

GENERAL NOTES

CODE

ALL MATERIALS, WORKMANSHIP AND CONSTRUCTION SHALL CONFORM TO THE 2018 EDITION OF THE IBC, IIRC, BUILDING CODE REQUIREMENTS AND ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.

BUILDING

TYPE V-B
OCCUPANCY GROUP: R3
SITE CLASS: D
WIND EXPOSURE: B

CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD, PROVIDE TEMPORARY BRACING AS REQUIRED UNTIL ALL PERMANENT CONNECTIONS AND STIFFENINGS HAVE BEEN INSTALLED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY ALL DISCREPANCIES OR CONFLICTS TO THE DESIGNER AT THE TIME THEY ARE NOTED.

FOUNDATION

UNLESS A SOILS INVESTIGATION BY A QUALIFIED SOILS ENGINEER IS PROVIDED, FOUNDATION DESIGN IS BASED ON AN ASSUMED AVERAGE SOIL BEARING OF 1500 PSF. EXTERIOR FOOTINGS SHALL BEAR 1'-6" (MINIMUM) BELOW FINISHED GRADE. ALL FOOTINGS TO BEAR ON FIRM, UNDISTURBED EARTH BELOW ORGANIC SURFACE SOILS. BACKFILL TO BE THOROUGHLY COMPACTED PER SPECIFICATIONS. PROVIDE (2) 4" (MIN) CONTINUOUS BOTTOM OF ALL WALLS AND FOOTINGS.

CONCRETE

CLASS AND USE	PSI f'c	MINIMUM SLUMP	SACKS/C.Y.
A - FOOTINGS AND FOUNDATIONS	2500	3 - 4	5-1/2
B - SLABS ON GRADE	2500	3 - 4	5-1/2

NOTE: 3000 PSI CONCRETE IS FOR WEATHERING PURPOSES ONLY. NO SPECIAL INSPECTION REQUIRED

- AIR-ENTRAINING AGENT (5% TO 7%) TO BE USED IN ALL CONCRETE FLATWORK EXPOSED TO WEATHER
- POZZOLITH 300 SERIES (4 OZ. PER 100* OF CEMENT) TO BE USED IN ALL CONCRETE.
- MIX MAY BE DESIGNED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 1905 OF THE IBC.
- WATER - CEMENT RATIO PER IBC TABLE 1904.2.2 & 1904.3

REINFORCING STEEL

ASTM A615 GRADE 40, REINFORCING STEEL DETAILS SHALL BE PREPARED BY AN EXPERIENCED DETAILER APPROVED BY THE DESIGNER AND CONFORM TO STANDARD PRACTICE OUTLINED IN ACI REPORT 315. NOTE: GRADE 40 FOR 14 BARS AND SMALLER, GRADE 60 FOR 15 BARS AND LARGER.

3"	CONCRETE POURED AGAINST EARTH
2"	FORMED CONCRETE WITH EARTH BACKFILL.
1-1/2"	BEAMS AND COLUMNS (STRIPS, TIES) WALLS EXPOSED TO WEATHER, SLABS ON MOISTURE BARRIER
1"	WALLS, INSIDE FACE.

LAP COLUMN VERTICALS, CLASS 1A' CONCRETE AND MASONRY COLUMN AND WALL VERTICALS 40 DIAMETERS (2' MIN) LAP ALL OTHER REINFORCING 30 DIAMETERS (2' MIN), SPLICES AT TENSION REGIONS SHALL NOT BE PERMITTED.

FRAMING

ALL FRAMING TO COMPLY WITH 2018 IBC, NAIL SIZES AND SPACING TO CONFORM TO IRC TABLE 602.3(1)

ALL WOOD IN CONTACT WITH CONCRETE TO BE PRESURE TREATED, EXTERIOR HANGERS TO BE SIMPSON ZMAK OR EQUAL (185).

STRUCTURAL DESIGN IS BASED ON THE FOLLOWING ALLOWABLE STRESSES (UNITS IN PSI):

WOOD

FRAMING LUMBER SHALL BE KILN DRIED OR MC-19, AND GRADED AND MARKED IN CONFORMANCE WITH UCLB STANDARD GRADING RULES FOR WEST COAST LUMBER NO. 16. FURNISH TO THE FOLLOWING MINIMUM STANDARDS:

JOISTS: (2X MEMBERS)	HEM-FIR NO. 2 MINIMUM BASE VALUE, Fc = 850 PSI
(3X AND 4X MEMBERS)	DOUGLAS FIR NO. 1 MINIMUM BASE VALUE, Fc = 1000 PSI
BEAMS: (4X MEMBERS) (INCL. 6X AND LARGER)	HEM-FIR NO. 2 DOUGLAS FIR NO. 1 MINIMUM BASE VALUE, Fc = 1350 PSI
POSTS: (4X MEMBERS) (6X AND LARGER)	DOUGLAS FIR NO. 2 MINIMUM BASE VALUE, Fc = 1300 PSI DOUGLAS FIR NO. 2 MINIMUM BASE VALUE, Fc = 925 PSI
STUDS, PLATES & MISG. FRAMING:	HEM-FIR STANDARD GRADE
EXTERIOR TOP PLATES:	DOUG-FIR STD. GRADE
DECKING: (2X6 TO 4X8)	HEM-FIR COMMERCIAL DEX MINIMUM BASE VALUE, Fc = 1350 PSI
LOADING:	
ROOF:	15 PSF DEAD LOAD + 25 PSF LIVE LOAD + 40 PSF
FLOOR:	10 PSF DEAD LOAD + 40 PSF LIVE LOAD + 50 PSF
CEILING:	5 PSF DEAD LOAD + 5 PSF LIVE LOAD + 10 PSF
DECK:	10 PSF DEAD LOAD + 60 PSF LIVE LOAD + 10 PSF
INTERIOR PARTITION:	10 PSF
EXTERIOR PARTITION:	10 PSF

BOLT HEADS AND NUTS BEARING AGAINST WOOD TO BE PROVIDED WITH FLAT CUT WASHERS. WOOD BEARING ON OR INSTALLED WITHIN 1" OF MASONRY OR CONCRETE TO BE TREATED WITH AN APPROVED PRESERVATIVE. SOLID BLOCKING OF NOT LESS THAN 2" THICKNESS SHALL BE PROVIDED AT ENDS AND AT ALL SUPPORT OF JOISTS AND RAFTERS. BETWEEN SUPPORTS PROVIDE BLOCKING OR APPROVED BRIDGING AT 8'-0" O.C. FOR FLOOR JOISTS, 10'-0" FOR ROOF JOISTS. TYPICAL GILL BOLTS TO BE 5/8" DIAMETER AT 4'-0" O.C. EMBED 10". ALL METAL FRAMING ANCHORS AND HANGERS SHOWN ON DRAWINGS SHALL BE "STRONG TIE CONNECTORS" AS MANUFACTURED BY SIMPSON COMPANY OR APPROVED EQUAL.

WOOD TRUSSES

SHALL BE FACTORY FABRICATED TRUSSES, DESIGN AND FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE, ENGINEERING DESIGN AND SHOP DRAWINGS BEARING THE STAMP OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF WASHINGTON AND SHOWING ALL DETAILS OF CONSTRUCTION INCLUDING BRACING.

TRUSSES SHALL BE DESIGNED FOR THE UNIFORM LOADING AS FOLLOWS:

TOP CORD	33 PSF OF TRIBUTARY AREA
BOTTOM CORD	10 PSF OF TRIBUTARY AREA

FABRICATOR SHALL BE APPROVED BY THE DESIGNER.

DRAFTSTOPPING

(IRC 302.12)
CONCEALED SPACES AT UPPER FLOOR OPEN TRUSS FRAMING SHALL BE DIVIDED IN APPROXIMATE EQUAL SPACES NOT TO EXCEED 1000 SF. AND SHALL CONSIST OF 1/2" GYPSUM BOARD OR 3/8" WOOD STRUCTURAL PANELS. DRAFTSTOPPING SHALL BE INSTALLED PARALLEL TO FRAMING MEMBERS. THE INTEGRITY OF THE DRAFTSTOPS SHALL BE MAINTAINED.

STRUCTURAL GLUE-LAMINATED TIMBER

GLUE LAMINATED MEMBERS SHALL BE FABRICATED IN CONFORMANCE WITH ASTM AND AITC STANDARD. EACH MEMBER SHALL BEAR AN AITC IDENTIFICATION MARK AND SHALL BE ACCOMPANIED BY AN AITC CERTIFICATE OF CONFORMANCE. ALL SIMPLE SPAN BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V4, Fc=2400 PSI, Fv=165 PSI. ALL CANTILEVERED BEAMS SHALL BE DOUGLAS FIR COMBINATION 24F-V8, Fc=2400 PSI, Fv=165 PSI. EXTERIOR JOINTS AND SEAMS SHALL BE SIMILARLY TREATED, OR TAPED, OR COVERED WITH MOISTURE VAPOR PERMEABLE HOUSEWRAP.

PLYWOOD / OSB

EACH SHEET SHALL BEAR THE TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION. ALL GRADING SHALL CONFORM TO PS 1. USE THICKNESS AND NAILING AS SHOWN ON THE DRAWINGS. ALL PLYWOOD SHALL BE C-D INTERIOR GRADE WITH EXTERIOR GLUE, EXCEPT AS OTHERWISE SHOWN OR NOTED. PROVIDE 8d AT 6" O.C. ON CENTER AT SUPPORTED PANEL EDGES AND 8d AT 12" ON CENTER ON OTHER SUPPORTING MEMBERS FOR WALLS, ROOF AND FLOORS. NOTE: EQUIVALENT RATED ORIENTED STRAND BOARD (OSB) MAY BE USED IN LIEU OF PLYWOOD CALLED OUT, AND 0.31" DIAMETER P-NAILS MAY BE USED IN LIEU OF 8d NAILS.

ROOF DIAPHRAGM: 1/2" PLYWOOD (PANEL INDEX + 24/16, WITH 8d NAILS AT 6" O.C. AT SUPPORTED PANEL AND AT 12" O.C. AT FIELD (TYPICAL, UNLESS NOTED OTHERWISE).

FLOOR DIAPHRAGM: 3/4" PLYWOOD (PANEL INDEX + 24/16) WITH 10d NAILS AT 6" O.C. AT SUPPORTED PANEL EDGES AND AT 12" O.C. AT FIELD (TYPICAL, UNLESS NOTED OTHERWISE ON PLAN).
OPTIONAL TO USE 0.148 DIAMETER P-NAILS IN LIEU OF 10d NAILS

STRUCTURAL STEEL

STRUCTURAL GRADE ASTM A36, Fy = 36,000 PSI. PIPE COLUMNS ASTM A53, GRADE B, Fy = 35,000 PSI. STRUCTURAL TUBING COLUMNS ASTM A500, GRADE B, Fy = 46,000 PSI. ALL STEEL EXCEPT STEEL EMBEDDED IN CONCRETE SHALL BE GIVEN ONE SHOP COAT OF APPROVED PAINT. WELDS TO BE 3/16" MINIMUM CONTINUOUS FILLET BY WABO CERTIFIED WELDERS. FIELD CONNECTIONS NOT SHOWN SHALL BE BOLTED FRAMED BEAM CONNECTIONS PER AISI. ALL BOLTS TO BE A325. DURING ERECTION, STRUCTURAL STEEL SHALL BE SECURED FROM COLLAPSING WITH TEMPORARY BRACING, WHERE EXPANSION ANCHORS ARE SPECIFIED, THE CONTRACTOR SHALL SUBMIT TO THE STRUCTURAL ENGINEER A SAMPLE OF THE ANCHOR TO BE USED WITH LABORATORY DATA OF PULL-OUT AND SHEAR STRENGTH.

FIREPLACES

MASONRY FIREPLACES AND CHIMNEYS ARE TO BE CONSTRUCTED TO CONFORM TO ALL APPLICABLE PORTIONS OF THE IBC SECTION VII AND IRC SECTION R1003. FLUE LINER MINIMUM 9/8" FIRE CLAY (OR EQUIV.) PER IBC SECTION R1003.12 AND TABLE R1003.14. FLUE AREA PER IBC TABLE R1001.1. CHIMNEYS SHALL SUPPORT ONLY THEIR OWN WEIGHT UNLESS SPECIFICALLY DESIGNED TO SUPPORT ADDITIONAL LOADS.

ALL FIREPLACES ARE TO BE PROVIDED WITH TIGHTLY-FITTING FLUE DAMPERS, OPERATED WITH A READILY-ACCESSIBLE MANUAL OR APPROVED AUTOMATIC CONTROL AND AN OUTSIDE SOURCE OF COMBUSTION AIR. MINIMUM DUCT SIZE OF 6 SQUARE INCHES IN AREA, PROVIDED WITH READILY-OPERABLE DAMPER LOCATED IN FRONT PART OF FIREBOX.

PREFABRICATED FIREPLACES, CHIMNEYS AND RELATED COMPONENTS TO BEAR UL, HAVE WASHINGTON STATE CERTIFICATION SEAL OF APPROVAL AND BE INSTALLED PER ANY CONDITIONS OF APPROVAL.

DIRECT VENT UNITS ARE REQUIRED WHEN GAS OPERATED

DOORS AND WINDOWS

ALL GLAZING TO BE DOUBLE GLAZING WITH MAXIMUM "U" VALUE OF 0.18. ALL SKYLIGHTS TO BE DOUBLE GLAZING. MAXIMUM "U" VALUE OF 0.50. FACTORY BUILT WINDOWS TO BE CONSTRUCTED TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM PER LINEAL FOOT OF OPERABLE SASH PERIMETER AS TESTED BY STANDARD ASTM E 283.13. SITE BUILT AND MILLWORK SHOP BUILT WOODEN SASH ARE EXEMPT FROM INFILTRATION CRITERIA ABOVE, BUT MUST BE MADE TIGHTLY FITTING AND WEATHER-STRIPPED OR CAULKED. SLIDING GLASS DOORS TO PERMIT MAXIMUM INFILTRATION OF 0.5 CFM PER INFILTRATION OF 10 CFM PER SQUARE FOOT OF DOOR AREA.

CAULK OR WEATHER-STRIP WINDOWS, DOORS AND PENETRATIONS

GLAZING IN DOORS AND GLAZING IN HAZARDOUS LOCATIONS DESCRIBED IN IRC SECTION R308, TO BE SAFETY GLAZING

GLAZING (IRC, R308)

GLAZING INSTALLED IN HAZARDOUS LOCATIONS AS DEFINED IN SECTION R308.4 SHALL BE PROVIDED WITH A MANUFACTURER'S DESIGNATION SPECIFYING WHO APPLIED THE DESIGNATION, THE TYPE OF GLASS AND THE SAFETY GLAZING STANDARD WITH WHICH IT COMPLIES. THE DESIGNATION SHALL BE VISIBLE IN THE FINAL INSTALLATION AND CANNOT BE REMOVED FROM THE WINDOW WITHOUT BEING DESTROYED.

INSULATION

UNLESS OTHERWISE NOTED, INSULATION TO BE AS FOLLOWS:

LOCATION	MINIMUM INSULATION ADDED	MAXIMUM ASSEMBLY "U" VALUE
CEILING & ROOFS	R-49, R-38 (ADV.)	03
EXTERIOR WALLS	R-21	05
WALLS BETWEEN HOUSE & GARAGE	R-21	05
FLOORS OVER UNHEATED SPACE	R-38	03
SLAB PERIMETER: (2)	R-10	
ELECTRIC WATER HEATERS (3)	PER ASHRAE 90A-80	
GAS WATER HEATERS (4)	PER ASHRAE 90A-80	
DUCTS IN UNHEATED SPACES	PER USEC TABLE 4-16	

FOOTNOTES:

- R-38 IN SINGLE RAFTER, JOIST VAULTED CEILINGS
- APPLIED TO PERIMETER OF SLAB FROM TOP OF SLAB DOWNWARD HORIZONTALLY MINIMUM 24" SEE BASIC FOUNDATION DETAILS.
- MUST BE INTEGRATED WITH UNIT. UNIT MUST DISPLAY VERIFICATION.
- UNLESS UNIT CONFORMS TO ASHRAE 90A-80 AND IS LABELED TO SIGNIFY CONFORMANCE

SMOKE ALARMS (IRC, R314)

ALL SMOKE ALARMS SHALL BE LISTED IN ACCORDANCE WITH UL 217 AND INSTALLED IN ACCORDANCE WITH THE HOUSEHOLD FIRE WARNING EQUIPMENT PROVISIONS OF NFPA 72. SMOKE ALARMS SHALL BE 100V, INTERCONNECTED WITH BATTERY BACK-UP AND SHALL BE LOCATED IN:
a. EACH SLEEPING ROOM
b. OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF THE BEDROOMS
c. ON EACH ADDITIONAL STORY OF THE DWELLING

EFFECTIVE JAN. 1, 2011, SINGLE STATION CARBON MONOXIDE ALARMS COMPLYING WITH UL 2034 SHALL BE INSTALLED IN ACCORDANCE WITH THIS CODE AND MANUFACTURER'S INSTRUCTIONS AND BE INSTALLED OUTSIDE EACH SEPARATE SLEEPING AREA IN THE IMMEDIATE VICINITY OF BEDROOMS AND EACH FLOOR LEVEL.

HEAT ALARMS (IRC, R314)

R314.2.3 New attached garages. A heat detector or heat alarm rated for the ambient outdoor temperatures and humidity shall be installed in new garages that are attached to or located under new and existing dwellings. Heat detectors and heat alarms shall be installed in a central location and in accordance with the manufacturer's instructions.

R314.4.1 Heat detection interconnection. Heat detectors and heat alarms shall be connected to an alarm or a smoke alarm that is installed in the dwelling. Alarms and smoke alarms that are installed for this purpose shall be located in a hallway, room, or other location that will provide occupant notification.

INFILTRATION CONTROL (USEC, SECTION 402.4)

- EXTERIOR JOINTS AROUND WINDOWS AND DOOR FRAMES, OPENINGS BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOF AND BETWEEN WALL PANELS, OPENINGS AT PENETRATIONS OF UTILITY SERVICES THROUGH WALLS, FLOOR AND ROOFS, AND ALL OTHER OPENINGS IN THE BUILDING ENVELOPE SHALL BE SEALED, CAULKED AND GASKETED OR WEATHER-STRIPPED TO LIMIT AIR LEAKAGE. OTHER EXTERIOR JOINTS AND SEAMS SHALL BE SIMILARLY TREATED, OR TAPED, OR COVERED WITH MOISTURE VAPOR PERMEABLE HOUSEWRAP.
- ALL EXTERIOR DOORS OR DOORS SERVING AS ACCESS TO AN ENCLOSED UNHEATED AREA SHALL BE WEATHER-STRIPPED TO LIMIT LEAKAGE AROUND THEIR PERIMETER WHEN IN A CLOSED POSITION.
 - TYPE IC RATED AND CERTIFIED UNDER ASTM E283 TO HAVE NO MORE THAN 2.0 CFM AIR MOVEMENT
 - THE LIGHTING FIXTURE SHALL BE TESTED AT 75 PASCALS OR 191 LBS/SF PRESSURE DIFFERENCE AND LABELED SHOWING COMPLIANCE
 - SHALL BE INSTALLED WITH A GASKET OR CAULK AT THE CEILING TO PREVENT AIR LEAKAGE
- RECESSED LIGHTING FIXTURES, WHEN INSTALLED IN CONTACT WITH THE BUILDING ENVELOPE SHALL BE:
 - TYPE IC RATED AND CERTIFIED UNDER ASTM E283 TO HAVE NO MORE THAN 2.0 CFM AIR MOVEMENT
 - THE LIGHTING FIXTURE SHALL BE TESTED AT 75 PASCALS OR 191 LBS/SF PRESSURE DIFFERENCE AND LABELED SHOWING COMPLIANCE
 - SHALL BE INSTALLED WITH A GASKET OR CAULK AT THE CEILING TO PREVENT AIR LEAKAGE
- BUILDING AIR LEAKAGE TESTING REQUIRED PER USEC 402.4.12 AND SHALL OCCUR ANYTIME AFTER ROUGH IN AND AFTER INSTALLATION OF PENETRATIONS OF THE BUILDING ENVELOPE. ACCEPTABLE AIR LEAKAGE TO BE LESS THAN 0.00030 SLA WITH A BLOWER DOOR AT A PRESS OF 50 PASCALS (0.2 INCH WG).

DUCTWORK

- DUCT SYSTEMS SHALL BE OF METAL AS SET FORTH IN TABLE M1601.1(2) OR FACTORY-MADE AIR DUCTS COMPLYING WITH M1601.2 AND 1601.2 I.R.C.
- JOINTS AND SEAMS SHALL BE SUBSTANTIALLY AIRTIGHT (M1601.4 I.R.C.)
- INSTALLATION OF DUCTS SHALL COMPLY WITH SECTION M1601.4 I.R.C.
- DUCT INSULATION SHALL BE INSTALLED IN ACCORDANCE WITH SECTION M1601.3 I.R.C.
- BUILDING CAVITIES MAY NOT BE USED AS DUCTS (UAC M1601.1)
- INSTALLATION OF DUCTS IN EXTERIOR WALLS, FLOORS OR CEILINGS SHALL NOT DISPLACE REQUIRED ENVELOPE INSULATION.

SEAMS AND JOINTS: (M1601.4) I.R.C.)

DUCTS SHALL BE LEAK TESTED IN ACCORDANCE WITH R5-33 USING THE MAXIMUM DUCT LEAKAGE RATES. ALL DUCTS, AIR HANDLERS, FILTER BOXES, AND BUILDING CAVITIES USED AS DUCTS SHALL BE SEALED. JOINTS AND SEAMS SHALL COMPLY WITH SECTION M1601.3 OF THE IRC OR 609.3 IMC. DUCT TIGHTNESS TESTING SHALL BE CONDUCTED TO VERIFY THAT DUCT ARE SEALED AND A SIGNED AFFIDAVIT DOCUMENTING THE TEST RESULTS SHALL BE PROVIDED TO THE JURISDICTION. DUCT TIGHTNESS SHALL BE VERIFIED BY EITHER POST-CONSTRUCTION TESTING OR ROUGH-IN TESTING

2018 WASHINGTON STATE ENERGY CODE

TABLE R402.1.1 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENTA	
CLIMATE ZONE 5 AND MARINE 4	
Fenestration U-Factorb	0.30
Skylightb U-Factor	0.50
Ceiling R-Valuee	49
Wood Frame Wall,g,h R-Value	21 int
Floor R-Value	30
Below-Grade,c,h Wall R-value	10/15/21 int + 5TB
Slab,d,f R-Value & Depth	10, 2 ft

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 R402.2.9.1.
- For single rafter- or joist-vaulted ceilings, the insulation may be reduced to R-38 if the full insulation depth extends over the top plate of the exterior wall.
- R-7.5 continuous insulation installed over an existing slab is deemed to be equivalent to the required perimeter slab insulation when applied to existing slabs complying with Section R503.1.1. If foam plastic is used, it shall meet the requirements for thermal barriers protecting foam plastics.
- For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.
- Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78 percent of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

R402.1.2 R-value computation. Insulation R-value shall be determined as specified in Section R303.1.4. Insulation material used in layers, such as framing cavity insulation or continuous insulation, shall be summed to compute the corresponding component R-value. The manufacturer's settled R-value shall be used for blown insulation. Computed R-values shall not include an R-value for other building materials or air films. Where insulated siding is used for the purpose of complying with the continuous insulation requirements of Table R402.1.1, the manufacturer's labeled R-value for insulated siding shall be reduced by R-0.6.

R402.1.3 U-factor alternative. An assembly with a U-factor equal to or less than that specified in Table R402.1.3 shall be permitted as an alternative to the R-value in Table R402.1.1. U-factors shall be determined as specified in Section R402.1.5.

CERTIFICATE (USEC R401.3)

A permanent certificate shall be completed by the builder or registered design professional and posted on a wall in the space where the furnace is located, a utility room, or an approved location inside the building. When located on an electrical panel, the certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label, or other required labels. The certificate shall list the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, below-grade wall, and/or floor) and ducts outside conditioned spaces; U-factors for fenestration and the solar heat gain coefficient (SHGC) of fenestration; and the results from any required duct system and building envelope air leakage testing done on the building; where there is more than one value for each component, the certificate shall list the value covering the largest area. The certificate shall list the types and efficiencies of heating, cooling and service water heating equipment; 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.

LIGHTING (USEC R404)

LIGHTING EQUIPMENT (MANDATORY). A MINIMUM IF 90% OF LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES SHALL BE HIGH-EFFICACY LAMPS IN ACCORDANCE WITH 2018 USEC SECTION R404.1

A NFPA 72-- Chapter 29 Monitored Fire Alarm System in compliance with NFPA 72 and CoMi standards shall be installed throughout the residence.

A separate FIRE permit is required.

A NFPA 13D Fire Sprinkler System in compliance with NFPA 13D and CoMi standards shall be installed throughout the residence.

A separate FIRE permit is required.

INTERMITTENT WHOLE HOUSE VENTILATING

SYSTEM USING EXHAUST FANS

2018 INTERNATIONAL RESIDENTIAL CODE (IRC M1501.3) CHAPTER 51-52 I.A.C. - EFFECTIVE FEB. 1, 2021
ACCORDING TO WA STATE AMENDMENTS VIA IAC 51-51

INTERMITTENT WHOLE HOUSE VENTILATION SYSTEMS SHALL OPERATE INTERMITTENTLY AND CONTINUOUSLY. THE SYSTEM SHALL HAVE A AUTOMATIC 24-HOUR CLOCK TIMER SET TO OPERATE PER FRACTIONAL OPERATION TIME IN M1501.3.2. CONTROLS SHALL BE CAPABLE OF OPERATING THE VENTILATION SYSTEM WITHOUT ENERGIZING OTHER ENERGY CONSUMING APPLIANCES. A LABEL SHALL BE AFFIXED TO THE CONTROLS THAT READS "WHOLE HOUSE VENTILATION (SEE OPERATING INSTRUCTIONS)". OUTDOOR AIR WILL BE DRAIN FROM AIR INLETS INSTALLED IN WINDOWS.

WHOLE HOUSE VENTILATION FANS:

- FAN AIRFLOW RATING AND DUCT SYSTEM SHALL BE DESIGNED AND INSTALLED TO DELIVER AT LEAST THE OUTDOOR AIRFLOW PER TABLE, ADJUSTED PER THE EXCEPTION
- EXHAUST FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH THE AIRFLOW AND SOUND RATING PROCEDURES OF THE HOME VENTILATING INSTITUTE.
- DOORS WILL BE UNDERCUT BY 1/2" PER THE WASHINGTON STATE ADMPMENTS R5013.4.4

FAN NOISE: (IRC M15013.42)

- WHOLE HOUSE FANS LOCATED 4 FEET OR LESS FROM THE INTERIOR GRILLE SHALL HAVE A SONE RATING OF 10 OR LESS MEASURED AT 0.10 INCHES WATER GAUGE
- MANUFACTURER'S FAN NOISE RATINGS SHALL BE DETERMINED ACCORDING TO HVAC 9.5
- REMOVELY MOUNTED FANS SHALL BE ACOUSTICALLY ISOLATED FROM THE STRUCTURAL ELEMENTS OF THE BUILDING AND FROM ATTACHED DUCT WORK USING INSULATED FLEXIBLE DUCT OR OTHER APPROVED MATERIAL.

EXHAUST DUCTS (IRC R506)

- SHALL TERMINATE OUTSIDE THE BUILDING
- SHALL BE EQUIPPED WITH BACK-DRAFT DAMPERS
- ALL EXHAUST DUCTS IN UNCONDITIONED SPACES SHALL BE INSULATED TO A MINIMUM OF R-4.5
- EXHAUST OUTLETS SHALL COMPLY WITH SECTION 5012

OUTDOOR AIR (IRC M15013.4.4)

EXHAUST FAN ONLY VENTILATION SYSTEMS SHALL PROVIDE OUTDOOR AIR THROUGH AIR INLETS INSTALLED IN WINDOWS. INLETS SHALL BE CONTROLLABLE WITH SECURE OPENINGS, SHALL BE DESIGNED TO NOT COMPROMISE THE THERMAL PROPERTIES OF THE BUILDING ENVELOPE, ACCESSIBLE TO OCCUPANTS AND SCREENED. INLETS SHALL PROVIDE NOT LESS THAN 4 SQUARE INCHES OF NET FREE AREA OF OPENING FOR EACH 100CFM OF OUTDOOR AIR REQUIRED IN TABLE 15013.3. EACH OCCUPIABLE SPACE SHALL HAVE A MINIMUM OF ONE AIR INLET THAT HAS A MINIMUM OF 4 SQUARE INCHES OF NET FREE AREA.

SOURCE-SPECIFIC VENTILATION (IRC M1501)

SOURCE SPECIFIC EXHAUST VENTILATION IS REQUIRED IN EACH KITCHEN, BATHROOM, WATER CLOSET, LAUNDRY ROOM, INDOOR SWIMMING POOL, SPA, AND OTHER ROOMS WHERE EXCESS WATER VAPOR OR COOKING ODOR IS PRODUCED. THE MINIMUM SOURCE SPECIFIC VENTILATION EFFECTIVE EXHAUST CAPACITY SHALL NOT BE LESS THAN LEVELS SPECIFIED IN TABLE 15014

TABLE 1503.3.(1)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

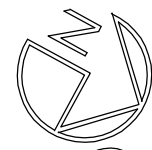
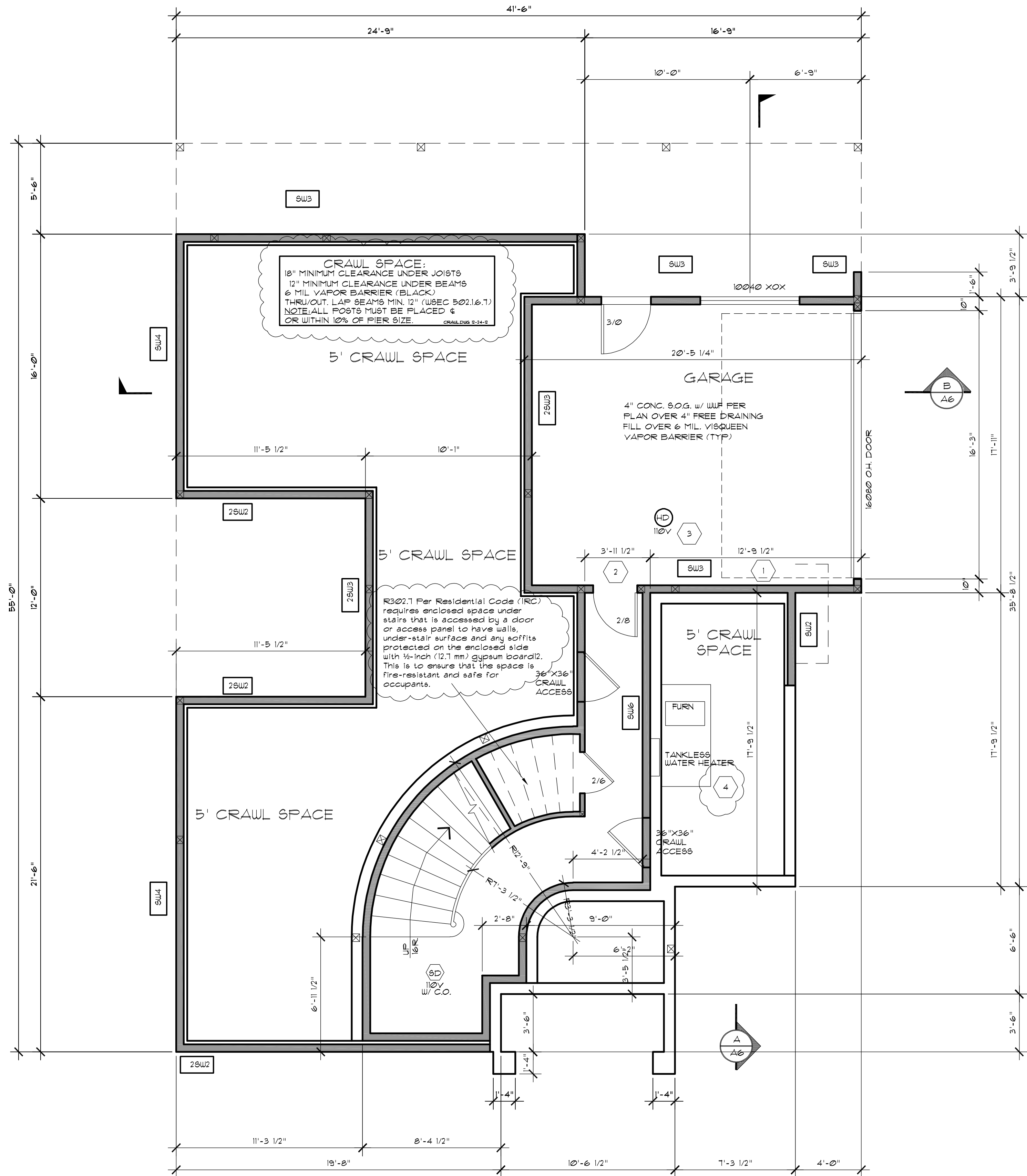
VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)

VENTILATION RATES FOR ALL GROUP R PRIVATE DWELLINGS (CONTINUOUSLY OPERATING SYSTEM)



LOWER FLOOR PLAN

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

A NFPA 72— Chapter 29 Monitored Fire Alarm System in compliance with NFPA 72 and CoMI standards shall be installed throughout the residence.

A separate FIRE permit is required.

A NFPA 13D Fire Sprinkler System in compliance with NFPA 13D and CoMI standards shall be installed throughout the residence.

A separate FIRE permit is required.

LOCAL EXHAUST FANS SHALL BE PROVIDED IN EACH KITCHEN, BATHROOM, WATER CLOSET, LAUNDRY ROOM, INDOOR SWIMMING POOL, SPA, AND OTHER ROOMS WHERE WATER VAPOR OR COOKING ODOR IS PRODUCED. IRC R507.4

NOTE: CONTRACTOR SHALL VERIFY TO INSPECTOR ALL GUARDS AND RAILINGS SHALL BE CAPABLE OF RESISTING 200 LB LOAD ON TOP RAIL, IN ANY DIRECTION AS REQUIRED BY IRC TABLE 307.5

STAIR LIGHTING: ALL STAIRWAYS SHALL BE PROVIDED WITH LIGHT SOURCES. LIGHT ACTIVATION CONTROLS SHALL BE ACCESSIBLE AT THE TOP AND BOTTOM OF INTERIOR STAIRWAYS AND WITHIN DWELLING UNIT FOR EXTERIOR STAIRS. IRC SECTIONS R303.7.4 R311.7.9

Winder treads shall have a tread depth of not less than 10 inches measured between the vertical planes of the foremost projection of adjacent treads at the intersections with the walking line. Winder treads shall have a tread depth of not less than 6 inches at any point within the clear width of the stair. Within any flight of stairs, the largest winder tread depth at the walking line shall not exceed the smallest winder tread by more than 3/8 inch. Consistently shaped winders at the walking line shall be allowed within the same flight of stairs as rectangular treads and do not have to be within 3/8 inch of the rectangular tread depth. (R311.7.2.1)

- 2018 IRC R302.6: Dwelling/garage separation required: The garage shall be separated as required by Table R302.6. Openings in garage walls shall comply with Section R302.5. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall. Ceilings and beams will be covered by 5/8" Type X gypsum run perpendicular to the floor joists (see 2018 IRC Table R702.3.5 footnote a).
- Openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8-inches (35mm) in thickness, solid or honeycomb core steel doors not less than 1-3/8 inches (35mm) thick, or 20-minute fire-rated doors, equipped with a self-closing device.
- R314.1 Heat detection interconnection. Heat detectors and heat alarms shall be connected to an alarm or a smoke alarm that is installed in the dwelling. Alarms and smoke alarms that are installed for this purpose shall be located in a hallway, room, or other location that will provide occupant notification.

- 5.3 Water heating system shall include one of the following:
Energy Star rated gas or propane water heater with a minimum UEF of 0.91
or
Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 95 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems
or
Water heater heated by ground source heat pump meeting the requirements of Option 3.3.
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 and, for solar water heating systems, the calculation of the minimum energy savings.

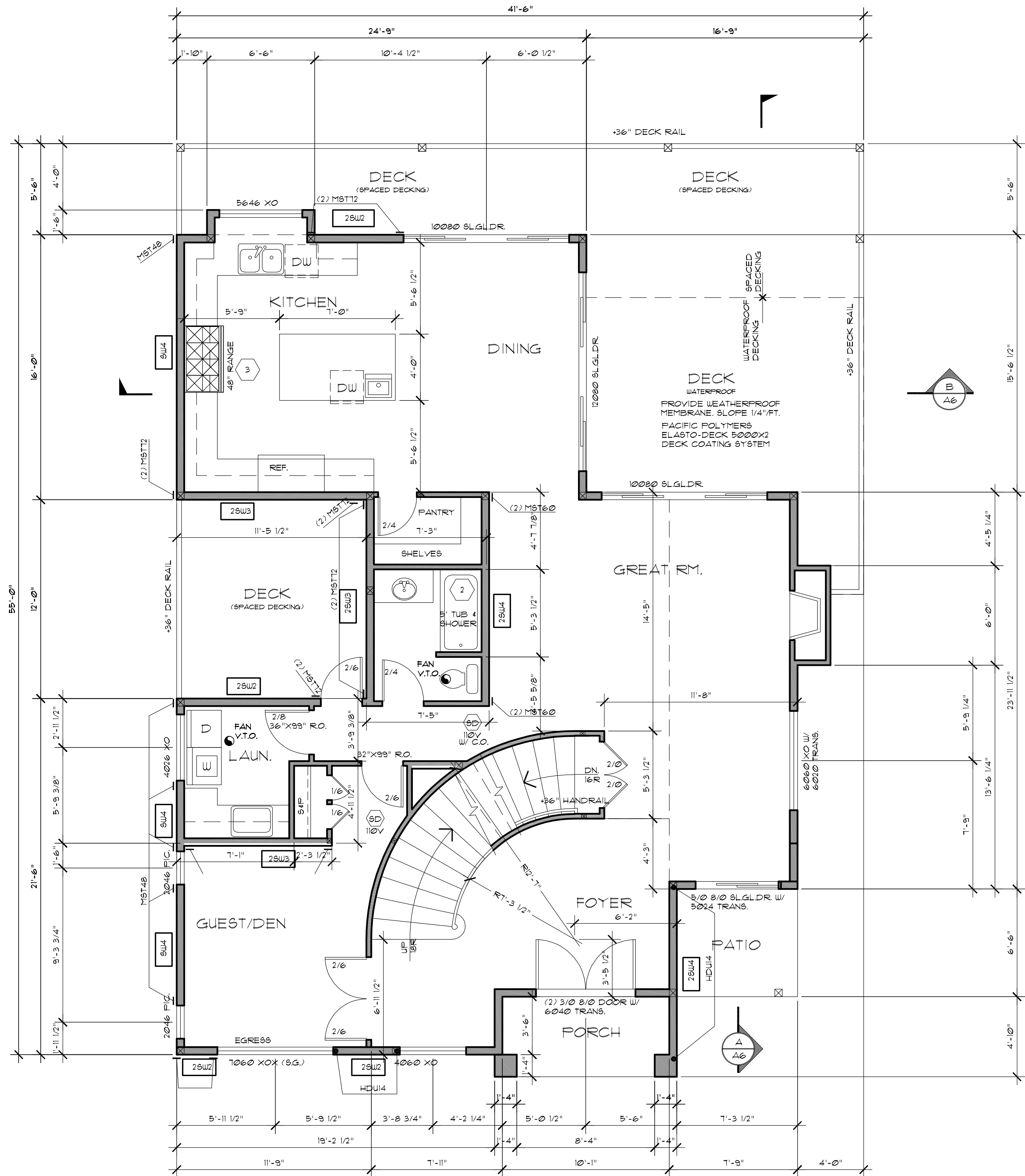
A NEW HOME AT:

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 5/18/24
8/20/24

SHEET NO.

A1



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

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

A separate FIRE permit is required.

A NFPA 13D Fire Sprinkler System in compliance with NFPA 13D and CoMI standards shall be installed throughout the residence.

A separate FIRE permit is required.

NOTE: CONTRACTOR SHALL VERIFY TO INSPECTOR ALL GUARDS AND RAILINGS SHALL BE CAPABLE OF RESISTING 200 LB LOAD ON TOP RAIL IN ANY DIRECTION AS REQUIRED BY IRC TABLE 301.5

STAIR LIGHTING ALL STAIRWAYS SHALL BE PROVIDED WITH LIGHT SOURCES LIGHT ACTIVATION CONTROLS SHALL BE ACCESSIBLE AT THE TOP AND BOTTOM OF INTERIOR STAIRWAYS AND WITHIN DWELLING UNIT FOR EXTERIOR STAIRS
IRC SECTIONS R303.1 & R311.1.5

WHOLE HOUSE VENTILATION PER SECTION M1505.4

INTERMITTENTLY OPERATION VENTILATION SYSTEM PER IRC SECTION M1501.2
REF TO TABLE M1505.4 (1) FOR MINIMUM OUTDOOR AIRFLOW RATES - CFM

RUN TIME: ON ONCE EVERY THREE HOURS, FOR ONE HOUR PER TABLE M1501.3.2

OPERATION: TIME CLOCK TO OPEN DAMPER LOCATED IN FRESH AIR INTAKE DUCT BETWEEN THE OUTSIDE CAR AND THE RETURN AIR DUCT AT FURNACE, AND THE CLOCK ALSO STARTS THE FURNACE FAN TO DISTRIBUTE FRESH AIR THROUGH THE HEAT DUCT SYSTEM THAT WAS BROUGHT IN THROUGH THE AIR INTAKE DUCT. THE AIR VOLUME BROUGHT IN WILL BE FLOW TESTED AND ADJUSTED TO MATCH THE AMOUNT REQUIRED BY CALCULATIONS.
(PRIOR TO THE FINAL INSPECTION)

FLOOR AREA	BEDROOMS				
	0-1	2	3	4	5 OR MORE
LESS THAN 500	30 CFM	30 CFM	35 CFM	45 CFM	50 CFM
501-1,000	30 CFM	35 CFM	40 CFM	50 CFM	55 CFM
1,001-1,500	30 CFM	40 CFM	45 CFM	55 CFM	60 CFM
1,501-2,000	35 CFM	45 CFM	50 CFM	60 CFM	65 CFM
2,001-2,500	40 CFM	50 CFM	55 CFM	65 CFM	70 CFM
2,501-3,000	45 CFM	55 CFM	60 CFM	70 CFM	75 CFM
3,001-3,500	50 CFM	60 CFM	65 CFM	75 CFM	80 CFM
3,501-4,000	55 CFM	65 CFM	70 CFM	80 CFM	85 CFM
4,001-4,500	60 CFM	70 CFM	75 CFM	85 CFM	90 CFM
4,501-5,000	65 CFM	75 CFM	80 CFM	90 CFM	95 CFM

TABLE 406.3 2018 ENERGY CREDITS (DEBITS)	
SEE RESIDENTIAL ENERGY EFFICIENCY SHEET ATTACHED	
HEAT OPTION 2 -	10 PTS
OPTION 2.2 -	15 PTS
OPTION 3.5 -	15 PTS
OPTION 4.1 -	5 PTS
OPTION 5.3 -	10 PTS
OPTION 7.0 -	5 PTS
TOTAL POINTS - 60 PTS	

PRESCRIPTIVE REQUIREMENTS 2018 W.S.E.C. (UNLIMITED)	
CLIMATE ZONES 5 AND MARINE 4	
GLAZING U-FACTOR: VERTICAL U=30, OVERHEAD U=50	
DOOR U-FACTOR: U=20	
INSULATION: CEILING: R-49, R-38 (ADV), VAULTED CEILING: R-38	
ABOVE GRADE WALLS: R-21, BELOW GRADE WALLS: R-21	
FLOOR OVER VENTED CRAWL SPACE: R-30	
SLAB ON GRADE: R-10	
VENTILATION DUCTS IN UNCONDITIONED SPACE TO BE R-8	
ENERGY CODE COMPLIANCE	

MECHANICAL VENTILATION
REQUIRED VENTILATION PER TABLE M1501.3.3 (1) 90 CFM
INTERMITTENT RUN TIME FACTOR 2 = 180 CFM
PROVIDE WHOLE HOUSE VENTILATION INTEGRATED WITH A FORCED AIR SYSTEM M1501.3.5

A MINIMUM OF 75% OF ALL LIGHT FIXTURES WILL BE HIGH EFFICACY. (WSEC R404.1)

- DIRECT VENT FIREPLACE
INSTALL PER MANUFACTURERS SPECIFICATIONS
 - CONC. FIBERBOARD @ TUB & SHOWER
SURROUND TO 6" ABOVE DRAIN
 - NOTE: PER M1503.6, EXHAUST HOOD SYSTEMS CAPABLE OF EXHAUSTING IN EXCESS OF 400 CFM SHALL BE PROVIDED WITH MAKEUP AIR AT A RATE EQUAL TO THE EXHAUST RATE. SUCH MAKEUP AIR SYSTEMS SHALL BE EQUIPPED WITH A MEANS OF CLOSURE AND SHALL BE AUTOMATICALLY CONTROLLED TO START AND OPERATE SIMULTANEOUSLY WITH THE EXHAUST SYSTEM
- Per R302.1, fire blocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space.

