CITY OF MERCER ISLAND
COMMUNITY PLANNING & DEVELOPMENT
RESIDENTIAL CODE COVERSHEET

(206) 275-7605 WWW.MERCERISLAND.GOV/CPD
EPERMIT.TECH@MERCERISLAND.GOV
DOCUMENTS ARE SUBJECT TO PUBLIC DISCLOSURE AS REQUIRED BY RCW 42.56

INSPECTION REQUESTS
CONSTRUCTION (206) 275-7730
FIRE INSPECTION eastsidefire-rescue.org

SF1
BUILDING PERMIT NUMBER 2406-096

PROJECT NAME: MERCER FIRSTHILL 2419
PROJECT ADDRESS: 2419 72ND AVE SE, MERCER ISLAND, WA 98040

TO BE COMPLETED BY APPLICANT
TO BE COMPLETED BY CITY

PROJECT DESCRIPTION
This scope should match the Building Permit Application Form

CONSTRUCT ONE SINGLE-FAMILY HOME WITH 2 STORY ABOVE GRADE AND 1 STORY BELOW GRADE

PROJECT CONTACT INFORMATION
The Applicant shall provide the following information for each type of contact (Engineer and Geotech dependent on scope)

Permitting Contact: PEIK LI PANG	Email: peikli.pang@5ft2studio.com	Phone: 425-287-1567
Construction Contact: SISI DUAN	Email: sisi@nexgengo.com	Phone: 206-839-7206
Engineer: F.T. Engineering and Const. Mgmt LLC	Email: ft.eng.cm@gmail.com	Phone: 509-822-0489
Geotech: NELSON GEOTECHNICAL ASSOCIATES, INC.	Email: leeb@nelsongeotech.com	Phone: 425-486-1669

DEFERRED SUBMITTALS
The Applicant is required to indicate all deferred submittals / shop drawings for submittal to the City for review and approval prior to item fabrication / construction. All deferred submittals require pre-approval from the City during the permit review process.

☒ No Deferred Submittals - all design included in these construction documents

☐ Connector plate wood roof trusses
☐ Metal joist / metal trusses
☐ Premanufactured structures (stairs, etc.)
☐ Exterior cladding
☐ Window wall / curtain wall construction
☐ Other:

ENERGY CODE AND WHOLE HOUSE VENTILATION INFORMATION
Indicate where the following information is located within the drawing set and select one box per line below.

Building Envelope- Define all components of the thermal envelope. Include U-factors, insulation and moisture control *WSEC Table 402.1.2* — Sheet: A7.0

Energy Credit Information- Include complete information on plan for options selected and equipment specified *WSEC Tables 406.2 and 406.3* — Sheet: A7.0

☐ No Credits Required ☐ Small Dwelling Unit ☒ Medium Dwelling Unit ☐ Large Dwelling Unit ☐ < 500 sf addition

New Construction Tests- The following are mandatory testing and reporting requirements of WSEC Ch 4 for new construction

● Certificate of Energy Efficiency *WSEC R401.3* ● Duct Leakage Testing *WSEC R403.3.5* ● Air Leakage Testing *WSEC R402.4.1.2*

☐ Air Leakage test report not to exceed 5 changes per hour *WSRC 1505.4.1.2* ☒ Air Leakage per selected energy credits

Whole House Ventilation- Specify system type below and include all system requirements on sheet noted *WSRC Section M1505.4* — Sheet: A7.1

☒ Exhaust fans *WSRC 1505.4.1.2* ☐ Supply fans *WSRC 1505.4.1.3* ☐ Balanced system *WSRC 1505.4.1.4* ☐ Other permitted system

REQUIRED SPECIAL INSPECTIONS
The Applicant shall complete the following section. One of the options below must be selected prior to permit intake. Chapter 17 of the International Building Code (IBC) requires Special Inspection to evaluate components of construction that are critical to the safety of the structure. The project owner shall be responsible for contracting with and hiring the Special Inspection agents. Structural Special Inspectors are required to be certified by the Washington Association of Building Officials (WABO). Geotechnical Special Inspectors shall be a licensed Washington State Professional Engineer. Where Special Inspection is required, all reports shall be emailed to InspectionReports@mercergov.org **and** provided to the City Building Inspector at time of the City inspection.

Inspections by the City Building Inspector are required in addition to the Special Inspection.
Do not cover or conceal any work prior to the City inspection.

PRESCRIPTIVE DESIGN
☐ This project is entirely non-structural, or is designed following the prescriptive gravity and lateral provisions of the International Residential Code (IRC) only. There are no engineered components that have been designed to the IBC or its referenced standards, e.g. American Concrete Institute (ACI), National Design Specifications (NDS), etc. No Special Inspections are required by IRC.

MINOR STRUCTURAL WORK
☐ This project has limited engineered design as permitted by IRC Section R301.1.3 and the construction is of a minor nature as excepted by IBC Section 1704.2. This option must be reviewed and accepted by the building official prior to permit issuance and shall be reevaluated for project revisions and deferred submittals.

ENGINEERED DESIGN
☒ This project is engineered to the provisions of the IBC and its referenced standards. Per IBC Chapter 17, a *Statement of Special Inspection* shall be completed by the Registered Design Professional (RDP) in responsible charge. The *Statement of Special Inspections* on coversheet SF2 has been reviewed and completed by the RDP.

REQUIRED STRUCTURAL OBSERVATION
Structural Observation may be required by the Registered Design Professional (RDP) in responsible charge or by the building official per IBC Section 1704.6.1. The RDP shall submit written statements to the building official prior to the commencement of observations (identifying frequency and extent of observations) and at the conclusion of work included in the permit (describing the site visit(s) performed and identifying any deficiencies that have not been resolved). Submit all statements to inspectionreports@mercerisland.gov

Structural Observation for this project is required by the:
☒ Registered Design Professional ☐ Building Official *(City use only)*

GEOTECHNICAL INFORMATION
Per Mercer Island City Code, designated geologic hazard areas require a geotechnical report and a statement of risk from a geotechnical professional be included with the project submittal. Refer to MICC 19.07.160 (B)(3) for statement of risk, and City GIS at https://www.mercerisland.gov/igs for hazard mapping. Some proposals may require a site restoration bond.

NO GEOTECHNICAL REPORT REQUIRED
☐ No geotechnical report is required due to either: 1. The absence of geologic hazards on site or 2. Scope of project does not include foundation construction, excavation, or alterations to a hazard (if a report is available or referenced it should be provided)

GEOTECHNICAL REPORT IS REQUIRED AND INCLUDED WITH SUBMITTAL
☒ A geotechnical report is required and has been provided. All construction must comply with the recommendations of the geotechnical report, and a copy of the report and any other geotechnical information must be kept on site at all times.

Geotechnical Engineer: Lee Bellah, LG	Phone: 425-486-1669	Project or report #: 1502724

SEASONAL DEVELOPMENT LIMITATION - MICC 19.07.160(F)(2) limits certain development between Oct 1 and Apr 1
☐ An application for Seasonal Development Limitation Waiver will be submitted and approved prior to any such activity.
☐ No grading or excavation will occur between October 1st and April 1st. SDL waiver not applicable.

The City requires an applicant paid peer review when the Building Official determines any of the following are present:
- Advanced excavation or foundation systems, i.e. soil nail walls, tieback shoring systems, etc.
- Foundation systems not supported on competent soils, i.e. over-excavation, soil preloading, etc.
- Projects that require slope stability analysis or those which could pose a significant risk to adjacent properties or structures.
- Where liquifaction presents significant risk (at waterfront or other high water table with seismic mapping)

TO BE COMPLETED BY APPLICANT
TO BE COMPLETED BY CITY

GENERAL REQUIREMENTS FOR ☒ NEW SINGLE FAMILY BUILD ☐ DEMOLITION/REBUILD ☐ ADDITION ☐ REMODEL ☐ REPAIR ☐ DOCK ☐ SITE IMPROVEMENTS ☐ SEISMIC RETRO
Construction of the project shall be from ***approved plans only***. No deviation from the approved project plans is allowed without prior approval from the City of Mercer Island.
Approved plans must be kept on site and maintained in good condition.

☑ Refer to "Conditions of Permit Approval" provided at permit issuance for required construction rules and regulations, including:
- Site Considerations
- Hours of Work
- Construction Vehicle Parking Restrictions
- Access Road Requirements
- ROW restrictions
- Drainage Requirements
- Sewer Requirements
- Water Service Requirements
- Additional Fire Code Requirements
- Planning Requirements
- Noise Abatement Certification
- Tree Requirements

☐ PRECONSTRUCTION MEETING REQUIRED. Refer to the "Preconstruction Meeting Checklist" notes for additional requirements.
☑ Temporary site address with minimum 6" high numbers visible from the street must be installed.
☑ Erosion control measures must be as shown on approved project drawings. All erosion control is to be in place and inspected prior to the start of any work.
☑ A City of Mercer Island Business License is required for all subcontractors. Call (206) 275-7602 for more information.
☑ Additional rockeries, patios, gravel or concrete paths, and other hardscape revisions to the project shall be submitted to the City for review and approval prior to installation.

LEGAL NONCONFORMANCE/STORMWATER THRESHOLD
Certain thresholds in the Land Use Code (MICC 19) or Stormwater Code (MICC 15.09) can have a significant impact on the requirements to conform with current code. Take special care to conform to the construction documents as-issued to avoid additional improvements.

☐ This project includes modification of legally nonconforming structures - MICC 19.01.050
☐ This project retains existing construction to limit calculation of *New Plus Replaced Hard Surface* - MICC 15.09

TREE REQUIREMENTS
TREE REMOVAL NOT SHOWN ON APPROVED PLAN MAY REQUIRE A SEPARATE TREE PERMIT - REFER TO MICC 19.10
☐ Tree protection as shown on approved drawings shall be installed at tree dripline prior to start of any site work and must remain in place throughout the project. Tree damage due to failure to follow approved plans shall result in fines per MICC 19.19.160.
☐ Replacement conifer trees must be a minimum of six feet tall at installation. Deciduous trees must have a minimum caliper of 1-1/2 inches. They must be planted and approved prior to final inspection.
For this project, _____ trees are authorized to be removed and replaced with _____ trees.
This project may be within a protected eagle nest area. Contact Federal Fish and Wildlife at (360) 534-9304 or visit their website at www.fws.gov/pacific/eagle.

FIRE PROTECTION REQUIREMENTS
Separate Permits are required for ***ALL*** fire protection systems. Fire Inspections can be requested at eastsidefire-rescue.org using the QR above, and require 48 hour advanced notice. Do not request fire inspections via MBP or on the general inspection line.

☒ Fire Sprinkler Separate permit required
- ☒ NFPA 13D
  - ☐ Full Coverage
- ☐ NFPA 13R
- ☐ NFPA 13

☐ Approved Fire Code Alternatives (FCA):
- ☐ FCA1
- ☐ FCA2
- ☐ FCA3
- ☐ FCA4

☒ Monitored Household Fire Alarm per NFPA 72 Separate permit required
- ☐ Monitored Sprinkler Water Flow Alarm

☐ Other:

WATER SERVICE REQUIREMENTS
☒ New or upsized water supply system required.
- ☒ Water service pre-con meeting and parts inspection are required prior to scheduling the water tap with the City. Schedule these inspections under the water service permit
- ☒ Applicant Installation.
  - ☒ Minimum Service Line Size (main to meter): 1"
  - ☒ Minimum Supply Line Size (meter to house): 1.25"
  - ☒ Minimum Required Meter Size: 1"

☒ Abandonment of existing service and meter required at main.
☒ City Inspector must verify water supply line (water meter to the house) sizing prior to final inspection. Upsizing may be required.

Additional water supply requirements:
- Contractor shall provide water supply that meets the required fire sprinkler system fire flow. Fire calculations or fire flow testing outcome may require a larger water service/meter or water supply line.
- Pressure reducing valve required if water pressure exceeds 80 psi.
- Reduced pressure backflow assembly (RPBA) required for all waterfront lots and for lots with potential connection to non-city water supply. See mercerisland.gov/backflow

For additional information about Water Service Inspection process: https://www.mercerisland.gov/cpd/page/water-service

STORMWATER MANAGEMENT
The storm drainage system shown on the approved plans shall be constructed and approved by the City Inspector prior to the construction of the roof, driveway, and other impervious surface that generate runoff from the project.

☐ Dispersion / Infiltration system
☐ On-site detention system (MR #5)
☐ Direct discharge to lake
☐ Rain Garden / Bioretention / Permeable Pavement
☐ Flow control system (MR #7)
☐ Run-off treatment (MR #8)
☒ Connect / Extend public drainage system
☒ Full size storm drainage as-builts
☐ Drainage review not required
☒ Other: Civil Engineer certification letter for Post construction Soil

SIDE SEWER REQUIREMENTS
☐ Side sewer requires a backflow preventer due to: a connection to the lake line, or elevation of the lowest plumbing fixture is lower than the elevation of the upstream manhole rim, or side sewer is shared with one or more properties
☒ Video tape of existing sewer required (see standard details)
☐ New connection ☒ Connect to existing ☐ Disconnect permit required ☒ Reconnect permit required
☐ Other:

APPROVED CODE ALTERNATIVES
Code alternatives must be approved by the Building Official prior to permit issuance. All code alternatives must be inspected. Refer to the adjacent Required Construction Inspections checklist.

☐ CA1:
☐ CA2:

PROJECT ALERTS AND NOTES TO INSPECTORS

WILDLAND/URBAN INTERFACE
-RESERVED FOR FUTURE USE-

REQUIRED CONSTRUCTION INSPECTIONS
It is the applicant's responsibility to contact CPD to schedule ALL inspections applicable to the project. Request inspections online at www.MyBuildingPermit.com or by calling the Inspection Hotline at (206) 275-7730. Each MBP inspection type is in [square brackets]. Refer to FIRE PROTECTION REQUIREMENTS for information on scheduling a fire inspection.

Inspections marked with "*" are not building permit inspections, and should be requested under the appropriate permit number. Refer to the packet provided at permit issuance or search by address at mybuildingpermit.com for other issued permit numbers.

INSPECTIONS: (Listed in order of typical sequencing)

Inspector	Date	Approved	N/A	Inspection Description	MBP.com Inspection Name	PARTIAL 1	PARTIAL 2	PARTIAL 3
		☐	☐	Pre-construction Meeting to Review Conditions of Permit Approval	[PRE-CON MTG GENERAL]	☐	☐	☐
		☐	☐	Tree protection	[TREE PROTECTION]	☐	☐	☐
		☐	☐	Erosion control	[EROSION CNTROL]	☐	☐	☐
		● ☐	☐	Sewer disconnect and cap	[SIDE SEWER DISCONNEC]	☐	☐	☐
		● ☐	☐	Right-of-way use or work / easement, material delivery, etc. If applicable, separate ROW permit required	[ROW OR UTILITY IMPRO]	☐	☐	☐
		● ☐	☐	Land clearing, grading and demolition	[FINAL DEMO]	☐	☐	☐
		☐	☐	Pilings / Shoring / Shotcrete. If applicable, provide survey letter (property line); Geotechnical Engineer / Special Inspector reports of inspections (pile and shoring installation, etc.)	[FOUNDATION WALLS/CON]	☐	☐	☐
		☐	☐	Footings, setbacks, UFER ground. If applicable, provide survey letter (building height and setbacks); Special Inspector reports of inspections (soil bearing capacity, compaction, earthwork, pile installation, etc.)	[FOOTINGS, SETBACKS, U]	☐	☐	☐
		☐	☐	Foundation walls / concrete columns	[FOUNDATION WALLS/CON]	☐	☐	☐
		● ☐	☐	Roof and footing drains	[CONVEYANCE FACILITIE]	☐	☐	☐
		☐	☐	Foundation dampproofing	[FOUND DAMP PROOFING]	☐	☐	☐
		● ☐	☐	Storm drainage, including (but not limited to) ◦ Connections to storm main in ROW ◦ Det systems / Conveyance / Flow control ◦ Infiltration systems / L.I.D. systems ◦ Catch basins ◦ Area drains ◦ Storm drain in ROW ◦ Pump systems ◦ Retaining wall drainage	[CONVEYANCE FACILITIE]	☐	☐	☐
		● ☐	☐	Water Service	[3. WATER SERVICE TAP]	☐	☐	☐
		☐	☐	Water Supply	[WATER SUPPLY LINE]	☐	☐	☐
		● ☐	☐	Side sewer installation, including (but not limited to) ◦ Connections to side sewer main ◦ Connections to existing side sewer ◦ Back-flow valves ◦ Grinder pump systems	[SIDE SEWER INSTALLAT]	☐	☐	☐
		● ☐	☐	Driveway / Access road	[ROW OR UTILITY IMPRO]	☐	☐	☐
		☐	☐	Underslab electrical / mechanical / plumbing	[UNDER-SLAB ELECT/MEC]	☐	☐	☐
		☐	☐	Underslab insulation / vapor barrier / reinforcing	[UNDER-SLAB INSULATIO]	☐	☐	☐
		☐	☐	Underfloor framing	[UNDER-FLOOR FRAMING]	☐	☐	☐
		☐	☐	Nailing-Roof sheathing (See SF2 for Required Agency Inspection)	[NAILING-ROOF SHEATHING]	☐	☐	☐
		☐	☐	Shear wall construction (See SF2 for Required Agency Inspection)	[NAILING-EXTERIOR WALL]	☐	☐	☐
		☐	☐	Rough hydronic installation	[ROUGH HYDRONIC PIPIN]	☐	☐	☐
		☐	☐	Rough electric installation	[ROUGH ELECTRIC]	☐	☐	☐
		● ☐	☐	Rough fire alarm (wiring inspection)	[ROUGH-IN LOW VOLTAGE]	☐	☐	☐
		☐	☐	Rough plumbing installation (DWV, water)	[ROUGH PLUMBING]	☐	☐	☐
		☐	☐	Rough mechanical	[ROUGH MECHANICAL/HVA]	☐	☐	☐
		☐	☐	Electrical service	[ELECTRICAL SERVICE]	☐	☐	☐
		☐	☐	Gas Piping & Test	[GAS PIPING/TEST]	☐	☐	☐
		● ☐	☐	Rough fire sprinkler / hydrostatic and flow (bucket) test	[ROUGH SPRINKLER RES/STATUS]	☐	☐	☐
		☐	☐	Framing and glazing. (See SF2 for Required Agency Inspection)	[FRAMING (& GLAZING)]	☐	☐	☐
		☐	☐	Masonry construction (fireplace / walls / veneer / etc.)	[MASONRY]	☐	☐	☐
		☐	☐	Insulation installation	[INSULATION]	☐	☐	☐
		☐	☐	Stucco (paper and lath)	[STUCCO]	☐	☐	☐
		☐	☐	Shower pan (or tub)	[SHOWER PAN (OR TUB)]	☐	☐	☐
		☐	☐	Weather exposed balcony and walking surface waterproofing	[ROOF DECK WATERPROOFING]	☐	☐	☐
		☐	☐	Code Alternative CA1	[CODE ALT 1]	☐	☐	☐
		☐	☐	Code Alternative CA2	[CODE ALT 2]	☐	☐	☐

FINAL INSPECTIONS

Inspector	Date		
		☐	**Final Tree Inspection:** Tree Restoration [FINAL_TREE]
		☐	**Final Fire Inspection:** Fire protection [FINAL FIRE_ALL SYSTEMS/ACCESS] ◦ Sprinkler ◦ Access Road ◦ Fire Code Alternatives (see below) ☐ FCA1 ☐ FCA2 ◦ Fuel Tank Installation ◦ Fire Extinguishing System ◦ Fire Alarm System ☐ FCA3: ☐ FCA4:
		☐	**Final Civil Inspection:** Site and utility, landscape, utilities, ROW, and Site [FINAL_CIVIL] Water supply protection/Backflow devices for: ◦ Waterfront property ◦ Fire / lawn sprinkler ◦ Well water on property ◦ Boiler
		☐	**Final Building Inspection:** [FINAL_BUILDING] provide closeout (summary) letters from Engineer, Special Inspectors, Geotechnical Engineer, and EIFS inspectors. **Final MEP Inspections:** ☐ Mech ☐ Electrical ☐ Plumbing
		☐	**Impact Fees Paid** (If applicable)

TCO APPROVALS

Inspector	Date	
		☐ [TCO_TREE]
		☐ [TCO_FIRE]
		☐ [TCO_CIVIL]
		☐ [TCO_BLDG]

90 DAY TEMPORARY CERTIFICATE OF OCCUPANCY (TCO)
Applicant option. Additional fees required. All TCO Approvals above must be complete.

Approved *Start Date* *End Date*

ADDITIONAL REQUIRED CITY INSPECTIONS
Use the contact information below to arrange these additional inspections.

Required Inspection(s):	Contact:	Contact email:

IMPACT FEES
If required for the project but deferred beyond permit issuance.

☐ Impact fees apply and are due ***prior*** to Final Inspection or on _____, whichever occurs first.
Date

PLAN REVIEW APPROVALS
Not all review disciplines may be required to review the documents.

Building	*Planning*	*Engineering*	*Tree*	*Fire*
DH	TN	RD	TN	MAJ
01/16/25	1/16/25	12/10/2024	1/16/25	8/29/24
Date	*Date*	*Date*	*Date*	*Date*

CERTIFICATE OF OCCUPANCY
Issued after all required inspections have been performed and approved.
Approved *Date*

APPROVED DRAWINGS MUST BE KEPT ON THE BUILDING SITE AT ALL TIMES

REVIEWED FOR CODE COMPLIANCE
DH *Approved* 01/16/25 *Date*

FILE NAME: *CPD CVR PG1 2023v1a.dwg Code Revision: 2021 WSRC*

CITY OF MERCER ISLAND
COMMUNITY PLANNING & DEVELOPMENT
THIRD PARTY INSPECTIONS

(206) 275-7605 WWW.MERCERISLAND.GOV/CPD
EPERMIT.TECH@MERCERISLAND.GOV
DOCUMENTS ARE SUBJECT TO PUBLIC DISCLOSURE AS REQUIRED BY RCW 42.56

INSPECTION REQUESTS
Request inspections online via QR code or voicemail
FIRE INSPECTION
(206) 275-7979
ALL OTHER INSPECTION
(206) 275-7730

REQUIRED SPECIAL INSPECTIONS

Indicate on the form below the required Special Inspections for this project. Special Inspections are regulated by IBC Section 1705. If the method of construction is included in project scope, the inspections are required.

REGISTERED DESIGN PROFESSIONAL

IBC Section 1704.2.3 requires the Registered Design Professional (RDP) in Responsible Charge to complete a *Statement of Special Inspections*. For City of Mercer Island permitting purposes, submitting this document is confirmation that the RDP has completed and reviewed the Special Inspections requirements and acknowledges this information complies with IBC Section 1705.

Name: Yuk Kwan Tsui | License Number: 54334 | License Type: Professional Eng | License Expiration: Dec 14, 2025

SPECIAL INSPECTION DESCRIPTION		REFERENCES	SPECIAL INSP REQUIRED	FREQUENCY	APPROVALS: Special Inspector sign-off	APPROVALS: City Inspector sign-off
ALTERNATIVE MATERIALS AND SYSTEMS (IBC 1705.1)						
Construction materials and systems that are alternatives to materials and systems prescribed by the IBC.	Notes:					
Unusual design applications of materials described in the code.	Notes:					
Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in the IBC or in standards referenced by the IBC.	Notes:					
STEEL CONSTRUCTION (IBC 1705.2)						
Structural Steel: Special Inspections for structural steel shall be in accordance with the inspection requirements of AISC 360 Chapter N.		AISC 360 Chapter N	☒	Per Standard		
Quality Control: Procedures specified by the fabricator and erector to ensure that work is performed in accordance with AISC specification and the construction documents		AISC 360 Section N5 (1)	☒	Per Standard		
Quality Assurance: Review and inspection performed by an agency hired by the owner to ensure work is performed in accordance with the construction documents		AISC 360 Section N5 (2)	☒	Per Standard		
Cold Formed Steel Deck: Special Inspections and qualifications or welding special inspectors for cold form set floor and roof deck shall be in accordance with Steel Deck Institute QA/QC.		Steel Deck Institute QA/QC	☐	Per Standard		
Open-Web Steel Joists and Joist Girders: *End connections: welding or bolting.*		SJI Specification per IBC 2207.1	☐	Periodic		
Bridging: horizontal or diagonal.		SJI Specification per IBC 2207.1	☐	Periodic		
Standard Bridging.		SJI Specification per IBC 2207.1	☐	Periodic		
Bridging that differs from SJI Specifications listed in Section 2207.1.		SJI Specification per IBC 2207.1	☐	Periodic		
Temporary and permanent restraint / bracing of cold-formed trusses over 60 feet.		IBC 1705.2.4	☐	Periodic		
CONCRETE CONSTRUCTION (IBC 1705.3) [a.]						
Inspect reinforcement, including prestressing tendons, and verify placement		ACI 318 Ch 20, 25.2, 25.3, 26.5.1-26.5.3	☒	Periodic		
Reinforcing bar welding: *Verify weldability of reinforcing bars other than ASTM A706.*		AWS D1.4 ACI 318 Ch 26.6.4	☒	Periodic		
Inspect single-pass fillet welds, maximum 5/16 inches.		AWS D1.4 ACI 318 Ch 26.6.4	☒	Periodic		
Inspect all other welds.		AWS D1.4 ACI 318 Ch 26.6.4	☒	Continuous		
Inspect anchors cast in concrete.		ACI 318 Ch 17.8.2	☒	Periodic		
Anchors post-installed in hardened concrete members: *Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.*		ACI 318 Ch 17.8.2.4	☒	Continuous		
All other post-installed mechanical and adhesive anchors.		ACI 318 Ch 17.8.2	☒	Periodic		
Verify use of required design mix.		ACI 318 Ch 19, 26.4.3, 26.4.4; IBC 1904.1, 1904.2, 1908.2, 1908.3	☒	Periodic		
Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.		ASTM C 172, ASTM C31 ACI 318 Ch 26.5, 26.12	☒	Continuous		
Inspect concrete and shotcrete placement for proper application techniques.		ACI 318 Ch 26.5	☒	Continuous		
Verify maintenance of specified curing temperature and techniques.		ACI 318 Ch 26.5-26.5.5	☒	Periodic		
Prestressed concrete: *Application of prestressing forces.*		ACI 318 Ch. 26.10	☐	Continuous		
Grouting of bonded prestressing tendons.		ACI 318 Ch. 26.10	☐	Continuous		
Inspect erection of precast concrete members.		ACI 318 Ch. 26.9	☐	Periodic		
Precast concrete diaphragm connections		ACI 318 Ch. 26.13.1.3	☐	Periodic		
Precast diaphragm installation tolerances		ACI 550.5	☐	Continuous		
Verify in-situ concrete strength prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.		ACI 318 Ch. 26.11.2	☐	Periodic		
Inspect formwork for shape, location and dimensions of the concrete member being formed		ACI 318 Ch. 26.11.2(b)	☐	Periodic		
MASONRY CONSTRUCTION (IBC 1705.4) [b.]						
Empirically designed masonry, glass unit masonry, or masonry veneer as part of a Risk Category IV structure requiring Level B Quality Assurance per ACI 530		ACI 530 Chapter 3 IBC 1705.4	☐	Per Standard		
Vertical masonry foundation elements requiring Quality Assurance per ACI 530		ACI 530 Chapter 3 IBC 1705.4	☐	Per Standard		
WOOD CONSTRUCTION (IBC 1705.5)						
High-Load diaphragms: *Panel thickness, framing member sizes, and nail or staple diameters and patterns (includes any diaphragms utilizing more than one row of fasteners at edges designed per IBC Section 2306.2/SDPWS 4.2.7.1.2).*		IBC 1705.5.1	☒	Periodic		
Metal-plate-connected wood trusses spanning 60 feet or greater: *Verify temporary and permanent individual truss member restraint / bracing are installed in accordance with approved truss submittal package.*		IBC 1705.5.2	☐	Periodic		
Mass timber construction per IBC Table 1705.5.3		IBC 1705.5.3	☐	Periodic		
Mass timber (upwardly inclined adhesive anchors)		IBC 1705.5.3	☐	Continuous		

a. Concrete special inspection not required where work meets the exceptions listed in IBC Section 1705.3

b. Masonry special inspection not required where work meets the exceptions listed in IBC Section 1705.4

SPECIAL INSPECTION DESCRIPTION	REFERENCES	SPECIAL INSP REQUIRED	FREQUENCY	APPROVALS: Special Inspector sign-off	APPROVALS: City Inspector sign-off
SOILS (IBC 1705.6)					
Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Geotechnical Report	☒	Periodic		
Verify excavations are extended to proper depth and have reached proper material.	Geotechnical Report	☒	Periodic		
Perform classification and testing of compacted fill materials.	Geotechnical Report	☒	Periodic		
Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	Geotechnical Report	☒	Continuous		
Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	Geotechnical Report	☒	Periodic		
DRIVEN DEEP FOUNDATIONS (IBC 1705.7)					
Verify element materials, sizes and lengths comply with the requirements noted in the drawings and geotechnical report.	Geotechnical Report, Construction Documents	☐	Continuous		
Determine capacities of test elements and conduct additional load tests, as required.	Geotechnical Report, Construction Documents	☐	Continuous		
Inspect driving operations and maintain complete and accurate records for each element.	Geotechnical Report, Construction Documents	☐	Continuous		
Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.	Geotechnical Report, Construction Documents	☐	Continuous		
For steel elements, perform additional Special Inspections in accordance with Section 1705.2.	Geotechnical Report, Construction Documents	☐			
For concrete elements and concrete-filled elements, perform additional Special Inspections in accordance with Section 1705.3.	Geotechnical Report, Construction Documents	☐			
For specialty elements, perform additional Special Inspections as determined by the Registered Design Professional in responsible charge.	Geotechnical Report, Construction Documents	☐			
CAST-IN-PLACE DEEP DRIVEN FOUNDATIONS (IBC 1705.8)					
Inspect drilling operations and maintain complete and accurate records for each element	Geotechnical Report, Construction Documents	☐	Continuous		
Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable), and adequate end-bearing strata capacity. Record concrete or grout volumes.	Geotechnical Report, Construction Documents	☐	Continuous		
For concrete elements, perform additional Special Inspections in accordance with Section 1705.3.	Geotechnical Report, Construction Documents	☐			
HELICAL PILE FOUNDATIONS (IBC 1705.9)					
Record installation equipment used, pile dimension, tip elevations, final depth, final installation torque and other pertinent installation information as determined by the Registered Design Professional in responsible charge.	Geotechnical Report, Construction Documents	☐	Continuous		
SPECIAL INSPECTION FOR WIND RESISTANCE (IBC 1705.11) [c.]					
Structural wood wind resistance elements: *Field gluing of wood elements of the windforce-resisting system.*	IBC 1705.11.1, Construction Documents	☒	Continuous		
Nailing, bolting, anchoring and other fastening of wood elements of the main windforce-resisting system, including wood shear walls, wood diaphragms, drag struts, braces and hold-downs. [d.]	IBC 1705.11.1, Construction Documents	☒	Periodic		
Cold-formed steel light-frame wind resistance elements: *Welding operations of cold-formed steel light-frame elements of the main windforce-resisting system.*	IBC 1705.11.2, Construction Documents	☐	Periodic		
Screw attachment, bolting, anchoring, and other fastening of elements of cold-formed steel light-frame elements of the main windforce-resisting system, including shear walls, braces, diaphragms, drag struts and hold-downs. [d.]	IBC 1705.11.2, Construction Documents	☐	Periodic		
Fastening of the following systems and components: *Roof covering, roof deck and roof framing connections.*	IBC 1705.11.3 (1), Construction Documents	☒	Periodic		
Exterior wall covering and wall connections to roof and floor diaphragms and framing.	IBC 1705.11.3 (2), Construction Documents	☒	Periodic		

c. Special inspection required in wind Exposure Category C or D per IBC Section 1705.11 (2).
d. Special inspection not required where wood or steel structural panels are on only one side of the shear wall and the fastener spacing for the sheathing is greater than 4 inches on center.

SPECIAL INSPECTION DESCRIPTION	REFERENCES	SPECIAL INSP REQUIRED	FREQUENCY	APPROVALS: Special Inspector sign-off	APPROVALS: City Inspector sign-off
SPECIAL INSPECTION FOR SEISMIC RESISTANCE (IBC 1705.12) [e.]					
Structural steel seismic force-resisting systems: *Special Inspections of MLFRS shall be in accordance with AISC 341 Chapter J. Submit all documents referenced in Section J3 "Quality Assurance Agency Documents" to the city for review.*	IBC 1705.12.1.1, AISC 341 *Seismic Provisions for Structural Steel Buildings*	☐	Per Standard		
Special inspection of structural steel elements shall be in accordance with AISC 341 Chapter J. Submit all documents referenced in Section J3 "Quality Assurance Agency Documents" to the city for review.	IBC 1705.12.1.2, AISC 341 *Seismic Provisions for Structural Steel Buildings*	☐	Per Standard		
Structural wood seismic force-resisting systems: *Special inspection during field gluing operations for elements of the seismic force-resisting system.*	IBC 1705.12.2 (1)	☒	Continuous		
Special inspection required for nailing, bolting, anchoring, and other fastening of elements of the seismic force-resisting system including wood shear walls, wood diaphragms, drag struts, braces, shear panels and hold-downs. [f.]	IBC 1705.12.2 (2)	☒	Periodic		
Cold-formed steel light-frame seismic force-resisting systems: *Special inspection during welding operations for elements of the seismic force-resisting system.*	IBC 1705.12.3 (1)	☐	Periodic		
Special inspection required for screw attachment, bolting, anchoring, and other fastening of elements of the seismic force-resisting system including shear walls, drag struts, braces, diaphragms and hold-downs.	IBC 1705.12.3 (2)	☐	Periodic		

e. Required where any of the following conditions exist (refer ASCE 7 Section 12.3): *Torsional or extreme torsional irregularity*, *Nonparallel systems irregularity*, *Stiffness (soft story) or extreme stiffness (extreme soft story) irregularity*, *Discontinuity in lateral strength (weak story irregularity)*
f. Special inspection not required where wood or steel structural panels are on only one side of the shear wall and the fastener spacing for the sheathing is greater than 4 inches on center.

SPRAYED FIRE-RESISTANT MATERIALS (IBC 1705.14)					
Special inspection and testing shall be per IBC Sections 1705.14.1 through 1705.14.6 as applicable.	IBC 1705.14	☐			
MASTIC AND INTUMESCENT FIRE RESISTANT COATINGS (IBC 1705.15)					
Special inspection is required for fire-resistant coatings applied to structural elements and decks.	AWCI 12-B, Construction Documents	☐			
EXTERIOR INSULATION AND FINISH SYSTEMS (IBC 1705.16)					
Special inspection and testing shall be provided for all EIFS applications. [g. h.]		☐			
Special inspection is required for water-resistive barrier complying with ASTM E 2570 when installed over a sheathing substrate.	ASTM E 570	☐			

g. Special inspection not required for EIFS applications where installed over water-resistive barrier with a means of draining moisture to the exterior.
h. Special inspection is not required for EIFS applications installed over masonry or concrete walls.

TO BE COMPLETED BY RDP
TO BE COMPLETED BY CITY

MERCER ISLAND REQUIRED AGENCY INSPECTIONS:

Reports documenting the quality of these types of construction are required by the Building Official as authorized by IRC Section R104.4x. The reports must be prepared by a WABO certified inspector for the specific type of construction, as indicated in the description, or as otherwise authorized by the Building Official.

AGENCY INSPECTION DESCRIPTION	REFERENCES	AGENCY INSPECTION REQUIRED	FREQUENCY	APPROVALS: Agency Inspector sign-off	APPROVALS: City Inspector sign-off
EXTERIOR PLASTER (IRC 703.7) [i.]					
Installation: *Lath and lath attachment.*	ASTM C 926, ASTM C 1063 IRC R703.7.1				
Portland Cement plaster mix, number of coats, thickness of coats.	IRC Tables R702.1(1), 702.1(3) IRC R703.7.2	☐	Periodic		
Weep screed material, attachment and location.	ASTM C 926, IRC R703.7.2.1				
Water resistive barrier installation, flashing installation, and drainage.	IRC R703.2, IRC R703.4, IRC R703.7.3				
Application of each coat and minimum curing.	ASTM C 926, IRC R703.7.4, IRC R703.7.5				
EXTERIOR INSULATION AND FINISH SYSTEM (IRC 703.7) [j.]					
Installation: *Installed in accordance with EIFS manufacturer's instructions.*	ASTM E 2568 IRC R703.9				
Drainage provided over all wall assemblies except substrates of masonry or concrete. Drainage shall have a 90 percent efficiency. EIFS and EIFS drainage shall terminate not less than 6 inches above finish grade.	ASTM 2273, ASTM E 2570, IRC R703.2	☐	Periodic		
Flashing shall be shall be provided per IRC R703.8. Decorative trim shall not be face-nailed through the EIFS.	IRC R703.8, IRC R703.4, IRC R703.7.3				
LATERAL RESISTING SYSTEM					
Installation: *Shearwall and diaphragm sheathing, panel edge and field nailing.*	Construction Documents				
Lateral load path continuity, i.e. roof and floor diaphragm to shearwall top plate below, shearwall to foundation.	Construction Documents	☐	Periodic		
Collector / drag strut nailing and connections. Holdown installation and location.	Construction Documents				
RESIDENTIAL WASHINGTON STATE ENERGY CODE					
Air Leakage Control: *Tested and verified as having an air leakage rate not exceeding 5 air changes per hour.*	WSEC R402.4.1.2	☐			
Tested and verified as having an air leakage rate not exceeding 3 air changes per hour as required by Energy Credit 2a.	WSEC R402.4.1.2, WSEC Table 406.3	☐			
Tested and verified as having an air leakage rate not exceeding 2 air changes per hour as required by Energy Credit 2b.	WSEC R402.4.1.2, WSEC Table 406.3	☐			
Tested and verified as having an air leakage rate not exceeding 1.5 air changes per hour as required by Energy Credit 2c.	WSEC R402.4.1.2, WSEC Table 406.3	☐			
Duct testing shall be provided in accordance with WSU RS-33 using the maximum duct leakage rates specified in WSEC R403.3.4. Written results shall be signed by the tester and provided to the code official.	WSEC R403.3.3, WSEC R403.3.4	☐			

i. Includes stucco installation.
j. Not required for EIFS applications installed over a water-resistive barrier draining moisture to the exterior or where installed over masonry of concrete.

MERCER ISLAND ADDITIONAL CIVIL ENGINEERING REQUIREMENTS:

The following civil engineering inspections and documentation shall be performed by the indicated Design Professional. Associated inspection reports and documentation shall be provided to the code official prior to final inspection.

CIVIL ENGINEERING INSPECTIONS				APPROVALS: Agency Inspector sign-off	APPROVALS: City Inspector sign-off
Project Civil Engineer or Geotechnical Engineer shall inspect and certify that the lawn and landscape areas meet the specified post-construction soil quality and depth requirements.	Construction Documents BMP T5.13 (2017 DOE manual)	☐	Periodic		
Project Civil Engineer shall inspect and certify the construction of the infiltration system, dispersion system, rain garden, bioretention, permeable pavement system and all LID systems for conformance to approved plans.	Construction Documents, Infiltration Report, Geotechnical Report	☐	Periodic		
Project Geotechnical Engineer shall observe and certify the infiltration system, dispersion system, rain garden, bioretention, permeable pavement system, and all LID systems to verify suitablity of existing soil conditions.	Construction Documents, Infiltration Report, Geotechnical Report	☐	Periodic		
CIVIL ENGINEERING DOCUMENTATION					
The Declaration of Covenant for the inspection and maintenance of private stormwater facilities must be signed, recorded and received by the City prior to final inspection.		☐			
A Right-of-Way Encroachment Agreement must be recorded for all private improvements in the right-of-way prior to final inspection.		☐			
Other as Specified:		☐			

SURVEY REQUIREMENTS (The following survey information must be submitted to planner when checked):

Surveyor shall verify points chosen for height calculations and point verification shall be submitted at the time of City foundation Inspection. A property survey may be required to verify setbacks and in some cases buildings must be surveyed onto the lot. The City reserves the right to request a lot coverage and hardscape area survey at any time prior to issuance of Certificate of Occupancy.

Land Use Planning Contact: _____ email: _____

☐ Building height survey _____ ☐ Hardscape survey _____
☐ Building setback survey _____ ☐ Gross floor area survey _____
☐ Lot coverage survey _____

☐ **MAXIMUM 40 PERCENT ALTERATION INSPECTION:** *MICC 19.01.050(D)(1)(b)(i)*
A Building Inspection prior to demolition is required for all legally nonconforming single family dwelling to ensure no more than 40 percent of the dwelling's exterior walls are structurally altered. Contact the Building Inspector at (206) 275-7730.

