheet for submission to your building official.

For Building Officials Only

Prescriptive Path - Single Family 2018 Washington State Energy Code-R 3

2018 Washington State Energy Code – Residential Prescriptive Energy Code Compliance for All Climate Zones in Washington Single Family – New & Additions (effective February 1, 2021)

Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.

1. **Small Dwelling Unit: 3 credits**
Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area. Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
2. **Medium Dwelling Unit: 6 credits**
All dwelling units that are not included in #1 or #3
3. **Large Dwelling Unit: 7 credits**
Dwelling units exceeding 5,000 sf of conditioned floor area
4. **Additions less than 500 square feet: 1.5 credits**
All other additions shall meet 1-3 above

Before selecting your credits on this Summary table, review the details in Table 406.3 (Single Family), on page 4.

Summary of Table R406.2 and 406.3			
Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option	User Notes
1	Combustion heating minimum NAECA ^a	0.0	<input type="checkbox"/>
2	Heat pump ^c	1.0	<input type="checkbox"/>
3	Electric resistance heat only - furnace or zonal	-1.0	<input type="checkbox"/>
4	DHP with zonal electric resistance per option 3.4	0.5	<input checked="" type="checkbox"/> MINI SPLITS
5	All other heating systems	-1.0	<input type="checkbox"/>
Energy Options	Energy Credit Option Descriptions	Credits - select ONE energy option from each category *	User Notes
1.1	Efficient Building Envelope	0.5	<input type="checkbox"/>
1.2	Efficient Building Envelope	1.0	<input type="checkbox"/>
1.3	Efficient Building Envelope	0.5	<input type="checkbox"/>
1.4	Efficient Building Envelope	1.0	<input type="checkbox"/>
1.5	Efficient Building Envelope	2.0	<input type="checkbox"/>
1.6	Efficient Building Envelope	3.0	<input type="checkbox"/>
1.7	Efficient Building Envelope	0.5	<input type="checkbox"/>
2.1	Air Leakage Control and Efficient Ventilation	0.5	<input type="checkbox"/>
2.2	Air Leakage Control and Efficient Ventilation	1.0	<input type="checkbox"/>
2.3	Air Leakage Control and Efficient Ventilation	1.5	<input type="checkbox"/>
2.4	Air Leakage Control and Efficient Ventilation	2.0	<input type="checkbox"/>
3.1 ^a	High Efficiency HVAC	1.0	<input type="checkbox"/>
3.2	High Efficiency HVAC	1.0	<input type="checkbox"/>
3.3 ^a	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.4	High Efficiency HVAC	1.5	<input checked="" type="checkbox"/> MINI SPLITS
3.5.1	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.5.2	High Efficiency HVAC	1.5	<input type="checkbox"/>
3.6 ^a	High Efficiency HVAC	2.0	<input type="checkbox"/>
4.1	High Efficiency HVAC Distribution System	0.5	<input type="checkbox"/>
4.2	High Efficiency HVAC Distribution System	1.0	<input type="checkbox"/>

Prescriptive Path - Single Family 2018 Washington State Energy Code-R 2

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DRAWN BY: MIM
 CHECKED BY: TL
 DATE: 02/04/19
 SCALE:

LIGHTSTONE
 5910 E MERCER WAY
 MERCER ISLAND, WA 98040

22079LIG

PROJECT

REV	DATE	ISSUE/REVISION
05/22/23	PERMIT SUBMITTAL	

NOT FOR CONSTRUCTION

SHEET TITLE
WSEC COMPLIANCE

REVISION NO.
 SUPersedes ALL PREVIOUS REVISIONS

SHEET NO.
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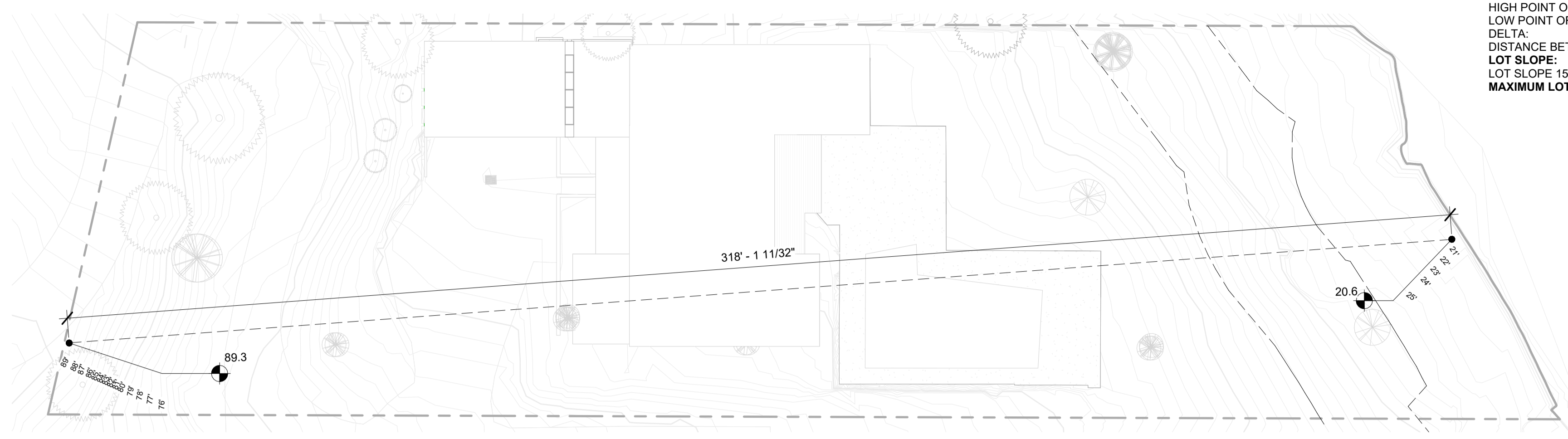
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HIGH POINT OF SITE: EL. 89.3'
 LOW POINT OF SITE: EL. 20.6'
 DELTA: 68.7'
 DISTANCE BETWEEN POINTS: 318'-11"
 LOT SLOPE: 15% TO 30%
 MAXIMUM LOT COVERAGE: 35% OF 28,231 = 9,881 SF

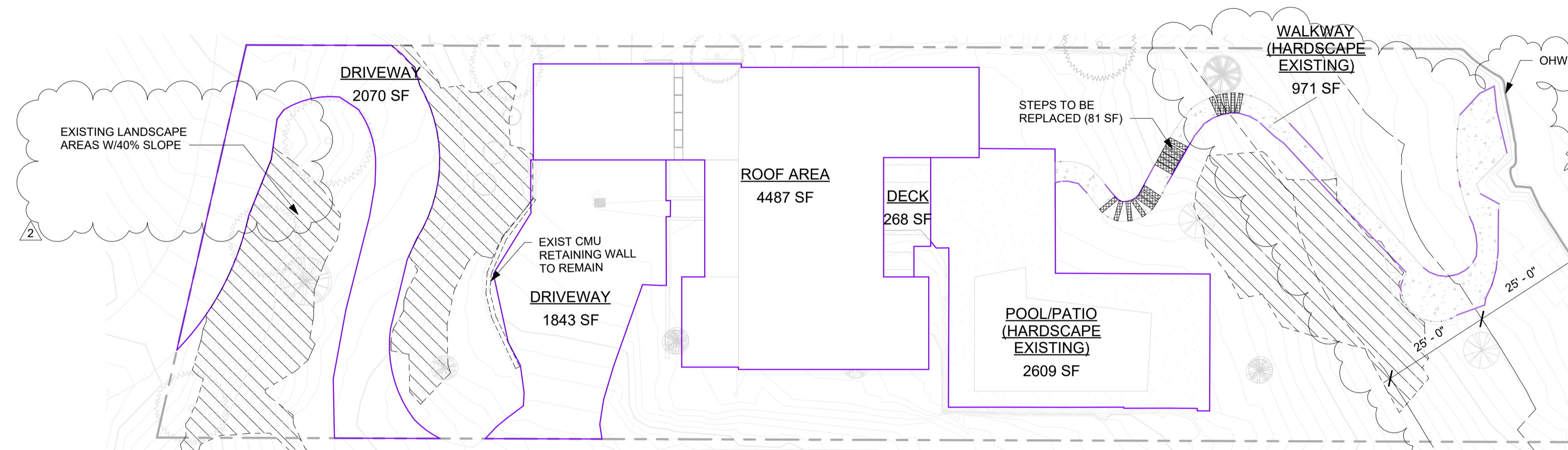
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DATE: 01/08/19
 SCALE: As indicated
 DRAWN BY: MM
 CHECKED BY: TL



1 LOT SLOPE DIAGRAM
 1" = 20'-0"
 MAXIMUM LOT COVERAGE: (35% OF 28,231) = 9,881 SF
 EXISTING LOT COVERAGE: 8,400 SF
 PROPOSED LOT COVERAGE: 8,400 SF (UNCHANGED)



MAXIMUM HARDSCAPE: (9% OF 28,231) = 2,541 SF
 LEFT OVER LOT COV. AREA: 1,481 SF
 TOTAL ALLOWABLE HARDSCAPE: 4,022 SF
 EXISTING HARDSCAPE: 3,848 SF
 EXISTING HARDSCAPE TO REMAIN: 3,767 SF
 EXISTING HARDSCAPE TO BE REPLACED: 81 SF
 PROPOSED HARDSCAPE: 3,848 SF (UNCHANGED)
 HARDSCAPE AND LANDSCAPE REMAIN UNCHANGED EXCEPT STEPS DOWN TO WATER. NEW AREA IS UNDER EXISTING ROOF, OVER EXISTING HARD SURFACE.

2 LOT COV/HARDSCAPE DIAGRAM
 1" = 20'-0"

TREE INVENTORY - ALL EXISTING

Tree Number	Type	Tree Diameter
1	Douglas Fir	12"
2	Douglas Fir	12"
3	Red Cedar	52"
4	Deciduous	12"
5	Deciduous	12"
6	Deciduous	6"
7	Deciduous	6"
8	Colorado Spruce	16"
9	Colorado Spruce	12"
10	Red Cedar	10"
11	Douglas Fir	30"
12	Red Cedar	4"
13	Red Cedar	6"
14	Red Cedar	4"
15	Red Cedar	6"
16	Red Cedar	6"
17	Red Cedar	6"
18	Red Cedar	6"
19	Red Cedar	8"
20	Red Cedar	6"
21	Red Cedar	6"
22	Red Cedar	4"
23	Red Cedar	6"
24	Red Cedar	6"
25	Red Cedar	6"
26	Red Cedar	6"
27	Red Cedar	6"
28	Red Cedar	6"
29	Red Cedar	6"
30	Red Cedar	6"
31	Red Cedar	6"
32	Red Cedar	6"
33	Red Cedar	6"
34	Red Cedar	6"
35	Red Cedar	6"
36	Red Cedar	6"
37	Red Cedar	6"
38	Red Cedar	6"
39	Red Cedar	6"
40	Red Cedar	6"

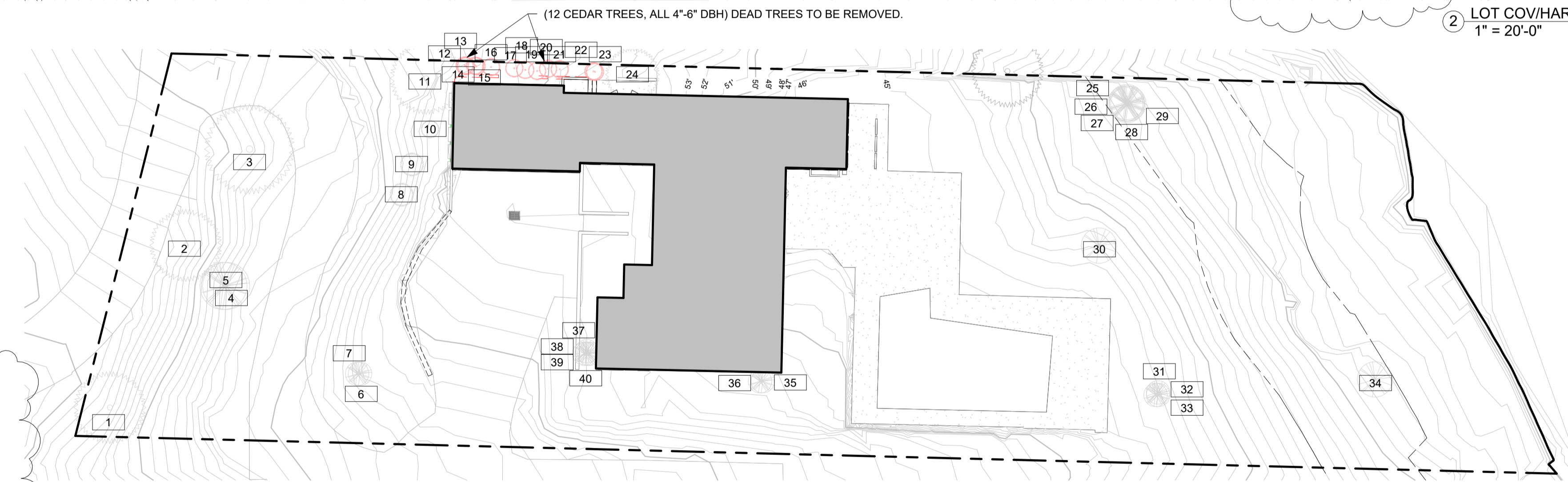
TREE INVENTORY - DEMO

Tree Number	Type	Tree Diameter
12	Red Cedar	4"
13	Red Cedar	6"
14	Red Cedar	4"
15	Red Cedar	6"
16	Red Cedar	6"
17	Red Cedar	6"
18	Red Cedar	6"
19	Red Cedar	8"
20	Red Cedar	6"
21	Red Cedar	6"
22	Red Cedar	4"
23	Red Cedar	6"
24	Red Cedar	68"

AVERAGE EXISTING GRADE ELEVATION...

Grade Elevation Number	Elevation Height	Wall Length	Height X Length
1	45.5'	16' - 6"	751 SF
2	45.5'	21' - 2"	963 SF
3	45.5'	31' - 8"	1441 SF
4	48.5'	9' - 2"	445 SF
5	49.0'	16' - 6"	809 SF
6	52.0'	15' - 2"	789 SF
7	52.5'	2' - 8"	140 SF
8	53.9'	24' - 8"	1330 SF
9	54.0'	2' - 8"	144 SF
10	54.9'	12' - 6"	686 SF
11	55.6'	16' - 6"	917 SF
12	55.4'	6' - 2"	342 SF
13	55.2'	7' - 10"	432 SF
14	54.9'	6' - 6"	357 SF
15	54.0'	24' - 0"	1296 SF
16	55.0'	17' - 4"	953 SF
17	56.1'	2' - 0"	112 SF
18	56.5'	30' - 3"	1709 SF
19	62.8'	20' - 4"	1277 SF
20	61.1'	26' - 3"	1604 SF
21	56.5'	1' - 8"	94 SF
22	51.0'	73' - 6"	3749 SF
TOTAL: 22		385' - 0"	20339 SF

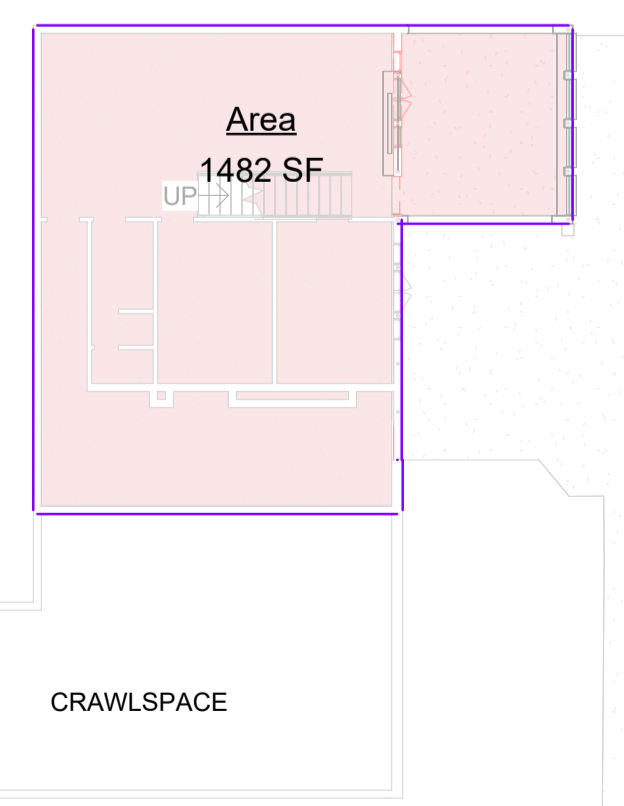
20,339 SF / 385'-0" = 52.83' AVERAGE BUILDING ELEVATION



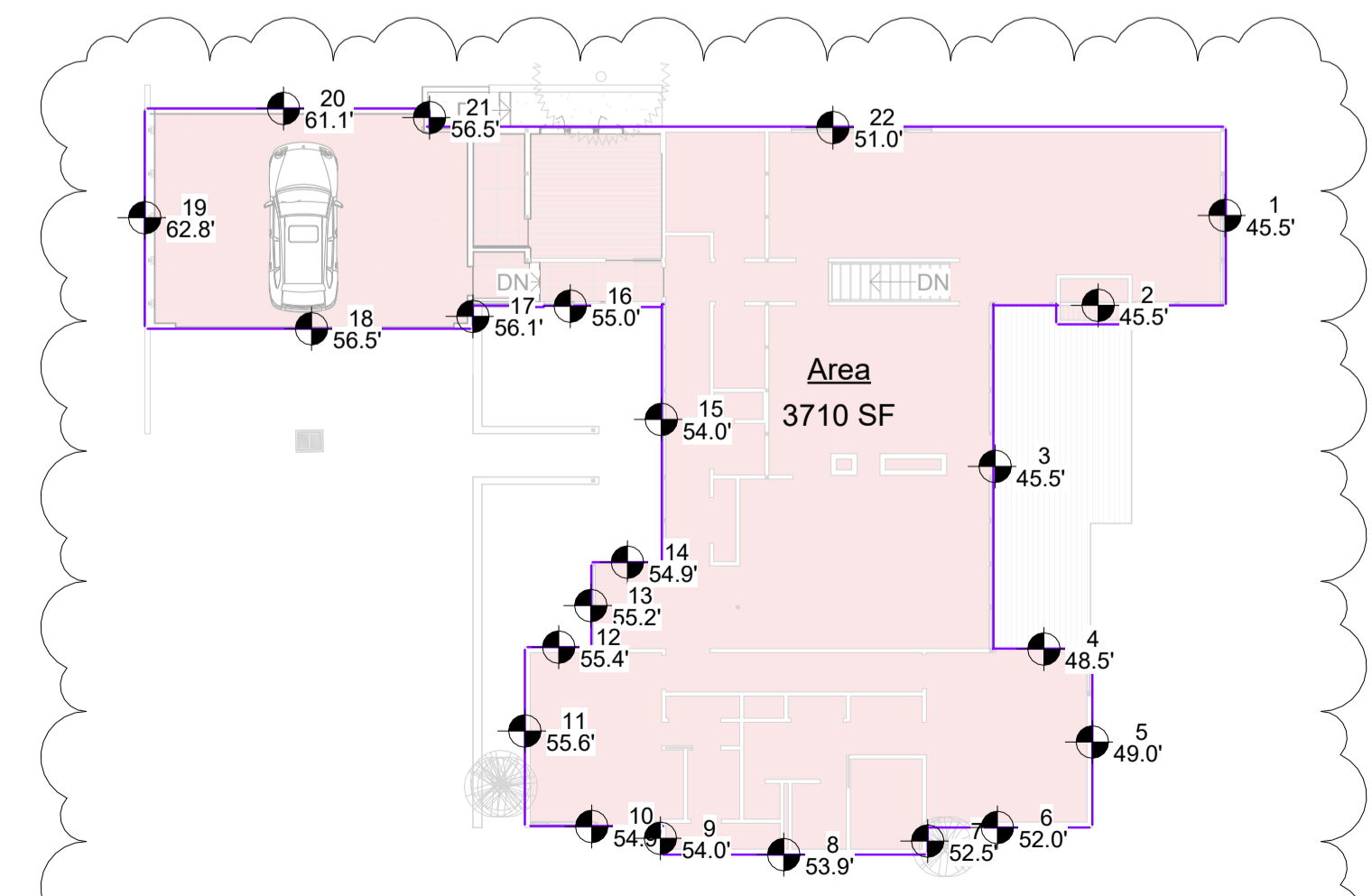
5 TREE PLAN - DEMO
 1" = 20'-0"

SITE AREA: 28,231 SF
 R-15 ZONING: (40% X 28,231) = 11,292 SF MAX GROSS FLOOR AREA

PROPOSED GROSS FLOOR AREA:
 BASEMENT: 1,482 SF
 MAIN FLOOR: 3,710 SF
 TOTAL: 5,192 SF



3 GROSS FLOOR AREA - BASEMENT
 1/16" = 1'-0"



4 GROSS FLOOR AREA - MAIN FLOOR
 1/16" = 1'-0"

LIGHTSTONE
 5910 E MERCER WAY
 MERCER ISLAND, WA 98040

PROJECT: 22079LIG

REV	DATE	ISSUE/REVISION
2	05/22/23	PERMIT SUBMITTAL
	10/23/23	PERMIT RESUBMITTAL

NOT FOR CONSTRUCTION

SHEET TITLE:
CODE COMPLIANCE DIAGRAMS

REVISION NO:
2
 SUPERSEDES ALL PREVIOUS REVISIONS

SHEET NO:
G0.2

SITE WORK

GENERAL

UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 1500 PSF. EXTERIOR FOOTINGS SHALL BEAR 18" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS. BACKFILL TO BE THOROUGHLY COMPACTED. BOLT HEADS AND NUTS BEARING AGAINST WOOD TO BE PROVIDED WITH 1/4"x3"x3" PLATE WASHERS. WOOD BEARING ON OR INSTALLED WITHIN 1" OF MASONRY OR CONCRETE TO BE PRESSURE TREATED WITH AN APPROVED PRESERVATIVE. FOUNDATION SILL BOLTS TO BE 5/8" DIAMETER AT 6'-0" O.C., U.N.O. WITH MIN. 7" EMBEDMENT. METAL FRAMING CONNECTORS TO BE MANUFACTURED BY SIMPSON STRONG TIE OR USP STRUCTURAL CONNECTORS.

FOUNDATION WATERPROOFING AND DAMPPROOFING

DAMPPROOFING

EXCEPT WHERE REQUIRED BY SEC R206.2 TO BE WATERPROOFED, FOUNDATION WALLS THAT RETAIN EARTH OR ENCLOSE INTERIOR SPACES AND FLOORS BELOW GRADE SHALL BE DAMPROOFED FROM THE TOP OF THE FOOTING TO THE FINISHED GRADE. MASONRY WALLS SHALL HAVE NOT LESS THAN 3/8" PORTLAND CEMENT PARKING APPLIED TO THE EXTERIOR SURFACE OF THE WALL. PARKING SHALL BE DAMPROOFED BY ONE OF THE FOLLOWING:

- 1) BITUMINOUS COATING
- 2) 3 POUNDS/ SQ. YD. OF ACRYLIC MODIFIED CEMENT
- 3) 3/8" COAT OF SURFACE BONDING CEMENT COMPLYING WITH ASTN C 887
- 4) ANY MATERIAL APPROVED FOR WATERPROOFING IN SEC R406.2
- 5) OTHER APPROVED METHODS OR MATERIALS.

EXCEPTION: PARKING OF UNIT MASONRY WALLS IS NOT REQUIRED WHERE A MATERIAL IS APPROVED FOR DIRECT APPLICATION OF MASONRY.

WATERPROOFING:

IN AREAS WHERE HIGH WATER TABLE OR OTHER SEVERE SOIL/ WATER CONDITIONS ARE KNOWN TO EXIST, EXTERIOR FOUNDATION WALLS THAT RETAIN EARTH OR ENCLOSE INTERIOR SPACES AND FLOORS BELOW GRADE SHALL BE WATERPROOFED FROM THE TOP OF FOOTING TO FINISHED GRADE. WALLS SHALL BE WATERPROOFED IN ACCORDANCE WITH ONE OF THE FOLLOWING:

- 1) 2-PLY HOT MOPPED FELT
- 2) 55# ROOF ROLLING
- 3) 6 MIL POLYVINYL CHLORIDE
- 4) 6 MIL POLYETHYLENE
- 5) 40 MIL POLYMER MODIFIED ASPHALT
- 6) 60 MIL FLEXIBLE POLYMER CEMENT
- 7) 1/8" CEMENT BASED, FIBER REINFORCED, WATERPROOF COATING
- 8) 60 MIL SOLVENT FREE, LIQUID APPLIED SYNTHETIC RUBBER

EXCEPTION: ORGANIC SOLVENT BASED PRODUCTS SUCH AS HYDROCARBONS, CHLORINATED HYDROCARBONS, KETONS, AND ESTERS SHALL NOT BE USED FOR ICF WALLS WITH EXPANDED POLYSTYRENE FOAM MATERIAL. USE OF PLASTIC ROOFING CEMENTS, ACRYLIC COATINGS, LATEX COATINGS, MORTARS AND PARGINGS TO SEAL ICF WALLS IS PERMITTED. COLD SETTING ASPHALT OR HOT ASPHALT SHALL CONFORM TO TYPE C OF ASTM D 449. HOT ASPHALT SHALL BE APPLIED AT A TEMPERATURE OF LESS THAN 200 DEGREES FAHRENHEIT. ALL JOINTS IN MEMBRANE WATERPROOFING SHALL BE LAPPED AND SEALED WITH AN ADHESIVE COMPATIBLE WITH THE MEMBRANE.

POSTING OF CERTIFICATE

WSEC 105.4:

A PERMANENT CERTIFICATE SHALL BE COMPLETED BY THE BUILDER OR OTHER APPROVED PARTY AND POSTED ON A WALL IN THE SPACE WHERE THE FURNACE IS LOCATED, A UTILITY ROOM, OR AN APPROVED LOCATION INSIDE THE BUILDING. WHEN LOCATED ON AN ELECTRICAL PANEL, THE CERTIFICATE SHALL NOT COVER OR OBSTRUCT THE VISIBILITY OF THE CIRCUIT DIRECTORY LABEL, SERVICE DISCONNECT LABEL, OR OTHER REQUIRED LABELS. THE CERTIFICATE SHALL LIST THE PREDOMINANT R-VALUES OF INSULATION INSTALLED IN OR ON CEILING/ROOF, WALLS, FOUNDATION (SLAB, BELOW-GRADE WALL, AND/OR FLOOR) AND DUCTS OUTSIDE CONDITIONED SPACES; U-FACTORS FOR FENESTRATION AND THE SOLAR HEAT GAIN COEFFICIENT (SHGC) OF FENESTRATION; THE RESULTS FROM ANY REQUIRED DUCT SYSTEM AND BUILDING ENVELOPE AIR LEAKAGE TESTING DONE ON THE BUILDING; AND THE RESULTS FROM THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FLOW RATE TEST. WHERE THERE IS MORE THAN ONE VALUE FOR EACH COMPONENT, THE CERTIFICATE SHALL LIST THE VALUE COVERING THE LARGEST AREA. THE CERTIFICATE SHALL LIST THE TYPES AND EFFICIENCIES OF HEATING, COOLING, WHOLE-HOUSE MECHANICAL VENTILATION, AND SERVICE WATER HEATING APPLIANCES. WHERE A GAS-FIRED UNVENTED ROOM HEATER, ELECTRIC FURNACE, OR BASEBOARD ELECTRIC HEATER IS INSTALLED IN THE RESIDENCE, THE CERTIFICATE SHALL LIST "GAS-FIRED UNVENTED ROOM HEATER," "ELECTRIC FURNACE" OR "BASEBOARD ELECTRIC HEATER," AS APPROPRIATE. AN EFFICIENCY SHALL NOT BE LISTED FOR GAS-FIRED UNVENTED ROOM HEATERS, ELECTRIC FURNACES OR ELECTRIC BASEBOARD HEATERS.