NOTE: CONTRACTOR SHALL VERIFY TO INSPECTOR ALL GUARDS AND RAILINGS SHALL BE CAPABLE OF RESISTING 200 LB LOAD ON TOP RAIL IN ANY DIRECTION AS REQUIRED BY IRC TABLE 301.5

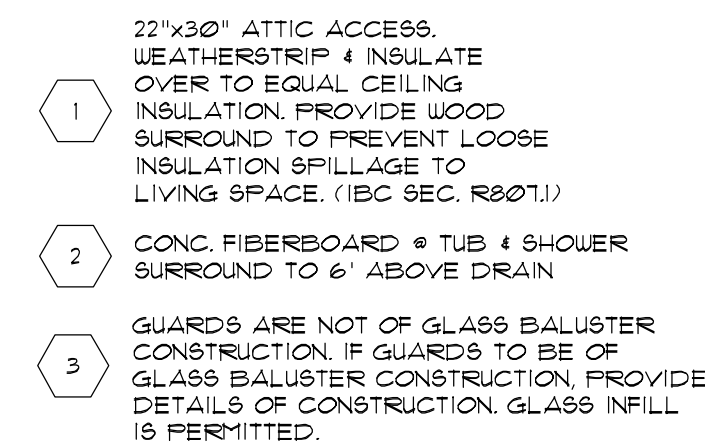
SQUARE FOOTAGE SUMMARY		
LOWER FLOOR	227	SQ. FT.
MAIN FLOOR	1414	SQ. FT.
UPPER FLOOR	988	SQ. FT.
TOTAL	2629	SQ. FT.
GARAGE	364	SQ. FT.
MAIN FLOOR DECKS	409	SQ. FT.
MAIN FLR. WATERPROOF DECK	218	SQ. FT.
UPPER FLOOR DECKS	627	SQ. FT.

A NEW HOME AT:
6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 5/18/24
8/20/24

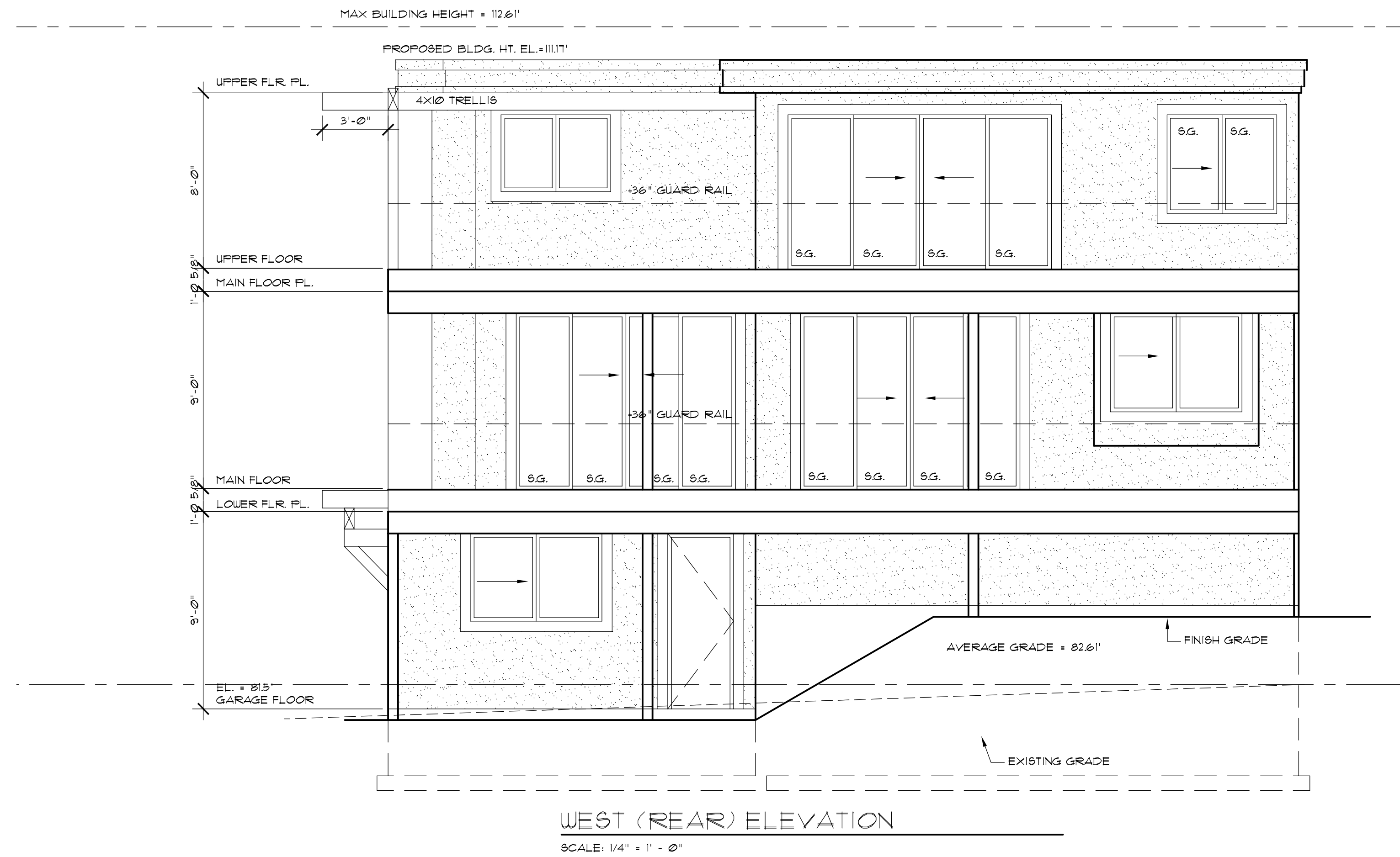
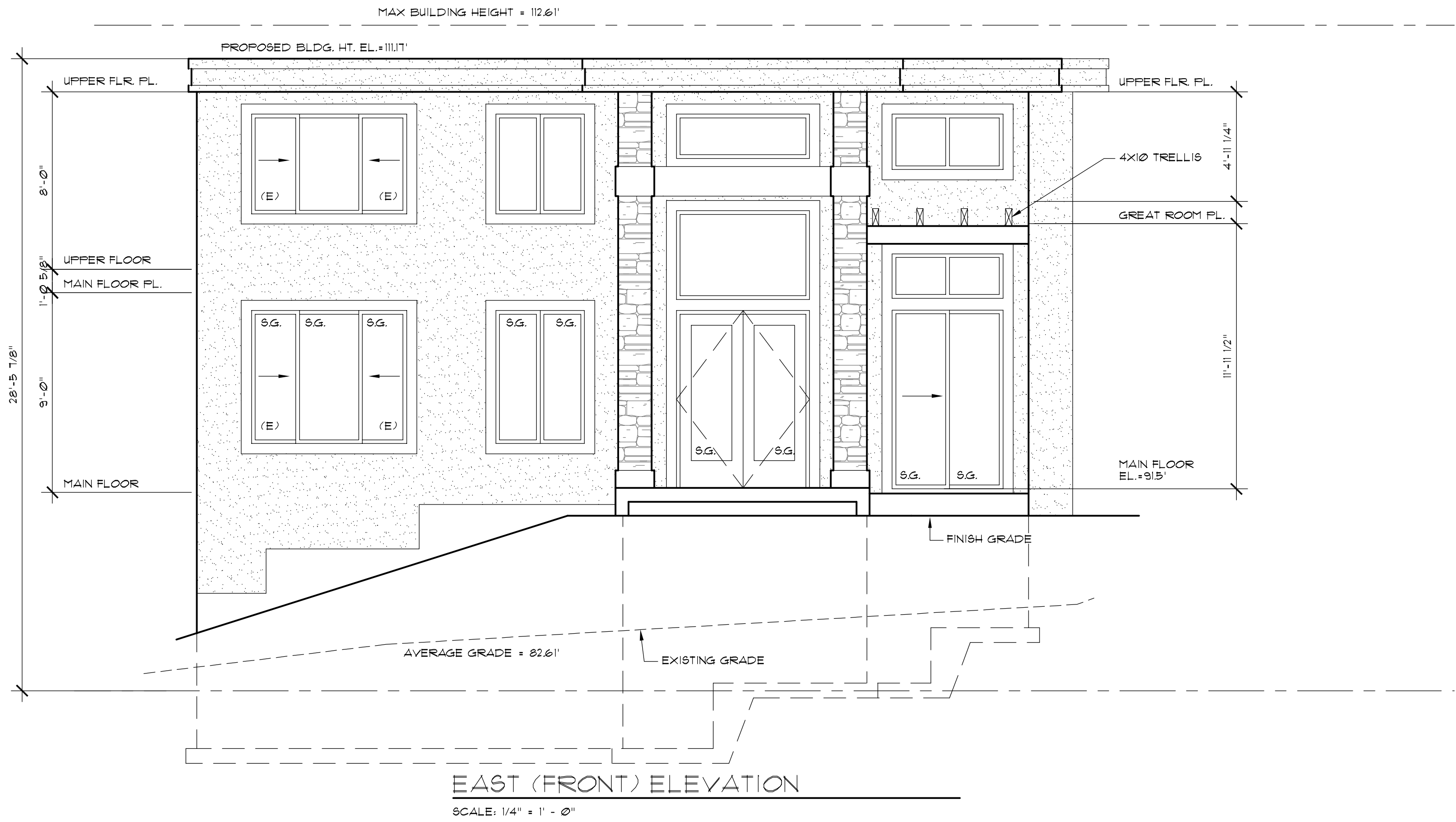
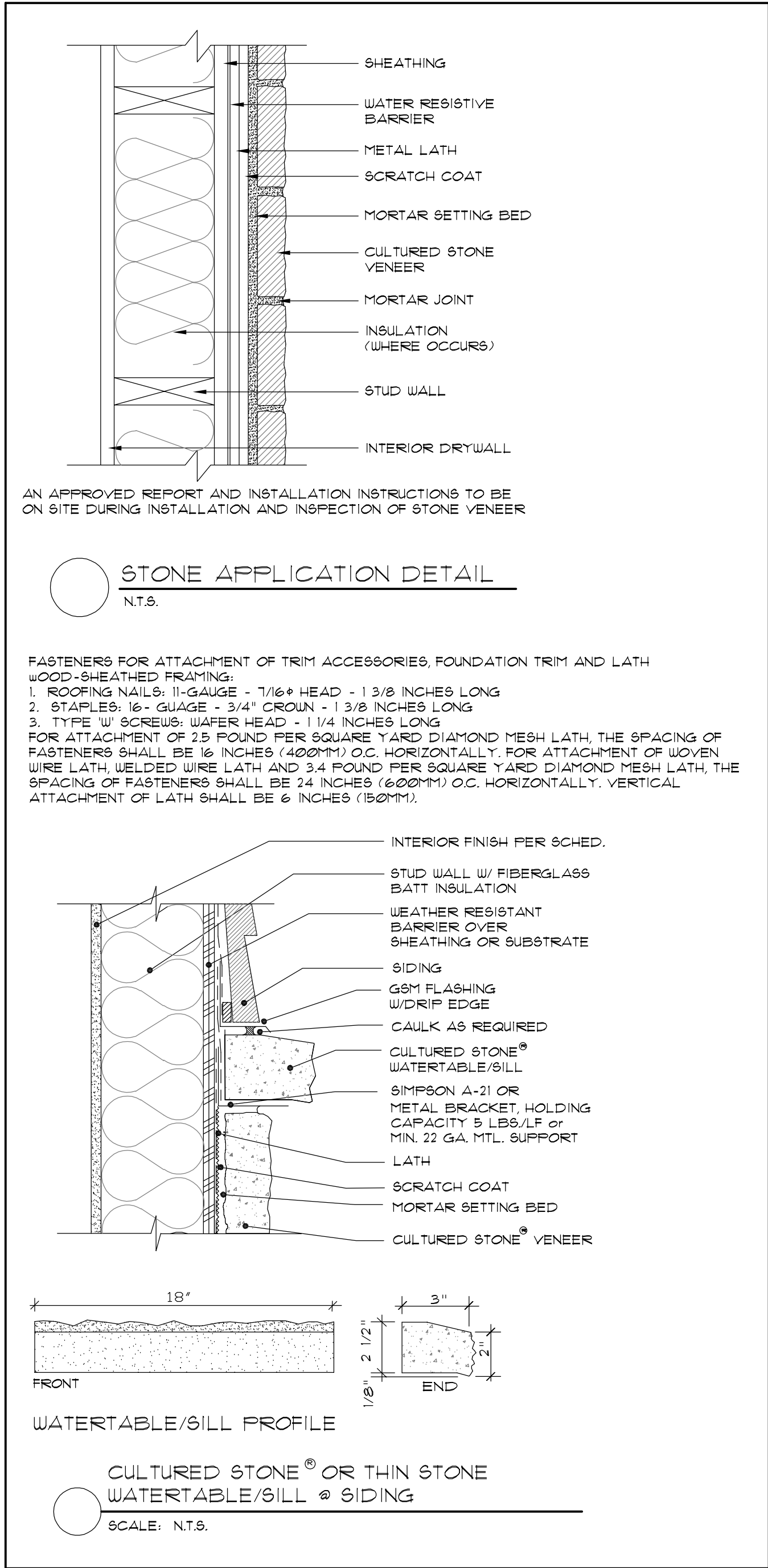
SHEET NO.

A2



STAIR LIGHTING ALL STAIRWAYS SHALL BE PROVIDED WITH LIGHT SOURCES. LIGHT ACTIVATION CONTROLS SHALL BE ACCESSIBLE AT THE TOP AND BOTTOM OF INTERIOR STAIRWAYS AND WITHIN DWELLING UNIT FOR EXTERIOR STAIRS
IRC SECTIONS R303.7 & R311.9

A separate FIRE permit is required.



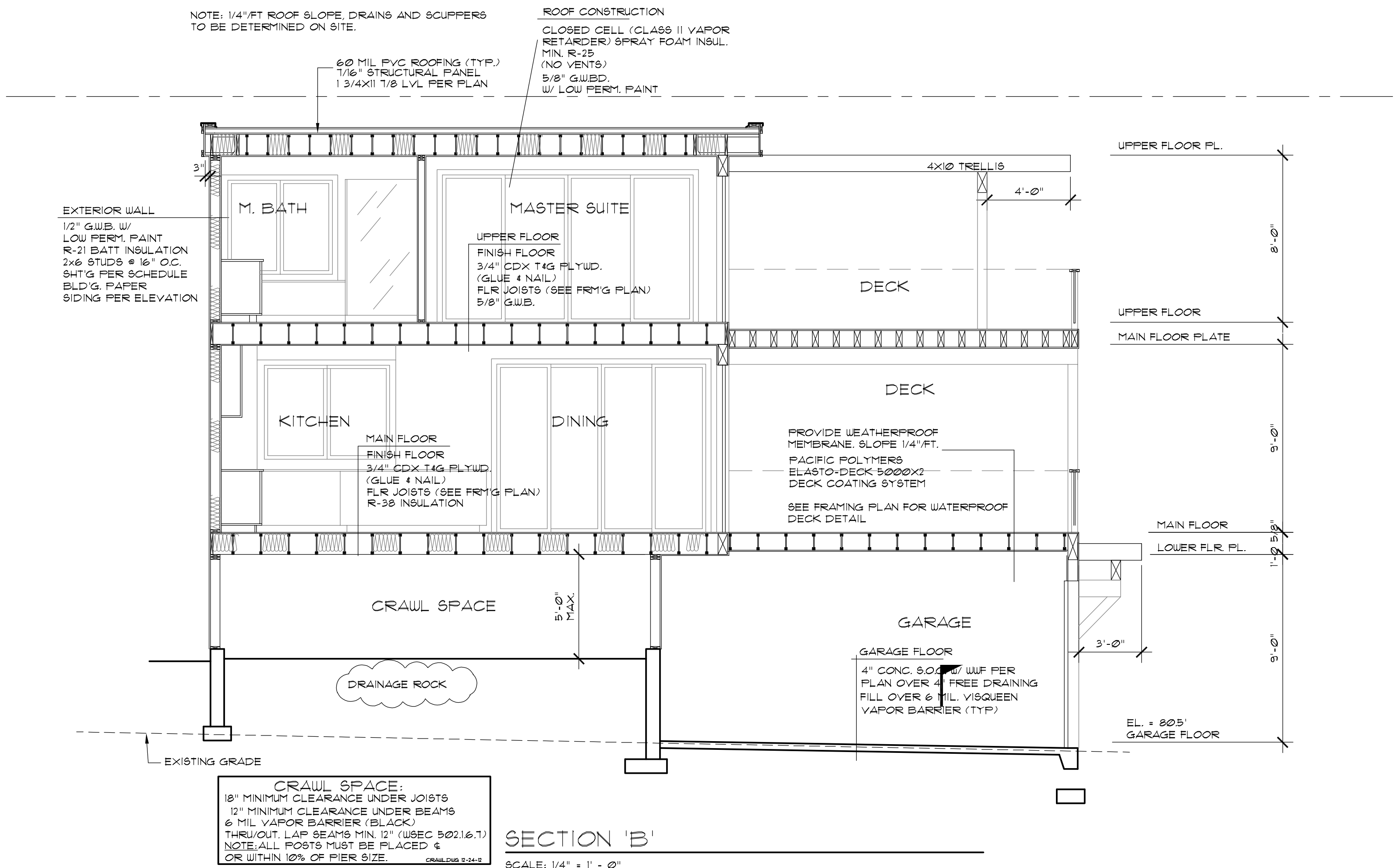
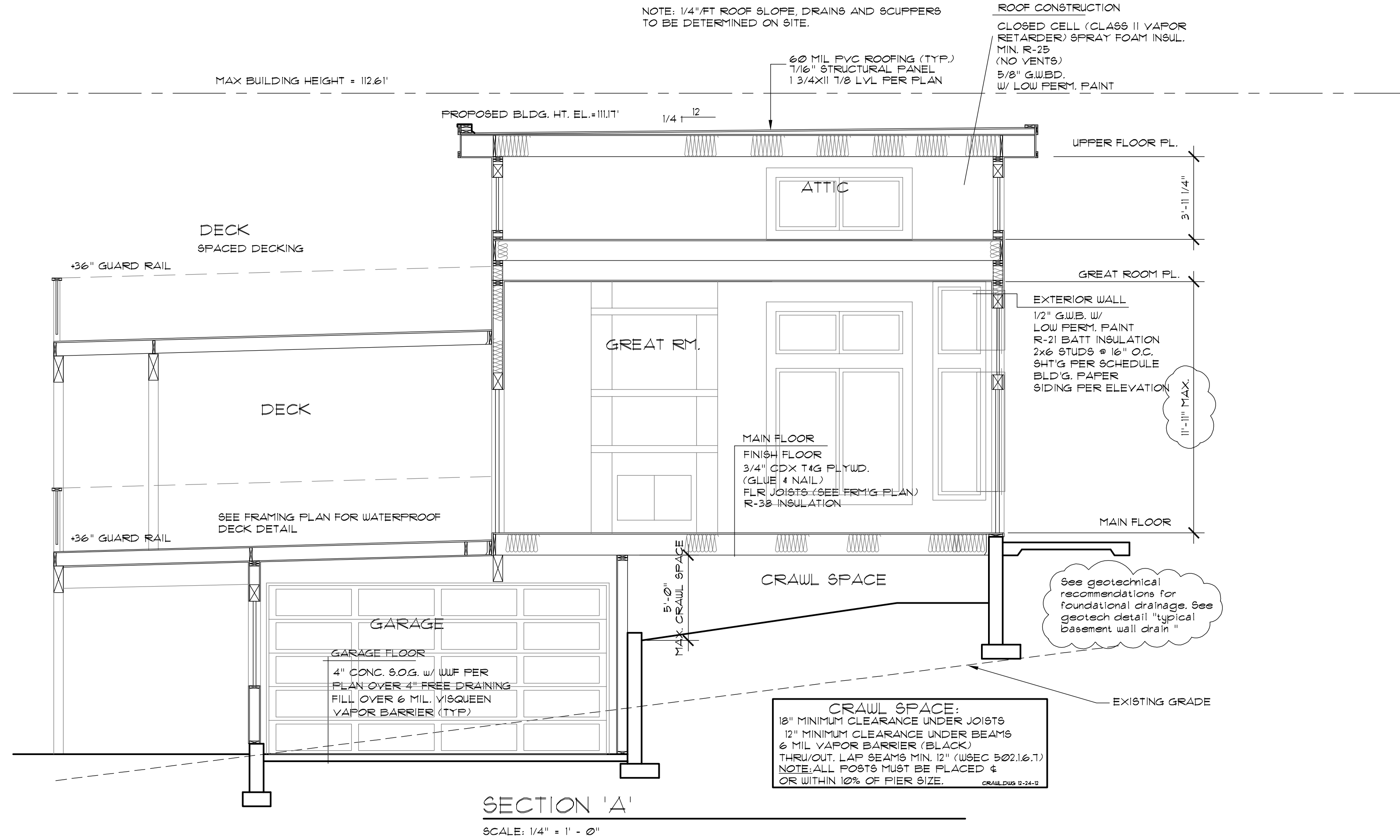
A NEW HOME AT:

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 6/27/24

SHEET NO.

A4



A NEW HOME AT:

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 6/27/24

SHEET NO.

A6

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

Each dwelling unit in a residential building shall comply with sufficient options from Table R406.2 (fuel normalization credits) and Table 406.3 (energy credits) to achieve the following minimum number of credits. To claim this credit, the building permit drawings shall specify the option selected and the maximum tested building air leakage, and show the qualifying ventilation system and its control sequence of operation.
1. Small Dwelling Unit: 3 credits
Dwelling units less than 1,500 sf in conditioned floor area with less than 300 sf of fenestration area.
Additions to existing building that are greater than 500 sf of heated floor area but less than 1,500 sf.
2. Medium Dwelling Unit: 6 credits
All dwelling units that are not included in #1 or #3
3. Large Dwelling Unit: 7 credits
Dwelling units exceeding 5,000 sf of conditioned floor area
4. Additions less than 500 square feet: 1.5 credits
All other additions shall meet 1-3 above

Summary of Table R406.2

Heating Options	Fuel Normalization Descriptions	Credits - select ONE heating option	User Notes
1	Combustion heating minimum NAECa	0.0	
2	Heat pumpc	1.0	●
3	Electric resistance heat only - furnace or zonal	-1.0	
4	DHP with zonal electric resistance per option 3.4	0.5	
5	All other heating systems	-1.0	

Energy Options	Energy Credit Option Descriptions	Credits - select ONE energy option from each category d	User Notes
1.1	Efficient Building Envelope	0.5	
1.2	Efficient Building Envelope	1.0	
1.3	Efficient Building Envelope	0.5	
1.4	Efficient Building Envelope	1.0	
1.5	Efficient Building Envelope	2.0	
1.6	Efficient Building Envelope	3.0	
1.7	Efficient Building Envelope	0.5	
2.1	Air Leakage Control and Efficient Ventilation	0.5	
2.2	Air Leakage Control and Efficient Ventilation	1.0	●
2.3	Air Leakage Control and Efficient Ventilation	1.5	
2.4	Air Leakage Control and Efficient Ventilation	2.0	
3.1a	High Efficiency HVAC	1.0	
3.2	High Efficiency HVAC	1.0	
3.3a	High Efficiency HVAC	1.5	
3.4	High Efficiency HVAC	1.5	
3.5	High Efficiency HVAC	1.5	●
3.6a	High Efficiency HVAC	2.0	
4.1	High Efficiency HVAC Distribution System	0.5	●
4.2	High Efficiency HVAC Distribution System	1.0	
5.1d	Efficient Water Heating	0.5	
5.2	Efficient Water Heating	0.5	
5.3	Efficient Water Heating	1.0	●
5.4	Efficient Water Heating	1.5	
5.5	Efficient Water Heating	2.0	
5.6	Efficient Water Heating	2.5	
6.1e	Renewable Electric Energy (3 credits max)	1.0	
7.1	Appliance Package	0.5	●
Total Credits		6.0	

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

Energy Credits (2018 Code)

TABLE 406.3
2018 ENERGY CREDITS

OPTION	DESCRIPTION	CREDIT(S)	
		All Other	Group R-2
1. EFFICIENT BUILDING ENVELOPE OPTIONS			
Only one option from Items 1.1 through 1.7 may be selected in this category. Compliance with the conductive UA targets is demonstrated using Section R402.1.4, Total UA alternative, where [1-(Proposed UA/Target UA)] > the required %UA reduction			
2. AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS			
Only one option from Items 2.1 through 2.4 may be selected in this category.			
2.1	Compliance based on R402.4.1.2: Reduce the tested air leakage to 3.0 air changes per hour maximum at 50 Pascals For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.3 cfm/ft2 maximum at 50 Pascals All whole house ventilation requirements as determined by Section M1507.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a high efficiency fan(s) (maximum 0.35 watts/cfm), not interlocked with the furnace fan (if present). Ventilation systems using a furnace including an ECM motor are allowed, provided that they are controlled to operate at low speed in ventilation only To qualify to claim this credit, the building permit drawings shall specify the option being selected, the maximum tested building air leakage, and shall show the qualifying ventilation system and its control sequence of operation.	0.5	1.0
3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS			
3.5a	Air-source, centrally ducted heat pump with minimum HSPF of 11.0. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and the minimum equipment efficiency.	1.5	N/A

TABLE 406.3 2018 ENERGY CREDITS			
OPTION	DESCRIPTION	CREDIT(S)	
		All Other	Group R-2
4. HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS			
4.1	All supply and return ducts located in an unconditioned attic shall be deeply buried in ceiling insulation in accordance with Section R403.3.7. For mechanical equipment located outside the conditioned space, a maximum of 10 linear feet of return duct and 5 linear feet of supply duct connections to the equipment may be outside the deeply buried insulation. All metallic ducts located outside the conditioned space must have both thermal and air leakage protection. Flex duct air leakage shall be limited to 3 cfm per 100 square feet of conditioned space. Air handler(s) shall be located within the conditioned space.	0.5	0.5
5. EFFICIENT WATER HEATING OPTIONS			
5.3	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.91 or Solar water heating supplementing a minimum standard water heater. Solar water heating will provide a rated minimum savings of 85 therms or 2000 kWh based on the Solar Rating and Certification Corporation (SRCC) Annual Performance of OG-300 Certified Solar Water Heating Systems or Water heater heated by ground source heat pump meeting the requirements of Option 3.3. 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 and, for solar water heating systems, the calculation of the minimum energy savings.	1.0	1.0
7. APPLIANCE PACKAGE OPTION			
7.1	All of the following appliances shall be new and installed in the dwelling unit and shall meet the following standards: Dishwasher – Energy Star rated Refrigerator (if provided) – Energy Star rated Washing machine – Energy Star rated Dryer – Energy Star rated, ventless dryer with a minimum CEF rating of 5.2. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the appliance type and provide documentation of Energy Star compliance. At the time of inspection, all appliances shall be installed and connected to utilities. Dryer ducts and exterior dryer vent caps are not permitted to be installed in the dwelling unit.	0.5	1.5

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

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

Project Information

Contact Information

Instructions: This single-family project will use the requirements of the Prescriptive Path below and incorporate the minimum values listed. Based on the size of the structure, the appropriate number of additional credits are checked as chosen by the permit applicant.
Provide all information from the following tables as building permit drawings: Table R402.1 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and 406.3 - Energy Credits.

Authorized Representative	Date

All Climate Zones (Table R402.1.1)		
	R-Value a	U-Factor a
Fenestration U-Factor b	n/a	0.28
Skylight U-Factor b	n/a	0.50
Glazed Fenestration SHGC b,e	n/a	n/a
Ceiling e	49j	0.026
Wood Frame Wall g,h	21 int	0.056
Floor	38	0.026
Below Grade Wall c,h	10/15/21 int + TB	0.042
Slab d,f R-Value & Depth	10, 2 ft	n/a

a R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity that is less than the label or design thickness of the insulation, the compressed R-value of the insulation from Appendix Table A101.4 shall not be less than the R-value specified in the table.
b The fenestration U-Factor column excludes skylights.
c "10/15/21 +5TB" means R-10 continuous insulation on the exterior of the wall, or R-21 cavity insulation on the interior of the basement 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.
d R-10 continuous insulation is required under heated slab on grade floors. See Section R402.2.9.1.
e 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.
f 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.
g For log structures developed in compliance with Standard ICC 400, log walls shall meet the requirements for climate zone 5 of ICC 400.
h Int. (intermediate framing) denotes framing and insulation as described in Section A103.2.2 including standard framing 16 inches on center, 78% of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

Vertical Fenestration (Windows and doors)

Component Description	Ref.	U-factor	Width Qt. Feet	Height Inch	Area	UA	
ENTRY		0.26	1	6	4	24.0	6.24
GREAT RM		0.28	1	5	10	50.0	14.00
GREAT RM		0.28	1	6	8	51.0	14.28
GREAT RM		0.28	1	12	8	96.0	26.88
GREAT RM		0.28	1	4	6	24.0	6.72
DINING		0.28	1	2	6	12.0	3.36
DINING		0.28	1	12	8	96.0	26.88
DINING		0.28	1	10	8	80.0	22.40
KITCHEN		0.28	1	6	4	24.0	6.72
HALL DECK DOOR		0.28	1	2	6	20.0	5.60
LAUNDRY		0.28	1	4	2	10.0	2.80
GUEST		0.28	2	2	4	18.0	5.04
GUEST		0.28	1	7	6	42.0	11.76
FOYER		0.28	1	6	2	12.0	3.36
STAIR / FOYER		0.28	1	4	6	24.0	6.72
ATTIC		0.28	4	5	3	70.0	19.60
						0.0	0.00
						0.0	0.00
MASTER SUITE		0.28	2	12	8	192.0	53.76
MASTER BATH		0.28	1	6	4	27.0	7.56
MASTER BATH		0.28	1	3	4	13.5	3.78
MASTER BATH		0.28	1	2	4	8.0	2.24
BATH		0.28	1	2	6	11.3	3.15
BDRM 3		0.28	2	1	4	9.0	2.52
BDRM 3		0.28	1	7	4	31.5	8.82
		0.28				0.0	0.00
		0.28				0.0	0.00

Sum of Vertical Fenestration Area and UA

Vertical Fenestration Area Weighted U = UA/Area

Overhead Glazing (Skylights)

Component Description	Ref.	U-factor	Width Qt. Feet	Height Inch	Area	UA
					0.0	0.00
					0.0	0.00
					0.0	0.00

Sum of Overhead Glazing Area and UA

Overhead Glazing Area Weighted U = UA/Area

Total Sum of Fenestration Area and UA (for heating system sizing calculations)

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2015 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This calculator will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please fill out all of the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please call the WSU Energy Extension Program at (360) 956-2042 for assistance.

Project Information

Contact Information

Heating System Type: All Other Systems Heat Pump

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

Design Temperature Instruction: Mercer Island Design Temperature Difference (ΔT) ΔT = Indoor (70 degrees) - Outdoor Design Temp 45

Area of Building Conditioned Floor Area Instruction: Conditioned Floor Area (sq ft) 2,703

Average Ceiling Height Instruction: Average Ceiling Height (ft) 9.0 Conditioned Volume 24,327

Glazing and Doors Instruction: U-Factor X Area = UA 0.280 914 255.86

Skylights Instruction: U-Factor X Area = UA 0.50 ---

Insulation Attic Instruction: Select R-Value No selection ---

Single Rafter or Joist Vaulted Ceilings Instruction: R-49 Advanced U-Factor X Area = UA 0.020 1,579 31.58

Above Grade Walls (see Figure 1) Instruction: R-21 Intermediate U-Factor X Area = UA 0.056 3,852 215.71

Floors Instruction: R-38 U-Factor X Area = UA 0.025 1,315 32.88

Below Grade Walls (see Figure 1) Instruction: R-21 Interior U-Factor X Area = UA 0.042 747 31.37

Slab Below Grade (see Figure 1) Instruction: R-10 Fully Insulated F-Factor X Length = UA 0.303 83 25.15

Slab on Grade (see Figure 1) Instruction: Select R-Value F-Factor X Length = UA No selection ---

Location of Ducts Instruction: Unconditioned Space Duct Leakage Coefficient 1.10

Figure 1

Sum of UA 592.55

Envelope Heat Load Sum of UA X ΔT 26,665 Btu / Hour

Air Leakage Heat Load Volume X 0.6 X ΔT X 0.18 11,823 Btu / Hour

Building Design Heat Load Air Leakage + Envelope Heat Load 38,488 Btu / Hour

Building and Duct Heat Load 42,337 Btu / Hour

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 59,271 Btu / Hour

Building and Duct Heat Loss X 1.40 for Forced Air Furnace

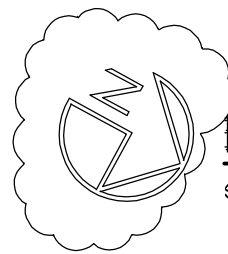
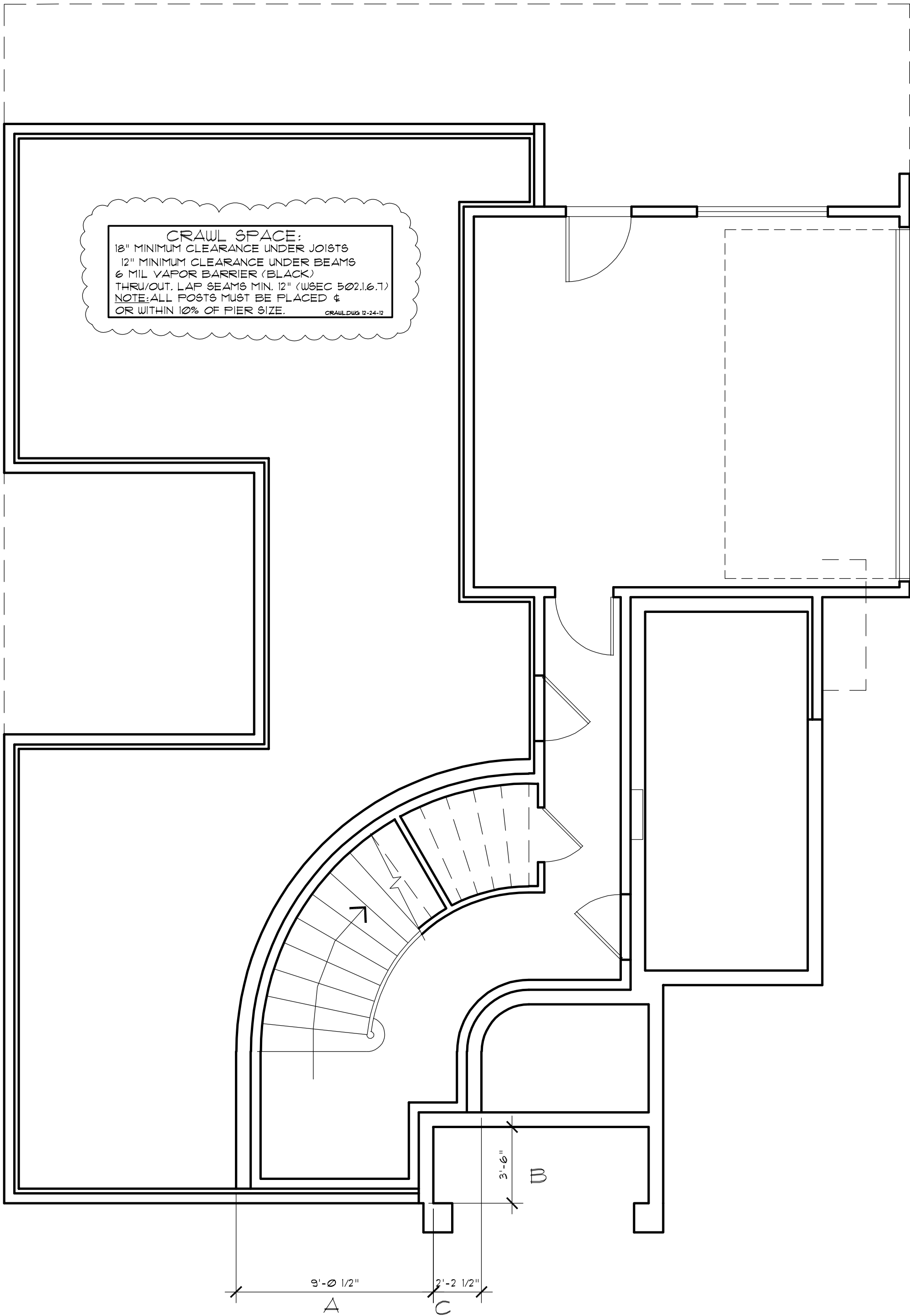
Building and Duct Heat Loss X 1.25 for Heat Pump

A NEW HOME AT:
6175 SE 27TH STREET
MERCER ISLAND, WA 98040

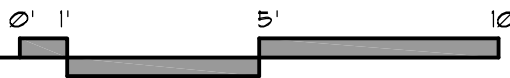
JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED:

SHEET NO.

A7



BASEMENT REDUCTION CALC
SCALE: 1/4" = 1' - 0"



BASEMENT FLOOR AREA CALCULATION

WALL	LENGTH	COVERAGE	RESULT
A	9'	28.4%	2.5%
B	3'-6"	29.7%	1.1%
C	2'-2"	31.1%	.7%

TOTAL 14.67' 4.3%

PORTION OF EXCLUDED BASEMENT FLOOR AREA:
 $532 \text{ (ACTUAL SQ. FT. W/ GARAGE)} \times (4.3/14.67) = 155.9 \text{ SQ. FT.}$
AREA OF BASEMENT EXCLUDED = $532 - 155.9 = 376.1 \text{ SQ. FT.}$

GROSS FLOOR AREA

LOWER FLOOR W/ GARAGE	532	SQ. FT.
MAIN FLOOR W/ STAIR	1410	SQ. FT.
UPPER FLOOR W/ STAIR	1204	SQ. FT.
TOTAL	3146	SQ. FT.
BASEMENT EXCLUDED	-155.9	SQ. FT.
TOTAL	2990.1	SQ. FT.
LOT AREA	7281	SQ. FT.
SQUARE FOOTAGE ALLOWED	3000	SQ. FT.

SQUARE FOOTAGE SUMMARY

LOWER FLOOR	227	SQ. FT.
MAIN FLOOR	1414	SQ. FT.
UPPER FLOOR	988	SQ. FT.
TOTAL	2629	SQ. FT.
GARAGE	364	SQ. FT.
MAIN FLOOR DECKS	621	SQ. FT.
UPPER FLOOR DECKS	621	SQ. FT.

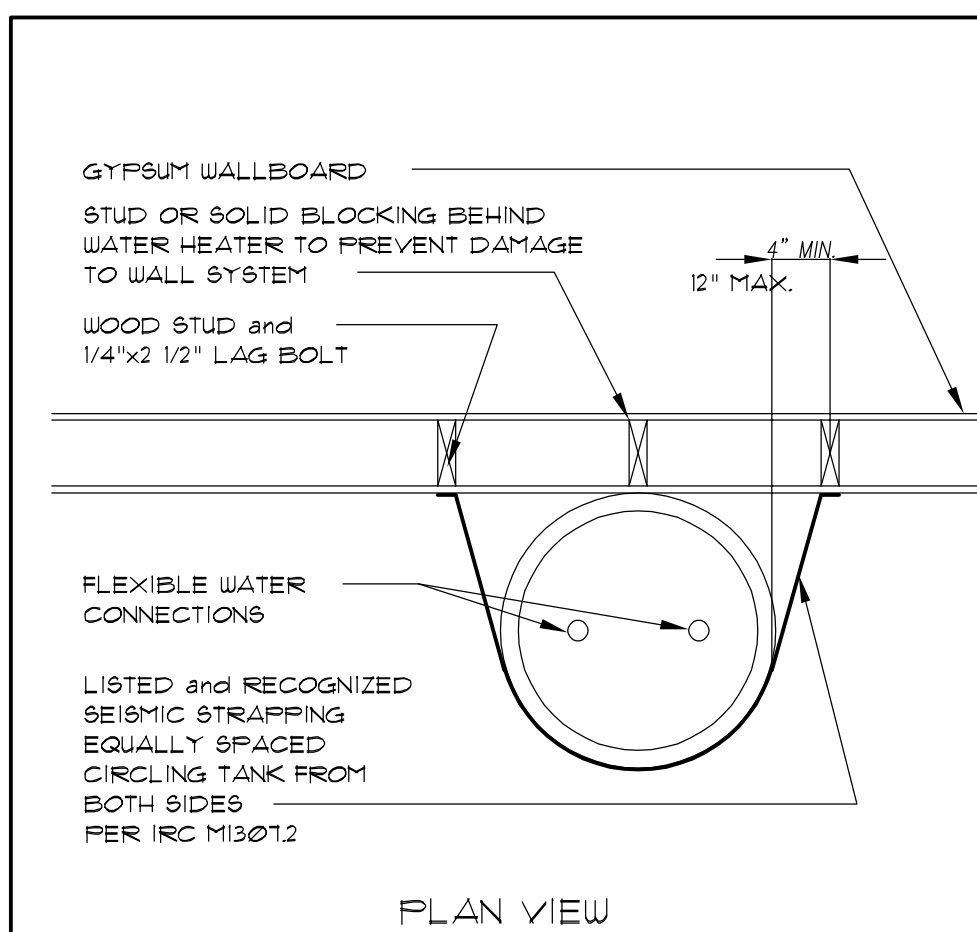
A NEW HOME AT:

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

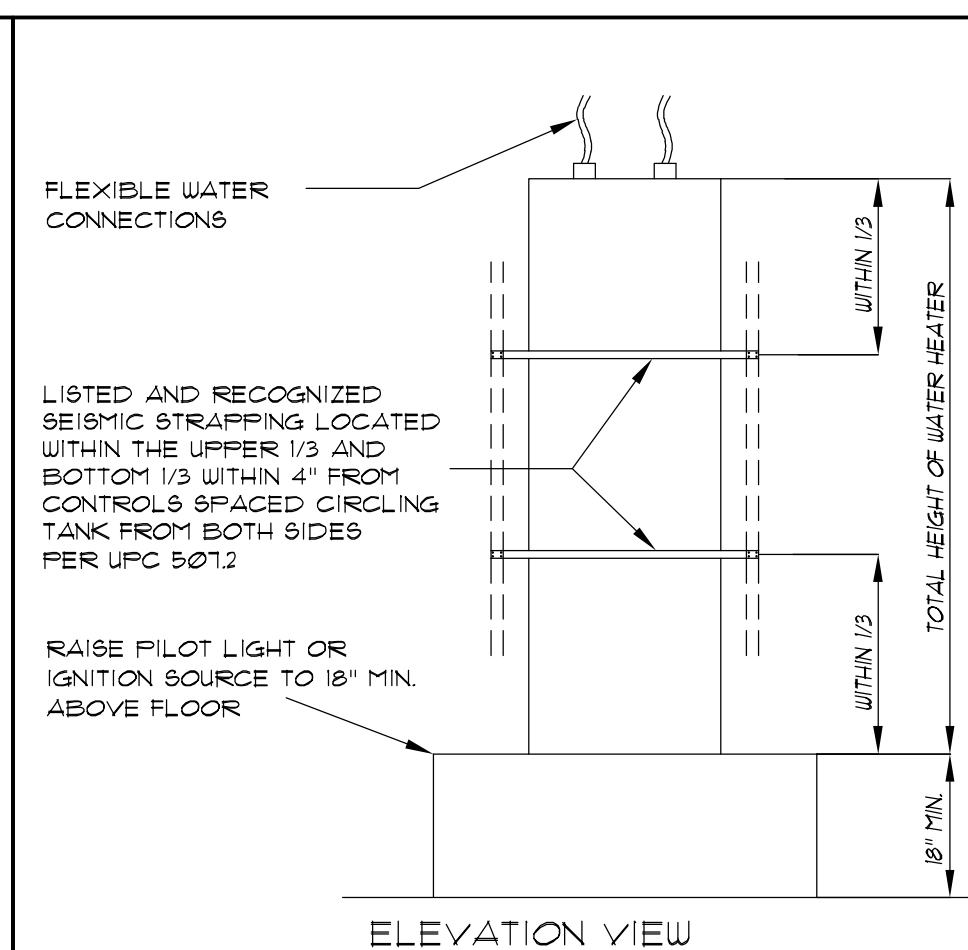
JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED:

SHEET NO.

