

# 7414 - 78th AVENUE SE • MERCER ISLAND • WASHINGTON • 98040

## GENERAL NOTES

- ALL WORK SHALL CONFORM TO APPLICABLE CODES, INCLUDING BUT NOT LIMITED TO THE 2021 INTERNATIONAL BUILDING CODE, INTERNATIONAL RESIDENTIAL CODE, THE CURRENT WASHINGTON STATE ENERGY CODE, THE WASHINGTON STATE BUILDING CODES, THE AMERICANS WITH DISABILITIES ACT, AND ALL RULES, REGULATIONS AND ORDINANCES OF THE GOVERNING AUTHORITY.
- ENGINEERED DESIGN IN ACCORDANCE WITH THE IBC IS PERMITTED.
- THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS, AND SITE CONDITIONS, AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY IN WRITING OF ANY DISCREPANCIES, ERRORS, OR OMISSIONS PRIOR TO PROCEEDING WITH THE WORK.
- DO NOT SCALE THE DRAWINGS FOR CRITICAL DIMENSIONS. DIMENSIONS ARE SHOWN TO FACE OF STUDS, POSTS AND CONCRETE UNLESS INDICATED OTHERWISE.
- THE PROJECT SHALL BE SCHEDULED AND INSTALLATION OF ELEMENTS COORDINATED AS NECESSARY BY THE CONTRACTOR TO PERMIT WORK BETWEEN DIFFERENT TRADES TO PROCEED WITHOUT UPSETTING PROPER CONSTRUCTION SEQUENCES OR DELAYING THE PROJECT SCHEDULE.
- CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS DURING CONSTRUCTION.
- THE CONTRACTOR SHALL VERIFY ALL DOOR AND WINDOW ROUGH-OPENING DIMENSIONS WITH THE DOOR AND WINDOW MANUFACTURERS.
- PLUMBING, ELECTRICAL AND MECHANICAL CONTRACTORS SHALL VERIFY ALL REQUIREMENTS FOR THIS PROJECT AND COMPLY WITH ALL LOCAL CODES, SUBMIT PLANS FOR APPROVAL AND OBTAIN PERMIT BEFORE STARTING WORK.
- SHOWN ONLY ONCE. TYPICAL DETAILS ARE NOT REFERENCED AT ALL LOCATIONS; THE INTENT IS THAT THEY APPLY THROUGHOUT THE PROJECT UNLESS OTHERWISE NOTED.
- ALL REQUIRED SHOP DRAWINGS AND SUBMITTALS SHALL BE REVIEWED BY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
- ALL SHOP DRAWING DIMENSIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE CAUSED BY HIMSELF OR OTHER TRADES.
- INSPECTIONS ARE TO BE PER IRC SECTION R109.
- ADDRESS MUST BE POSTED AND VISIBLE AT CONSTRUCTION SITE PER IRC SEC R319; BUILDINGS SHALL HAVE APPROVED ADDRESS NUMBERS, BUILDING NUMBERS OR APPROVED BUILDING IDENTIFICATION PLACED IN A POSITION THAT IS PLAINLY LEGIBLE AND VISIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY.
- ANY DEVIATION IN CONSTRUCTION FROM APPROVED PLANS REQUIRES PRIOR REVIEW AND APPROVAL FROM THE CITY OF MERCER ISLAND, PLANNING AND BUILDING DEPARTMENT.

## TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

ROOF SNOW LOAD:	25 PSF
WIND SPEED:	98 MPH
SEISMIC DESIGN CATEGORY:	D2
WEATHERING:	MODERATE
FROST LINE DEPTH:	12 INCHES
TERMITE:	SLIGHT TO MODERATE
DECAY:	SLIGHT TO MODERATE
WINTER DESIGN TEMP:	24 DEGREES FAHRENHEIT
ICE SHIELD UNDERLAYMENT REQUIRED:	NO
FLOOD HAZARDS:	NA
AIR FREEZING INDEX:	113
MEAN ANNUAL TEMP:	53 DEGREES FAHRENHEIT
ASSUMED SOIL BEARING:	3000 PSF STATIC (PER SOILS REPORT DATED 4/17/24)

## AUTOMATIC FIRE SPRINKLER SYSTEMS

FIRE SPRINKLERS  ARE  ARE NOT REQUIRED FOR THIS PROJECT. AUTOMATIC RESIDENTIAL FIRE SPRINKLER SYSTEMS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13D.

## SECTION M1501 EXHAUST SYSTEMS

M1501.1 OUTDOOR DISCHARGE  
THE AIR REMOVED BY EVERY MECHANICAL EXHAUST SYSTEM SHALL BE DISCHARGED TO THE OUTDOORS IN ACCORDANCE WITH SECTION M1504.3. AIR SHALL NOT BE EXHAUSTED INTO AN ATTIC, SOFFIT, RIDGE VENT OR CRAWL SPACE.

M1502 CLOTHES DRYER EXHAUST  
M1502.1 GENERAL  
CLOTHES DRYERS SHALL BE EXHAUSTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

M1502.2 INDEPENDENT EXHAUST SYSTEMS  
DRYER EXHAUST SYSTEMS SHALL BE INDEPENDENT OF ALL OTHER SYSTEMS AND SHALL CONVEY THE MOISTURE TO THE OUTDOORS.  
EXCEPTION: THIS SECTION SHALL NOT APPLY TO LISTED AND LABELED CONDENSING (DUCTLESS) CLOTHES DRYERS.

M1502.3 DUCT TERMINATION  
EXHAUST DUCTS SHALL TERMINATE ON THE OUTSIDE OF THE BUILDING. EXHAUST DUCT TERMINATIONS SHALL BE IN ACCORDANCE WITH THE DRYER MANUFACTURER'S INSTALLATION INSTRUCTIONS. IF THE MANUFACTURER'S INSTRUCTIONS DO NOT SPECIFY A TERMINATION LOCATION, THE EXHAUST DUCT SHALL TERMINATE NOT LESS THAN 3 FEET IN ANY DIRECTION FROM OPENINGS INTO BUILDINGS, INCLUDING OPENINGS IN VENTILATED SOFFITS. EXHAUST DUCT TERMINATIONS SHALL BE EQUIPPED WITH A BACKDRAFT DAMPER. SCREENS SHALL NOT BE INSTALLED AT THE DUCT TERMINATION.

M1502.4 DRYER EXHAUST DUCTS  
DRYER EXHAUST DUCTS SHALL CONFORM TO THE REQUIREMENTS OF SECTIONS M1502.4.1 THROUGH M1502.4.8.

M1502.4.1 MATERIAL AND SIZE  
EXHAUST DUCTS SHALL HAVE A SMOOTH INTERIOR FINISH AND SHALL BE CONSTRUCTED OF METAL NOT LESS THAN 0.0157 INCH IN THICKNESS (NO. 28 GAGE), THE DUCT SHALL BE 4 INCHES NOMINAL IN DIAMETER.

M1502.4.2 DUCT INSTALLATION  
EXHAUST DUCTS SHALL BE SUPPORTED AT INTERVALS NOT TO EXCEED 12 FEET AND SHALL BE SECURED IN PLACE. THE INSERT END OF THE DUCT SHALL EXTEND INTO THE ADJOINING DUCT OR FITTING IN THE DIRECTION OF AIRFLOW. EXHAUST DUCT JOINTS SHALL BE SEALED IN ACCORDANCE WITH SECTION M1501.4.1 AND SHALL BE MECHANICALLY FASTENED. DUCTS SHALL NOT BE JOINED WITH SCREWS OR SIMILAR FASTENERS THAT PROTRUDE MORE THAN 1/8 INCH INTO THE INSIDE OF THE DUCT. WHERE DRYER EXHAUST DUCTS ARE ENCLOSED IN WALL OR CEILING CAVITIES, SUCH CAVITIES SHALL ALLOW THE INSTALLATION OF THE DUCT WITHOUT DEFORMATION.

M1502.4.3 TRANSITION DUCT  
TRANSITION DUCTS USED TO CONNECT THE DRYER TO THE EXHAUST DUCT SYSTEM SHALL BE A SINGLE LENGTH THAT IS LISTED AND LABELED IN ACCORDANCE WITH UL 2158A. TRANSITION DUCTS SHALL BE NOT GREATER THAN 8 FEET IN LENGTH. TRANSITION DUCTS SHALL NOT BE CONCEALED WITHIN CONSTRUCTION.

M1502.4.4 DRYER EXHAUST DUCT POWER VENTILATORS  
DOMESTIC DRYER EXHAUST DUCT POWER VENTILATORS SHALL CONFORM TO UL 705 FOR USE IN DRYER EXHAUST DUCT SYSTEMS. THE DRYER EXHAUST DUCT POWER VENTILATOR SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

M1502.4.6 DUCT LENGTH  
THE MAXIMUM ALLOWABLE EXHAUST DUCT LENGTH SHALL BE DETERMINED BY ONE OF THE METHODS SPECIFIED IN SECTIONS M1502.4.6.1 THROUGH M1502.4.6.3.

M1502.4.6.1 SPECIFIED LENGTH  
THE MAXIMUM LENGTH OF THE EXHAUST DUCT SHALL BE 35 FEET FROM THE CONNECTION TO THE TRANSITION DUCT FROM THE DRYER TO THE OUTLET TERMINAL, WHERE FITTINGS ARE USED, THE MAXIMUM LENGTH OF THE EXHAUST DUCT SHALL BE REDUCED IN ACCORDANCE WITH TABLE M1502.4.6.1. THE MAXIMUM LENGTH OF THE EXHAUST DUCT DOES NOT INCLUDE THE TRANSITION DUCT.

DRYER EXHAUST DUCT FITTING TYPE	EQUIVALENT LENGTH
4-INCH RADIUS MITERED 45-DEGREE ELBOW	2 FEET 6 INCHES
4-INCH RADIUS MITERED 90-DEGREE ELBOW	5 FEET
6-INCH RADIUS MITERED 45-DEGREE ELBOW	1 FOOT
6-INCH RADIUS MITERED 90-DEGREE ELBOW	1 FOOT 9 INCHES
8-INCH RADIUS MITERED 45-DEGREE ELBOW	1 FOOT
8-INCH RADIUS MITERED 90-DEGREE ELBOW	1 FOOT 7 INCHES
10-INCH RADIUS MITERED 45-DEGREE ELBOW	9 INCHES
10-INCH RADIUS MITERED 90-DEGREE ELBOW	1 FOOT 6 INCHES

M1503 DOMESTIC COOKING EXHAUST EQUIPMENT  
M1503.2 DOMESTIC COOKING EXHAUST  
WHERE DOMESTIC COOKING EXHAUST EQUIPMENT IS PROVIDED, IT SHALL COMPLY WITH ONE OF THE FOLLOWING:  
1. THE FAN FOR OVERHEAD RANGE HOODS AND DOWNDRAFT EXHAUST EQUIPMENT NOT INTEGRAL WITH THE COOKING APPLIANCE SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 507.  
2. OVERHEAD RANGE HOODS AND DOWNDRAFT EXHAUST EQUIPMENT WITH INTEGRAL FANS SHALL COMPLY WITH UL 507.  
3. DOMESTIC COOKING APPLIANCES WITH INTEGRAL DOWNDRAFT EXHAUST EQUIPMENT SHALL BE LISTED AND LABELED IN ACCORDANCE WITH ANSI Z21.1 OR UL 858.  
4. MICROWAVE OVENS WITH INTEGRAL EXHAUST FOR INSTALLATION OVER THE COOKING SURFACE SHALL BE LISTED AND LABELED IN ACCORDANCE WITH UL 923.

M1503.6 MAKEUP AIR REQUIRED  
WHERE ONE OR MORE GAS, LIQUID OR SOLID FUEL-BURNING APPLIANCE THAT IS NEITHER DIRECT-VENT NOR USES A MECHANICAL DRAFT VENTING SYSTEM IS LOCATED WITHIN A DWELLING UNIT'S AIR BARRIER, EACH EXHAUST SYSTEM CAPABLE OF EXHAUSTING IN EXCESS OF 400 CUBIC FEET PER MINUTE SHALL BE MECHANICALLY OR PASSIVELY PROVIDED WITH MAKEUP AIR AT A RATE APPROXIMATELY EQUAL TO THE EXHAUST AIR RATE. SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH NOT FEWER THAN ONE DAMPER COMPLYING WITH SECTION M1503.6.2. EXCEPTION: MAKEUP AIR IS NOT REQUIRED FOR EXHAUST SYSTEMS INSTALLED FOR THE EXCLUSIVE PURPOSE OF SPACE COOLING AND INTENDED TO BE OPERATED ONLY WHEN WINDOWS OR OTHER AIR INLETS ARE OPEN.  
M1503.6.1 LOCATION  
KITCHEN EXHAUST MAKEUP AIR SHALL BE DISCHARGED INTO THE SAME ROOM IN WHICH THE EXHAUST SYSTEM IS LOCATED OR INTO ROOMS OR DUCT SYSTEMS THAT COMMUNICATE THROUGH ONE OR MORE PERMANENT OPENINGS WITH THE ROOM IN WHICH SUCH EXHAUST SYSTEM IS LOCATED. SUCH PERMANENT OPENINGS SHALL HAVE A NET CROSS-SECTIONAL AREA NOT LESS THAN THE REQUIRED AREA OF THE MAKEUP AIR SUPPLY OPENINGS.

M1503.6.2 MAKEUP AIR DAMPERS  
WHERE MAKEUP AIR IS REQUIRED BY SECTION M1503.6, MAKEUP AIR DAMPERS SHALL COMPLY WITH THIS SECTION. EACH DAMPER SHALL BE GRAVITY DAMPER OR AN ELECTRICALLY OPERATED DAMPER THAT AUTOMATICALLY OPENS WHEN THE EXHAUST SYSTEM OPERATES. DAMPERS SHALL BE LOCATED TO ALLOW ACCESS FOR INSPECTION, SERVICE, REPAIR AND REPLACEMENT WITHOUT REMOVING PERMANENT CONSTRUCTION OR ANY OTHER DUCTS NOT CONNECTED TO THE DAMPER BEING INSPECTED, SERVICED, REPAIRED OR REPLACED. GRAVITY OR BAROMETRIC DAMPERS SHALL NOT BE USED IN PASSIVE MAKEUP AIR SYSTEMS EXCEPT WHERE THE DAMPERS ARE RATED TO PROVIDE THE DESIGN MAKEUP AIRFLOW AT A PRESSURE DIFFERENTIAL OF 0.01 IN. W.C. OR LESS.

M1504 EXHAUST DUCTS AND EXHAUST OPENINGS  
M1504.2 DUCT LENGTH  
THE LENGTH OF EXHAUST AND SUPPLY DUCTS USED WITH VENTILATING EQUIPMENT SHALL NOT EXCEED THE LENGTHS DETERMINED IN ACCORDANCE WITH TABLE M1504.2. EXCEPTION: DUCT LENGTH SHALL NOT BE LIMITED WHERE THE DUCT SYSTEM COMPLIES WITH THE MANUFACTURER'S DESIGN CRITERIA OR WHERE THE FLOW RATE OF THE INSTALLED VENTILATING EQUIPMENT IS VERIFIED BY THE INSTALLER OR APPROVED THIRD PARTY USING A FLOW HOOD, FLOW GRID OR OTHER AIRFLOW MEASURING DEVICE.

DUCT TYPE	FLEX DUCT					SMOOTH-WALL DUCT										
	3	4	5	6	8	3	4	5	6	8						
FAN AIRFLOW RATING	50	80	100	125	150	200	250	300	50	80	100	125	150	200	250	300
DIAMETER <sup>Ø</sup> (INCHES)																
3	X	X	X	X	X	X	X	X	5	X	X	X	X	X	X	X
4	56	4	X	X	X	X	X	X	114	31	10	X	X	X	X	X
5	NL	81	42	16	2	X	X	X	NL	152	91	51	28	4	X	X
6	NL	NL	158	91	55	18	1	X	NL	NL	NL	168	112	63	25	9
8	NL	NL	NL	NL	161	78	40	19	NL	NL	NL	NL	148	88	54	
8 AND ABOVE	NL	NL	NL	NL	NL	189	111	69	NL	NL	NL	NL	NL	198	133	

- FAN AIRFLOW RATING SHALL BE IN ACCORDANCE WITH ANSI/AMCA 210-ANSI/ASHRAE 51.
- FOR NONCIRCULAR DUCTS, CALCULATE THE DIAMETER AS FOUR TIMES THE CROSS-SECTIONAL AREA DIVIDED BY THE PERIMETER.
- THIS TABLE ASSUMES THAT ELBOWS ARE NOT USED, FIFTEEN FEET OF ALLOWABLE DUCT LENGTH SHALL BE DEDUCTED FOR EACH ELBOW INSTALLED IN THE DUCT RUN.
- NL = NO LIMIT ON DUCT LENGTH OF THIS SIZE.
- X = NOT ALLOWED; ANY LENGTH OF DUCT OF THIS SIZE WITH ASSUMED TURNS AND FITTINGS WILL EXCEED THE RATED PRESSURE DROP.

M1504.3 EXHAUST OPENINGS  
AIR EXHAUST OPENINGS SHALL TERMINATE AS FOLLOWS:  
1. NOT LESS THAN 3 FEET FROM PROPERTY LINES.  
2. NOT LESS THAN 3 FEET FROM GRAVITY AIR INTAKE OPENINGS, OPERABLE WINDOWS AND DOORS.  
3. NOT LESS THAN 10 FEET FROM MECHANICAL AIR INTAKE OPENINGS EXCEPT WHERE EITHER OF THE FOLLOWING APPLY:  
3.1 THE EXHAUST OPENING IS LOCATED NOT LESS THAN 3 FEET ABOVE THE AIR INTAKE OPENING.  
3.2 THE EXHAUST OPENING IS PART OF A FACTORY-BUILT INTAKE/EXHAUST COMBINATION TERMINATION WHICH 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 M1504.5.3.1 WHERE APPLICABLE. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED PER SECTION M1505.4.2 UNLESS CONFIGURED WITH INTERMITTENT OFF CONTROLS PER SECTION M1505.4.3.2.  
4. OPENINGS SHALL COMPLY WITH SECTIONS R303.5.2 AND R303.6.

## M1505 MECHANICAL VENTILATION

M1505.4 WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM  
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. WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM WITH SUPPLY AND EXHAUST FANS PER SECTIONS M1505.4.1.2, M1505.4.1.3, M1505.4.1.4, AND M1505.4.1.5. LOCAL EXHAUST 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 M1504.5.3.1 WHERE APPLICABLE. THE WHOLE-HOUSE VENTILATION SYSTEM SHALL OPERATE CONTINUOUSLY AT THE MINIMUM VENTILATION RATE DETERMINED PER SECTION M1505.4.2 UNLESS CONFIGURED WITH INTERMITTENT OFF CONTROLS PER SECTION M1505.4.3.2.

M1505.4.1.1 WHOLE-HOUSE SYSTEM COMPONENT REQUIREMENTS  
WHOLE-HOUSE VENTILATION SUPPLY AND EXHAUST FANS SPECIFIED IN THIS SECTION SHALL HAVE A MINIMUM EFFICACY AS PRESCRIBED IN THE WASHINGTON STATE ENERGY CODE. DESIGN AND INSTALLATION OF THE SYSTEM OR EQUIPMENT SHALL BE CARRIED OUT IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS. WHOLE-HOUSE VENTILATION FANS SHALL BE RATED FOR SOUND AT NO LESS THAN THE MINIMUM AIRFLOW RATE REQUIRED BY SECTION M1505.4.3.1. VENTILATION FANS SHALL BE RATED FOR SOUND AT A MAXIMUM OF 1.0 SONE. THIS SOUND RATING SHALL BE AT A MINIMUM OF 0.1 IN. W.C. (25 PA) STATIC PRESSURE IN ACCORDANCE WITH HVI PROCEDURES SPECIFIED IN SECTIONS M1505.4.1.2 AND M1505.4.1.3.  
EXCEPTION: HVAC AIR HANDLERS, ERV/HRV UNITS, AND REMOTE-MOUNTED FANS NEED NOT MEET THE SOUND REQUIREMENTS. TO BE CONSIDERED FOR THIS EXCEPTION, A REMOTE-MOUNTED FAN MUST BE MOUNTED OUTSIDE THE HABITABLE SPACES, BATHROOMS, TOILETS, AND HALLWAYS, AND THERE MUST BE AT LEAST 4 FEET (1219 MM) OF DUCTWORK BETWEEN THE FAN AND THE INTAKE GRILLE.

THE WHOLE-HOUSE SUPPLY FAN SHALL PROVIDE DUCTED OUTDOOR VENTILATION AIR TO EACH HABITABLE SPACE WITHIN THE RESIDENTIAL UNIT.  
EXCEPTION: INTERIOR JOINING SPACES PROVIDED WITH A 30 CFM (0.0141 M3/S) WHOLE-HOUSE TRANSFER FAN OR A PERMANENT OPENING WITH AN AREA OF NOT LESS THAN 8 PERCENT OF THE FLOOR AREA OF THE INTERIOR ADJOINING SPACE BUT NOT LESS THAN 25 SQUARE FEET (2.3 M2) DO NOT REQUIRE DUCTED OUTDOOR VENTILATION AIR TO BE SUPPLIED DIRECTLY TO THE SPACE. WHOLE-HOUSE TRANSFER FANS SHALL MEET THE SONE RATING OF SECTION M1505.4.1.1 AND SHALL HAVE A WHOLE-HOUSE VENTILATION CONTROLS THAT COMPLY WITH SECTION M1505.4.2.  
M1505.4.1.2 EXHAUST FANS  
EXHAUST FANS REQUIRED SHALL BE DUCTED DIRECTLY TO THE OUTSIDE. EXHAUST AIR OUTLETS SHALL BE DESIGNED TO LIMIT THE PRESSURE DIFFERENCE TO THE OUTSIDE AND EQUIPPED WITH BACKDRAFT DAMPERS OR MOTORIZED DAMPERS IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE. EXHAUST FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH THE AIRFLOW AND SOUND RATING PROCEDURES OF THE HOME VENTILATING INSTITUTE (HVI 915, HVI 916, HVI 920, HVI 921, HVI 922, HVI 923, HVI 924, HVI 925, HVI 926, HVI 927, HVI 928, HVI 929, HVI 930, HVI 931, HVI 932, HVI 933, HVI 934, HVI 935, HVI 936, HVI 937, HVI 938, HVI 939, HVI 940, HVI 941, HVI 942, HVI 943, HVI 944, HVI 945, HVI 946, HVI 947, HVI 948, HVI 949, HVI 950, HVI 951, HVI 952, HVI 953, HVI 954, HVI 955, HVI 956, HVI 957, HVI 958, HVI 959, HVI 960, HVI 961, HVI 962, HVI 963, HVI 964, HVI 965, HVI 966, HVI 967, HVI 968, HVI 969, HVI 970, HVI 971, HVI 972, HVI 973, HVI 974, HVI 975, HVI 976, HVI 977, HVI 978, HVI 979, HVI 980, HVI 981, HVI 982, HVI 983, HVI 984, HVI 985, HVI 986, HVI 987, HVI 988, HVI 989, HVI 990, HVI 991, HVI 992, HVI 993, HVI 994, HVI 995, HVI 996, HVI 997, HVI 998, HVI 999, HVI 1000).

M1505.4.1.3 SUPPLY FANS  
SUPPLY FANS USED IN MEETING THE REQUIREMENTS OF THIS SECTION SHALL SUPPLY OUTDOOR AIR FROM INTAKE

OPENINGS IN ACCORDANCE WITH INTERNATIONAL MECHANICAL CODE SECTIONS 401.4 AND 401.5. WHEN DESIGNED FOR INTERMITTENT OFF OPERATION, SUPPLY SYSTEMS SHALL BE EQUIPPED WITH MOTORIZED DAMPERS IN ACCORDANCE WITH THE WASHINGTON STATE ENERGY CODE. SUPPLY FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH THE AIRFLOW AND SOUND RATING PROCEDURES OF THE HOME VENTILATING INSTITUTE (HVI 915, HVI 916, HVI 917, HVI 918, HVI 919, HVI 920, HVI 921, HVI 922, HVI 923, HVI 924, HVI 925, HVI 926, HVI 927, HVI 928, HVI 929, HVI 930, HVI 931, HVI 932, HVI 933, HVI 934, HVI 935, HVI 936, HVI 937, HVI 938, HVI 939, HVI 940, HVI 941, HVI 942, HVI 943, HVI 944, HVI 945, HVI 946, HVI 947, HVI 948, HVI 949, HVI 950, HVI 951, HVI 952, HVI 953, HVI 954, HVI 955, HVI 956, HVI 957, HVI 958, HVI 959, HVI 960, HVI 961, HVI 962, HVI 963, HVI 964, HVI 965, HVI 966, HVI 967, HVI 968, HVI 969, HVI 970, HVI 971, HVI 972, HVI 973, HVI 974, HVI 975, HVI 976, HVI 977, HVI 978, HVI 979, HVI 980, HVI 981, HVI 982, HVI 983, HVI 984, HVI 985, HVI 986, HVI 987, HVI 988, HVI 989, HVI 990, HVI 991, HVI 992, HVI 993, HVI 994, HVI 995, HVI 996, HVI 997, HVI 998, HVI 999, HVI 1000).

M1505.4.1.4 BALANCED WHOLE-HOUSE VENTILATION SYSTEM  
A BALANCED WHOLE-HOUSE VENTILATION SYSTEM SHALL INCLUDE BOTH SUPPLY AND EXHAUST FANS. THE SUPPLY AND EXHAUST FANS SHALL HAVE AIRFLOW THAT IS WITHIN 10% OF EACH OTHER. THE TESTED AND BALANCED TOTAL MECHANICAL EXHAUST AIRFLOW RATE IS WITHIN 10% OR 5 CFM, WHICHEVER IS GREATER, OF THE TOTAL MECHANICAL SUPPLY AIRFLOW RATE. THE FLOW RATE TEST RESULTS SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION M1505.4.1.7. THE EXHAUST FAN SHALL MEET THE REQUIREMENTS OF SECTION M1505.4.1.2. THE SUPPLY FAN SHALL MEET THE REQUIREMENTS OF SECTION M1505.4.1.3. BALANCED VENTILATION SYSTEMS WITH BOTH SUPPLY AND EXHAUST FANS IN A PACKAGED PRODUCT, SUCH AS AN ERV/HRV, SHALL MEET THE REQUIREMENTS OF HVI 920, AS APPLICABLE. INTERMITTENT DRYER EXHAUST, INTERMITTENT RANGE HOOD EXHAUST, AND INTERMITTENT TOILET ROOM EXHAUST AIRFLOW RATES ABOVE THE RESIDENTIAL DWELLING OR SLEEPING UNIT MINIMUM VENTILATION RATE ARE EXEMPT FROM THE BALANCED AIRFLOW CALCULATION.

M1505.4.1.5 FURNACE INTEGRATED SUPPLY SYSTEMS USING SPACE HEATING AND/OR COOLING AIR HANDLER FANS FOR OUTDOOR AIR SUPPLY DISTRIBUTION ARE NOT PERMITTED.

EXCEPTION: AIR HANDLER FANS SHALL HAVE MULTI-SPEED OR VARIABLE SPEED SUPPLY AIRFLOW CONTROL CAPABILITY WITH A LOW SPEED OPERATION NOT GREATER THAN 25% OF THE RATED SUPPLY AIRFLOW CAPACITY DURING VENTILATION ONLY OPERATION. OUTDOOR AIR INTAKE OPENINGS MUST MEET THE PROVISIONS OF SECTIONS R303.5 AND R303.6 AND MUST INCLUDE A MOTORIZED DAMPER THAT IS ACTIVATED BY THE WHOLE-HOUSE VENTILATION SYSTEM CONTROLLER. THE MOTORIZED DAMPER MUST BE CONTROLLED TO MAINTAIN THE OUTDOOR AIRFLOW INTAKE AIRFLOW WITHIN 10% OF THE WHOLE-HOUSE MECHANICAL EXHAUST AIRFLOW RATE. THE FLOW RATE FOR THE OUTDOOR AIR INTAKE MUST BE TESTED AND VERIFIED AT THE MINIMUM VENTILATION FAN SPEED AND THE MAXIMUM HEATING OR COOLING FAN SPEED. THE RESULTS OF THE TEST SHALL BE SUBMITTED AND POSTED IN ACCORDANCE WITH SECTION M1505.4.1.7.

M1505.4.1.6 TESTING  
WHOLE-HOUSE MECHANICAL VENTILATION SYSTEMS SHALL BE TESTED, BALANCED AND VERIFIED TO PROVIDE A FLOW RATE NOT LESS THAN THE MINIMUM REQUIRED BY SECTIONS M1505.4.3 AND M1505.4.4. TESTING SHALL BE PERFORMED ACCORDING TO THE VENTILATION EQUIPMENT MANUFACTURER'S INSTRUCTIONS, OR BY USING A FLOW HOOD, FLOW GRID, OR OTHER AIRFLOW MEASURING DEVICE AT THE MECHANICAL VENTILATION FAN'S INLET TERMINALS. OUTLET TERMINALS OR GRILLES OR IN THE CONNECTED VENTILATION DUCTS, WHERE REQUIRED BY THE BUILDING OFFICIAL. TESTING SHALL BE CONDUCTED BY AN APPROVED THIRD PARTY. A WRITTEN REPORT OF THE RESULTS OF THE TEST SHALL BE SIGNED BY THE PARTY CONDUCTING THE TEST AND PROVIDED TO THE BUILDING OFFICIAL AND BE POSTED IN THE DWELLING UNIT PER SECTION M1505.4.1.7.

M1505.4.1.7 CERTIFICATE  
A PERMANENT CERTIFICATE SHALL BE COMPLETED BY THE MECHANICAL CONTRACTOR, TEST AND BALANCE CONTRACTOR 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 FLOW RATE DETERMINED FROM THE DELIVERED AIRFLOW OF THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AS INSTALLED AND THE TYPE OF MECHANICAL WHOLE-HOUSE VENTILATION SYSTEM USED TO COMPLY WITH SECTION M1505.4.3.1.

M1505.4.2 SYSTEM CONTROLS  
THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT COMPLY WITH THE FOLLOWING:  
THE WHOLE-HOUSE VENTILATION SYSTEM SHALL BE CONTROLLED WITH MANUAL SWITCHES, TIMERS OR OTHER MEANS THAT PROVIDE FOR AUTOMATIC OPERATION OF THE VENTILATION SYSTEM THAT ARE READILY ACCESSIBLE BY THE OCCUPANT;

WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED WITH CONTROLS THAT ENABLE MANUAL OVERRIDE OFF OF THE SYSTEM BY THE OCCUPANT DURING PERIODS OF POOR OUTDOOR AIR QUALITY. CONTROLS SHALL INCLUDE PERMANENT TEXT OR A SYMBOL INDICATING THEIR FUNCTION. RECOMMENDED CONTROL PERMANENT LABELING TO INCLUDE TEXT SIMILAR TO THE FOLLOWING: "LEAVE ON UNLESS OUTDOOR AIR QUALITY IS VERY POOR;" MANUAL CONTROLS SHALL BE READILY ACCESSIBLE BY THE OCCUPANT;  
WHOLE-HOUSE VENTILATION SYSTEMS SHALL BE CONFIGURED TO OPERATE CONTINUOUSLY EXCEPT WHERE INTERMITTENT OFF CONTROLS AND SIZING ARE PROVIDED PER SECTION M1505.4.3.2.

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

DWELLING UNIT FLOOR AREA	NUMBER OF BEDROOMS			
	0-1	2-3	4-5	6-7
	AIRFLOW IN CFM			
< 1,500	30	45	60	75
1,501 — 3,000	45	60	75	90
3,001 — 4,500	60	75	90	105
4,501 — 6,000	75	90	105	120
6,001 — 7,500	90	105	120	135
> 7,500	105	120	135	150

TABLE M1505.4.3(2) INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS<sup>®</sup>  
RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT  
25% 33% 50% 66% 75% 100%  
FACTOR (a) 4 3 2 1.5 1.3 1.0

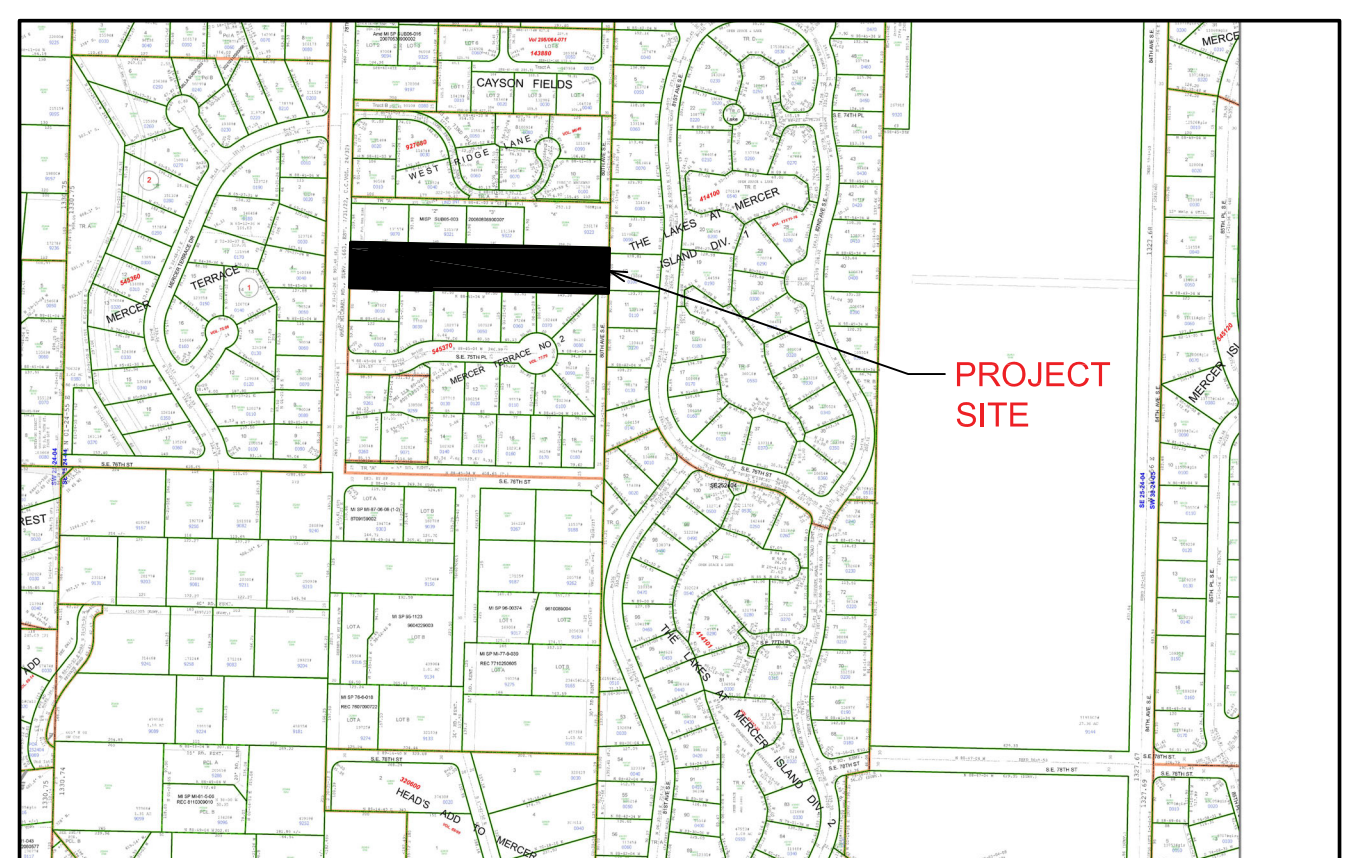
- FOR VENTILATION SYSTEM RUN TIME VALUES BETWEEN THOSE GIVEN, THE FACTORS ARE PERMITTED TO BE DETERMINED BY INTERPOLATION.
- EXTRAPOLATION BEYOND THE TABLE IS PROHIBITED.

WHOLE-HOUSE VENTILATION OPTIONS (CHOOSE ONE):

1. WHOLE-HOUSE VENTILATION USING EXHAUST FANS  
 2. WHOLE-HOUSE VENTILATION INTEGRATED WITH A FORCED-AIR SYSTEM  
 3. WHOLE-HOUSE VENTILATION USING A SUPPLY FAN  
 4. WHOLE-HOUSE VENTILATION USING A HEAT RECOVERY VENTILATION SYSTEM.

## VICINITY MAP

N.T.S.



## DRAWING INDEX:

### ARCHITECTURAL

- A0.1 COVER SHEET
- A0.2 WSEC - BUILDING THERMAL ENVELOPE
- A1.0 SITE PLAN
- A1.1 SITE CALCULATIONS
- A1.10 TOPOGRAPHIC SURVEY
- A2.1 FDN. & MISC. DETAILS
- A2.2 ROOF & FLOOR DETAILS
- A2.3 STAIR DETAILS
- A3 FOUNDATION PLAN
- A4 BASEMENT FLOOR PLAN
- A5 MAIN FLOOR FRAMING PLAN
- A6 MAIN FLOOR PLAN
- A7 UPPER FLOOR FRAMING PLAN
- A8 UPPER FLOOR PLAN
- A9 ROOF FRAMING PLAN
- A10 EXTERIOR ELEVATIONS
- A11 EXTERIOR ELEVATIONS
- A12 BUILDING SECTIONS

### STRUCTURAL

- S-0.0 STRUCTURAL NOTES
- LB-1 STRUCTURAL DETAILS
- LB-2 STRUCTURAL DETAILS
- SD.01 FOUNDATION DETAILS
- SD.02 FOUNDATION DETAILS

### CIVIL

- C4.01 LOT 2 GRADING AND DRAINAGE PLAN

## PROJECT TEAM

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# BUILDING THERMAL ENVELOPE

R401 COMPLIANCE & CERTIFICATE POSTED  
THE BUILDING THERMAL ENVELOPE SHALL MEET THE PRESCRIPTIVE REQUIREMENTS OF SECTION R402 OF THE WSEC.

**R401.3 CERTIFICATE.** 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 INDICATE THE FOLLOWING:  
1. 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.  
2. U-FACTORS FOR FENESTRATION AND THE SOLAR HEAT GAIN COEFFICIENT (SHGC) OF FENESTRATION, WHERE THERE IS MORE THAN ONE VALUE FOR EACH COMPONENT, THE CERTIFICATE SHALL INDICATE THE AREA WEIGHTED AVERAGE VALUE.  
3. THE RESULTS FROM ANY REQUIRED DUCT SYSTEM AND BUILDING ENVELOPE AIR LEAKAGE TESTING DONE ON THE BUILDING.  
4. THE RESULTS FROM THE WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM FLOW RATE TEST.  
5. THE TYPES, SIZES 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.  
6. WHERE ON-SITE PHOTOVOLTAIC PANEL SYSTEMS HAVE BEEN INSTALLED, THE ARRAY CAPACITY, INVERTER EFFICIENCY, PANEL TILT, ORIENTATION AND ESTIMATED ANNUAL ELECTRICAL GENERATION SHALL BE NOTED ON THE CERTIFICATE.

# ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS

**R406.1 SCOPE.** THIS SECTION ESTABLISHES ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS FOR ALL NEW CONSTRUCTION COVERED BY THIS CODE, INCLUDING ADDITIONS SUBJECT TO SECTION R502 AND CHANGE OF OCCUPANCY OR USE SUBJECT TO SECTION R505 UNLESS SPECIFICALLY EXEMPTED IN SECTION R406. CREDIT FROM BOTH SECTIONS R406.2 AND R406.3 ARE REQUIRED.

**R406.2 CARBON EMISSION EQUALIZATION.** THIS SECTION ESTABLISHES A BASE EQUALIZATION BETWEEN FUELS USED TO DEFINE THE EQUIVALENT CARBON EMISSIONS OF THE OPTION SPECIFIED. THE PERMIT SHALL DEFINE THE BASE FUEL SELECTION TO BE USED AND THE POINTS SPECIFIED IN TABLE R406.2 SHALL BE USED TO MODIFY THE REQUIREMENTS IN SECTION R406.3. THE SUM OF CREDITS FROM TABLES R406.2 AND R406.3 SHALL MEET THE REQUIREMENTS OF SECTION R406.3.

**R406.3 ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS.** EACH DWELLING UNIT IN A RESIDENTIAL BUILDING SHALL COMPLY WITH SUFFICIENT OPTIONS FROM TABLE R406.2 AND TABLE 406.3 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.

- SMALL DWELLING UNIT: 5.0 CREDITS  
DWELLING UNITS LESS THAN 1500 SQUARE FEET IN CONDITIONED FLOOR AREA WITH LESS THAN 300 SQUARE FEET OF FENESTRATION AREA, ADDITIONS TO EXISTING BUILDING GREATER THAN 500 SQUARE FEET OF HEATED FLOOR AREA BUT LESS THAN 1500 SQUARE FEET.
- MEDIUM DWELLING UNIT: 8.0 CREDITS  
ALL DWELLING UNITS THAT ARE NOT INCLUDED IN #1, #3 OR #4.
- LARGE DWELLING UNIT: 9.0 CREDITS  
DWELLING UNITS EXCEEDING 5000 SQUARE FEET OF CONDITIONED FLOOR AREA.
- R-2 OCCUPANCIES: 6.5 CREDITS  
SECTION R401.1 AND RESIDENTIAL BUILDING SECTION R202 FOR GROUP R-2.
- ADDITIONS: 2.0 CREDITS  
150 SQUARE FEET TO 500 SQUARE FEET.

THE DRAWINGS INCLUDED WITH THE PERMIT APPLICATION SHALL IDENTIFY WHICH OPTIONS HAVE BEEN SELECTED AND THE POINT VALUE OF EACH OPTION, REGARDLESS OF WHETHER SEPARATE MECHANICAL, PLUMBING, ELECTRICAL, OR OTHER PERMITS ARE UTILIZED FOR THE PROJECT.

**ENERGY EQUALIZATION CREDITS, SYSTEM 2 (1.5 CREDITS)**  
FOR AN INITIAL HEATING SYSTEM USING A HEAT PUMP THAT MEETS FEDERAL STANDARDS FOR THE EQUIPMENT LISTED IN TABLE C403.3.2(2) AND SUPPLEMENTAL HEATING PROVIDED BY ELECTRIC RESISTANCE OR A COMBUSTION FURNACE MEETING MINIMUM STANDARDS LISTED IN TABLE C403.3.2(5)B

**HIGH EFFICIENCY HVAC EQUIPMENT OPTION 3.11 (0.5 CREDIT)**  
CONNECTED THERMOSTAT MEETING ENERGY STAR CERTIFIED SMART THERMOSTATS/EPA ENERGY STAR SPECIFICATIONS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE THERMOSTAT MODEL.

**EFFICIENT WATER HEATING OPTION 5.1 (0.5 CREDITS)**  
A DRAIN WATER HEAT RECOVERY UNIT(S) SHALL BE INSTALLED, WHICH CAPTURES WASTE WATER HEAT FROM AT LEAST TWO SHOWERS, INCLUDING TUBS/SHOWER COMBINATIONS. IT IS ACCEPTABLE, BUT NOT REQUIRED, FOR SINK WATER TO BE CONNECTED. UNIT SHALL HAVE A MINIMUM EFFICIENCY OF 40% IF INSTALLED FOR EQUAL FLOW OR A MINIMUM EFFICIENCY OF 54% IF INSTALLED FOR UNEQUAL FLOW. SUCH UNITS SHALL BE RATED IN ACCORDANCE WITH CSA B55.1 OR IAPMO IGC 346-2017 AND BE SO LABELED. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL INCLUDE A PLUMBING DIAGRAM THAT SPECIFIES THE DRAIN WATER HEAT RECOVERY UNITS AND THE PLUMBING LAYOUT NEEDED TO INSTALL IT. LABELS OR OTHER DOCUMENTATION SHALL BE PROVIDED THAT DEMONSTRATES THAT THE UNIT COMPLIES WITH THE STANDARD.

**EFFICIENT WATER HEATING OPTION 5.6 (2.0 CREDITS)**  
ELECTRIC HEAT PUMP WATER HEATER MEETING THE STANDARDS FOR TIER III OF NEEA'S ADVANCED WATER HEATING SPECIFICATION.  
TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SPECIFY THE WATER HEATER EQUIPMENT TYPE AND THE MINIMUM EQUIPMENT EFFICIENCY.

**RENEWABLE ELECTRIC ENERGY OPTION 6.1 (3.5 CREDITS)**  
FOR EACH 800 KWH OF ELECTRICAL GENERATION PER HOUSING UNIT PROVIDED ANNUALLY BY ON-SITE WIND OR SOLAR EQUIPMENT A 0.5 CREDIT SHALL BE ALLOWED, UP TO 4.5 CREDITS. GENERATION SHALL BE CALCULATED AS FOLLOWS: FOR SOLAR ELECTRIC SYSTEMS, THE DESIGN SHALL BE DEMONSTRATED TO MEET THIS REQUIREMENT USING THE NATIONAL RENEWABLE ENERGY LABORATORY CALCULATOR (NREL) OR ALTERNATIVE APPROVED BY THE CODE OFFICIAL. DOCUMENTATION NOTING SOLAR ACCESS SHALL BE INCLUDED ON THE PLANS. TO QUALIFY TO CLAIM THIS CREDIT, THE BUILDING PERMIT DRAWINGS SHALL SPECIFY THE OPTION BEING SELECTED AND SHALL SHOW THE PHOTOVOLTAIC EQUIPMENT TYPE, PROVIDE DOCUMENTATION OF SOLAR ACCESS, AND INCLUDE A CALCULATION OF THE MINIMUM ANNUAL ENERGY POWER PRODUCTION.

MINIMUM ANNUAL POWER PRODUCTION OF THE RENEWABLE ELECTRIC ENERGY:  
SYSTEM SIZE (kWDC)= 5kW  
FIRST YEAR POWER OUTPUT (kWh)= 5270 kWh  
SPECIFIC PRODUCTION (kWh/m<sup>2</sup>/DAY)= 3.77 kWh/m<sup>2</sup>/DAY  
SYSTEM LOSSES= 14.08%  
SYSTEM SPECIFICATIONS= STANDARD MODULE AND FIXED ARRAY TYPE  
ARRAY TILT= 20 DEGREES  
ARRAY AZIMUTH= 180 DEGREES

# MOISTURE CONTROL

**R405.2.2 FOUNDATION VAPOR RETARDERS**  
A 6 MIL-THICK POLYETHYLENE VAPOR RETARDER SHALL BE APPLIED OVER THE POROUS LAYER WITH THE BASEMENT FLOOR CONSTRUCTED OVER THE POLYETHYLENE.

**R702.7 WALL VAPOR RETARDERS**  
A VAPOR RETARDER SHALL BE PROVIDED ON THE INTERIOR SIDE OF FRAME WALLS OF THE CLASS INDICATED IN TABLE R702.7(2), INCLUDING COMPLIANCE WITH TABLE R702.7(3) OR R702.7(4) WHERE APPLICABLE.  
EXCEPTIONS:  
1. BASEMENT WALLS.  
2. BELOW-GRADE PORTION OF ANY WALL.  
3. CONSTRUCTION WHERE ACCUMULATION, CONDENSATION OR FREEZING OF MOISTURE WILL NOT DAMAGE THE MATERIALS.  
4. A VAPOR RETARDER SHALL NOT BE REQUIRED IN CLIMATE ZONES 1,2 AND 3.

TABLE R702.7(1) VAPOR RETARDER MATERIALS AND CLASSES	CLASS I	CLASS II <sup>a</sup>	CLASS III
ACCEPTABLE MATERIALS			
I SHEET POLYETHYLENE, NONPERFORATED ALUMINUM FOIL OR OTHER APPROVED MATERIALS WITH A PERM RATING LESS THAN OR EQUAL TO 0.1.			
II KRAFT-FACED FIBERGLASS BATTS, VAPOR RETARDER PAINT OR OTHER APPROVED MATERIALS APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR A PERM RATING GREATER THAN 0.1 AND LESS THAN OR EQUAL TO 1.0.			
III LATEX PAINT, ENAMEL PAINT OR OTHER APPROVED MATERIALS APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR A PERM RATING GREATER THAN 1.0 AND LESS THAN OR EQUAL TO 10.0.			