THE CODE OFFICIAL MAY REQUIRE THAT DOCUMENTATION FOR ANY REQUIRED TEST RESULTS INCLUDE AN ELECTRONIC RECORD OF THE TIME, DATE AND LOCATION OF THE TEST. A DATE-STAMPED SMART PHONE PHOTO OR AIR LEAKAGE TESTING SOFTWARE MAY BE USED TO SATISFY THIS REQUIREMENT.

INSULATION AND MOISTURE PROTECTION

GENERAL:

MAINTAIN 1" CLEARANCE ABOVE INSULATION FOR FREE AIR FLOW. INSULATION BAFFLES TO EXTEND 6" ABOVE BATT INSULATION. INSULATION BAFFLES TO EXTEND 12" ABOVE LOOSE FILL INSULATION. INSULATE BEHIND TUBS/SHOWERS, PARTITIONS, AND CORNERS. FACED BATTS TO BE FACE STAPLED. FRICTION FIT UNFACED BATTS SHALL BE INSTALLED PER MFR. SPECS. USE 4 MIL POLY VAPOR RETARDER AT EXTERIOR WALLS.

INSULATION MATERIALS:

INSULATION MATERIAL, INCLUDING FACINGS, SUCH AS VAPOR RETARDERS OR VAPOR PERMEABLE MEMBRANES INSTALLED WITHIN FLOOR/CEILING ASSEMBLIES, ROOF/CEILING ASSEMBLIES, WALL ASSEMBLIES, CRAWL SPACES, AND ATTICS SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 WITH AN ACCOMPANYING SMOKE DEVELOPED INDEX NOT TO EXCEED 450 WHEN TESTED IN ACCORDANCE WITH ASTM E 64.

EXCEPTIONS:

1) WHEN SUCH MATERIALS ARE INSTALLED IN CONCEALED SPACES, THE FLAME SPREAD AND SMOKE DEVELOPMENT LIMITATIONS DO NOT APPLY TO THE FACINGS, PROVIDED THAT THE FACING IS INSTALLED IN SUBSTANTIAL CONTACT WITH THE UNEXPOSED SURFACE OF THE CEILING, FLOOR, OR WALL FINISH.
2) CELLULOSE LOOSE FILL INSULATION, WHICH IS NOT SPRAY APPLIED, COMPLYING WITH THE REQUIREMENTS OF IRC R316.3, SHALL ONLY BE REQUIRED TO MEET THE SMOKE DEVELOPED INDEX OF NOT MORE THAN 450.

INFILTRATION CONTROL:

EXTERIOR JOINTS AROUND WINDOWS AND DOOR PANELS, PENETRATIONS IN FLOORS, ROOFS, AND WALLS, AND ALL SIMILAR OPENINGS SHALL BE SEALED, CAULKED, GASKETED, OR WEATHER STRIPPED TO LIMIT AIR LEAKAGE.

VAPOR BARRIERS/ GROUND COVERS:

AN APPROVED VAPOR BARRIER SHALL BE PROPERLY INSTALLED IN ROOF DECKS, IN ENCLOSED CEILING SPACES, AND AT EXTERIOR WALLS. A GROUND COVER OF 6 MIL (0.006") BLACK POLYETHYLENE OR EQUIVALENT SHALL BE LAID OVER THE GROUND IN ALL CRAWL SPACES. THE GROUND COVER SHALL BE OVERLAPPED ONE FOOT AT EACH JOINT AND SHALL EXTEND TO THE FOUNDATION WALL.

WALL FLASHING:

APPROVED CORROSION RESISTANT FLASHING SHALL BE PROVIDED TO THE EXTERIOR WALL ENVELOPE IN SUCH A MANNER AS TO PREVENT ENTRY OF WATER INTO THE WALL CAVITY OR PENETRATION OF WATER TO THE BUILDING STRUCTURAL FRAMING COMPONENTS. THE FLASHING SHALL EXTEND TO THE SURFACE OF THE EXTERIOR WALL FINISH AND SHALL BE INSTALLED TO PREVENT WATER FROM REENTERING THE EXTERIOR WALL ENVELOPE. APPROVED CORROSION RESISTANT FLASHINGS SHALL BE INSTALLED AT ALL OF THE FOLLOWING LOCATIONS:

- 1) AT THE TOP OF ALL EXTERIOR WINDOW AND DOOR OPENINGS IN SUCH A MANNER AS TO BE LEAK PROOF, EXCEPT THAT SELF FLASHING WINDOWS, HAVING A CONTINUOUS LAP OF NOT LES THAN 1-1/8" (28mm) OF THE SHEATHING MATERIAL AROUND THE PERIMETER OF THE OPENING, INCLUDING CORNERS, DO NOT REQUIRE ADDITIONAL FLASHING. JAMB FLASHING MAY ALSO BE OMITTED WHEN SPECIFICALLY APPROVED BY THE BUILDING OFFICIAL.
- 2) AT THE INTERSECTION OF CHIMNEYS OR OTHER MASONRY CONSTRUCTION WITH FRAME OR STUCCO WALLS, WITH PROJECTING LIPS ON BOTH SIDES UNDER STUCCO OPENINGS.
- 3) UNDER AND AT THE ENDS OF MASONRY, WOOD, OR METAL COPINGS AND SILLS.
- 4) CONTINUOUSLY ABOVE ALL PROJECTING WOOD TRIM.
- 5) WHERE EXTERIOR PORCHES, DECKS, OR STAIRS ATTACH TO A WALL OR FLOOR ASSEMBLY OF WOOD CONSTRUCTION.
- 6) AT WALL AND ROOF INTERSECTIONS.
- 7) AT BUILT IN GUTTERS.

APPLIANCES IN ATTICS

APPLIANCES IN ATTICS (IRC 2018 - M1305.1.2)

ATTICS CONTAINING APPLIANCES SHALL BE PROVIDED WITH AN OPENING AND A CLEAR UNOBSTRUCTED PASSAGEWAY LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE, BUT NOT LESS THAN 30 INCHES (762mm) HIGH AND 22 INCHES (559mm) WIDE AND NOT MORE THAN 20 FEET (6096mm) LONG MEASURED ALONG THE CENTERLINE OF THE PASSAGEWAY FROM THE OPENING TO THE APPLIANCE. THE PASSAGEWAY SHALL HAVE CONTINUOUS SOLID FLOORING IN ACCORDANCE WITH CHAPTER 5, NOT LESS THAN 24 INCHES (610mm) WIDE. A LEVEL SURFACE SPACE AT LEAST 30 INCHES (762mm) DEEP AND 30 INCHES (762mm) WIDE SHALL BE PRESENT ALONG ALL SIDES OF THE APPLIANCE WHERE ACCESS IS REQUIRED. THE CLEAR ACCESS OPENINGS SHALL BE A MINIMUM OF 20 INCHES BY 30 INCHES (508mm X 762mm), AND LARGE ENOUGH TO ALLOW REMOVAL OF THE LARGEST APPLIANCE.

EXCEPTIONS:

1)THE PASSAGEWAY AND LEVEL SERVICE SPACE ARE NOT REQUIRED WHERE THE APPLIANCE CAN BE SERVICED THROUGH THE REQUIRED OPENING.
2)WHERE THE PASSAGEWAY IS UNOBSTRUCTED AND NOT LESS THAN 6 FEET (1829mm) HIGH AND 22 INCHES (559mm) WIDE FOR ITS ENTIRE LENGTH, THE PASSAGEWAY SHALL NOT BE MORE THAN 50 FEET (15,250mm) LONG.

HABITABLE ATTIC SPACE

HABITABLE ATTIC:

A HABITABLE ATTIC SHALL BE DEFINED AS:

- 1) ATTIC WITH A CONDITIONED AREA OF 70 SQUARE FEET OR MORE.
- 2) CONTAINS AN OCCUPIABLE FLOOR AREA CEILING HEIGHT THAT COMPLIES WITH R305.
- 3) ATTIC SPACE IS ENTIRELY ENCLOSED BY THE ROOF ASSEMBLY.
- 4) ATTIC SPACE IS NOT CONSIDERED A STORY.

CARPENTRY

GENERAL

ALL NAILING TO COMPLY WITH REQUIREMENTS OF IRC TABLE R602.3(1). GYPSUM WALL BOARD AT INTERIOR WALLS TO BE FASTENED ACCORDING TO TABLE R702.3.5. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED. FIELD OUT ENDS, NOTCHES, AND DRILLED HOLES OF PRESSURE TREATED LUMBER SHALL BE RETREATED IN THE FIELD IN ACCORDANCE WITH AWPA M4. PER IRC 317.3, FASTENERS FOR PRESSURE PRESERVATIVE AND FIRE RETARDANT TREATED WOOD SHALL BE OF HOT DIPPED GALVANIZED STEEL, STAINLESS STEEL, SILICON BRONZE, OR COPPER.

- 1) 6" MIN. CLEARANCE BETWEEN WOOD AND EARTH.
- 2) 12" MIN. CLEARANCE BETWEEN FLOOR BEAMS AND EARTH.
- 3) 18" MIN. CLEARANCE BETWEEN FLOOR JOISTS AND EARTH.

FASTENERS:

ALL NAILS SPECIFIED ON THIS PLAN SHALL BE COMMON OR GALVANIZED BOX (UNLESS NOTED OTHERWISE) OF THE DIAMETER AND LENGTH LISTED BELOW OR AS PER APPENDIX "L) O FHTE NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION (NDS).

8d COMMON (0.131" DIA., 2-1/2" LENGTH), 8d BOX (0.013" DIA., 2-1/2" LONG), 10d COMMON (0.148" DIA., 3" LONG), 10d BOX (0.128" DIA., 3" LENGTH), 16d COMMON (0.162" DIA., 3-1/2" LONG), 16d SINKER (0.148" DIA., 3-1/4" LONG), 5d COOLER (0.086" DIA., 1-5/8" LONG), 6d COOLER (0.092" DIA., 1-7/8" LONG).

LUMBER GRADES:

FRAMING LUMBER SHALL COMPLY WITH THE LATEST EDITION OF THE GRADING RULES OF THE WESTERN PRODUCTS ASSOCIATION OR THE WEST COAST LUMBER INSPECTION BUREAU. ALL SAWN LUMBER SHALL BE STAMPED WITH THE GRADE MARK OF AN APPROVED LUMBER GRADING AGENCY.

GLUE LAMINATED BEAMS (GLB):

ALL GLUE LAMINATED BEAMS SHALL BE 24F-V4 FOR SINGLE SPANS AND 24F-V8 FOR CONTINUOUS OR CANTILEVER SPANS.

ENGINEERED WOOD BEAMS AND I-JOIST:

CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SPECIFICATIONS FOR APPROVAL BY BUILDING OFFICIAL. DESIGN, FABRICATION, AND ERECTION IN ACCORDANCE WITH THE LATEST ICC EVALUATION REPORT. CALCULATIONS SHALL INCLUDE DEFLECTION AND CAMBER REQUIREMENTS. DEFLECTION SHALL BE LIMITED AS FOLLOWS:

FLOOR LIVE LOAD MAXIMUM = L/480
FLOOR TOTAL LOAD MAXIMUM = L/240

PREFABRICATED WOOD TRUSSES:

PREFABRICATED WOOD TRUSSES SHALL BE DESIGNED TO SUPPORT SELF WEIGHT PLUS LIVE LOAD AND SUPERIMPOSED DEAD LOADS AS STATED IN THE GENERAL NOTES. TRUSSES SHALL BE DESIGNED AND STAMPED BY A REGISTERED DESIGN PROFESSIONAL AND FABRICATED ONLY FROM THOSE DESIGNS. NONBEARING WALLS SHALL BE HELD AWAY FROM THE TRUSS BOTTOM CHORD WITH AN APPROVED FASTENER (SUCH AS SIMPSON STC) TO ENSURE THAT THE TRUSS BOTTOM CHORD WILL NOT BEAR ON THE WALL. ALL PERMANENT TRUSS MEMBER BRACING SHALL BE INSTALLED PER THE TRUSS DESIGN DRAWINGS.

ROOF/ WALL FLOOR SHEATHING

TYPICAL WALL AND ROOF SHEATHING SHALL BE 7/16" MINIMUM UNLESS OTHERWISE SPECIFIED. MINIMUM NAILING SHALL BE 8d COMMON @ 6" O.C. AT PANEL EDGES AND 12" O.C. IN FIELD, U.N.O. ON SHEARWALL SCHEDULE. SPAN INDEX SHALL BE 24/0 FOR WALLS AND 24/16 FOR ROOF. FLOOR SHEATHING SHALL BE 3/4" T&G SHEATHING, UNLESS OTHERWISE SPECIFIED. MINIMUM NAILING SHALL BE 8d COMMON AT 6" O.C. AT PANEL EDGES AND 12" O.C. IN FIELD. SPAN INDEX SHALL BE 40/20 UNLESS NOTED OTHERWISE. STAGGER END LAPS AT ROOF AND FLOOR SHEATHING.

DRILLING AND NOTCHING STUDS

DRILLING AND NOTCHING STUDS (R602.6):

DRILLING AND NOTCHING OF STUDS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

1) NOTCHING- ANY STUD IN AN EXTERIOR WALL OR BEARING PARTITION MAY BE CUT OR NOTCHED TO A DEPTH NOT EXCEEDING 25 PERCENT OF ITS WIDTH. STUDS IN NONBEARING PARTITIONS MAY BE NOTCHED TO A DEPTH NOT TO EXCEED 40 PERCENT OF A SINGLE STUD WIDTH.
2) DRILLING- ANY STUD MAY BE BORED OR DRILLED, PROVIDED THAT THE DIAMETER OF THE RESULTING HOLE IS NO MORE THAN 60 PERCENT OF THE STUD WIDTH, AND THE HOLE IS NO MORE THAN 5/8" (16mm) TO THE EDGE OF THE STUD, AND THE HOLE IS NOT LOCATED IN THE SAME SECTION AS A CUT OR NOTCH. STUDS LOCATED IN EXTERIOR WALLS OR BEARING PARTITIONS DRILLED OVER 40 PERCENT AND UP TO 60 PERCENT SHALL ALSO BE DOUBLED WITH NO MORE THAN TWO SUCCESSIVE DOUBLED STUDS BORED. (SEE R602.6(1) AND R602.6(2))
EXCEPTION: USE OF APPROVED STUD SHOES IS PERMITTED WHEN THEY ARE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

DRILLING AND NOTCHING OF TOP PLATE (R602.6.1):

WHEN PIPING OR DUCTWORK IS PLACED IN OR PARTLY IN AN EXTERIOR WALL OR INTERIOR LOAD BEARING WALL NECESSITATING CUTTING, DRILLING, OR NOTCHING OF THE TOP PLATE BY MORE THAN 50 PERCENT OF ITS WIDTH, A GALVANIZED METAL TIE OF NOT LESS THAN 16ga (0.054 INCH THICK,1.37mm) AND 1-1/2" (38mm) WIDE SHALL BE FASTENED ACROSS AND TO THE PLATE AT EACH SIDE OF THE OPENING WITH NOT LESS THAN EIGHT 16d NAILS AT EACH SIDE OF EQUIVALENT (SEE R602.6.1).

EXCEPTION: WHEN THE ENTIRE SIDE OF THE WALL WITH THE NOTCH OR CUT IS COVERED BY WOOD STRUCTURAL PANEL SHEATHING.

DOORS, WINDOWS & SKYLIGHTS

GENERAL:

ALL SKYLIGHTS AND SKY WALLS TO BE LAMINATED GLASS UNLESS NOTED OTHERWISE. BEDROOM EMERGENCY EGRESS WINDOWS SHALL HAVE A MINIMUM NET CLEAR OPENING OF 5.7 SQUARE FEET WITH A MINIMUM NET CLEAR OPENING WIDTH OF 20" AND A MINIMUM NET CLEAR OPENING HEIGHT OF 24". FINISHED SILL HEIGHT SHALL BE A MAXIMUM 44" ABOVE FINISHED FLOOR.

- 1) WINDOW FLASHING TO BE FASTENED PER IRC R703.8
- 2) WINDOW GUARDS ARE REQUIRED PER IRC R612.

OPERABLE SECTIONS OF THE WINDOWS SHALL NOT PERMIT OPENINGS THAT ALLOW PASSAGE OF A 4 INCH DIAMETER (102mm) SPHERE WHERE SUCH OPENINGS ARE LOCATED WITHIN 24 INCHES (610mm) OF THE FINISHED FLOOR.

EXCEPTION:

1) WINDOWS WHOSE OPENINGS WILL NOT ALLOW A 4 INCH DIAMETER (102mm) SPHERE TO PASS THROUGH THE OPENING WHEN THE OPENING IS IN ITS LARGEST OPENED POSITION.
2) OPENINGS THAT ARE PROVIDED WITH WINDOW FALL PREVENTION DEVICES THAT COMPLY WITH ASTM F 2000.
3) WINDOWS THAT ARE PROVIDED WITH WINDOW OPENING CONTROL DEVICES THAT COMPLY WITH SECTION R312.2.2.

EMERGENCY ESCAPE AND RESCUE:

WINDOW OPENING HEIGHT OF NOT MORE THAN 44 INCHES FROM THE FINISHED FLOOR TO THE BOTTOM OF THE CLEAR WINDOW OPENING.

WINDOW INSTALLATION:

WINDOWS SHALL BE INSTALLED AND FINISHED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. WRITTEN INSTALLATION INSTRUCTIONS SHALL BE PROVIDED BY THE MANUFACTURER FOR EACH WINDOW.

SAFETY GLAZING SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS OR AS OTHERWISE REQUIRED PER IRC R308.4:

- 1) SIDE HINGED DOORS EXCEPT JALOUSIES.
- 2) SLIDING GLASS DOORS AND PANELS IN SLIDING AND BI-FOLD CLOSET DOOR ASSEMBLIES.
- 3) STORM DOORS.
- 4) SHOWER AND BATH TUB, HOT TUB, WHIRLPOOL, SAUNA, STEAM ENCLOSURES.
- 5) GLAZING WITH THE EXPOSED EDGE WITHIN A 24" ARC OF EITHER VERTICAL EDGE OF A DOOR IN THE CLOSED POSITION AND BOTTOM EDGE IS LESS THAN 60" ABOVE THE WALKING SURFACE.
- 6) GLAZING IS GREATER THAN 9 SQUARE FEET AND LESS THAN 18" ABOVE FINISHED FLOOR.
- 7) GLAZING IN GUARDRAILS.
- 8) GLAZING IS LESS THAN 18" ABOVE FINISHED FLOOR.
- 9) STAIRWAYS, LANDINGS, AND RAMPS WITHIN 36" HORIZONTAL OF WALKING SURFACE AND 60" ABOVE ADJACENT WALKING SURFACE.

GLAZING ADJACENT TO STAIRS AND RAMPS:

A MINIMUM HEIGHT OF 36" ABOVE A TREAD AT THE SIDE OF A STAIRWAY SHALL BE MAINTAINED.

GLAZING ADJACENT TO THE BOTTOM OF STAIR LANDING:

SAFETY GLAZING IS REQUIRED IF:

- 1)LESS THAN 60" MEASURED HORIZONTALLY FROM THE BOTTOM STAIR TREAD NOSING.
- 2) BOTTOM EDGE OF GLAZING IS LESS THAN 36" ABOVE THE LANDING/WALKING SURFACE.

EXCEPTION: THE GLAZING IS PROTECTED BY A GUARD COMPLYING WITH SECTION R312 AND THE PLANE OF THE GLASS IS MORE THAN 18" FROM THE GUARD.

LIGHTING

STAIRWAY ILLUMINATION (R303.7):

STAIRWAY ILLUMINATION- ALL INTERIOR AND EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH A MEANS TO ILLUMINATE THE STAIRS, INCLUDING THE LANDINGS AND TREADS. INTERIOR STAIRWAYS SHALL BE PROVIDED AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF EACH LANDING OF THE STAIRWAY. FOR INTERIOR STAIRS THE ARTIFICIAL LIGHT SOURCES SHALL BE CAPABLE OF ILLUMINATING TREADS AND LANDINGS TO LEVELS NOT LESS THAN 1 FOOT CANDLE (11 LUX) MEASURED AT THE CENTER OF TREADS AND LANDINGS. EXTERIOR STAIRWAYS SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE TOP LANDING OF THE STAIRWAY. EXTERIOR STAIRWAYS PROVIDING ACCESS TO A BASEMENT FROM THE OUTSIDE GRADE LEVEL SHALL BE PROVIDED WITH AN ARTIFICIAL LIGHT SOURCE LOCATED IN THE IMMEDIATE VICINITY OF THE BOTTOM LANDING OF THE STAIRWAY.

EXCEPTION: AN ARTIFICIAL LIGHT SOURCE IS NOT REQUIRED AT THE TOP AND BOTTOM LANDING, PROVIDED AN ARTIFICIAL LIGHT SOURCE IS LOCATED DIRECTLY OVER EACH STAIRWAY SECTION.

WSEC R404.1 LIGHTING EQUIPMENT:

NOT LESS THAN 90% OF LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS.

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LIGHTSTONE
5910 E MERCER WAY
MERCER ISLAND, WA 98040

22079LIG

PROJECT	REV	DATE	ISSUE/REVISION
	05/22/23	PERMIT SUBMITTAL	
SHEET TITLE			
GENERAL NOTES			
REVISION NO.			
SUPERSEDES ALL PREVIOUS REVISIONS			
SHEET NO.			
G0.3			

MECHANICAL

HEATING EQUIPMENT:

ALL WARM AIR FURNACES SHALL BE LISTED AND LABELED BY AN APPROVED AGENCY AND INSTALLED TO LISTED SPECIFICATIONS. NO WARM AIR FURNACES SHALL BE INSTALLED IN A ROOM USED OR DESIGNED TO BE USED AS A BEDROOM, BATHROOM, CLOSET, OR IN ANY ENCLOSED SPACE WITH ACCESS ONLY THROUGH SUCH ROOM OR SPACE, EXCEPT DIRECT VENT FURNACE, ENCLOSED FURNACES AND ELECTRIC HEATING FURNACES.

LIQUEFIED PETROLEUM GAS BURNING APPLIANCES SHALL NOT BE INSTALLED IN A PIT, BASEMENT, OR SIMILAR LOCATION WHERE HEAVIER THAN AIR GAS MIGHT COLLECT. APPLIANCES SO FUELED SHALL NOT BE INSTALLED IN AN ABOVE GRADE UNDER FLOOR SPACE OR BASEMENT UNLESS SUCH LOCATION IS PROVIDED WITH AN APPROVED MEANS FOR REMOVAL OF UNBURNED GAS.

PROVIDE COMBUSTION AIR FOR GAS APPLIANCES PER 2018 IRC G2407.

VENTILATION:

GROUP R OCCUPANCIES SHALL BE PROVIDED WITH VENTILATION SYSTEMS WHICH COMPLY WITH THE SECTION M1505 OF THE 2018 IRC WITH WASHINGTON STATE AMENDMENTS.

M1505.2 RECIRCULATION OF AIR. EXHAUST AIR FROM BATHROOMS AND TOILET ROOMS SHALL NOT BE RECIRCULATED WITHIN A RESIDENCE AND SHALL BE EXHAUSTED DIRECTLY TO THE OUTDOORS. EXHAUST AIR FROM BATHROOMS, TOILET ROOMS AND KITCHENS SHALL NOT DISCHARGE INTO AN ATTIC, CRAWL SPACE OR OTHER AREAS INSIDE THE BUILDING. THIS SECTION SHALL NOT PROHIBIT THE INSTALLATION OF DUCTLESS RANGE HOODS IN ACCORDANCE WITH THE EXCEPTION TO SECTION M1503.3.

M1505.3 EXHAUST EQUIPMENT. EXHAUST EQUIPMENT SERVING SINGLE DWELLING UNITS SHALL BE LISTED AND LABELED AS PROVIDING THE MINIMUM REQUIRED AIRFLOW IN ACCORDANCE WITH ANSI/AMCA 210-ANSI/ASHRAE 51.

M1505.4 WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM. WHOLE-HOUSE MECHANICAL VENTILATION SYSTEMS SHALL BE DESIGNED IN ACCORDANCE WITH SECTIONS M1505.4.1 THROUGH M1505.4.4

M1505.4.1 SYSTEM DESIGN. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL CONSIST OF ONE OR MORE SUPPLY FANS, ONE OR MORE EXHAUST FANS, OR AN ERV/HRV WITH INTEGRAL FANS, ASSOCIATED DUCTS AND CONTROLS. LOCAL EXHAUST OR SUPPLY FANS ARE PERMITTED TO SERVE AS PART OF THE WHOLE HOUSE VENTILATION SYSTEM WHEN PROVIDED WITH THE PROPER CONTROLS PER SECTION M1505.4.2. THE SYSTEMS SHALL BE DESIGNED AND INSTALLED TO EXHAUST AND/OR SUPPLY THE MINIMUM OUTDOOR AIRFLOW RATES PER SECTION M1505.4.3 AS MODIFIED BY THE WHOLE HOUSE VENTILATION SYSTEM COEFFICIENTS IN SECTION M1505.4.3.1 WHERE APPLICABLE. THE WHOLE HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED BY PER SECTION M1505.4.2 UNLESS CONFIGURED WITH INTERMITTENT OFF CONTROLS PER SECTION M1505.4.3.2

FOR WHOLE HOUSE COMPONENT REQUIREMENTS SEE SECTION M1505.4.1.1

FOR SYSTEM CONTROLS REQUIREMENTS SEE SECTION M1505.4.2

M1505.4.3 MECHANICAL VENTILATION RATE. THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL PROVIDE OUTDOOR AIR AT A CONTINUOUS RATE AS DETERMINED IN ACCORDANCE WITH TABLE M1505.4.3(1) OR EQUATION 15-1.