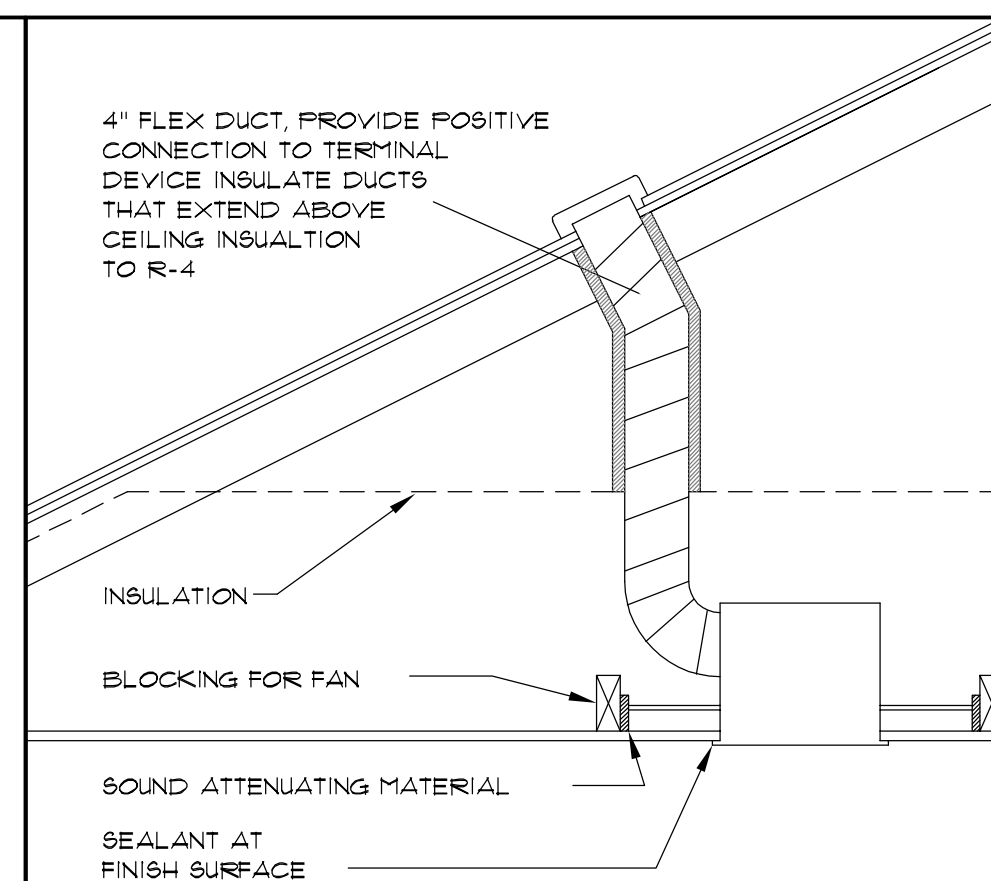
A8



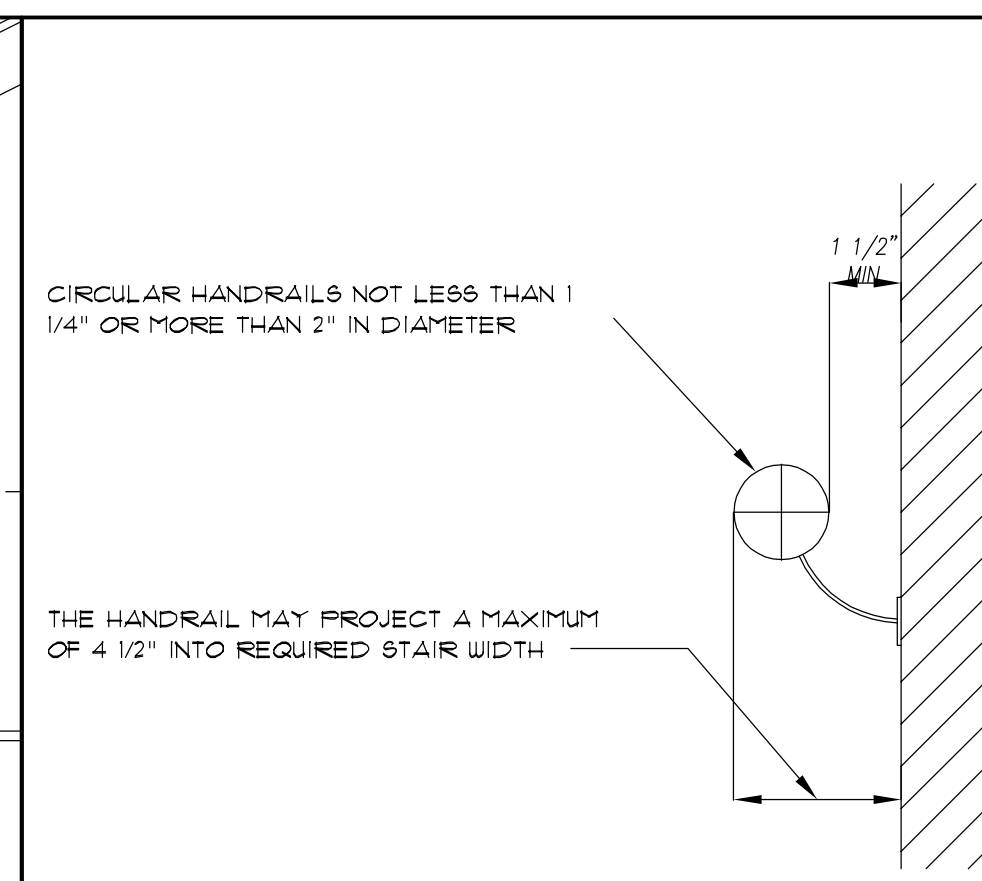
1 WATER HEATER SEISMIC STRAP.
N.T.S.



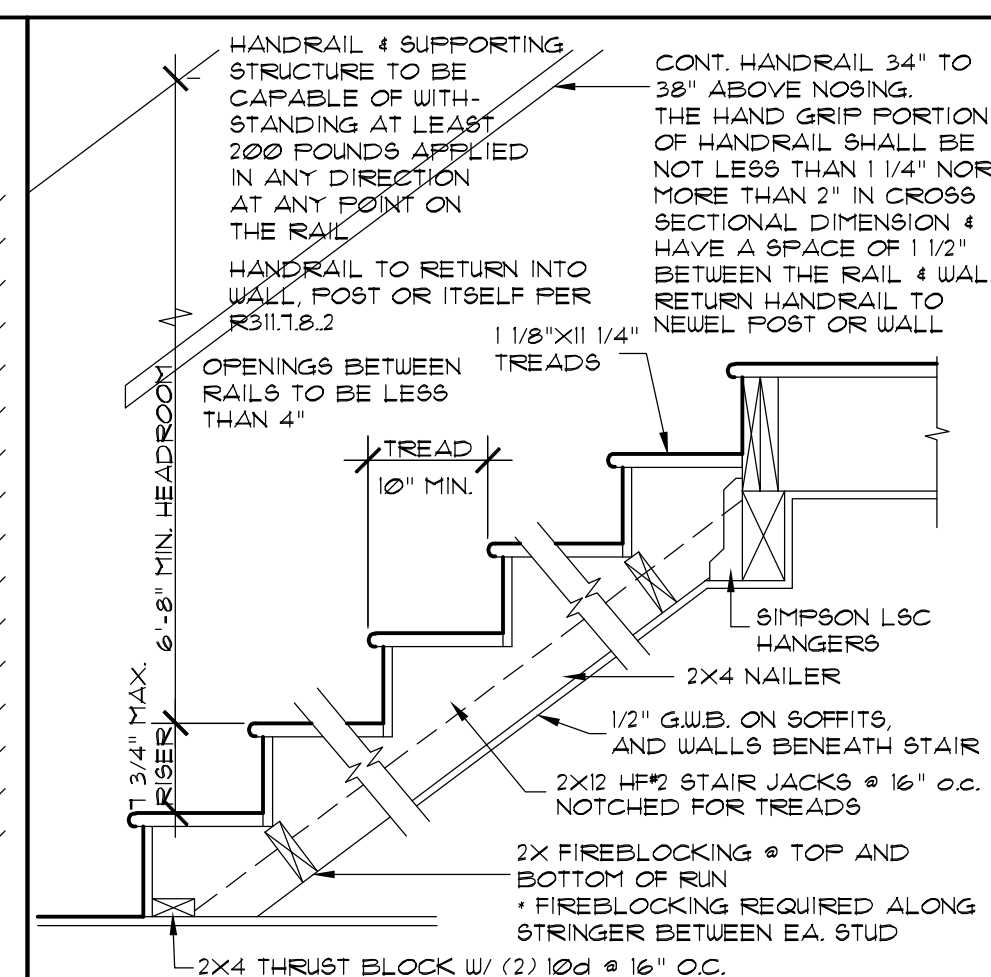
2 WATER HEATER SEIMIC STRAP.
N.T.S.



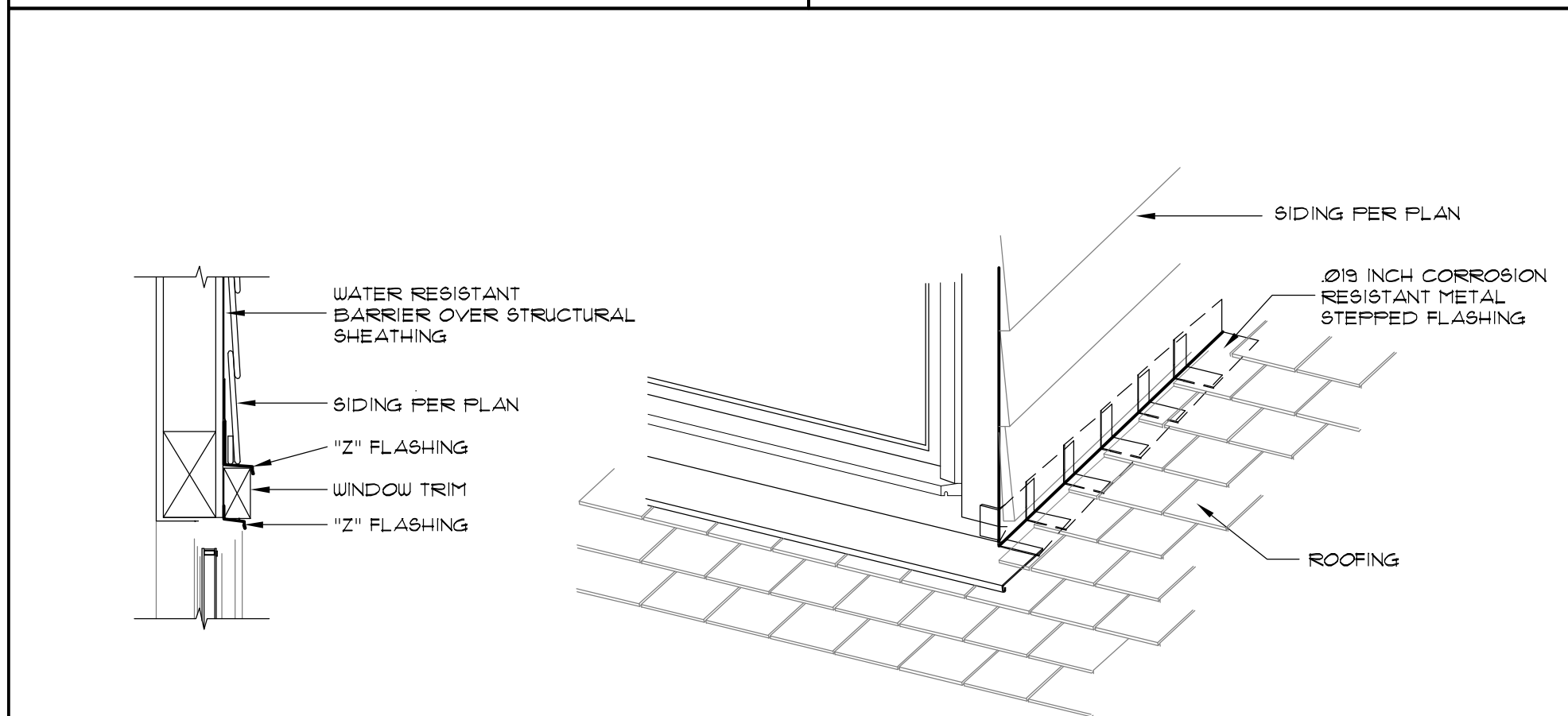
3 SOUND ATTENUATION FOR
SURFACE MOUNTED FAN
N.T.S.



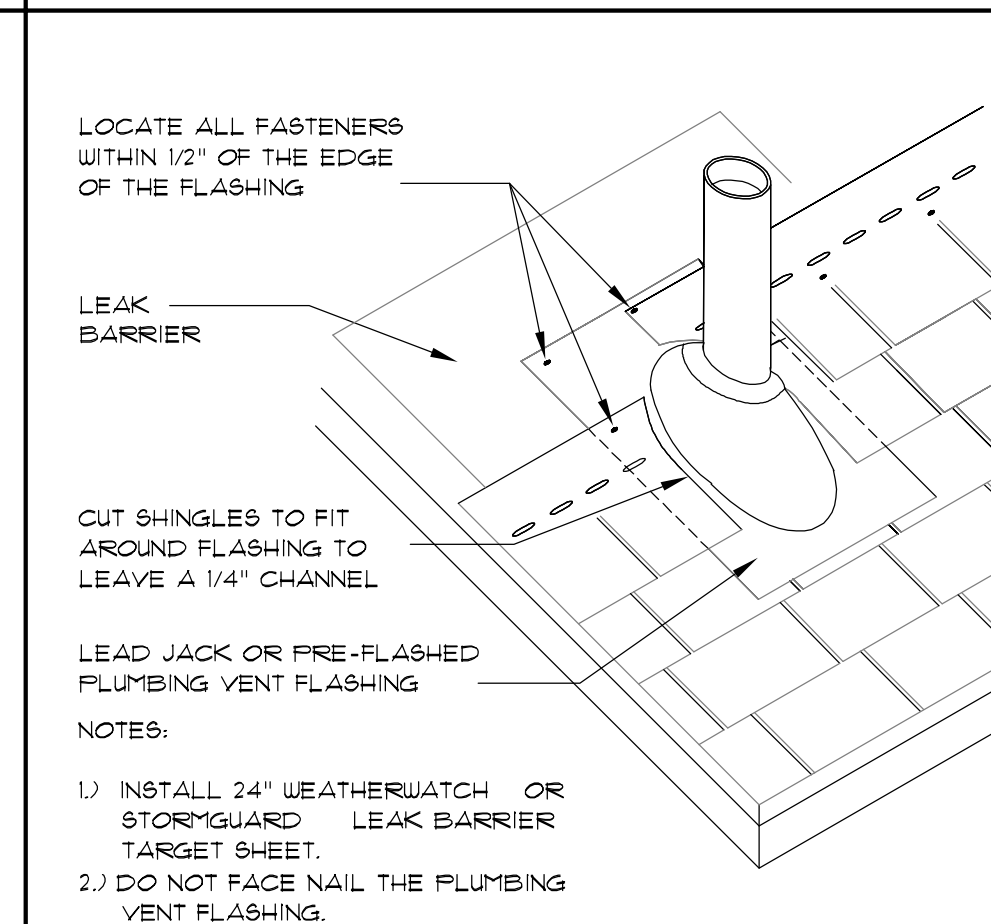
4 HANDRAIL SECTION
N.T.S.



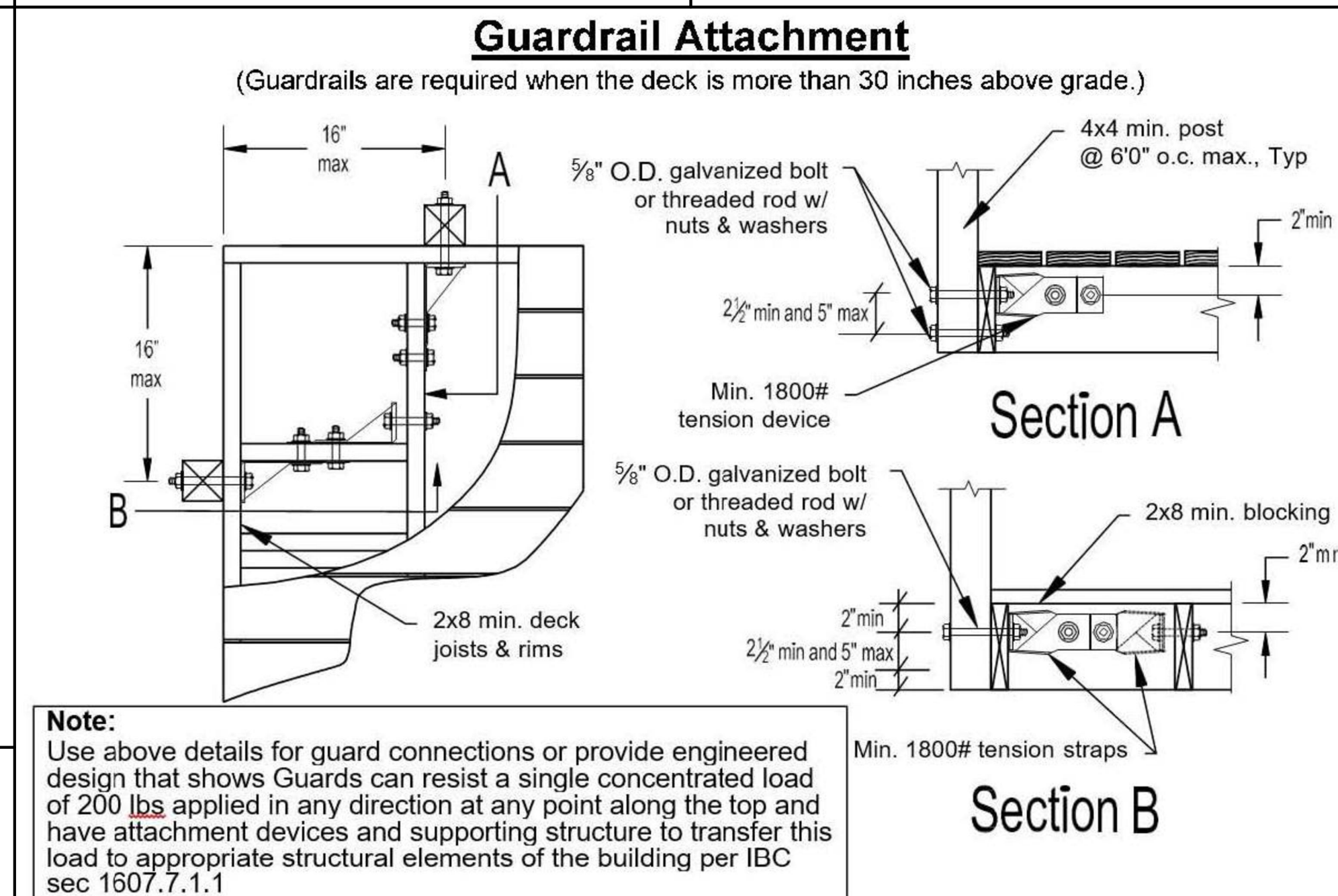
5 STAIR SECTION DETAIL
N.T.S.



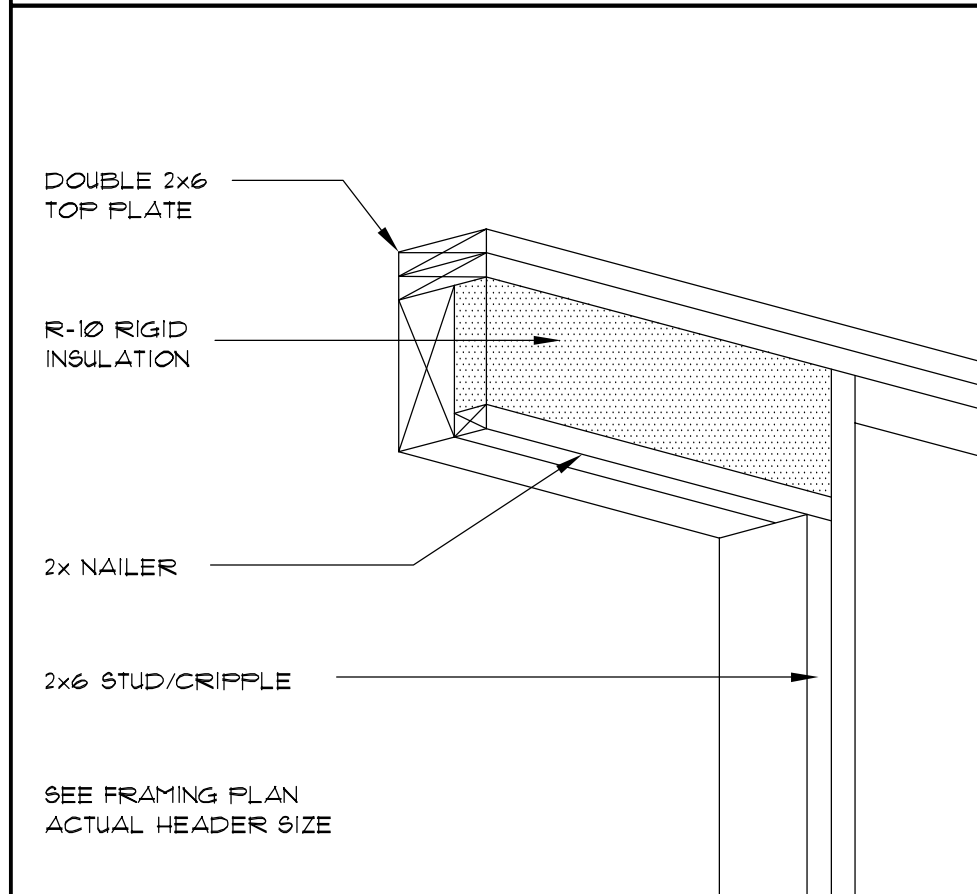
6 FLASHING DETAILS
N.T.S.



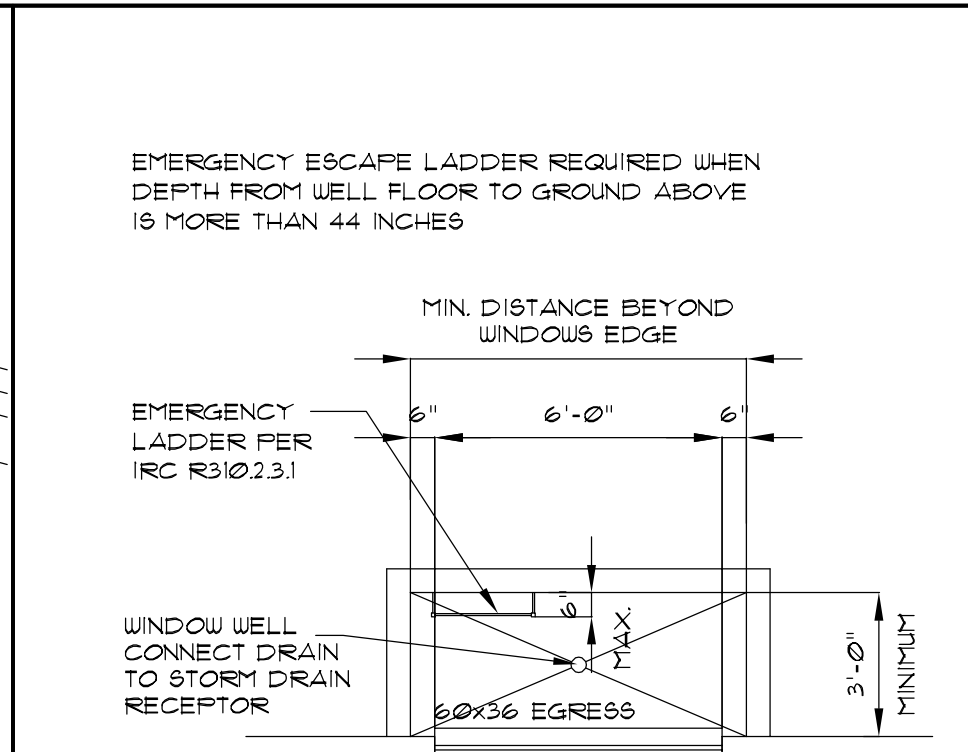
7 PLUMBING VENT FLASHING
N.T.S.



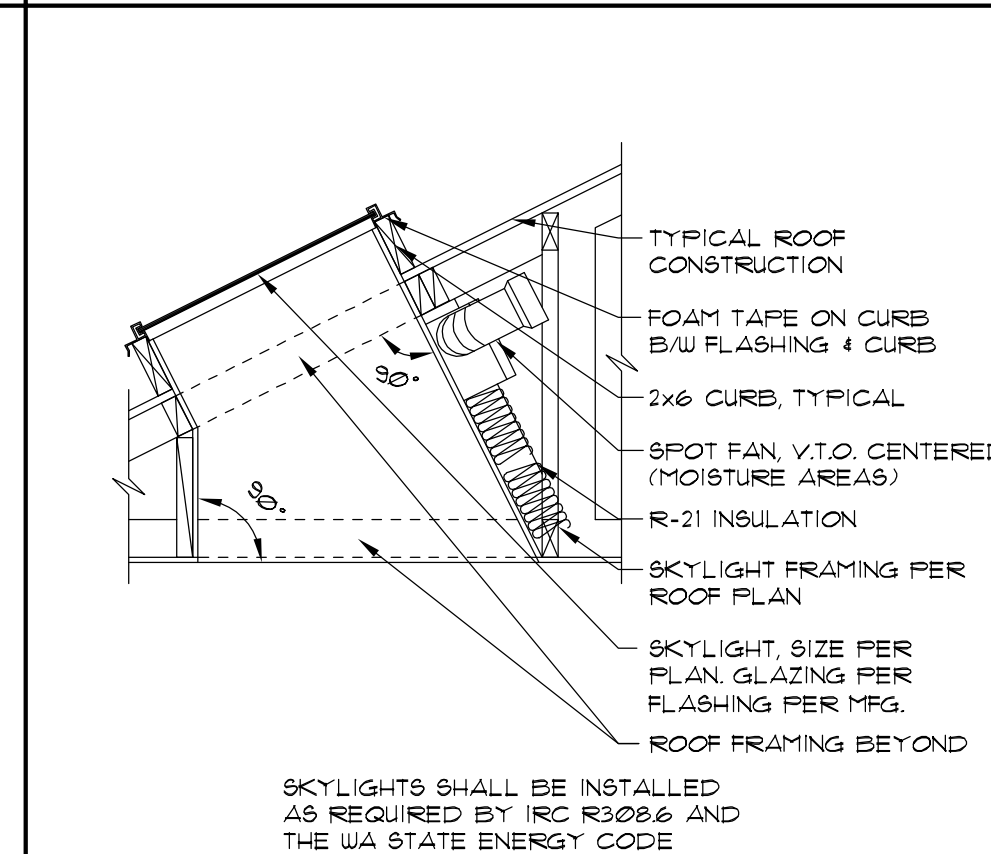
8 GUARD RAIL ATTACHMENT
N.T.S.



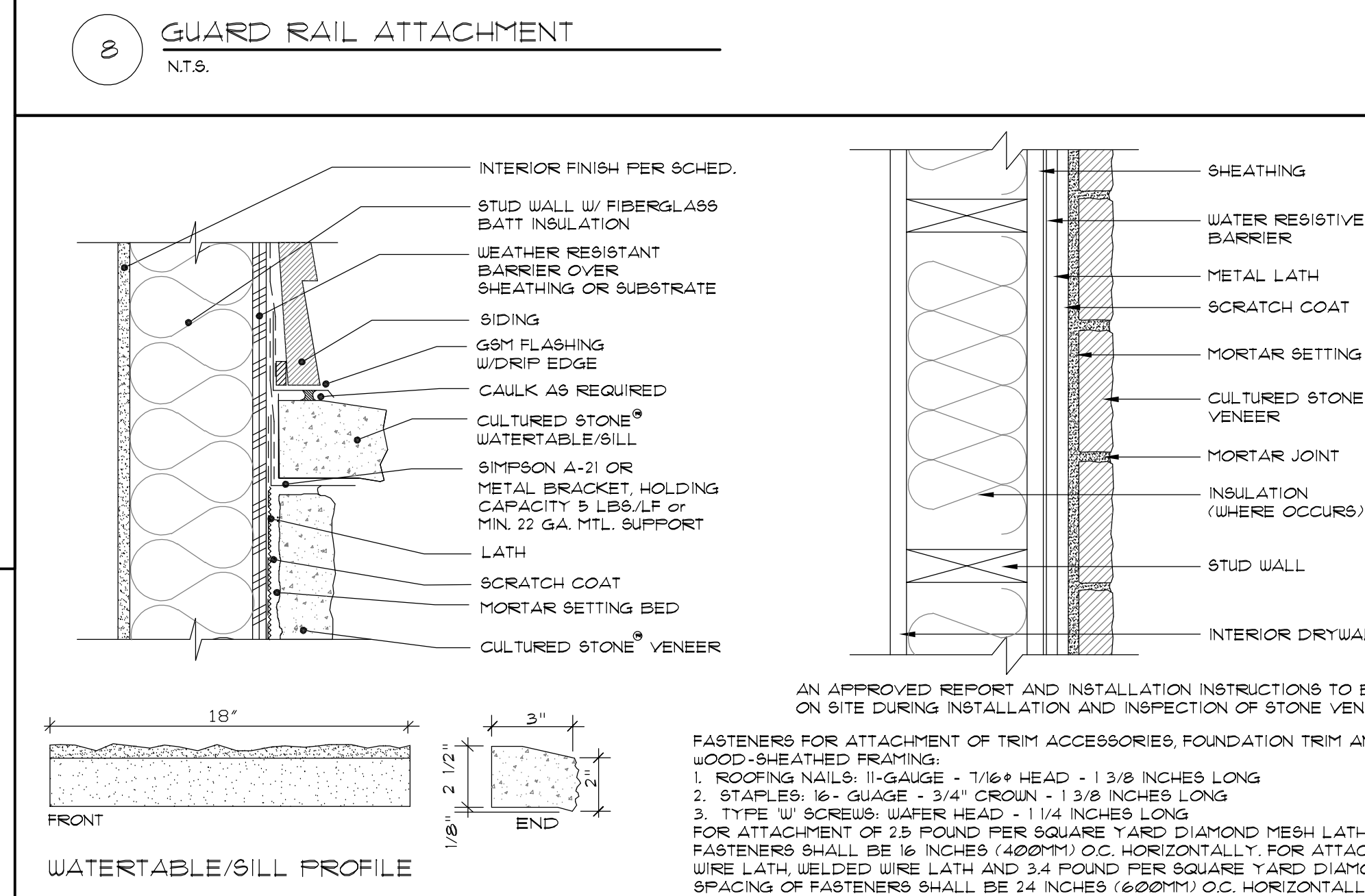
9 INSULATED HEADER DETAIL
N.T.S.



10 WINDOW WELL DETAIL
N.T.S. PER IRC R310.2.3



11 SKYLIGHT WELL DETAIL
N.T.S.



STRUCTURAL NOTES

GENERAL REQUIREMENTS & DESIGN CRITERIA

BUILDING CODE & REFERENCE STANDARDS: THE "INTERNATIONAL BUILDING CODE", 2018 EDITION, GOVERNS THE DESIGN AND CONSTRUCTION OF THIS PROJECT. REFERENCE TO A SPECIFIC SECTION IN THE CODE DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE ENTIRE MATERIALS REFERENCE STANDARDS NOTED BELOW. THE LATEST EDITION OF THE MATERIALS REFERENCE STANDARDS SHALL BE USED.

ARCHITECTURAL DRAWINGS: REFER TO THE ARCHITECTURAL DRAWINGS FOR INFORMATION INCLUDING, BUT NOT LIMITED TO: DIMENSIONS, ELEVATIONS, SLOPES, DOOR AND WINDOW OPENINGS, NON-BEARING WALLS, STAIRS, CURBS, DRAINS, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES AND OTHER NONSTRUCTURAL ITEMS.

STRUCTURAL RESPONSIBILITIES: THE PE IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE PRIMARY STRUCTURE IN ITS COMPLETED STATE.

CONTRACTOR RESPONSIBILITIES: THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND ALL JOB RELATED SAFETY STANDARDS SUCH AS OSHA AND WSHA. THE CONTRACTOR IS RESPONSIBLE FOR THE STRENGTH AND STABILITY OF THE STRUCTURE DURING CONSTRUCTION AND SHALL PROVIDE TEMPORARY SHORING, BRACING AND OTHER ELEMENTS REQUIRED TO MAINTAIN STABILITY UNTIL THE STRUCTURE IS COMPLETED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE WORK REQUIRED IN THE CONSTRUCTION DOCUMENTS AND THE REQUIREMENTS FOR EXECUTING IT PROPERLY.

DISCREPANCIES: IN CASE OF DISCREPANCIES BETWEEN THESE GENERAL NOTES, THE CONTRACT DRAWINGS AND SPECIFICATIONS, AND/OR REFERENCE STANDARDS, THE ENGINEER SHALL DETERMINE WHICH SHALL GOVERN. DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

SITE VERIFICATION: THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE PRIOR TO FABRICATION AND/OR CONSTRUCTION. CONFLICTS BETWEEN THE DRAWINGS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE WORK. ALL UNDERGROUND UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO EXCAVATION OR DRILLING.

WIND DESIGN: BASIC WIND SPEED (3-SECOND GUST), V = 85 MPH(ASD); WIND IMPORTANCE FACTOR, IW = 1.0; OCCUPANCY CATEGORY = II; EXPOSURE CATEGORY = C;

SEISMIC DESIGN: SEISMIC IMPORTANCE FACTOR IE = 1.0; OCCUPANCY CATEGORY = II; SS = 1.40G; S1 = 0.488G; SITE CLASS = D; SDS = 1.12G; SD1 = 0.488G; SEISMIC DESIGN CATEGORY = D; BASIC SEISMIC FORCE RESISTING SYSTEM = A-13 (BEARING WALL SYSTEMS) LIGHT-FRAMED WALLS WITH WOOD STRUCTURAL PANELS RATED FOR SHEAR RESISTANCE; CS = 0.12I; R = 6.5; ANALYSIS PROCEDURE = EQUIVALENT LATERAL FORCE PROCEDURE PER ASCE 7, SEC 12.8.

SNOW LOAD: GROUND SNOW LOAD, PG = 20 PSF; FLAT ROOF SNOW LOAD, PF = 25 PSF (DRIFT LOADS CONSIDERED PER ASCE 7 WHERE APPLICABLE); SNOW EXPOSURE FACTOR, CE = 1.0; SNOW IMPORTANCE FACTOR, IS = 1.0; THERMAL FACTOR, CT = 1.0.

LIVE LOADS:

ROOF (LIVE)	20 PSF
ROOF (SNOW)	25 PSF
RESIDENTIAL FLOOR	40 PSF
RESIDENTIAL DECK	60 PSF

DESIGN-BY-OTHERS (DEFERRED SUBMITTALS) LOADS: ALL PRE-ENGINEERED/FABRICATED/MANUFACTURED OR OTHER PRODUCTS DESIGNED BY OTHERS SHALL BE DESIGNED FOR THE TRIBUTARY DEAD AND LIVE LOADS PLUS WIND, EARTHQUAKE, AND COMPONENT AND CLADDING LOADS WHEN APPLICABLE. DESIGN SHALL CONFORM TO THE PROJECT DRAWINGS AND SPECIFICATIONS, REFERENCE STANDARDS, AND GOVERNING CODE.

ROOF DEAD LOAD 15 PSF
TOP CHORD DEAD LOAD 8 PSF
BOTTOM CHORD DEAD LOAD 7 PSF
TRUSS UPLIFT LOAD (GROSS) 10 PSF

DEFERRED SUBMITTALS: ITEMS DESIGNED BY OTHERS SHALL INCLUDE CALCULATIONS, SHOP DRAWINGS AND PRODUCT DATA. DESIGN SHALL BE PREPARED BY THE SSE AND SUBMITTED TO THE ARCHITECT AND SER FOR REVIEW PRIOR TO SUBMISSION TO THE JURISDICTION FOR APPROVAL. THE SSE SHALL SUBMIT TO THE ENGINEER FOR REVIEW CALCULATIONS AND SHOP DRAWINGS THAT ARE STAMPED AND SIGNED BY THE SSE. REVIEW OF THE SSE'S SHOP DRAWINGS IS FOR GENERAL COMPLIANCE WITH DESIGN CRITERIA AND COMPATIBILITY WITH THE DESIGN OF THE PRIMARY STRUCTURE AND DOES NOT RELIEVE THE SSE OF RESPONSIBILITY FOR THAT DESIGN. ALL NECESSARY BRACING, TIES, ANCHORAGE, AND PROPRIETARY PRODUCTS SHALL BE FURNISHED AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS OR THE SSE'S DESIGN DRAWINGS AND CALCULATIONS.

INSPECTIONS: ALL CONSTRUCTION IS SUBJECT TO INSPECTION BY THE BUILDING OFFICIAL IN ACCORDANCE WITH IBC SEC 109. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS WITH THE BUILDING OFFICIAL. SUBMIT COPIES OF ALL INSPECTION REPORTS TO THE ENGINEER FOR REVIEW.

PREFABRICATED CONSTRUCTION: ALL PREFABRICATED CONSTRUCTION SHALL CONFORM TO IBC SEC 1703.6.

GEOTECHNICAL INSPECTION: THE GEOTECHNICAL ENGINEER OR BUILDING OFFICIAL SHALL INSPECT ALL PREPARED SOIL BEARING SURFACES PRIOR TO PLACEMENT OF CONCRETE AND REINFORCING STEEL AND PROVIDE A LETTER TO THE OWNER STATING THAT SOILS ARE ADEQUATE TO SUPPORT THE "ALLOWABLE FOUNDATION PRESSURE" SHOWN BELOW. SOIL VALUES SHALL BE FIELD VERIFIED BY THE BUILDING OFFICIAL OR THE GEOTECHNICAL ENGINEER PRIOR TO PLACING CONCRETE.

GEOTECHNICAL REPORT: RECOMMENDATIONS CONTAINED IN "GEOTECHNICAL ENGINEERING INVESTIGATION" G-6035 BY GROUP NORTHWEST, INC., DATED MAR 8, 2024 WERE USED FOR FOOTING DESIGN.

DESIGN SOIL VALUES:

ALLOWABLE BEARING PRESSURE (ASSUMED)	2000 PSF
PASSIVE LATERAL PRESSURE	350 PSF/FT
ACTIVE LATERAL PRESSURE (UNRESTRAINED)	35 PSF/FT
ACTIVE LATERAL PRESSURE (RESTRAINED)	45 PSF/FT
COEFFICIENT OF SLIDING FRICTION	0.35

SLABS-ON-GRADE & FOUNDATIONS: ALL FOUNDATIONS SHALL BEAR ON STRUCTURAL COMPACTED FILL OR COMPETENT NATIVE SOIL PER THE GEOTECHNICAL REPORT. ALL SLABS-ON-GRADE SHALL BE FOUNDED ON APPROPRIATE SUB-GRADE PREPARATION AS NOTED IN THE GEOTECHNICAL REPORT. EXTERIOR PERIMETER FOOTINGS SHALL BEAR NOT LESS THAN 18 INCHES BELOW FINISH GRADE, OR BY THE GEOTECHNICAL ENGINEER AND THE BUILDING OFFICIAL. INTERIOR FOOTINGS SHALL BEAR NOT LESS THAN 12 INCHES BELOW FINISH FLOOR.

COMPACTION: UNLESS OTHERWISE SPECIFIED BY A GEOTECHNICAL ENGINEER, FOOTINGS SHALL BE PLACED ON COMPACTED MATERIAL AND SHALL BE WELL-GRADED GRANULAR MATERIAL WITH NO MORE THAN 5% PASSING A #2 SIEVE. FILLS PLACED SHALL BE IN MAXIMUM 8" LIFTS AND ALL BEARING SOILS SHALL BE COMPACTED TO 95% MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT USING THE MODIFIED PROCTOR TEST.

CAST-IN-PLACE CONCRETE & REINFORCEMENT

REFERENCE STANDARDS: CONFORM TO:

- (1) ACI 318 "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY".
- (2) IBC CHAPTER 19.
- (3) ACI 301 "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE", SEC 3 "REINFORCEMENT AND REINFORCEMENT SUPPORTS."

FIELD REFERENCE: THE CONTRACTOR SHALL KEEP A COPY OF ACI FIELD REFERENCE MANUAL, SP-15, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE (ACI 301) WITH SELECTED ACI AND ASTM REFERENCES."

CONCRETE MIXTURES: CONFORM TO ACI 318 CHAPTER 5 "CONCRETE QUALITY, MIXING, AND PLACING."

MATERIALS: CONFORM TO ACI 318 CHAPTER 3 "MATERIALS" FOR REQUIREMENTS FOR CEMENTITIOUS MATERIALS, AGGREGATES, MIXING WATER AND ADMIXTURES.

REINFORCING BARS	ASTM A615, GRADE 60, DEFORMED BARS.
DEFORMED WELDED WIRE FABRIC	ASTM A497
BAR SUPPORTS	CRSI MSP-2, CHAPTER 3 "BAR SUPPORTS."
TIE WIRE	16.5 GAGE OR HEAVIER, BLACK ANNEALED.

MIX DESIGNS: PROVIDE A 5-SACK MINIMUM, 28-DAY COMPRESSIVE STRENGTH F'C = 2,500 PSI CONCRETE MIX WITH MAXIMUM 3/4" AGGREGATE AND 0.50 W/C RATIO FOR ALL ISOLATED POST AND CONTINUOUS WALL FOOTINGS, SLABS-ON-GRADE, AND BASEMENT WALLS EXTENDING NO MORE THAN 8" ABOVE FINISH GRADE. ELEVATION FOR BASEMENT WALLS EXTENDING MORE THAN 8" ABOVE FINISH GRADE AND ALL SITE WALLS, PROVIDE A 5-1/2 SACK MINIMUM F'C = 3,000 PSI CONCRETE MIX WITH MAXIMUM 3/4" AGGREGATE AND 0.50 W/C RATIO.

MIX DESIGN NOTES:

- (1) W/C RATIO: WATER-CEMENTITIOUS MATERIAL RATIOS SHALL BE BASED ON THE TOTAL WEIGHT OF CEMENTITIOUS MATERIALS.
- (2) CEMENTITIOUS CONTENT: THE USE OF FLY ASH, OTHER POZZOLANS, SILICA FUME, OR SLAG SHALL CONFORM TO ACI 301 SEC 4.2.2.8.B. MAXIMUM AMOUNT OF FLY ASH SHALL BE 20% OF TOTAL CEMENTITIOUS CONTENT UNLESS REVIEWED AND APPROVED OTHERWISE BY SER.

- (3) AIR CONTENT: CONFORM TO ACI 301 SEC 4.2.2.4. HORIZONTAL EXTERIOR SURFACES IN CONTACT WITH THE SOIL REQUIRE ENTRAINED AIR. USE "MODERATE EXPOSURE". VERTICAL EXTERIOR SURFACES REQUIRE "MODERATE EXPOSURE". TOLERANCE IS +/- 1-1/2%. AIR CONTENT SHALL BE MEASURED AT POINT OF PLACEMENT.
- (4) SLUMP: CONFORM TO ACI 301 SEC 4.2.2.2. SLUMP SHALL BE DETERMINED AT POINT OF PLACEMENT.
- (5) NON-CHLORIDE ACCELERATOR: NON-CHLORIDE ACCELERATING ADMIXTURE MAY BE USED IN CONCRETE SLABS PLACED AT AMBIENT TEMPERATURES BELOW 50°F AT THE CONTRACTOR'S OPTION.

FORMWORK: CONFORM TO ACI 301 SEC 2 "FORMWORK AND FORM ACCESSORIES." REMOVAL OF FORMS SHALL CONFORM TO SEC 2.3.2 EXCEPT STRENGTH INDICATED IN SEC 2.3.2.5 SHALL BE 0.75 F'C.

MEASURING, MIXING, AND DELIVERY: CONFORM TO ACI 301 SEC 4.3.

HANDLING, PLACING, CONSTRUCTING AND CURING: CONFORM TO ACI 301 SEC 5.

REBAR FABRICATION & PLACING: CONFORM TO ACI 301, SEC 3.2.2 "FABRICATION", AND ACI SP-66 "ACI DETAILING MANUAL." CONFORM TO ACI 301, SEC 3.3.2 "PLACEMENT." PLACING TOLERANCES SHALL CONFORM TO SEC 3.3.2.1 "TOLERANCES."

SPLICES: CONFORM TO ACI 301, SEC 3.3.2.7. REFER TO PLANS FOR TYPICAL SPLICES.

FIELD BENDING: CONFORM TO ACI 301 SEC 3.3.2.8. "FIELD BENDING OR STRAIGHTENING." BAR SIZES #3 THROUGH #5 MAY BE FIELD BENT COLD THE FIRST TIME. OTHER BARS REQUIRE PREHEATING. DO NOT TWIST BARS.

CORNER BARS: PROVIDE MATCHING-SIZED "L" CORNER BARS FOR ALL HORIZONTAL WALL AND FOOTING BARS WITH THE APPROPRIATE SPICE LENGTH, UNO.

CONCRETE COVER: CONFORM TO THE FOLLOWING COVER REQUIREMENTS FROM ACI 301, TABLE 3.3.2.3:

CONCRETE CAST AGAINST EARTH	3"
CONCRETE EXPOSED TO EARTH OR WEATHER (#5 & SMALLER)	1-1/2"
BARS IN SLABS AND WALLS	3/4"

CONSTRUCTION JOINTS: CONFORM TO ACI 301 SEC 2.2.2.5, 5.1.2.3A, 5.2.2.1, AND 5.3.2.6. CONSTRUCTION JOINTS SHALL BE LOCATED AND DETAILED AS ON THE CONSTRUCTION DRAWINGS. USE OF AN ACCEPTABLE ADHESIVE, SURFACE RETARDER, PORTLAND CEMENT GROUT, OR ROUGHENING THE SURFACE IS NOT REQUIRED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS. WHERE SHEAR BOND IS REQUIRED, ROUGHEN SURFACES TO 1/4" AMPLITUDE.