TABLE R702.7(2) VAPOR RETARDER OPTIONS	CLASS I <sup>a</sup>	CLASS II <sup>b</sup>	CLASS III
CLIMATE ZONE			
1, 2	NOT PERMITTED	NOT PERMITTED	PERMITTED
3, 4 (EXCEPT MARINE 4)	NOT PERMITTED	PERMITTED <sup>c</sup>	PERMITTED
MARINE 4, 5, 6, 7, 8 R702.7(3)	PERMITTED <sup>b</sup>	PERMITTED <sup>c</sup>	SEE TABLE

- CLASS I AND II VAPOR RETARDERS WITH VAPOR PERMEANCE GREATER THAN 1 PERM WHEN MEASURED BY ASTM E96 WATER METHOD (PROCEDURE B) SHALL BE ALLOWED ON THE INTERIOR SIDE OF ANY FRAME WALL IN ALL CLIMATE ZONES.
- USE OF A CLASS I VAPOR RETARDER IN FRAME WALLS WITH A CLASS I VAPOR RETARDER ON THE EXTERIOR SIDE SHALL REQUIRE AN APPROVED DESIGN.
- WHERE A CLASS II VAPOR RETARDER IS USED IN COMBINATION WITH FOAM PLASTIC INSULATING SHEATHING INSTALLED AS CONTINUOUS INSULATION ON THE EXTERIOR SIDE OF FRAME WALLS, THE CONTINUOUS INSULATION SHALL COMPLY WITH TABLE R702.7(4) AND THE CLASS II VAPOR RETARDER SHALL HAVE A PERMEANCE GREATER THAN 1 PERM WHEN MEASURED BY ASTM E96 WATER METHOD (PROCEDURE B).

**R805.1 CEILING INSTALLATION**  
CEILING SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS FOR INTERIOR WALL FINISHES AS PROVIDED IN SECTIONS R702.1 THROUGH R702.6.

MAXIMUM HEAT EQUIPMENT OUTPUT  
WASHINGTON STATE SIMPLE HEATING SYSTEM SIZING= 87,140 BTUHR

2021 WSEC TABLE R402.1.1 * MODIFIED BY U-FACTOR COMPLIANCE		
CLIMATE ZONE 5 AND MARINE 4	R VALUE	EQUIVALENT U-FACTORS
FENESTRATION U-FACTOR (b)	N/A	0.30
SKYLIGHT (b) U-FACTOR	N/A	0.50
CEILING ATTIC R-VALUE (e)	60	0.024
CEILING VAULT R-VALUE (e)	49*	0.021*
WOOD FRAMED WALL (g,i) R-VALUE	21 int. + 0 c.i.*	0.054*
FLOOR R-VALUE	30	0.029
BELOW GRADE (c,h) WALL R-VALUE	21 int. + 1 lb.	0.035
SLAB (d,f) 7' DEPTH & R-VALUE	10, ENTIRE SLAB	0.50

- FOR SI: 1 FOOT = 304.8 MM. CI = CONTINUOUS INSULATION, INT = INTERMEDIATE FRAMING.
- R-VALUES ARE MINIMUMS. U-FACTORS AND SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN A CAVITY WHICH 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 +5TB" 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 +5TB" 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. "5TB" 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 R402.2.3.1.
  - 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 PERCENT OF THE WALL CAVITY INSULATED AND HEADERS INSULATED WITH A MINIMUM OF R-10 INSULATION.
  - THE FIRST VALUE IS CAVITY INSULATION; THE SECOND VALUE IS CONTINUOUS INSULATION. THEREFORE, AS AN EXAMPLE, "R-13+10" MEANS R-13 CAVITY INSULATION PLUS R-10 CONTINUOUS INSULATION.
  - A MAXIMUM U-VALUE OF 0.32 SHALL APPLY TO VERTICAL FENESTRATION PRODUCTS INSTALLED IN BUILDINGS LOCATED ABOVE 4000 FEET IN ELEVATION ABOVE SEA LEVEL, OR IN WINDBORNE DEBRIS REGIONS WHERE PROTECTION OF OPENINGS IS REQUIRED UNDER SECTION R301.2.1.2 OF THE INTERNATIONAL RESIDENTIAL CODE.

2021 WSEC TABLE R406.3		
ADDITIONAL ENERGY REQUIREMENTS FOR MEDIUM DWELLING = 8.0 CREDITS REQUIRED		
ENERGY EQUALIZATION CREDIT	SYSTEM 2.0	1.5 CREDITS
ENERGY EFFICIENCY CREDIT	OPTION	CREDITS EARNED
OPTION 1 BUILDING ENVELOPE	NA	NA
OPTION 2 AIR LEAKAGE CONTROL	NA	NA
OPTION 3 HVAC EQUIPMENT	OPTION 3.11	0.5 CREDITS
OPTION 4 HVAC DISTRIBUTION	NA	NA
OPTION 5 WATER HEATING	OPTION 5.1	0.5 CREDITS
OPTION 5 WATER HEATING	OPTION 5.4	1.0 CREDITS
OPTION 6 RENEWABLE ENERGY	OPTION 6.1	4.5 CREDITS
OPTION 7 APPLIANCE OPTION	NA	NA
TOTAL CREDITS EARNED		8.0 CREDITS

# PVWATTS CALCULATOR RESULTS

**RESULTS**  
**5,269 kWh/Year\***  
System output may range from 5,029 to 5,447 kWh per year near this location.

Month	Solar Radiation (kWh / m <sup>2</sup> / day)	AC Energy (kWh)
January	1.43	178
February	2.32	263
March	3.19	392
April	4.77	554
May	5.13	609
June	5.66	631
July	6.22	709
August	5.90	680
September	4.61	522
October	2.80	340
November	1.71	208
December	1.45	184

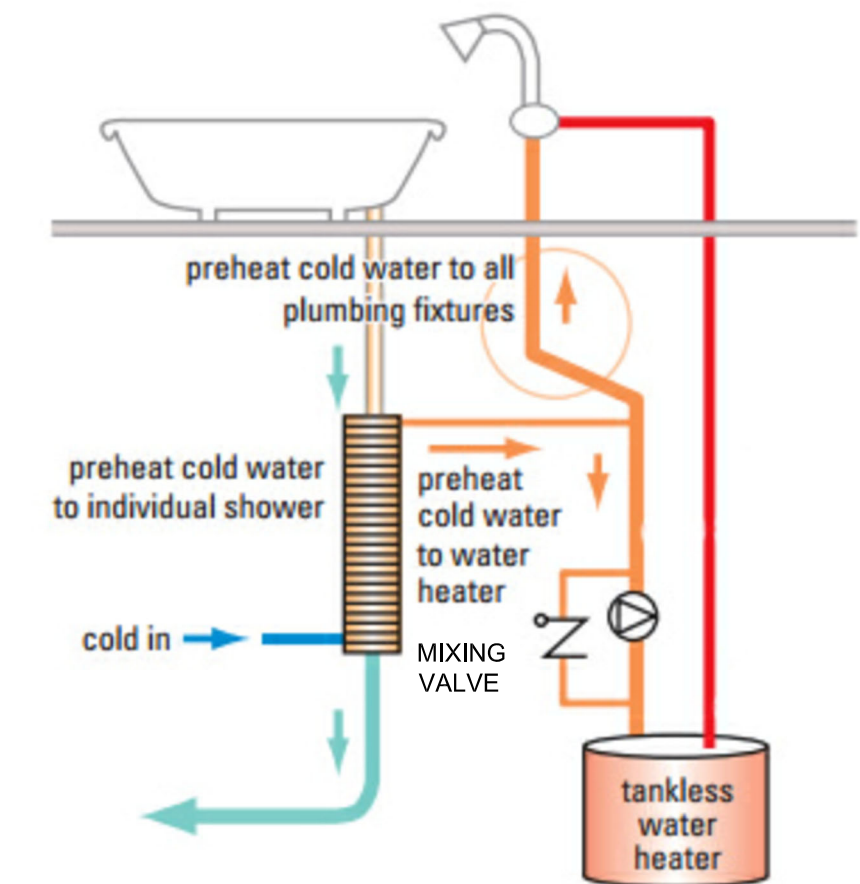
Annual Solar Radiation: 3.77 AC Energy: 5,270

# Location and Station Identification

Requested Location	7414 78th avenue se, mercer island
Weather Data Source	Lat, Lng: 47.53, -122.22 0.8 mi
Latitude	47.53° N
Longitude	122.22° W

# PV System Specifications

DC System Size	5 kW
Module Type	Standard
Array Type	Fixed (open rack)
System Losses	14.08%
Array Tilt	20°
Array Azimuth	180°
DC to AC Size Ratio	1.2
Inverter Efficiency	96%
Ground Coverage Ratio	0.4



SEE BUILDING SECTION A-A AND PLAN SHTS A4 AND A6 FOR LAYOUT OF D.W.H.R. SYSTEM COMPONENTS

# Window, Skylight and Door Schedule

Project Information	Contact Information
SEARS PLAT - LOT 2	McCullough Architects
97414 - 78th Avenue SE	5601 - 6th Ave S, #317
Mercer Island, Wa 98040	Seattle, Wa 98108

	Ref.U-factor	Width Qt Feet Inch	Height Feet Inch	Area	UA
Exempt Swinging Door (24 sq. ft. max.)					
Exempt Glazed Fenestration (15 sq. ft. max.)					

# Vertical Fenestration (Windows and doors)

Component Description	Ref.U-factor	Width Qt Feet Inch	Height Feet Inch	Area	UA
<b>Upper Floor</b>					
3/0 x 3/0 FIX & AWN	0.30	5	3	45.0	13.50
3/0 x 5/0 FIX	0.30	1	3	15.0	4.50
3/0 x 8/0 FIX of FIX & CSMT of FIX	0.30	15	3	360.0	108.00
5/0 x 5/0 FIX	0.30	1	5	25.0	7.50
6/0 x 8/0 FIX of FIX	0.30	5	6	240.0	72.00
6/0 x 8/0 TRAP HEAD	0.30	1	6	40.5	12.15
7/0 x 8/0 FIX of FIX	0.30	1	7	56.0	16.80
<b>Main Floor</b>					
3/0 x 4/0 FIX	0.30	2	3	24.0	7.20
3/0 x 7/0 FIX	0.30	2	3	42.0	12.60
3/0 x 10/0 FIX of FIX & CSMT of FIX	0.30	7	3	210.0	63.00
3/6 x 9/0 FIX of FIX of FIX	0.30	1	3	31.5	9.45
4/0 x 2/6 FIX	0.30	2	4	20.0	6.00
5/0 x 10/0 FIX of FIX	0.30	1	5	50.0	15.00
6/0 x 4/0 FIX	0.30	1	6	24.0	7.20
7/9 x 9/0 FIX of FIX	0.30	1	7	69.8	20.93
8/0 x 10/0 FIX of FIX	0.30	1	8	80.0	24.00
10/ x 10/0 2 PANEL SLIDER	0.30	1	10	100.0	30.00
2/8 x 8/0 SWING	0.30	1	2	21.3	6.40
3/6 x 9/0 SWING	0.25	1	3	31.5	7.88
<b>Lower Floor</b>					
5/0 x 2/6 FIX	0.30	1	5	12.5	3.75
6/0 x 2/6 FIX	0.30	3	6	45.0	13.50
9/0 x 5/0 CSMT-FIX-CSMT	0.30	1	9	45.0	13.50

Sum of Vertical Fenestration Area and UA  
Vertical Fenestration Area Weighted U = UA/Area  
1588.1 474.85  
0.30

# Simple Heating System Size: Washington State

Project Information	Contact Information
SEARS PLAT - LOT 2	McCullough Architects
97414 - 78th Avenue SE	5601 - 6th Ave S, #317
Mercer Island, WA 98040	Seattle, WA 98108

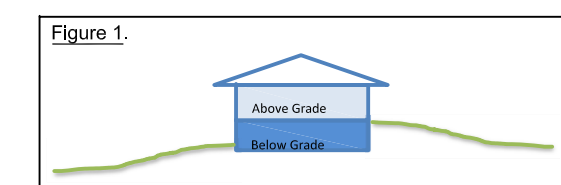
Heating System Type:  All Other Systems  Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions"

Design Temperature Instructions	Design Temperature Difference (ΔT) ΔT = Indoor (70 degrees) - Outdoor Design Temp
Mercer Island	25 / 45

Area of Building	Conditioned Floor Area (sq ft)	Conditioned Volume
Conditioned Floor Area	4,995	49,950
Average Ceiling Height	10.0	
Glazing and Doors	U-Factor X Area = UA	
Instructions	0.300 X 1,588 = 478.40	
Skylights	U-Factor X Area = UA	
Instructions	0.50 X 0 = 0.00	
Insulation	U-Factor X Area = UA	
Attic	Instructions	R-60
Instructions	0.024 X 2,282 = 54.77	
Single Rafter or Joist Vaulted Ceilings	Instructions	R-49
Instructions	0.020 X 177 = 3.54	
Above Grade Walls (see Figure 1)	Instructions	R-21 Intermediate
Instructions	U-Factor X Area = UA	
Instructions	0.056 X 3,042 = 170.35	
Floors	Instructions	R-30
Instructions	U-Factor X Area = UA	
Instructions	0.029 X 1,444 = 41.88	
Below Grade Walls and Slabs (see Figure 1)	Instructions	Wall U-Factor X Area = UA
Instructions	0.035 X 1,305 = 45.88	
Slab F-Factor X Length = UA	Depth	153
Instructions	0.500 X 153 = 76.25	
Slab on Grade (see Figure 1)	Instructions	F-Factor X Length = UA
Instructions	None	
Location of Ducts	Instructions	Unconditioned Space
Instructions		Duct Leakage Coefficient
		1.100

Sum of UA	868.86
Envelope Heat Load	39,099Btu / Hour
Sum of UA x ΔT	24,276Btu / Hour
Air Leakage Heat Load	63,374Btu / Hour
Volume x 0.6 x ΔT x 0.018	69,712Btu / Hour
Building Design Heat Load	87,140Btu / Hour
Air leakage + envelope heat loss	
Building and Duct Heat Load	
Ducts in unconditioned space: sum of building heat loss x 1.10	
Ducts in conditioned space: sum of building heat loss x 1	
Maximum Heat Equipment Output	87,140Btu / Hour
Building and duct heat loss x 1.40 for forced air furnace	
Building and duct heat loss x 1.25 for heat pump	



# McCULLOUGH ARCHITECTS

5601 - 6th Ave South, #317  
Seattle, WA, 98108  
206.443.1181  
mccullougharchitects.com

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Comment

Revisions

Date: 2025.07.03  
Job No: 24-008

Project No:

Drawn:

Approved:

Owner  
SAINTFIELD2 LLC

# SEARS PLAT - LOT 2

Mercer Island  
Washington  
98040

PERMIT APPLICATION

WSEC - Building  
Thermal Envelope



### GROSS FLOOR AREA

BASEMENT LEVEL:	169 SF
MAIN LEVEL:	1,904 SF
UPPER LEVEL:	2,261 SF
GARAGE:	656 SF
<b>TOTAL PROPOSED:</b>	<b>4,990 SF</b>
<b>TOTAL ALLOWED:</b>	<b>5,184 SF</b>

### LOT COVERAGE

MAIN STRUCTURE ROOF AREA=	2,539 S.F.
ACCESSORY STRUCTURE ROOF AREA=	0 S.F.
VEHICULAR USE=	830 S.F.
COVERED PATIOS AND DECKS=	85 S.F.
<b>TOTAL NEW LOT COVERAGE AREA</b>	<b>3,454 S.F.</b>
<b>ALLOWED= 10,788 S.F. (0.50)=</b>	<b>5,184 S.F.</b>

#### Sears Lot 2 Average Building Elevation Calculation

Point	Length	Height	LxH
A	9.67	307.42	2972.7514
B	18.83	308.25	5804.3475
C	17.33	309.17	5357.9161
D	20.17	309.67	6246.0439
E	14	310.25	4343.5
F	13	310	4030
G	20.25	310.67	6291.0675
H	10.83	310.92	3367.2636
I	1.08	310.33	335.1564
J	1	310.75	310.75
K	21	310.67	6524.07
L	28.83	309.67	8927.7861
M	19.5	308.17	6009.315
N	9.67	307.33	2971.8811
O	1.08	308.75	333.45
P	20.08	307.67	6178.0136
Q	2.42	307.67	744.5614
R	11.25	308.67	3472.5375
S	10.42	309.33	3223.2186
T			0
U			0
<b>totals</b>	<b>250.41</b>		<b>77443.6297</b>

ABE:	309.2673204
Max Ht:	339.2673204

#### PROPOSED HARDSCAPE:

WALKWAY=	59 S.F.
WALKWAY=	21 S.F.
AREA WELL=	88 S.F.
AREA WELL=	86 S.F.
<b>TOTAL=</b>	<b>254 S.F.</b>

#### LOT SLOPE:

HIGHEST ELEVATION POINT:	311.50'
LOWEST ELEVATION POINT:	296.00'
ELEVATION DIFFERENCE:	15.50'
HORIZONTAL DISTANCE:	341.00'
LOT SLOPE=	4.54%

(SEE BOUNDARY PLAN ON SHT A1.0 FOR DATA POINTS)

#### Basement GFA Calculation 2.26.2025

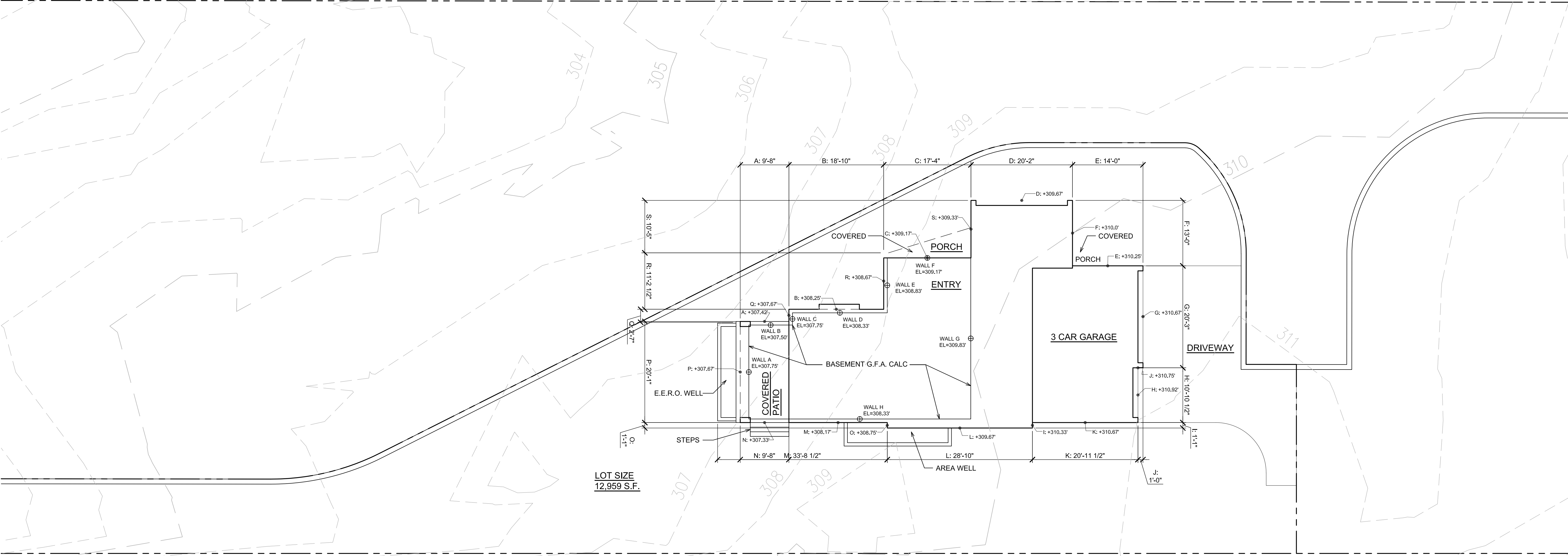
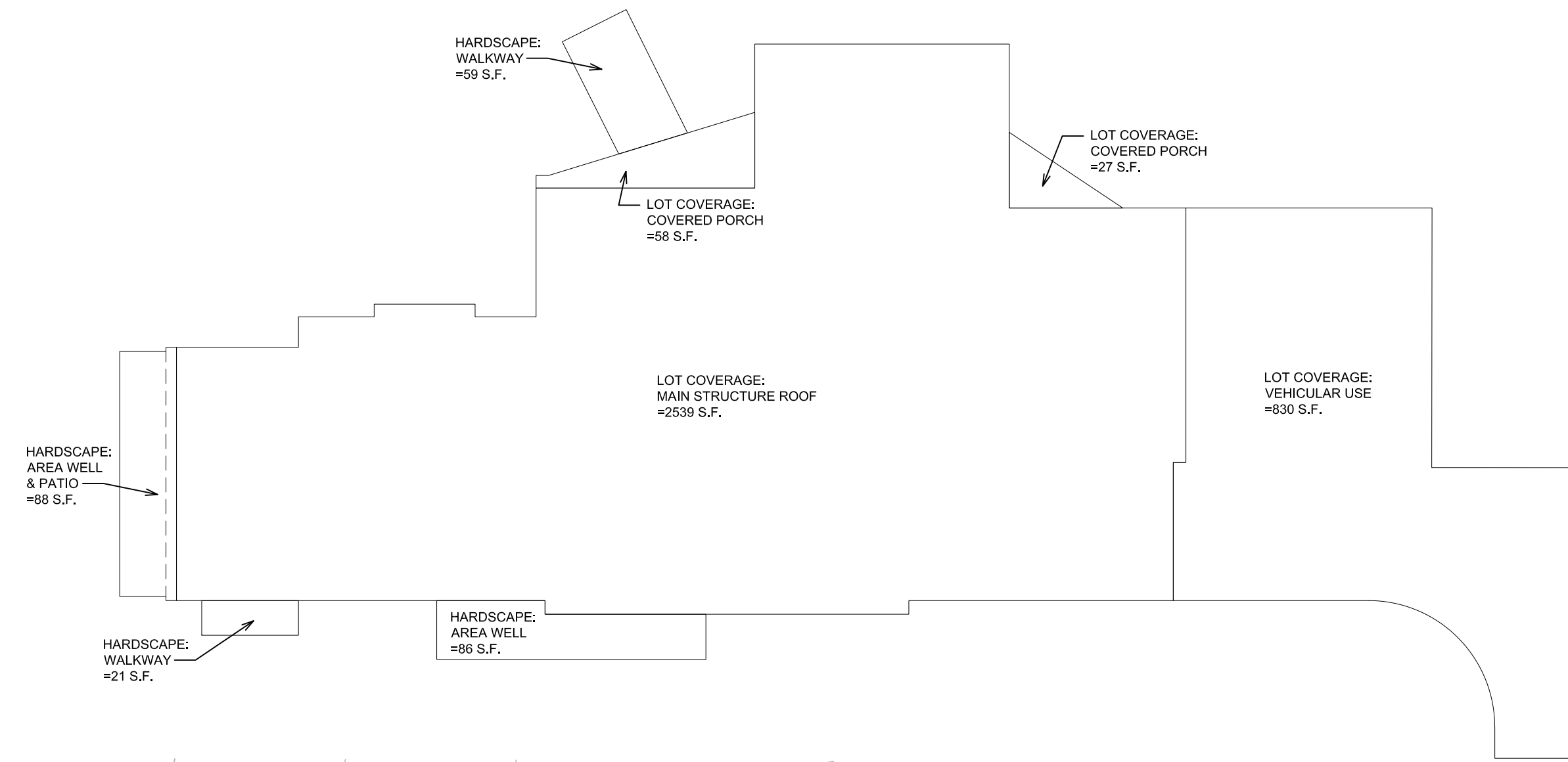
Sears Plat 2

Wall Segment	Exist or Finish Grade (which ever is lower)	Floor = burried wall ht	Difference	Total Wall Height	
A	18.67	307.75	300.85	6.90	9.08
B	8.67	307.50	300.85	6.65	9.08
C	2.42	307.75	300.85	6.90	9.08
D	18.83	308.33	300.85	7.48	9.08
E	10.92	308.83	300.85	7.98	9.08
F	16.58	309.17	300.85	8.32	9.08
G	32.00	309.83	300.85	8.98	9.08
H	44.08	309.25	300.85	8.40	9.08

**152.17= sum of wall segment lengths**

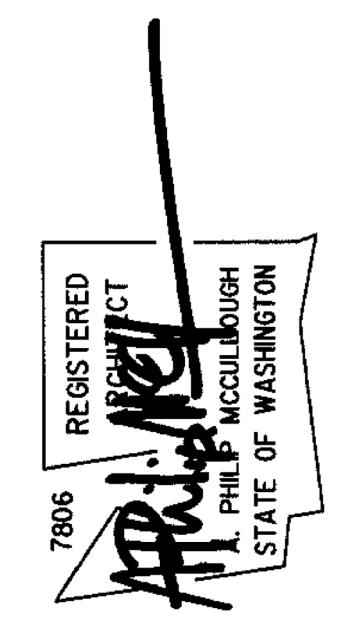
0.844695708= percentage of bsement wall which is below grade. ( X100)

BASEMENT AREA	1089SF
EXCLUDED AREA	919.8744F
<b>GFA AREA</b>	<b>169.1265F</b>



**McCULLOUGH ARCHITECTS**  
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Date: 2025.07.03  
 Job No: 24-008  
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 Drawn:  
 Approved:  
 Owner: SAINTFIELD2 LLC



**7414 - 78th Ave. SE**  
 Mercer Island  
 Washington  
 98040

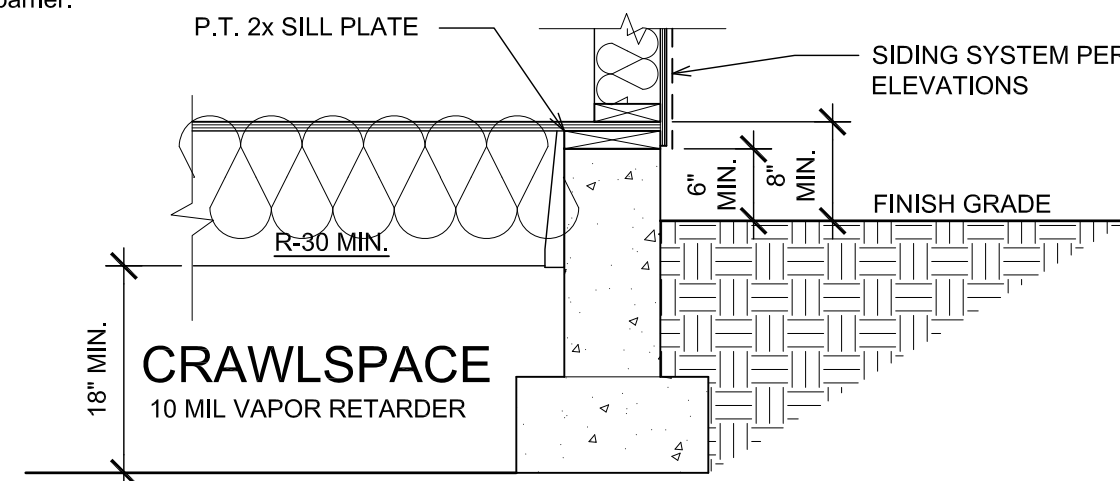
PERMIT APPLICATION  
 Site Calculations  
**A1.1**



**SECTION R317 PROTECTION OF WOOD AND WOOD-BASED PRODUCTS AGAINST DECAY**

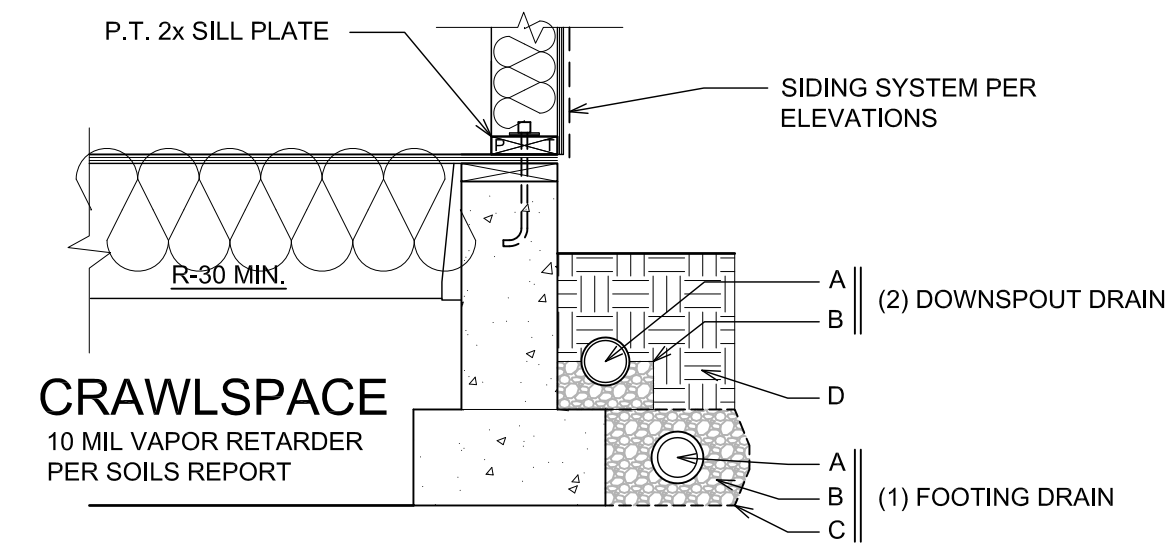
Protection of wood and wood-based products from decay shall be provided in the following locations by the use of naturally durable wood or wood that is preservative-treated in accordance with AWPA U1.

1. Wood joists or the bottom of a wood structural floor where closer than 18 inches or wood girders where closer than 12 inches to the exposed ground in crawl spaces or unexcavated area located within the periphery of the building foundation.
2. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from the exposed ground.
3. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
4. The ends of wood girders entering exterior masonry or concrete walls having clearances of less than 1/2 inch on tops, sides and ends.
5. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches from the ground or less than 2 inches measured vertically from concrete steps, porch slabs, patio slabs and similar horizontal surfaces exposed to the weather.
6. Wood structural members supporting moisture-permeable floors or roofs that are exposed to the weather, such as concrete or masonry slabs, unless separated from such floors or roofs by an impervious moisture barrier.
7. Wood furring strips or other wood framing members attached directly to the interior of exterior masonry walls or concrete walls below grade except where an approved vapor retarder is applied between the wall and the furring strips or framing members.
8. Portions of wood structural members that form the structural supports of buildings, balconies, porches or similar permanent building appurtenances where those members are exposed to the weather without adequate protection from a roof, eave, overhang or other covering that would prevent moisture or water accumulation on the surface or at joints between members.
9. Wood columns in contact with basement floor slabs unless supported by concrete piers or metal pedestals projecting not less than 1 inch above the concrete floor and separated from the concrete pier by an impervious moisture barrier.

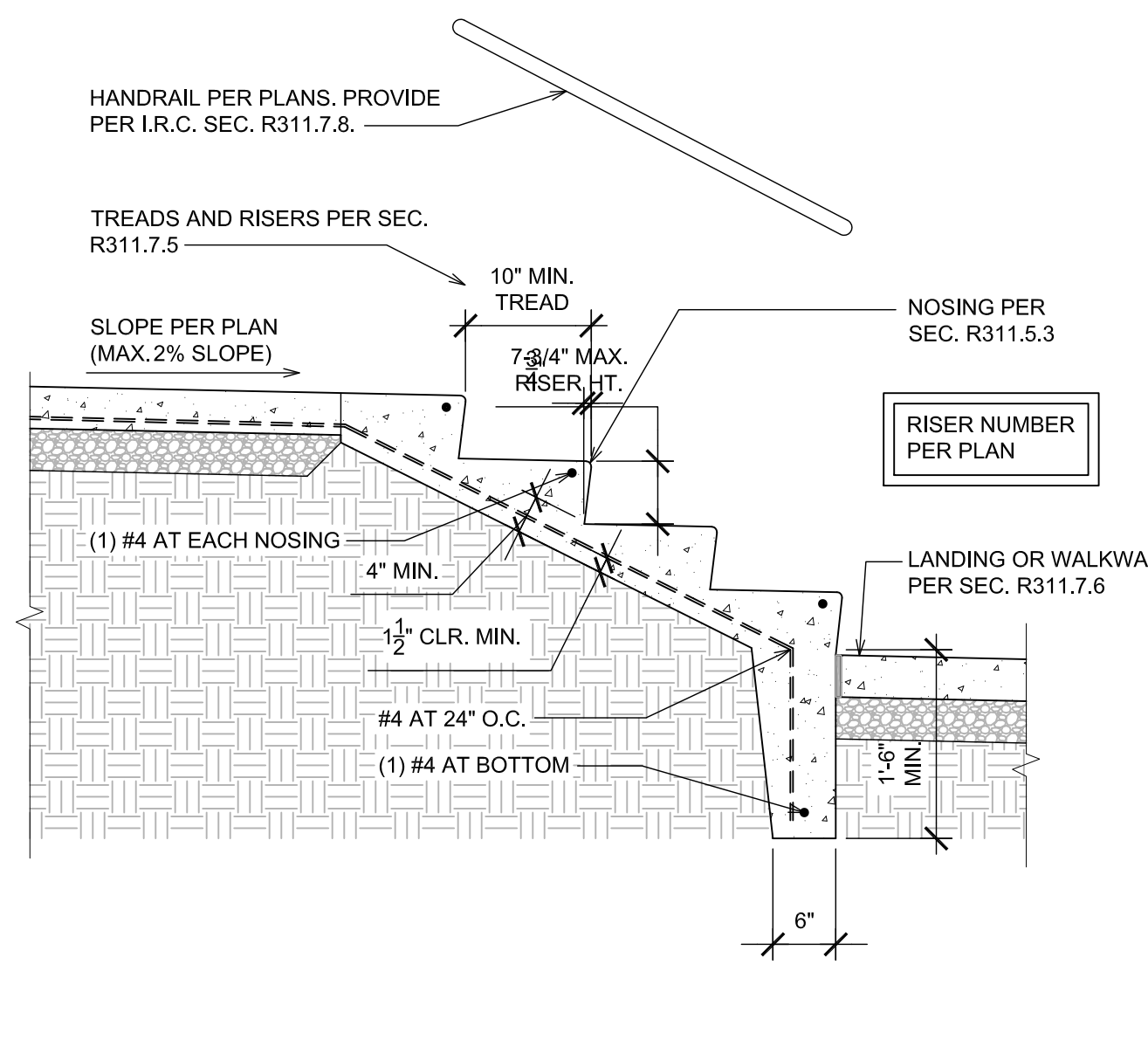


**FOUNDATION - PROTECTION OF WOOD**  
SCALE: 3/4" = 1'-0" SLAB ON GRADE (A2.1) 9

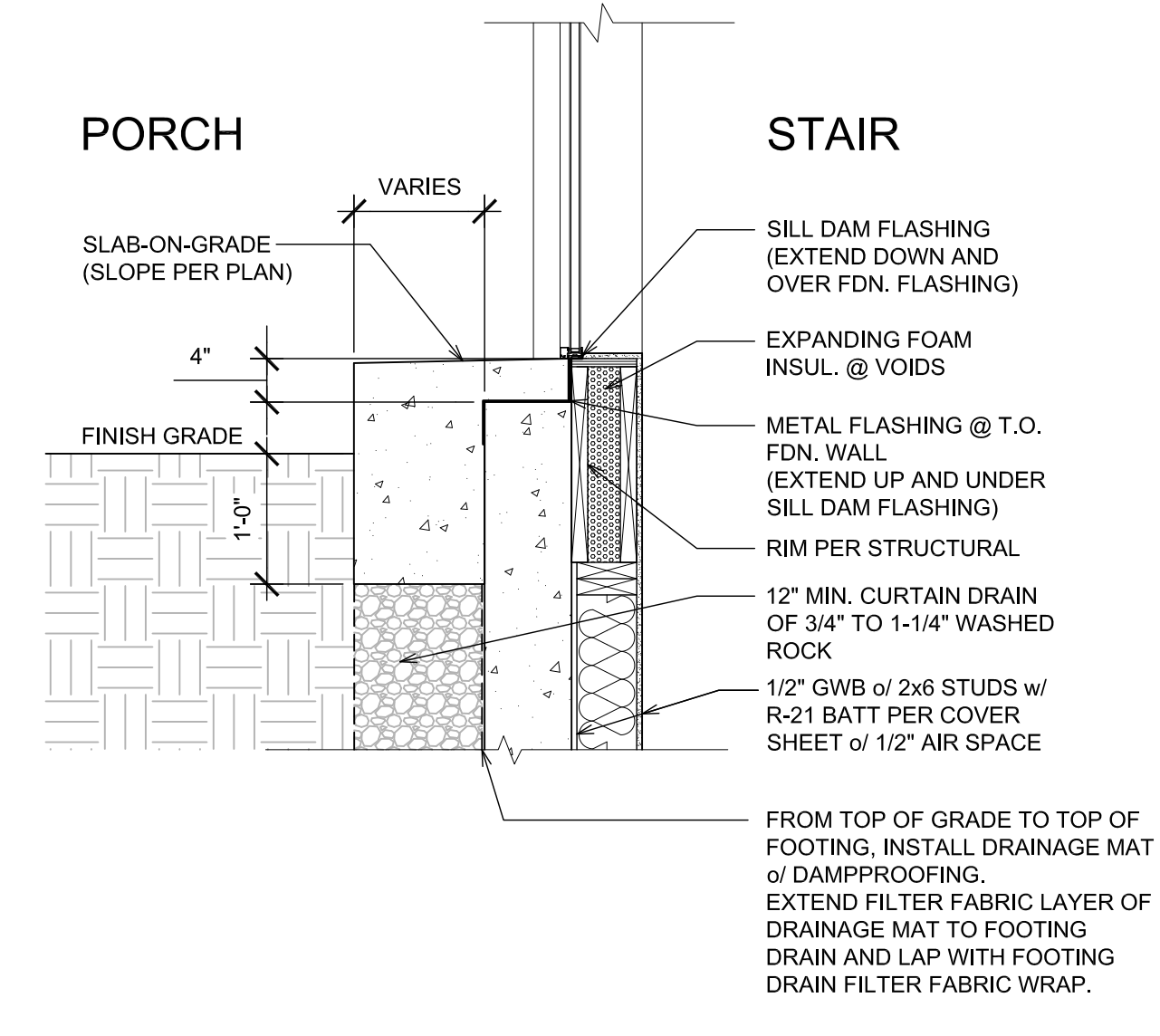
- (1) FOOTING DRAINS:**
- PIPE: SMOOTH WALL PERF PIPE, MIN. 4" DIAMETER (PERFS. DOWN.) INSTALL CLEANOUTS AT MAXIMUM 50 FOOT SPACING. INVERT AT LEAST 6" BELOW SLAB OR CRAWLSPACE. SLOPE TO DRAIN TO APPROPRIATE OUTFALL. 4" DIAMETER TIGHTLINE ROOF DRAIN, SMOOTH WALL, DO NOT CONNECT TO FOOTING DRAIN.
  - BEDDING: CLEAN, WASHED, ROUNDED GRAVEL W/ UNIFORM DIA. BETWEEN 3/4" & 1-1/4". PROVIDE AT LEAST 6-INCHES OF BEDDING ABOVE AND BESIDE FOOTING DRAIN PIPE.
  - FILTER FABRIC: NON-WOVEN GEOTEXTILE EQUIVALENT TO MIRAFI 140N. INSTALLED TO FULLY ENCAPSULATE CLEAN, WASHED ROUNDED GRAVEL (7/8" MIN.)
  - BACKFILL: IMPORTED OR NATIVE SOIL W/ MAX. PARTICLE SIZE OF 4".



**DRAINAGE NOTES**  
SCALE: 3/4" = 1'-0" SLAB ON GRADE (A2.1) 8

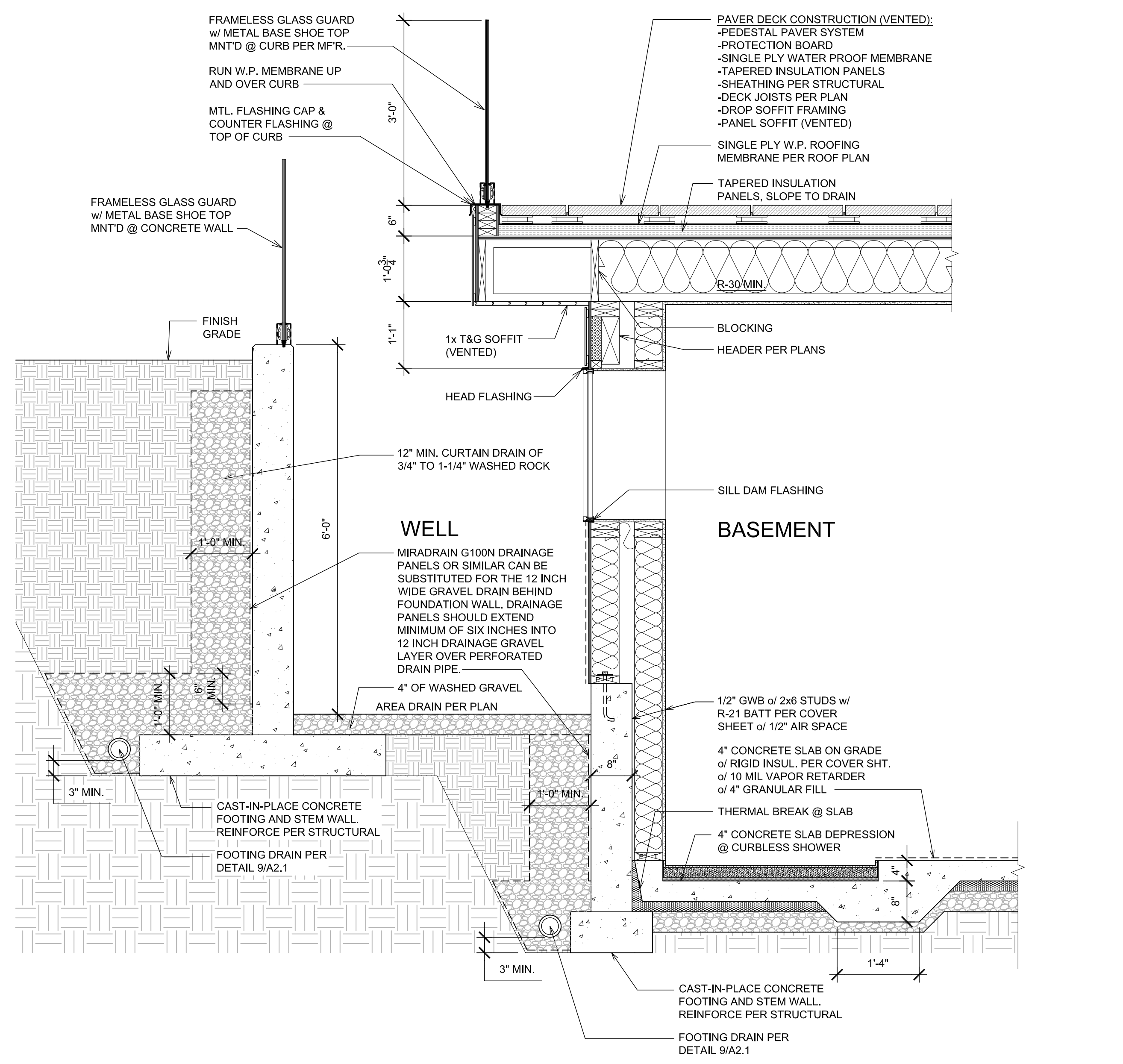


**CONC. STEPS ON GRADE**  
SCALE: 3/4" = 1'-0" (A2.1) 7

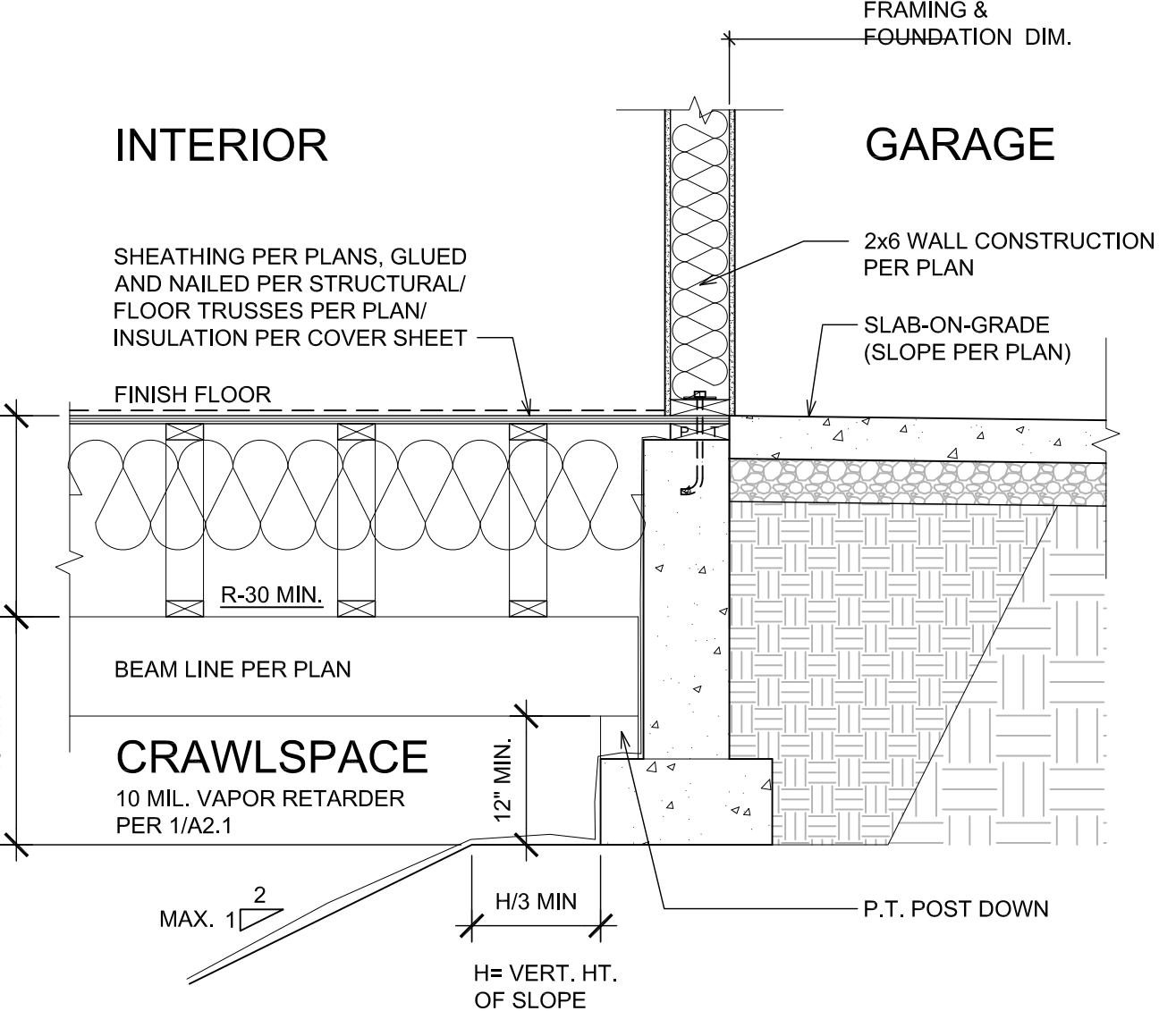


**RAISED STEM WALL @ PORCH / STAIR**  
SCALE: 3/4" = 1'-0" (A2.1) 6

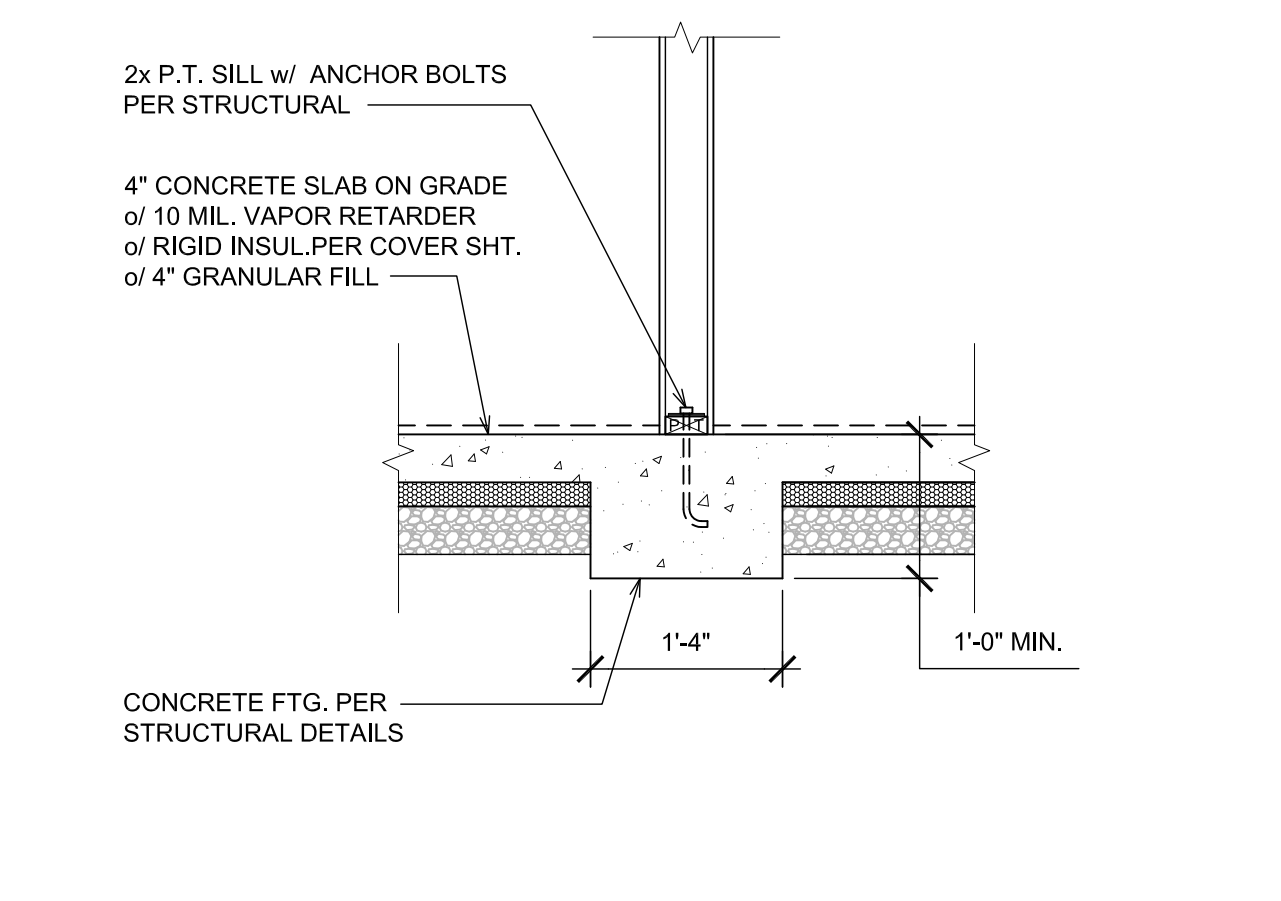
**COVERED PORCH**



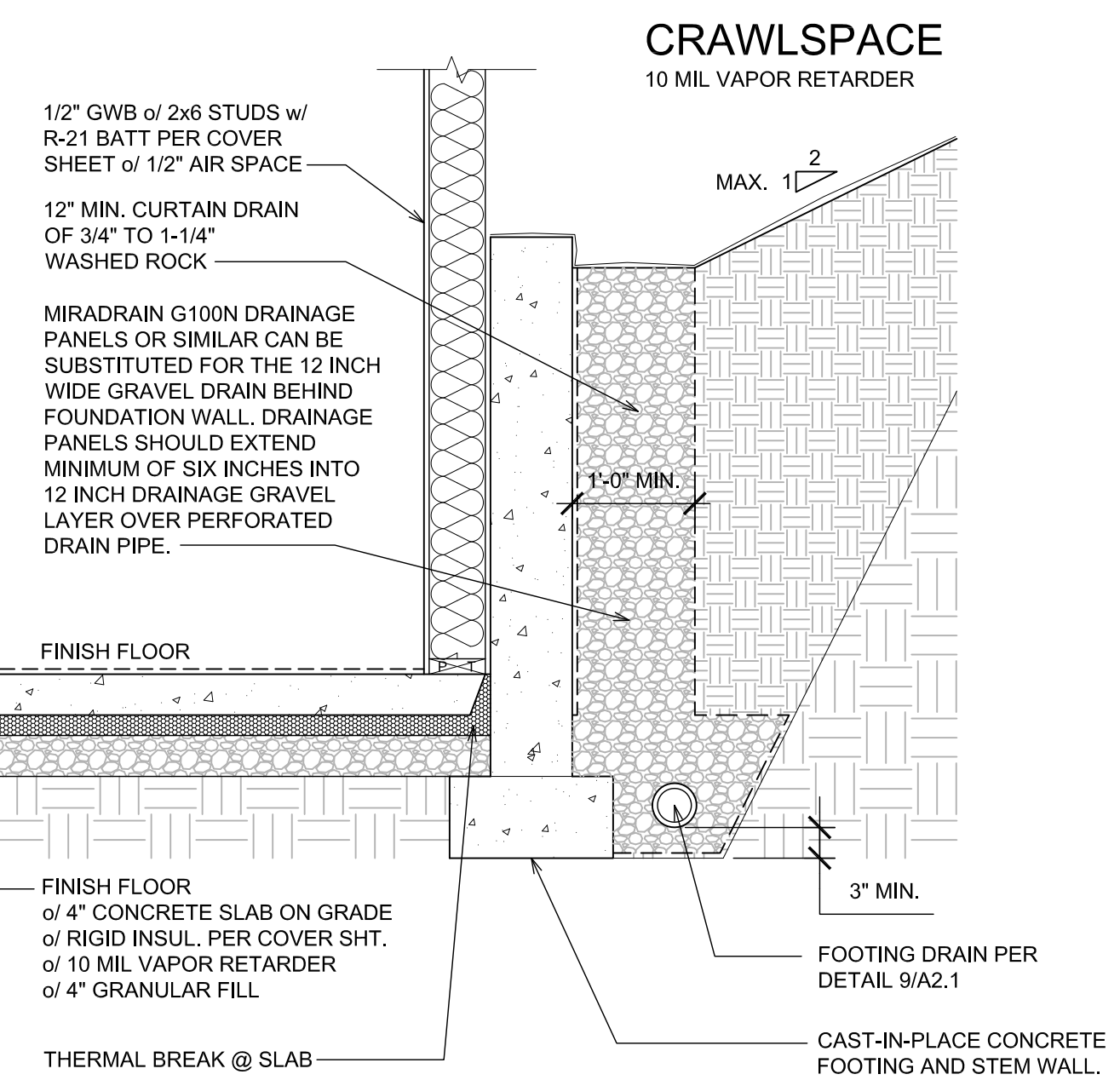
**FOUNDATION - PARTIAL HEIGHT WALL**  
SCALE: 3/4" = 1'-0" SLAB ON GRADE (A2.1) 3