TO BE COMPLETED BY RDP
FIELD USE ONLY

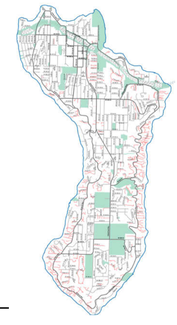
SPECIAL INSPECTOR AND AGENCY INSPECTOR CONTACTS:

Each inspector designated in the field to perform any of the above Special Inspections or City initiated Agency Inspections shall provide the following information:

INSPECTOR NAME	INITIALS	COMPANY NAME	PHONE NUMBER	EMAIL ADDRESS

SF2
BUILDING PERMIT NUMBER 2406-096

PROJECT NAME: MERCER FIRSTHILL 2419
PROJECT ADDRESS: 2419 72ND AVE SE, MERCER ISLAND, WA 98040



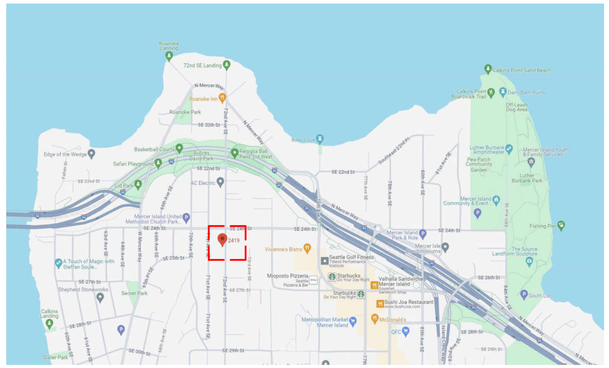
APPROVED DRAWINGS MUST BE KEPT ON THE BUILDING SITE AT ALL TIMES

REVIEWED FOR CODE COMPLIANCE
DH *Approved* 01/16/25 *Date*

PROJECT INFORMATION

LEGAL DESCRIPTION:	EAST SEATTLE ADD Plat Block: 24 Plat Lot: 32-33-34
PARCEL NUMBER:	217450-4040
ZONING:	R-8.4
JURISDICTION:	MERCER ISLAND
PROJECT ADDRESS:	2419 72ND AVE SE, MERCER ISLAND, WA 98040
OWNER INFORMATION:	NAME: 3H Development LLC MANAGER: Sisi Duan ADDRESS: 10023 NE 23rd St, Bellevue, WA 98004 EMAIL: sisi.d@neulandllc.com PHONE: 206-839-7206
ARCHITECT:	5FT2 STUDIO ARCHITECTS INFO@5FT2STUDIO.COM
GENERAL CONTRACTOR:	TBD
STRUCTURAL ENGINEER:	NAME: F.T. Engineering and Const. Mgmt LLC PHONE: 509 822 0489 ADDRESS: 19223 98th Pl S, Renton, WA 98055.
WORK DESCRIPTION:	CONSTRUCT ONE SINGLE-FAMILY HOME WITH 2 STORY ABOVE GRADE AND 1 STORY BELOW GRADE

VICINITY MAP



N

ADOPTED CODES

1. BUILDING: 2021 INTERNATIONAL RESIDENTIAL CODE W/ WASHINGTON STATE AMENDMENT

2. ENERGY: 2021 WASHINGTON STATE ENERGY CODE

4. PLUMBING: 2021 UNIFORM PLUMBING CODE (UPC) W/ WASHINGTON STATE AMENDMENT, ALL PLUMBING WORK SHALL BE DONE BY LICENSED CONSTRUCTOR UNDER SEPARATE PERMIT

5. ELECTRICAL:NATIONAL ELECTRICAL CODE (NEC) / WASHINGTON CITIES ELECTRICAL CODE (WCEC), ALL ELECTRICAL WORK SHALL BE DONE BY LICENSED CONSTRUCTOR UNDER SEPARATE PERMIT

6. MECHANICAL: 2021 INTERNATIONAL MECHANICAL CODE

TREE & VEGETATION PROTECTION

TREE PROTECTION FENCING AND SIGN:

1. CHAIN LINK FENCE REQUIRED (NO ORANGE CONSTRUCTION FENCE OR PLYWOOD)

2. MINIMUM 6" HIGH

3. FENCE SHALL BE SUPPORTED BY RIGID POSTS DRIVEN INTO THE GROUND AT 8' MAXIMUM INTERVALS

4. MUST BE INSTALLED PRIOR TO DEMOLITION OR GROUND DISTURBANCE

5. KEPT IN PLACE FOR THE DURATION OF CONSTRUCTION

6. NO DUMPING OF ANY MATERIALS IN THE PROTECTION AREA

7. NO SOIL DISTURBANCE OR ACTIVITY ALLOWED WITHIN FENCED AREA: MATERIAL STORAGE /STOCKPILING, PARKING, EXCAVATION, DUMPING,OR WASHING

8. MODIFICATIONS OF THESE REQUIREMENTS BY APPROVAL OF PLANNER ONLY

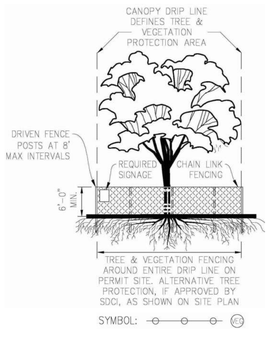
9. IF ROOTS GREATER THAN 2 INCH FOUND OUTSIDE OF FENCING, PROTECT BY HAND EXCAVATION AND, IF NECESSARY, CUT CLEANLY AND KEEP MOIST

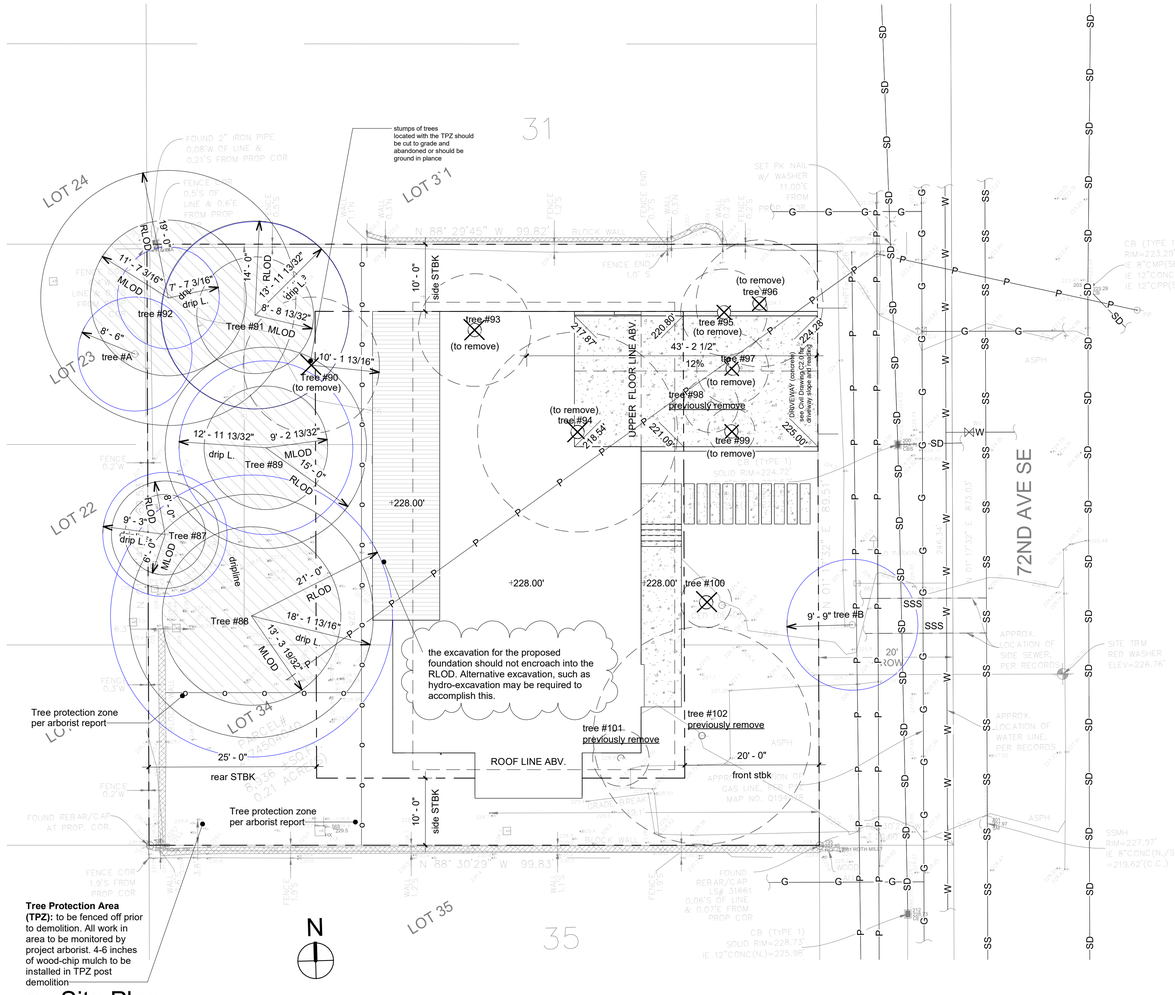
10. USE 3 INCHES OR DEEPER WOOD CHIP MULCH OUTSIDE FENCED AREAS TO PROTECT FEEDER ROOTS

VEGETATION PROTECTION (DOES NOT APPLY TO TREES):

1. ORANGE MESH OR SIMILAR OPEN MATERIAL

2. PROTECT VEGETATION OUTSIDE CONSTRUCTION ZONE WITH FENCING AS SHOWN





N

3 Site Plan
3/32" = 1'-0"

SITE PLAN LEGEND

- TREE REMOVAL (SEE TREE RETENTION PLAN)
- MLOD (MINIMUM LIMITS OF DISTURBANCE)
- MLOD (MINIMUM LIMITS OF DISTURBANCE)
- DECKING
- CONCRETE
- TREE PROTECTION FENCE

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

ABBREVIATIONS

℄	CENTERLINE
#	POUND OR NUMBER
(E)	EXISTING
(N)	NEW
(2)	DOUBLE
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
A/C	AIR CONDITIONING
ABE	AVERAGE BUILDING ELEVATION
APT	APARTMENT
AG	AVERAGE GRADE
AWN	AWNING
BD	BOARD
BLKG	BLOCKING
BM	BEAM
BOT	BOTTOM OF
CAB	CABINET
CB	CATCH BASIN
CEM	CEMENT
CJ	CONTROL JOINT
CLG	CEILING
CLKG	CAULKING
CLO	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CNTR	COUNTER
COL	COLUMN
CONC	CONCRETE
CI	CONTINUOUS INSULATION
CPT	CARPET/CARPETED
DEMO	DEMOLITION
DF	DOUGLAS FIR
DN	DOWN
DR	DOOR
DS	DOWN SPOUT
DTL	DETAIL
DW	DISHWASHER
DWG	DRAWING
EA	EACH
EG	EGRESS
EL	ELEVATION
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATOR
EQ	EQUAL
EST	ESTIMATE
EXIST	EXISTING
EXT	EXTERIOR
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FF	FINISH FLOOR
FLASH	FLASHING
FOS	FACE OF STUD
FOF	FACE OF FINISH
FR	FRAME
FRPF	FIREPROOF
FP	FIREPLACE
FT	FOOT OR FEET
FURR	FURRING
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GL	GLASS
GLB	GLUE-LAMINATED BEAM
GR	GRADE
GWB	GYPSUM WALL BOARD
HB	HOSE BIB
HC	HOLLOW CORE
HDR	HEADER
HORIZ	HORIZONTAL
HT	HEIGHT
HVAC	HEATING/VENTILATION/ AIR CONDITIONING
HW	HOT WATER
IN	INCH
INCL	INCLUDING/INCLUDED
INSUL	INSULATION
INT	INTERIOR
LAM	LAMINATE/LAMINATED
LAV	LAVATORY
LT	LENGTH
LGT	LIGHT
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MEMB	MEMBRANE
MTL	METAL
MFR	MANUFACTURER
MIN	MINIMUM
MTRL	MATERIAL
MUL	MULLION
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OFF	OFFICE
OVH	OVERHEAD
OPP	OPPOSITE
PERF	PERFORATED
PLAM	PLASTIC LAMINATE
PLAS	PLASTER
PLYWD	PLYWOOD
PNL	PANEL
PR	PAIR
PRCST	PRE-CAST
PT	POINT
PTD	PAINTED
PTN	PARTITION
PL	PROPERTY LINE
PROJ	PROJECT
PSI	POUNDS/SQUARE INCH
PT	PRESSURE TREATED
STBK	SETBACK
R	RISER
RA	RETURN AIR
RAD	RADIUS
RD	ROOF DRAIN
REFR	REFRIGERATOR
RCP	REFLECTED CEILING PLAN
REQ	REQUIRED
RESIL	RESILIENT CHANNEL
REV	REVISION/REVISED
RGSTR	REGISTER
RM	ROOM
RO	ROUGH OPENING
SD	SMOKE DETECTOR
SEC	SECTION
SF	SQUARE FEET
SG	SAFETY GLASS
SHT	SHEET
SHTG	SHEATHING
SHWR	SHOWER
SPEC	SPECIFICATION
SS	STAINLESS STEEL
STL	STEEL
STOR	STORAGE
STRUC	STRUCTURAL
SUSP	SUSPENDED
T	TREAD
TBD	TO BE DETERMINED
T+G	TONGUE AND GROOVE
TG	TEMPERED GLASS
THK	THICK
TO	TOP OF
TYP	TYPICAL
VB	VAPOR BARRIER
VEN	VENEER
VERT	VERTICAL
WC	WATER CLOSET
WD	WOOD
WF	WIDE FLANGE
WG	WIRED GLASS
WH	WATER HEATER
WL	WATER LINE
W/O	WITHOUT
WIN	WINDOW
WP	WATERPROOF
WR	WATER RESISTANT
WT	WEIGHT

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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NO.	DESCRIPTION	DATE
2	Revision 2	12/14/24

DATE: 06.05.24

Cover Sheet and Site Plan

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GENERAL NOTES

A. The drawings are intended to only partially describe the scope of work for the project, any work not shown here, but required by code, or the specifications, or to make the work complete, shall be provided as part of the work.

B. Refer to the list of abbreviations for common abbreviations used in the drawings. If an abbreviation is not on the list, or not commonly used, refer to the architect for clarification.

C. It is the intent of the documents that all work complies with all applicable local, state, and national codes and ordinances in effect at the date of permit submittal. Nothing in these drawings shall be construed to grant approval for any code violation. Any errors, omissions, or non-compliance with governing codes shall be brought to the attention of the architect immediately.

D. Before starting each portion of the work, the contractor shall carefully study and compare the various drawings and other contract documents related to that portion of the work, as well as owner-provided information, shall take field measurements of any existing conditions related to that portion of the work and shall observe any conditions at the site affecting it. Any errors, inconsistencies or omissions shall be reported promptly to the architect.

E. Do not scale the drawings. The contractor shall use dimensions shown on the drawings and verify actual field measurements. If discrepancies are found, the architect shall be notified at once.

F. Dimensions are shown to the face of concrete, face of stud at exterior walls, face of finished wall at interior walls, face of finished wall at existing walls, and edge of openings, unless detailed or noted otherwise on drawings. Refer to the architect if clarification is needed.

G. Repetitive features not indicated in the drawings everywhere they occur shall be provided as if drawn in full.

H. The contract documents are complementary, and what is required by one shall be as binding as if required by all. In case of discrepancy, refer to the architect for clarification.

I. The contractor shall verify the dimensions required for all equipment, appliances, fixtures, cabinets, ductwork, and openings before framing begins .the contractor shall coordinate with the subcontractors of all trades to verify the sizes and locations of openings through the floors, walls, ceilings and roofs for ducts, pipes, conduits, and equipment.The contractor shall coordinate the location and installation of wood backing, blocking, furring and stripping as required for the installation and attachment of work of all trades.

J. The systems, including, but not limited to, mechanical, plumbing, and electrical work are bigger designed. The contractor shall be responsible for all work done on site (field). Work shown on the drawings is intended to illustrate the general design intent, scope, and location of work. All work not specifically drawn, but required for a complete, legal, and functioning system, shall be provided as part of the work.

K. The contractor shall secure and pay for all permits and governmental fees, licenses and inspections necessary for proper execution and completion of the work, with the exception of the master use permit and the building permit.

L. Prior to the commencement of any construction or site development activity, the contractor and/or architect shall schedule a pre-construction meeting with the project team members for the purpose of answering initial questions, clarifying areas of concern, and formalizing a construction administration process. The meeting(s) shall include the architect, general contractor, owner, landscape architect, structural engineer, civil engineer, geotechnical engineer, and water intrusion consultant

M. All information contained in these documents represents a "basic limited architectural service" that requires the contractor to be knowledgeable and experienced with all aspects of construction including all building codes and regulations imposed by the city or county and any other agency having jurisdiction over the project.

N. It is the responsibility of the contractor to provide all construction necessary for the complete installation of all operating systems, materials and finishes in accordance with mfr.'s recommendation or written specifications. It is the responsibility of the contractor to ensure construction means and method and final construction technique. Contractor shall thoroughly review drawings, specifications and owner's requirements.

O. Safety, care of adjacent properties during construction, compliance with local, state, federal regulations regarding safety on site shall be the contractors responsibility

P. No deviation from these documents shall be made without written approval from the owner and architect. Any changes can affect the structural integrity and code related issues of the structure.

Q. All information contained in these documents is for the purpose of construction permit acquisition and construction only. The information provided is not intended for any other purpose and no other use is intended or implied, e.g. plan information is not intended to be used as a base for sale or transfer of real estate

R.The architect may assist in coordination with consultants (such as soils, structural, civil engineers etc) but under the terms of basic limited service, receives no compensation for, and assumes no responsibility or liability for the area of their (consultants) work and expertise.

S.This set of drawings shall not be copied in whole or in part without prior written consent from the owner. this document is considered as one unit and shall not be considered complete or whole if documents are separated in any manner. documents shall not be separated for the purpose of submitting proposals or for separate phases of construction.

T.These documents are prepared for use by the contractor and shall not, either in whole or in part constitute any direction or instruction to any contractor with regard to construction methods, means or techniques.

U.The contractor shall be responsible for demolition work including, but not limited to, sequence & temporary shoring of all existing structures & verification of existing utilities & services.

V. Construction Barricades: Provide construction barricade as required to keep public and employees safe, following all applicable federal, state and city codes and regulations.

Acceptance of these plans for construction constitutes an understanding of above mentioned terms and basic limited architectural service as described in agreement between owner/architect.

SITE NOTES

1. The contractor shall verify dimensions of existing site conditions, distances, and topographic contours. Site conditions shown are from owner-provided information, surveys by others, and public records. The architect is not responsible for the accuracy of the survey or existing site information.

2. The contractor shall verify dimensions of existing site conditions, distances, and topographic contours. Site conditions shown are from owner-provided information, surveys by others, and public records. The architect is not responsible for the accuracy of the survey or existing site information.

3. The Contractor shall order necessary site boundary and setback survey prior to commencement of all work.

4.The contractor shall execute and complete all work on adjacent properties and public rights-of-way that is required by construction easement agreements with neighboring property owners, private contract documents with the city department of transportation, street use permits, or any other agreement or contract. all improvements and repairs to sidewalks, alleys, streets and neighboring properties shall be coordinated to minimize the impact on the public and to maintain access to neighboring properties .the contractor shall make arrangements and secure necessary permits when construction requires street or sidewalk closures.

5. If any hazardous material, including but not limited to asbestos or polychlorinated biphenyl (pcb), is encountered on the site by the contractor, the contractor shall immediately notify the owner.

6. Prior to beginning any demolition work, the owner or contractor shall submit a "notice of intent" to the Puget Sound clean air agency (pscaa) and fulfill their requirements.

7. New water mains, fire hydrants, and temporary fire department access shall be installed, inspected, and approved by the fire department prior to the commencement of combustible construction.

STRUCTURAL/FRAMING (SITE-SPECIFIC STRUCTURAL ENGINEERING SHALL GOVERN)

A. All structural matter refer to structural drawings provided by project structural drawings

B. All materials and workmanship shall conform to the requirements of the drawings, notes, specifications, and all applicable codes and ordinances.

C. All wood frame construction shall conform to the minimum standards of IRC/IBC,
unless specified in the Structural Drawings, Structural Notes and Specifications.

D. Columns and posts located on concrete or masonry floors or decks exposed to the weather or to water splash or in basements and which support permanent structures shall be supported by concrete piers or metal pedestals projecting above floors unless approved wood of natural resistance to decay or treated wood is used. The pedestals shall project at least 6 inches above exposed earth and at least 1 inch above such floors.

E. Where installation includes manufactured products, comply with the manufacturer's applicable instructions and recommendations for installation. Verify rough in dimensions for equipment and provide buck-outs, backing and jacks as required.

F. All wood exposed to the weather, such as wood used for deck framing including, decking railings, joists, beams and posts shall be pressure treated or of wood with natural resistance to decay per IRC/IBC
-Girder ends within 1/2 of exterior masonry walls below grade.
-Wood joists in crawl space closer than 18" to ground or girders closer than 12" to ground.
- Wood framing resting on the foundation within 8" of exposed earth.
-Wood framing or furring attached directly to below grade concrete.
-Sleeper or Sills on concrete slab on grade concrete.
-Wood siding within 6" of exterior ground.

G. Verify all rough-in dimensions for equipment, provide all buck-out, blocking, backing and jacks required for installation.

BUILDING ENVELOPE

A. Asphalt-saturated felt free from holes or breaks, weighing not less than 14 pounds per 100 square feet and complying with ASTM D 226 or other approved weather resistant material shall be applied over sheathing of all exterior walls. approved alternative weatherproof membranes shall be used for open joint rain screen siding, weather resistant materials shall be applied horizontally per manufacturers recommendations, with the upper layer lapped over the lower layer not less than 2 inches and not less than 6 inches where joints occur.

B. Approved corrosion-resistive flashing shall be provided in the exterior wall envelope in such a manner as to prevent entry of water into the wall cavity or penetration of water to the buildings structural framing components the flashing shall extend to the surface of the exterior wall surface and shall be installed to prevent water from reentering the exterior wall envelope. flashing shall be installed at, but not limited to the following locations:
- the top of all exterior window & door openings
- intersections of frame walls and masonry or stucco
- under masonry, wood or metal copings and sills
- continuously above all projecting wood trim
- where exterior porches, decks or stairs attach to a wall
- at wall and roof or soffit intersections
- at built-in gutters

FIREBLOCKING AND DRAFTSTOPPING

A. Floor Assemblies Fireblocking and Draftstopping shall be in stalled in accordance with IRC/IBC.

B. Wall Assemblies: Fireblocking shall be installed per IRC/IBC

C.Chimneys and fireplaces: All spaces between chimneys and floors and ceilings through which chimneys pass shall be reblocked with noncomustible material securely fastened in place. The fireblocking of spaced between chimneys and wood joists beams, or headers shall be self supporting or be placed on strips of metal or metal lath laid accross the spaces between combustible material and the chimney.

DRYWALL FINISH

A. Provide 1/2" gypsum wall board for non-rated assemblies and 5/8" type x gypsum wall board for 1-hr rated assemblies with all exposed joints and fastener heads smooth and flush with the surface of the board, joints taped and prepared for a pplication of finish, use water-resistant board at all wet areas to 4'-0" aff.

B. When gypsum board is used as a base for tile or wall panels far tub, shower or water closet compartment walls, water resistant gypsum backing board shall be used.

C. All gypsum board partitions shall be taped and sanded smooth with no visible joints or lines. all screws or other attachment devices shall be patched and not visible. patch and repair surfaces to match adjacent or adjoining surfaces where required. all surfaces shall be aligned and sanded smooth.

REFLECTED CEILING PLAN NOTES

A. Coordinate the work of all trades involved in the ceiling work to insure clearances for fixtures, ducts, piping, ceiling suspension system, etc., necessary to maintain the finished ceiling heights. see reflected ceiling plans for finished ceiling heights. verify in field.

B. Perimeter ceiling angle, where occurs, shall be installed tight to vertical surfaces, free from curves, breaks, or other irregularities, and painted to match ceiling finish.

C. Furnish and install all fixtures, associated trim, fixture lamps, and seismic bracing as required.

D. Light fixtures, exit signs, sprinklers, and other ceiling elements shall be located in center of individual ceiling tile, unless otherwise noted. all switches and dimmers shall be located 48" above finished floor to center of switch, unless otherwise noted. Multiple switches at one location shall be ganged together and finished with one cover plate, unless otherwise noted.

E. Provide ceiling access as required for equipment and system maintenance, and match adjacent ceiling finish, unless otherwise noted.
all soffits and ceiling heights are dimensioned from top of finished floor to bottom of finished gypsum board or ceiling tile and shall allow for thickness of all floor finishes.

F. The reflected ceiling plan indicates the location of ceiling heights, light types, light fixtures, switch locations, and associated items. refer to engineering drawing (lighting plan) for circuiting, wiring layout, and additional information.

G. In the event of discrepancies between the architect's reflected ceiling plan and the engineer's lighting plan, immediately notify the architect in writing before ordering materials or proceeding with work.

H. All specific information concerning installation of various above-ceiling elements are to be found in the hvac, plumbing, fire protection, electrical, and lighting drawings.

I. Notify architect of any conflicts of light fixture locations with main runners, ducts, structures, hvac, and/or (e) conduit, prior to framing for lights. any discrepancies between architect's ceiling grid location and actual field conditions are to be clarified with the architect prior to framing.

J. Submit grille, sprinkler, thermostat, and other fixture and element layouts to the architect for review at least 2 weeks prior to installation.

K. Verify field conditions and locations of all plumbing, mechanical ducts, structural elements, and any and all other applicable items; install applicable new plumbing, mechanical fans, ducts, conduits, and other related and appurtenant items so as to not conflict with luminaires and any and all field conditions.

L. Furnish and install underwriters laboratories inc. (ul) labelled devices throughout.

M. Install light fixtures with protective film or similar cover over louver, lens, baffle, and the like, to avoid fixture soiling or damage; fixtures shall be maintained clean and as new; lamps shall be new at project completion.

N. Refer to engineering drawings for all life safety devices required by code and all emergency light fixtures. architectural drawings shall govern location of these devices.

ELECTRICAL

A. Electrical work shall be performed in a bidder design" manner. The Contractor shall submit such systems separately permit.
B. It is the contractor's responsibility to design systems that meet all requirements and codes. Contractor shall submit drawings, pay for, and obtain permit and perform work in a manner that meets or exceeds the recognized workmanship standards for the industry.
C. All drawings are to be submitted for review and approval to the owner before performing work. Specific attention is to be paid regarding owner requested locations of electrical, phone and computer cabling port locations
D. Proper protection shall be provided around recessed light fixtures per manufactures recommendations so that overtheating will not occur. Recessed light fixtures to be C. rated.

DOOR NOTES

A. Refer to door schedule for all door/hardware specifications.

B. Field measure floor to ceiling doors for proper fit.

C. Exterior level landing may slope up to 1/4" per foot max. in any direction for surface drainage.

D. The floor or landing shall not be more than 1/2" lower than the threshold of the doorway. bevel (1:2 max. slope) where the threshold exceeds 1/4" in height.

E. Door openings in partitions not dimensioned are to be located within 4" of adjoining partition, unless otherwise noted.

F. All glass in doors shall be tempered safety glass, unless otherwise noted.

G. Hollow metal doors shall be finished with semi-gloss paint. refer to finish schedule for additional information.

H. Doors opening into required exit corridors do not restrict the required width when opened in any position.

I. All doors required as exits shall swing in the direction of travel.

J. Provide doors made with adhesives and composite wood products where possible that do not contain urea formaldehyde.

MILLWORK NOTES

A. All blocking required shall be ascribed to wall or ceiling, general contractor to check job progress and coordinate with other trades involved. general contractor is responsible for all blocking required; under no circumstances will "extra" work be authorized for extra blocking.

B. The general contractor shall submit shop drawings and samples to the architect for review.

C. Field conditions prior to the start of fabrication, the general contractor shall check and verify all dimensions and conditions at job site and shall be responsible for the same.

D. Joinery, where members are mitered or butted, they shall be joined and secured in a manner to insure against the joint opening.

E. Fabrication, all of the work shall be fabricated, assembled, finished, and erected in the best method known to the cabinet trade. surfaces shall be true, straight, and free from all machine and tools markings, bruises, indentations, chips, or abrasions.

F. Field verification, it shall be the general contractor 's responsibility to have examined the job site in conjunction with the project documents so as to be satisfied as to the conditions under which the work will be performed, including such matters as unloading facilities, locations and sizes of elevators, equipment, or facilities needed preliminary to and during the work, and other conditions which may affect the work.

G. Protection, the general contractor shall maintain reasonable protection to safeguard his work from damage and to protect building owner's property from injury or loss arising in connection with all project work.

H. The general contractor shall guarantee that all materials and workmanship shall be of the quality specified and shown and that any defect due to improper workmanship or materials discovered and made known within one year from the date of substantial completion of the installation shall be repaired or replaced with reasonable promptness without additional cost. architect will give notice of such observed defects with reasonable promptness.

I. Installation, general contractor will shim and level countertops above files after files are installed by others. files in operations area to be shimmed and secured to millwork after they are set in place. general contractor to level floor under files in all areas where files are ganged or installed below fixed cabinetry. (plastic laminated shims as required at file cabinet area).

J. All millwork shall receive final finish at the shop or factory prior to delivery. general contractor shall protect all finished and installed millwork from damage by other trades. damaged or defective millwork shall be replaced by the general contractor. at his expense.

K. Millwork contractor to coordinate location of electrical, telephone, and communications outlets and install grommets in countertop surfaces as required to conceal cables.

L. Shelving, no unbraced length of shelving and or counterwork shall exceed 3'-0" without additional supports and or blocking. all end conditions shall be properly blocked and or supported.

M. Overhead cabinets, all blocking and wood cleats for overhead cabinets to be screwed and secured to full height or braced ceiling height metal studs and wood grounds.

MECHANICAL

A. HVAC and Plumbing work shall be performed in a "Bidder Design manner. The contractor shall submit such systems separately for permit.

B. It is the contractor's responsibility to design systems that meet all requirements and codes. Contractor shall submit drawings, pay and obtain permit and perform work in a manner that meets or exceeds the recognized workmanship standards for the industry.

C. All drawings are to be submitted for review and approval to the Owner before performing work.

D. Heating equipment shall be listed and labeled by an approved agency and installed to listed specifications.

E. Appliances installed in garages or other areas where they may be subject to mechanical damage shall be suitably guarded against such damage by being installed behind protective barriers or by being elevated or located out of the normal path of vehicles.

F.Equipment located in a garage and capable of igniting flammable vapors shall be installed with the pilots or burners or heating elements and switches at least 18 inches above the floor level.

G. Appliances designed to be in fixed positions shall be fastened or anchored in an approved manner Water heater shall be anchored or strapped to resist horizontal displacement caused by earthquake motion. Strapping shall be at points within the upper one-third and lower one-third of the appliance's vertical dimensions. At the lower point, the strapping shall maintain a minimum distance of 4 inches above controls.

H. Verify types, manufacture, and locations of a plumbing, faucets with Owner prior to purchasing and/or installing

I. Vent outlet for gas appliances shall be 3' minimum away from operable windows, and 10' minimum away from fresh air intakes per WA VIAQ 303.4.1.5.

J. Protection of structure: the building or structure shall not be weakened by the installation of mechanical systems. Penetrations of floor/ceiling assemblies and assembles required to have fire resistance rating shall be protected in accordance with IRC/IBC

K. The cutting, notching and boring of wood framing members shall comply with IRC/IBC
Joist notching shall be per IRC 502.8: Notches on the ends of members shall not exceed one-fourth the member depth. Holes bored in joists shall not be within 2 inches of the top or bottom of the joist, and the diameter of any such hole shall not exceed one-third the depth of the joist. Notches in the top or bottom of members shall not exceed one-sixth the depth, shall not be longer than one third of the depth of the member and shall not be located in the middle third of the span.

L. Stud cutting and notching shall be per IRC/IBC, In exterior walls and bearing partitions, any wood stud is permitted to be cut or notched not to exceed 25 percent of its depth Cutting or notching of studs not greater than 40 percent of a single stud depth is permitted in nonbearing partitions supporting no loads other than the weight of the partition. A hole not greater in diameter than 60 percent of the stud depth is permitted to be bored in any wood stud, provided that the resulting hole no more than 5/8 to the edge of the stud, and the hole is not located in the same section as a cut or notch, Studs located in exterior walls or bearing partitions drilled over 40% and up to 60% shall also be doubled with no more than two successive doubled studs bored.

M. Engineered wood products shall be cut and notched in accordance with IRC/IBC
Cuts, notches and holes bored in trusses, structural composite lumber, structural glue laminated members and I-joists are prohibited except where permitted by the manufacturer's recommendations or where the effects of such alterations are specifically considered n the design of the member by a registered design professional.

N. Contractor shall submit shop drawings of ductwork and registers, including access panels if required; cuts of all fixtures, fittings, and accessories, to architect for review and action prior to proceeding with fabrication and/or installation or relocation.

O. Air balancing- air conditioning system throughout entire space is to be properly balanced after move in. air balance shall be performed by an independent air balance contractor who shall certify that the report is accurate. submit 2 copies to building owner.

P. Heat producing equipment- hvac contractor to refer to reflected ceiling and furniture drawings for occupancy figures and heat producing equipment.

Q. Ceiling diffusers - installation shall be coordinated with all trades as required for proper assembly. ceiling diffusers to be relocated to maintain new fixture patterns as required.

R. All peripheral shut-off valves shall be accessible at all times.

S.. The contractor shall coordinate his plumbing work with manufacturer's specifications. the contractor shall coordinate plumbing work with that of all other trades.

T.The contractor shall plan installation of new plumbing work and connections to existing work to insure minimum interference with regular operations of existing facilities. submit to the building manager a date schedule for approval of necessary temporary shutdowns of existing services. all shutdowns shall be made at such time as will not interfere with regular operations of existing facilities and only after written approval of the building manager.

U.Penetrations - sleeves are to be provided for each pipe passing through walls, partitions, floors, and slabs. all penetrations of rated assemblies shall be fire stopped per code.

V. Testing - before being covered up or built-in, all piping shall be tested as required by the authorities having jurisdiction.

W. Contractor should fulfill mechanical ventilation requirememt per IRC/IBC

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5ft2

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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NO.	DESCRIPTION	DATE

DATE: 06.05.24

General Notes

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PLAN NOTES (IRC)

SG **SAFETY GLAZING REQUIREMEMT (S.G.) : (IRC R308)**

SAFETY GLAZING PER IRC R308 IN WINDOWS AND DOORS

EE **EMERGENCY ESCAPE AND RESCUE OPENING (E.E.) : (IRC R310)**

IRC R310.1. All sleeping rooms must have an emergency egress window or door that leads directly to a yard or public way

Emergency egress windows must provide a minimum clear openable area of 5.7 square feet, 24 inches high and 20 inches wide.

IRC R310.2.2 Where a window is provided as the emergency escape and rescue opening, it shall have a sill height of not more than 44 inches above the floor; where the sill height is below grade, it shall be privided with a window well in accordance with Section R310.2.3

GUARDRAILS, HANDRAILS AND STAIRS

1 All guardrails to be 36" high minimum above finished floor (a.f.f.) openings in railing assemblies are not to exceed 4 in one direction. guardrails to withstand a uniform load of 50 lbs/ft or a concentrated load of 200 lbs placed at the top of the handrail or guard. infill areas must be able to withstand a load of 50 lbs / square foot

2 Handrails to be between 1 1/4" diameter to 2" diameter, with clearance of 1.5" between rail and wall surface. mount between 34" and 38" above stair nosing or @ 36" a.f.f., typ

3 Riser: max 7 3/4", tread: min.10"

FG **FROSTED GLASS**

MECHANICAL VENTILATION (IRC M1505)

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION AND WHOLE HOUSE MECHANICAL VENTILATION

1 250 CFM ON SWITCH

2 50 CFM ON SWITCH

3 95 CFM per TABLE M1505.4.3(1)

S **SMOKE DETECTORS (IRC R314.3)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

M **CARBON MONOXIDE ALARM (IRC R 315.1)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

HD **NEW ATTACHED GARAGES (IRC R 314.2.3)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

DWELLING-GARAGE OPENING AND PENETRATION PROTECTION (IRC R302.5.1)

Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors. Doors shall be self-latching and equipped with a self-closing or automatic-closing device.

DWELLING-GARAGE SEPARATION: (IRC R302.6)

R302.6 Dwelling-garage fire separation
The garage shall be separated as required by Table R302.6. Opening in garage walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

TABLE R302.6 DWELLING-GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than $\frac{1}{2}$-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than $\frac{5}{8}$-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than $\frac{5}{8}$-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than $\frac{1}{2}$-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Fire sprinkler and Alarm system
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."

A NFPA 72- Chapter 29 Monitored Fire Alarm System in compliance with NFPA 72 and CoMI standards shall be installed throughout the residence.
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REVIEWED FOR CODE COMPLIANCE
January 16, 2025
CITY OF MERCER ISLAND

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20120172 REGISTERED ARCHITECT PEIK LI PANG STATE OF WASHINGTON
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NO.	DESCRIPTION	DATE
1	PL redline	05.14.24
2	Revision 2	12/14/24

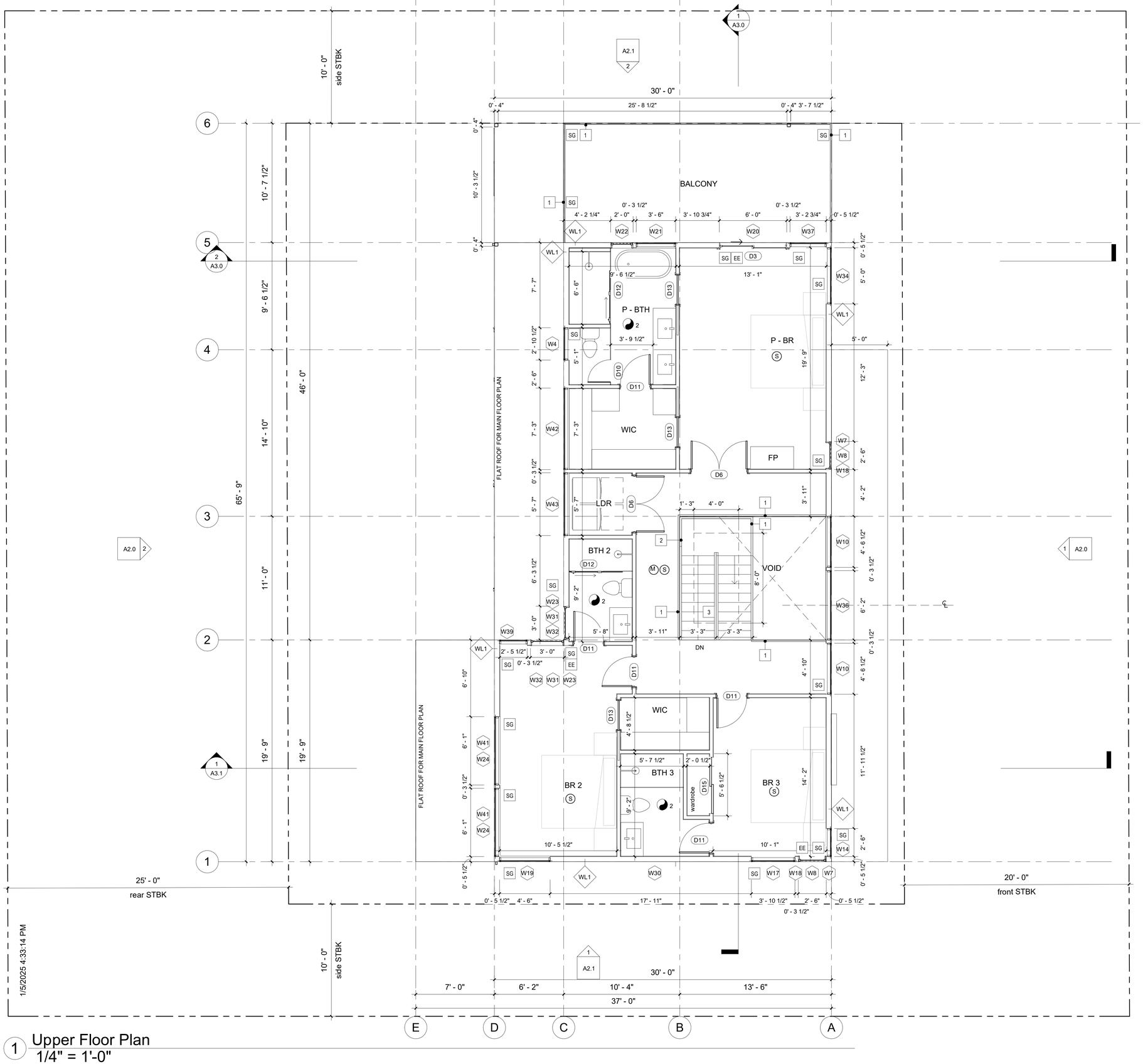
DATE: 06.05.24

Main Floor Plan

A1.1

1 Main Floor Plan
1/4" = 1'-0"

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1 Upper Floor Plan
1/4" = 1'-0"

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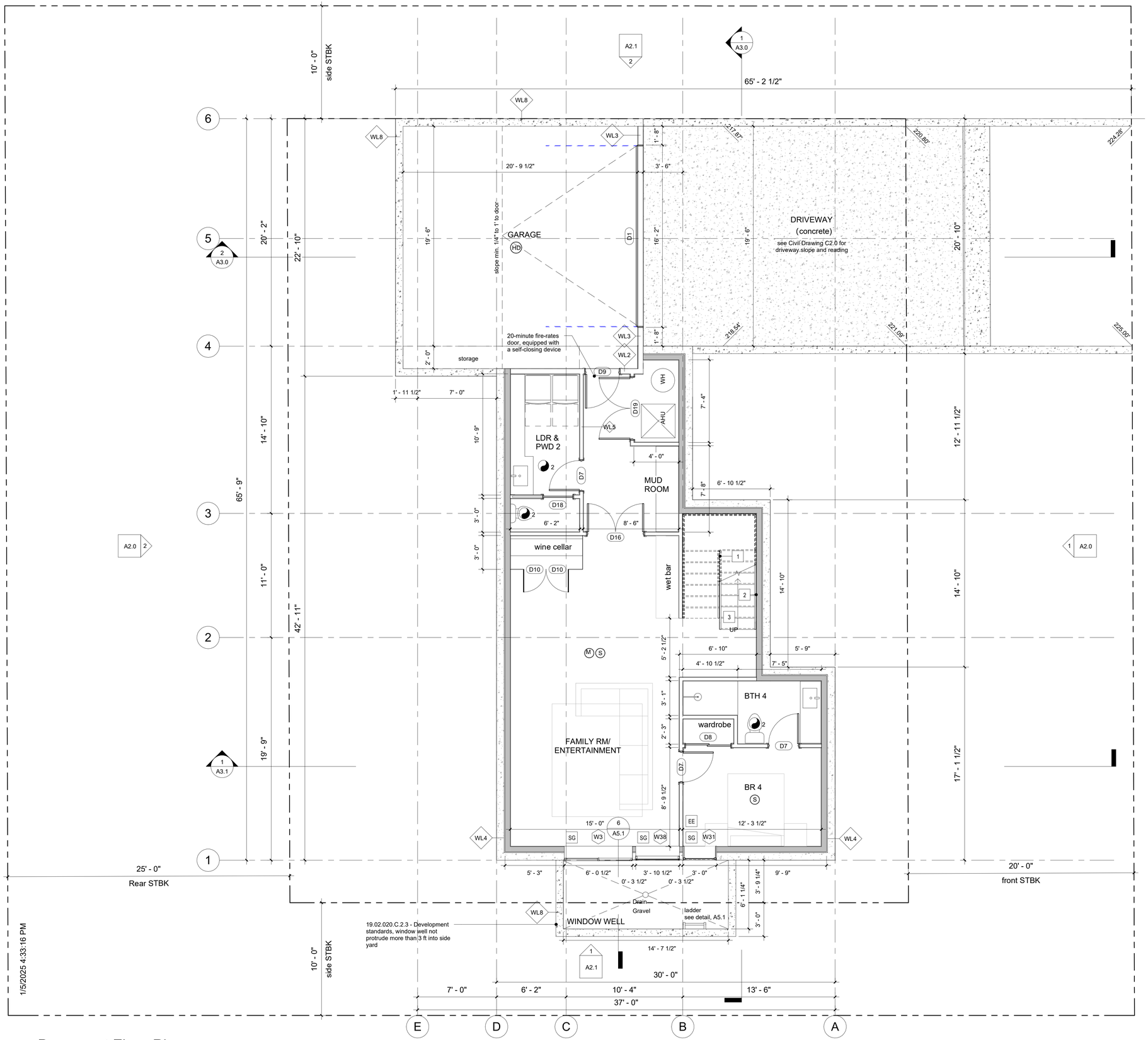
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NO.	DESCRIPTION	DATE

DATE: 06.05.24

Upper Floor Plan

A1.2



1 Basement Floor Plan
1/4" = 1'-0"

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FG **FROSTED GLASS**

MECHANICAL VENTILATION (IRC M1505)

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION AND WHOLE HOUSE MECHANICAL VENTILATION

1 250 CFM ON SWITCH

2 50 CFM ON SWITCH

3 95 CFM per TABLE M1505.4.3(1)

S **SMOKE DETECTORS (IRC R314.3)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

M **CARBON MONOXIDE ALARM (IRC R 315.1)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

HD **NEW ATTACHED GARAGES (IRC R 314.2.3)**

SEE SHEET A6.3 FOR COMPLIANCE - ALARMS AND VENTILATION

DWELLING-GARAGE OPENING AND PENETRATION PROTECTION (IRC R302.5.1)

Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 13/8 inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than 13/8 inches (35 mm) thick, or 20-minute fire-rated doors. Doors shall be self-latching and equipped with a self-closing or automatic-closing device.

DWELLING-GARAGE SEPARATION: (IRC R302.6)

R302.6 Dwelling-garage fire separation
The garage shall be separated as required by Table R302.6. Opening in garage walls shall comply with Section R302.5. Attachment of gypsum board shall comply with Table R702.3.5. The wall separation provisions of Table R302.6 shall not apply to garage walls that are perpendicular to the adjacent dwelling unit wall.

TABLE R302.6 DWELLING-GARAGE SEPARATION

SEPARATION	MATERIAL
From the residence and attics	Not less than $\frac{1}{2}$-inch gypsum board or equivalent applied to the garage side
From habitable rooms above the garage	Not less than $\frac{5}{8}$-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than $\frac{5}{8}$-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than $\frac{5}{8}$-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

Fire sprinkler and Alarm system
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."

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.

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

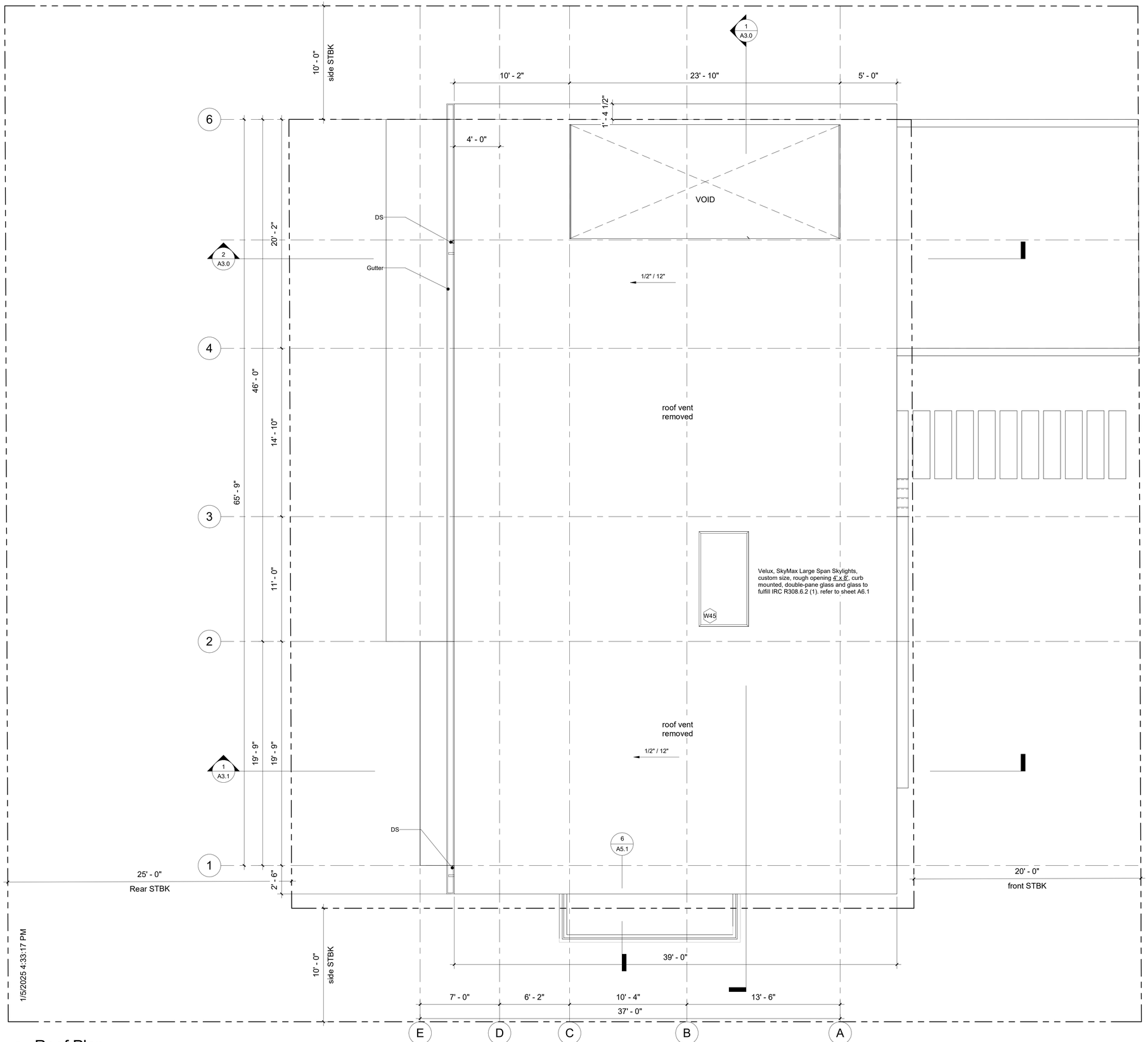
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NO.	DESCRIPTION	DATE
1	PL redline	05.14.24

DATE: 06.05.24

Basement Floor Plan

A1.3



1/5/2025 4:33:17 PM

1 Roof Plan
1/4" = 1'-0"

PLAN NOTES (IRC)

SG **SAFETY GLAZING REQUIREMEMT (S.G.) : (IRC R308)**

SAFETY GLAZING PER IRC R308 IN WINDOWS AND DOORS

EE **EMERGENCY ESCAPE AND RESCUE OPENING (E.E.) : (IRC R310)**

IRC R310.1. All sleeping rooms must have an emergency egress window or door that leads directly to a yard or public way

Emergency egress windows must provide a minimum clear openable area of 5.7 square feet, 24 inches high and 20 inches wide.