WOOD FRAMING

REFERENCE STANDARDS: CONFORM TO:

- (1) IBC CHAPTER 23 "WOOD".
- (2) NDS AND NDS SUPPLEMENT - "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION".
- (3) ANSI/TPI 1 "NATIONAL DESIGN STANDARD FOR METAL-PLATE-CONNECTED WOOD TRUSS CONSTRUCTION".

DEFERRED SUBMITTALS: SUBMIT PRODUCT DATA AND PROOF OF ICC APPROVAL FOR FRAMING MEMBERS AND FASTENERS THAT HAVE BEEN DESIGNED BY OTHERS. SUBMIT CALCULATIONS PREPARED BY THE SSE IN THE STATE OF WASHINGTON FOR ALL MEMBERS AND CONNECTIONS DESIGNED BY OTHERS ALONG WITH SHOP DRAWINGS. ALL NECESSARY BRIDGING, BLOCKING, BLOCKING PANELS AND WEB STIFFENERS SHALL BE DETAILED AND FURNISHED BY THE SUPPLIER. TEMPORARY AND PERMANENT BRIDGING SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S SPECIFICATIONS. DEFLECTION LIMITS SHALL BE AS NOTED UNDER DESIGN LOADS SECTION.

IDENTIFICATION: ALL SAWN LUMBER AND PRE-MANUFACTURED WOOD PRODUCTS SHALL BE IDENTIFIED BY THE GRADE MARK OR A CERTIFICATE OF INSPECTION ISSUED BY THE CERTIFYING AGENCY.

MATERIALS:

- **SAWN LUMBER:** CONFORM TO GRADING RULES OF WMPA, WCLIB OR NLGA. FINGER JOINTED STUDS ACCEPTABLE AT INTERIOR WALLS ONLY.
- | MEMBER USE | SIZE | SPECIES | GRADE |
|-----------------|------------|----------|-------|
| STUDS & POSTS | 2x, 4x | HEM-FIR | NO. 2 |
| RAFTERS | 2x4 - 2x10 | HEM-FIR | NO. 2 |
| BEAMS | 4x8 - 4x12 | HEM-FIR | NO. 2 |
| BEAMS | 6x8 - 6x12 | HEM-FIR | NO. 2 |
| POSTS & TIMBERS | 6x, 8x | DOUG-FIR | NO. 2 |
- **GLUED LAMINATED TIMBER:** CONFORM TO AITC 117 "STANDARD SPECIFICATIONS FOR STRUCTURAL GLUE-LAMINATED TIMBER OF SOFTWOOD SPECIES, MANUFACTURING AND DESIGN" AND ANSI/AITC A190.1 "STRUCTURAL GLUED LAMINATED TIMBER." CAMBER ALL GLUED LAMINATED MEMBERS BEAMS TO 2000" RADIUS, UNLESS SHOWN OTHERWISE ON THE PLANS.
- | MEMBER USE | SIZES | SPECIES | STRESS CLASS | USES |
|------------|-------|---------|-------------------------|------------------|
| BEAMS | ALL | DF/DF | 24F-1.8E | SIMPLE SPANS |
| | ALL | DF/DF | 24F-1.8E [(--FB)=(+FB)] | CANTILEVER SPANS |
- **METAL PLATE CONNECTED WOOD ROOF TRUSSES:** CONFORM TO IBC SEC 2303.4 "TRUSSES."
- **WOOD STRUCTURAL SHEATHING (PLYWOOD):** WOOD APA-RATED STRUCTURAL SHEATHING INCLUDES: ALL VENEER PLYWOOD, ORIENTED STRAND BOARD, WATERBOARD, PARTICLEBOARD, 11-11 SIDING, AND COMPOSITES OF VENEER AND WOOD BASED MATERIAL. CONFORM TO PRODUCT STANDARDS PS-1 AND PS-2 OF THE U.S. DEPT. OF COMMERCE AND THE AMERICAN PLYWOOD ASSOCIATION (APA).

MINIMUM APA RATING				
LOCATION	THICKNESS	SPAN RATING	PLYWOOD GRADE	EXPOSURE
ROOF	15/32"	32/16	C-D	1
FLOOR	23/32" T&G	24 OC	STURD-I-FLOOR	1
WALLS	15/32"	32/16	C-D	1
WALLS(ALT)	7/16" OSB	24/16	C-D	1

- **JOIST HANGERS AND CONNECTORS:** SHALL BE "STRONG TIE" BY SIMPSON COMPANY OR USP EQUIVALENT AS SPECIFIED IN THEIR LATEST CATALOGS. ALTERNATE CONNECTORS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED PROVIDED THEY HAVE CURRENT ICC APPROVAL FOR EQUIVALENT OR GREATER LOAD CAPACITIES AND ARE REVIEWED AND APPROVED BY THE SER PRIOR TO ORDERING. CONNECTORS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS. WHERE CONNECTOR STRAPS CONNECT TWO MEMBERS, PLACE 1/2 OF THE NAILS OR BOLTS IN EACH MEMBER. PROVIDE WASHERS UNDER THE HEADS AND NUTS OF ALL BOLTS AND LAG SCREWS BEARING ON WOOD. UNLESS NOTED OTHERWISE ALL NAILS SHALL BE FULL LENGTH COMMON. NAIL STRAPS TO WOOD FRAMING AS LATE AS POSSIBLE IN THE FRAMING PROCESS TO ALLOW THE WOOD TO SHRINK AND THE BUILDING TO SETTLE.
- **NAILS AND STAPLES:** CONFORM TO IBC SEC 2303.6 "NAILS AND STAPLES." UNLESS NOTED ON PLANS, NAIL PER IBC TABLE 2304.9.1. UNLESS NOTED OTHERWISE ALL NAILS SHALL BE COMMON. NAIL SIZES SPECIFIED ON THE DRAWINGS ARE BASED ON THE FOLLOWING SPECIFICATIONS:

SIZE	LENGTH	DIAMETER
8d	2-1/2"	0.131"
10d	3"	0.148"
(8d & 10d ALTERNATIVE) PASLODE TETRAGRIP NAILS	2-3/8"	0.113"
12d (16d SINKER)	3-1/4"	0.148"
16d	3-1/2"	0.162"

- **LAG BOLTS/BOLTS:** CONFORM TO ASTM A307.

NAILING REQUIREMENTS: PROVIDE MINIMUM NAILING IN ACCORDANCE WITH IBC TABLE 2304.9.1 "FASTENING SCHEDULE" EXCEPT AS NOTED ON THE DRAWINGS. NAILING FOR ROOF/FLOOR DIAPHRAGMS/SHEAR WALLS SHALL BE PER DRAWINGS. NAILS SHALL BE DRIVEN FLUSH AND SHALL NOT FRACTURE THE SURFACE OF SHEATHING.

STANDARD LIGHT-FRAME CONSTRUCTION: UNLESS NOTED ON THE PLANS, CONSTRUCTION SHALL CONFORM TO IBC SEC 2308 "CONVENTIONAL LIGHT-FRAME CONSTRUCTION" AND IBC SEC 2304 "GENERAL CONSTRUCTION REQUIREMENTS."

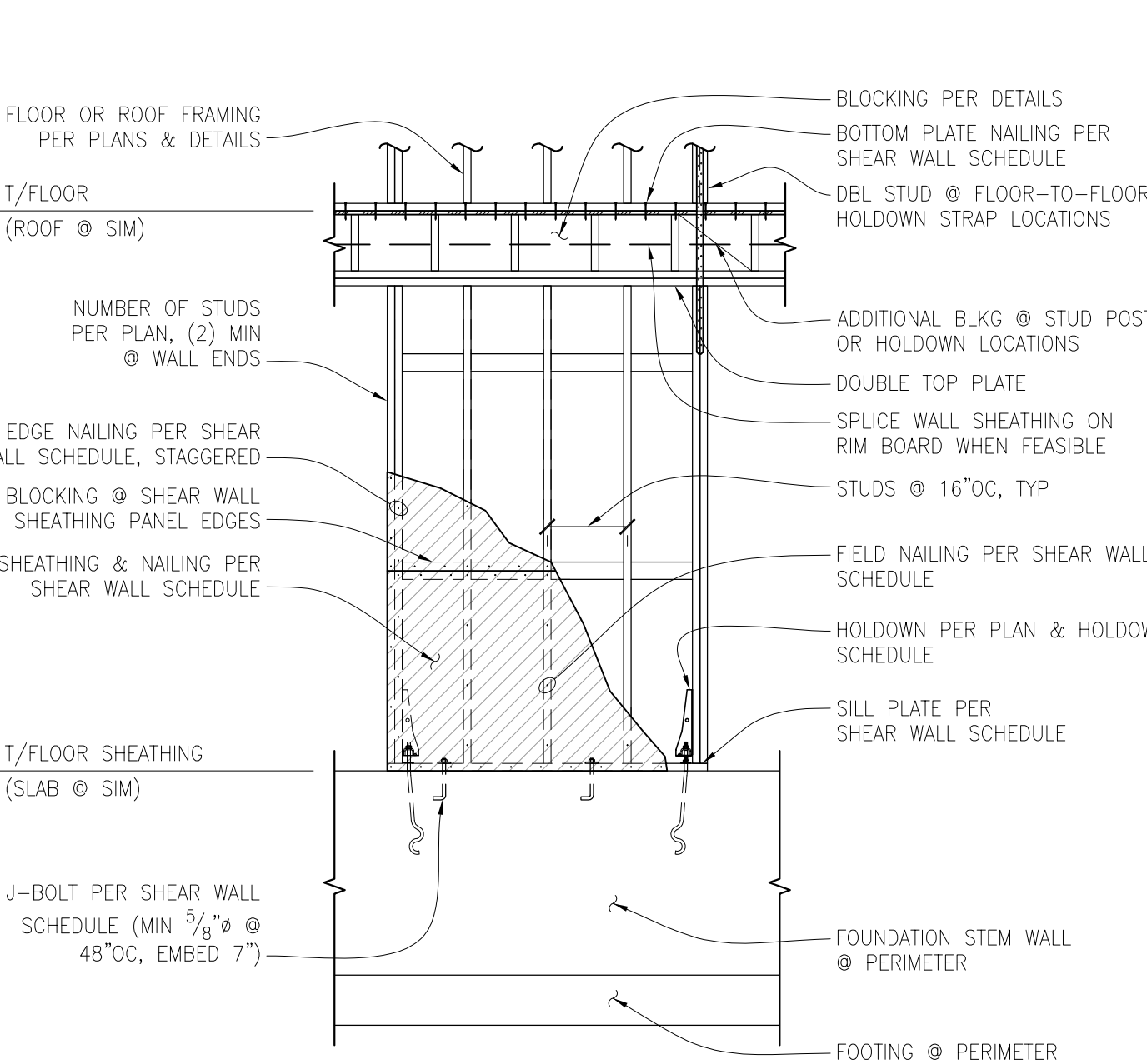
- (1) **WALL FRAMING:** UNLESS OTHERWISE NOTED, ALL INTERIOR WALLS SHALL BE 2x4 @ 16"OC AND ALL EXTERIOR WALLS SHALL BE 2x6 @ 16"OC. PROVIDE (2)BUNDLED STUDS MIN AT WALL ENDS AND EACH SIDE OF ALL OPENINGS. UNO, ALL SOLID SAWN LUMBER HEADERS SHALL BE SUPPORTED BY A MINIMUM OF (1)TRIM AND (1)KING STUD AND ALL GULUM OR ENGINEERED WOOD HEADERS BY (2)TRIM AND (2)KING STUDS. AT FRAMED WALLS, UNO, ALL SOLID SAWN LUMBER BEAMS SHALL BE SUPPORTED ON A MINIMUM OF (2) BUNDLED 2X STUDS AND ALL GULUM OR ENGINEERED WOOD BEAMS ON A MINIMUM OF (3) BUNDLED 2X STUDS. STITCH-NAIL BUNDLED STUDS WITH (2)100 @ 12"OC, UNO, ALL INTERIOR AND EXTERIOR HEADS SHALL BE 4X6. PROVIDE SOLID BLOCKING THRU FLOORS TO SUPPORTS BELOW FOR BEARING WALLS AND POSTS. UNO, ATTACH BOTTOM PLATES OF STUD WALLS TO WOOD FRAMING BELOW WITH 16d @ 12"OC OR TO CONCRETE WITH 5/8"-DIA. ANCHOR BOLTS x 7" EMBEDMENT AT 48"OC. REFER TO SHEAR WALL SCHEDULE FOR SPECIFIC SHEATHING, STUD, AND NAILING REQUIREMENTS AT FRAMED WALLS. UNO, PROVIDE GYPSUM SHEATHING ON INTERIOR SURFACES AND PLYWOOD SHEATHING ON EXTERIOR SURFACES.

- (2) **ROOF/FLOOR FRAMING:** UNLESS OTHERWISE NOTED, PROVIDE DOUBLE JOISTS/RAFTERS UNDER ALL PARALLEL BEARING PARTITIONS AND SOLID BLOCKING AT ALL BEARING POINTS. PROVIDE DOUBLE JOISTS AROUND ALL ROOF/FLOOR OPENINGS. UNO, MULTI-JOISTS/RAFTERS SHALL BE STITCH-NAILED TOGETHER WITH (2)100 @ 12"OC. PROVIDE ROOF SHEATHING EDGE CLIPS CENTERED BETWEEN FRAMING AT UNBLOCKED PLYWOOD EDGES. ALL FLOOR SHEATHING SHALL HAVE TONGUE AND GROOVE JOINTS OR BE SUPPORTED BY SOLID BLOCKING. ALLOW 1/8" SPACING AT ALL PANEL EDGES AND ENDS OF ROOF/FLOOR SHEATHING. ROOF/FLOOR SHEATHING SHALL BE LAID FACE GRAIN PERPENDICULAR TO FRAMING MEMBERS.

MOISTURE CONTENT: WOOD MATERIAL USED FOR THIS PROJECT SHALL HAVE MAXIMUM MOISTURE CONTENT OF 19% EXCEPT FOR THE PRESSURE-TREATED WOOD SILL PLATE.

PRESERVATIVE TREATMENT: WOOD MATERIALS ARE REQUIRED TO BE "TREATED WOOD" UNDER CERTAIN CONDITIONS IN ACCORDANCE WITH IBC SEC 2304.11 "PROTECTION AGAINST DECAY AND TERMITES". CONFORM TO THE APPROPRIATE STANDARDS OF THE AMERICAN WOOD-PRESERVERS ASSOCIATION (AWPA) FOR SAWN LUMBER, GLUED LAMINATED TIMBER, ROUND POLES, WOOD PILES AND MARINE PILES. FOLLOW AMERICAN LUMBER STANDARDS COMMITTEE (ALSC) QUALITY ASSURANCE PROCEDURES. PRODUCTS SHALL BEAR THE APPROPRIATE MARK.

METAL CONNECTORS/PT WOOD: CK ENGINEERING LLC RECOMMENDS THAT ALL METAL HARDWARE AND FASTENERS IN CONTACT WITH PRESSURE TREATED LUMBER BE STAINLESS STEEL TYPE 316L. AT THE OWNER'S RISK AND DISCRETION, HOT-DIPPED GALVANIZED METAL HARDWARE AND FASTENERS MAY BE INVESTIGATED FOR USE IN LIEU OF STAINLESS STEEL PROVIDED THAT THE FINISH HAS A MINIMUM ZINC CONTENT OF AT LEAST 1.05 OZ/SF AND ITS USE IS COORDINATED BY THE CONTRACTOR AND WOOD SUPPLIER FOR THE EXPECTED ENVIRONMENT AND MOISTURE EXPOSURE FOR APPROPRIATE USE BASED ON THE METHOD OF PRESERVATIVE TREATMENT OF THE WOOD.



TYPICAL SHEAR WALL ELEVATION

SCALE: N.T.S.

7

WOOD-FRAMED SHEAR WALL SCHEDULE									
FOR HEM-FIR/DOUG-FIR STUD FRAMING									
SW TYPE	SW SHEATHING APA-RATED	NAIL SIZE & SPACING @ PANEL EDGES	RIM JOIST OR BLOCKING ATTACHMENT TO TOP PLATE BELOW	BOTTOM PLATE & EDGE MEMBER REQUIREMENTS		SILL PLATE REQUIREMENTS		SHEAR LOAD CAPACITY (PLF)	
				SHEAR NAILING TO WOOD FRAMING BELOW	BOTTOM P AT FRAMING	ANCHOR BOLT TO CONCRETE FOUNDATION	SILL P AT FOUNDATION		
SW-6	15/32" CD-EXT	0.131"ø x 2 1/2" @ 6"OC	CLIP @ 18"OC	0.148"ø x 3 1/4" @ 6"OC	2x	5/8"ø @ 48"OC	P.T. 2x	242	
SW-4	15/32" CD-EXT	0.131"ø x 2 1/2" @ 4"OC	CLIP @ 14"OC	0.148"ø x 3 1/4" @ 4"OC	3x	5/8"ø @ 32"OC 5/8"ø @ 48"OC	P.T. 2x P.T. 3x	353	
SW-3	15/32" CD-EXT	0.131"ø x 2 1/2" @ 3"OC, STAGGERED	CLIP @ 12"OC	0.148"ø x 3 1/4" @ 4"OC & CLIP @ 18"OC	3x	5/8"ø @ 24"OC 5/8"ø @ 32"OC	P.T. 2x P.T. 3x	456	
SW-2	15/32" CD-EXT	0.131"ø x 2 1/2" @ 2"OC, STAGGERED	CLIP @ 8"OC	0.148"ø x 3 1/4" @ 4"OC & CLIP @ 16"OC	3x	5/8"ø @ 16"OC 5/8"ø @ 24"OC	P.T. 2x P.T. 3x	595	
2SW-4	15/32" CD-EXT BOTH SIDE	0.131"ø x 2 1/2" @ 4"OC, STAGGERED	CLIP @ 6"OC	0.148"ø x 3 1/4" @ 4"OC & CLIP @ 12"OC	3x	5/8"ø @ 24"OC	P.T. 3x	707	
2SW-3	15/32" CD-EXT BOTH SIDE	0.131"ø x 2 1/2" @ 3"OC, STAGGERED	CLIP @ 8"OC BOTH SIDES, STAGGERED	0.148"ø x 3 1/4" @ 4"OC & CLIP @ 8"OC	3x	5/8"ø @ 16"OC	P.T. 3x	911	
2SW-2	15/32" CD-EXT BOTH SIDE	0.131"ø x 2 1/2" @ 2"OC, STAGGERED	CLIP @ 6"OC BOTH SIDES, STAGGERED	0.148"ø x 3 1/4" @ 4"OC & CLIP @ 5"OC	3x	5/8"ø @ 12"OC	P.T. 3x	1190	

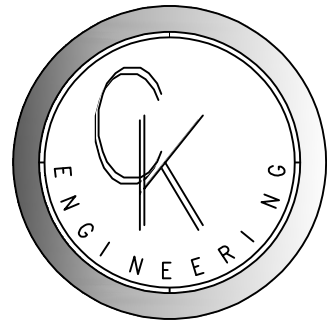
NOTES:

1. INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY.
2. WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.
3. BLOCKING IS REQUIRED AT ALL PANEL EDGES.
4. PROVIDE SHEAR WALL SHEATHING AND NAILING FOR ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY WINDOWS, OR DOORWAYS OR AS DESIGNATED ON PLANS. HOLDOWN REQUIREMENTS PER PLANS.
5. SHEAR WALLS DESIGNATED AS PERFORATED SHEAR WALLS REQUIRE SHEATHING, SHEAR WALL NAILING, ETC. ABOVE AND BELOW ALL OPENINGS.
6. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLDOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLDOWN POSTS. ADDITIONAL INFORMATION PER HOLDOWN SCHEDULE & DETAILS.
7. INTERMEDIATE FRAMING TO BE 2x MINIMUM MEMBERS. ATTACH SHEATHING TO INTERMEDIATE FRAMING WITH 0.148"ø x 2 1/2" NAILS AT 12"OC WHERE STUDS ARE SPACED AT 16"OC AND 0.148"ø x 2 1/2" NAILS AT 6"OC WHERE STUDS ARE SPACED AT 24"OC.
8. BASED ON 0.131"ø x 1 1/2" NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131"ø x 2 1/2" NAILS WHERE INSTALLED OVER SHEATHING.
9. FRAMING CLIPS: SIMPSON "A35" OR "LTP5" OR APPROVED EQUIVALENT.

WOOD-FRAMED SHEAR WALL SCHEDULE

SCALE: N.T.S.

12



CK ENGINEERING LLC
PROFESSIONAL STRUCTURAL
ENGINEERING SERVICES
19103 34th Ave. W. Suite 205
Lynnwood, WA 98036
Phone: (206) 417-0670



10/20/2024

NEW HOME AT:
6175 SE 27TH ST.
MERCER ISLAND, WA 98040

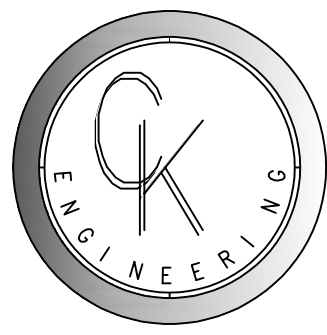
REVISION #	DATE	DESCRIPTION:
1	03-15-2024	BDC REVIEW
2	10-20-2024	REVISIONS

Drawn By: PK
Checked By: SC
Date: 10-20-2024

CK JOB NO.
23-043

STRUCTURAL
NOTES/SCHED.

S-1.0



10/20/2024

NEW HOME AT:
6175 SE 27TH ST.
MERCER ISLAND, WA 98040

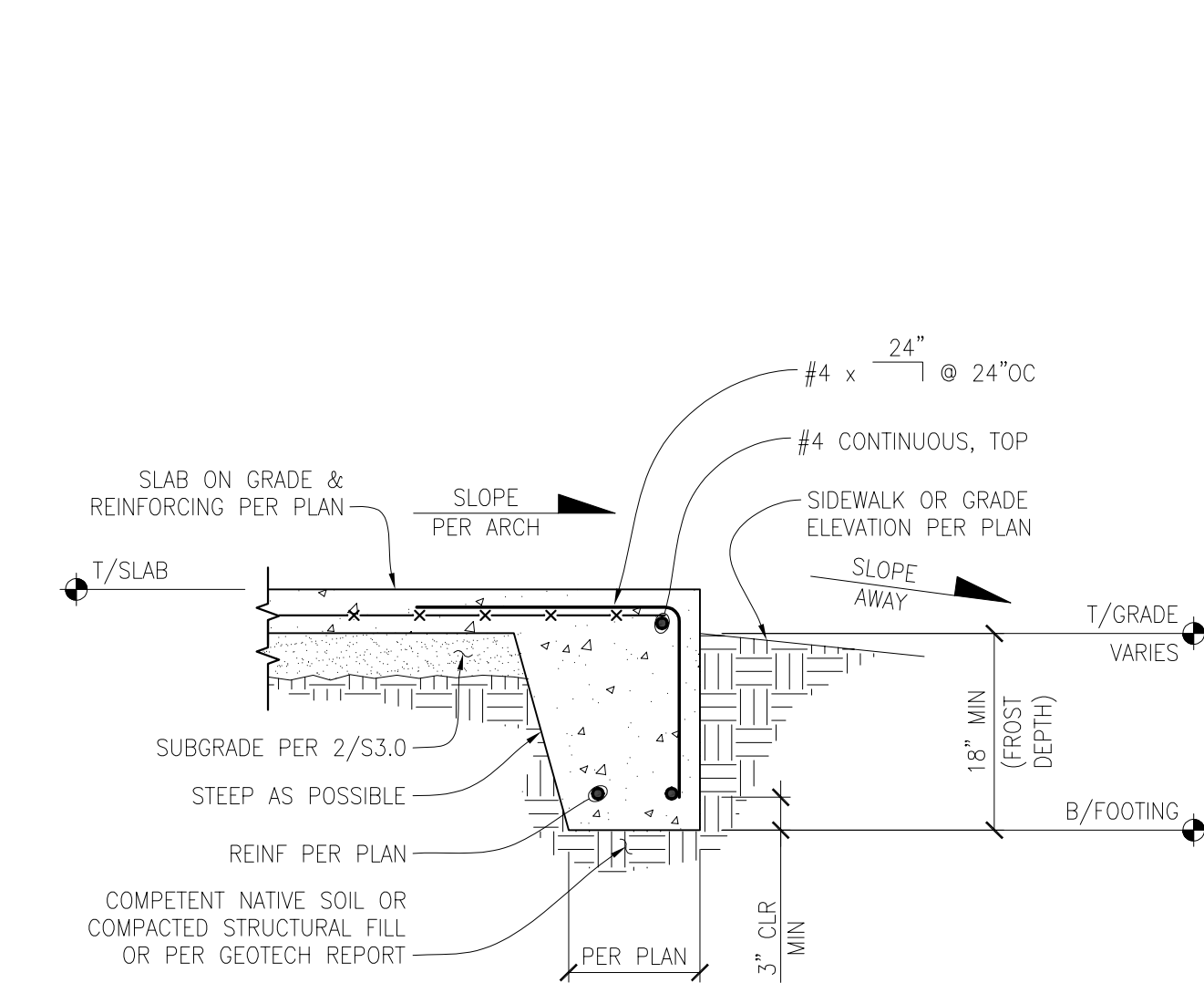
REVISION #	DATE	DESCRIPTION:
1	03-15-2024	BDC REVIEW
2	10-20-2024	REVISIONS

Drawn By: PK
Checked By: SC
Date: 10-20-2024

CK JOB NO.
23-043

STRUCTURAL
DETAILS

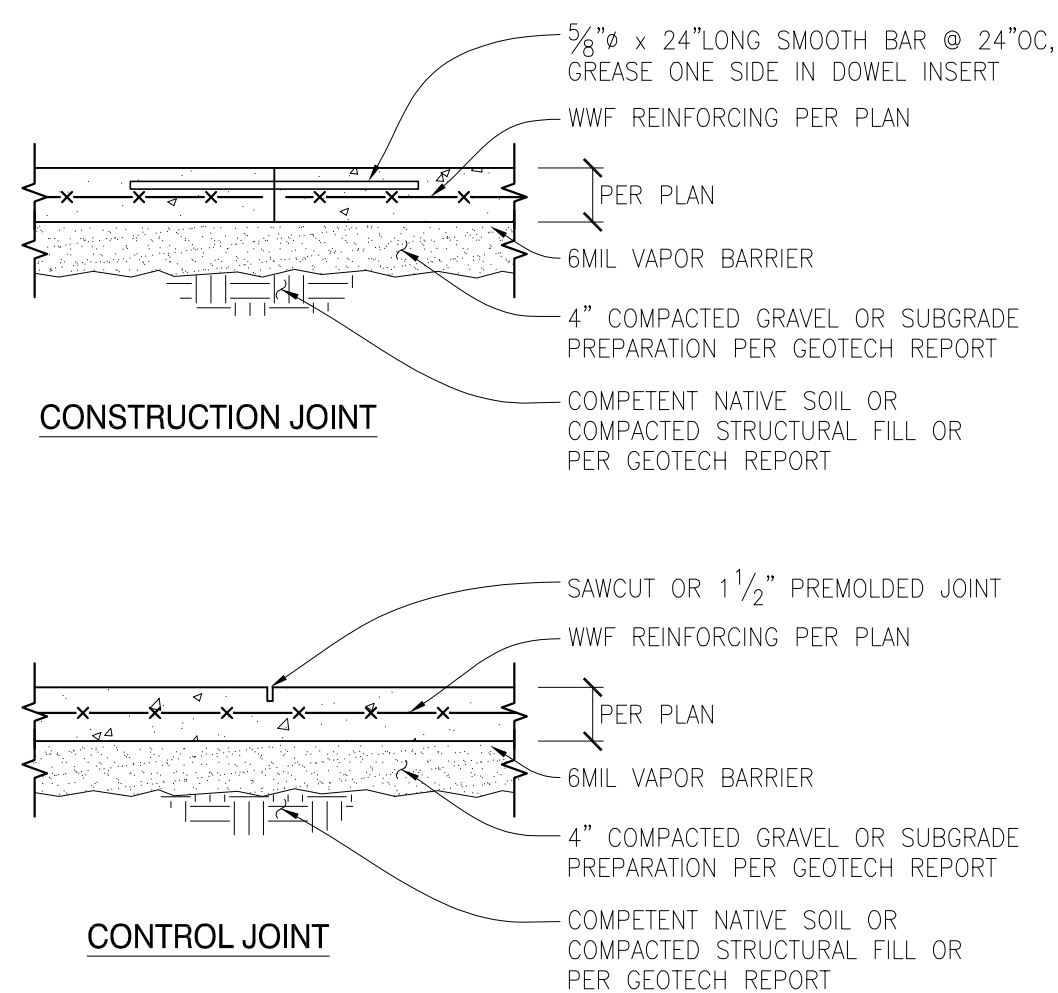
S-2.0



TYPICAL THICKENED SLAB EDGE FOOTING

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

1



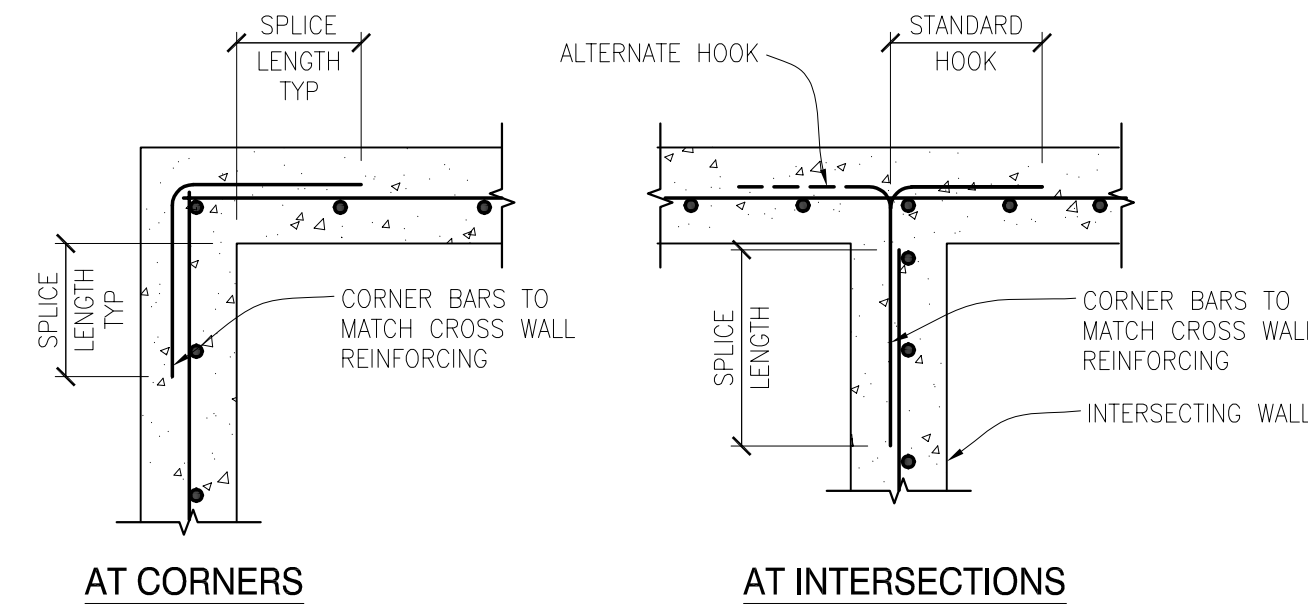
NOTES:

- FOR CONSTRUCTION OR CONTROL JOINT LOCATIONS REFERENCE FOUNDATION/SLAB PLAN
- USE "SOFTCUT SAW" AS SOON AS POSSIBLE WITHOUT CAUSING RAVELING OF CONCRETE EDGES. SAWCUT ALONG SHORT DIRECTION OF POUR FIRST
- PROVIDE CONSTRUCTION/CONTROL JOINT TO ENCLOSE APPROXIMATE SQUARE AREAS OF 225 SF MAX

TYPICAL SLAB ON GRADE JOINT DETAILS

SCALE: N.T.S.

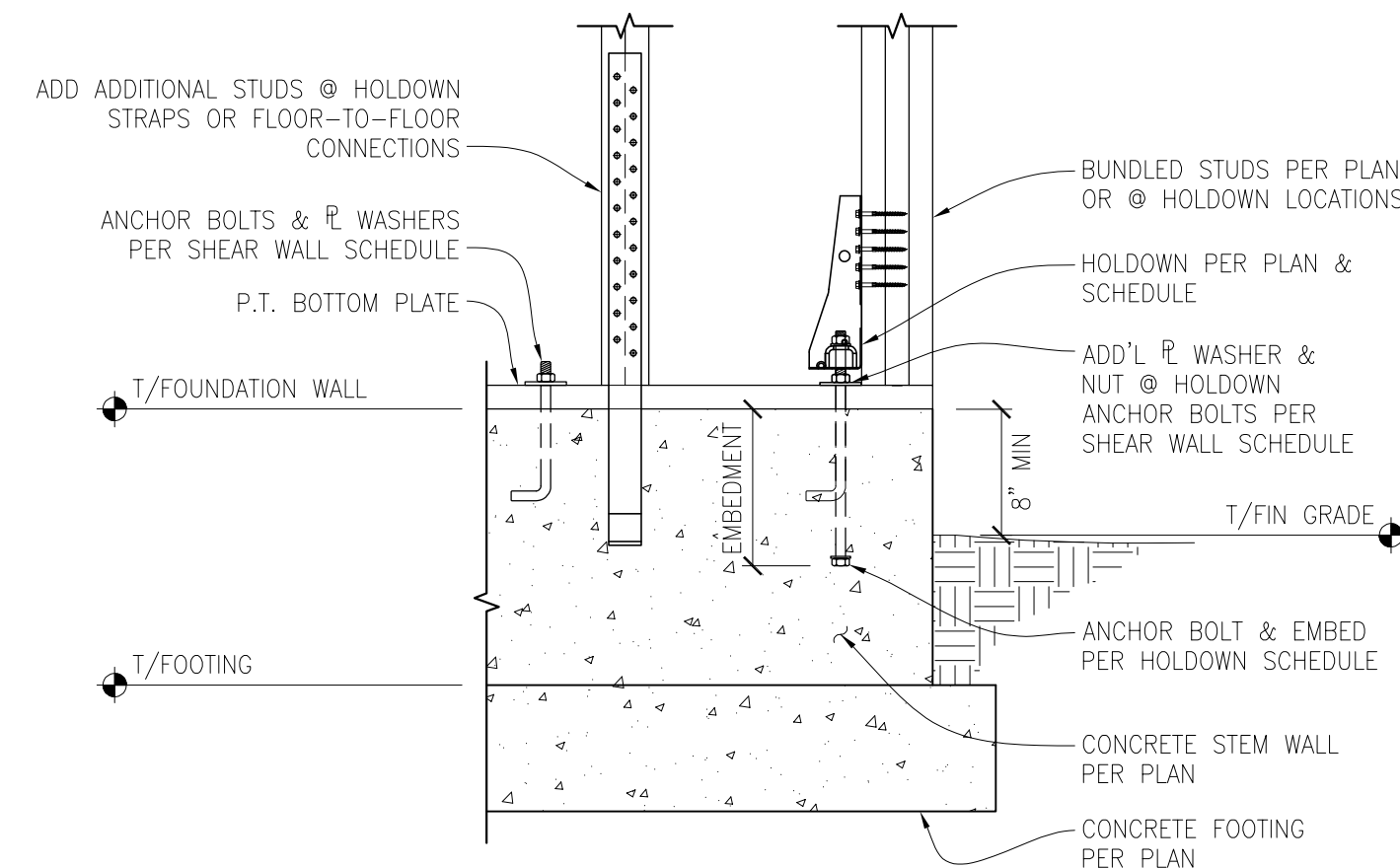
2



TYPICAL CORNER BARS
AT CONCRETE WALLS - SINGLE MAT

SCALE: N.T.S.

3

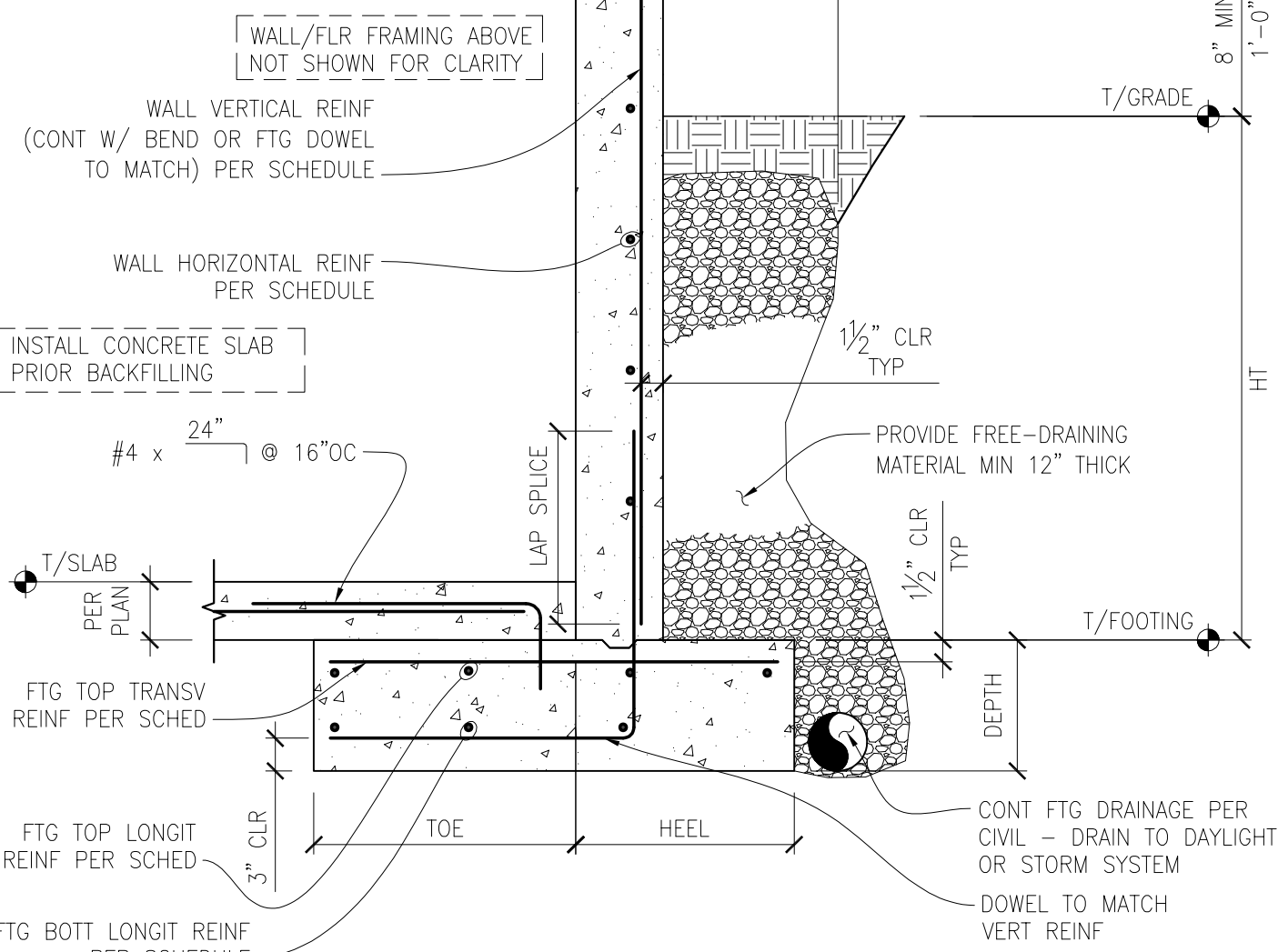


TYPICAL SHEAR WALL HOLDDOWN
CONNECTIONS AT FOUNDATION CONCRETE WALL

SCALE: N.T.S.

4

SPlice LENGTH	
BAR	LENGTH
#4	28"
#5	36"
#6	42"

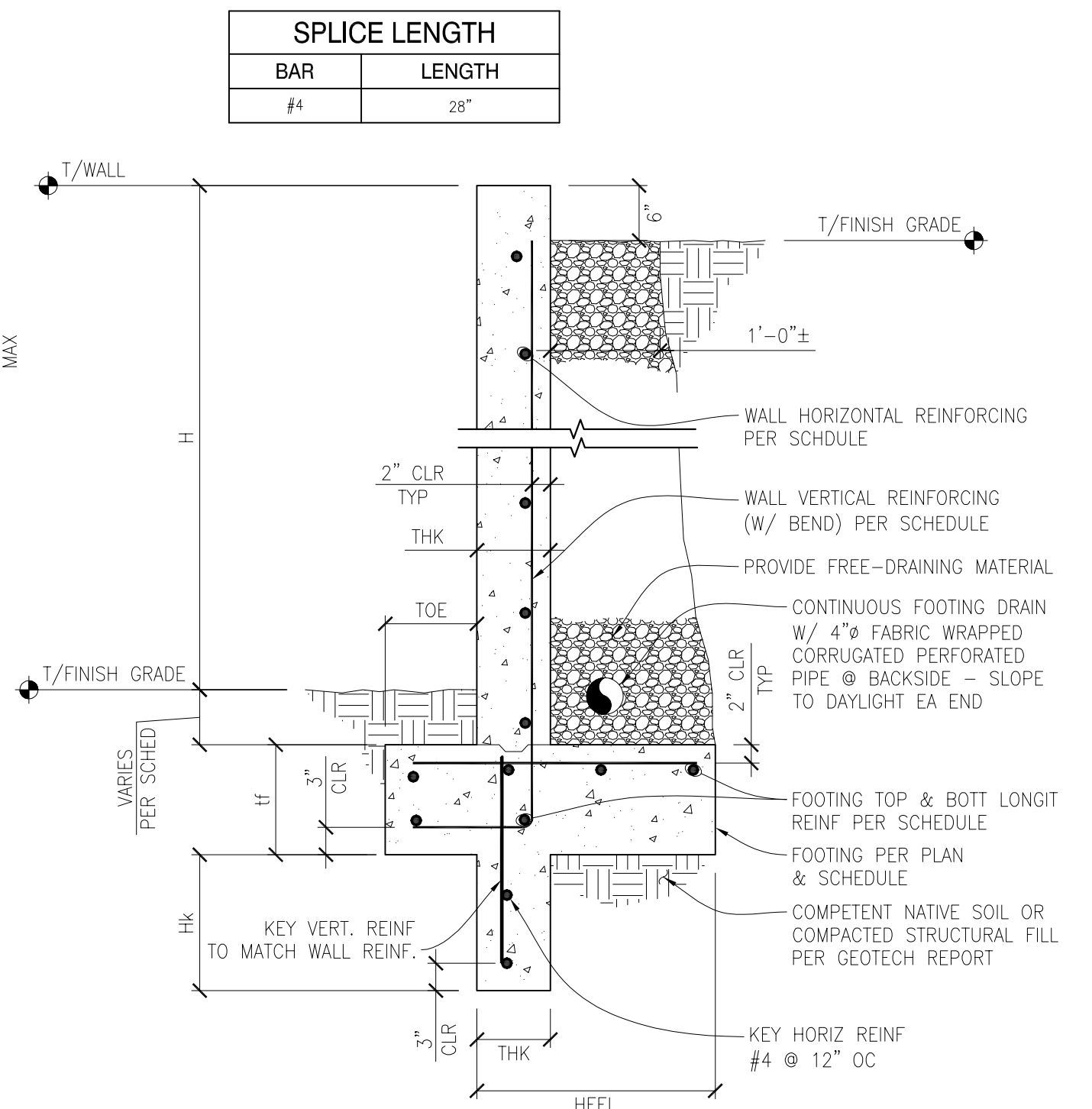


WALL				FOOTING			
SIZE	REINFORCEMENT	SIZE	REINFORCEMENT	SIZE	REINFORCEMENT	SIZE	REINFORCEMENT
HT (MAX) THK	VERTICAL	HORIZONTAL	TOE	HEEL	DEPTH	TOP/TRANSV	TOP/LONGIT
4'-0"	8"	#4 @ 12"OC	#4 @ 12"OC	1'-0"	1'-6"	10"	#4 @ 10"OC
6'-0"	8"	#4 @ 8"OC	#4 @ 12"OC	2'-6"	1'-6"	10"	#4 @ 10"OC
8'-0"	8"	#5 @ 10"OC	#4 @ 12"OC	3'-6"	2'-0"	14"	#5 @ 10"OC
9'-0"	8"	#5 @ 8"OC	#4 @ 12"OC	3'-6"	3'-0"	14"	#5 @ 10"OC
10'-0"	10"	#6 @ 10"OC	#5 @ 12"OC	4'-3"	3'-0"	16"	#5 @ 10"OC

RETAINING WALL SCHEDULE

SCALE: N.T.S.