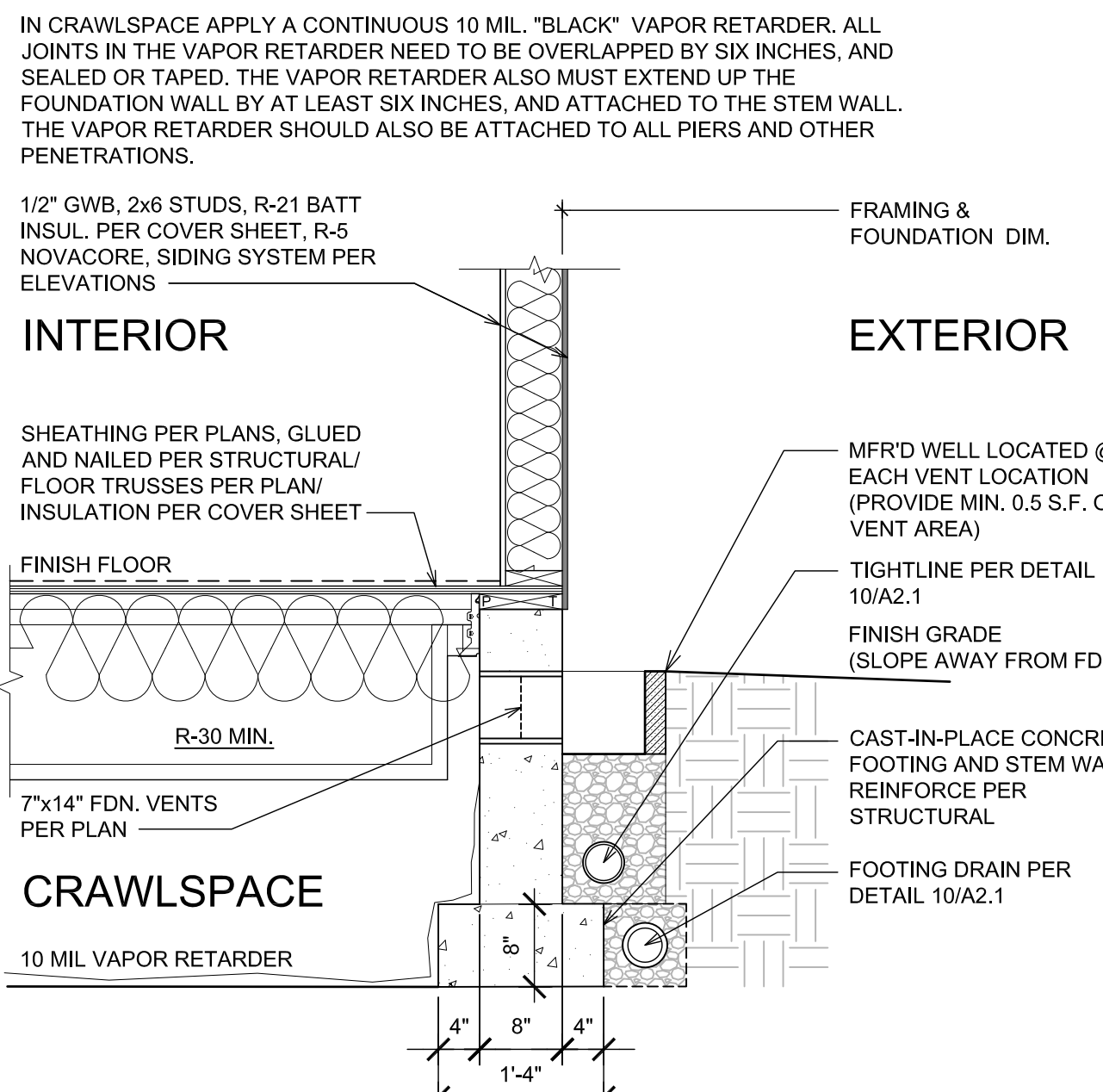
**FOUNDATION - CRAWLSPACE**  
SCALE: 3/4" = 1'-0" CRAWLSPACE (A2.1) 5



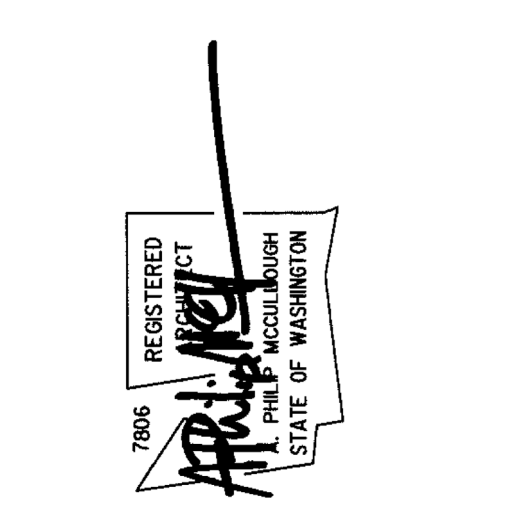
**FOUNDATION - THICKENED SLAB**  
SCALE: 3/4" = 1'-0" SLAB ON GRADE (A2.1) 4



**FDN - RAISED WALL @ CRAWLSPACE**  
SCALE: 3/4" = 1'-0" SLAB ON GRADE / CRAWLSPACE (A2.1) 2



**FOUNDATION - CRAWLSPACE**  
SCALE: 3/4" = 1'-0" CRAWLSPACE (A2.1) 1

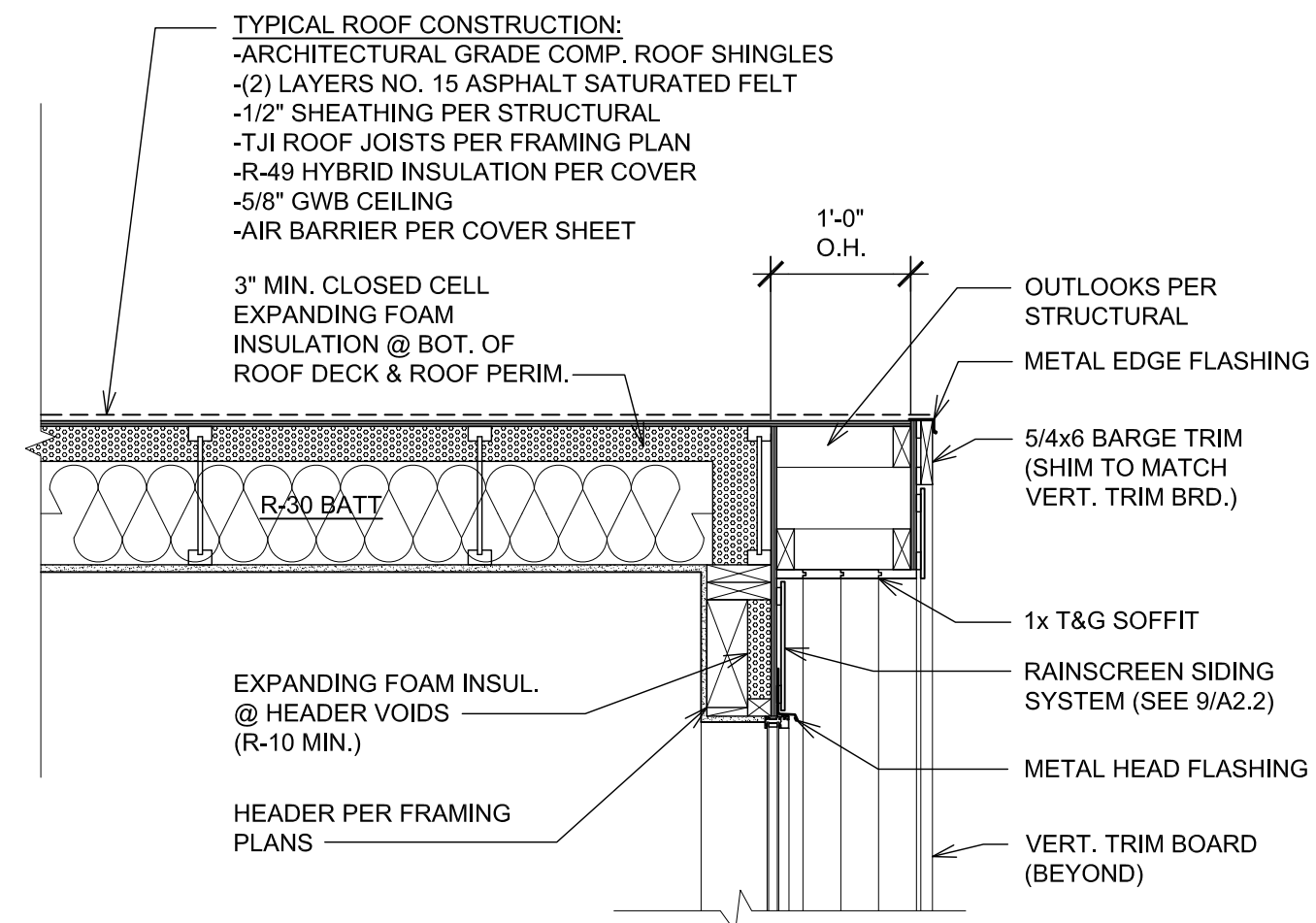


**WINDOW INSTALLATION SEQUENCE**

1. STRUCTURAL SHEATHING INSTALLED OVER FRAME WALL
2. INSTALL FLASHING AT SILL
3. INSTALL WINDOW PLUMB, LEVEL AND SQUARE
4. INSTALL FLASHING AT JAMBS
5. INSTALL FLASHING AT HEAD
6. AIR SEAL INT. OF WINDOW AROUND ENTIRE PERIMETER w/ SEALANT AND BACK ROD

**TYPICAL ASSEMBLY INSULATION VALUES:**

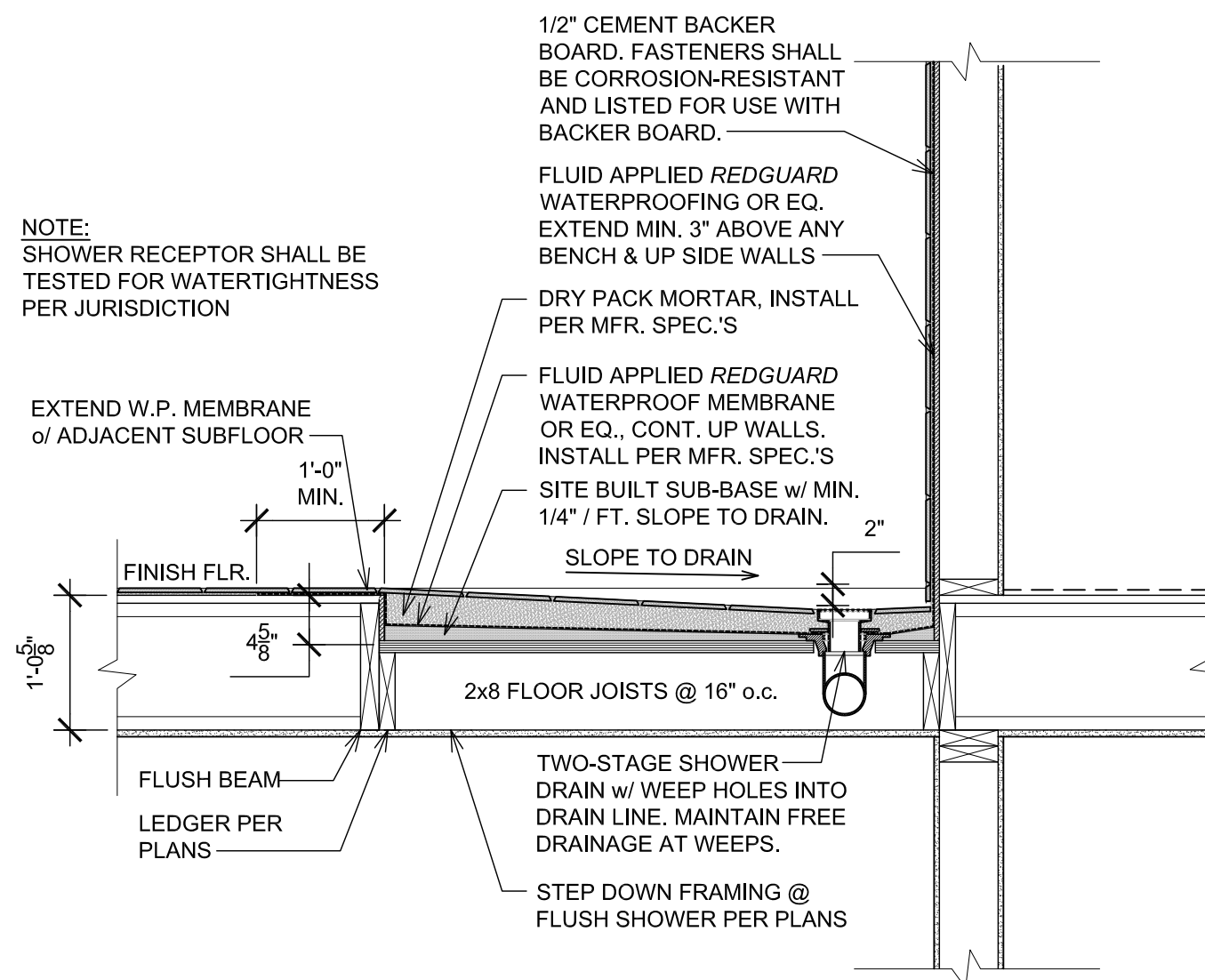
ATTIC INSULATION	R-60 BLOWN-IN
VAULTED CL'G INSULATION	R-49 (R-30 BATT+3"SPF)
FLOOR INSULATION	R-30 BATT
ABV. GRADE EXT. WALL INSUL.	R-21 BATT
BELOW GRADE EXT. WALL INSUL.	R-21 BATT+R-5 C.I.



**VAULT ROOF AT ENTRY**

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

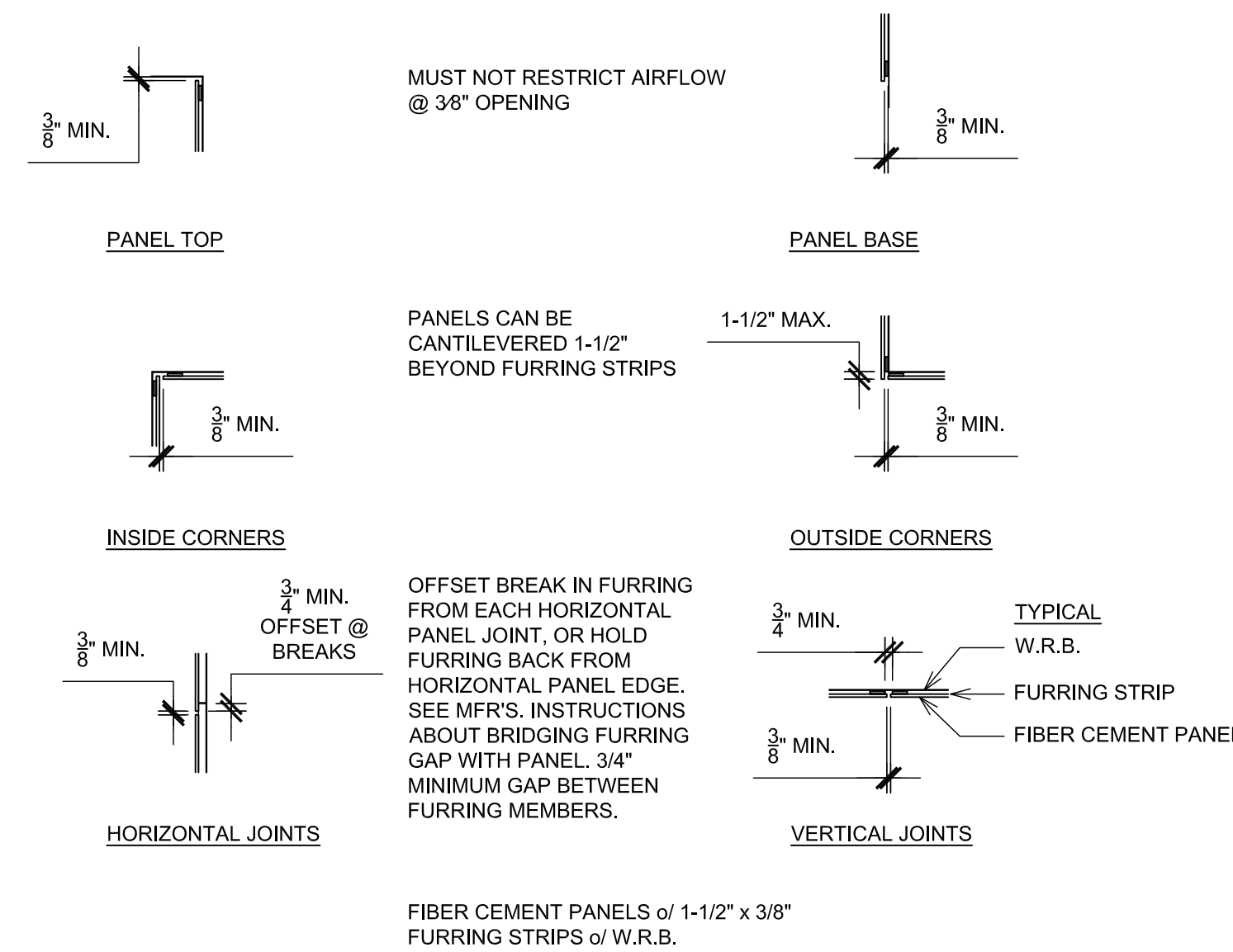
11  
A2.2



**RECESSED MUD SET SHOWER**

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

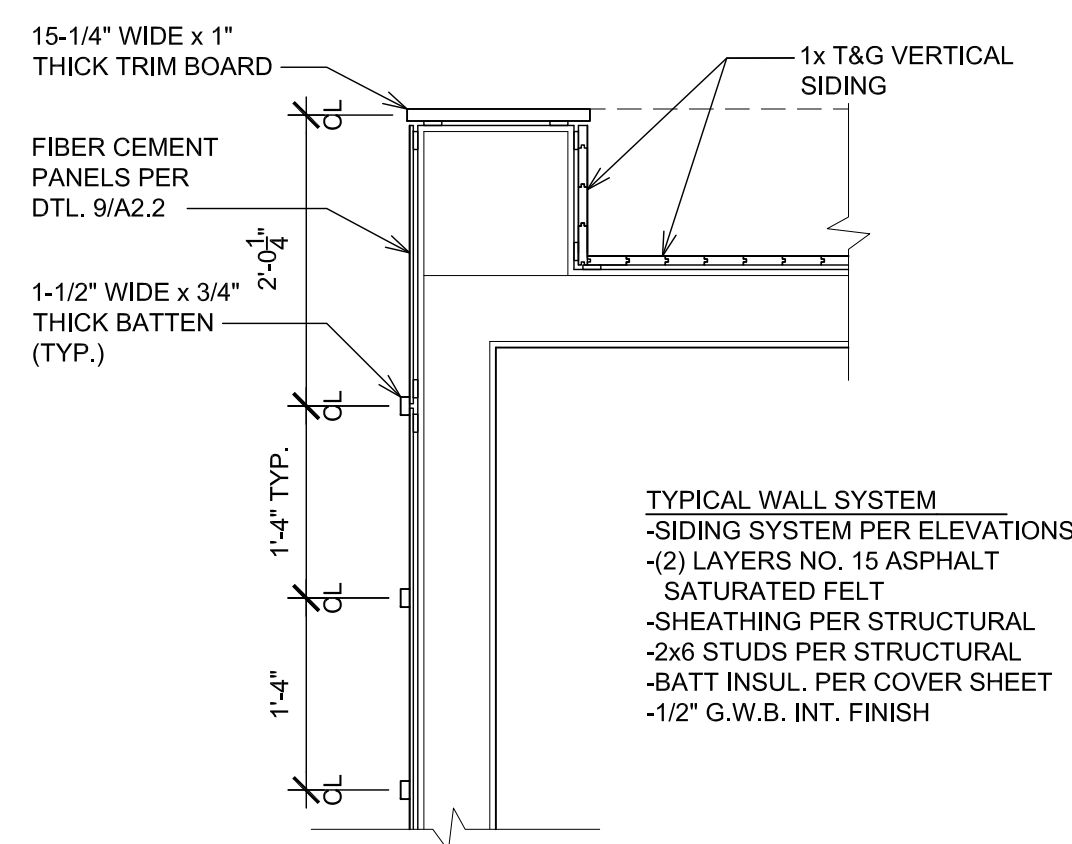
10  
A2.2



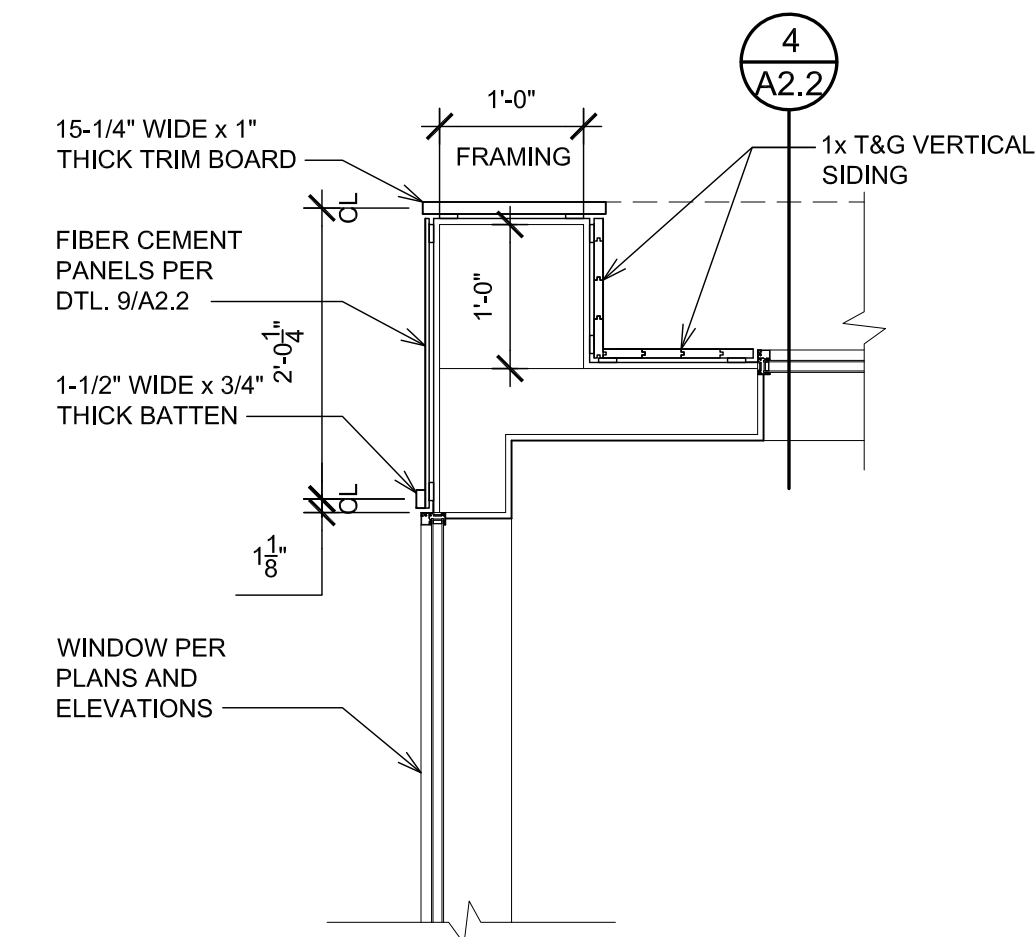
**TYPICAL - RAINSCREEN SIDING DETAILS**

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

9  
A2.2

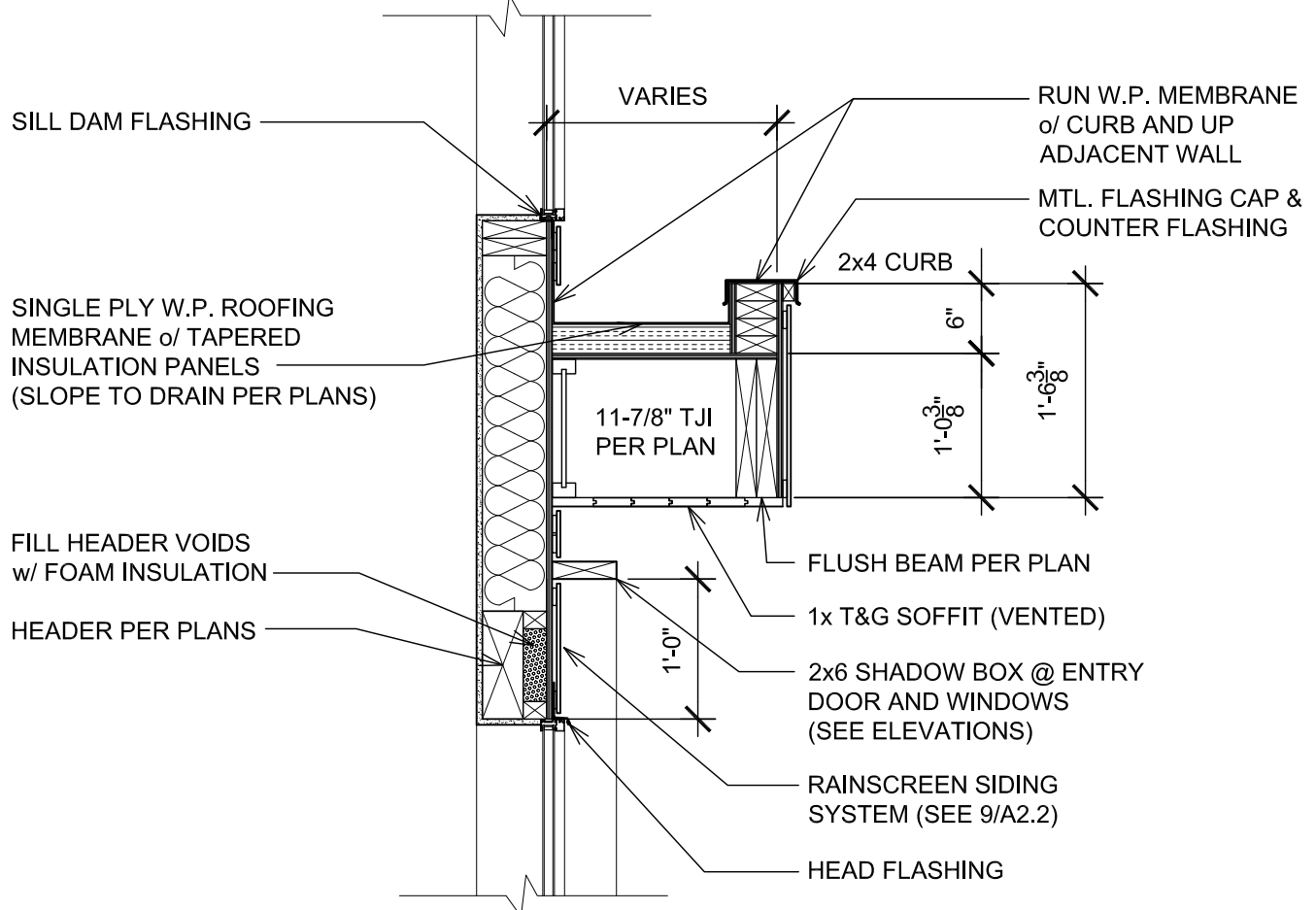


**PLAN CORNER w/o WINDOW**



**PLAN CORNER w/ WINDOW**

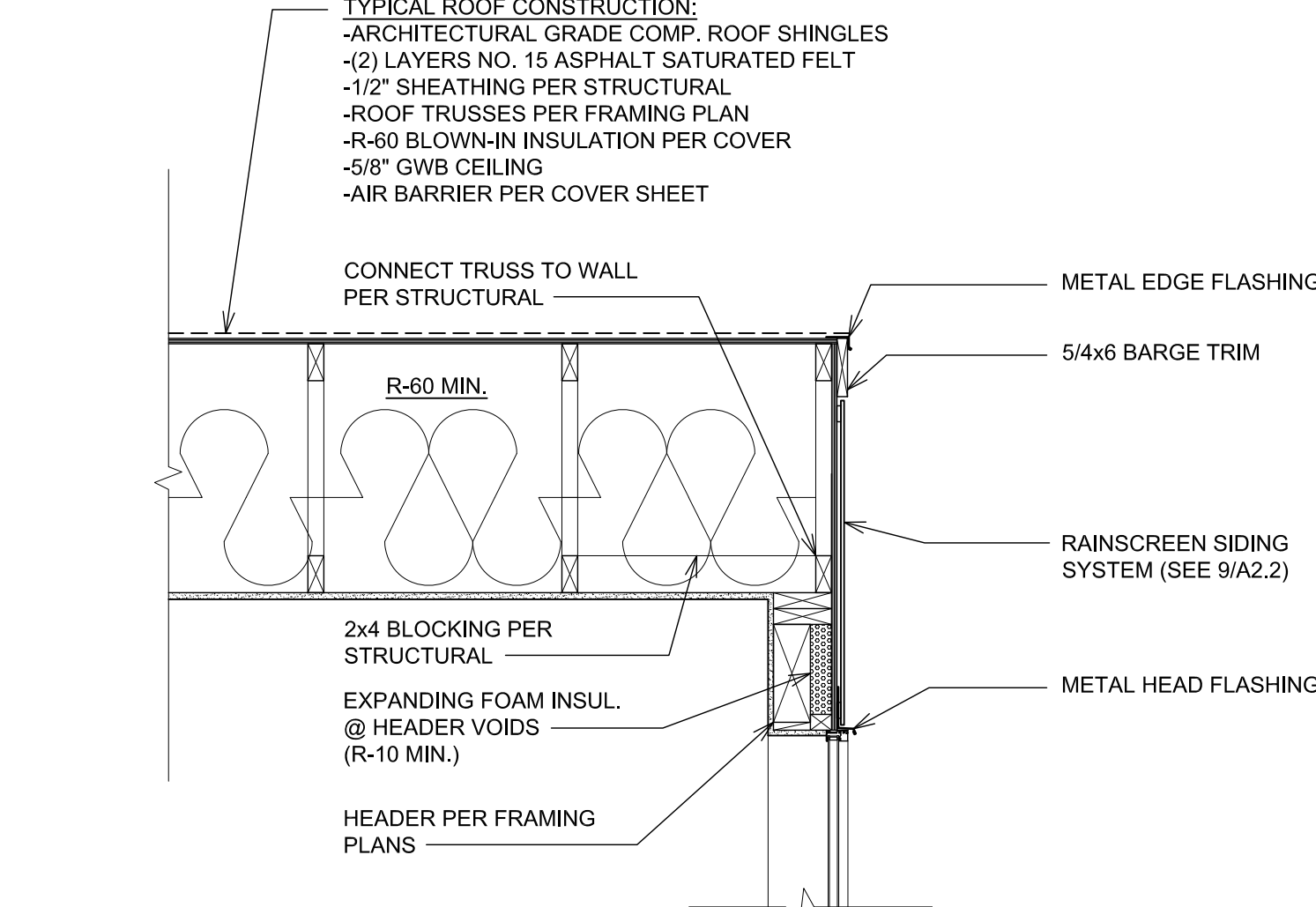
7  
A2.2



**PORCH PARAPET ROOF**

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

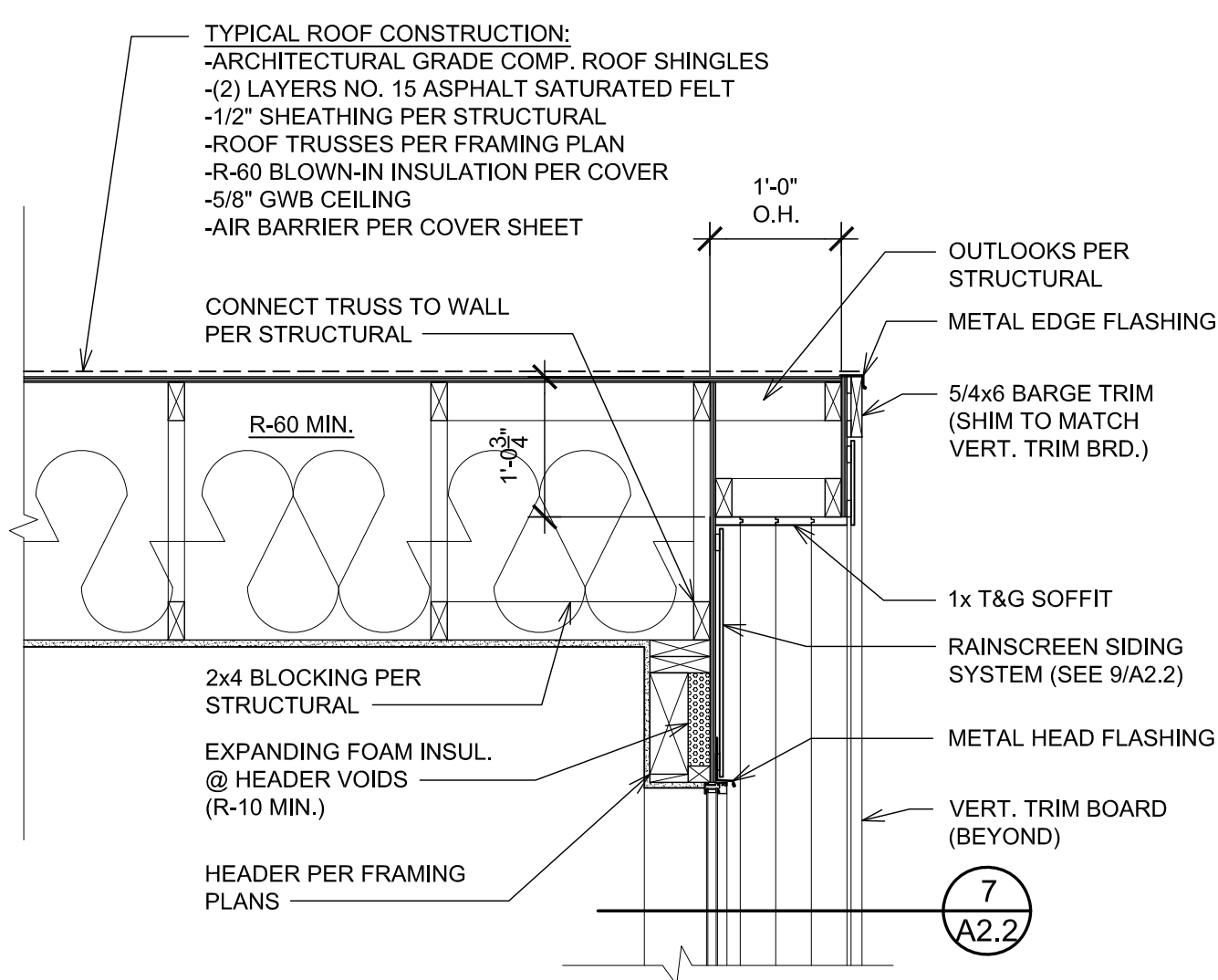
6  
A2.2



**TYPICAL RAKE 0° O.H.**

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

5  
A2.2

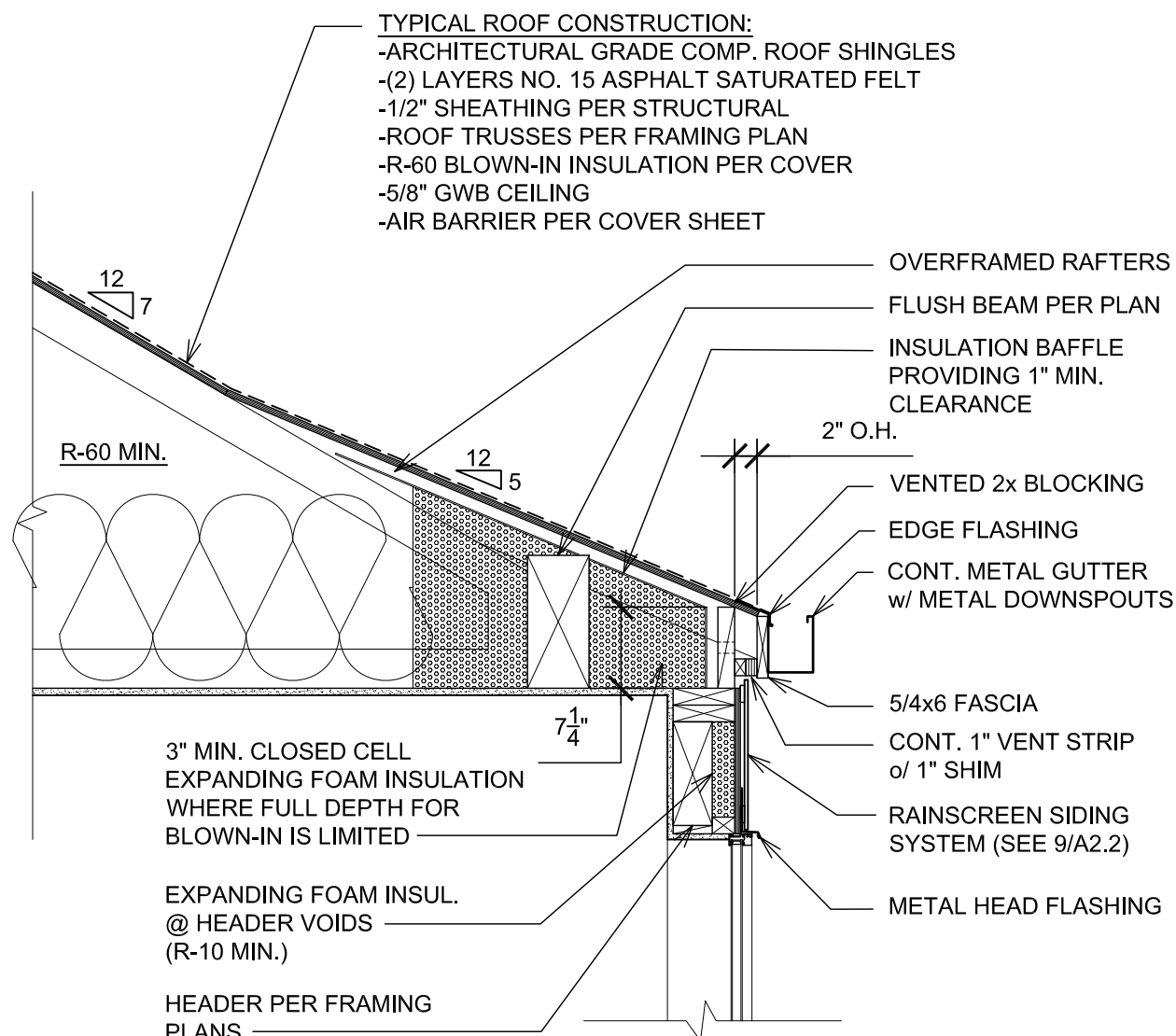


**TYPICAL RAKE O.H.**

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

VENTED

4  
A2.2

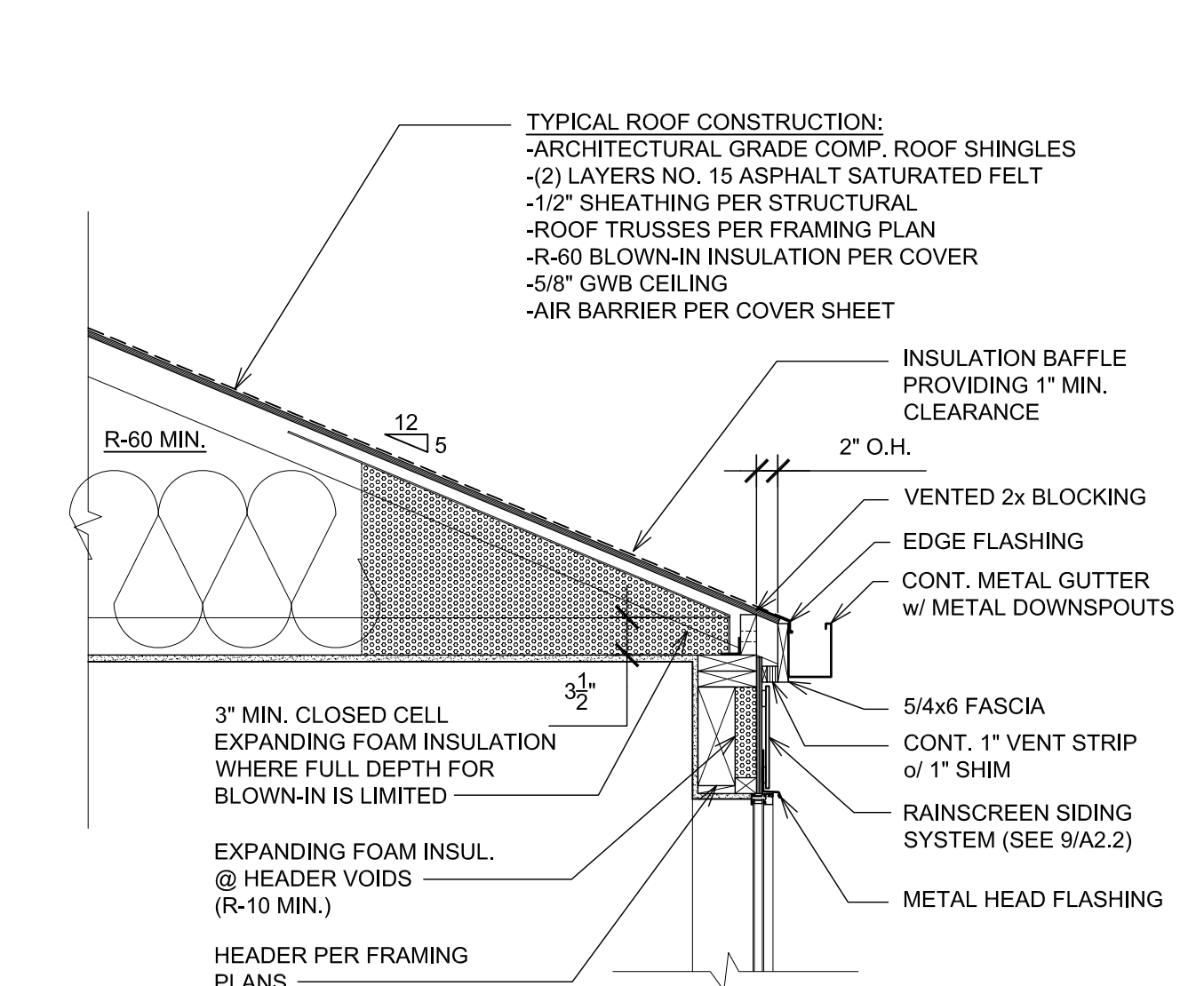


**5:12 ROOF OVERFRAME EAVE O.H.**

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

VENTED

3  
A2.2

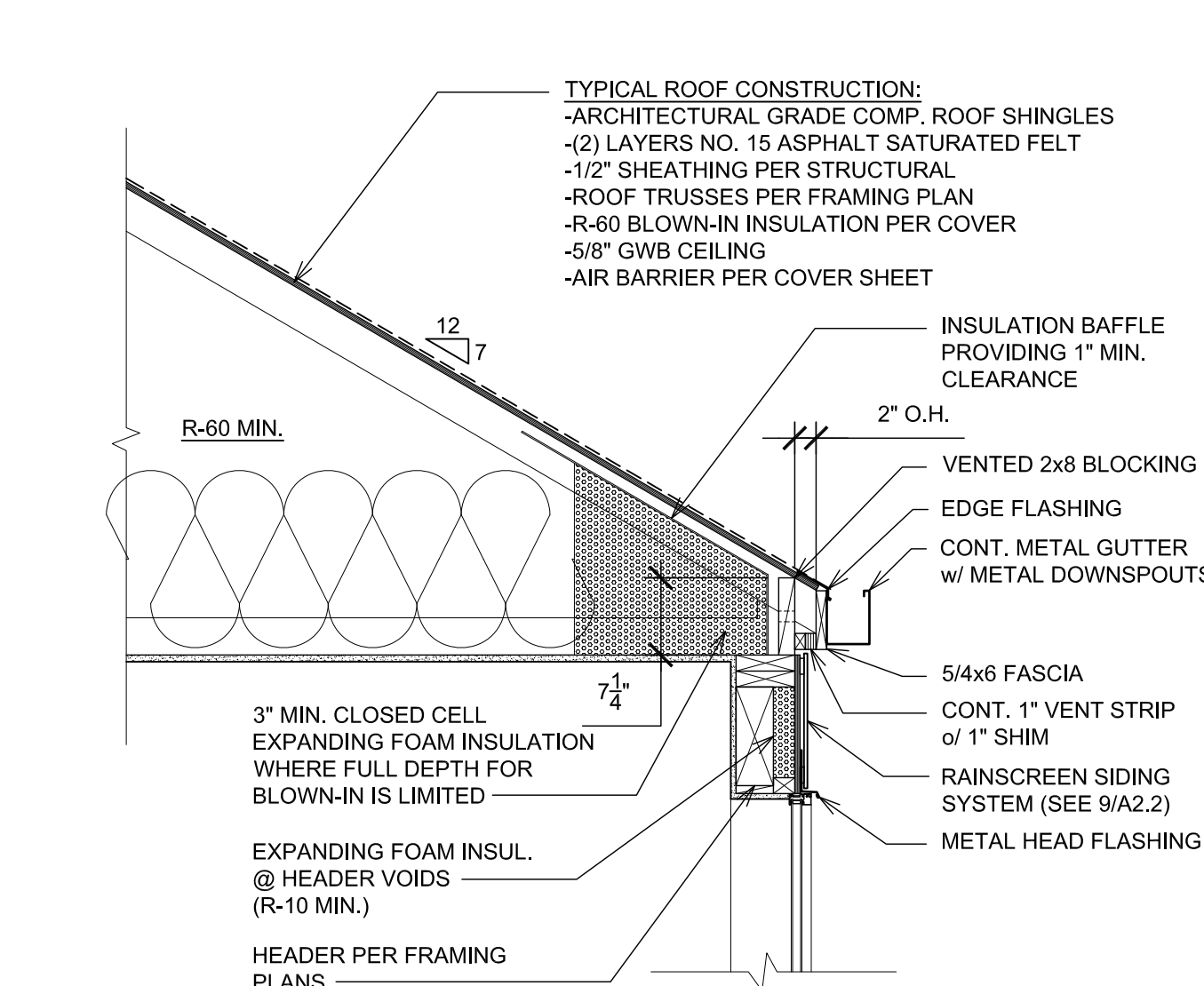


**TYPICAL - 5:12 ROOF EAVE O.H.**

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

VENTED

2  
A2.2



**TYPICAL - 7:12 ROOF EAVE O.H.**

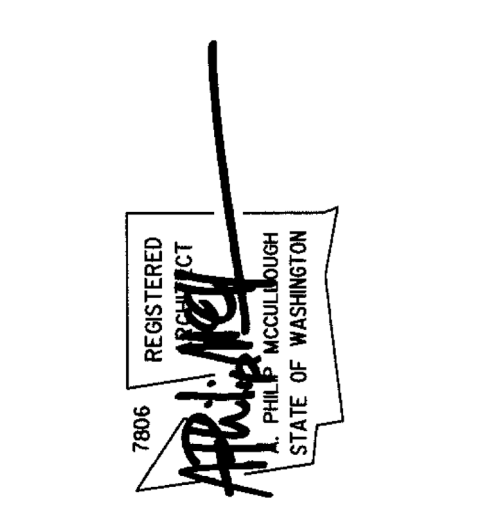
SCALE: 3/4" = 1'-0"