IRC R310.2.2 Where a window is provided as the emergency escape and rescue opening, it shall have a sill height of not more than 44 inches above the floor; where the sill height is below grade, it shall be privided with a window well in accordance with Section R310.2.3

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3 Riser: max 7 3/4", tread: min.10"

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CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

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STATE OF WASHINGTON
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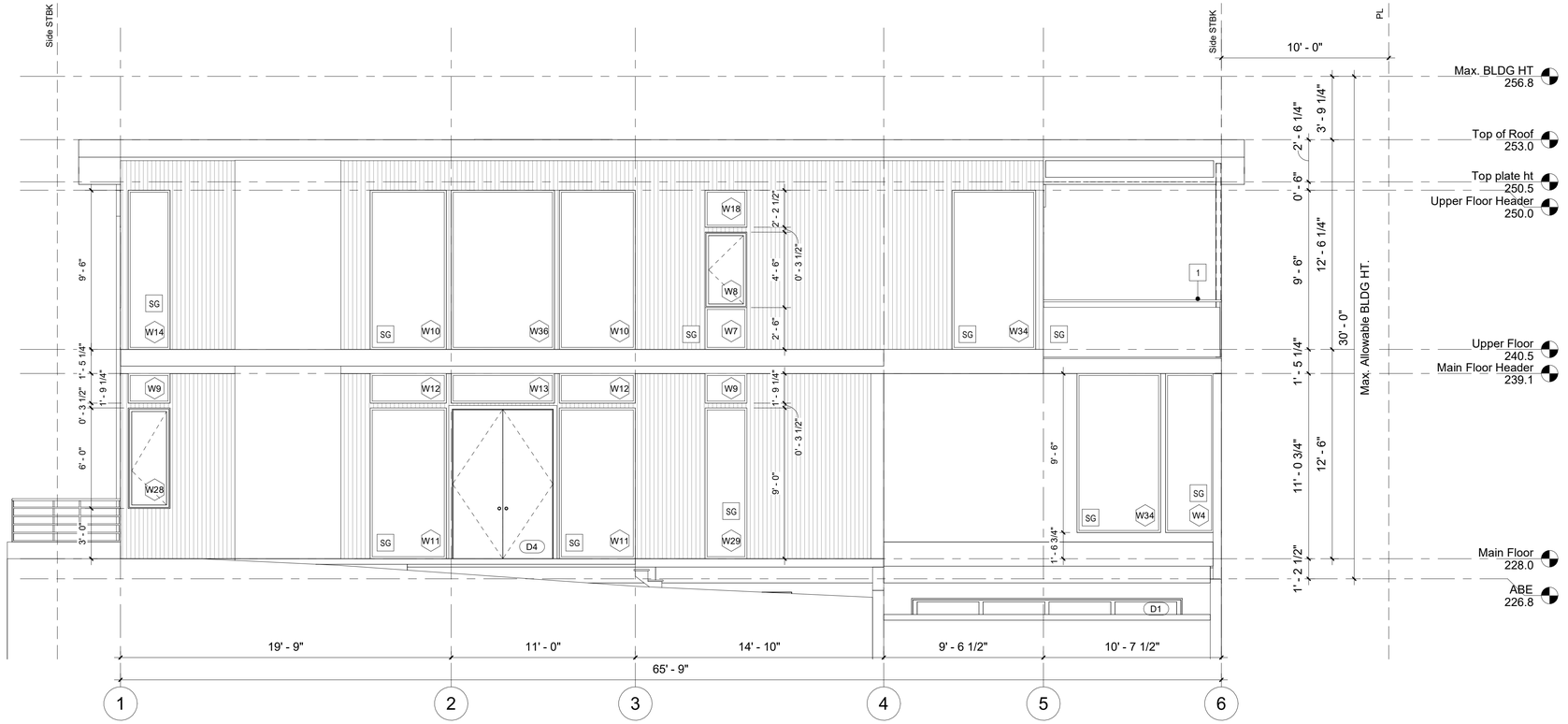
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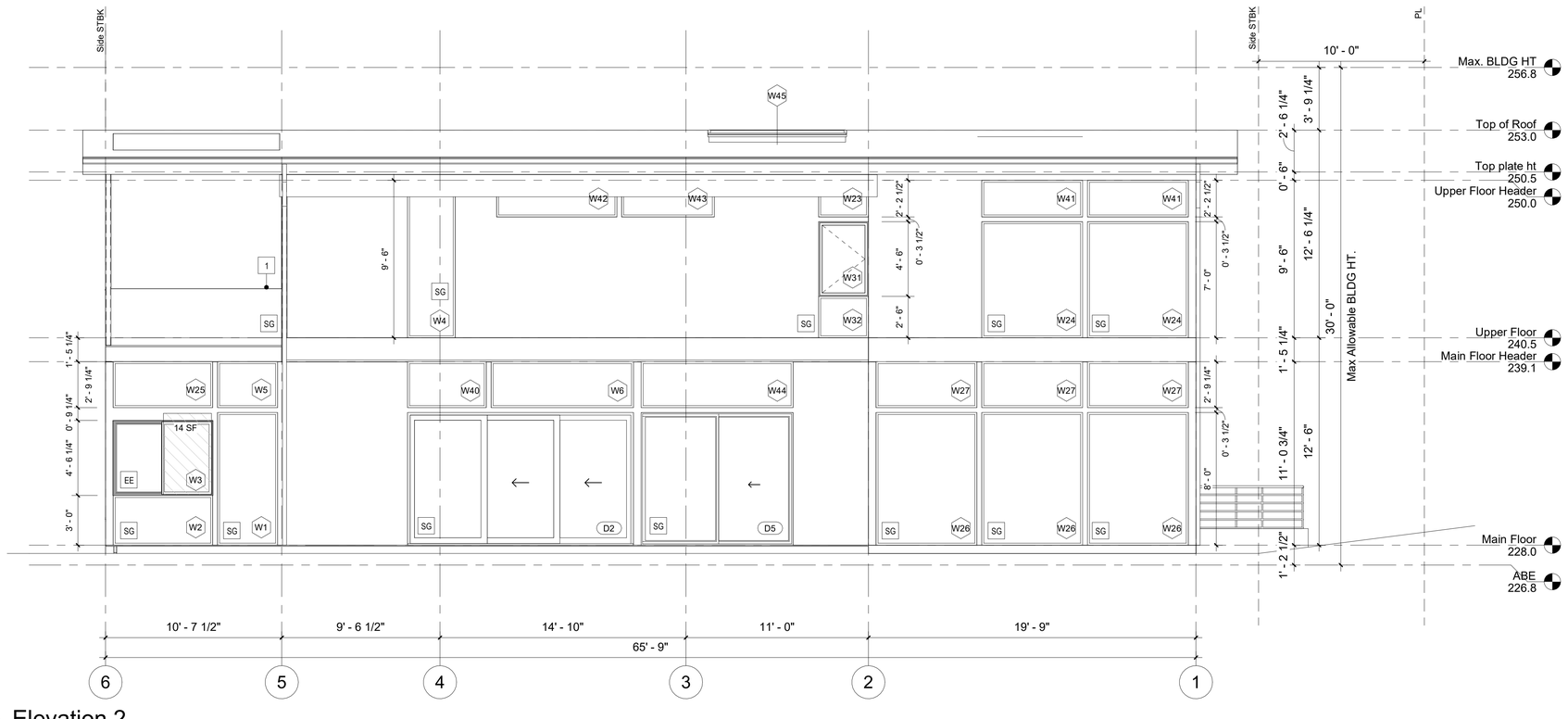
DATE: 06.05.24

Roof Plan

A1.4



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



2 Elevation 2
1/4" = 1'-0"

1/5/2025 4:33:21 PM

ELEVATION & SECTION NOTES (IRC)

SG **SAFETY GLAZING REQUIREMEMT (S.G.) : (IRC R308)**

SAFETY GLAZING PER IRC R308 IN WINDOWS AND DOORS

EE **EMERGENCY ESCAPE AND RESCUE OPENING (E.E.) : (IRC R310)**

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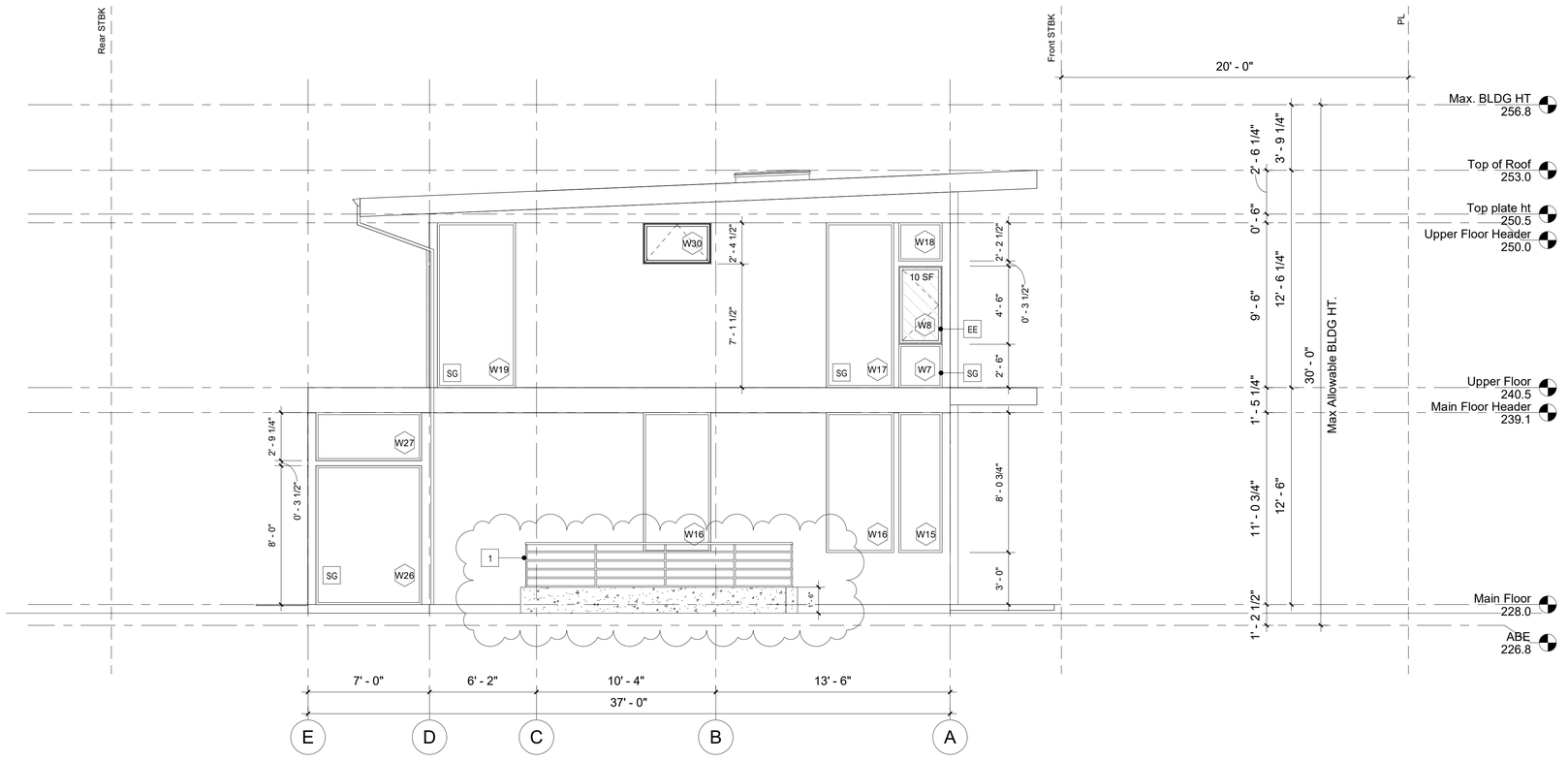
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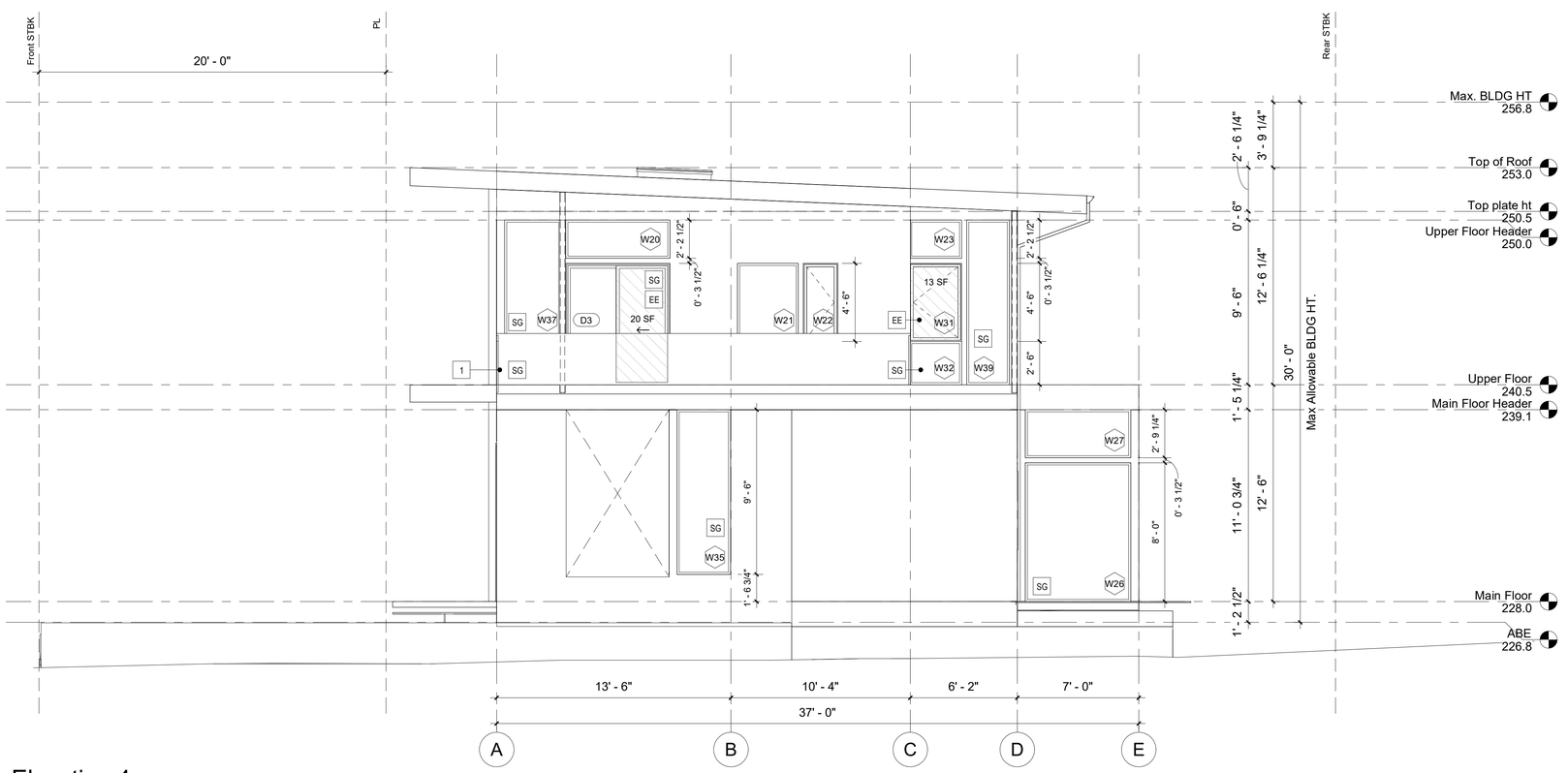
DATE: 06.05.24

Elevation
1

A2.0



1 Elevation 3
1/4" = 1'-0"



2 Elevation 4
1/4" = 1'-0"

1/5/2025 4:33:24 PM

ELEVATION & SECTION NOTES (IRC)

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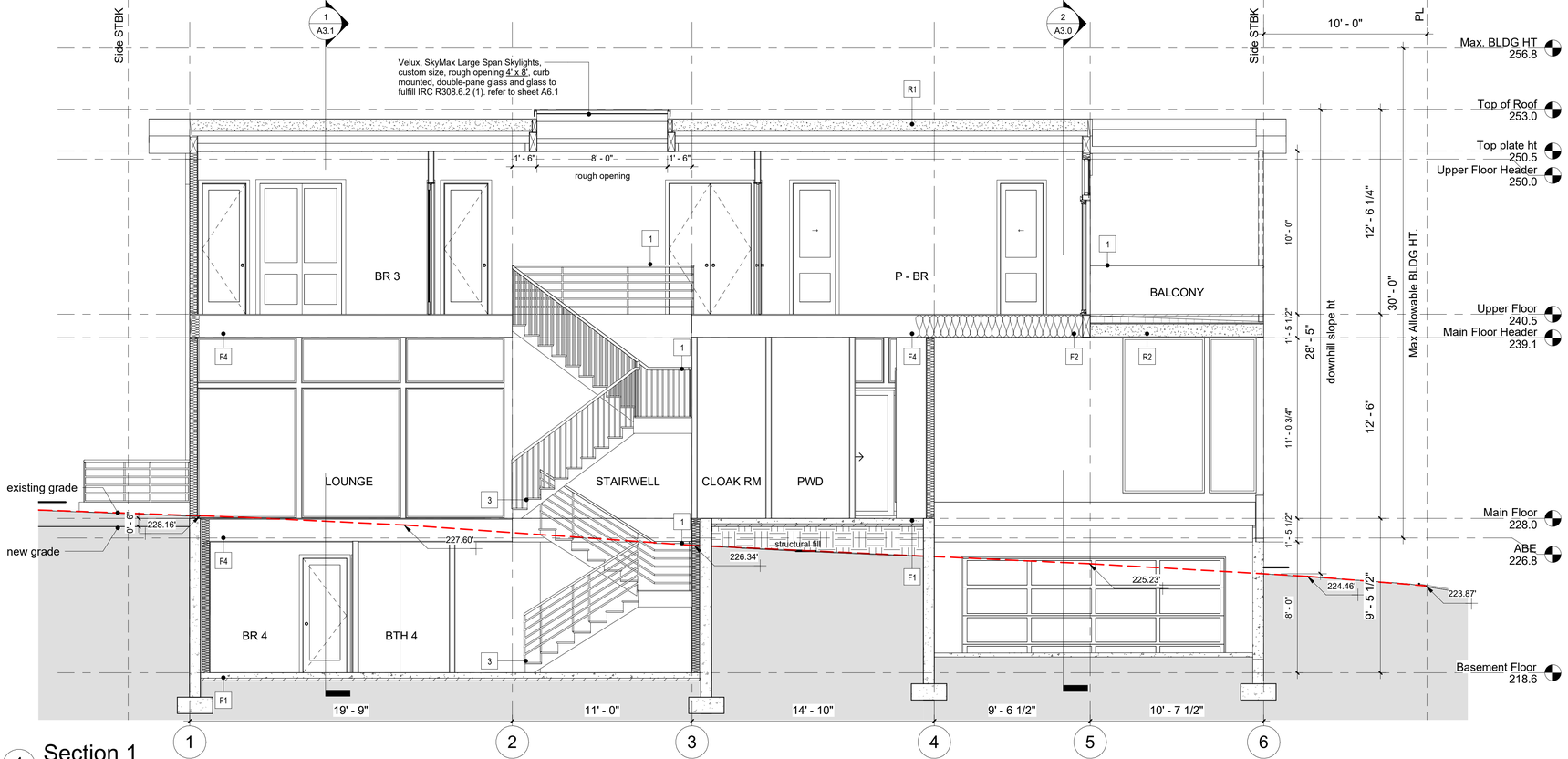
NO.	DESCRIPTION	DATE
2	Revision 2	12/14/24

DATE: 06.05.24

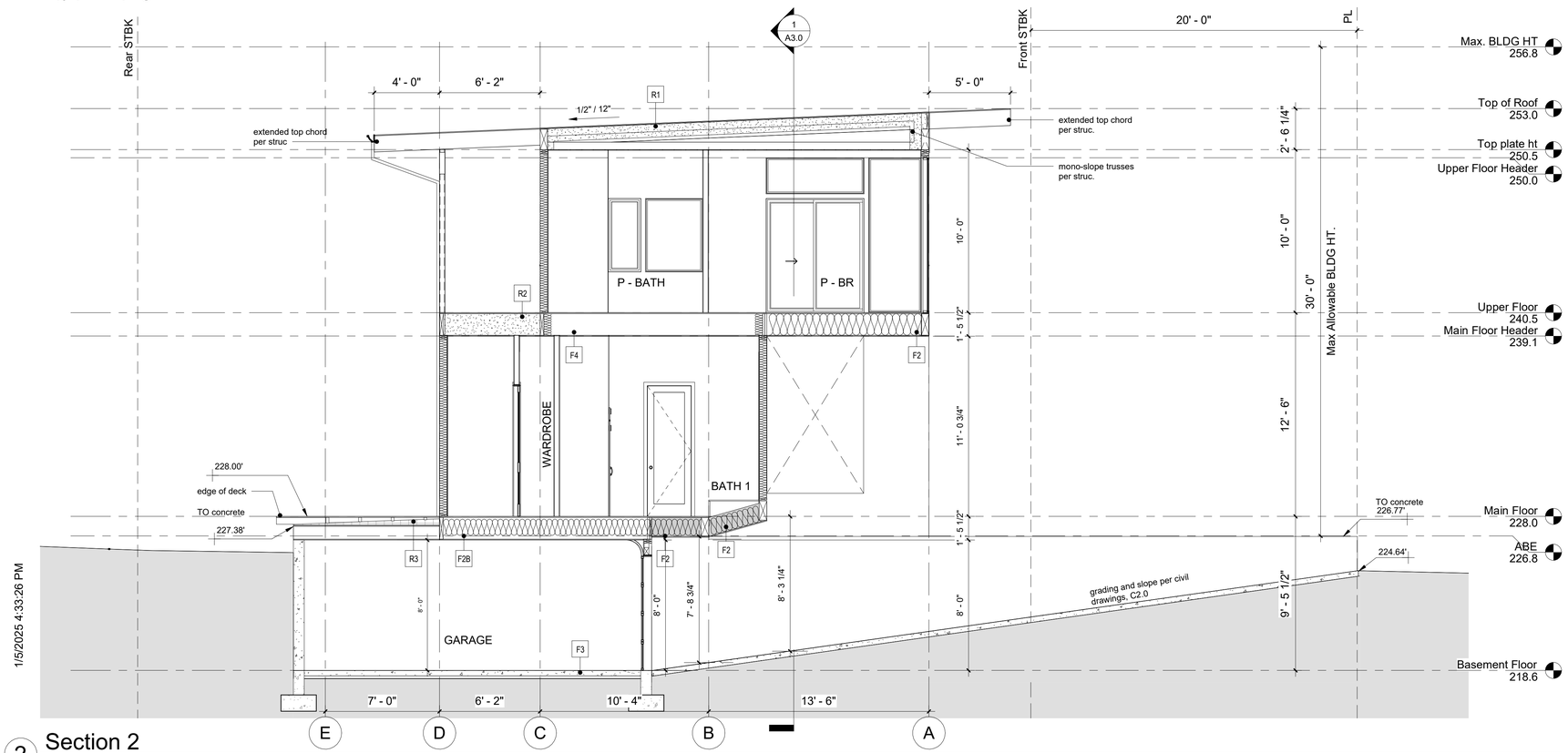
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January 16, 2025

Elevation 2

A2.1



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



2 Section 2
1/4" = 1'-0"

1/5/2025 4:33:26 PM

ELEVATION & SECTION NOTES (IRC)

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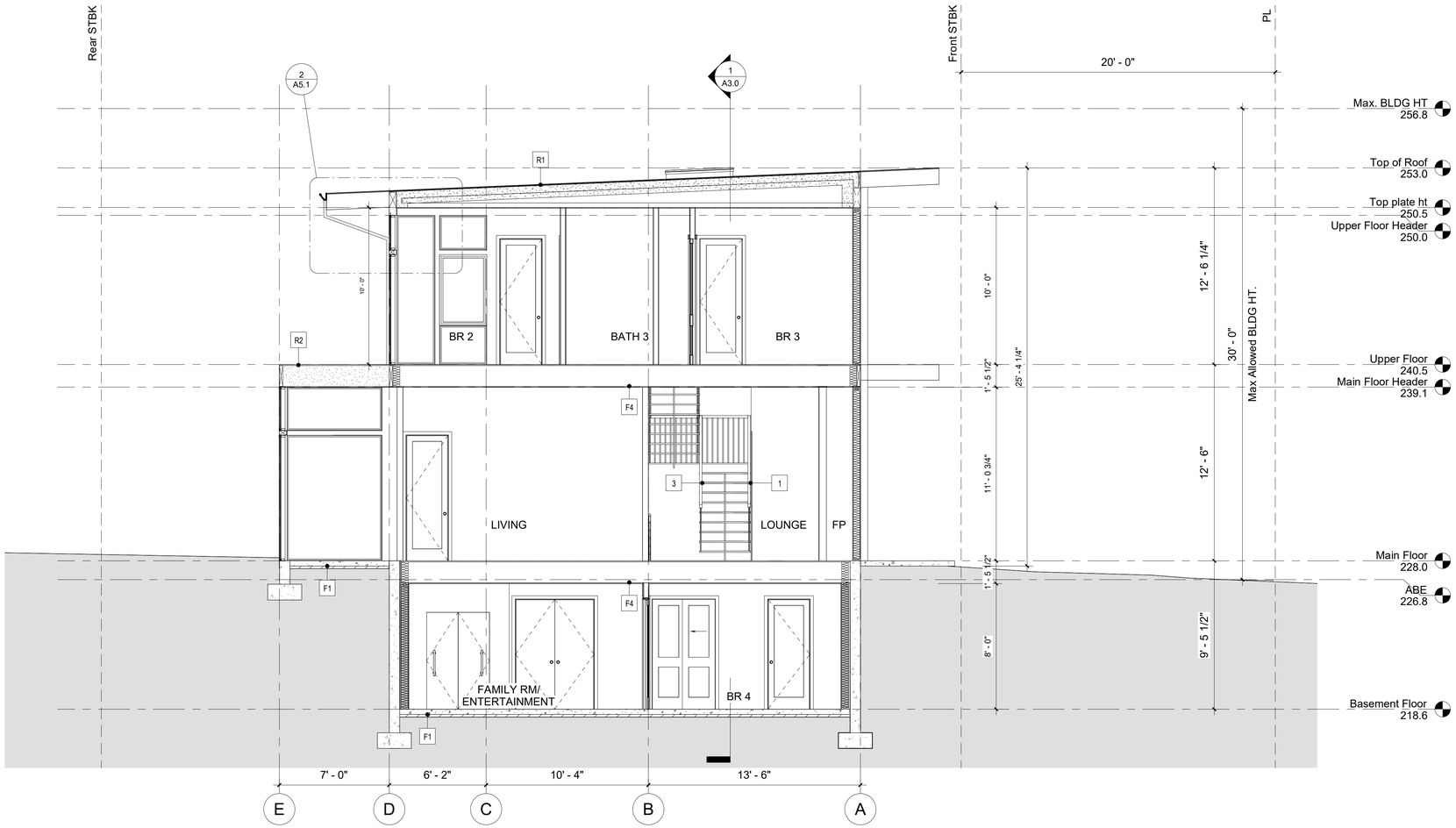
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1	PL redline	05.14.24

DATE: 06.05.24

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January 16, 2025

Section 1

A3.0



1 Section 3
1/4" = 1'-0"

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ELEVATION & SECTION NOTES (IRC)

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5ft2

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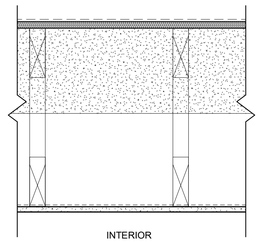
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Section 2

A3.1

ROOF ASSEMBLIES

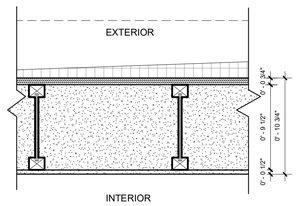
R1



VENTILATED ROOF
- Fully adhered roofing membrane (TPO)
-15# Felt
- Sheathing per structureal
- Mono truss per structural
- - Min. 9.5" R-61 Spray foam insulation (R6.5/inch), refer to spray form note
- 5/8" GWB Ceiling, smoothly skimmed and painted

THERMAL
min. R60

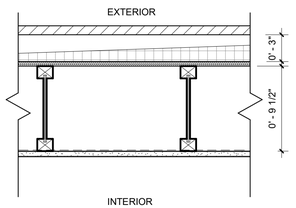
R2



- Fully adhered roofing membrane covering entire roof deck
-15# Roofing Felt
- 65 psi tapered insulation @ 1/4" per 1'
- Sheathing per structural
- TJI per structural
- Min. 9.5" R-61 Spray foam insulation (R6.5/inch), refer to spray form note
- 5/8" GWB Ceiling, smoothly skimmed and painted

THERMAL
min. R60

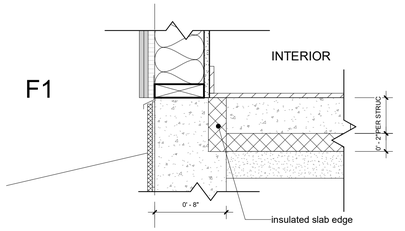
R3



- Deck assembly per plan
- Fully adhered roofing membrane (TPO)
-15# Roofing Felt
- 65 psi tapered insulation @ 1/4" per 1'
- Sheathing per structural
- TJI per structural
- Vapor retarder - class I or class II
- 5/8" GWB ceiling

FLOOR ASSEMBLIES

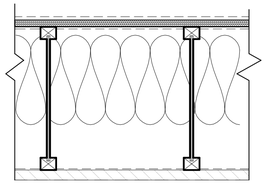
F1



- Finish per plan
- Reinforced concrete slab per structural
- Vapor Barrier
- 2" XPS Rigid Insulation under entire concrete slab, FOAMULAR® FOAMULAR®NGX™ 1000, R15
-granular capillary break and drainage pad
- compacted soil

THERMAL
min. R10

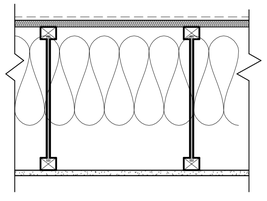
F2



- Finish per plan
- Sheathing per structural
- Vapor retarder - class I or class II
- TJI per structural
- Batt Insulation between joists, thick12", R38
- Vapor permeable Water Resistive Barrier (WRB), WrapShield SA® Self-Adhered, sealed w/ Vapro Shield tape
- Soffit per plan

THERMAL
min. R38

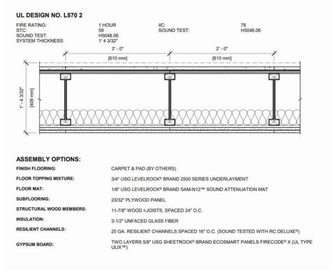
F2B



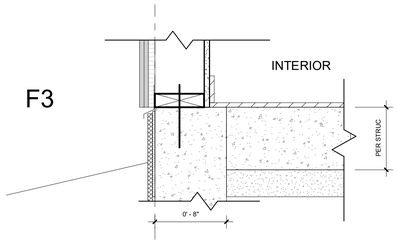
- Finish per plan
- Sheathing per structural
- TJI per structural
- Batt Insulation between joists, thick 12", R-38 seams taped and sealed
- GWB-X ceiling

THERMAL
min. R38

1-hr Fire Rate
L570 assembly typical

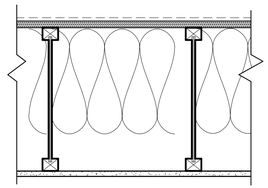


F3



- Finish per plan
- Reinforced concrete slab per structural
- Vapor Barrier
- Granular capillary break and drainage pad
- Compacted soil

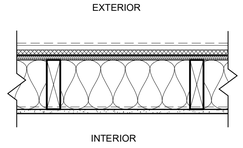
F4



- Finish per plan
- Sheathing per structural
- TJI per structural
- Batt Insulation between joists for acoustic attenuation
- 5/8" GWB Ceiling, smoothly skimmed and painted

WALL ASSEMBLIES

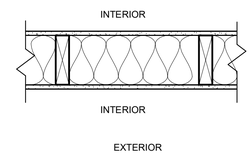
WL1



- Siding to per specification
- Rain screen
- 1" Polyisocyanurate Rigid insulation min R5-ci
- Vapor permeable Water Resistive Barrier (WRB), WrapShield SA® Self-Adhered, sealed w/ Vapro Shield tape
- Sheathing plywood per structural
- Studwall 2X6 w/ insulation R20
- Vapor Retarder, Class II
- 1/2" GWB, smoothly skimmed and painted

THERMAL
R20+R5-ci

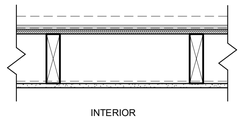
WL2



- 1/2" GWB, smoothly skimmed and painted
- Studwall 2X6 w/ insulation min. R21
- 1/2" GWB, smoothly skimmed and painted

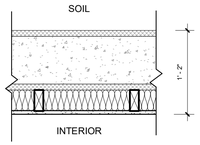
THERMAL
min. R21

WL3



- Siding to per specification
- Rain screen
- Vapor permeable Water Resistive Barrier (WRB), WrapShield SA® Self-Adhered, sealed w/ Vapro Shield tape
- 1/2" sheathing plywood
- Studwall 2X6
- Vapor Retarder, Class II
- 1/2" GWB, smoothly skimmed and painted

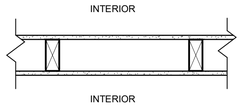
WL4



- 1" Polyisocyanurate Rigid insulation R-6
- Concrete Retainer per structural
- 1" Polyisocyanurate Rigid insulation R-6
- Studwall 2x4 w/ rigid insulation, min. R15
- 1/2" GWB, smoothly skimmed and painted

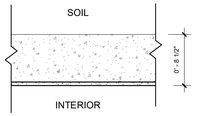
THERMAL
min. R21

WL5



- 1/2" GWB, smoothly skimmed and painted
- Studwall 2X4
- 1/2" GWB, smoothly skimmed and painted

WL8



- Concrete Retainer per structural
- 1/2" GWB, smoothly skimmed and painted

SPRAY FORM NOTE

SPRAY FORMPRODUCT NAME: CERTASPRAY CLOSED-CELL SPRAY FOAM INSULATION
MANUFACTURER: CERTAINTEED CORPORATION ESR REPORT # : 2669

SPRAY FORM NOTES:
1) A copy of the ICC-ES Report for the insulation product must be provided on site for the field inspector

2) The applied spray foam must be installed in accordance with the manufacturer 's instructions by a certified installer.

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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NO.	DESCRIPTION	DATE
1	PL redline	05.14.24

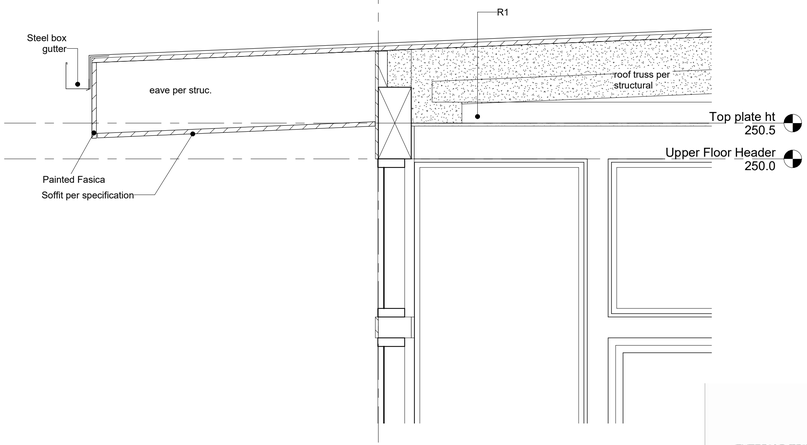
DATE: 06.05.24

REVIEWED FOR CODE COMPLIANCE
January 14, 2025

Assemblies

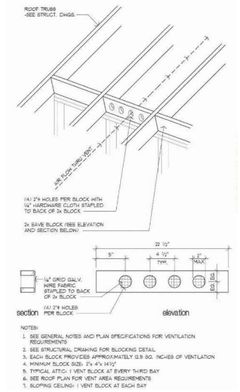
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2 ROOF EAVE VENT
1" = 1'-0"

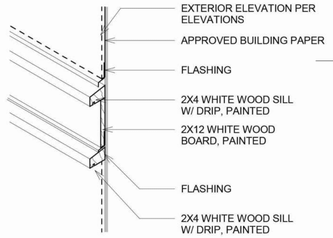
D

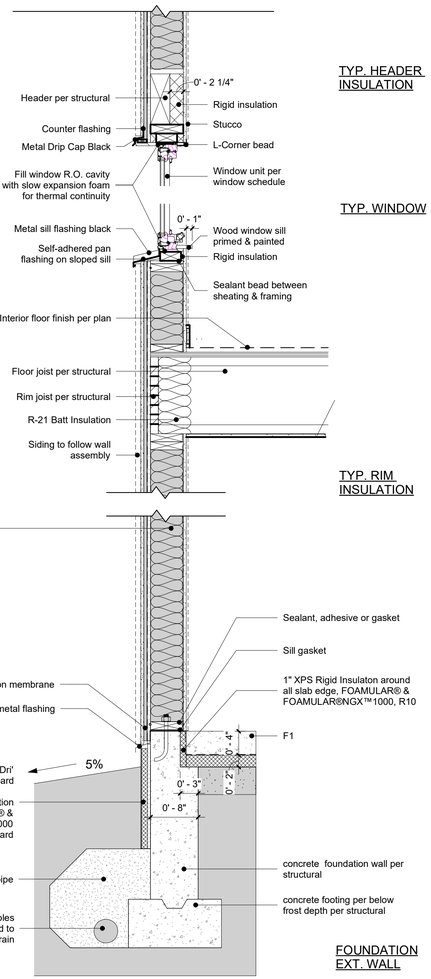


3 EAVE VENT BLOCK
NOT-TO-SCALE

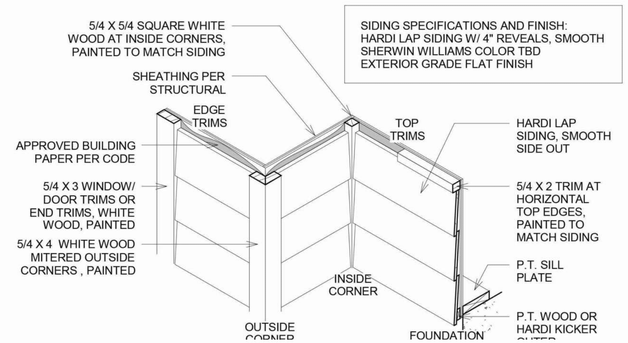
EXTERIOR TRIMS INCLUDE:
- FASCIAS
- BARGES
- WINDOW AND DOOR TRIMS, LINERS AND JAMBS
- BELLY BANDS
- OUTSIDE CORNER TRIMS (BUT NOT INSIDE)

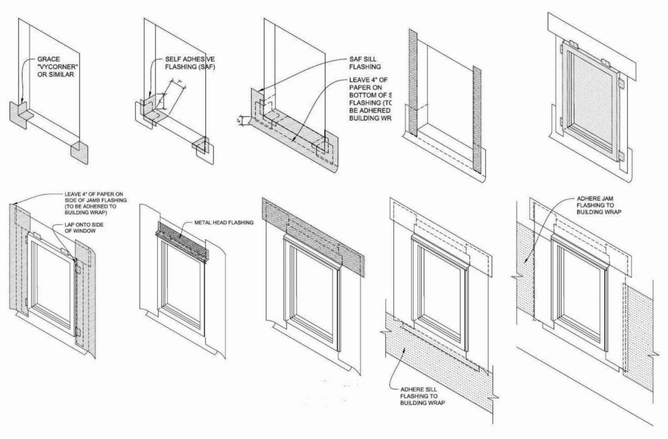
EXTERIOR TRIMS FINISH:
WHITE WOOD PAINTED
SHERWIN WILLIAMS SW7504 "KEYSTONE GREY"
EXTERIOR GRADE FLAT FINISH



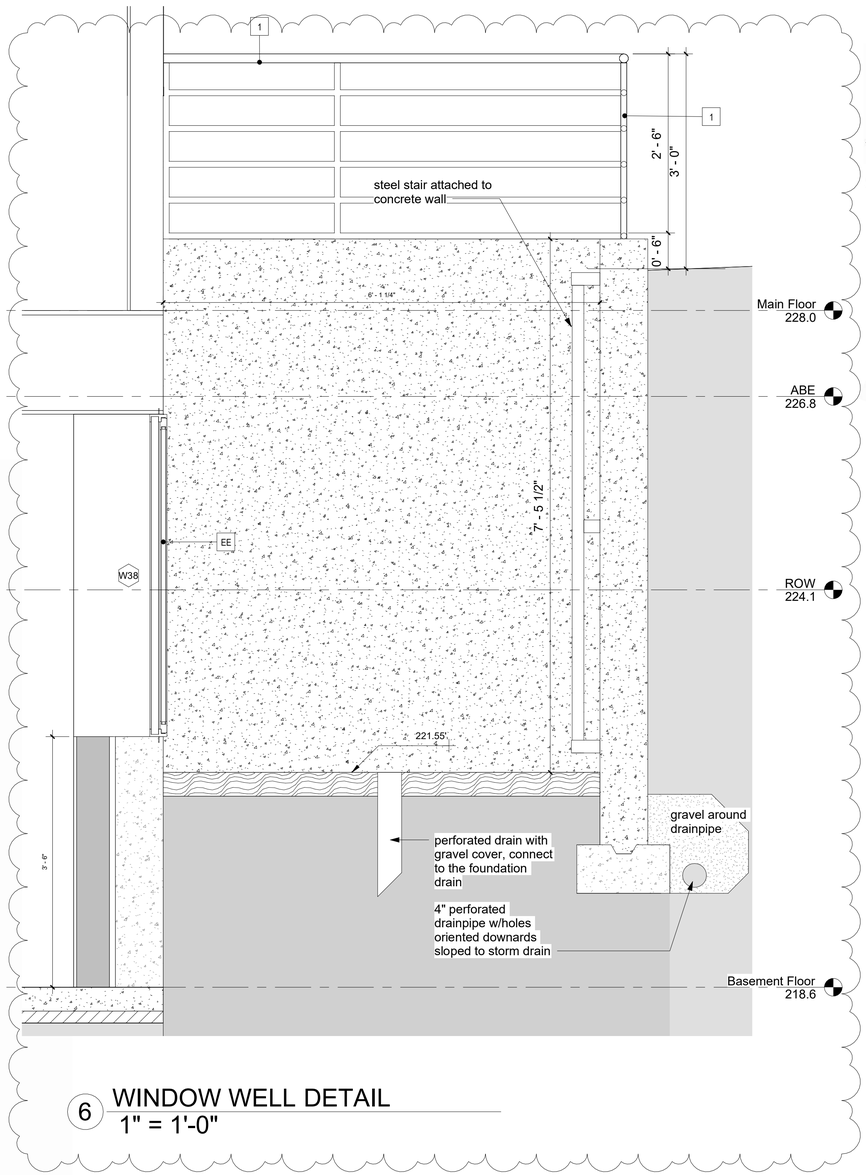


4 TYPICAL WALL SECTION
1" = 1'-0"

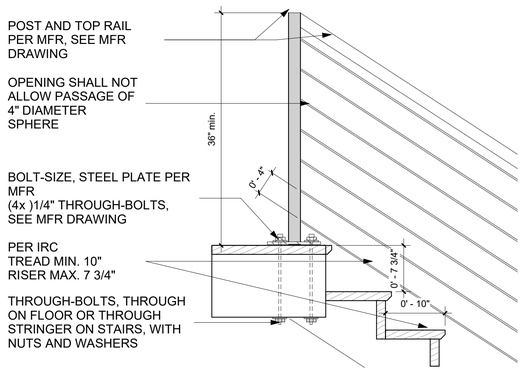




1 DETAIL-EXTERIOR FINISH
NOT-TO-SCALE



6 WINDOW WELL DETAIL
1" = 1'-0"



5 TYP. STAIR GUARDRAIL
1" = 1'-0"

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004
info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

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Building Permit

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NO.	DESCRIPTION	DATE
1	PL redline	05.14.24
2	Revision 2	12/14/24