EQUATION 15-1. VENTILATION RATE IN CUBIC FEET PER MINUTE = (0.01 X TOTAL SQUARE FOOT AREA OF THE HOUSE) + [7.5 X (NUMBER OF BEDROOMS +1)]

M1505.4.3.1 VENTILATION QUALITY ADJUSTMENT. THE MINIMUM WHOLE HOUSE VENTILATION RATE FROM SECTION M1505.4.3 SHALL BE ADJUSTED BY THE SYSTEM COEFFICIENT IN TABLE M1505.4.3(2) BASED ON THE SYSTEM TYPE NOT MEETING THE DEFINITION OF A BALANCED WHOLE-HOUSE VENTILATION SYSTEM AND/OR NOT MEETING THE DEFINITION OF A DISTRIBUTED WHOLE-HOUSE VENTILATION SYSTEM.

EQUATION 15-2. QUALITY ADJUSTED AIRFLOW RATE (CFM) = VENTILATION RATE (CFM) X SYSTEM COEFFICIENT FROM TABLE 1505.4.3(2)

EXCEPTION: THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM IS PERMITTED TO OPERATE INTERMITTENTLY WHERE THE SYSTEM HAS CONTROLS THAT ENABLE OPERATION FOR NOT LESS THAN 50% OF EACH 4-HOUR SEGMENT AND THE VENTILATION RATE PRESCRIBED IN TABLE M1505.4.3(1) IS MULTIPLIED BY THE FACTOR DETERMINED IN ACCORDANCE WITH TABLE M1505.4.3(3).

TABLE M1505.4.3(1) CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION AIRFLOW RATE:

FLOOR AREA	0-1 BR	2 BR	3 BR	4 BR	5+ BR	6 BR	7BR	8+BR
< 500 SF	30 CFM	30 CFM	35 CFM	45 CFM	50 CFM			
501-1,000 SF	30 CFM	35 CFM	40 CFM	50 CFM	55 CFM			
1,001-1,500 SF	30 CFM	40 CFM	45 CFM	55 CFM	60 CFM			
1,501-2,000 SF	35 CFM	45 CFM	50 CFM	60 CFM	65 CFM			
2,001-2,500 SF	40 CFM	50 CFM	55 CFM	65 CFM	70 CFM			
2,501-3,000 SF	45 CFM	55 CFM	60 CFM	70 CFM	75 CFM			
3,001-3,500 SF	50 CFM	60 CFM	65 CFM	75 CFM	80 CFM			
3,501-4,000 SF	55 CFM	65 CFM	70 CFM	80 CFM	85 CFM			
4,001-4,500 SF	60 CFM	70 CFM	75 CFM	85 CFM	90 CFM			
4,501-5,000 SF	65 CFM	75 CFM	80 CFM	90 CFM	95 CFM			
5,001-6,000 SF	75 CFM	90 CFM	90 CFM	105 CFM	105 CFM	120 CFM	120 CFM	135 CFM
6,001-7,500 SF	90 CFM	105 CFM	105 CFM	120 CFM	120 CFM	135 CFM	135 CFM	150 CFM
> 7,500 SF	105 CFM	120 CFM	120 CFM	135 CFM	135 CFM	150 CFM	150 CFM	165 CFM

TABLE M1505.4.3(2) SYSTEM COEFFICIENT:

SYSTEM TYPE	DISTRIBUTED	NOT DISTRIBUTED
BALANCED	1.0	1.25
NOT BALANCED	1.25	1.5

TABLE M1505.4.3(3) INTERMITTENT OFF WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS:

RUN TIME % EA 4HR SEGMENT FACTOR	50%	66%	75%	100%
	2	1.5	1.3	1.0

TABLE M1505.4.4 MINIMUM REQUIRED LOCAL EXHAUST RATES FOR ONE AND TWO FAMILY DWELLINGS.

KITCHENS: 100 CFM INTERMITTENT OR 30 CFM CONTINUOUS
BATHROOMS/TOILET ROOMS: MECHANICAL EXHAUST CAPACITY OF 50 CFM INTERMITTENT OR 20 CFM CONTINUOUS

ALL WHOLE HOUSE VENTILATION REQUIREMENTS AS DETERMINED BY SECTION M1505 OF THE IRC SHALL BE MET WITH A HIGH EFFICIENCY FAN (MAXIMUM 0.35 WATTS/CFM), NOT INTERLOCKED WITH THE FURNACE FAN. VENTILATION SYSTEMS USING A FURNACE INCLUDING AN ECM MOTOR ARE ALLOWED, PROVIDED THAT THEY ARE CONTROLLED TO OPERATE AT LOW SPEED IN VENTILATION ONLY MODE.

HVAC DUCTS MUST NOT DISPLACE REQUIRED INSULATION AT ANY GIVEN LOCATION, PROVIDE REQUIRED FLOOR OR CEILING INSULATION ON UNHEATED SIDE OF DUCTS INSTALLED IN JOIST OR RAFTER CAVITIES WHERE UNHEATED SPACES ARE ABOVE OR BELOW.

EVERY FACTORY BUILT CHIMNEY, TYPE L VENT, TYPE B GAS VENT, OR TYPE BW GAS VENT SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF ITS LISTING, MANUFACTURER'S INSTALLATION INSTRUCTIONS, AND APPLICABLE CODE REQUIREMENTS.

A TYPE L VENTING SYSTEM SHALL TERMINATE NOT LESS THAN 2 FEET ABOVE THE HIGH TEST POINT WHERE THE VENT PASSES THROUGH THE ROOF OF THE BUILDING AND AT LEAST 2'-0" HIGHER THAN ANY PORTION OF THE BUILDING WITHIN 10'-0" OF THE VENT.

DUCTS

WSEC R403.3 DUCTS:

DUCTS AND AIR HANDLERS SHALL BE INSTALLED IN ACCORDANCE WITH SECTIONS R403.3.1 THROUGH R403.3.7.

R403.3.1 INSULATION. DUCTS OUTSIDE THE BUILDING THERMAL ENVELOPE SHALL BE INSULATED TO A MINIMUM OF R-8. DUCTS WITHIN A CONCRETE SLAB OR IN THE GROUND SHALL BE INSULATED TO R-10 WITH INSULATION DESIGNED TO BE USED BELOW GRADE.

EXCEPTION: DUCTS OR PORTIONS THEREOF LOCATED COMPLETELY INSIDE THE BUILDING THERMAL ENVELOPE. DUCTS LOCATED IN CRAWL SPACES DO NOT QUALIFY FOR THIS EXCEPTION.

R403.3.2 SEALING. DUCTS, AIR HANDLERS, AND FILTER BOXES SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH EITHER THE INTERNATIONAL MECHANICAL CODE OR INTERNATIONAL RESIDENTIAL CODE, AS APPLICABLE.

EXCEPTIONS:

1. AIR-IMPERMEABLE SPRAY FOAM PRODUCTS SHALL BE PERMITTED TO BE APPLIED WITHOUT ADDITIONAL JOINT SEALS.

2. FOR DUCTS HAVING A STATIC PRESSURE CLASSIFICATION OF LESS THAN 2 INCHED OF WATER COLUMN (500 PA), ADDITIONAL CLOSURE SYSTEMS SHALL NOT BE REQUIRED FOR CONTINUOUSLY WELDED JOINTS AND SEAMS, AND LOCKING-TYPE JOINTS AND SEAMS OF OTHER THAN THE SNAP-LOCK AND BUTTON-LOCK TYPES.

R403.3.2.1 SEALED AIR HANDLER. AIR HANDLERS SHALL HAVE A MANUFACTURER'S DESIGNATION FOR AN AIR LEAKAGE OF NO MORE THAN 2 PERCENT OF THE DESIGN AIR FLOW RATE WHEN TESTED IN ACCORDANCE WITH ASHRAE 193.

R403.3.3 DUCT TESTING. DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH WSU RS-33, USING THE MAXIMUM DUCT LEAKAGE RATES SPECIFIED.

EXCEPTIONS:

1. THE TOTAL LEAKAGE TEST OR LEAKAGE TO THE OUTDOORS IS NOT REQUIRED FOR DUCTS AND AIR HANDLERS LOCATED ENTIRELY WITHIN THE BUILDING THERMAL ENVELOPE. FOR FORCED AIR DUCTS, A MAXIMUM OF 10 LINEAR FEET OF RETURN DUCTS AND 5 LINEAR FEET OF SUPPLY DUCTS MAY BE LOCATED OUTSIDE THE CONDITIONED SPACE. ALL METALLIC DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE MUST HAVE BOTH TRANSVERSE AND LONGITUDINAL JOINTS SEALED WITH MASTIC. IF FLEX DUCTS ARE USED, THEY CANNOT CONTAIN SPLICES. FLEX DUCT CONNECTIONS MUST BE MADE WITH NYLON STRAPS AND INSTALLED USING A PLASTIC STRAPPING TENSIONING TOOL. DUCTS LOCATED IN CRAWL SPACES DO NOT QUALIFY FOR THIS EXCEPTION.

2. A DUCT AIR LEAKAGE TEST SHALL NOT BE REQUIRED FOR DUCTS SERVING HEAT OR ENERGY RECOVERY VENTILATORS THAT ARE NOT INTEGRATED WITH DUCTS SERVING HEATING OR COOLING SYSTEMS.

A WRITTEN REPORT OF THE RESULTS SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE CODE OFFICIAL.

R403.3.4 DUCT LEAKAGE. THE TOTAL LEAKAGE OF THE DUCTS, WHERE MEASURED IN ACCORDANCE WITH SECTION R403.3.3, SHALL BE AS FOLLOWS:

1. ROUGH-IN TEST: TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 PA) ACROSS THE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTERS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST. IF THE AIR HANDLER IS NOT INSTALLED AT THE TIME OF THE TEST, TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 3 CFM (85 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA.

2. POSTCONSTRUCTION TEST: LEAKAGE TO OUTDOORS SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA OR TOTAL LEAKAGE SHALL BE LESS THAN OR EQUAL TO 4 CFM (113.3 L/MIN) PER 100 SQUARE FEET (9.29 M2) OF CONDITIONED FLOOR AREA WHEN TESTED AT A PRESSURE DIFFERENTIAL OF 0.1 INCHES W.G. (25 PA) ACROSS THE ENTIRE SYSTEM, INCLUDING THE MANUFACTURER'S AIR HANDLER ENCLOSURE. ALL REGISTER BOOTS SHALL BE TAPED OR OTHERWISE SEALED DURING THE TEST.

R403.3.5 BUILDING CAVITIES. BUILDING FRAMING CAVITIES SHALL NOT BE USED AS DUCTS OR PLENUMS. INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION. R403.3.6 DUCTS BURIED WITHIN CEILING INSULATION, WHERE SUPPLY AND RETURN AIR DUCTS ARE PARTIALLY OR COMPLETELY BURIED IN CEILING INSULATION, SUCH DUCTS SHALL COMPLY WITH ALL OF THE FOLLOWING:

1. THE SUPPLY AND RETURN DUCTS SHALL HAVE AN INSULATION R-VALUE NOT LESS THAN R-8.

2. AT ALL POINTS ALONG EACH DUCT, THE SUM OF THE CEILING INSULATION R-VALUE AGAINST AND ABOVE THE TOP OF THE DUCT, AND AGAINST AND BELOW THE BOTTOM OF THE DUCT, SHALL BE NOT LESS THAN R-19, EXCLUDING THE R-VALUE OF THE DUCT INSULATION.

EXCEPTION: SECTIONS OF THE SUPPLY DUCT THAT ARE LESS THAN 3 FEET (914 MM) FROM THE SUPPLY OUTLET SHALL NOT BE REQUIRED TO COMPLY WITH THESE REQUIREMENTS.

R403.3.6.1 EFFECTIVE R-VALUE OF DEEPLY BURIED DUCTS. WHERE USING A SIMULATED ENERGY PERFORMANCE ANALYSIS, SECTIONS OF DUCTS THAT ARE: INSTALLED IN ACCORDANCE WITH SECTION R403.3.6; LOCATED DIRECTLY ON, OR WITHIN 5.5 INCHES (140 MM) OF THE CEILING; SURROUNDED WITH BLOWN-IN ATTIC INSULATION HAVING AN R-VALUE OF R-30 OR GREATER AND LOCATED SUCH THAT THE TOP OF THE DUCT IS NOT LESS THAN 3.5 INCHES (89 MM) BELOW THE TOP OF THE INSULATION, SHALL BE CONSIDERED AS HAVING AN EFFECTIVE DUCT INSULATION R-VALUE OF R-25.

DUCTS, CNTD

R403.3.7 DUCTS LOCATED IN CONDITIONED SPACE. FOR DUCTS TO BE CONSIDERED AS INSIDE A CONDITIONED SPACE, SUCH DUCTS SHALL COMPLY WITH EITHER OF THE FOLLOWING:

1. ALL DUCT SYSTEMS SHALL BE LOCATED COMPLETELY WITHIN THE CONTINUOUS AIR BARRIER AND WITHIN THE BUILDING THERMAL ENVELOPE.

2. ALL HEATING, COOLING AND VENTILATION SYSTEM COMPONENTS SHALL BE INSTALLED INSIDE THE CONDITIONED SPACE INCLUDING, BUT NOT LIMITED TO, FORCED AIR DUCTS, HYDRONIC PIPING, HYDRONIC FLOOR HEATING LOOPS, CONVECTORS AND RADIATORS. COMBUSTION EQUIPMENT SHALL BE DIRECT VENT OR SEALED COMBUSTION.

3. FOR FORCED AIR DUCTS, A MAXIMUM OF 10 LINEAR FEET OF RETURN DUCTS AND 5 LINEAR FEET OF SUPPLY DUCTS IS PERMITTED TO BE LOCATED OUTSIDE THE CONDITIONED SPACE, PROVIDED THEY ARE INSULATED TO A MINIMUM OF R-8.

3.1. METALLIC DUCTS LOCATED OUTSIDE THE CONDITIONED SPACE MUST HAVE BOTH TRANSVERSE AND LONGITUDINAL JOINTS SEALED WITH MASTIC.

3.2. IF FLEX DUCTS ARE USED, THEY CANNOT CONTAIN SPLICES. FLEX DUCT CONNECTIONS MUST BE MADE WITH NYLON STRAPS AND INSTALLED USING A PLASTIC STRAPPING TENSIONING TOOL.

DRYER EXHAUST DUCTS:

DRYER EXHAUST DUCT LENGTH SHALL COMPLY WITH IRC M1502.4.5. PROTECTIVE SHIELD PLATES SHALL BE CONSTRUCTED OF STEEL, HAVING A THICKNESS OF 0.062" AND EXTEND A MINIMUM OF 2 INCHES ABOVE SOLE PLATES AND BELOW TOP PLATES. DRYER EXHAUST DUCT REQUIRES THAT PROTECTIVE SHIELD BE PLACED ON THE FINISHED FACE OF ALL FRAMING MEMBERS WHERE THERE IS LESS THAN 1-1/4" BETWEEN THE DUCT AND THE FINISHED FACE OF THE FRAMING MEMBER. DUCTS SHALL HAVE SMOOTH INTERIORS AND BE MADE OF MIN. 28 GAUGE METAL AND BE NO MORE THAN 35 FEET IN LENGTH FROM DRYER CONNECTION TO OUTLET TERMINAL (IRC M1502). FOR DUCT RUNS WITH ELBOWS, MAXIMUM ALLOWABLE LENGTH SHALL BE REDUCED PER IRC M1502.4.5.1.

DRAFT STOPPING AND FIRE BLOCKING

DRAFT STOPPING:

WHEN THERE IS USABLE SPACE BOTH ABOVE AND BELOW THE CONCEALED SPACE OF A FLOOR/ CEILING ASSEMBLY, DRAFT STOPS SHALL BE INSTALLED SO THAT THE AREA OF THE CONCEALED SPACE DOES NOT EXCEED 1,000 SQUARE FEET. DRAFT STOPPING SHALL DIVIDE THE CONCEALED SPACE INTO APPROXIMATELY EQUAL AREAS. WHERE THE ASSEMBLY IS ENCLOSED BY A FLOOR MEMBRANE ABOVE AND A CEILING MEMBRANE BELOW, DRAFT STOPPING SHALL BE PROVIDED IN FLOOR/ CEILING ASSEMBLIES UNDER THE FOLLOWING CIRCUMSTANCES:

- 1) CEILING IS SUSPENDED UNDER THE FLOOR FRAMING.
- 2) FLOOR FRAMING IS CONSTRUCTED OF TRUSS TYPE OPEN WEB OR PERFORATED MEMBERS.

DRAFT STOPPING SHALL CONSIST OF MATERIALS LISTED IN IRC SECTION R302.12.

FIRE BLOCKING:

FIRE BLOCKING SHALL BE PROVIDED TO CUT OFF ALL CONCEALED DRAFT OPENINGS (BOTH VERTICALLY AND HORIZONTALLY) AND TO FORM AN EFFECTIVE BARRIER BETWEEN STORIES, AND BETWEEN A TOP STORY AND THE ROOF SPACE. FIRE BLOCKING SHALL BE PROVIDED IN WOOD FRAME CONSTRUCTION IN THE FOLLOWING LOCATIONS:

- 1) IN CONCEALED SPACES OF STUD WALLS AND PARTITIONS, INCLUDING FURRED SPACES AND PARALLEL ROWS OF STUDS OR STAGGERED STUDS AS FOLLOWS:
 - 1.1) VERTICALLY AT THE CEILING AND FLOOR LEVELS
 - 1.2) HORIZONTALLY AT INTERVALS NOT EXCEEDING 10'-0"
- 2) AT ALL INTERCONNECTIONS BETWEEN CONCEALED VERTICAL AND HORIZONTAL SPACES SUCH AS OCCUR AT SOFFITS, DROP CEILINGS, AND COVE CEILINGS.
- 3) IN CONCEALED SPACES BETWEEN STAIR STRINGERS AT THE TOP AND BOTTOM OF THE RUN. ENCLOSED SPACES UNDER STAIRS SHALL COMPLY WITH IRC SECTION R311.2.2.
- 4) AT OPENINGS AROUND VENTS, PIPES, AND DUCTS AT CEILING AND FLOOR LEVEL, WITH AN APPROVED MATERIAL TO RESIST THE FREE PASSAGE OF FLAME AND PRODUCTS OF COMBUSTION.
- 5) FOR THE FIRE BLOCKING OF CHIMNEYS AND FIREPLACES, SEE IRC SECTION R1003.19.
- 6) FIRE BLOCKING OF CORNICES OF A TWO FAMILY DWELLING IS REQUIRED AT THE LINE OF DWELLING UNIT SEPARATION.

FIRE BLOCKING SHALL CONSIST OF MATERIALS LISTED IN IRC SECTION R302.11.1. LOOSE FILL INSULATION MATERIAL SHALL NOT BE USED AS A FIRE BLOCK UNLESS SPECIFICALLY TESTED IN THE FORM AND MANNER INTENDED. THE INTEGRITY OF ALL FIRE BOX SHALL BE MAINTAINED.

FLOOR FIRE PROTECTION:

FIRE PROTECTION OF FLOORS REQUIRES A MINIMUM OF 1/2" GYPSUM BOARD (OR EQUIVALENT) MATERIAL TO BE APPLIED TO THE UNDERSIDE OF FLOOR ASSEMBLIES OF DWELLING UNITS AND ACCESSORY BUILDINGS.

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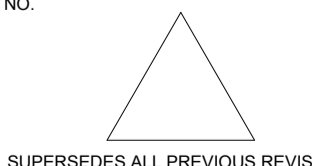
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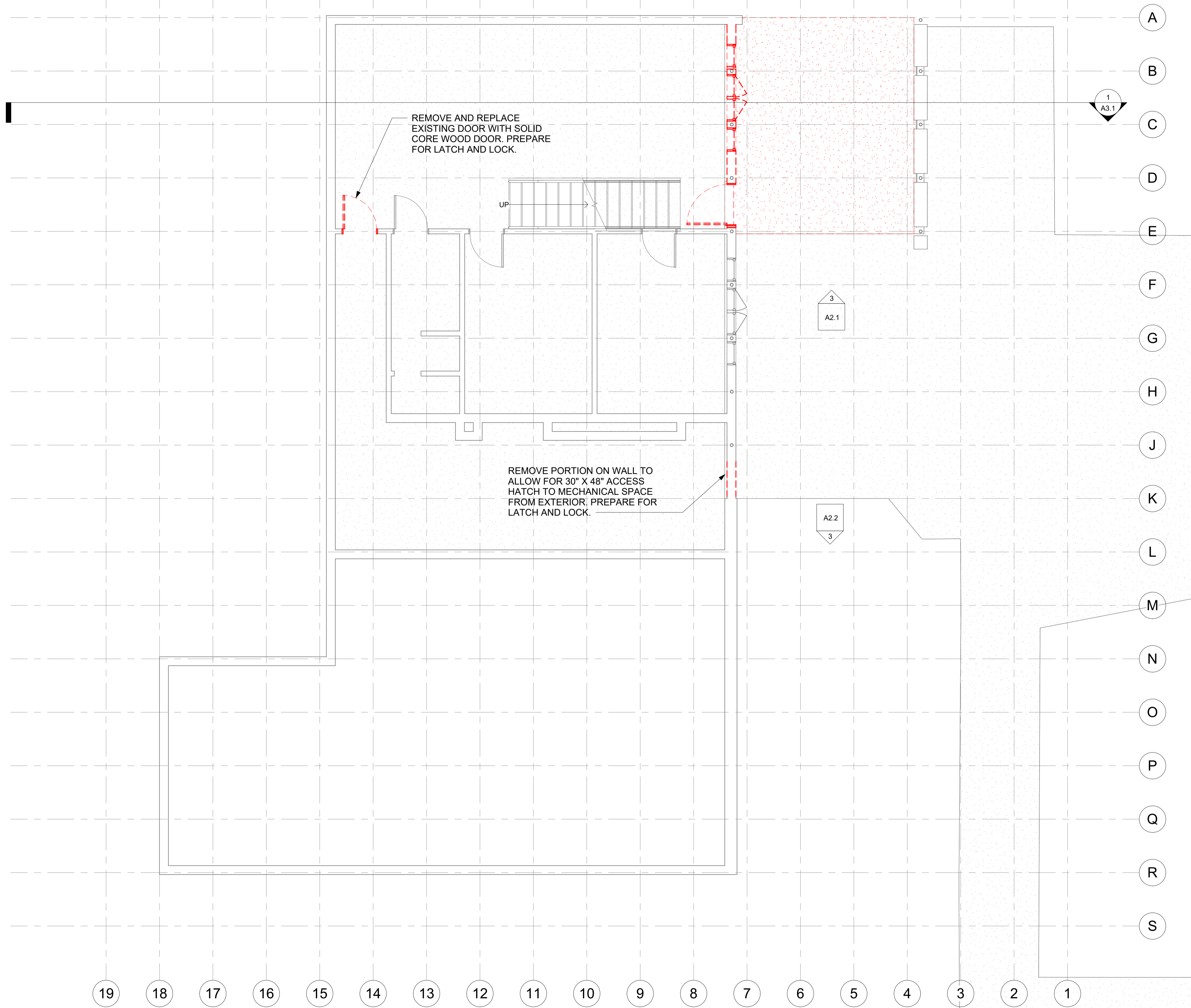


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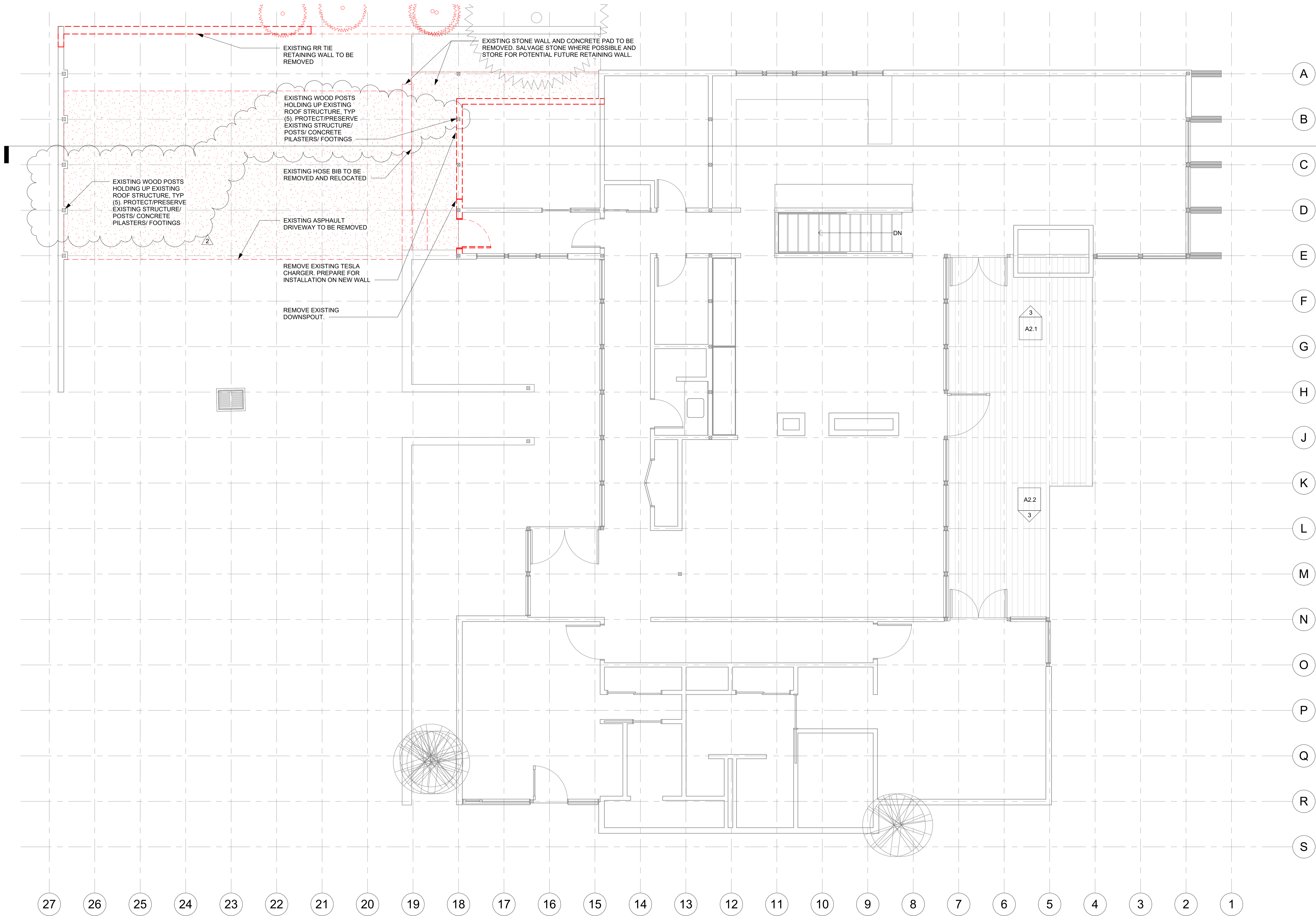
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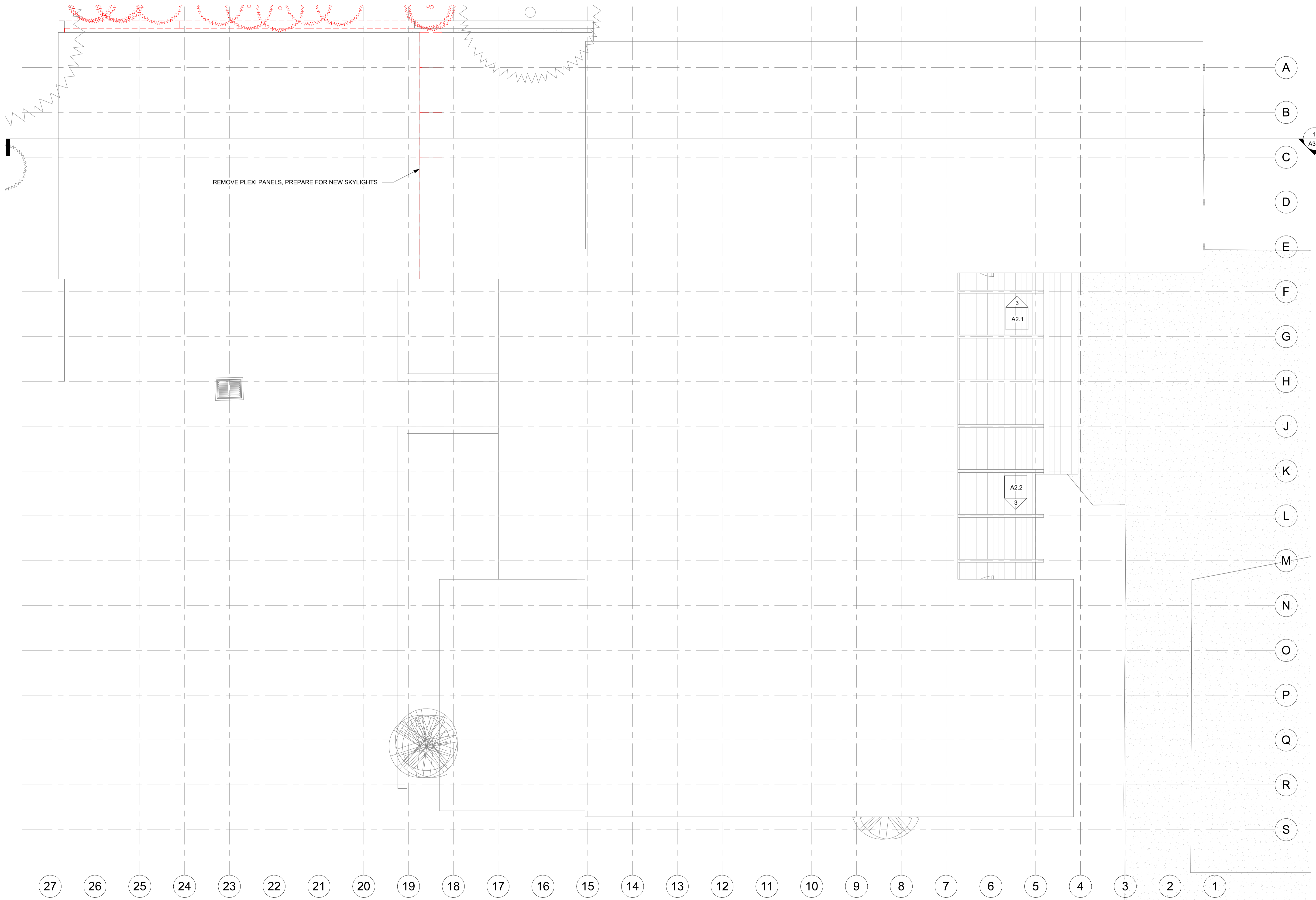
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REMOVE PLEXI PANELS, PREPARE FOR NEW SKYLIGHTS