9

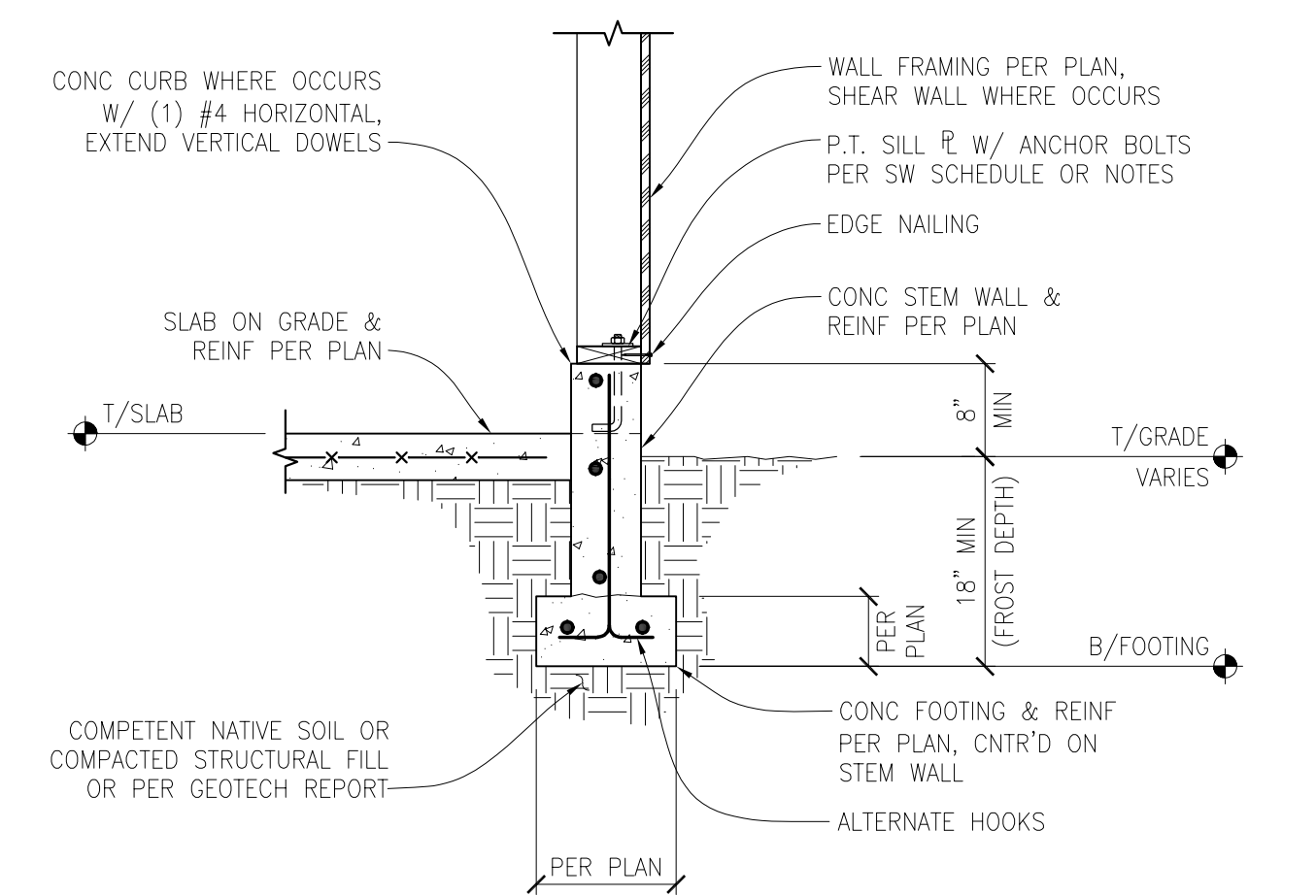


WALL				FOOTING			
SIZE	REINFORCEMENT	SIZE	REINFORCEMENT	SIZE	REINFORCEMENT	SIZE	REINFORCEMENT
HT (MAX) THK	VERTICAL	HORIZONTAL	TOE	HEEL	DEPTH	TOP/TRANSV	TOP/LONGIT
4'-0"	8"	#4 @ 12"OC	#4 @ 12"OC	1'-6"	1'-6"	10"	#4 @ 10"OC
6'-0"	8"	#4 @ 8"OC	#4 @ 12"OC	2'-0"	1'-6"	12"	#4 @ 10"OC

TALL CRAWL SPACE RETAINING WALL SCHEDULE

SCALE: N.T.S.

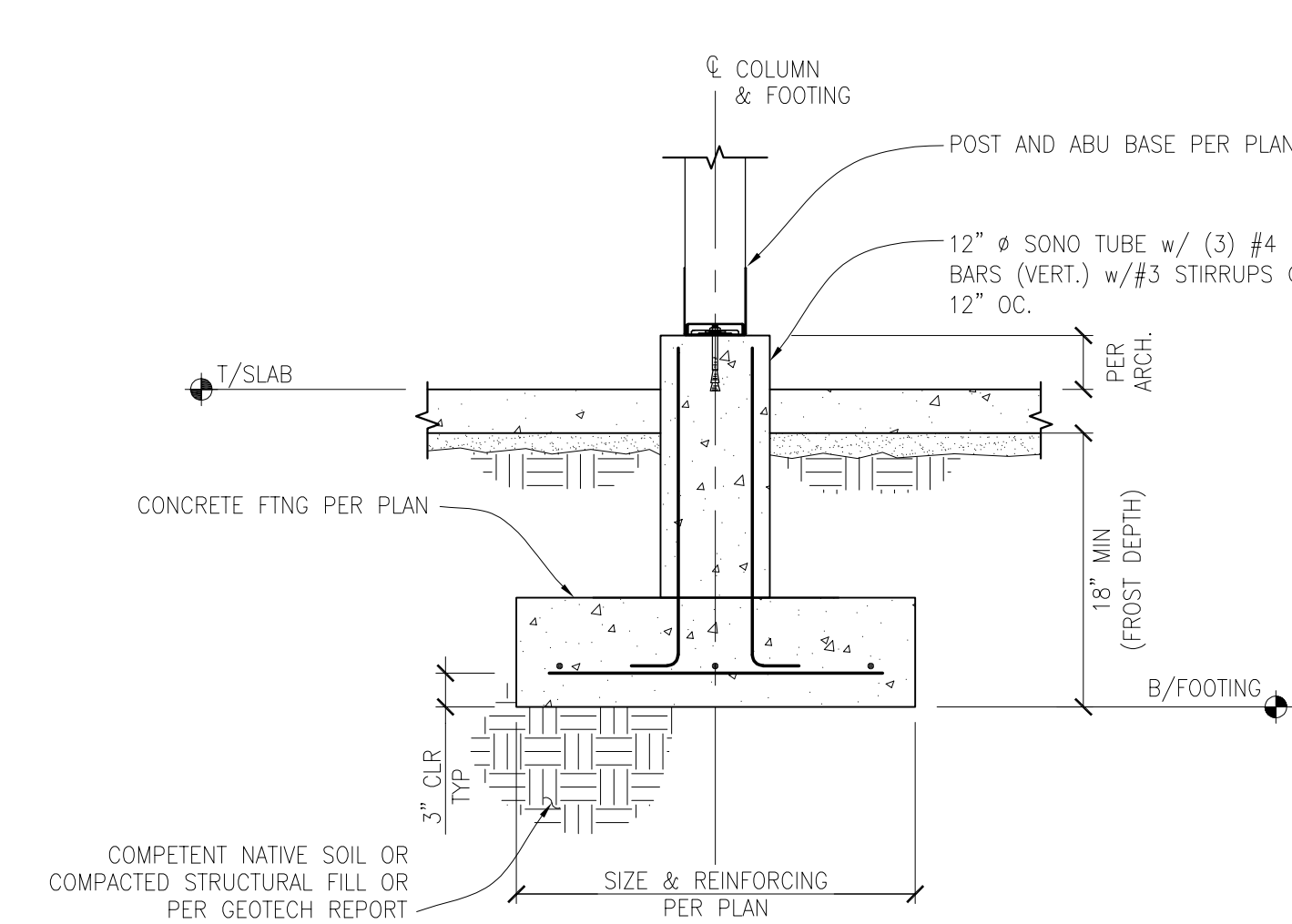
10



TYPICAL FOUNDATION FOOTING
AND STEM WALL WITH SLAB ON GRADE

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

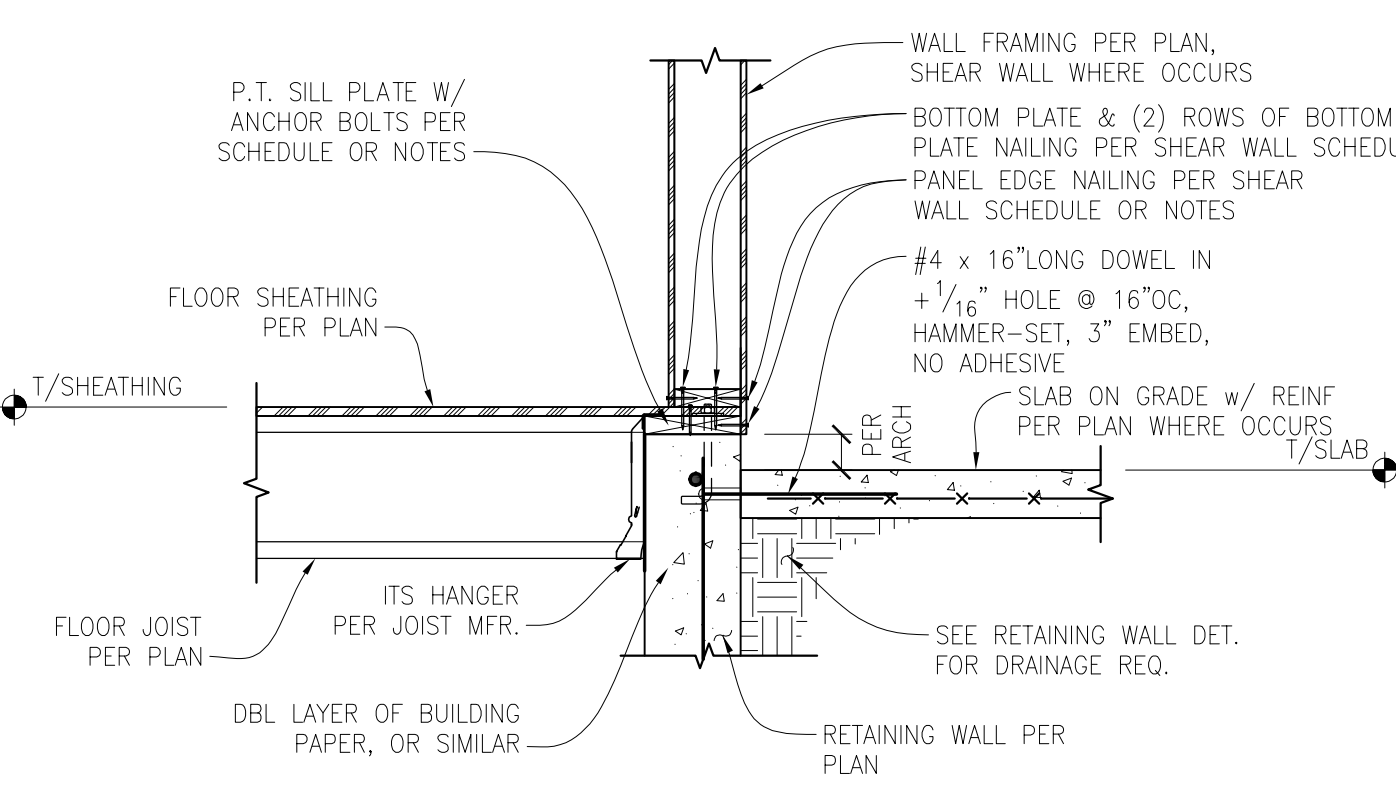
7



NEW FOOTING/POST CONNECTION

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

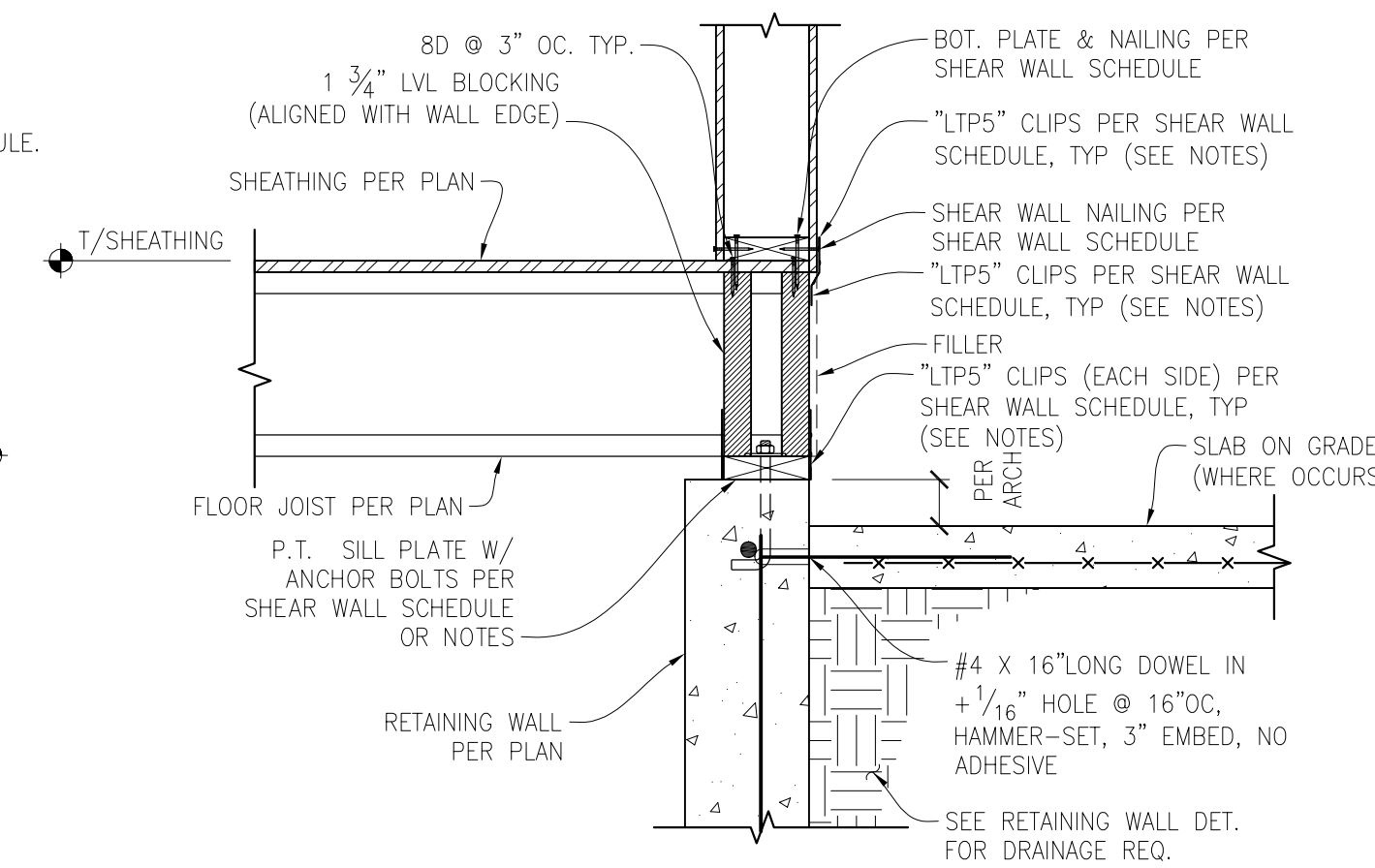
8



EXTERIOR SHEAR WALL WITH
JOISTS PERPENDICULAR TO RETAINING WALL

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

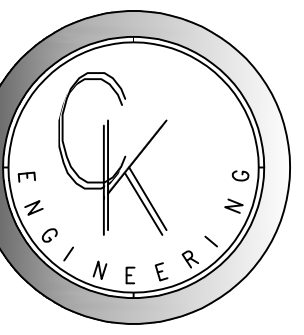
11



DBL SIDED SHEAR WALL
TO RETAINING WALL CONNECTION

SCALE: 1" = 1'-0"

12



CK ENGINEERING LLC
PROFESSIONAL STRUCTURAL
ENGINEERING SERVICES
19103 34th Ave W, Suite 205
Lynnwood, WA 98036
Phone: (206) 417-0670



10/20/2024

NEW HOME AT:
6175 SE 27TH ST.
MERCER ISLAND, WA 98040

REVISION #	DATE	DESCRIPTION:
1	03-15-2024	BDC REVIEW
2	10-20-2024	REVISIONS

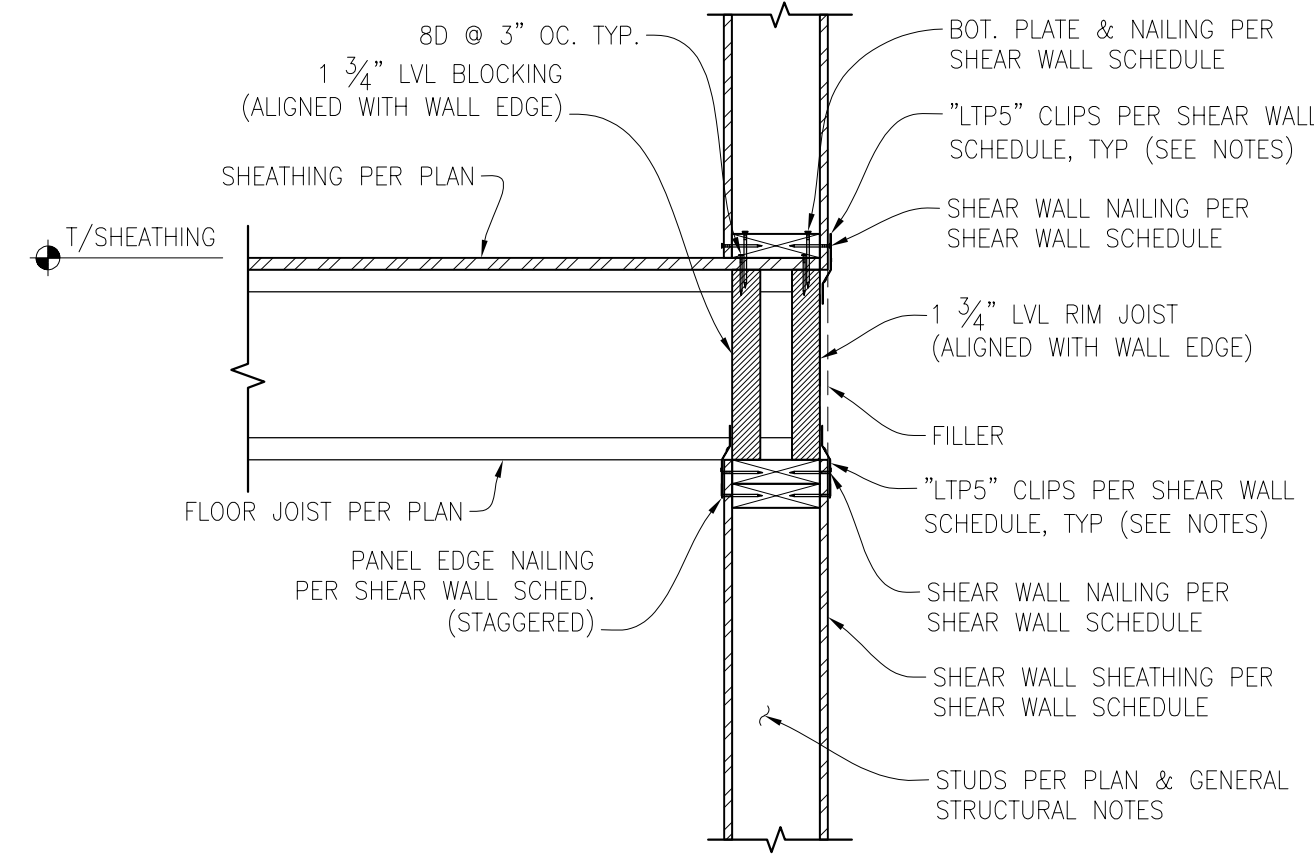
Drawn By: PK
Checked By: SC
Date: 10-20-2024

CK JOB NO.
23-043

STRUCTURAL
DETAILS

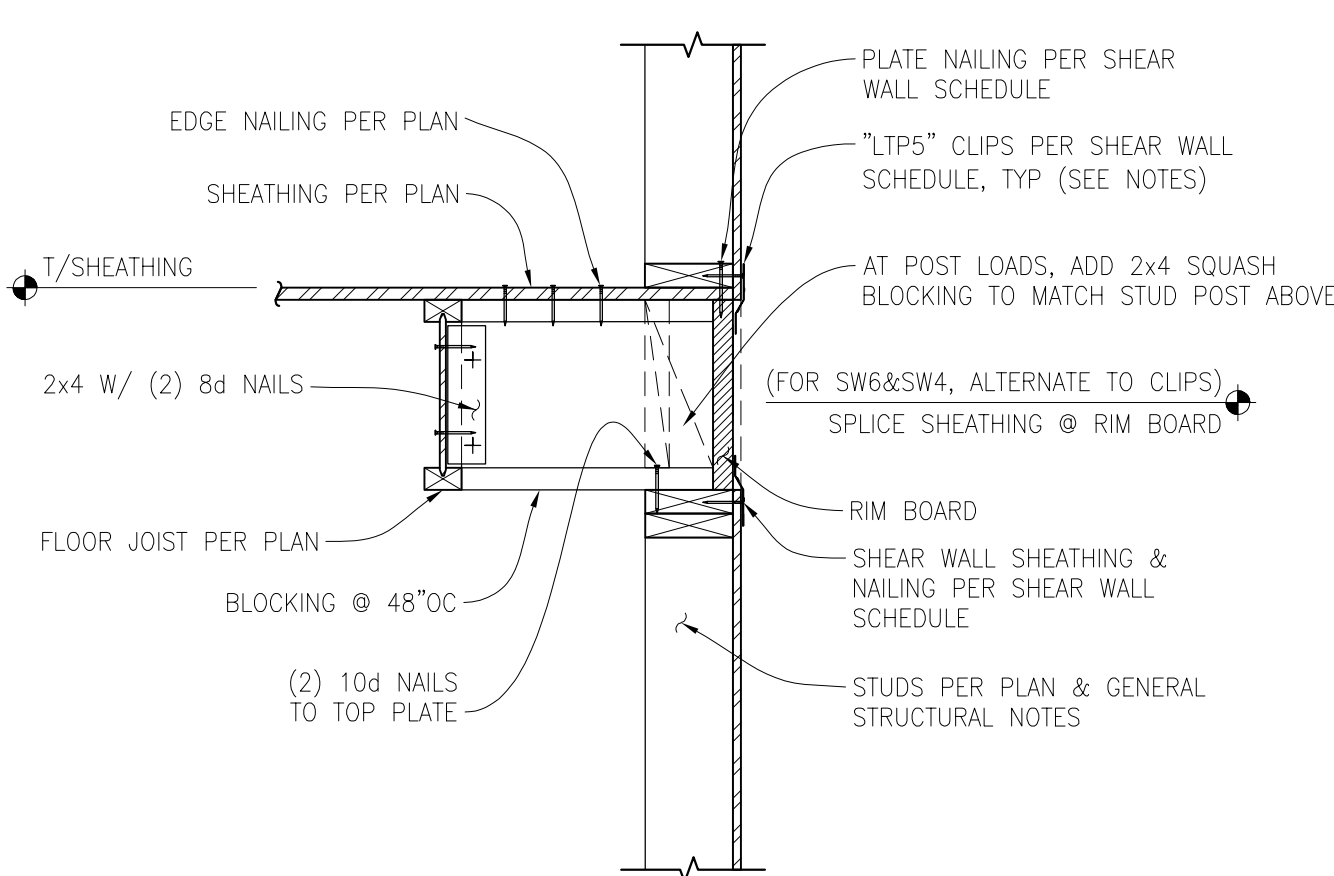
S-3.0

NOTES:
FOR SW-6 TO SW-4, TO ELIMINATE SHEAR WALL
CLIPS @ R'S, LOCATE SHEATHING SPLICES AT
MID-HT OF RIM BOARD & NAIL W/ (2) ROWS OF
PANEL EDGE NAILING PER SHEAR WALL SCHEDULE.



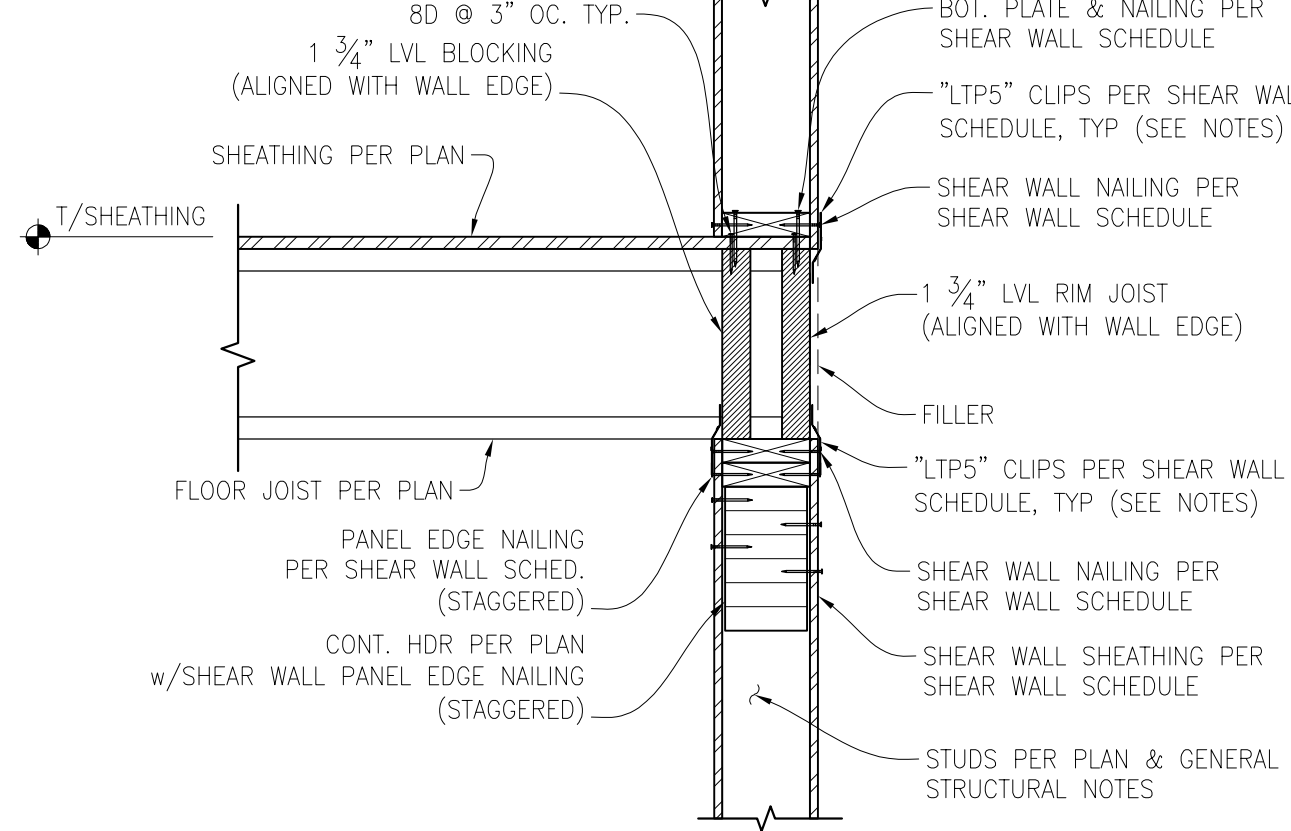
FL. JOIST PERP. TO DBL SIDED SHEAR WALL CON.

SCALE: 1" = 1'-0"



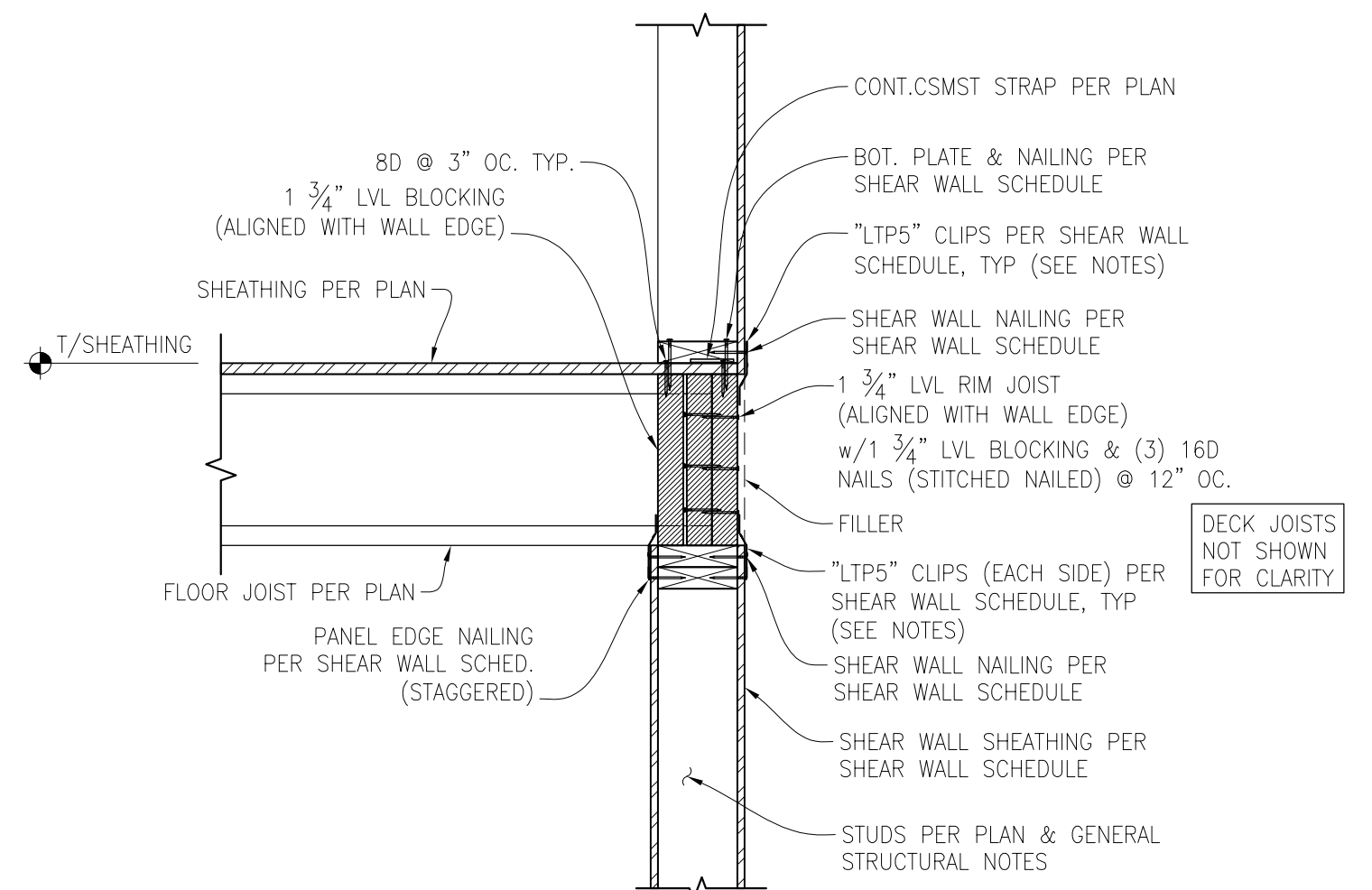
FLOOR JOIST PARALLEL TO EXTERIOR WALL CON.

SCALE: 1" = 1'-0"



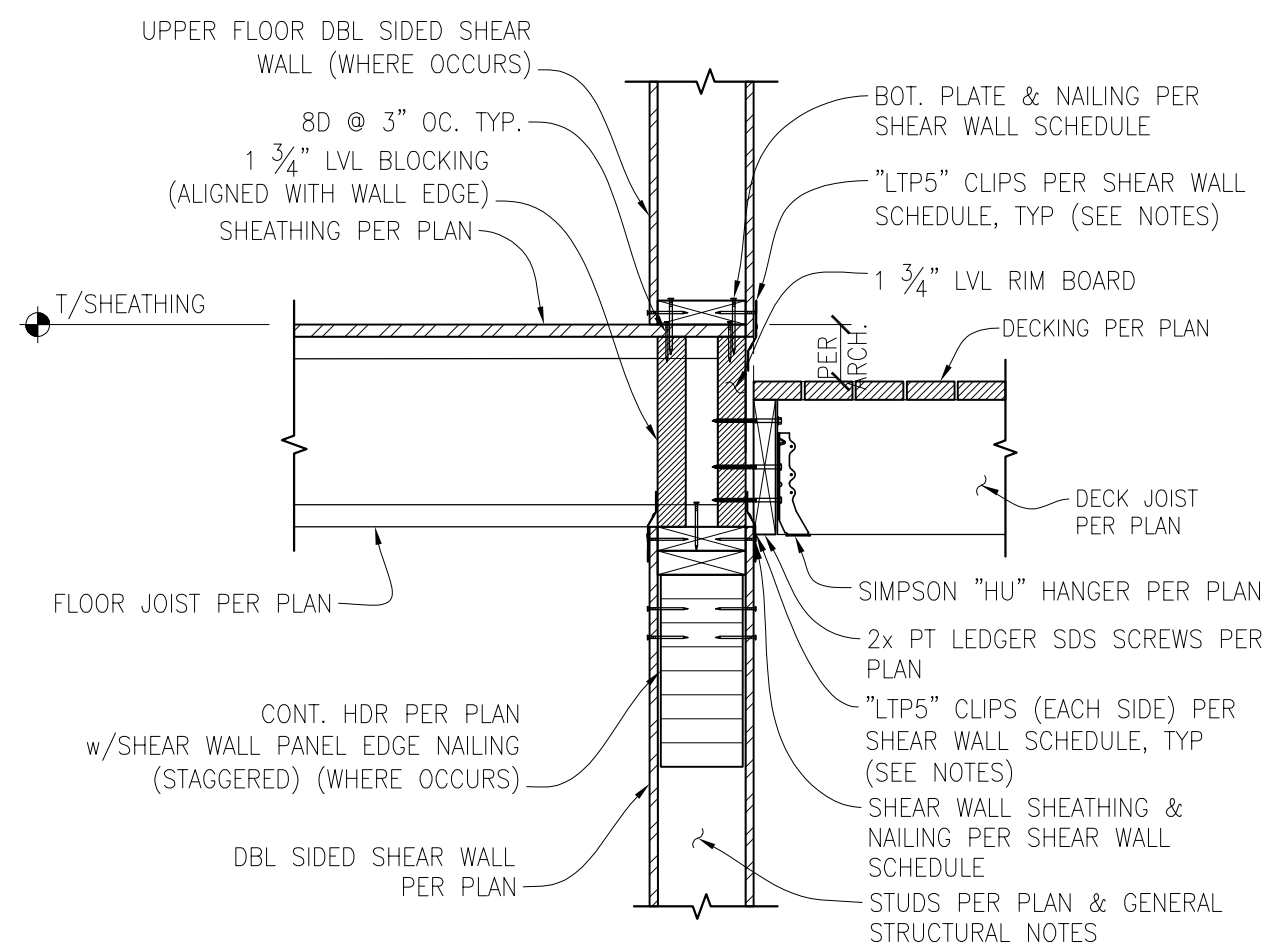
CONT. HEADER &
FL. JOIST PERP. TO DBL SIDED SHEAR WALL CON.

SCALE: 1" = 1'-0"



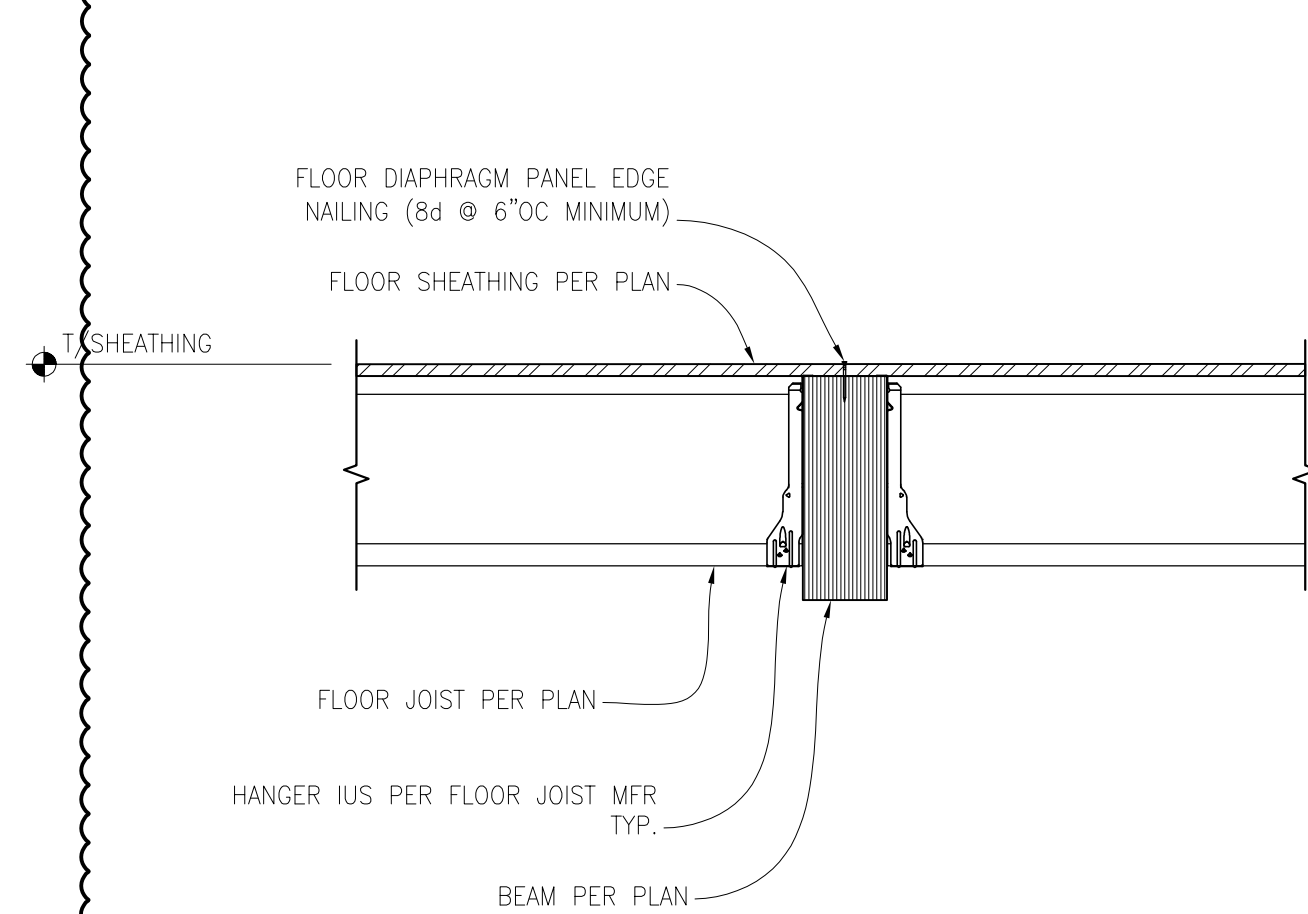
CMST STRAP TO BLOCKING &
FL. JOIST PERP. TO DBL SIDED SHEAR WALL CON.

SCALE: 1" = 1'-0"



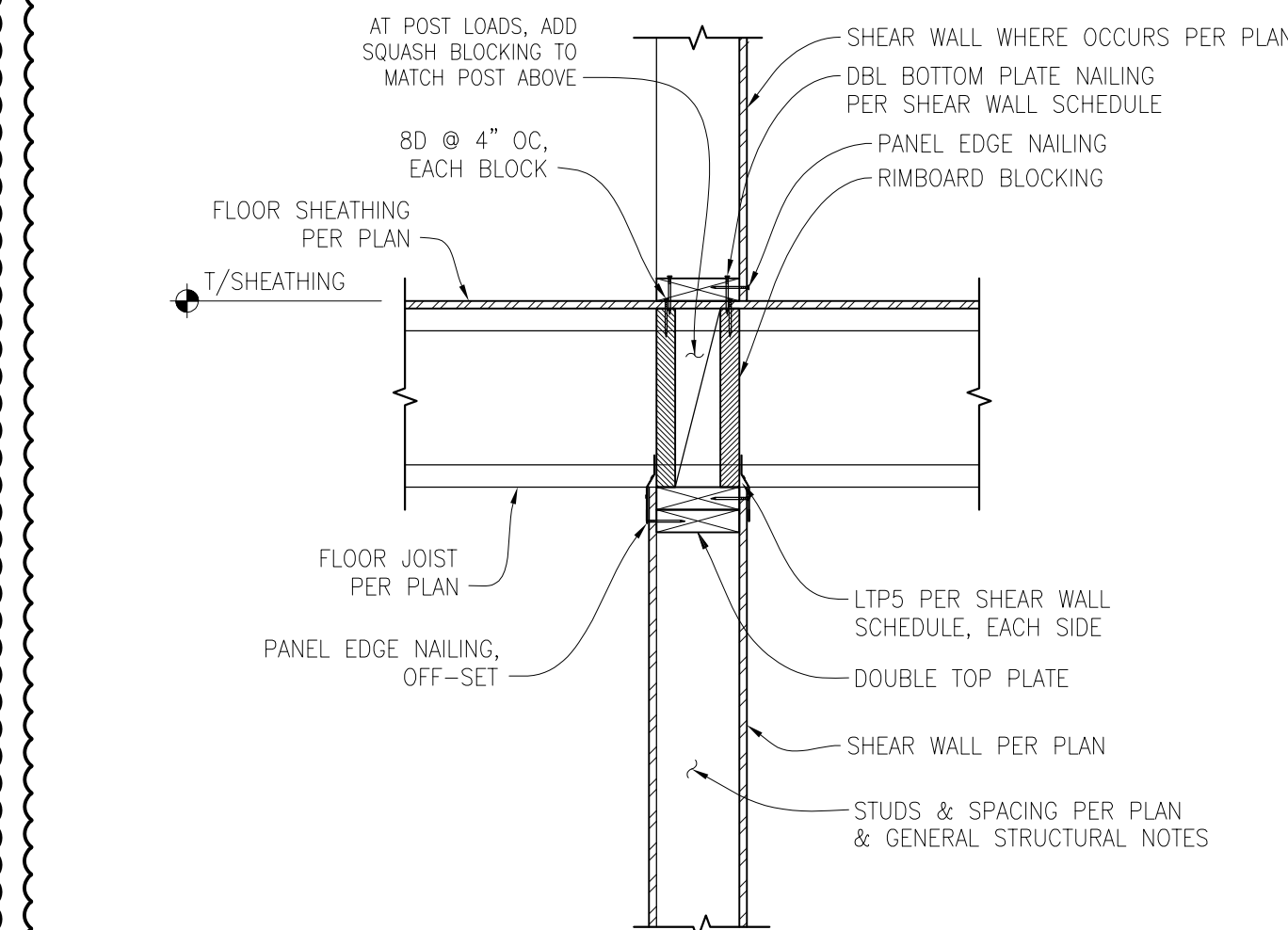
DBL SIDED SHEAR WALL/
RIM JOIST TO LEDGER CONNECTION

SCALE: 1" = 1'-0"



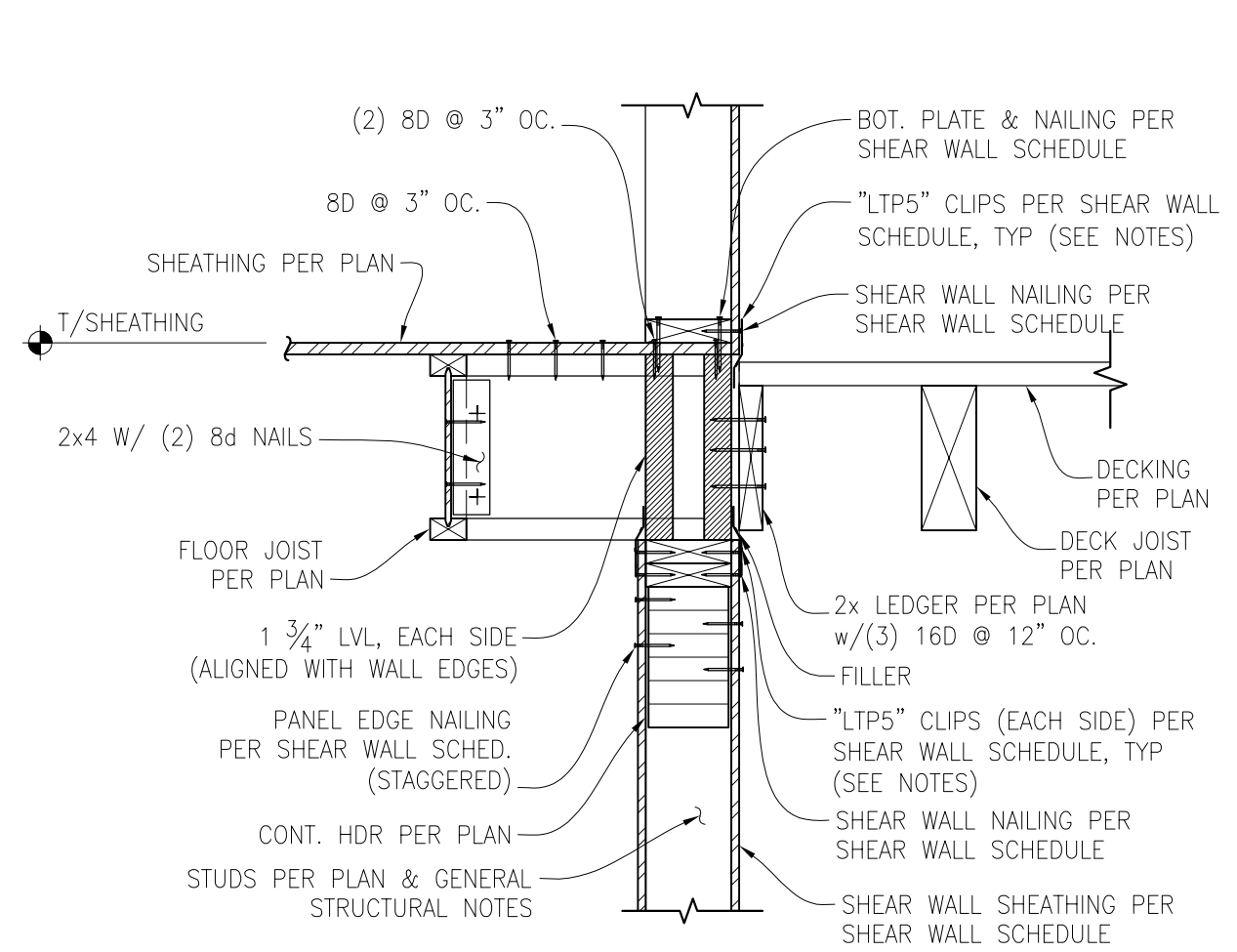
FLOOR JOIST/FLUSH BEAM CONNECTION

SCALE: 1" = 1'-0"



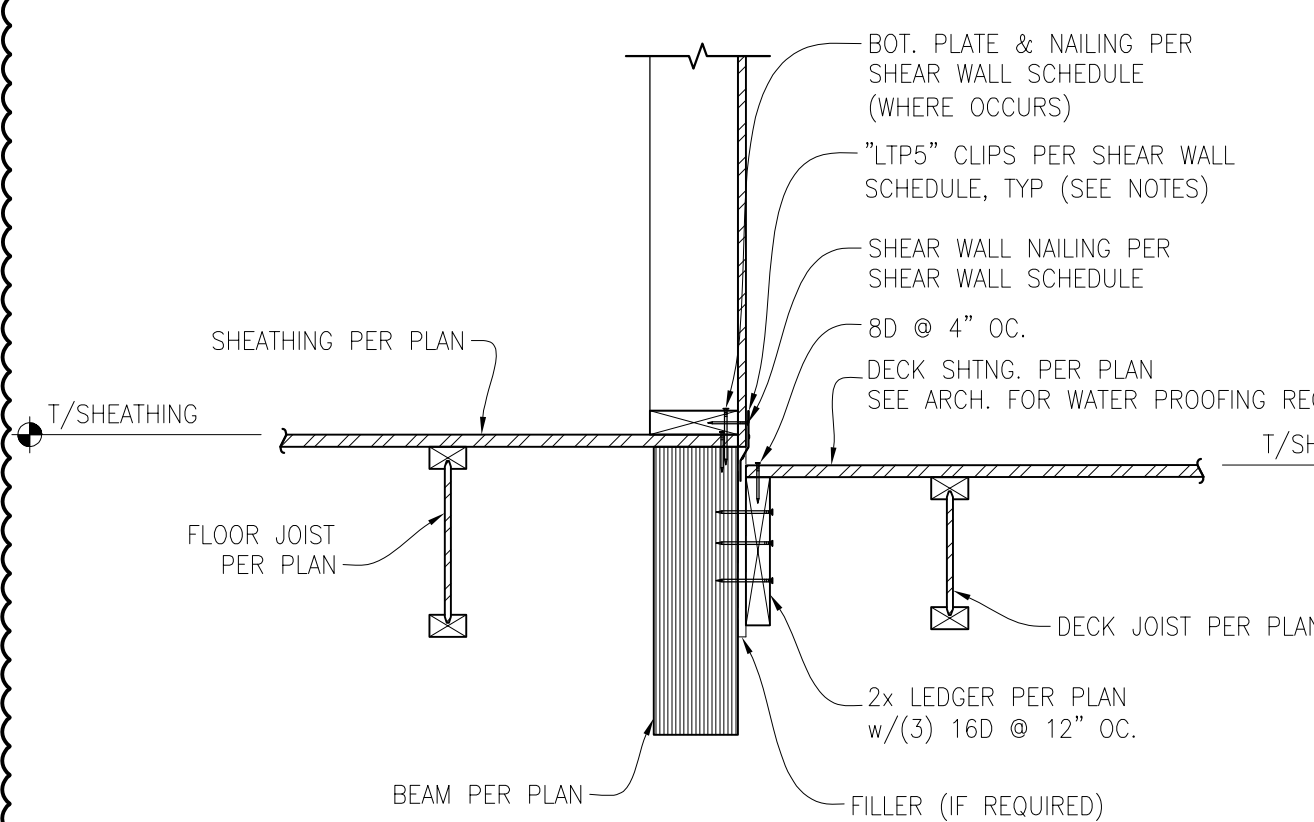
INTERIOR BEARING/SHEAR WALL CON.