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

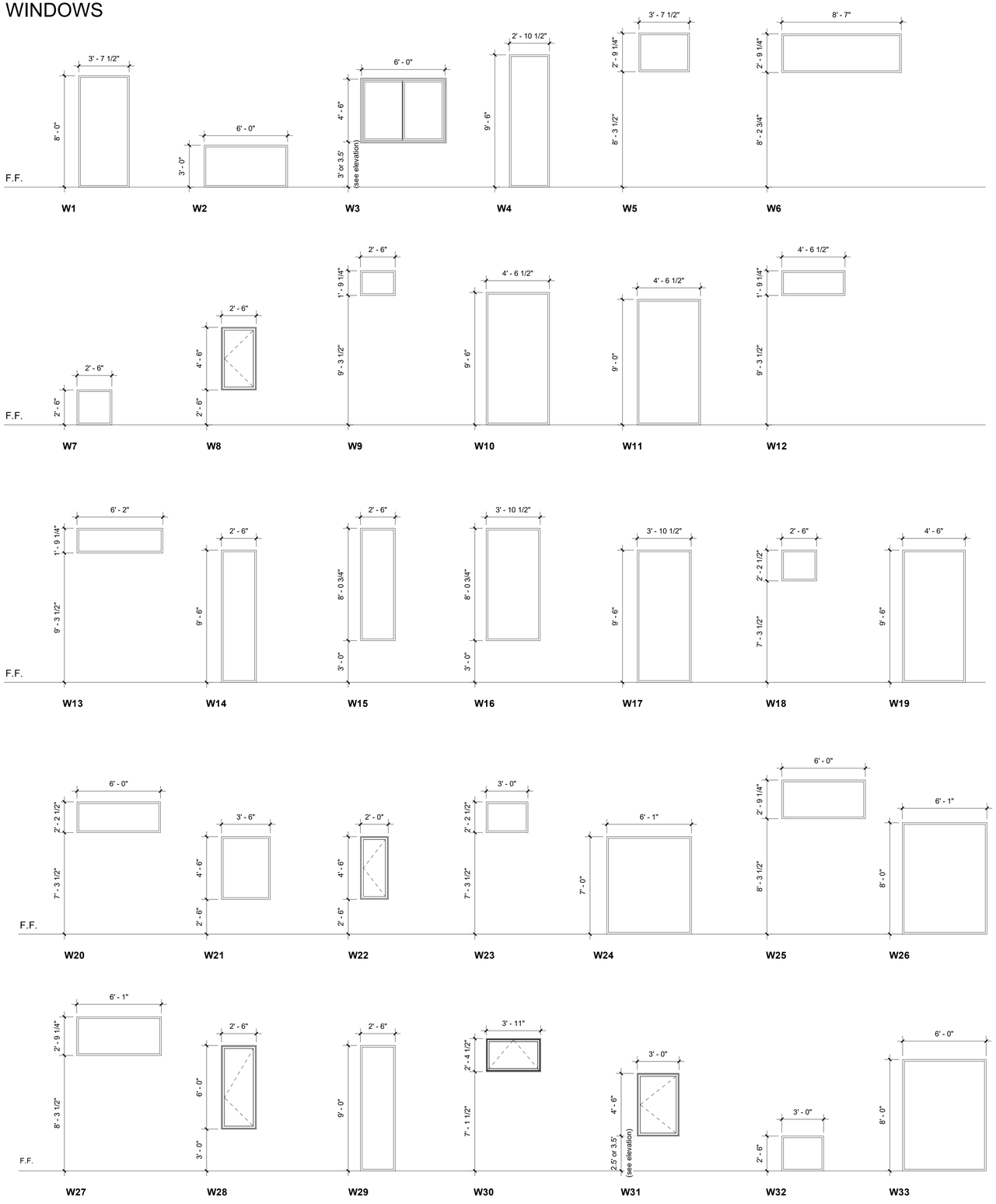
DATE: 06.05.24

Details 1

A5.1

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WINDOWS



Window Schedule

Type Mark	Level	Count	Width	Height	Sill Height	U-Value	Type Comments	Glazing Material	Frame	Manufacturer
W1	Main Floor	1	3' - 7 1/2"	8' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W2	Main Floor	1	6' - 0"	3' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W3	<varies>	2	6' - 0"	4' - 6"	<varies>	0.25	Sliding Window			Marvin Windows and Doors
W4	<varies>	2	2' - 10 1/2"	9' - 6"	<varies>	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W5	Main Floor	1	3' - 7 1/2"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W6	Main Floor	1	8' - 7"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W7	Upper Floor	2	2' - 6"	2' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W8	Upper Floor	2	2' - 6"	4' - 6"	2' - 6"	0.25	Casement Window			Marvin Windows and Doors
W9	Main Floor	2	2' - 6"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W10	Upper Floor	2	4' - 6 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W11	Main Floor	2	4' - 6 1/2"	9' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W12	Main Floor	2	4' - 6 1/2"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W13	Main Floor	1	6' - 2"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W14	Upper Floor	1	2' - 6"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W15	Main Floor	1	2' - 6"	8' - 0 3/4"	3' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W16	Main Floor	2	3' - 10 1/2"	8' - 0 3/4"	3' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W17	Upper Floor	1	3' - 10 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W18	Upper Floor	2	2' - 6"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W19	Upper Floor	1	4' - 6"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W20	Upper Floor	1	6' - 0"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W21	Upper Floor	1	3' - 6"	4' - 6"	2' - 6"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W22	Upper Floor	1	2' - 0"	4' - 6"	2' - 6"	0.25	Casement Window			Marvin Windows and Doors
W23	Upper Floor	2	3' - 0"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W24	Upper Floor	2	6' - 1"	7' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W25	Main Floor	1	6' - 0"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W26	Main Floor	5	6' - 1"	8' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W27	Main Floor	5	6' - 1"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W28	Main Floor	1	2' - 6"	6' - 0"	3' - 0"	0.25	Casement Window			Marvin Windows and Doors
W29	Main Floor	1	2' - 6"	9' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W30	Upper Floor	1	3' - 11"	2' - 4 1/2"	7' - 1 1/2"	0.25	Awning Window	Glass-Marvin-IG Low E II with Argon	Wood Ultrex	Marvin Windows and Doors
W31	<varies>	3	3' - 0"	4' - 6"	<varies>	0.25	Casement Window			Marvin Windows and Doors
W32	Upper Floor	2	3' - 0"	2' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W34	<varies>	2	5' - 0"	9' - 6"	<varies>	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W35	Main Floor	1	3' - 1"	9' - 6"	1' - 6 3/4"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W36	Upper Floor	1	6' - 2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W37	Upper Floor	1	3' - 2 3/4"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W38	Basement Floor	1	3' - 10 1/2"	4' - 6"	3' - 6"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W39	Upper Floor	1	2' - 5 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W40	Main Floor	1	4' - 9"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W41	Upper Floor	2	6' - 1"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W42	Upper Floor	1	7' - 3"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W43	Upper Floor	1	5' - 7"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W44	Main Floor	1	9' - 2"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W45	Top plate ht	1	4' - 0"	8' - 0"		0.25	Skylight			VELUX

ALL WINDOWS DIMENSIONS ARE REPESENTING
ROUGH OPENING (RO)

1/5/2025 4:33:33 PM

Window Schedule
1/4" = 1'-0"

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
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NO.	DESCRIPTION	DATE

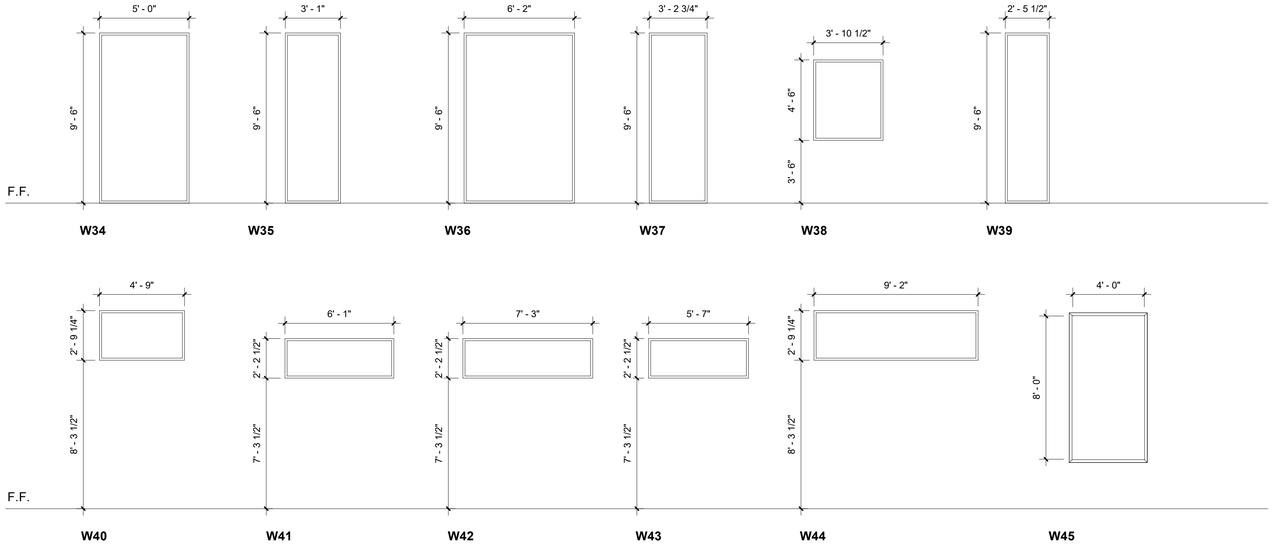
CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

DATE: 06.05.24

Window Schedule

A6.0

WINDOWS



U VALUE: MAX 0.28
TYPE: VELUX, SKYMAX LARGE SPAN SKYLIGHTS, Skylights, custom size, rough opening 4' x 8', curb mounted, double-pane glass and glass to fulfill SRC R308.6.2 (1).

- the glazing material is laminated glass with the interlayer thickness of at least 0.030 inch

FRAME: ALUMINUM FRAME
MANUFACTURER: VELUX, SKYMAX

Window Schedule

Type Mark	Level	Count	Width	Height	Sill Height	U-Value	Type Comments	Glazing Material	Frame	Manufacturer
W1	Main Floor	1	3' - 7 1/2"	8' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W2	Main Floor	1	6' - 0"	3' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W3	<varies>	2	6' - 0"	4' - 6"	<varies>	0.25	Sliding Window			Marvin Windows and Doors
W4	<varies>	2	2' - 10 1/2"	9' - 6"	<varies>	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W5	Main Floor	1	3' - 7 1/2"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W6	Main Floor	1	8' - 7"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W7	Upper Floor	2	2' - 6"	2' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W8	Upper Floor	2	2' - 6"	4' - 6"	2' - 6"	0.25	Casement Window			Marvin Windows and Doors
W9	Main Floor	2	2' - 6"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W10	Upper Floor	2	4' - 6 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W11	Main Floor	2	4' - 6 1/2"	9' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W12	Main Floor	2	4' - 6 1/2"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W13	Main Floor	1	6' - 2"	1' - 9 1/4"	9' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W14	Upper Floor	1	2' - 6"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W15	Main Floor	1	2' - 6"	8' - 0 3/4"	3' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W16	Main Floor	2	3' - 10 1/2"	8' - 0 3/4"	3' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W17	Upper Floor	1	3' - 10 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W18	Upper Floor	2	2' - 6"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W19	Upper Floor	1	4' - 6"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W20	Upper Floor	1	6' - 0"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W21	Upper Floor	1	3' - 6"	4' - 6"	2' - 6"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W22	Upper Floor	1	2' - 0"	4' - 6"	2' - 6"	0.25	Casement Window			Marvin Windows and Doors
W23	Upper Floor	2	3' - 0"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W24	Upper Floor	2	6' - 1"	7' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W25	Main Floor	1	6' - 0"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W26	Main Floor	5	6' - 1"	8' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W27	Main Floor	5	6' - 1"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W28	Main Floor	1	2' - 6"	6' - 0"	3' - 0"	0.25	Casement Window			Marvin Windows and Doors
W29	Main Floor	1	2' - 6"	9' - 0"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W30	Upper Floor	1	3' - 11"	2' - 4 1/2"	7' - 1 1/2"	0.25	Awning Window	Glass-Marvin-IG Low E II with Argon	Wood Ultrex	Marvin Windows and Doors
W31	<varies>	3	3' - 0"	4' - 6"	<varies>	0.25	Casement Window			Marvin Windows and Doors
W32	Upper Floor	2	3' - 0"	2' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W34	<varies>	2	5' - 0"	9' - 6"	<varies>	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W35	Main Floor	1	3' - 1"	9' - 6"	1' - 6 3/4"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W36	Upper Floor	1	6' - 2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W37	Upper Floor	1	3' - 2 3/4"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W38	Basement Floor	1	3' - 10 1/2"	4' - 6"	3' - 6"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W39	Upper Floor	1	2' - 5 1/2"	9' - 6"	0' - 0"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W40	Main Floor	1	4' - 9"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W41	Upper Floor	2	6' - 1"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W42	Upper Floor	1	7' - 3"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W43	Upper Floor	1	5' - 7"	2' - 2 1/2"	7' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W44	Main Floor	1	9' - 2"	2' - 9 1/4"	8' - 3 1/2"	0.25	Direct Glaze Rectangle	Glass-Marvin-IG Low E II with Argon	High Density Fiberglass	Marvin Windows and Doors
W45	Top plate ht	1	4' - 0"	8' - 0"		0.25	Skylight			VELUX

ALL WINDOWS DIMENSIONS ARE REPESENTING ROUGH OPENING (RO)

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Window Schedule
1/4" = 1'-0"

5ft2

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT PEIK LI PANG STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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NO.	DESCRIPTION	DATE

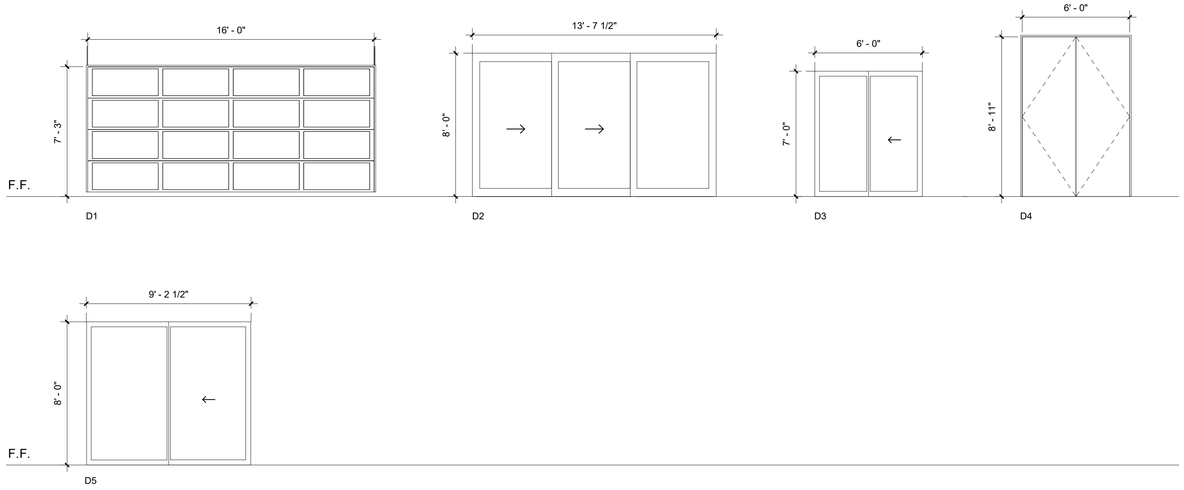
CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

DATE: 06.05.24

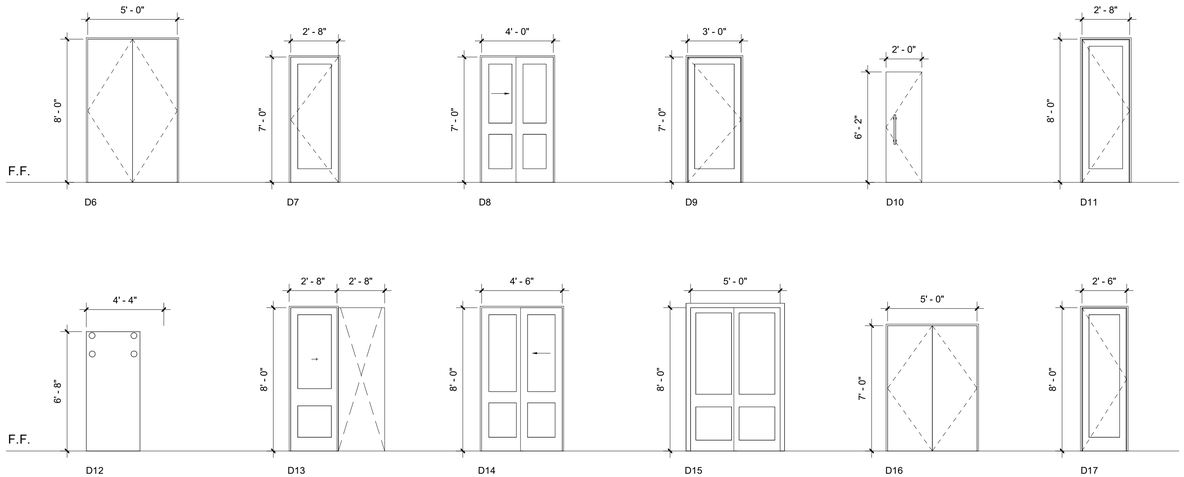
Window Schedule 2

A6.1

EXTERIOR



INTERIOR



Schedule - Door
1/4" = 1'-0"

Door Schedule

Door Type	Count	Width	Height	U-Values	Type Comments	Panel Material
D1	1	16' - 0"	7' - 0"		Sectional Garage Door	
D2	1	13' - 7 1/2"	8' - 0"	0.25	Triple Panel Sliding Door	Glass
D3	1	6' - 0"	7' - 0"	0.25	Exterior Double Slider	Glass
D4	1	6' - 0"	8' - 11"	0.25	Double Flush Door	Solid Core Wood
D5	1	9' - 2"	8' - 0"	0.25	Exterior Double Slider	Glass
D6	2	5' - 0"	8' - 0"		Double Flush Door	Solid Core Wood
D7	3	2' - 8"	7' - 0"		Single Flush Door	Solid Core Wood
D8	1	4' - 0"	7' - 0"		Double Pocket Sliding Door	Solid Core Wood
D9	1	3' - 0"	7' - 0"		Single Flush Door	Solid Core Wood
D10	3	2' - 0"	6' - 2"		Shower Glass Door	Glass
D11	7	2' - 8"	8' - 0"		Single Flush Door	Solid Core Wood
D12	3	4' - 4"	6' - 8"		Shower Glass Sliding Door	Glass
D13	3	2' - 8"	8' - 0"		Single Pocket Sliding Door	Solid Core Wood
D14	1	4' - 6"	8' - 0"		Double Pocket Sliding Door	Solid Core Wood
D15	1	5' - 0"	8' - 0"		Double Pocket Sliding Door	Solid Core Wood
D16	1	5' - 0"	7' - 0"		Double Flush Door	Solid Core Wood
D17	3	2' - 6"	8' - 0"		Single Flush Door	Solid Core Wood
D18	1	2' - 8"	7' - 0"		Single Pocket Sliding Door	Solid Core Wood
D19	1	5' - 6"	6' - 11"		Double Louvred Flush Door	Solid Core Wood

5ft2

5ft2 Studio Architects

2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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NO.	DESCRIPTION	DATE

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

DATE: 06.05.24

Door Schedule

A6.2

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2021 WSEC CODE PATH

ENERGY CODE TO COMPLY WITH CHAPTER 51-11C WAC WASHINGTON STATE ENERGY CODE - RESIDENTIAL 2021 EDITION, SECTIONS R401 THROUGH R404 AND ADDITION OF SECTION R406

R401.2 Compliance. Projects shall comply with one of the following:
1. Sections R401 through R404. In addition, dwelling units and sleeping units in a residential building
shall comply with Section R406.
2. Section R405.
3. Section R407.

TABLE R402.1.2
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE 5 AND MARINE 4	
Fenestration U-Factor[b]	0.30
Skylight U-Factor	0.50
Ceiling U-Factor	0.024
Above-Grade Wall U-Factor	0.056
Floor U-Factor	0.029
Slab on Grade F-Factor	0.54
Below Grade 2' Depth	
Wall *U-Factor*	0.042
Slab *F-Factor*	0.59
Below Grade 3.5' Depth	
Wall *U-Factor*	0.040
Slab *F-Factor*	0.56
Below Grade 7' Depth	
Wall *U-Factor*	0.035
Slab *F-Factor*	0.50

For SI: 1 foot = 304.8 mm, ci = continuous insulation, int = intermediate framing.

a. *U-factors* or *F-factors* shall be obtained from measurement, calculation or an approved source, or as specified in Section R402.1.5.

b. A maximum U-factor of 0.32 shall apply to vertical fenestration products installed in buildings located above 4000 feet in elevation above sea level, or in windborne debris regions where protection of openings is required under Section R301.2.1.2 of the International Residential Code.

PERFORMANCE PLATINUM™

Rheem

The new degree of comfort™

PERFORMANCE PLATINUM™ Hybrid Electric is the most efficient water heater available

Efficiency
- High 3.45 - 3.75 UEF reduces operating cost
- ENERGY STAR® rated

Performance
- Delivers hot water faster than most standard electric water heaters – 40-67 gallons first-hour delivery, depending on model
- Ambient operating range: 37-145° F is widest in class, offering more days of HP operation annually; designed to meet Northern Climate Spec (Tier 4)

Easy Installation
- Easy access side connections
- Quick access to electrical junction box
- Easily replaces a standard electric water heater

Integration
- Electronic control for easy temperature adjustment and mode management
- Audible alarm for service alerts

EcoNet®
- Integrated EcoNet® WiFi-connected® technology (2.4 GHz only) and free mobile app gives users control over water systems, allowing for customizable temperature, vacation settings, energy savings and system monitoring at home or away. Visit Rheem.com/EcoNetConnect
- Demand Response Ready – CTA-2045 Port easily connects to utility programs

Operation Modes
- Energy Saver
- Heat Pump
- High Demand
- Electric
- Vacation/Away: 2-28 days (or placed on hold indefinitely)

Plus...
- Premium grade anode rod with resistor extends the life of the tank
- 3/4" NPT water inlet and outlet; 3/4" condensate drain connections
- Incoloy stainless steel resistor elements
- Dry-fire protection
- Easy access, top mounted washable air filter
- 2" Non-CFC foam insulation
- Enhanced flow brass drain valve
- Temperature and pressure relief valve installed
- Design certified to NSF/ANSI 372 (Lead Content)

Warranty
- 10-Year limited warranty for tank and parts, 1-year full in-home labor* warranty
  See Residential Warranty Certificate for complete information

Units meet or exceed ANSI requirements and have been tested according to CSA procedures. Units have been certified by CSA to meet requirements of NAECA, ASHRAE standard 90, ICC Code and all state energy efficiency performance criteria.

* WiFi broadband internet connection required.

15 Amps

PERFORMANCE PLATINUM Hybrid
40, 50, 65 and 80-Gallon Capacities
208-240 Volt / 1 PH Electric

ENERGY STAR

cULus

ASME

LEED Points = 3

See specifications chart on back.

12/21 FORM NO. THD-PPHEG-15 Rev. 4

R406 ADDITIONAL ENERGY EFFICIENCY REQUIREMENTS COMPLIANCE

2021 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective March 15, 2024)

WASHINGTON STATE UNIVERSITY Energy Program

Permit#
Address or Lot & Block
City Zip

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

Instructions: This single-family project uses the requirements of the Prescriptive Path below to incorporate the minimum values listed. Based on the conditioned floor area of the structure, the number of required additional credits must be selected by the permit applicant.

Provide all information from the following tables in as building permit drawings: Table R402.1.2 - Insulation and Fenestration Requirements by Component, Table R406.2 - Fuel Normalization Credits and R406.3 Energy Credits.

Authorized Representative Signature Date

All Climate Zones Table 402.1.3	R-Value [a]	U-Factor [a]
Fenestration U-Factor [b,i]	n/a	0.30
Skylight U-Factor [b]	n/a	0.50
Ceiling [e]	60	n/a
Wood Frame Wall [c]	20+5 or 13+10	n/a
Floor	30	n/a
Below Grade Wall [d]	10/15/21 int +5TB	n/a
Slab [d] & Value & Depth	10, 4 ft	n/a

a. 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

b. The fenestration U-factor column excludes skylights.

c. "10/15/21 +15ff" 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 5 continuous insulation on the interior side of the basement wall at the interface of the basement wall. "10/15/21 +15ff" 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. "15ff" 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.

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 R503.3.1. 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 percent of the wall cavity insulated and headers insulated with a minimum of R-10 insulation.

i. The first value is cavity insulation, the second value is continuous insulation. Therefore, as an example, "R13+10" means R-13 cavity insulation plus R-10 continuous insulation.

j. A maximum U-factor of 0.32 shall apply to vertical fenestration products installed in buildings located above 4000 feet in elevation above sea level, or in windborne debris regions where protection of openings is required under Section R301.2.1.2 of the International Residential Code.

2021 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective March 15, 2024)

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: ..... **5.0 credits**
   Dwelling units less than 1500 square feet in conditioned floor area with less than 300 square feet of fenestration area. Additions to existing building greater than 500 square feet of heated floor area but less than 1500 square feet.
2. Medium Dwelling Unit: ..... **8.0 credits**
   All dwelling units that are not included in #1, #3 or #4.
3. Large Dwelling Unit: ..... **9.0 credits**
   Dwelling units exceeding 5000 square feet of conditioned floor area.
4. Dwelling units serving Group R-2 occupancies: ..... **6.5 credits**
   Section R401.1 and residential building Section R202 for Group R-2.
5. Additions 150 square feet to 500 square feet: ..... **2.0 credits**

The drawings included with the building permit application shall identify which options have been selected and the point value of each option, regardless of whether separate mechanical, plumbing, electrical, or other permits are utilized for the project

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

Table R406.2 ENERGY EQUALIZATION CREDITS

System Type	Description of Primary Heating Source	Credits – select ONE system type
1	For combustion heating equipment meeting minimum federal efficiency standards for the equipment listed in Table C403.3.2(5) or C403.3.2(6)	0 ☐
2	For an initial heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) and supplemental heating provided by electric resistance or a combustion furnace meeting minimum standards listed in Table C403.3.2(5)b found in the 2021 WSEC- COMMERCIAL ENERGY CODE	1.5 ☐
3	For heating system based on electric resistance only (either forced air or Zonal)	0.5 ☐
4[a]	For heating system using a heat pump that meets federal standards for the equipment listed in Table C403.3.2(2) or C403.3.2(9) or air to water heat pump units that are configured to provide both heating and cooling and are rated in accordance with AHRI 550/590	3.0 ☒
5	For heating system based on electric resistance only: 1. Inverter-driven ductless mini-split heat pump system installed in the largest zone in the dwelling, or 2. With 2KW or less total installed heating capacity per dwelling	2.0 ☐

a. See Section R403.1 and residential building in Section R202 for Group R- 2 scope.
b. The gas back-up furnace will operate as fan-only when the heat pump is operating. The heat pump shall operate at all temperatures above 38°F (3.3°C) (or lower). Below that "changeover" temperature, the heat pump would not operate to provide space heating. The gas furnace provides heating below 38°F (3.3°C) (or lower).
c. Additional points for the HVAC system are included in Table R406.3.

2021 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective March 15, 2024)

Summary of Table R406.3

Options	Energy Credit Option Descriptions	Credits – limited to one energy option from each category [a]	Comments:
1.1	Efficient Building Envelope	0.5 ☐	
1.2	Efficient Building Envelope	1.0 ☒	1
1.3	Efficient Building Envelope	1.5 ☐	
1.4	Efficient Building Envelope	2.5 ☐	
2.1	Air Leakage Control and Efficient Ventilation	1.0 ☒	1
2.2	Air Leakage Control and Efficient Ventilation	1.5 ☐	
2.3	Air Leakage Control and Efficient Ventilation	2.0 ☐	
3.1[b,c]	High Efficiency HVAC	1.0 ☐	
3.2[d]	High Efficiency HVAC	0.5 ☒	0.5
3.3[b,e]	High Efficiency HVAC	0.5 ☐	
3.4[b,f]	High Efficiency HVAC	1.5 ☐	
3.5[g]	High Efficiency HVAC	1.5 ☐	
3.6[h]	High Efficiency HVAC	1.0 ☐	
3.7[b,i,k]	High Efficiency HVAC	2.0 ☐	
3.8[b,j]	High Efficiency HVAC	1.0 ☐	
3.9[l]	High Efficiency HVAC	1.5 ☐	
3.10	High Efficiency HVAC	2.5 ☐	
3.11	High Efficiency HVAC	0.5 ☐	
4.1	High Efficiency HVAC Distribution System	0.5 ☐	
5.1[d]	Efficient Water Heating	0.5 ☐	
5.2	Efficient Water Heating	0.5 ☐	
5.3	Efficient Water Heating	0.5 ☐	
5.4	Efficient Water Heating	1.0 ☐	
5.5	Efficient Water Heating	1.5 ☐	
5.6	Efficient Water Heating	2.0 ☒	2.0
5.7	Efficient Water Heating	2.5 ☐	
5.8	Efficient Water Heating	2.5 ☐	
6.1[n]	Renewable Electric Energy (4.5 credits max)	0.5-4.5 ☐	
7.1	Appliance Package	0.5 ☒	0.5
	including energy equalization credits	Total Credits 8	Credits Required 8.0

a. An alternative heating source sized at a maximum of 0.5 Watts/ft2 (equivalent) of heated floor area or 500 Watts, whichever is bigger, may be installed in the dwelling unit.
b. See Section R403.1 and residential building in Section R202 for Group R-2 scope.
c. Option 3.1 can only be taken with Options 3.3 and 3.7. To qualify to claim Option 3.1 with 3.3, the system shall be a 1-2 speed heat pump system. Variable capacity heat pumps are ineligible from claiming this option.
d. This option may only be claimed if serving System Type 4 or 5 from Table R406.2.
e. Primary living areas include living, dining, kitchen, family rooms, and similar areas.
f. Option 3.11 can only be taken with Efficient Water Heating Options 5.1 or 5.2. Equipment sizing for space heating shall be calculated as provided in Section R403.7 with increased capacity to provide a minimum of 75 percent of peak hot water demand or shall be sized in accordance with approved manufacturer's specifications or guidance. Supplementary hot water heating system shall be in accordance with Section R403.5.7.

2021 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective March 15, 2024)

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
1. EFFICIENT BUILDING ENVELOPE OPTIONS Only one option from items 1.1 through 1.4 may be selected in this category. Compliance with the conductive UA targets is demonstrated using Section R402.1.5, Total UA alternative, where [1-(Proposed UA/Target UA)] = the required %UA reduction		
1.1	Prescriptive compliance is based on Table R402.1.3 with the following modifications: Vertical fenestration U =0.22	0.5
1.2	Prescriptive compliance is based on Table R402.1.3 with the following modifications: Vertical fenestration U =0.25 Fluorh 38 Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab **or** Compliance based on Section R402.1.5: Reduce the Total target UA by 15%.	1.0
1.3	Prescriptive compliance is based on Table R402.1.3 with the following modifications: Vertical fenestration U = 0.18 Ceiling and cathe-r joist-vaulted R-60 advanced Wood frame wall R-21 int plus R-12 ci Floor R-38 Basement wall R-21 int plus R-12 ci Slab on grade R-10 perimeter and under entire slab Below grade slab R-10 perimeter and under entire slab **or** Compliance based on Section R402.1.5: Reduce the Total target UA by 22.5%.	1.5
1.4	Prescriptive compliance is based on Table R402.1.3 with the following modifications: Vertical fenestration U = 0.18 Ceiling and single-cafter or joist-vaulted R-60 advanced Wood frame wall R-21 int plus R-16 ci Floor R-48 Basement wall R-21 int plus R-16 ci Slab on grade R-20 perimeter and under entire slab Below grade slab R-20 perimeter and under entire slab **or** Compliance based on Section R402.1.5: Reduce the Total target UA by 30%	2.5

2021 Washington State Energy Code – Residential
Prescriptive Energy Code Compliance for All Climate Zones in Washington
Single Family – New & Additions (effective March 15, 2024)

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
2. AIR LEAKAGE CONTROL AND EFFICIENT VENTILATION OPTIONS Only one option from Items 2.1 through 2.3 may be selected in this category.		
2.1	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 2.0 air changes per hour maximum at 50 Pascals, or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.25 cfm/ft2 maximum at 50 Pascals. **and** All whole-house ventilation requirements as determined by Section M1505.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.65. 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.	1.0
2.2	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 1.5 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 0.20 cfm/ft2 maximum at 50 Pascals **and** All whole-house ventilation requirements as determined by Section M1505.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.75. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.	1.5
2.3	Compliance based on Section R402.4.1.2: Reduce the tested air leakage to 1.0 air changes per hour maximum at 50 Pascals, or For R-2 Occupancies, optional compliance based on Section R402.4.1.2: Reduce the tested air leakage to 0.15 cfm/ft2 maximum at 50 Pascals **and** All whole-house ventilation requirements as determined by Section M1505.3 of the International Residential Code or Section 403.8 of the International Mechanical Code shall be met with a heat recovery ventilation system with minimum sensible heat recovery efficiency of 0.80. Duct insulation shall comply with Section R403.3.7. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the maximum tested building air leakage and shall show the heat recovery ventilation system.	2.0

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Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
3. HIGH EFFICIENCY HVAC EQUIPMENT OPTIONS Only one option from Items 3.1 through 3.10 may be selected in this category. Item 3.11 may be taken with Items 3.1 or 3.3 only.		
3.1[a,b,c]	Reference the chart at the appendix for the HSPF2 Rating conversions for the HVAC selections. Energy Credit Options: Std HSPF2 9.5 / Int HSPF2 8.5 3.2 & 3.3 Ducted central heat pump 3.5 ductless heat pump in main living area + electric resistance in other rooms Std HSPF2 10 / Int HSPF2 9 3.6 ducted central heat pump Std HSPF2 11 / Int HSPF2 9.4 3.7 ducted heat pump with no electric resistance (except footnote a) Std HSPF2 10 / Int HSPF2 8.5 3.7 ductless heat pump with no electric resistance ≥ 24,000 Btu (except footnote a) Std HSPF2 9 / Int HSPF2 8.1 For System Type 1 in Table R406.2: Air-source centrally ducted heat pump with minimum HSPF 9.5 / SEER 18 / EER 12.5 **or** Energy Star rated (U.S. North) Gas or propane furnace with minimum AFUE of 95% **or** Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%. 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.	1.0
3.2[a,b,c]	For secondary heating system serving System Type 2 in Table R406.2: Air-source centrally ducted heat pump with minimum HSPF 9.5 / SEER18 / EER 12.5 **or** Energy Star rated (U.S. North) Gas or propane boiler with minimum AFUE of 90%. 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.	0.5
3.3[a,b,c,d]	Air-source centrally ducted heat pump with minimum HSPF 9.5 /SEER18 / EER 12.5 In area where the winter design temperature as specified in Appendix RC is 23°F or below, a cold climate heat pump found on the NEEP cc ASHP qualified product list shall be used. 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.	0.5
3.4[a,b,e,f]	Closed-loop ground source heat pump, with a minimum COP of 3.3 **or** Open loop water source heat pump with a maximum pumping hydraulic head of 150 feet and minimum COP of 3.6. 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
3.5[a,b,g]	Ductless mini-split heat pump system, zonal control: In homes where the primary space heating system is zonal electric heating, a ductless mini-split heat pump system with a	1.5

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	minimum HSPF of 10.0 shall be installed and provide heating to the largest zone of the housing unit. 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.	
3.6	A centrally ducted air source cold climate variable capacity heat pump (cc VHP) found on the NEEP cc VCHP qualified product list with a minimum of 10 HSPF may be used to satisfy this requirement. In area where the winter design temperature as specified in Appendix RC is 23°F or below, an air source centrally ducted heat pump shall be a cold-climate variable capacity heat pump as listed on the NEEP qualified product list. 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.	1.0
3.7[a,b,e]	Ductless split system heat pumps with no electric resistance heating in the primary living areas. A ductless heat pump system with a minimum HSPF of 10 shall be sized and installed to provide heat to entire dwelling unit at the design outdoor air temperature. **Exception:** In homes with total heating load of 24,000 BTUh or less using multi-zone mini-split systems with nominal ratings of 24,000 or less, the minimum HSPF to claim this credit shall be 9 HSPF. a) This option may only be claimed if serving System Type 4 or 5 from Table R406.2. e. Primary living areas include living, dining, kitchen, family rooms, and similar areas. f Option 3.11 can only be taken with Efficient Water Heating Options 5.1 or 5.2. Equipment sizing for space heating shall be calculated as provided in Section R403.7 with increased capacity to provide a minimum of 75 percent of peak hot water demand or shall be sized in accordance with approved manufacturer's specifications or guidance. Supplementary hot water heating system shall be in accordance with Section R403.5.7.	2.0
3.8[a,j]	Air-to-water heat pump with minimum COP of 3.2 at 47°F, rated in accordance with AHRI 550/590 by an accredited or certified testing lab. To qualify to claim this credit, the building permit drawings shall specify the option being selected, the heated floor area calculation, the heating equipment type(s), the minimum equipment efficiency, and total installed heat capacity (by equipment type).	1.0
3.9	Gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.15. For R-2 Occupancy, gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.20.	1.5
3.10[l]	Combination water heating and space heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0., shall serve all units. **or** For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0.	2.5

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3.11[c]	Connected thermostat meeting ENERGY STAR Certified Smart Thermostats/EPA ENERGY STAR specifications. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the thermostat model.	0.5

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
4. HIGH EFFICIENCY HVAC DISTRIBUTION SYSTEM OPTIONS		
4.1	HVAC equipment and associated duct system(s) installation shall comply with the requirements of Section R403.3.2. Electric resistance heat, hydronic heating and ductless heat pumps are not permitted under this option. Direct combustion heating equipment with AFUE less than 80% is not permitted under this option. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the heating equipment type and shall show the location of the heating and cooling equipment and all the ductwork.	0.5

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
5. EFFICIENT WATER HEATING OPTIONS Only one option from Items 5.1 through 5.4 may be selected in this category. Items 5.1 and 5.2 may be combined with any option.		
5.1	A drain water heat recovery unit(s) shall be installed, which captures waste water heat from at least two showers, including tub/shower combinations. It is acceptable, but not required, for sink water to be connected. Unit shall have a minimum efficiency of 40% if installed for equal flow or a minimum efficiency of 54% if installed for unequal flow. Such units shall be rated in accordance with CSA B55.1 or IAPMO IGC 346-2017 and be so labeled. To qualify to claim this credit, the building permit drawings shall include a plumbing diagram that specifies the drain water heat recovery units and the plumbing layout needed to install it. Labels or other documentation shall be provided that demonstrates that the unit complies with the standard.	0.5
5.2	For Compact Hot Water Distribution system credit, the volume shall store not more than 16 ounces of water between the nearest source of heated water and the termination of the fixture supply pipe where calculated using Section R403.5.2. Construction documents shall indicate the ounces of water in piping between the hot water source and the termination of the fixture supply. When the hot water source is the nearest primed plumbing loop or trunk, this must be primed with an On Demand recirculation pump and must run a dedicated ambient return line from the furthest fixture or end of loop to the water heater. To qualify for this credit, the dwelling must have a minimum of 1.5 bathrooms.	0.5

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5.3	Water heating system shall include the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.80. 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.	0.5
5.4	Water heating system shall include one of the following: Energy Star rated gas or propane water heater with a minimum UEF of 0.93. **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 System **or** Water heater heated by ground source heat pump meeting the requirements of Option 3.4. 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
5.5	Water heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0. **or** For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0. shall supply domestic hot water to all units. **or** For R-2 Occupancy, gas-fired heat pump water heater(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.35., shall supply domestic hot water to all units. 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.	1.5
5.6	Water heating system shall include the following: Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard Advanced Water Heating Specification with the UEF noted above 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.	2.0
5.7	Water heating system shall include one of the following: Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard Advanced Water Heating Specification with the UEF noted above	2.5

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Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
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: 1. Dishwasher, standard – Energy Star rated, Most Efficient 2021 or Dishwasher, compact – Energy Star rated (Version 6.0) 2. Refrigerator (if provided) – Energy Star rated (Version 5.1) 3. Washing machine (Residential) – Energy Star rated (Version 8.1) 4. Dryer – Energy Star rated, Most Efficient 2022 To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify 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

Table 406.3 – Energy Credits (Single Family)

Option	Description	Credits: SF
8. RENEWABLE ELECTRIC ENERGY OPTION		
8.1	For each 660 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 4.5 credits. Generation shall be calculated as follows: For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculative PVWATTs or approved alternate by the code official. Documentation noting solar access shall be included on the plans. For wind generation projects designs shall document annual power generation based on the wind turbine power curve, average annual wind speed at the site, frequency distribution of the wind speed at the site and height of the tower. To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.	0.5 - 4.5

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	or For R-2 Occupancy, electric heat pump water heater(s), meeting the standards for Tier III of NEEA's advanced water heating specification and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors, shall supply domestic hot water for all units. If one water heater is serving more than one dwelling unit, all hot water supply and recirculation piping shall be insulated with R-4 minimum pipe insulation. 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.	
5.8	Combination water heating and space heating system shall include one of the following: Gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0., or For R-2 Occupancy, gas-fired heat pump water heater(s) meeting Tier 2 of the NEEA Advanced Water Heating Specification for Gas-Fueled Residential Storage Water Heaters Version 1.0., shall supply all units. or For R-2 Occupancy, gas-fired heat pump(s) meeting ANSI Z21.40.2 and Z21.40.4 or CSA, with a minimum UEF of 1.35., shall supply all units. 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.	2.5
5.9[a,d]	Water heating system shall include one of the following: Electric heat pump water heater meeting the standards for Tier III of NEEA's advanced water heating specification Electric heat pump water heater with a minimum UEF of 2.9 and utilizing a split system configuration with the air-to-refrigerant heat exchanger located outdoors. Equipment shall meet Section 4, requirements for all units, of the NEEA standard Advanced Water Heating Specification with the UEF noted above 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.	2.0

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6.1[n]	Renewable Electric Energy (4.5 credits max)	0.5-4.5 ☐
7.1	Appliance Package	0.5 ☒ 0.5
	including energy equalization credits	Total Credits 8 Credits Required 8.0

n. For each 660 kWh of electrical generation per housing unit provided annually by on-site wind or solar equipment a 0.5 credit shall be allowed, up to 4.5 credits. Generation shall be calculated as follows:

For solar electric systems, the design shall be demonstrated to meet this requirement using the National Renewable Energy Laboratory calculative PVWATTs or approved alternate by the code official. Documentation noting solar access shall be included on the plans.

For wind generation projects designs shall document annual power generation based on the wind turbine power curve, average annual wind speed at the site, frequency distribution of the wind speed at the site and height of the tower.

To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall show the photovoltaic or wind turbine equipment type, provide documentation of solar and wind access, and include a calculation of the minimum annual energy power production.

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Table 406.3 - Energy Credit

7. Appliance Package Option	Width	cu. Ft.	Brand	Model # (link to energy star rating)	Energy Star	Most Efficient 2024	Retail Price	
1 D

ALARMS IRC 2021

(S) SMOKE ALARM AND HEAT DETECTION (IRC R314)

R314.1.1 Listings. Smoke alarms shall be listed in accordance with UL 217. Heat detectors and heat alarms shall be listed for the intended application. Combination smoke and carbon monoxide alarms shall be listed in accordance with UL 217 and UL 2034.

R314.2 Where required. For new construction. Smoke alarms shall be provided in dwelling units. A heat detector or hear alarm shall be provided in new attached garages.

R314.3 Location. Smoke alarms shall be installed in the following locations:
1. In each sleeping room or sleeping loft
2. Outside each separate sleeping area in the immediate vicinity of the bedromms.
3. On each additinal story of the dweling, including basements and habitabe attics and not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one ful story below the upper level.
4. Smoke alarms shall be installed not less than 3 feet horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by this section.
5. In napping areas in a family home child care.
6. In the hallway and in the room open to the hallway in dwelling units where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches (610 mm) or more.
7. Within the room to which a loft is open, in the immediate vicinity of the loft.

R314.4 Interconnectivity. Where more than one smoke alarm is required to be installed within an individual dwelling unit in accordance with Section R 314.2, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of smoke alarms shall not be required where listed wireless alarms are installed and all alarms sound upon activation of one alarm.

R314.5 Combination alarms. Combination smoke and carbon monoxide alarms shall be permitted to be used in lieu of carbon monoxide alarms.

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.
R314.6 Power source. Smoke alarms, heat alarms, and heat detectors shall receive their primary power from the building wiring where such wiring is served from a commercial source and, where primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection.
EXCEPTIONS:
1. Smoke alarms shall be permitted to be battery operated where installed in buildings without commercial power.

2. Smoke alarms installed in accordance with Section R314.2.2 shall be permitted to be battery powered.

(M) CARBON MONOXIDE ALARM (IRC R 315.1)

R315.1.1 Listings, Carbon monoxide alarms shall be listed in accordance with UL 2034. Combination carbon monoxide and smoke alarms shall be listed in accordance with UL 2034 and UL 217.

R315.2 Where required. For new construction, an approved carbon monoxide alarm shall be installed outside of each separate sleeping area in the immediate vicinity of the bedroom in dwelling units and each level of the dwelling in accordance with manufacturer's recommendation.

R315.3 Location. Carbon monoxide alarms in dwelling units shall be installed outside of each separate sleeping area in the immediate vicinity of the bedrooms and each level of the dwelling with the manufacturer's recommendations. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

R315.4 Combination alarms. Combination carbon monoxide and smoke alarms shall be permitted to be used in lieu of carbon monoxide alarms.

R315.5 Interconnectivity. Where more than one carbon monoxide alarm is required to be installed within an individual dwelling unit in accordance with Section R 315.3, the alarm devices shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual dwelling unit. Physical interconnection of carbon monoxide alarms shall not be required wehre listed wireless alarms are installed and all alarms sound upon activation of one alarm.