VENTED

1  
A2.2

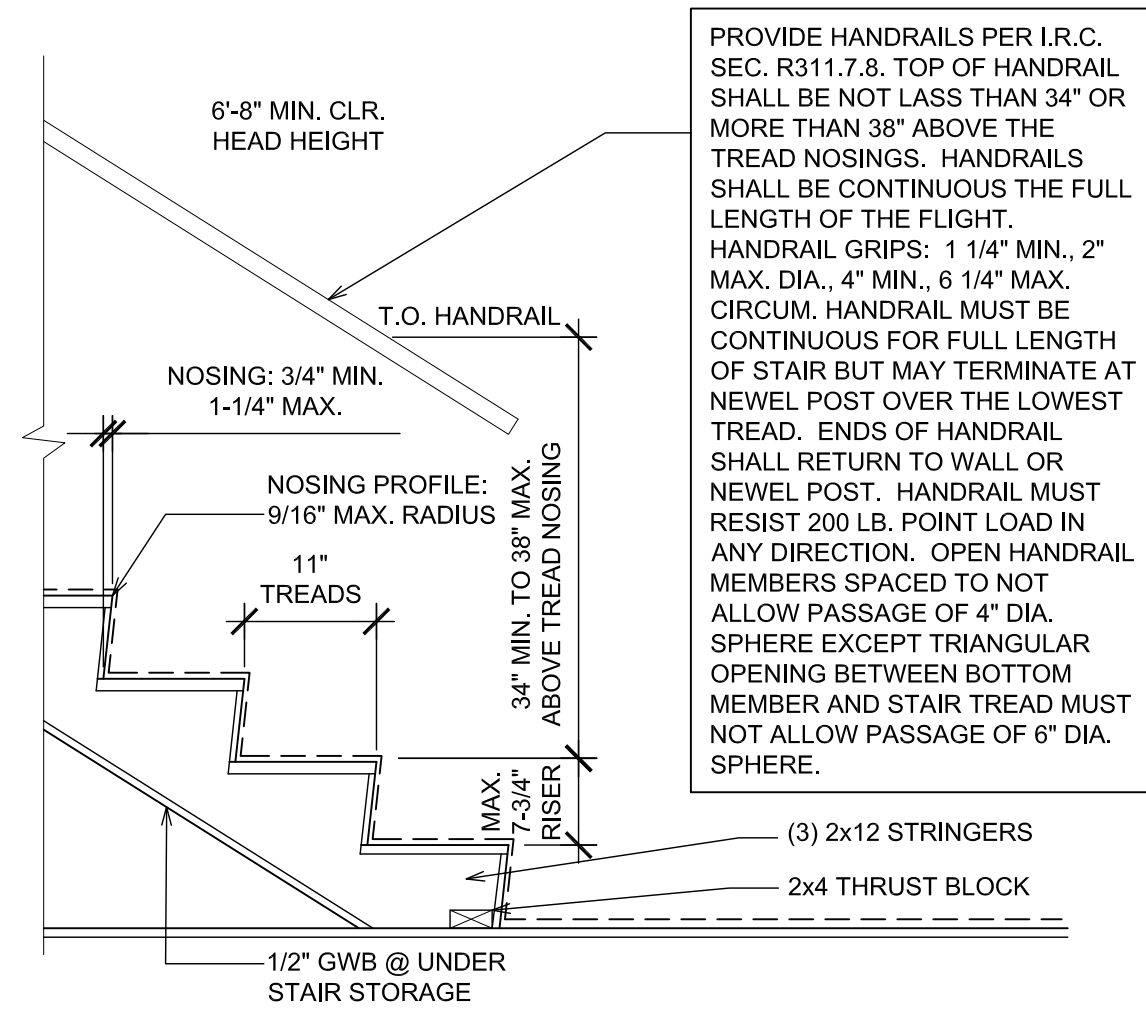
Comment
Revisions

Date: 2025.07.03  
Job No: 24-008  
Project No:  
Drawn:  
Approved:  
Owner: SAINTFIELD2 LLC



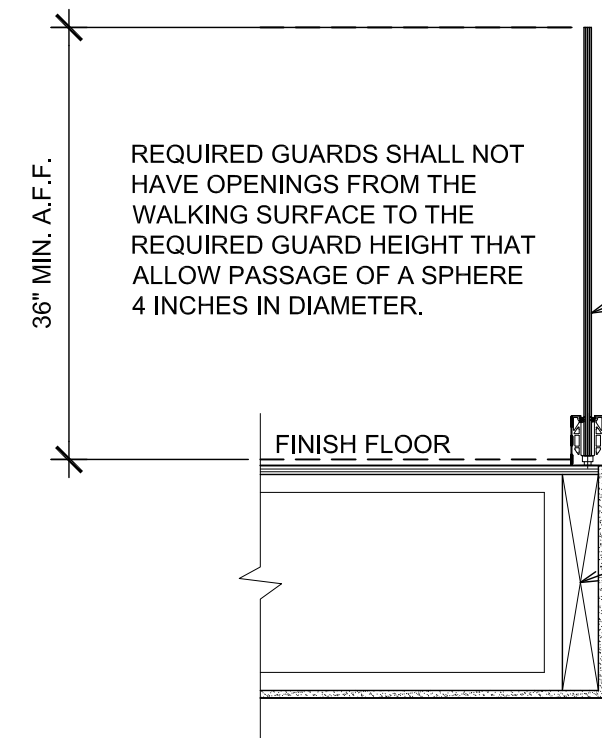
**SEARS PLAT - LOT 2**  
Mercer Island  
Washington  
98040

PERMIT APPLICATION  
Wall Sections & Roof Details  
**A2.2**

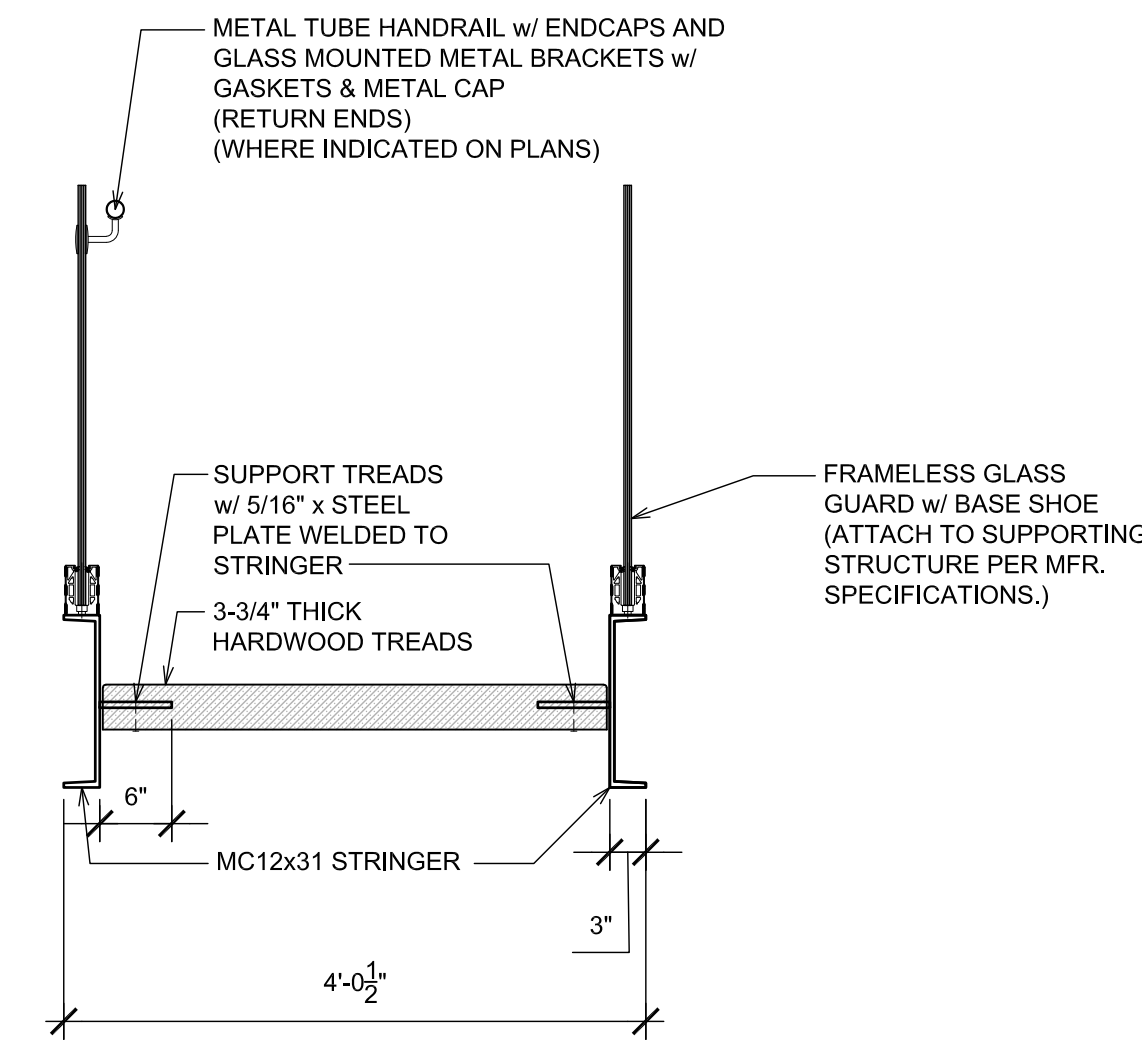


PROVIDE HANDRAILS PER I.R.C. SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT. HANDRAIL GRIPS: 1 1/4" MIN., 2" MAX. DIA., 4" MIN., 6 1/4" MAX. CIRCUM. HANDRAIL MUST BE CONTINUOUS FOR FULL LENGTH OF STAIR BUT MAY TERMINATE AT NEWEL POST OVER THE LOWEST TREAD. ENDS OF HANDRAIL SHALL RETURN TO WALL OR NEWEL POST. HANDRAIL MUST RESIST 200 LB. POINT LOAD IN ANY DIRECTION. OPEN HANDRAIL MEMBERS SPACED TO NOT ALLOW PASSAGE OF 4" DIA. SPHERE EXCEPT TRIANGULAR OPENING BETWEEN BOTTOM MEMBER AND STAIR TREAD MUST NOT ALLOW PASSAGE OF 6" DIA. SPHERE.

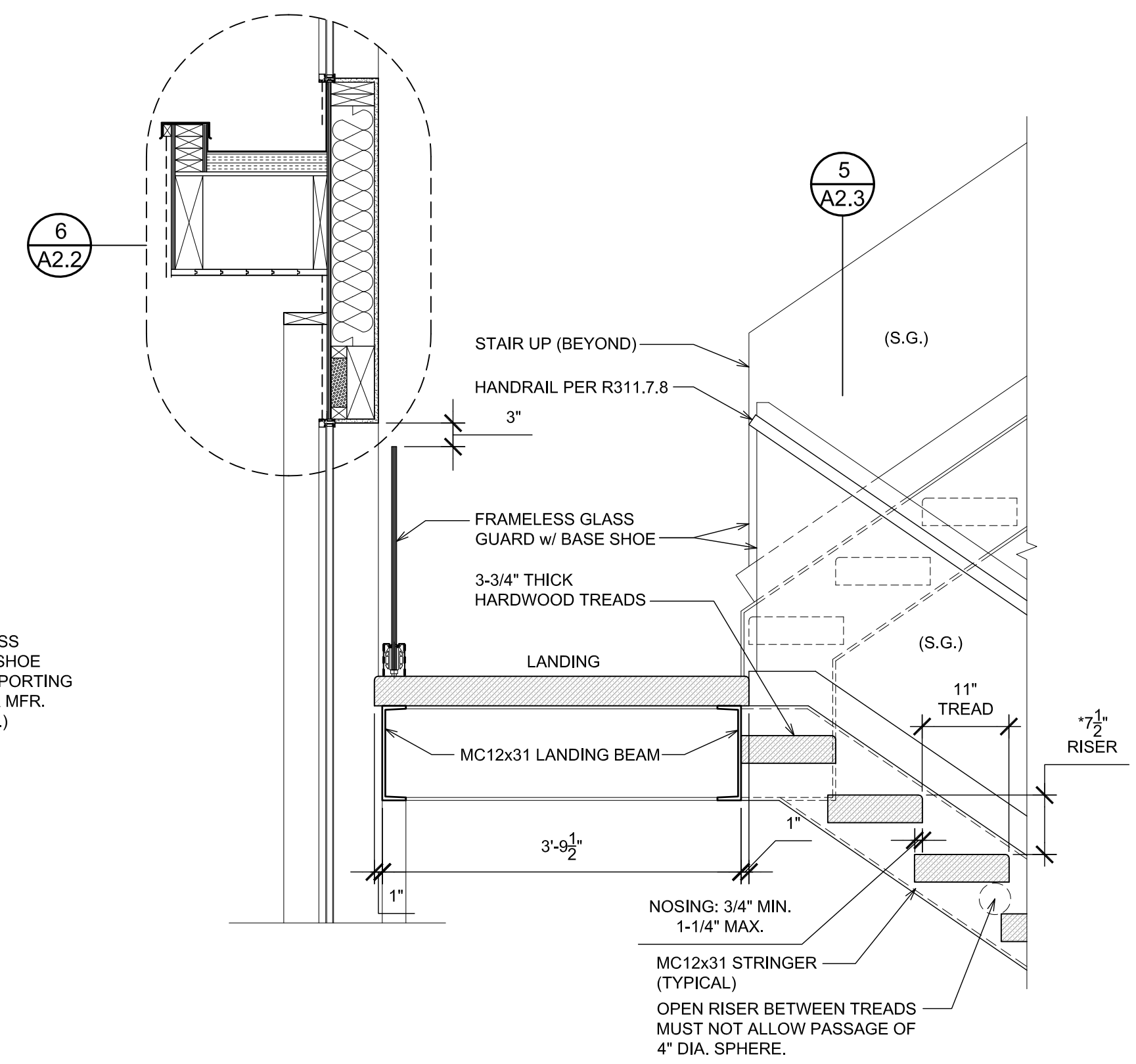
**GUARDS**  
R301.5 LIVE LOADS  
CONCENTRATED LOAD=200 LBS  
Glazing used in handrail assemblies and guards shall be designed with a load adjustment factor of 4. The load adjustment factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the in-fill components. These loads shall be determined independent of one another, and loads are assumed not to occur with any other live load. Where the top of a guard system is not required to serve as a handrail, the single concentrated load shall be applied at any point along the top, in the vertical downward direction and in the horizontal direction away from the walking surface. Where the top of a guard is also serving as the handrail, a single concentrated load shall be applied in any direction at any point along the top. Concentrated loads shall not be applied concurrently.



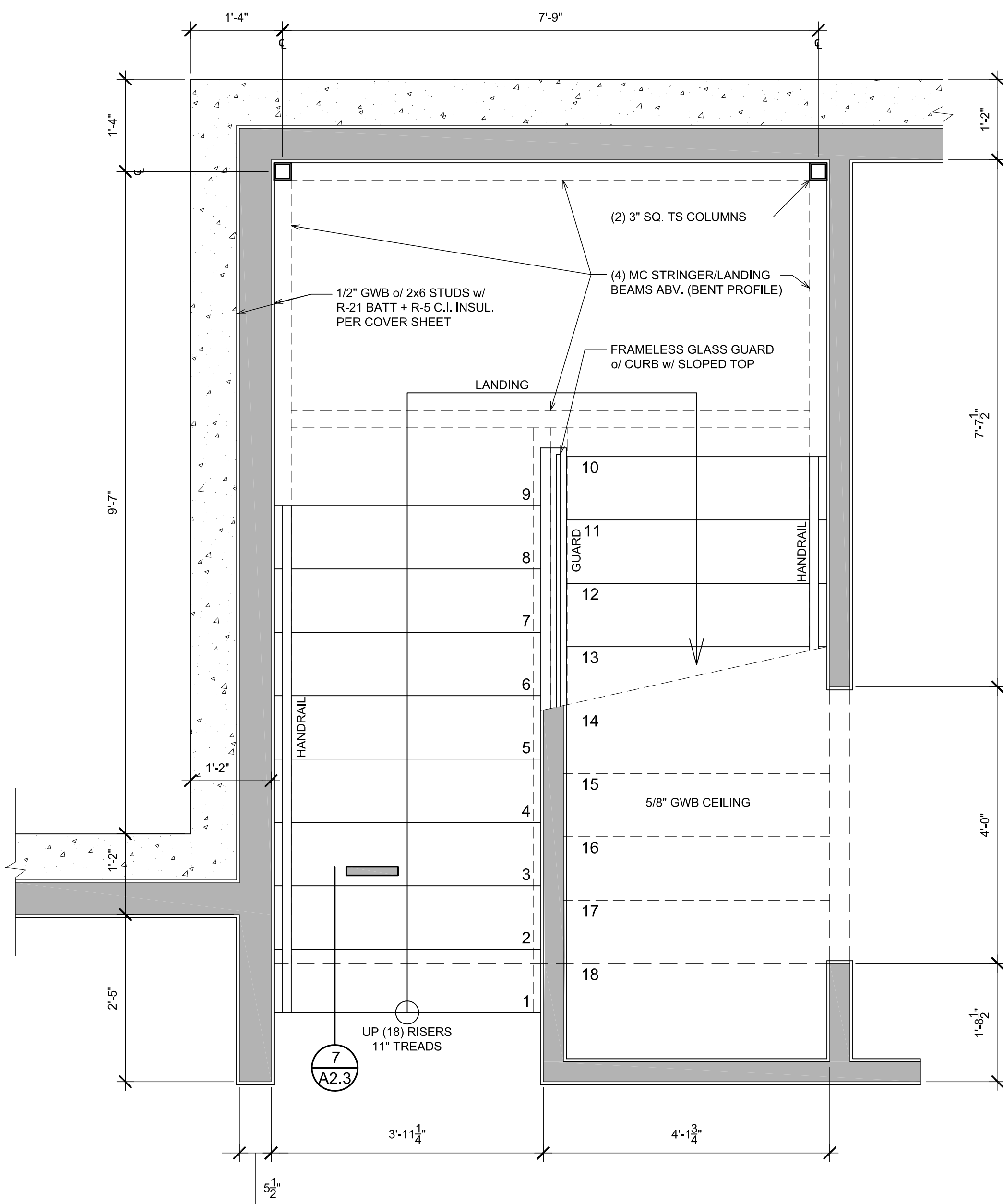
**GLASS GUARD SECTION**  
SCALE: 3/4" = 1'-0"



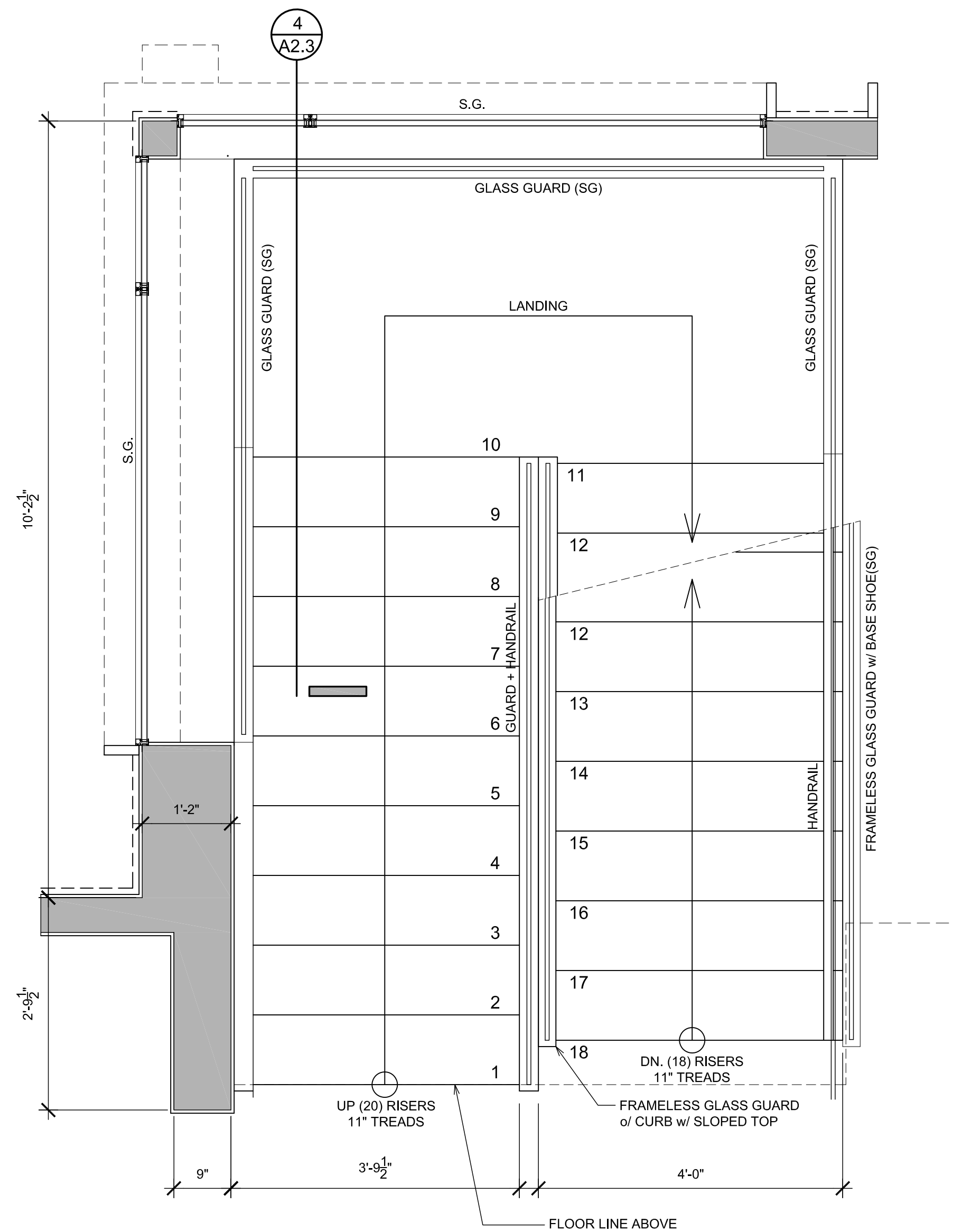
**STAIR STRINGER SECTION**  
SCALE: 3/4" = 1'-0"



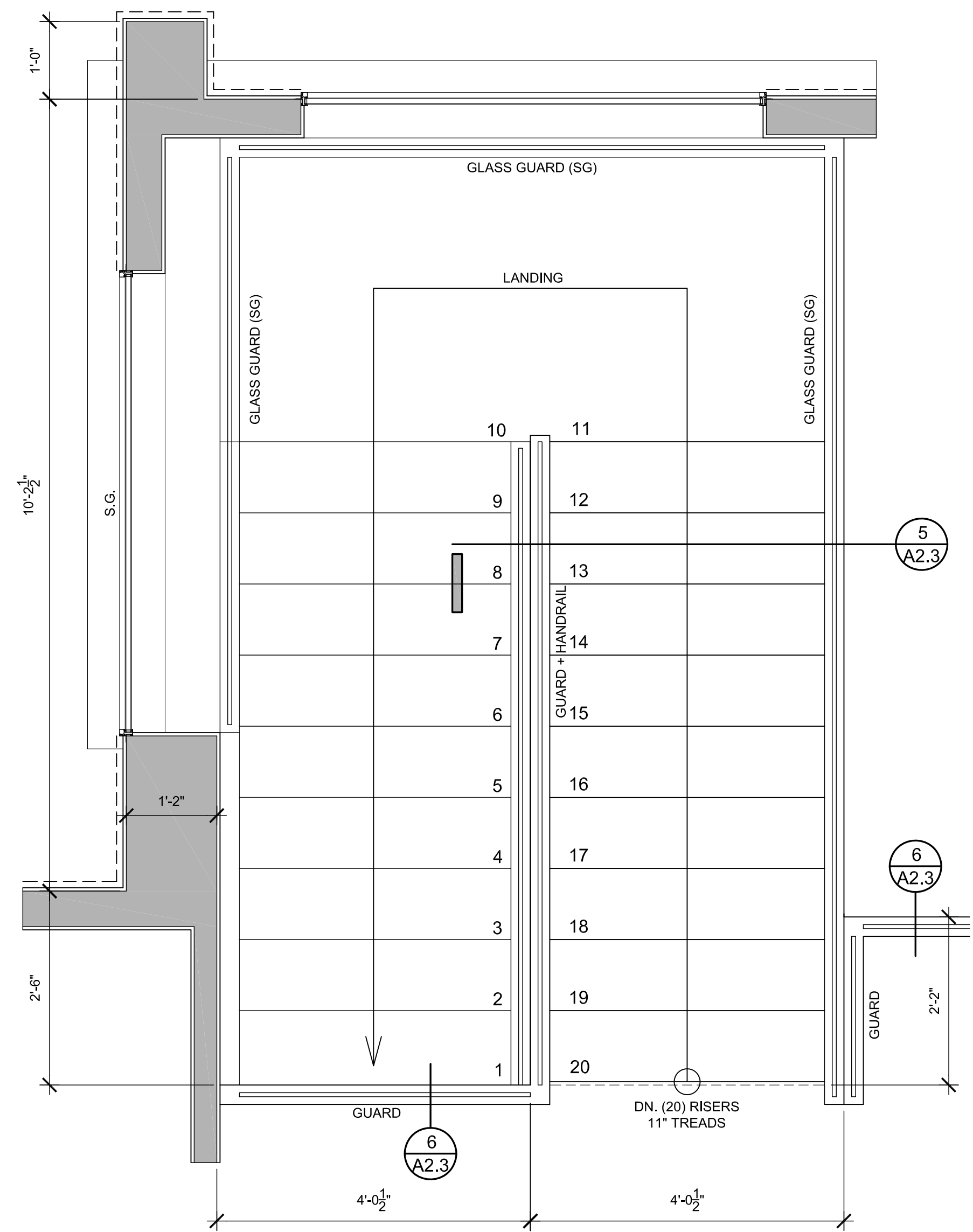
**STAIR LANDING SECTION**  
SCALE: 1-1/2" = 1'-0"



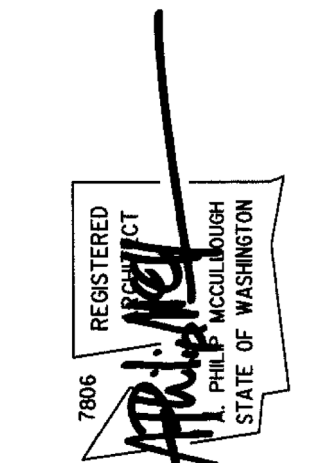
**STAIR - LOWER FLOOR PLAN**  
SCALE: 3/4" = 1'-0"



**STAIR - MAIN FLOOR PLAN**  
SCALE: 3/4" = 1'-0"



**STAIR - UPPER FLOOR PLAN**  
SCALE: 3/4" = 1'-0"



INDICATES LOC. OF 14"x7" FOUNDATION VENT w/ AREA WELL (PROVIDE MIN. 0.5 S.F. OF VENTILATION PER VENT)

PLAN KEY:

- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
- INDICATES LOC. OF DOWNSPOUT
- TYPICAL CONC. FDN. WALL
- RAISED STEM CONC. FDN. WALL
- BELOW SLAB RIGID INSULATION

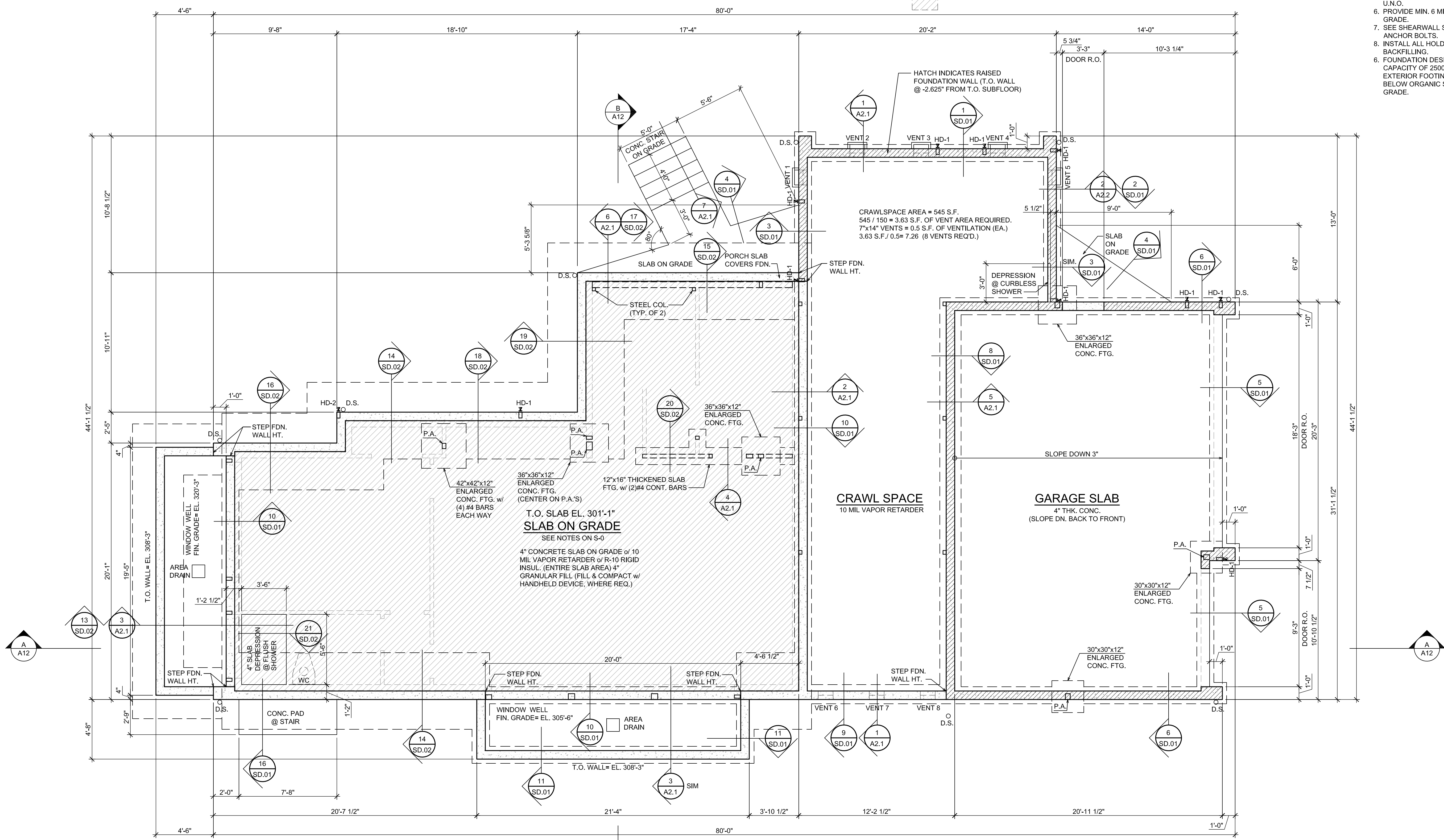
- GENERAL NOTES:
1. 8" MIN. CLEARANCE BETWEEN EXTERIOR GRADE & UNPROTECTED WOOD.
  2. ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED.
  3. WOOD JOISTS OR THE BOTTOM OF A WOOD STRUCTURAL FLOOR WHEN CLOSER THAN 18" OR WOOD GIRDERS WHEN CLOSER THAN 12" TO THE EXPOSED GROUND IN CRAWL SPACES SHALL BE PROTECTED AGAINST DECAY WITH A PRESERVATIVE-TREATMENT IN ACCORDANCE WITH AWPA U1 AND THE IRC R317.1.
  4. THE UNDER-FLOOR GRADE SHALL BE CLEANED OF ALL ORGANIC MATERIAL, AND CONSTRUCTION MATERIAL BEFORE THE BUILDING IS OCCUPIED.
  5. ALL DIMENSION LINES ARE TO FACE OF FRAMING OR CONCRETE, U.N.O.
  6. PROVIDE MIN. 6 MIL VAPOR BARRIER @ CRAWLSPACE & SLAB ON GRADE.
  7. SEE SHEARWALL SCHEDULE FOR LOCATION & SPACING OF ANCHOR BOLTS.
  8. INSTALL ALL HOLD-DOWNS AND HARDWARE PRIOR TO BACKFILLING.
  9. FOUNDATION DESIGN IS BASED ON AN AVERAGE BEARING CAPACITY OF 2500 PSF PER SOILS REPORT DATED 5/30/23. EXTERIOR FOOTINGS TO BEAR ON FIRM UNDISTURBED SOIL BELOW ORGANIC SURFACE SOIL, A MINIMUM 1'-6" BELOW FINISH GRADE.

Date:	2025.07.03
Job No:	24-008
Project No:	
Drawn:	
Approved:	
Owner:	SAINTFIELD2 LLC






**SEARS PLAT - LOT 2**  
 Mercer Island  
 Washington  
 98040

PERMIT APPLICATION  
 Foundation Plan  
**A3**



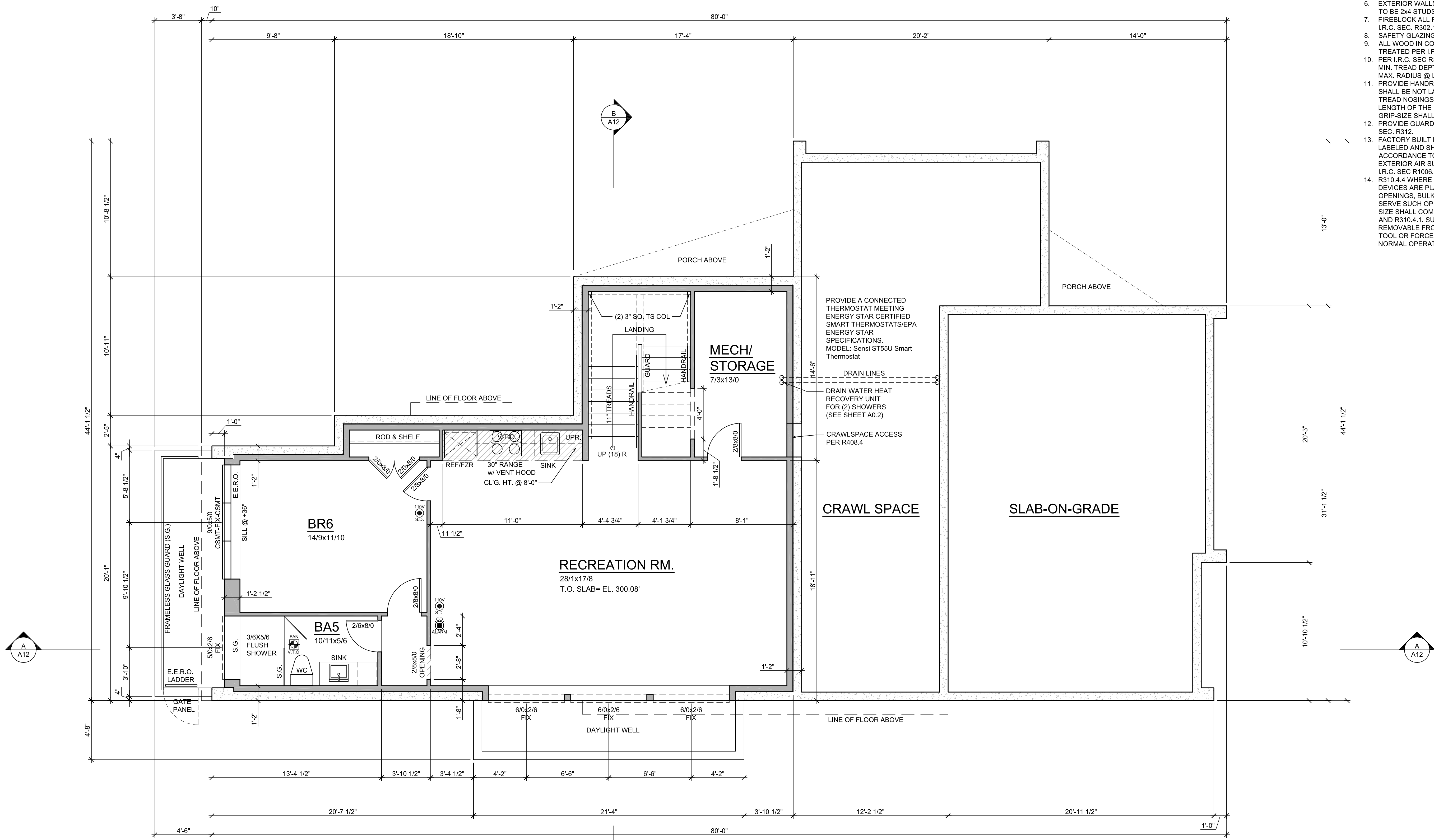
**FOUNDATION PLAN**  
 SCALE: 1/4" = 1'-0"

**PLAN KEY:**

- |   |   |        |   |
|---|---|--------|---|
|  | INDICATES 110V SMOKE DET. PER I.R.C. 313.4 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP | S.G.   | INDICATES SAFETY GLAZING REQUIRED PER IRC SEC. R308.4 |
|  | INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1                                     | FIX    | INDICATES FIXED FRAME WINDOW                          |
|  | INDICATES EXHAUST VENTILATION FAN PER COVER SHEET.                                    | CSMT   | INDICATES CASEMENT WINDOW                             |
|   |   | V.T.O. | INDICATES "VENT TO OUTSIDE"                           |

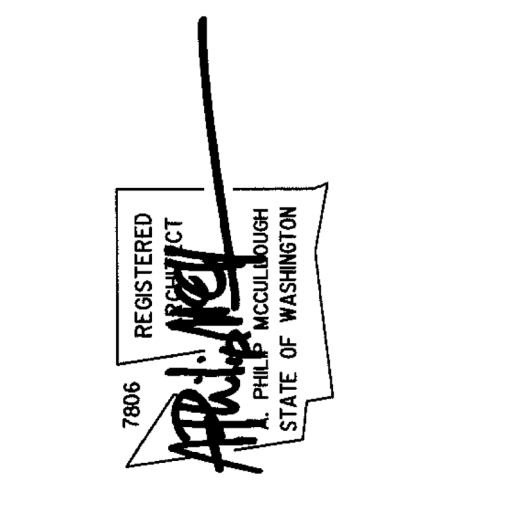
**GENERAL NOTES:**

- PLATE HEIGHT @ LOWER FLOOR IS 9'-1"; U.N.O.
- DIMENSION LINES ARE TO FACE OF STUD U.N.O.
- WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
- WINDOW HEAD HEIGHT AT LOWER FLOOR IS 8'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPEC'S TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
- WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2/8-2/8= 2'-8"W x 2'-8"H)
- EXTERIOR WALLS TO BE 2x6 STUDS AT 16" o.c., INTERIOR WALLS TO BE 2x4 STUDS AT 16" o.c., U.N.O.
- FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER I.R.C. SEC. R302.11.
- SAFETY GLAZING PER I.R.C. SEC. R308.4.
- ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER I.R.C. SEC. R317.1.
- PER I.R.C. SEC R311.7.5, MAX. RISER HEIGHT SHALL BE 7-3/4", MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD: 9/16" MAX.
- PROVIDE HANDRAILS PER I.R.C. SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
- PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER I.R.C. SEC. R312.
- FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER I.R.C. SEC R1008.
- R310.4.4 WHERE BARS, GRILLES, COVERS, SCREENS OR SIMILAR DEVICES ARE PLACED OVER EMERGENCY ESCAPE AND RESCUE OPENINGS, BULKHEAD ENCLOSURES OR AREA WELLS THAT SERVE SUCH OPENINGS, THE MINIMUM NET CLEAR OPENING SIZE SHALL COMPLY WITH SECTIONS R310.2 THROUGH R310.2.2 AND R310.4.1. SUCH DEVICES SHALL BE RELEASABLE OR REMOVABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR TOOL OR FORCE GREATER THAN THAT REQUIRED FOR THE NORMAL OPERATION OF THE ESCAPE AND RESCUE OPENING.



**BASEMENT FLOOR PLAN**  
SCALE: 1/4" = 1'-0"

Date:	2025.07.03
Job No:	24-008
Project No:	
Drawn:	
Approved:	
Owner:	SAINTFIELD2 LLC

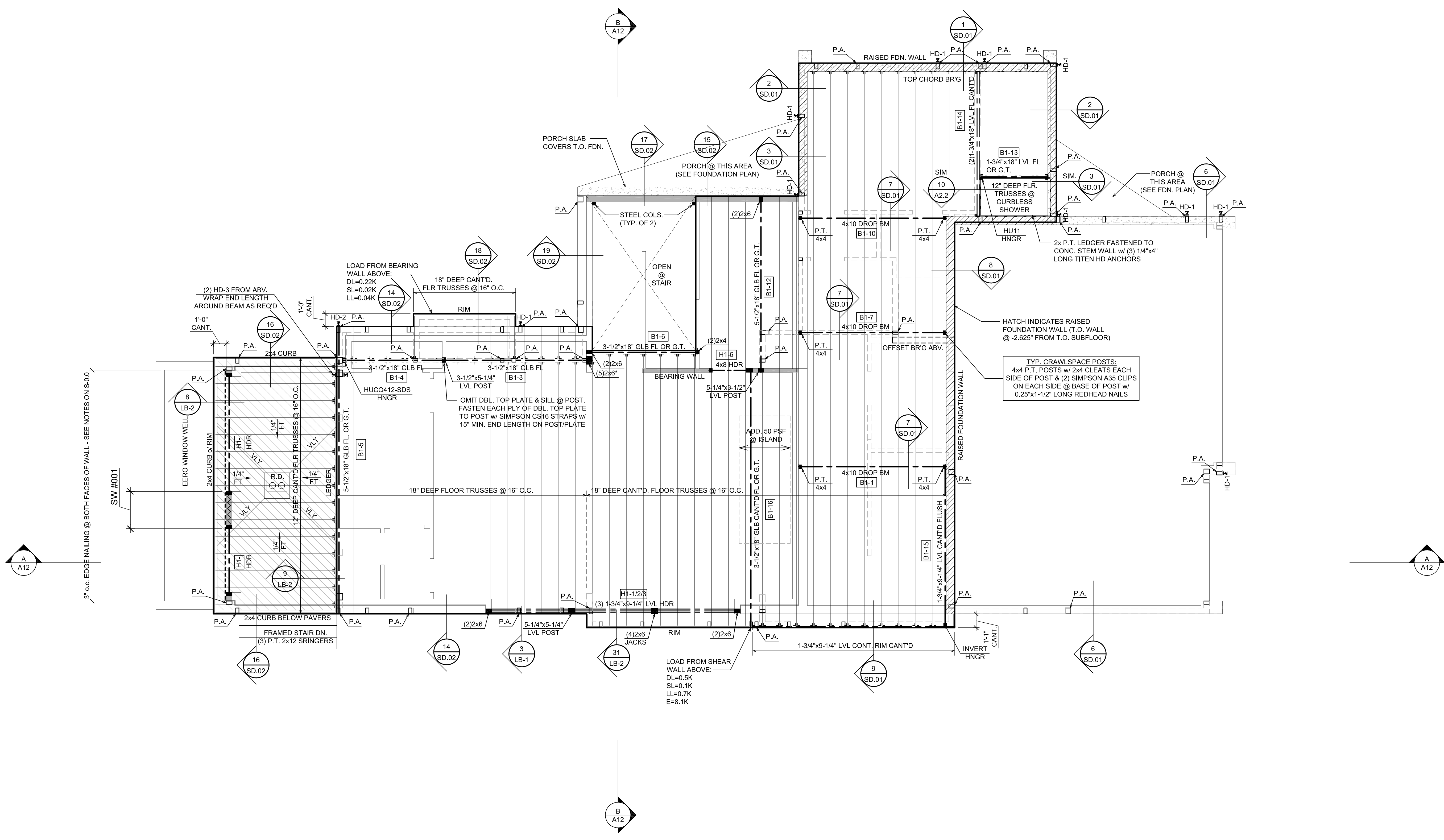


**SEARS PLAT - LOT 2**  
Mercer Island  
Washington  
98040



- PLAN KEY:**
- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
  - INDICATES LOC. OF SOLID SUPPORT (2) STUDS LAM'D W/ 16d @ 16" O.C., (2) 16d EA. END TYP. UNLESS NOTED OTHERWISE
  - P.A. POST ABOVE
  - ⊥ TYPICAL FLOOR TRUSS HANGER
  - ⌊ TYPICAL BEAM HANGER
  - ▭ TYPICAL WALL ABOVE (TYP.)
  - ▭ TYPICAL BR'G WALL ABOVE
  - ▭ TYPICAL WALL BELOW
  - ▭ TYPICAL BR'G WALL BELOW
  - ▭ TYPICAL SHEAR WALL BELOW
  - ▭ SHEAR WALL w/ 3" EDGE NAILING
  - ▭ INDICATES LOC. OF HOLD-DOWN

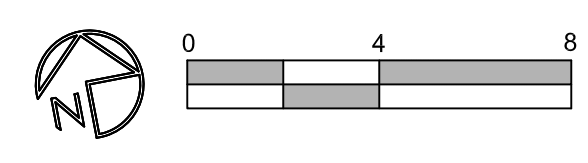
- GENERAL NOTES:**
1. TYPICAL FLOOR FRAMING CONSISTS OF 3/4" T&G APA RATED SHEATHING (SPAN RATING 48/24) OVER 18" FLOOR TRUSSES AT 16" o.c., U.N.O. PROVIDE DOUBLE JOISTS UNDER ALL PARALLEL PARTITIONS THAT EXTEND OVER MORE THAN HALF THE JOIST LENGTH.
  2. GLUE AND NAIL FLOOR SHEATHING w/ 8d AT 6" o.c. AT FRAMED PANEL EDGES AND AT 12" o.c. IN THE FIELD. UNO.
  3. REFER TO SHEET SD-4 FOR TYPICAL FOUNDATION AND CONCRETE DETAILS.
  4. REFER TO GENERAL STRUCTURAL NOTES SHEET S-0 FOR ADDITIONAL REQUIREMENTS.
  5. DO NOT SCALE DRAWINGS. REFER TO LISTED DIMENSIONS.