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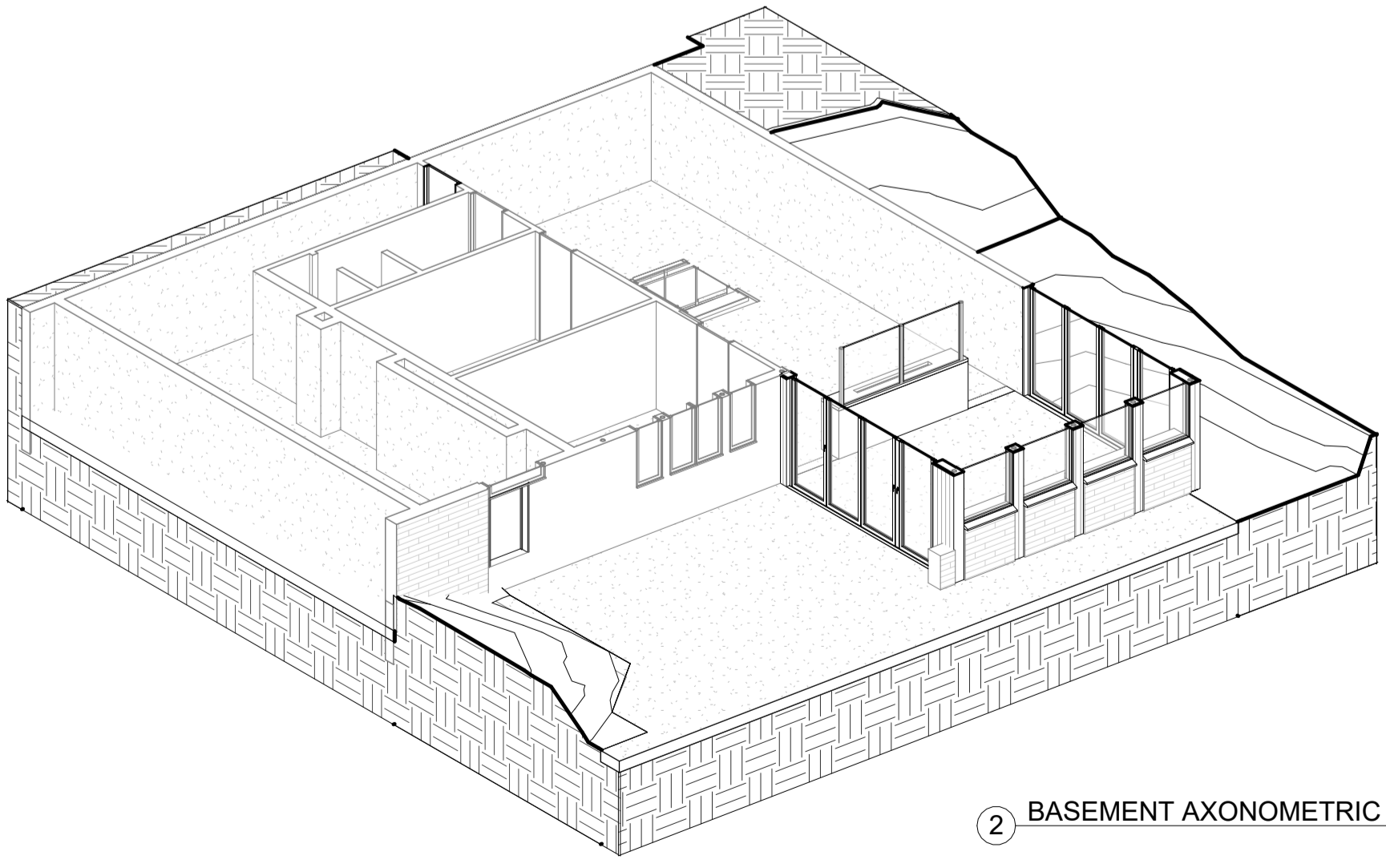
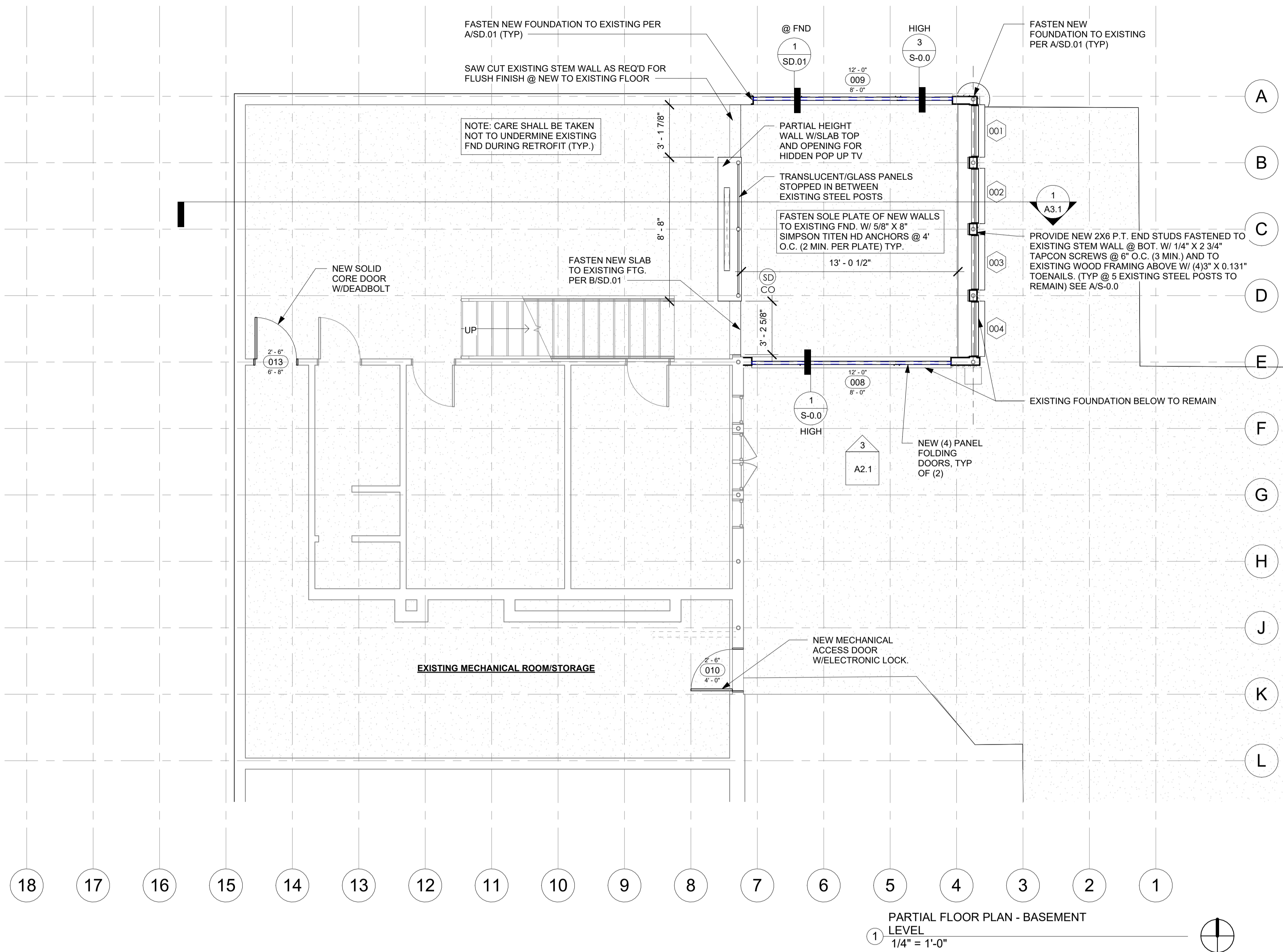
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 1/4" = 1'-0"



PLAN NOTES:

- THIS PROJECT SHALL BE DESIGNED, ENGINEERED, AND CONSTRUCTED IN FULL COMPLIANCE WITH ALL CODES AND REGULATIONS.
- ALL EXTERIOR WALLS TO BE FRAMED WITH 2X6 H.F. (STUD GRADE OR BETTER) UNO. PROVIDE R-21 BATT INSULATION MIN. UNO.
- ALL INTERIOR WALLS TO BE 2X4 UNO.
- ALL HANDRAILS SHALL BE LOCATED AT 36" ABOVE STAIR NOSING WITH A GRASP DIMENSION BETWEEN 1 1/4" AND 2".
- ALL HANDRAILS SHALL BE CONTINUOUS OR TERMINATE IN A NEWEL POST.
- ALL GUARDRAILS SHALL BE 36" ABOVE FINISHED FLOOR AND DESIGNED SUCH THAT THE MAXIMUM OPENING WILL NOT ALLOW PASSAGE OF A 4" SPHERE.
- ALL GUARDRAILS SHALL BE DESIGNED TO RESIST A 200LB CONCENTRATED LOAD AT THE TOP RAIL AND 50 PSF ON ALL GUARDRAIL INFILL COMPONENTS.
- PROVIDE FIRE BLOCKING AT ALL PLUMBING PENETRATIONS AND WALL/ROOF INTERSECTIONS.
- THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NO LESS THAN 1/2" GWB APPLIED TO THE GARAGE SIDE. LIVING AREAS ABOVE THE GARAGE SHALL BE SEPARATED FROM THE GARAGE WITH NO LESS THAN 5/8" TYPE X GWB. ALL SUPPORTING STRUCTURE SHALL BE PROTECTED BY NO LESS THAN 1/2" GWB.
- FINISH ALL CEILINGS WITH 5/8" TYPE X GWB.
- ACCESSIBLE SPACES UNDER STAIRS TO BE FINISHED WITH (2) LAYERS 5/8" TYPE X GWB.
- PROVIDE 26 GA. GALVANIZED SHEET METAL FLASHING ABOVE WINDOWS AND DOORS, LAP BUILDING PAPER OVER.
- WINDOWS TO BE SPECIFIED BY OWNER/CONTRACTOR. CONTRACTOR TO VERIFY ALL ROUGH OPENINGS PRIOR TO CONSTRUCTION.
- ALL EXHAUST AIR SHALL VENT DIRECTLY TO THE EXTERIOR OF THE BUILDING PER M1501.1 AND M1506.2.
- ALL NEW STAIRS SHALL MEET THE FOLLOWING REQUIREMENTS:
 - MINIMUM 36" WIDTH
 - MAXIMUM 7 3/4" RISER, MINIMUM 10" TREAD
 - MINIMUM 6'-8" HEADROOM
 - MINIMUM LANDING LENGTH 36"
- WINDOW AND DOOR HEADERS SHALL BE INSULATED WITH A MINIMUM R-10 INSULATION.
- HVAC DUCTS MUST NOT DISPLACE REQUIRED INSULATION AT ANY GIVEN LOCATION. PROVIDE REQUIRED FLOOR OR CEILING INSULATION ON UNHEATED SIDE OF DUCTS INSTALLED IN JOIST OR RAFTER CAVITIES WHERE UNHEATED SPACES ARE ABOVE OR BELOW.
- ALL CONCEALED VOIDS TO BE FIRE AND DRAFT STOPPED PER 2018 IRC SECTION R602.8.
- ALL TUBS AND SHOWER STALLS:
 - FIRE BLOCK BETWEEN STUDS
 - LIMIT SHOWER FLOW TO 2.5 GPM
 - WALLS SHALL BE WATERPROOFED TO A MIN. OF 70" ABOVE DRAIN INLET
 - ALL GLAZING, INCLUDING WINDOWS, WITHIN 70" OF DRAIN INLET SHALL BE SAFETY GLAZING
- PROVIDE ELECTRIC ILLUMINATION AT OUTSIDE DOORS SWITCHED FROM INSIDE.
- PROVIDE ELECTRIC ILLUMINATION AT STAIRWAY, INCLUDING LANDING, SWITCHED AT EACH FLOOR LEVEL.
- DOORS FROM GARAGE TO LIVING SPACES TO BE 1 3/8" MIN. THICK SOLID CORE DOOR WITH SELF CLOSER AND WEATHER STRIPPING, U-VALUE = 0.20 MAX.
- ☒ DENOTES 50 CFM EXHAUST FAN VENTED TO OUTSIDE.
- ☐ DENOTES 100 CFM MIN EXHAUST FAN VENTED TO OUTSIDE. IF EXHAUST HOOD EXCEEDS 400 CFM MAKE UP AIR SHALL BE PROVIDED.
- ☑ DENOTES 110 VOLT SMOKE DETECTOR WITH BATTERY BACK UP AND INTERCONNECTED. ADDITION OF "CM" DESIGNATION INCLUDES INTEGRATED CARBON MONOXIDE DETECTOR.
- A DRAIN WATER HEAT RECOVERY UNIT SHALL BE INSTALLED, WHICH CAPTURES WASTE WATER HEAT FROM ALL THE SHOWERS, AND HAS A MINIMUM EFFICIENCY OF 40% IF INSTALLED FOR EQUAL FLOW OR A MINIMUM EFFICIENCY OF 52% IF INSTALLED FOR UNEQUAL FLOW. SUCH UNITS SHALL BE RATED IN ACCORDANCE CSA B55.1 AND BE SO LABELED.

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PROJECT: 22079LIG

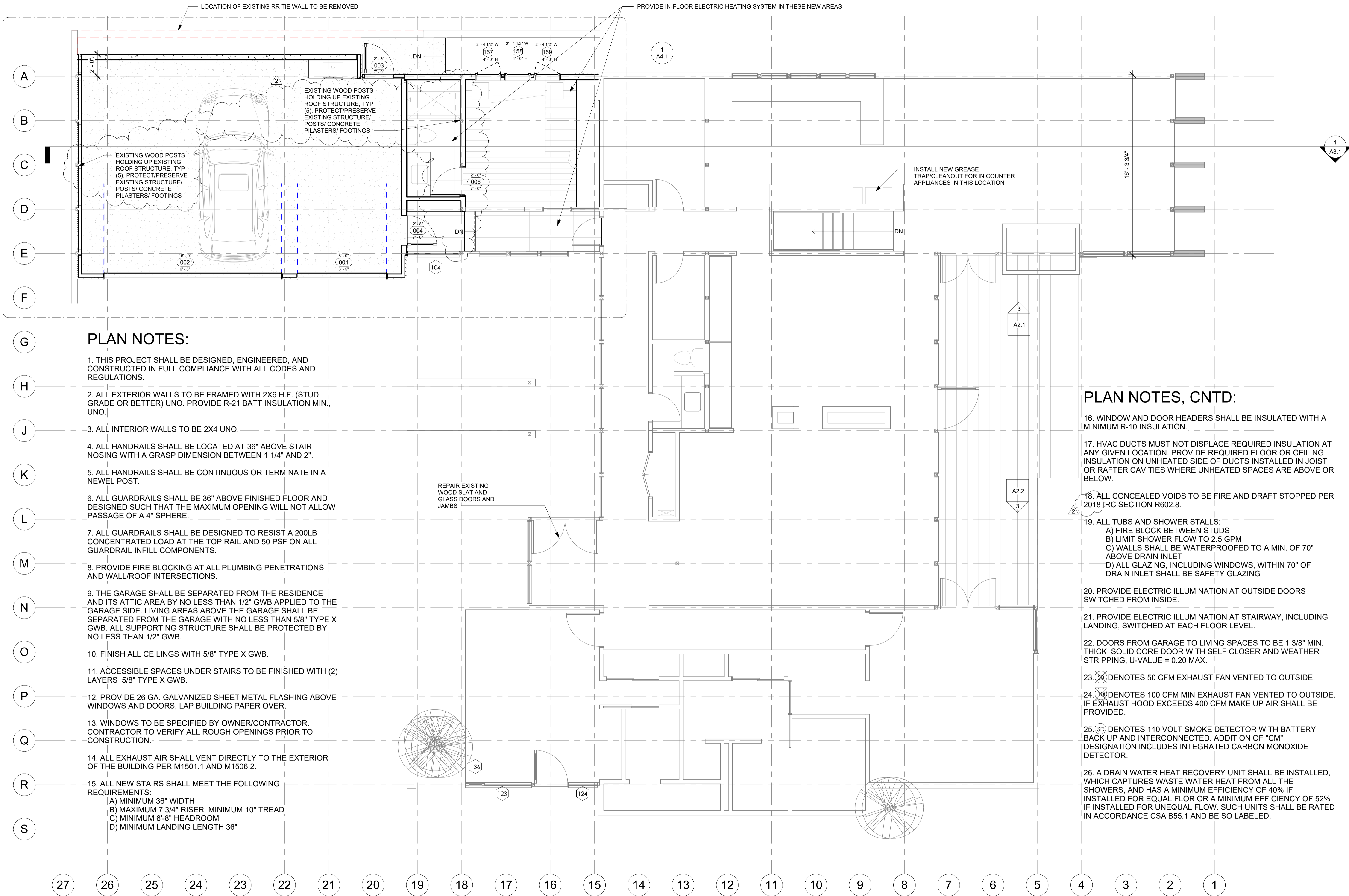
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SHEET TITLE
FLOOR PLAN - BASEMENT LEVEL

REVISION NO.
2
 SUPERSEDES ALL PREVIOUS REVISIONS

SHEET NO.
A1.1



PLAN NOTES:

1. THIS PROJECT SHALL BE DESIGNED, ENGINEERED, AND CONSTRUCTED IN FULL COMPLIANCE WITH ALL CODES AND REGULATIONS.
2. ALL EXTERIOR WALLS TO BE FRAMED WITH 2X6 H.F. (STUD GRADE OR BETTER) UNO. PROVIDE R-21 BATT INSULATION MIN., UNO.
3. ALL INTERIOR WALLS TO BE 2X4 UNO.
4. ALL HANDRAILS SHALL BE LOCATED AT 36" ABOVE STAIR NOSING WITH A GRASP DIMENSION BETWEEN 1 1/4" AND 2".
5. ALL HANDRAILS SHALL BE CONTINUOUS OR TERMINATE IN A NEWEL POST.
6. ALL GUARDRAILS SHALL BE 36" ABOVE FINISHED FLOOR AND DESIGNED SUCH THAT THE MAXIMUM OPENING WILL NOT ALLOW PASSAGE OF A 4" SPHERE.
7. ALL GUARDRAILS SHALL BE DESIGNED TO RESIST A 200LB CONCENTRATED LOAD AT THE TOP RAIL AND 50 PSF ON ALL GUARDRAIL INFILL COMPONENTS.
8. PROVIDE FIRE BLOCKING AT ALL PLUMBING PENETRATIONS AND WALL/ROOF INTERSECTIONS.
9. THE GARAGE SHALL BE SEPARATED FROM THE RESIDENCE AND ITS ATTIC AREA BY NO LESS THAN 1/2" GWB APPLIED TO THE GARAGE SIDE. LIVING AREAS ABOVE THE GARAGE SHALL BE SEPARATED FROM THE GARAGE WITH NO LESS THAN 5/8" TYPE X GWB. ALL SUPPORTING STRUCTURE SHALL BE PROTECTED BY NO LESS THAN 1/2" GWB.
10. FINISH ALL CEILINGS WITH 5/8" TYPE X GWB.
11. ACCESSIBLE SPACES UNDER STAIRS TO BE FINISHED WITH (2) LAYERS 5/8" TYPE X GWB.
12. PROVIDE 26 GA. GALVANIZED SHEET METAL FLASHING ABOVE WINDOWS AND DOORS. LAP BUILDING PAPER OVER.
13. WINDOWS TO BE SPECIFIED BY OWNER/CONTRACTOR. CONTRACTOR TO VERIFY ALL ROUGH OPENINGS PRIOR TO CONSTRUCTION.
14. ALL EXHAUST AIR SHALL VENT DIRECTLY TO THE EXTERIOR OF THE BUILDING PER M1501.1 AND M1506.2.
15. ALL NEW STAIRS SHALL MEET THE FOLLOWING REQUIREMENTS:
 - A) MINIMUM 36" WIDTH
 - B) MAXIMUM 7 3/4" RISER, MINIMUM 10" TREAD
 - C) MINIMUM 6'-8" HEADROOM
 - D) MINIMUM LANDING LENGTH 36"

PLAN NOTES, CNTD:

16. WINDOW AND DOOR HEADERS SHALL BE INSULATED WITH A MINIMUM R-10 INSULATION.
17. HVAC DUCTS MUST NOT DISPLACE REQUIRED INSULATION AT ANY GIVEN LOCATION. PROVIDE REQUIRED FLOOR OR CEILING INSULATION ON UNHEATED SIDE OF DUCTS INSTALLED IN JOIST OR RAFTER CAVITIES WHERE UNHEATED SPACES ARE ABOVE OR BELOW.
18. ALL CONCEALED VOIDS TO BE FIRE AND DRAFT STOPPED PER 2018 IRC SECTION R602.8.
19. ALL TUBS AND SHOWER STALLS:
 - A) FIRE BLOCK BETWEEN STUDS
 - B) LIMIT SHOWER FLOW TO 2.5 GPM
 - C) WALLS SHALL BE WATERPROOFED TO A MIN. OF 70" ABOVE DRAIN INLET
 - D) ALL GLAZING, INCLUDING WINDOWS, WITHIN 70" OF DRAIN INLET SHALL BE SAFETY GLAZING
20. PROVIDE ELECTRIC ILLUMINATION AT OUTSIDE DOORS SWITCHED FROM INSIDE.
21. PROVIDE ELECTRIC ILLUMINATION AT STAIRWAY, INCLUDING LANDING, SWITCHED AT EACH FLOOR LEVEL.
22. DOORS FROM GARAGE TO LIVING SPACES TO BE 1 3/8" MIN. THICK SOLID CORE DOOR WITH SELF CLOSER AND WEATHER STRIPPING, U-VALUE = 0.20 MAX.
23. (EF) DENOTES 50 CFM EXHAUST FAN VENTED TO OUTSIDE.
24. (EF) DENOTES 100 CFM MIN EXHAUST FAN VENTED TO OUTSIDE. IF EXHAUST HOOD EXCEEDS 400 CFM MAKE UP AIR SHALL BE PROVIDED.
25. (SD) DENOTES 110 VOLT SMOKE DETECTOR WITH BATTERY BACK UP AND INTERCONNECTED. ADDITION OF "CM" DESIGNATION INCLUDES INTEGRATED CARBON MONOXIDE DETECTOR.
26. A DRAIN WATER HEAT RECOVERY UNIT SHALL BE INSTALLED, WHICH CAPTURES WASTE WATER HEAT FROM ALL THE SHOWERS, AND HAS A MINIMUM EFFICIENCY OF 40% IF INSTALLED FOR EQUAL FLOW OR A MINIMUM EFFICIENCY OF 52% IF INSTALLED FOR UNEQUAL FLOW. SUCH UNITS SHALL BE RATED IN ACCORDANCE CSA B55.1 AND BE SO LABELED.

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PROJECT

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SHEET TITLE

FLOOR PLAN - MAIN LEVEL

REVISION NO.