(HD) NEW ATTACHED GARAGES (IRC R314.2.3)

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.

• R314.3- Smoke alarm locations now include:
5. In the hallway and in the room open to the hallway in dwelling units where the ceiling height of a room open to a hallway serving bedrooms exceeds that of the hallway by 24 inches or more.
• R314.3.1-Smoke alarm near cooking appliances now include:
1. Smoke alarms listed and marked "helps reduce cooking nuisance alarms" shall not be installed less than 6 feet horizontally from permanently installed cooking appliance.

MECHANICAL VENTILATION IRC 2021

LOCAL EXHAUST RATES

1 250 CFM ON SWITCH

2 50 CFM ON SWITCH

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

AREA TO BE EXHAUSTED	EXHAUST RATES
Kitchens	100 cfm intermittent or 25 cfm continuous
Bathrooms-Toilet Rooms	Mechanical exhaust capacity of 50 cfm intermittent or 20 cfm continuous

For SI: 1 cubic foot per minute = 0.0004719 m³/s.

M1505 MECHANICAL VENTILATION
Whole-House Mechanical Ventilation System Selected - Exhaust Ventilation System

THE WHOLE HOUSE VENTILATION SYSTEM SHALL PROVIDE OUTDOOR AIR TO EACH HABITABLE SPACE AT A CONTINUOUS RATE OF NOT LESS THAN DETERMINED IN ACCORDANCE WITH IRC 2021 TABLE M1505.4.3(1).

3 95 CFM per TABLE M1505.4.3(1)

Table M1505.4.3(1)
Whole-House Mechanical Ventilation Airflow Rate

Dwelling Unit Floor Area (square feet)	Number of Bedrooms				
	0 - 1	2	3	4	5 or more
	Airflow in cfm				
< 500	30	30	35	45	50
501 - 1,000	30	35	40	50	55
1,001 - 1,500	30	40	45	55	60
1,501 - 2,000	35	45	50	60	65
2,001 - 2,500	40	50	55	65	70
2,501 - 3,000	45	55	60	70	75
3,001 - 3,500	50	60	65	75	80
3,501 - 4,000	55	65	70	80	85
4,001 - 4,500	60	70	75	85	90
4,501 - 5,000	65	75	80	90	95

Certified on 3/27/2024 WAC 51-51-1505 Page 3

Table M1505.4.4.1
Minimum Local Exhaust Rates

Area to Be Exhausted	Exhaust Rates	
	Intermittent	Continuous
Open Kitchens	In accordance with Section M1505.4.4.3	Not Permitted
Enclosed Kitchens	In accordance with Section M1505.4.4.3	5 ACH based on kitchen volume
Bathrooms - Toilet rooms	50 cfm	20 cfm

M1505.4.4.3 Local intermittent kitchen exhaust system. Kitchen range hoods for domestic cooking appliances shall meet or exceed either the minimum airflow or the minimum capture efficiency in accordance with Table M1505.4.4.3. Capture efficiency ratings shall be determined in accordance with ASTM E3087.

EXCEPTION: Other intermittent kitchen exhaust fans, including downdraft, shall meet or exceed 300 cfm airflow.

Table M1505.4.4.3
Kitchen Range Hood Airflow Rates (cfm) and ASTM E3087 Capture Efficiency (CE) Ratings According to Kitchen Range Fuel Type

Hood Over Electric Range	Hood Over Combustion Range
65% CE or 160 cfm	80% CE or 250 cfm

M1504.3 EXHAUST OPENINGS

Exhaust openings shall terminate as follows:
1. Not less than 3 feet (914mm) from property lines
2. Not less than 3 feet (914mm) from gracity air intake openings, operabe windows and doors.
3. Not less than 10 feet (3048 mm) from mechanical air intake openings except where the exhaust opening is located not less than 3 feet (914mm) above the air intake opnening shall comply with Section R303.5.2 and R303.6.

5ft2

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT PEIK LI PANG STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

This drawing is the exclusive property of 5ft2 Studio Architects, and can be reproduced only with the permission of the architect. variations and modifications to work shown on this drawing shall not be carried out without written permission from the architect.

NO.	DESCRIPTION	DATE
1	PL redline	05.14.24

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

DATE: 06.05.24

Compliance - Alarms and Ventilation (IRC)

A7.1

1/5/2025 4:33:43 PM

SITE DATA AND ZONING

ZONING	R-8.4	
LOT AREA	8,936 SF	
SETBACK REQUIREMENT	FRONT SETBACK	20 FT
	REAR SETBACK	25 FT
	SIDE SETBACK	10 FT

For lots with a lot width of 90 feet or less, the sum of the side yards' width shall be at least 15 feet.
Site width is 89.51'

Variable side yard depth requirement
(a) Single-family dwellings shall provide a minimum side yard depth of seven and one-half feet if the building:

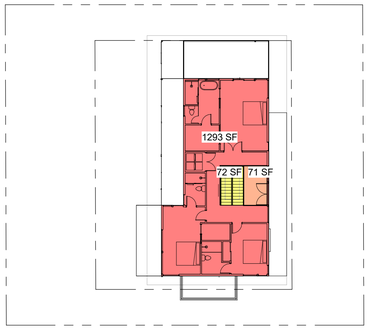
(1)For nongabled roof end buildings, the height is more than 15 feet measured from existing or finished grade, whichever is lower, to the top of the exterior wall facade adjoining the side yard;
or (2)For gabled roof end buildings, the height is more than 18 feet measured from existing or finished grade, whichever is lower, to the top of the gabled roof end adjoining the side yard.

(b) Single-family dwellings with a height of **more than 25 feet** measured from the existing or finished grade, whichever is lower, to the top of the exterior wall facade adjoining the side yard shall provide a minimum side yard depth of ten feet.

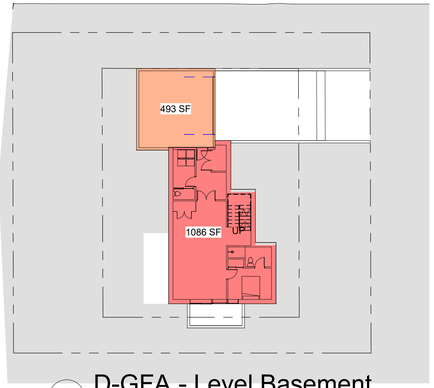
The building more than height is 25 feet,
hence the minimum side yard depth is 10 feet



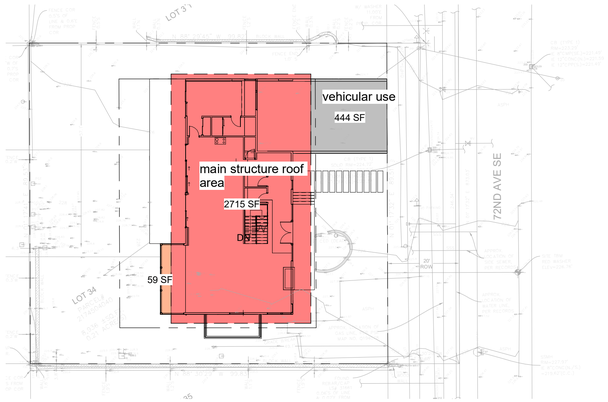
5 D-GFA - Level 1
1" = 20'-0"



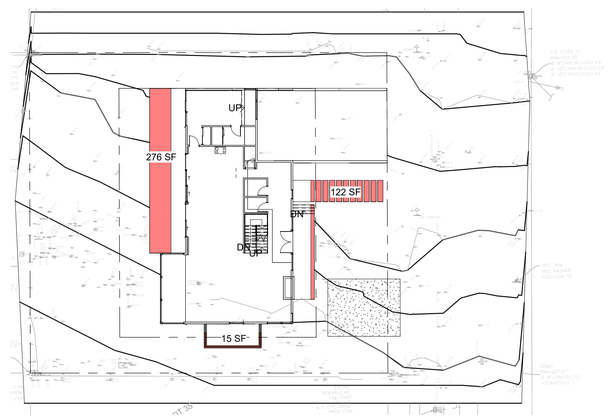
6 D-GFA - Level 2
1" = 20'-0"



7 D-GFA - Level Basement
1" = 20'-0"



3 D- Lot Coverage
1" = 20'-0"



4 D- Hardscape
1" = 20'-0"

LOT COVERAGE CALCULATIONS

A.	Gross Lot Area	8,936 Square Feet
B.	Net Lot Area	8,936 Square Feet
C.	Allowed Lot Coverage Area	3574.4 Square Feet
D.	Allowed Lot Coverage	40 % of Lot
E.	Existing Lot Coverage:	
	1 Main Structure Roof Area	NA Square Feet
	2 Accessory Building Roof Area	NA Square Feet
	3 Vehicular Use (driveway, paved accesseasements [portion used by the lot for access],parking	NA Square Feet
	4 Covered Patios and Covered Decks	NA Square Feet
	5 Total Existing Lot Coverage Area (E1+E2+E3+E4)	NA Square Feet
F.	(Total Lot Coverage Area Removed)	NA Square Feet
G.	Proposed Adjustment for Single Story (Area)	NA Square Feet
H.	Proposed Adjustment for Flag Lot	NA Square Feet
I.	Total New Lot Coverage Area:	
	1 Main Structure Roof Area	2,715 Square Feet
	2 Accessory Structure Roof Area Vehicular Use (driveway, paved accesseasement [portion used by	0 Square Feet
	3 the lot for access],parking)	444 Square Feet
	4 Covered Patios and Covered Decks	59 Square Feet
	5 Total New Lot Coverage Area (I1 + I2 + I3 + I4)	**3,218** Square Feet
J.	Total Project Lot Coverage Area = (E5 - F) + I5	3,218 Square Feet
K.	Proposed Lot Coverage Area = (J/B) x 100	36.0% % of Lot
	Lot Coverage calculations shown on Plan Sheet #	**A7.2:** Compliance - Zoning 1

HARDSCAPE CALCULATIONS

A.	Gross Lot Area	8936 Square Feet
B.	Net Lot Area	8936 Square Feet
C.	Area Borrowed from Lot Coverage	356 Square Feet
D.	Allowed Hardscape Area = 9% of lot area + C	13.0 % of Lot
E.	Allowed Hardscape Area	1160.6 Square Feet
F.	Total Existing Hardscape Area	
	1 Uncovered Decks	NA Square Feet
	2 Uncovered Patios	NA Square Feet
	3 Walkways	NA Square Feet
	4 Stairs	NA Square Feet
	5 Rockeries and Retaining Walls	NA Square Feet
	6 Other ***[INSERT TEXT HERE]***	NA Square Feet
	7 Total Existing Hardscape Area (F1 + F2 + F3 + F4 + F5 + F6)	0 Square Feet
G.	(Total Hardscape Area Removed)	0 Square Feet
H.	Total New Hardscape Area	
	1 Uncovered Decks	276 Square Feet
	2 Uncovered Patios	0 Square Feet
	3 Walkways	122 Square Feet
	4 Stairs	0 Square Feet
	5 Rockeries and Retaining Walls	15 Square Feet
	6 Other ***[INSERT TEXT HERE]***	0 Square Feet
	7 Total New Hardscape Area (H1 +H2 +H3 +H4 + H5 + H6)	413 Square Feet
I.	Total Project Hardscape Area = (F7-G) + H7	413 Square Feet
J.	Total Project Hardscape Area = (I/B) x 100	4.6 % of Lot
	Hardscape calculations shown on Plan Sheet #	**A7.2:** Compliance - Zoning 1

GROSS FLOOR AREA CALCULATIONS

Building Area	Existing Area (Sq. Ft.)	Removed Area (Sq. Ft.)	New/Addition Area (Sq. Ft.)	Total (Sq. Ft.)
Upper Floor	0	0	1,293	
Main Floor	0	0	1,769	
Gross Basement Area (including 1x staircase)	0	0	1,086	
Garage / Carport	0	0	493	
Total Floor Area	0	0	4,641	4,641
Accessory Buildings	0	0	0	
Accessory Dwelling Unit	0	0	0	
2nd and 3rd Story Roof Decks	0	0	0	
Basement Area Excluded	0	0	1291.5	-1291.5
150% GFA Modifier* (main and upper floor x2)	0	0	0	0
200% GFA Modifier* (main and upper floor x2)	0	0	70.8	141.5
Staircase GFA Modifier* (x2 for a three story staircase, x3 for a four story staricase)	0	0	71.7	71.7
				**1 x included in basement*
TOTAL Building Area				3,562.7

A.	Lot Area				8,936 Square Feet
B.	Zone	R-8.4 (x)	R-9.6 ( )	R-12 ( )	R-15 ( )
C.	Allowed Gross Floor Area (refer to "allowed GFA")				**3574.4** Square Feet
D.	Allowed Gross Floor Area				**40** % of Lot
E.	Proposed Gross Floor Area				3562.7 Square Feet
F.	Proposed Gross Floor Area				**39.87%** % of Lot

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5ft2

5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004

info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

Mercer Firsthill
2419

2419 72nd Ave
SE, Mercer Island,
WA 98040

Building Permit

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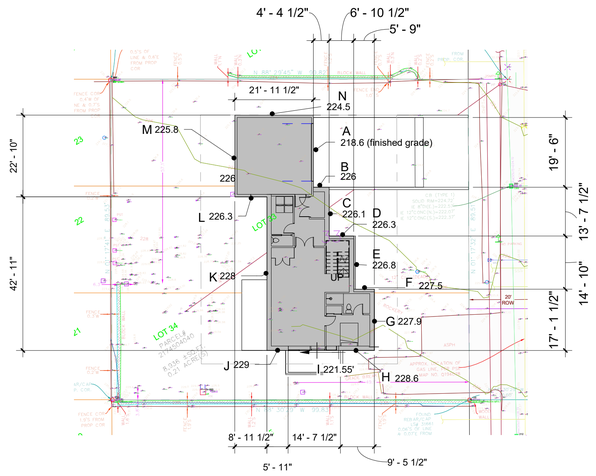
NO.	DESCRIPTION	DATE

DATE: 06.05.24

Compliance
-Zoning
1

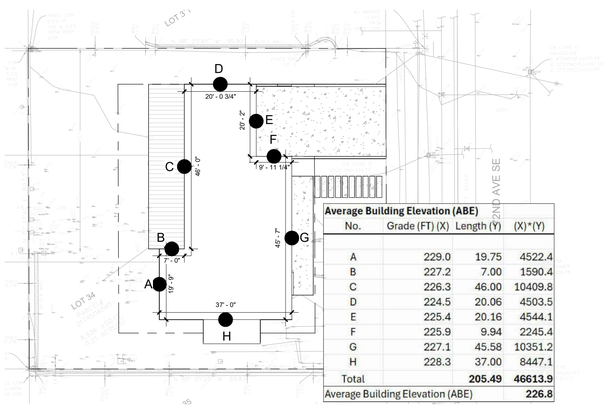
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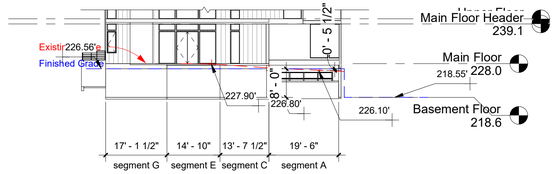


2 D-GFA exemption Basement
1" = 20'-0"

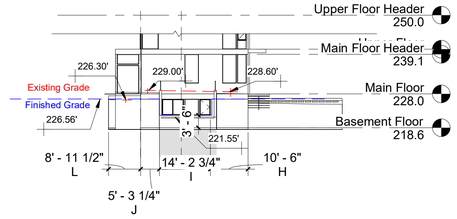
		WALL SEG LENGTH (FT)		celing ht	COVERAGE	RESULT
1	A	19.5	0	8.02	0%	0.0%
2	B	4.375	7.39	8.02	92%	4.0%
3	C	13.625	7.57	8.02	94%	12.9%
4	D	7.375	7.59	8.02	95%	7.0%
5	E	14.83	8.02	8.02	100%	14.8%
6	F	5.25	8.02	8.02	100%	5.3%
7	G	17.125	8.02	8.02	100%	17.1%
8	H	9.45	8.02	8.02	100%	9.5%
9	I	14.6	3	8.02	37%	5.5%
10	J	5.9	8.02	8.02	100%	5.9%
11	K	42.9	8.02	8.02	100%	42.9%
12	L	8.96	8.02	8.02	100%	9.0%
13	M	22.85	7.25	8.02	90%	20.7%
14	N	21.85	5.95	8.02	74%	16.2%
	(X)	208.59			na	170.6% (Y)
					Y/X	81.79% excluded



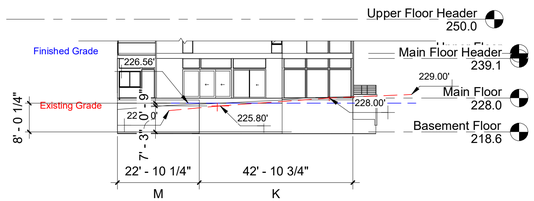
1 D- Average Grade
1" = 20'-0"



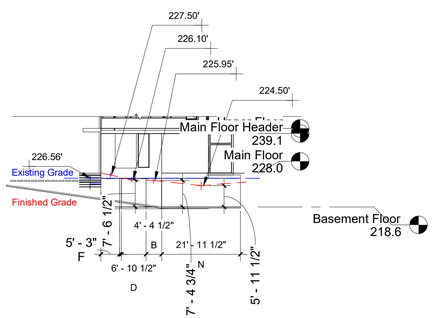
3 D. Elev Wall Segment A ,C. E, G
1" = 20'-0"



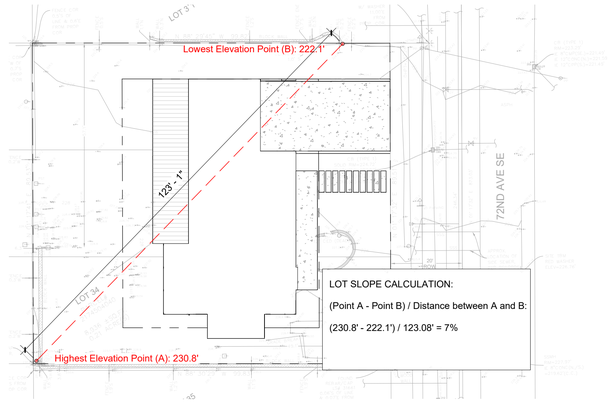
x D. Elev Wall Segment H,I,J,L
1" = 20'-0"



4 D. Elev Wall Segment M,K
1" = 20'-0"



5 D. Elev Wall Segment N, B, D, F
1" = 20'-0"



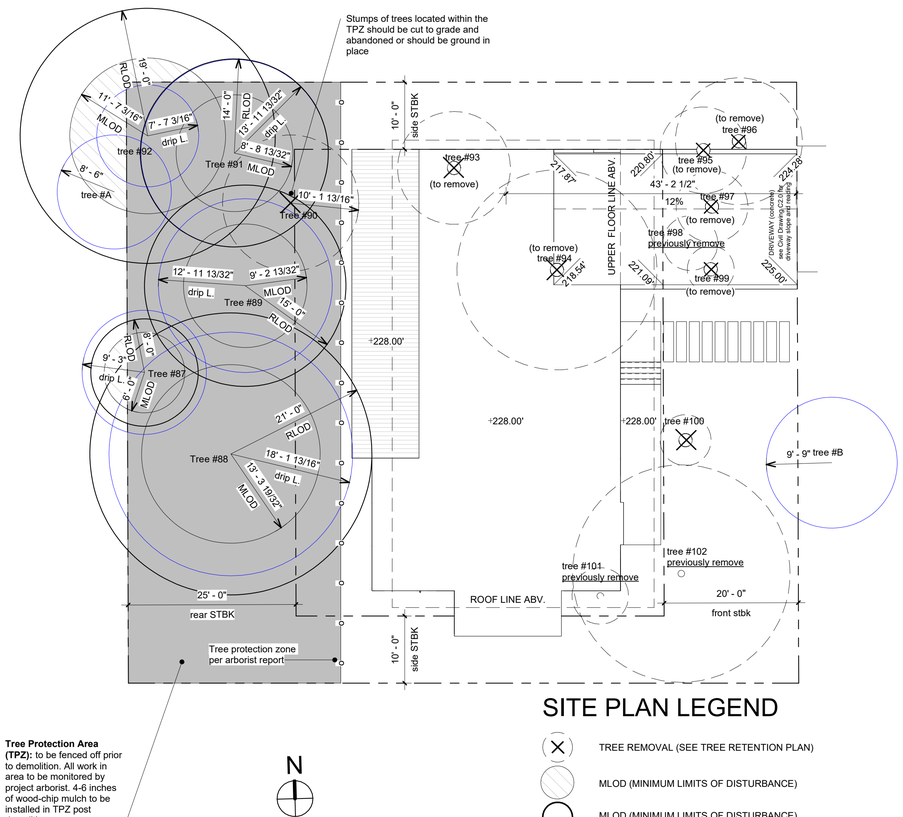
6 D- Lot Slope
1" = 20'-0"

LOT SLOPE CALCULATIONS

A.	Highest Elevation Point of Lot:	230.8 Feet
B.	Lowest Elevation Point of Lot:	222.1 Feet
C.	Elevation Difference	8.7 Feet
D.	Horizontal Distance Between High and Low Points	123.1 Feet
E.	Lot Slope*	7.1 %

* ***Lot slope*** **is the elevation difference divided by horizontal distance multiplied by 100. ***

Lot Slope calculations shown on Plan Sheet # A7.3: Compliance - Zoning 2



SITE PLAN LEGEND

- TREE REMOVAL (SEE TREE RETENTION PLAN)
- MLOD (MINIMUM LIMITS OF DISTURBANCE)
- MLOD (MINIMUM LIMITS OF DISTURBANCE)
- DECKING
- CONCRETE
- TREE PROTECTION FENCE

7 Tree Retention Plan
3/32" = 1'-0"

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5ft2
5ft2 Studio Architects
2625 Northup Way, Ste 100,
Bellevue, WA 98004
info@5ft2studio.com
www.5ft2studio.com

20120172 REGISTERED ARCHITECT
PEIK LI PANG
STATE OF WASHINGTON
06.05.2024

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NO.	DESCRIPTION	DATE

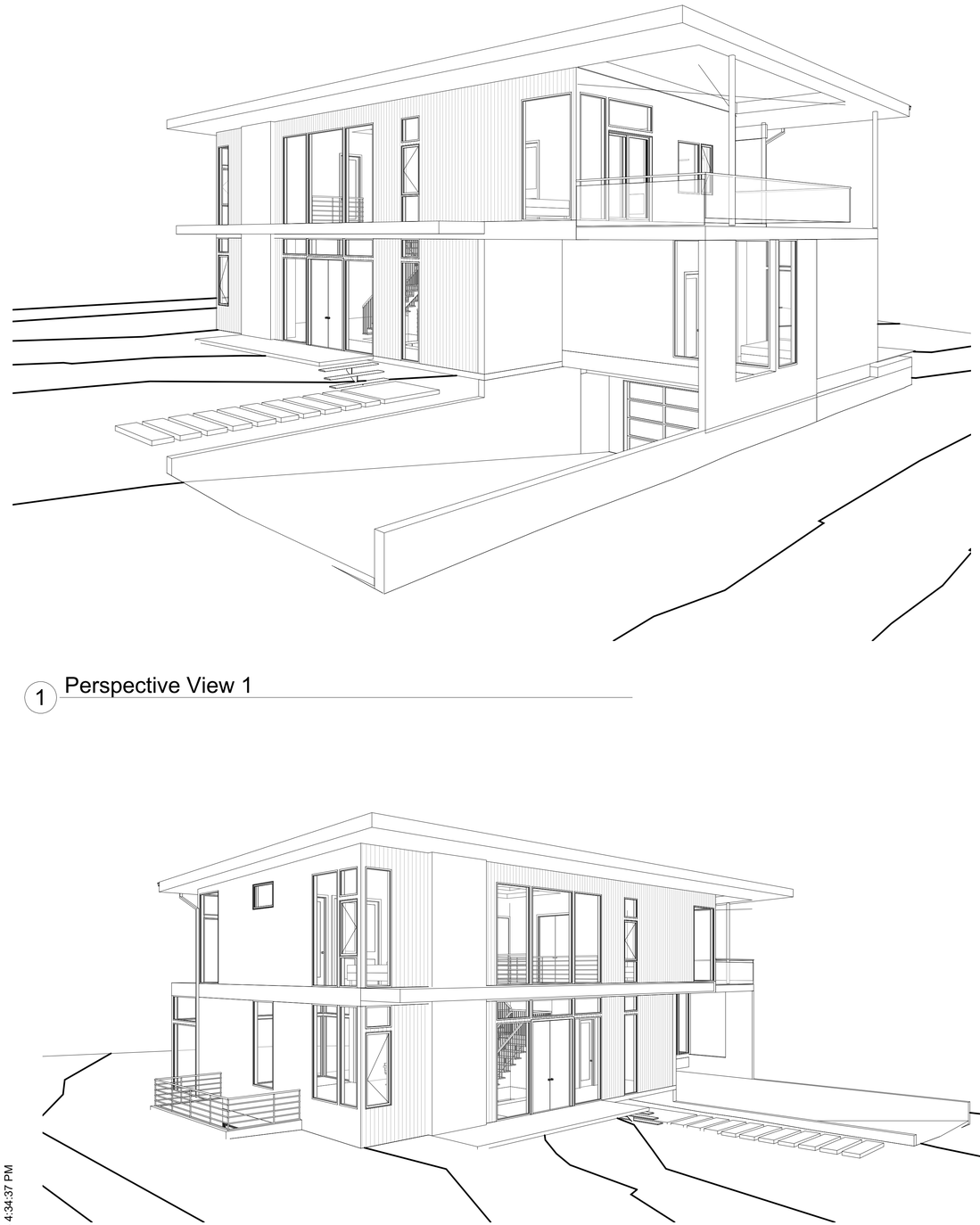
DATE: 06.05.24

Compliance - Zoning 2 & Tree Retention Plan

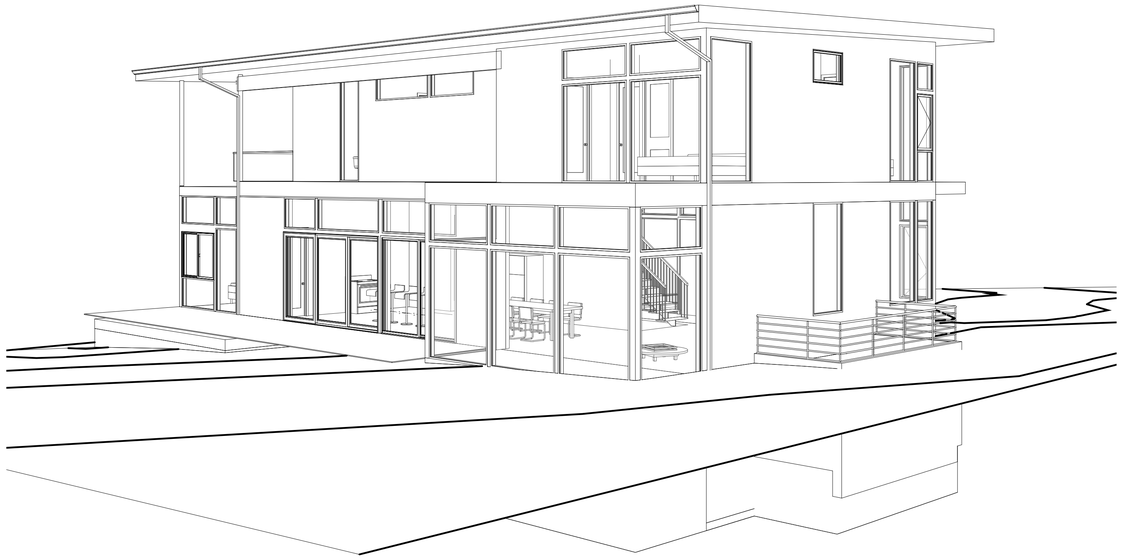
A7.3

1/5/2025 4:34:32 PM

NOTE: ALL THE PERSPECTIVES SHOWN ARE FOR ILLUSTRATION PURPOSES ONLY AND NOT FOR CONSTRUCTION PURPOSES.



1 Perspective View 1



2 Perspective View 2

3 Perspective View 3



4 Perspective View 4

1/5/2025 4:34:37 PM

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NO.	DESCRIPTION	DATE

DATE: 06.05.24

3D Views

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

A9.0

TOPOGRAPHIC & BOUNDARY SURVEY

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20230518000717)

LOTS 32, 33 AND 34, BLOCK 24, EAST SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 3 OF PLATS, PAGE 22, RECORDS OF KING COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BASIS OF BEARINGS

HELD BEARING OF S 01°17'50" W ALONG CENTERLINE OF 71ST AVE. S.E., AS CALCULATED FROM RECORD OF SURVEY FILED UNDER K.C.R.N. 20061213900004, AND REFRENCED BY R1

REFERENCES

R1. ALIGNMENT FOR 71ST AVE. S.E. PER R.O.S FILED UNDER K.C.R.N. 20061213900004 IN KING COUNTY WA

R2. ALIGNMENT FOR Srly LINE OF BLOCK PER R.O.S. FILED UNDER K.C.R.N. 9001189001 IN KING COUNTY WA

R3. PLAT OF EAST SEATTLE, VOL. 3 OF PLATS, PG. 22 &23

VERTICAL DATUM

NAVD(88) PER WGS SURVEY DATA WAREHOUSE:
POINT DESIGNATION 7007, MON IN CASE @ INTX. 70TH AVE. S.E. & S.E. 24TH ST.
EL: 208.21'

SITE TEMP. BENCHMARK
DESCRIPTION: PK NAIL W RED WASHER
LOCATION: 36.3'E & 25.4'N
ELEVATION: 226.76'

SURVEYOR'S NOTES

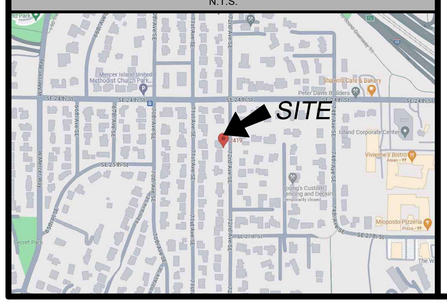
1. THE TOPOGRAPHIC SURVEY SHOWN HEREON WAS PERFORMED IN JANUARY OF 2024. THE FIELD DATA WAS COLLECTED AND RECORDED ON MAGNETIC MEDIA THROUGH AN ELECTRONIC THEODOLITE. THE DATA FILE IS ARCHIVED ON DISC OR CD. WRITTEN FIELD NOTES MAY NOT EXIST. CONTOURS ARE SHOWN FOR CONVENIENCE ONLY. DESIGN SHOULD RELY ON SPOT ELEVATIONS.
2. ALL MONUMENTS SHOWN HEREON WERE LOCATED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
3. THE TYPES AND LOCATIONS OF ANY UTILITIES SHOWN ON THIS DRAWING ARE BASED ON INFORMATION PROVIDED TO US, BY OTHERS OR GENERAL INFORMATION READILY AVAILABLE IN THE PUBLIC DOMAIN INCLUDING, AS APPLICABLE, IDENTIFYING MARKINGS PLACED BY UTILITY LOCATE SERVICES AND OBSERVED BY TERRANE IN THE FIELD. AS SUCH, THE UTILITY INFORMATION SHOWN ON THESE DRAWINGS ARE FOR INFORMATIONAL PURPOSES ONLY AND SHOULD NOT BE RELIED ON FOR DESIGN OR CONSTRUCTION PURPOSES; TERRANE IS NOT RESPONSIBLE OR LIABLE FOR THE ACCURACY OR COMPLETENESS OF THIS UTILITY INFORMATION. FOR THE ACCURATE LOCATION AND TYPE OF UTILITIES NECESSARY FOR DESIGN AND CONSTRUCTION, PLEASE CONTACT THE SITE OWNER AND THE LOCAL UTILITY LOCATE SERVICE (800-424-5555).
4. SUBJECT PROPERTY TAX PARCEL NO. 217450-4040
5. SUBJECT PROPERTY AREA PER THIS SURVEY IS 8,936 ±S.F. (0.21 ACRES)
6. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT. EASEMENTS AND OTHER ENCUMBRANCES MAY EXIST THAT ARE NOT SHOWN HEREON.
7. EXISTING STRUCTURE(S) LOCATION AND DIMENSIONS ARE MEASURED FROM THE FACE OF THE SIDING UNLESS OTHERWISE NOTED.
8. FIELD DATA FOR THIS SURVEY WAS OBTAINED BY DIRECT FIELD MEASUREMENTS WITH A CALIBRATED ELECTRONIC 3-SECOND TOTAL STATION AND/OR SURVEY GRADE GPS OBSERVATIONS. ALL ANGULAR AND LINEAR RELATIONSHIPS ARE ACCURATE AND MEET THE STANDARDS SET BY WAC 332-130-090.

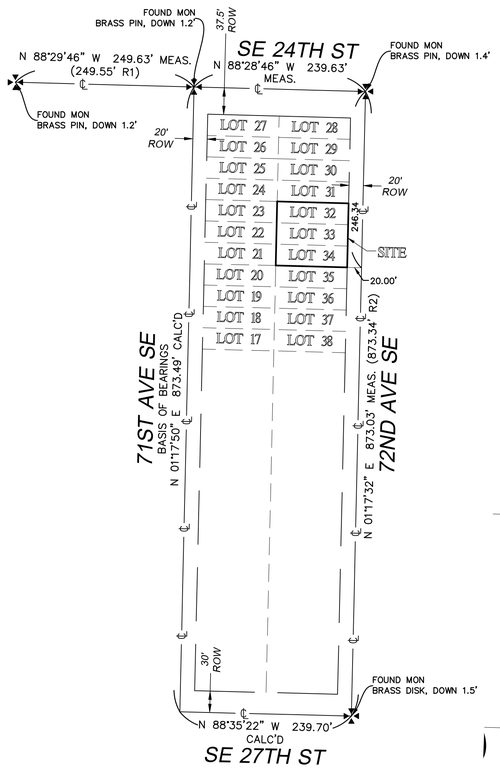
LEGEND

ASPHALT SURFACE	POWER METER
BENCHMARK	POWER (OVERHEAD)
BUILDING	POWER POLE
CENTERLINE ROW	REBAR & CAP (SET)
CONCRETE SURFACE	REBAR / IRON PIPE (FOUND)
DECK	RETAINING WALL
FENCE LINE (WOOD)	ROCKERY
GAS LINE	SEWER LINE
GAS VALVE	SEWER MANHOLE
HEAT EXCHANGER	SIGN (AS NOTED)
INLET (TYPE 1)	STORM DRAIN LINE
INLET (TYPE 1, SOLID)	TREE (AS NOTED)
MONUMENT (SURFACE, FOUND)	WATER LINE
OHP TRANSMISSION ELEVATION	WATER METER
PAVER SURFACE	WATER VALVE
POST	

VICINITY MAP

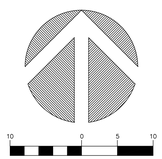
N.T.S.





CONTROL MAP

N.T.S.



(IN FEET)
1 INCH = 10 FT.

INDEXING INFORMATION

NW 1/4 NW 1/4
SECTION: 12
TOWNSHIP: 24N
RANGE: 04E, W.M.
COUNTY: KING

STEEP SLOPE/BUFFER DISCLAIMER:

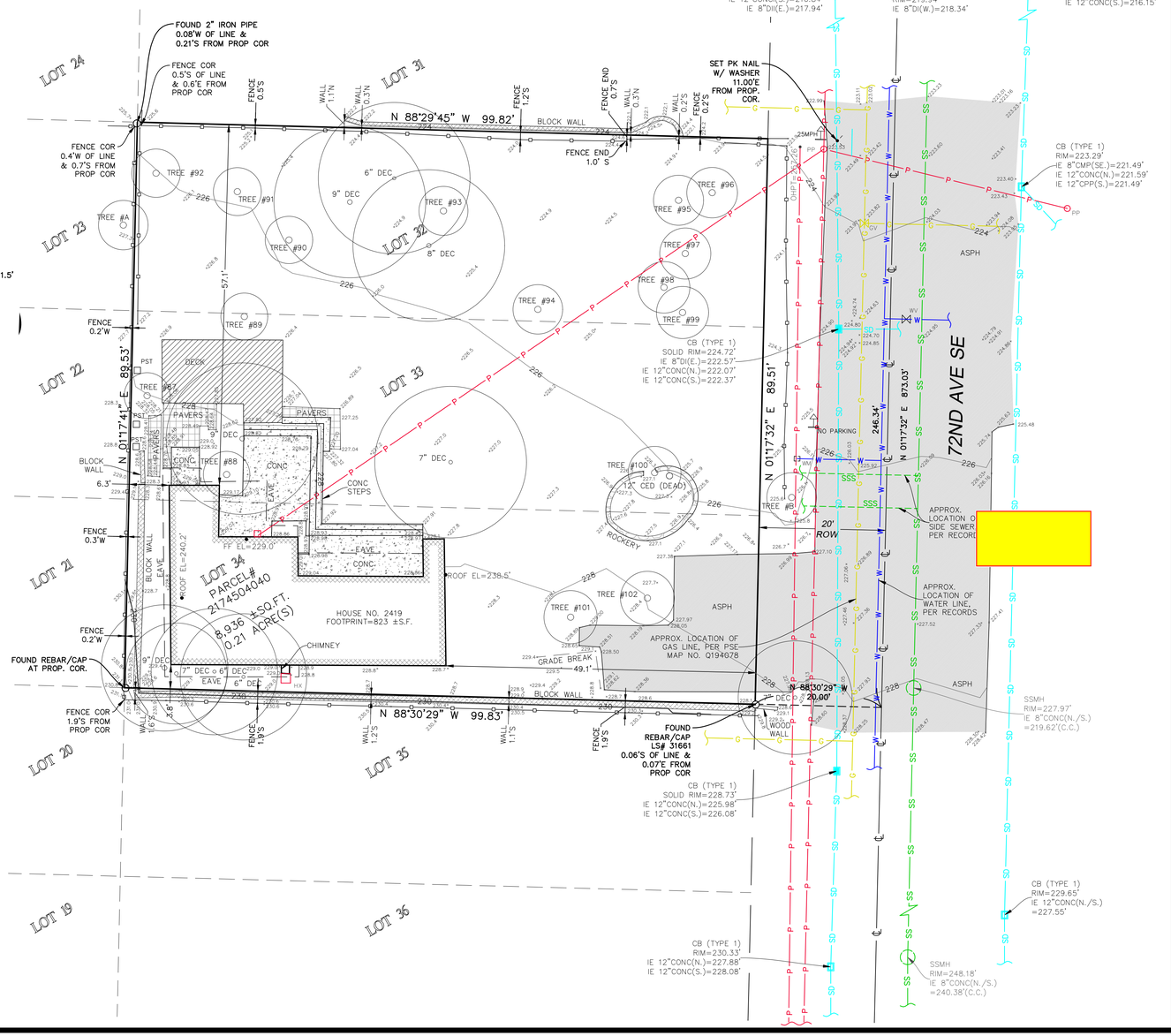
THE LOCATION AND EXTENT OF STEEP SLOPES SHOWN ON THIS DRAWING ARE FOR INFORMATIONAL PURPOSES ONLY AND CANNOT BE RELIED ON FOR DESIGN AND/OR CONSTRUCTION. THE PITCH, LOCATION, AND EXTENT ARE BASED SOLELY ON OUR GENERAL OBSERVATIONS ON SITE AND OUR CURSORY REVIEW OF READILY AVAILABLE PUBLIC DOCUMENTS;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

TREE INVENTORY

PER ARBOR REPORT
BY: TREE SOLUTIONS INC
DATED: 12/15/2023

NUMBER	DIAMETER	TYPE/NAME
T-87	12.5" DBH	ACER PLATANOIDES, NORWAY MAPLE
T-88	32.0" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-89	22.1" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-90	19.2" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-91	20.9" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-92	27.8" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-93	18.8" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-94	19.6" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-95	22.4" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-96	21.8" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-97	17.7" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-98	21.5" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-99	23.9" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-100	14.8" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-101	28.4" DBH	ACER MACROPHYLLUM, BIGLEAF MAPLE
T-102	34.5" DBH	PSEUDOTSUGA MENZIESII, DOUGLAS-FIR
		OFF-SITE TREES
T-A	26.0" DBH	THUJA PLICATA, WESTERN REDCEDAR
T-B	13.1" DBH	PINUS CONTORTA, LODGEPOLE PINE

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025



We are the measure | terrane.net

TOPOGRAPHIC & BOUNDARY SURVEY
PARCEL NO. 2174504040

3H DEVELOPMENT LLC

2419 72ND AVE SE
MERCER ISLAND, WA 98040

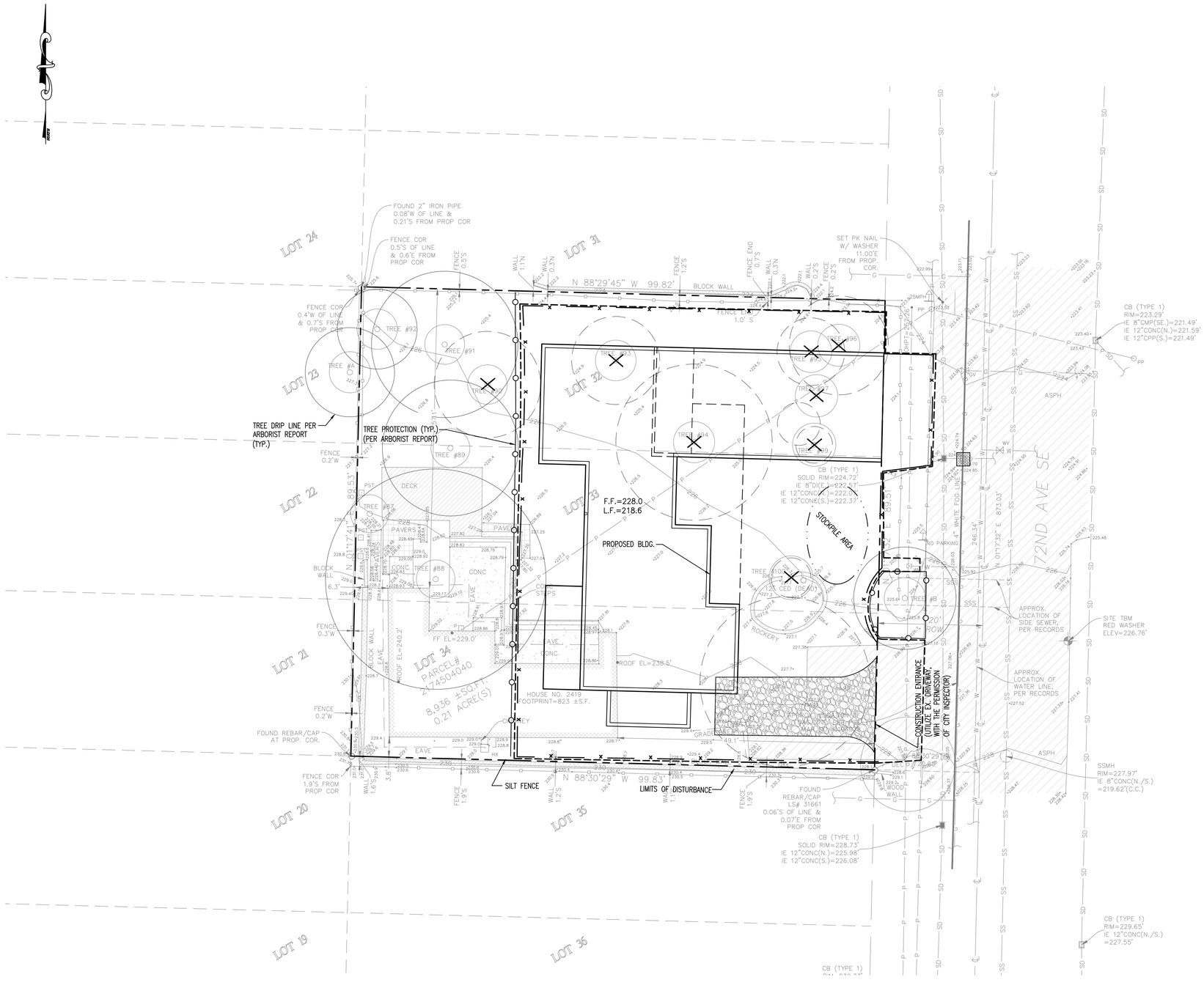
TERRANE
10801 Main Street, Suite 102
Bellevue, WA 98004
p: 425-458-4488 | e: info@terrane.net

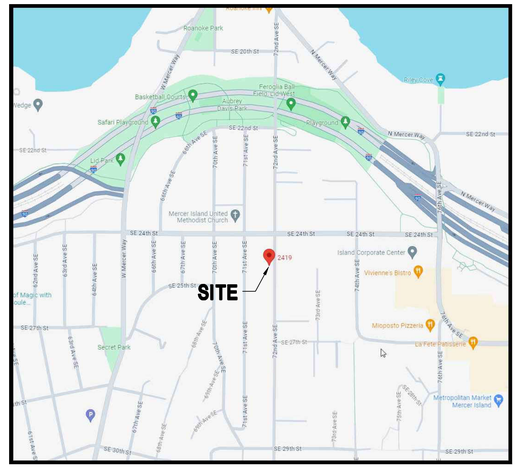
JOB NUMBER:	232094
DATE:	01/19/24
DRAFTED BY:	IDV / RPM
CHECKED BY:	EJG/TMM/WMS
SCALE:	1" = 10'

REVISION HISTORY

SHEET NUMBER
1 OF 1

NW ¼, NW ¼, SEC 12, TWP. 24N., RGE 4E., W.M.