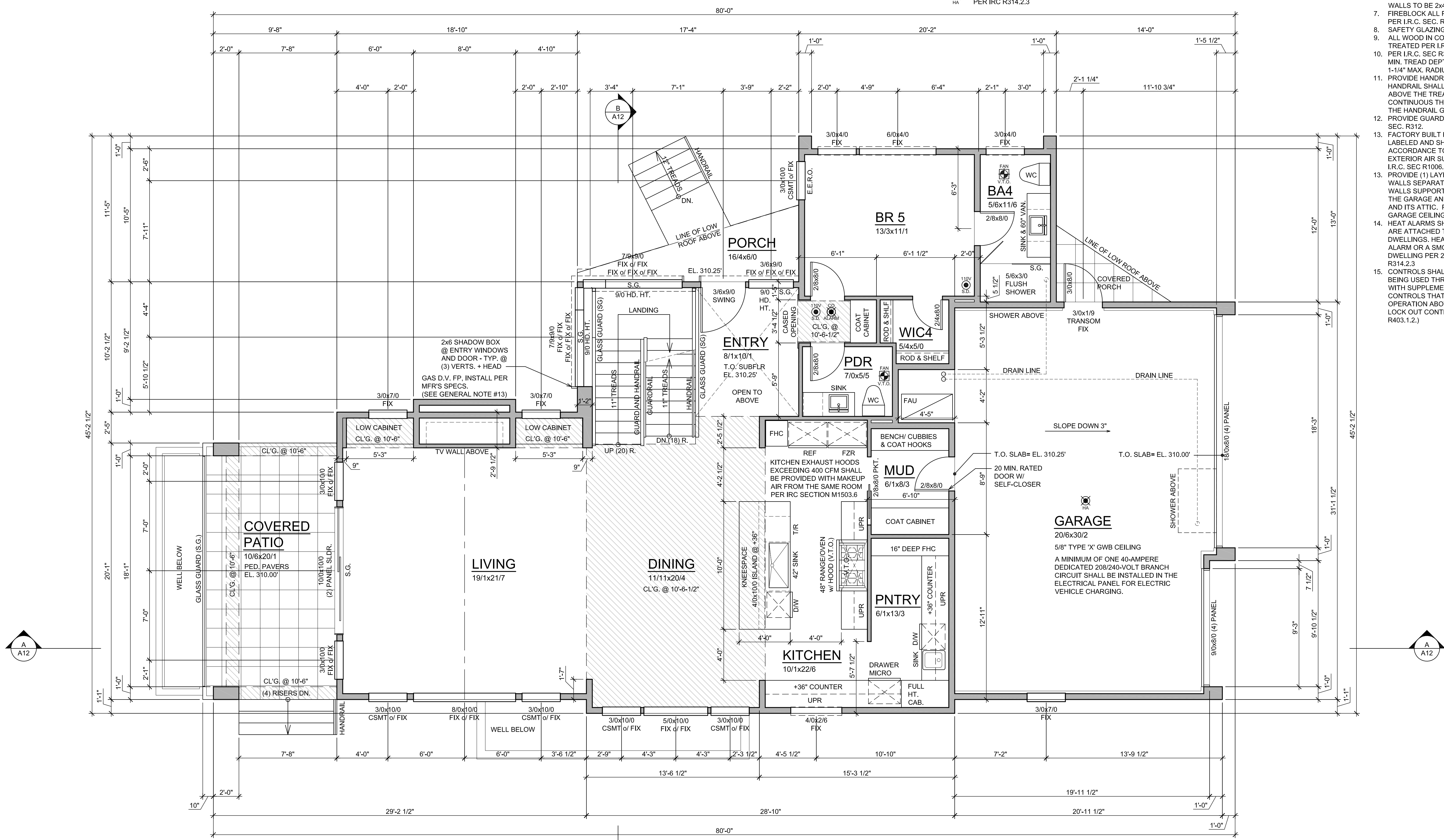
CREATE DECK SLOPE WITH RIDGID INSULATION PANELS

TYP. CRAWLSPACE POSTS:  
 4x4 P.T. POSTS w/ 2x4 CLEATS EACH SIDE OF POST & (2) SIMPSON A35 CLIPS ON EACH SIDE @ BASE OF POST w/ 0.25"x1-1/2" LONG REDHEAD NAILS

LOAD FROM SHEAR WALL ABOVE:  
 DL=0.5K  
 SL=0.1K  
 LL=0.7K  
 E=8.1K



**MAIN FLOOR FRAMING PLAN**  
 SCALE: 1/4" = 1'-0"



**PLAN KEY:**

	INDICATES 110V SMOKE DET. PER I.R.C. 313.4 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP	S.G.	INDICATES SAFETY GLAZING REQUIRED PER IRC SEC. R308.4
	INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1	FIX	INDICATES FIXED FRAME WINDOW
	INDICATES EXHAUST VENTILATION FAN PER COVER SHEET.	CSMT	INDICATES CASEMENT WINDOW
	INDICATES HEAT ALARM PER IRC R314.2.3	AWN	INDICATES AWNING WINDOW (E.G. 2'-8-2/8" = 2'-8"W x 2'-8"H)
		V.T.O.	INDICATES "VENT TO OUTSIDE"

- GENERAL NOTES:**
- PLATE HEIGHT @ MAIN FLOOR IS 11'-0". U.N.O.
  - DIMENSION LINES ARE TO FACE OF STUD U.N.O.
  - WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
  - WINDOW HEAD HEIGHT AT MAIN FLOOR IS 10'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPECS TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
  - WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2'-8-2/8" = 2'-8"W x 2'-8"H)
  - EXTERIOR WALLS TO BE 2x6 STUDS AT 16" o.c., INTERIOR WALLS TO BE 2x4 STUDS AT 16" o.c., U.N.O.
  - FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER I.R.C. SEC. R302.11.
  - SAFETY GLAZING PER I.R.C. SEC. R308.4.
  - ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESSURE TREATED PER I.R.C. SEC. R317.1.
  - PER I.R.C. SEC R311.7.5. MAX. RISER HEIGHT SHALL BE 7'-3/4", MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD; 9/16" MAX.
  - PROVIDE HANDRAILS PER I.R.C. SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
  - PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER I.R.C. SEC. R312.
  - FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS. PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER I.R.C. SEC R1008.
  - PROVIDE (1) LAYER OF 1/2" G.W.B. AT THE GARAGE SIDE OF ALL WALLS SEPARATING THE GARAGE FROM THE RESIDENCE. ALL WALLS SUPPORTING A FLOOR CEILING ASSEMBLY BETWEEN THE GARAGE AND RESIDENCE, AND BETWEEN THE GARAGE AND ITS ATTIC. PROVIDE (1) LAYER 5/8" TYPE 'X' G.W.B. TO GARAGE CEILING IF BELOW HABITABLE ROOMS.
  - HEAT ALARMS SHALL BE INSTALLED IN NEW GARAGES THAT ARE ATTACHED TO OR LOCATED UNDER NEW AND EXISTING DWELLINGS. HEAT ALARMS SHALL BE CONNECTED TO AN ALARM OR A SMOKE ALARM THAT IS INSTALLED IN THE DWELLING PER 2018 WASHINGTON STATE ADVERTISEMENTS IRC R314.2.3
  - CONTROLS SHALL INDICATE WHEN SUPPLEMENTAL HEATING IS BEING USED THROUGH VISUAL MEANS. HEAT PUMPS EQUIPPED WITH SUPPLEMENTAL HEATERS SHALL BE INSTALLED WITH CONTROLS THAT PREVENT SUPPLEMENTAL HEATER OPERATION ABOVE 40°F. AT FINAL INSPECTION THE AUX. HEAT LOCK OUT CONTROL SHALL BE SET TO 35°F OR LESS. (WSEC R403.1.2.)

**GROSS FLOOR AREA**

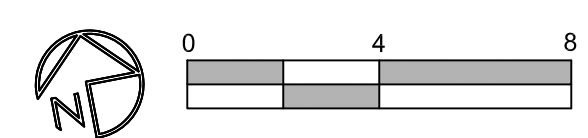
BASEMENT:	169 SF
MAIN LEVEL:	1,834 SF
UPPER LEVEL:	2,261 SF
GARAGE:	656 SF
<b>TOTAL ALLOWED:</b>	<b>5,184 SF</b>
<b>TOTAL PROPOSED:</b>	<b>4,990 SF</b>

**BUILDING AREA SUMMARY**

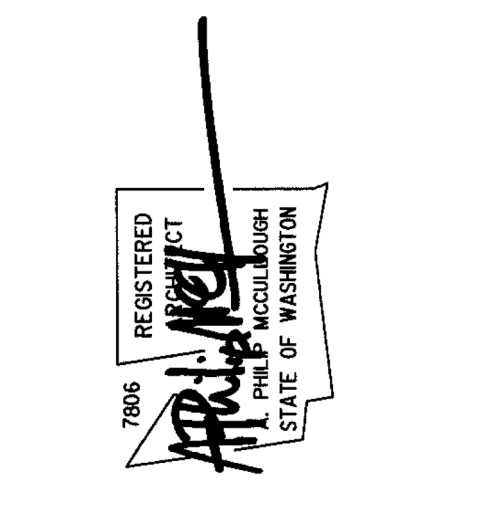
HEATED BASEMENT:	1,105 SF
HEATED MAIN LEVEL:	1,629 SF
HEATED UPPER LEVEL:	2,261 SF
<b>TOTAL HEATED FLOOR AREA:</b>	<b>4,995 SF</b>
GARAGE AREA:	656 S.F.
COVERED PORCH/PATIO:	296 S.F.

# MAIN FLOOR PLAN

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



Date:	2025.07.03
Job No:	24-008
Project No:	
Drawn:	
Approved:	
Owner:	SAINTFIELD2 LLC



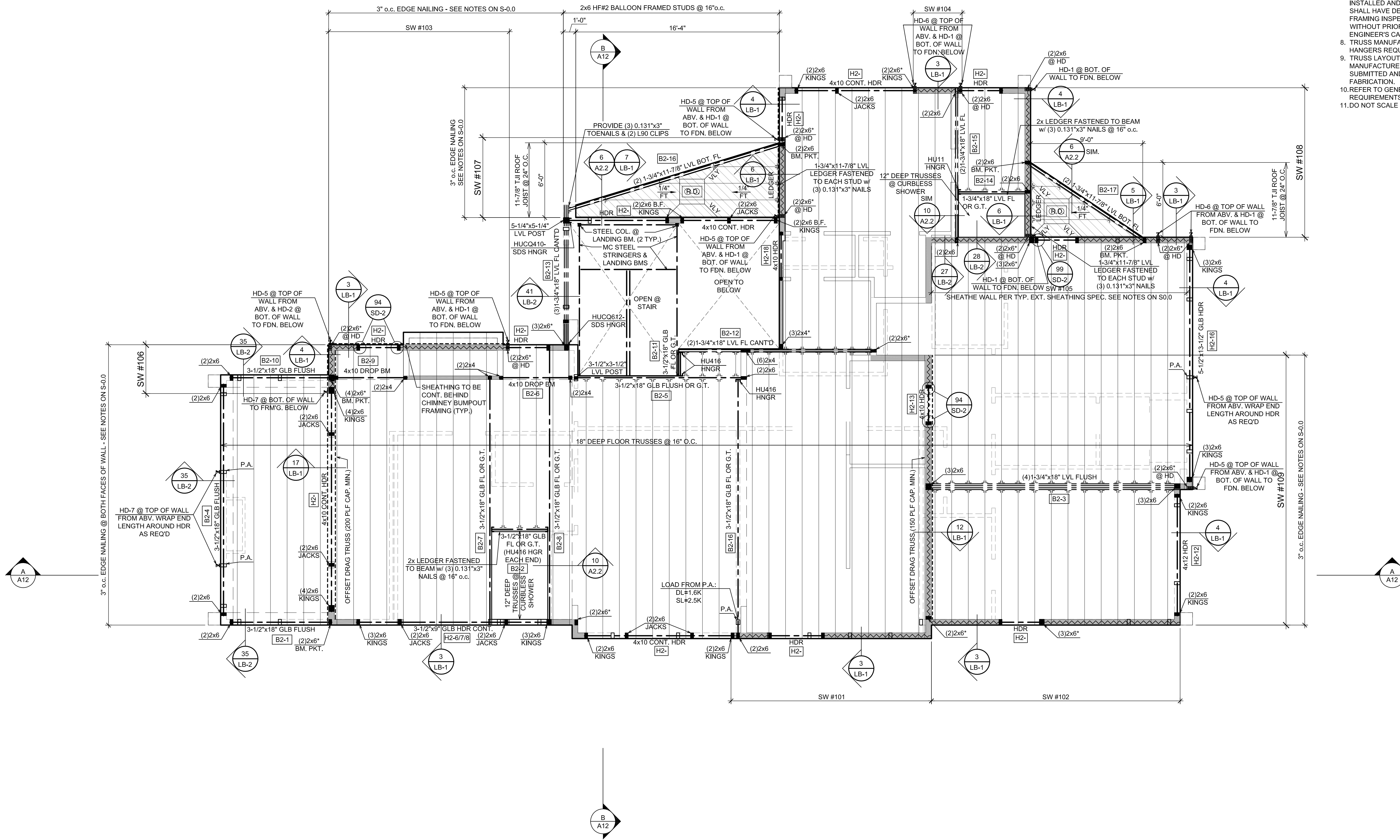
**SEARS PLAT - LOT 2**  
 Mercer Island  
 Washington  
 98040

**PLAN KEY:**

- INDICATES LOC. OF POINT LOAD FROM ABOVE (TYP.)
- INDICATES LOC. OF SOLID SUPPORT
- P.A. POST ABOVE, PROVIDE SOLID BLKG (TYP.)
- ⌋ TYPICAL JOIST HANGER (SIMPSON)
- ⌋ TYPICAL BEAM HANGER (SIMPSON)
- TYPICAL WALL ABOVE
- TYPICAL BR'G WALL ABOVE
- TYPICAL WALL BELOW
- TYPICAL BR'G WALL BELOW
- TYPICAL SHEAR WALL
- SHEAR WALL w/ 3" EDGE NAILING
- INDICATES LOC. OF HOLD-DOWN

**GENERAL NOTES**

1. MAIN FLOOR FRAMING TO BE 18" DEEP FLOOR TRUSSES @ 16" O.C. WITH 3/4" OSB SUBFLOOR, GLUED AND NAILED, U.N.O. ADHESIVES SHALL CONFORM TO APA SPEC. AFG 01. PROVIDE T&G EDGES AT LONG PANEL EDGES. STAGGER SUBFLOOR END JOINTS.
2. EXTERIOR HEADERS SHALL BE FL. BOT. 4x10 DF#2, OR FLOOR GIRDER TRUSS U.N.O. PROVIDE (1) 2x TRIMMER @ ALL HEADERS U.N.O. FILL HEADER CAVITY WITH R-10 INSULATION.
3. PROVIDE (2) BEARING (TRIMMER) STUDS AT EACH END OF HEADERS, BEAMS AND GIRDER TRUSSES 6'-0" IN LENGTH AND OVER, U.N.O.
4. WHERE POSTS OCCUR PROVIDE SOLID VERTICAL GRAIN BLOCKING THRU FLOOR TO MATCHING SUPPORTS BELOW, U.N.O. ALL MARKED POSTS ARE BELOW THE FRAMING SHOWN ON THIS PLAN.
5. PROVIDE SOLID BLOCKING IN FLOOR AT ALL WALLS AND POINT LOADS FROM ABOVE.
6. BEARING WALLS ARE SHADED.
7. ALL TRUSSES SHALL CARRY MANUFACTURER'S STAMP. SHALL BE INSTALLED AND BRACED TO MANUFACTURER'S SPECIFICATIONS. SHALL HAVE DESIGN DETAILS AND DRAWINGS ON SITE FOR FRAMING INSPECTION, AND WILL NOT BE FIELD ALTERED WITHOUT PRIOR BUILDING DEPARTMENT APPROVAL OF ENGINEER'S CALCULATIONS.
8. TRUSS MANUFACTURER TO SUPPLY ALL BLOCKING AND HANGERS REQUIRED AT MANUFACTURED TRUSSES.
9. TRUSS LAYOUT TO BE REVIEWED AND APPROVED BY TRUSS MANUFACTURER PRIOR TO CONSTRUCTION. ALL CHANGES TO BE SUBMITTED AND APPROVED BY ARCHITECT PRIOR TO FABRICATION.
10. REFER TO GENERAL STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.
11. DO NOT SCALE DRAWINGS. REFER TO LISTED DIMENSIONS.



**UPPER FLOOR FRAMING PLAN**

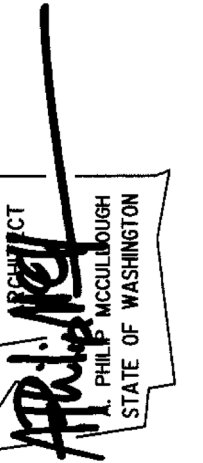
SCALE: 1/4" = 1'-0"

Comment  
Revisions

Date: 2025.07.03  
Job No: 24-008

Project No:  
Drawn:  
Approved:

Owner  
**SAINTFIELD2 LLC**



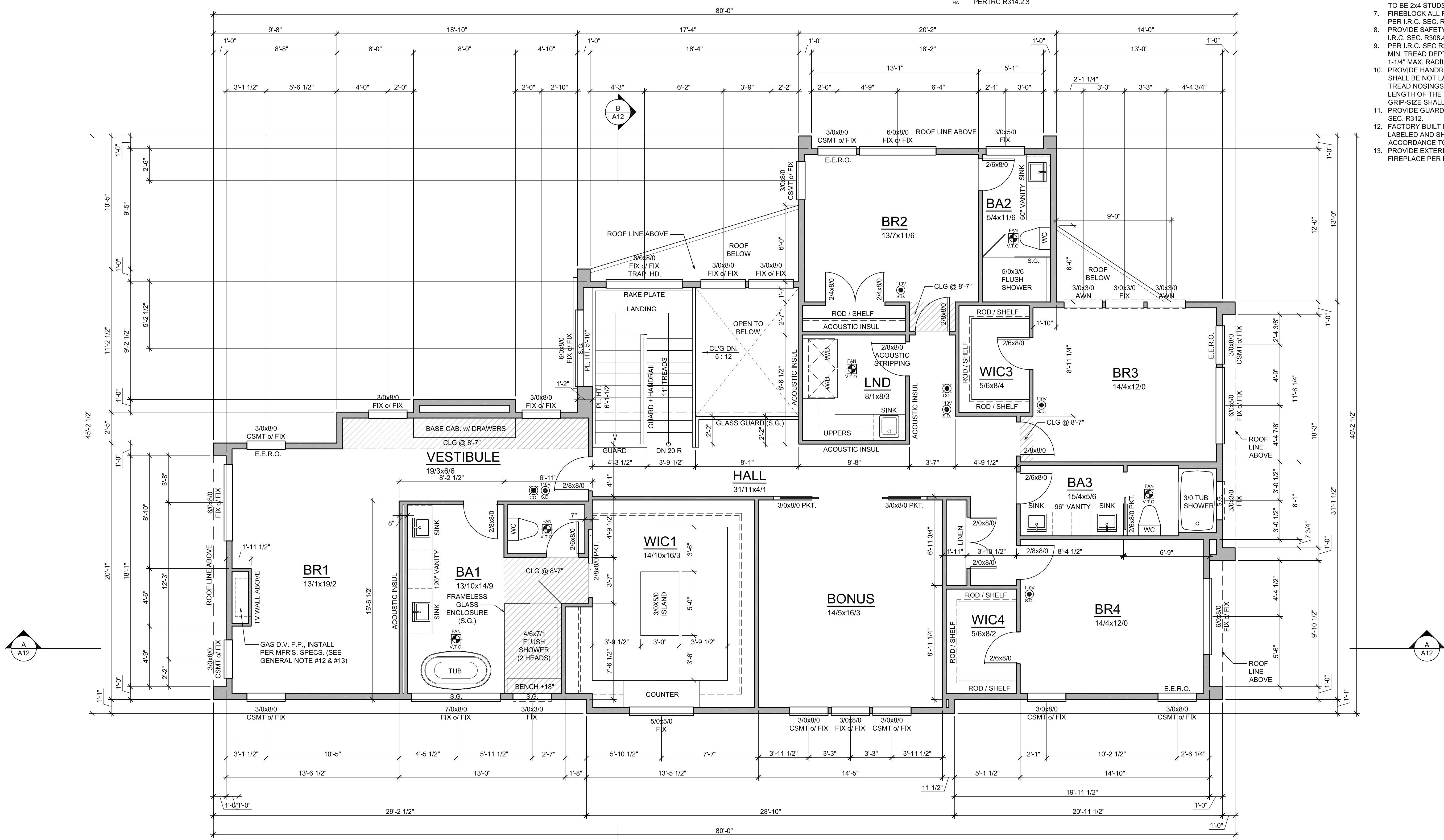
**SEARS PLAT - LOT 2**

Mercer Island  
Washington  
98040

PERMIT APPLICATION

Upper Floor  
Plan

**A7**

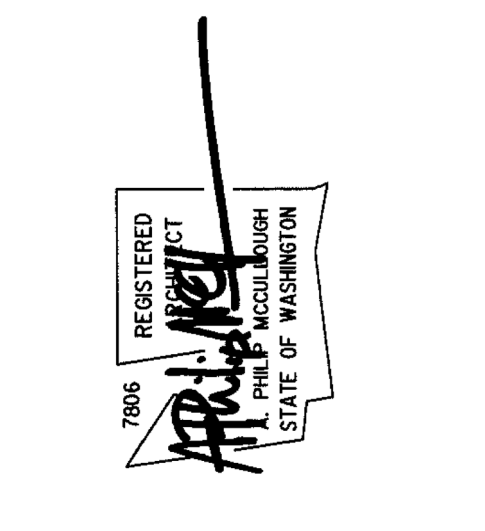


**PLAN KEY:**

	INDICATES 110V SMOKE DET. PER I.R.C. 313.4 INTERCONNECTED W/ EMERGENCY BATTERY BACKUP	S.G.	INDICATES SAFETY GLAZING REQUIRED PER IRC SEC. R308.4
	INDICATES CARBON MONOXIDE ALARM PER I.R.C. R315.1	FIX	INDICATES FIXED FRAME WINDOW
	INDICATES EXHAUST VENTILATION FAN PER COVER SHEET.	CSMT	INDICATES CASEMENT WINDOW
	INDICATES HEAT ALARM PER IRC R314.2.3	AWN	INDICATES AWNING WINDOW
		V.T.O.	INDICATES "VENT TO OUTSIDE"

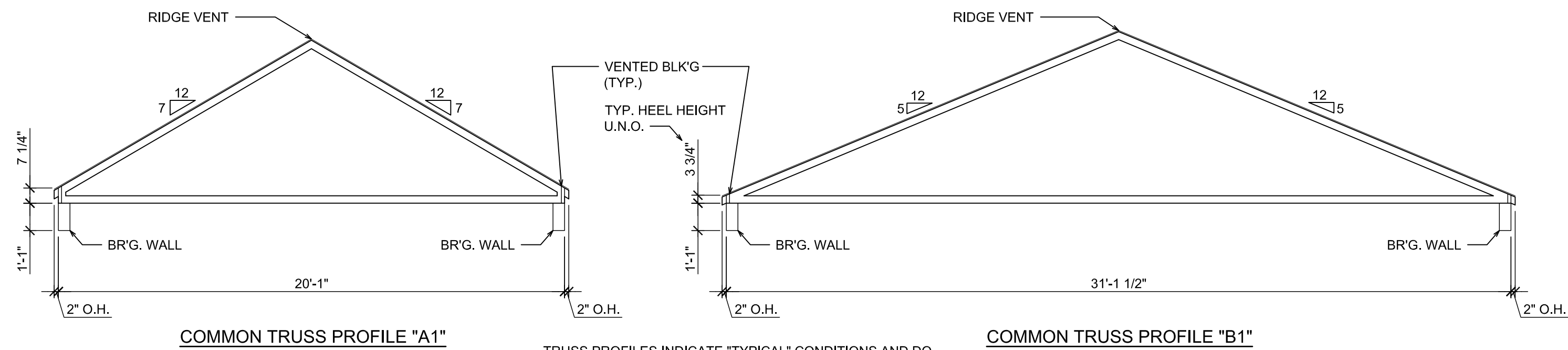
- GENERAL NOTES:**
- PLATE HEIGHT @ UPPER FLOOR IS 9'-1". U.N.O.
  - DIMENSION LINES ARE TO FACE OF STUD U.N.O.
  - WINDOW SIZES & ROUGH OPENINGS TO BE VERIFIED BY CONTRACTOR.
  - WINDOW HEAD HEIGHT AT UPPER FLOOR IS 8'-0" ABOVE SUBFLOOR, U.N.O. IF NOMINAL DOOR AND WINDOW HEIGHTS ARE SIMILAR, COORDINATE WITH DOOR AND WINDOW SPECS TO LOCATE FINAL ELEVATION OF THE HEAD HEIGHTS SO THAT ALL DOOR AND WINDOW TRIM ALIGN.
  - WINDOW AND DOOR SIZES ARE DIMENSIONED IN FEET AND INCHES (E.G. 2/8-2/8= 2'-8"W x 2'-8"H)
  - EXTERIOR WALLS TO BE 2x6 STUDS AT 16" o.c., INTERIOR WALLS TO BE 2x4 STUDS AT 16" o.c., U.N.O.
  - FIREBLOCK ALL PLUMBING PENETRATIONS AND STAIR RUNS PER I.R.C. SEC. R302.11
  - PROVIDE SAFETY GLAZING AT HAZARDOUS LOCATIONS PER I.R.C. SEC. R308.4.
  - PER I.R.C. SEC R311.7.5. MAX. RISER HEIGHT SHALL BE 7-3/4". MIN. TREAD DEPTH SHALL BE 10". STAIR NOSINGS: 3/4" MIN., 1-1/4" MAX. RADIUS @ LEADING EDGE OF TREAD; 9/16" MAX.
  - PROVIDE HANDRAILS PER I.R.C. SEC. R311.7.8. TOP OF HANDRAIL SHALL BE NOT LESS THAN 34" OR MORE THAN 38" ABOVE THE TREAD NOSINGS. HANDRAILS SHALL BE CONTINUOUS THE FULL LENGTH OF THE FLIGHT PER R311.7.8.2. THE HANDRAIL GRIP-SIZE SHALL BE PROVIDED PER R311.7.8.3.
  - PROVIDE GUARDS (MIN. 36" HEIGHT) IN LOCATIONS PER I.R.C. SEC. R312.
  - FACTORY BUILT FIREPLACES & CHIMNEYS SHALL BE LISTED & LABELED AND SHALL BE INSTALLED & TERMINATED IN ACCORDANCE TO THE CONDITIONS OF THE LISTINGS.
  - PROVIDE EXTERIOR AIR SUPPLY TO ANY FACTORY-BUILT FIREPLACE PER I.R.C. SEC R1006.

Date:	2025.07.03
Job No:	24-008
Project No:	
Drawn:	
Approved:	
Owner:	SAINTFIELD2 LLC



**SEARS PLAT - LOT 2**  
 Mercer Island  
 Washington  
 98040

**UPPER FLOOR PLAN**  
 SCALE: 1/4" = 1'-0"



TRUSS PROFILES INDICATE "TYPICAL" CONDITIONS AND DO NOT INDICATE MODIFICATIONS REQUIRED FOR SPECIFIC TRUSSES. TRUSS DIMENSIONS TO BE FIELD VERIFIED BY CONTRACTOR. REFER TO APPROVED TRUSS SHOP DRAWINGS FOR EXACT SIZE AND DIMENSION OF EACH TRUSS AND CONDITION.

**PLAN KEY:**

- INDICATES LOC. OF SOLID SUPPORT
- (2) STUDS LAMD W/ 10d @ 16" O.C.
- (2) 10d EA. END TYP. UNLESS NOTED OTHERWISE
- ⌋ TYPICAL RAFTER HANGER (SIMPSON)
- ⌋ TYPICAL BEAM HANGER (SIMPSON)
- D.S.O DOWNSPOUT
- ▨ TYPICAL WALL BELOW
- ▨ TYPICAL EXT. / INT. BR'G. WALL
- ▨ TYPICAL SHEAR WALL
- ▨ 3 INCH o.c. SHEAR WALL
- ▨ INDICATES LOC. OF HOLD-DOWN
- ▨ HATCHED AREA INDICATES OVERFRAMING

**GENERAL NOTES:**

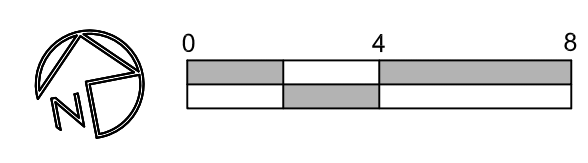
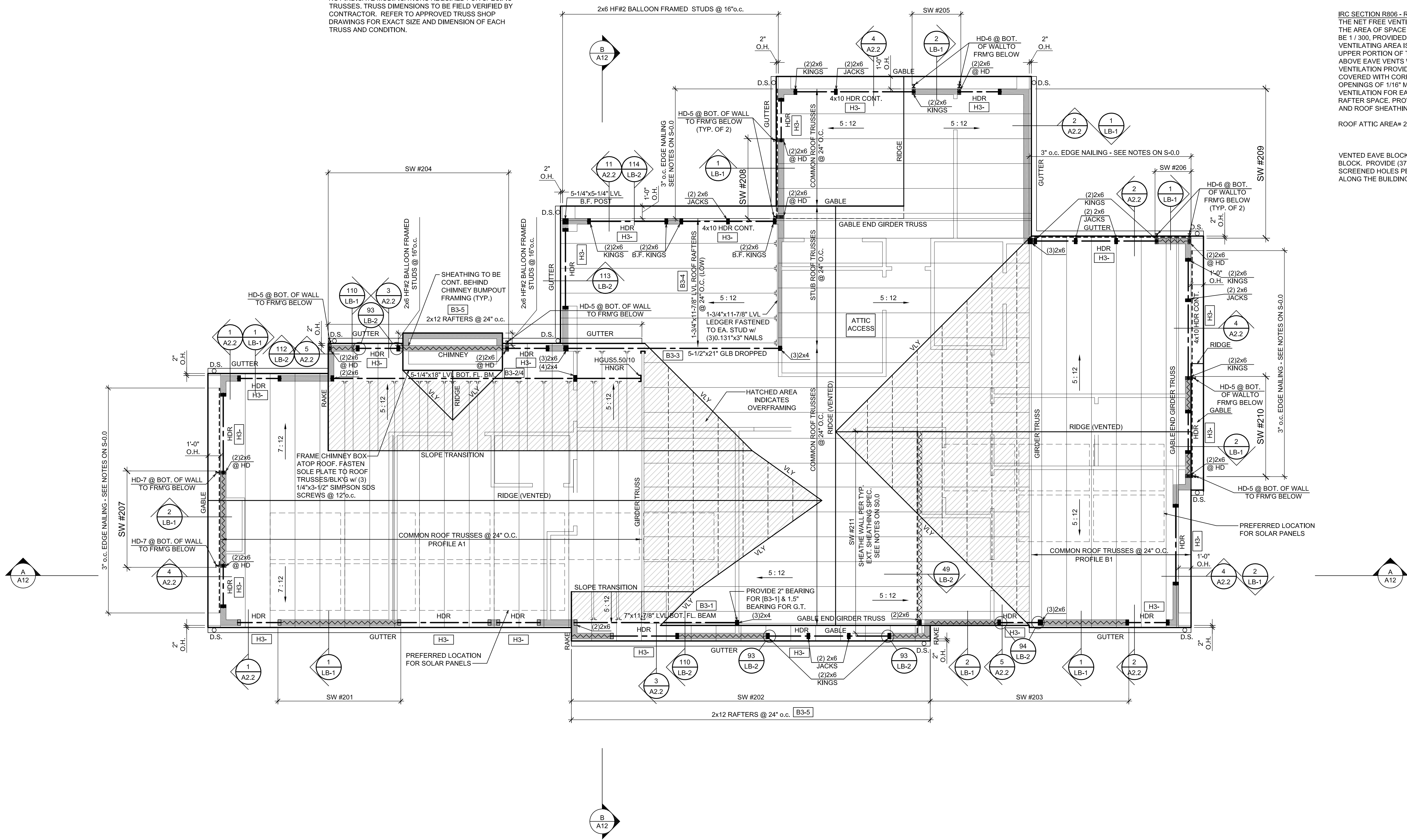
1. BEARING WALLS ARE SHADED.
2. 5/12 ROOF PITCH, U.N.O.
3. EAVE OVERHANG TO BE 2", RAKE OVERHANG TO BE 0" U.N.O.
4. APPLY ROOF UNDERLAYMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ICE BARRIER IS REQUIRED FOR LOW SLOPE ROOFS.
5. APPLY SINGLE PLY ROOFING MEMBRANE IN ACCORDANCE WITH I.R.C. SEC. 905.12.
6. ROOF FRAMING TO BE MANUFACTURED TRUSSES @ 24" O.C., U.N.O.
7. 4x10 AT ALL EXT. OPENINGS U.N.O. PROVIDE (1) 2x TRIMMER @ ALL HEADERS U.N.O. FILL HEADER CAVITY WITH R-10 INSULATION.
8. COLUMNS @ HEADERS, BEAMS, & GIRDERS TO BE (2) 2x STUDS (U.N.O.)
9. ALL MARKED POSTS ARE LOCATED BELOW THE FRAMING SHOWN ON THIS PLAN.

**IRC SECTION R806 - ROOF VENTILATION**

THE NET FREE VENTILATING AREA SHALL NOT BE LESS THAN 1 / 150 OF THE AREA OF SPACE TO BE VENTILATED, EXCEPT THAT THE AREA MAY BE 1 / 300, PROVIDED AT LEAST 40% (50% MAX.) OF THE REQUIRED VENTILATING AREA IS PROVIDED BY VENTILATORS LOCATED IN THE UPPER PORTION OF THE SPACE TO BE VENTILATED AT LEAST 3 FEET ABOVE EAVE VENTS WITH THE BALANCE OF THE REQUIRED VENTILATING PROVIDED BY EAVE VENTS. THE OPENINGS SHALL BE COVERED WITH CORROSION-RESISTANT METAL MESH WITH MESH OPENINGS OF 1/16" MIN. & 1/4" MAX. IN DIMENSION. PROVIDE CROSS VENTILATION FOR EACH SEPARATE SPACE OF ENCLOSED ATTIC OR RAFTER SPACE. PROVIDE MIN. 1" CLEARANCE BETWEEN INSULATION AND ROOF SHEATHING.

ROOF ATTIC AREA= 2460 S.F. / 300 = 8.2 S.F. (1180 S.I.) REQ'D. VENT AREA  
 = 590 S.I. REQ'D. LOWER VENT AREA  
 = 590 S.I. REQ'D. RIDGE VENT AREA

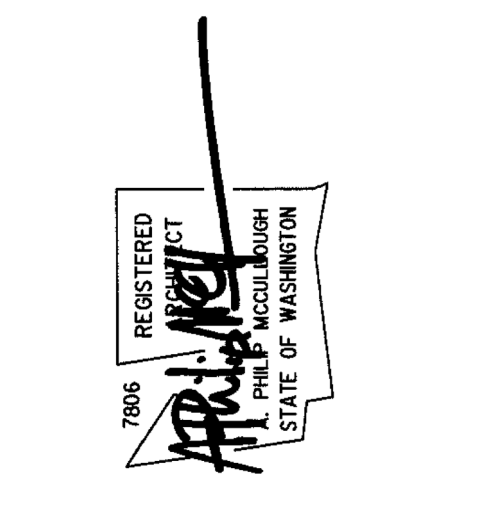
VENTED EAVE BLOCKING PROVIDES 16 S.I. OF VENTING PER EAVE BLOCK. PROVIDE (3) VENTED EAVE BLOCKS W/ (3) 1-1/2" DIA. SCREENED HOLES PER EAVE BLOCK. PROVIDE CONT. VENT STRIPS ALONG THE BUILDING PERIMETER @ ALL CLOSINGS.



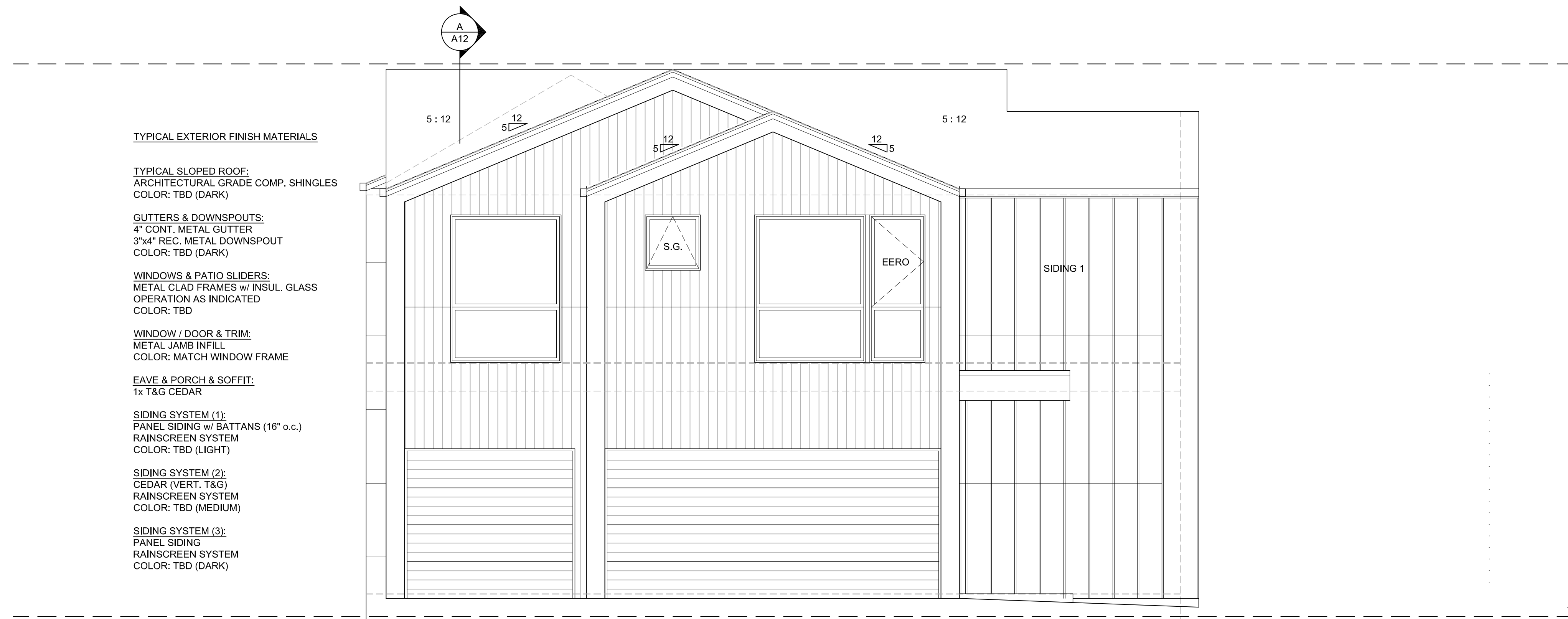
**ROOF FRAMING PLAN**

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

Date:	2025.07.03
Job No:	24-008
Project No:	
Drawn:	
Approved:	
Owner:	SAINTFIELD2 LLC



**SEARS PLAT - LOT 2**  
 Mercer Island  
 Washington  
 98040



**TYPICAL EXTERIOR FINISH MATERIALS**

**TYPICAL SLOPED ROOF:**  
ARCHITECTURAL GRADE COMP. SHINGLES  
COLOR: TBD (DARK)

**GUTTERS & DOWNSPOUTS:**  
4" CONT. METAL GUTTER  
3"x4" REC. METAL DOWNSPOUT  
COLOR: TBD (DARK)

**WINDOWS & PATIO SLIDERS:**  
METAL CLAD FRAMES w/ INSUL. GLASS  
OPERATION AS INDICATED  
COLOR: TBD

**WINDOW / DOOR & TRIM:**  
METAL JAMB INFILL  
COLOR: MATCH WINDOW FRAME

**EAVE & PORCH & SOFFIT:**  
1x T&G CEDAR

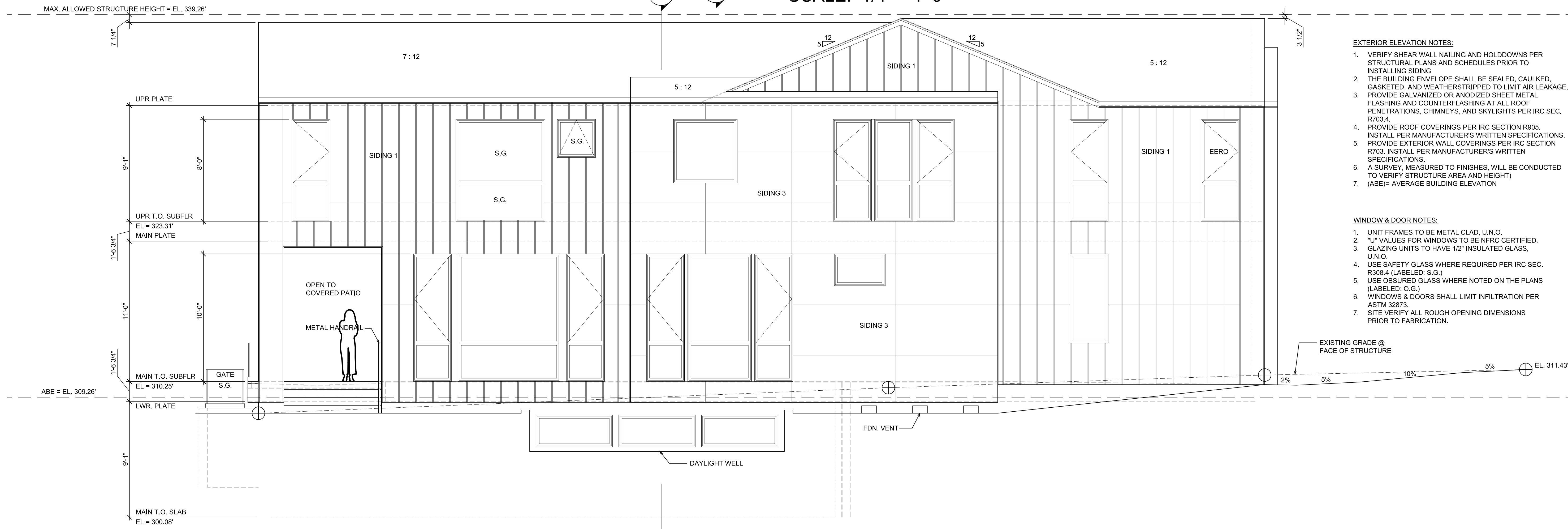
**SIDING SYSTEM (1):**  
PANEL SIDING w/ BATTANS (16" o.c.)  
RAINSCREEN SYSTEM  
COLOR: TBD (LIGHT)

**SIDING SYSTEM (2):**  
CEDAR (VERT. T&G)  
RAINSCREEN SYSTEM  
COLOR: TBD (MEDIUM)

**SIDING SYSTEM (3):**  
PANEL SIDING  
RAINSCREEN SYSTEM  
COLOR: TBD (DARK)

**EAST ELEVATION**

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



**EXTERIOR ELEVATION NOTES:**

1. VERIFY SHEAR WALL NAILING AND HOLDDOWNS PER STRUCTURAL PLANS AND SCHEDULES PRIOR TO INSTALLING SIDING
2. THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED, GASKETED, AND WEATHERSTRIPPED TO LIMIT AIR LEAKAGE.
3. PROVIDE GALVANIZED OR ANODIZED SHEET METAL FLASHING AND COUNTERFLASHING AT ALL ROOF PENETRATIONS, CHIMNEYS, AND SKYLIGHTS PER IRC SEC. R703.4.
4. PROVIDE ROOF COVERINGS PER IRC SECTION R905. INSTALL PER MANUFACTURER'S WRITTEN SPECIFICATIONS.
5. PROVIDE EXTERIOR WALL COVERINGS PER IRC SECTION R703. INSTALL PER MANUFACTURER'S WRITTEN SPECIFICATIONS.
6. A SURVEY, MEASURED TO FINISHES, WILL BE CONDUCTED TO VERIFY STRUCTURE AREA AND HEIGHT)
7. (ABE) = AVERAGE BUILDING ELEVATION

**WINDOW & DOOR NOTES:**

1. UNIT FRAMES TO BE METAL CLAD, U.N.O.
2. "U" VALUES FOR WINDOWS TO BE NFRC CERTIFIED.
3. GLAZING UNITS TO HAVE 1/2" INSULATED GLASS, U.N.O.
4. USE SAFETY GLASS WHERE REQUIRED PER IRC SEC. R308.4 (LABELED: S.G.)
5. USE OBTURED GLASS WHERE NOTED ON THE PLANS (LABELED: O.G.)
6. WINDOWS & DOORS SHALL LIMIT INFILTRATION PER ASTM 32873.
7. SITE VERIFY ALL ROUGH OPENING DIMENSIONS PRIOR TO FABRICATION.