SCALE: 1" = 1'-0"



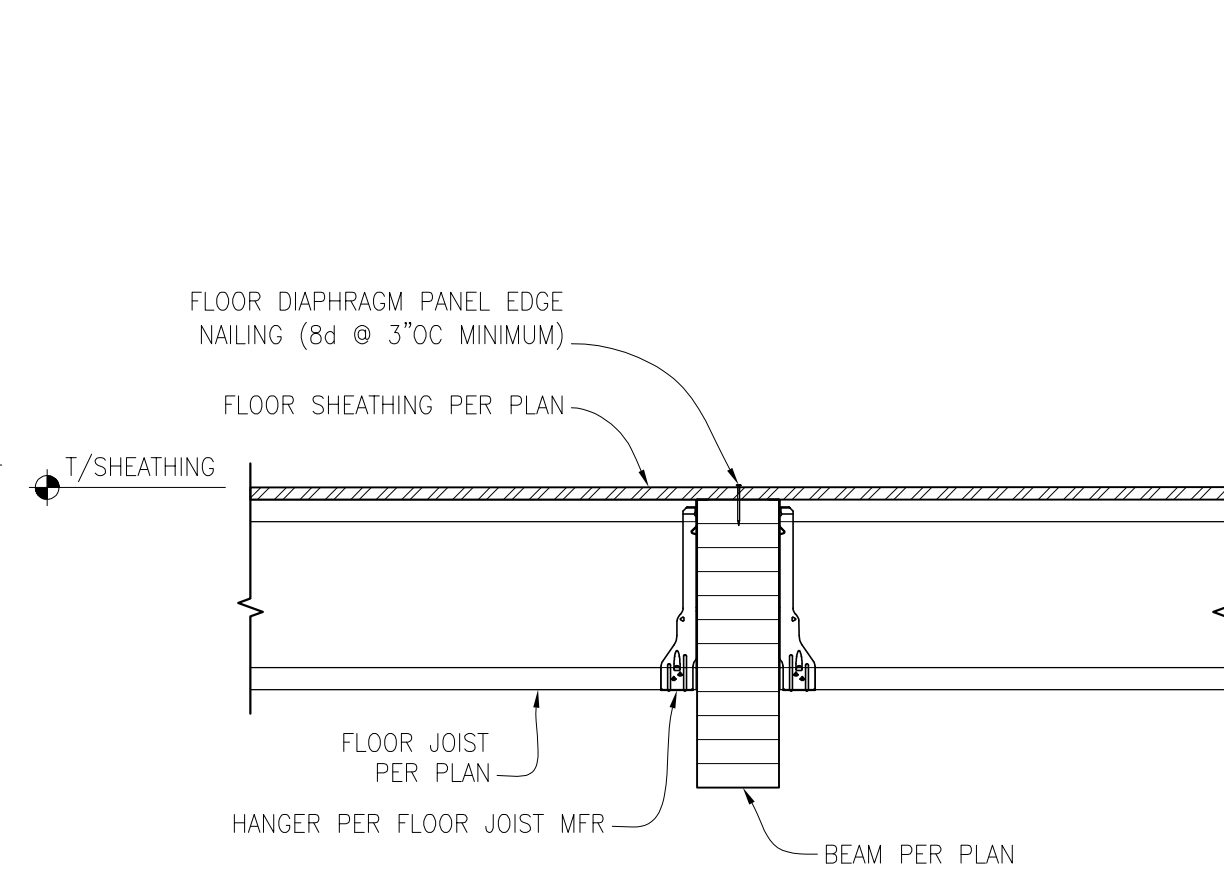
CONT. HEADER/SHEAR WALL CONNECTION
(FLOOR/DECK JOIST PARALLEL)

SCALE: 1" = 1'-0"



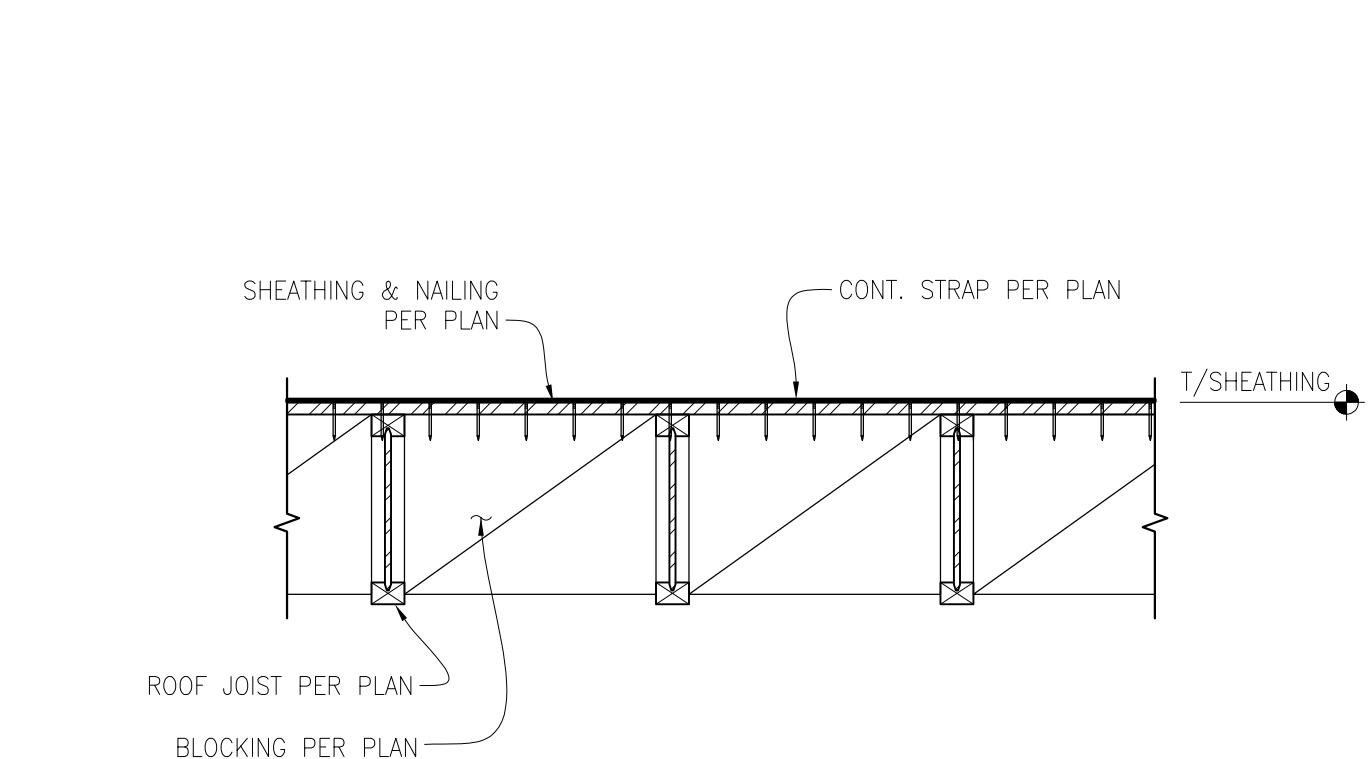
FLOOR/DECK JOIST PARALLEL TO BEAM CON.

SCALE: 1" = 1'-0"



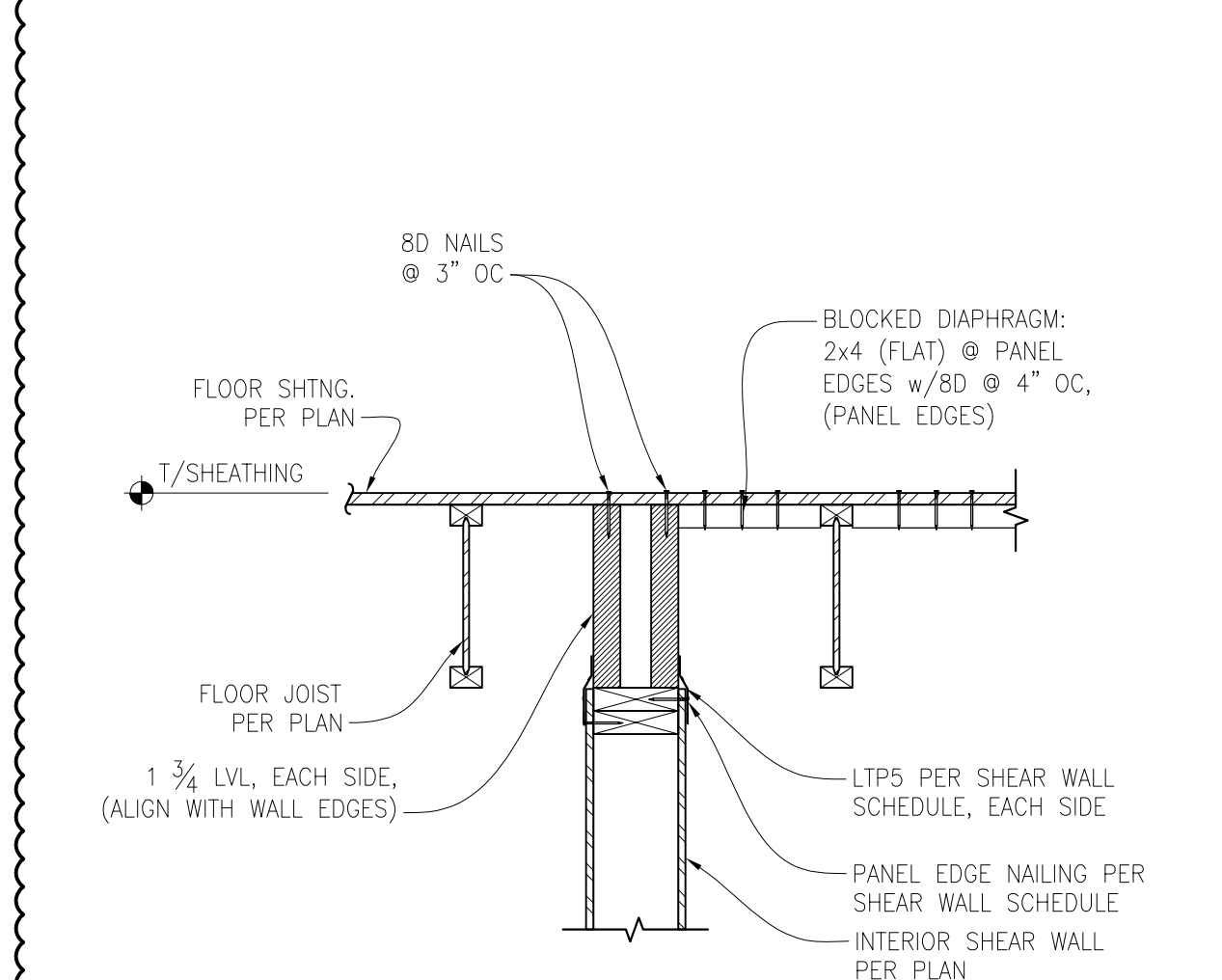
FLOOR JOIST/TOP FLUSH BEAM CONNECTION

SCALE: 1" = 1'-0"



FLOOR JOIST BLOCKING

SCALE: 1" = 1'-0"



FLORO JOISTS PARALLEL TO
INTERIOR SHEAR WALL CONNECTION

SCALE: 1" = 1'-0"



CK ENGINEERING LLC
PROFESSIONAL STRUCTURAL
ENGINEERING SERVICES
19105 34th Ave. W. Suite 205
Lynnwood, WA 98036
Phone: (206) 417-0670



10/20/2024

NEW HOME AT:
6175 SE 27TH ST.
MERCER ISLAND, WA 98040

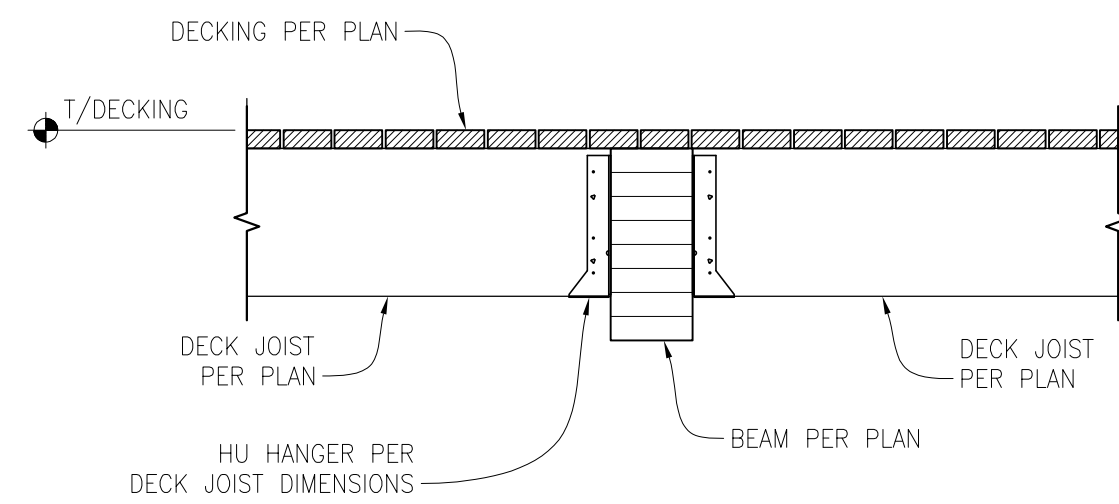
REVISION #	DATE	DESCRIPTION:
1	03-15-2024	BDC REVIEW
2	10-20-2024	REVISIONS

Drawn By: PK
Checked By: SC
Date: 10-20-2024

CK JOB NO.
23-043

STRUCTURAL
DETAILS

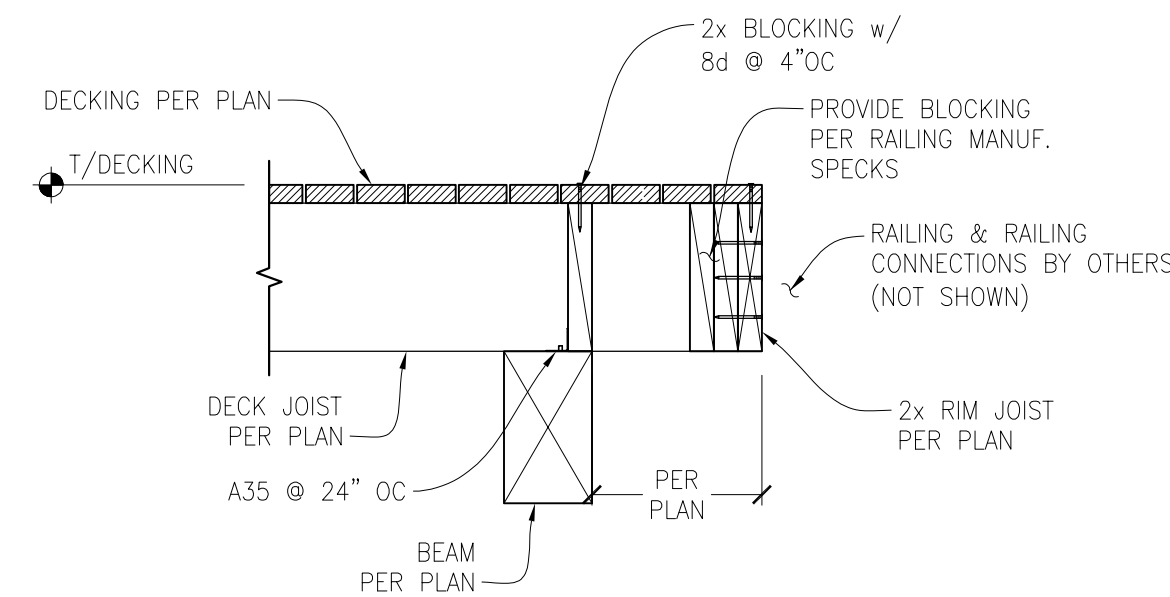
S-3.1



DECK JOIST MID BEAM CONNECTION

SCALE: 1" = 1'-0"

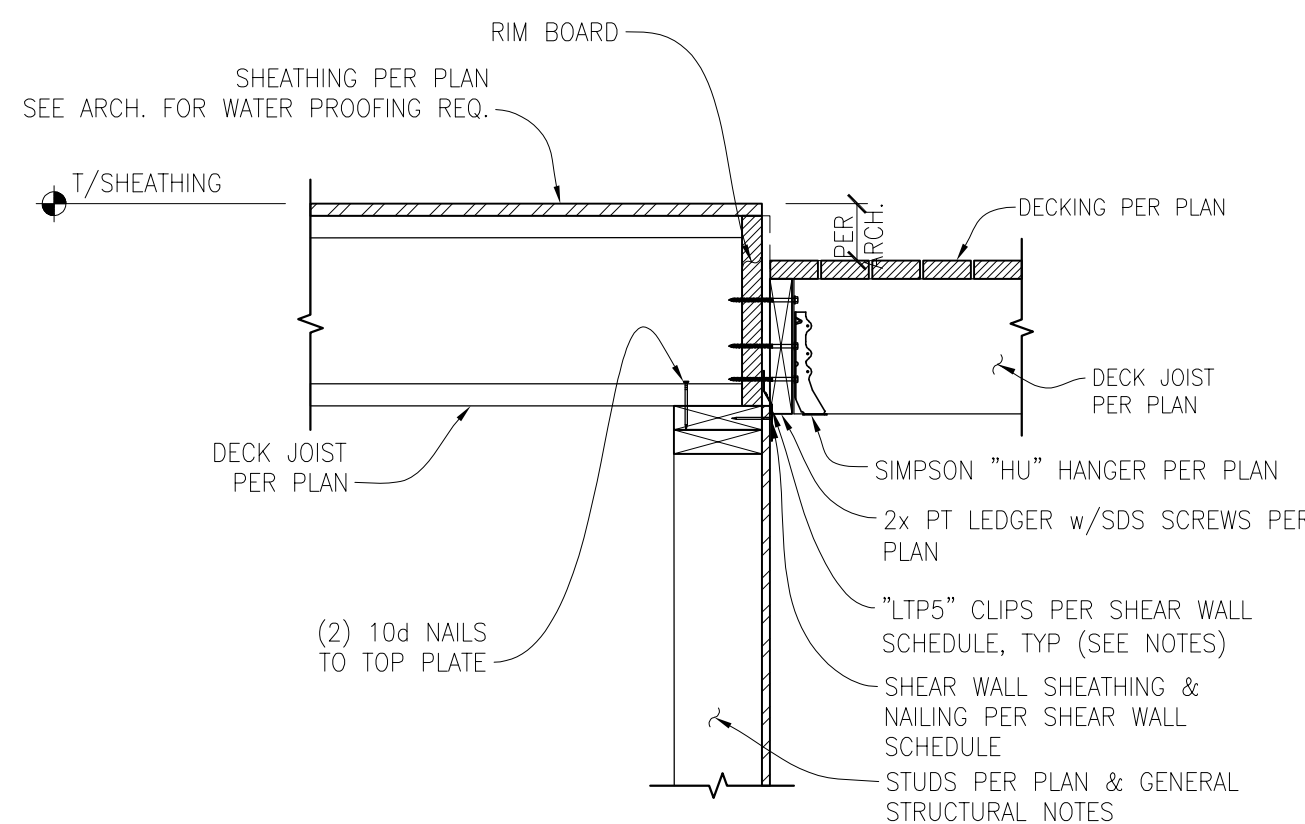
1



DECK JOIST TO DECK BEAM CONNECTION

SCALE: 1" = 1'-0"

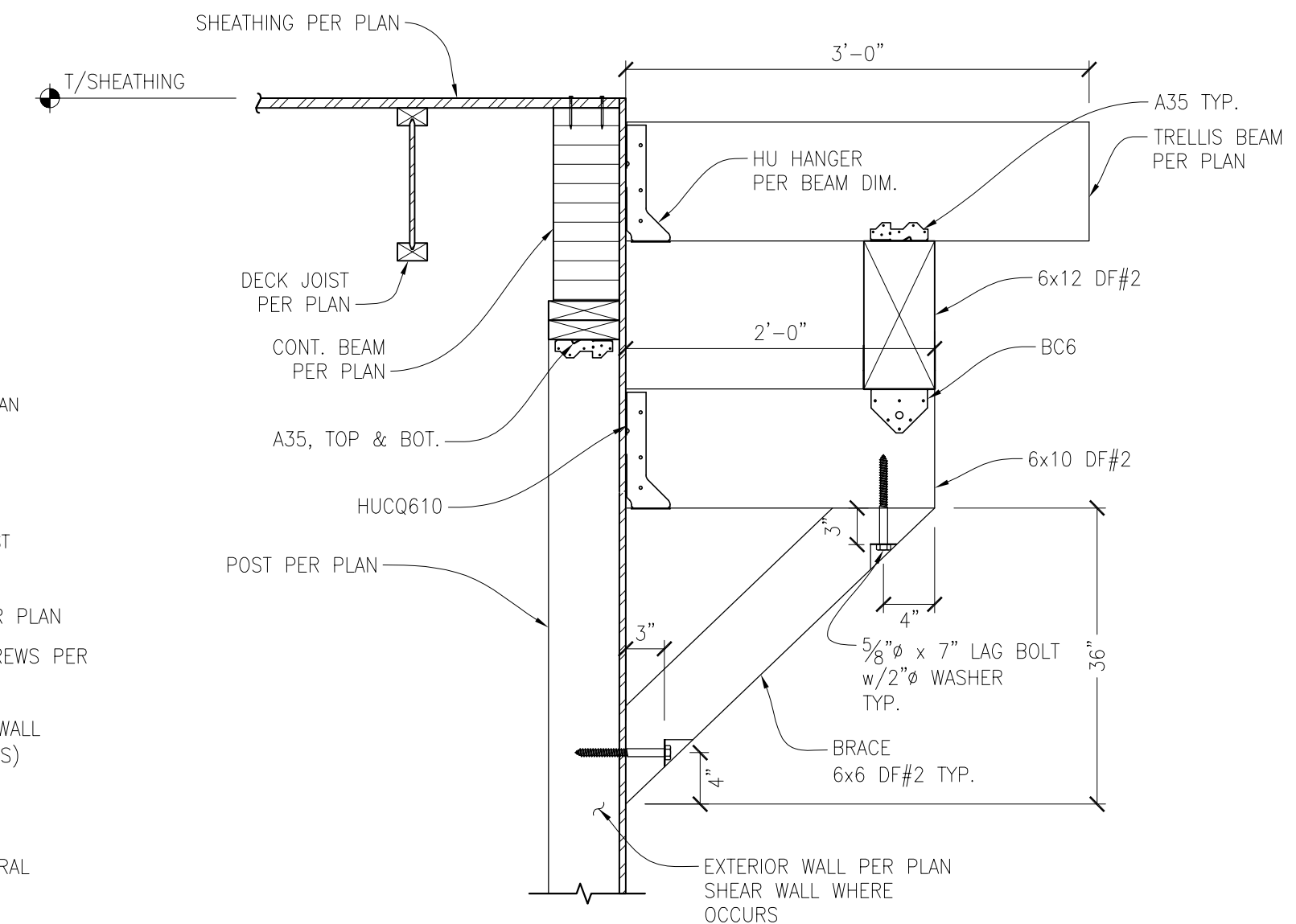
2



DECK JOIST/SHEAR WALL CONNECTION

SCALE: 1" = 1'-0"

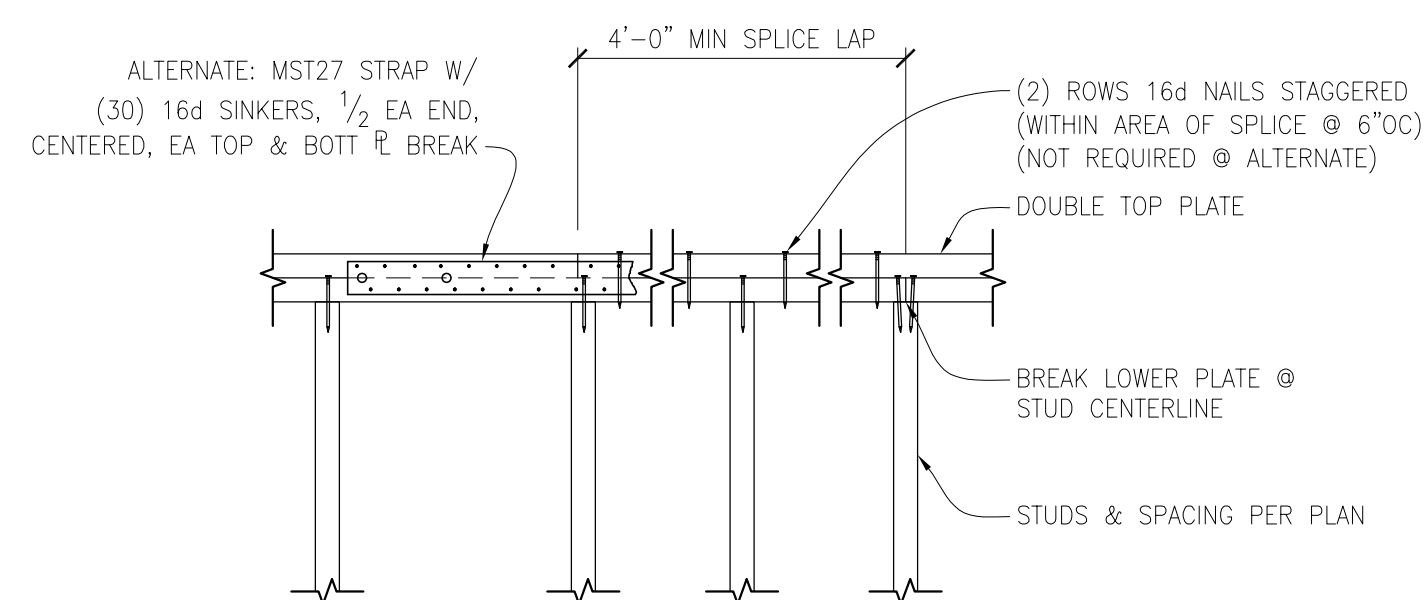
3



TYPICAL KNEE BRACE AT TRELLIS CONNECTION

SCALE: NTS

4

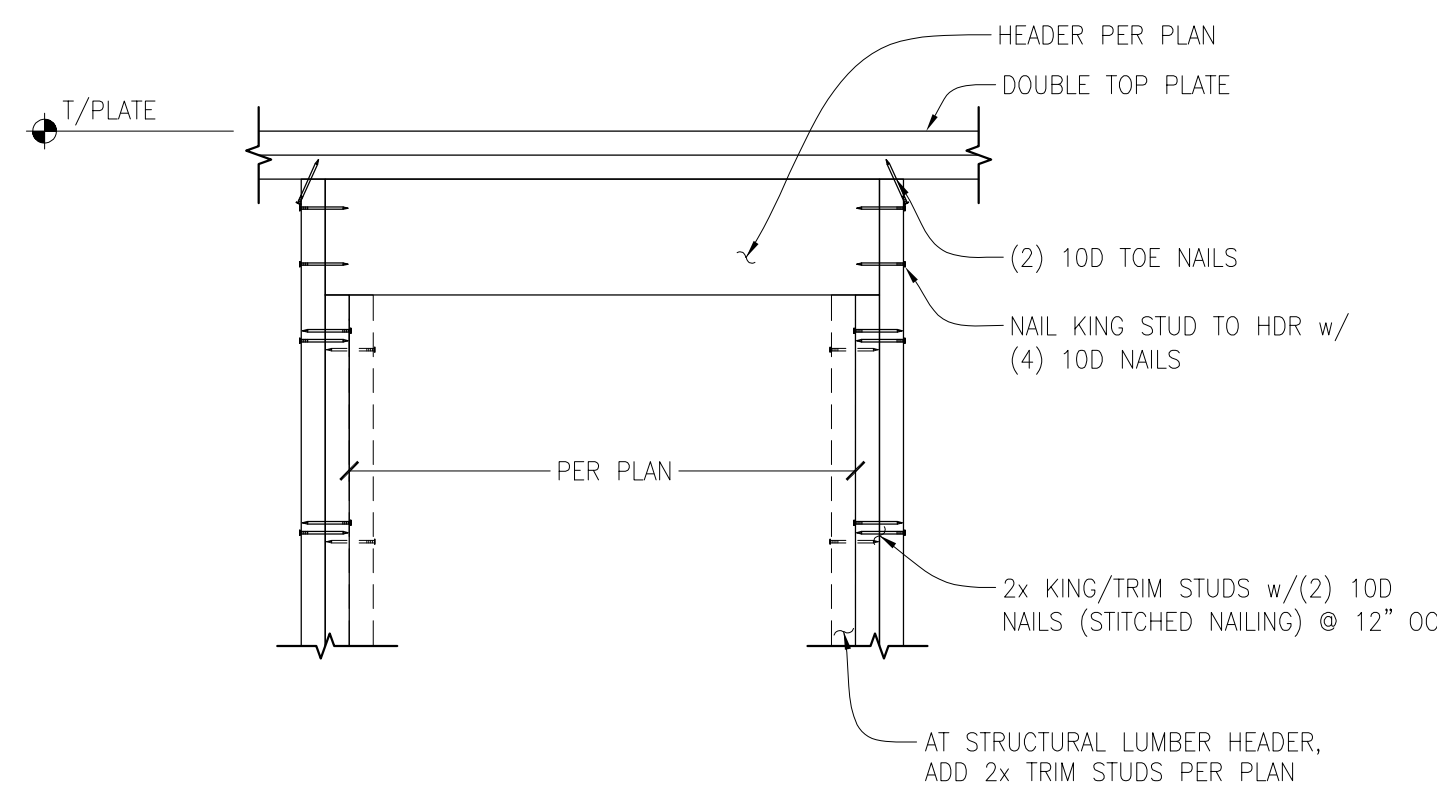


NOTE:
FLOOR JOISTS NOT SHOWN FOR CLARITY.

TYPICAL PLATE SPLICE DETAIL

SCALE: N.T.S.

5

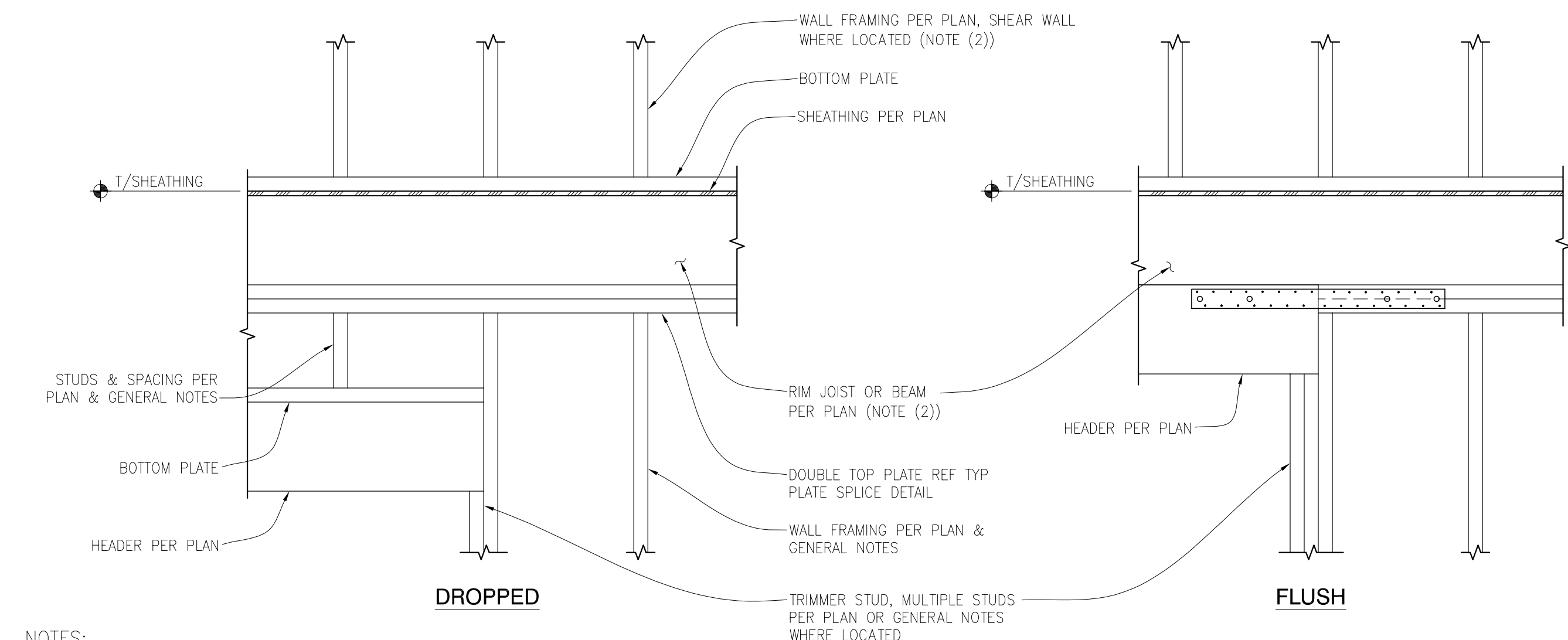


NOTE:
FLOOR/ROOF FRAMING NOT SHOWN FOR CLARITY.

TYPICAL HEADER CONNECTION

SCALE: N.T.S.