N

VICINITY MAP
(NTS)

LEGEND:

- CB INSERTS (STREAM GUARD, EMCON ENVIRODRAIN OR EQUIVALENT.
- TEMPORARY CONSTRUCTION ENTRANCE (USING EX. ASP. DRWY.)
- SILT FENCE/CLEARING LIMITS
- LIMITS OF DISTURBANCE
- PROPOSED BUILDING
- TREE TO BE REMOVED

SURVEY LEGEND:

	ASPHALT SURFACE	P □	POWER METER
	BENCHMARK	P	POWER (OVERHEAD)
	BUILDING	PP ○	POWER POLE
	CENTERLINE ROW	●	REBAR & CAP (SET)
	CONCRETE SURFACE	○	REBAR / IRON PIPE (FOUND)
	DECK		RETAINING WALL
	FENCE LINE (WOOD)		ROCKERY
G	GAS LINE	SS	SEWER LINE
GV	GAS VALVE		SEWER MANHOLE
HX □	HEAT EXCHANGER		SIGN (AS NOTED)
	INLET (TYPE 1)	SD	STORM DRAIN LINE
	INLET (TYPE 1, SOLID)	SIZE TYPE ○	TREE (AS NOTED)
	MONUMENT (SURFACE, FOUND)	W	WATER LINE
•OHPT	OHP TRANSMISSION ELEVATION	WM □	WATER METER
	PAVER SURFACE	WV	WATER VALVE
PST □	POST		

LEGAL DESCRIPTION

(PER STATUTORY WARRANTY DEED RECORDING# 20230518000717)

LOTS 32, 33 AND 34, BLOCK 24, EAST SEATTLE, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 3 OF PLATS, PAGE 22, RECORDS OF KING COUNTY, WASHINGTON.

SITUATE IN THE COUNTY OF KING, STATE OF WASHINGTON.

BENCHMARK AND DATUM PER SURVEY

NAVD(88) PER WGS SURVEY DATA WAREHOUSE:
POINT DESIGNATION 7007, MON IN CASE @ INTX. 70TH AVE. S.E. & S.E. 24TH ST.
EL: 208.21'

SITE TEMP. BENCHMARK
DESCRIPTION: PK NAIL W RED WASHER
LOCATION: 36.3'E & 25.4'N
ELEVATION: 226.76'

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

EARTHWORK QUANTITIES:

CUT = 70 C.Y.
FILL = 50 C.Y.

GRAPHIC SCALE

10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft. (H)

811 Know what's below. Call before you dig.

NO.	DATE	REVISION

01/13/2024

C2MY ENGINEERS, LLC
PO BOX 52883
BELLEVUE, WA 98015
(206) 922-9376
cmchin.c2my@gmail.com

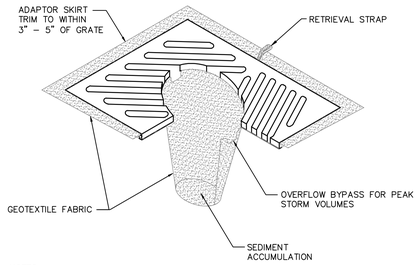
PROJECT: MERCER FIRSTHILL 2419 - SFR
2419 72ND AVENUE SE
MERCER ISLAND, WA 98040
DATE: 05-17-24

TESC PLAN

FILE NO: 2406 .DWG

SHEET C1.0

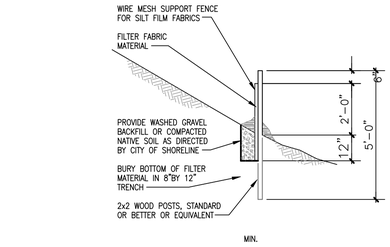
Nov 13, 2024 – 10:12pm CMC G:\Projects\2024\2406 – 2419 72nd Ave SE MI – Sisi Duan – 5ft2\2406-C1.0.dwg Layout Name: C1



NOTES
1. INSERT SHALL BE INSTALLED PRIOR TO CLEARING AND GRADING ACTIVITY, OR UPON PLACEMENT OF A NEW CATCH BASIN.
2. SEDIMENT SHALL BE REMOVED FROM THE UNIT WHEN IT BECOMES HALF FULL .
3. SEDIMENT REMOVAL SHALL BE ACCOMPLISHED BY REMOVING THE INSERT, EMPTYING, AND RE–INSERTING IT INTO THE CATCH BASIN.

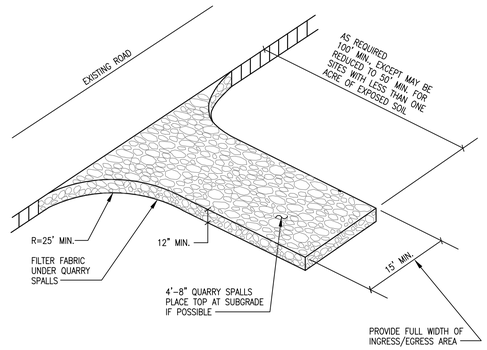
CATCH BASIN INLET PROTECTION INSERT

NTS



SILT FENCE

NO SCALE

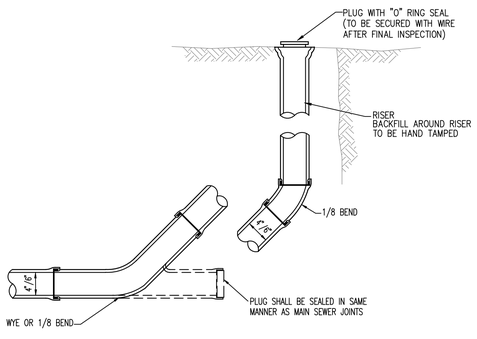


STABILIZED CONSTRUCTION ENTRANCE

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 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER 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 MAY REQUIRE PERIODIC TOP DRESSING 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.



NOTE:
1. FOR SIDE SEWER AND SERVICE DRAINS ON UNPAVED AREA.

CLEANOUT DETAILS

NTS

TREE PROTECTION AREA (TPZ)

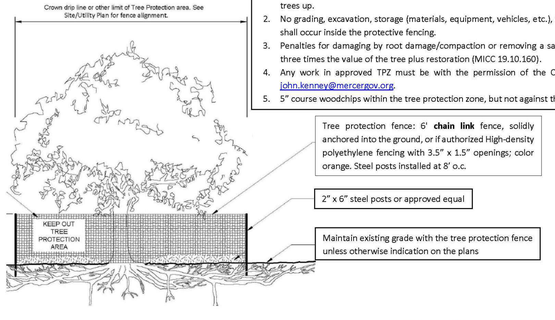
KEEP OUT!

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

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

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

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



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

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

Nov 14, 2024 – 10:55am CMC G:\Projects\2024\2406 – 2419 72nd Ave SE MI – Sisi Duan – 5Ft2\2406-C1.1.dwg Layout Name: C1.1

NO.	DATE	REVISION

CHRISTOPHER M. CRAIG, 52064, REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON, 01/13/2024

C2MY ENGINEERS, LLC
PO BOX 52883
BELLEVUE, WA 98015
(206) 922-9316
cmchin.c2my@gmail.com

PROJECT: MERCER FIRSTHILL 2419 - SFR
2419 T2ND AVENUE SE
MERCER ISLAND, WA 98040

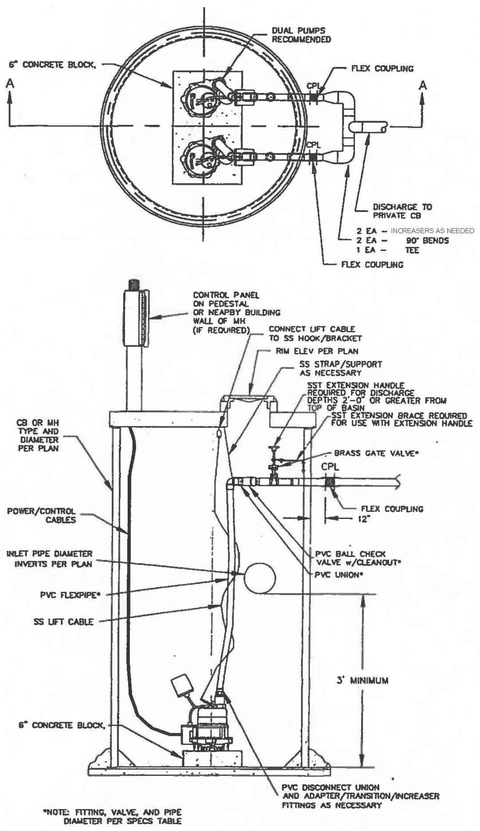
DATE: 05-17-24

TESC AND DRAINAGE DETAILS

FILE NO: 2406 DWG

SHEET C1.1

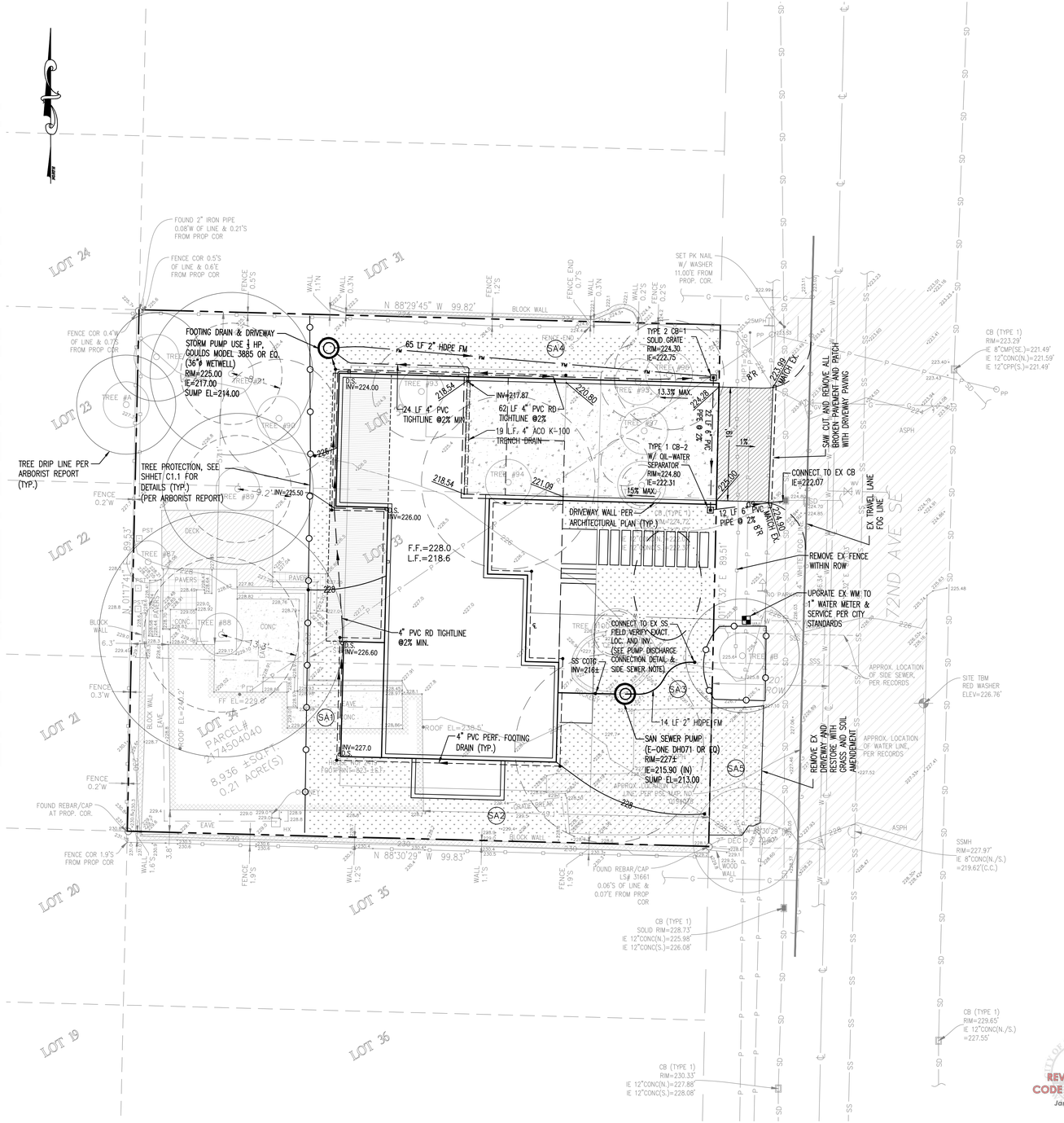
NW ¼, NW ¼, SEC 12, TWP. 24N., RGE 4E., W.M.

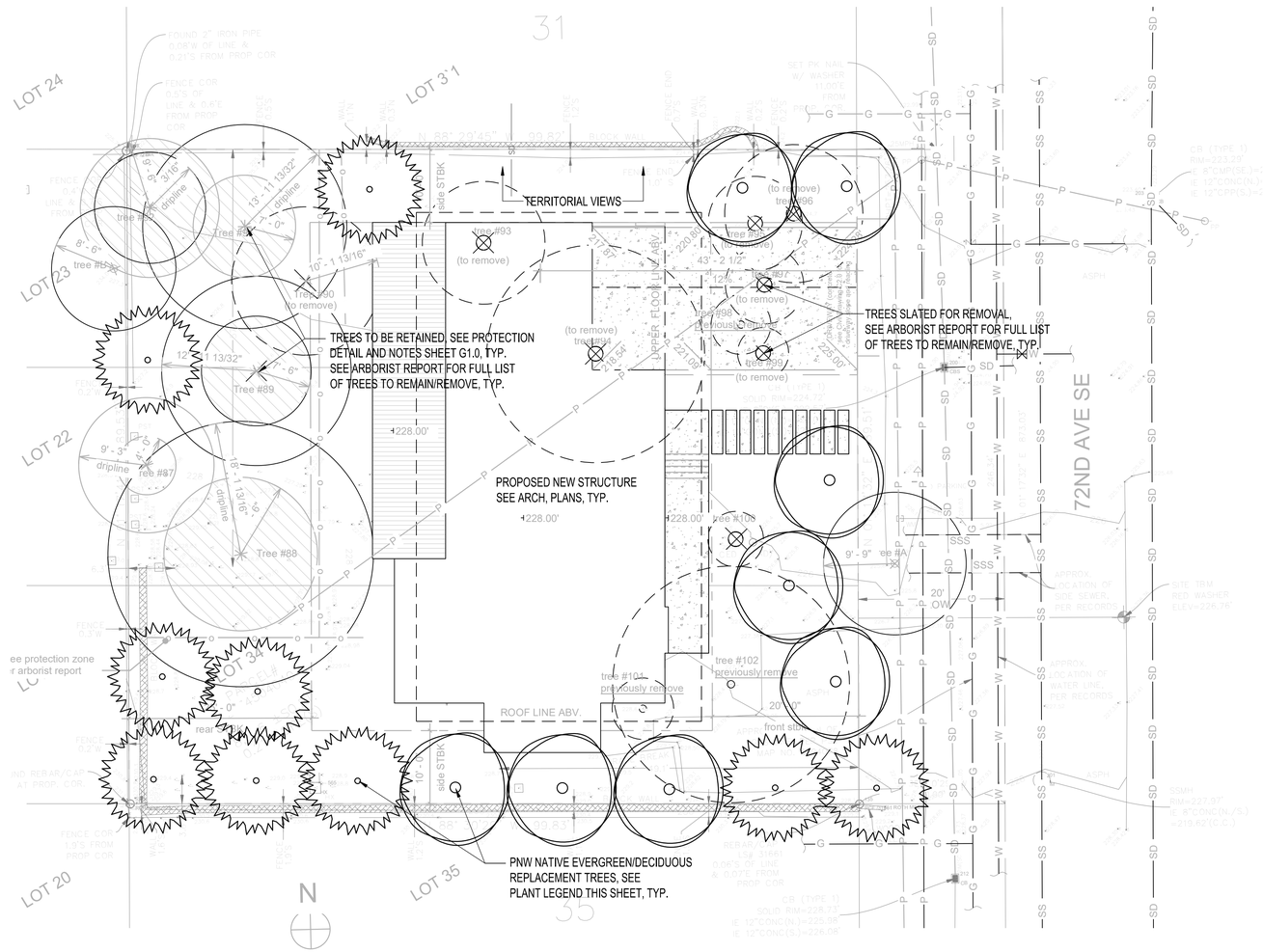


STORM DRAIN DUPLEX PUMP STATION SPECIFICATIONS:

GENERAL DESCRIPTION	DUPLEX PARALLEL SUBMERSIBLE GRIDER PUMPS
DESIGN CALCULATIONS	FROM SBUH FLOW CALCULATIONS: PEAK FLOWS: (INCLUDING 2GPM FOR FTG. DRAIN FLOW) 25-YR = 5.4 GPM 100-YR = 5.9 GPM
DESIGN FLOW AND TDH	1ST PUMP: 5.9 GPM @ 13' TDH 2ND PUMP: 5.9 GPM @ 13' TDH
PUMP ELECTRICAL	1/3 HP, 1 PHASE, 208 V GOULD WE 3885 SERIES, MODEL # WE0318L OR EQ.
PUMP CONTROLS	ALTERNATE PUMP STARTS, LOW AND HIGH LEVEL ALARM LIGHT
PUMP MOUNTING AND DISCHARGE	INCREASER TO 2" DISCHARGE WITH 2" UNION, CHECK VALVE, AND GATE VALVE FROM EACH PUMP
DISCHARGE MANIFOLD	DISCHARGE TO FORCEMAIN 1.5" NPT
FORCE MAIN & FITTING	2"
	FLOAT SPECFICATIONS
REDUNDANT OFF AND LOW LEVEL ALARM	PER MANUFACTURE'S REQUIREMENTS
OFF	PER MANUFACTURE'S REQUIREMENTS
ON (1ST PUMP)	1.5' ABOVE OFF
ON (2ND PUMP)	2.5' ABOVE OFF
HIGH LEVEL ALARM	0.5' ABOVE 2NF PUMP ON
MIN. HEIGHT FROM HIGH LEVEL ALARM TO LOWEST INLET	0.5'

NOTES:
1. THESE SPECIFICATIONS ARE SCHEMATIC IN NATURE AND SHALL BE CONFIRMED BY SUPPLIER AND CONTRACTOR.
2. PUMP FLOATS/CONTROL SHALL BE FIELD TESTED AND ADJUSTED TO ACHIEVE OPTIMUM PUMP CYCLE TIMES PER MANUFACTURE;S RECOMMENDATIONS
3. EXPLOSIVE PROOF PUMPS, CONTROLS AND ELECTRICAL COMPONENTS SHALL BE INSTALLED IF REQUIRED BY CODE.


FOUND 2" IRON PIPE 0.08'W OF LINE & 0.21'S FROM PROP COR
FENCE COR 0.5'S OF LINE & 0.6'E FROM PROP COR
SET PK NAIL W/ WASHER 11.00'E FROM PROP. COR.
N 88°29'45" W 99.82'
FOOTING DRAIN & DRIVEWAY STORM PUMP USE ½ HP, GOULDS MODEL 3885 OR EQ. (36" Ø WETWELL)
RIM=225.00
IE=217.00
SUMP EL=214.00
65 LF 2" HDPE FM
TYPE 2 CB-1
SOLID GRATE
RIM=224.30
IE=222.75
24 LF 4" PVC TIGHTLINE @2% MIN
62 LF 4" PVC RD TIGHTLINE @2%
19 L.F. 4" ACO K-100 TRENCH DRAIN
TYPE 1 CB-2
W/ OIL-WATER SEPARATOR
RIM=224.80
IE=222.31
15% MAX.
13.3% MAX.
12 LF 6" PVC PIPE @ 2% MIN.
CONNECT TO EX CB IE=222.07
SAW CUT AND REMOVE ALL BROKEN PAVEMENT AND PATCH WITH DRIVEWAY PAVING
EX TRAVEL LANE FOG LINE
REMOVE EX FENCE WITHIN ROW
UPGRATE EX WM TO 1" WATER METER & SERVICE PER CITY STANDARDS
TREE DRIP LINE PER ARBORIST REPORT (TYP.)
TREE PROTECTION, SEE SHHET C1.1 FOR DETAILS (TYP.) (PER ARBORIST REPORT)
DRIVEWAY WALL PER ARCHITECTURAL PLAN (TYP.)
F.F.=228.0
L.F.=218.6
4" PVC RD TIGHTLINE @2% MIN.
4" PVC PERF. FOOTING DRAIN (TYP.)
CONNECT TO EX SS FIELD VERIFY EXACT LOC. AND INV. (SEE PUMP DISCHARGE CONNECTION DETAIL & SIDE SEWER NOTE)
SS COTG INV=216±
14 LF 2" HDPE FM
SAN SEWER PUMP (E-ONE DH071 OR EQ)
RIM=227±
IE=215.90 (IN)
SUMP EL=213.00
REMOVE EX DRIVEWAY AND RESTORE WITH GRASS AND SOIL AMENDMENT
APPROX. LOCATION OF SIDE SEWER, PER RECORDS
APPROX. LOCATION OF WATER LINE, PER RECORDS
SITE TBM RED WASHER ELEV=226.76'
SSMH RIM=227.97' IE 8"CONC(N./S.) =219.62'(C.C.)
CB (TYPE 1) RIM=223.29' IE 8"CMP(SE.)=221.49' IE 12"CONC(N.)=221.59' IE 12"CPP(S.)=221.49'
FOUND REBAR/CAP LS# 31661 0.06'S OF LINE & 0.07'E FROM PROP COR
CB (TYPE 1) SOLID RIM=228.73' IE 12"CONC(N.)=225.98' IE 12"CONC(S.)=226.08'
CB (TYPE 1) RIM=230.33' IE 12"CONC(N.)=227.88' IE 12"CONC(S.)=228.08'
CB (TYPE 1) RIM=229.65' IE 12"CONC(N./S.) =227.55'
FOUND REBAR/CAP AT PROP. COR.
FENCE COR 1.9'S FROM PROP COR
FENCE COR 0.4'W OF LINE & 0.7'S FROM PROP COR
BLOCK WALL
FENCE 0.5'S
WALL 1.1'N
WALL 0.3'N
FENCE 1.2'S
FENCE END 0.7'S
WALL 0.3'N
WALL 0.2'S
FENCE 0.2'S
FENCE 0.3'S
FENCE 0.2'W
FENCE 0.3'W
FENCE 0.2'W
WALL 1.6'S
WALL 1.2'S
WALL 1.1'S
FENCE 1.9'S
FENCE 1.9'S
LOT 24
LOT 31
LOT 23
LOT 22
LOT 21
LOT 20
LOT 35
LOT 19
LOT 36
LOT 2
LOT 3
LOT 1A PARCEL# 7745404040 8,936 ±SQ.FT. 0.21 ACRE(S)
2ND AVE SE
20' ROW
ASPH
CONC
PAVERS
DECK
EAVE
ROOF EL=238.5'
FF EL=229.0'
TREE #85
TREE #86
TREE #87
TREE #88
TREE #89
TREE #90
TREE #91
TREE #92
TREE #93
TREE #94
TREE #97
TREE #98
SA1
SA2
SA3
SA4
SA5
INV=227.0
INV=224.00
INV=226.00
INV=226.60
INV=225.50
INV=217.87
INV=221.09
INV=220.80
INV=224.38
INV=225.27
INV=223.99
INV=223.40
INV=223.43
INV=224.27
INV=224.41
INV=227.92
INV=228.42
INV=228.52
INV=228.62
INV=228.72
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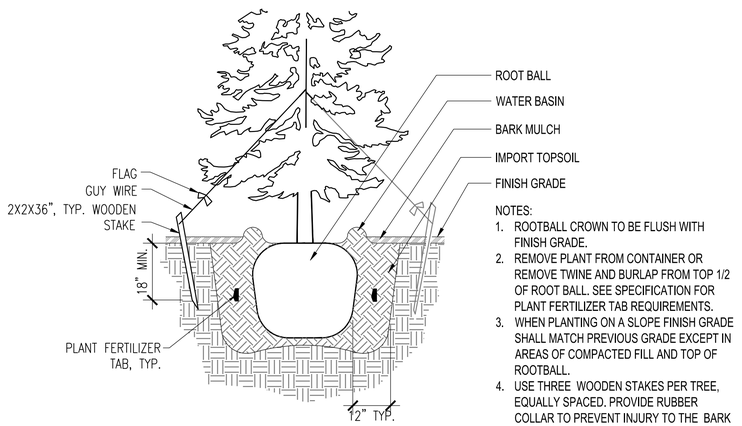


PLANT SCHEDULE

% AREA	BOTANICAL NAME	COMMON NAME	SPACING	SIZE/CONT.
TREES:				
44%	ACER CIRCINATUM	VINE MAPLE	AS SHOWN	1.5" CAL.
56%	PINUS CONTORTA	SHORE PINE	AS SHOWN	6' MIN. HT.
	NOTE: BOTH TREES SPECIES ARE PNW NATIVE TREES.			

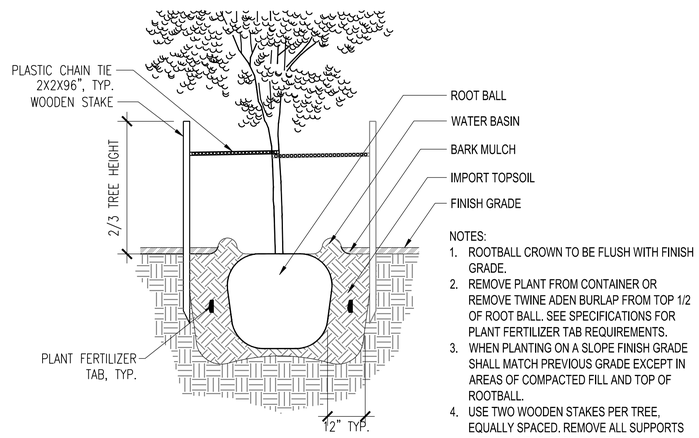
CODE COMPLIANCE & INSTALL NOTES:

REQUIRED REPLACEMENT TREES PER INVENTORY AND REPLACEMENT FORM: 26 EA
TOTAL REPLACEMENT TREES PROVIDED: 17 EA
FEE IN LIEU: TO PRESERVE KEY TERRITORIAL VIEWS, THE PROJECT OWNER REQUESTS TO PAY A 'FEE IN LIEU' OF FOR (9) REPLACEMENT TREES ON THE PROJECT (MIMC SECTION 19.10.070.C).
PLANTING TIMING: REPLACEMENT TREES SHALL BE PLANTED IN THE WET SEASON (OCTOBER 1 THROUGH APRIL 1) WHERE POSSIBLE OR AS CITY ARBORIST APPROVES.
MAINTENANCE OF REPLACEMENT TREES: THE PARCEL OWNER SHALL MAINTAIN ALL REPLACEMENT TREES IN A HEALTHY CONDITION FOR A PERIOD OF FIVE YEARS AFTER PLANTING. THE APPLICANT SHALL BE OBLIGATED TO REPLANT ANY REPLACEMENT TREE THAT DIES, BECOMES DISEASED, OR IS REMOVED DURING THIS FIVE-YEAR TIME PERIOD.
IMPORT TOPSOIL: CONTRACTOR TO REMOVE COMPACTED NATIVE SOILS AROUND TREE ROOTBALLS AND INSTALL WINTERMIX TOPSOIL OR COMPOST/TOPSOIL BLEND FOR IMPORT TOPSOIL AREAS SHOWN IN THE PROJECT DETAILS. SEE DETAILS #1 AND #2 BELOW TYPICAL.
TREE PROTECTION/RETENTION: SEE TREE FENCING AND PROTECTION DETAIL SHEET G1.0 FOR TREE FENCING AND PROTECTION REQUIREMENTS FOR TREES TO REMAIN, TYPICAL.



NOTES:
1. ROOTBALL CROWN TO BE FLUSH WITH FINISH GRADE.
2. REMOVE PLANT FROM CONTAINER OR REMOVE TWINE AND BURLAP FROM TOP 1/2 OF ROOT BALL. SEE SPECIFICATION FOR PLANT FERTILIZER TAB REQUIREMENTS.
3. WHEN PLANTING ON A SLOPE FINISH GRADE SHALL MATCH PREVIOUS GRADE EXCEPT IN AREAS OF COMPACTED FILL AND TOP OF ROOTBALL.
4. USE THREE WOODEN STAKES PER TREE, EQUALLY SPACED. PROVIDE RUBBER COLLAR TO PREVENT INJURY TO THE BARK OF TREE. REMOVE ALL SUPPORTS WITH IN 1 YEAR FROM PLANTING.

1 EVERGREEN TREE PLANTING
Scale 1/2" = 1'-0



NOTES:
1. ROOTBALL CROWN TO BE FLUSH WITH FINISH GRADE.
2. REMOVE PLANT FROM CONTAINER OR REMOVE TWINE ADEN BURLAP FROM TOP 1/2 OF ROOT BALL. SEE SPECIFICATIONS FOR PLANT FERTILIZER TAB REQUIREMENTS.
3. WHEN PLANTING ON A SLOPE FINISH GRADE SHALL MATCH PREVIOUS GRADE EXCEPT IN AREAS OF COMPACTED FILL AND TOP OF ROOTBALL.
4. USE TWO WOODEN STAKES PER TREE, EQUALLY SPACED. REMOVE ALL SUPPORTS WITH IN 1 YEAR FROM PLANTING.

2 DECIDUOUS TREE PLANTING
Scale 1/2" = 1'-0

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

0 10 20
SCALE: 1" = 10'

811 Know what's below. Call before you dig.

MacKay Sposito
ENERGY PUBLIC WORKS LAND DEVELOPMENT
www.mackaysposito.com

STATE OF WASHINGTON
NATHANIEL T. LOVEN
EXP. 01/16/2026
REGISTERED LANDSCAPE ARCHITECT

3H DEVELOPMENT LLC
TREE REPLACEMENT & RETENTION PLAN

2419 72ND AVENUE SE
MERCER ISLAND, WA 98040

REVISIONS:

JOB NO.:	18625
DATE:	JULY 2024
SCALE:	VARIES
DESIGNED BY:	NTL
DRAWN BY:	NTL
CHECKED BY:	NTL

PERMIT SUBMITTAL

L-1.0

NO. OF

FILE: J:\18625 - 2419 72ND LANDSCAPE\500 DESIGN\502 DRAWINGS\BASE\18625 2419 72ND LANDSCAPE BASE.DWG

GENERAL NOTES

ALL DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2021 EDITION. 2

CONTRACTOR SHALL VERIFY ALL LEVELS, DIMENSIONS AND EXISTING CONDITIONS IN FIELD BEFORE PROCEEDING WITH ANY CONSTRUCTION OR DEMOLITION. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES OR FIELD CHANGES.

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

CONTRACTOR SHALL PROVIDE ADEQUATE SHORING AND BRACING OF ALL STRUCTURAL MEMBERS, EXISTING CONSTRUCTION AND SOIL EXCAVATIONS AS REQUIRED, IN A MANNER SUITABLE TO THE WORK SEQUENCE. TEMPORARY SHORING AND BRACING SHALL NOT BE REMOVED UNTIL ALL FINAL CONNECTIONS HAVE BEEN COMPLETED IN ACCORDANCE WITH THE DRAWINGS AND MATERIALS HAVE ACHIEVED DESIGN STRENGTH. FOUNDATIONS WALLS GREATER THAN 4 FEET SHALL NOT BE BACKFILLED UNTIL THE FLOOR FRAMING AND ALL CONNECTIONS TO THE FLOOR FRAMING PER THESE DETAILS ARE COMPLETE.

CHANGES: NO CHANGES TO THESE STRUCTURAL DRAWINGS ARE PERMITTED WITHOUT WRITTEN CONSENT OF THE ENGINEER. CHANGES WILL BE BILLED TO THE CLIENT, OWNER OR CONTRACTOR AT THE ENGINEER'S HOURLY RATE.

SUBMITTALS: SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO ANY FABRICATION OR CONSTRUCTION FOR ALL THE FOLLOWING: STRUCTURAL STEEL, STEEL CANOPIES, GLUED-LAMINATED MEMBERS AND PRE-MANUFACTURED WOOD MEMBERS.

DESIGN DRAWINGS AND CALCULATIONS, FOR PRE-MANUFACTURED WOOD TRUSSES AND JOISTS SHALL BEAR THE SEAL AND SIGNATURE OF THE WASHINGTON STATE REGISTERED PROFESSIONAL ENGINEER WHO IS RESPONSIBLE FOR THE DESIGN, AND SHALL BE SUBMITTED TO THE ARCHITECT AND BUILDING OFFICIAL FOR REVIEW PRIOR TO FABRICATION.

DESIGN LOADS

LIVE LOADS: LIVE LOADS ARE DETERMINED IN ACCORDANCE WITH ASCE CH. 7
L = 40 PSF (RESIDENTIAL)

SNOW LOADS: SNOW LOADS ARE DETERMINED IN ACCORDANCE WITH ASCE CH. 7 WITH THE FOLLOWING FACTORS:
GROUND SNOW LOAD PG = 25 PSF CT = 1.0 CE = 1.0
ROOF SNOW LOAD PS = 25 PSF IS = 1.0

WIND LOADS: WIND LOADS ARE BASED ON ASCE 7-16 CH. 28 (ENVELOPE PROCEDURE) WITH THE FOLLOWING FACTORS:
EXPOSURE CATEGORY = B IW = 1.0
VELOCITY (3 SEC) = 110 MPH (ULT) KZT = 1.60
DESIGN WIND PRESSURED FOR DETERMINING FORCES ON COMPONENTS AND CLADDING ARE DETERMINED IN ACCORDANCE WITH ASCE 7-16 CHAPTER 30.

SEISMIC LOADS: SEISMIC LOADS ARE BASED ON THE EQUIVALENT LATERAL FORCE PROCEDURE IN ASCE 7-16 SECTION 12.8 WITH THE FOLLOWING FACTORS:
RISK CATEGORY = II SS = 1.393
SITE CLASS = D S1 = 0.485
DESIGN CATEGORY = D SDS = 0.929
IE = 1.0
R = 6.5 (WOOD SHEAR WALL) CS = 0.143 (ULT.)

FOUNDATIONS

CONCRETE FOUNDATIONS SHALL BEAR ON STIFF, COMPETENT, UNDISTURBED NATIVE SOIL. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN CONFIRMATION FROM THE BUILDING OFFICIAL THAT THE NATIVE SOIL AT THIS PROJECT IS ADEQUATE TO SUPPORT THE FOLLOWING BEARING PRESSURE: PER GEO REPORT BY NGA, INC (NO1502724), ALLOWABLE BEARING PRESSURE USED FOR STRUCTURAL DESIGN = 2500 PSF.

WHERE FOOTINGS MUST BEAR ON STRUCTURAL FILL DUE TO INADEQUATE SOIL CONDITIONS, THE FILL SHALL BE MIXED AND COMPACTED IN ACCORDANCE WITH SPECIFICATIONS PROVIDED BY A GEOTECHNICAL ENGINEER LICENSED IN THE STATE OF WASHINGTON.

BOTTOM OF FOOTING ELEVATION SHALL BE LOCATED AT MINIMUM FROST DEPTH 18" BELOW TOP OF FINISHED GRADE UNLESS REQUIRED OTHERWISE BY THE BUILDING OFFICIAL. THE CONTRACTOR SHALL CONFIRM THE MINIMUM FROST DEPTH WITH THE BUILDING OFFICIAL PRIOR TO EXCAVATION.

CONCRETE

CONCRETE WORK SHALL COMPLY, IN GENERAL, WITH ACI 301 (LATEST EDITION) "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS.

CONCRETE MIXES: CONCRETE MIXES SHALL CONFORM ACI 318 CH. 5. MINIMUM CONCRETE STRENGTH F'C AT 28 DAYS SHALL BE AS FOLLOWS:
SLAB-ON-GRADE, CURBS AND PADS – 2500 PSI
FOOTINGS – 5000 PSI
WALLS, STEMS – 5000 PSI

WATER/CEMENT RATIO SHALL BE MEASURED BY WEIGHT AND SHALL BE BASED ON THE TOTAL CEMENTITIOUS MATERIAL. WATER/CEMENT RATIO SHALL BE DETERMINED BY THE SUPPLIER BASED ON STRENGTH REQUIREMENTS AND SHALL NOT EXCEED 0.55. WATER-REDUCING ADMIXTURES MAY BE INCORPORATED IN CONCRETE MIX DESIGNS, BUT SHALL CONFORM TO ASTM C 464 AND BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CACL AND OTHER WATER-SOLUBLE CHLORIDE ADMIXTURES SHALL NOT BE USED.

REINFORCING STEEL: ALL REINFORCING SHALL BE DEFORMED BAR (REBAR) WITH BAR DIAMETERS SPECIFIED IN THESE DRAWINGS AND PROPERTIES BELOW:
ALL REINFORCING UNLESS NOTED OTHERWISE – ASTM A615, GRADE 60
#3 STIRRUPS AND TIES – ASTM A615, GRADE 40
WELDED REBAR – ASTM A706, GRADE 60
GALVANIZED WELDED WIRE FABRIC – ASTM A165

REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES."

REINFORCING STEEL SHALL BE LAPPED AS NOTED ON THE DRAWINGS. WHERE LAP LENGTH IS NOT SHOWN, REINFORCING BARS SHALL BE LAPPED AS FOLLOWS:
#5 AND SMALLER – 48 BAR DIAMETERS
#6 AND LARGER – 60 BAR DIAMETERS

MINIMUM CONCRETE COVER OVER REINFORCING SHALL BE AS FOLLOWS:
NONSTRUCTURAL SLAB-ON-GRADE – MID-DEPTH
WALL BARS: INTERIOR FACE – 3/4"
EXPOSED TO EARTH/WEATHER – 1-1/2" (#5 AND SMALLER), 2" (#6 AND LARGER)
FOOTINGS: BOTTOM BARS – 3" (CAST AGAINST EARTH)
TOP BARS – 1-1/2"
SIDE BARS – 2"

PROVIDE SUPPORTS AS REQUIRED FOR PROPER ALIGNMENT AND CONCRETE COVER AROUND THE REINFORCEMENT. CONSULT THE CRSI MANUAL OF STANDARD PRACTICE MSP-1 FOR SPECIFIC INFORMATION.

DRYPACK

DRYPACK SHALL BE 5,000 PSI NON-SHRINK GROUT, FIVE STAR OR EQUIVALENT. INSTALL DRYPACK UNDER BEARING PLATES BEFORE FRAMING MEMBER IS INSTALLED.

ANCHORS

USE OF DRILLED CONCRETE ANCHORS, INCLUDING EXPANSION BOLTS AND ADHESIVE ANCHORS, WHERE NOT SPECIFIED IN THESE DOCUMENTS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER, ARCHITECT AND THE BUILDING INSPECTOR

EXPANSION BOLTS: EXPANSION BOLTS IN SOLID CONCRETE SHALL BE WEDGE-TYPE ANCHORS MADE OF CARBON STEEL. BOLT SIZE, SPACING AND EMBEDMENT LENGTH SHALL BE AS DESIGNATED IN THESE DRAWINGS. BOLTS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS WITH INSPECTION PER SCHEDULE. EXPANSION BOLTS SHALL BE SIMPSON STRONG BOLT 2 OR APPROVED EQUAL. A CURRENT ICBO OR ICC REPORT SHALL BE SUBMITTED FOR ALTERNATES.

ADHESIVE ANCHORS: ADHESIVE OR EPOXY TYPE ANCHORS IN SOLID CONCRETE SHALL BE INSTALLED PER THE MANUFACTURER'S INSTRUCTIONS. ANCHOR SIZE, SPACING AND EMBEDMENT LENGTH SHALL BE AS DESIGNATED IN THESE DRAWINGS. ADHESIVE SHALL BE SIMPSON SET 3G. A CURRENT ICBO OR ICC REPORT SHALL BE SUBMITTED FOR ALTERNATES.

THREADED RODS SHALL BE CONFORM WITH F1554, GRADE 55. DOWELS SHALL CONFORM WITH ASTM A615, GRADE 60. ALL ADHESIVE (EPOXY) BOLTS SHALL HAVE I.C.C. RATING FOR MATERIAL INTO WHICH INSTALLATION TAKES PLACE. ANCHORS AT EXTERIOR LOCATIONS SHALL BE HOT DIPPED GALVANIZED.

WOOD

SAWN LUMBER: STRUCTURAL SAWN LUMBER SHALL BE KILN DRIED AND BE OF THE SPECIES AND GRADE NOTED BELOW OR BETTER:

USE	GRADE	FB (PSI)
WALL STUDS	HEM FIR STUD	675
PLATES	DOUGLAS #2	900
4X BEAMS	HEM FIR #2	850
6X BEAMS	HEM FIR #2	675
6X COLUMNS	DOUGLAS FIR #1	1200
4X COLUMNS	DOUGLAS FIR #1	1000

ALL WOOD CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG TIE COMPANY (OR APPROVED EQUAL), AND OF THE SIZE AND TYPE SHOWN ON THE DRAWINGS. ALL WOOD CONNECTORS IN CONTACT WITH PRESERVATIVE-TREATED WOOD SHALL BE TRIPLE ZINC G-185 GALVANIZED (1.85 OZ/SQ FT COATING).

MINIMUM WOOD NAILING REQUIREMENTS UNLESS OTHERWISE NOTED ON THE DRAWINGS, TYPICAL WOOD FRAMING SHALL BE FASTENED PER IBC 2021 TABLE 2304.10.2. 2

RATED SHEATHING: STRUCTURAL PANELS SHALL BEAR THE APA TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION. SHEATHING SHALL BE AS FOLLOWS:
SHEAR WALL SHTG MIN. 7/16" 32/16 MIN. C-D INT APA WITH EXTERIOR GLUE (CDX)
ROOF SHTG MIN. 15/32" 32/16 MIN. C-D INT APA WITH EXTERIOR GLUE (CDX)
SUB FLOOR SHTG MIN. 3/4" 48/24 T&G MIN. C-D INT APA WITH EXTERIOR GLUE (CDX)

SHEATHING SHALL BE ORIENTATED OVER THE SUPPORTS AS SHOWN ON THE DRAWINGS. SHEAR WALL SHEATHING SHALL BE BLOCKED AT ALL PANEL EDGES AS SHOWN IN THE SHEAR WALL SCHEDULE.

PREMANUFACTURED OPEN WEB WOOD TRUSSES: TRUSSES SHALL BE DESIGN BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF WASHINGTON, WHO IS REGULARLY ENGAGED IN THE DESIGN OF PLATE-CONNECTED WOOD TRUSSES. TRUSS DESIGN SHALL BE ACCORDANCE WITH IBC SECTION 2303.4.

TRUSSES SHALL BE DESIGN FOR THE FOLLOWING DEAD LOADS:

	TOP CHORD	BOTTOM CHORD	TOTAL
ROOF TRUSSES	15 PSF	5 PSF	20 PSF

IN ADDITION TO DEAD LOADS, THE DESIGN SHALL INCLUDE THE LIVE, WIND, SNOW AND SNOW DRIFT LOADS AS IDENTIFIED IN THE "DESIGN LOADS" SECTION OF THESE DRAWINGS. IN ADDITION, THE TRUSS DESIGN SHALL INCLUDE CONCENTRATED AND AXIAL LOADS SHOWN ON FRAMING PLANS AND HANGER SCHEDULES IN THESE DRAWINGS. ROOF TRUSSES SHALL BE DESIGNED FOR WIND NET UPLIFT OF 10 PSF UNLESS OTHERWISE NOTED ON THE DRAWINGS. FLOOR TRUSSES SHALL BE DESIGN FOR MAXIMUM LIVE LOAD DEFLECTION = 1/2" AND MINIMUM LIVE LOAD DEFLECTION RATIO = L/480.

TRUSSES SHALL BE FABRICATED BY A MANUFACTURER WHO IS A MEMBER OF THE TRUSS PLATE INSTITUTE. TRUSSES SHALL BE SUPPLIED WITH THE PROPER HANGERS, END CONNECTIONS, BRIDGING, BRACING TO PROVIDE LATERAL STABILITY OF ALL TRUSS MEMBERS, AND TIE-DOWN CONNECTIONS TO BEAMS AND TOPS OF WALLS. TRUSSES SHALL BE SUPPLIED WITH TAPERED HARDWOOD SHIMMING SO THAT EVERY CHORD BEARS ON THE FULL WIDTH OF EVERY SUPPORT WITHOUT NOTCHING THE TRUSS MEMBERS. THE TRUSS MANUFACTURER IS RESPONSIBLE FOR ENSURING THE BEARING SEAT DOES NOT EXCEED THE SILL PLATE CAPACITY OF THE SUPPORTING ELEMENT.