**SOUTH ELEVATION**

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

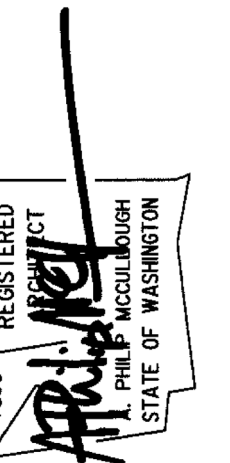
Comment

Revisions

2025.07.03  
24-008

Date: 2025.07.03  
Job No: 24-008  
Project No:  
Drawn:  
Approved:

Owner  
SAINTFIELD2 LLC



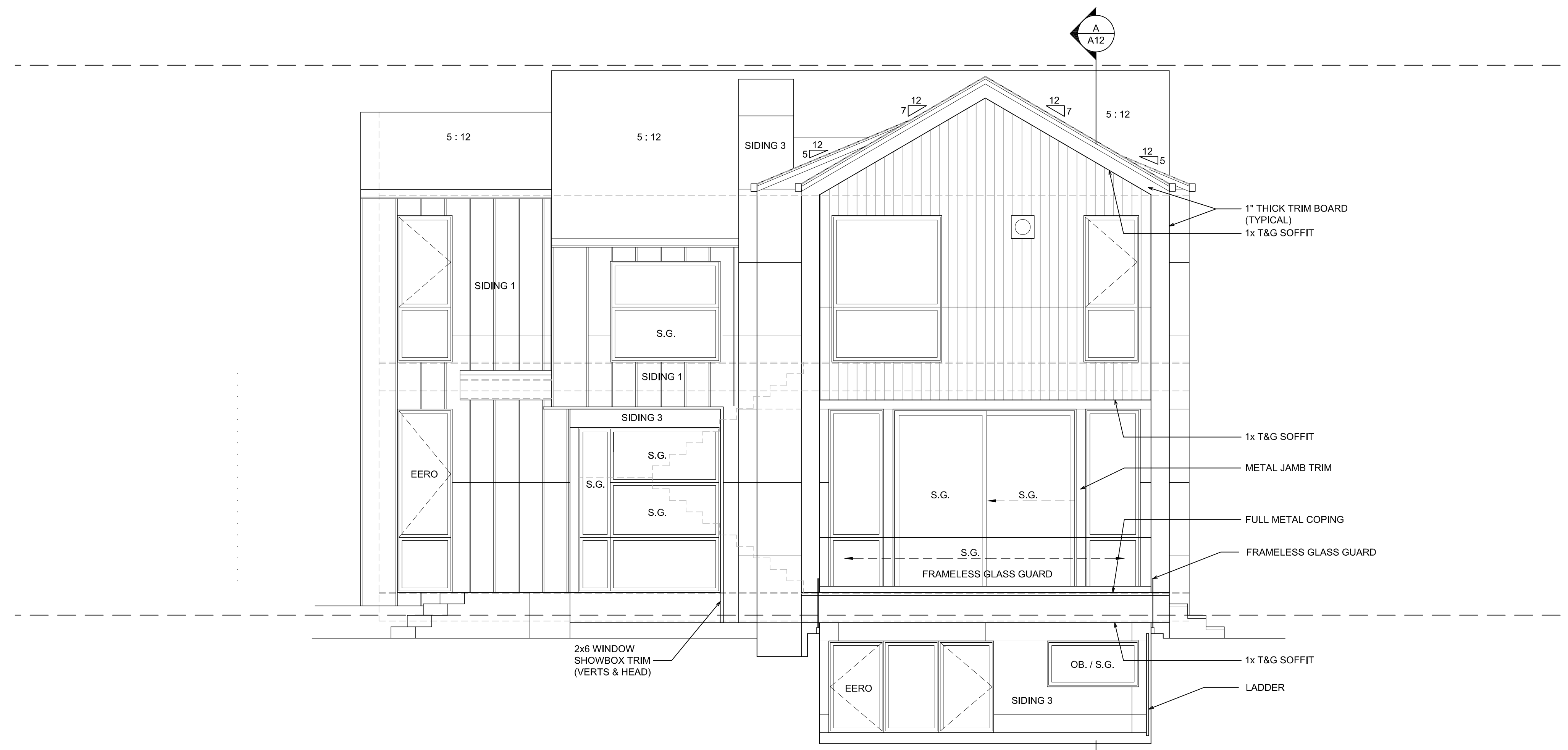
**SEARS PLAT - LOT 2**

Mercer Island  
Washington  
98040

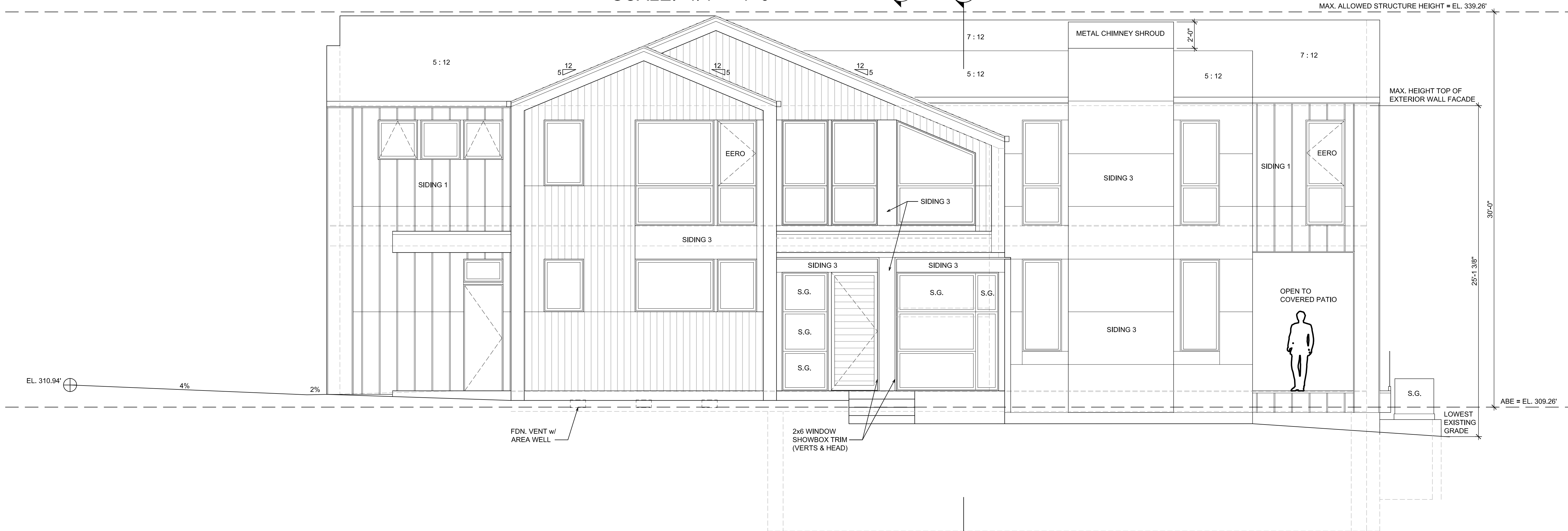
PERMIT APPLICATION

Elevations

**A10**

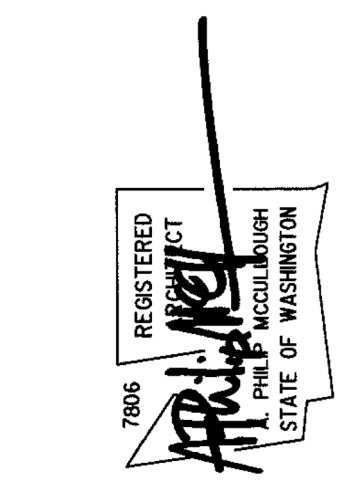


**WEST ELEVATION**  
SCALE: 1/4" = 1'-0"



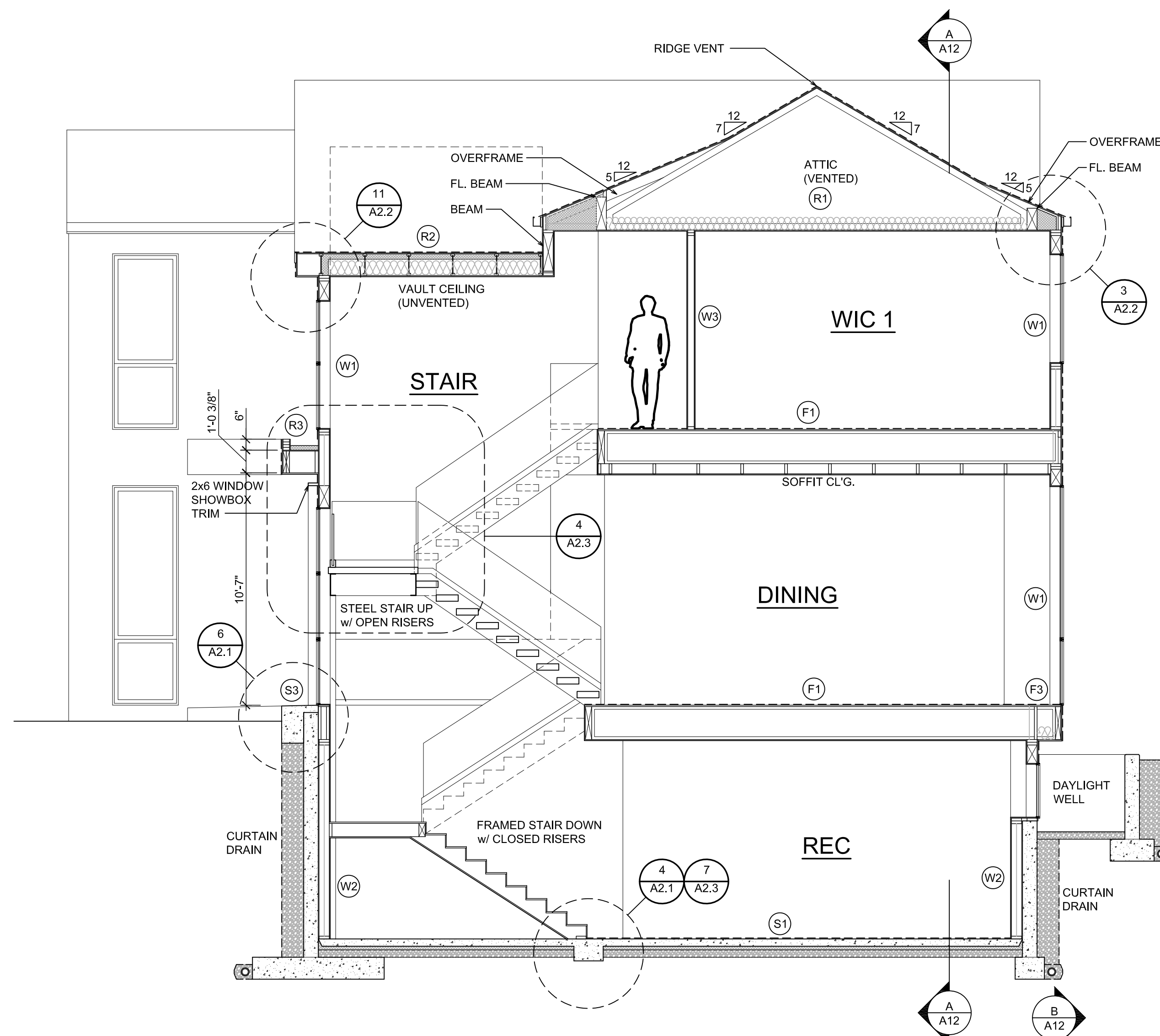
**NORTH ELEVATION**  
SCALE: 1/4" = 1'-0"

Date: 2025.07.03  
Job No: 24-008  
Project No:  
Drawn:  
Approved:  
Owner: SAINTFIELD2 LLC



**SEARS PLAT - LOT 2**  
Mercer Island  
Washington  
98040

PERMIT APPLICATION  
Elevations  
**A11**

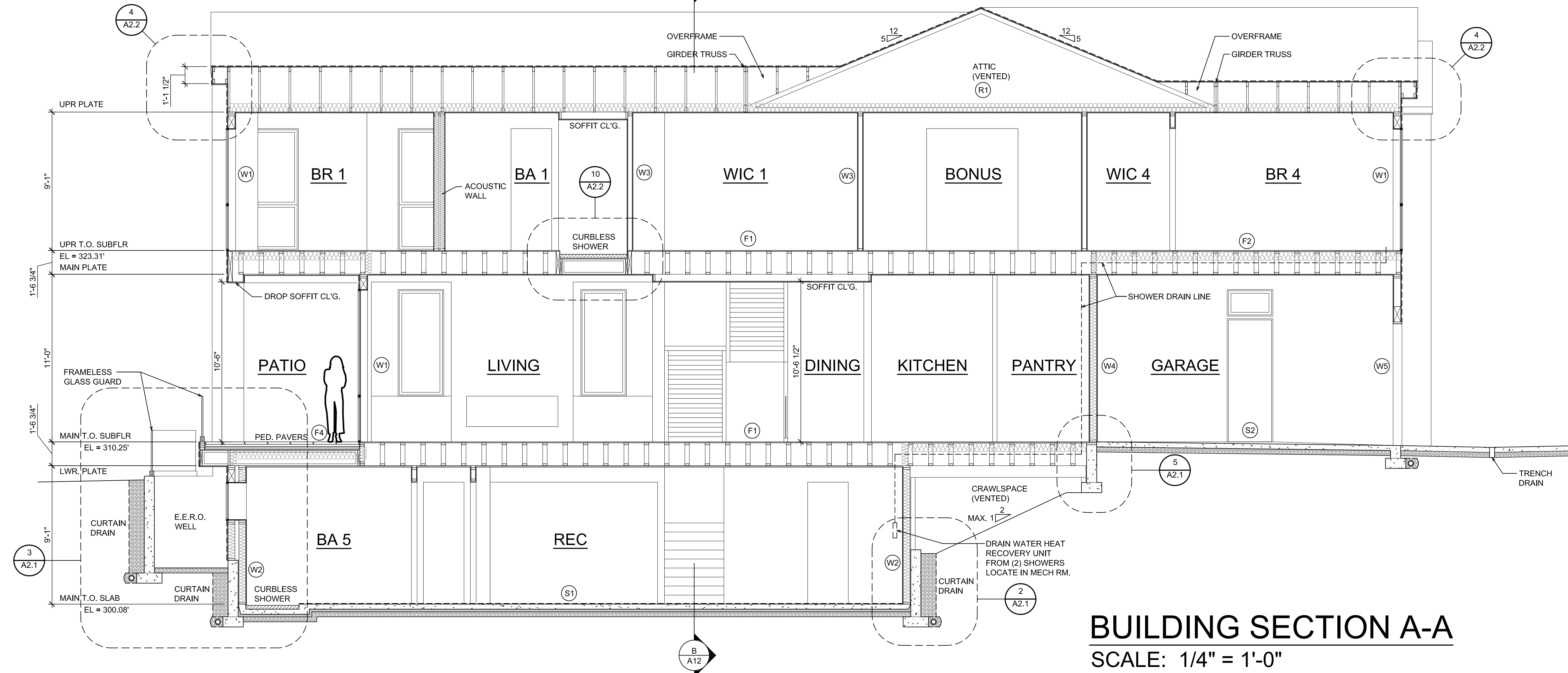


- (W1) TYPICAL ABOVE GRADE EXTERIOR WALL:  
-SIDING SYSTEM PER ELEVATIONS  
-NO. 15 ASPHALT SATURATED FELT (WRB)  
-1/2" SHEATHING PER STRUCTURAL  
-2x6 STUDS PER STRUCTURAL  
-R-21 BATT INSULATION PER COVER SHEET  
-1/2" G.W.B. INTERIOR FINISH  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (W2) TYPICAL BELOW GRADE EXTERIOR WALL:  
-CURTAIN DRAIN SYSTEM  
-CONCRETE WALL PER PLANS  
-1/2" AIR SPACE  
-2x6 STUDS PER STRUCTURAL  
-R-21 BATT INSULATION PER COVER SHEET  
-1/2" G.W.B. INTERIOR FINISH  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (W3) TYPICAL INTERIOR WALL:  
-1/2" G.W.B. INTERIOR FINISH  
-2x4 STUDS PER STRUCTURAL (2x6 WHERE NOTED ON PLANS)  
-1/2" G.W.B. INTERIOR FINISH
- (W4) TYPICAL HOUSE/GARAGE WALL:  
-1/2" G.W.B. INTERIOR FINISH  
-2x6 STUDS PER STRUCTURAL  
-R-21 BATT INSULATION PER COVER SHEET  
-1/2" SHEATHING PER STRUCTURAL  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (W5) TYPICAL GARAGE EXTERIOR WALL:  
-SIDING SYSTEM PER ELEVATIONS  
-NO. 15 ASPHALT SATURATED FELT (WRB)  
-2x6 STUDS PER STRUCTURAL  
-1/2" G.W.B. INTERIOR FINISH  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL

- (F1) TYPICAL FLOOR of HEATED SPACE:  
-FINISH FLOOR PER PLAN  
-3/4" T&G SHEATHING PER STRUCTURAL (GLUE & NAIL TO JOISTS)  
-FLOOR JOISTS OR TRUSSES PER FRAMING PLAN  
-R-30 BATT INSULATION PER COVER  
-5/8" G.W.B. CEILING (TYPE 'X' WHERE INDICATED)  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (F2) TYPICAL FLOOR of GARAGE:  
-FINISH FLOOR PER PLAN  
-3/4" T&G SHEATHING PER STRUCTURAL (GLUE & NAIL TO JOISTS)  
-FLOOR JOISTS OR TRUSSES PER FRAMING PLAN  
-R-30 BATT INSULATION PER COVER  
-5/8" G.W.B. CEILING (TYPE 'X' WHERE INDICATED)  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (F3) TYPICAL FLOOR of EXTERIOR SPACE:  
-FINISH FLOOR PER PLAN  
-3/4" T&G SHEATHING PER STRUCTURAL (GLUE & NAIL TO JOISTS)  
-FLOOR JOISTS OR TRUSSES PER FRAMING PLAN  
-R-30 BATT INSULATION PER COVER  
-VENTED SOFFIT PANEL  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (F4) FLOOR @ DECK PAVERS of INTERIOR SPACE (UNVENTED):  
-PEDESTAL PAVER SYSTEM  
-PROTECTION BOARD  
-SINGLE PLY WATER PROOF MEMBRANE  
-TAPERED INSULATION PANELS  
-1/2" SHEATHING PER STRUCTURAL (GLUE & NAIL TO JOISTS)  
-FLOOR JOISTS PER FRAMING PLAN  
-FILL CAVITY w/ EXPANDING FOAM INSULATION  
-5/8" G.W.B. CEILING  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL

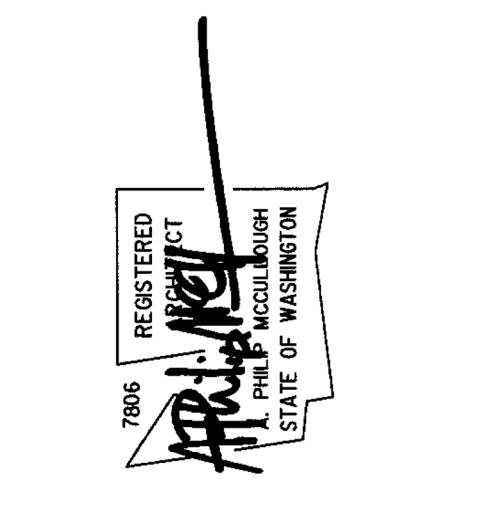
- (R1) TYPICAL ROOF CONSTRUCTION of HEATED (VENTED):  
-ARCHITECTURAL GRADE COMPOSITION ROOF SHINGLES (-SLOPE TO GUTTER)  
-1/2" SHEATHING PER STRUCTURAL  
-ROOF TRUSSES PER FRAMING PLAN  
-R-60 BATT INSULATION PER COVER  
-5/8" G.W.B. CEILING  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (R2) VAULT ROOF CONSTRUCTION of HEATED (VENTED):  
-ARCHITECTURAL GRADE COMPOSITION ROOF SHINGLES (-SLOPE TO GUTTER)  
-1/2" SHEATHING PER STRUCTURAL  
-ROOF TRUSSES PER FRAMING PLAN  
-R-49 HYBRID (R-30 BATT + 3" SPF) INSULATION PER COVER  
-5/8" G.W.B. CEILING  
-AIR BARRIER PER COVER SHEET: MOISTURE CONTROL
- (R3) FLAT ROOF CONSTRUCTION of EXTERIOR SPACE (VENTED):  
-SINGLE PLY ROOF MEMBRANE SYSTEM  
-TAPERED INSULATION PANELS (SLOPE TO EDGE)  
-1/2" SHEATHING PER STRUCTURAL  
-ROOF RAFTERS (FLAT, NO SLOPE) PER FRAMING PLAN  
-1x T&G SOFFIT CEILING
- (S1) TYPICAL SLAB-ON-GRADE (INTERIOR):  
-FINISH FLOOR PER PLAN  
-4" CAST-IN-PLACE CONCRETE  
-10 MIL VAPOR RETARDER  
-R-10 RIGID INSULATION PER COVER SHEET  
-4" GRANULAR FILL
- (S2) GARAGE SLAB-ON-GRADE (GARAGE):  
-4" CAST-IN-PLACE CONCRETE (SLOPE PER PLAN)  
-10 MIL VAPOR RETARDER  
-4" GRANULAR FILL
- (S3) PATIO SLAB-ON-GRADE:  
-4" CAST-IN-PLACE CONCRETE (SLOPE PER PLAN)  
-4" GRANULAR FILL

**BUILDING SECTION B-B**  
SCALE: 1/4" = 1'-0"



**BUILDING SECTION A-A**  
SCALE: 1/4" = 1'-0"

Comment
Revisions
Date: 2025.07.03 Job No: 24-008 Project No: Drawn: Approved: Owner: SAINTFIELD2 LLC



**SEARS PLAT - LOT 2**  
Mercer Island  
Washington  
98040

PERMIT APPLICATION  
Building Sections  
**A12**

<b>BASEMENT SLAB</b>
4" CONC. SLAB ON 10 MIL VAPOR BARRIER ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL
<b>GARAGE SLAB</b>
4" CONC. SLAB ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL
<b>PORCH SLAB</b>
4" CONC. SLAB ON GRADE ON 4" MIN. GRANULAR FILL ON 95% COMPACTED FILL/VIRGIN SOIL

GENERAL STRUCTURAL NOTES	
FOUNDATION	
<ul style="list-style-type: none"> <li>DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE &amp; 2021 INTERNATIONAL BUILDING CODE</li> <li>DESIGN LOADS: <ul style="list-style-type: none"> <li>SOIL: 1500 PSF ALLOWABLE BEARING PRESSURE</li> </ul> </li> <li>CONCRETE SHALL ATTAIN THE FOLLOWING MINIMUM COMPRESSIVE STRENGTHS IN 28 DAYS, UNO. <ul style="list-style-type: none"> <li><math>f_c = 3000</math> psi. * ..... FOUNDATION WALLS</li> <li>3000 psi. * ..... FOOTINGS</li> <li>2500 psi. * ..... INTERIOR SLABS ON GRADE</li> <li>3500 psi. * ..... GARAGE &amp; EXT. SLABS ON GRADE</li> <li><math>f_y = 60000</math> psi</li> </ul> </li> <li>* ALL CONCRETE HAS BEEN DESIGNED FOR 2500 PSI, ANYTHING GREATER THAN THIS SPECIFICATION IS FOR WEATHERING ONLY.</li> <li>ALL CONCRETE EXPOSED TO THE WEATHER SHALL NOT HAVE LESS THAN 5% OR MORE THAN 7% AIR ENTRAINMENT.</li> <li>FOUNDATION WALL DESIGN IS BASED ON BACKFILL SOIL PRESSURE OF 55 PCF AT REST, 35 PCF ACTIVE &amp; 7% SEISMIC SURCHARGE.</li> <li>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.</li> <li>FOUNDATION WALLS SHALL BE BRACED PRIOR TO BACKFILLING, BY EITHER ADEQUATE TEMPORARY BRACING OR INSTALLATION OF FIRST FLOOR DECK.</li> <li>ALL FOOTINGS SHALL BEAR BELOW FROST LINE. CONSULT SOILS REPORT/ LOCAL MUNICIPALITY FOR MINIMUM DEPTH BELOW GRADE.</li> <li>FOOTINGS AND SLABS ON GRADE SHALL BEAR ON VIRGIN SOIL OR 95% COMPACTED FILL.</li> <li>PROVIDE CONTROL JOINTS AT ALL INSIDE CORNERS OF SLAB EDGES, AND OTHER LOCATIONS WHERE SLAB CRACKS ARE LIKELY TO DEVELOP. (15'-0" O.C.)</li> <li>FASTEN SILL PLATES TO FOUNDATION WALLS WITH 3/8" DIA. ANCHOR BOLTS W/ MIN. 3"x3"x 1/2" PLATE WASHERS (EDGE OF WASHER TO BE LOCATED WITHIN 1/2" OF EXTERIOR EDGE OF SILL PLATE) PROVIDE A MINIMUM OF 2 ANCHORS PER PLATE, 12" MAXIMUM FROM PLATE ENDS, UNO. (SEE FND. DETAILS).</li> <li>ALL LUMBER EXPOSED TO WEATHER OR IN CONTACT W/ CONCRETE OR MASONRY FOUNDATION SHALL BE PRESERVATIVE TREATED HEM FIR #2.</li> <li>ARCH/BUILDER TO VERIFY ALL DIMENSIONS</li> </ul>	

HOLD-DOWN SCHEDULE	
SYMBOL	SPECIFICATION
	SIMPSON STDH14 (RJ) HOLD-DOWN
	SIMPSON HDUB-SD52.5 HOLD-DOWN
	SIMPSON MTS37 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM UNO.)
	SIMPSON CS16 STRAP TIE (14" END LENGTH)
	SIMPSON MSTC40 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM UNO.)
	SIMPSON MSTC66 STRAP TIE (CENTER STRAP ON FLOOR SYSTEM UNO.)

MEANS & METHODS NOTES	
<p>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, GUYS, 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.</p> <p>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.</p>	

ADDITIONAL NOTES FOR TRUSS & I-JOIST MANUFACTURER	
<p>ROOF TRUSSES, FLOOR TRUSSES AND ENGINEERED JOISTS SHALL BE DESIGNED TO MEET THE DIFFERENTIAL DEFLECTION CRITERIA BELOW UNLESS NOTED OTHERWISE ON PLAN. MULHERN &amp; KULP CANNOT BE HELD RESPONSIBLE FOR ANY STRUCTURAL ISSUES RELATED TO ANY BUILDING COMPONENT IF COMPONENT SHOP DRAWINGS ARE NOT SUBMITTED TO MKF FOR REVIEW PRIOR TO FABRICATION, DELIVERY, OR INSTALLATION.</p> <p>TRUSSES SHALL BE DESIGNED SO THAT DIFFERENTIAL DEFLECTION BETWEEN ADJACENT PARALLEL TRUSSES OR GIRDER TRUSSES DOES NOT EXCEED THE FOLLOWING:</p> <p>A. ROOF TRUSSES:  1/4" DEAD LOAD  1/8" DEAD LOAD</p> <p>B. FLOOR TRUSSES, ATTIC TRUSSES, &amp; I-JOISTS:  1/8" DEAD LOAD</p> <p>C. FLOOR TRUSSES &amp; ATTIC TRUSSES ADJACENT TO FLOOR FRAMING BY OTHERS:  LIMIT ABSOLUTE TRUSS DEFLECTION TO 3/16" DEAD LOAD. (NOT DIFFERENTIAL DEFLECTION)</p>	

LOADING AND DESIGN PARAMETERS	
GRAVITY DESIGN LOADS:	
DEAD LOAD (PSF):	
ROOF TRUSSES TOP CHORD :	10
ROOF TRUSSES BOTTOM CHORD :	7
ROOF RAFTERS :	10
FLOOR TRUSSES :	15
TILE FLOORS :	10
PEDESTAL PAVERS :	10
LIVE LOAD (PSF):	
ROOF :	20
RESIDENTIAL LIVING AREAS :	40
RESIDENTIAL SLEEPING AREAS :	30
RESIDENTIAL WOOD DECKS :	60
GARAGE :	50
SNOW LOAD:	
GROUND SNOW LOAD (P) (PSF) :	25
FLAT ROOF SNOW LOAD (P) (PSF) :	25
SNOW EXPOSURE FACTOR (C <sub>s</sub> ) :	1.2
SNOW LOAD IMPORTANCE FACTOR (I) :	1.0
THERMAL FACTOR (C <sub>t</sub> ) :	1.2
LATERAL DESIGN LOADS:	
WIND LOAD: (EG. 1609)	
SPEED (V) (MPH) :	100
WIND RISK CATEGORY :	II
IMPORTANCE FACTOR (I <sub>w</sub> ) :	1.0
EXPOSURE CATEGORY :	B
INTERNAL PRESSURE COEFF. (GC <sub>p</sub> ) :	+0.18
TOPOGRAPHIC FACTOR (K <sub>z</sub> ) :	1.0
SEISMIC LOAD: (EG. 1613)	
SEISMIC RISK CATEGORY :	II
SEISMIC IMPORTANCE FACTOR (I <sub>s</sub> ) :	1.0
MAPPED SPECTRAL RESPONSE:	
S <sub>s</sub> 1.471	S <sub>1</sub> 0.508
SITE CLASS :	D (DEFAULT)
SPECTRAL RESPONSE COEFF. :	S <sub>m</sub> 0.601
SEISMIC DESIGN CATEGORY:	D
BASIC SEISMIC-FORCE-RESISTING SYS :	
LIGHT FRAMED WALLS	
W/ WOOD STRUCTURAL PANELS	
ULTIMATE BASE SHEAR	
TRANS: 18k	LONG: 18k
SEISMIC RESPONSE COEFF. (C <sub>d</sub> ) :	LONG: 0.81
TRANS: 0.81	LONG: 0.81
TRANS: 6.5	LONG: 6.5
ANALYSIS PROCEDURE USED:	EQUIVALENT LATERAL FORCE

**LATERAL BRACING NOTES**

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

**100 MPH WIND IN 2021 IRC MAP**

ENGINEERED DESIGN WAS COMPLETED PER 2021 IBC (SECTION 1604 & 1613) & ASCE 7-16, AS PERMITTED BY R301.1.3 OF THE 2021 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 WHERE NOTED ON PLANS)

• 1/16" OSB OR 1 1/2" PLYWOOD:

FASTEN SHEATHING W/ 2 1/2"x0.131" NAILS @ 6" 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)

• 1/16" OSB OR 1 1/2" PLYWOOD:

ONLY AT LOCATIONS INDICATED ON PLANS - SHEATH WALL SHOWN WITH 1/16" 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) 3/8"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.

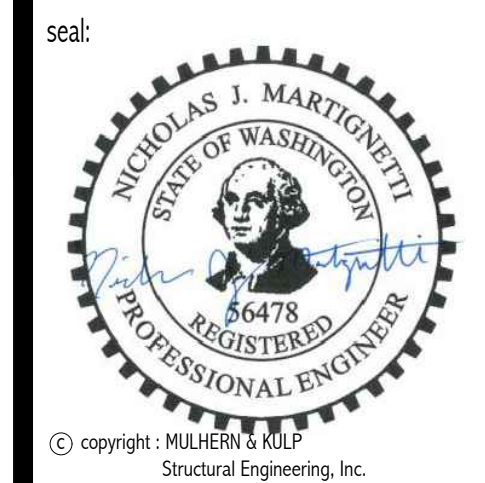
LEGEND	
	INTERIOR BEARING WALL
	BEARING WALL ABOVE (B/A), OR SHEAR WALL ABOVE (S/A)
	BEAM / HEADER
	INTERIOR SHEAR WALL PANEL OR EXTERIOR SHEAR WALL W/ 3" O.C. EDGE NAILING
	AREA OF OVERFRAMING
	JL METAL HANGER
	* INDICATES POST ABOVE (P.A). PROVIDE SOLID BLOCKING UNDER POST OR JAMB ABOVE.
	▷ INDICATES HOLD-DOWN.

GENERAL STRUCTURAL NOTES	
DESIGN PARAMETERS	
<ul style="list-style-type: none"> <li>DESIGN IS BASED ON 2021 INTERNATIONAL RESIDENTIAL CODE &amp; 2021 INTERNATIONAL BUILDING CODE</li> <li>WOOD FRAME ENGINEERING IS BASED ON NDS, NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION - LATEST EDITION.</li> </ul>	
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 2x "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 2x6 HEM FIR (HF) #2 GRADE LUMBER, OR BETTER, UNO.
- ALL SHEATHING AND LEDGERS ARE TO BE DIRECTLY APPLIED AND FASTENED TO FRAMING. DO NOT PROVIDE CONTINUOUS INSULATION BETWEEN FRAMING AND SHEATHING/LEDGERS
- 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 COLUMN 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. CHARTED CAPACITY. NOTE: HANGERS USE COMMON NAIL DIAMETERS NOT TYPICAL FRAMING GUN NAILS.
- FASTEN ALL BEAMS TO COLUMN, OR FLUSH BEAMS TO SUPPORTING BEAMS, W/ (4) 3"x0.131" TOENAILS (MIN), TYP. UNO.
- PROVIDE SOLID BLOCKING IN FLOOR SYSTEM UNDER ALL POSTS & HOLD-DOWNS CONTINUOUS TO FOUNDATION/BEARING. BLOCKING TO MATCH POST ABOVE.
- ENGINEERED LUMBER TO MEET OR EXCEED THE FOLLOWING:
  - LVL MEMBERS - Fb=2925 PSI, Fv=310 PSI, E=1.15x10<sup>7</sup> PSI
  - LVL MEMBERS - Fb=2400 PSI, Fv=285 PSI, E=1.2x10<sup>7</sup> PSI
  - GLB MEMBERS - Fb=2400 PSI, Fv=185 PSI, Fv=285 PSI, E=1.8x10<sup>7</sup> PSI, DF/DF, 24F-V4 (UNO.)
- ENGINEERED LUMBER POSTS TO MEET OR EXCEED THE FOLLOWING:
  - LVL MEMBERS - Fb=2400 PSI, Fv=1250 PSI, E=1.8x10<sup>7</sup> PSI
- FACE NAIL MULTI-PLY 2x BEAMS & HEADERS W/ 3-RINGS OF 3"x0.131" NAILS (MIN) @ 12" O.C. STAGGERED. APPLY NAILING FROM BOTH FACES @ 3-PLY OR MORE CONDITIONS. UTILIZE 2 ROWS OF NAILS FOR 2x6 & 2x8 MEMBERS.
- TRUSS SHOP DWGS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF PROPOSED CONSTRUCTION SHALL BE SUBMITTED TO BUILDING DESIGNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY IN ACCORDANCE WITH TP-1 2.3.2.3 & 2.3.4.3.
- REFER TO IRC FASTENING SCHEDULE TABLE R602.3(1) FOR ALL CONNECTIONS, TYP. UNO.
- BUILDER RESPONSIBLE TO DETERMINE CORROSION-RESISTANCE REQUIREMENTS AND COMPATIBILITY OF HARDWARE, FASTENERS AND CONNECTORS FOR ENVIRONMENTAL EXPOSURE AND CONTACT W/ PRESERVATIVE-TREATED WOOD OF ACTUAL FINAL CONDITIONS AND SOURCED MATERIALS. CONTACT LUMBER & HARDWARE SUPPLIERS TO COORD. IN THE ABSENCE OF MANUFACTURER'S RECOMMENDATIONS, NOT LESS THAN ASTM A653, TYPE G90 ZINC-COATED GALVANIZED STEEL, OR EQUIVALENT, SHALL BE USED.

FLOOR FRAMING	
<ul style="list-style-type: none"> <li>I-JOISTS/TRUSSES SHALL BE DESIGNED BY MANUF. TO MEET OR EXCEED L1400 LIVE LOAD DEFLECTION CRITERIA AND SHALL RUN CONTINUOUS OVER SUPPORTS WHEREVER POSSIBLE. ALL LOADS SHOWN ON PLAN FOR MANUF. DESIGNS ARE ASD LEVEL LOADS, UNO. (EXCLUDES STONE/MARBLE OR NET BED CONSTRUCTED FLOORS - CONTACT MKF FOR EXCLUDED DESIGNS).</li> <li>ALL METAL I-JOIST/TRUSS HANGERS SHALL BE SPECIFIED BY I-JOIST/TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED.</li> <li>2x FLOOR JOISTS HAVE BEEN DESIGNED TO MEET OR EXCEED L1860 LIVE LOAD DEFLECTION CRITERIA.</li> <li>TYPICAL 2x JOIST HANGERS (UNO. ON PLANS): <ul style="list-style-type: none"> <li>SINGLE PLY: SIMPSON LUS210 DOUBLES: SIMPSON LUS210-2</li> </ul> </li> <li>FLOOR SHEATHING SHALL BE 23/32" A.P.A. RATED "STURD-I-FLOOR" 24" O.C. EXPOSURE 1 (OR APPROVED EQUAL) WITH TONGUE AND GROOVE EDGES. FASTEN TO FRAMING MEMBERS W/ GLUE AND 2 1/2" x 0.131" NAILS @ 6" O.C. @ PANEL EDGES &amp; @ 12" O.C. FIELD.</li> <li>ALL FLUSH CONNECTIONS SHALL BE CONNECTED WITH HANGER APPROPRIATE FOR MEMBER SIZE, UNO.</li> <li>FASTEN HANGERS TO SINGLE PLY FLUSH BEAMS W/ 1/2" LONG NAILS.</li> </ul>	

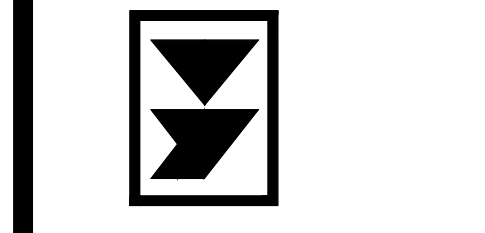
ROOF FRAMING	
<ul style="list-style-type: none"> <li>FASTEN EACH ROOF TRUSS TO TOP PLATE W/ (4) 3"x0.131" TOENAILS (MIN) &amp; (1) SIMPSON H2.5T CLIP @ ALL BEARING POINTS. PROVIDE (2) SIMPSON H2.5T CLIPS AT 2-PLY GIRDER TRUSSES, (3) SIMPSON H2.5T CLIPS AT 3-PLY GIRDER TRUSSES AT ALL BEARING POINTS.</li> <li>FASTEN EACH ROOF RAFTER TO TOP PLATE WITH (1) SIMPSON H2.5T CLIP. PROVIDE (2) SIMPSON H2.5T CLIPS AT FLUSH BEAMS IN THE ROOF - AT ALL BEARING POINTS.</li> <li>ROOF SHEATHING SHALL BE 7/16" A.P.A. RATED SHEATHING 24" O.C. EXPOSURE 1 (OR APPROVED EQUAL). FASTEN TO FRAMING MEMBERS W/ 2 1/2" x 0.131" NAILS @ 6" O.C. AT PANEL EDGES &amp; @ 6" O.C. AT INTERMEDIATE SUPPORTS. ROOF SHEATHING SHALL EXTEND BELOW ALL INSTANCES OF OVERFRAMING. BLOCKING SHALL BE INSTALLED AS REQUIRED TO LIMIT ROOF SHEATHING SPANS TO 24" MAX.</li> <li>ALL METAL HANGERS SHALL BE SPECIFIED BY THE TRUSS MANUFACTURER, UNLESS OTHERWISE NOTED.</li> <li>ROOF TRUSS SHOP DRAWINGS &amp; CALCULATIONS SHALL BE DESIGNED FOR UNBALANCED SNOW LOADINGS PER ASCE 7-16, SECTION 1.6.</li> <li>ERECT AND INSTALL ROOF TRUSSES PER WTGA &amp; TP'S BC51 I-08 "GUIDE TO GOOD PRACTICE FOR HANDLING, INSTALLING &amp; BRACING OF METAL PLATE CONNECTED WOOD TRUSSES".</li> <li>FASTEN OVER-FRAMED TRUSS SETS TO TRUSSES BELOW W/ (2) 3"x0.131" TOENAILS AT EA. TRUSS.</li> <li>FASTEN ALL INTERIOR NON-BEARING PARTITION WALLS TO TRUSS BOTTOM CHORD ABOVE WITH SIMPSON STC CLIPS AT 24" O.C. MAX. PROVIDE BLOCKING BETWEEN THE TRUSS BOTTOM CHORDS AS REQUIRED FOR THE PARALLEL CONDITIONS.</li> </ul>	



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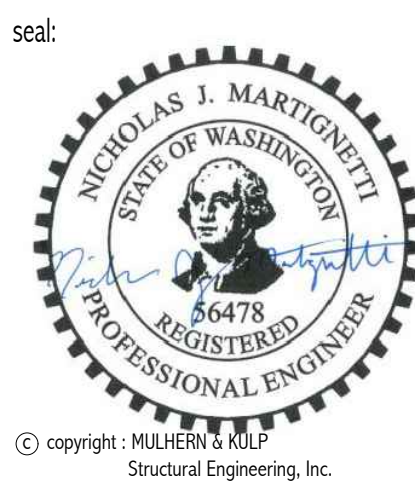
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drawn by:	RSC
issue date:	06-23-25
REVISIONS:	
date:	initial:

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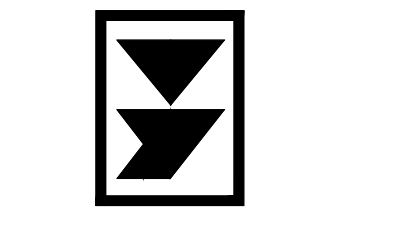
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**SEARS PLAT**  
**LOT 2**  
**MERCER ISLAND, WASHINGTON**