2

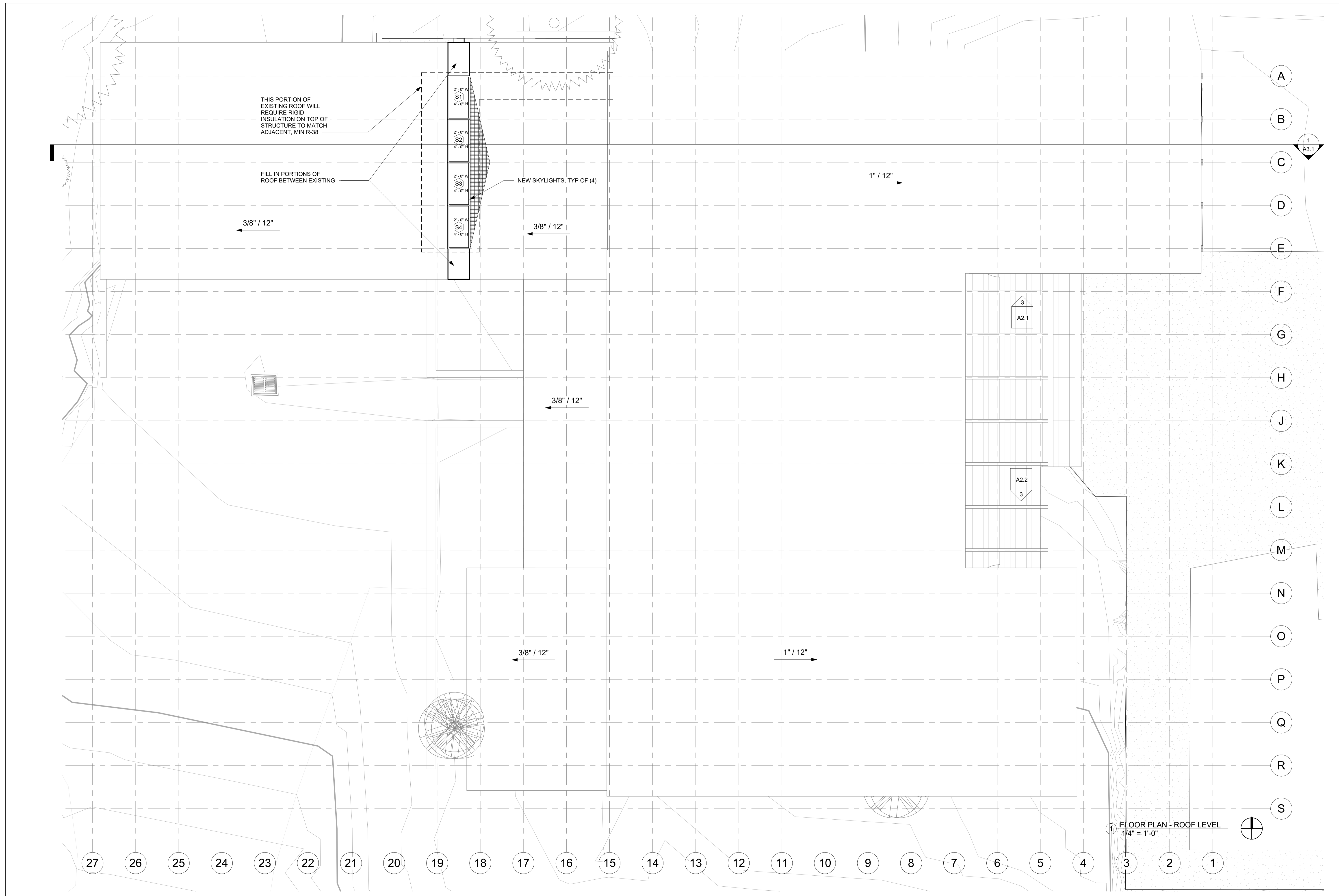
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SHEET NO.

A1.2

1 FLOOR PLAN - MAIN LEVEL
 1/4" = 1'-0"

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ROOF NOTES:

1. CHIMNEY SHALL EXTEND A MIN OF 2'-0" ABOVE ROOF OR PARAPET WITHIN 10'-0" RADIUS OF CHIMNEY. PROVIDE APPROVED SPARK ARRESTOR AT ALL CHIMNEY CAPS. ALL ARCHITECTURAL FEATURES MUST BE PERMITTED BY FLU AND SPARK ARRESTOR MFR APPROVAL.
2. ALL VENTS SHALL BE LOCATED AWAY FROM VISIBILITY AT PUBLIC RIGHT OF WAY.
3. ALL ROOF COVERINGS SHALL COMPLY WITH THE PROVISIONS IN CHAPTER 9 OF THE 2015 IRC.
4. PROVIDE VENTED BLOCKING AT EAVES OF UPPER ROOF.
5. LOWER ROOF PITCH TO BE 1/4" PER 1'-0" MIN.
6. APPLY PVA PAINT WITH A PERM RATING OF NOT MORE THAN (1) AT ALL CEILINGS WITH INSULATION ABOVE.

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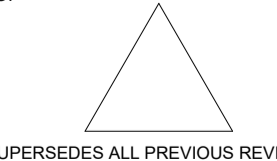
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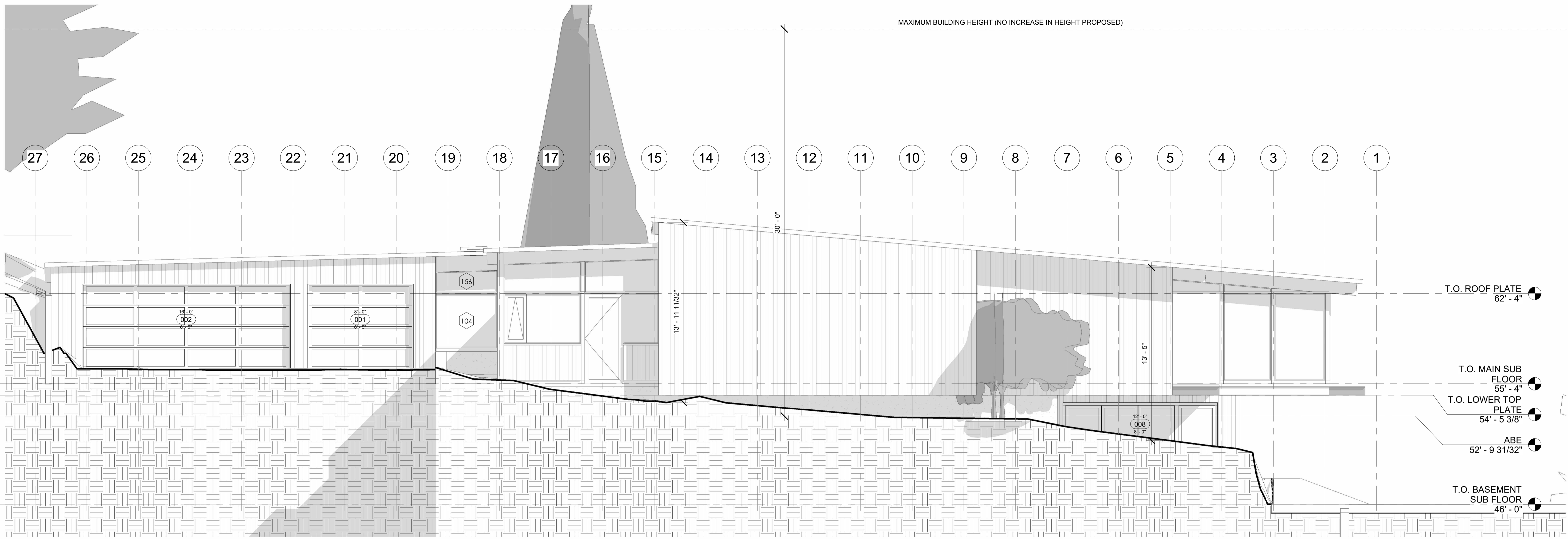
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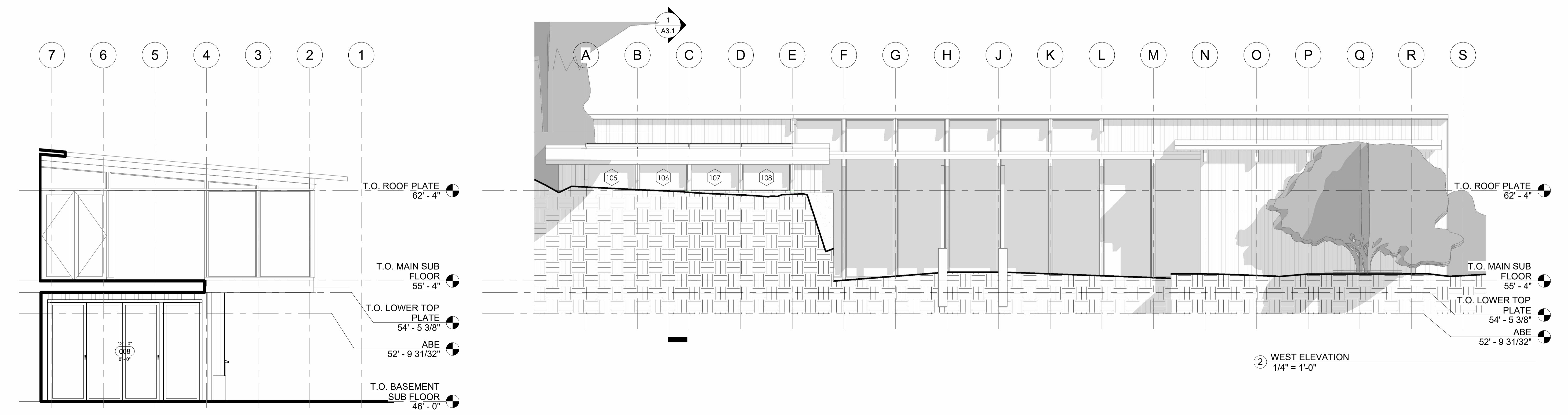
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NOT FOR CONSTRUCTION



1 SOUTH ELEVATION 1
1/4" = 1'-0"



2 WEST ELEVATION
1/4" = 1'-0"

3 SOUTH ELEVATION 2
1/4" = 1'-0"

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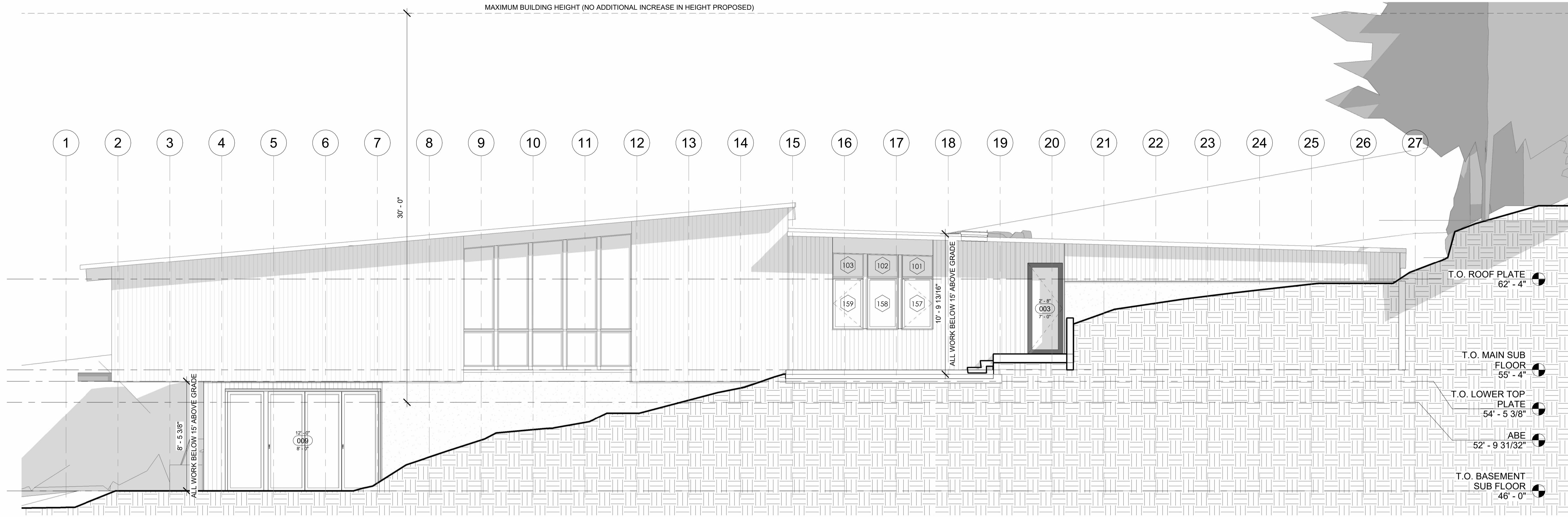
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ELEVATIONS

REVISION NO.
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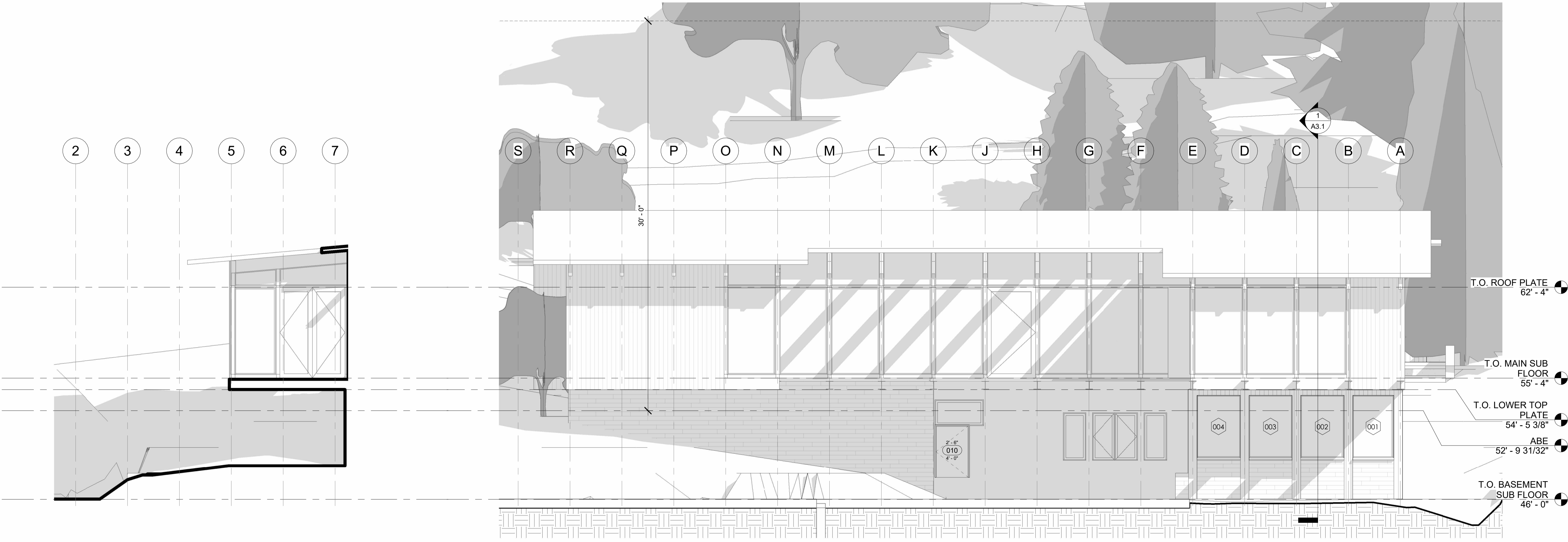
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A2.1

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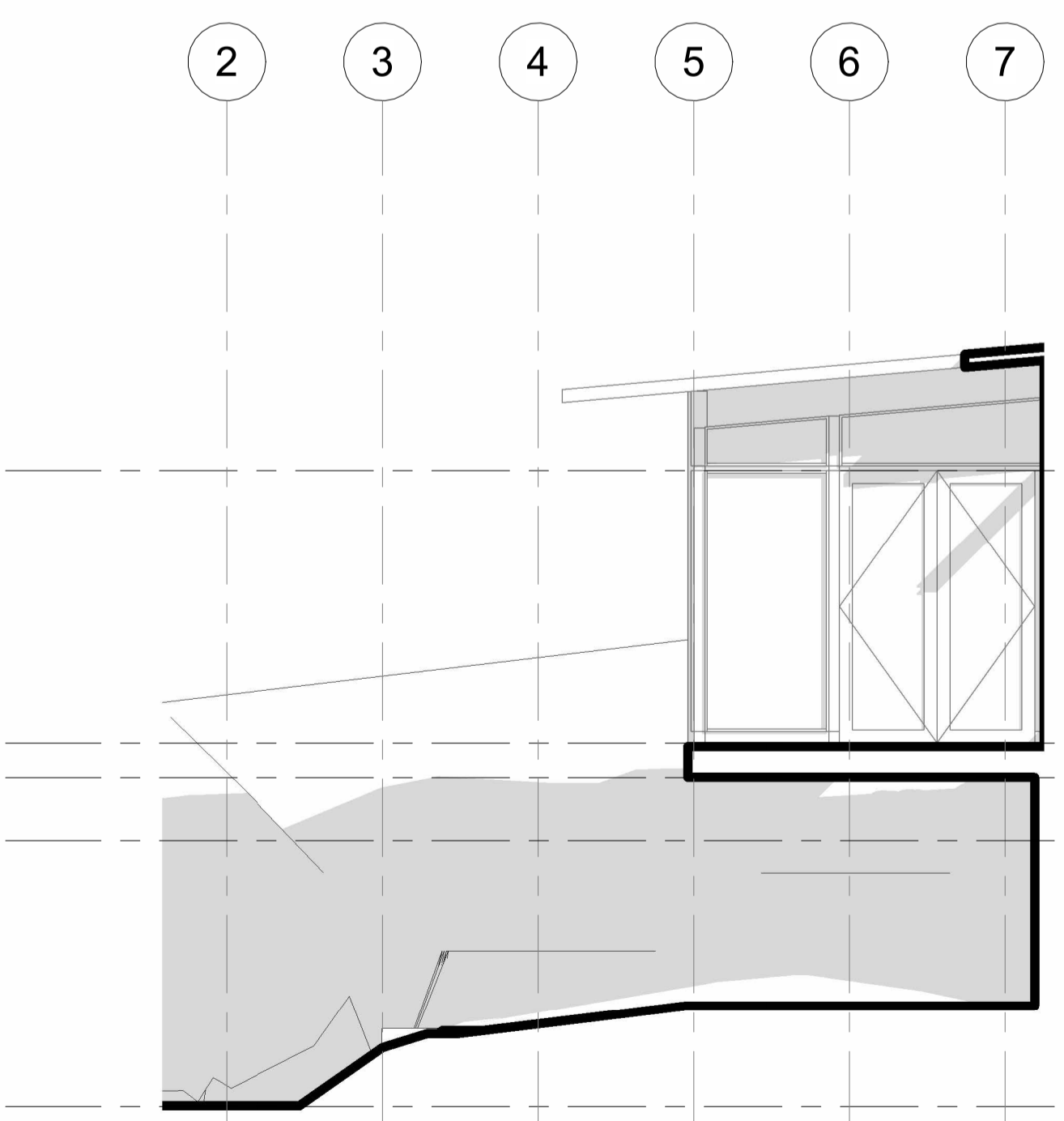
MAXIMUM BUILDING HEIGHT (NO ADDITIONAL INCREASE IN HEIGHT PROPOSED)



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



2 EAST ELEVATION
1/4" = 1'-0"



3 NORTH ELEVATION 2
1/4" = 1'-0"

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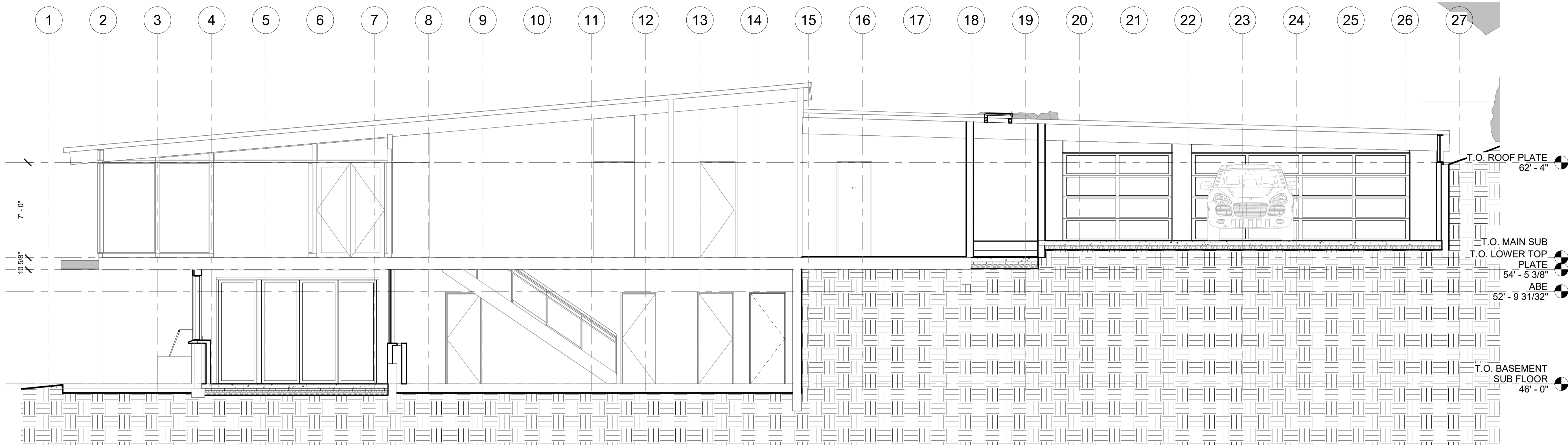
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SHEET TITLE
ELEVATIONS

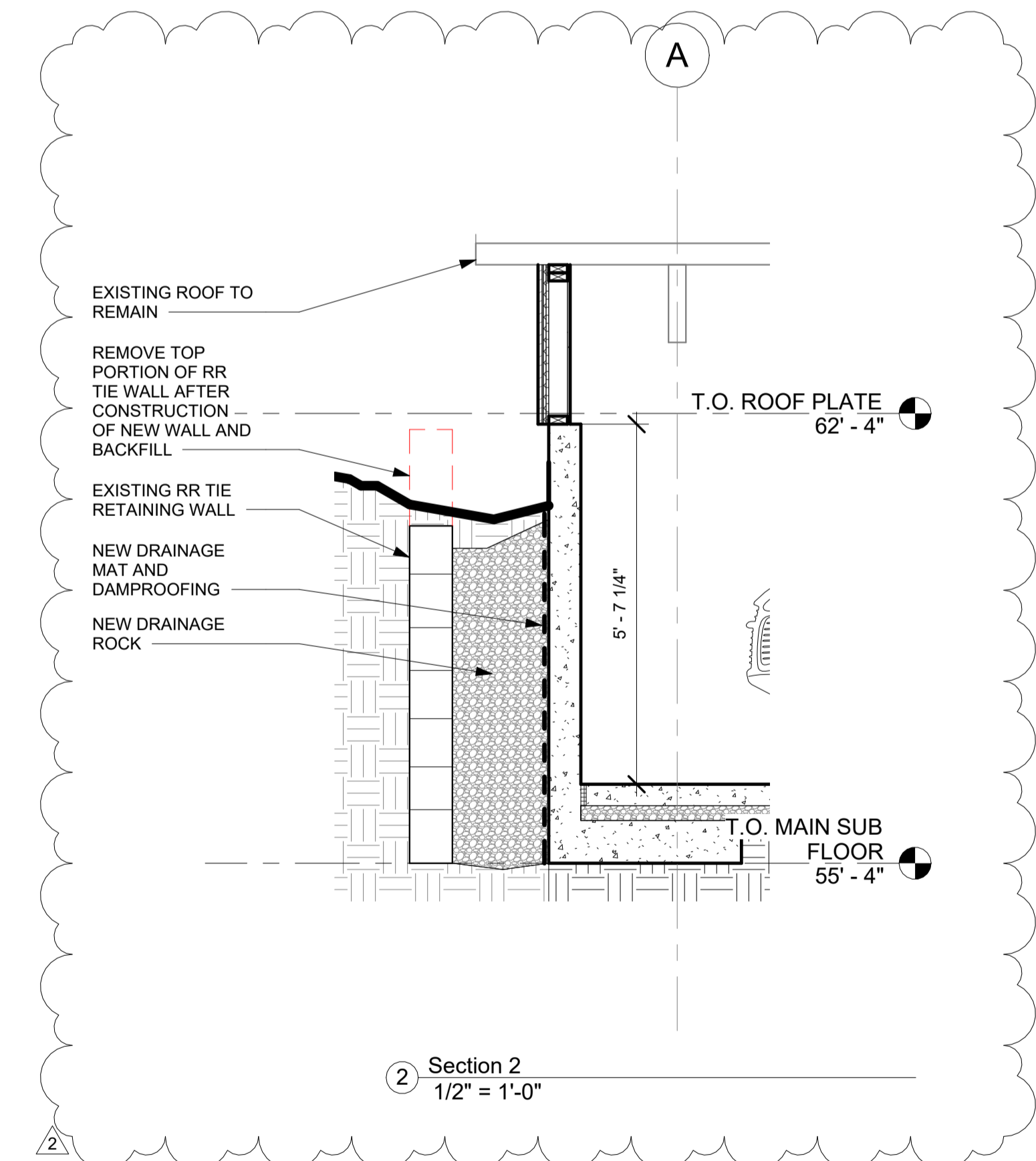
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A2.2

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1 Section 1
1/4" = 1'-0"



2 Section 2
1/2" = 1'-0"

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BUILDING SECTIONS

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SHEET NO.
A3.1

NOTE: CARE SHALL BE TAKEN NOT TO UNDERMINE EXISTING FND DURING RENOVATION (TYP)

EXISTING WOOD POSTS HOLDING UP EXISTING ROOF STRUCTURE, TYP (5). SEE IMAGE BELOW FOR EXISTING CONDITION. PROTECT/PRESERVE EXISTING STRUCTURE/POSTS/ CONCRETE PILASTERS/ FOOTINGS

EPOXY SET HORIZ. BARS IN NEW STEM & CONT. BARS IN NEW FND INTO EXISTING RETAINING WALL TO REMAIN W/ 4 1/2" MIN EMBED PER A/SD.01 (SIM)

FASTEN SOLE PLATE OF NEW INSET WALLS TO NEW SLAB/EXISTING FND. W/ 5/8" X 8" SIMPSON TITEN HD ANCHORS @ 4' O.C. (2 MIN. PER PLATE) TYP

EXISTING CONCRETE RETAINING WALL IN SOUND STRUCTURAL CONDITION. FREE OF VOIDS, CRACKS, OR OTHER STRUCTURAL DEFECTS TO REMAIN. CONTACT M-K FOR FURTHER EVALUATION IF UPON INSPECTION STRUCTURAL DEFECTS ARE FOUND

ENSURE THAT EXTERIOR FACE OF INSET WALL IS SHEATHED PRIOR TO MOVING WALL INTO PLACE. FASTEN END STUD TO EXISTING CONCRETE PLINTH @ POST W/ 1/4" X 2 3/4" SIMPSON TITEN HD ANCHORS @ 6" O.C. VERT. (TYP). SEE DETAIL B/S-0.0.