BUILDING OFFICIAL INSPECTIONS

THE FOLLOWING RECOMMENDED MINIMUM ITEMS SHALL BE INSPECTED BY A QUALIFIED INDIVIDUAL PROVIDED BY THE BUILDING OFFICIAL:
-FOOTINGS BEAR ON COMPETENT NATIVE SOIL PER THE "FOUNDATIONS" SECTION ABOVE
-FOOTING REINFORCEMENT
-SHEAR WALL SILL PLATE ANCHORS AND WASHERS PER SCHEDULE
-SHEAR WALL NAILING AND SHEAR CLIPS PER SCHEDULE
-SHEAR WALL HOLD-DOWNS
-VERIFY TYPE, SIZE AND GRADE OF STRUCTURAL STEEL MEMBERS AND BOLTS

SHEET INDEX

S1.0 STRUCTURAL NOTES
S1.1 STRUCTURAL NOTES 2
S2.0 FOUNDATION PLANS
S2.1 MAIN FLOOR FRAMING PLANS
S2.1 UPPER FLOOR FRAMING PLANS
S2.2 ROOF FRAMING PLANS
S3.0 TYPICAL STRUCTURAL DETAILS
S3.1 TYPICAL STRUCTURAL DETAILS
S3.2 TYPICAL STRUCTURAL DETAILS
S3.3 SHEAR WALL DETAILS
S3.4 TYPICAL STRUCTURAL DETAILS

TABLE2304.10.2
FASTENING SCHEDULE

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[b]	SPACING AND LOCATION
Roof		
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	4-8d box (2½" x 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3"14 gage staples, 7/16" crown	Each end, toenail
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2½" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail
	2-16 d common (3½" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail
Flat blocking to truss and web filler	16d common (3½" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail
2. Ceiling joists to top plate	4-8d box (2½" x 0.113"); or 3-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust) (see Section 2308.11.3.1, Table 2308.11.3.1)	3-16d common (3½" × 0.162"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint) (see Section 2308.11.3.1, Table 2308.11.3.1)	Per Table 2308.11.3.1	Face nail
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6. Rafter or roof truss to top plate (See Section 2308.11.4, Table 2308.11.4)	3-10 common (3" × 0.148"); or 3-16d box (3½" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	2 toenails on one side and 1 toenail on opposite side of rafter or truss;
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3½" × 0.162"); or 3-16d box (3½" × 0.135"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
	3-10d common (3½" × 0.148"); or 4-16d box (3½" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
Wall		
8. Stud to stud (not at braced wall panels)	16d common (3½" × 0.162");	24" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	16" o.c. face nail
9. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3½" × 0.162")	16" o.c. face nail
	16d box (3½" × 0.135"); or 3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail
10. Built-up header (2" to 2" header)	16d common (3½" × 0.162")	16" o.c. each edge, face nail
	16d box (3½" × 0.135")	12" o.c. each edge, face nail
11. Continuous header to stud	4-8d common (2½" × 0.131"); or 4-10d box (3" × 0.128"); or 5-8d box (2½" x 0.113")	Toenail
12. Top plate to top plate	16d common (3½" × 0.162")	16" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
13. Top plate to top plate, at end joints	8-16d common (3½" × 0.162"); or 12-16d box (3½" x 0.135"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3½" × 0.162")	16" o.c. face nail
	16d box (3½" x 0.135"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3½" × 0.162"); or 3-16d box (3½" x 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16. Stud to top or bottom plate	3-16d box (3½" x 0.135"); or 4-8d common (2½" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-8d box (2½" x 0.113"); or 4-3" 14 gage staples, 7/16" crown	Toenail
	2-16d common (3½" × 0.162"); or 3-16d box (3½" x 0.135"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17. Top plates, laps at corners and intersections	2-16d common (3½" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
18. 1" brace to each stud and plate	3-8d box (2½" x 0.113"); or 2-8d common (2½" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
19. 1" × 6" sheathing to each bearing	3-8d box (2½" x 0.113"); or 2-8d common (2½" × 0.131"); or 2-10d box (3" × 0.128"); or 2-1¼" 16 gage staples, 1" crown	Face nail
20. 1" × 8" and wider sheathing to each bearing	3-8d common (2½" × 0.131"); or 3-8d box (2½" x 0.113"); or 3-10d box (3" × 0.128"); or 3-1¼" 16 gage staples, 1" crown	Face nail
	Wider than 1" × 8" 3-8d common (2½" × 0.131"); or 4-8d box (2½" x 0.113"); or 3-10d box (3" × 0.128"); or 4-1¼" 16 gage staples, 1" crown	
Floor		
21. Joist to sill, top plate, or girder	4-8d box (2½" × 0.113"); or 3-8d common (2½" × 0.131"); or floor 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Toenail
	8d box (2½" × 0.113")	4" o.c., toenail
22. Rim joist, band joist, or blocking to top plate, sill or other framing below	8d common (2½" × 0.131"); or 10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	6" o.c., toenail
23. 1" × 6" subfloor or less to each joist	3-8d box (2½" × 0.113"); or 2-8d common (2½" × 0.131"); or 3-10d box (3" × 0.128"); or 2-1½" 16 gage staples, 1" crown	Face nail
24. 2 subfloor to joist or girder	3-16d box (3½" × 0.135"); or 2-16d common (3½" × 0.162")	Blind and face nail
25. 2" planks (plank & beam – floor & roof)	3-16d box (3½" × 0.135"); or 2-16d common (3½" × 0.162")	Each bearing, face nail
26. Built-up girders and beams, 2" lumber layers	20d common (4" × 0.192")	32" o.c., face nail at top and bottom staggered on opposite sides
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	24" o.c. face nail at top and bottom staggered on opposite sides
	And: 2-20d common (4" × 0.192"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Ends and at each splice, face nail
27. Ledger strip supporting joists or rafters	3-16d common (3½" × 0.162"); or 4-16d box (3½" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Each joist or rafter, face nail
28. Joist to band joist or rim joist	3-16d common (3½" × 0.162"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	End nail
29. Bridging or blocking to joist, rafter or truss	2-8d common (2½" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Each end, toenail

Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing[a]

		Edges (inches)	Intermediate supports (inches)
30. 3/8" – ½"	6d common or deformed (2" × 0.113"); or 2⅜" × 0.113" nail (subfloor and wall)	6	12
	8d common or deformed (2½" × 0.131" × 0.281" head) nail (roof); or RSRS-01 (2⅜" × 0.113" × 0.281" head) nail (roof)[g]	6[e]	6[e]
	1¾" 16 gage staple, 7/16" crown (subfloor and wall)	4	8
	2⅜" × 0.113"× 0.266" head nail (roof)	3[f]	3[f]
	1¾" 16 gage staple, 7/16" crown (roof)	3[f]	3[f]
31. 19/32" – ¾"	8d common (2½" × 0.131"); or deformed (2" × 0.113") (subfloor and wall)	6	12
	8d common or deformed (2½" × 0.131" × 0.281" head) nail (roof); or RSRS-01 (2⅜" × 0.113" × 0.281" head) nail (roof)[g]	6[e]	6[e]
	2⅜" × 0.113"× 0.266" head nail; or 2" 16 gage staple, 7/16" crown (subfloor and wall)	4	8
32. 7/8" – 1¼"	10d common (3" × 0.148"); or deformed (2½" × 0.131" × 0.281" head)	6	12
Other exterior wall sheathing			
33. ½" fiberboard sheathing[c]	1½" × 0.120", galvanized roofing nail (7/16" head diameter); or 1¼" 16 gage staple with 7/16" or 1" crown	3	6
34. 25/32" fiberboard sheathing[c]	1¾" × 0.120" galvanized roofing nail (7/16" diameter head); or 1½" 16 gage staple with 7/16" or 1" crown	3	6
Wood structural panels, combination subfloor underlayment to framing			
35. ¾" and less	8d common (2½" × 0.131"); or deformed (2" × 0.113"); or deformed (2" × 0.120")	6	12
36. 7/8" – 1"	8d common (2½" × 0.131"); or deformed (2½" × 0.131"); or deformed (2½" × 0.120")	6	12
37. 1 1/8" – 1¼"	10d common (3" × 0.148"); or deformed (2½" × 0.131"); or deformed (2½" × 0.120")	6	12
Panel siding to framing			
38. ½" or less	6d corrosion-resistant siding (11/8" × 0.106"); or 6d corrosion-resistant casing (2" × 0.099")	6	12
39. 5/8"	8d corrosion-resistant siding (2⅜" × 0.128"); or 8d corrosion-resistant casing (2½" × 0.113")	6	12

Wood structural panels (WSP), subfloor, roof and interior wall sheathing to framing and particleboard wall sheathing to framing[a]

		Edges (inches)	Intermediate supports (inches)
Interior paneling			
40. ¼"	4d casing (1½" × 0.080"); or 4d finish (1½" × 0.072")	6	12
41. 3/8"	6d casing (2" × 0.099"); or 6d finish (2" × 0.092") (Panel supports at 24 inches)	6	12

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

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12/12/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
54354
REGISTERED
PROFESSIONAL ENGINEER
12/12/2024

2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

REV	DESCRIPTION	DATE
2	REVIEW 2	12/12/2024

Drawn By:
Drawing Title:
STRUCTURAL NOTES
Sheet
S1.0

STRUCTURAL STEEL

ALL CONSTRUCTION SHALL BE PER AISC. ALL STRUCTURAL STEEL SHALL BE AS FOLLOWS:

ALL STRUCTURAL STEEL SHALL BE ASTM A36 (F_y = 36 KSI), U.N.O.

ALL WIDE FLANGE STEEL SHALL BE ASTM A572, GRADE 50, OR A992, GRADE 50 (F_y = 50 KSI).

ALL BOLTS SHALL BE ASTM F3125 GRADE A325N, UNLESS NOTED OTHERWISE AND SHALL BE INSTALLED AS BEARING-TYPE CONNECTIONS WITH THREADS INCLUDED IN SHEAR PLANE (I.E. A TYPE "N" CONNECTION), UNO. BOLTS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION USING ANY AISC APPROVED METHOD. ALL HIGH-STRENGTH BOLTING SHALL BE PERIODICALLY INSPECTED BY AN INDEPENDENT TESTING LABORATORY.

ALL ANCHOR RODS SHALL BE ASTM F1554 GRADE 55, U.N.O.

STANDARD HOLES SHALL BE USED UNLESS OVERSIZE OR SLOTTED HOLES ARE SPECIFICALLY NOTED. HARDENED WASHERS SHALL BE PROVIDED AT ALL OVERSIZE OR SLOTTED HOLES.

SHOP DRAWINGS OF ALL STRUCTURAL STEEL SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION. SEE "SHOP DRAWINGS" SECTION.

WELDING

WELDERS HOLDING VALID W.A.B.O. CERTIFICATES AND HAVING CURRENT EXPERIENCE IN THE TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES SHALL PERFORM ALL WELDING. CERTIFICATES SHALL BE THOSE ISSUED BY AN ACCEPTED TESTING AGENCY.

ALL WELDING DONE BY E70 SERIES, U.N.O. ALL WELDING SHALL BE PER LATEST AWS STANDARDS.

THESE DRAWINGS DO NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS; THE CONTRACTOR MAY SHOP WELD OR FIELD WELD AT THEIR DISCRETION. SHOP WELDS AND FIELD WELDS SHALL BE SHOWN ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW.

PAINTING

PRIOR TO FINISHING CLEAN ALL SURFACES OF RUST, SCALE, GREASE AND FOREIGN MATTER IN ACCORDANCE WITH PAINT MANUFACTURER'S REQUIREMENTS. DO NOT PRIME SURFACES IN DIRECT CONTACT WITH CONCRETE OR WHERE FIELD WELDING IS REQUIRED. FINAL CONDITION OF ALL STEEL SHALL BE PRIMED (MINIMUM (1) COAT) AND PAINTED. VERIFY COLOR WITH OWNER.

SPECIAL INSPECTION – STRUCTURAL ONLY

SPECIAL INSPECTION IS TO BE PROVIDED FOR THE ITEMS LISTED BELOW IN ADDITION TO THE INSPECTIONS CONDUCTED BY THE BUILDING SAFETY DEPARTMENT. "SPECIAL STRUCTURAL INSPECTION" SHALL NOT RELIEVE THE OWNER OR THEIR AGENT FROM REQUESTING THE CITY OR COUNTY INSPECTIONS REQUIRED BY SECTION 110.3 OF THE IBC. SPECIAL INSPECTION IS REQUIRED PER SECTIONS 1704 AND 1705 FOR THE FOLLOWING:

1. EPOXY AND ADHESIVE ANCHORS IN CONCRETE:

A) DURING THE PLACEMENT OF ANCHORS IN HARDENED CONCRETE

2. WELDING:

A) SEE ATTACHED TABLES FOR THE QUALITY ASSURANCE AND QUALITY CONTROL REQUIREMENTS PER AISC 360-16 CHAPTER N WHICH SHALL APPLY TO ALL STEEL CONNECTIONS.

3. HIGH-STRENGTH BOLTING:

A) SEE TABLES ON THIS SHEET FOR THE QUALITY ASSURANCE AND QUALITY CONTROL REQUIREMENTS PER AISC 360-16 CHAPTER N WHICH SHALL APPLY TO ALL STEEL CONNECTIONS.

3. SEE FOLLOWING TABLES FOR ADDITIONAL INFORMATION INCLUDING REQUIRED AISC QUALITY ASSURANCE INSPECTIONS FOR WELDING, BOLTING AND OTHER INSPECTION TASKS. PER AISC 360-16 SECTION N5.3 AND AISC 341-10 SECTION J5.4, IT IS ACCEPTABLE, WITH THE ENGINEER AND PIERCE COUNTY'S APPROVAL, FOR THE TASKS NOTED IN THE VARIOUS QUALITY ASSURANCE TABLES TO BE COORDINATED BETWEEN THE FABRICATOR'S INSPECTOR AND THE OWNER'S INSPECTOR SO THAT THE INSPECTION IS PERFORMED BY ONLY ONE OF THE REQUIRED PARTIES. FOR THIS PROVISION, THE FABRICATOR MUST BE AISC CERTIFIED AND HAVE A PIERCE COUNTY APPROVED INSPECTION PROGRAM.

4. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:

A) THE SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED TO BE CERTAIN IT CONFORMS WITH THE APPROVED DESIGN DRAWINGS AND SPECIFICATION.

B) THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE STRUCTURAL ENGINEER OF RECORD. ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN, IF UNCORRECTED, TO THE DESIGN AUTHORITY AND THE BUILDING OFFICIAL.

C) UPON COMPLETION OF THE ASSIGNED WORK THE STRUCTURAL ENGINEER SHALL COMPLETE AND SIGN THE APPROPRIATE FORMS CERTIFYING THAT TO THE BEST OF THEIR KNOWLEDGE THE WORK IS IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS, AND THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

FOR ADDITIONAL INFORMATION ON SPECIAL STRUCTURAL INSPECTIONS SEE IBC AND MATERIAL SPECIFIC TABLES ON THE FOLLOWING SHEETS OR CONTACT THE STRUCTURAL ENGINEER PRIOR TO START OF CONSTRUCTION.

2

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

12/12/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
54334
REGISTERED PROFESSIONAL ENGINEER
12/12/2024

2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

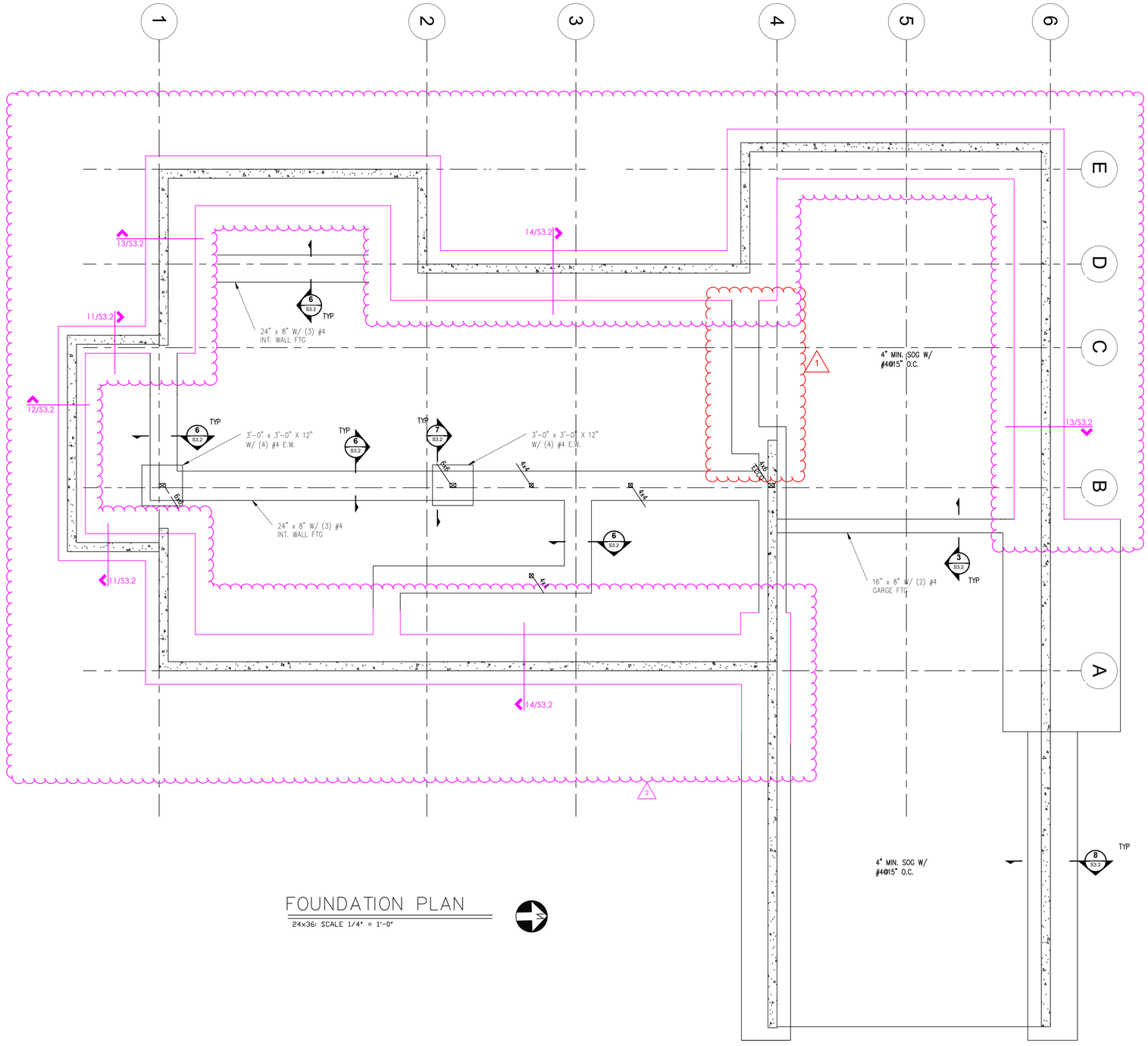
JOB # 2024020

REV	DESCRIPTION	DATE
2	REVIEW 2	12/12/2024

Drawn By:

Drawing Title:
STRUCTURAL NOTES

Sheet
S1.1



FOUNDATION PLAN

24x36' SCALE 1/4" = 1'-0"

FLOOR PLAN LEGEND

	LOAD BEARING WALL
B-XX	BEAM/HEADER, U.N.O
	POST
	HOLD-DOWN LOCATION
	HANGER
	INDICATES SHEAR WALL AND HOLD-DOWN TYPE. SEE SCHEDULE ON SHEET S3.3
	FORCE TRANSFER SHEAR WALL SEE DETAIL S6/3.3

PLAN NOTES:

1. SEE ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS NOT SHOWN. ALL DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. STRUCTURAL DRAWINGS ARE SCHEMATIC. DO NOT SCALE. CONTRACTOR TO PROVIDE TEMPORARY SUPPORT FOR THE DEMOLITION.

2. DIMENSIONS AND LOCATION OF EXISTING FOUNDATION SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

3. ALL LOAD BEARING WALL WITH OUT SHEAR WALL TYPE SHOULD BE TYPE A.

4. ALL 4" LOAD BEARING WALL SHOULD BE 2X4 HF#2 @ 16" OC.

5. ALL 6" LOAD BEARING WALL SHOULD BE 2X6 HF#2 @ 16"O.C.

6. ALL POST SHALL BE DF#1 U.N.O.

7. ALL BEAM AND HEADER SHOULD BE HF#2 U .N. O.

8. ALL SHEAR WALL DOES NOT LINE UP ABOVE, HOLDOWN SHOULD BE CONTINUOUS AND CONNECTED TO BEAM OR FOUNDATION .

9. All BEAM AT TOP PLATE/WALL CONNECTION SEE DETAIL 5/S3.3.

10. TYPICAL STAIR AND STAIR LANDING DETAIL SEE DWG 10/S3.1 - 15/S3.1

MARC J. MALSAM
STATE OF WASHINGTON
41206
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS IN PINK ONLY

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CODE COMPLIANCE
January 16, 2025

11/11/2024

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PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
24334
REGISTERED
PROFESSIONAL ENGINEER
11/11/2024

2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

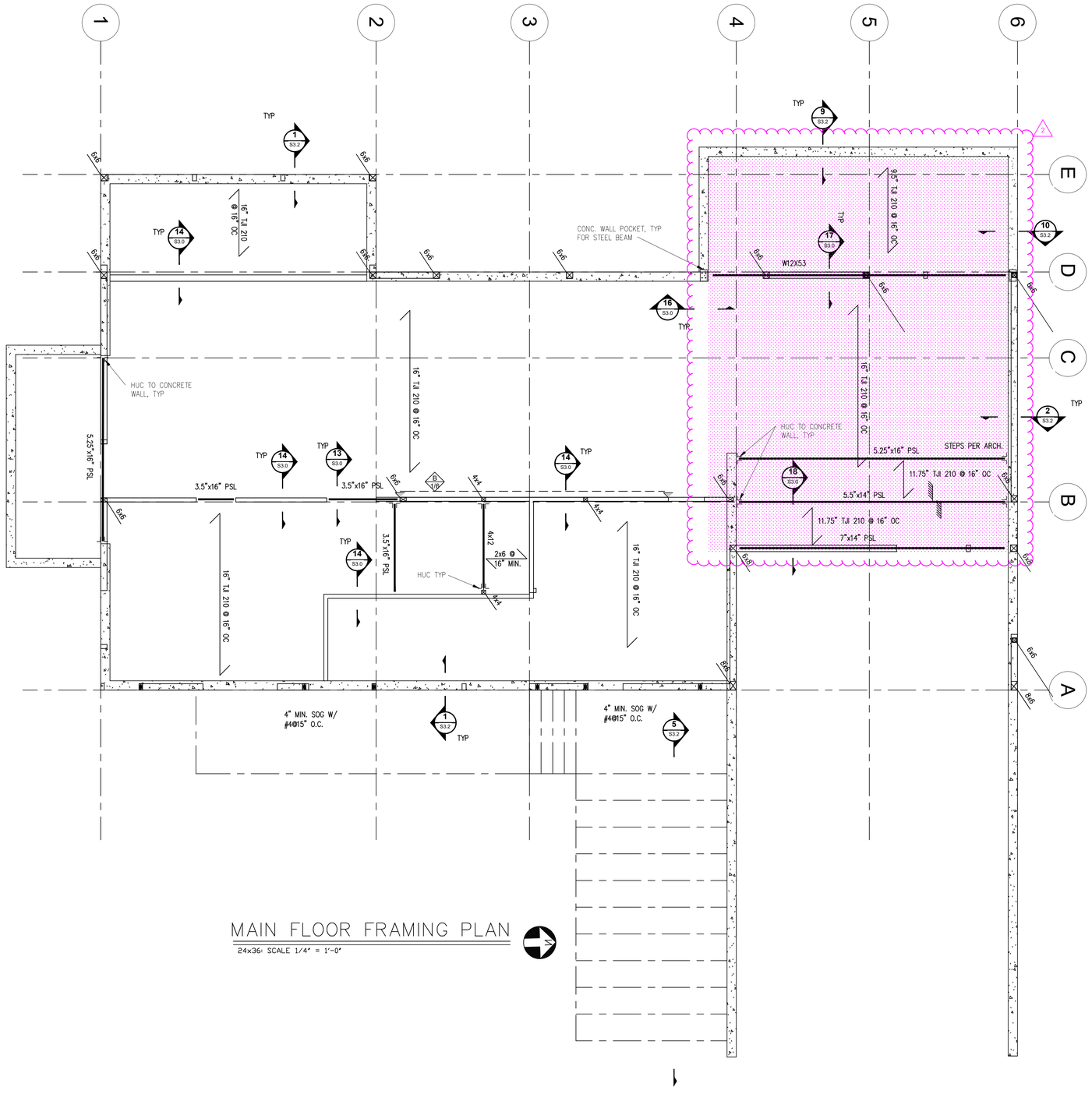
REV	DESCRIPTION	DATE
1	REVIEW 1	11/11/2024
2	4/1 REVISIONS 1	4/18/2025

Drawn By:

Drawing Title:

FOUNDATION PLAN

Sheet
S2.0



MAIN FLOOR FRAMING PLAN

24x36: SCALE 1/4" = 1'-0"

FLOOR PLAN LEGEND

	LOAD BEARING WALL
B-XX	BEAM/HEADER, U.N.O
⊠	POST
△	HOLD-DOWN LOCATION
⊔	HANGER
A / B	INDICATES SHEAR WALL AND HOLD-DOWN TYPE. SEE SCHEDULE ON SHEET S3.3
A / B	FORCE TRANSFER SHEAR WALL SEE DETAIL S6/3.3
	BLOCK DIAPHRAGM - PROVIDE FLAT 2x4 BLKG w/ (6) #10x1-1/2" AT ALL PANEL EDGES AND (6) AT 12" OC IN THE FIELD

PLAN NOTES:

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8. ALL SHEAR WALL DOES NOT LINE UP ABOVE, HOLDOWN SHOULD BE CONTINUOUS AND CONNECTED TO BEAM OR FOUNDATION .
9. All BEAM AT TOP PLATE/WALL CONNECTION SEE DETAIL 5/S3.3.
10. TYPICAL STAIR AND STAIR LANDING DETAIL SEE DWG 10/S3.1 - 15/S3.1

YUK KWAN TSUI — STATE OF WASHINGTON — 5A334 — REGISTERED PROFESSIONAL ENGINEER — 4/04/2024

MARC J. MALSAM — STATE OF WASHINGTON — 41206 — STRUCTURAL ENGINEER — PROFESSIONAL ENGINEER

REVISIONS IN PINK ONLY

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5/29/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

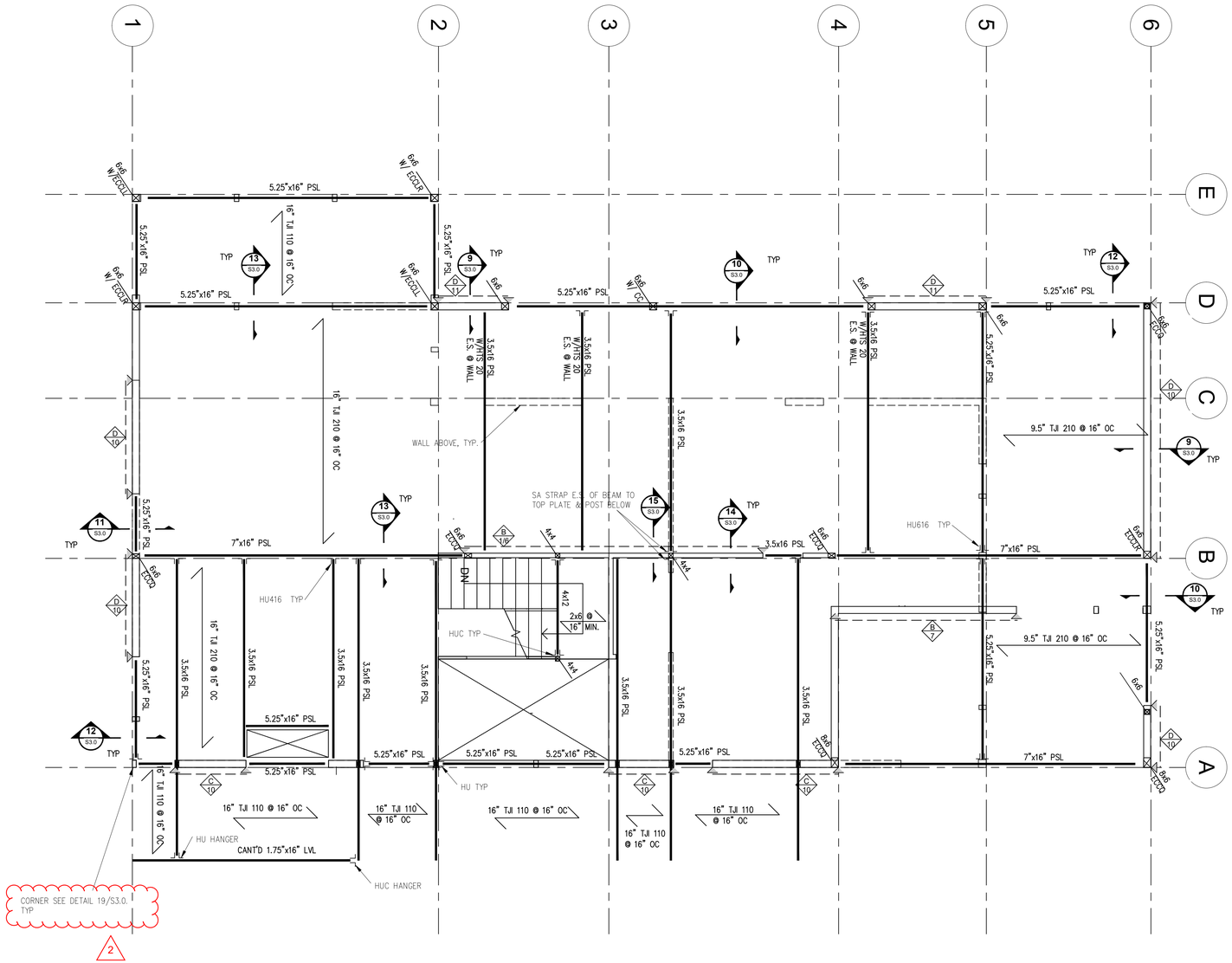
2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

REV	DESCRIPTION	DATE
1	1ST REVISIONS	4/18/2025

Drawn By:
Drawing Title: MAIN FLOOR FRAMING PLAN
Sheet S2.1



UPPER FLOOR FRAMING PLAN

24x36 SCALE 1/4" = 1'-0"

FLOOR PLAN LEGEND

	LOAD BEARING WALL
B-XX	BEAM/HEADER, U.N.O
⊠	POST
△	HOLD-DOWN LOCATION
⊓	HANGER
A / #	INDICATES SHEAR WALL AND HOLD-DOWN TYPE. SEE SCHEDULE ON SHEET S3.3
A / #	FORCE TRANSFER SHEAR WALL SEE DETAIL S6/3.3

PLAN NOTES:

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9. All BEAM AT TOP PLATE/WALL CONNECTION SEE DETAIL 5/S3.3.

10. TYPICAL STAIR AND STAIR LANDING DETAIL SEE DWG 10/S3.1 - 15/S3.1

REVIEWED FOR CODE COMPLIANCE
January 16, 2025

12/12/2024

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EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
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REGISTERED PROFESSIONAL ENGINEER
12/12/2024

2419 MERCER FIRSTHILL

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MERCER ISLAND, WA 98040

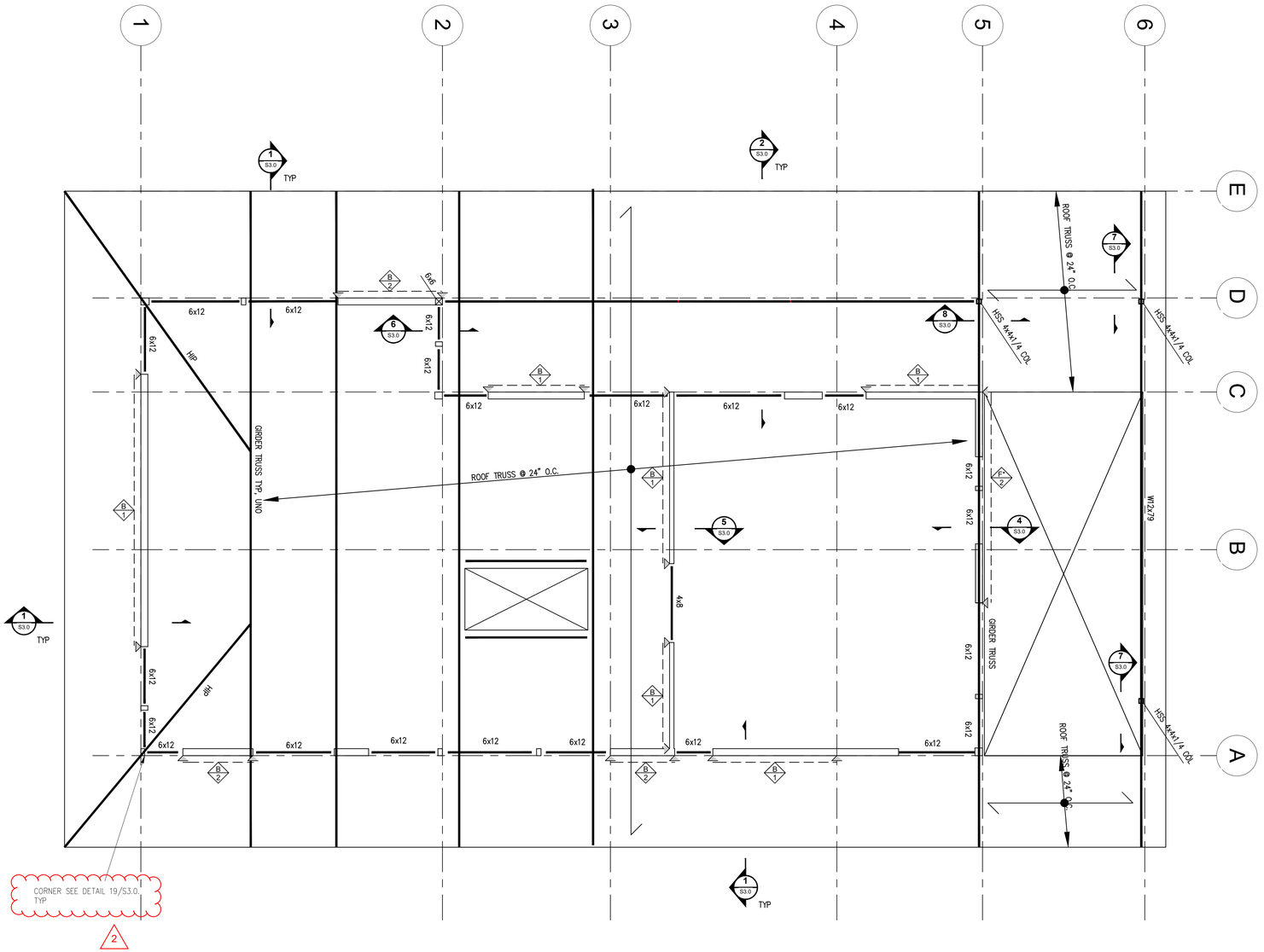
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REV	DESCRIPTION	DATE
2	REVIEW 2	12/12/2024

Drawn By:

Drawing Title:
UPPER FLOOR FRAMING PLAN

Sheet
S2.2



ROOF FRAMING PLAN

24x36: SCALE 1/4" = 1'-0"

FLOOR PLAN LEGEND

	LOAD BEARING WALL
B-XX	BEAM/HEADER, U.N.O
	POST
	HOLD-DOWN LOCATION
	HANGER
X/#	INDICATES SHEAR WALL AND HOLD-DOWN TYPE. SEE SCHEDULE ON SHEET S3.3
X/#	FORCE TRANSFER SHEAR WALL SEE DETAIL S6/3.3

PLAN NOTES:

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9. All BEAM AT TOP PLATE/WALL CONNECTION SEE DETAIL 5/S3.3.
10. TYPICAL STAIR AND STAIR LANDING DETAIL SEE DWG 10/S3.1 - 15/S3.1

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F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
24334
REGISTERED PROFESSIONAL ENGINEER
11/11/2024

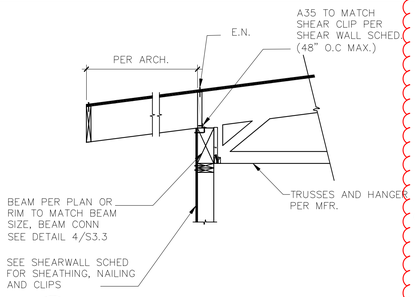
2419 MERCER FIRSTHILL

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MERCER ISLAND, WA 98040

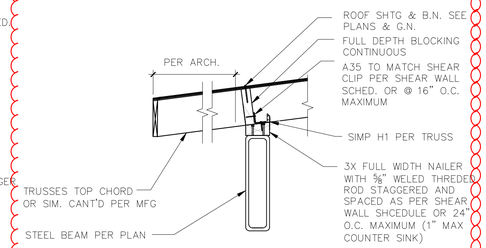
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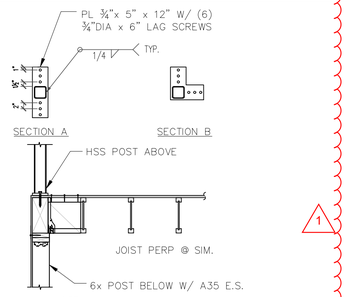
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Drawing Title: ROOF FRAMING PLAN
Sheet S2.3



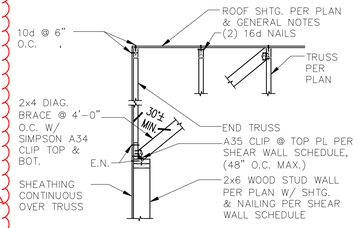
1 S3.0 TYP. ROOF TRUSS // TO WALL
SCALE: 1/2"=1'-0"



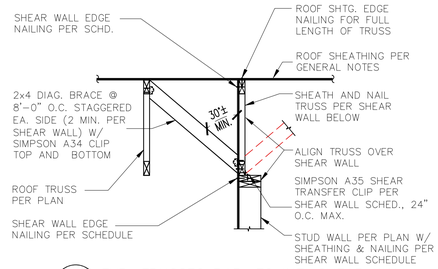
2 S3.0 TYP. ROOF TRUSS @ HSS BEAM
SCALE: 1/2"=1'-0"



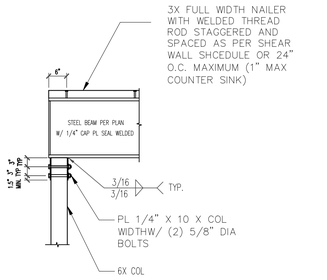
3 S3.0 TYP. EXT. WALL JST. PARALLEL
SCALE: 1/2"=1'-0"



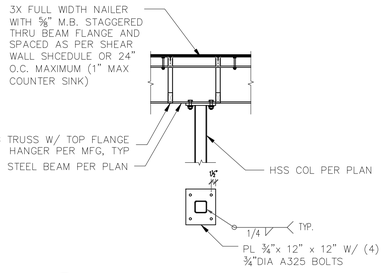
4 S3.0 GABLE END ROOF CONNECTION
SCALE: 3/4"=1'-0"



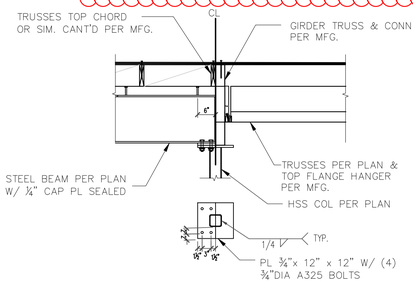
5 S3.0 TYP. TRUSSES PAR. TO INT. SHEAR WALL
SCALE: 3/4"=1'-0"



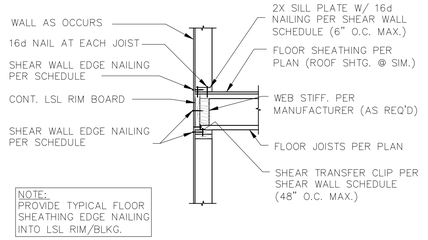
6 S3.0 HSS BEAM TO WOOD POST CONN
SCALE: 3/4"=1'-0"



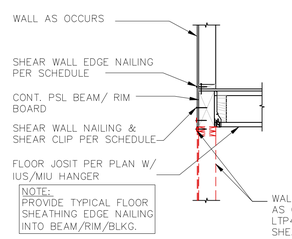
7 S3.0 CANT'D W BEAM TO HSS CONN.
SCALE: 1/2"=1'-0"



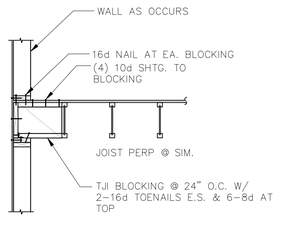
8 S3.0 HSS BEAM TO HSS CONN @ END TRUSS
SCALE: 1/2"=1'-0"



9 S3.0 TYP. EXT. WALL JSTS. PERP.
SCALE: 1/2"=1'-0"

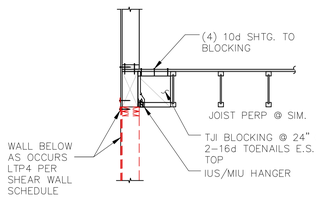


10 S3.0 TYP. EXT. BEAM JSTS. PERP.
SCALE: 1/2"=1'-0"



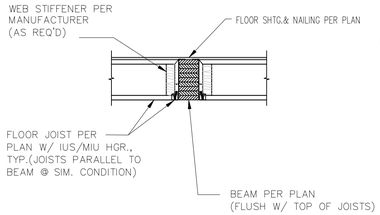
NOTE:
FOR INFORMATION NOT SHOWN SEE PLAN & OTHER DETAILS

11 S3.0 TYP. EXT. WALL JST. PARALLEL
SCALE: 1/2"=1'-0"

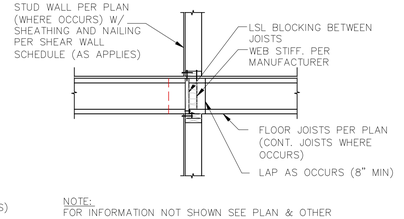


NOTE:
FOR INFORMATION NOT SHOWN SEE PLAN & OTHER DETAILS

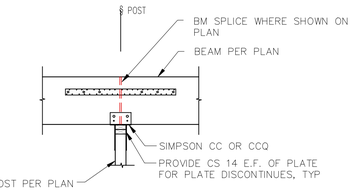
12 S3.0 TYP. EXT. BEAM JST. PARALLEL
SCALE: 1/2"=1'-0"



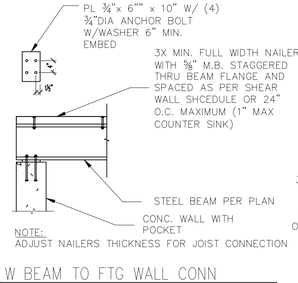
13 S3.0 TYP. FLOOR JOISTS TO WOOD BEAM
SCALE: 1/2"=1'-0"



14 S3.0 TYP. INT. WALL, JSTS. PERP.
SCALE: 1/2"=1'-0"

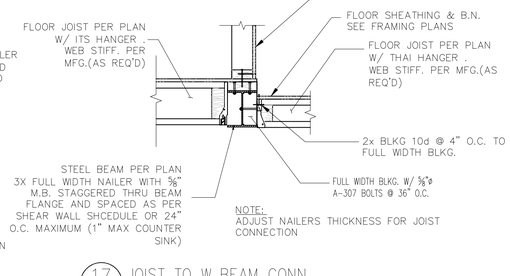


15 S3.0 TYP COL TO BEAM CONN.
SCALE: 1/2"=1'-0"



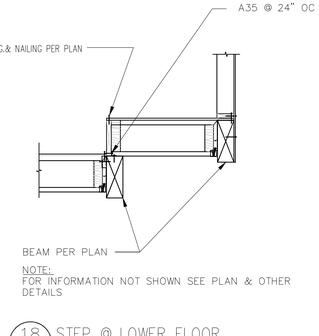
NOTE:
ADJUST NAILERS THICKNESS FOR JOIST CONNECTION

16 S3.0 W BEAM TO FTG WALL CONN
SCALE: 1/2"=1'-0"



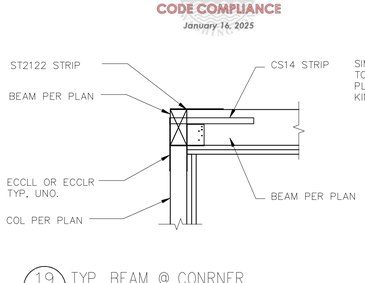
NOTE:
ADJUST NAILERS THICKNESS FOR JOIST CONNECTION

17 S3.0 JOIST TO W BEAM CONN.
SCALE: 1/2"=1'-0"

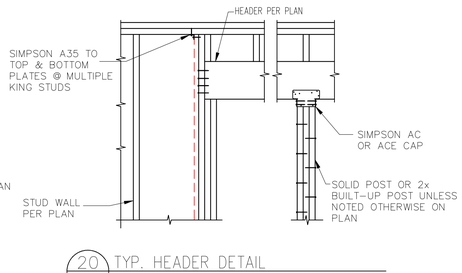


NOTE:
FOR INFORMATION NOT SHOWN SEE PLAN & OTHER DETAILS

18 S3.0 STEP @ LOWER FLOOR
SCALE: 1/2"=1'-0"



19 S3.0 TYP. BEAM @ CONRNER
SCALE: 1/2"=1'-0"



20 S3.0 TYP. HEADER DETAIL
SCALE: 3/4"=1'-0"

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21334
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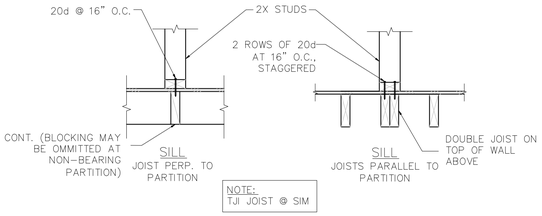
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REV	DESCRIPTION	DATE
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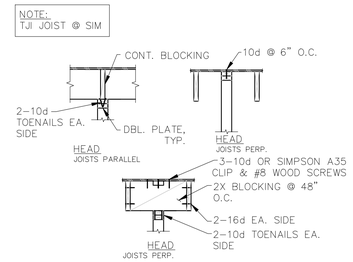
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Drawing Title:

TYPICAL STRUCTURAL DETAILS

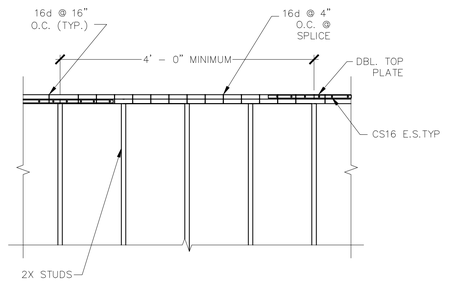
Sheet
S3.0



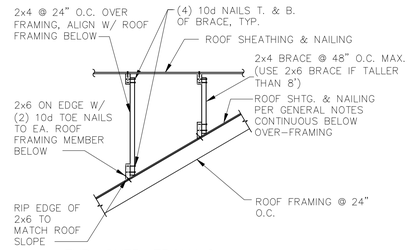
1 TYP. JOIST FRAMING AT NON-LOAD BEARING STUD WALLS
SCALE: 1/2"=1'-0"



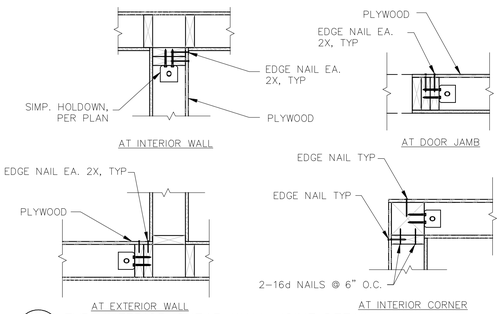
2 TYP. JOIST FRAMING AT STUD WALLS
SCALE: 1/2"=1'-0"



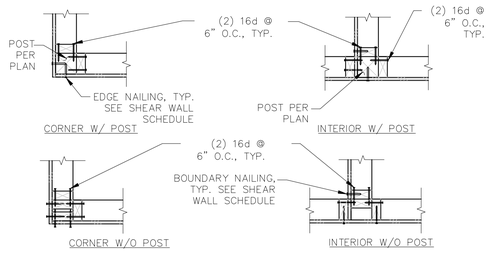
3 TYP. TOP PLATE SPLICE
SCALE: 1/2"=1'-0"



4 TYP. OVER-FRAMING PERP. TO ROOF FRAMING
SCALE: 3/4"=1'-0"

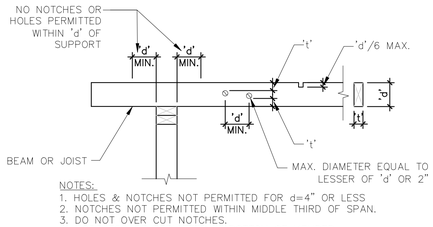


5 TYP. INTERIOR SHEAR WALL JOINT DETAIL
SCALE: 1/2"=1'-0"



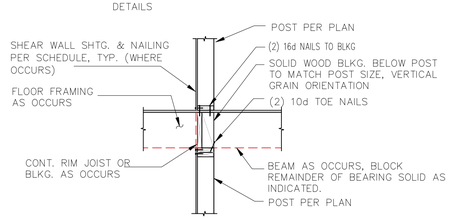
NOTS:
1. SEE FRAMING PLAN FOR SHEAR WALL, FACE OF WALL, ONE SIDE,TWO SIDE AND SCHEDULE REFERENCES.
2. ALL STUDS 1½" THICK U.N.O.