6

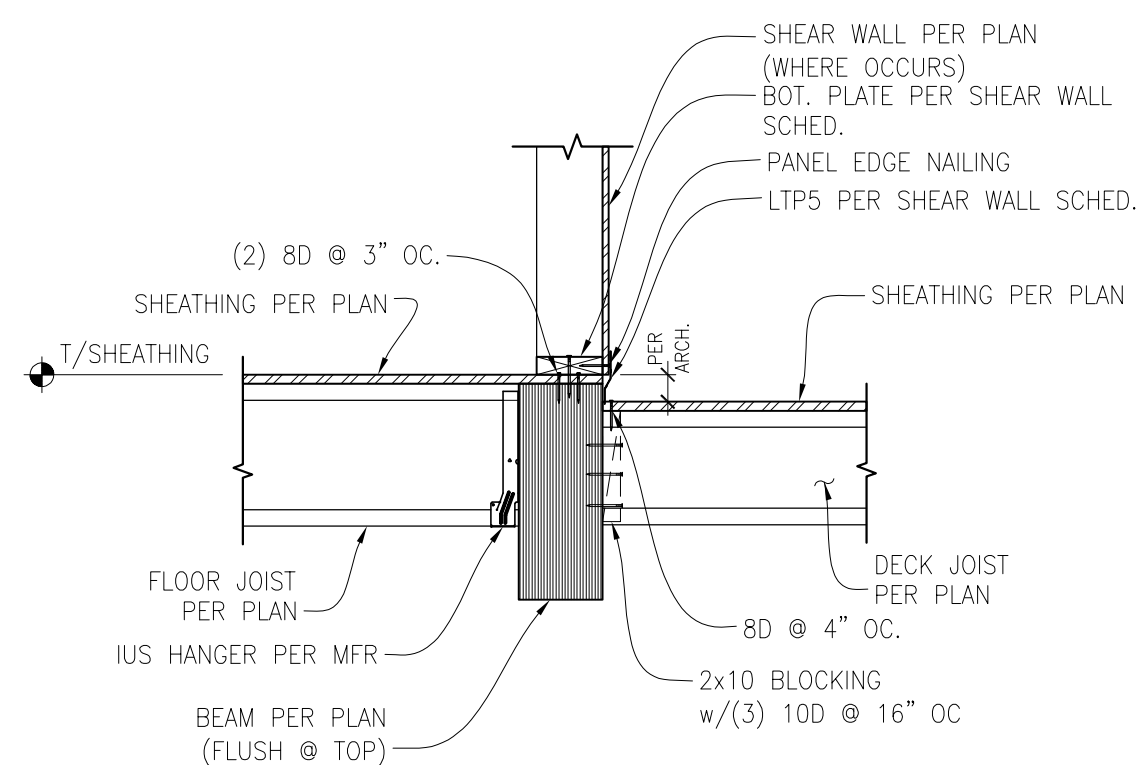


NOTES:
1. WALL SHEATHING NOT SHOWN FOR CLARITY
2. WHERE ROOF ABOVE, RAFTERS OR PRE-MANUFACTURED TRUSSES PER PLAN REPLACES RIM JOIST

TYPICAL HEADER FRAMING

SCALE: 1" = 1'-0"

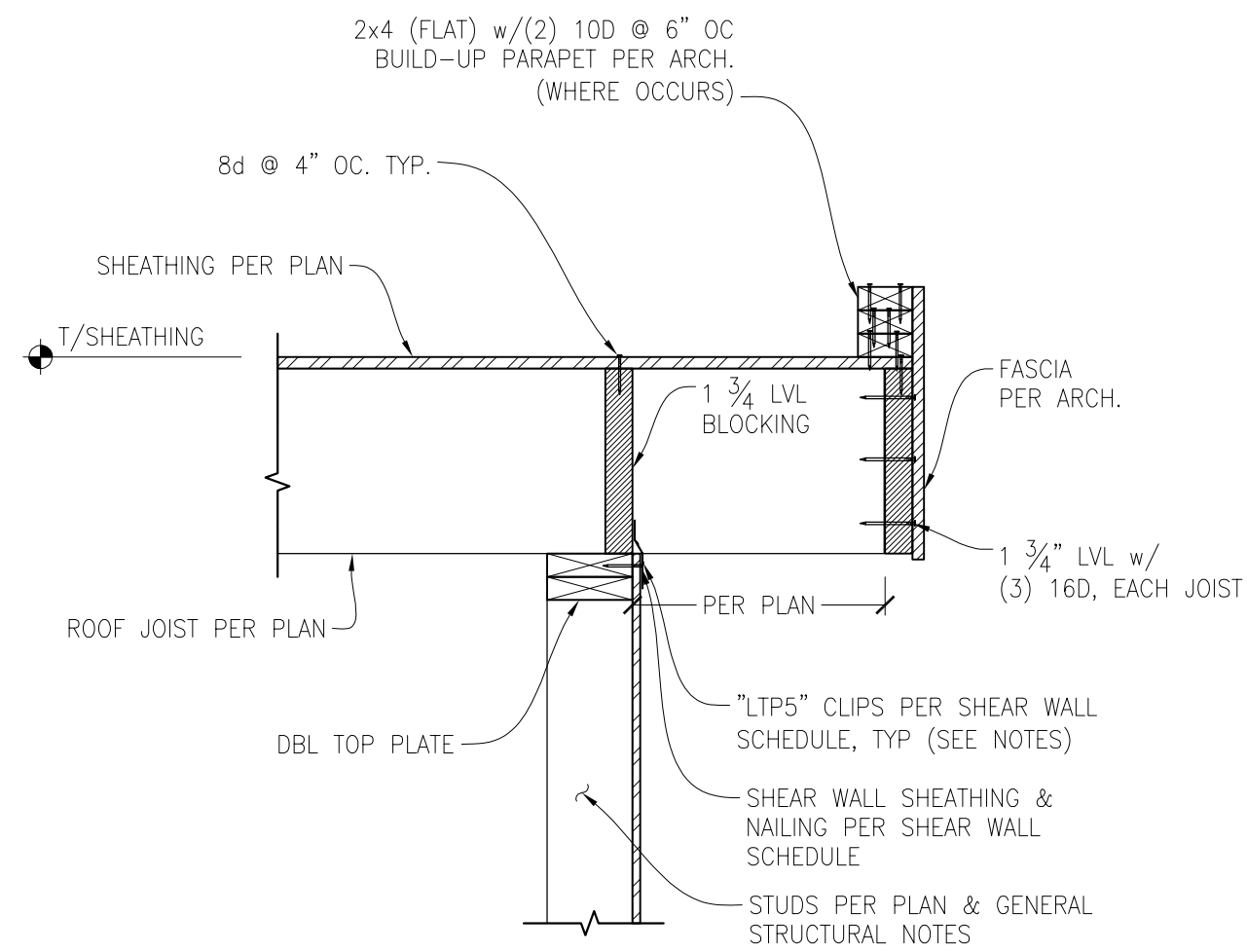
8



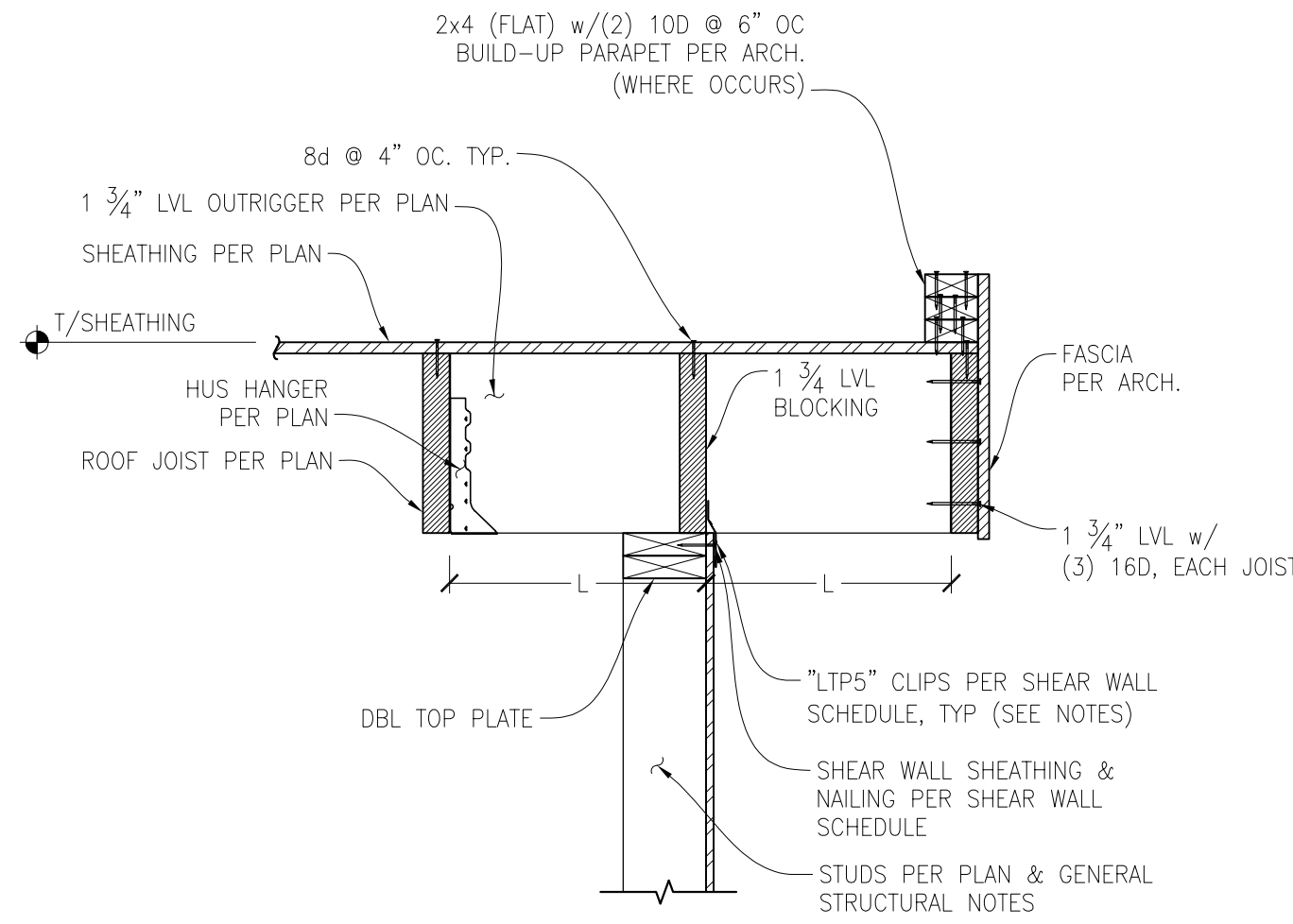
FLOOR/DECK JOIST TO BEAM CONNECTION

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

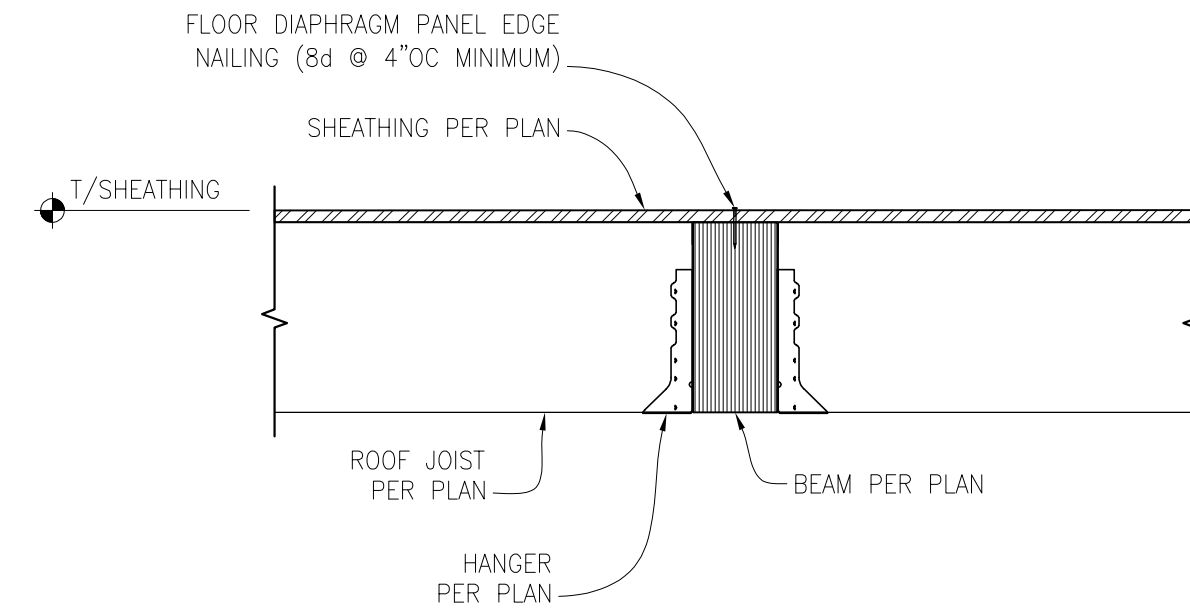
9



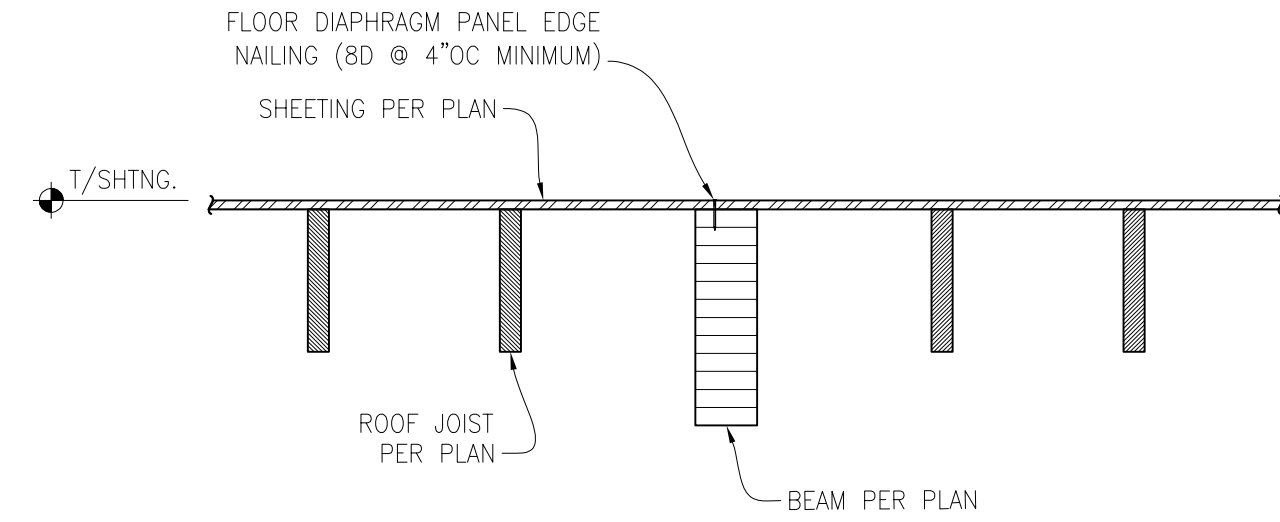
ROOF JOIST PERPENDIC. TO BEARING/SHEAR WALL
SCALE: 1" = 1'-0"



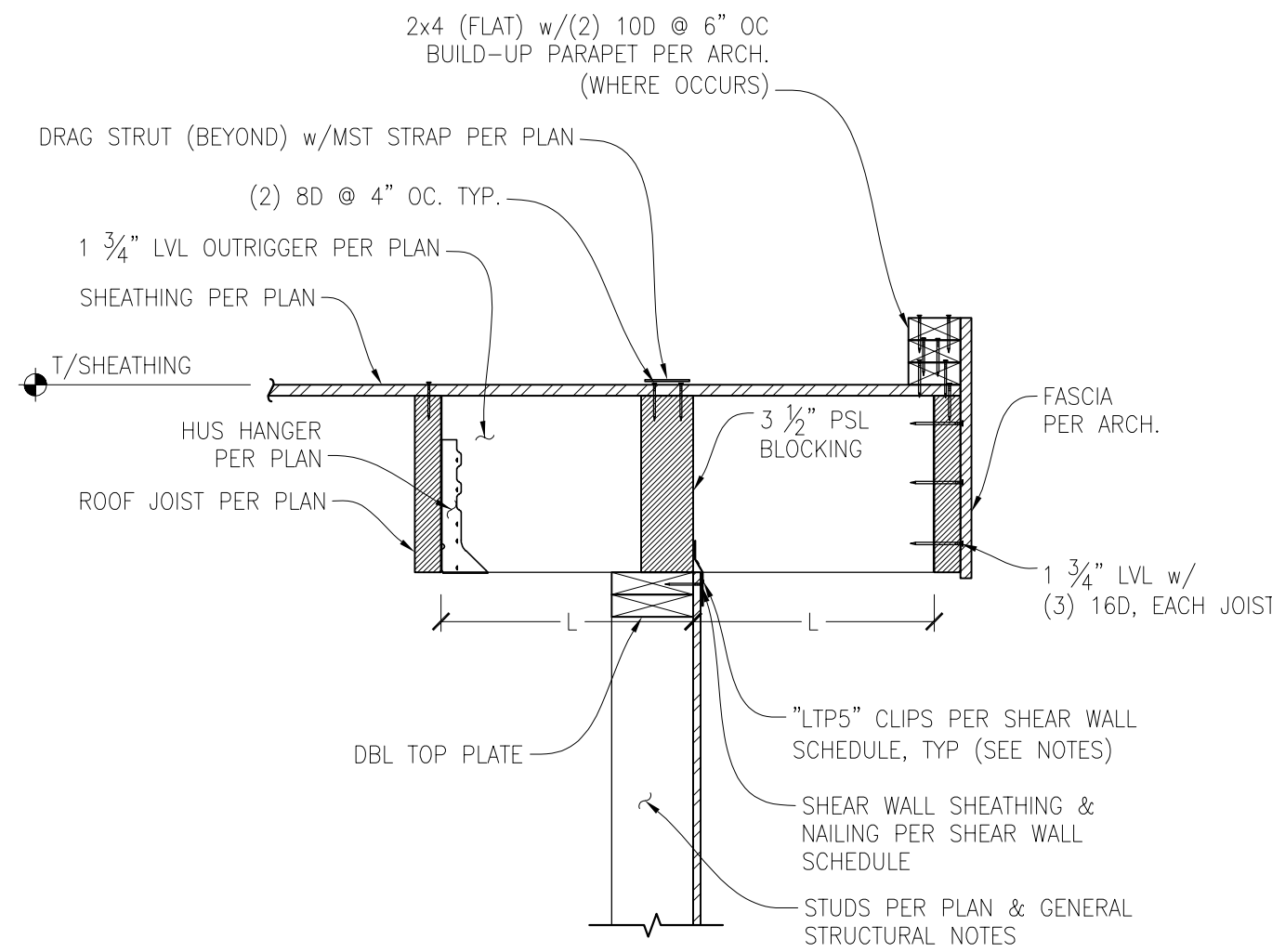
ROOF JOIST PARALLEL TO BEARING/SHEAR WALL
SCALE: 1" = 1'-0"



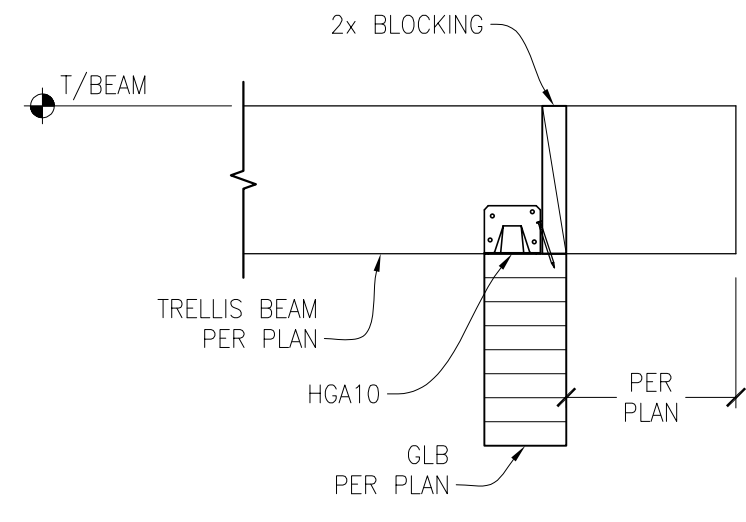
ROOF JOIST/TOP FLUSH BEAM CONNECTION
SCALE: 1" = 1'-0"



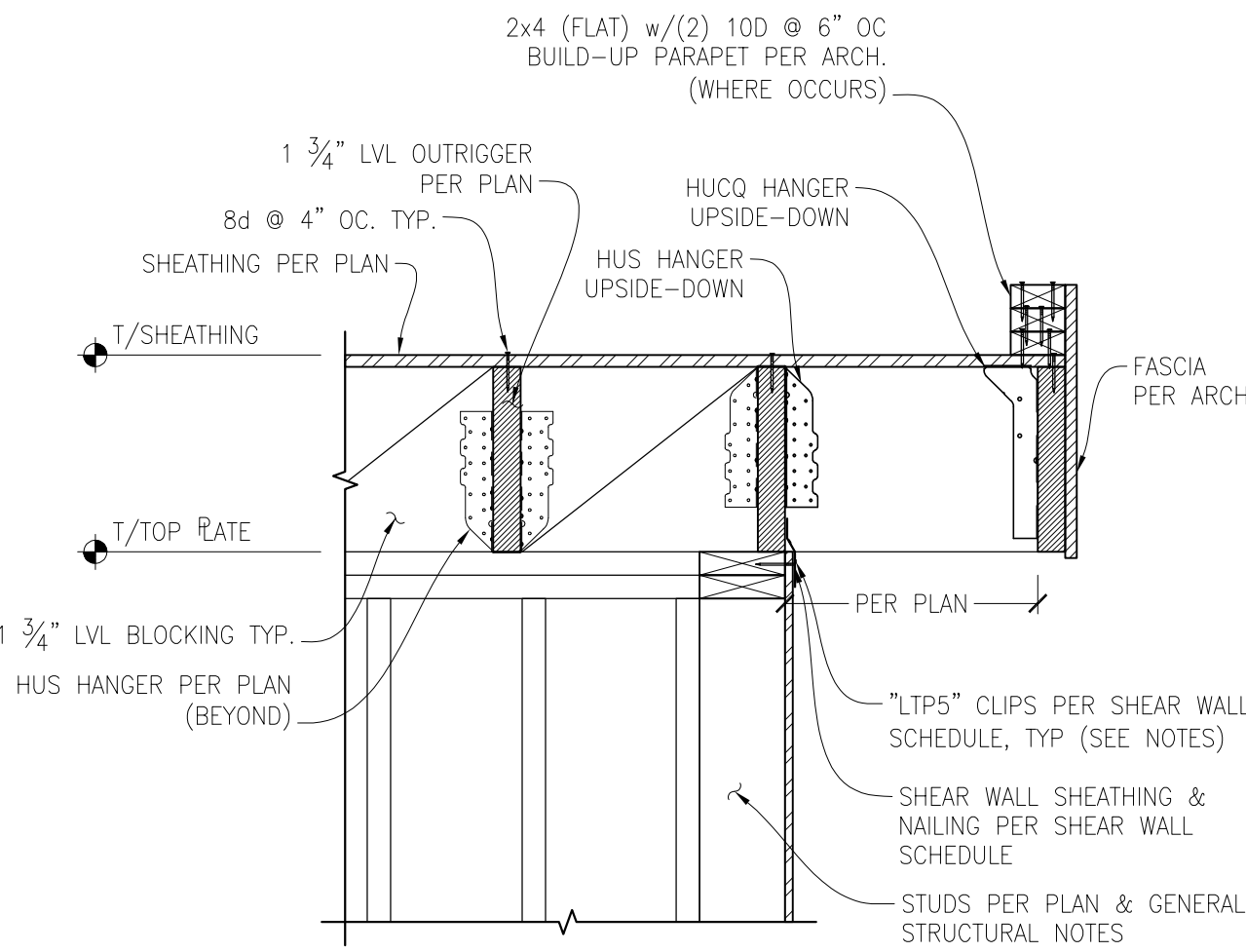
ROOF BEAM (TOP FLUSH) CONNECTION
SCALE: 3/4" = 1'-0"



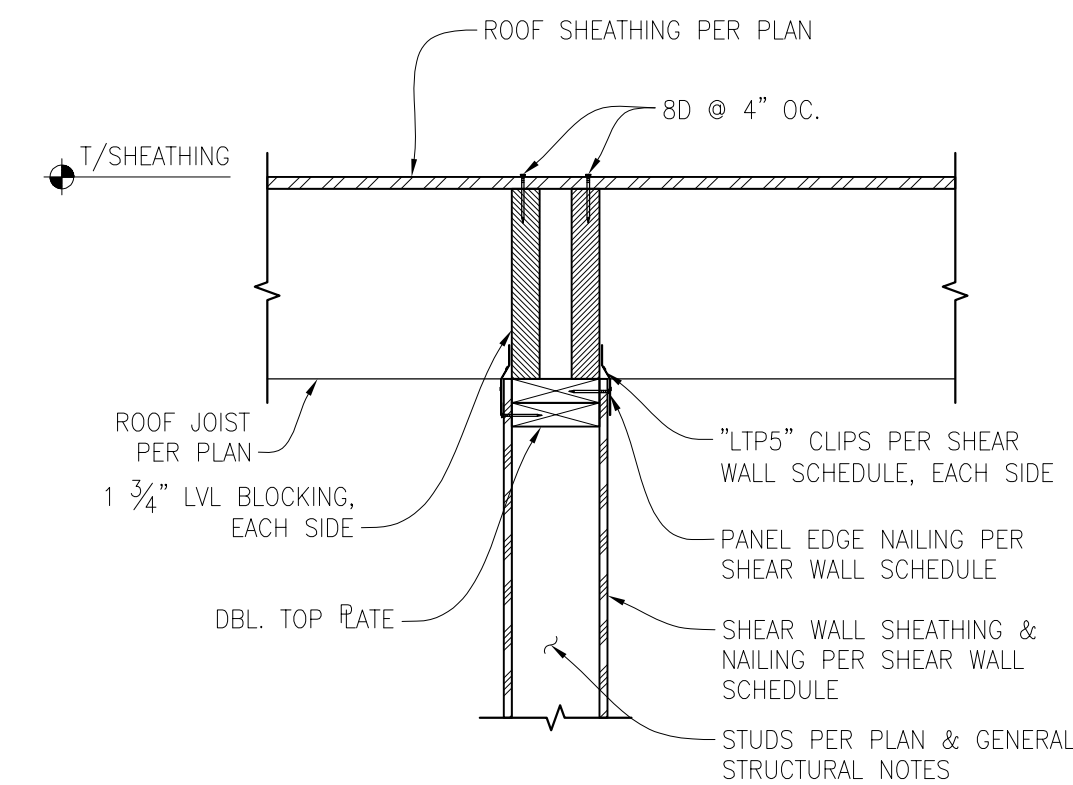
DRAG STRAT TO ROOF JOIST BLOCKING SHEAR WALL CONNECTION
SCALE: 1" = 1'-0"



TRELLIS BEAM TO BEAM CONNECTION
SCALE: 1" = 1'-0"

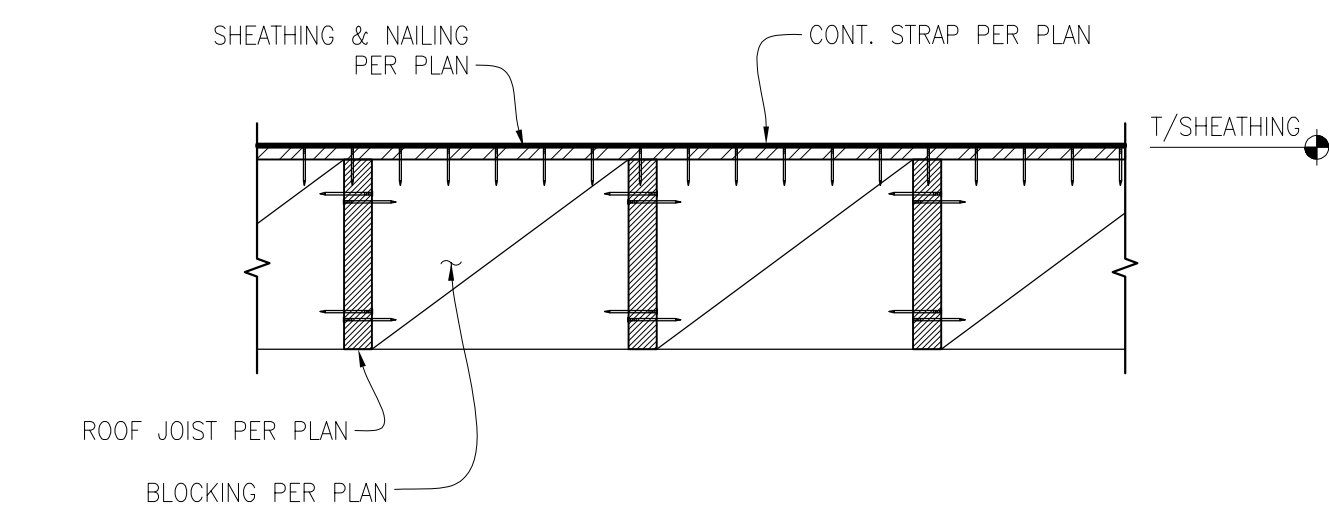


ROOF JOIST CORNER CONNECTION
SCALE: 1" = 1'-0"



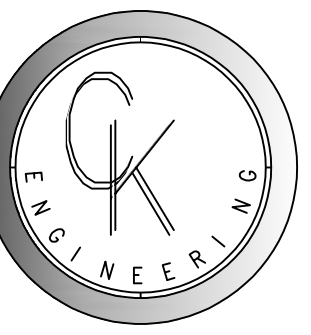
ROOF JOISTS PERPENDICULAR TO INTERIOR SHEAR WALL CONNECTION
SCALE: 1" = 1'-0"

2



ROOF JOIST BLOCKING
SCALE: 1" = 1'-0"

2



CK ENGINEERING LLC
PROFESSIONAL STRUCTURAL
ENGINEERING SERVICES
19105 34th Ave. W. Suite 205
Lynnwood, WA 98036
Phone: (206) 417-0670



10/20/2024

NEW HOME AT:
6175 SE 27TH ST.
MERCER ISLAND, WA 98040

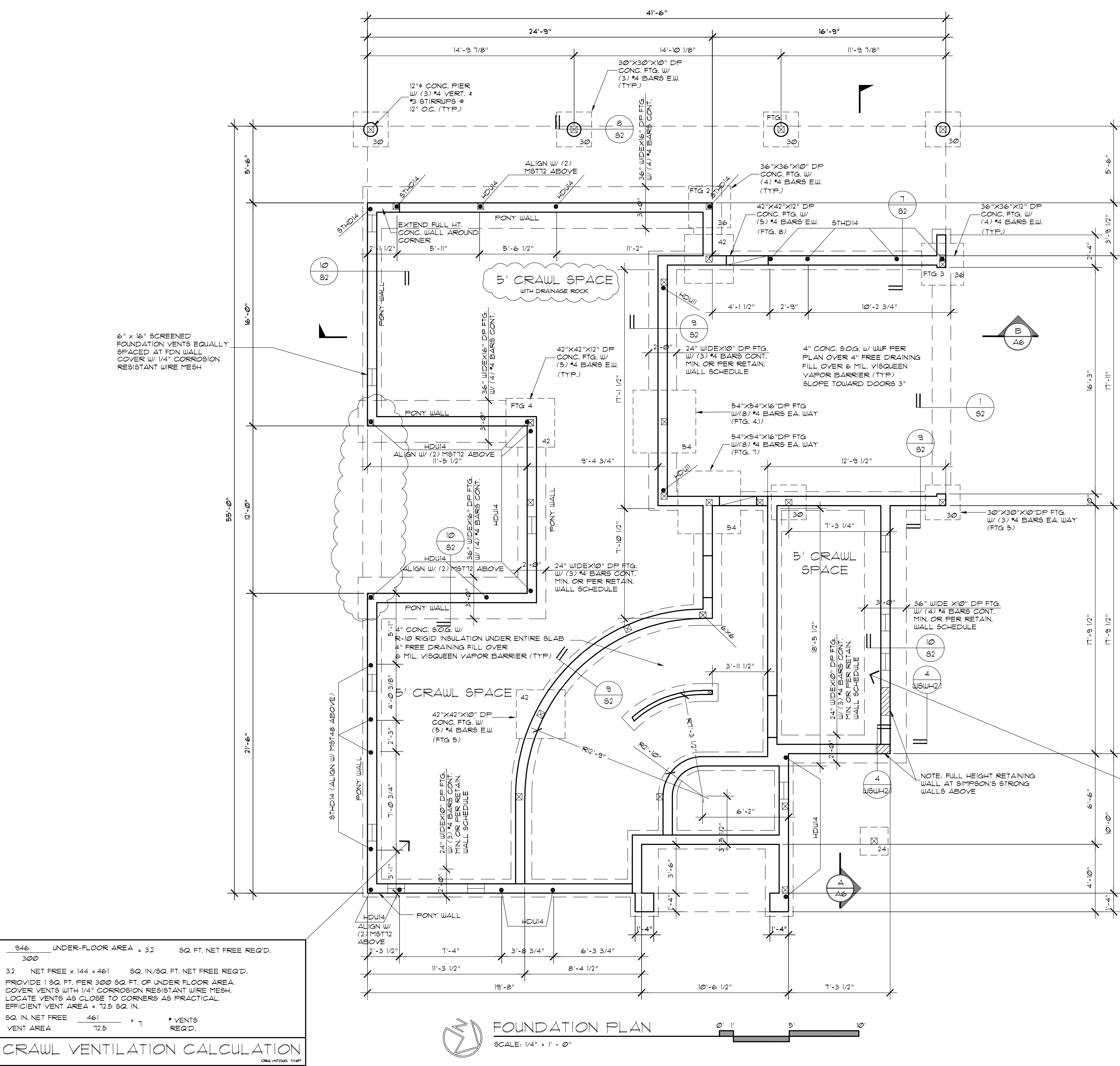
REVISION #	DATE	DESCRIPTION:
1	03-15-2024	BDC REVIEW
2	10-20-2024	REVISIONS

Drawn By: PK
Checked By: SC
Date: 10-20-2024

CK JOB NO.
23-043

STRUCTURAL
DETAILS

S-4.0



1) ALL FLR JSTs TO BE TJ FLOOR SYSTEM, REFER TO MFG. LAYOUT FOR ALL FRAMING DETAILS AND BLOCKING. REVIEW MFG. LAYOUT PRIOR TO FRAMING. OR ALL FLR JSTs AND RFTS TO BE #2 HEM-FIR DOUBLE UNDER BEARING PARTITIONS. PROVIDE SOLID BLOCKING OVER BEARING MEMBERS.
2) ALL EXT. DR & UNDW. HDRS. TO BE 4x10 DPF. (AND)
3) ALL PRE-MANUFACTURED TRUSSES TO BE IDENTIFIED BY MFG'S STAMP.
4) FACTORY BLT FRPLC & CHIMNEY TO BE UL LABELED. INSTALL PER MNFTRS SPECS O/SIDE CHBSTN AIR REQ'D (MIN 6 SQ IN.) DUCTED TO R/BOX W/ OVERLAP O/SIDE DAMPER. TIGHTLY FITT'G FLUE DAMPER, AND TIGHT FITTING GLASS OR METAL DOORS OR FLUE DRAFT INDUCTION FAN.
5) LIMIT SHOWER FLOW TO 2.0 GALLON/MIN.
6) HWT. TO BE LABELED PER ASHRAE STD. NO. 90A-90. AND MEET THE REQ'DTS. PER NATIONAL APPLIANCE ENERGY CONSERVATION ACT.
7) FURN & HUI. TANKS: PILOTS, BURNERS, HEATING ELEMENTS, AND SWITCHES TO BE A MIN. OF 18" ABOVE FINISHED FLOOR.
8) ALL SKYLITES TO COMPLY WITH I.R.C. SECTION R308.6
9) ALL SIDELITES, SLIDING GLASS DOORS AND TUB/SHOWER ENCLOSURES TO COMPLY WITH I.R.C. SECTION R308
10) HEAT REGISTERS TO BE PER LEGEND: LOCATE APPROXIMATELY AS SHOWN. 6" IN FROM EXTERIOR WALLS, 3" IN FROM INTERIOR WALLS.
11) VENT DRYER, OVEN/RANGE & EXHAUST FANS TO O/SIDE. DRYER EXH DUCTS SHALL NOT EXCEED A TOTAL COMB. HORIZ. AND VERT. LGTH. OF 14'-0", INCL. 2 90d. ELBOWS. DEDUCT 2'-0" FOR EA. 90d. ELBOW EXCEEDING 2'. ALL EXHAUST DUCTS INSLTD (MIN. OF R-4)
12) ALL NAILING TO COMPLY WITH 2021 I.B.C. COLUMN, POST & BEAM CONNECTIONS TO COMPLY WITH 2021 I.B.C.
13) TUB/SHOWER SURROUND WALLS TO HAVE WATER RSTNT GYP BRD AND A SMOOTH HARD SURFACE TO A MINIMUM HEIGHT OF 10' ABOVE DRAIN INLET
14) PROVIDE 8PK DETCTR AND CO ALARMS IN COMPLIANCE WITH I.R.C. R314
15) ALL 8PK DETCTRS, SLIDING GLASS DOORS, OPNG'S AT UTILITY PENETRATIONS THROUGH WALLS, FLRS, AND ROOFS, ALL OTHER OPNG'S IN BLD'G ENVELOPE.
16) ALL EXTERIOR DOORS OR ACCESS HATCHES TO ENCLOSED UNHEATED AREAS MUST BE WEATHERSTRIPPED
17) MINIMUM SOIL BEARING PRESSURE = 1500 PSF
18) FOOTINGS TO BE PLACED ON FIRM, UNDISTURBED NATIVE SOIL.
19) DUELLING TO COMPLY WITH I.R.C. 2021 EDITION
20) DUELLING TO COMPLY WITH I.R.C. 2021 EDITION
21) FIRE STOPS SHALL BE PROVIDED TO CUT OFF ALL CONCL'D DRAFT OPNG'S FROM VERT TO HORIZL. SPACES, INCL'G THE STAIR, TUB, SHWR, FRPLCE, ETC.
22) O/SB ROOF SHEATHING W/COMP ROOFING AND PLYUD AT ALL OVERHANGS. SEE DETAIL SHT FOR ALL ADDITIONAL NOTES.

GENERAL NOTES:

Concrete batch ticket or delivery receipt for 2500 PSI concrete on site for Building Inspector verification at under-floor inspection. Concrete shall be air entrained. Total air content (Percent by volume of concrete) shall not be less than 5 percent or more than 1 percent per I.R.C. Table 402.2.)

-UNDERFLOOR INSPECTION REQUIRED PRIOR TO LAYING SUBFLOOR

-CONTRACTOR SHOULD VERIFY THE TRANSFER OF ALL POINT LOADS FROM THE ROOF DOWN THROUGH FRAMING MEMBERS AND INTO THE FOUNDATION

GROUNDING ELECTRODE SYSTEM: ALL GROUNDING ELECTRODES AS DESCRIBED IN 25052(A)(1) THROUGH (A)(6) THAT ARE PRESENT AT EACH BUILDING OR STRUCTURE SERVED SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM WHERE NONE OF THESE GROUNDING ELECTRODES EXIST, ONE OR MORE OF THE GROUNDING ELECTRODES SPECIFIED IN 25052(A)(4) THROUGH (A)(7) SHALL BE INSTALLED AND USED

-NOTE: SHOP DRAWINGS FOR PRE-ENGINEERED FLOORS OR TRUSSES MUST BE ON-SITE AT TIME OF FRAMING INSPECTION, AND HAVE AN ORIGINAL WASHINGTON SEAL AND SIGNATURE OF THE DESIGNER. PROCEEDING WITH FRAMING WITHOUT APPROVED DETAILS AND PLAN IS DONE SO AT THE CONTRACTORS/APPLICANTS RISK

3" X 3" X 1/4" PLATE WASHERS REQUIRED AT EACH ANCHOR BOLT, I.R.C. R602.1.1

CRAWL SPACE:
18" MINIMUM CLEARANCE UNDER JOISTS
12" MINIMUM CLEARANCE UNDER BEAMS
6 MIL VAPOR BARRIER (BLACK)
THRU/OUT. LAP BEAMS MIN. 12" (USEC 502.1.6.7)
NOTE: ALL POSTS MUST BE PLACED 4' OR WITHIN 10% OF PIER SIZE.

214	UNDER-FLOOR AREA = .72	SQ. FT. NET FREE REQ'D.
300		
.72	NET FREE x 144 = 103.7	SQ. IN./SQ. FT. NET FREE REQ'D.
PROVIDE 1 SQ. FT. PER 300 SQ. FT. OF UNDER FLOOR AREA. COVER VENTS WITH 1/4" CORROSION RESISTANT WIRE MESH. LOCATE VENTS AS CLOSE TO CORNERS AS PRACTICAL. EFFICIENT VENT AREA = 12.5 SQ. IN.		
SQ. IN. NET FREE	103.7	* VENTS
VENT AREA	12.5	REQ'D.

FOOTING SCHEDULE	
30"	30"X30"X10" DP CONC. FTG. W/ (3) #4 BARS E.W.
36"	36"X36"X10" DP CONC. FTG. W/ (4) #4 BARS E.W.
42"	42"X42"X10" DP CONC. FTG. W/ (5) #4 BARS E.W.

946	UNDER-FLOOR AREA = 3.2	SQ. FT. NET FREE REQ'D.
300		
3.2	NET FREE x 144 = 461	SQ. IN./SQ. FT. NET FREE REQ'D.
PROVIDE 1 SQ. FT. PER 300 SQ. FT. OF UNDER FLOOR AREA. COVER VENTS WITH 1/4" CORROSION RESISTANT WIRE MESH. LOCATE VENTS AS CLOSE TO CORNERS AS PRACTICAL. EFFICIENT VENT AREA = 12.5 SQ. IN.		
SQ. IN. NET FREE	461	* VENTS
VENT AREA	12.5	REQ'D.

CRAWL VENTILATION CALCULATION



1. ALL BEAMS AND HEADERS TO BE 4x8 DFP UNLESS NOTED OTHERWISE.
2. PROVIDE SOLID PRESSURE BLOCKING AT ALL POINT LOADS FROM ABOVE.
3. PROVIDE SOLID BLOCKING OR BRIDGING AT MID-SPAN OF ALL FLOOR JOISTS WITH SPANS OVER 10'-0" OR PER JOIST SPECIFICATIONS PER JOIST MANUFACTURER.
4. PROVIDE BLOCKING OR OTHER APPROVED MEANS OF LATERAL SUPPORT AT ALL JOIST BEARING LOCATIONS.
5. XXX DENOTES SHEARWALL CALLOUT PER SHEARWALL TABLE.
6. ALL HEADERS TO HAVE (1) 2x BEARING STUD AND (1) 2x KING STUD AT EACH END UNLESS NOTED OTHERWISE.

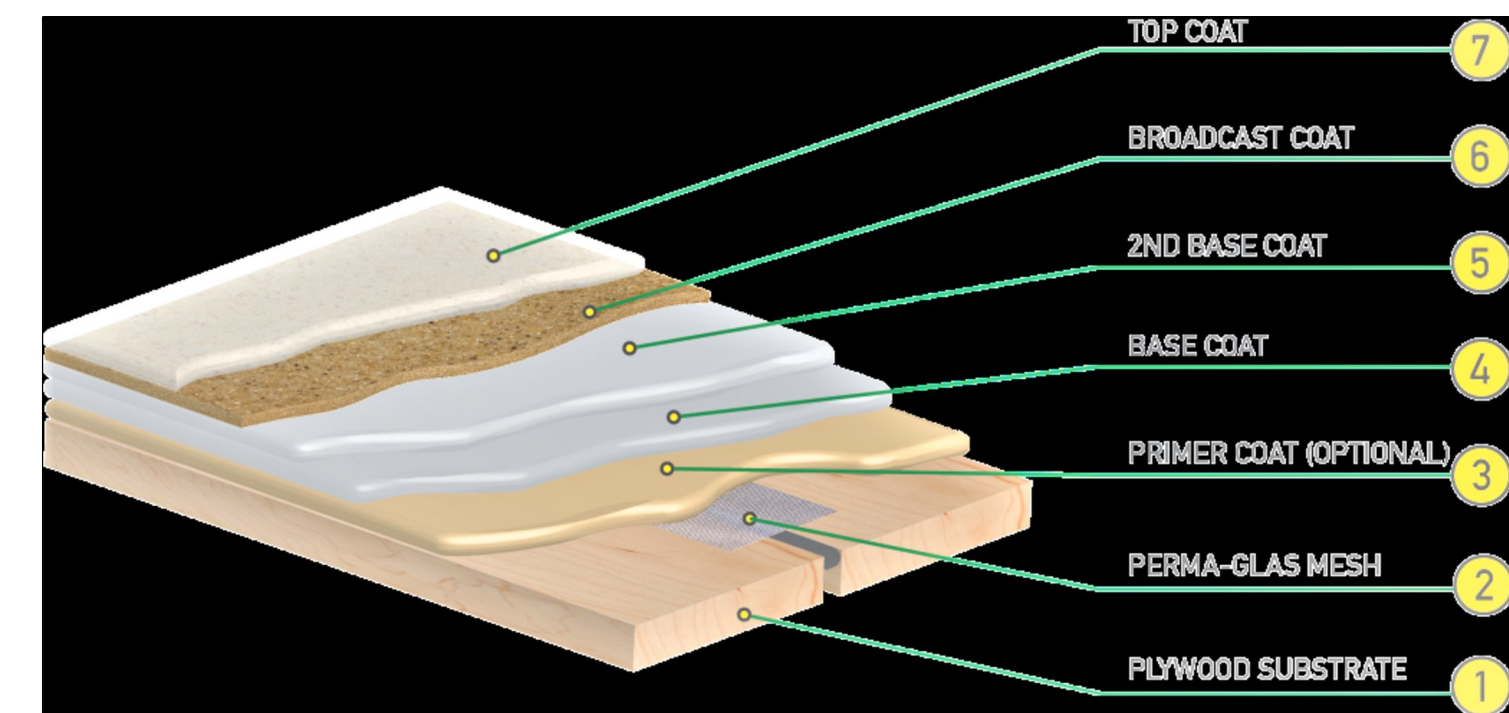
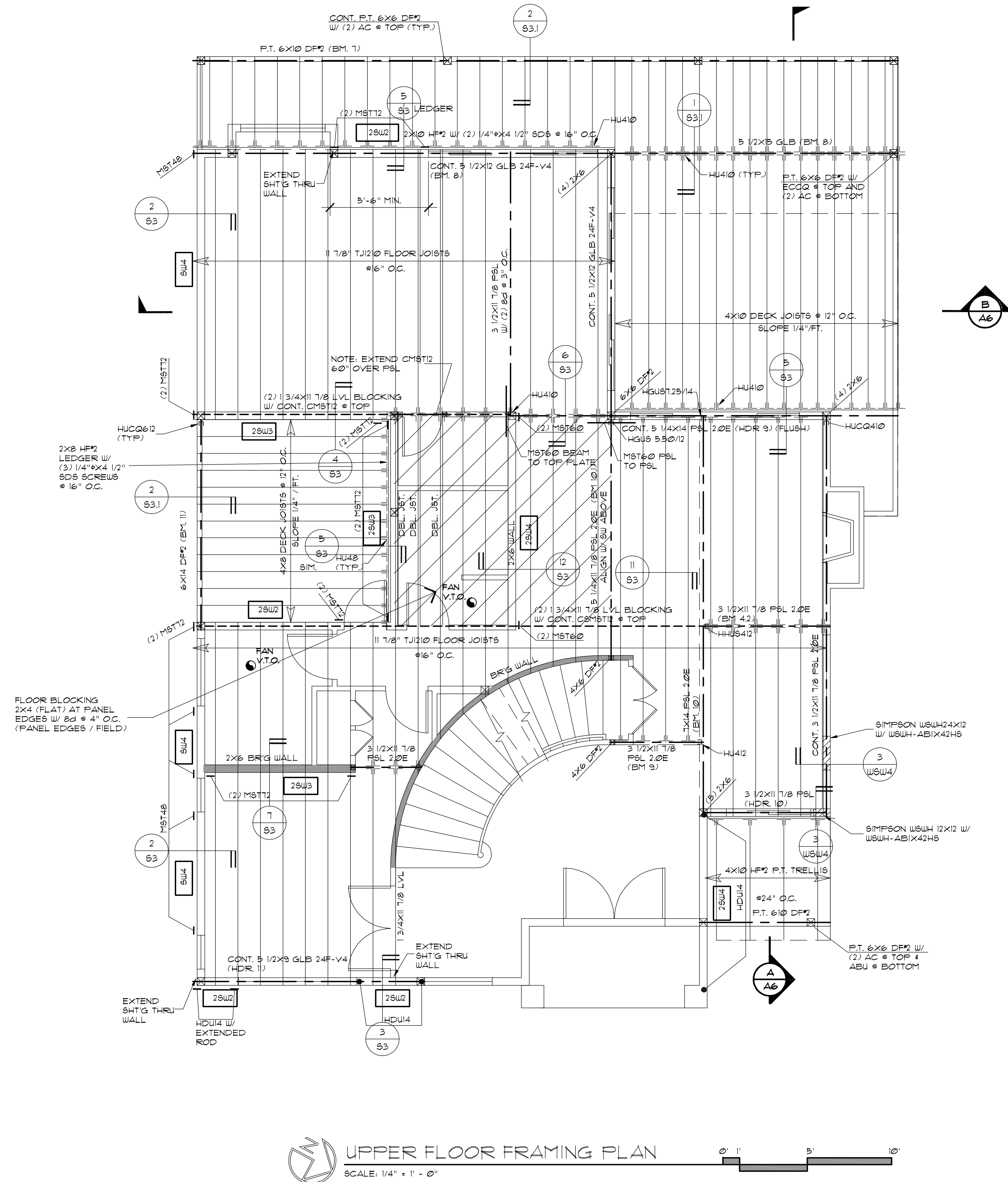
Joists shall be laterally supported at the ends by full-depth solid blocking not less than 2 inches nominal in thickness or by attachment to a full-depth header, band or rim joist, or to an adjoining stud to provide lateral support to prevent rotation. Additionally, in Seismic Design Categories D0, D1, and D2, lateral restraint shall be provided at each intermediate support. See IRC Sections 106.11 and 502.7.

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 5/18/24
8/20/24

SHEET NO.

Se



WATERPROOF DECK DETAIL

FLOOR FRAMING NOTES:

1. ALL BEAMS AND HEADERS TO BE 4x8 DF#2 UNLESS NOTED OTHERWISE.
2. PROVIDE SOLID PRESSURE BLOCKING AT ALL POINT LOADS FROM ABOVE.
3. PROVIDE SOLID BLOCKING OR BRIDGING AT MID-SPAN OF ALL FLOOR JOISTS WITH SPANS OVER 10'-0" OR PER JOIST SPECIFICATIONS PER JOIST MANUFACTURER.
4. PROVIDE BLOCKING OR OTHER APPROVED MEANS OF LATERAL SUPPORT AT ALL JOIST BEARING LOCATIONS.
5. [XXX] DENOTES SHEARWALL CALLOUT PER SHEARWALL TABLE.
6. ALL HEADERS TO HAVE (1) 2x BEARING STUD AND (1) 2x KING STUD AT EACH END UNLESS NOTED OTHERWISE.
7. EXPOSED WOOD TO BE PROTECTED AGAINST DECAY, PRESERVATIVE TREATED WOOD TO BE USED PER IRC R301.