PROVIDE (1) SIMPSON A 35 CLIP FROM EXISTING 2X T&G ROOF FRAMING TO NEW DBL. TOP PLATE @ SW#101

FASTEN NEW FND. TO EXISTING PER A/SD.01

SIMPSON STHD14 WET SET HOLD DOWN FROM FRAMING TO FND BELOW. ALTERNATIVELY, SIMPSON HTT5 MAY BE INSTALLED PER D/SD.01 IN LIEU OF STHD14

PROVIDE NEW SLOPING EXTERIOR WALL TIGHT TO UNDERSIDE OF SLOPING EXISTING ROOF FRAMING ABOVE (TYP)

FASTEN SOLE PLATE OF NEW WALLS TO EXISTING FND. W/ 5/8" X 8" SIMPSON TITEN HD ANCHORS @ 4'-0" O.C. (2 MIN. PER PLATE) TYP

FASTEN NEW FND. TO EXISTING PER A/SD.01

FASTEN NEW FND. TO EXISTING PER A/SD.01 (TYP. U.N.O.)

FASTEN NEW FND. TO EXISTING PER A/SD.01

NEW TERRAZZO FLOORING ON LANDING AND STAIR TO MATCH EXISTING ADJACENT HALLWAY

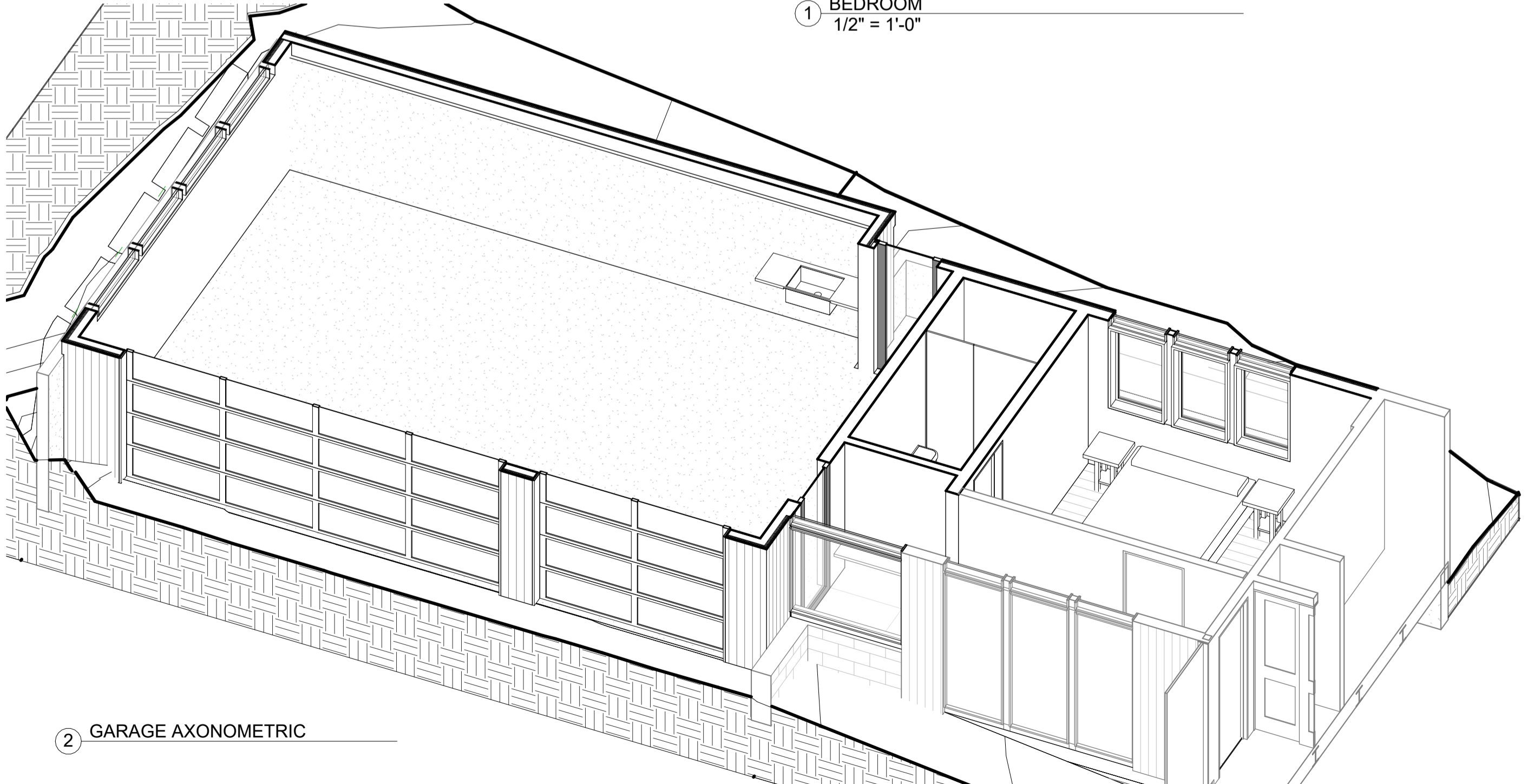
ENLARGED PLAN - GARAGE AND BEDROOM
1/2" = 1'-0"



VIEW OF EXISTING WEST RETAINING WALL



VIEW OF EXISTING NORTH RR TIE RETAINING WALL



2 GARAGE AXONOMETRIC

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SHEET TITLE
ENLARGED PLAN

REVISION NO.
2
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SHEET NO.
A4.1

DATE: 04/20/22
SCALE: 1/2" = 1'-0"
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SKYLIGHT SCHEDULE - CONDITIONED SPACE										
Mark	Room	Description	Height	Width	Area	U-Value	UA	Safety Glazing Required	Comments	
S1	Bathroom	Skylight	4' - 0"	2' - 0"	8.0 SF	0.5	4.0 SF		Operable	
S2	Bathroom	Skylight	4' - 0"	2' - 0"	8.0 SF	0.5	4.0 SF		Operable	
S3	Bathroom/Mud	Skylight	4' - 0"	2' - 0"	8.0 SF	0.5	4.0 SF		Blank panel - over wall. Provide ventilation.	
S4	Mud	Skylight	4' - 0"	2' - 0"	8.0 SF	0.5	4.0 SF		Operable	
					32.0 SF		16.0 SF			

GLAZED DOOR SCHEDULE									
Mark	Description	Door Material	Width	Height	Area	U - Value	UA	Comments	
003	Glazed Swing	Glass/Alum Clad Wood	2' - 8"	7' - 0"	18.7 SF	0.31	5.8 SF		
004	Glazed Swing	Glass/Alum Clad Wood	2' - 8"	7' - 0"	18.7 SF	0.31	5.8 SF		
008	4 PANEL FOLDING DOOR	Glass/Alum Clad Wood	12' - 0"	8' - 0"	96.0 SF	0.32	30.7 SF	NFRC CPD# LOW-N-72-05036-00001	
009	4 PANEL FOLDING DOOR	Glass/Alum Clad Wood	12' - 0"	8' - 0"	96.0 SF	0.32	30.7 SF	NFRC CPD# LOW-N-72-05036-00001	
					229.3 SF		73.0 SF		

DOOR SCHEDULE							
Mark	Function	Description	Width	Height	Thickness	Door Material	Comments
001	Exterior	Overhead Garage	8' - 0"	6' - 5"	1 1/2"		
002	Exterior	Overhead Garage	16' - 0"	6' - 5"	1 1/2"		
006	Interior		2' - 6"	7' - 0"	1 3/8"		
010	Exterior	Swing	2' - 6"	4' - 0"	1 3/8"		
013	Interior	Swing	2' - 6"	6' - 8"	1 3/8"		

NOTE: FOR GLAZED DOORS, SEE GLAZED DOOR SCHEDULE

GLAZING SCHEDULE						
Mark	Length	Height	Area	U Value	U Value * Area	Comments
001	3' - 1 7/8"	4' - 9 1/4"	15.1 SF	0.23	3.46 SF	
002	3' - 4"	4' - 9 1/4"	15.9 SF	0.23	3.66 SF	
003	3' - 4"	4' - 9 1/4"	15.9 SF	0.23	3.66 SF	
004	3' - 4 1/4"	4' - 9 1/4"	16.0 SF	0.23	3.68 SF	
101	2' - 4 1/2"	1' - 9 3/16"	4.1 SF	0.23	0.94 SF	Raked Top
102	2' - 4 1/2"	1' - 10 5/32"	4.3 SF	0.23	0.98 SF	Raked Top
103	2' - 4 1/2"	1' - 11 1/32"	4.4 SF	0.23	1.02 SF	Raked Top
104	4' - 9 1/2"	4' - 2 1/2"	20.2 SF	0.23	4.64 SF	
105	3' - 8 3/4"	2' - 2"	7.7 SF	0.23	1.76 SF	
106	3' - 8 3/4"	2' - 2"	7.7 SF	0.23	1.76 SF	
107	3' - 8 3/4"	2' - 2"	7.7 SF	0.23	1.76 SF	
108	3' - 8 3/4"	2' - 2"	7.7 SF	0.23	1.76 SF	
156	4' - 9 1/2"	1' - 7 9/32"	7.6 SF	0.23	1.75 SF	Raked Top
			134.0 SF		30.83 SF	

TOTAL AVERAGE WEIGHTED U-VALUE	AREA	U-VALUE*AREA	U-VALUE
GLAZING	134.0 SF	30.83 SF	0.23
GLAZED DOORS	229.3 SF	73.0 SF	0.32
TOTAL	363.3 SF	103.83	0.28

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 CHECKED BY: TL

LIGHTSTONE
 5910 E MERCER WAY
 MERCER ISLAND, WA 98040

22079LIG

PROJECT

REV	DATE	ISSUE/REVISION
2	05/22/23	PERMIT SUBMITTAL
	10/23/23	PERMIT RESUBMITTAL

NOT FOR CONSTRUCTION

SHEET TITLE

SCHEDULES

REVISION NO.

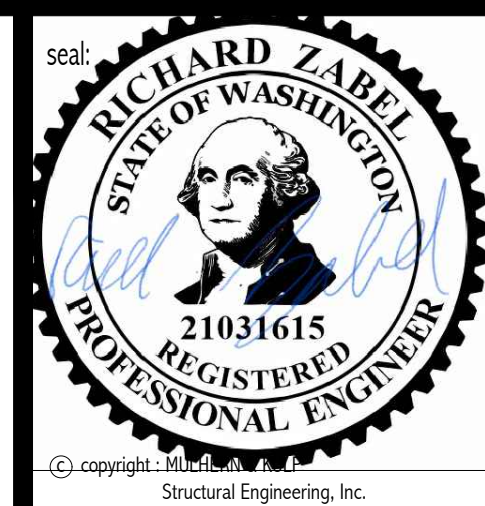
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SUPERSEDES ALL PREVIOUS REVISIONS

SHEET NO.

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10/23/2023 2:25:37 PM



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M&K project number:
268-23003

project mgr: **RJZ**
drawn by: **RJD**
issue date: **04-20-23**

REVISIONS:
date: **04/13/23** initial: **RJD**
PLAN REVIEW RESPONSE

LOCHWOOD LOZIER

STRUCT. NOTES & DETAILS
LIGHTSTONE ADDITION
5910 E. MERCER WAY
MERCER ISLAND, WASHINGTON

sheet:
S-0.0

GENERAL STRUCTURAL NOTES

- DESIGN PARAMETERS**
- DESIGN IS BASED ON 2018 INTERNATIONAL RESIDENTIAL CODE & 2018 INTERNATIONAL EXISTING BUILDING CODE.
 - WOOD FRAME ENGINEERING IS BASED ON NDS "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" - LATEST EDITION.
- GENERAL FRAMING**
- EXTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (w/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO.
 - INTERIOR BEARING WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) @ 16" O.C. (w/ DOUBLE TOP PLATE) HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO.
 - ALL NON-BEARING INTERIOR STUD WALLS SHALL BE CONSTRUCTED WITH 2x2 "STUD" GRADE MEMBERS SPACED @ 24" O.C. (MAX).
 - ALL WALLS TALLER THEN TYP. PLATE HEIGHT SHALL BE CONSIDERED BALLOON FRAMED & SHALL BE CONSTRUCTED FROM FLOOR TO UNDERSIDE OF FRAMING AT NEXT LEVEL. BF. WALLS SHALL BE 2x4 OR 2x6 (AS SHOWN ON PLANS) HEM FIR (HF) #2 GRADE LUMBER, OR BETTER.
 - ALL HEADERS SHALL BE SUPPORTED BY (1)2x JACK STUD & (1)2x KING STUD MINIMUM. THE NUMBER OF STUDS SPECIFIED AT A SUPPORT INDICATES THE NUMBER OF JACK STUDS REQUIRED, UNO.
 - BUILT-UP POSTS SHALL BE 2x4 OR 2x6 HEM FIR (HF) "STUD" GRADE LUMBER, OR BETTER, UNO. & SOLID WOOD COLUMNS SHALL BE SPRUCE PINE FIR (SPF) #2 GRADE LUMBER, OR BETTER, UNO.
 - ALL 2x6 AND LARGER SOLID SAWN BEAMS/HEADERS SHALL BE HEM FIR #2 (HF #2) OR BETTER. ALL 4x6 AND LARGER SOLID SAWN LUMBER SHALL BE DOUG FIR #2 (DF #2) OR BETTER.
 - ALL FRAMING LUMBER SHALL BE KILN DRIED TO 15% MC (KD-15).
 - ALL TYP. NAIL FASTENER REQUIREMENTS ARE NOTED IN GENERAL NOTES, IN DETAILS, OR ON PLANS. ALL NAILS SPECIFIED ARE MIN DIAMETER AND LENGTH REQUIRED FOR CONNECTION. ALL HANGER NAILS SHALL BE INSTALLED PER MANUFACTURER'S REQUIREMENTS FOR MAX CHARGED CAPACITY. NOTE: HANGERS USE COMMON NAIL DIAMETERS NOT TYPICAL FRAMING GUN NAILS.
 - FASTEN ALL BEAMS TO COLUMNS, OR FLUSH BEAMS TO SUPPORTING BEAMS, w/ (4) 3"x0.131" TOENAILS (MN), TYP. UNO.
 - PROVIDE SOLID BLOCKING IN FLOOR SYSTEM UNDER ALL POSTS & HOLD-DOWNS CONTINUOUS TO FOUNDATION/BEARINGS. BLOCKING TO MATCH POST ABOVE.
 - ENGINEERED LUMBER TO MEET OR EXCEED THE FOLLOWING:
 - LSL MEMBERS - Fb=2325 PSI; Fv=310 PSI; E=1550000 PSI
 - LVL MEMBERS - Fb=2600 PSI; Fv=285 PSI; E=2.0x10⁶ PSI
 - GLB MEMBERS - Fb=42400 PSI; Fv=1850 PSI; Fv=265 PSI; E=1.8x10⁶ PSI; DF/DF; 24F-V4 (UNO)
 - ENGINEERED LUMBER POSTS TO MEET OR EXCEED THE FOLLOWING:
 - LVL MEMBERS - Fb=2400 PSI; Fc1=2500 PSI; E=1.8x10⁶ PSI
 - FACE NAIL MULTI-PLY 2x BEAMS & HEADERS w/ 3-ROVMS OF 3"x0.131" NAILS (MN) @ 12" O.C. STAGGERED. APPLY NAILING FROM BOTH FACES @ 3-PLY OR MORE CONDITIONS. UTILIZE 2 ROWS OF NAILS FOR 2x6 & 2x8 MEMBERS.
 - ALL MEMBERS SPECIFIED AS MULTI-PLY (M) SHALL BE FASTENED TOGETHER PER MANUFACTURER. EQUIVALENT WIDTH SOLID MATERIAL MAY BE USED AS EQUAL.
 - FASTEN 2x WOOD PLATES TO TOP FLANGE OF STEEL BEAMS w/P.A.F.s (HLTI) X-U PINS OR EQUAL (0.15" DIA. x 2" LONG MIN.) @ 16" O.C. STAGGERED, OR 1/2" DIA. BOLTS @ 48" O.C. STAGGERED.
 - REFER TO IRC FASTENING SCHEDULE TABLE R602.3(U) FOR ALL CONNECTIONS, TYP. UNO.

LATERAL BRACING NOTES

THIS HOME HAS BEEN ENGINEERED TO RESIST LATERAL FORCES RESULTING FROM:
100 MPH WIND SPEED, EXP. C
(ASCE 7-16 WIND MAP, PER IRC R301.2.1.1) RISK CAT. 2 & SEISMIC CAT. D2.

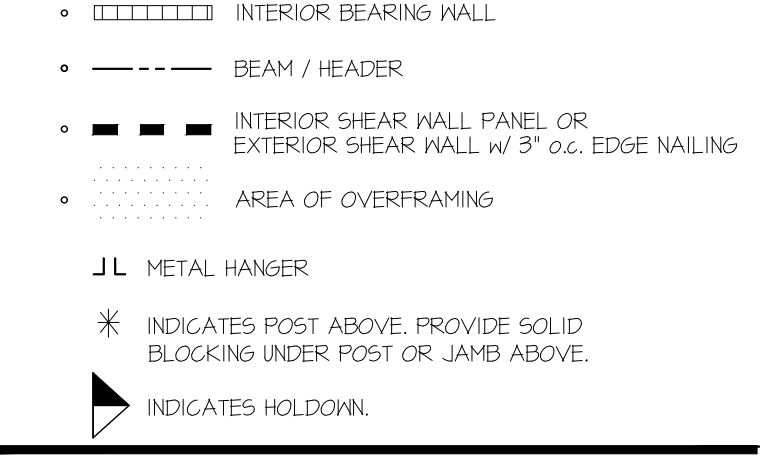
110 MPH WIND IN 2018 IRC MAP
ENGINEERED DESIGN WAS COMPLETED PER 2018 IBC (SECTION 1604 & 1613) & ASCE 7-16, AS PERMITTED BY R301.1.3 OF THE 2018 IRC. ACCORDINGLY, THIS HOME, AS DOCUMENTED AND DETAILED HEREWITHIN, IS ADEQUATE TO RESIST THE CODE REQUIRED LATERAL FORCES, AND DOES NOT NEED TO CONFORM TO THE PRESCRIPTIVE PROVISIONS OF R602.10.

STANDARD EXTERIOR WALL SHEATHING SPECIFICATIONS (INTERIOR WALL SPECIFICATION HERE NOTED ON PLANS)

- 3/8" OSB OR 1/2" PLYWOOD:
FASTEN SHEATHING w/ 2 1/2"x0.131" NAILS @ 8" O.C. AT ALL SUPPORTED PANEL EDGES AND 12" O.C. IN THE PANEL FIELD. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE. ALL EXTERIOR WALLS SHALL BE CONSTRUCTED PER THIS SPECIFICATION UNO ON PLANS.
- 3" O.C. EDGE NAILING (WHERE NOTED ON PLANS)**
- 3/8" OSB OR 1/2" PLYWOOD:
ONLY AT LOCATIONS INDICATED ON PLANS - SHEATHING WALL SHOWN WITH 3/8" OSB. FASTEN SHEATHING w/ 2 1/2"x0.131" NAILS @ 3" O.C. AT EDGES AND 12" O.C. AT CENTER. ALL SHEATHING SHEET PANEL EDGES SHALL OCCUR OVER WALL FRAMING MEMBERS OR 2x HORIZONTAL BLOCKING SHALL BE PROVIDED TO SUPPORT PANEL EDGE AND 3" O.C. FASTENING.

- NOTES:**
- LATERAL ANALYSIS ASSUMES STUD SPACING @ 16" O.C.
 - ALL SHEAR WALLS SHALL HAVE DOUBLE TOP PLATES FASTENED TOGETHER w/ 3"x0.131" NAILS @ 8" O.C. USE (12/35"x0.131" NAILS AT EACH LAP SPLICE, (6) EACH SIDE OF JOINT (TYP. UNO).
 - ALL EXTERIOR WALLS ARE CONTINUOUSLY SHEATHED.
 - ALL INTERIOR SHEAR WALLS AND EXTERIOR WALLS ARE SHEATHED ABOVE AND BELOW OPENINGS.

LEGEND



DEMOLITION/RENOVATION NOTES

- FRAMING AND FOUNDATION PLANS HAVE BEEN DESIGNED TO BE STRUCTURALLY SOUND UPON COMPLETION OF THE WORK. THE MEANS AND METHODS OF CONSTRUCTION ARE THE RESPONSIBILITY OF THE BUILDER/CONTRACTOR (UNLESS SPECIFICALLY NOTED ON PLANS).
- DURING DEMOLITION AND CONSTRUCTION, IT IS THE BUILDER/CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE TEMPORARY SHORING/BRACING OF EXISTING ELEMENTS INTENDED TO REMAIN.
- THE STRUCTURAL PLANS HAVE BEEN PREPARED WITH EXISTING FRAMING/FOUNDATION ASSUMPTIONS AS NOTED ON THE PLANS. IT IS THE BUILDER/CONTRACTOR'S RESPONSIBILITY TO CONTACT M&K STRUCTURAL ENGINEERING IF ACTUAL SITE CONDITIONS VARY FROM WHAT IS DEPICTED ON THE CONSTRUCTION DOCUMENTS.

LOADING AND DESIGN PARAMETERS

LATERAL DESIGN LOADS:	
WIND LOAD: (IBC 1604)	
SPEED (w) (MPH)	100
WIND RISK CATEGORY :	II
IMPORTANCE FACTOR (I _w) :	1.0
EXPOSURE CATEGORY :	C
INTERNAL PRESSURE COEFF. (GC _w) :	±0.18
TOPOGRAPHIC FACTOR (K _z) :	1.0

GENERAL STRUCTURAL NOTES

- FOUNDATION**
- DESIGN IS BASED ON 2018 INTERNATIONAL RESIDENTIAL CODE & 2018 INTERNATIONAL EXISTING BUILDING CODE.
 - DESIGN LOADS: 2000 PSF ALLOWABLE BEARING PRESSURE SOIL.
 - CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS IN 28 DAYS, UNO.
 - F_c = 2500 psi FOUNDATION WALLS*
 - 2500 psi FOOTINGS*
 - 2500 psi INTERIOR SLABS ON GRADE
 - 3500 psi GARAGE & EXT. SLABS ON GRADE
 - f_y = 60,000 psi
 - UTILIZE 5/8" SACK 2500 PSI CONCRETE MIXES THAT ARE EQUIVALENT TO 3000 PSI CONCRETE FOR WEATHERING POTENTIAL.
 - ALL CONCRETE EXPOSED TO THE WEATHER SHALL NOT HAVE LESS THAN 5% OR MORE THAN 7% AIR ENTRAINMENT.
 - FOUNDATION WALL DESIGN IS BASED ON 35 pcf ACTIVE, 55 pcf AT-REST, & 7% SEISMIC SURCHARGE.
 - TYPICAL REINFORCEMENT DETAILS: LAP ALL REBAR 24" MIN; BEND BARS AND LAP AT CORNERS; PROVIDE 6" HOOK INTO SUPPORTING FOOTINGS WHEN FOOTINGS INTERSECT; PROVIDE 3" MINIMUM COVER AT THE BOTTOM BARS AND 1 1/2" COVER AT THE SIDES.
 - ALL FOOTINGS SHALL BEAR BELOW FROST LINE. CONSULT SOILS REPORT/ LOCAL MUNICIPALITY FOR MINIMUM DEPTH BELOW GRADE.
 - FOOTINGS AND SLABS ON GRADE SHALL BEAR ON VIRGIN SOIL OR 15% COMPACTED FILL.
 - PROVIDE CONTROL JOINTS AT ALL INSIDE CORNERS OF SLAB EDGES, AND OTHER LOCATIONS WHERE SLAB CRACKS ARE LIKELY TO DEVELOP. (15'-0" O.C.)
 - FASTEN SILL PLATES TO FOUNDATION WALLS WITH 3/8" DIA. ANCHOR BOLTS w/ MIN. 3"x3"x 1/4" PLATE WASHERS (EDGE OF WASHER TO BE LOCATED WITHIN 1/2" OF EXTERIOR EDGE OF SILL PLATE) & NUTS @ 6'-0" O.C. @ 2-STORY & 4'-0" O.C. @ 3-STORY CONDITIONS w/ 1" MIN. EMBEDMENT INTO CONG. PROVIDE A MINIMUM OF 2 ANCHORS PER PLATE, 12" MAXIMUM FROM PLATE ENDS, UNO. (SEE FND. DETAILS).
 - ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT w/ CONCRETE OR MASONRY FOUNDATION SHALL BE PRESERVATIVE TREATED HEM FIR #2.
 - BUILDER TO VERIFY CORROSION-RESISTANCE COMPATIBILITY OF HARDWARE & FASTENERS IN CONTACT w/ PRESERVATIVE-TREATED WOOD. CONTACT LUMBER & HARDWARE SUPPLIERS TO COORDINATE.
 - ARCH/BUILDER TO VERIFY ALL DIMENSIONS.

MEANS & METHODS NOTES

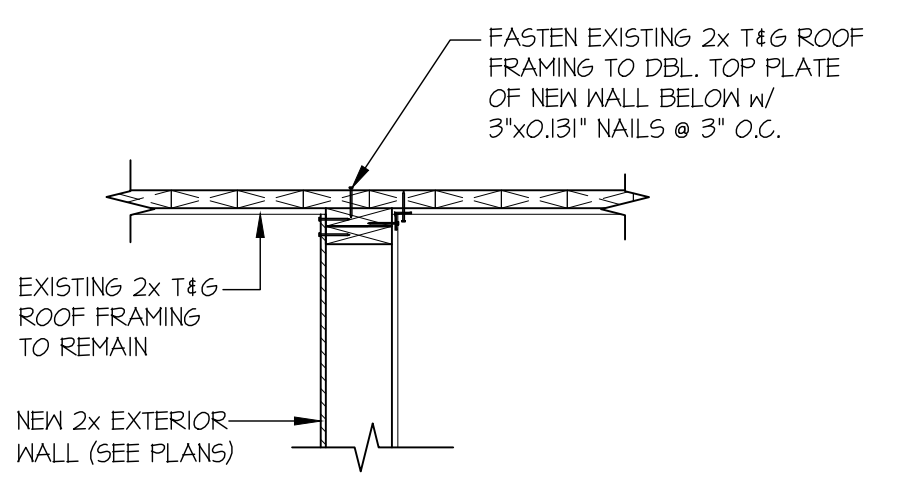
THE STRUCTURE IS DESIGNED TO BE SELF SUPPORTING AND STABLE AFTER THE BUILDING IS FINISHED AND ALL PLAN, DETAIL, AND NOTE SPECIFICATIONS HAVE BEEN COMPLETED. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCE TO INSURE THE SAFETY OF THE BUILDING AND ITS COMPONENTS DURING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF NECESSARY SHORING, SHEETING, TEMPORARY BRACING, GUTS, AND TIE-DOWNS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING AND BRACING REQUIRED TO STABILIZE AND PROTECT EXISTING AND ADJACENT STRUCTURES AND SYSTEMS DURING COURSE OF DEMOLITION AND CONSTRUCTION OF THE PROJECT.

STRUCTURAL DESIGN AND SPECIFICATIONS ASSUME THAT ALL SUPPORTING AND NON-SUPPORTING ELEMENTS IN CONTACT WITH FLOOR FRAMING ARE LEVEL, INCLUDING, BUT NOT LIMITED TO; FOUNDATIONS, SLABS ON GRADE, BEAMS, WALLS, AND NON-BEARING ELEMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LEVELNESS AND MAKE ADJUSTMENTS AS NECESSARY, INCLUDING CONSIDERATION OF THOSE AREAS THAT MAY BE WITHIN CONTRACTUAL, INDUSTRY, OR WARRANTY TOLERANCES.