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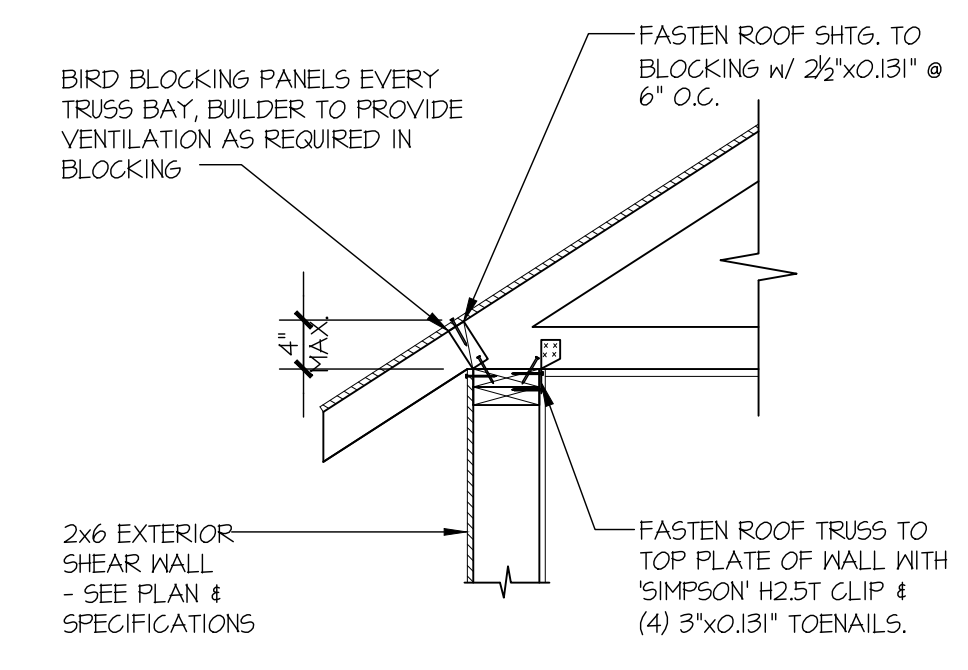
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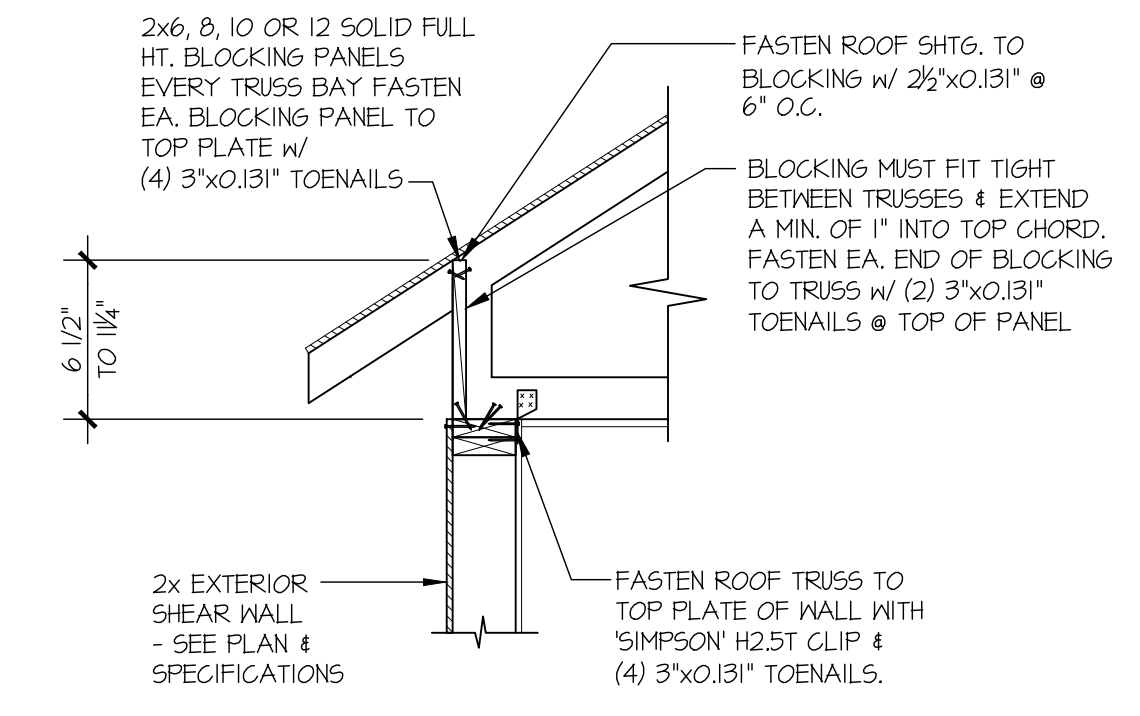
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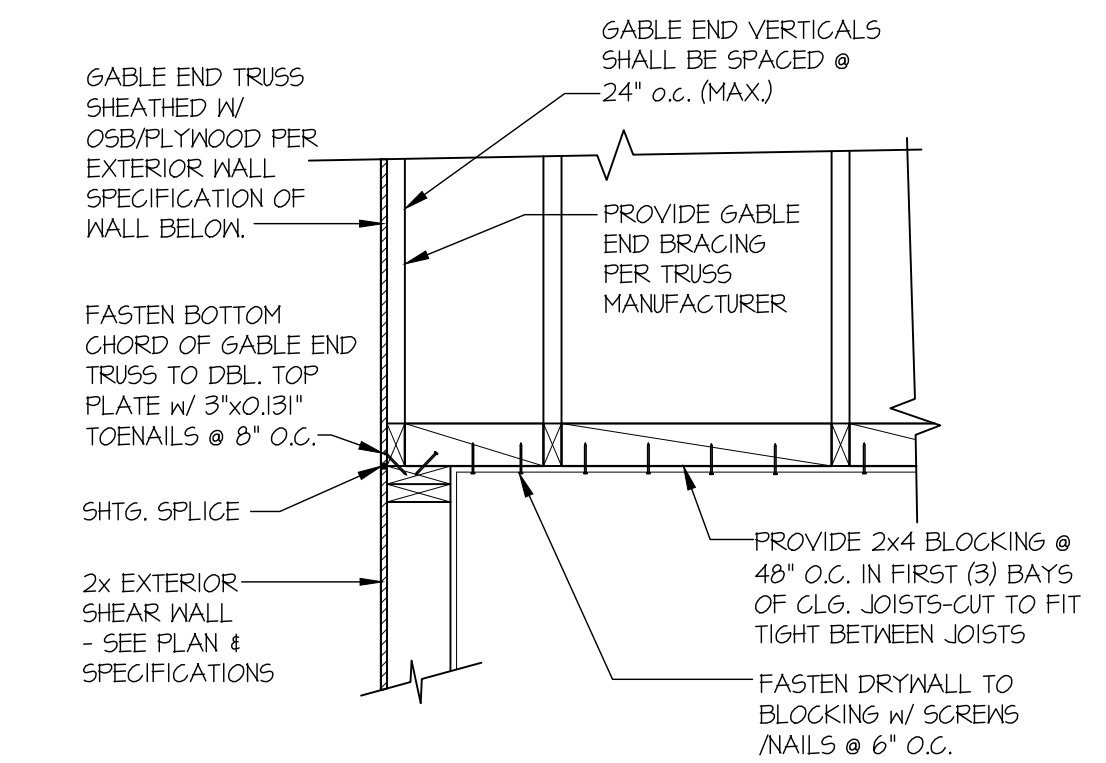
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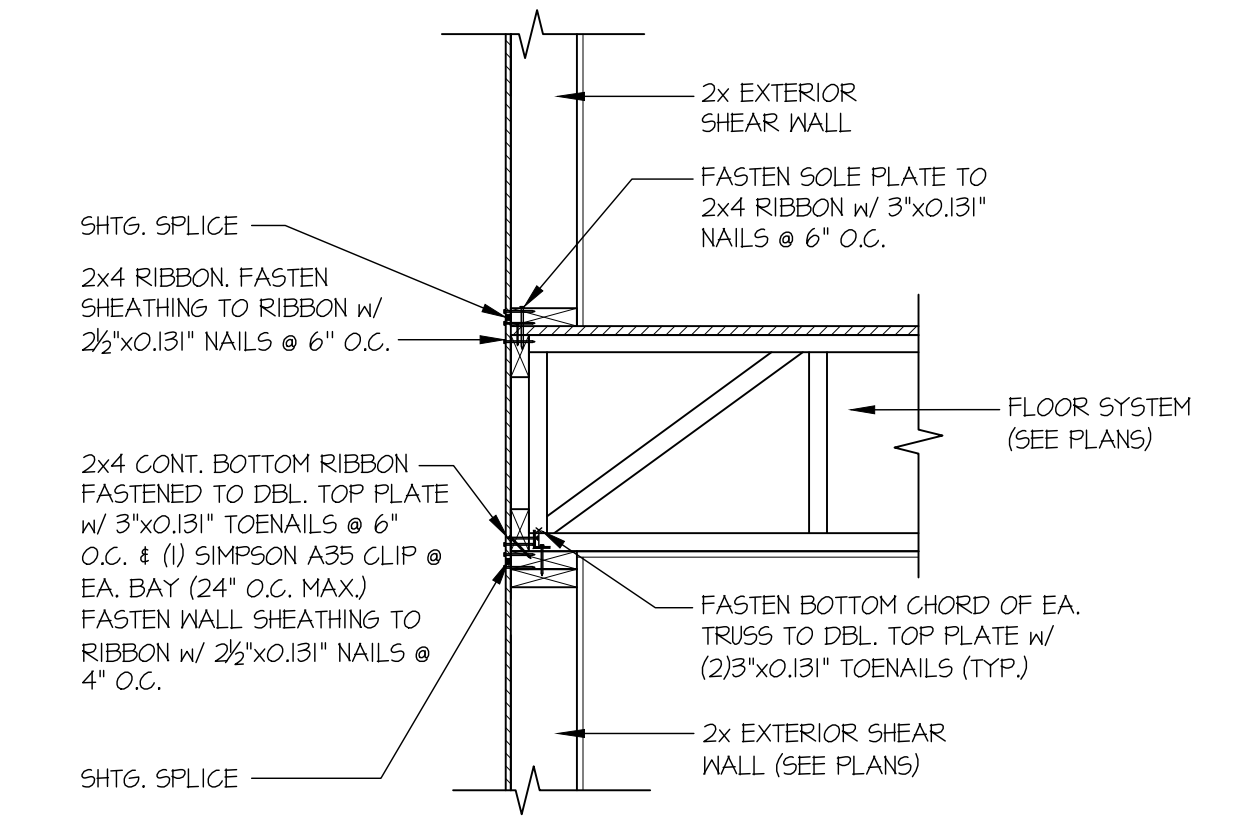
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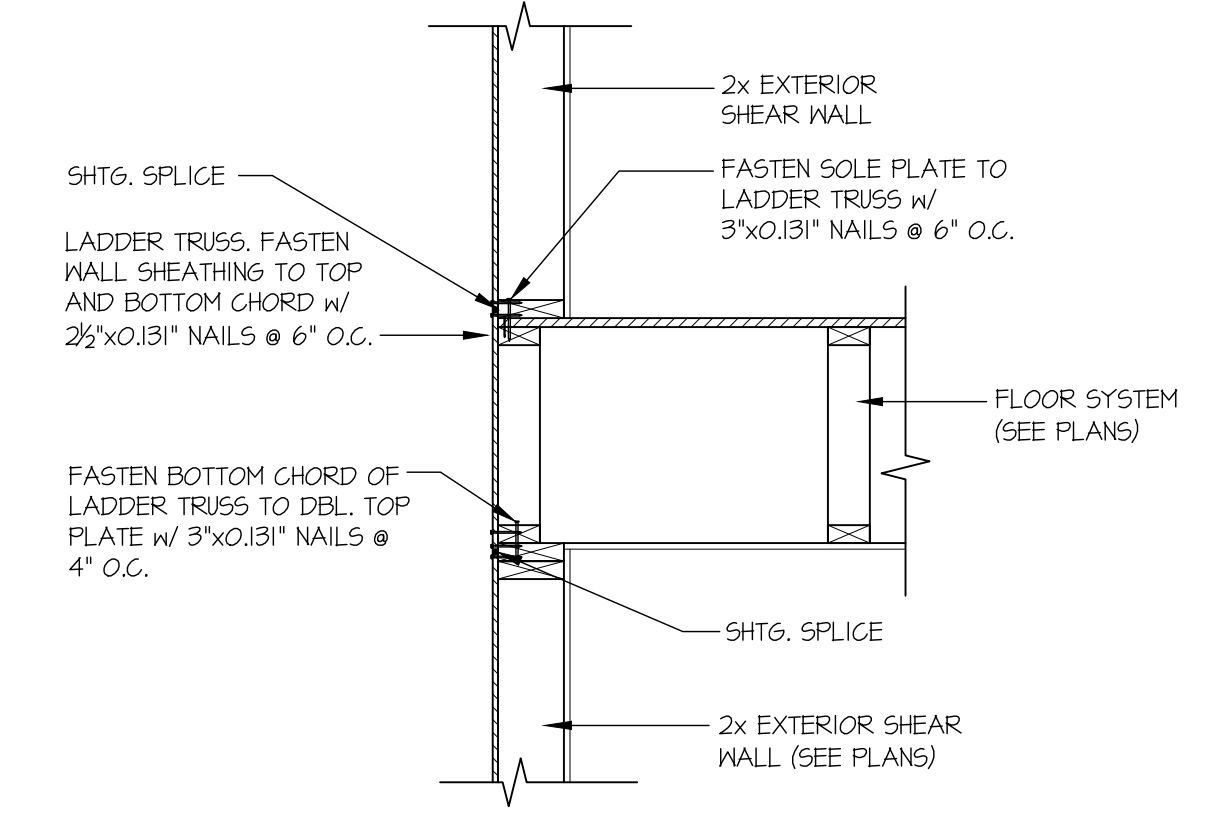
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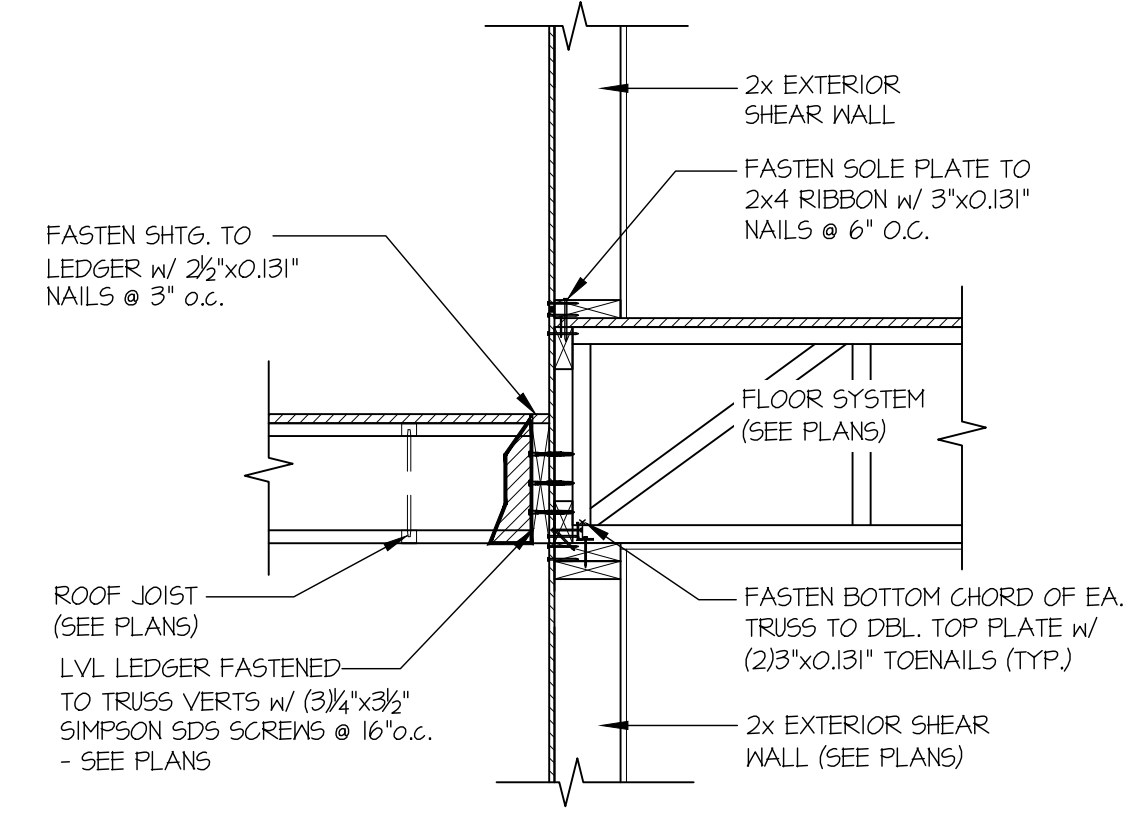
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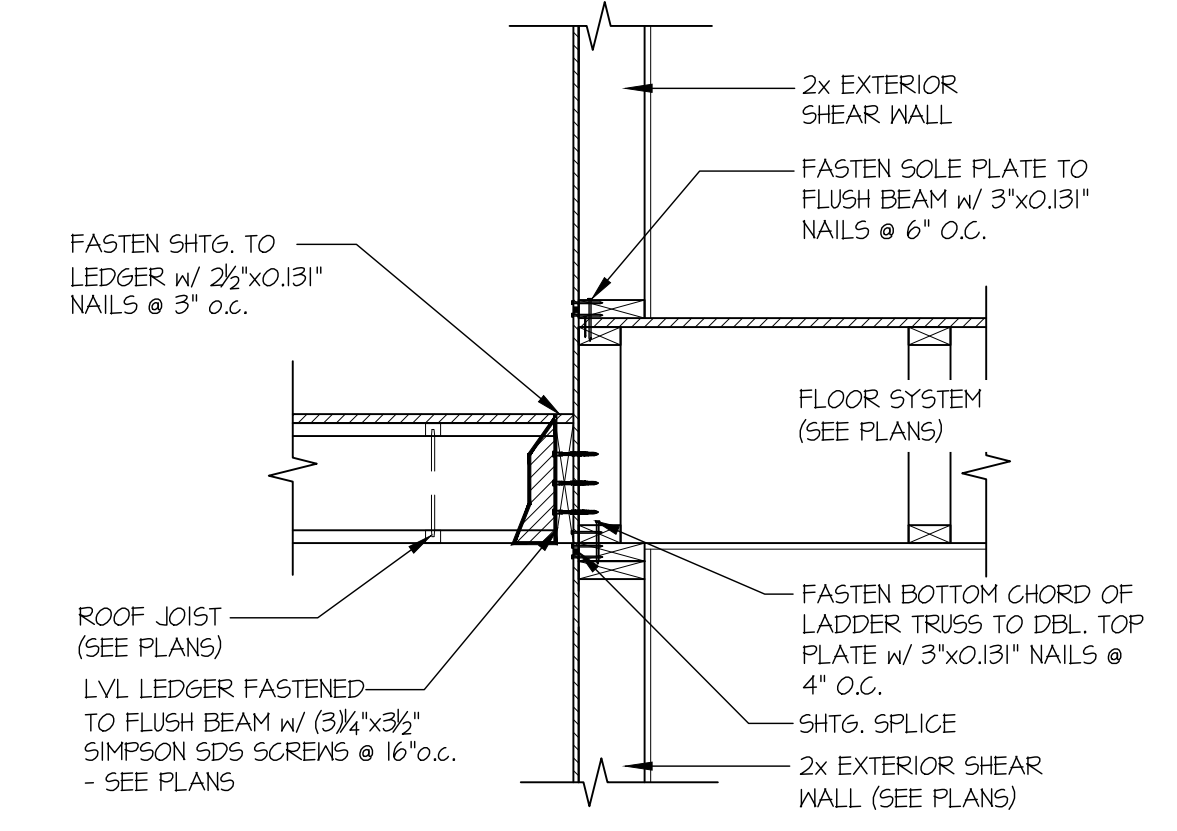
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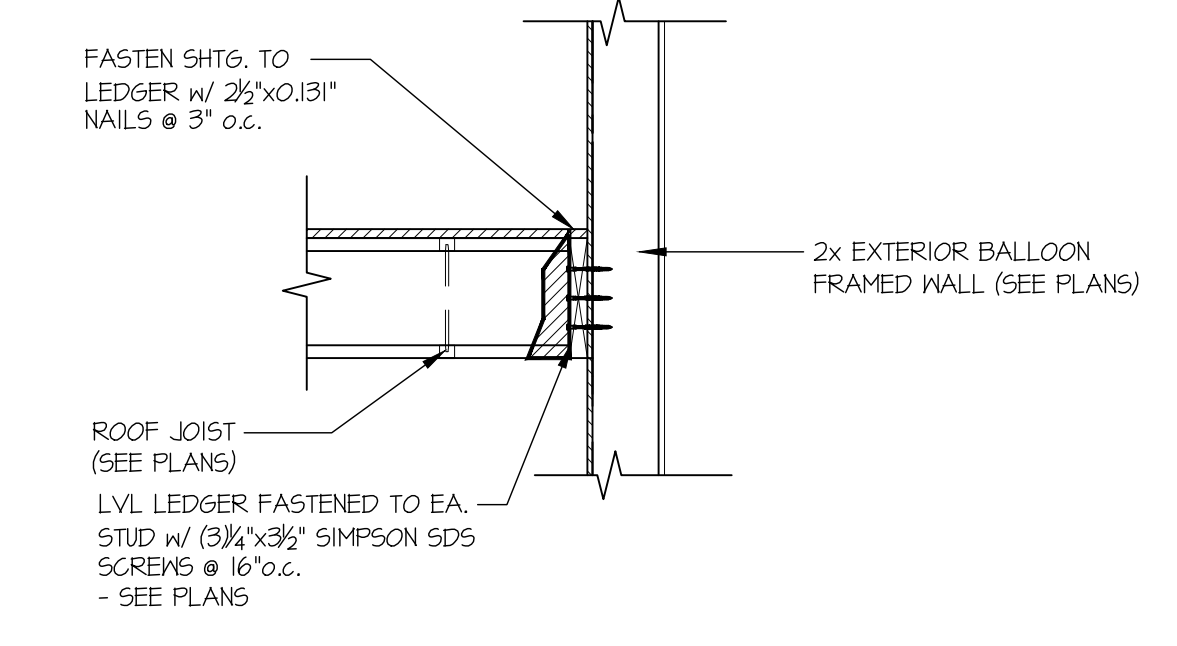
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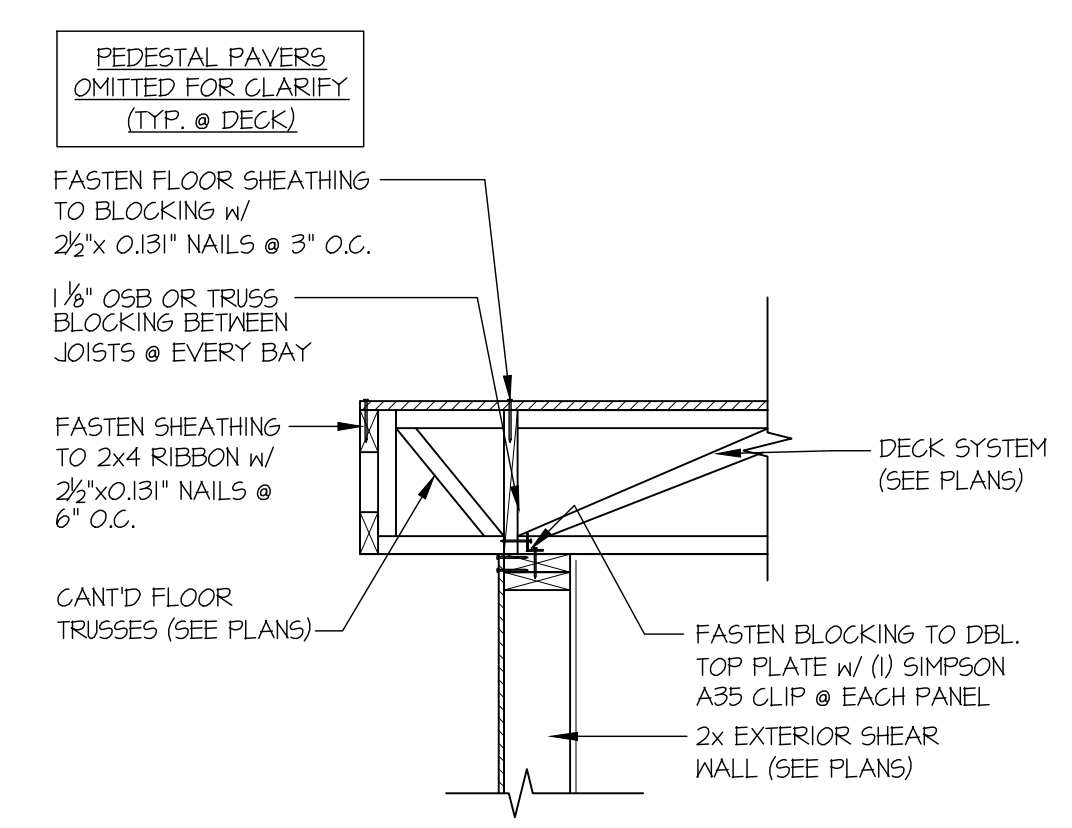
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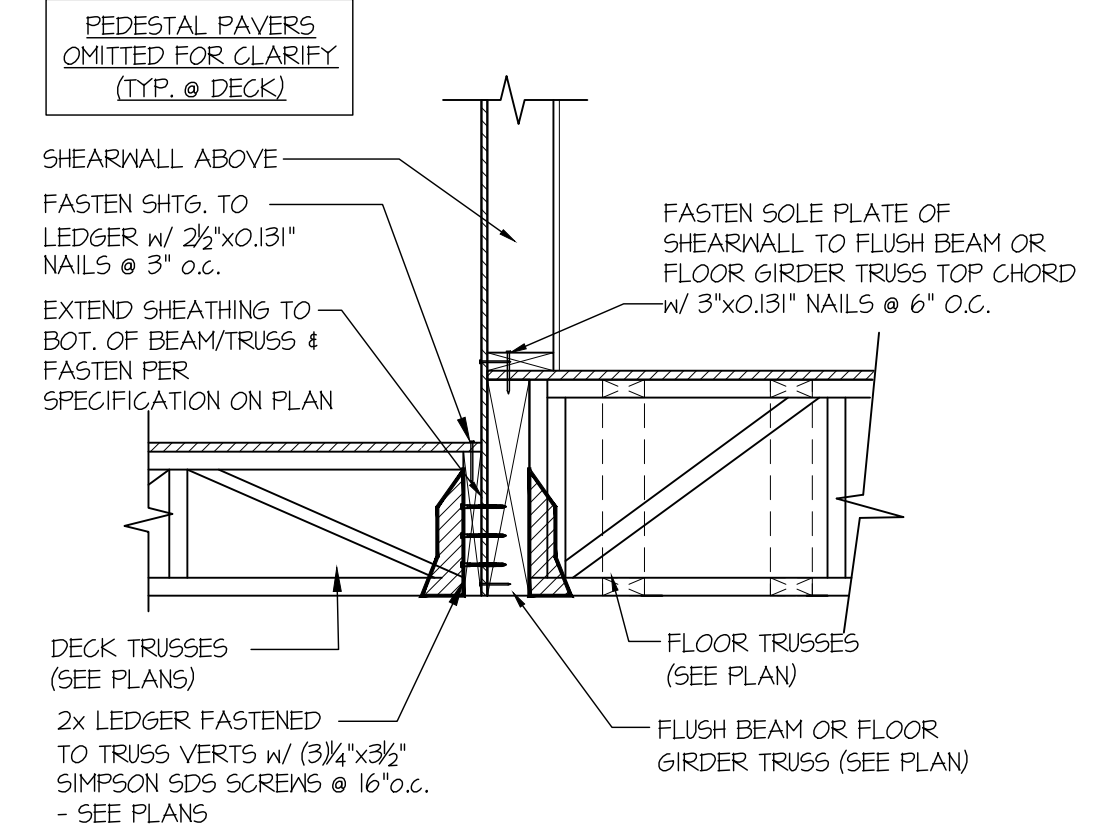
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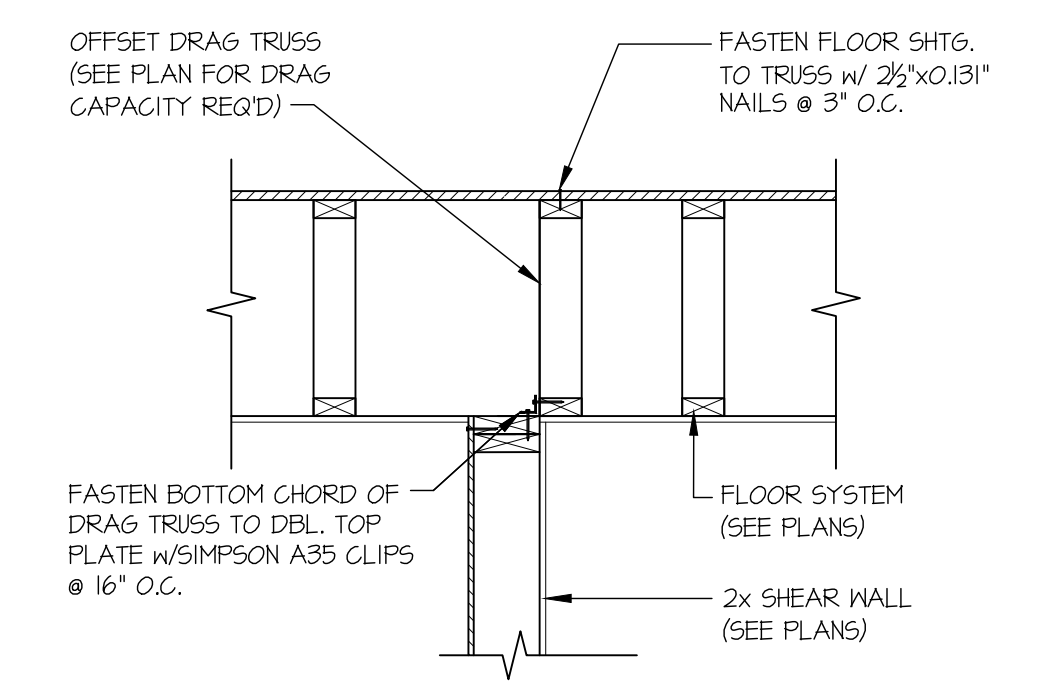
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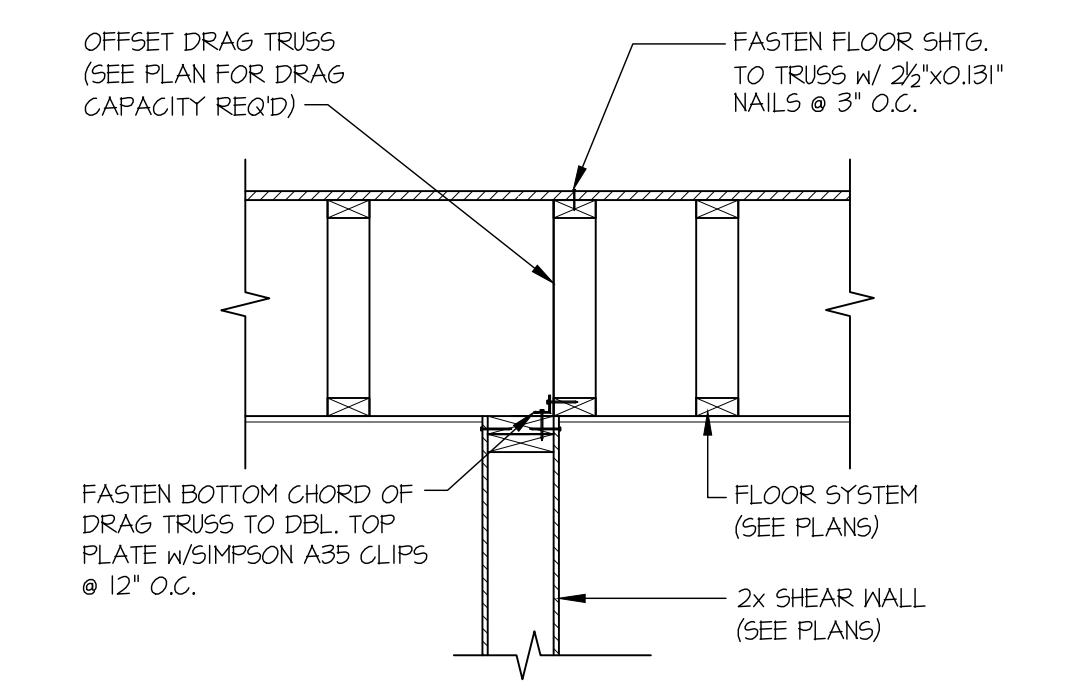
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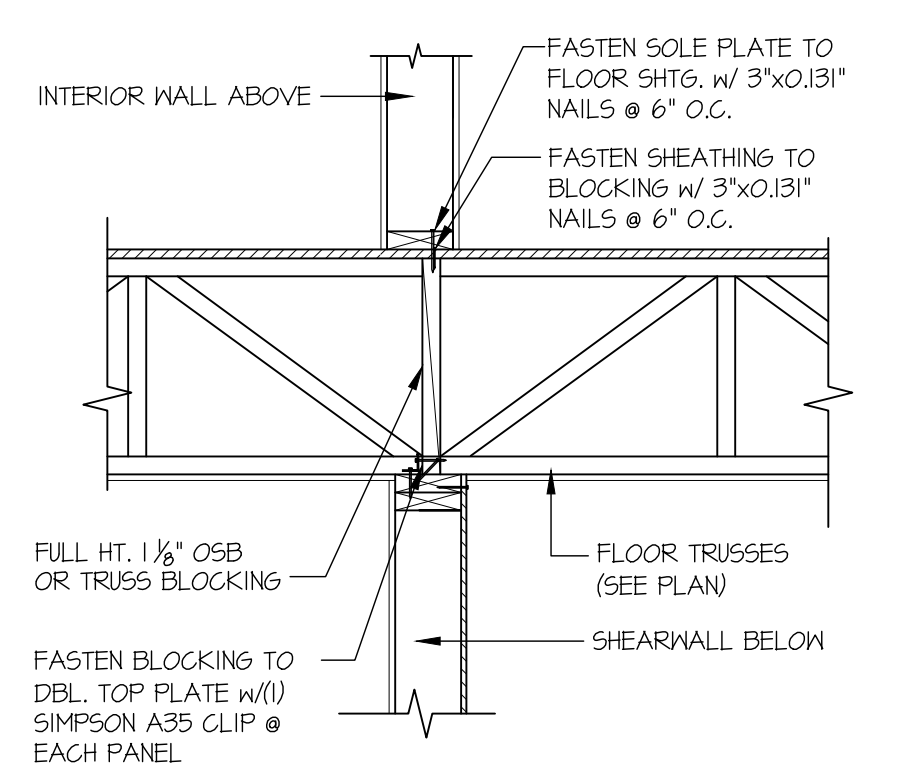
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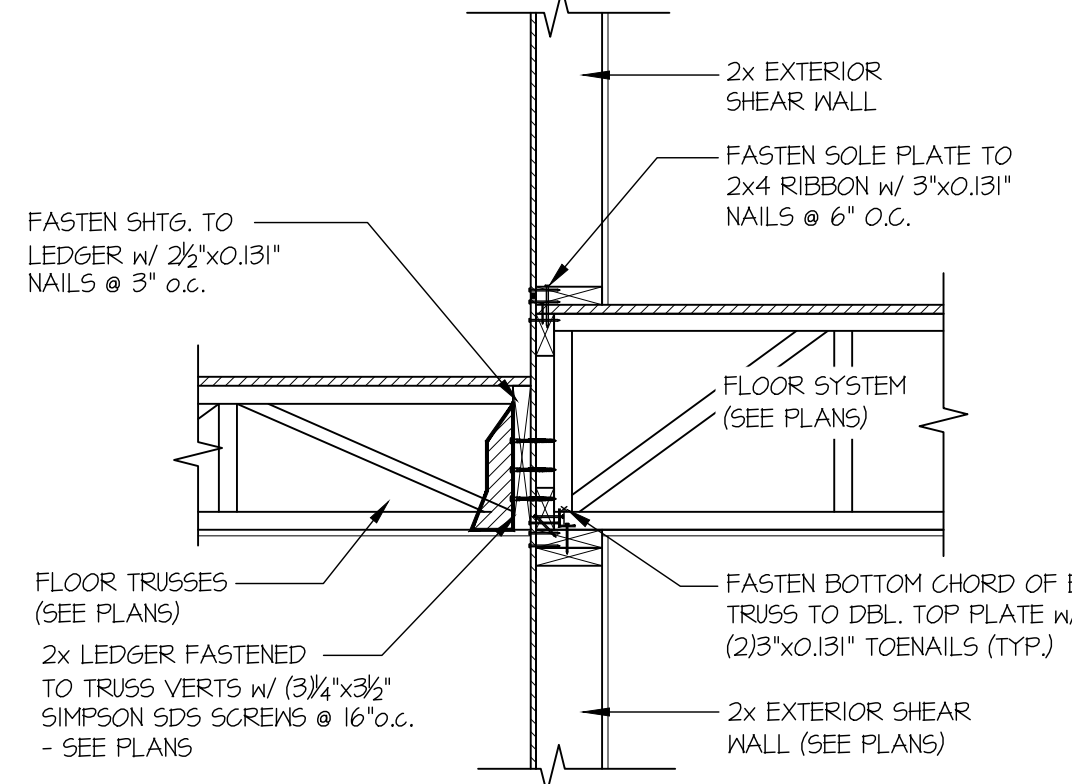
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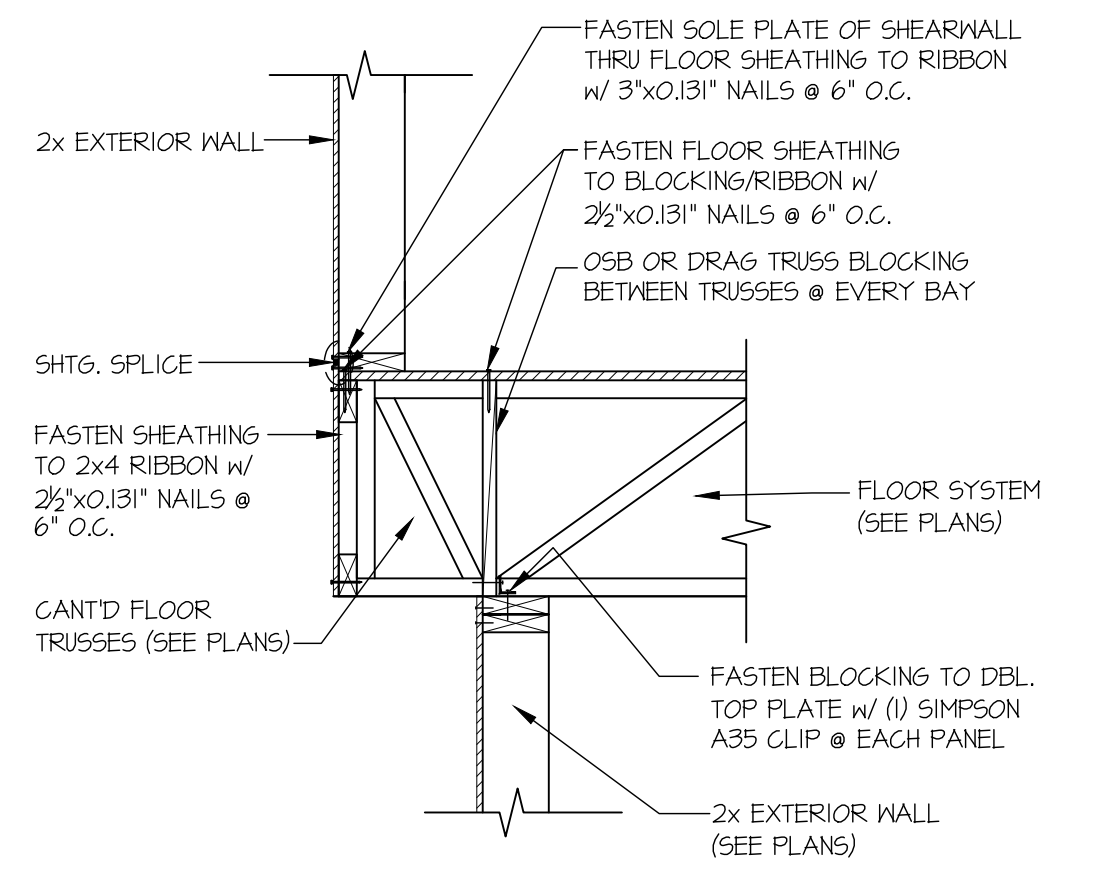
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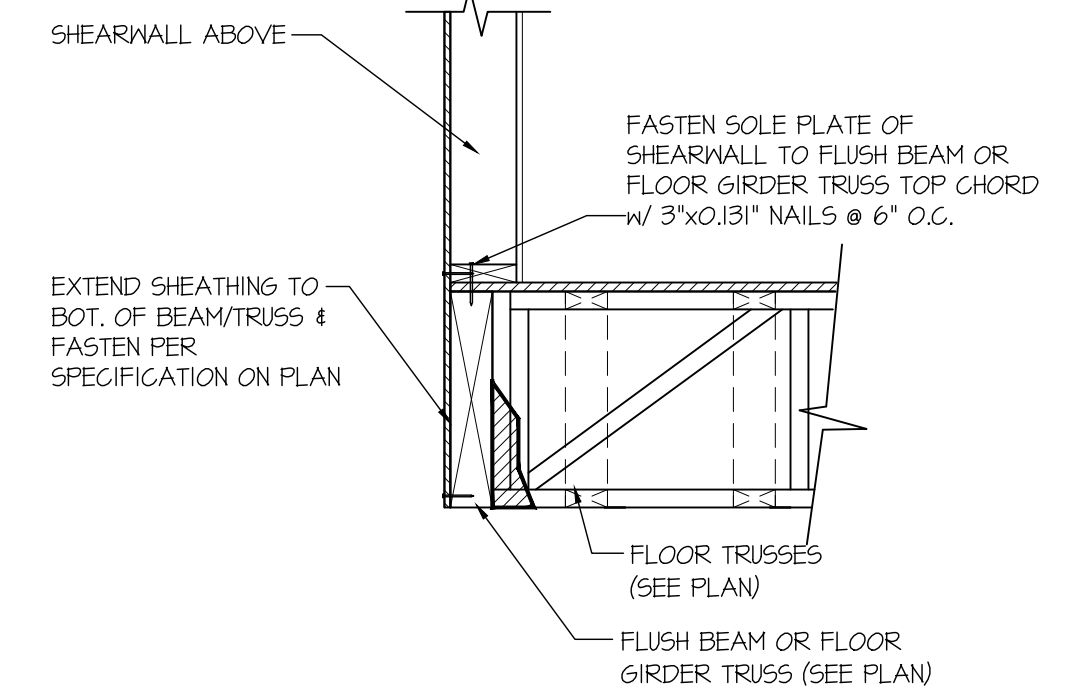
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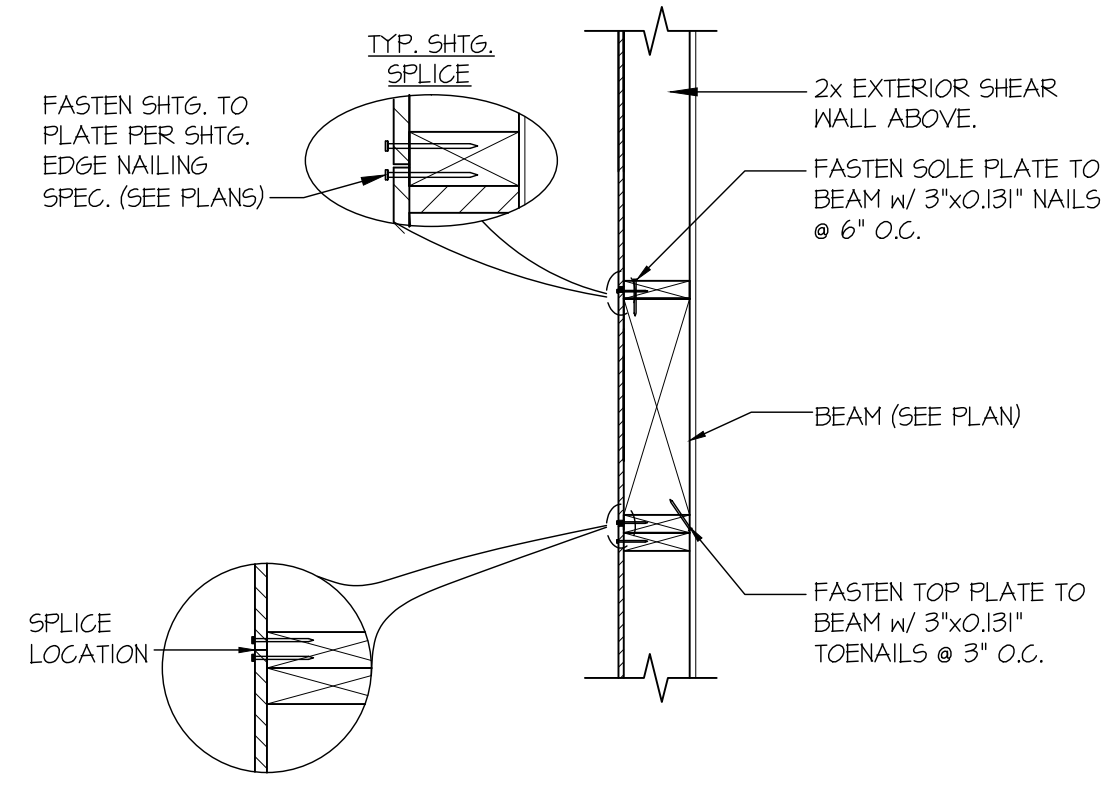
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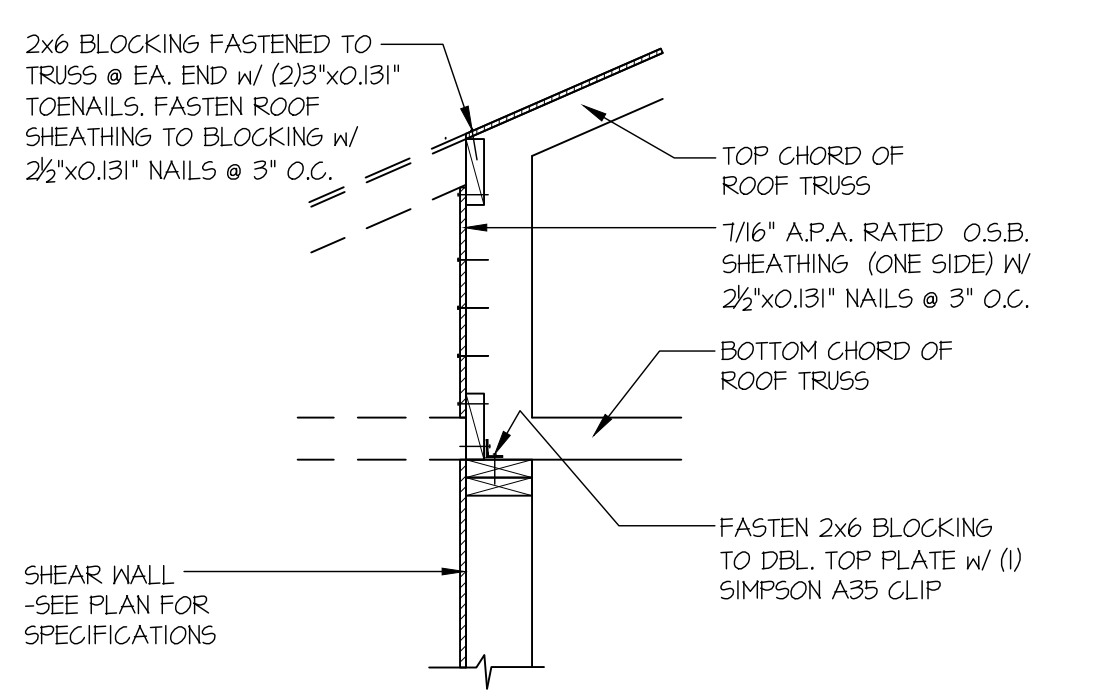
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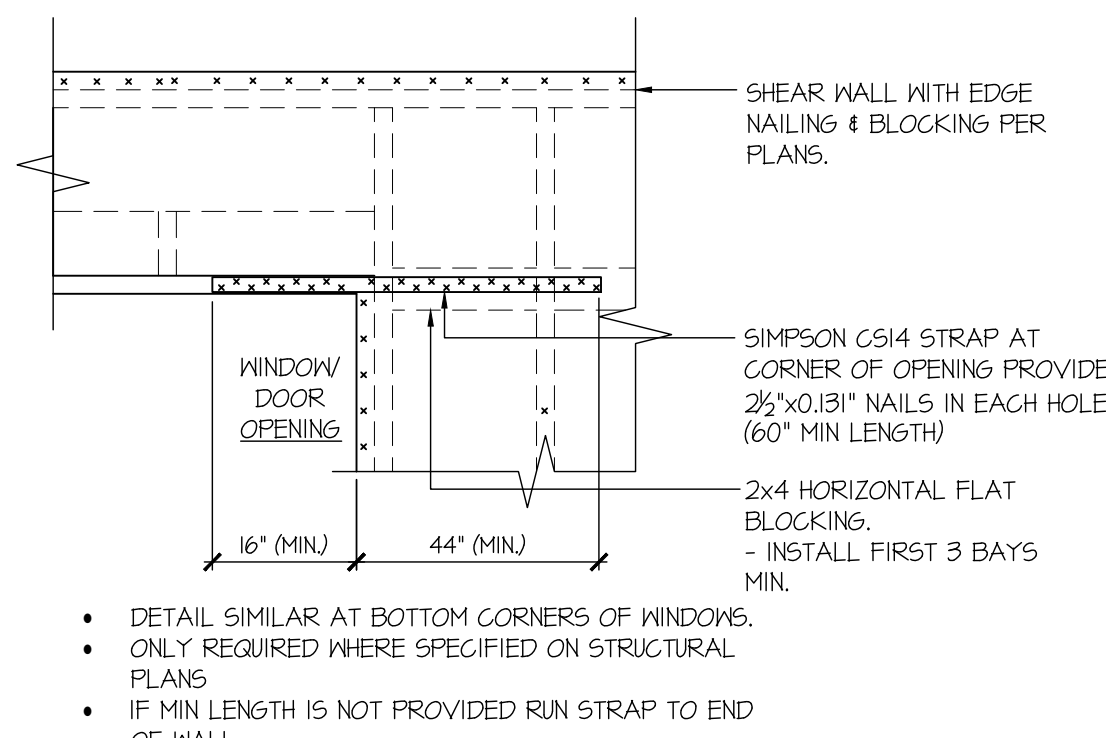
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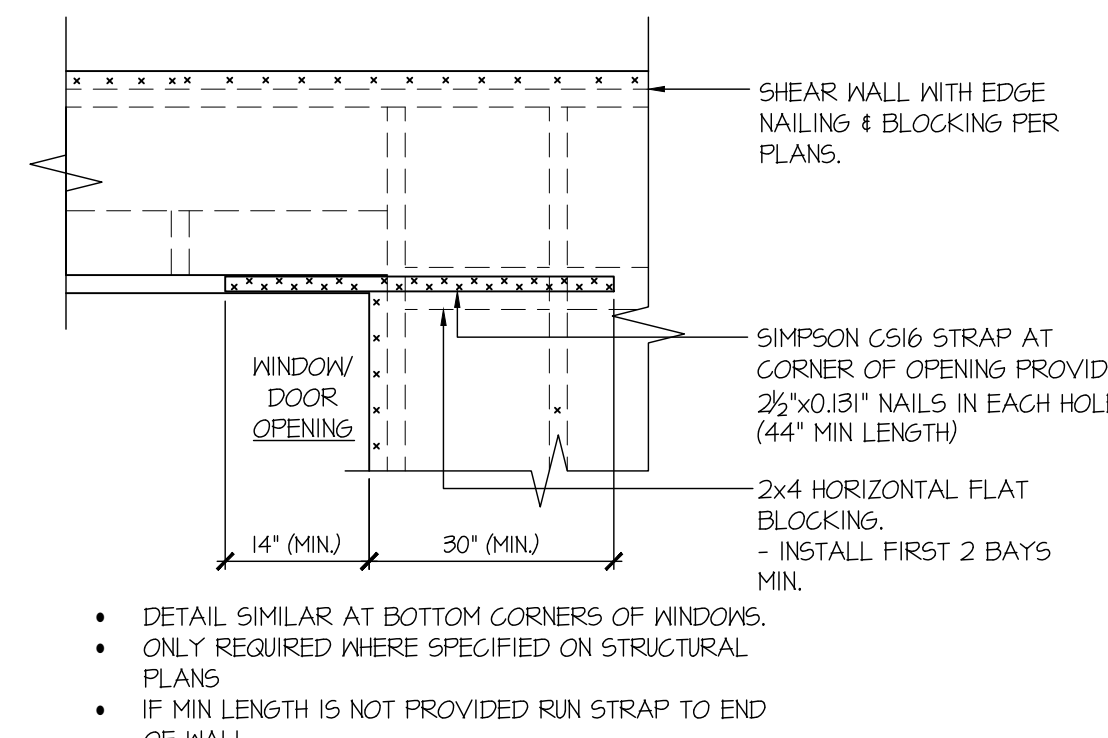
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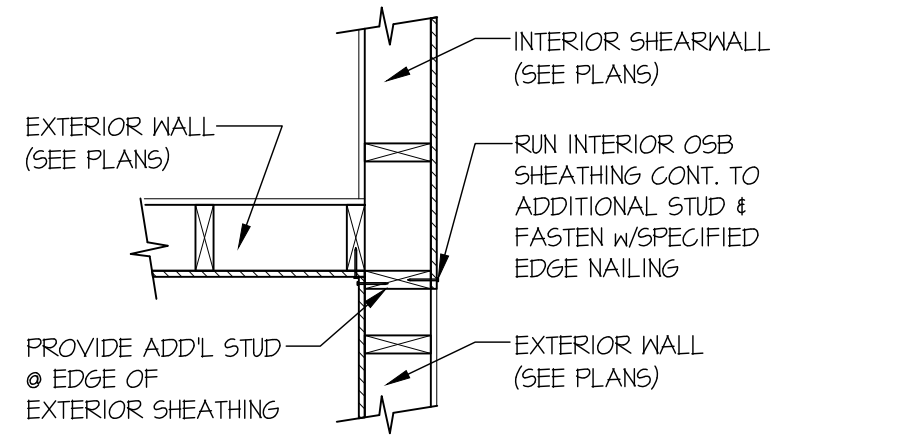
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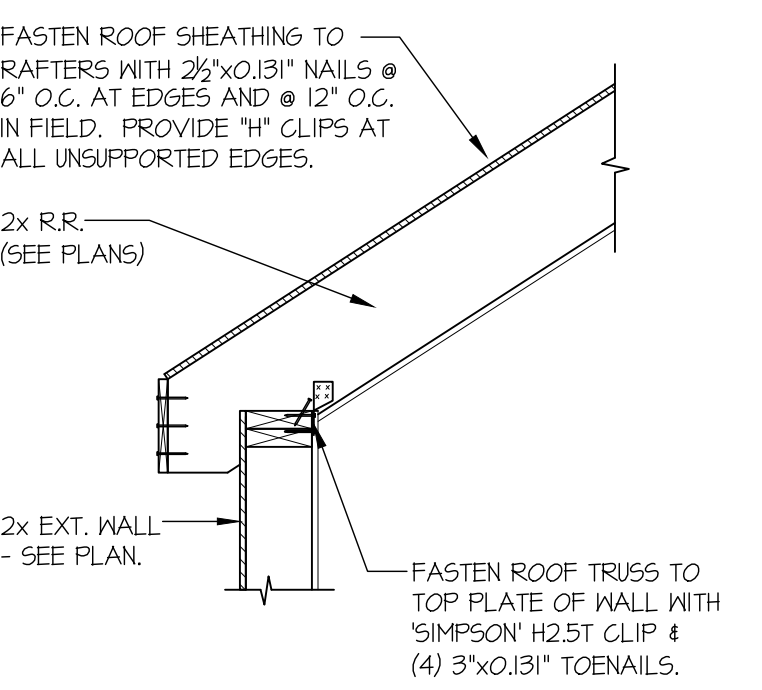
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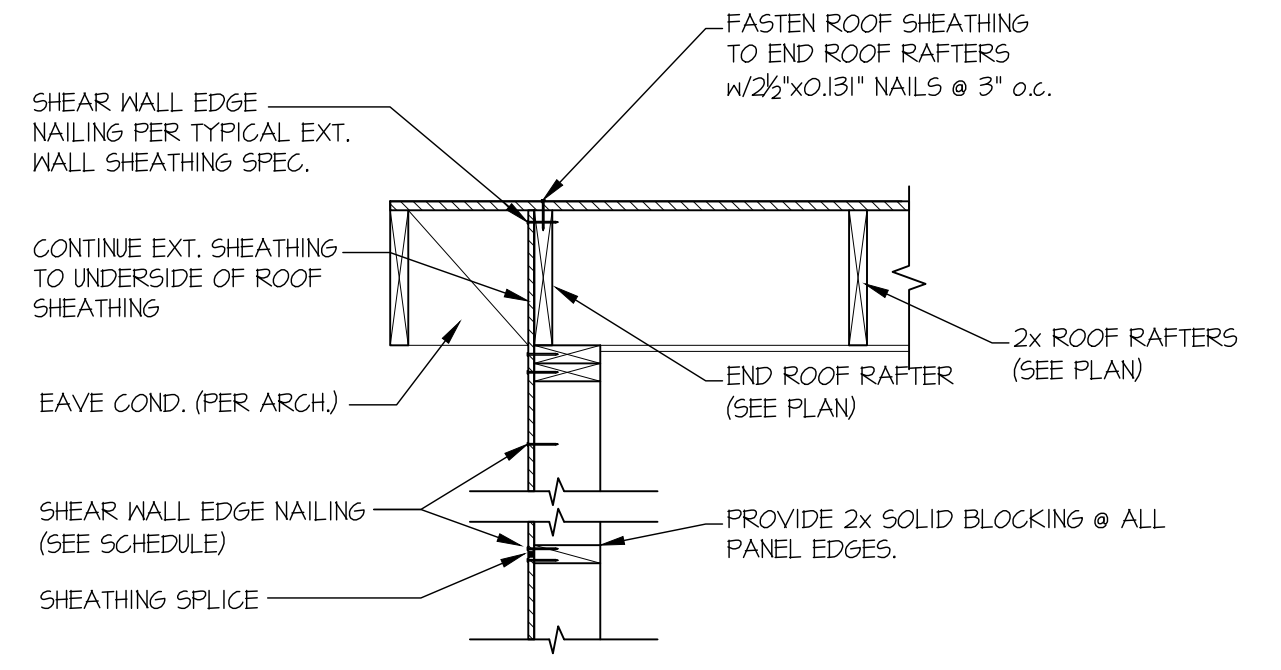