6 TYP. INTERIOR SHEAR WALL JOINT DETAIL
SCALE: 1/2"=1'-0"

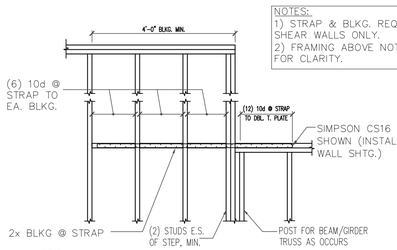


NOTES:
1. HOLES & NOTCHES NOT PERMITTED FOR d=4" OR LESS
2. NOTCHES NOT PERMITTED WITHIN MIDDLE THIRD OF SPAN.
3. DO NOT OVER CUT NOTCHES.
4. NOTCHES NOT PERMITTED IN BOTTOM OF MEMBER.

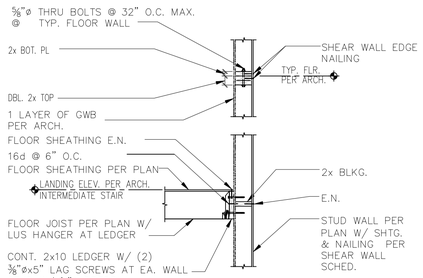
7 TYP. NOTCHES & HOLES IN JOISTS/BEAMS
SCALE: 1/2"=1'-0"



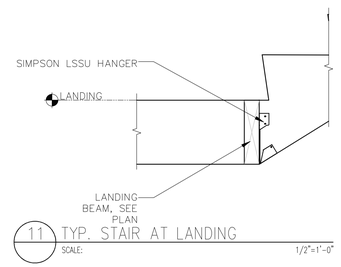
8 TYP. POST @ FLOOR
SCALE: 1/2"=1'-0"



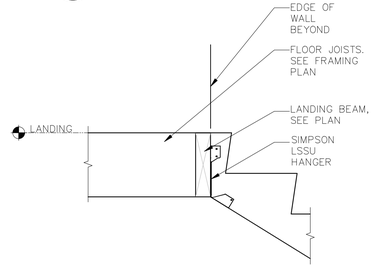
9 TYP. PLATE HT. STEP
SCALE: 3/4"=1'-0"



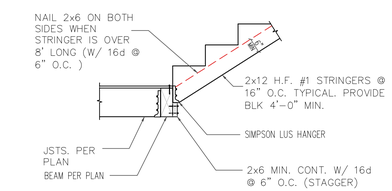
10 TYP. FRAMING @ STAIR LANDING
SCALE: 1/2"=1'-0"



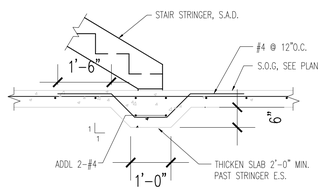
11 TYP. STAIR AT LANDING
SCALE: 1/2"=1'-0"



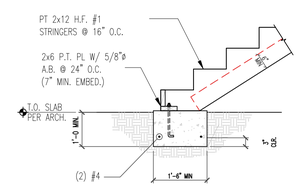
12 TYP. STAIR AT LANDING
SCALE: 1/2"=1'-0"



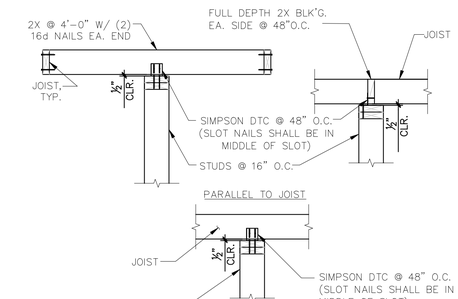
13 TYP. STRINGER CONNECTION
SCALE: 3/4"=1'-0"



14 STAIR STRINGER FOOTING
SCALE: NTS



15 EXT. STAIR STRINGER FOOTING
SCALE: NTS



NOTE:
DO NOT INSTALL NON-BEARING PARTITIONS UNTIL DEAD LOEAD IS IN PLACE(AT ROOF CONSTRUCTION AND WHERE A DEFLECTION SPACE HAS BEEN PROVIDED FOR THIS REQUIREMENT MAY BE WAIVED).

16 TYP. NON-BEARING DETAIL
SCALE: 1/2"=1'-0"

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5/29/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
24334
REGISTERED PROFESSIONAL ENGINEER
6/04/2024

2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

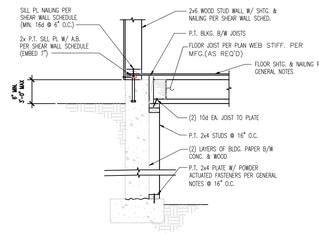
REV	DESCRIPTION	DATE

Drawn By:

Drawing Title:

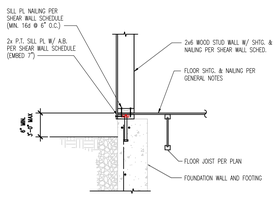
TYPICAL STRUCTURAL DETAILS

Sheet
S3.1

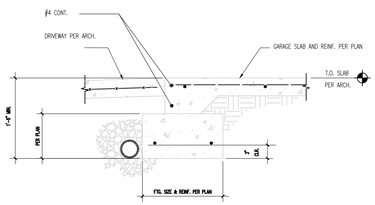


NOTE:
CONC. WALL AND FOUNDATION PER PLAN AND DETAIL

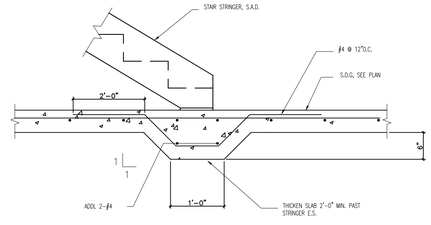
1 S3.2 TYP. EXTERIOR FOUNDATION PERP. TO JOIST
SCALE: 3/4"=1'-0"



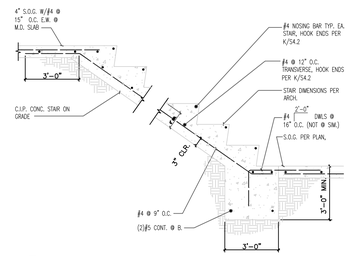
2 S3.2 TYP. EXTERIOR FOUNDATION // TO JOIST
SCALE: 3/4"=1'-0"



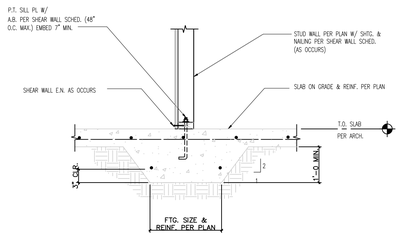
3 S3.2 FOOTING @ GARAGE DOOR
SCALE: 1/2"=1'-0"



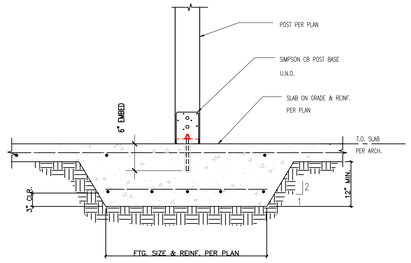
4 S3.2 TYP. STAIR FOUNDATION
SCALE: 3/4"=1'-0"



5 S3.2 TYP. STAIR SECTION @ FOUNDATION
SCALE: 3/4"=1'-0"



6 S3.2 TYP. INT. STUD WALL FOOTING
SCALE: 1/2"=1'-0"

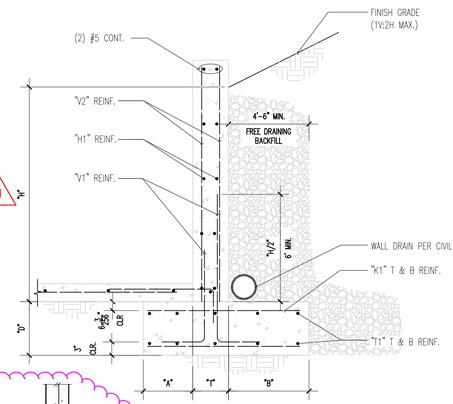


7 S3.2 TYP. INTERIOR POST SPREAD FTG.
SCALE: 1/2"=1'-0"

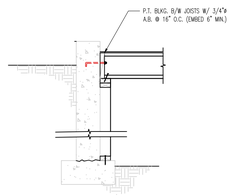
RETAINING WALL REINFORCING SCHEDULE

DIMENSIONS					REINFORCING				
"H"	"A"	"B"	"T"	"Y"	"H"	"V1"	"V2"	"K1"	"T1"
9'-6"	3'-6"	5'-0"	12"	20"	#5 @ 12" O.C.	#7 @ 6" O.C.	#7 @ 6" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.
8'-6"	3'-6"	4'-6"	10"	20"	#5 @ 12" O.C.	#7 @ 6" O.C.	#7 @ 6" O.C.	#5 @ 12" O.C.	#5 @ 12" O.C.
4'-0"	1'-0"	2'-0"	10"	10"	#4 @ 16" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.	#4 @ 12" O.C.

GEO SOIL REPORT PROVIDED BY NGA, INC(NO. 1502724):
ALLOWABLE SOIL BEARING = 2500 PSF
ACTIVE PRESSURE = 40 PCF
AT REST PRESSURE = 60 PCF
PASSIVE PRESSURE = 200 PCF
SEISMIC LOAD = 8H

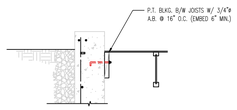


8 S3.2 RETAINING WALL
SCALE: NTS

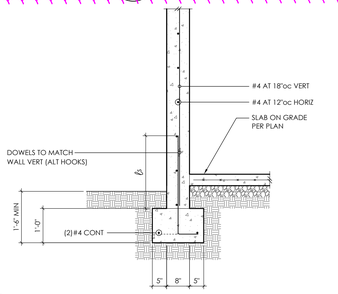


NOTE:
TYP. DETAILS SEE DETAIL 1

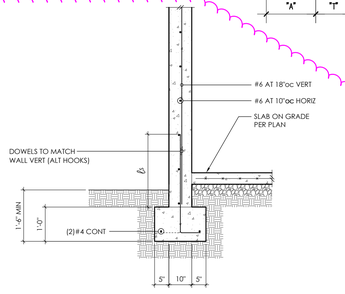
9 S3.2 TYP. EXTERIOR FOUNDATION PERP. TO JOIST
SCALE: 3/4"=1'-0"



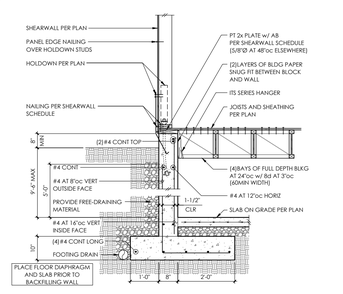
10 S3.2 TYP. EXTERIOR FOUNDATION // TO JOIST
SCALE: 3/4"=1'-0"



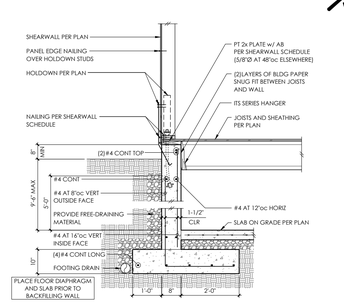
11 S3.2 TYPICAL 8" CONCRETE WALL FOOTING
SCALE: NTS



12 S3.2 TYPICAL 10" CONCRETE WALL FOOTING
SCALE: NTS



13 S3.2 8" JOISTS PARALLELL TO BRACED BASEMENT WALL
SCALE: NTS



14 S3.2 8" JOISTS PRPENDICULAR TO BRACED BASEMENT WALL
SCALE: NTS

MARC J. MALSAM
STATE OF WASHINGTON
41266
STRUCTURAL ENGINEER
PROFESSIONAL ENGINEER

THESE DETAILS ONLY

REVIEWED FOR CODE COMPLIANCE
January 16, 2025
CITY OF MERCER ISLAND

11/11/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
54334
REGISTERED
PROFESSIONAL ENGINEER
11/11/2024

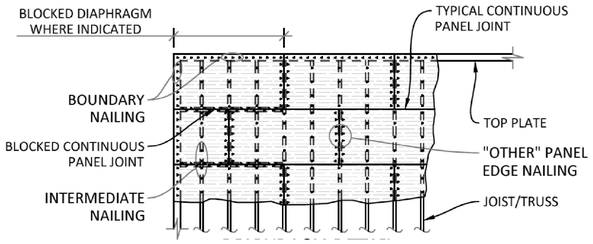
2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

REV	DESCRIPTION	DATE
1	REVIEW 1	11/11/2024
2	4/7 REVISIONS 1	4/18/2025

Drawn By:
Drawing Title:
TYPICAL STRUCTURAL DETAILS
Sheet
S3.2

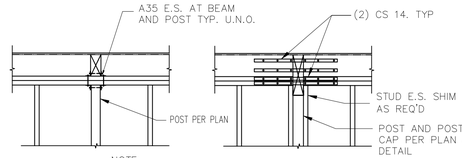


DIAPHRAGM NAILING SCHEDULE						
LOCATION	SHEATHING	BLKG REQD	SIZE OF NAIL	NAIL SPACING AT BOUNDARIES AND "OTHER" PANEL EDGES	NAIL SPACING AT INTERMEDIATE FRAMING MEMBERS	NAIL SPACING AT BLOCKED PANEL JOINTS
ROOF	SEE STRUCT NOTES	NO	10d	6" OC	12" OC	6" OC
SUB-FLR		NO	10d & GLUE	4" OC	12" OC	4" OC

NOTE:
*PROVIDE ⅛" GAP @ TYP. PANEL JOINT

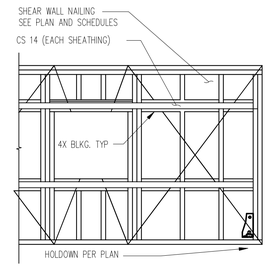
DIAPHRAGM NOTES
1. ALL DIAPHRAGM SHEATHING IS TO BE STAGGERED IN THE DIRECTION OF THE PLYWOOD SPAN PER DIAPHRAGM DETAIL
2. PROVIDE BOUNDARY NAILING CONTINUOUS AROUND THE ENTIRE PERIMETER OF THE DIAPHRAGM
3. NAILS SHALL BE COMMON OR GALVANIZED BOX
4. ALL FRAMING MEMBERS SHALL BE 2x MINIMUM NOMINAL WIDTH

1 TYP. PLY. DIAPHRAGM NAILING
SCALE 1/4" = 1'-0"

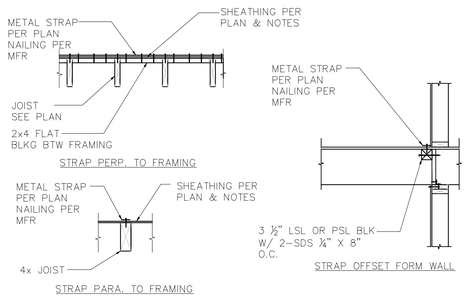


NOTE:
BALANCE OF FRAMING NOT SHOWN FOR CLARITY

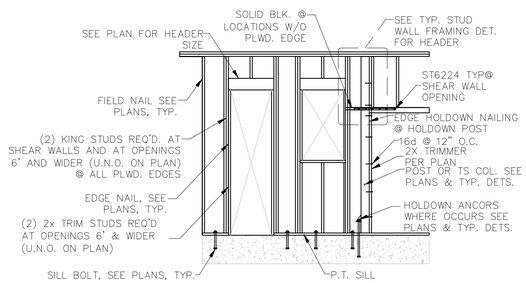
5 TYP. BEAM @ WALL CONNECTION
SCALE NTS



6 TYP. PERFORATED SHEAR WALL
SCALE NTS



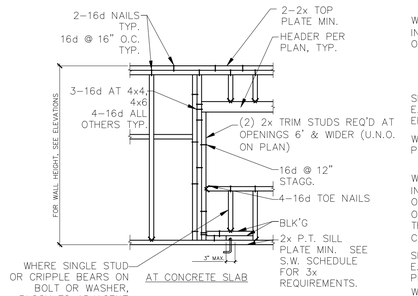
7 TYP. COIL STRAP AT FRAMING
SCALE NTS



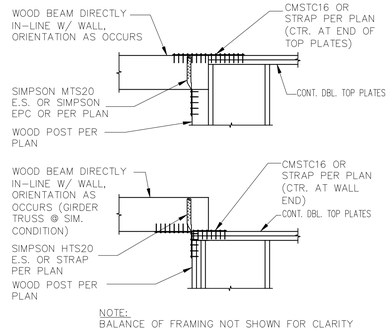
TYP MINIMUM KING STUD AND TRIM			
WIDTH OF OPENING	8'-0"	6'-0"	4'-0"
NUMBER OF TRIMMERS	3	2	1
NUMBER OF KING STUD	4	3	2

NOTES:
1. USE 2x6 AT 16" O.C. AT ALL EXTERIOR WALLS.
2. SEE PLANS FOR SPECIAL FRAMING REQUIREMENTS.
3. HEADER SIZES SHOWN IN SCHEDULES ABOVE ARE MINIMUM HEADER SIZES, SEE PLANS FOR WHERE LARGER HEADER SIZES ARE REQUIRED.
4. IF CALLED OUT STUD HEIGHTS AT ANY GIVEN FLOOR LEVEL EXCEED LIMITATIONS, CONTACT STRUCTURAL ENGINEER FOR CLARIFICATION.
5. TRIMMERS AT 4x4 USE 1-4x4 AND 1-2x4 AND AT 3x4 USE 1-3x4 AND 1-2x4.
6. NAIL TRIMMERS TOGETHER W/ 16d NAILS @ 12" O.C. STAGGERED EACH FACE.
7. SEE PLANS FOR SHEAR WALL FRAMING REQUIREMENTS.

2 TYP. SHEAR WALL FRAMING
SCALE NTS



3 TYP. STUD WALL OPENING FRAMING
SCALE NTS



NOTE:
BALANCE OF FRAMING NOT SHOWN FOR CLARITY

4 TYP. TIE STRAP CONN. DETAILS
SCALE NTS

SHEAR WALL SCHEDULE											
MARK	SHEATHING	SIDE	PANEL NAILING SIZE	PANEL NAILING EDGE	PANEL NAILING FIELD	PANEL BLOCKING	BOT PLATE FASTENING	SILL PLATE	ANCHOR BOLTS (MIN. 7" EMBED)	SHEAR CLIP	VALUE (PLF)
A	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	ONE	8d	6" O.C.	12" O.C.	2x	16d @ 6"OC	2x	5/8" x 10" @ 48" O.C. OR UFP10-SDS3 @ 48" O.C.	SIMPSON LTP4/A35 @ 18" O.C.	230
B	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	ONE	8d	4" O.C.	12" O.C.	3x	16d @ 4"OC	3x / (2) 2x	5/8" x 12" @ 42" O.C. OR UFP10-SDS3 @ 42" O.C.	SIMPSON LTP4/A35 @ 18" O.C.	380
C	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	ONE	8d	3" O.C.	12" O.C.	3x	16d @ 3"OC	3x / (2) 2x	5/8" x 12" @ 36" O.C. OR UFP10-SDS3 @ 36" O.C.	SIMPSON LTP4/A35 @ 16" O.C.	420
D	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	ONE	10d	3" O.C.	12" O.C.	3x	16d @ 3"OC	3x / (2) 2x	5/8" X 12" @ 24" O.C. OR UFP10-SDS3 @ 24" O.C.	SIMPSON LTP4/A35 @ 12" O.C.	560
E	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	TWO	8d	6" O.C.	12" O.C.	3x	(2) ROW 16d @ 6"OC	3x / (2) 2x	5/8" X 12" @ 32" O.C.	SIMPSON LTP4 & A35. @ 24" O.C.	520
F	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	TWO	8d	4" O.C.	12" O.C.	3x	(2) ROW 16d @ 4"OC	3x / (2) 2x	5/8" x 12" @ 24" O.C.	SIMPSON LTP4 & A35. @ 16" O.C.	760
G	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	TWO	8d	3" O.C.	12" O.C.	3x	(2) ROW 16d @ 3"OC	3x / (2) 2x	5/8" x 12" @ 16" O.C.	SIMPSON LTP4 & A35. @ 12" O.C.	980
H	15/32" APA RATED SHEATHING WITH STUDS @ 16" O.C.	TWO	10d	3" O.C.	12" O.C.	3x	(2) ROW 16d @ 3"OC	3x / (2) 2x	5/8" x 12" @ 12" O.C.	SIMPSON LTP4 & A35. @ 9" O.C.	1,200

NOTES:
1. SOME SHEAR WALLS LISTED MAY NOT BE USED IN THIS PROJECT. REFER TO PLAN FOR TYPES USED.
2. 8d NAIL = 2 1/2" x 0.131" COMMON OR 2 1/2" x 0.113" GALVANIZED BOX.
   10d NAIL = 3" x 0.148" COMMON OR 3" x 0.128" GALVANIZED BOX.
3. IF ANCHOR BOLT SPACING IS GREATER THAN SHEAR WALL LENGTH INSTALL (1) ANCHOR BOLT WITHIN 12" OF EACH END.
4. NAIL SIZES SHOWN ARE FOR COMMON NAILS OR GALVANIZED BOX. POWER DRIVEN NAILS SHALL COMPLY WITH ESR 1539 FOR RECOMMENDED SPACING AND INSTALLATION TO COMPLY WITH THE ABOVE SHEAR WALL SCHEDULE.
5. SILL PLATE ANCHORS SHALL INCLUDE A STEEL PLATE WASHER NOT LESS THAN 0.229"x3"x3" IN SIZE PER AF&PA SDPWS SECTION 4.3.6.4.3. THE HOLE IN THE PLATE WASHER SHALL BE PERMITTED TO BE DIAGONALLY SLOTTED WITH A WIDTH OF UP TO 3/16" LARGER THAN THE BOLT DIAMETER AND A SLOT LENGTH NOT TO EXCEED 1-3/4", PROVIDED A STANDARD CUT WASHER IS PLACED BETWEEN THE PLATE WASHER AND THE NUT. THE PLATE WASHER SHALL EXTEND TO WITHIN ½" OF THE EDGE OF THE BOTTOM PLATE ON THE SIDE(S) WITH SHEATHING.
6. IN SEISMIC DESIGN CATEGORY D, E, OR F, WHERE SHEAR DESIGN VALUES EXCEED 700 POUNDS PER LINEAR FOOT (350 PLF ASD), ALL FRAMING MEMBERS RECEIVING EDGE NAILING FROM ABUTTING PANELS SHALL NOT BE LESS THAN A SINGLE 3-INCH NOMINAL MEMBER, OR TWO 2-INCH NOMINAL MEMBERS FASTENED TOGETHER IN ACCORDANCE WITH SECTION 2306.1 TO TRANSFER THE DESIGN SHEAR VALUES BETWEEN FRAMING MEMBERS. WOOD STRUCTURAL PANEL JOINT AND SILL PLATE NAILING SHALL BE STAGGERED IN ALL CASES.
7. WHERE PANELS ARE APPLIED TO BOTH FACES OF A WALL AND NAIL SPACING IS LESS THAN 6" O.C. ON EITHER SIDE, PANEL JOINTS SHALL BE OFFSET TO FALL ON DIFFERENT FRAMING MEMBERS. ALTERNATIVELY, THE WIDTH OF THE NAILED FACE OF FRAMING MEMBERS SHAL BE 3" NOMINAL OR GREATER AT ADJOINING PANEL EDGES AND NAILS AT ALL PANEL EDGES SHALL BE STAGGERED.
8. SHEAR WALL NAILING MUST BE INSTALLED SUCH THAT THE NAIL HEAD OR CROWN IS FLUSH WITH THE SURFACE OF SHEATHING. OVERDRIVEN OR OVER PENETRATED NAILS WILL NOT BE ALLOWED OR COUNTED AS APPROPRIATE NAILING.

SHEAR WALL SCHEDULE
SCALE NTS

HOLDOWN SCHEDULE							
MARK	HOLDOWN	WOOD MEMBER	WOOD FASTENER	ANCHOR BOLT	ANCHOR BOLT EMBEDMENT (IN)	COMMENTS SEE NOTES BELOW	VALUE (LBS)
0	NONE REQUIRED						
1	SIMPSON MST37	(2) 2x	(22) 16d NAILS 1/2 TOP & BOT.	N/A	N/A	WRAP & NAIL STRAP TO BEAM/HEADER BELOW AS REQUIRED	2,135
2	SIMPSON MST48	(2) 2x	(32) 16d NAILS 1/2 TOP & BOT.	N/A	N/A	WRAP & NAIL STRAP TO BEAM/HEADER BELOW AS REQUIRED	3,425
3	SIMPSON MST60	(2) 2x	(48) 16d NAILS 1/2 TOP & BOT.	N/A	N/A	WRAP & NAIL STRAP TO BEAM/HEADER BELOW AS REQUIRED	4,830
4	SIMPSON CMST12	(1) 4x	(86) 16d NAILS 1/2 TOP & BOT.	N/A	N/A	WRAP & NAIL STRAP TO BEAM/HEADER BELOW AS REQUIRED 39" END LENGTH	9,215
5	SIMPSON LSTHD8 OR LSTHD8RJ	(2) 2x SEE NOTES	(24) 16d SINKERS	N/A	8"	SEE NOTES 1, 2, 3, AND 4 USE (3) 2x AT CORNERS	1,220
6	SIMPSON HDU2-SDS2.5	(2) 2x	(6) SIMPSON SDS SCREWS	5/8" DIA. SIMP. SSTB16	12-5/8"	SEE NOTES 1, 2, 3, AND 4	2215
7	SIMPSON HDU4-SDS2.5	(2) 2x	(14) SIMPSON SDS SCREWS	5/8" DIA. SIMP. SSTB20	16-5/8"	SEE NOTES 1, 2, 3, AND 4	3285
8	SIMPSON HDU5-SDS2.5	(2) 2x	(14) SIMPSON SDS SCREWS	5/8" DIA. SIMP. SSTB24	20-5/8"	SEE NOTES 1, 2, 3, AND 4	4340
9	SIMPSON HDU8-SDS2.5	(1) 4x	(20) SIMPSON SDS SCREWS	7/8" DIA. SIMP. SB7/8x24	18"	SEE NOTES 1, 2, 3, AND 4	5820
10	SIMPSON HHDQ11-SDS2.5	(1) 6x	(24) SIMPSON SDS SCREWS	1" DIA. A307 THREADED ROD	de = 16" W = 48"	SEE NOTES 1, 2, 3, 4 AND 5	8030
11	SIMPSON HHDQ14-SDS2.5	(1) 6x	(30) SIMPSON SDS SCREWS	1" DIA. A307 THREADED ROD	de = 16" W = 48"	SEE NOTES 1, 2, 3, 4 AND 5	12375
12	SIMPSON HDU14-SDS2.5	(1) 6x	(36) SIMPSON SDS SCREWS	1" DIA. A307 THREADED ROD	de = 16" W = 48"	SEE NOTES 1, 2, 3, 4 AND 5	12425

NOTES:
1. DOUBLE STUDS ARE REQUIRED AT HOLDOWNS UNLESS NOTED OTHERWISE. DOUBLE STUDS SHALL BE LAMINATED TOGETHER WITH 16d NAILS AT 6" O.C. FULL HEIGHT (TYPICAL).
2. PROVIDE HOLDOWN NOTED WITHIN 6" FROM EACH END OF EACH SHEAR WALL SHOWN ON PLANS.
3. ADD (2) EXTRA VERTICAL DOWEL WITH STANDARD HOOK IN FOOTING AT EACH ANCHOR BOLT LOCATION.
4. ADJUST FOOTING AND STEM WALL HEIGHT TO ACCOMMODATE ANCHOR BOLT EMBEDMENT REQUIREMENTS.
5. ADJUST FOOTING AND STEM WALL HEIGHT TO ACCOMMODATE ANCHOR BOLT EMBEDMENT REQUIREMENTS.
6. SEE THREADED ROD ANCHOR DETAIL.
7. FOR EXISTING STEM WALL, DRILL AND EPOXY ANCHOR. USE A307 THREADED ROD WITH SIMPSON SET-XP EPOXY. SEE PLANS AND DETAILS FOR REQUIRED EMBEDMENT.
8. ALL HOLDOWN ANCHORS AND BOLTS SHALL BE INSTALLED IN THE CORRECT LOCATION IN THE TOP OF THE CONCRETE WALL AND SECURED TO THE FORMS PRIOR TO CONCRETE INSTALLATION. THERE IS NO PRACTICAL SOLUTION TO POST-INSTALLED HOLDOWN ANCHORS IN THE TOP OF THE 8" CONCRETE STEM WALL. NO EPOXY OR MECHANICAL ANCHOR BOLT ALTERNATIVES WILL BE OFFERED FOR MISSING OR MISPLACED EMBEDDED ANCHORS. CONCRETE FOOTINGS AND STEM WALLS MAY HAVE TO BE REMOVED AT CONTRACTOR'S EXPENSE TO MITIGATE MISPLACED, MISALIGNED, OR MISSING HOLDOWN ANCHORS OR BOLTS.

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

HOLDOWN SCHEDULE
SCALE NTS

5/29/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

TUK KWAN TSUI
STATE OF WASHINGTON
54334
REGISTERED PROFESSIONAL ENGINEER
9/04/2024

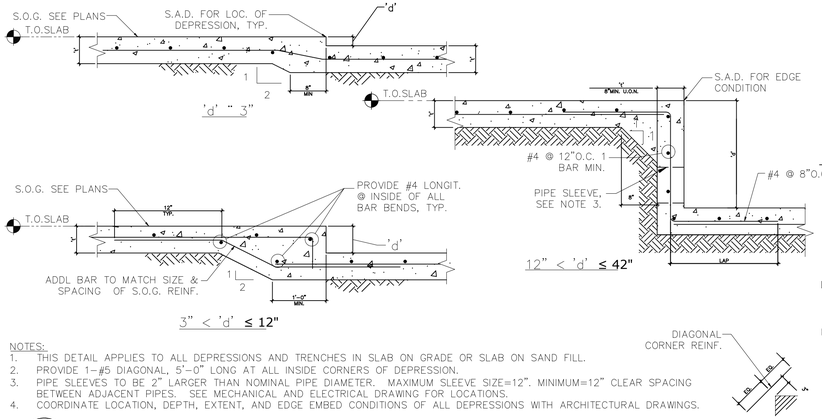
2419 MERCER FIRSTHILL
2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

DATE
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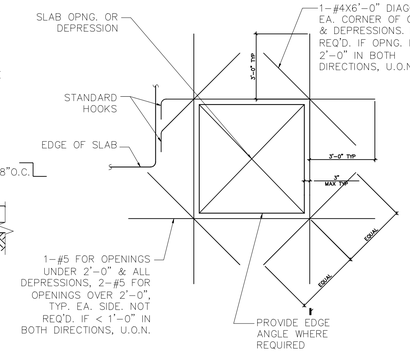
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SHEAR WALL DETAILS

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S3.3

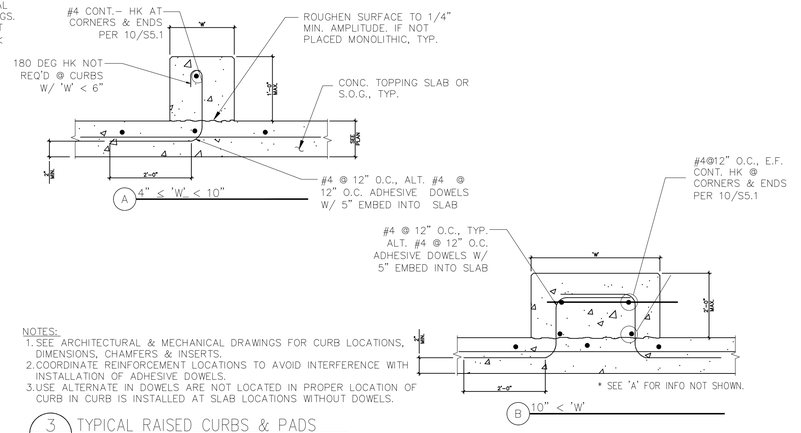


NOTES:
1. THIS DETAIL APPLIES TO ALL DEPRESSIONS AND TRENCHES IN SLAB ON GRADE OR SLAB ON SAND FILL.
2. PROVIDE 1–#5 DIAGONAL, 5'–0" LONG AT ALL INSIDE CORNERS OF DEPRESSION.
3. PIPE SLEEVES TO BE 2" LARGER THAN NOMINAL PIPE DIAMETER. MAXIMUM SLEEVE SIZE=12". MINIMUM=12" CLEAR SPACING BETWEEN ADJACENT PIPES. SEE MECHANICAL AND ELECTRICAL DRAWING FOR LOCATIONS.
4. COORDINATE LOCATION, DEPTH, EXTENT, AND EDGE EMBED CONDITIONS OF ALL DEPRESSIONS WITH ARCHITECTURAL DRAWINGS.

1 SLAB ON GRADE DEPRESSION
SCALE: 1/2"=1'–0"

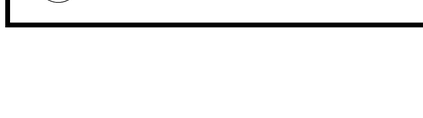


2 SLAB PENETRATION REINFORCING
SCALE: 1/2"=1'–0"



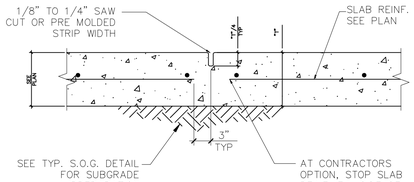
NOTES:
1. SEE ARCHITECTURAL & MECHANICAL DRAWINGS FOR CURB LOCATIONS, DIMENSIONS, CHAMFERS & INSERTS.
2. COORDINATE REINFORCEMENT LOCATIONS TO AVOID INTERFERENCE WITH INSTALLATION OF ADHESIVE DOWELS.
3. USE ALTERNATE IN DOWELS ARE NOT LOCATED IN PROPER LOCATION OF CURB IN CURB IS INSTALLED AT SLAB LOCATIONS WITHOUT DOWELS.

3 TYPICAL RAISED CURBS & PADS
SCALE: 1/2"=1'–0"



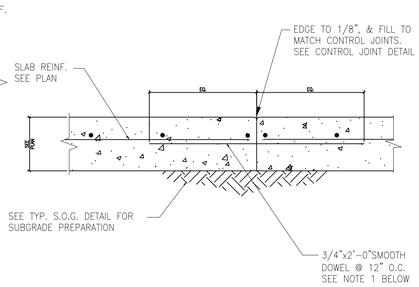
NOTES:
1. SEE GEOTECHNICAL REPORT.
2. SEE SPECIFICATIONS FOR GRANULAR MATERIAL & CRUSHED ROCK.
3. SEE PLANS FOR LOCATIONS OF COLUMN BLOCKOUTS, CONSTRUCTION JOINTS, CONTROL JOINTS AND SLAB DEPRESSIONS.

4 TYP. SUBGRADE PREP. & SLAB ON GRADE DETAIL
SCALE: 1/2"=1'–0"



NOTES:
1. WHEN USED, MAKE SAW CUT AS SOON AS SLAB CAN SUPPORT WEIGHT OF WORKERS & EQUIPMENT WITHOUT DAMAGE TO SLAB FINISH, & CUTS CAN BE MADE WITHOUT DAMAGE TO THE CONCRETE MAKE TRIAL CUTS AS REQUIRED.
2. JOINT TO BE THOROUGHLY CLEANED PRIOR TO FILLING.
3. PROVIDE FILLER MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS & APPLY STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. FILLER MATERIAL SHALL BE APPLIED WHEN SLAB IS UNDER PERMANENT TEMPERATURE CONTROL, SUCH AS AT THE COMPLETION OF THE BUILDING SHELL, WHENEVER POSSIBLE. IF PERMANENT TEMPERATURE CONTROL IS NOT ESTABLISHED, A MINIMUM OF 90 DAYS AFTER THE COMPLETION OF SLAB CONSTRUCTION SHALL ELAPSE PRIOR TO APPLYING THE JOINT FILLER.

5 CONTROL JOINTS AT SLAB ON GRADE
SCALE: 1/2"=1'–0"



NOTES:
1. BREAK BOND BETWEEN NEW AND PREVIOUSLY POURED SLAB ON GRADE BY SPRAYING OR PAINTING EXPOSED SIDE OF KEY WITH CURING COMPOUND OR FORM OIL.
2. LONG STRIP CONSTRUCTION METHOD SHALL BE USED FOR ALL SLAB ON GRADE, UNLESS OTHERWISE APPROVED BY RESIDENT ENGINEER.
3. SUBGRADE SHALL BE FREE OF STANDING WATER AT TIME OF CONCRETE PLACEMENT.

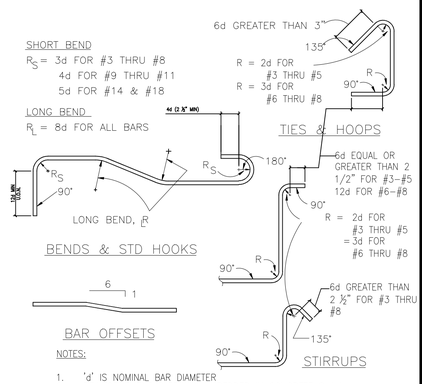
6 CONSTRUCTION JOINTS AT SLAB ON GRADE
SCALE: 1/2"=1'–0"

LAP SPLICE LENGTHS
(INCHES)(1,2)
GRADE 60 REINFORCING BARS, NORMAL WEIGHT CONCRETE

BAR SIZE		#3	#4	#5	#6	#7	#8	#9	#10	#11
f_c'= 3000PSI	TOP BAR (3)	21	28	35	46	62	82	104	132	162
	OTHER BAR	16	21	27	35	48	63	80	101	124
f_c'= 4000PSI	TOP BAR (3)	20	24	30	40	54	71	90	114	140
	OTHER BAR	16	19	23	30	41	55	69	88	108
f_c'= 5000 PSI	TOP BAR (3)	20	22	27	35	48	63	80	102	125
	OTHER BAR	16	17	21	27	37	49	62	79	96

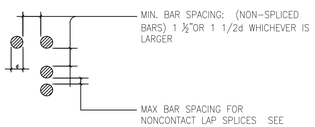
NOTES:
1. LAP SPLICE LENGTHS, WHERE PERMITTED, SHALL BE IN ACCORDANCE WITH THIS TABLE UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE.
2. EMBEDMENT LENGTHS OF DOWELS SHALL BE EQUAL TO LENGTHS FOR "OTHER" BARS.
3. TOP BARS ARE HORIZONTAL BARS SO PLACED THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR.

7 REINFORCING LAP SPLICE TABLE
SCALE: NTS



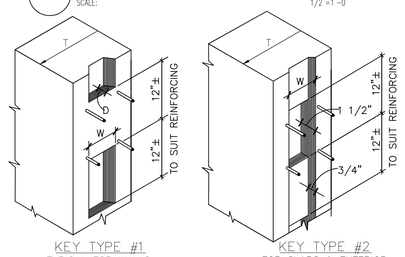
NOTES:
1. 'd' IS NOMINAL BAR DIAMETER
2. REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

8 HOOKS AND BENDS
SCALE: NTS



NOTES:
1. COLUMN DOWELS, TYPICAL HORIZONTAL WALL STEEL AND TYPICAL WALL STEEL DOWELS MAY BE WIRED TOGETHER INSTEAD OF SPACING AS SHOWN ABOVE.
2. CLEAR DISTANCE LIMITATION BETWEEN BARS SHALL APPLY ALSO TO THE CLEAR DISTANCE BETWEEN A CONTACT LAP SPLICE AND ADJACENT SPLICES OF BARS.
3. BARS SPLICED BY NONCONTACT LAP SPLICES SHALL NOT BE SPLICED TRANSVERSELY FURTHER APART THAN ONE–FIFTH THE REQUIRED LAP SPLICE LENGTH, NOR 6".

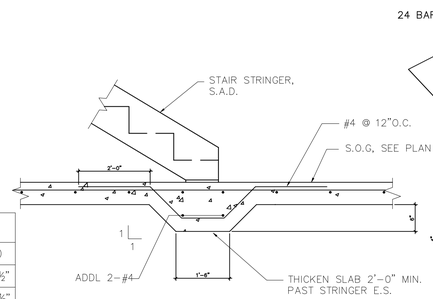
9 BAR SPACING & SLAB ON GRADE DETAIL
SCALE: NTS



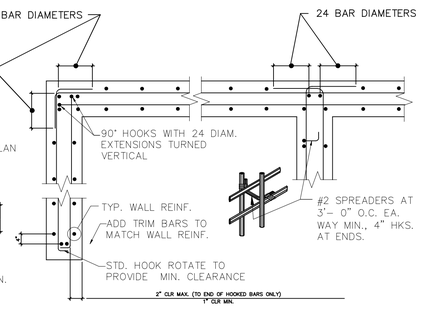
KEY SCHEDULE					
T	W	D	T	W	D
EQUAL LESS THAN 6" WALL OR SLAB	'T'	1 ½"	13"	7 ¼"	1 ½"
7"	7"	1 ½"	14" TO 16"	9 ¼"	2 ½"
8" TO 12"	5 ½"	1 ½"	18" & OVER	11 ¼"	2 ½"

NOTES:
1. BEFORE PLACING 2ND POUR, ALL SURFACES ARE TO BE ROUGHENED TO ¼" AMPLITUDE & THOROUGHLY CLEANED, SEE SPECIFICATIONS.
2. DETAILS APPLY TO BOTH HORIZONTAL & VERTICAL CONSTRUCTION JOINTS.

10 CONSTRUCTION JOINTS IN WALLS & SLABS
SCALE: 1/2"=1'–0"



11 STAIR STRINGER FOOTING
SCALE: 1/2"=1'–0"



NOTES:
1. WALLS WITH SINGLE CURTAIN OF STEEL SIMILAR TO ABOVE WITH HORIZONTAL HOOKS AT CORNERS ONLY.
2. SPLICES IN HORIZONTAL REINFORCEMENT SHALL BE STAGGERED.

12 WALL DETAIL REINF. @ CORNERS & INTER.
SCALE: NTS

CITY OF MERCER ISLAND
REVIEWED FOR CODE COMPLIANCE
January 16, 2025

5/29/2024

F.T. ENG. & CONST. MGMT., LLC
PHONE: 5098220489
EMAIL: F.T.ENG.CM@GMAIL.COM

YUK KWAN TSUI
STATE OF WASHINGTON
54334
REGISTERED PROFESSIONAL ENGINEER
6/04/2024

2419 MERCER FIRSTHILL

2419 72ND AVE SE
MERCER ISLAND, WA 98040

JOB # 2024020

REV	DESCRIPTION	DATE

Drawn By:
Drawing Title:
TYPICAL STRUCTURAL DETAILS
Sheet
S3.4