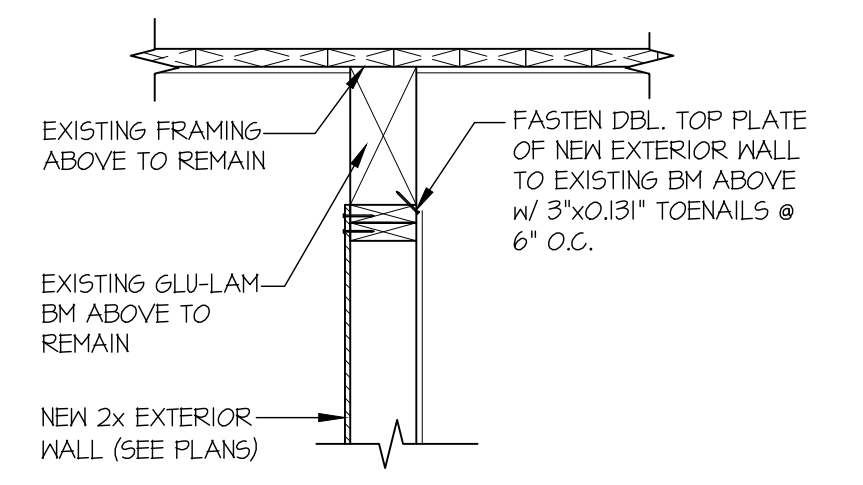
BASEMENT SLAB
4" CONG. SLAB ON 6 MIL VAPOR BARRIER ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

GARAGE SLAB
4" CONG. SLAB ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

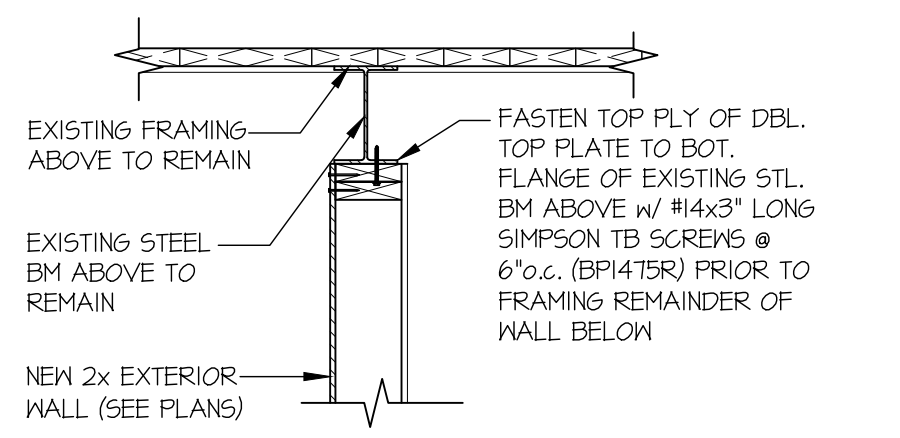
PORCH SLAB
4" CONG. SLAB ON GRADE ON 6 MIL VAPOR BARRIER ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL



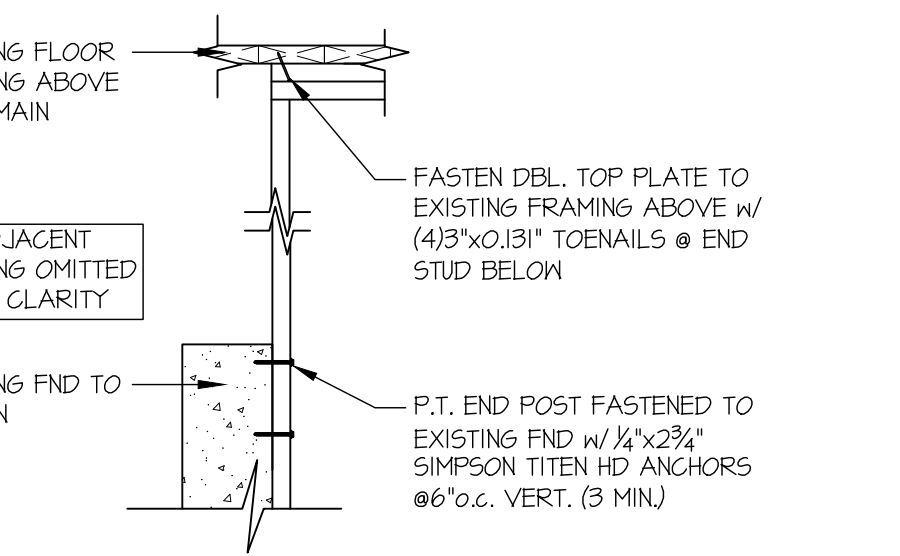
SECTION 1
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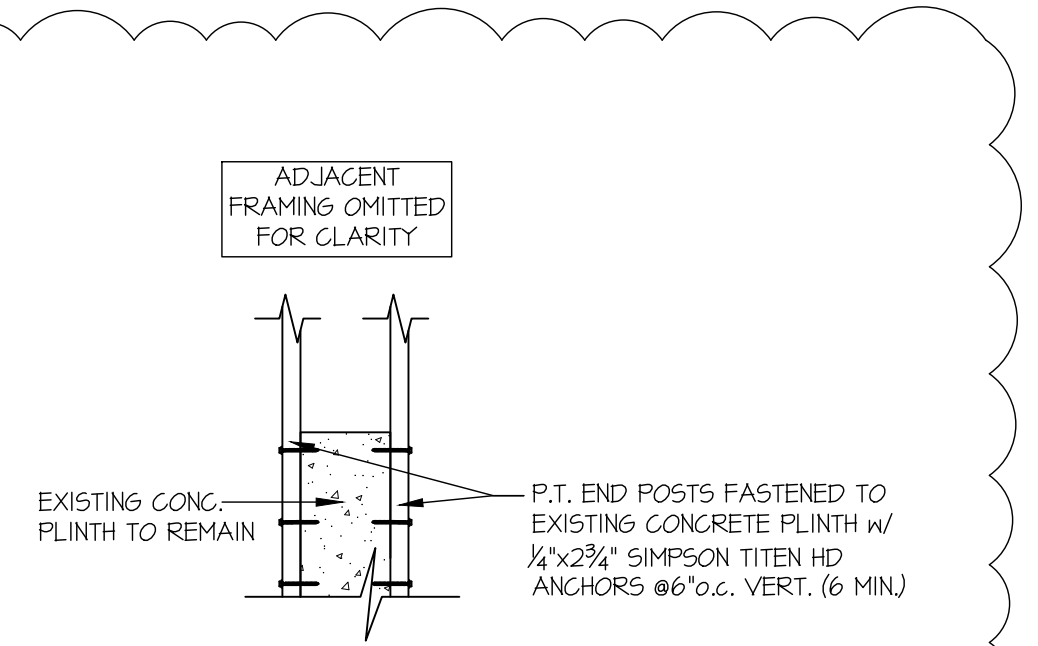
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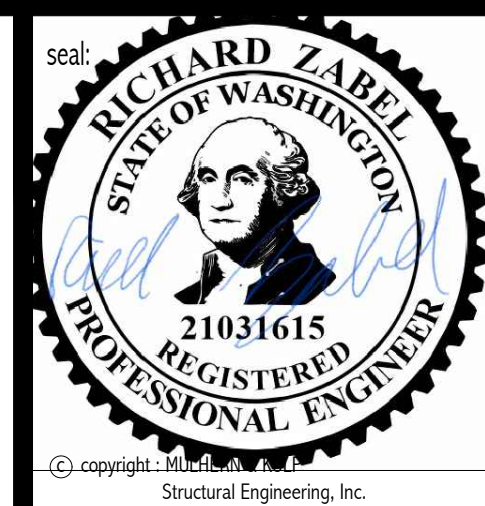
SECTION 3
SCALE: 3/4"=1'-0"



A END STUD FASTENING
SCALE: 3/4"=1'-0" ● LOWER LEVEL



B END STUD FASTENING
SCALE: 3/4"=1'-0" ● GARAGE



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M&K project number:
268-23003

project mgr: RJJ
drawn by: RJD
issue date: 04-20-23

REVISIONS:

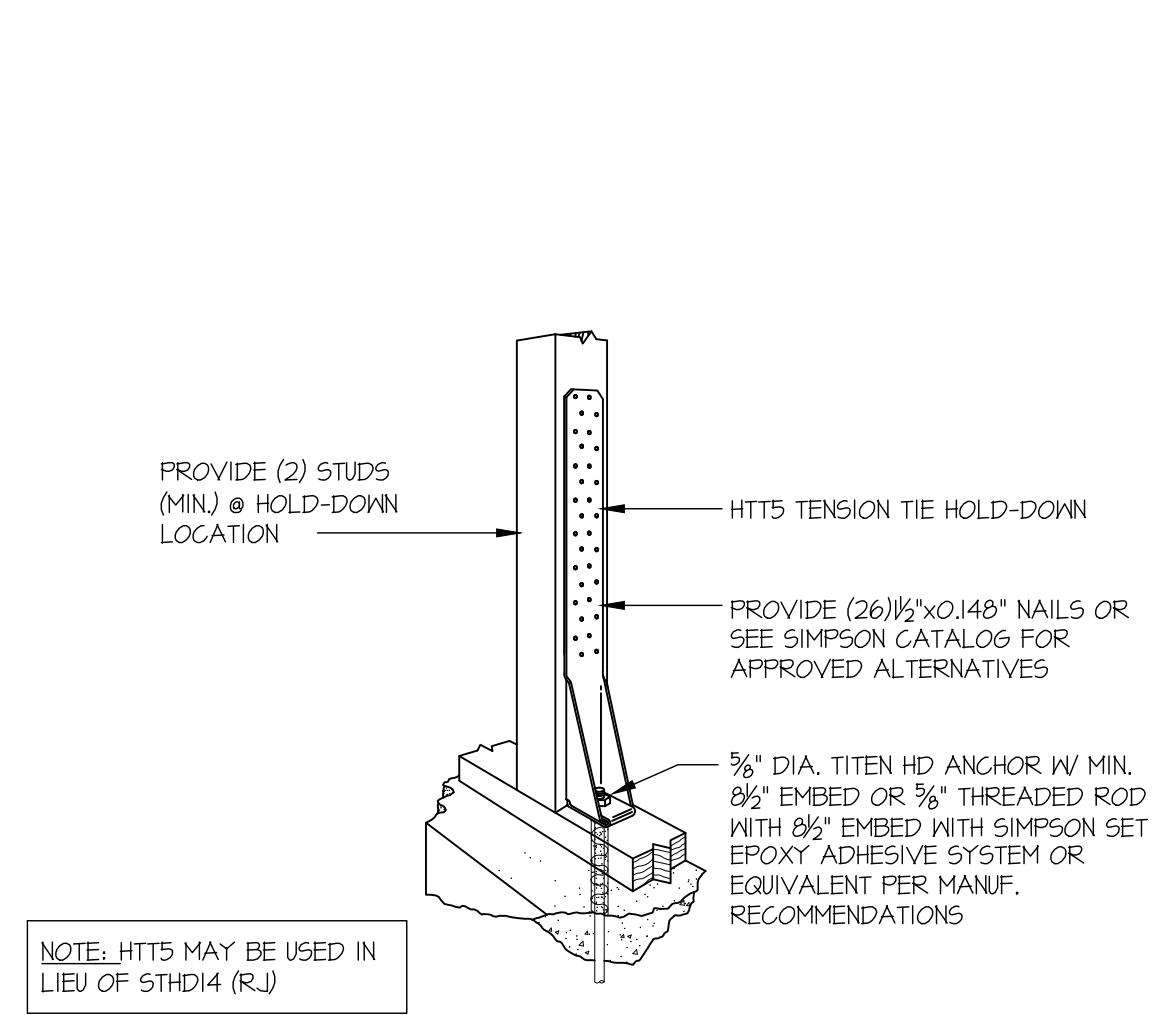
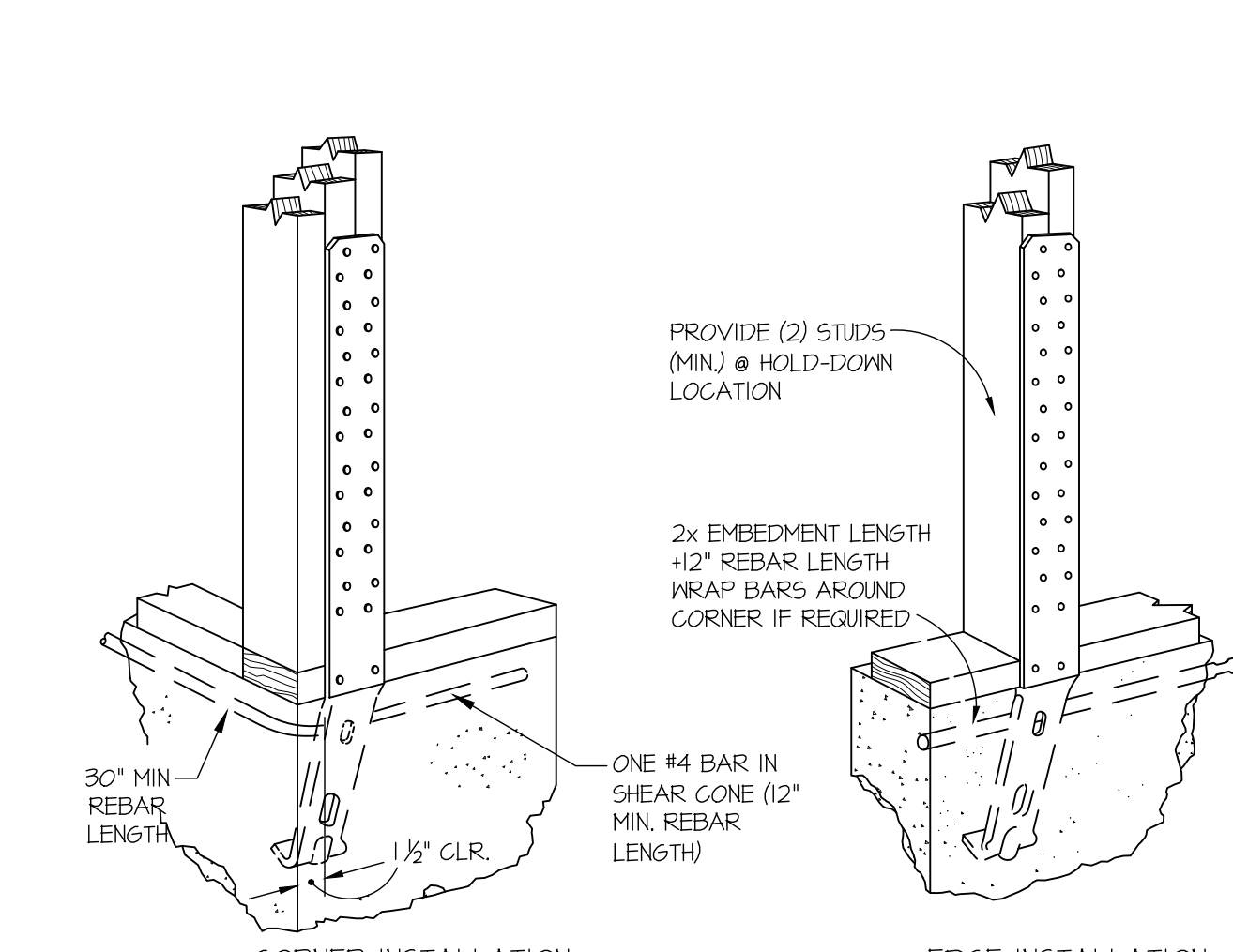
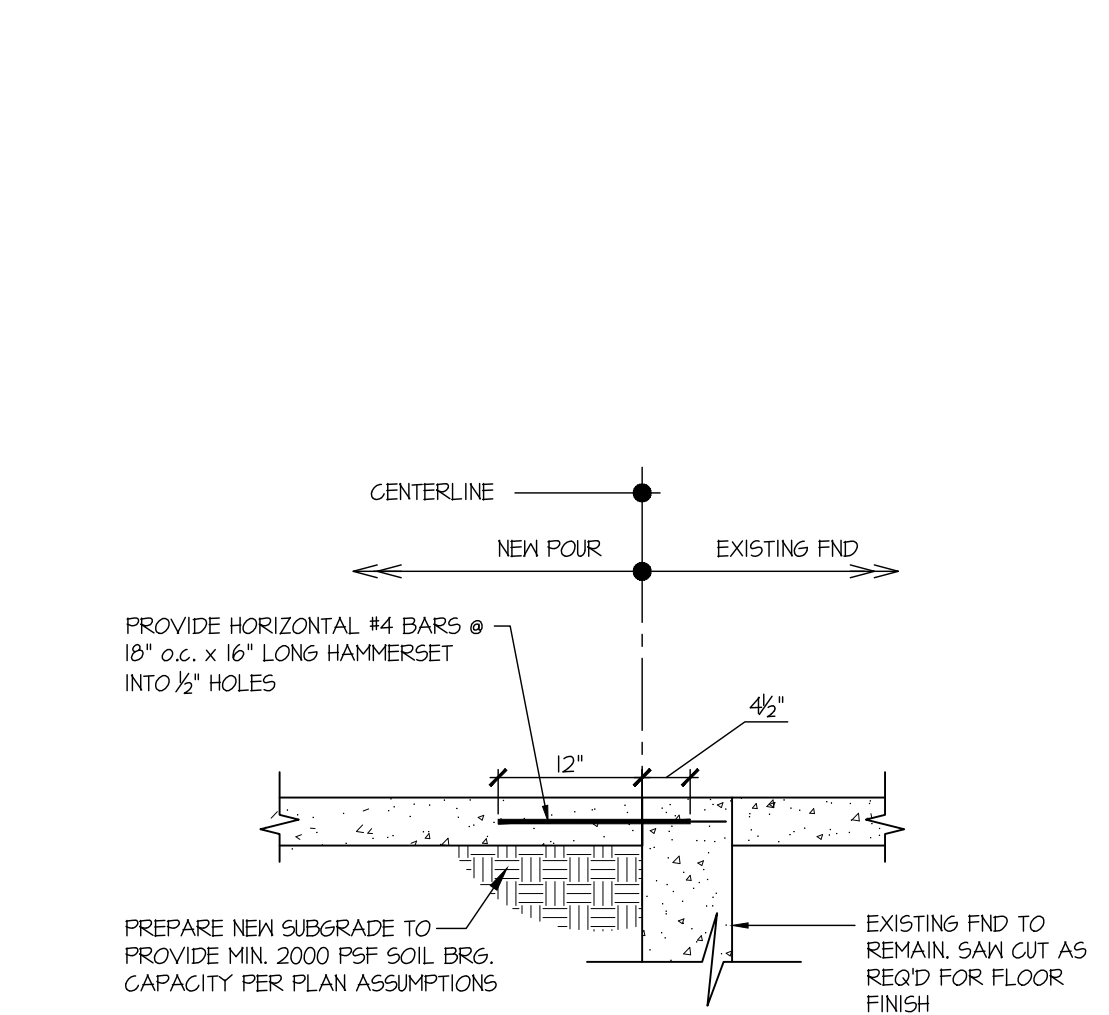
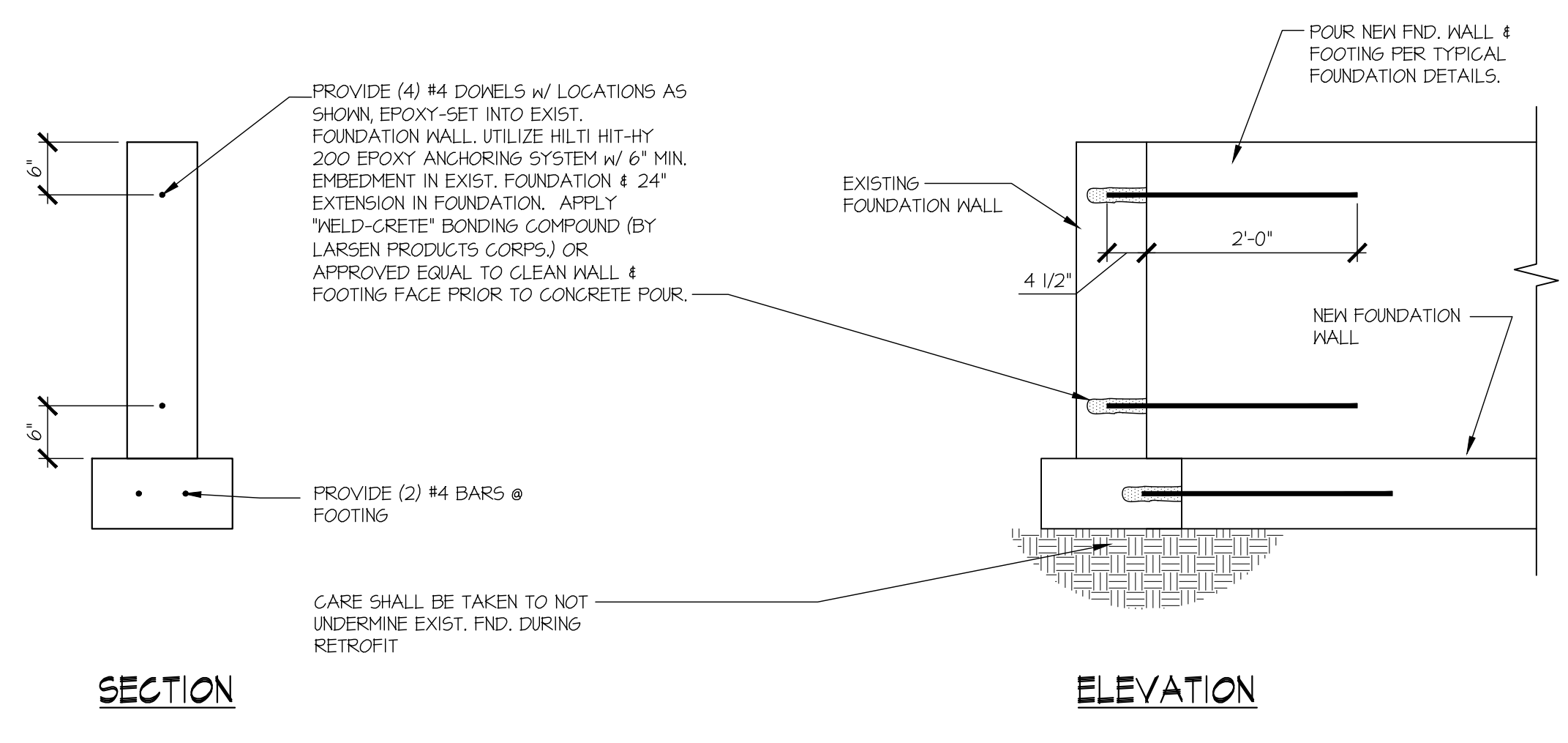
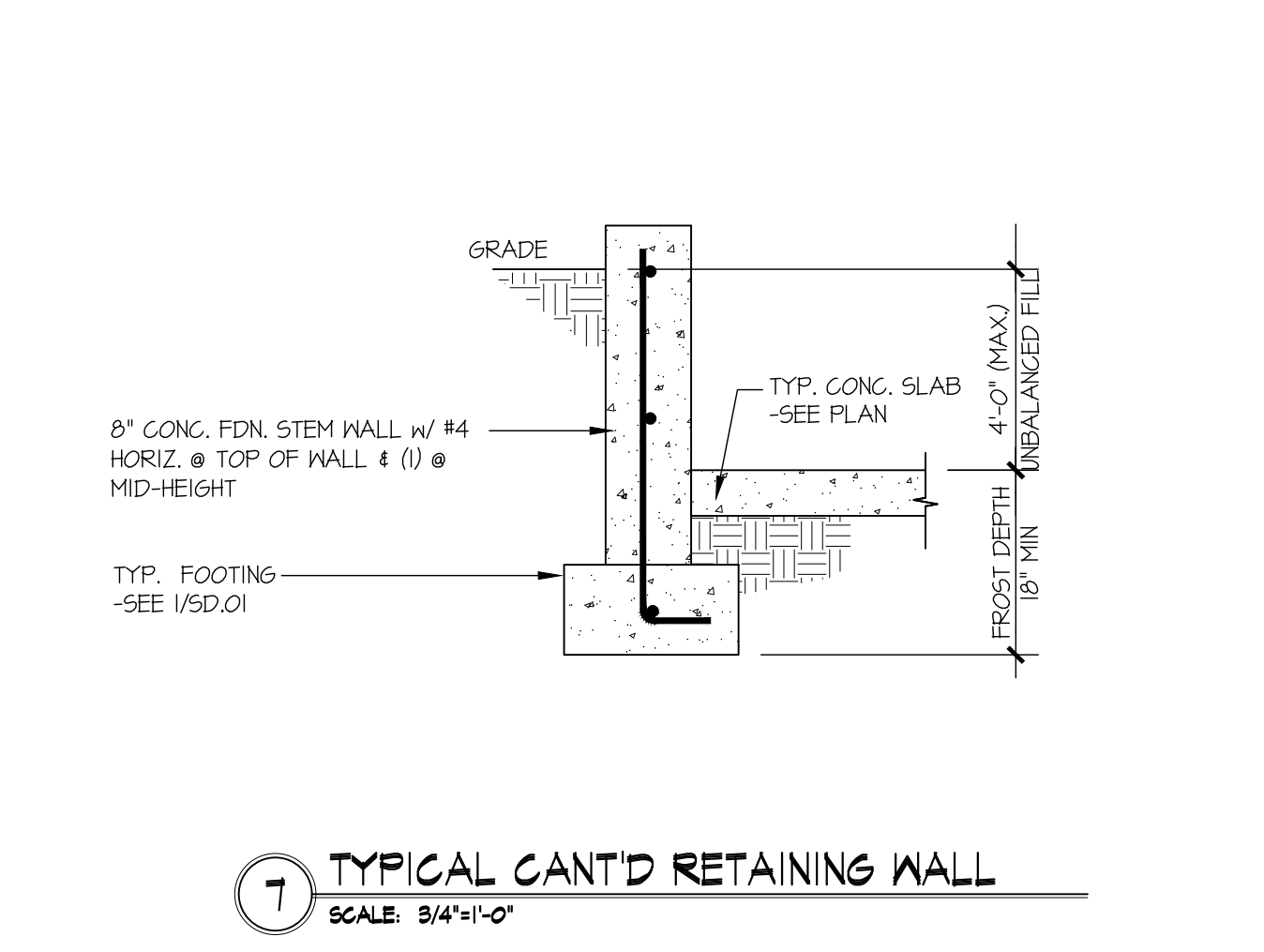
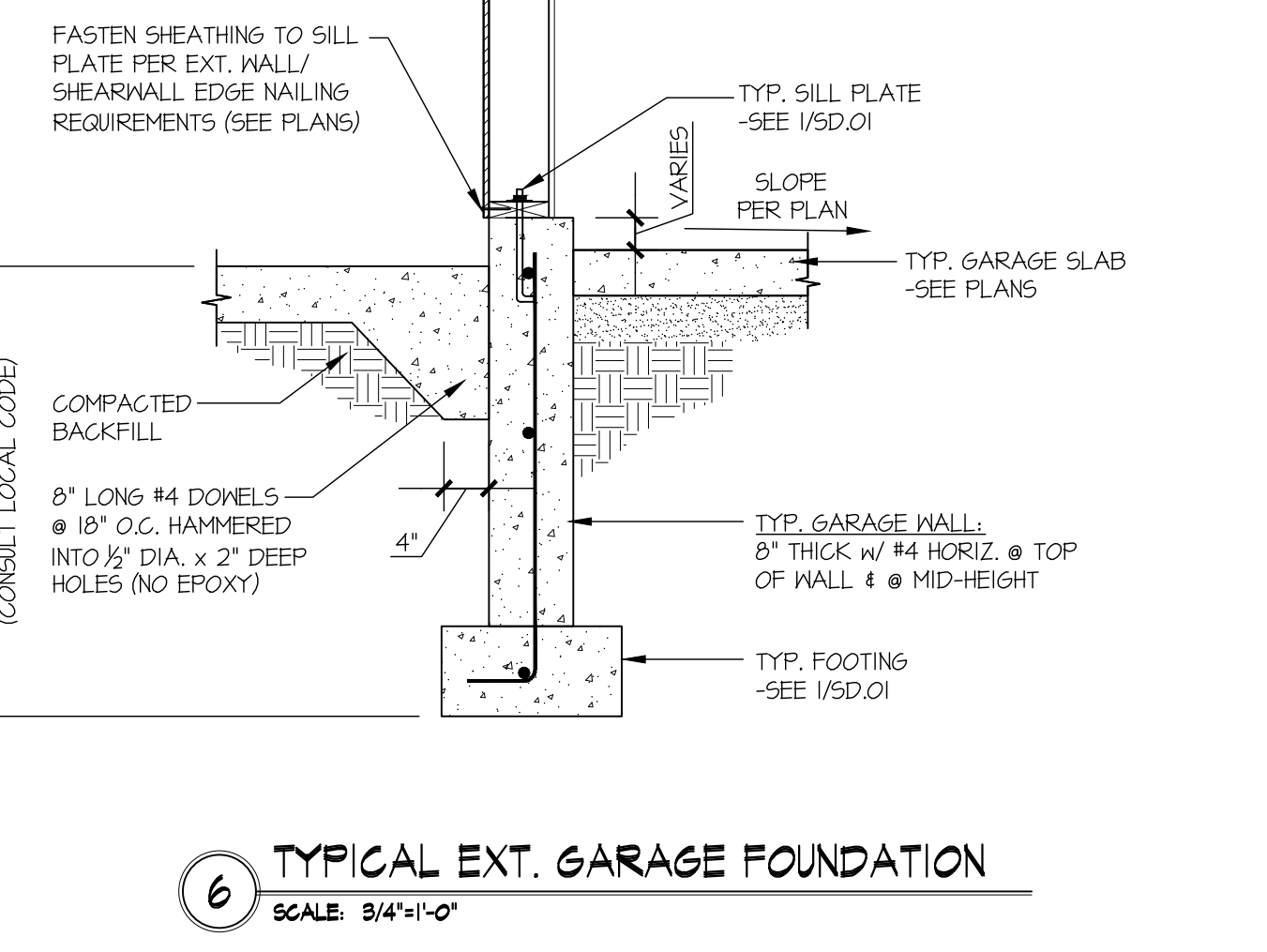
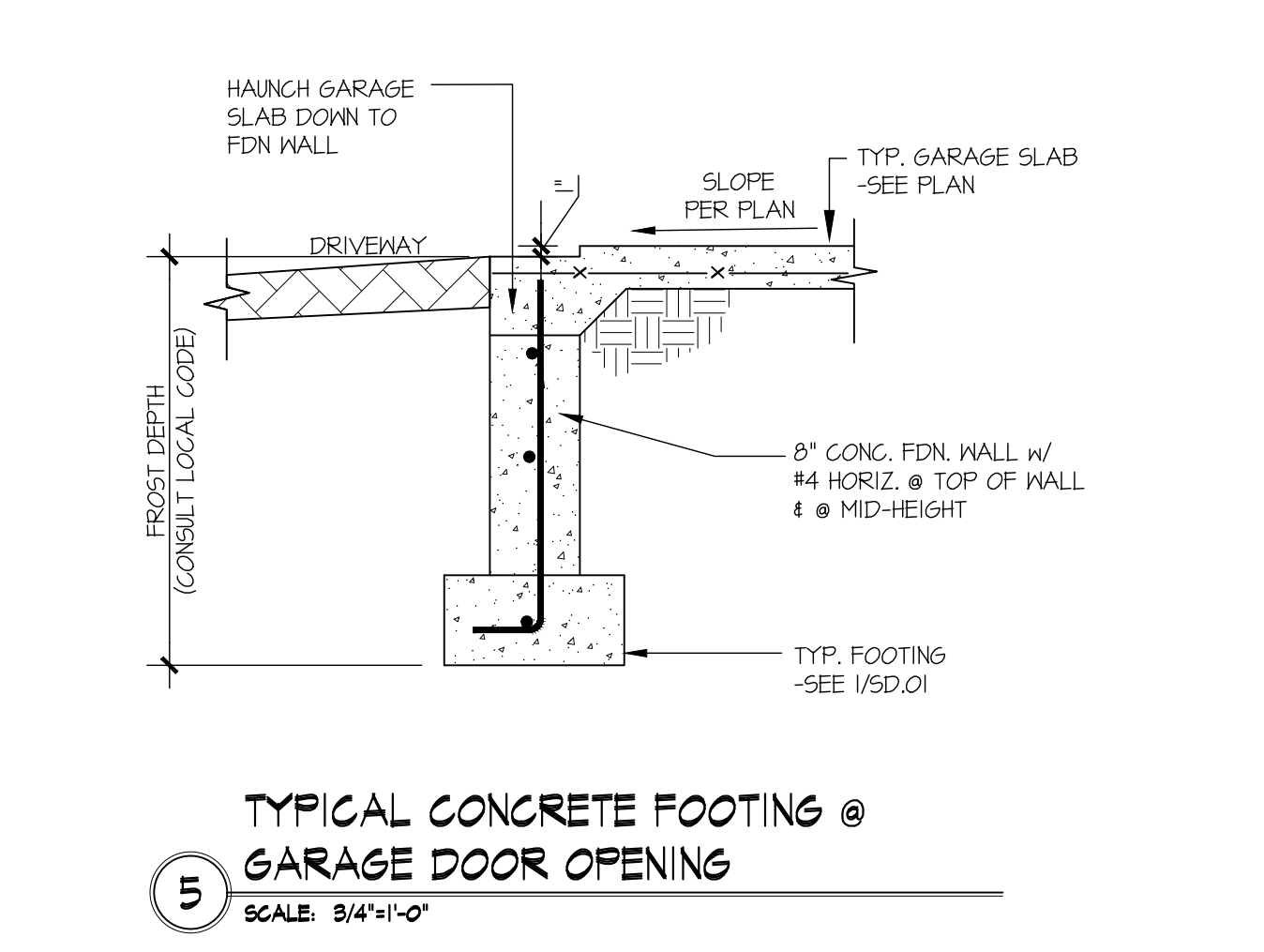
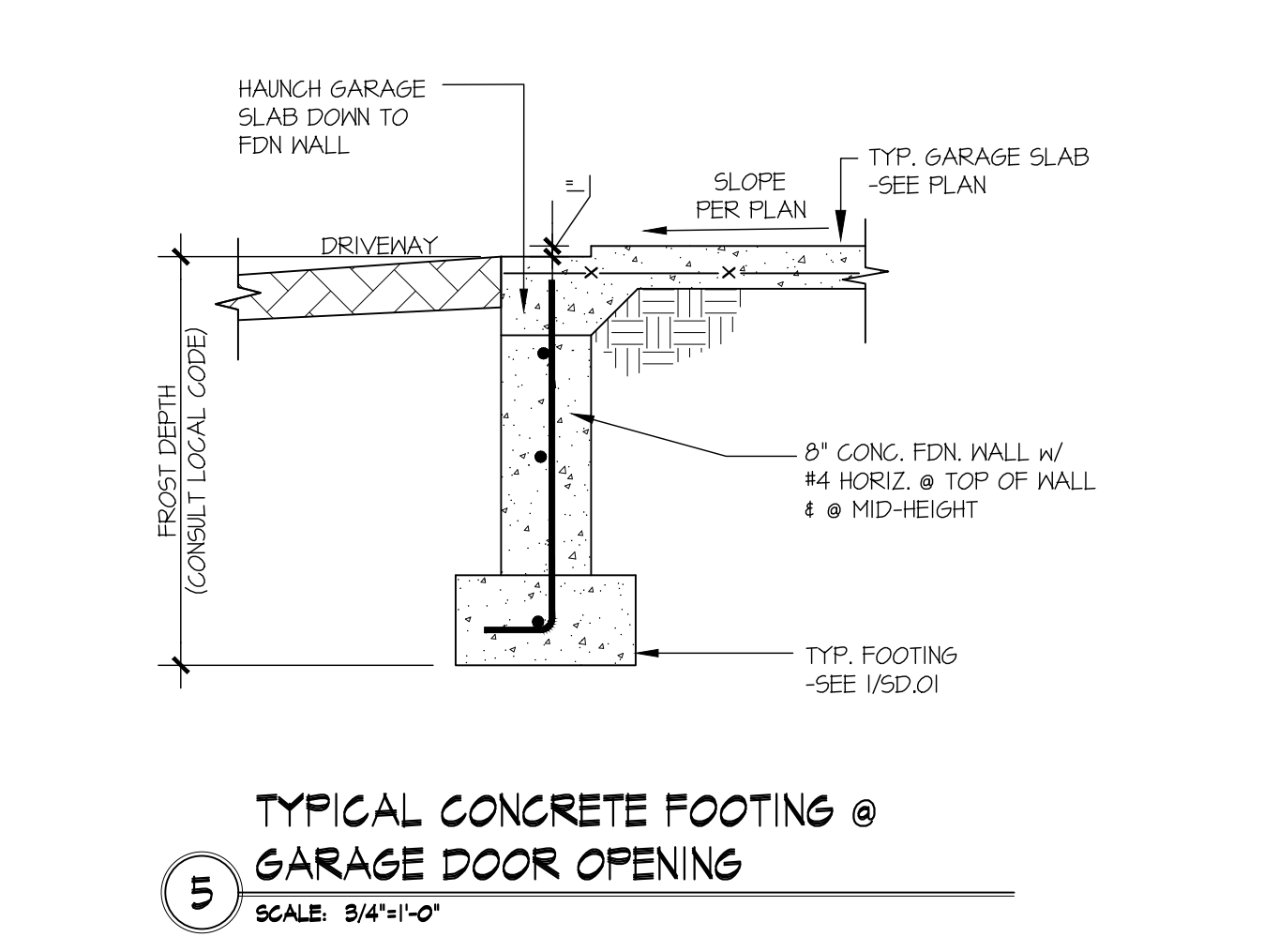
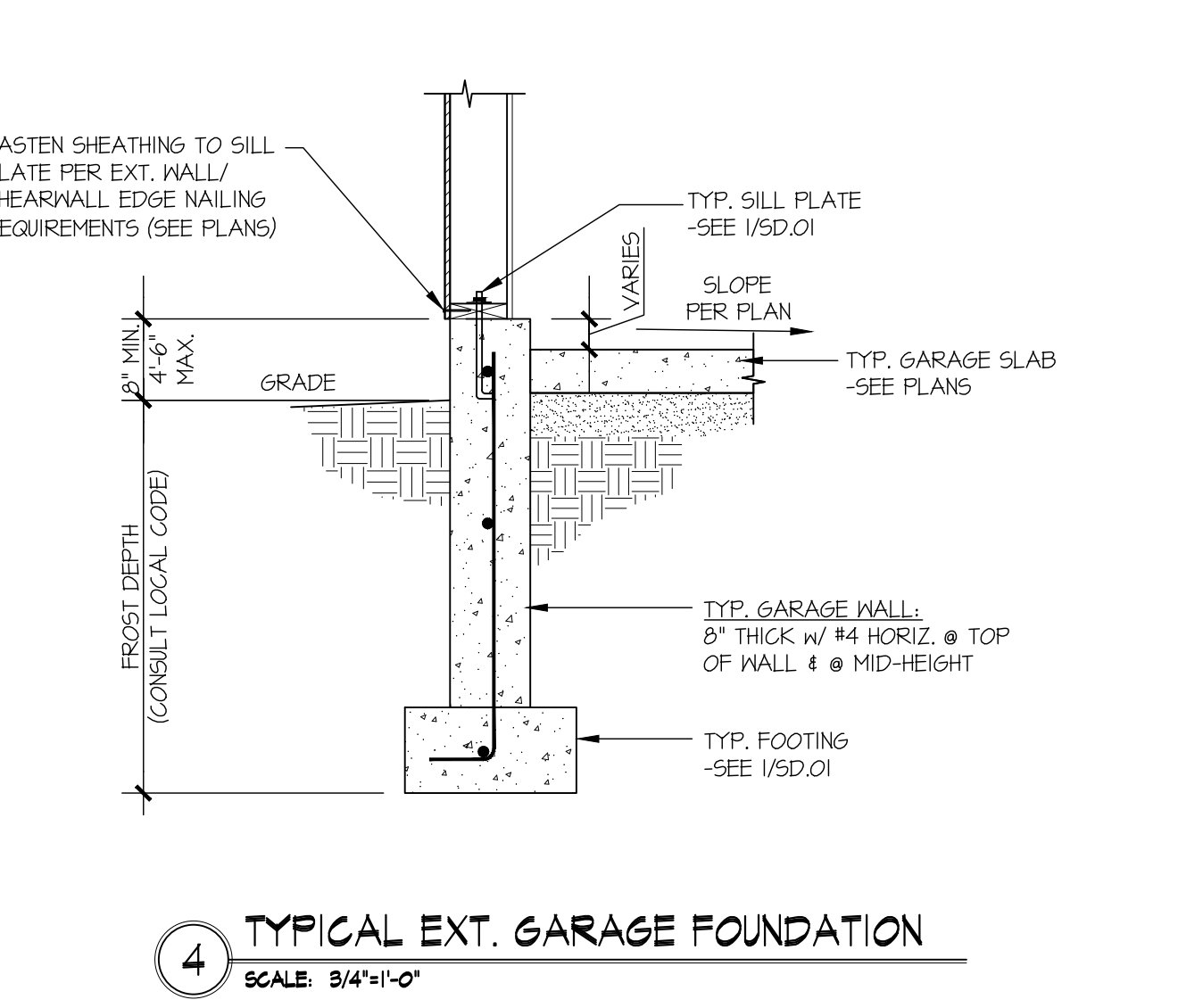
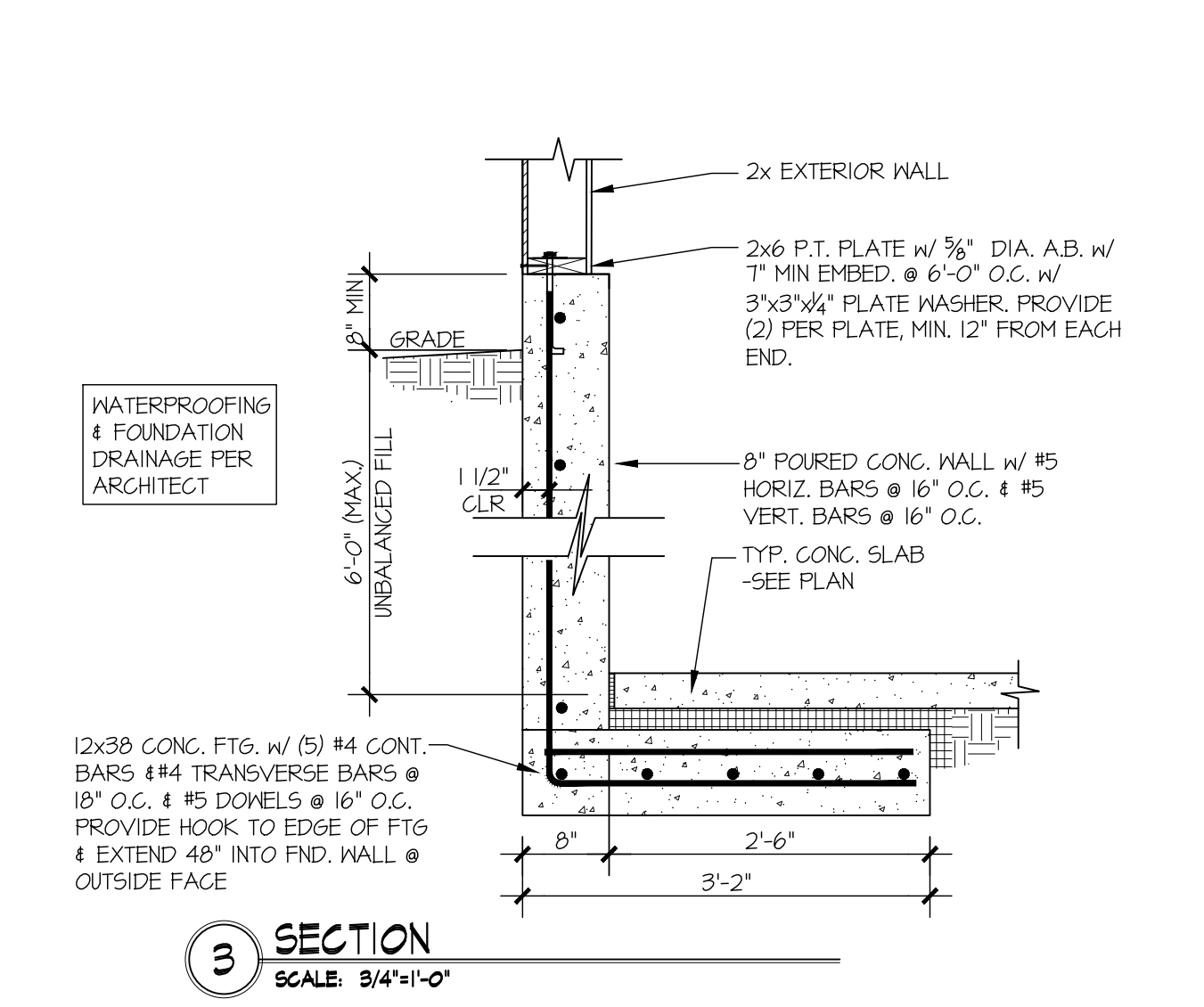
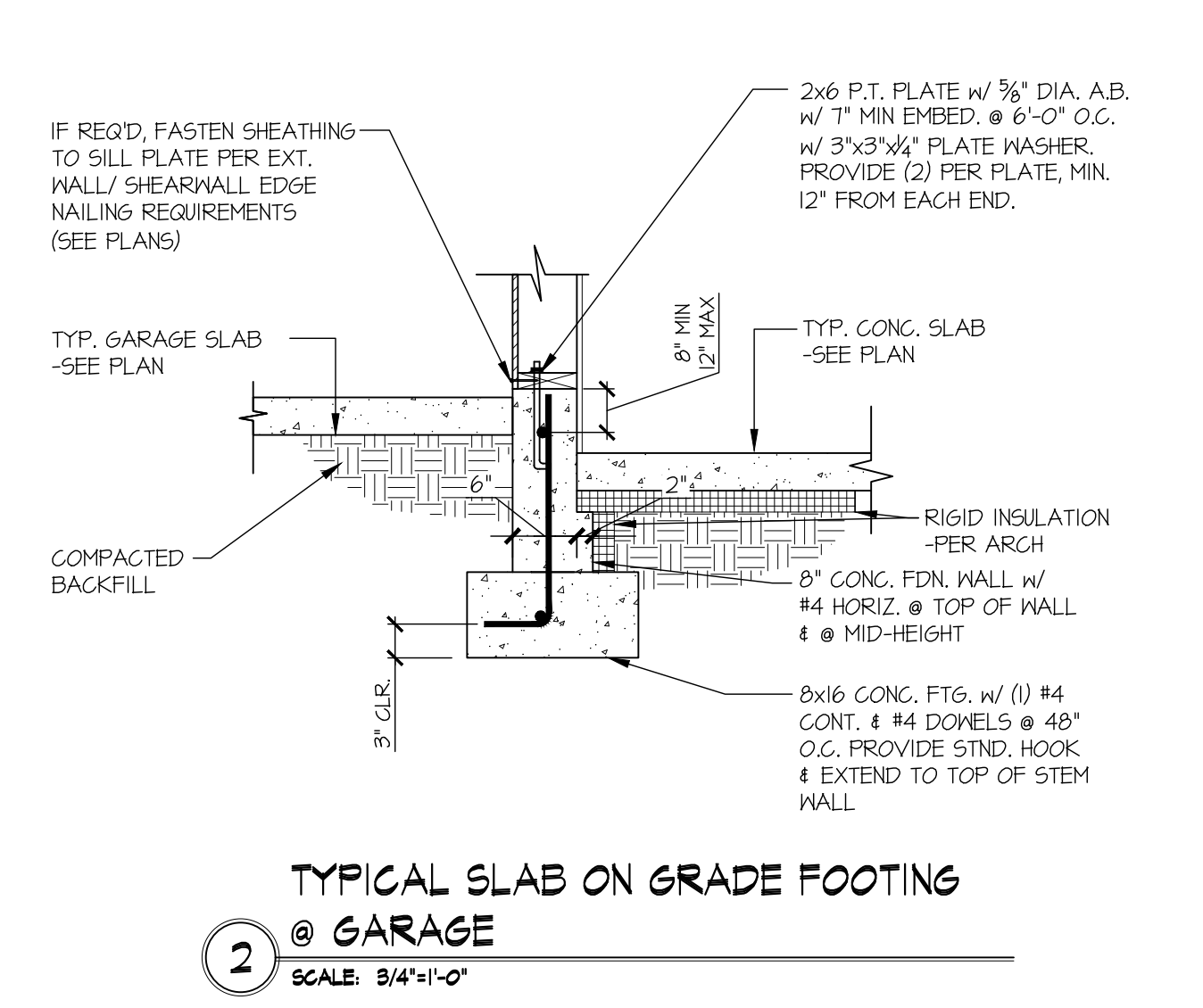
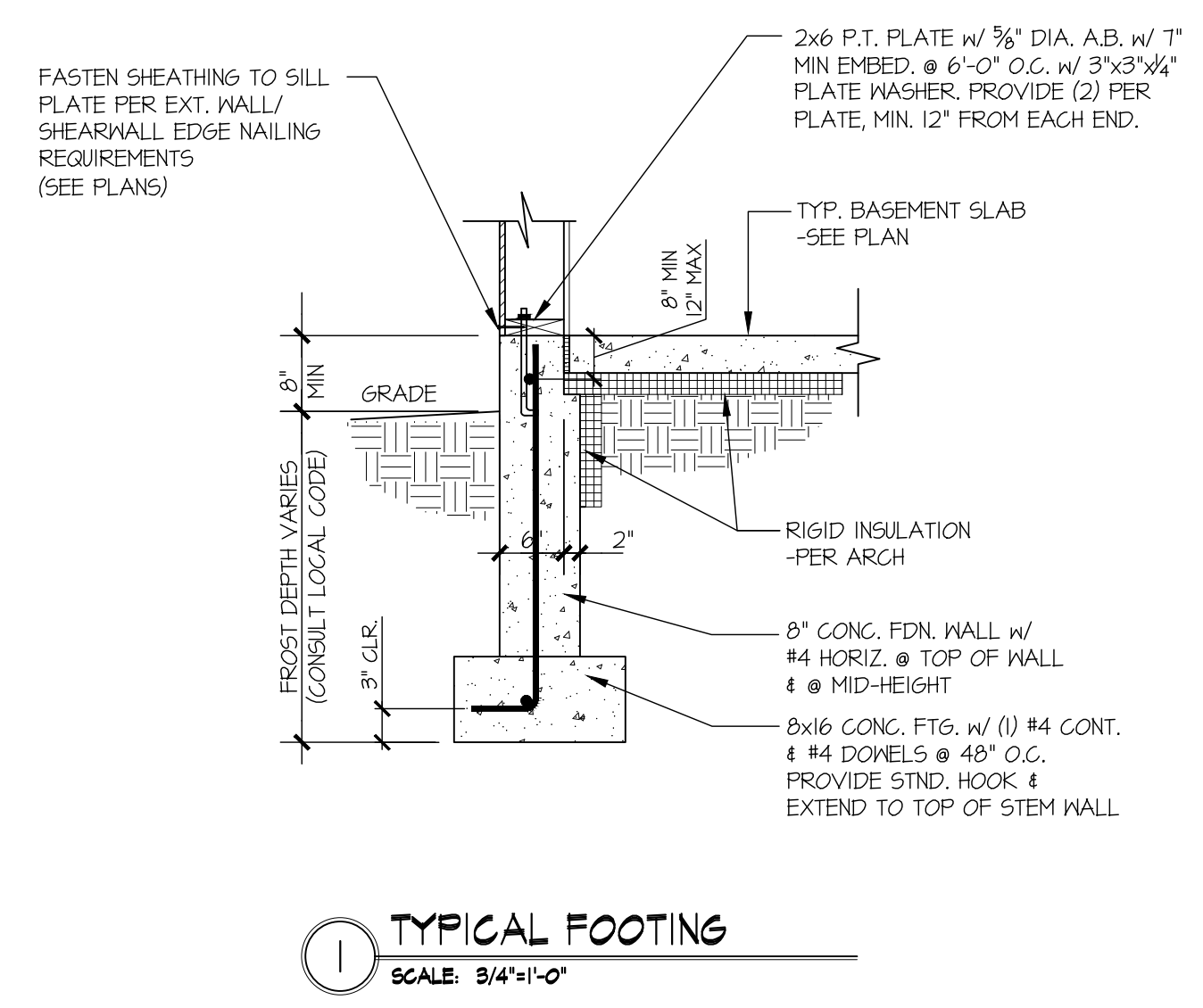
date:	initial:
04/13/23	RJD
PLAN REVIEW RESPONSE	

LOCHWOOD LOZIER

STRUCTURAL DETAILS

LIGHTSTONE ADDITION
5910 E. MERCER WAY
MERCER ISLAND, WASHINGTON

sheet:
SD.01



A TYPICAL FOUNDATION RETROFIT DETAIL
SCALE: 3/4"=1'-0"
UP TO 6'-0" TALL

B TYPICAL SLAB ON GRADE CONNECTION DETAIL
SCALE: 3/4"=1'-0"

C TYPICAL HOLD-DOWN INSTALLATION
NOT TO SCALE
SIMPSON STD HD @ FOUNDATION

D TYPICAL HOLD-DOWN ALTERNATE
NOT TO SCALE
SIMPSON HIT5 SHOWN