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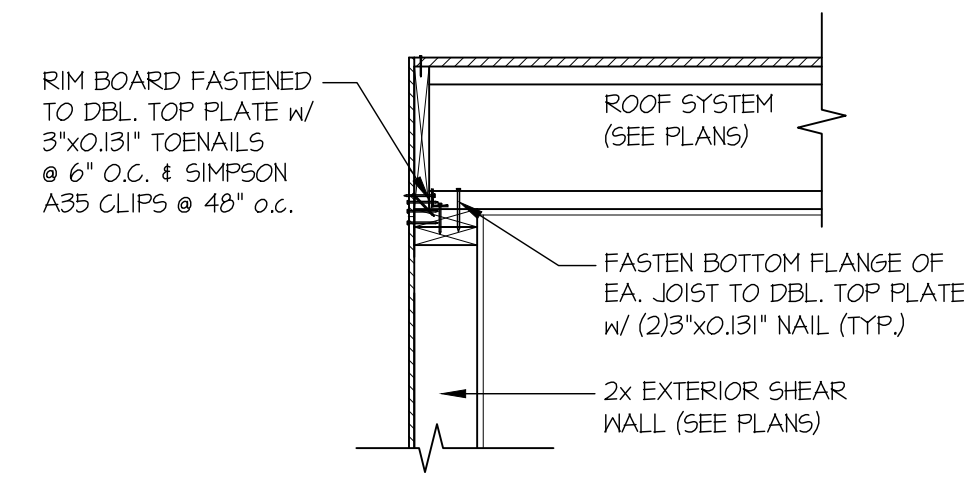


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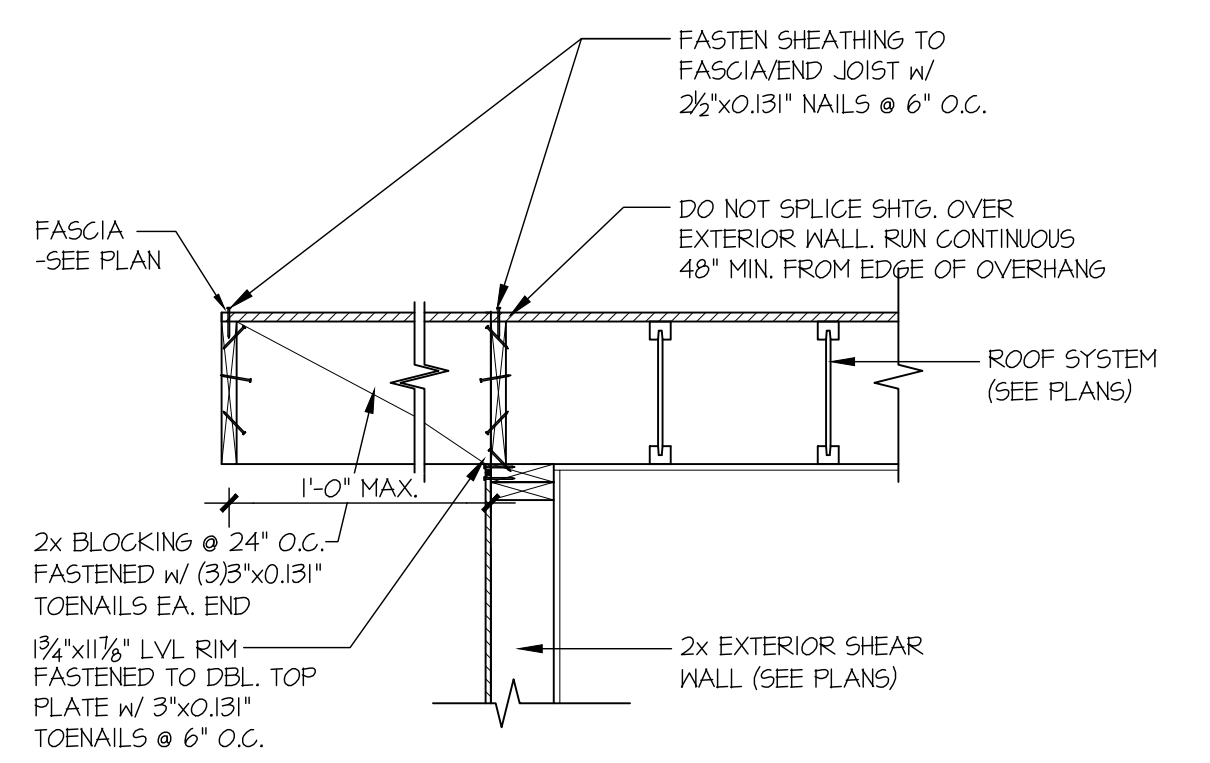
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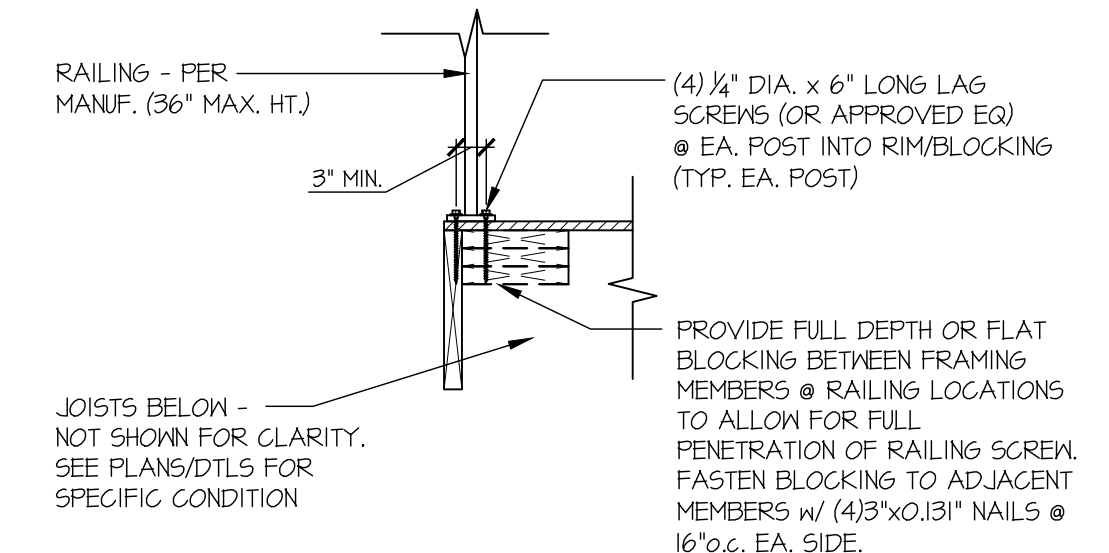
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A TYP. RAILING CONNECTION  
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WOOD FRMG BELOW



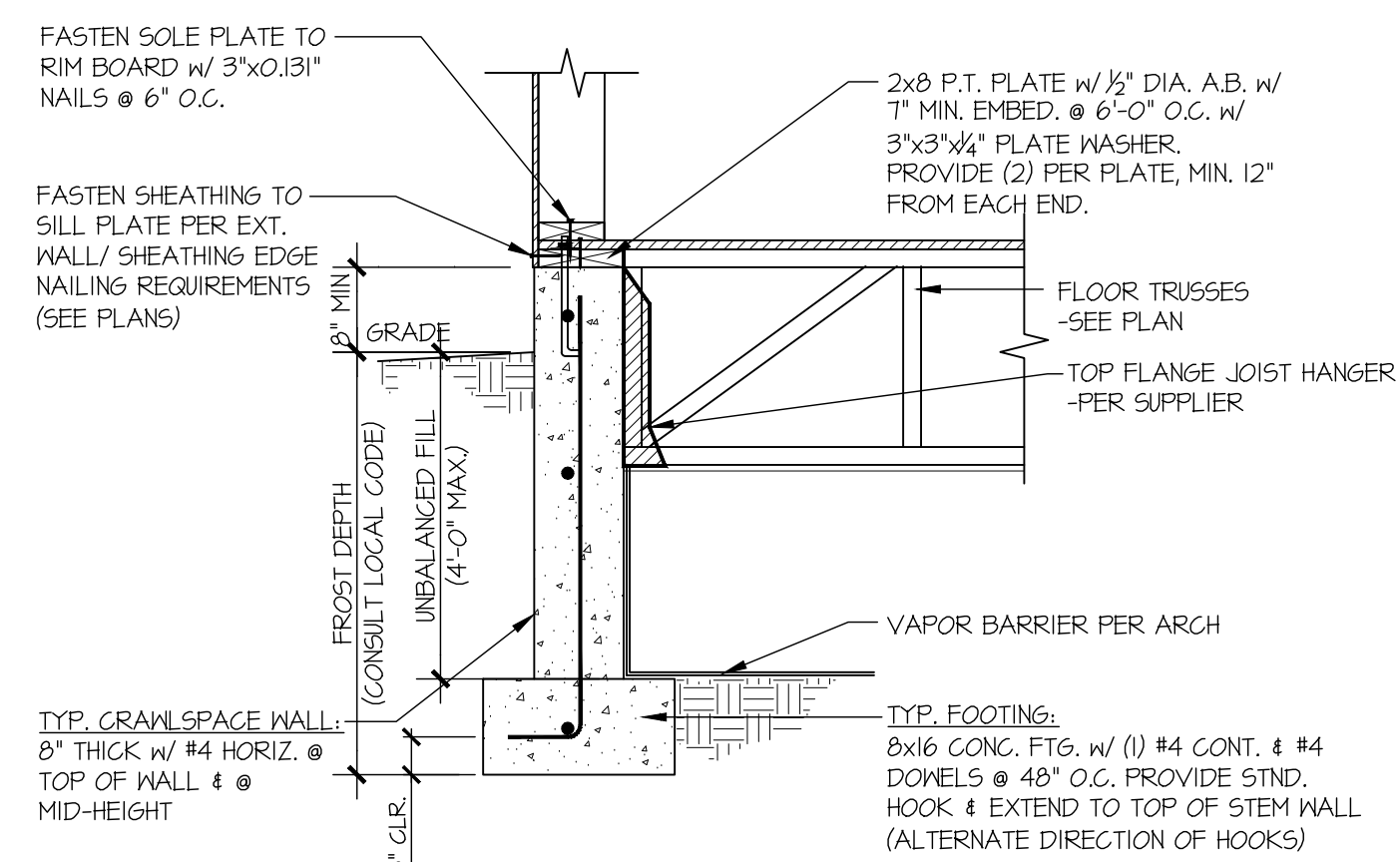
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drawn by: RSC  
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date: initial:

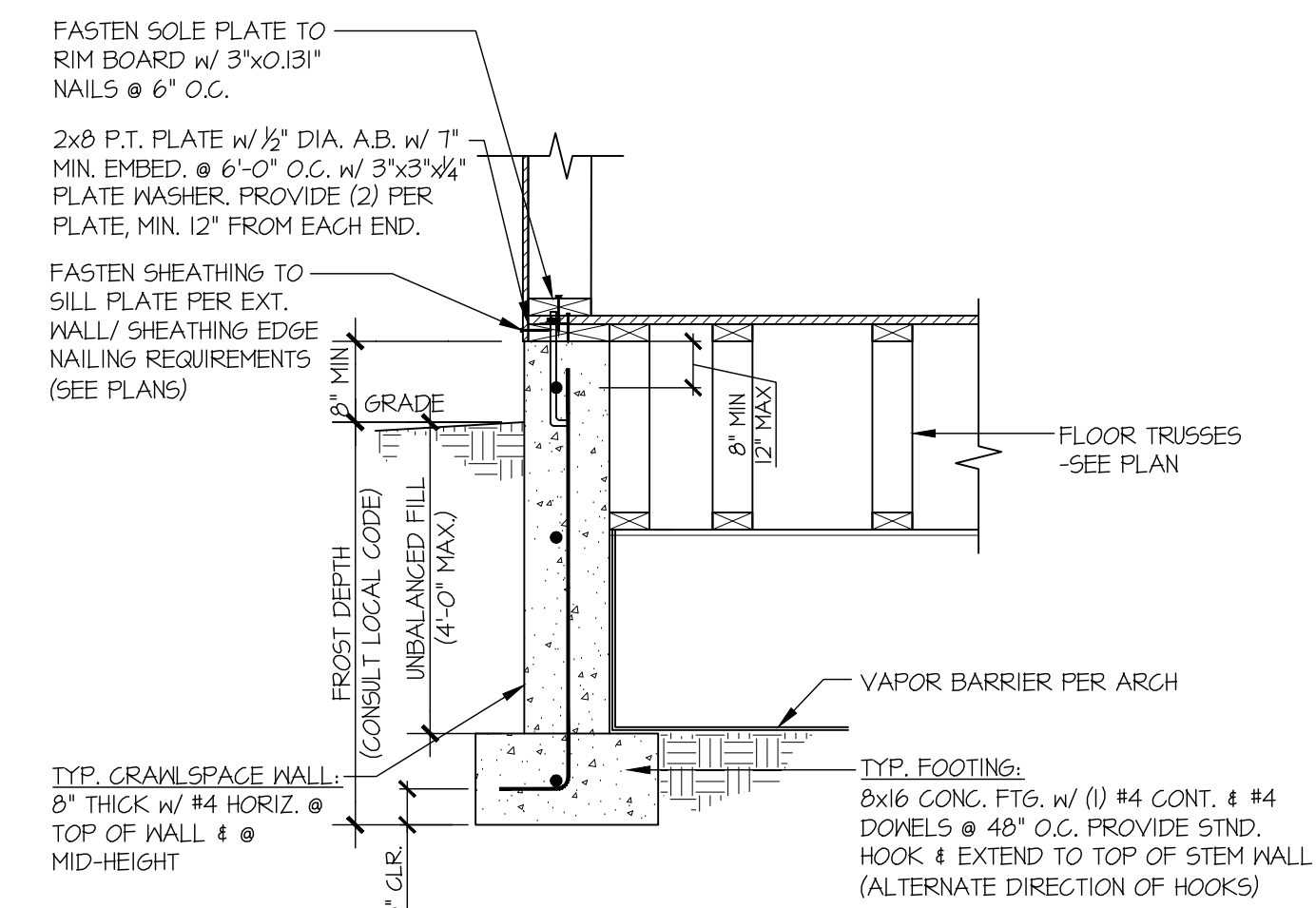
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ARCHITECTS

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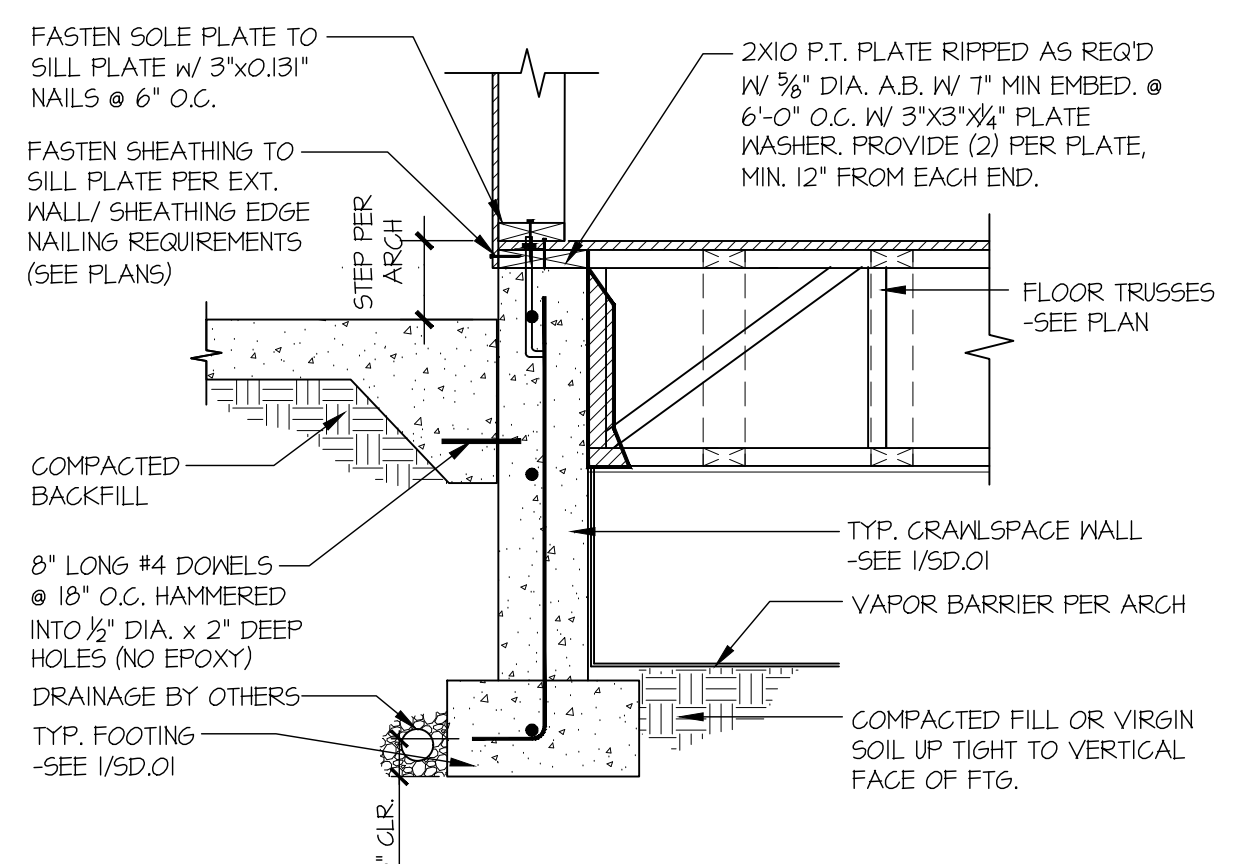
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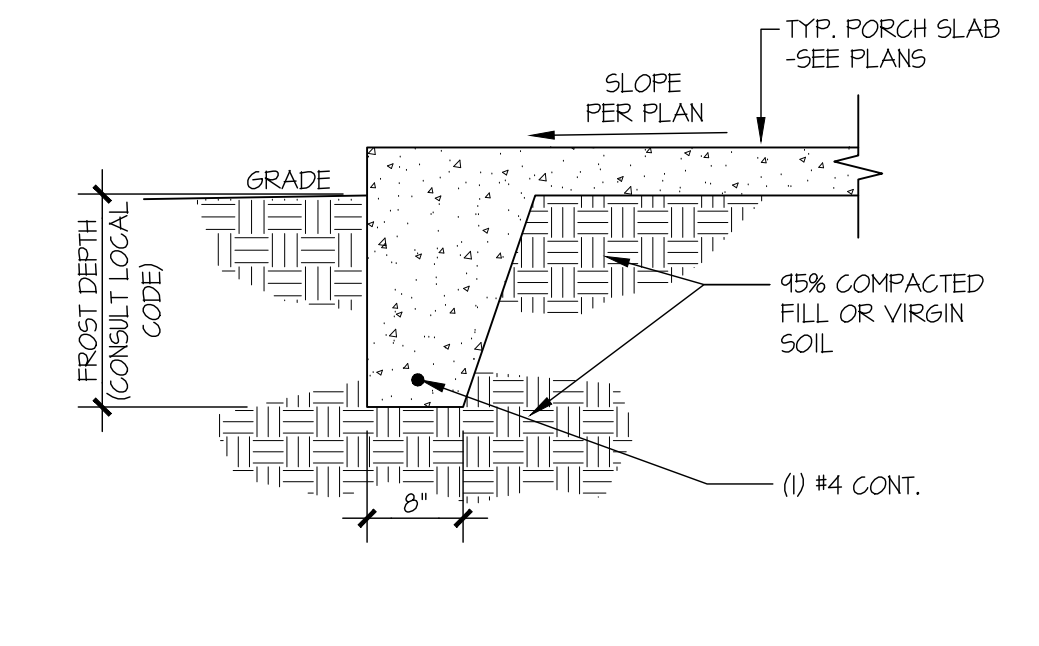
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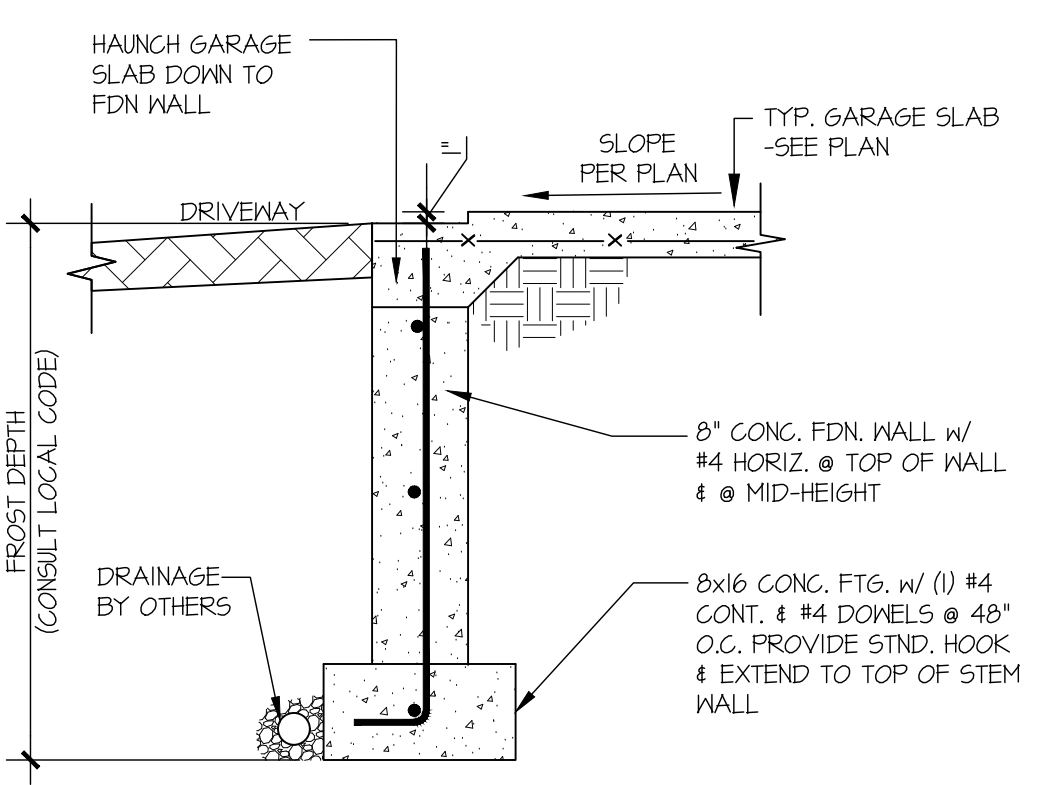
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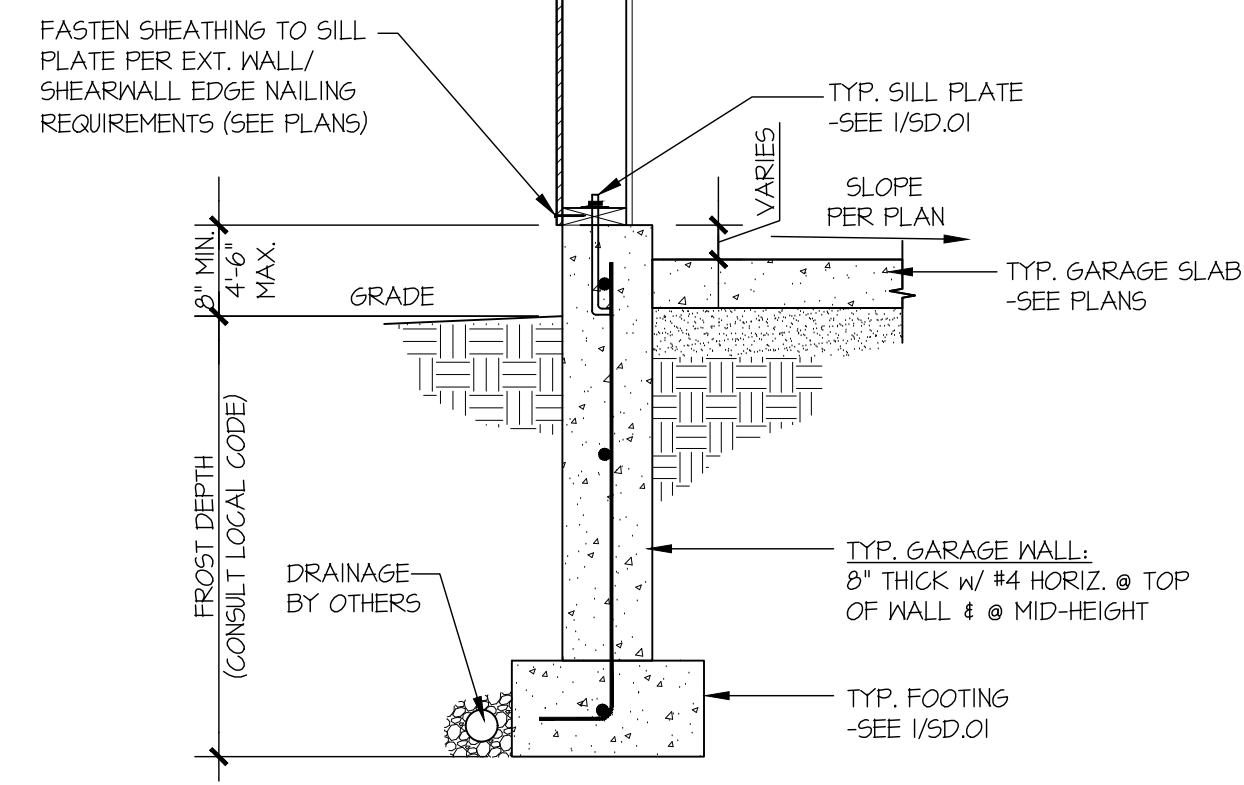
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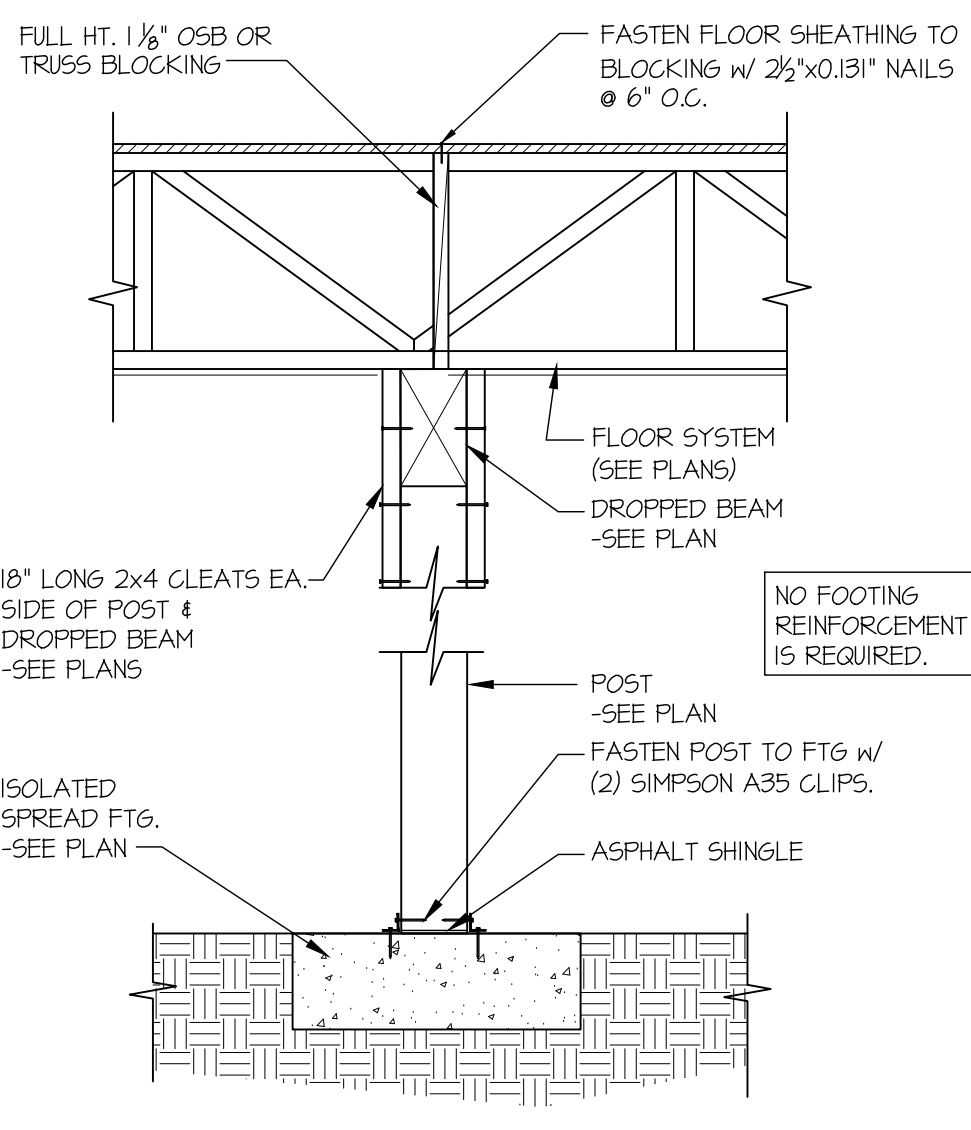
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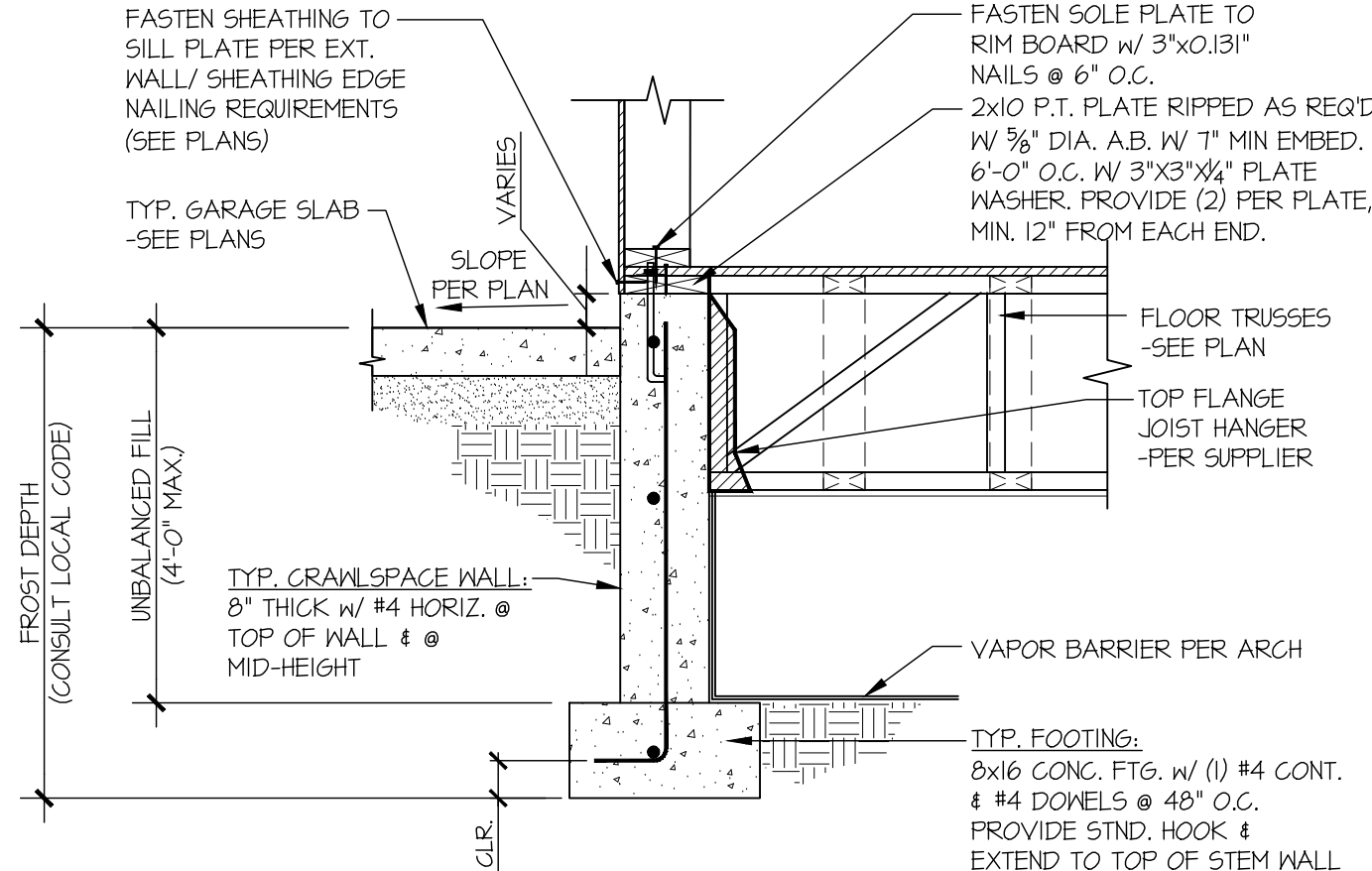
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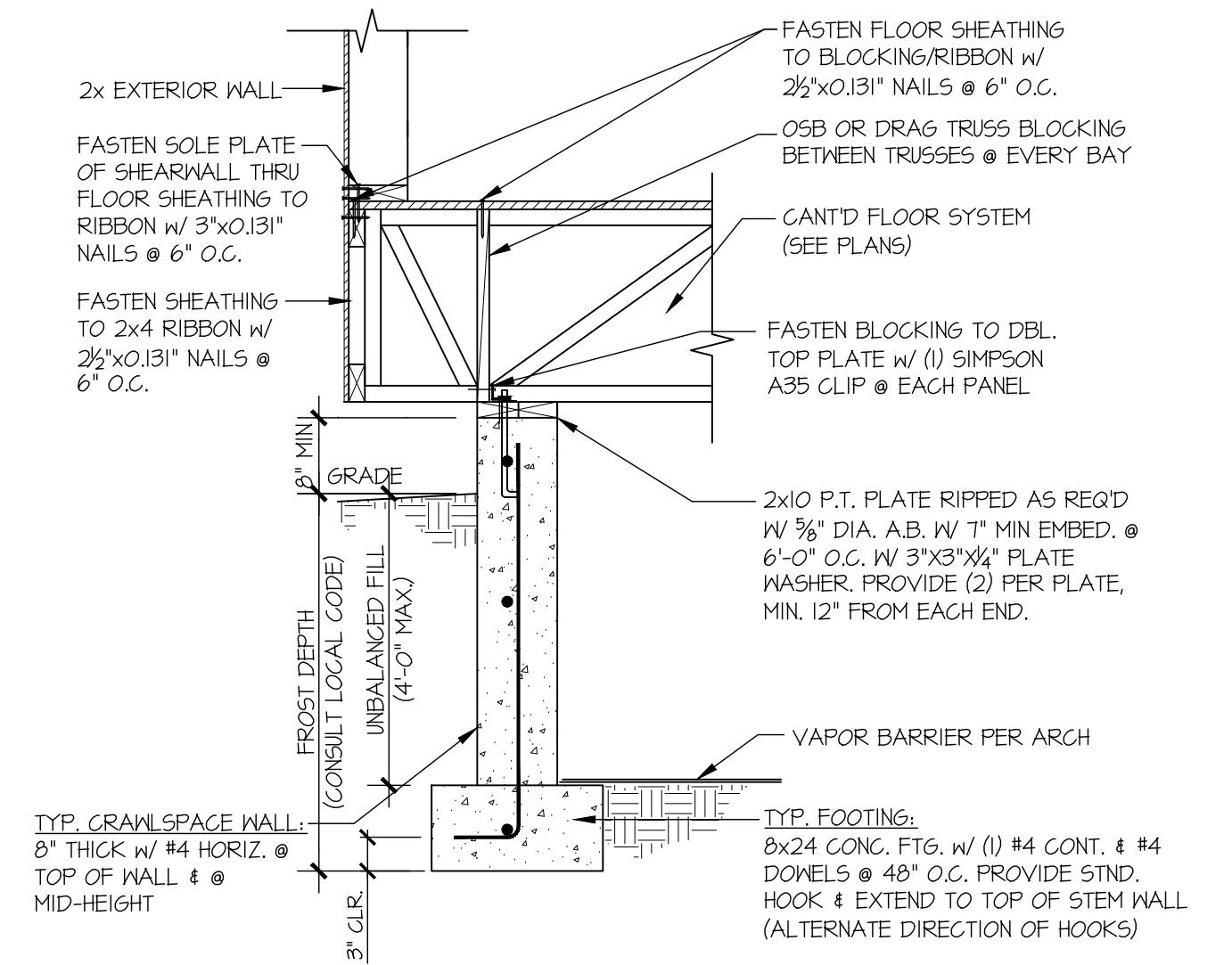
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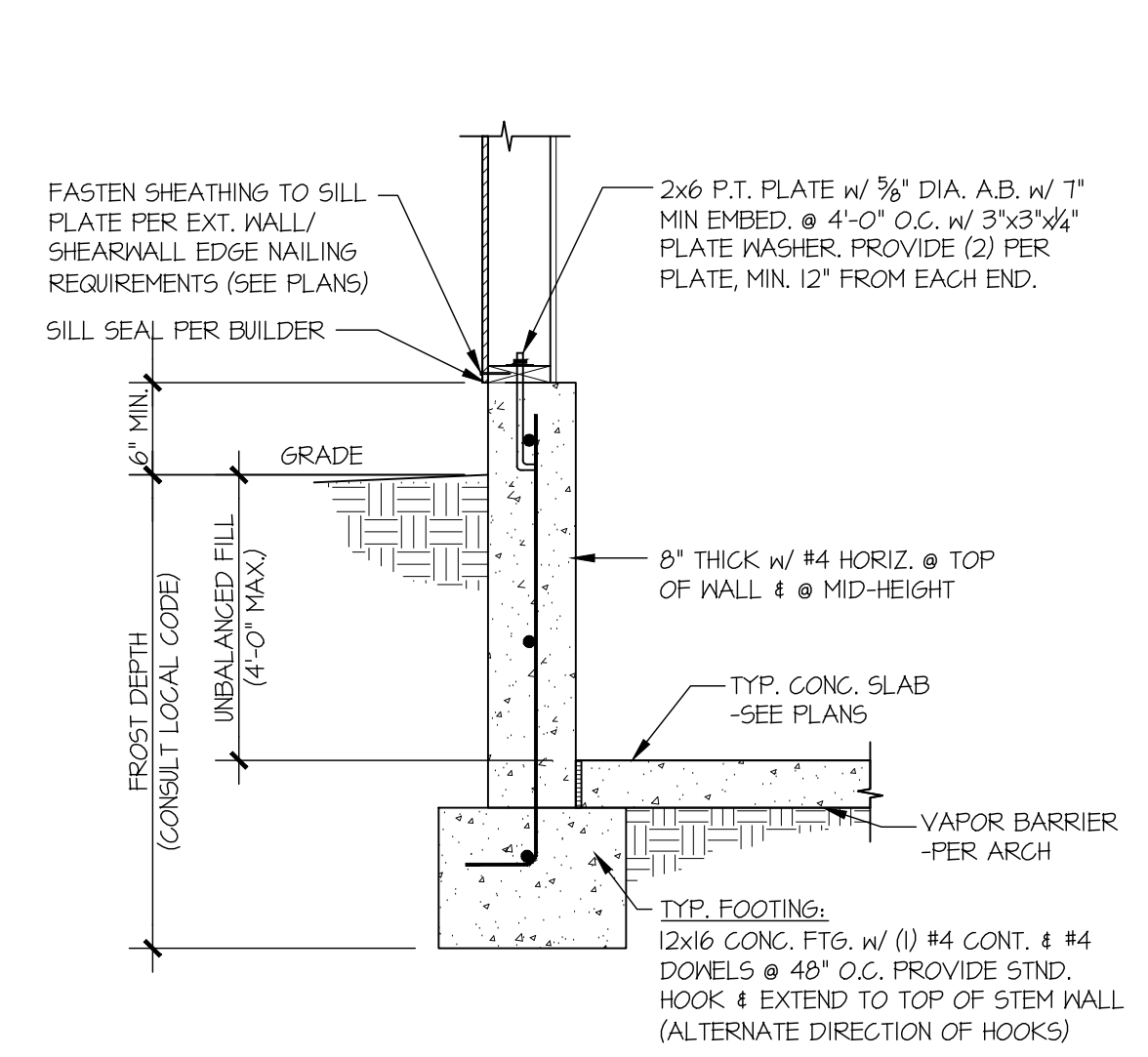
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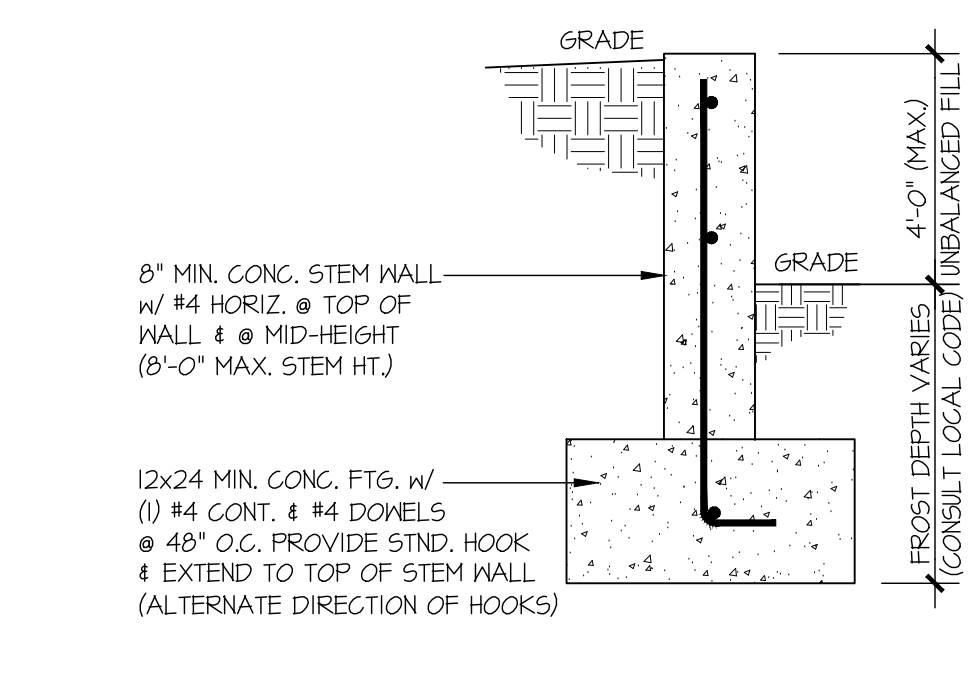
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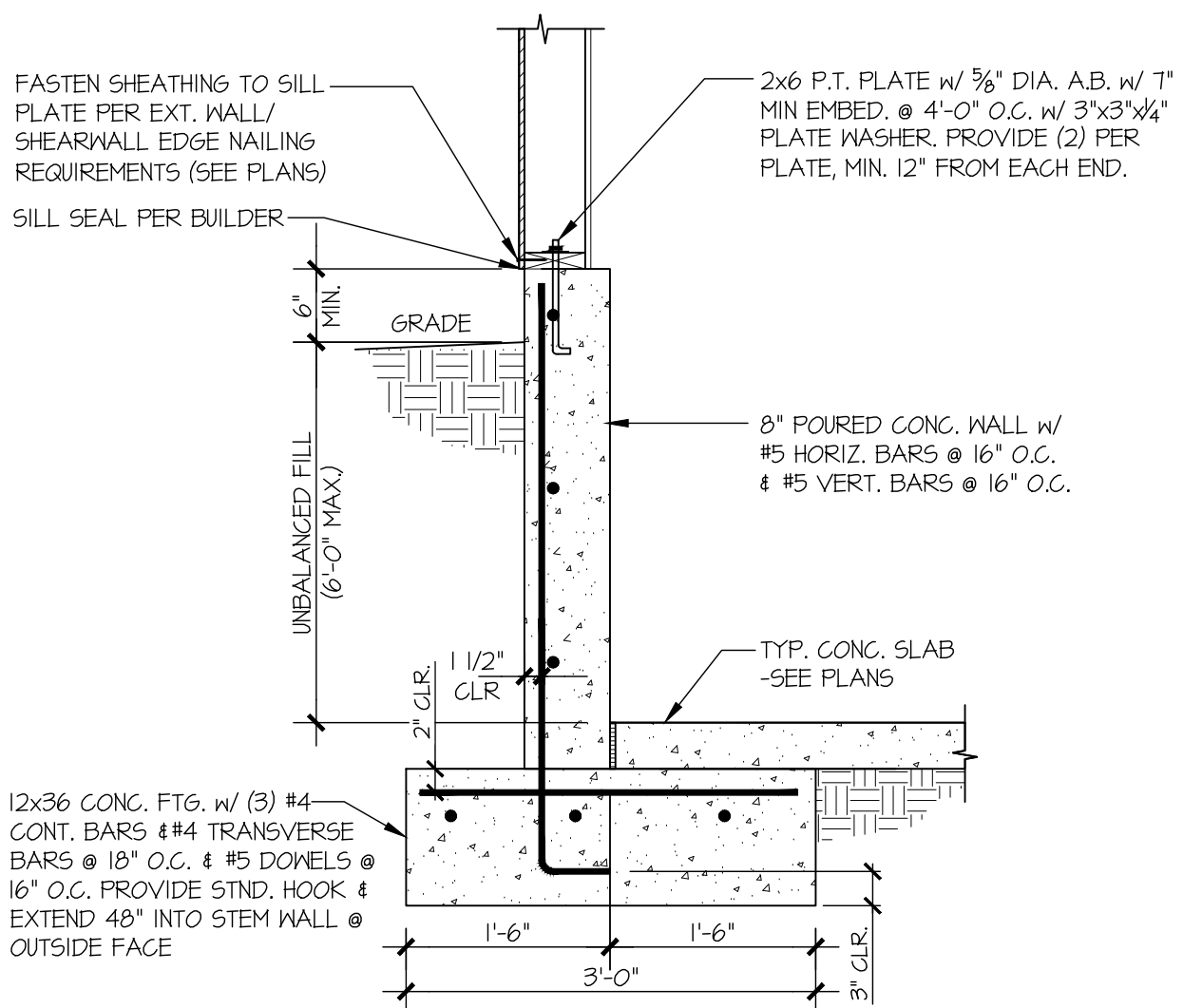
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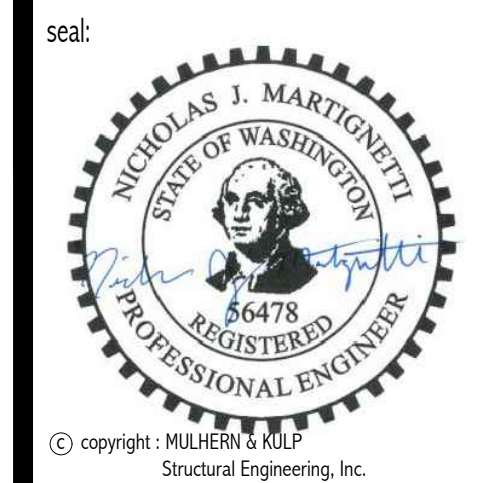
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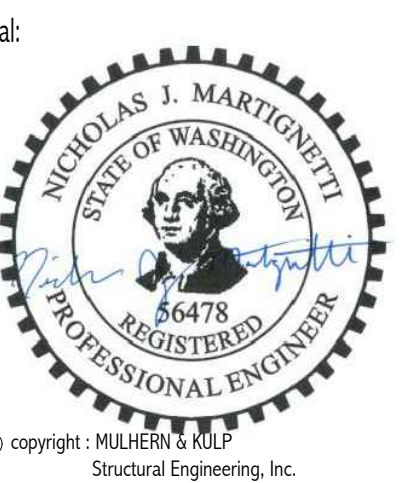
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**ARCHITECTS**

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**SEARS PLAT**  
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