Joists shall be laterally supported at the ends by full-depth solid blocking not less than 2 inches nominal in thickness or by attachment to a full-depth header, band or rim joist, or to an adjoining stud to provide lateral support to prevent rotation. Additionally, in Seismic Design Categories D0, D1, and D2, lateral restraint shall be provided at each intermediate support. See IRC Sections 106.11 and 502.7.

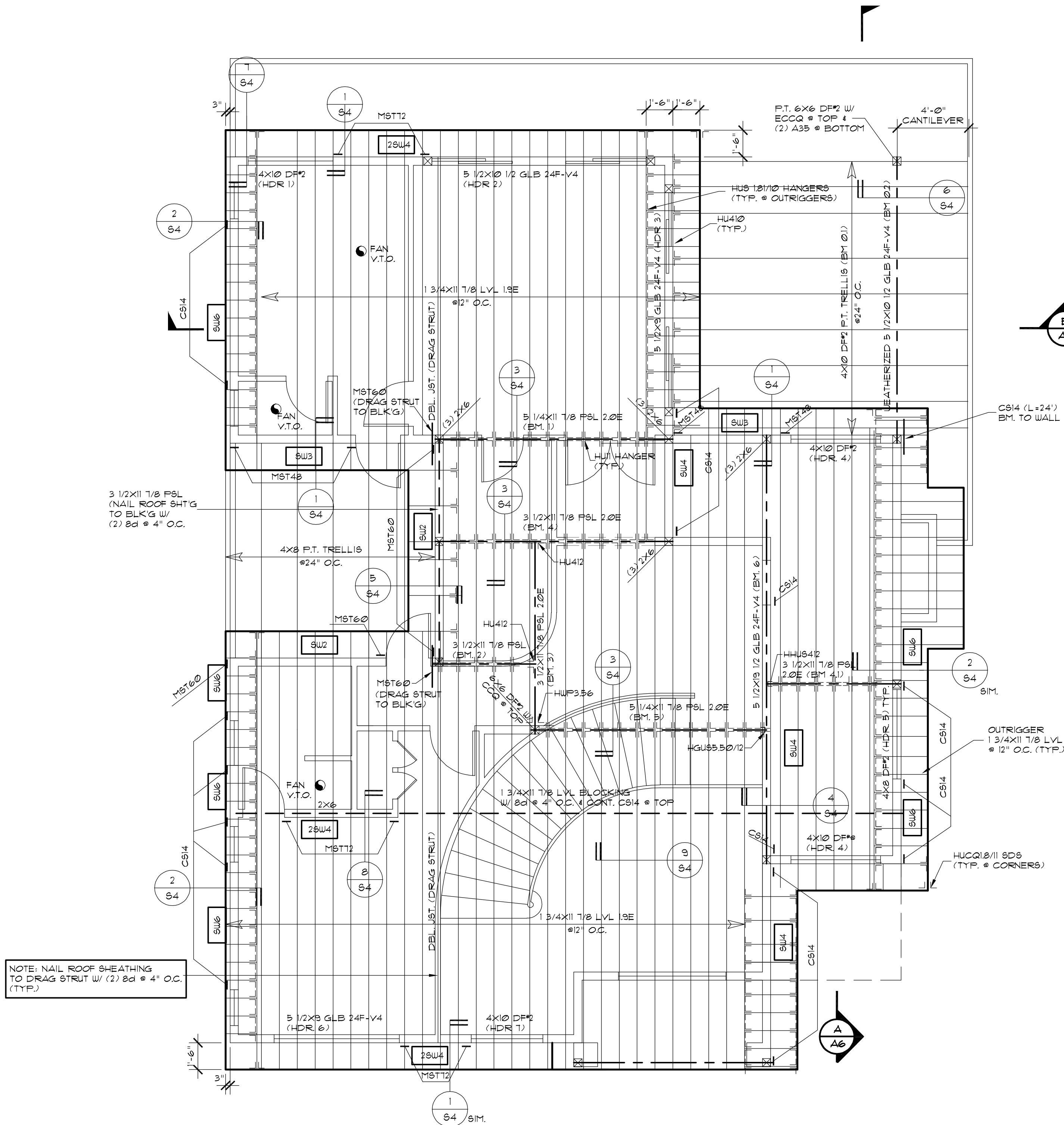
A NEW HOME AT:

6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRWN. BY: TH
REVISED: 5/18/24
8/20/24

SHEET NO.

57



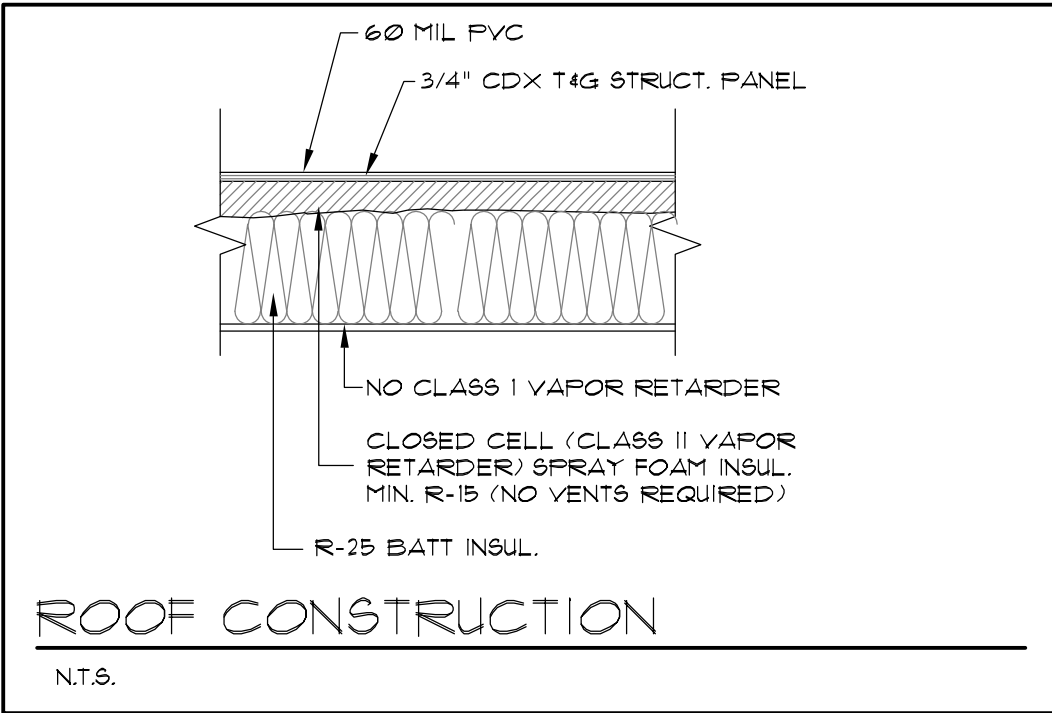
NOTE: 1/4" / FT ROOF SLOPE, DRAINS AND SCUPPERS TO BE DETERMINED ON SITE.



HDR: 4x8 DF#2 TYP. (U.N.O.)
POST: (2) 2x6 HF#2 TYP. (U.N.O.)

WOOD-FRAMED SHEAR WALL SCHEDULE								
FOR HEM-FIR/DOUG-FIR STUD FRAMING								
SW TYPE	SW SHEATHING APA-RATED	NAIL SIZE & SPACING @ PANEL EDGES (L & S)	RIM JOIST OR BLOCKING ATTACHMENT TO TOP PLATE BELOW (L & S)	BOTTOM PLATE & EDGE REQUIREMENTS (L & S)		SILL PLATE REQUIREMENTS		SHEAR LOAD CAPACITY (PLF)
				SHEAR NAILING TO WOOD FRAMING BELOW	BOTTOM PLATE AT FRAMING	ANCHOR BOLT TO CONCRETE FOUNDATION	SILL PLATE AT FOUNDATION	
SW-6	15/32" CD-EXT	0.131" @ 2 1/2" @ 6"OC	CLIP @ 18"OC	0.148" @ 3 1/4" @ 6"OC	2x	5/8" @ 48"OC	P.T. 2x	242
SW-4	15/32" CD-EXT	0.131" @ 2 1/2" @ 4"OC	CLIP @ 14"OC	0.148" @ 3 1/4" @ 4"OC	3x	5/8" @ 32"OC	P.T. 2x	353
SW-3	15/32" CD-EXT	0.131" @ 2 1/2" @ 3"OC, STAGGERED	CLIP @ 12"OC	0.148" @ 3 1/4" @ 4"OC & CLIP @ 18"OC	3x	5/8" @ 24"OC	P.T. 2x	456
SW-2	15/32" CD-EXT	0.131" @ 2 1/2" @ 2"OC, STAGGERED	CLIP @ 8"OC	0.148" @ 3 1/4" @ 4"OC & CLIP @ 16"OC	3x	5/8" @ 16"OC	P.T. 2x	595
2SW-4	15/32" CD-EXT BOTH SIDE	0.131" @ 2 1/2" @ 4"OC, STAGGERED	CLIP @ 6"OC	0.148" @ 3 1/4" @ 4"OC & CLIP @ 12"OC	3x	5/8" @ 24"OC	P.T. 3x	707
2SW-3	15/32" CD-EXT BOTH SIDE	0.131" @ 2 1/2" @ 3"OC, STAGGERED	CLIP @ 8"OC	0.148" @ 3 1/4" @ 4"OC & CLIP @ 8"OC	3x	5/8" @ 16"OC	P.T. 3x	911
2SW-2	15/32" CD-EXT BOTH SIDE	0.131" @ 2 1/2" @ 2"OC, STAGGERED	CLIP @ 6"OC	0.148" @ 3 1/4" @ 4"OC & CLIP @ 5"OC	3x	5/8" @ 12"OC	P.T. 3x	1190

- NOTES:
1. INSTALL PANELS EITHER HORIZONTALLY OR VERTICALLY.
 2. WHERE SHEATHING IS APPLIED ON BOTH SIDES OF WALL, PANEL EDGE JOINTS ON 2x FRAMING SHALL BE STAGGERED SO THAT JOINTS ON OPPOSITE SIDES ARE NOT LOCATED ON THE SAME STUDS.
 3. BLOCKING IS REQUIRED AT ALL PANEL EDGES.
 4. PROVIDE SHEAR WALL SHEATHING AND NAILING FOR ENTIRE LENGTH OF THE WALLS INDICATED ON THE PLANS. ENDS OF FULL HEIGHT WALLS ARE DESIGNATED BY WINDOWS OR DOORWAYS OR AS DESIGNATED ON PLANS. HOLDOWN REQUIREMENTS PER PLANS.
 5. SHEAR WALLS DESIGNATED AS PERFORATED SHEAR WALLS REQUIRE SHEATHING, SHEAR WALL NAILING, ETC. ABOVE AND BELOW ALL OPENINGS.
 6. SHEATHING EDGE NAILING IS REQUIRED AT ALL HOLDOWN POSTS. EDGE NAILING MAY ALSO BE REQUIRED TO EACH STUD USED IN BUILT-UP HOLDOWN POSTS. ADDITIONAL INFORMATION PER HOLDOWN SCHEDULE & DETAILS.
 7. INTERMEDIATE FRAMING TO BE 2x MINIMUM MEMBERS. ATTACH SHEATHING TO INTERMEDIATE FRAMING WITH 0.148" @ 3 1/4" NAILS AT 12"OC WHERE STUDS ARE SPACED AT 16"OC AND 0.148" @ 3 1/4" NAILS AT 6"OC WHERE STUDS ARE SPACED AT 24"OC.
 8. BASED ON 0.131" @ 2 1/2" NAILS USED TO ATTACH FRAMING CLIPS DIRECTLY TO FRAMING. USE 0.131" @ 2 1/2" NAILS WHERE INSTALLED OVER SHEATHING.
 9. FRAMING CLIPS: SIMPSON "A35" OR "1TP5" OR APPROVED EQUIVALENT.
 10. ANCHOR BOLTS SHALL BE PROVIDED WITH HOT-DIPPED GALVANIZED STEEL PLATE WASHERS 3"x3"x0.229"(MIN). THE HOLE IN THE PLATE WASHER MAY BE DIAGONALLY SLOTTED 19/16"x1 1/2". PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND NUT. PLATE WASHER TO EXTEND TO WITHIN 1/2" OF THE EDGE OF THE SILL PLATE ON THE SIDES WITH SHEATHING. WHERE SHEAR WALLS ARE SHEATHED ON BOTH SIDES OF 2x6 WALL FRAMING, USE 4.5"x4.5"x0.229"(MIN) PLATE WASHERS. EMBED ANCHOR BOLTS 7" MINIMUM INTO THE CONCRETE.
 11. PRESSURE TREATED MATERIAL CAN CAUSE EXCESSIVE CORROSION IN THE FASTENERS. PROVIDE HOT-DIPPED GALVANIZED (ELECTRO-PLATING IS NOT ACCEPTABLE) NAILS AND CONNECTOR PLATES (FRAMING ANGLES, ETC.) FOR ALL CONNECTORS IN CONTACT WITH PRESSURE TREATED FRAMING MEMBERS. ADDITIONAL INFORMATION PER STRUCTURAL NOTES.
 12. WHERE WOOD SHEATHING IS APPLIED OVER GYPSUM SHEATHING, AT ADDING PANEL EDGES, (2) 2x STUDS NAILED TOGETHER MAY BE USED IN PLACE OF SINGLE 3x STUD. DOUBLE 2x STUDS SHALL BE CONNECTED TOGETHER BY NAILING THE STUDS TOGETHER WITH 3" LONG NAILS OF THE SAME SPACING AND DIAMETER AS THE PLATE NAILING.
 13. CONTACT THE STRUCTURAL ENGINEER OF RECORD FOR ADHESIVE OR EXPANSION BOLT ALTERNATIVES TO CAST-IN-PLACE ANCHOR BOLTS. SPECIAL INSPECTION MAY BE REQUIRED.
 14. NAIL STUDS TO 3x BOTTOM/SILL PLATES WITH EITHER (2) 0.148" @ 4" 0.131" @ 2 1/2" TOENAILS.
 15. END NAILS OR



- ROOF FRAMING NOTES:
1. ALL BEAMS AND HEADERS TO BE 4x8 DF#2 UNLESS NOTED OTHERWISE.
 2. NO TRUSSES SHALL BE FIELD MODIFIED WITHOUT PRIOR CONSENT OF THE TRUSSES ENGINEER AND THE BUILDING DEPARTMENT.
 3. ROOF SHEATHING TO BE 1/2" APA RATED SHEATHING WITH 10d NAILS AT PERIMETER AND ALL SUPPORTED PANEL EDGES AT 6" ON CENTER AND AT 12" ON CENTER AT FIELD.
 4. [XXX] DENOTES SHEARWALL CALLOUT PER SHEARWALL TABLE.
 5. [X] DENOTES SOLID 2x STUD BEARING BELOW END OF HEADER OR GIRDER.
 6. ALL HEADERS TO HAVE (1) 2x BEARING STUD AND (1) 2x KING STUD AT EACH END UNLESS NOTED OTHERWISE.
 7. PROVIDE SOLID BEARING STUDS AT ALL BEARING LOCATIONS INCLUDING GIRDER TRUSSES AND BEAMS.

A NEW HOME AT:

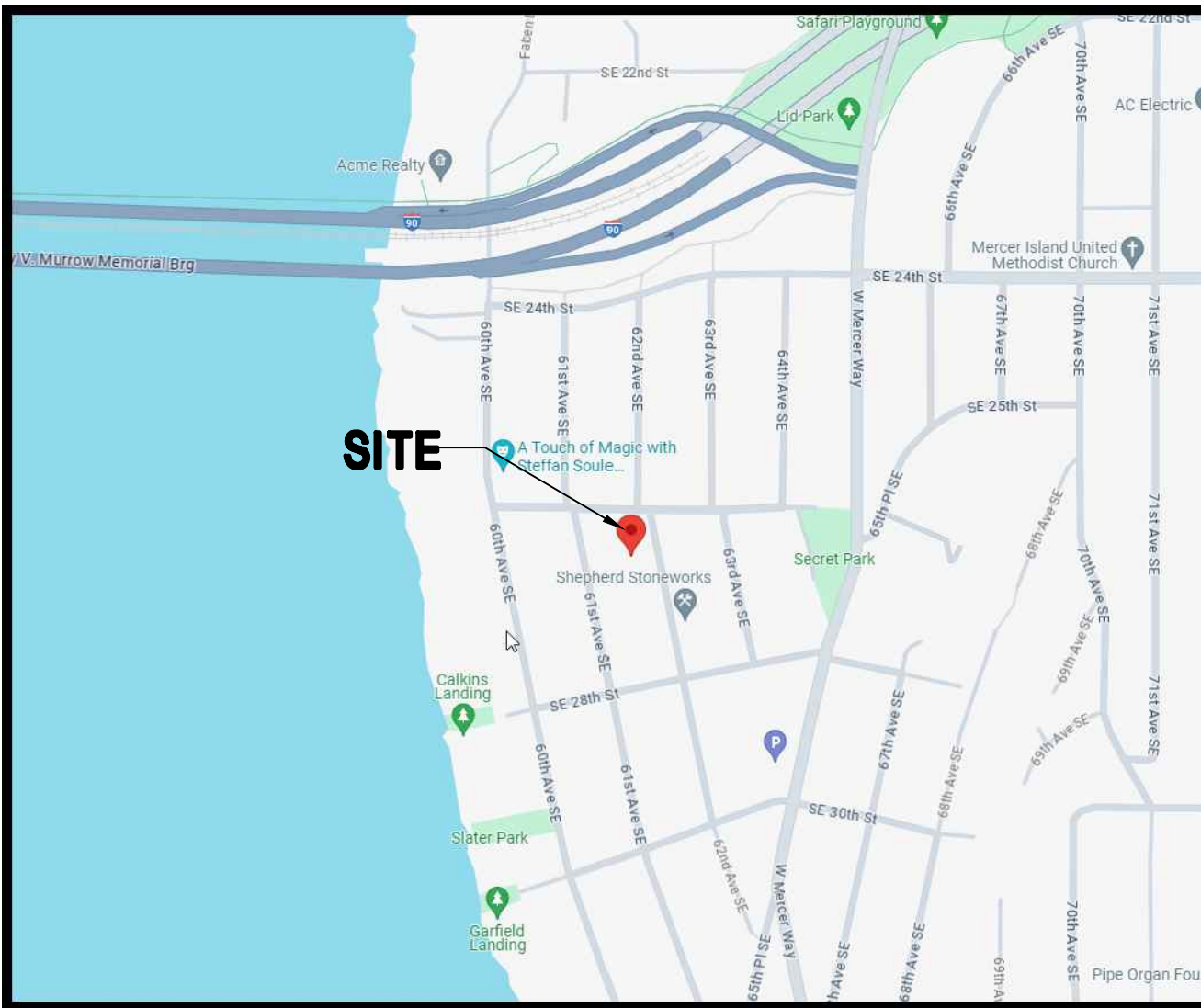
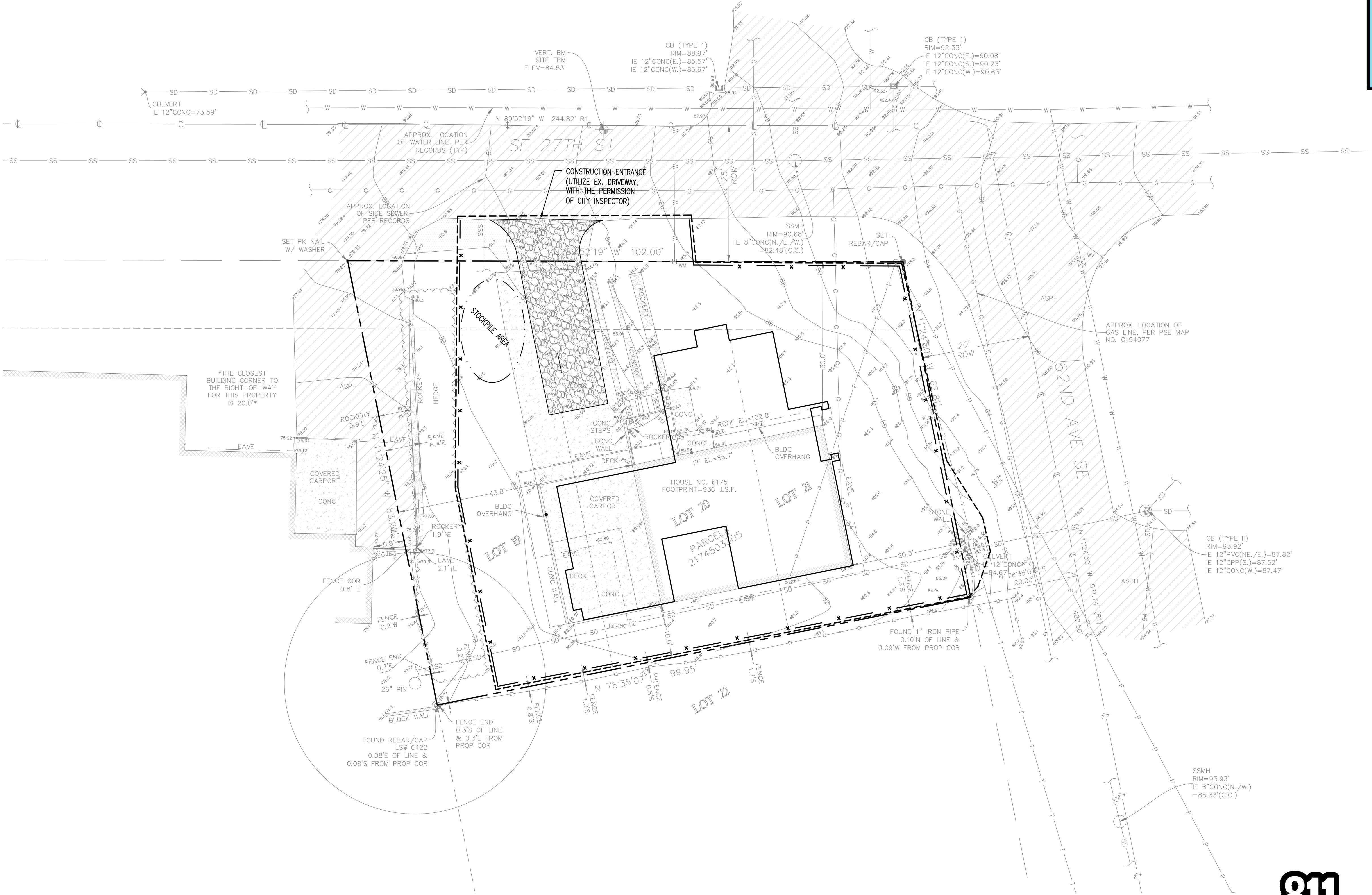
6175 SE 27TH STREET
MERCER ISLAND, WA 98040

JOB NO: 23006
DATE: 12/11/23
DRAWN BY: TH
REVISED: 5/18/24
8/20/24

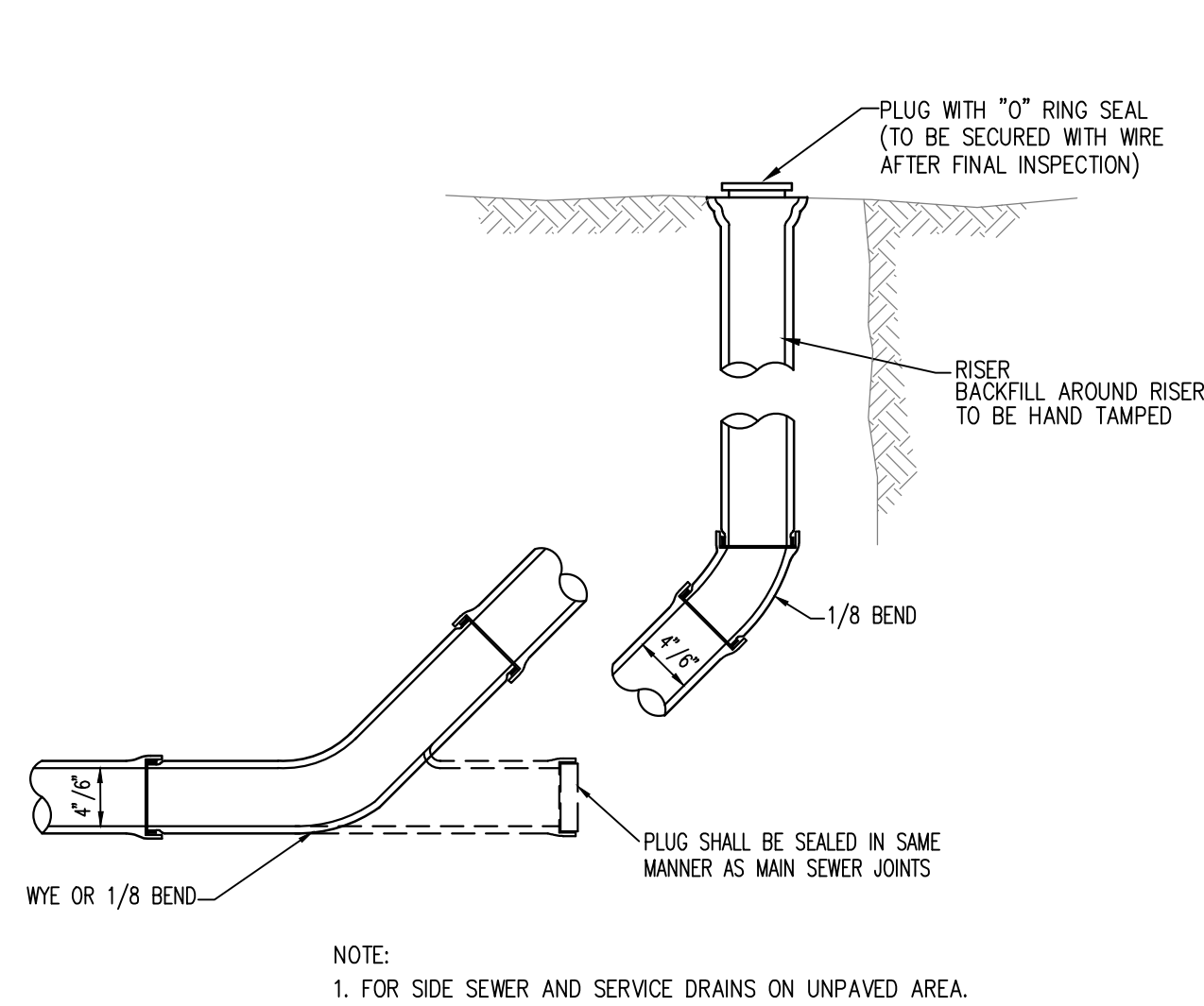
SHEET NO.

58

NE 1/4, NE 1/4, SEC 11, TWP. 24N., RGE 4E., W.M.

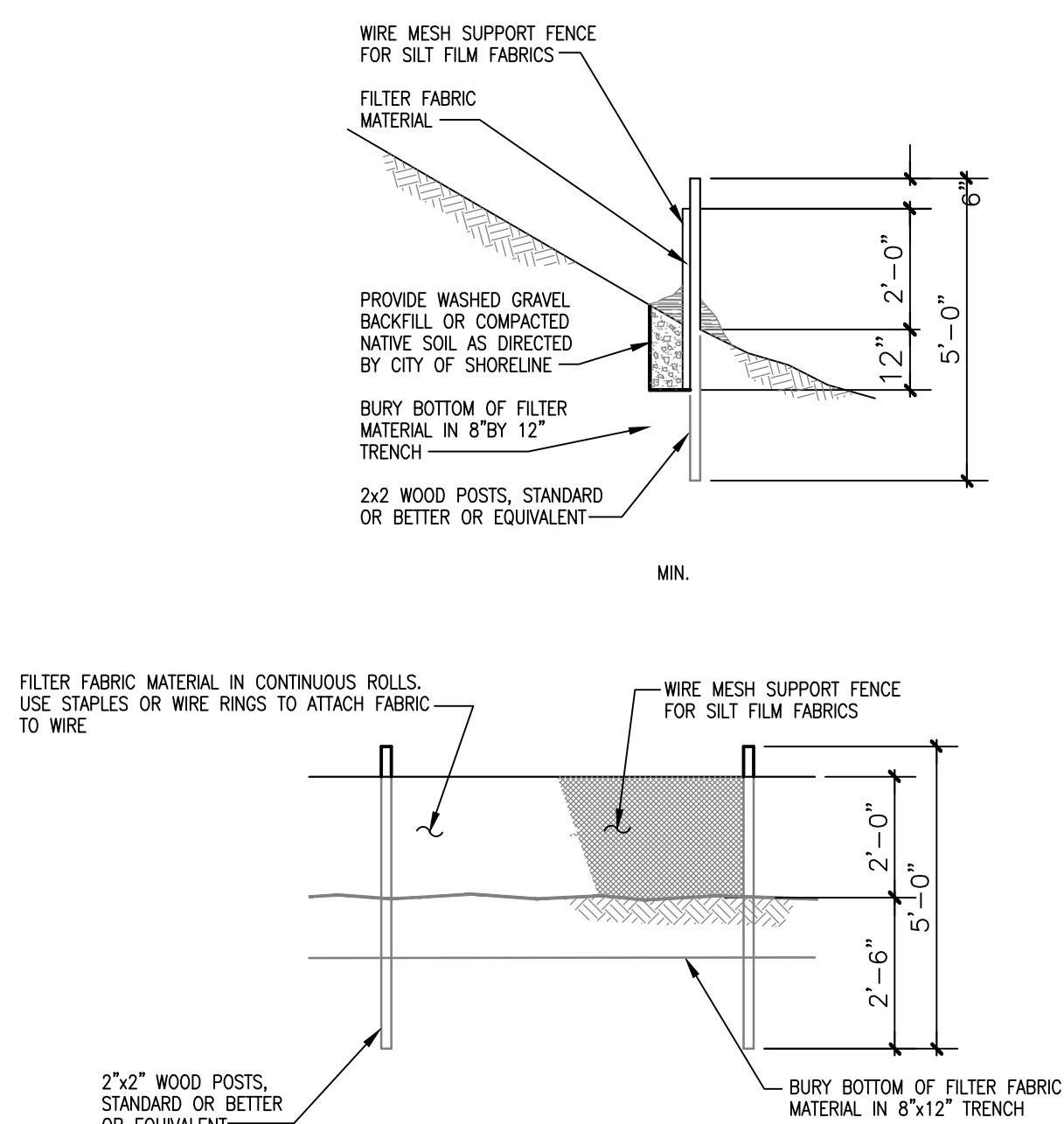


NE $\frac{1}{4}$, NE $\frac{1}{4}$, SEC 11, TWP. 24N., RGE 4E., W.M.



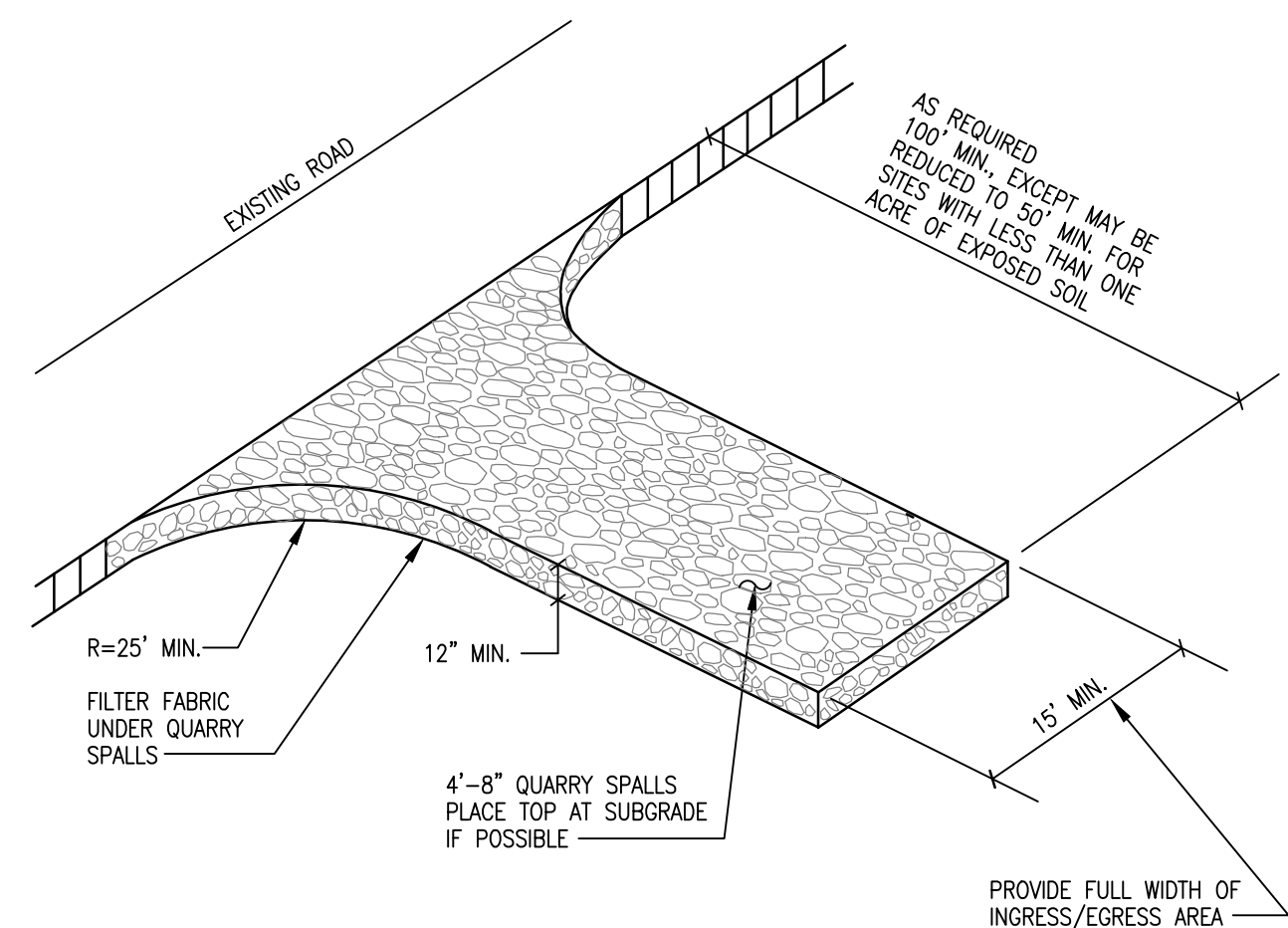
CLEANOUT DETAILS

NTS



SILT FENCE

NO SCALE



STABILIZED CONSTRUCTION ENTRANCE

NO SCALE

NOTES:

1. STONE SIZE - USE 4" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS - NOT LESS THAN 12"
4. WIDTH - 15 FEET MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURRED ON THE ADJACENT PROPERTY.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. IT WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS WILL REQUIRE PAVING TO DRAINAGE WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

[illegible]

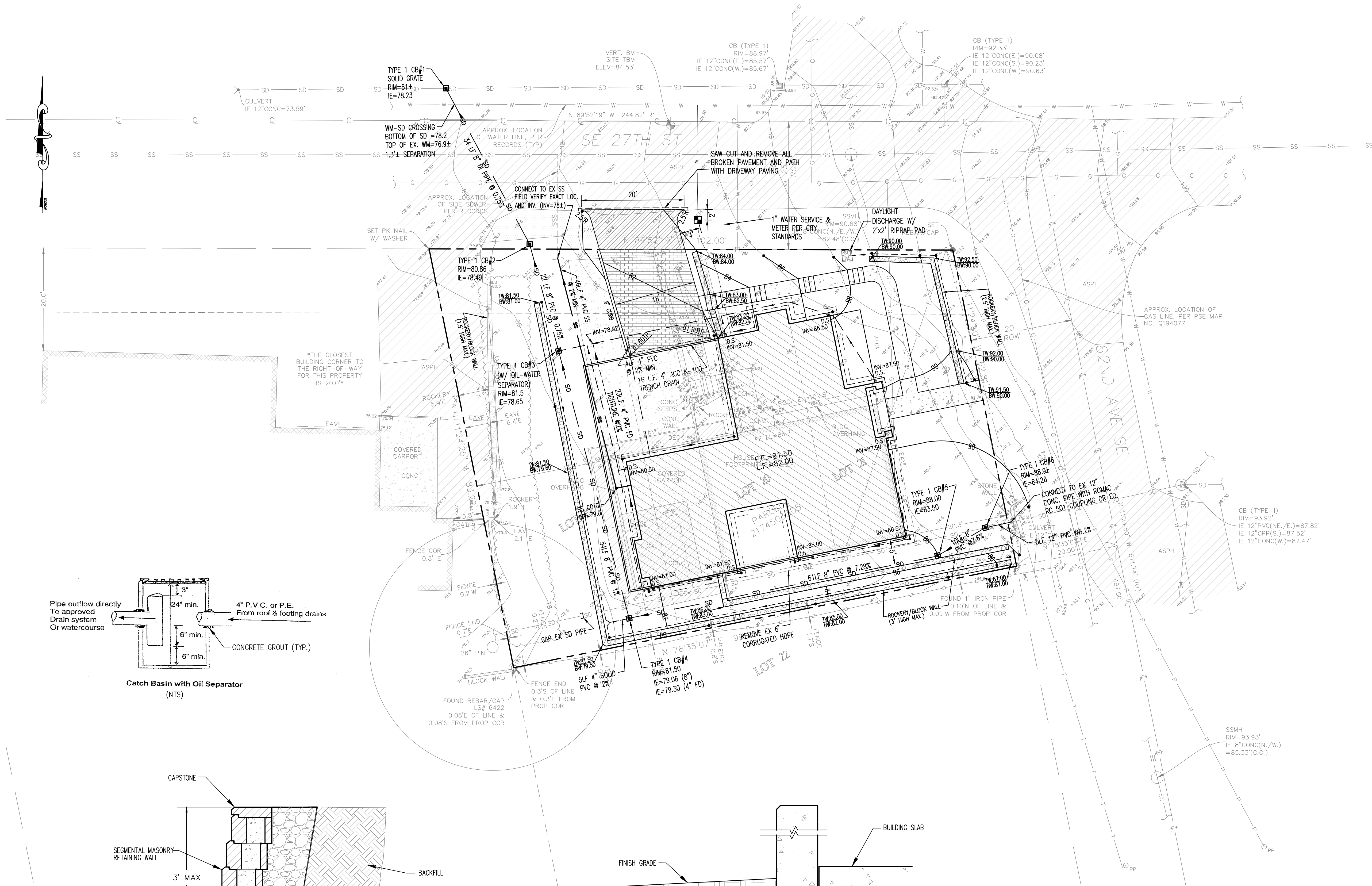
DATE:
12-21-23

CHEN RESIDENCE
6115 SE 27TH STREET
MERCER ISLAND, WA 98040

FILE NO:
2342
.DWG

SHEET
C1.1

NE ¼, NE ¼, SEC 11, TWP. 24N., RGE 4E., W.M.



SOIL AMENDMENT NOTE:

THE LAWN AND LANDSCAPE AREAS ARE REQUIRED TO PROVIDE POST-CONSTRUCTION SOIL QUALITY AND DEPTH IN ACCORDANCE WITH BMP 15.13. THE PROJECT CIVIL ENGINEER MUST PROVIDE A LETTER OF CERTIFICATION TO ENSURE THAT THE LAWN AND LANDSCAPE AREAS ARE MEETING THE POST-CONSTRUCTION SOIL QUALITY AND DEPTH REQUIREMENTS SPECIFIED ON THE APPROVED PLAN SET PRIOR TO FINAL INSPECTION OF THE PROJECT.

SIDE SEWER NOTE:

THE TV INSPECTION OF THE EXISTING SIDE SEWER TO THE CITY SEWER MAIN IS REQUIRED. IF THE RESULT OF THE TV INSPECTION IS NOT IN SATISFACTORY CONDITION, AS DETERMINED BY THE CITY OF MERCER ISLAND INSPECTOR, THE REPLACEMENT OF THE EXISTING SIDE SEWER IS REQUIRED.

SITE IMPERVIOUS AREA SUMMARY:

EXISTING LOT AREA = 7297 S.F.
EXISTING BUILDING ROOF: 1600 S.F.
EXISTING DRIVEWAY: 646 S.F.
EXISTING DECK: 186+58 = 244 S.F.
EXISTING WALKWAY: 63 S.F.
TOTAL EXISTING IMPERVIOUS AREA = 2553 S.F.
EXISTING IMPERVIOUS IS 34.9% < 35% (NEW DEVELOPMENT FLOW CHART)

PROPOSED DRIVEWAY WITHIN ROW: 177 S.F.
PROPOSED DRIVEWAY WITHIN PROPERTY: 322 S.F.
PROPOSED WALKWAY: 254 S.F.
PROPOSED BUILDING ROOF: 1961 S.F.
PROPOSED PATIO/DECK: 92+547=639 S.F.
TOTAL NEW IMPERVIOUS AREA: 3,176 S.F. < 5000 S.F.

PER FIGURE I-3.1 FLOW CHART FOR DETERMINING FOR NEW DEVELOPMENT:
MINIMUM #1 TO #5 APPLIED TO NEW AND REPLACED HARD SURFACES AND THE LAND DISTURBED

NET INCREASE IN IMPERVIOUS AREA ON-SITE= 623 S.F.

LEGEND

EX. SANITARY SEWER
EX. WATER LINE
EX. STORM DRAIN
CONCRETE DRIVEWAY
GRASS LAWN
SAW CUT LINE
ROOF DRAIN TIGHTLINE WITH C.O.T.G.(4" PVC)
FOOTING DRAIN W/ CLEANOUT TO GRADE (C.O.T.G.)

NOTES:

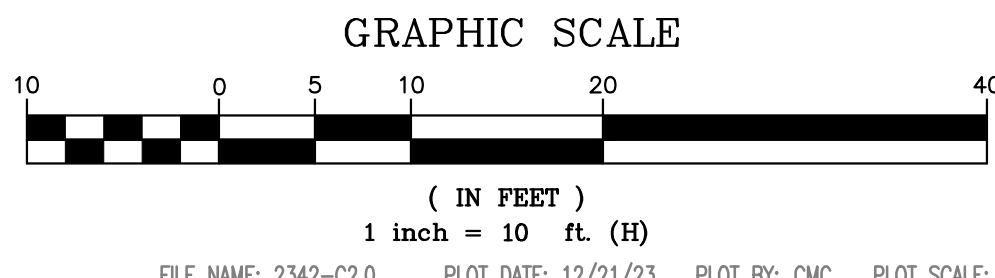
1. SEE ARCHITECTURE SITE PLAN FOR OTHER PROPOSED INFORMATION NOT SHOWN ON THIS SHEET.

DRAINAGE GENERAL NOTES:

1. DOWNSPOUTS SHALL BE TIED INTO A NON-PERFORATED, RIGID, SMOOTH-BORE PIPE WHICH DRAINS TO AN APPROVED STORM SYSTEM.
2. PROVIDE CLEANOUTS AT THE UPPER END OF THE SYSTEM AND AT EACH CUMULATIVE CHANGE OF DIRECTION IN EXCESS OF 135 DEGREES.
3. ALL PIPE FITTINGS SHALL BE MADE OF THE SAME MATERIAL AS THE STRAIGHT PIPE. GLEED JOINTS SHALL USE A BONDING AGENT RECOMMENDED BY THE PIPE MANUFACTURER.
4. FOOTING DRAINS SHALL BE INSTALLED AROUND ALL NEW FOUNDATIONS AND SHALL BE TIGHTLINED TO DISCHARGE TO THE SPLASH BLOCK. FOOTING DRAINS SHALL BE CONSTRUCTED OF PERFORATED PIPE AT THE BASE OF THE FOOTING, AND SHALL MEET MATERIAL STANDARDS OF D2729 FOR PVC PIPE, WITH THE PERFORATIONS DIRECTED DOWNWARD. PLACE GRANULAR BACKFILL AROUND AND ABOVE THE FOOTING DRAIN TO A DEPTH OF 2/3 OF THE WALL HEIGHT. PROVIDE FILTER FABRIC WRAP AROUND BETWEEN THE GRANULAR BACKFILL AND THE NATIVE SOIL.

BENCHMARK AND DATUM PER SURVEY

ACCEPTED A BEARING OF N 78°35'37" E BETWEEN MONUMENTS FOUND ALONG THE CENTERLINE OF SE 28TH ST, PER R1
NAVD 88 PER GPS OBSERVATIONS
SITE TEMP. BENCHMARK
DESCRIPTION: PK NAIL W/ RED WASHER
LOCATION: NORTH SIDE SE 27TH ST MIDDLE OF SUBJECT PROPERTY
ELEVATION: 84.53'



NO.	DATE	REVISION	REVISION PER CITY COMMENTS
1	06.25.2024		
2	08.09.2024		
C2MY ENGINEERS, LLC PO BOX 52883 BELLEVUE, WA 98015 (206) 932-9376 cmchen.c2my@gmail.com			
PROJECT: CHEN RESIDENCE 6175 SE 27TH STREET MERCER ISLAND, WA 98040 Paving, Grading, Drainage Plan			
DATE: 12-21-23			
FILE NO: 2342 DWS			
SHEET C2.0			